Simrad MS70

Software Release Note 1.4.0

Introduction

This document describes the changes introduced with the new software version.

- **Product**: MS70
- **Software version**: 1.4.0

This software controls all functionality in the Simrad MS70.

Software changes

This software update solves a number of software bugs that have been reported by our users, or detected during our own product testing. New functionality is also introduced.

The following specific changes have been made.

Functional changes

- New user interface introduced to resemble the EK80 visual appearance.
- Improved storage of calibration results. It is now possible to merge the results from two calibrations.
- The NMEA THS datagram (vessel heading) is now supported.
- Improved handling of transducer mounted in a drop keel. The proprietary drop keel datagram is supported
- Improved handling of water level variations. The proprietary water level datagram is supported.
- EK500 data output to file and Ethernet has been removed.
- It is now possible to position the transducer facing either port or starboard.

Technical changes

- This software version support both TRX32 or LPT32 transceiver boards.
- This software version requires Windows® 10
- This is a 64–bit installation.
- The start-up process is improved when the Processor Unit is turned on.
- This version include some changes to the parameter interface.

  For further details about this, contact our support department.

  – simrad.support@simrad.com

Known issues

Certain software issues related to the Simrad MS70 are known. Issues in the MS70 software will be corrected in future upgrades.

- End user documentation has not been updated with this release.

End-user documentation

The end user documentation for the Simrad MS70 Multibeam Scientific Sonar has not been updated with this release.

The current *Reference Manual* is included on the MS70 software media (USB flash drive). End user documentation can also be downloaded from the product website

- https://www.simrad.com/ms70

The MS70 *Reference Manual* is included with the MS70 software as context sensitive on-line help.

Read this before you upgrade

Special preparations must be made before you upgrade the Simrad MS70 software.

Note

This software version only runs under Microsoft® Windows® 10 operating system. Unless your Processor Unit already uses this operating system, it must be upgraded.

If you have a preliminary ("Beta") software version installed, it must be removed before you can update. Use the operating system functionality to remove the old software version.

Before the upgrade

1 If necessary: Upgrade your Processor Unit to Windows® 10 operating system.

For more information, see: *Upgrading the Processor Unit to Windows 10*.

2 Write down the communication parameters for all the sensors that are connected to the MS70.

- Port
- Baud Rate
- Data bits
- Parity
- Stop bits

3 Write down the installation parameters.

- Navigation sensors
- Motion Reference Unit (MRU)
- Transducer
- Ship origin

These parameters must be recorded because they are deleted by the software upgrade. We apologize for the inconvenience.

After the upgrade

1 Install all the navigation sensors in the MS70 user interface.

These installation parameters were deleted by the software upgrade. For the relevant sensors, make sure to include the physical installation offset values.

2 Insert all relevant installation parameters.

These installation parameters were deleted by the software upgrade.

Note

When you have inserted all the installation parameters, restart the MS70.

3 Do a complete target strength calibration of the MS70 system.

Software installation

When a new MS70 software version is released, it must be installed on your Processor Unit.

A dedicated wizard is used to install the MS70 software. You need administrative privileges on your Processor Unit to do the software installation. Installation of additional operating system components may be required. These are installed automatically. Observe the information offered in the wizard.

Registered dealers and distributors can download the new software version from the "Simrad Dealer Club". To access the "Simrad Dealer Club", visit our website.

- https://www.simrad.com/sdc

Note

All communication and interface parameters are lost when the MS70 is upgraded.

If the installation of the MS70 software fails, uninstall Microsoft Visual C++ 2015-2019 Redistributable (x64/x86).

Reporting issues

Any issues related to the user interface or the performance of the Simrad MS70 can be reported to us.

Please use e-mail address.

- simrad.support@simrad.com

Include the phrase "MS70 issue" in the title of the e-mail.

Upgrading the MS70 operational software

When a new MS70 software version is released, it must be installed on your Processor Unit.

Prerequisites

In order to upgrade the MS70 software, you need the relevant file set on a suitable media. If the MS70 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.

It is assumed that you are familiar with the Microsoft® operating system utilities for file handling.

Context

The new version of the MS70 will automatically replace the old version.

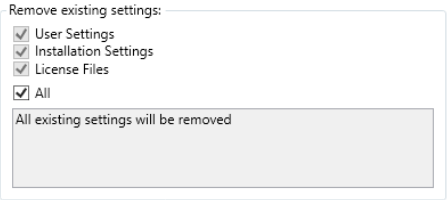
Procedure

1. Read the software release note to see if special actions are required.

   The software release note can be downloaded from our website.

   - https://www.simrad.com
2. Turn on the Processor Unit.
3. Switch off any firewall applications.
4. Insert the MS70 software media.

   If the MS70 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.
5. Use a file manager application on the Processor Unit to access the software files.
6. Double-click `Setup.exe` to start the installation.
7. Allow the wizard to start.
8. In the first dialog box, under **Remove existing settings**, select **All**.

9. Allow the wizard to continue.
10. Once the software installation has been completed, double-click the icon on the desktop to start the program.

SIMRAD

Simrad MS70

Multibeam Scientific Sonar

Upgrading the Processor Unit to Windows 10

Release 1.4.0

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Introduction

The latest Processor Unit software version requires Windows® 10. Unless you Processor Unit is already fitted with this operating system, it must be upgraded.

Summary of preparations for software installation

Note

It is very important that these tasks are done in the order described.

1. Check which type of Processor Unit you have to make sure it meets the technical requirements for upgrade.
2. Upgrade the BIOS (Basic Input/Output System) settings on the Processor Unit.
3. Replace the Ethernet adapter in your Processor Unit.
4. If necessary: Upgrade your Processor Unit to Windows® 10 operating system.
5. Set up the port numbers for the serial port adapter.
6. Set up the Ethernet adapter.

Ethernet adapter

The Ethernet adapter must be replaced to meet the requirements of the new software version A new adapter can be purchased locally, or ordered from us. Two adapters are available.

- Ethernet adapter: Intel i350 T2V2
  - **Part number**: 439845
  - **True manufacturer**: Intel (http://www.intel.com)
  - **True manufacturer's part number**: I350T2V2
- Fibre optic Ethernet adapter: Intel i350 F2 (Optional type)
  - **Part number**: 412576
  - **True manufacturer**: Intel (http://www.intel.com)
  - **True manufacturer's part number**: I350F2

Computer image

You need to order a USB flash drive from us. The USB contains:

- Complete image for Windows® 10
- License for Windows® 10

Use part number 463593.

Related topics

Processor Unit identification, page 6

Processor Unit identification

Before you can upgrade your Processor Unit you must establish which computer type you have.

The MS70 Processor Unit is labelled to identify its type, part number and serial number.

- The label on the rear panel identifies the computer type and its serial number.
- The label on the side panel identifies the computer part number and the version.

Identify the type of computer you have. The following computers can be upgraded:

Processor Unit	Part number	Revision
41x9 2670	402655	A
41X10 2680	402655	B, C

If your computer type differs from these, contact your local dealer or our sales organization for a replacement.

Related topics

Setting up the BIOS on the Enix Processor Unit 41X9 2670, page 7
Setting up the BIOS on the Enix Processor Unit 41X10 2680, page 11
Replacing the Ethernet adapter in the Processor Unit, page 14
Upgrading the Processor Unit to use Windows 10 operating system, page 16
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Procedures

Topics

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Setting up the BIOS on the Enix Processor Unit 41X9 2670

The fundamental purposes of the BIOS are to initialize and test the system hardware components, and to load the operating system when the Processor Unit is switched on. The BIOS software is stored on flash memory so that the contents can be rewritten. This allows BIOS software to be easily upgraded to define operational parameters, add new features or to fix bugs.

Prerequisites

This information is intended for certified maintenance technicians and service engineers from Kongsberg Maritime, or from a certified dealer, distributor or agent. It is assumed that you are familiar with the Windows® operating systems, computer technology, and interface principles. We strongly advise our end users not to alter the parameters described.

Context

The BIOS (Basic Input/Output System) on the Processor Unit is set up using the Aptio Setup Utility provided by American Megatrends (AMI). For more information, refer to the end-user documentation provided by the manufacturer.

- **Manufacturer**: American Megatrends (AMI)
- **Manufacturer's website**: https://www.ami.com

Note

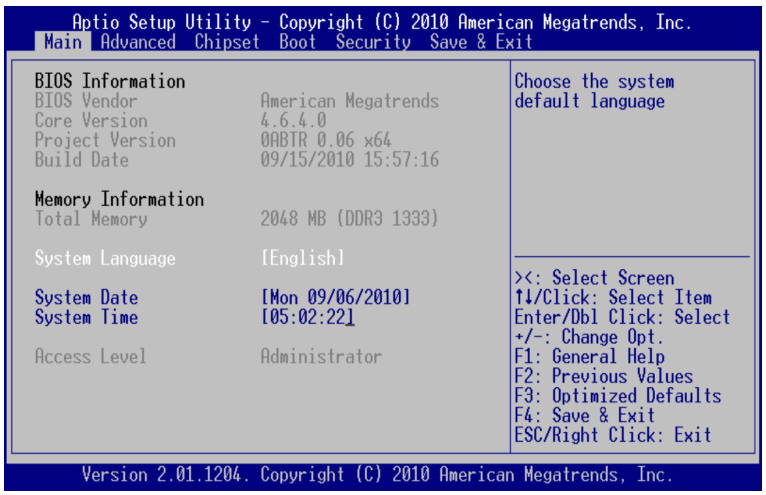
This procedure is valid for the following computer:

Processor Unit	***Part number***	***Revision***
41x9 2670	*402655*	*A*

Procedure

1 Restart the Processor Unit.

2 During the boot sequence, when prompted, press **DEL** to run the setup program.

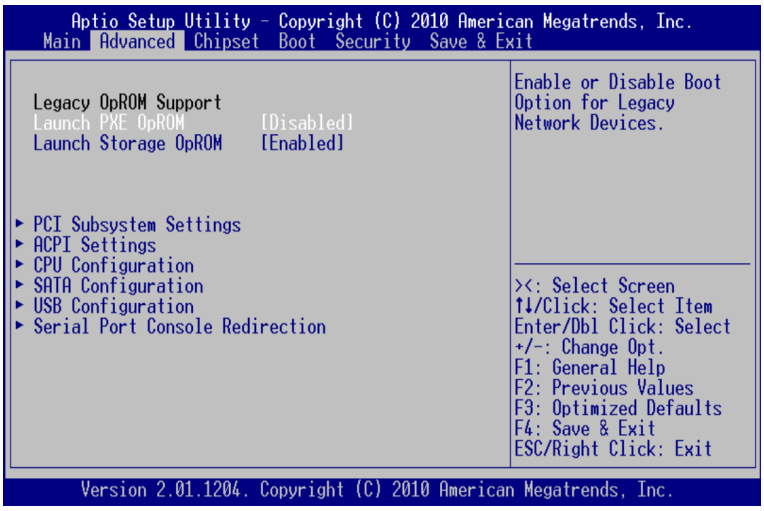


Observe that the program starts. Use the arrow keys on the keyboard to move the cursor. Press **Enter** on the keyboard to make selections. Press **Escape** on the keyboard to go one step "back". In some situations, **Escape** will attempt to close the BIOS setup program.

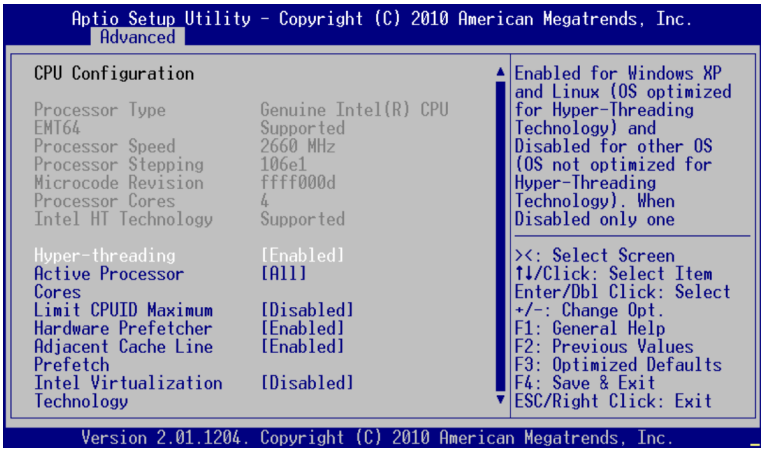
3 Define the **Hyper-Threading** parameter.

> Hyper-threading (officially called *Hyper-Threading Technology* or *HT Technology* and abbreviated as HTT or HT) is Intel's proprietary simultaneous multithreading (SMT) implementation used to improve parallelization of computations (doing multiple tasks at once) performed on x86 microprocessors. [..] For each processor core that is physically present, the operating system addresses two virtual (logical) cores and shares the workload between them when possible. The main function of hyper-threading is to increase the number of independent instructions in the pipeline; it takes advantage of superscalar architecture, in which multiple instructions operate on separate data in parallel.
>
> *https://en.wikipedia.org/wiki/Hyper-threading(April 2020)*

a Select **Advanced** on the **Main** menu.



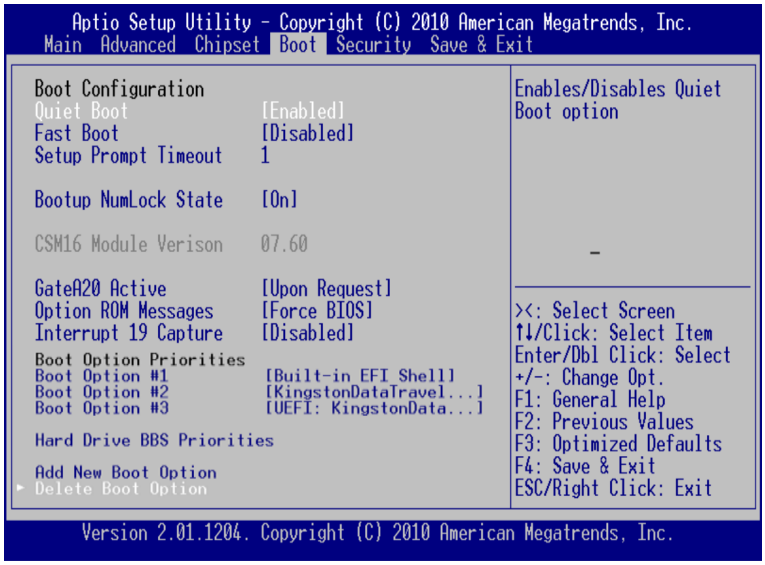
b Select **CPU Configuration**.



c Set **Hyper-Threading** to: *Disabled*.

d Press **Escape** to return. Repeat until you are back on the **Main** menu.

4 Set the boot parameters.



a Select **Boot** on the **Main** menu.

b Set **Boot Option #1** to: *USB Hard Disk:USB Memory Stick*.

The name of the USB flash drive may differ.

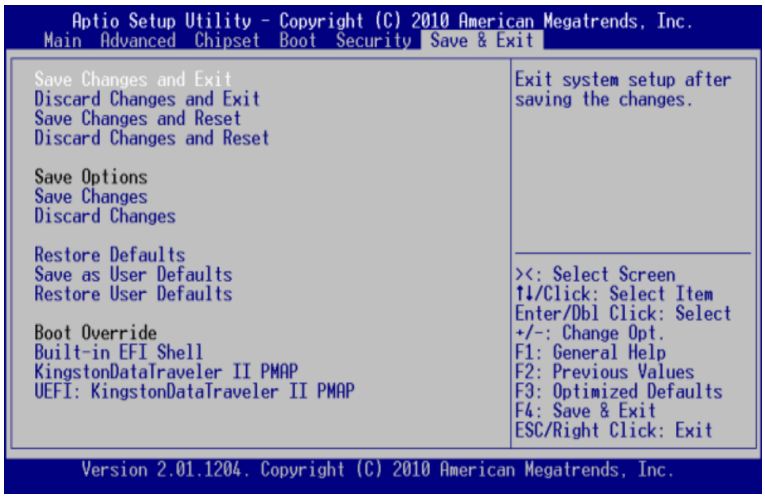
c Set **Boot Option #2** to: *Hard Disk:P0: Intel SSDSC2BB120G4*.

The name of the hard disk drive may differ.

d Set remaining boot devices to: *Disabled*.

e Press **Escape** to return. Repeat until you are back on the **Main** menu.

5 Select **Save & Exit** on the **Main** menu.



6 Select **Save Changes and Reset**.

7 Allow the Processor Unit to restart.

Related topics
Procedures, page 7

Setting up the BIOS on the Enix Processor Unit 41X10 2680

The fundamental purposes of the BIOS are to initialize and test the system hardware components, and to load the operating system when the Processor Unit is switched on. The BIOS software is stored on flash memory so that the contents can be rewritten. This allows BIOS software to be easily upgraded to define operational parameters, add new features or to fix bugs.

Prerequisites

This information is intended for certified maintenance technicians and service engineers from Kongsberg Maritime, or from a certified dealer, distributor or agent. It is assumed that you are familiar with the Windows® operating systems, computer technology, and interface principles. We strongly advise our end users not to alter the parameters described.

Context

The BIOS (Basic Input/Output System) on the Processor Unit is set up using a setup utility provided by American Megatrends (AMI) for Super Micro Computer. For more information, refer to the end-user documentation provided by the manufacturer.

- **Manufacturer**: Super Micro Computer, Inc.
- **Manufacturer's website**: https://www.supermicro.com

Note

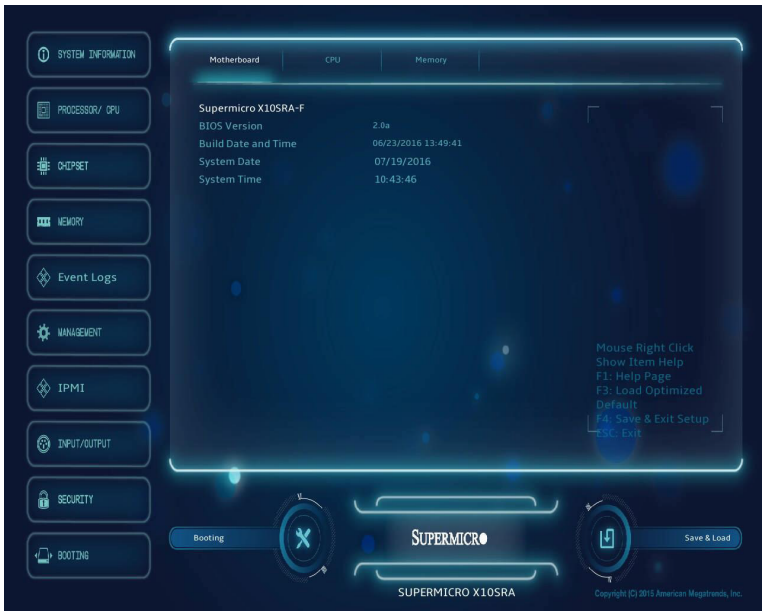
This procedure is valid for the following computers:

Processor Unit	***Part number***	***Revision***
41X10 2680	*402655*	*B*
41X10 2680	*402655*	*C*

Procedure

1 Restart the Processor Unit.

2 During the boot sequence, when prompted, press **DEL** to run the setup program.

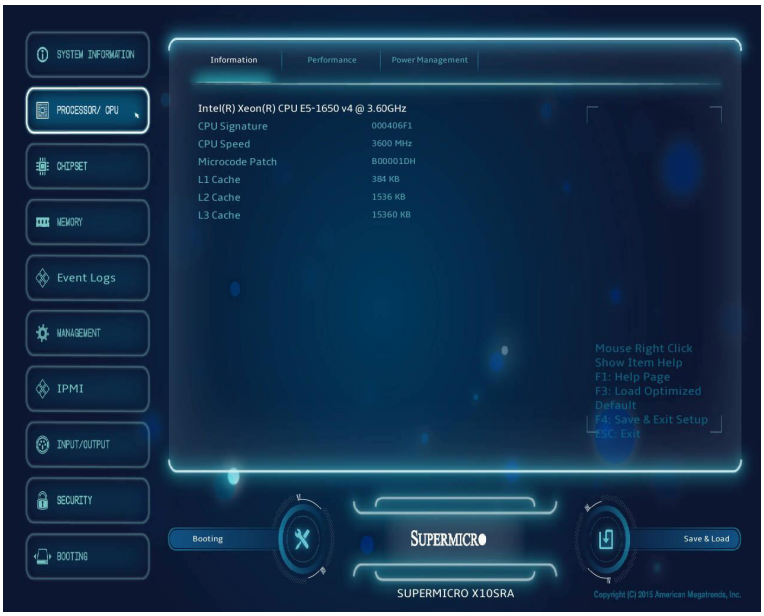


Observe that the program starts. Observe the **Main** menu on the left side of the screen. Observe the secondary menu at the top of the screen.

3 Define the **Hyper-Threading** parameter.

> Hyper-threading (officially called *Hyper-Threading Technology* or *HT Technology* and abbreviated as HTT or HT) is Intel's proprietary simultaneous multithreading (SMT) implementation used to improve parallelization of computations (doing multiple tasks at once) performed on x86 microprocessors. [..] For each processor core that is physically present, the operating system addresses two virtual (logical) cores and shares the workload between them when possible. The main function of hyper-threading is to increase the number of independent instructions in the pipeline; it takes advantage of superscalar architecture, in which multiple instructions operate on separate data in parallel.
>
> *https://en.wikipedia.org/wiki/Hyper-threading(April 2020)*

a Select **Processor/CPU** on the **Main** menu.



b On the **Processor/CPU** page select **Performance**.

c Set **Hyper-Threading** to: *Disabled*.

4 Set the boot parameters.

a Select **Booting** on the **Main** menu.

b Set **Boot Mode Select** to: *Legacy*

c Set **Legacy Boot Order #1** to: *USB key*.

The name of the USB flash drive may differ.

d Set **Legacy Boot Order #2** to: *Hard Disk: Intel SSDSC2KB240KB*.

The name of the hard disk drive may differ.

e Set remaining boot devices to: *Disabled*.

5 Select **Save & Exit**.

6 Select **Save Changes and Reset**.

7 Allow the Processor Unit to restart.

Related topics

Procedures, page 7

Replacing the Ethernet adapter in the Processor Unit

The current Ethernet adapter in the Processor Unit is not compatible with the new Processor Unit software version. It must be replaced.

Prerequisites

You must be equipped with a standard set of tools. This tool set must comprise the normal tools for electronic and electromechanical tasks. This includes different screwdriver types, pliers, spanners, a cable stripper, a soldering iron, etc. Each tool

must be provided in various sizes. We recommend that all tools are demagnetized to protect your equipment.

The following replacement part is required:

- Ethernet adapter: Intel i350 T2V2
  - **Part number**: 439845
  - **True manufacturer**: Intel (http://www.intel.com)
  - **True manufacturer's part number**: I350T2V2

or

- Fibre optic Ethernet adapter: Intel i350 F2
  - **Part number**: 412576
  - **True manufacturer**: Intel (http://www.intel.com)
  - **True manufacturer's part number**: I350F2

These are commercial items that can be purchased locally.

Note

This procedure will instruct you to handle electronic circuit boards and/or modules. Before doing so, make sure that you are familiar with the applicable handling precautions. You must be familiar with the applicable handling precautions. Take all necessary steps to avoid Electrostatic Discharge (ESD).

Context

The circuit board is located in slot F. Observe the identification label on the rear side of the unit.

Procedure

1 If necessary: Remove the Processor Unit from its normal position.
   a Disconnect all cables.
   b Remove the Processor Unit from its normal position.
   c Place the unit on a clean and stable workbench.
2 Open the Processor Unit.

   Remove the mounting screws to lift off the lid.
3 Locate the Ethernet adapter.
4 Loosen the mounting screw and remove the board.
5 Insert the new board.
6 Close the Processor Unit.

7 If necessary: Install the Processor Unit.

Connect all cables.

Related topics
Procedures, page 7

Upgrading the Processor Unit to use Windows 10 operating system

Upgrading the Processor Unit to use Microsoft® Windows® 10 is done by restoring the operating system from an image.

Prerequisites

To restore you need a USB flash drive containing the complete backup image.

Context

The USB flash drive contains the following files:

- `SMS_Image_Enix_2670_2680_Win10_full_b1_s1_v1.tib`
- `SMS_Image_Enix_2670_2680_Win10_full_b1_s1_v2.tib`
- `SMS_Image_Enix_2670_2680_Win10_full_b1_s1_v2.tib`

The software in use is created by Acronis. For more information about this company and their products, see their website:

- **Manufacturer**: Acronis International GmbH
- **Manufacturer's website**: http://www.acronis.com

This procedure refers to the following software version: *True Image 2017*.

Note

The screen captures are provided as examples. They do not reflect the specific MS70 Processor Unit.

Procedure

1 Connect a mouse and a computer keyboard to the Processor Unit.

2 Boot the Processor Unit from the USB flash drive.

a Insert the bootable USB flash drive.

41x9 2670: Use the USB sockets on the rear side of the Processor Unit. Avoid the blue USB sockets, as these do not support the boot functionality

b Turn on the Processor Unit manually using the on/off button.

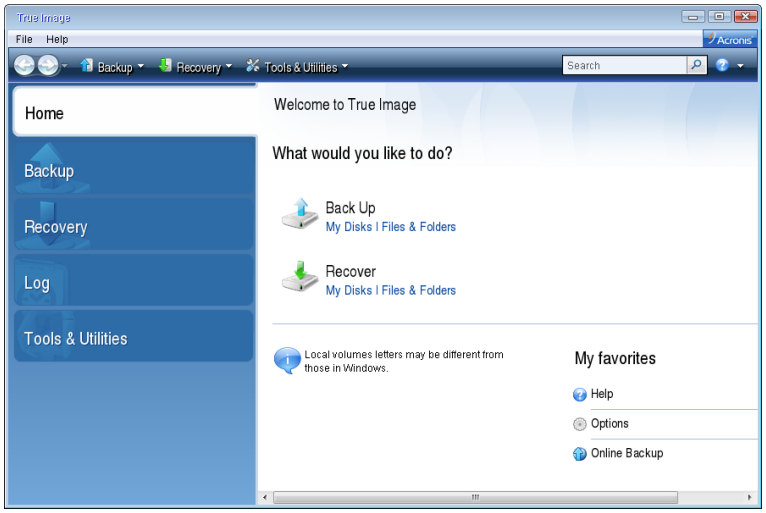
c Observe that the Processor Unit boots from the USB flash drive.

Tip

If the Processor Unit does not start from the USB flash drive, reboot, and start the BIOS application to select boot device.

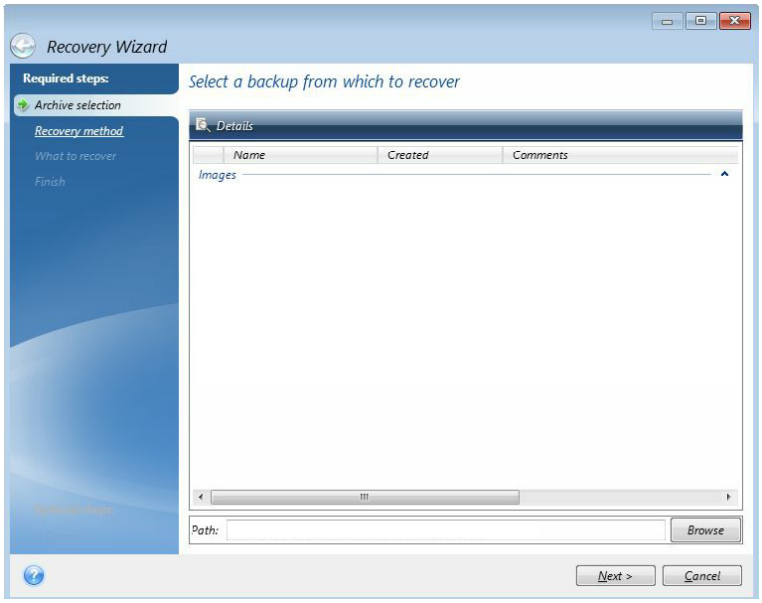
3 On the Acronis start menu select **Acronis True Image OEM (64-bit)**.

4 On the **Home** page, under **Recover**, select **My Disks**.



The application runs as a wizard. Select **Next** to proceed to the next page in the wizard.

5 At the bottom of the **Archive Selection** page select **Browse** to select the image file.



A standard operating system dialog box opens to let you choose files.

a Locate and select the backup file.

Select the USB flash drive as source. The file format is `*.tib`.

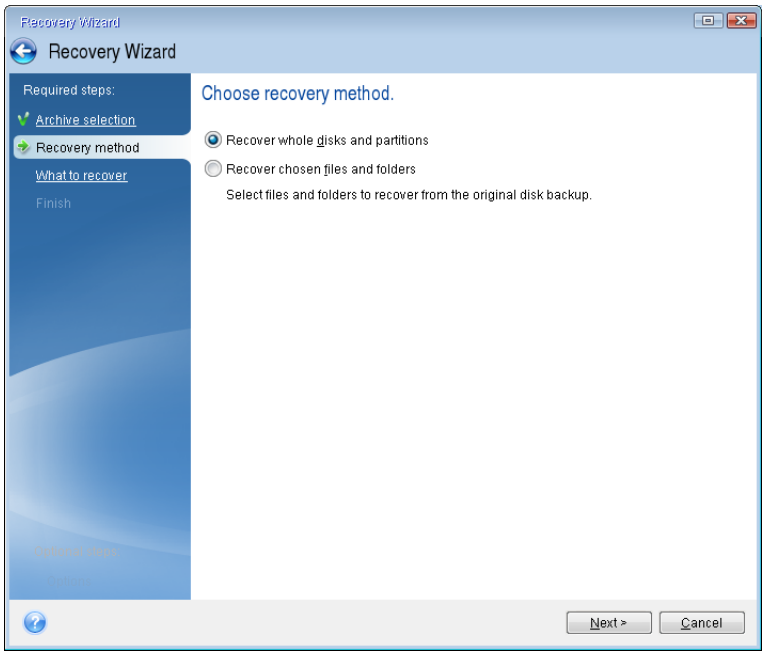
b Select the file at the top of the list.

c Select **OK** to continue.

d Under **Details**, make sure that the correct file has been selected.

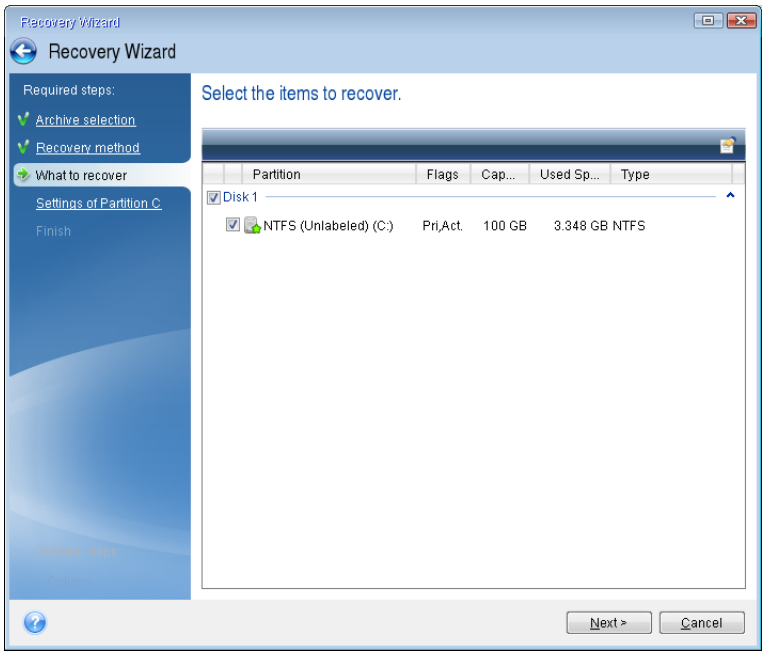
e Select **Next**.

6 On the **Recovery Method** page, select **Recover whole disks and partitions**.



Select **Next**.

7 On the **What To Recover** page, select **Disk 1**.



By selecting **Disk 1** all partitions on the disk are also selected.

Select **Next**.

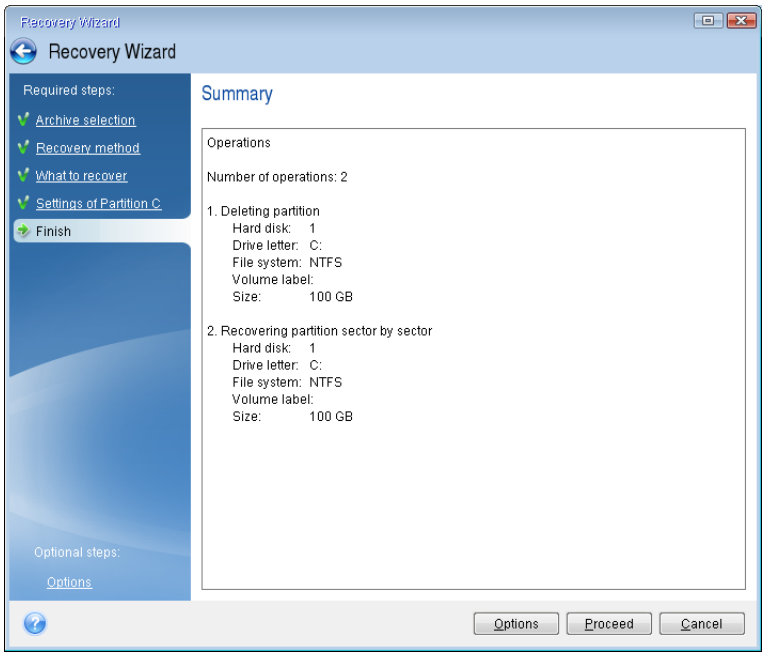
8 Select **Next** to verify your intentions.

Since Disk 1 already contains data, a warning message is shown.

> *The destination hard disk drive you have chosen contains some partitions that could contain useful data. Hard disk drive image recovery is possible only if the destination hard disk drive is empty. Click OK to confirm deletion of all the partitions on the destination hard disk drive.*

Select **OK**.

9 On the **Finish** page, make sure that the entire Disk 1 with all the partitions are replaced.



Select **Proceed**.

10 Wait for the recovery process to finish.

11 Remove the USB flash drive.

12 Restart the Processor Unit.

Related topics

Procedures, page 7

Setting up the serial ports in numerical order

The interface ports provided by the **Moxa CP114EL-I** serial adapter board are configured using a dedicated driver application in the operating system. To make sure that the numbering of the serial ports is correct and consistent, you must use the driver application to define the numbering sequence.

Prerequisites

This procedure is made for the Microsoft® Windows® 10 operating system. It is assumed that you are familiar with this operating system. Neither tools nor instruments are required.

Context

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

Note

This information is intended for certified maintenance technicians and service engineers from Kongsberg Maritime, or from a certified dealer, distributor or agent. It is assumed that you are familiar with the Windows® operating systems, computer technology, and interface principles. We strongly advise our end users not to alter the parameters described.

This procedure is valid for all computer types.

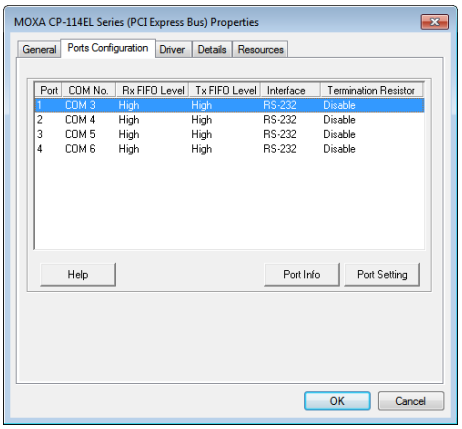
- The 41x9 2670 computer offers two serial ports on the motherboard (COM1 and COM2).
- The 41x10 2680 computer offers one serial port on the motherboard (COM1).

Default configuration:

Serial ports / Default configuration / 41x9 2670					
COM1	**COM2**	**COM3**	**COM4**	**COM5**	**COM6**
RS-232	RS-232	RS-422	RS-422	RS-422	RS-422

Serial ports / Default configuration / 41x10 2680				
COM1	**COM2**	**COM3**	**COM4**	**COM5**
RS-232	RS-422	RS-422	RS-422	RS-422

Procedure



1 In the bottom left corner of your desktop, select the looking glass to start a search.

2 In the search box, type "Device manager", and open the **Device manager** dialog box.

3 Expand the **Multi-port serial adapters** option.

4 Double-click **Moxa CP114EL Series (PCI Express Bus)** to open the configuration utility.

   a Open the **Ports Configuration** page.

   b Select *Port 1*.

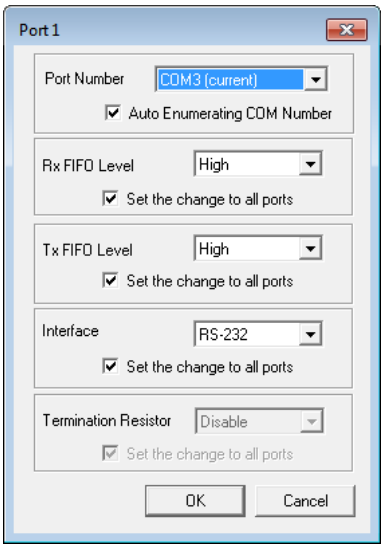
   c Select **Port Setting** to open the configuration dialog box.

      1 41x9 2670: Set **Port Number** to *COM3*.

      2 41x10 2780: Set **Port Number** to *COM2*.

   d Make sure that **Auto Enumerating COM Number** is enabled.

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



5 For each serial port, make sure that the interface settings are set to match you communication parameters.

6 Select **OK** repeatedly to save the chosen settings and exit.

Related topics

Procedures, page 7

Configuring the Ethernet adapter

Several important communication parameters must be defined in the Ethernet adapter's driver before it can be put to use.

Prerequisites

This procedure is made for the Microsoft® Windows® 10 operating system. It is assumed that you are familiar with this operating system. Neither tools nor instruments are required.

Context

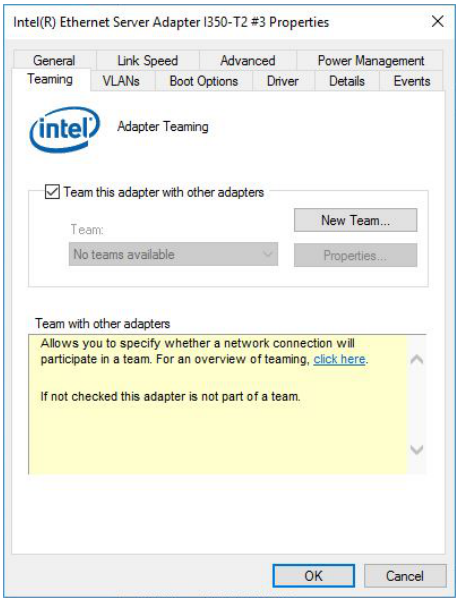
As long as you do not change the Processor Unit to another computer, or replace the network adapter in your Processor Unit, you will only need to do this once.

Note

This information is intended for certified maintenance technicians and service engineers from Kongsberg Maritime, or from a certified dealer, distributor or agent. It is assumed that you are familiar with the Windows® operating systems, computer technology, and interface principles. We strongly advise our end users not to alter the parameters described.

This procedure is valid for all computer types.

Procedure



1 Create an adapter team.

   a In the bottom left corner of your desktop, select the looking glass to start a search.

   b In the search box, type "Device manager", and open the **Device manager** dialog box.

   c On the list of devices, expand **Network adapters**.

   d Select the first adapter on the i350 Ethernet adapter board, right-click and select **Properties**.

   e Open the **Teaming** page.

   f Select **Team this adapter with other adapters** and then **New team**.

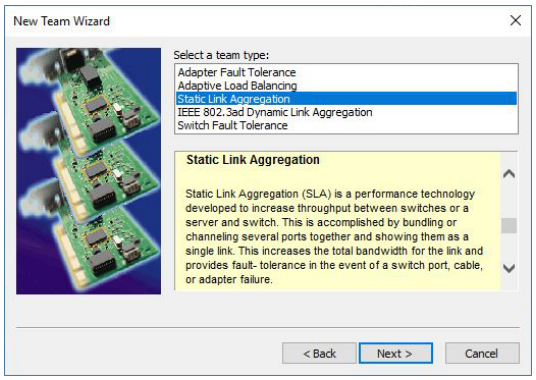
   g Type a name for the new team.

   h Select **Next** to continue.

   i Select the second adapter on the i350 Ethernet adapter board to make it a member of the team.

   j Select **Next**.

k Select **Static Link Aggregation**.



l Select **Next**.

m Select **Finish** to close the wizard.

n Select **OK** repeatedly to save the chosen settings and exit.

2 Define the advanced features for the i350 Ethernet adapter.

a On the list of devices, expand **Network adapters**.

b Select the first adapter on the i350 Ethernet adapter board, right-click and select **Properties**.

c Open the **Advanced** page.

d Set **Maximum Number of RSS Queues** to *8 Queues*.

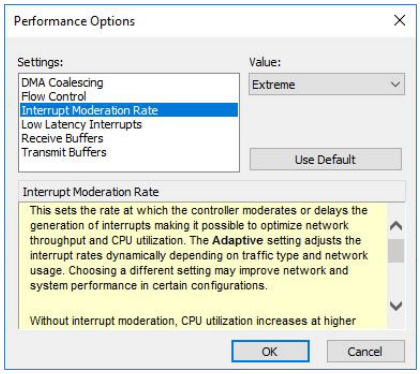
e Select **Performance Options** and then **Properties**.

f In the **Performance Options** dialog box:

1 Set **Interrupt Moderation Rate** to *Extreme*.

2 Set **Receiver Buffers** to *2048*.

3 Set **Transmit Buffers** to *2048*.



g Select **OK** repeatedly to save the chosen settings and exit.

Select **Yes** to acknowledge the connectivity message.

h Repeat these steps for the second i350 adapter.

3 Rename the Ethernet adapter.

a In the bottom-left corner of your desktop, select the Windows® **Start** button.

b On the menu, select **Settings**.

c Observe that the **Windows Settings** dialog box opens.

d Select **Network and Sharing Center**.

e Select **Change Adapter Settings**.

f Select the Ethernet adapter, right-click and select **Rename**.

g Rename the Ethernet adapter using the same name as the team you created.

4 Set up the IP Address and the subnet mask for communication with the Transceiver Unit.

a Select the network adapter you renamed, then right-click and select **Properties** on the short-cut 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

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

5 Define the advanced configuration parameters.

a Select the network adapter you renamed, then right-click and select **Properties** on the short-cut menu.

b Under **Connect using:**, select **Configure**.

c Open the **Advanced** page.

d Set **Check Time (in Seconds)** to *3*.

e Set **Load Balance Refresh Rate** to *0*.

Related topics

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