



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

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

The purpose of this Factory Acceptance Test is to verify that the CMC system is fully functional, and meets the operational requirements. It is then ready for packing and shipment. 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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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

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Introduction

Topics

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Purpose

This is the Factory 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 Factory Acceptance Test is to verify that the CMC system is fully functional, and meets the operational requirements. It is then ready for packing and shipment. 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

In some cases the hydrophone is shipped to the installation shipyard before the Factory Acceptance Test takes place. The hardware registration is then omitted. The Factory Acceptance Test is done with a replacement transducer or a dummyload.

Personnel and location

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

This Factory Acceptance Test is done at the Kongsberg Maritime premises in Horten, Norway. The test is done by personnel from Kongsberg Maritime. All personnel must have good knowledge of the product and/or module(s) at hand. Basic knowledge of computer BIOS and the Windows® operating systems, as well as electronic circuitry and device programming is required.

Representatives from the client and/or end user may be 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 Factory Acceptance Test.

Note

Unless specified in the applicable procedure(s), the CMC publications listed here are not required during this Factory 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

Acceptance test summary

The purpose of this Factory Acceptance Test is to verify that the CMC system is fully functional, and meets the operational requirements. 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 Factory 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 23](#)
- 3 Test the main functionality of the CMC.
 - [Testing the CMC operational functionality, page 31](#)
- 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 41](#)

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

- [Secondary procedures, page 42](#)

Hardware and software registration

Topics

[Software items, page 10](#)

[Hardware items, page 11](#)

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 11](#)

[Processor Unit, page 12](#)

[Receiver Unit, page 12](#)

[Hydrophone Interface and Splitter, page 13](#)

[Hydrophones, page 14](#)

[Catch monitoring sensors, page 15](#)

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 Splitter ¹	Part number ²	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

In some cases the hydrophone is shipped to the installation shipyard before the Factory Acceptance Test takes place. 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 32](#)

Visual inspection

Topics

[Inspecting logistic items, page 24](#)

[Visual inspection of the display, page 25](#)

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

[Visual inspection of the Receiver Unit, page 27](#)

[Visual inspection of the Hydrophone Interface and Splitter, page 28](#)

[Visual inspection of the hydrophone, page 29](#)

Inspecting logistic items

All relevant logistic items that are included with the CMC delivery shall be inspected. This includes end-user manuals, software and software media. If spare parts are included in the delivery, these shall also be inspected.

Prerequisites

The list of logistic items to be delivered (order confirmation or contract) must be available. All the relevant items must be available for inspection. Neither tools nor instruments are required.

Context

The verification of the operating system license is only applicable if the Processor Unit is provided by Simrad as a part of the CMC delivery.

Procedure

- 1 Verify that the CMC end-user manuals have been provided.
- 2 Verify that the applicable CMC software media (USB flash disk, CD, DVD etc) have been provided.
- 3 Verify that the operating system software license stickers is placed on the Processor Unit.
- 4 Verify that the spare parts provided matches the order confirmation for the CMC delivery.

Result

Requirements	Results
All logistical items are available.	
Date and signature:	

Related topics

[Customer acceptance form, page 41](#)

Visual inspection of the display

A visual inspection of the CMC display is required to verify its physical condition and appearance prior to delivery.

Prerequisites

The CMC has been set up with its hardware units connected as specified in the CMC *Installation manual*. The CMC is turned off. Neither tools nor instruments are required.

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 display is new.
- 3 Make sure that the unit is not physically damaged, and that the surfaces and paint-work are clean without dents or scratches.
- 4 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 new, clean and free from scratches, dents or other physical damage.	
The display is clearly identified with the relevant product labels.	
Date and signature:	

Related topics

[Customer acceptance form, page 41](#)

Visual inspection of the Processor Unit

A visual inspection of the CMC Processor Unit is required to verify its physical condition and appearance prior to delivery.

Prerequisites

The CMC has been set up with its hardware units connected as specified in the CMC *Installation manual*. The CMC is turned off. Neither tools nor instruments are required.

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 new.
- 3 Make sure that the unit is not physically damaged, and that the surfaces and paint-work are clean without dents or scratches.
- 4 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 new, clean and free from scratches, dents or other physical damage.	
The Processor Unit is clearly identified with the relevant product labels.	
Date and signature:	

Related topics

[Customer acceptance form, page 41](#)

Visual inspection of the Receiver Unit

A visual inspection of the Receiver Unit is required to verify its physical condition and appearance prior to delivery. If more than one Receiver Unit is used, each must be inspected separately.

Prerequisites

The CMC has been set up with its hardware units connected as specified in the CMC *Installation manual*. The CMC is turned off. Neither tools nor instruments are required.

Procedure

- 1 Make sure that the Receiver Unit is new.
- 2 Make sure that the unit's serial number has been recorded in the list of hardware items.
- 3 Make sure that the unit is not physically damaged, and that the surfaces and paint-work are clean without dents or scratches.
- 4 Make sure that the unit has been identified with the relevant product label(s), and that one label includes the part and serial numbers.
- 5 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 41](#)

Visual inspection of the Hydrophone Interface and Splitter

A visual inspection of the Hydrophone Interface and Splitter unit is required to verify its physical condition and appearance prior to delivery.

Prerequisites

The CMC has been set up with its hardware units connected as specified in the CMC *Installation manual*. The CMC is turned off. Neither tools nor instruments are required.

Procedure

- 1 Make sure that the Hydrophone Interface and Splitter unit is new.
- 2 Make sure that the unit's serial number has been recorded in the list of hardware items.
- 3 Make sure that the unit is not physically damaged, and that the surfaces and paint-work are clean without dents or scratches.
- 4 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 new, clean and free from scratches, dents or other physical damage.	
The Hydrophone Interface and Splitter unit is clearly identified with the relevant product labels.	
Date and signature:	

Related topics

[Customer acceptance form, page 41](#)

Visual inspection of the hydrophone

A visual inspection of the hydrophone is required to verify its physical condition and appearance prior to delivery. The hydrophone surface must be inspected for potential damage that may have an effect on CMC operation. If more than one hydrophone is included in the delivery, each must be inspected separately.

Prerequisites

The CMC has been set up with its hardware units connected as specified in the CMC *Installation manual*.

- The CMC is turned off.
- Neither tools nor instruments are required.
- If you find damage, you need a high resolution camera to document it.

Context

The hydrophone face is covered with a red protective coating made of a special plastic type. The red protective coating is an vital part of the hydrophone. It is very important that neither this coating nor the internal parts of the hydrophone are damaged during the handling, installation or cleaning. Any holes and/or scratches in the hydrophone surface will allow water to penetrate the hydrophone. If a leak occurs, the hydrophone must be replaced.

Note

In some cases the hydrophone is shipped to the installation shipyard before the Factory Acceptance Test takes place. This inspection is then omitted.

Procedure

- 1 Make sure that each hydrophone is new.
- 2 Make sure that each hydrophone is not physically damaged, and that the surface is clean without dents or scratches.
- 3 If you find suspicious damage, take high resolution photos that show the damage.
- 4 Make sure that the hydrophone cables are not damaged.
- 5 Make sure that each hydrophone is uniquely identified with part and serial numbers.
- 6 Make sure that the serial number on each hydrophone has been recorded in the list of hardware items.

Result

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

Requirements (Hydrophone 1)	Results
Serial number:	
The hydrophone is new, clean and free from scratches, dents or other physical damage.	
The hydrophone is clearly marked with part number and serial number.	
Date and signature:	

Requirements (Hydrophone 2)	Results
Serial number:	
The hydrophone is new, clean and free from scratches, dents or other physical damage.	
The hydrophone is clearly marked with part number and serial number.	
Date and signature:	

Requirements (Hydrophone 3)	Results
Serial number:	
The hydrophone is new, clean and free from scratches, dents or other physical damage.	
The hydrophone is clearly marked with part number and serial number.	
Date and signature:	

Requirements (Hydrophone 4)	Results
Serial number:	
The hydrophone is new, clean and free from scratches, dents or other physical damage.	
The hydrophone is clearly marked with part number and serial number.	
Date and signature:	

Related topics

[Customer acceptance form, page 41](#)

Testing the CMC operational functionality

Topics

[Assembling the CMC system to turn it on, page 31](#)

[Adding new catch monitoring sensors, page 32](#)

[Functional test of the Receiver Unit, page 35](#)

[Functional test of the sensor data presentations in the views, page 38](#)

Assembling the CMC system to turn it on

Prior to testing, the complete system must be assembled and turned on. You must install the software, and obtain the necessary software license.

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 Factory 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 Connect the system units according to the instructions and drawings provided in the end user documentation.
- 2 Verify that the CMC units are correctly connected together.
- 3 Turn on the Processor Unit.
Wait while the operating system loads.
- 4 Install the TV80 software and the relevant software licenses.
- 5 On the Processor Unit desktop, double-click the CMC icon to start the program.
- 6 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 41](#)

[Secondary procedures, page 42](#)

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 system is assembled according to the instructions in the end user documentation.

- 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.

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.

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 15](#)
- [Customer acceptance form, page 41](#)
- [Secondary procedures, page 42](#)

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 system is assembled according to the instructions in the end user documentation.

- 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.

Neither tools nor instruments are required.

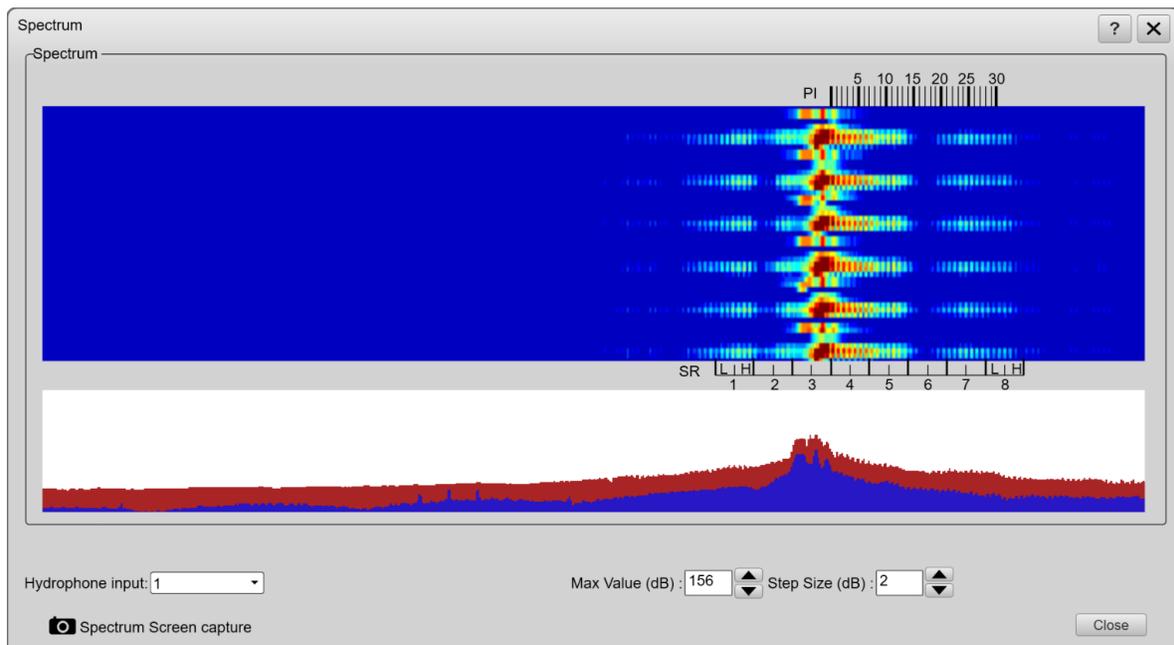
Note

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.

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.

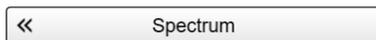
Note

*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 Observe the graph in the **Spectrum** dialog box.

With the hydrophone in air, and no signal sources available, the graph appears with a relatively even blue pattern. Only ambient noise is shown. Some disturbances in the pattern must be expected. These disturbances verify that the hydrophone, the receiver and the software is operational.

Increase the value of **Max Value** to reduce the sensitivity and increase the attenuation. This removes the strong acoustic noise from the presentation.

- 6 Tap the hydrophone with a pen or the blunt end of a small screwdriver.
- 7 Verify that the graph in the **Spectrum** dialog box reflects this.
- 8 Place a sensor a couple of meters from the hydrophone.
Make sure that it is pointed towards the hydrophone.
- 9 Activate the sensor to make it transmit data.
- 10 Verify that the graph in the **Spectrum** dialog box reflects this.
- 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.

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 41](#)

[Secondary procedures, page 42](#)

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 system is assembled according to the instructions in the end user documentation.

- 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.

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.

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 Place the sensors a couple of meters from the hydrophone as if they were mounted on a virtual fishing gear.
- 2 Activate the sensors to make them transmit data.
- 3 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.
- 4 Select **Add** on the top bar of the Designer module to open the **Gauges** dialog box.
- 5 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.
- 6 Select **Save** and then **Close** to save all the parameters and close the Designer module.
- 7 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.

Result

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

Related topics

[Customer acceptance form, page 41](#)

[Secondary procedures, page 42](#)

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 Factory Acceptance Test. These procedures are not part of the Factory Acceptance Test. They are provided for reference purposes only. If you scan a completed Factory Acceptance Test for archiving or reporting purposes, it is not necessary to include these procedures.

Topics

[Starting and stopping the TV80 program, page 43](#)

[Defining the IP address on the Processor Unit network adapter, page 48](#)

[Setting up the SR15 Receiver Unit on an Ethernet \(LAN\) port, page 49](#)

[Setting up the SR70 Receiver Unit on an Ethernet \(LAN\) port, page 50](#)

[Setting up the PI50 and PI60 Receiver Units on a serial line input, page 51](#)

[Defining the serial line communication parameters for the PI50 and PI60 Receiver Units, page 53](#)

Starting and stopping the TV80 program

Topics

[Installing the TV80 operational software, page 43](#)

[Obtaining and installing the software license, page 44](#)

[Starting the TV80 program, page 46](#)

[Closing the TV80 program, page 47](#)

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 43](#)

[Testing the CMC operational functionality, page 31](#)

[Secondary procedures, page 42](#)

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 43](#)

[Testing the CMC operational functionality, page 31](#)

[Secondary procedures, page 42](#)

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 43](#)

[Testing the CMC operational functionality, page 31](#)

[Secondary procedures, page 42](#)

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 43](#)

[Testing the CMC operational functionality, page 31](#)

[Secondary procedures, page 42](#)

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 31](#)

[Secondary procedures, page 42](#)

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 31](#)

[Secondary procedures, page 42](#)

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 31](#)

[Secondary procedures, page 42](#)

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 31](#)

[Secondary procedures, page 42](#)

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 31](#)

[Secondary procedures, page 42](#)

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