



***Simrad CMC
Catch monitoring system
Harbour Acceptance Test***

This is the Harbour Acceptance Test for the Simrad CMC Catch monitoring system.

The purpose of this Harbour Acceptance Test is to verify that the CMC system provided to the vessel is correctly installed, and fully functional. When all the tasks have been done, the report form must be signed by the relevant parties. The completed document then becomes the official report.

Vessel/Customer

Document information

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- **Document:** Harbour Acceptance Test
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Warning

The equipment to which this manual applies must only be used for the purpose for which it was designed. Improper use or maintenance may cause damage to the equipment and/or injury to personnel. 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.

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Introduction

Topics

[Purpose, page 5](#)

[Personnel and location, page 6](#)

[Referenced documents, page 7](#)

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Purpose

This is the Harbour Acceptance Test for a Simrad Catch Monitoring System assembled using the modular Catch Monitoring Components (CMC) available.

The modular Catch Monitoring Components (CMC) system comprises the following items:

- TV80 Catch monitoring software
- CM60 Processor Unit
- PI50 Receiver Unit
- PI60 Receiver Unit
- SR15 Receiver Unit
- SR70 Receiver Unit
- Hydrophone Interface and Splitter
- Hydrophone Selector Unit
- Purse seine hydrophone
- Trawl hydrophone
- Portable hydrophone

Unless otherwise specified in a contract, the Processor Unit and the display are not included in the standard delivery from Kongsberg Maritime.

Note

In this document, the abbreviation "CMC" is used as a generic product name.

The purpose of this Harbour Acceptance Test is to verify that the CMC system provided to the vessel is correctly installed, and fully functional. It is then ready for the Sea Acceptance Test. When all the tasks have been done, the report form must be signed by the relevant parties. The completed document then becomes the official report.

Note

The hydrophone is not accessible during the Harbour Acceptance Test. The hardware registration is then omitted.

Personnel and location

Successful completion of the test requires qualified and experienced test engineers and/or technicians.

This Harbour Acceptance Test is done on board the vessel, alongside the quay. The test is done by personnel from Kongsberg Maritime. All personnel must have good knowledge of the product and/or module(s) at hand.

A representative from an authorized dealer or distributor can do the Harbour Acceptance Test on behalf of Kongsberg Maritime.

Representatives from the client and/or end user are normally present to witness the test and results.

As with all assembly and test procedures related to advanced technical and/or electronic equipment, the skill of the operator is vital to a successful completion of the tasks. The only way to secure high quality of our products is first rate workmanship and high professional standards throughout the production chain.

It is equally important that all members of the production and test crews show initiative, and are willing to suggest improvements to functionality, design, procedures and documents. If you find a mistake in a document, or find that information is missing, offer this information to the proper authorities without further delay. Likewise, your experience as a skilled worker is valuable. Please forward any suggestions to make improvements to the product, the design, the production method, or any other matters related to your expertise.

Referenced documents

The installation and use of the CMC is described in several documents and end user manuals. Internal test documents are used throughout the production and test of the CMC.

This list is not complete. Additional documents and end user manuals are available for the CMC. These publications are not relevant for this Harbour Acceptance Test.

Note

Unless specified in the applicable procedure(s), the CMC publications listed here are not required during this Harbour Acceptance Test.

End user manuals

- **TV80 Reference Manual and On-line Help:** 406388

Software documents

- **TV80 Software Release Note:** 415117

Customer acceptance test procedures

- **CMC Factory Acceptance Test:** 426006
- **CMC Harbour Acceptance Test:** 426009
- **CMC Sea Acceptance Test:** 426012

Tools and test equipment

Specific tools and test equipment are required for this Simrad CMC Harbour Acceptance Test. The required tools and equipment must be made available before the test can start.

You need the following equipment:

- Multimeter
- An ample length of rope
- Fixings (Snap hooks/Screw links)

Multimeter (Make and model)	Serial number	Calibration expiry date

Acceptance test summary

The purpose of this Harbour Acceptance Test is to verify that the CMC system provided to the vessel is correctly installed, and fully functional. This acceptance test summary is provided to offer an overview of the functions and items that need to be tested. References are made to the individual chapters in this Harbour Acceptance Test.

Procedure

- 1 Record the software and hardware items that are included in the test.
 - [Hardware and software registration, page 9](#)
- 2 Do a visual inspection of each unit that is comprised by the CMC delivery.
 - [Visual inspection, page 24](#)
- 3 Test the main functionality of the CMC.
 - [Testing the CMC operational functionality, page 35](#)
- 4 When all the tests have been successfully concluded, open the *Customer acceptance form*, and fill it in with the relevant signatures.
 - [Customer acceptance form, page 52](#)

The end user and technical documentation for the CMC contains several procedures that are also applicable for this Harbour Acceptance Test. These procedures are not part of the Harbour Acceptance Test. They are provided for reference purposes only.

- [Secondary procedures, page 53](#)

Hardware and software registration

Topics

[Verification of previously tested items, page 10](#)

[Software items, page 11](#)

[Hardware items, page 12](#)

Verification of previously tested items

It is not necessary to fill in registration tables for software and hardware items that have already been recorded in a previous test.

Are the CMC user interface software and hardware units the same as those tested during the *Factory Acceptance Test*? If this is the case, it is not necessary to fill out the registration tables again.

- If no changes have been made to neither the software nor the hardware, sign the table below to verify this.
- If the software has been updated, record the new software version.
- If hardware changes have been made (units are replaced), all serial numbers must be recorded again.

Verification of previously tested items
Neither user interface software nor hardware units have been changed on this CMC system since the <i>Factory Acceptance Test</i> . For this reason, the registration tables have not been filled out.
Date and signature

Software items

Every software program that is provided as a part of the CMC delivery must be registered. Part number and software version must be registered. When software media (USB flash drive, CD, DVD etc) is provided, the part number of the media and the CMC software version provided on the media must be registered.

Software	Part number	Software version
Simrad TV80	321028	

Software media	Part number	Software version
Simrad CMC	426661	
The software version on the software media shall be the same as the version installed on the Processor Unit. End user documentation is included on the same software media.		

Hardware items

Topics

[Display, page 12](#)

[Processor Unit, page 13](#)

[Receiver Unit, page 13](#)

[Hydrophone Interface and Splitter, page 14](#)

[Hydrophones, page 15](#)

[Catch monitoring sensors, page 16](#)

Display

Each display provided with the CMC delivery must be uniquely identified. Make(s), model(s), part number(s) and serial number(s) must be registered. Any unit that is not provided by Kongsberg Maritime AS does not need to be registered.

Display (Make and model ¹)	Part number ²	Serial number	Revision
¹ Fill in the make, model and serial number for each unit that is provided with the CMC delivery. If applicable, add the part number. The unit contains neither circuit boards nor modules that need to be identified separately.			
² This is the part number on the unit label.			

Processor Unit

The Processor Unit provided with the CMC delivery must be uniquely identified. Make, model, part number and serial number must be registered.

Processor Unit ¹	Part number ²	Serial number	Revision
CMC Processor Unit (with TV80 software)	428474		
¹ The unit contains neither circuit boards nor modules that need to be identified separately.			
² This is the part number on the unit label.			
If this unit is <u>not</u> included in the delivery, or not tested, set serial number to "N/A" (not applicable).			

Receiver Unit

Each Receiver Unit provided with the CMC delivery must be uniquely identified. Make, model, part number and serial number must be registered.

Receiver Unit ¹ (Type)	Part number ²	Serial number
¹ These units do not contain any circuit boards or modules that must be identified separately. Part numbers ² :		
<ul style="list-style-type: none"> • SR15 Receiver Unit: 423701 • SR70 Receiver Unit: 396790 		
² This is the part number on the unit label.		

Hydrophone Interface and Splitter

The Hydrophone Interface and Splitter unit provided with the CMC delivery must be uniquely identified. Make, model, part number and serial number must be registered.

Hydrophone Interface and Splitter¹	Part number²	Serial number
Hydrophone Interface and Splitter 1	408441	
Hydrophone Interface and Splitter 2	408441	
¹ These units do not contain any circuit boards or modules that must be identified separately.		
² This is the part number on the unit label.		
For units that are <u>not</u> included in the delivery, or not tested, set serial number to "N/A" (not applicable).		

Hydrophones

Each hydrophone provided with the CMC delivery must be uniquely identified.

Hydrophones (Make and model ¹)	Part number ²	Serial number
¹ These units do not contain any circuit boards or modules that must be identified separately. Part numbers ² : <ul style="list-style-type: none"> • Trawl hydrophone: 314-205250 • Purse seine hydrophone: 314-202275 • Portable hydrophone: 314-203863 		
² This is the part number on the unit label.		

Note

The hydrophone is not accessible during the Harbour Acceptance Test. The hardware registration is then omitted.

Catch monitoring sensors

All catch monitoring sensors provided with the CMC delivery must be uniquely identified. Make, model, part number and serial number must be registered.

Catch monitoring sensors (Type) ¹	Part number ²	Serial number
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

¹These items do not contain any circuit boards or modules that must be identified separately.

²This is the part number on the unit label.

For items that are not included in the delivery, or not tested, set serial number to "N/A" (not applicable).

Catch monitoring sensors added to the system

Record the configuration parameters in the tables.

Catch monitoring sensor 1

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Catch monitoring sensor 2

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	

Catch monitoring sensor	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Catch monitoring sensor 3

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Catch monitoring sensor 4

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Catch monitoring sensor 5

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	

Catch monitoring sensor	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Catch monitoring sensor 6

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Catch monitoring sensor 7

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Catch monitoring sensor 8

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	

Catch monitoring sensor	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Catch monitoring sensor 9

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Catch monitoring sensor 10

Catch monitoring sensor	
Sensor type	
Common configuration parameters:	
Location	
Measurement 1	
Measurement 2	
Measurement 3	
Measurement 4	
Measurement 5	
Measurement 6	
Measurement 7	
Measurement 8	
Channel	
Output Power	
Update Interval	
Non editable information about the sensor:	
FPGA Version	
PCB Serial Number	
SW Version	
Body Serial Number	
Lid Type	

Related topics

[Adding new catch monitoring sensors, page 37](#)

Visual inspection

Topics

[Visual inspection of the display, page 24](#)

[Visual inspection of the Processor Unit, page 26](#)

[Visual inspection of the Receiver Unit, page 28](#)

[Visual inspection of the Hydrophone Interface and Splitter, page 30](#)

[Inspecting the hydrophone installation, page 31](#)

[Making sure that all CMC cables are properly connected, page 33](#)

Visual inspection of the display

A visual inspection of the CMC display is required to verify that the unit has not been physically damaged during the installation.

Prerequisites

The CMC is installed as specified in the *CMC Installation manual*. The CMC is turned off. You need the following equipment:

- Multimeter

Context

This test procedure is only applicable when the display is provided by Kongsberg Maritime as a part of the CMC delivery.

Procedure

- 1 Make sure that the unit's serial number has been recorded in the list of hardware items.

- 2 Make sure that the physical installation of the unit has been completed.
 - a Make sure that the structure to which the display is fastened is substantial enough to hold the unit securely under all operating conditions.
 - b If applicable, make sure that the display (or the display mounting bracket) is bolted or welded securely to the deck and/or bulkhead.
 - c If applicable: Make sure that ample ventilation is provided to avoid overheating.
 - d Make sure that ample space is provided around the unit to allow for maintenance and replacement of parts.
 - e Make sure that the bolts, screws or studs that have been used are all of the correct size.
 - f Make sure that the correct flat and shake-proof washers have been used.
 - g Make sure that all the nuts have been tightened properly.
 - h Make sure that all welds and brackets have been painted with the correct preservation medium to prevent corrosion.
- 3 Make sure that the display is installed in the correct location, and that it is suitably orientated with respect to ambient light conditions and reflections.
- 4 Make sure that the unit is not physically damaged, and that the surfaces and paint-work are clean without dents or scratches.

The physical handling during the installation may have caused some minor scratches to the surfaces or paint-work. This can be accepted. However, if rough handling has caused serious damage, this must be recorded with a written statement and necessary photos, so that corrective actions can be made.
- 5 Make sure that the unit is firmly connected to ship's ground.
 - a The unit must be connected to the ship's ground with an earthing strap. The strap must be in addition to any incidental electrical contact made by the mounting lugs on the unit.
 - b Use a standard multimeter to check that the resistance between the unit and the ship's ground is approximately 0 (zero) Ω .
- 6 Make sure that cable installation has been completed.
 - a Make sure that all cables leading to and from the unit have been properly mounted and secured.
 - b Make sure that enough slack has been provided on each cable to allow for maintenance and replacement.
- 7 Make sure that the unit has been identified with the relevant product label(s), and that one label includes the part and serial numbers.

Result

Requirements	Results
The display is correctly installed with easy access for maintenance and replacement of parts.	
The display is free from scratches, dents or other physical damage.	
Free access to all the connectors on the display is provided. All cables are properly mounted with enough slack.	
The display is properly grounded.	
Date and signature:	

Related topics

[Customer acceptance form, page 52](#)

Visual inspection of the Processor Unit

A visual inspection of the CMC Processor Unit is required to verify that the unit has not been physically damaged during the installation.

Prerequisites

The CMC is installed as specified in the *CMC Installation manual*. The CMC is turned off. You need the following equipment:

- Multimeter

Context

The Processor Unit is not a standard part of the CMC delivery. This test procedure is only applicable when the Processor Unit is provided by Kongsberg Maritime as a part of the CMC delivery.

Procedure

- 1 Make sure that the unit's serial number has been recorded in the list of hardware items.
- 2 Make sure that the computer is installed in the correct location, and that it is suitably oriented for replacement and cabling.
- 3 Make sure that the physical installation of the unit has been completed.
 - a Make sure that you have free access to rear and front side connectors on the computer for maintenance purposes.

- b Make sure that ample space is provided to open/close DVD and/or CD lids (if relevant), and to insert and remove USB flash drives.
 - c If applicable: Make sure that ample ventilation is provided to avoid overheating.
 - d Make sure that ample space is provided around the unit to allow for maintenance and replacement of parts.
 - e Make sure that the bolts, screws or studs that have been used are all of the correct size.
 - f Make sure that the correct flat and shake-proof washers have been used.
 - g Make sure that all the nuts have been tightened properly.
 - h Make sure that all welds and brackets have been painted with the correct preservation medium to prevent corrosion.
- 4 Make sure that the unit is not physically damaged, and that the surfaces and paint-work are clean without dents or scratches.
- The physical handling during the installation may have caused some minor scratches to the surfaces or paint-work. This can be accepted. However, if rough handling has caused serious damage, this must be recorded with a written statement and necessary photos, so that corrective actions can be made.
- 5 Make sure that the unit is firmly connected to ship's ground.
- a Make sure that the unit is securely connected to the ship's ground with an earthing strap. The strap must be in addition to any incidental electrical contact made by the mounting lugs on the unit.
 - b Use a standard multimeter to check that the resistance between the unit and the ship's ground is approximately 0 (zero) Ω .
- 6 Make sure that cable installation has been completed.
- a Make sure that all cables leading to and from the unit have been properly mounted and secured.
 - b Make sure that enough slack has been provided on each cable to allow for maintenance and replacement.
- 7 Make sure that the unit has been identified with the relevant product label(s), and that one label includes the part and serial numbers.

Result

Requirements	Results
The Processor Unit is correctly installed with easy access for maintenance and replacement of parts.	
The Processor Unit is free from scratches, dents or other physical damage.	

Requirements	Results
Free access to all the connectors on the Processor Unit is provided. All cables are properly mounted with enough slack.	
The Processor Unit can be fully opened for access to the internal parts.	
The Processor Unit is properly earthed.	
Date and signature:	

Related topics

[Customer acceptance form, page 52](#)

Visual inspection of the Receiver Unit

A visual inspection of the Receiver Unit is required to verify that the unit has not been physically damaged during the installation. If more than one Receiver Unit is used, each must be inspected separately.

Prerequisites

The CMC is installed as specified in the *CMC Installation manual*. The CMC is turned off. You need the following equipment:

- Multimeter

Procedure

- 1 Make sure that the unit's serial number has been recorded in the list of hardware items.
- 2 Make sure that the Receiver Unit is installed in the correct location, and that it is suitably oriented for replacement and cabling.
- 3 Make sure that the physical installation of the unit has been completed.
 - a Make sure that you have free access to the connectors on the Receiver Unit for maintenance purposes.
 - b Make sure that ample space is provided around the unit to allow for maintenance and replacement of parts.
 - c Make sure that the bolts, screws or studs that have been used are all of the correct size.
 - d Make sure that the correct flat and shake-proof washers have been used.
 - e Make sure that all the nuts have been tightened properly.
- 4 Make sure that the unit is not physically damaged, and that the surfaces and paint-work are clean without dents or scratches.

The physical handling during the installation may have caused some minor scratches to the surfaces or paint-work. This can be accepted. However, if rough handling has caused serious damage, this must be recorded with a written statement and necessary photos, so that corrective actions can be made.

- 5 Make sure that the unit is firmly connected to ship's ground.
 - a Make sure that the unit is securely connected to the ship's ground with an earthing strap. The strap must be in addition to any incidental electrical contact made by the mounting lugs on the unit.
 - b Use a standard multimeter to check that the resistance between the unit and the ship's ground is approximately 0 (zero) Ω .
- 6 Make sure that cable installation has been completed.
 - a Make sure that all cables leading to and from the unit have been properly mounted and secured.
 - b Make sure that enough slack has been provided on each cable to allow for maintenance and replacement.
- 7 Make sure that the unit has been identified with the relevant product label(s), and that one label includes the part and serial numbers.
- 8 If applicable, repeat the test for each Receiver Unit

Result

Requirements - SR70 Receiver Unit	Results
The Receiver Unit is new, clean and free from scratches, dents or other physical damage.	
The Receiver Unit is clearly identified with the relevant product labels.	
Date and signature:	
If this unit is <u>not</u> included in the delivery, or not tested, set Result to "N/A" (not applicable).	

Requirements - SR15 Receiver Unit	Results
The Receiver Unit is new, clean and free from scratches, dents or other physical damage.	
The Receiver Unit is clearly identified with the relevant product labels.	
Date and signature:	
If this unit is <u>not</u> included in the delivery, or not tested, set Result to "N/A" (not applicable).	

Related topics

[Customer acceptance form, page 52](#)

Visual inspection of the Hydrophone Interface and Splitter

A visual inspection of the Hydrophone Interface and Splitter unit is required to verify that it has not been physically damaged during the installation.

Prerequisites

The CMC is installed as specified in the CMC *Installation manual*. The CMC is turned off. You need the following equipment:

- Multimeter

Procedure

- 1 Make sure that the unit's serial number has been recorded in the list of hardware items.
- 2 Make sure that the Hydrophone Interface and Splitter unit is installed in the correct location, and that it is suitably oriented for replacement and cabling.
- 3 Make sure that the physical installation of the unit has been completed.
 - a Make sure that you have free access to rear and front side connectors on the computer for maintenance purposes.
 - b Make sure that you have free access to the connectors on the Hydrophone Interface and Splitter unit for maintenance purposes.
 - c Make sure that ample space is provided around the unit to allow for maintenance and replacement of parts.
 - d Make sure that the bolts, screws or studs that have been used are all of the correct size.
 - e Make sure that the correct flat and shake-proof washers have been used.
 - f Make sure that all the nuts have been tightened properly.
- 4 Make sure that the unit surfaces and paint-work are clean without dents or scratches.

The physical handling during the installation may have caused some minor scratches to the surfaces or paint-work. This can be accepted. However, if rough handling has caused serious damage, this must be recorded with a written statement and necessary photos, so that corrective actions can be made.
- 5 Make sure that the unit is firmly connected to ship's ground.
 - a Use a standard multimeter to check that the resistance between the unit and the ship's ground is approximately 0 (zero) Ω .
- 6 Make sure that cable installation has been completed.

- a Make sure that all cables leading to and from the unit have been properly mounted and secured.
 - b Make sure that enough slack has been provided on each cable to allow for maintenance and replacement.
- 7 Make sure that the unit has been identified with the relevant product label(s), and that one label includes the part and serial numbers.

Result

Requirements	Results
The Hydrophone Interface and Splitter unit is correctly installed with easy access for maintenance and replacement of parts.	
The Hydrophone Interface and Splitter unit is free from scratches, dents or other physical damage.	
Free access to all the connectors on the Hydrophone Interface and Splitter unit is provided. All cables are properly mounted with enough slack.	
The Hydrophone Interface and Splitter unit is properly grounded.	
Date and signature:	

Related topics

[Customer acceptance form, page 52](#)

Inspecting the hydrophone installation

Correct installation of the hydrophone is critical to successful operation of the CMC.

Prerequisites

The following specific tool is required for this task:

- Camera

Note

Due to the fact that the hydrophone is physically installed under the hull, its location must be determined on the installation drawings. The installation shipyard must provide all necessary installation drawings.

Context

The installation of the hydrophone is described in the relevant installation manual.

Procedure

- 1 Obtain the hydrophone installation drawings prepared by the installation shipyard.
- 2 Make sure that the hydrophone has been positioned according to the guidelines in the installation manual.
- 3 Write down the distance between the hydrophone and the propellers.
- 4 Write down the distance between the hydrophone and the keel.
- 5 Write down the type of anti-fouling paint that is used on the hydrophone face.
- 6 Inspect the hydrophone cable as closely as permitted.
 - a Make sure that the hydrophone cable is installed as specified in the installation manual.
 - b Make sure that the cable is not damaged during the installation work.
 - c Make sure that the hydrophone cable is installed using a steel conduit, cable duct and/or pipe, and that the cable is properly secured to this to avoid damage caused by motion and vibration.
 - d Make sure the steel conduit, cable duct and/or pipe used to secure the cable does not have sharp edges or protruding items that may cause damage.
 - e Make sure that the cable is entered into the steel conduit, cable duct and/or pipe without causing excessive physical stress.
 - f Verify that enough slack is provided for the cable to allow for maintenance and replacements.
- 7 Use a high resolution digital camera, and take pictures of the installation.
 The pictures must clearly show how the hydrophone and the hydrophone cables are installed. Attach the pictures (files and/or prints) to the test report.
- 8 Repeat for each hydrophone that is installed.

Result

Requirements	Results
The hydrophone is positioned according to the guidelines in the installation manual.	
The hydrophone cable is not damaged.	
The steel conduit(s), cable duct(s) and/or pipe(s) used for cable protection is satisfactory constructed and installed.	
Enough slack has been provided for the cable to allow for maintenance and replacements.	
Type of hydrophone installation (Single/Dual):	
Date and signature:	

Hydrophone #1	
Hydrophone location (Port/Starboard)	
Distance between hydrophone and propellers	
Distance between hydrophone and keel	
Hydrophone #2	
Hydrophone location (Port/Starboard)	
Distance between hydrophone and propellers	
Distance between hydrophone and keel	
Hydrophone #3	
Hydrophone location (Port/Starboard)	
Distance between hydrophone and propellers	
Distance between hydrophone and keel	
Hydrophone #4	
Hydrophone location (Port/Starboard)	
Distance between hydrophone and propellers	
Distance between hydrophone and keel	

Related topics

[Customer acceptance form, page 52](#)

Making sure that all CMC cables are properly connected

The CMC relies on communication between each system unit, and between the CMC and external devices. It is very important that all cables are correctly installed, that the proper cable types have been used, and that all cables are connected correctly.

Prerequisites

- The CMC has been installed as specified in the relevant CMC end-user documentation.
- All system cables are installed.
- All cable connections are made.
- Correct operating power is available.

You need the following equipment:

- Cable tester
- Multimeter

Procedure

- 1 For each cable in use on the CMC:
 - a Make sure that the cable is installed correctly.
Pay special attention to hydrophone cables. These must not be installed too close to power cables.
 - b Make sure that the terminations at each end of the cable are correct.
 - c Make sure that the cable is properly identified.
- 2 If possible, use a multimeter or a dedicated cable tester to check the continuity in each cable.
- 3 Use a qualification tester to make sure that each Ethernet cable is correctly wired, and meets the specifications related to quality and bandwidth.

Result

Requirements	Results
Each cable is installed correctly.	
All cable connections are made.	
Each cable is properly identified.	
Each Ethernet cable in use meets the quality requirements.	
Date and signature:	

Related topics

[Customer acceptance form, page 52](#)

Testing the CMC operational functionality

Topics

[Assembling the CMC system to turn it on, page 35](#)

[Adding new catch monitoring sensors, page 37](#)

[Functional test of the Receiver Unit, page 40](#)

[Functional test of the sensor data presentations in the views, page 43](#)

[Verifying the communication with a navigation system \(GPS\), page 45](#)

[Verifying the communication with the course gyro, page 47](#)

[Verifying the communication with speed log, page 49](#)

Assembling the CMC system to turn it on

Prior to testing the CMC, the complete system must be turned on.

Prerequisites

You need the following equipment:

- All relevant system units
- End user manuals
- TV80 operating software

Context

Observe the cabling and assembly instructions in the CMC end user documentation. A selection of basic operating procedures for the CMC are provided in the *Secondary procedures* chapter in this Harbour Acceptance Test.

Note

The test of the CMC system may be conducted for a specific delivery. The assembly of the CMC system with the relevant hardware units must then be made according to the project specifications.

Procedure

- 1 Verify that the CMC units are correctly connected together.
- 2 Turn on the Processor Unit.
Wait while the operating system loads.
- 3 Install the TV80 software and the relevant software licenses.
- 4 On the Processor Unit desktop, double-click the CMC icon to start the program.
- 5 Once the program has started, observe that the presentation fills the entire screen.

Result

Requirements	Results
The system is assembled according to the instructions in the end user documentation.	
The system starts when it is turned on from the Processor Unit.	
The display presentation appears after a few minutes.	
Date and signature:	

Related topics

[Customer acceptance form, page 52](#)

[Secondary procedures, page 53](#)

Adding new catch monitoring sensors

When you want to put a new catch monitoring sensor to use, you need to add it to the system. The sensor may or may not need to be configured.

Prerequisites

The CMC is installed as specified by the relevant installation instructions.

- One or more hydrophones are connected to the Receiver Unit.
- The relevant catch monitoring sensors are available.
- The CMC system is turned on and operates normally.
- The vessel is berthed.

Neither tools nor instruments are required.

Note

The test of the CMC system may be conducted for a specific delivery. The assembly of the CMC system with the relevant hardware units must then be made according to the project specifications.

It is not necessary to add sensors and record these if this has been done in a previous qualifying test. Obtain the records from the previous qualifying test.

In order to read the data from a catch monitoring sensor, you must first connect one or more receivers to the Processor Unit. This procedure assumes that a suitable receiver unit has been connected to the Processor Unit, and that all relevant communication parameters have been defined.

If you want to add a new sensor to your system and you need to modify its configuration, the sensor must be connected to the Processor Unit with a dedicated cable.

Context

Catch monitoring sensors are delivered from Kongsberg Maritime readily set up with common default settings. Each individual sensor can be configured to specify its communication channel, which measurements to make and some other relevant operating parameters. This is specially important if you wish to use several sensors to operate on different communication channels. This is also important to avoid interference if several vessels equipped with identical catch monitoring systems are operating simultaneously in the same area.

The **Add New Sensor** dialog box starts a "wizard" that permits you to select the specific catch monitoring sensor you want to put to use. If relevant, the "wizard" provides the necessary configuration functionality.

Note

The TV80 only allows you to configure PX sensors. If you wish to use older sensors (not PX family), these must be configured using their dedicated applications before you add them.

If your new sensor has already been configured, you do not need to repeat the configuration process to use it.

The number of sensors you can add depends on your hardware configuration.

Procedure

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



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

- 3 Observe the **Select Gear** page at the left of the **Installation** dialog box
Select a gear icon according to your working environment.

- 4 At the bottom of the **Sensor list** page, select **Add New Sensor**.

The **Add New Sensor** dialog box opens. In the first dialog box, the following options are provided.

- 5 Select **Yes** if you have a new sensor that needs to be configured before use.
 - a In the very first **PX Sensor Configurator** dialog box, select communication port and sensor type, then select **Connect**.
 - b In the relevant configuration dialog box, select the operational parameters to suit your preferences and fishing gear setup.
 - 1 On the gear illustration, select the location of your sensor.
 - 2 Choose the measurements you want your sensor to read and define the relevant parameters accordingly.
 - 3 Choose the communication channel.
 - 4 Select the update interval.
 - 5 Select the relevant value for output power.
 - 6 If applicable, select **Calibrate Sensor** or **Unlock Measurements** to open the proper dialog boxes.
 - c Select **Program Sensor** to transfer the chosen parameters to the sensor.
 - d Disconnect the sensor from the interface cable and the Processor Unit.

- e Select **Close** to close the dialog box.
- 6 Select **No** if one of the following conditions is met:
 - The sensor is mounted on the fishing gear.
 - The sensor is not a PX family sensor.
 - The sensor data is received using a third wire cable on a FS system.
- a Observe that the **Select Sensors** dialog box opens.
- b On the gear illustration, select the location of your sensor.
- c Define the sensor parameters.
 - 1 Choose the measurements you want your sensor to read and define the relevant parameters accordingly.
 - 2 Choose the communication channel.
 - 3 Select the update interval.
- d Select **Close** to save the chosen settings and close the dialog box.
- 7 Record the configuration parameters in the table.

The table is located in section *Catch monitoring sensors* in chapter *Hardware and software registration*.
- 8 Repeat these steps for the next sensor.

Result

The new sensor appears on the **Sensor List** page.

The **Sensor List** page presents a table with all the catch monitoring sensors that have been added to the system. You can see if they are currently in use or disabled. You can also see relevant information about the sensors, such as type, receiver in use, communication channel, and where they are placed on the fishing gear.

Related topics

[Catch monitoring sensors, page 16](#)

[Customer acceptance form, page 52](#)

[Secondary procedures, page 53](#)

Functional test of the Receiver Unit

The TV80 offers a spectrum analyser that shows you the signals from each hydrophone. The graph in the **Spectrum** dialog box provides you with information about the background noise and the signal strength in the selected frequency band.

Prerequisites

The CMC is installed as specified by the relevant installation instructions.

- One or more hydrophones are connected to the Receiver Unit.
- The relevant catch monitoring sensors are available. The sensors are configured for use and fully charged.
- The CMC system is turned on and operates normally.
- The vessel is berthed.

You need the following equipment:

- An ample length of rope
- Fixings (Snap hooks/Screw links)

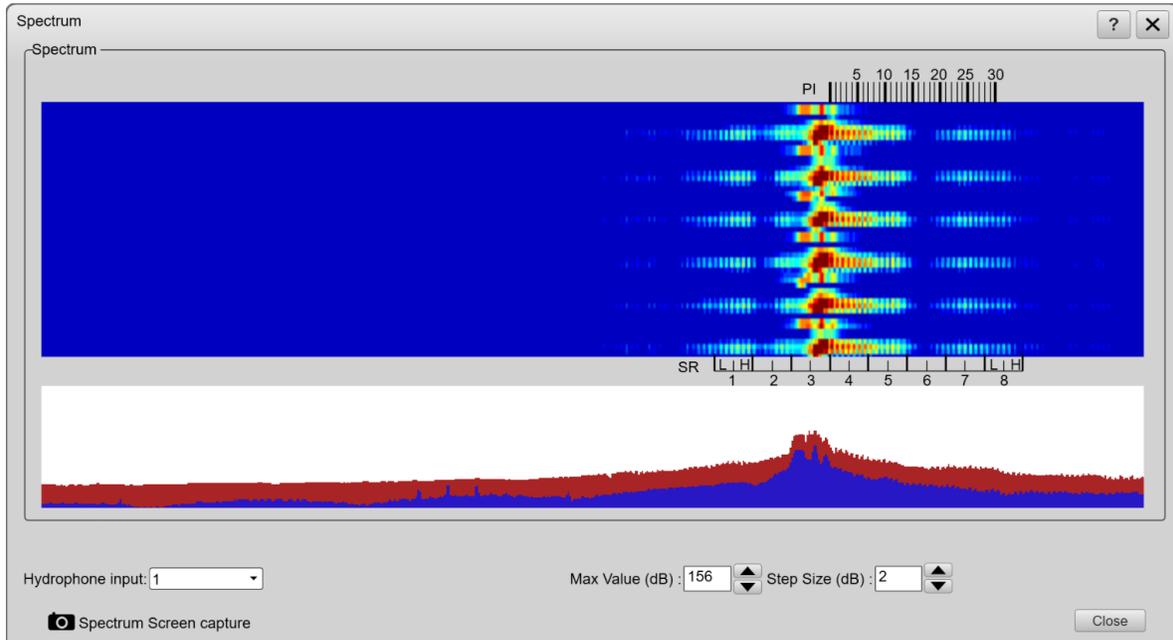
Note

The test of the CMC system may be conducted for a specific delivery. The assembly of the CMC system with the relevant hardware units must then be made according to the project specifications.

Context

A functional test is done with the CMC system assembled as a complete product.

The quality of the acoustic communication link between the sensors and the receiver can be challenged by noise. When noise appears in the same frequency range as the sensors are using for their communication, the resulting information may be unstable or unreadable. The graph in the **Spectrum** dialog box provides you with information about the background noise and the signal strength in the selected frequency band. With this information you can identify noise and find the "cleanest" frequencies. On the top and bottom parts of the graph, the channel identifiers correspond to the relevant receiver channel. With the channel identifiers you can easily see in which channels you have signals and noise.



- The upper scale (PI) identifies the channels for the PI Family receivers.
- The bottom scale (SR) identifies the channels for the SR Family receivers.

The graph plots data using a 16 colour palette. Red colour corresponds to the maximum value defined, while blue is the minimum.

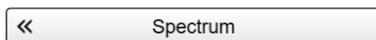
Note

*The **Spectrum** dialog box can only be used with SR type receiver units:*

- SR15
- SR70

Procedure

- 1 Verify that one or several hydrophones are connected to the receiver.
- 2 Open the **Setup** menu.
- 3 On the **Setup** menu, select **Spectrum** to open the dialog box.



- 4 Select the hydrophone you want to inspect from the list provided.
- 5 Set **Max Value** (the maximum starting value) to *160 dB*.
- 6 Observe the graph in the **Spectrum** dialog box.

- 7 Lower the catch monitoring sensor into the water.
Place the sensor on the same depth as the hydrophone, and make sure that the sensor is pointed towards the hydrophone.
- 8 Verify that the graph in the **Spectrum** dialog box reflects this.
- 9 If necessary: Increase the value of **Max Value** to reduce the sensitivity and increase the attenuation.
This removes the strong acoustic noise from the presentation.
- 10 Use the information in the **Spectrum** dialog box to assess whether the noise level is acceptable.
If the noise level is too high:
 - a Try the functionality provided by the **SR Receiver Filtering** dialog box.
Use the **SR Receiver Filtering** functionality to minimize the interference from other acoustic systems (sonars and echo sounders) on your own and/or other vessels. The filter also suppresses noise from your propellers, and from other similar noise sources. The **SR Receiver Filtering** functions are only available for SR type receiver units:
 - b Check the entire CMC system to establish the *cause* of the noise.
 - c Change the communication channel in use.
This is the communication channel used between the catch monitoring sensor and the TV80. The channel number is vital. The channel you choose on the TV80 must comply with the channel programmed into the catch monitoring sensor.
- 11 If applicable, repeat the test for each input on the Receiver Unit
- 12 If applicable, repeat the test for each Receiver Unit
- 13 If applicable, repeat the test for each catch monitoring sensor.
- 14 Keep the sensor in the water.
You need it for the next test.

Result

Requirements - SR70 Receiver Unit	Results
Each input on the Receiver Unit is operational.	
Date and signature:	
If this unit is <u>not</u> included in the delivery, or not tested, set Result to "N/A" (not applicable).	

Requirements - SR15 Receiver Unit	Results
The Receiver Unit is operational.	
Date and signature:	
If this unit is <u>not</u> included in the delivery, or not tested, set Result to "N/A" (not applicable).	

Related topics

[Customer acceptance form, page 52](#)

[Secondary procedures, page 53](#)

Functional test of the sensor data presentations in the views

In order to verify that the TV80 can receive the various measurements from the sensors, appropriate views must be created using the Designer module.

Prerequisites

The CMC is installed as specified by the relevant installation instructions.

- One or more hydrophones are connected to the Receiver Unit.
- The relevant catch monitoring sensors are available. The sensors are configured for use and fully charged.
- The CMC system is turned on and operates normally.
- The vessel is berthed.

You need the following equipment:

- An ample length of rope
- Fixings (Snap hooks/Screw links)

Note

The test of the CMC system may be conducted for a specific delivery. The assembly of the CMC system with the relevant hardware units must then be made according to the project specifications.

Context

The Designer module is a powerful tool that allows you to customize the way you want to see the data received from the sensors. Each specific measurement is visualized using a gauge.

You can choose from a large library of gauges to set up the presentations to fit your requirements.

Note

Some measurements can not be made unless the sensor is submerged in water, and with ample depth.

Procedure

- 1 Lower the catch monitoring sensor into the water.
Place the sensor on the same depth as the hydrophone, and make sure that the sensor is pointed towards the hydrophone.
- 2 Open the Designer module.
 - a Click in the view you want to activate.
The active view is identified with a thicker border.
 - b Move the cursor to the right side of the view.
The **View** shortcut menu opens. You may need to hide the main menu or move it to the left hand side of your presentation.
 - c Select **Edit View**.
The **Designer** module opens.
- 3 Select **Add** on the top bar of the Designer module to open the **Gauges** dialog box.
- 4 Select, one by one, as many gauges as you may need in your active view.
 - a Right click on a selected gauge in your active view.
 - b Select **Properties** to open the **Edit Gauge** dialog box.
 - c From the **Measurement** list, select one of the available options.
 - d Select **OK** to save the selected setting and close the dialog box.
- 5 Select **Save** and then **Close** to save all the parameters and close the Designer module.
- 6 Verify that the information from the sensors is shown in the CMC presentation.

Note

Some measurements can not be made unless the sensor is submerged in water, and with ample depth.

- 7 Retract the sensor from the water.

Result

Requirements	Results
The information from each sensor is shown in the presentation.	
Date and signature:	

Related topics

[Customer acceptance form, page 52](#)

[Secondary procedures, page 53](#)

Verifying the communication with a navigation system (GPS)

For the CMC to use and offer correct navigational information, one or more external sensors must be connected. The communication with the sensor is tested.

Prerequisites

The CMC is installed as specified by the relevant installation instructions.

- The sensor is connected to a communication port on the Processor Unit. The sensor is turned on and in normal operation.
- The interface port is set up with the correct communication parameters.
- 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.
- All relevant vessel drawings, installation reports and/or measurement results are available.
- The CMC system is turned on and operates normally.
- The vessel is berthed.

Neither tools nor instruments are required. For connections and communication parameters, see the relevant end-user documentation from the sensor manufacturer.

Context

Most global positioning system (GPS) receivers provide NMEA 0183 datagrams containing geographical latitude and longitude information, as well as current speed and sailed distance. Some GPS systems will also provide the current heading, but this information is normally taken from the gyro.

The communication parameters defined for NMEA 0183 are:

- **Baud rate:** 4800 bit/s
- **Data bits:** 8
- **Parity:** Even
- **Stop bits:** 1

Some instruments may provide other parameters and/or options. You must always check the relevant technical documentation supplied by the manufacturer.

Procedure

- 1 Observe the top bar.
- 2 Make sure that the information from the sensor is displayed.
- 3 If possible, use another instrument to verify that the information provided by the CMC is correct.
- 4 Open the **Setup** menu.
- 5 On the **Setup** menu, select **Installation**.
Observe that the **Installation** dialog box opens.
- 6 Observe the **I/O Setup** page on the right side of the **Installation** dialog box.
Every interface is presented as a small "block diagram".
 - a In the relevant block diagram, select the serial port icon.
 - b Observe that the **Serial Port Setup** dialog box opens.
 - c Make sure that the communication parameters are correct.
Adjust the settings if it is necessary.
 - d Write down the information.
 - e Close the dialog boxes.
- 7 Select **Navigation** to open the dialog box.
 - a Open the relevant page.
 - b Make sure that the communication parameters are correct.
Adjust the settings if it is necessary.
 - c Write down the information.
 - d Close the dialog box.
- 8 Fill in the result tables.

Result

Datagram	Port	Baud rate	Talker ID

Requirements	Results
Position data is provided and displayed.	
The relevant communication parameters are recorded.	
Date and signature:	

Related topics

[Customer acceptance form, page 52](#)

[Secondary procedures, page 53](#)

Verifying the communication with the course gyro

Without the input from a course gyro, the CMC will not be able to present correct navigational information. The vessel's current heading is shown on the top bar. The communication with the sensor is tested.

Prerequisites

The CMC is installed as specified by the relevant installation instructions.

- The sensor is connected to a communication port on the Processor Unit. The sensor is turned on and in normal operation.
- The interface port is set up with the correct communication parameters.
- 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.
- All relevant vessel drawings, installation reports and/or measurement results are available.
- The CMC system is turned on and operates normally.
- The vessel is berthed.

Neither tools nor instruments are required. For connections and communication parameters, see the relevant end-user documentation from the sensor manufacturer.

Context

In most cases a suitable course gyro is already installed on the vessel. A global positioning system (GPS) with a compatible output format can also be used.

The properties of each of the available communication ports are defined on the **I/O Setup** page. The **Navigation** dialog box controls how the CMC receives information from external navigation sensors.

The communication parameters defined for NMEA 0183 are:

- **Baud rate:** 4800 bit/s
- **Data bits:** 8
- **Parity:** Even
- **Stop bits:** 1

Some instruments may provide other parameters and/or options. You must always check the relevant technical documentation supplied by the manufacturer.

Procedure

- 1 Observe the top bar.
- 2 Make sure that the information from the sensor is displayed.
- 3 If possible, use another instrument to verify that the information provided by the CMC is correct.
- 4 Open the **Setup** menu.
- 5 On the **Setup** menu, select **Installation**.
Observe that the **Installation** dialog box opens.
- 6 Observe the **I/O Setup** page on the right side of the **Installation** dialog box.
Every interface is presented as a small "block diagram".
 - a In the relevant block diagram, select the serial port icon.
 - b Observe that the **Serial Port Setup** dialog box opens.
 - c Make sure that the communication parameters are correct.
Adjust the settings if it is necessary.
 - d Write down the information.
 - e Close the dialog boxes.
- 7 Select **Navigation** to open the dialog box.
 - a Open the relevant page.
 - b Make sure that the communication parameters are correct.

- Adjust the settings if it is necessary.
- c Write down the information.
 - d Close the dialog box.
- 8 Fill in the result tables.

Result

Datagram	Port	Baud rate	Talker ID

Requirements	Results
Heading data is provided and displayed.	
The relevant communication parameters are recorded.	
Date and signature:	

Related topics

[Customer acceptance form, page 52](#)

[Secondary procedures, page 53](#)

Verifying the communication with speed log

Without the input from a speed log, the CMC will not be able to present correct navigational information. The vessel's current speed is shown on the top bar. The communication with the sensor is tested.

Prerequisites

The CMC is installed as specified by the relevant installation instructions.

- The sensor is connected to a communication port on the Processor Unit. The sensor is turned on and in normal operation.
- The interface port is set up with the correct communication parameters.
- 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.
- All relevant vessel drawings, installation reports and/or measurement results are available.
- The CMC system is turned on and operates normally.

- The vessel is berthed.

Neither tools nor instruments are required. For connections and communication parameters, see the relevant end-user documentation from the sensor manufacturer.

Context

In most cases a suitable sensor is already installed on the vessel. A global positioning system (GPS) with a compatible output format can also be used.

The properties of each of the available communication ports are defined on the **I/O Setup** page. The **Navigation** dialog box controls how the CMC receives information from external navigation sensors.

The communication parameters defined for NMEA 0183 are:

- **Baud rate:** 4800 bit/s
- **Data bits:** 8
- **Parity:** Even
- **Stop bits:** 1

Some instruments may provide other parameters and/or options. You must always check the relevant technical documentation supplied by the manufacturer.

Procedure

- 1 Observe the top bar.
- 2 Make sure that the information from the sensor is displayed.
- 3 If possible, use another instrument to verify that the information provided by the CMC is correct.
- 4 Open the **Setup** menu.
- 5 On the **Setup** menu, select **Installation**.
Observe that the **Installation** dialog box opens.
- 6 Observe the **I/O Setup** page on the right side of the **Installation** dialog box.
Every interface is presented as a small "block diagram".
 - a In the relevant block diagram, select the serial port icon.
 - b Observe that the **Serial Port Setup** dialog box opens.
 - c Make sure that the communication parameters are correct.
Adjust the settings if it is necessary.
 - d Write down the information.
 - e Close the dialog boxes.

- 7 Select **Navigation** to open the dialog box.
 - a Open the relevant page.
 - b Make sure that the communication parameters are correct.
Adjust the settings if it is necessary.
 - c Write down the information.
 - d Close the dialog box.
- 8 Fill in the result tables.

Result

Datagram	Port	Baud rate	Talker ID

Requirements	Results
Speed data is provided and displayed.	
The relevant communication parameters are recorded.	
Date and signature:	

Related topics

- [Customer acceptance form, page 52](#)
- [Secondary procedures, page 53](#)

Customer acceptance form

Fill in and sign this form for formal acceptance of the Simrad CMC system.

The Simrad CMC system is (<i>tick relevant column</i>):		
Accepted	Accepted with comments	Not accepted
Vessel/Customer		
Place and date		
Comments		
Test done by (name)	Company/Position	Date and signature
Test accepted by (name)	Company/Position	Date and signature
When this test procedure has been completed with all relevant signatures and applicable forms filled in, the document must be sent to the Simrad Support Department at Strandpromenaden 50, P.O.Box 111, 3191 Horten, Norway. Alternatively, scan all the pages to PDF using minimum 200 DPI resolution, and send the file to simrad.support@simrad.com .		

Secondary procedures

The end user and technical documentation for the CMC contains several procedures that are also applicable for this Harbour Acceptance Test. These procedures are not part of the Harbour Acceptance Test. They are provided for reference purposes only. If you scan a completed Harbour Acceptance Test for archiving or reporting purposes, it is not necessary to include these procedures.

Topics

[Starting and stopping the TV80 program, page 54](#)

[Defining the IP address on the Processor Unit network adapter, page 59](#)

[Setting up the SR15 Receiver Unit on an Ethernet \(LAN\) port, page 60](#)

[Setting up the SR70 Receiver Unit on an Ethernet \(LAN\) port, page 61](#)

[Setting up the PI50 and PI60 Receiver Units on a serial line input, page 62](#)

[Defining the serial line communication parameters for the PI50 and PI60 Receiver Units, page 64](#)

[Reducing noise disturbance from the data received on a SR15 or SR70 Receiver Unit, page 65](#)

[Setting up the input from a navigation system \(GPS\), page 66](#)

Starting and stopping the TV80 program

Topics

[Installing the TV80 operational software, page 54](#)

[Obtaining and installing the software license, page 55](#)

[Starting the TV80 program, page 57](#)

[Closing the TV80 program, page 58](#)

Installing the TV80 operational software

Before you can put your Catch monitoring system to work, the operational software must be installed on the Processor Unit.

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

Make sure 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. Do this before you install the software.

Context

A valid software license is required to use the program. The license string is added after the software installation.

Procedure

- 1 Turn on the Processor Unit.
- 2 Insert the software media.

If the 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.

- 3 Use a file manager application on the Processor Unit to access the software files.
- 4 Double-click `Setup.exe` to start the installation.

- 5 Allow the installation wizard to run. Follow the instructions provided.
We recommend that you install the software in the default folder suggested by the wizard.
- 6 Once the software installation has been completed, double-click the icon on the desktop to start the program.
- 7 Depending on your operating system parameters, certain dialog boxes may open.
 - a The Microsoft Windows 10 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 software can run on the computer. You must permit this.

Further requirements

Observe the dedicated procedure for obtaining and installing the software licence.

Related topics

[Starting and stopping the TV80 program, page 54](#)

[Testing the CMC operational functionality, page 35](#)

[Secondary procedures, page 53](#)

Obtaining and installing the software license

Before you can use the TV80 software you must obtain a license and install it on your Processor Unit.

Prerequisites

This procedure assumes that the TV80 operational software has been successfully installed on the Processor Unit.

Context

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

Note

Once you receive your software license string, do not lose it. 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 On the Processor Unit desktop, double-click the CMC icon to start the program.
- 2 Observe that the **Activation** dialog box opens.
- 3 Copy the activation code provided.

Note

This activation code will only appear the first time you start an unlicensed version of the program.

- 4 Send the necessary information to one of Simrad's dealers or distributors.

Your dealer will need the following information from you to place the order:

- Vessel name and call sign
- Vessel type (trawler, purse seiner, etc.)
- Vessel owner's name, address and contact information
- Activation code

You can also use the request form on <https://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.

- 5 On the Processor Unit desktop, double-click the CMC icon to start the program.
- 6 Observe that the **Activation** dialog box opens.
- 7 Copy the license string into the text field provided.
- 8 Select **Activate** to start the TV80 program.

Related topics

[Starting and stopping the TV80 program, page 54](#)

[Testing the CMC operational functionality, page 35](#)

[Secondary procedures, page 53](#)

Starting the TV80 program

The TV80 is a software program, and you start it just like any other computer programs. You must turn on the display, the Processor Unit, and the sensor receiver(s).

Prerequisites

This procedure assumes that you have connected one or more sensor receivers to the Processor Unit.

Context

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

Procedure

- 1 Turn on the display.
If required, refer to the instructions provided by the display manufacturer.
- 2 Turn on the Processor Unit.
Wait while the operating system loads.
- 3 On the Processor Unit desktop, double-click the CMC icon to start the program.
- 4 Select user settings.
During the program load, a dialog box appears to let you choose from the current user settings available on the CMC. 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.
- 5 Once the CMC 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.

Related topics

[Starting and stopping the TV80 program, page 54](#)
[Testing the CMC operational functionality, page 35](#)
[Secondary procedures, page 53](#)

Closing the TV80 program

You must never turn off the CMC by means of the on/off switch on the Processor Unit. You can close the CMC program by selecting **Exit** on the top bar.

Context

When you do not use the CMC, turn off the display and the Processor Unit.

Procedure

- 1 Observe the presentation on your screen.
- 2 If the **Installation** dialog box is open:
 - a Close the dialog box by selecting [X] in the upper-right corner.
 - b Observe that the TV80 switches to normal presentation.
 - c Select **Exit** on the top bar.



- 3 If you are working in the **Gear Setup**, or **Select Sensor** dialog boxes:
 - a Select **Close**.
 - b Close the dialog box by selecting [X] in the upper-right corner.
 - c Observe that the TV80 switches to normal presentation.
 - d Select **Exit** on the top bar.
- 4 If you are working in a normal presentation:
 - a Select **Exit** on the top bar.
Observe that the TV80 program closes down.
- 5 If the Processor Unit does not turn itself off automatically, use the functionality provided by the operating system to turn it off manually.
- 6 Turn off the display.
If required, refer to the instructions provided by the display manufacturer.

Related topics

[Starting and stopping the TV80 program, page 54](#)
[Testing the CMC operational functionality, page 35](#)
[Secondary procedures, page 53](#)

Defining the IP address on the Processor Unit network adapter

The communication between the Processor Unit and the SR70 and SR15 Receiver Units is made using a high speed Ethernet cable. You must define which IP Address and Subnet mask the Ethernet adapter in the Processor Unit shall use for this communication. 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.

Prerequisites

This procedure is made for the Microsoft® Windows® 10 operating system. It is assumed that you are familiar with this operating system.

Context

You will only need to set up the IP address on the Ethernet adapter if you are going to communicate with an SR70 or SR15 Receiver Unit.

If you wish to connect your Processor Unit to a ship network, you must provide the computer with two Ethernet adapters. Use one adapter for the communication with the SR70 or SR15 Receiver Unit, and one for the local area network.

Procedure

- 1 Close all the programs that are running on the Processor Unit.
- 2 Open the **Network Connections** dialog box.
 - a In the bottom-left corner of your desktop, select the Windows® search function.
 - b In the search box, type "Network Connections", and open the **Network Connections** dialog box.
- 3 Define the IP address on the Ethernet adapter.
 - a Right-click the network adapter you are going to use and select **Properties** on the shortcut menu.
 - b On the list of connections, select **Internet Protocol 4 (TCP/IPv4)**, and then **Properties**.
 - c Select **Use the following IP address**, and type the IP address and network mask.
 - **IP Address:** 192.168.1.30
 - **Subnet mask:** 255.255.255.0
- 4 Select **OK** to save the selected settings, and then close all the dialog boxes.

Related topics

[Testing the CMC operational functionality, page 35](#)

[Secondary procedures, page 53](#)

Setting up the SR15 Receiver Unit on an Ethernet (LAN) port

In order to read the data from a catch monitoring sensor, you must first connect one or more receivers to the Processor Unit. The Receiver Unit must be connected to the Processor Unit using an Ethernet line.

Prerequisites

In order to connect a catch sensor to the CMC system, the following requirements must be met.

- The TV80 software is installed on the Processor Unit.
- The license string for the software is installed and activated.
- One or more receivers are available for connection to the CMC.

Context

The SR15 has one hydrophone input plug. Depending on your fishing requirements, you may need to install more than one hydrophone to receive the information from the catch sensors. With a single channel receiver, you must manually switch between the hydrophones to check which hydrophone that provides the best communication.

When a PX sensor is connected to a SR type receiver unit you can get the maximum number of measurements the sensor can have.

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.
Observe that the **Installation** dialog box opens.
- 3 Observe the **I/O Setup** page on the right side of the **Installation** dialog box.
- 4 Select **Add LAN Port** to open the **Select Input (LAN)** dialog box.
- 5 Select the SR15 Receiver Unit.

Result

Every new interface is presented as a small "block diagram" on the **I/O Setup** page. The **I/O Setup** page also presents a number of "inspection points". These are small circular icons with an "i".

Inspection points provide important information about the connection. By selecting an inspection point you can retrieve relevant information about the connection. The colour of an inspection point helps you to identify the quality of the information that is received.

- When an inspection point is green, the information is properly received.
- When an inspection point is red, it means that a specific datagram is not recognized. This is not a critical error since many systems have proprietary NMEA datagram sentences that are not used, and therefore do not need decoding.

Related topics

[Testing the CMC operational functionality, page 35](#)

[Secondary procedures, page 53](#)

Setting up the SR70 Receiver Unit on an Ethernet (LAN) port

In order to read the data from a catch monitoring sensor, you must first connect one or more receivers to the Processor Unit. The Receiver Unit must be connected to the Processor Unit using an Ethernet line.

Prerequisites

In order to connect a catch sensor to the CMC system, the following requirements must be met.

- The TV80 software is installed on the Processor Unit.
- The license string for the software is installed and activated.
- The Receiver Unit must be connected to the Processor Unit using an Ethernet line.

Context

When a PX sensor is connected to a SR type receiver unit you can get the maximum number of measurements the sensor can have. The SR70 Receiver Unit allows you to connect four hydrophones. This allows simultaneous reception without any need of switches or splitters.

With a single channel receiver, you must manually switch between the hydrophones to check which hydrophone that provides the best communication.

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.
Observe that the **Installation** dialog box opens.
- 3 Observe the **I/O Setup** page on the right side of the **Installation** dialog box.
- 4 Select **Add LAN Port** to open the **Select Input (LAN)** dialog box.
- 5 Select the SR70 Receiver Unit.

Result

Every new interface is presented as a small "block diagram" on the **I/O Setup** page. The **I/O Setup** page also presents a number of "inspection points". These are small circular icons with an "i".

Inspection points provide important information about the connection. By selecting an inspection point you can retrieve relevant information about the connection. The colour of an inspection point helps you to identify the quality of the information that is received.

- When an inspection point is green, the information is properly received.
- When an inspection point is red, it means that a specific datagram is not recognized. This is not a critical error since many systems have proprietary NMEA datagram sentences that are not used, and therefore do not need decoding.

Related topics

[Testing the CMC operational functionality, page 35](#)

[Secondary procedures, page 53](#)

Setting up the PI50 and PI60 Receiver Units on a serial line input

In order to read the data from a catch monitoring sensor, you must first connect one or more receivers to the Processor Unit. The CMC system supports several receiver units. The PI50 and PI60 receivers must be connected to the Processor Unit with a serial line.

Prerequisites

This procedure assumes that a receiver has been connected to the Processor Unit by means of a serial line, and that the communication line has been initiated. If the Processor Unit is not fitted with a suitable serial line connector, use a USB-to-serial converter.

Context

The communication between the PI50 and PI60 Receiver Units and the Processor Unit is made using a (1:1) serial line.

Procedure

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



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

- 3 Observe the **I/O Setup** page on the right side of the **Installation** dialog box.
- 4 Observe that the available serial interface ports on the Processor Unit are listed.



Next to every port icon, a green indicator shows it is available, while a red one shows it is not available.

- 5 Select the serial port the receiver is connected to.
- 6 In the **Select Input (COM)** dialog box, select the receiver you wish to connect to, and then select **OK**.

Result

Every new interface is presented as a small "block diagram" on the **I/O Setup** page.

The block diagram shows you (from right towards left) the serial port, the sensor receiver and the hydrophone. The **I/O Setup** page also presents a number of "inspection points".



By selecting an inspection point you can retrieve relevant information about the connection.

Related topics

[Testing the CMC operational functionality, page 35](#)

[Secondary procedures, page 53](#)

Defining the serial line communication parameters for the PI50 and PI60 Receiver Units

The communication between the PI50 and PI60 Receiver Units and the Processor Unit is made using a (1:1) serial line. All serial line communication is based on specific transmission parameters. These parameters must be defined at each end of the line, and they must be set up identical.

Prerequisites

The communication between the PI50 and PI60 Receiver Units and the Processor Unit is made using a (1:1) serial line.

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.
Observe that the **Installation** dialog box opens.
- 3 Observe the **I/O Setup** page on the right side of the **Installation** dialog box.
Every interface is presented as a small "block diagram".
- 4 In the relevant block diagram, select the serial port icon.



Observe that the **Serial Port Setup** dialog box opens.

- 5 Make the necessary adjustments.
The communication parameters defined for the PI50 and PI60 Receiver Units are:
 - **Baud rate:** 4800 bit/s
 - **Data bits:** 8
 - **Parity:** None
 - **Stop bits:** 1
- 6 Select **OK** to save the selected settings and close the dialog box.

Related topics

[Testing the CMC operational functionality, page 35](#)

[Secondary procedures, page 53](#)

Reducing noise disturbance from the data received on a SR15 or SR70 Receiver Unit

Use the **SR Receiver Filtering** functionality to minimize the interference from other acoustic systems (sonars and echo sounders) on your own and/or other vessels.

Context

You can apply filters to the data received from a PX TrawlEye or any other active catch monitoring sensor on the sensor list. Each receiver must be able to accept and recognize the data from the catch monitoring sensors. However, sea conditions will vary, sometimes drastically. The acoustic conditions are also changing. It may therefore be useful to adjust the signal reception parameters to "fine tune" the CMC operation.

Note

The SR Receiver Filtering functions are only available for SR type receiver units:

- SR15
- SR70

Procedure

- 1 Select the **Operation** icon to open the menu.
- 2 Select **SR Receiver Filtering** to open the dialog box.



- 3 Select and adjust the level of the filters according to the type of sensor.
 - The **Interference filter** offers four different settings. The default setting of the **Interference Filter** is *Weak*.
 - The **Sensor Filter** can be used if you have problems with the reception. It will average the data received from the sensors. After the sensors have been submerged, the receiver requires only three consecutive pings from individual sensors to calculate and display their respective information. However, if you experience problems with the reception, you may try this filter. The **Sensor filter** offers four different settings. The default setting of the filter is *Weak*.
 - The **Catch filter** reduces the jumping between “catch” and “no catch” states. The **Catch filter** offers four different settings. The default setting of the filter is *Weak*.
 - The **Catch/Bottom Filter** is used to restrict the change of state from the catch and bottom contact sensors. This will reduce jitter in the presentation. The default setting of the filter is *Weak*.

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

Related topics

[Testing the CMC operational functionality, page 35](#)

[Secondary procedures, page 53](#)

Setting up the input from a navigation system (GPS)

In order to receive information from an external navigation sensor, you must choose which communication port to use, and which datagram formats to read.

Context

For the CMC to use and offer correct navigational information, one or more external sensors must be connected. Typical sensors are those providing navigational information (heading, speed or geographical position). In most cases a suitable sensor is already installed on the vessel.

The CMC must be set up to receive the information from these sensors. You must select which port to use, and set up the various communication parameters.

When you need to use Ethernet to communicate with an external sensor or peripheral system, you must add a LAN Port and select the relevant system.

Procedure

- 1 On the **Setup** menu, select **Installation**.
Observe that the **Installation** dialog box opens.
- 2 Observe the **I/O Setup** page on the right side of the **Installation** dialog box.
- 3 Select **Add LAN Port** at the bottom of the **I/O Setup** page.
- 4 Select the system you want to interface from the list provided.
The “block diagram” shows the selected system and the Ethernet port icon.
- 5 Select the LAN port icon in the “block diagram” to open the **UPD Configuration** dialog box.
- 6 Define the relevant communication parameters on the **UPD Configuration** dialog box.
- 7 Select **OK** to save the selected settings and close the dialog box.
- 8 Select **Navigation** to open the dialog box.
The **Navigation** dialog box is located on the setup menu.

- 9 Open the relevant page.
 - a Select the communication port you want to use.
 - b Select which NMEA datagram you want to use.
 - c If applicable, specify a dedicated Talker ID.

Related topics

[Testing the CMC operational functionality, page 35](#)

[Secondary procedures, page 53](#)

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