

SNMP Module

474-SNMP / 474-SNMPV3



Introduction

This manual contains important safety instructions as well as instructions for setting up the product and operating it. Please read the general safety instructions (see chapter 2, page 9) and additional notice in the respective chapters. Read carefully through the User Manual before you switch on the product.

Product Identification

The model and serial number of your products are indicated on the bottom of our products. Always refer to this information when you need to contact your dealer or the support of IHSE GmbH (see chapter 10, page 101).

Trademarks and Trade Names

All trademark and trade names mentioned in this document are acknowledged to be the property of their respective owners.

Validity of this Manual

This manual applies to all products of the series named on the cover page. Differences between the various models are clearly described.

The manufacturer reserves the right to change specifications, functions or circuitry of the series described here without notice. Information in this manual can be changed, expanded, or deleted without notice. You can find the current version of the manual in the download area of our website.

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Available Documentation

Name	Format	Description	Provision
User Manual	PDF	Provides an overview of the product together with technical data and safety instructions. Contains all instructions required to operate the product to a basic level.	Download from website
Quick Setup	Print	Provides a quick installation guide and safety instructions	Contained in the scope of delivery

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1 Important Information

1.1 Symbols for Warnings and Helpful Information

The meaning of the symbols used for warnings and helpful information in this manual is described below:

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE identifies information, if not observed, endangers the functionality of your device or the security of your data.



This symbol indicates information about special features on the device or when using device and function variants.



This symbol indicates instructions for procedures recommended by the manufacturer for an effective utilization of the device potential.

1.2 Spellings

Uniform spellings are used in this manual for better readability or easier assignment.

The following spellings are used for products:

Product	Description
Draco tera-Tool	Management software
Source	Computer, CPU
Sink	Console (monitor, keyboard, mouse)

The following spellings are used for keyboard commands:

Keyboard command	Description
<key>	Description of a key on the keyboard
<key> + <key>	Press keys simultaneously
<key>, <key>	Press keys successively
2x <key>	Press key quickly, twice in a row (like a mouse double-click)

The following spellings are used for software descriptions:

Spelling	Description
Bold print	Description of terms that are used in the device firmware or software
Menu item	Description of a menu item in the device firmware or software
Menu item > Menu item	Select menu items successively

1.3 EU Declaration of Conformity

For information about the Declaration of Conformity refer to chapter 12, page 103. A copy of the original, product-specific EU Declaration of Conformity can be provided upon request. For contact details, see page 2 of this manual.

2 Safety instructions

To ensure reliable and safe long-term operation of your device, please note the following guidelines:

- ▶ Read this user manual carefully.
- ▶ Only use the device according to this user manual. Failure to follow the instructions described can damage the device or endanger the security of your data.
- ▶ Take any required ESD precautions.

CAUTION

Danger of burns due to tremendously heated chassis surface after a long period of operation

When the chassis is fully equipped, the surface of the chassis can become very warm after a long period of operation. If the chassis surface is touched after a long period of operation, this can cause skin burns.

- ▶ Protective gloves must be worn to transport a fully equipped housing after a long period of operation.
- ▶ Ensure that there is sufficient distance from the operator, e.g. for mounting under a table.

Installation Location

While operating the device and the power supply units can get warm. Damage to the device can occur in a damp environment.

- ▶ Use the device only in dry, indoor environments.
- ▶ Use the device only in a room with adequate ventilation.
- ▶ For rack-mount installations, at least 0.5 RU (rack unit) is required above the KVM extender for ventilation.
- ▶ Do not place the power supply units directly on top of the device.
- ▶ Existing ventilation openings on the device must always be free.
- ▶ If installing the device under the table, place the device at a sufficient distance from the operator.
- ▶ Place all power sockets including the sockets for the supplied external power supply units easily accessible and directly next to each other.

Connection

- ▶ Check the device and the power supply units for visible damage before connecting it.
- ▶ Only connect the device if the device and the ports are not damaged.
- ▶ Only use power supply units originally supplied with the product or manufacturer-approved replacements.
- ▶ Only use power supply units without any visible damage at the chassis or the cable.
- ▶ Connect all power supply units to grounded outlets.
- ▶ Ensure that the ground connection is maintained from the outlet socket through to the power supply's AC power input.
- ▶ Only connect the device to KVM devices using the interconnect cable - not to other devices, particularly not to telecommunications or network devices

Disconnect the Device from the Circuit***NOTICE***

The cable plugs on the device side can contain a lock. In the event of a necessary quick and complete disconnection from external electric circuits:

- ⇒ remove all corresponding cable plugs from the socket,
- ⇒ or set the power switch of the power outlets (if available) to the “Off” position.

3 Description

3.1 Intended Use

The SNMP module is used to monitor all function- and safety-critical components of those KVM extenders that have been installed in the same chassis as the SNMP module. In addition, the SNMP module can be used to query the status of the KVM extenders, update the firmware of the extenders, and make and query settings of the extenders. Possible settings are parameters, USB HID or the EDID.

NOTICE

Possible radio interference in a domestic environment

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

- Follow the safety and installation instructions given in this manual.
- Use connection cables according to the specifications for the length and type given in this manual.

3.2 Access Options

You have following options to configure and operate the KVM Extender.

Access option	Description
Draco tera-Tool	<p>The Draco tera-Tool (management software) is available as a single executable program file (desktop and app version) that does not require a separate installation. The management software can be downloaded from the link https://www.ihse.de/software.</p> <p>Advanced settings can be configured on the KVM extender operating system using the management software:</p> <ul style="list-style-type: none">• Advanced configuration• Extended monitoring options• System update (firmware update)• Local backup option.

 The management software is used for the Draco tera Matrices as well as the SNMP modules and has more functions than is required for the management of the SNMP modules.

This manual explains all the functions that are required for the SNMP modules. Information on additional functions can be found in the manual for the Draco tera Matrices of the series 480.

3.3 System Overview

3.3.1 KVM Extender - Structure

A pair of KVM Extenders consists of 2 KVM Extenders, each with at least one CPU extender module and at least one CON extender module. The various extender modules are installed respectively in a Draco vario chassis (2-slot, 4-slot or 6-slot) on the CPU side (CPU Unit) and console side (CON Unit). With 2-slot, 4-slot and 6-slot chassis add-on modules are placed above an extender module, with 21-slot chassis, add-on modules are placed to the right of an extender module.

The assignment of the extender modules or add-on modules can be recognized by the article number:

- Extender or add-on module for the CPU Unit: **L4XX** (L = Local)
- Extender or add-on module for the CON Unit: **R4XX** (R = Remote)

An add-on module can contain up to 2 independent function parts (part A and B), one on the left and one on the right, see Fig. 1.

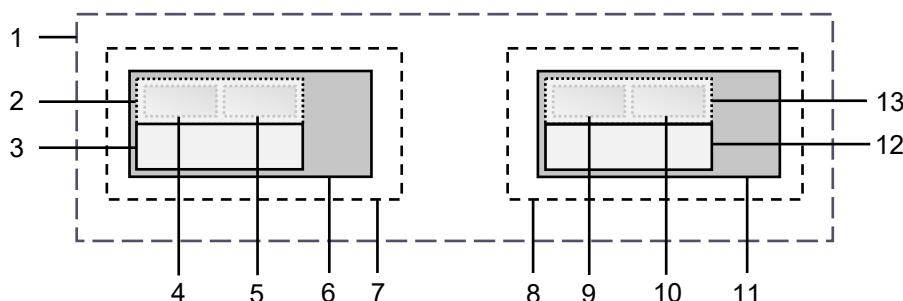


Fig. 1 KVM Extender pair with CPU Unit and CON Unit

- | | | | |
|---|---|----|---|
| 1 | KVM Extender pair | 8 | CON Unit |
| 2 | Extender module or add-on module (optional) | 9 | Part A of the CON add-on module (optional) |
| 3 | Extender module | 10 | Part B of the CON add-on module (optional) |
| 4 | Part A of the CPU add-on module (optional) | 11 | Chassis |
| 5 | Part B of the CPU add-on module (optional) | 12 | Extender module |
| 6 | Chassis | 13 | Extender module or add-on module (optional) |
| 7 | CPU Unit | | |

3.3.2 KVM Extender - Numbering of the Slots / Positioning SNMP Module

The numbering of the slots in the chassis runs from bottom left to top right in the 6-slot chassis and from left to right in the 21-slot chassis. The numbering of the slots is relevant for the positioning of an SNMP module.

2	4	6
1	3	5

Fig. 2 Numbering 6-slot chassis with positioning (grey) of an SNMP module

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----

Fig. 3 Numbering 21-slot chassis with positioning (grey) of an SNMP module

3.3.3 Installation Example



With an SNMP module those extenders are monitored that were installed in the same chassis as the SNMP module. In this example the extenders of the CPU Unit are monitored.

The CPU Unit is connected directly to the source (computer, CPU) using the supplied cables. The CON Unit is connected to the console (monitor, keyboard, and mouse).

The CPU Unit and the CON Unit communicate with each other through the interconnect cables.

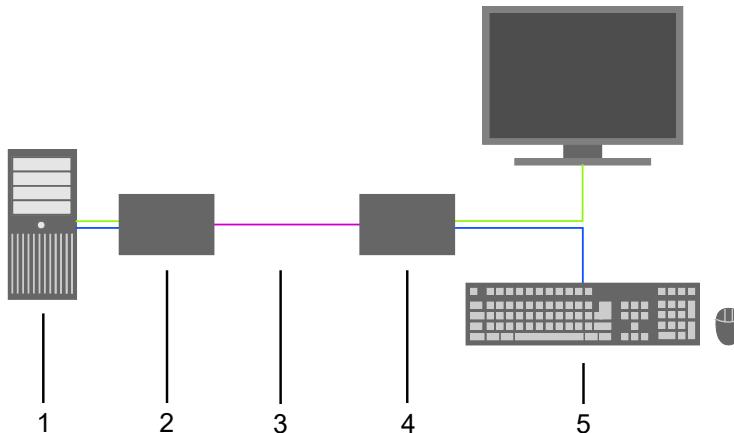


Fig. 4 Installation example Single-Head with SNMP module in the CPU Unit

- | | |
|-----------------------------|--------------------------------------|
| 1 Source (computer, CPU) | 4 CON Unit |
| 2 CPU Unit with SNMP module | 5 Console (monitor, keyboard, mouse) |
| 3 Interconnect cable | |

Example of use: installation of an SNMP module in a CPU Unit



Fig. 5 Example of use: 474-SNMPV3 in 474-BODY6BPF

1 474-SNMPV3

2 474-BODY6BPF

3.4 Product Types

3.4.1 Chassis for Slide-in Modules

Type	Chassis			Power supply unit		
	Slots	Active backplane	Current input	Internal	External	Setup for redundant power supply
474-BODY6BP	6	Yes	Rear view	2x	-	-
474-BODY6BPF	6	Yes	Interface side	2x	-	-
474-BODY21/4U	21	Yes	Rear view	1x	-	1x (internal)



All external power supply units are separately certified to the relevant major international safety standards.

3.4.2 SNMP Modules

Type	Description
474-SNMP	SNMP module for sliding-in into the chassis 474-BODY6BP (slot 5), 474-BODY6BPF (slot 5) and 474-BODY21/4U (slot 21). The transmission of the traps is unencrypted (SNMP v1).
474-SNMPv3	SNMP module for sliding-in into the chassis 474-BODY6BP (slot 5), 474-BODY6BPF (slot 5) and 474-BODY21/4U (slot 21). The transmission of the traps is unencrypted (SNMP v3).

3.5 Accessories Chassis

Type	Description
474-6RMK	19"-Rackmount Ears for Draco vario 6-slot chassis
474-VPLATE	Mounting plate for 2-/4-/6-slot chassis
474-BRACKET	Wall-/Tablemount L-Brackets for all 2-/4-/6-Slot chassis
474-PSU21	Spare PSU for 21-slot chassis, slide-in, hot-swap
474-BLND1	Blanking plate with IHSE Logo, 1-Slot for Draco vario chassis
474-6FAN	Optional fan for Draco vario 6-slot chassis with backplane

3.6 Accessories Cables and Power Supply Units

Cables or power supply units can be requested from the manufacturer if required.

3.7 Scope of Delivery

Depending on the order, the scope of delivery contains the following items:

Product type	Scope of delivery
474-SNMP	<ul style="list-style-type: none">• 1x Module 474-SNMP• 1x Serial control cable
474-SNMPV3	<ul style="list-style-type: none">• 1x Module 474-SNMPV3
474-BODY6BP	
474-BODY6BPF	<ul style="list-style-type: none">• 2x country-specific power cord per chassis
474-BODY21/4U	



If anything is missing, please contact your dealer.

3.8 Device Views Draco vario Chassis

NOTICE

Exceeding the maximum permissible power consumption

In addition to the power consumption of the extender and add-on modules, the power consumption of the connected peripherals must be added.

- ⇒ Note the maximum power consumption of the chassis (see chapter 7.3.1, page 96).

3.8.1 6-Slot Chassis Draco vario 474-BODY6BP

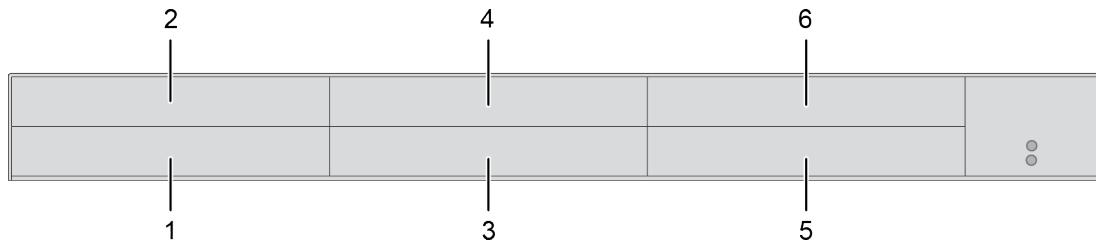


Fig. 6 Interface side chassis 474-BODY6BP

- | | |
|----------|----------|
| 1 Slot 1 | 4 Slot 4 |
| 2 Slot 2 | 5 Slot 5 |
| 3 Slot 3 | 6 Slot 6 |

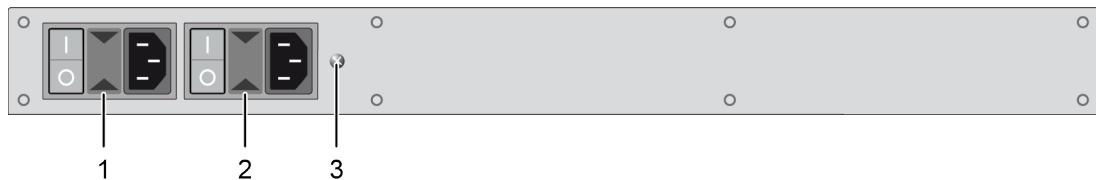


Fig. 7 Rear view chassis 474-BODY6BP

- | | |
|--|-------------|
| 1 Power supply AC (standard) | 3 Grounding |
| 2 Power supply AC (redundancy, optional) | |

3.8.2 6-Slot Chassis Draco vario 474-BODY6BPF

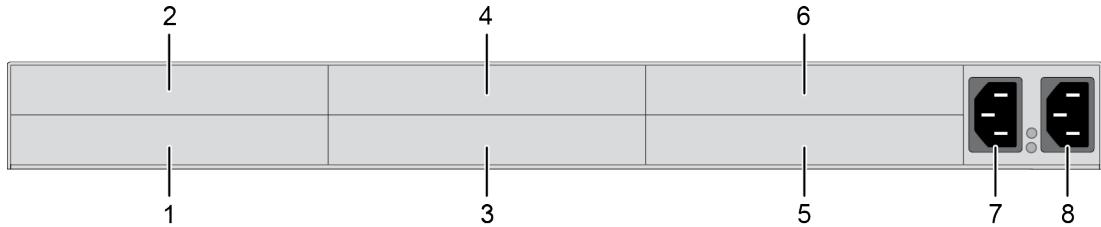


Fig. 8 Interface side chassis 474-BODY6BPF

- | | |
|----------|--|
| 1 Slot 1 | 5 Slot 5 |
| 2 Slot 2 | 6 Slot 6 |
| 3 Slot 3 | 7 Power supply AC (standard) |
| 4 Slot 4 | 8 Power supply AC (redundancy, optional) |

3.8.3 21-Slot Chassis Draco vario 474-BODY21/4U

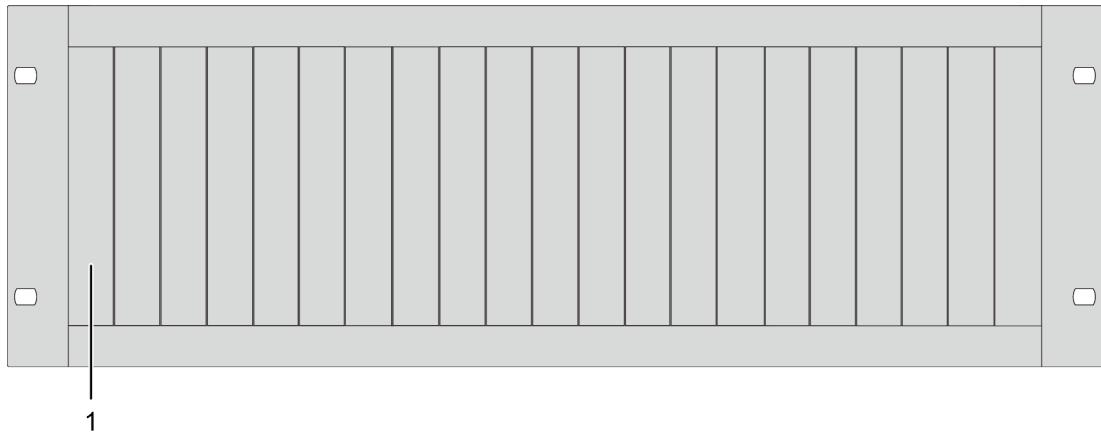


Fig. 9 Interface side chassis 474-BODY21/4U

- 1 Slots 1 to 21 (from left to right)

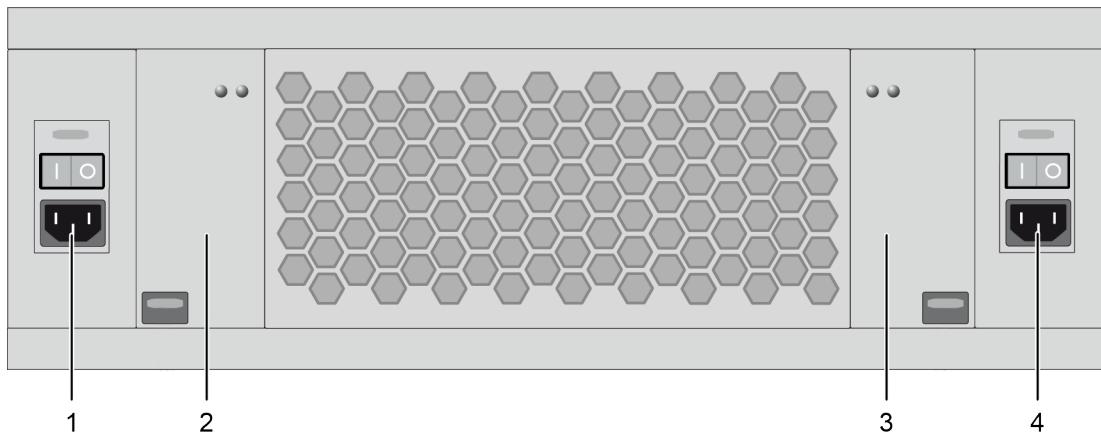


Fig. 10 Rear view chassis 474-BODY21/4U

- | | |
|--|--------------------------------|
| 1 Power supply AC (redundancy) | 3 Power supply unit (standard) |
| 2 Power supply unit (redundancy, optional) | 4 Power supply AC (standard) |

3.9 Device Views SNMP Modules

NOTICE

The functions of the SNMP modules are available with the following chassis variants in certain slots:

- ➔ Slot 5: 474-BODY6BP and 474BODY6BPF (with a production date of the chassis later than March 2014)
- ➔ Slot 21: 474-BODY21/4U

3.9.1 Module 474-SNMP

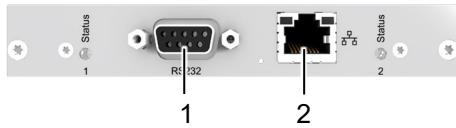


Fig. 11 Interface side 474-SNMP

- 1 RS232 serial (D-Sub 9, female socket)
- 2 Input / Output RJ45 (network connection)



This module works with the unencrypted SNMPv1 standard.

3.9.2 Module 474-SNMPv3

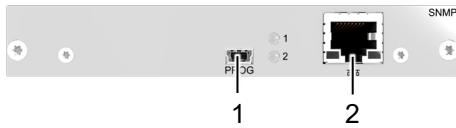


Fig. 12 Interface side 474-SNMPv3

- 1 Input Mini-USB (service)
- 2 Input / Output RJ45 (network connection)



This module works with the encrypted SNMPv3 standard.

3.10 Status Indication of the Chassis

The Draco vario chassis are equipped with LEDs for status information.

3.10.1 6-Slot Chassis Draco vario 474-BODY6BP

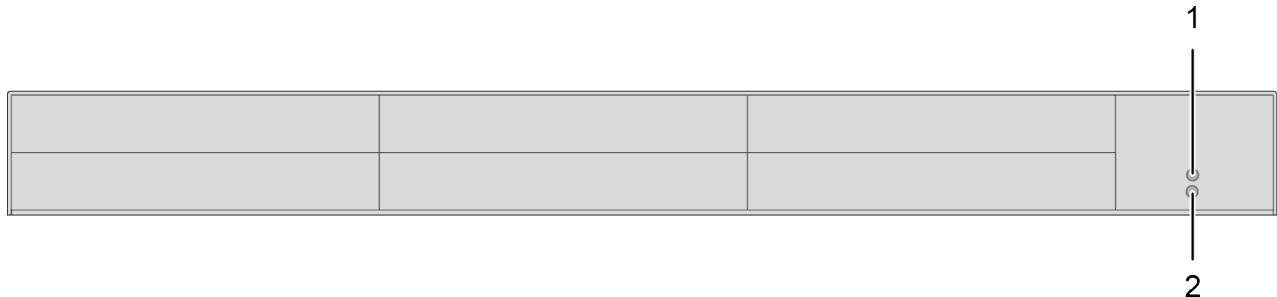


Fig. 13 Interface side chassis 474-BODY6BP - status LEDs

1 Status LED for power supply 1

2 Status LED for power supply 2

Status LEDs for Power Supply Voltage

Pos.	LED	Status	Description
3 and 4	AC Input	2x green	Power supply voltage available
		1x green / 1x red	No redundant power supply voltage available
		2x off	No power supply voltage available

3.10.2 6-Slot Chassis Draco vario 474-BODY6BPF

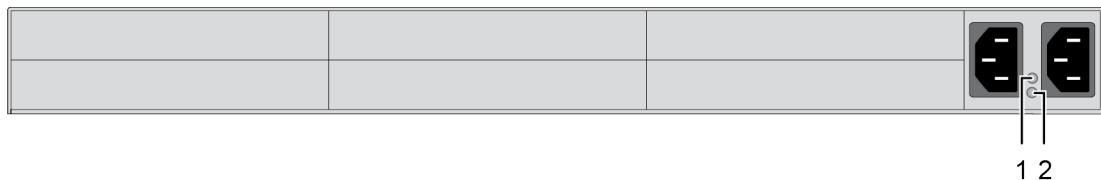


Fig. 14 Interface side chassis 474-BODY6BPF - status LEDs

1 Status LED for power supply 1

2 Status LED for power supply 2

Status LEDs for Power Supply Voltage

Pos.	LED	Status	Description
1 and 2	AC Input	2x green	Power supply voltage available
		1x green / 1x red	No redundant power supply voltage available
		2x off	No power supply voltage available

3.10.3 21-Slot Chassis Draco vario 474-BODY21/4U

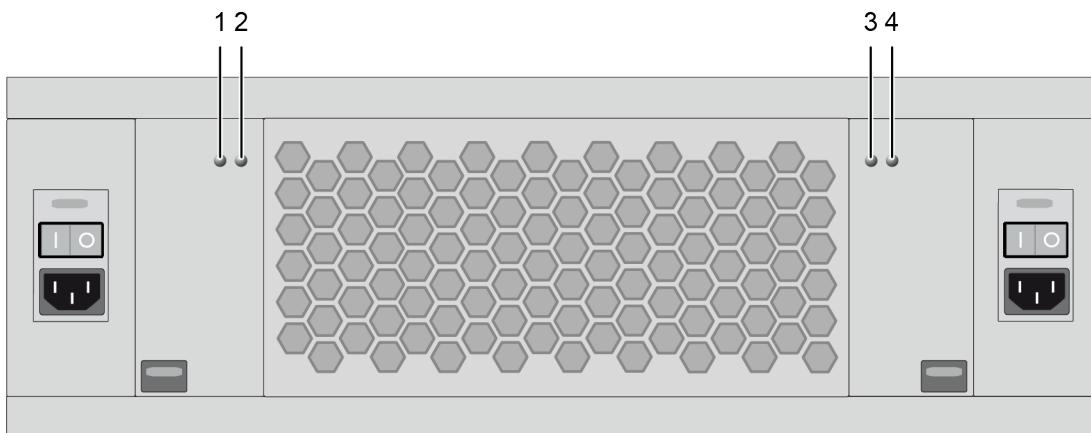


Fig. 15 Rear view chassis 474-BODY21/4U - status LEDs

- | | |
|--|--|
| 1 Status LED for power supply (redundancy) | 2 Status LED for power supply (standard) |
| 2 Fault LED for power supply (redundancy) | 3 Fault LED for power supply (standard) |

Status LEDs for Power Supply Voltage

Pos.	LED	Status	Description
1, 3	AC Input (green)	Off	Power supply voltage not available
		On	Power supply voltage available
2, 4	Fault LED (red)	On	<ul style="list-style-type: none"> • The input voltage of the power supply unit is too low • The output voltage of the power supply unit too high • Permissible power supply temperature exceeded

3.11 Status Indication of the SNMP Modules

3.11.1 Module 474-SNMP

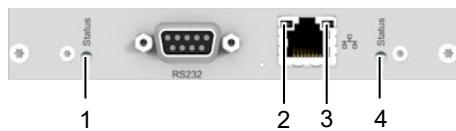


Fig. 16 Interface side module 474-SNMP - status LEDs

- 1 Status LED 1 SNMP module
- 2 Link status LED network connection
- 3 Activity status LED network connection
- 4 Status LED 2 SNMP module

Status LEDs of the SNMP module

Pos.	LED	Status	Description
1	Status 1	White	SNMP module is in registration process
		Blue flashing	Registration of the SNMP module has started
		Red flashing	Registration in progress
		Green flashing	Operating condition
		Green	SNMP module de-registered
4	Status 2	White	SNMP module is in registration process



Due to variations in LED type "white" might also appear as light purple or light blue.

Status LEDs of the network port

Pos.	LED	Status	Description
2	Activity status (green)	Off	No network connection available
		Flashing	Network connection available
3	Link status (orange)	Off	No network connection available or no data transfer
		On	Network connection available, data transfer active

3.11.2 Module 474-SNMPV3

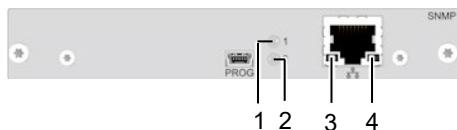


Fig. 17 Interface side module 474-SNMPV3 - status LEDs

- 1 Status LED 1 SNMP module
- 2 Status LED 2 SNMP module
- 3 Link status LED network connection
- 4 Activity status LED network connection

Status LEDs of the SNMP module

Pos.	LED	Status	Description
1	Status 1	White	SNMP module is in registration process
		Blue flashing	Registration of the SNMP module has started
		Red flashing	Registration in progress
		Green flashing	Operating condition
		Green	SNMP module de-registered
2	Status 2	White	SNMP module is in registration process



Due to variations in LED type “white” might also appear as light purple or light blue.

Status LEDs of the network port

Pos.	LED	Status	Description
3	Link status (orange)	Off	No network connection available or no data transfer
		On	Network connection available, data transfer active
4	Activity status (green)	Off	No network connection available
		Flashing	Network connection available

3.12 Control Options via Management Software

3.12.1 Management Software Menu Structure

The menu structure of the management software is subdivided into various sections:

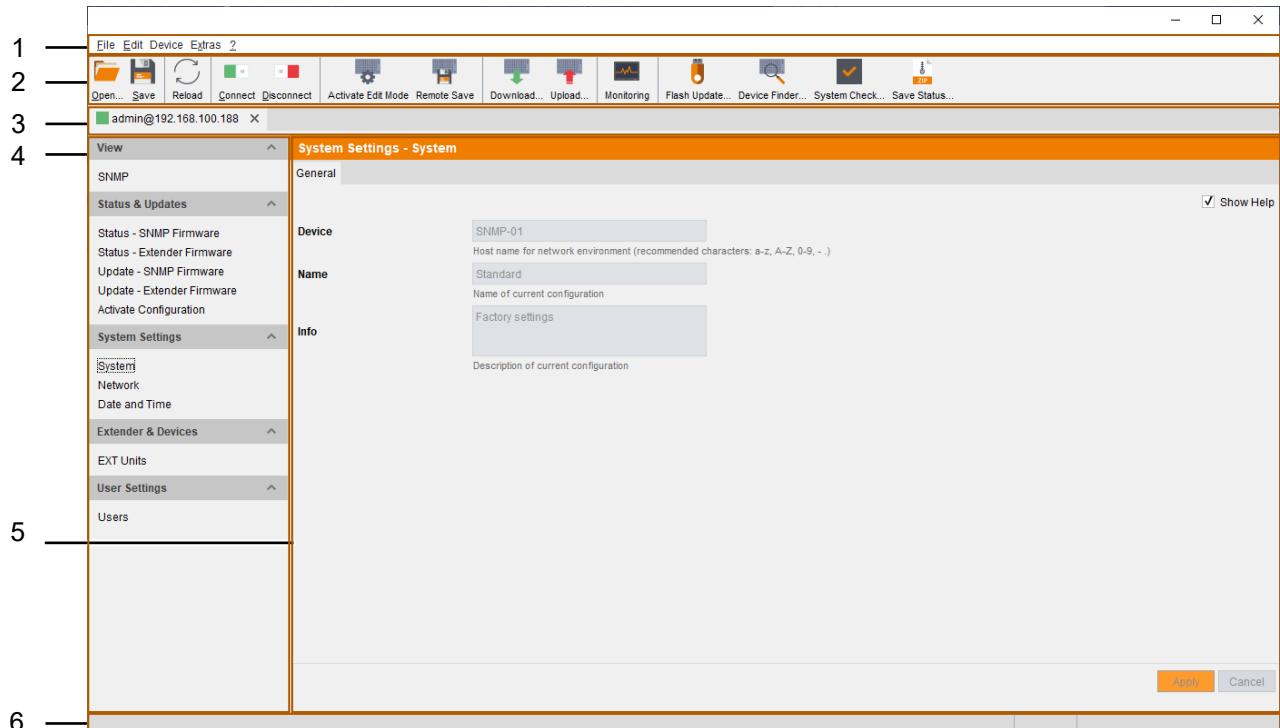


Fig. 18 Management software **menu structure**

- | | | | |
|---|-----------------------|---|-----------------------------------|
| 1 | Menu bar (top line) | 4 | Task area (left menu section) |
| 2 | Toolbar (second line) | 5 | Working area (right menu section) |
| 3 | Tab bar (third line) | 6 | Status bar (bottom line) |

The following functions are available in most of the menus:

Button	Function
Apply	Confirm changes (temporary storage of the active configuration in the volatile memory of the SNMP module)
Cancel	Reject changes

NOTICE

Possible loss of changes

By clicking the **Apply** button, changes are applied to the active configuration and saved in the volatile memory of the SNMP module. In the event of a sudden power failure, these changes are lost. To save changes permanently:

- save the configuration changes into the active configuration (**Remote Save**, see chapter 5.7.1, page 62) or perform a restart (see chapter 6.9.2, page 92).

Information for operating and for support functions

The operation of the management software is intuitive and corresponds to the user interface of common operating systems.

- Help texts:

The management software contains its own support function. The integrated help texts in the working area of the management software can be activated or deactivated by the checkbox in the upper right corner. Auxiliary names (tooltips) for the menu items can be activated in the options.

- Online help:

After calling up a function from the task area, a menu opens in the work area of the management software, sometimes with several sub-pages (tabs). An online help is available for these functions, which can be called up by pressing the **F1** key on the keyboard. An internet connection and a browser are required for opening the online help (pdf).

3.12.2 Management Software Toolbar

Some functions are only available if a connection to the SNMP module has been established (online mode). The respective functions are marked here with (online).

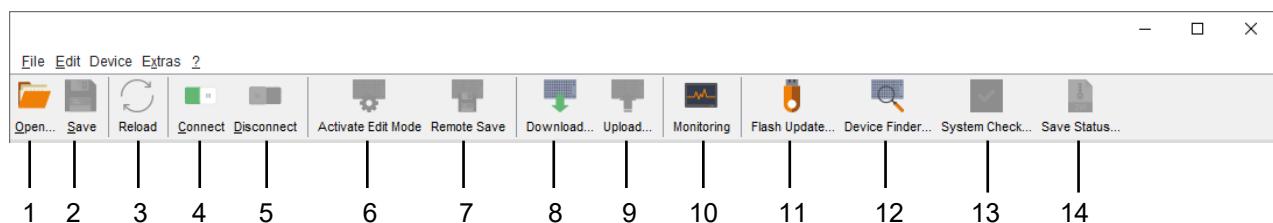


Fig. 19 Management software toolbar

- | | | | |
|---|---|----|---|
| 1 | Load locally saved configuration | 8 | Show predefined configuration saved on SNMP module (online) |
| 2 | Save configuration locally | 9 | Save predefined configuration on SNMP module (online) |
| 3 | Update configuration | 10 | Monitoring (online) |
| 4 | Connect to SNMP module, switches to online mode | 11 | Update flash |
| 5 | Disconnect from SNMP module, switches to offline mode | 12 | Overview of devices in the subnet (online) |
| 6 | Activate/deactivate edit mode | 13 | Check system |
| 7 | Save active configuration (online) | 14 | Save status locally (online) |

3.12.3 Management Software Mouse Control

The following mouse commands are selectable for menu functions:

Mouse command	Function
Primary mouse button	Menu selection, marking
Double-click primary mouse button	Open function specific selection menus
Secondary mouse button	Open context specific selection menus

3.12.4 Management Software Keyboard Control

The following keyboard commands are available for the navigation and configuration within the menus:

Keyboard command	Function
<Cursor Left>	Cursor to the left
<Cursor Right>	Cursor to the right
<Cursor Up>	Line up
<Cursor Down>	Line down
<Page Up>	In input or status menus with more than one page: previous page
<Page Down>	In input or status menus with more than one page: next page
<Tab>	In input menus: previous field
<Left Shift> + <Tab>	In input menus: next field
<Space>	<ul style="list-style-type: none"> • Switch in selection fields between two conditions (checkmark or not). • Open already marked fields with editing or selecting possibility.
Keyboard command	Function
<Enter>	<ul style="list-style-type: none"> • Select menu item • In menus: Save data
<Ctrl> + <Tab>	<ul style="list-style-type: none"> • Leave tables • Jump from tables into the next field
<Ctrl> + <Left Shift> + <Tab>	<ul style="list-style-type: none"> • Leave tables • Jump from tables into the previous field



Various functions within the menus in the menu bar can be executed with the provided keyboard commands (e.g. press `<Ctrl> + <S>` to execute **Save**) that are listed to the right of the respective menu item.

3.12.5 Management Software Reload Options

The information shown in the management software can be reloaded in different ways:

- Press the `<F5>` key on the used keyboard.
- Click the **Reload** menu item in the toolbar.
- Click **Edit > Reload** in the drop-down menu of the menu bar.

3.12.6 Management Software Context Function

The management software offers several context functions that support user-friendly and efficient operation. The context functions are described in the respective chapters.

Context function	Action	Results
Execute context function	Click with the secondary mouse button on a field.	A context menu opens and displays functions available for the corresponding field (if existing).
	Click with the primary mouse button on the desired function.	The desired function is executed.

3.12.7 Management Software Sort Function

Lists and tables in the management software offer a sorting function for fast and smooth search. An active filter is indicated by an arrow in the header.

Sort function	Action	Result
Ascending sort	Click with the primary mouse button once on the header of the column to be sorted.	<ul style="list-style-type: none"> The column is sorted in ascending order. The sort status is indicated by an arrow pointing upwards.
Descending sort	Click with the primary mouse button twice on the header of the column to be sorted.	<ul style="list-style-type: none"> The column is sorted in descending order. The sort is displayed by an arrow that points downwards.
Cancel sort	Click with the primary mouse button once or twice on the head of the sorted column.	The displayed arrow disappears.

3.12.8 Management Software Filter Function

Lists and tables in the management software offer a filter function that supports a fast and smooth search. The filter entry field is located above the header. An active filter is indicated by a green filter symbol in the filter entry field.

Filter function	Action	Results
Activate filter	Click with the primary mouse button in the filter entry field above the header. Write the word or part of a word to be filtered.	<ul style="list-style-type: none"> The filter results are shown immediately. The filter symbol is displayed in green.
Cancel filter	Delete the text in the filter entry field.	<ul style="list-style-type: none"> The list or table shows the complete content. The filter symbol is displayed in grey.

4 Installation

NOTICE

Please verify that interconnect cables, interfaces, and handling of the devices comply with the requirements (see chapter 7, page 94).



First-time users are recommended to set up the system in a test environment that is limited to a single room. This makes it easier to identify and solve any cabling problems, and experiment with your system more conveniently.

4.1 Setting up Network and Firewall Releases

Requirements: Releasing network ports

The following ports are used by the KVM Extender depending on the configuration and must be released at the security gateway if necessary. The ports must only be released if you want to use the respective function.

Function	Port
DNS	53
SNTP	123 / UDP
SNMP	161/162 / both UDP
Syslog	514 / UDP
API	5555 / TCP (5565 for SSL)
Broadcast	5556 / UDP (5566 for SSL)

4.2 Installing the SNMP Module

NOTICE

The SNMP module can only be installed in special slots of the 6-slot or 21-slot chassis with an integrated backplane: BODY6 (slot 5), BODY21 (slot 21).



It is not necessary to switch off the chassis. The SNMP module can be installed during operating.

- Install the SNMP module in the specified slot of the chassis (see chapter 3.3.2, page 12).

4.3 Installing Management Software

NOTICE

Connection to the SNMP module blocked

Synchronization directories or offline directories require special attention regarding the firewall setting, e.g. Windows: roaming directories.

If blocked by the firewall, no connection to the SNMP module can be established.

- Save the management software in a locally available directory.

Requirements

If you want to use the management software as a desktop version, the following requirements must be fulfilled:

Computer / Software / Network	Requirements / Recommendations
Free memory	RAM Recommended: 512 MB
Operating system	Microsoft Windows 8, Windows 8.1, Windows 10
	macOS macOS 10.14 (Mojave) or higher, Intel platform
Specification	Java Installed: Oracle Java Runtime Environment (JRE) 1.8.x or higher Recommended: Oracle Java 1.8 update 152, or higher. (https://adoptopenjdk.net , https://github.com/ojdkbuild/ojdkbuild)
Management software desktop version	Draco tera-Tool Downloaded from https://www.ihse.de/software
Network connection	- Available between computer and SNMP module



Contact your system administrator concerning JRE and network connection.

If you want to use the management software as an app version, the following requirements must be fulfilled:

Computer / Software / Network	Requirements / Recommendations
Free memory	RAM Recommended: 512 MB
Operating system	Microsoft Windows 8, Windows 8.1, Windows 10
Specification	Java On Windows operating systems, the portable management tool TeraToolApp requires no Java installation.
Management software APP version	Draco tera-Tool Downloaded from https://www.ihse.de/software
Network connection	- Available between computer and SNMP module

Installing the management software

The management software is available as a single executable program file that does not require a separate installation.

- Save the management software in a locally available directory.



If you do not have the program file, please contact your dealer.

4.3.1 Connecting SNMP Module to the Computer

NOTICE

For a connection between computer and SNMP module via switch or hub, parallel assembled network cables are required.

Use only a network connection between computer and the SNMP module that is not primarily used for streaming audio or video data

- ▶ Connect the network cable to the RJ45 ports of computer and SNMP module.

4.3.2 Starting Management Software

- ▶ Open the management software by a double-click on the program icon on the desktop or the file in the directory.

The management software starts in offline mode.

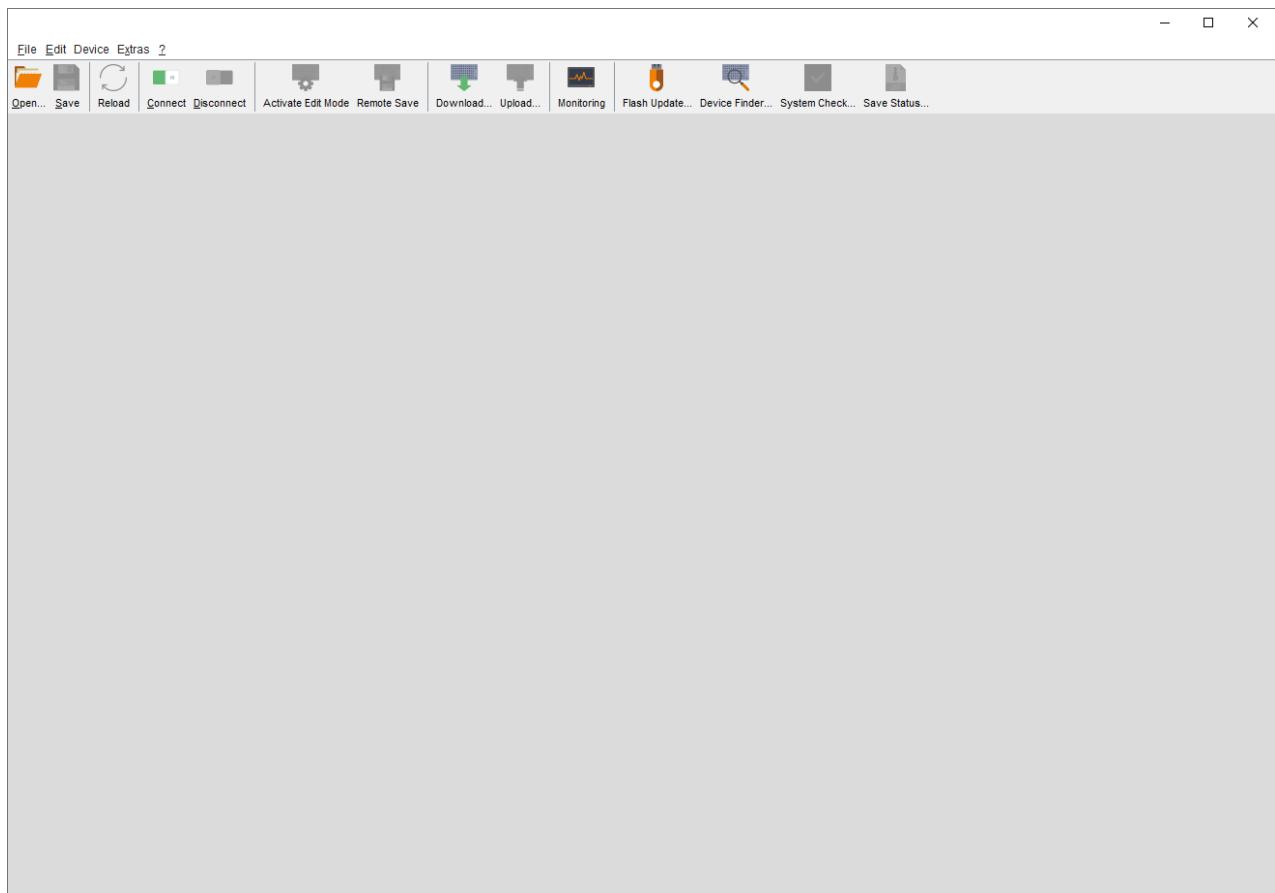


Fig. 20 Management software *landing page in offline mode*

4.3.3 Connecting Management Software with the SNMP Module



At least FTP rights are required.

1. Click the **Connect** menu item in the tool bar.
An access window appears.
2. Enter the IP address according to the network configuration of the SNMP module (see chapter 5.4.2, page 38).
Default Settings of the SNMP module:
474-SNMP: IP-Address 192.168.100.99 and DHCP is deactivated.
474-SNMPV3: IP-Address 192.168.100.99 and DHCP is activated.
3. Enter the username and password of the administrator (see chapter 5.5, page 50).
4. Click the **Login** button to confirm your entries.



Fig. 21 Management software dialog **Connect**



The data must be entered each time the network connection is re-established.

Alternatively, the data can be entered and stored in the management software under **Extras > Options** (see chapter 5.3.1, page 33).

5 Configuration via Management Software

NOTICE

Possible loss of changes

By clicking the **Apply** button changes are applied to the active configuration and saved in the volatile memory of the SNMP module. In the event of a sudden power failure, these changes are lost. To save changes permanently:

- save the configuration changes into the active configuration (**Remote Save**,(see chapter 5.7.1, page 62)) or perform a restart (see chapter 6.9.2, page 92).

NOTICE

A change in system-relevant parameters (e.g. change of the IP address) is immediately displayed in the management software. To initialize system-relevant configuration changes on the SNMP module, the SNMP module must be restarted. The restart of the SNMP module may take several minutes, and the SNMP module is not available during the restart.

5.1 Configuring in Online Mode

Configurations and system settings can be edited via management software in online mode with an active connection between SNMP module and management software. Hereby, the following steps are necessary:

1. Connect the management software with the SNMP module.

When connecting the first time, the manufacturer-specific configuration (Factory Settings) saved on the SNMP module) is loaded into the management software.

2. Click the **Activate Edit Mode** menu item in the toolbar.

The edit mode is active. A symbol is shown in the status bar.

3. Make any edits in the configuration and system settings.

4. Click the **Apply** button to confirm the changes.

The changes are applied immediately as the current configuration running in the volatile memory of the SNMP module.

5. Click the **Deactivate Edit Mode** menu item in the toolbar.

6. Click the **Remote Save** button to save the configuration to the SNMP module.

7. Optionally: restart the system (depending on the settings made).

5.2 Configuring in Offline Mode

Configuration and system settings via management software can be changed in offline mode without a direct connection between SNMP module and management software. Afterwards, the configuration must be uploaded to the SNMP module. Hereby, the following steps are necessary:

1. Connect the management software with the SNMP module.

When connecting the first time, the manufacturer-specific configuration (Factory Settings) saved on the SNMP module) is loaded into the management software.

2. Download the configuration.

3. Disconnect the management software from the SNMP module.

The configuration is now editable.

4. Make any edits in the configuration and system settings.

5. Click the **Apply** button to confirm the changes.

The changes are applied immediately in the downloaded current configuration.

6. Upload the configuration to the SNMP module and activate immediately (optional) or later.

7. Optionally: restart the SNMP module.

5.3 Setting Management Software Options

The settings of the management software can be customized and optimized to support you configure your SNMP module. The settings can be set in the offline mode.



A restart is required to activate changes in the options menu.

5.3.1 Setting Program Default Settings

To avoid the repeated entry of data in the management software, this data can be saved in the default settings.

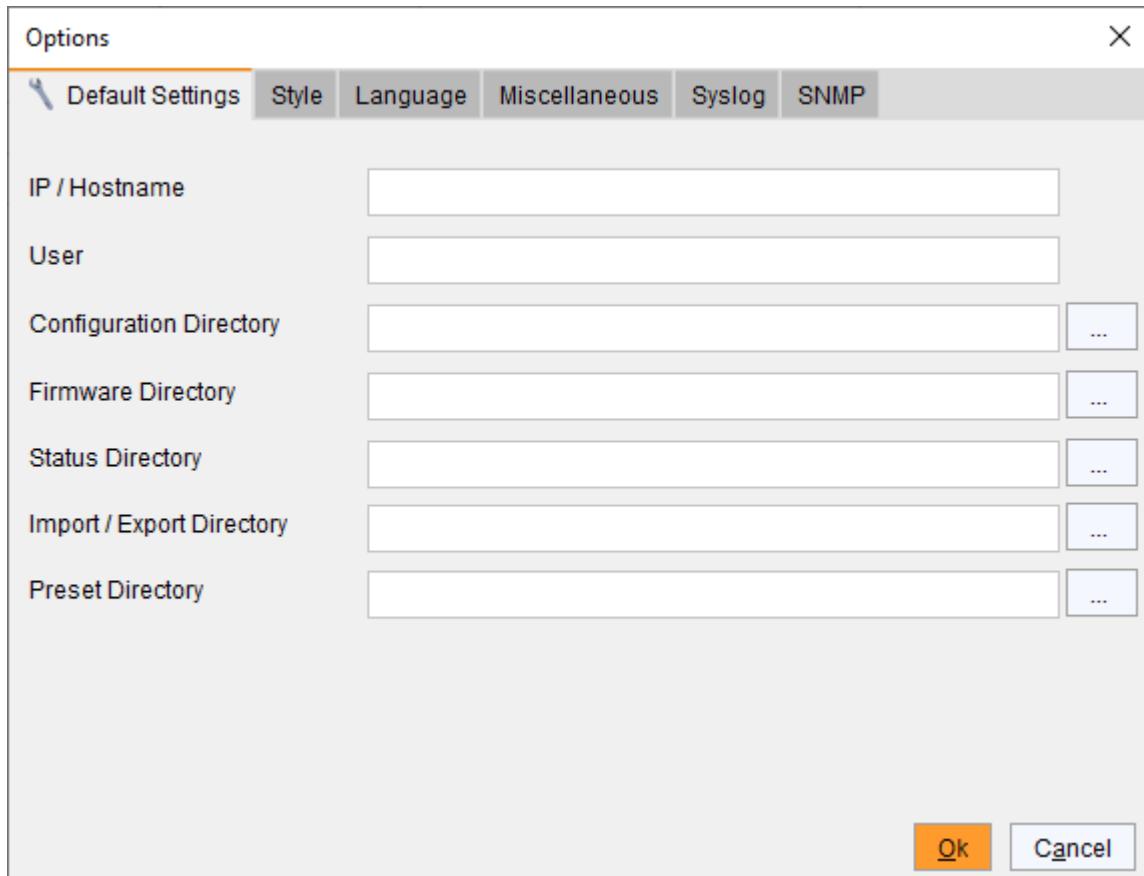


Fig. 22 Management software menu **Extras - Options - Default Settings**

The following parameters can be configured:

Option	Description
IP / Hostname	Default IP address or host name of the SNMP module for establishing a connection
User	Default username for establishing a connection
Configuration Directory	Default directory for configuration files
Firmware Directory	Default directory for firmware files
Status Directory	Default directory for status files
Import / Export Directory	Without function, only when using a matrix
Preset Directory	Without function, only when using a matrix

To activate or set the default settings, proceed as follows:

1. Select **Extras > Options** in the menu bar.
The **Options** menu opens and shows the **Default Settings** tab.
2. Enter the appropriate data.
3. Click the **Ok** button to confirm your entries.
4. Close the management software and restart it.

5.3.2 Setting Font Size and Tooltip in the Toolbar

The font size can be set in this menu and the display of tooltips for the toolbar can be activated.

1. Select **Extras > Options** in the menu bar and open the **Style** tab.
2. Select the desired font size.
3. Click the **Show Toolbar Button Text** checkbox.
A tooltip is displayed when hovering over a menu item in the toolbar.
4. Select the color theme for the management software (default or dark).
5. Click the **Ok** button to confirm your changes.
6. Close the management software and restart it.

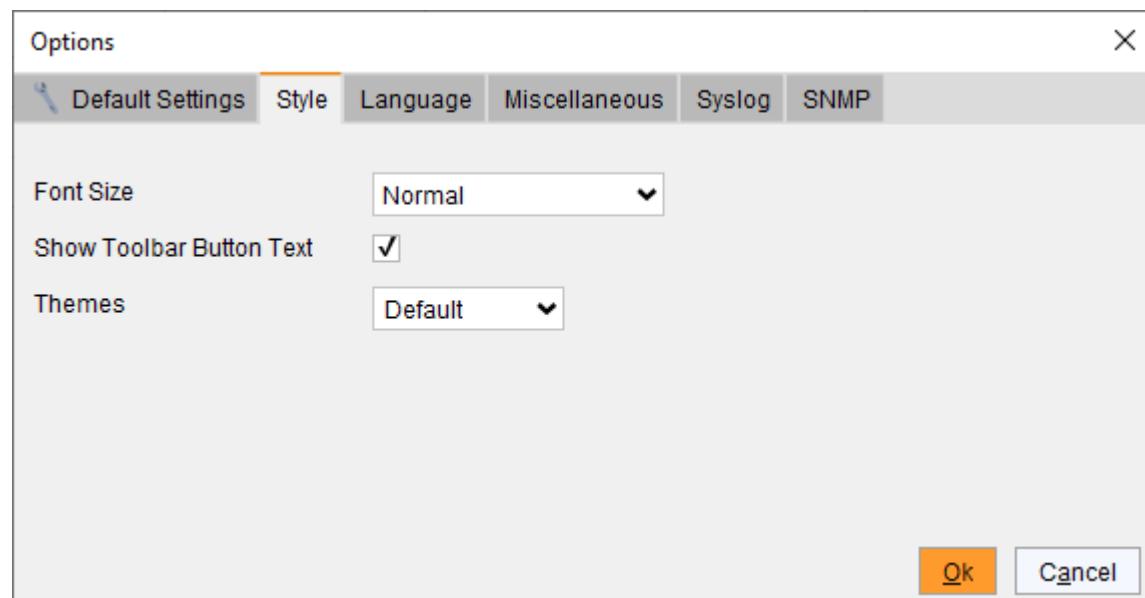


Fig. 23 Management software menu **Extras - Options - Style**

5.3.3 Setting Language of the Management Software

The language within the management software is set in this menu. The charset must match the selected language to ensure correct representation.

1. Select **Extras > Options** in the menu bar and open the **Language** tab.
2. Select the desired language within the management software and the corresponding charset.
3. Click the **Ok** button to confirm your changes.
4. Close the management software and restart it.

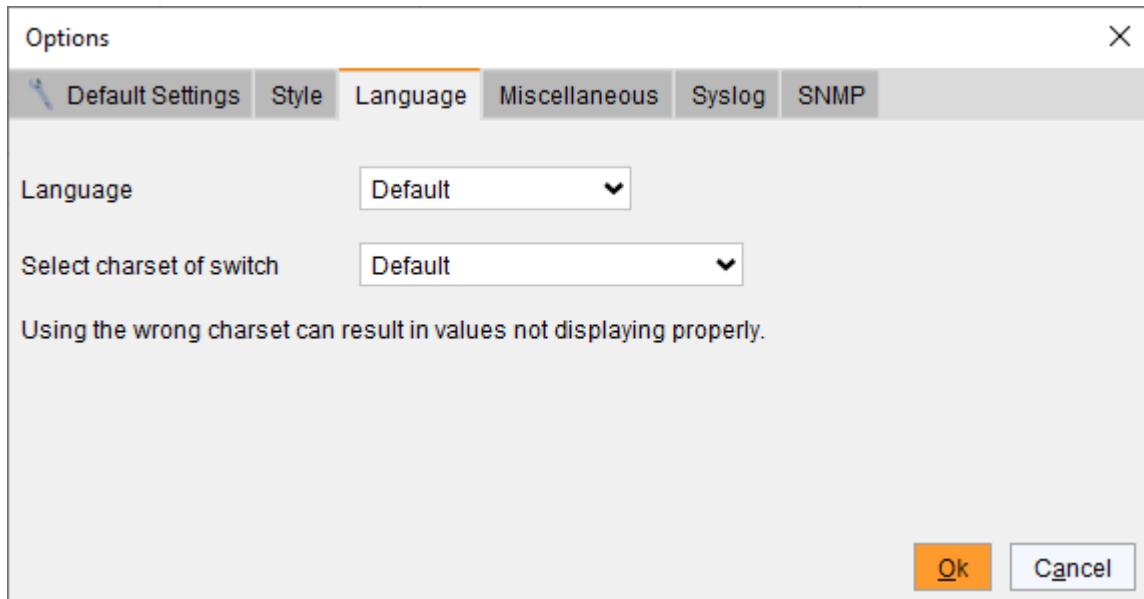


Fig. 24 Management software menu **Extras - Options - Language**

5.3.4 Setting Autostart of the Device Finder

To start the device finder automatically when starting the management software, proceed as follows:

1. Select **Extras > Options** in the menu bar and open the **Miscellaneous** tab.
 2. Activate the **Device Finder on startup** checkbox.
- After restarting the SNMP module, the **Device Finder** appears.
3. Click the **Ok** button to confirm your changes.
 4. Close the management software and restart it.

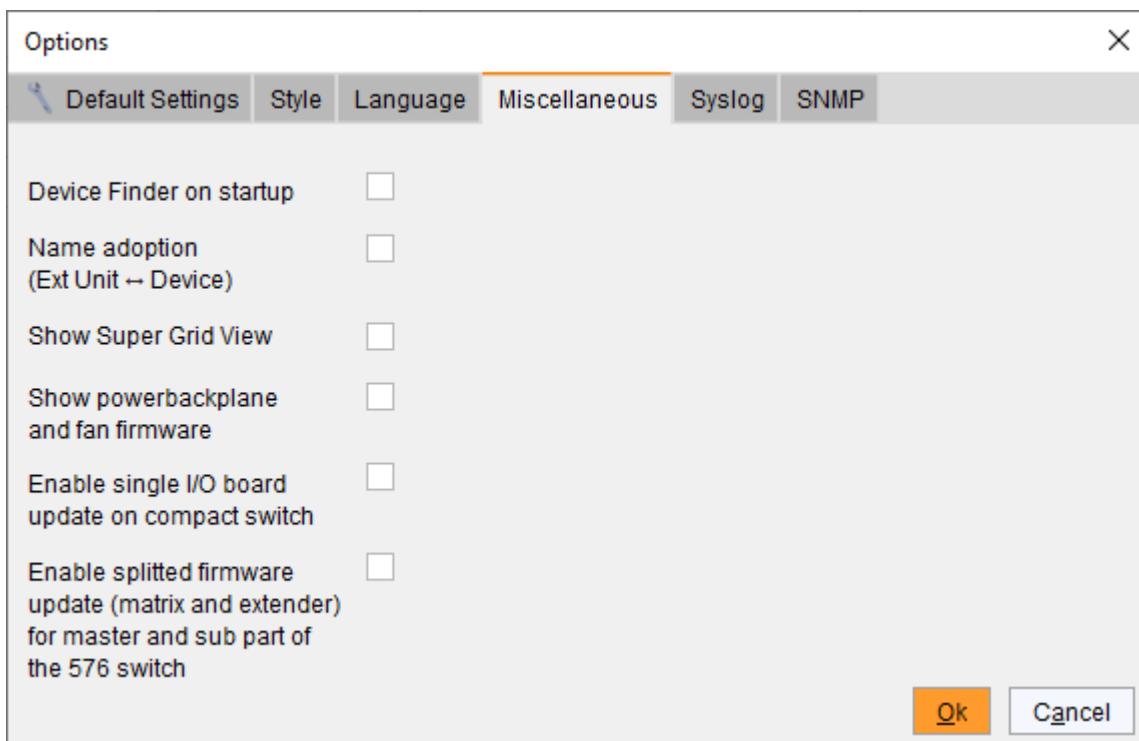


Fig. 25 Management software menu **Extras - Options - Miscellaneous**



The other shown options are provided when using a matrix (see matrix user manual).

5.4 System Settings



After changing the IP address, the new IP address is required to connect to the management software after restart.

5.4.1 Defining the SNMP Module

The parameters for the SNMP module are defined in this menu.

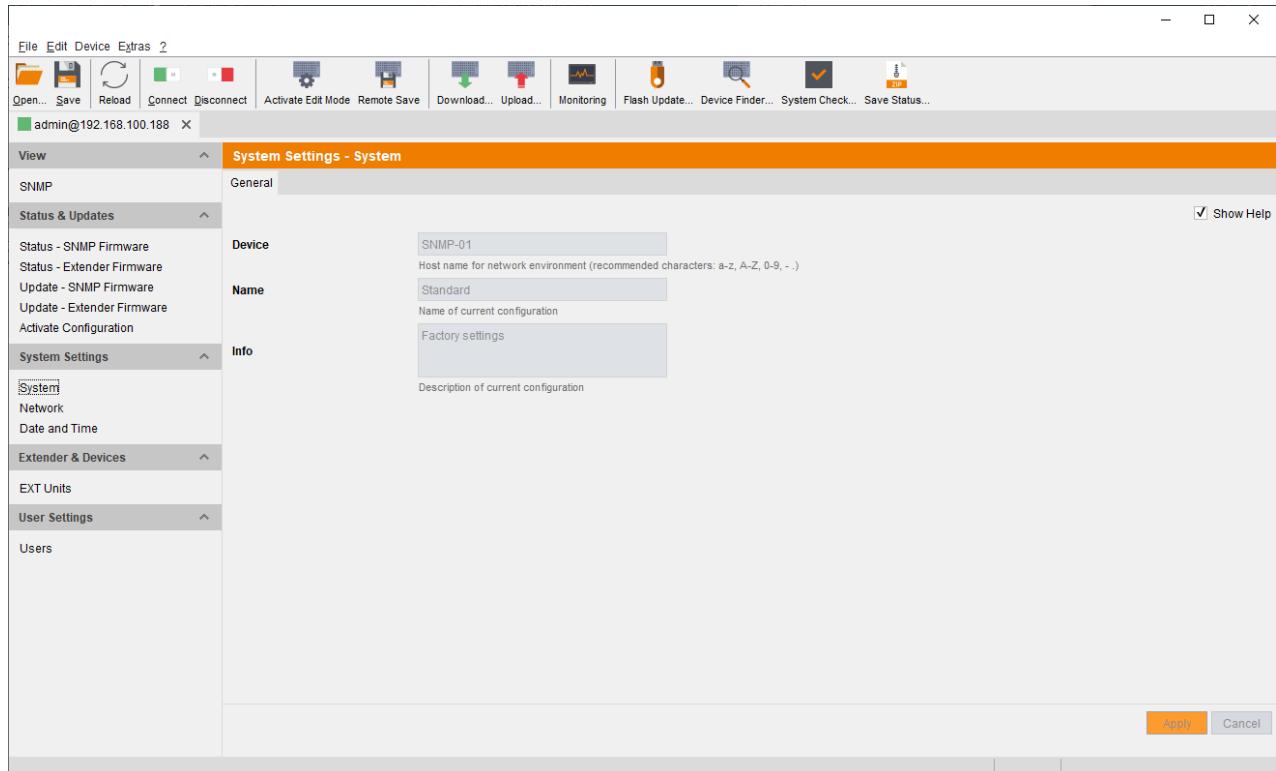


Fig. 26 Management software menu **System Settings - System**

The following parameters can be configured:

System Settings

Parameter	Entry	Description
Device	Text	Enter the device name of the SNMP module (default: SNMP-01) The device name is used as the host name in the network.
Name	Text	Enter the name of the configuration that is used to save the current settings (default: Standard)
Info	Text	Additional text field to describe the configuration (default: Factory settings)

To define parameters for the SNMP module, proceed as follows:

1. Select **Configuration > System** in the task area.
2. Click the **Activate Edit Mode** menu item in the toolbar.
3. Modify the desired settings.
4. Click the **Apply** button to confirm your entries.
5. Click the **Deactivate Edit Mode** menu item in the toolbar.

5.4.2 Setting the Network Configuration

The parameters for the network configuration are set in this menu.

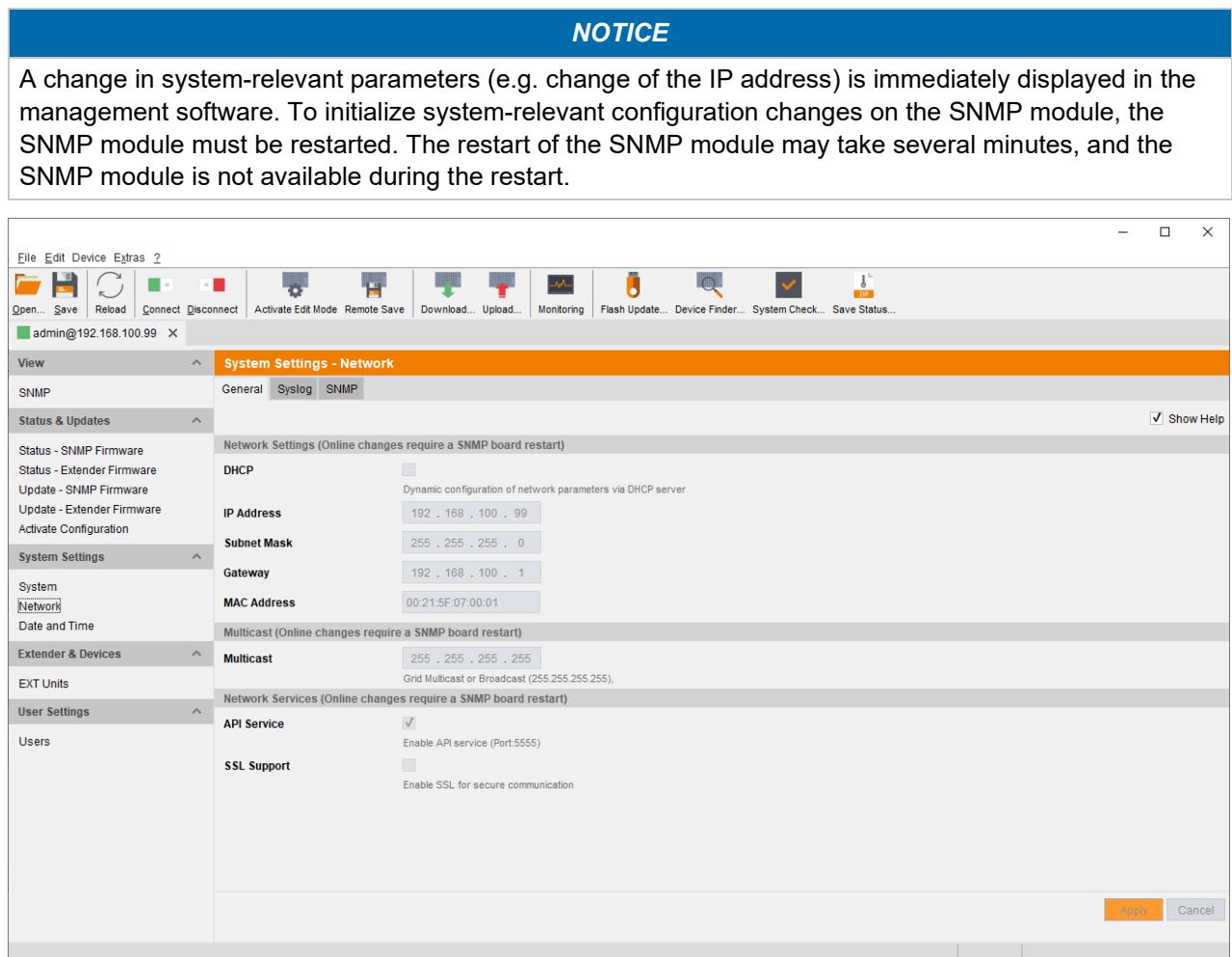


Fig. 27 Management software menu **System Settings - Network - General**

The following parameters can be configured:

Network Settings

Field	Entry	Description
DHCP	Activated	The network settings are automatically supplied by a DNS server. Note: If DHCP is activated and there is no physical network connection available, the boot times might increase.
	Deactivated	Function not active (default)
IP Address	Byte	Input of the IP address, if DHCP is not active (default: 192.168.100.99)
Subnet Mask	Byte	Input of the subnet mask in the form "255.255.255.0", if DHCP is not active (default: 255.255.255.0)
Gateway	Byte	Input of the subnet mask in the form "192.168.1.1", if DHCP is not active
MAC Address	Byte	Cannot be changed, is called up automatically

Multicast

Field	Entry	Description
Multicast	Byte	Input of the multicast address, if using within a multicast group (default is: 255.255.255.255 (broadcast))

Network Services

Field	Entry	Description
API Service	Activated	LAN interface at the SNMP module activated for access via management software (API service port 5555)
SSL Support	Activated	Activate SSL encryption for API, management software API, management software and SNMP module communication
	Deactivated	Function not active (default)

To set parameters for the network configuration, proceed as follows:

1. Select **System Settings > Network** in the task area.
2. Click the **Activate Edit Mode** menu item in the toolbar.
3. Modify the desired settings.
4. Click the **Apply** button to confirm your entries.
5. Click the **Deactivate Edit Mode** menu item in the toolbar.



If no access to the SNMP module is possible because the IP address has been forgotten, the SNMP module can be reset to the factory settings via jumper (see chapter 9.2, page 99).

5.4.3 Setting the Syslog Function

The parameters for the syslog function are set in this menu.

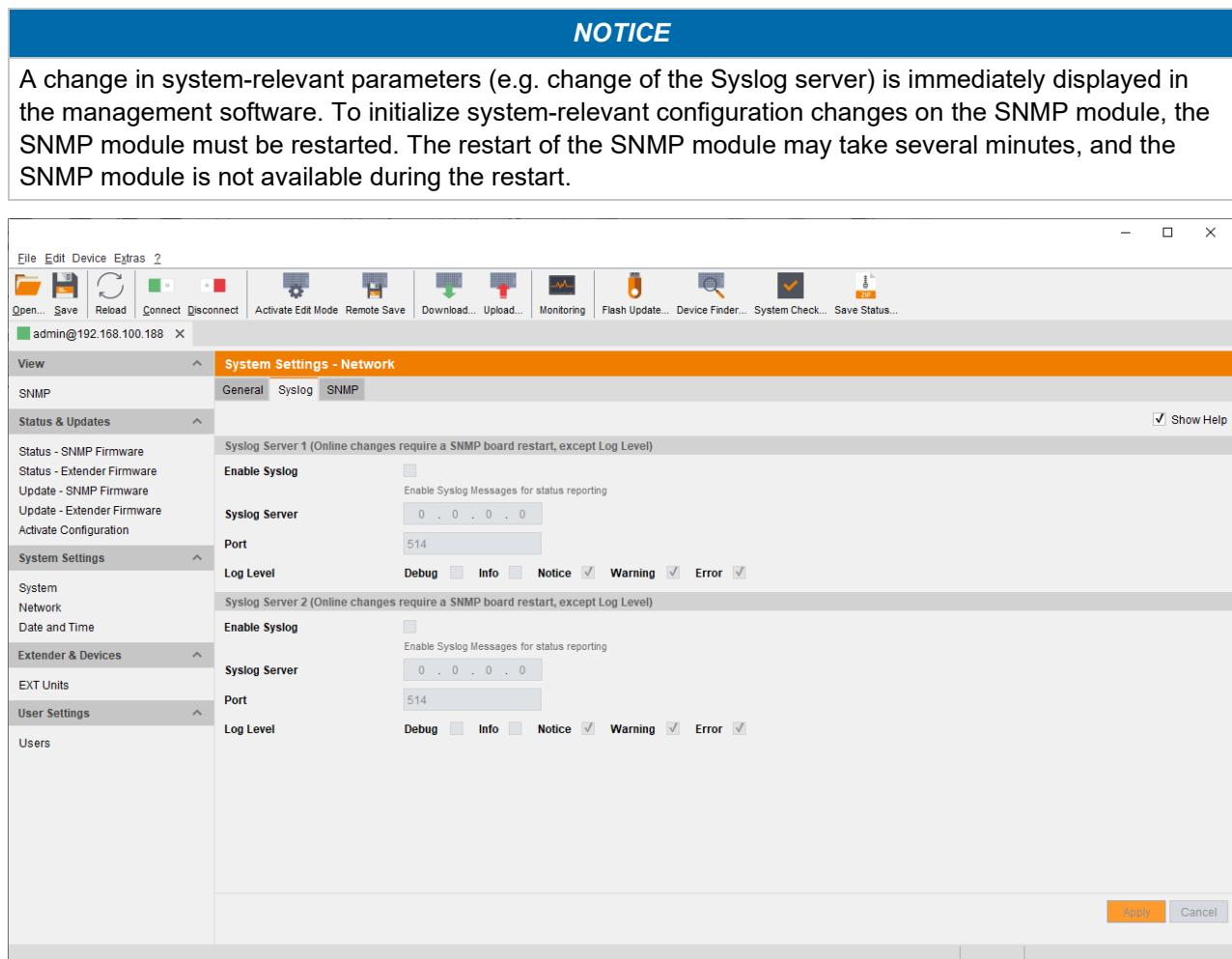


Fig. 28 Management software menu **System Settings - Network - Syslog**

The following parameters can be configured:

Field	Entry	Description
Enable Syslog	Activated	Syslog server to query status is active
	Deactivated	Function not active (default)
Syslog Server	Byte	Input of the IP address of the syslog servers in the form "192.168.1.1"
Port	Byte	Input of the syslog ports (default: 514)
Log Level	DEB	Activate debug messages in syslog (default: N) Note: The debug messages are exclusively for SNMP module diagnostics. Use this function only for concrete debug cases as it is not intended for normal operation.
	INF	Activate information messages in syslog (default: N)
	NOT	Activate notification messages in syslog (default: Y)
	WAR	Activate warning messages in syslog (default: Y)
	ERR	Activate error messages in syslog (default: Y)

To set parameters for the syslog function, proceed as follows:

1. Select **System Settings > Network** in the task area.
2. Click the **Activate Edit Mode** menu item in the toolbar.
3. Select the **Syslog** tab in the working area.
4. Modify the desired settings.
5. Click the **Apply** button to confirm your entries.
6. Click the **Deactivate Edit Mode** menu item in the toolbar.

Setting the syslog options

To set or activate the presetting, proceed as follows:

1. Select **Extras > Options** in the menu bar and open the **Syslog** tab.
2. Enter the appropriate data.
3. Click the **Ok** button to confirm your entries.
4. Close the management software and restart it.

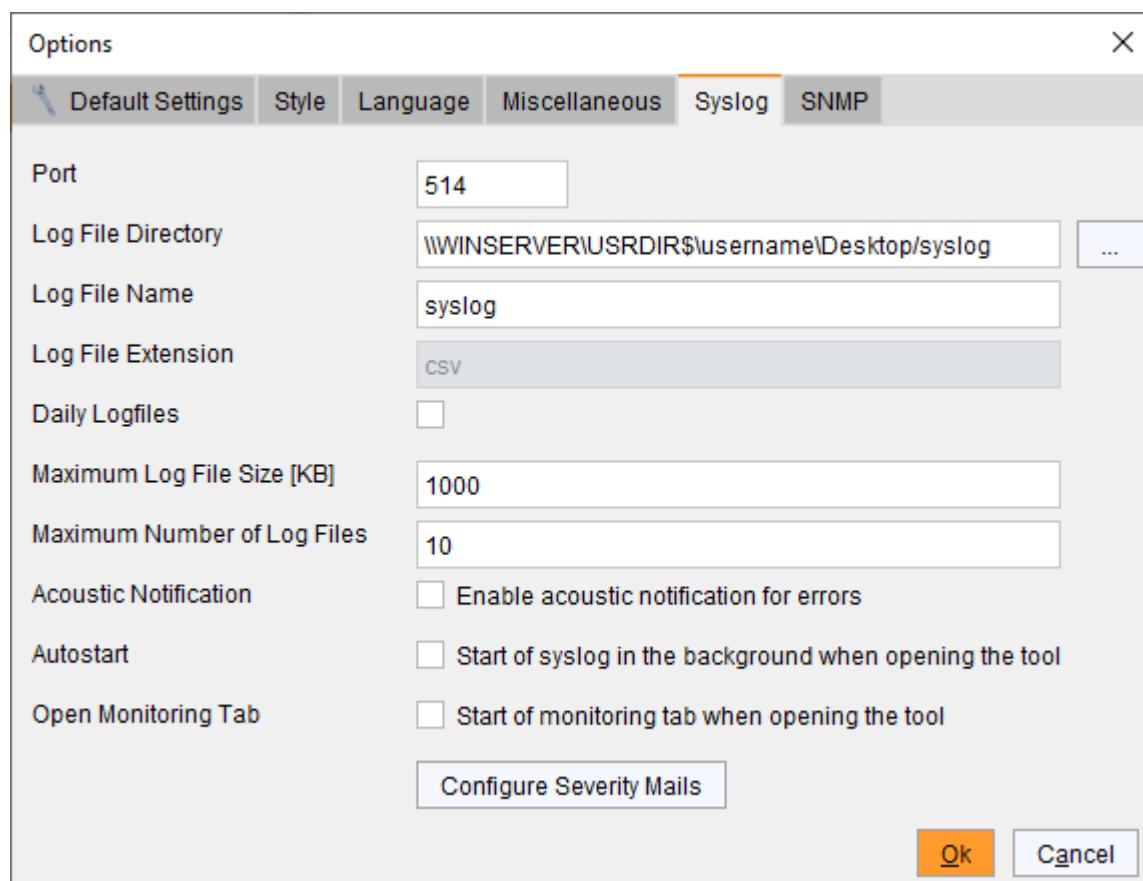


Fig. 29 Management software menu **Extras - Options - Syslog**

The following options are available:

Option	Description
Log File Directory	Default directory to store the log files
Log File Name	Default name of the log file
Log File Extension	Default extension for the log file
Daily Logfiles	Log files are stored every 24 hours (daily)
Maximum Log File Size [KB]	Allowed maximum size of log file

Option	Description
Maximum Number of Log Files	Allowed maximum number of log files
Acoustic Notification	Enables acoustic notification for errors
Autostart	When starting the management software, the syslog function will be started in the background
Open Monitoring Tab	When starting the management software, the monitoring tab will be opened



When reaching the maximum log file size, a new log file will be created. When reaching the maximum number of log files, the oldest logfile will be overwritten with the new information.

5.4.4 Setting the SNMP Function

The SNMP function allows all function-critical and safety-critical elements of the SNMP module to be monitored and queried. This function complies with the RFC 1157 conformal standard. Two SNMP servers can be used at the same time.

NOTICE

When using SNMP monitoring, for reasons of access security, the use of a dedicated network according to the IT-Grundsatz catalog is recommended. The read only community for the MIB file is **draco**.

NOTICE

For an activation of the SNMP agent function or the SNMP server function, a restart of the SNMP module is necessary.

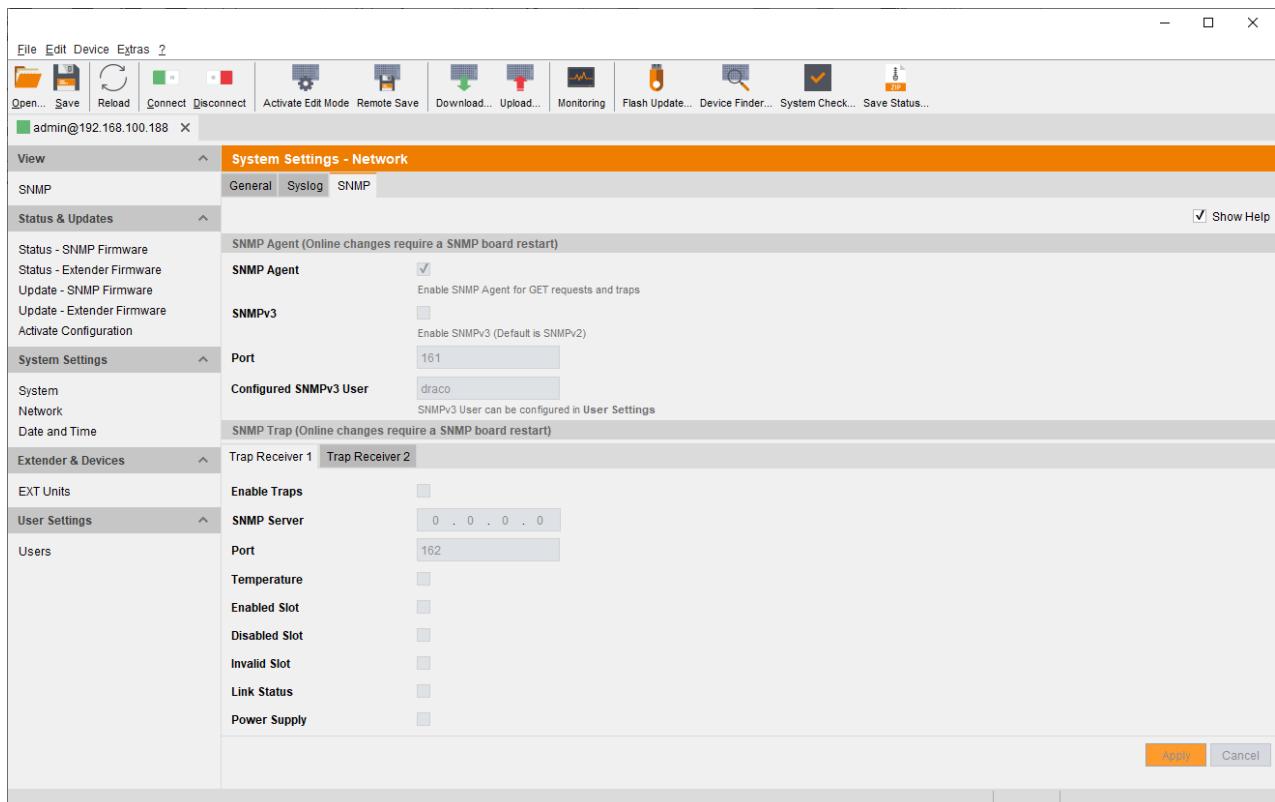


Fig. 30 Management software menu **System Settings - Network - SNMP**

The following parameters are pre-configured or can be configured:

SNMP Agent

Field	Entry	Description
SNMP Agent	Activated (not deactivateable)	Permission for an active query of the SNMP agent for traps is granted. This activation is a prerequisite for using the SNMP server.
SNMPv3	Activated	The encrypted SNMP monitoring (SNMPv3) is activated (default).
	Deactivated	The unencrypted SNMP monitoring (SNMPv2) is active (default).
Port	Numerical	The SNMP port is called up automatically (default: 161).
Configured SNMPv3 User	Text	Name of the SNMPv3 user (default: draco) Changing the username, see chapter 5.5, page 50

SNMP Trap



The SNMP agent must be activated to activate the SNMP traps.

Field	Entry	Description
Enable Traps	Activated	Activates the active sending of trap messages from the SNMP agent to the SNMP server
	Deactivated	No traps are sent to the den SNMP server (default).
SNMP Server	Byte	Input of the IP address of the SNMP server in the form "192.168.1.1"
Port	Numerical	Input of the SNMP port (default: 162)

If you activate the checkbox **Enable Traps**, the following traps are activated by default:

Field	Description
Temperature	Notification of the temperature of the power supply units
Enabled Slot	<ul style="list-style-type: none"> Notification about an extender newly inserted to the chassis Notification about a switched-on extender
Disabled Slot	<ul style="list-style-type: none"> Notification of an extender removed from the chassis Notification of a switched-off extender
Invalid Slot	The inserted extender cannot be recognized
Link Status	Notification of the connection status between two extenders or an extender and a matrix with numerical output: <ul style="list-style-type: none"> 0: link not available 1: link 1 is available 2: link 2 is available (with redundant extenders) -1: The extender used cannot output any link information
Power Supply	Notification of the status of the power supply units

Activating the SNMP Monitoring

To activate the SNMP monitoring, proceed as follows:

1. Select **System Settings > Network** in the task area.
2. Select the **SNMP** tab in the working area.
3. Click the **Activate Edit Mode** menu item in the toolbar.
4. Click the **SNMP Agent** checkbox within the **SNMP Agent** area.
5. Click the **Apply** button to confirm your changes.
6. Click the **Deactivate Edit Mode** menu item in the toolbar.

Activating SNMP traps

To activate active reporting of the SNMP traps, proceed as follows:

1. Select **System Settings > Network** in the task area.
2. Select the **SNMP** tab in the working area.
3. Click the **Activate Edit Mode** menu item in the toolbar.
4. Click the **Enable Traps** checkbox within the **SNMP Trap** area.
5. Enter the IP address of the SNMP server under **SNMP Server**.
6. Click the **Apply** button to confirm your changes.
7. Click the **Deactivate Edit Mode** menu item in the toolbar.

Setting up SNMP options

Presets for an SNMPv3 user can be set up for the computer on which the management software is operated and are set in this menu.

The following options are available:

Option	Description
Port	Input of the SNMP port (default: 162)
Log File Directory	Default directory to store the log files
Log File Name	Default name of the log file
Log File Extension	Default extension for the log file
Daily Logfiles	Log files are stored every 24 hours (daily)
Maximum Log File Size [KB]	Allowed maximum size of log file
Maximum Number of Logfiles	Allowed maximum number of log files
Acoustic Notification	Enables acoustic notification for errors
Autostart	When starting the management software, the SNMP function will be started in the background
Open Monitoring Tab	When starting the management software, the monitoring tab will be opened

To set or activate the presetting, proceed as follows:

1. Select **Extras > Options** in the menu bar and open the **SNMP** tab.
2. Modify the desired settings.
3. Click the **Ok** button to confirm your entries.
4. Close the management software and restart it.

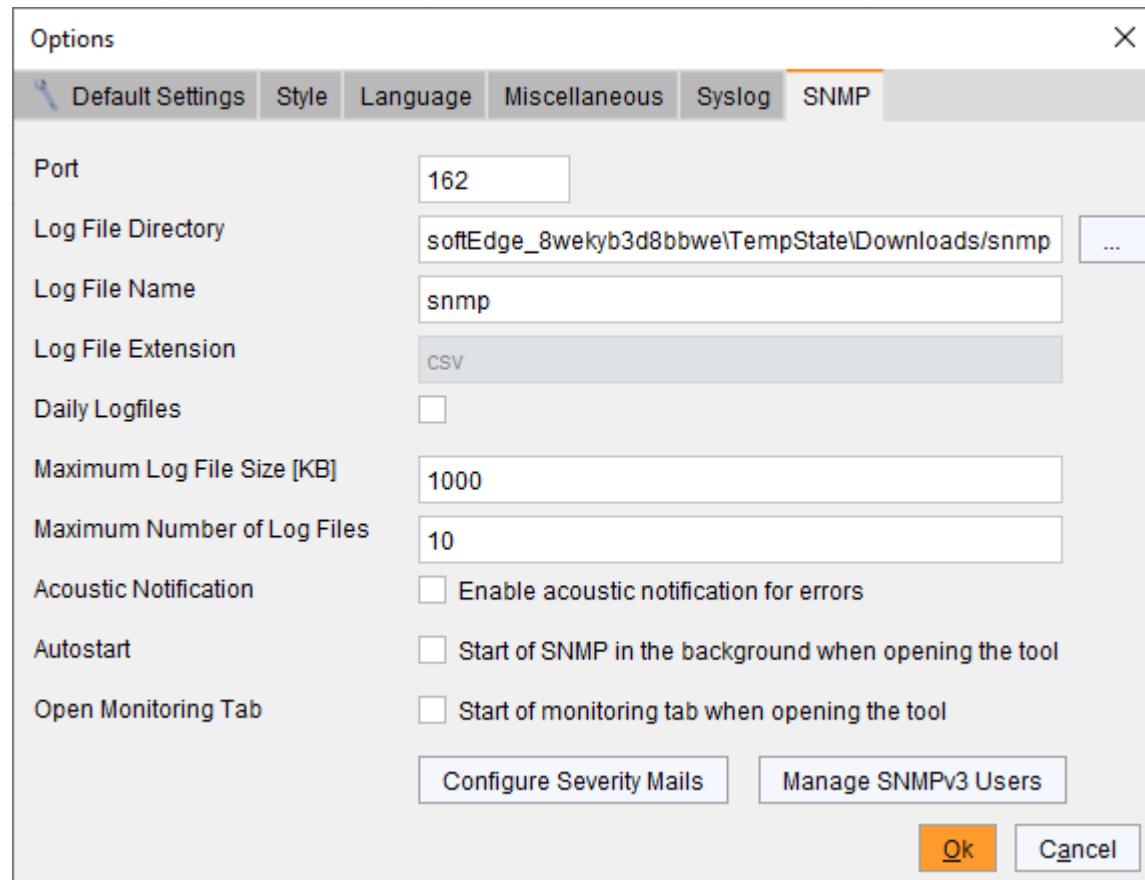


Fig. 31 Management software menu **Extras - Options - SNMP**

Creating an SNMPv3 User for the SNMP Server

In the following menu, the login data for an SNMPv3 user can be set up for the computer on which the management software is operated (SNMP server). The SNMP server authenticates itself with the agent using this login data.

NOTICE

Failed SNMP logging

If the login data differs between the SNMP module (set up in the **User** menu) and the SNMP server, no SNMP traps are transmitted.

- Ensure the login data (username and password) in both settings are identical (see chapter 5.5, page 50).

To configure the login data for an SNMPv3 user at the SNMP server, proceed as follows:

1. Select **Extras > Options** in the menu bar and open the **SNMP** tab.
1. Click the **Manage SNMPv3 Users** button.
A list appears with already created SNMPv3 users.
2. Click the **Add User** button.
A dialog window appears.
3. Enter the required data and click the **Ok** button to confirm your entries.
4. Click the **Close** button to close the users list.
5. Click the **Ok** button in the **SNMP** tab to confirm your settings.
6. Close the management software and restart it.

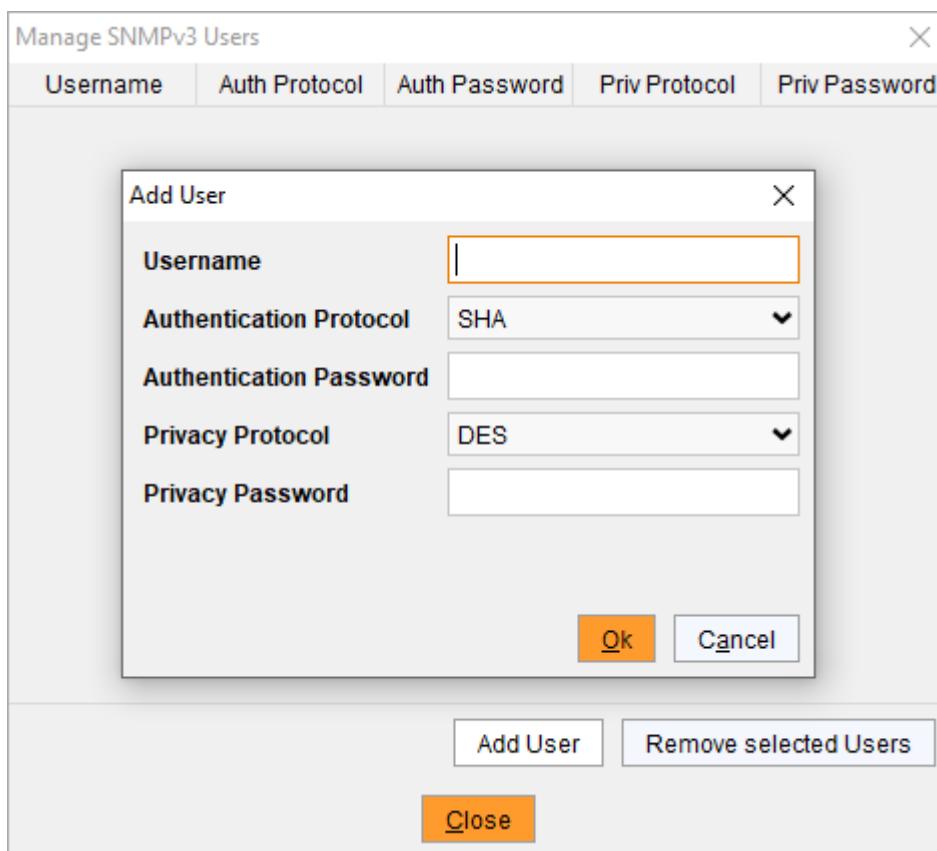


Fig. 32 Management software menu **Extras - Options - SNMP - Manage SNMPv3 Users - Add User**

The following parameters are required to create a new SNMPv3 user on the SNMP server:

Option	Description
Username	SNMPv3 username, not changeable (default: snmp)
Authentication Protocol	Only SHA protocol, no selection available
Authentication Password	Authentication password for the SNMPv3 user (case sensitive, input of minimum 8 characters up to 16 characters)
Privacy Protocol	Only DES protocol, no selection available
Privacy Password	Must be identical to the password of the authentication password

5.4.5 Setting the Date and Time

The parameters for the system configuration are set in this menu, based on Simple Network Time Protocol (SNTP):

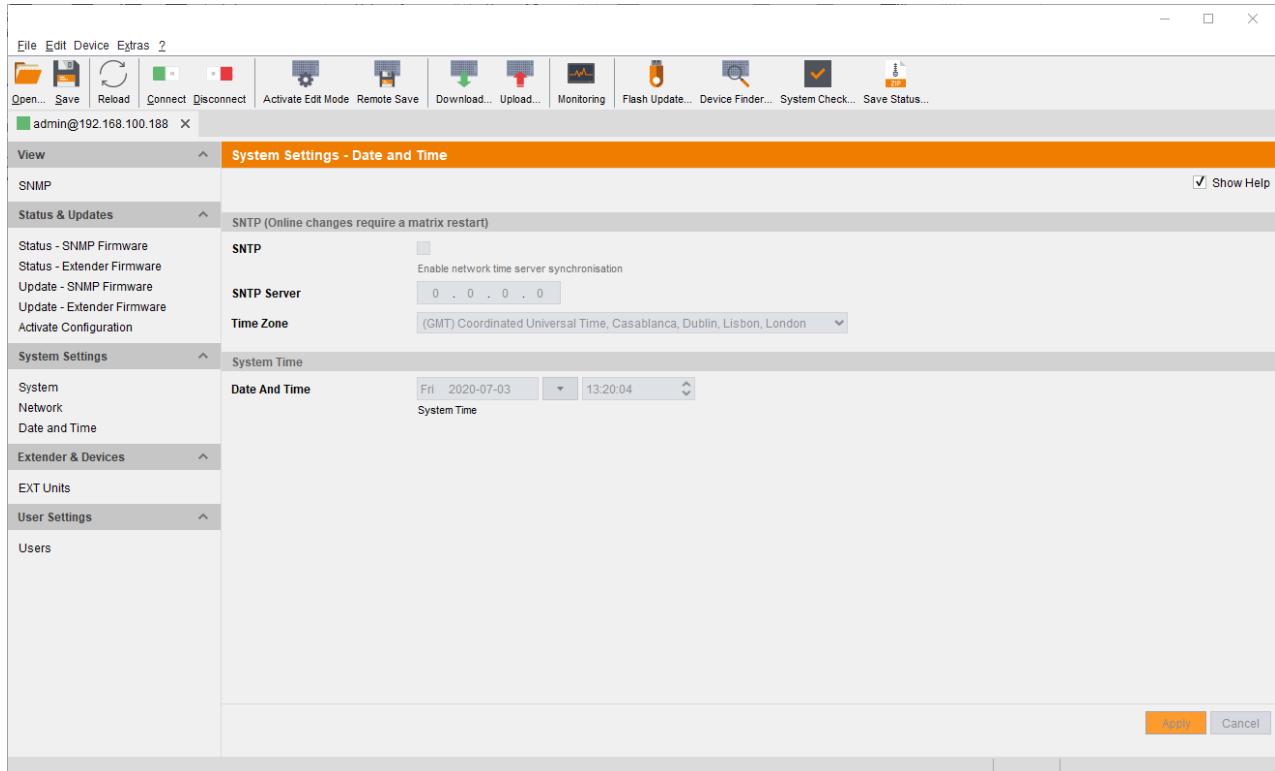


Fig. 33 Management software menu **System Settings - Date and Time**

The following parameters are pre-configured or can be configured:

SNTP

Field	Entry	Description
SNTP	Activated	Enable network time server synchronization
	Deactivated	Function not active (default)
SNTP Server	Byte	Input of the SNTP server IP address (default: 000.000.000.000)
Time Zone	Region	Set your specific time zone (default: GMT +00)

System Time

Field	Description
Date And Time	Date and time of the system (set by default)

Configuring the time server

To configure a time server, proceed as follows:

1. Select **System Settings > Date and Time** in the task area.
2. Click the **Activate Edit Mode** menu item in the toolbar.
3. Activate the **SNTP** checkbox to enable the SNTP option.
4. Enter the IP address of your SNTP server into the **SNTP Server** field.
5. Select your time zone in the **Time Zone** field.
6. Click the **Apply** button to confirm your settings.
7. Click the **Deactivate Edit Mode** menu item in the toolbar.

NOTICE

A change in system-relevant parameters (e.g. change of the SNTP server) is immediately displayed in the management software. To initialize system-relevant configuration changes on the SNMP module, the SNMP module must be restarted. The restart of the SNMP module may take several minutes, and the SNMP module is not available during the restart.

5.5 User Settings

User settings and permissions are set in this menu. By default, two users are set. It is not intended to create additional users.

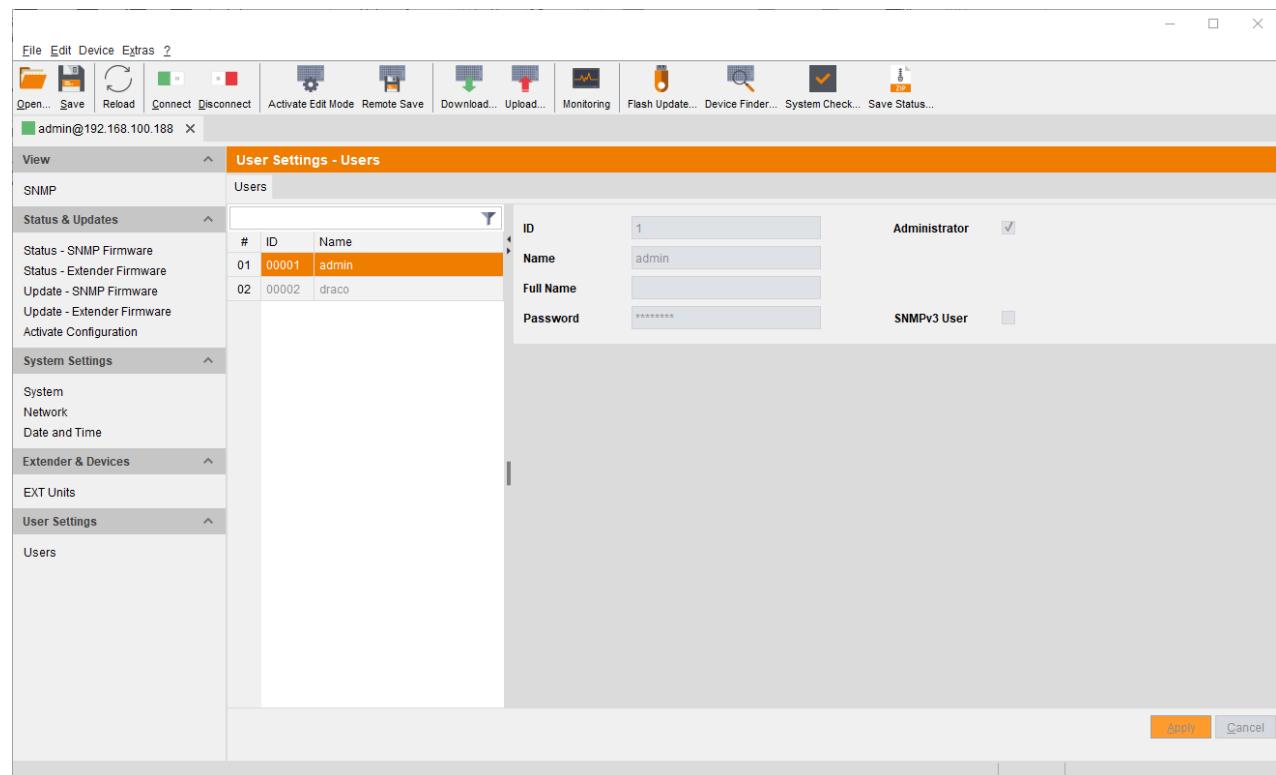


Fig. 34 Management software menu **User Settings - Users**

Administrator

The administrator (username: admin) has the permission to configure the system. The following parameters can be configured for the administrator:

Field	Entry	Description
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters)
Password / New Password	Text	User password (case sensitive, input of minimum 8 characters up to 16 characters)
Repeat New Password	Text	Repetition of the user password (case sensitive, input of minimum 8 characters up to 16 characters)



The username of the administrator is not changeable.



If no access to the SNMP module is possible because the administrator password has been forgotten, the SNMP module can be reset to the factory settings via jumper (see chapter 9.2, page 99).

SNMPv3 User

The SNMPv3 user has the permission to enable encrypted SNMPv3 monitoring. The following parameters can be configured for the SNMPv3 user:

Field	Entry	Description
Name	Text	Username, default: draco (case sensitive, input of minimum 8 characters, up to 32 characters)
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters)
Password / New Password	Text	User password (case sensitive, input of minimum 8 characters up to 16 characters)
Repeat New Password	Text	Repetition of the user password (case sensitive, input of minimum 8 characters up to 16 characters)

Editing user settings

To edit settings of an existent user, proceed as follows:

1. Select **Configuration > User Data** in the task area.
2. Click the **Activate Edit Mode** menu item in the toolbar.
3. Select the SNMPv3 user in the list **Users**.
4. Modify the desired settings.
5. Click the **Apply** button to confirm your entries.
6. Click the **Deactivate Edit Mode** menu item in the toolbar.

NOTICE

Failed SNMP logging

If the login data of the SNMPv3 user differs between the SNMP module and the SNMP server, no SNMP loggings are transmitted.

- Ensure the login data (username and password) in both settings are identical (see Fig. 32).

5.6 Extender Settings

The SNMP module recognizes the physical link of extenders and add-on modules and queries their data, which is displayed and managed in this menu as extender units. An add-on module is not created as an independent extender unit. Add-on modules are combined with the associated KVM extender in one extender unit.

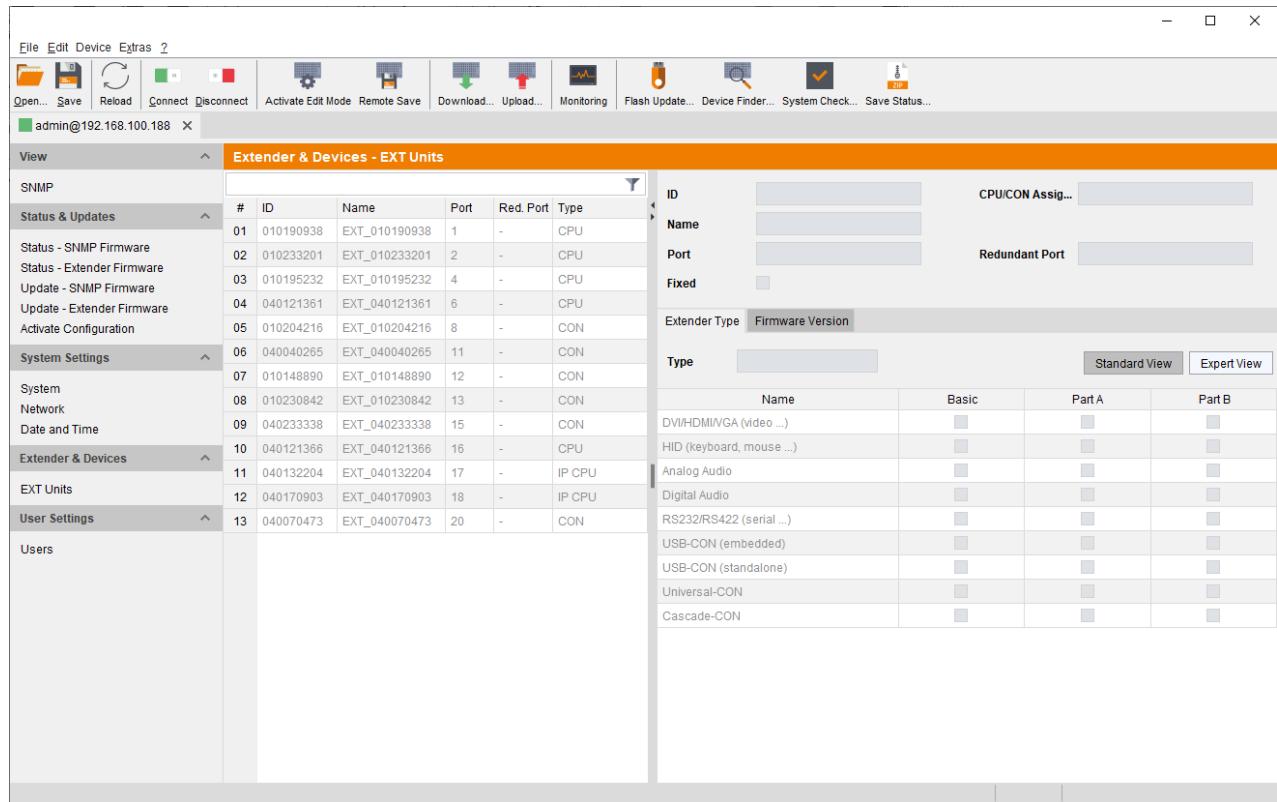


Fig. 35 Management software menu **Extender & Devices - EXT Units**

Following parameters are recognized automatically:

Field	Entry	Description
ID	Text	Numerical value of the extender ID (KVM extenders: ID is provided by extender unit (Serial No.) and cannot be changed)
Name	Text	Name of the extender unit
Port	1 to 21	Slot number of the extender unit (depending on the chassis)
Fixed	-	Without function, only when using a matrix
CPU/CON Assigned	-	Without function, only when using a matrix
Redundant Port	-	Without function, only when using a matrix

5.6.1 Extender Type

To display extender types, proceed as follows:

1. Select **Extender & Devices > EXT Units** in the task area.
2. Click the extender unit to be displayed.

The extender type is displayed on the right side of the working area.

- The **Basic** column stands for the extender of the selected extender unit.
- The **Part A** or **Part B** column stand for the add-on module of the selected extender unit.

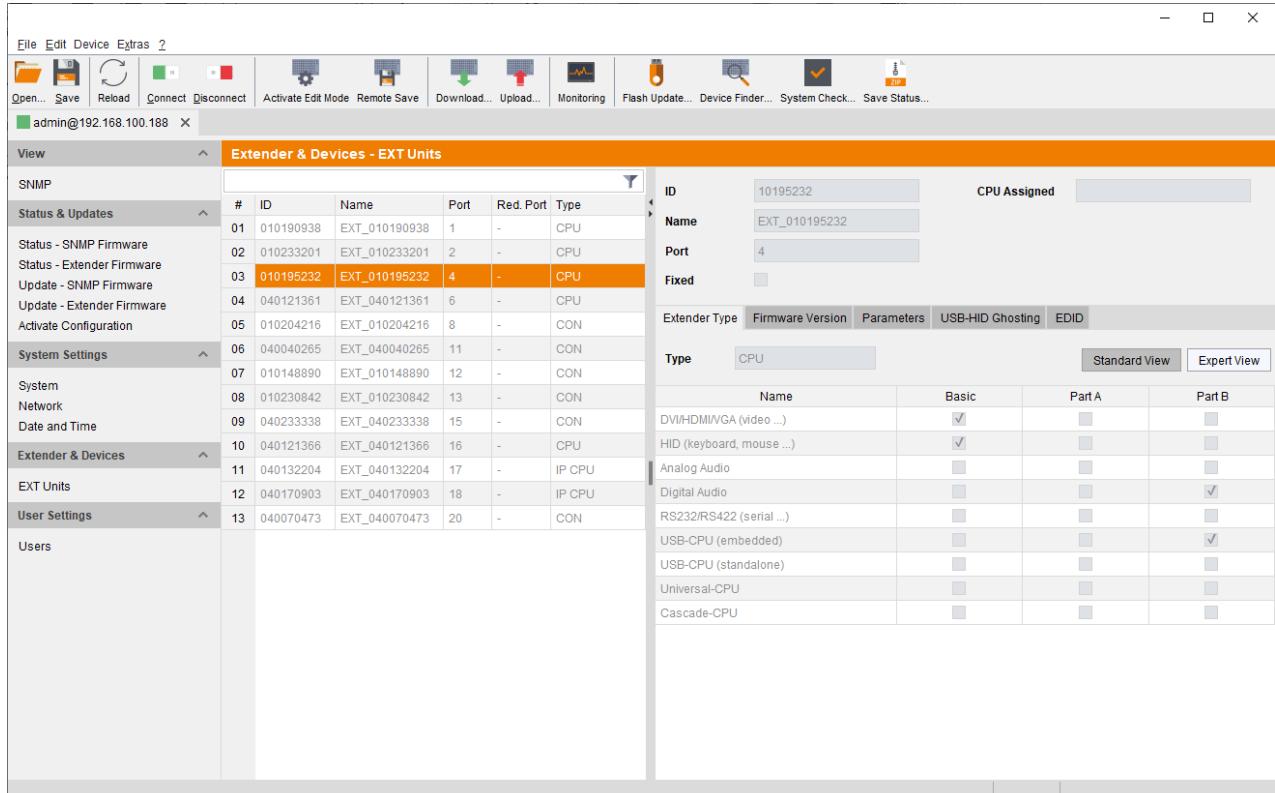


Fig. 36 Management software menu **Extender & Devices - EXT Units - Expert View - Extender Type**

5.6.2 Firmware Version

To display extender unit information or to modify settings, proceed as follows:

1. Select **Extender & Devices > EXT Units** in the task area.
2. Click the **Activate Edit Mode** menu item in the toolbar.
3. Click the extender unit to be displayed.
4. Click the **Firmware Version** tab on the right side of the working area.

The **Firmware Version** overview is displayed on the right side of the working area.

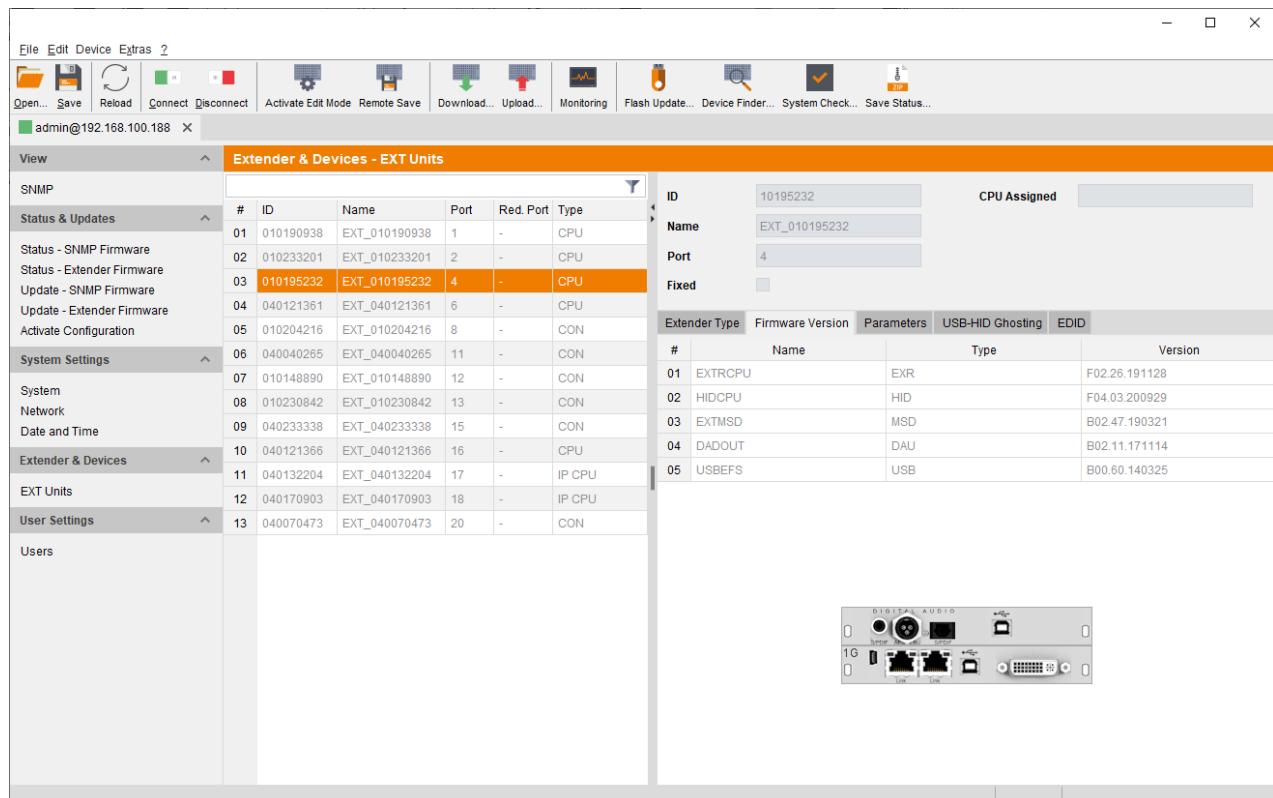


Fig. 37 Management software menu **Extender & Devices - EXT Units - Firmware Version**



Add-on modules are shown together with the associated KVM extender in one extender unit.

5.6.3 Parameters

To display parameters of the extender units, proceed as follows:

1. Select **Extender & Devices > EXT Units** in the task area.
2. Click the **Activate Edit Mode** menu item in the toolbar.
3. Click the extender unit to be displayed.
4. Click the **Parameter** tab on the right side of the working area.
5. Click the **Read** button.

A query to read the parameters appears.

6. Click the **Yes** button to confirm the reading.

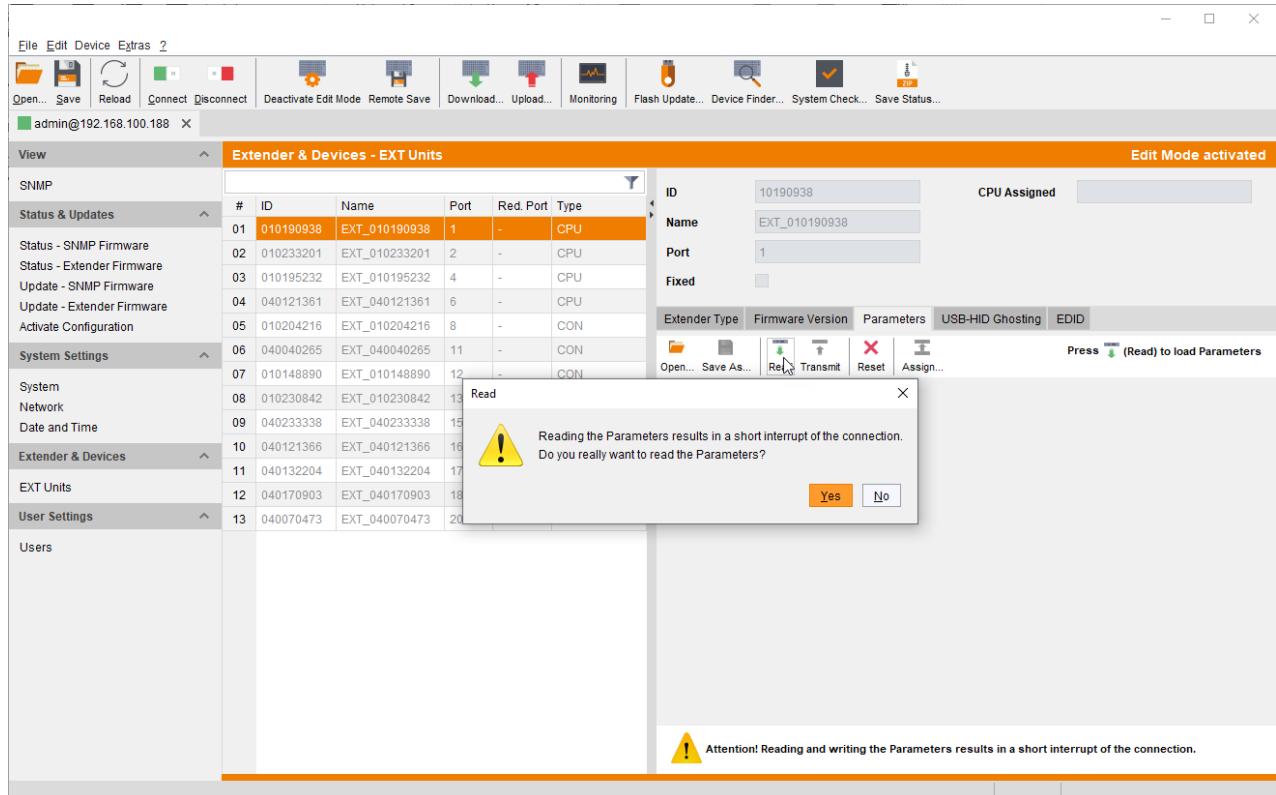


Fig. 38 Management software menu **Extender & Devices - EXT Units - read parameters**

The parameters of the extender unit are displayed on the right side of the working area.

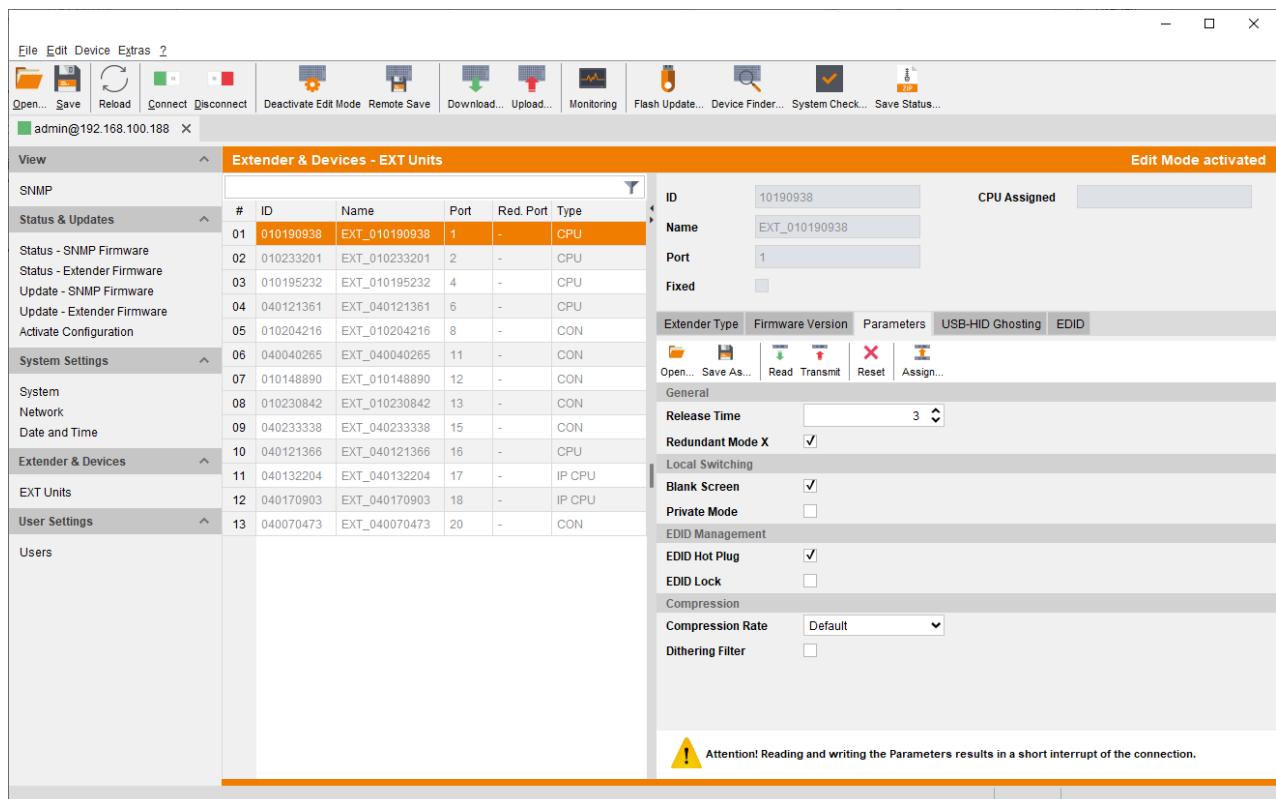


Fig. 39 Management software menu **Extender & Devices - EXT Units** - displayed parameters

The following functions are available:

Button	Function
Open...	Open locally saved parameters
Save As...	Save parameters locally (file Config.txt)
Read	Read parameters of the extender unit
Transmit	Transmit parameters to the extender unit and activate
Reset	Reset parameters of the extender unit
Assign	Assign parameters to several extender units at the same time

Modifying Parameters

To modify parameters of an extender unit, proceed as follows:

1. Read the extender unit parameters (see chapter 5.6.3, page 55).
2. Modify the parameters.
3. Click the **Transmit** button.

A query for transmission appears.

4. Click the **Yes** button to transmit the modified parameters to the extender unit.
The progress of the parameter transmission is displayed.
5. Click the **Close** button when the parameter transmission is completed (green).

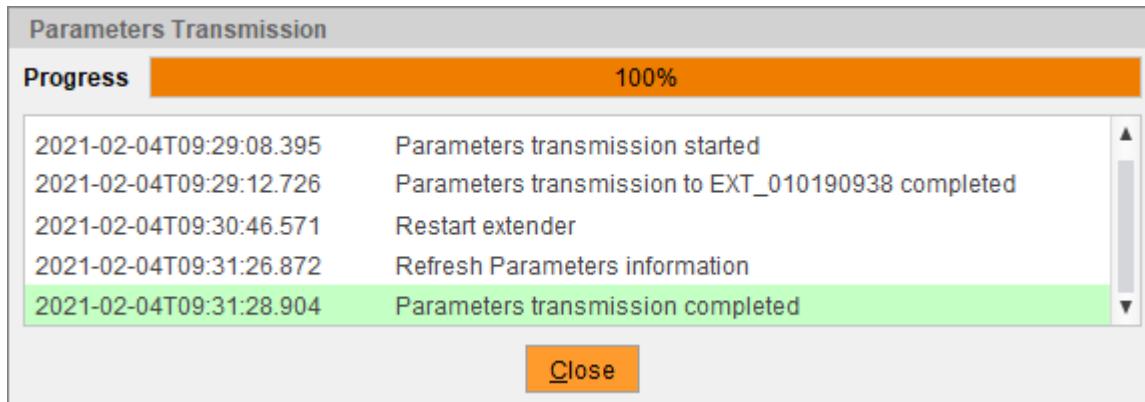


Fig. 40 Management software menu **Extender & Devices - EXT Units - transmission finished**

The parameter transmission is finished.

6. Click the **Deactivate Edit Mode** menu item in the toolbar.

Assigning Parameter

To assign parameters of an extender unit to another extender unit, proceed as follows

1. Select **Extender & Devices > EXT Units** in the task area.
2. Click the **Activate Edit Mode** menu item in the toolbar.
3. Click the extender unit to be displayed.
4. Click the **Parameter** tab on the right side of the working area.
5. Click the **Read** button.
A query to read the parameters appears.
6. Click the **Yes** button to conform the reading.
7. Click the **Assign** button.
A query to assign the parameters appears.
8. Select the extender units the currently displayed parameters should be assigned. By pressing the **<Ctrl1>** key at the same time, more than one extender unit can be marked.
9. Click the **>** button to transmit the selected extender units to the selection. To transmit all selected extender units to the selection, click the **>>** button.
10. Click the **Next** button.

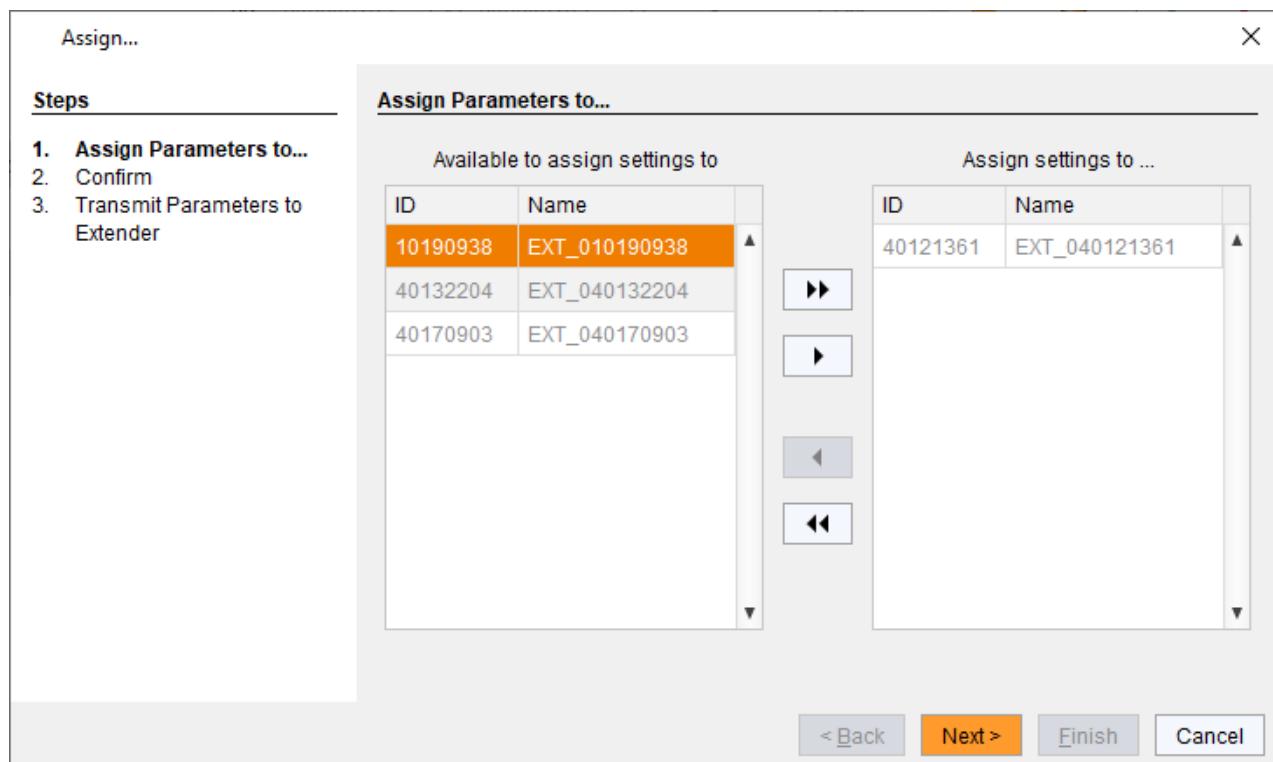


Fig. 41 Management software menu **Extender & Devices - EXT Units - select extender units**

A query to start the assignment appears.

11. Click the **Confirm to continue** checkbox to confirm the start of the assignment.
12. Click the **Next** button to start of the assignment.

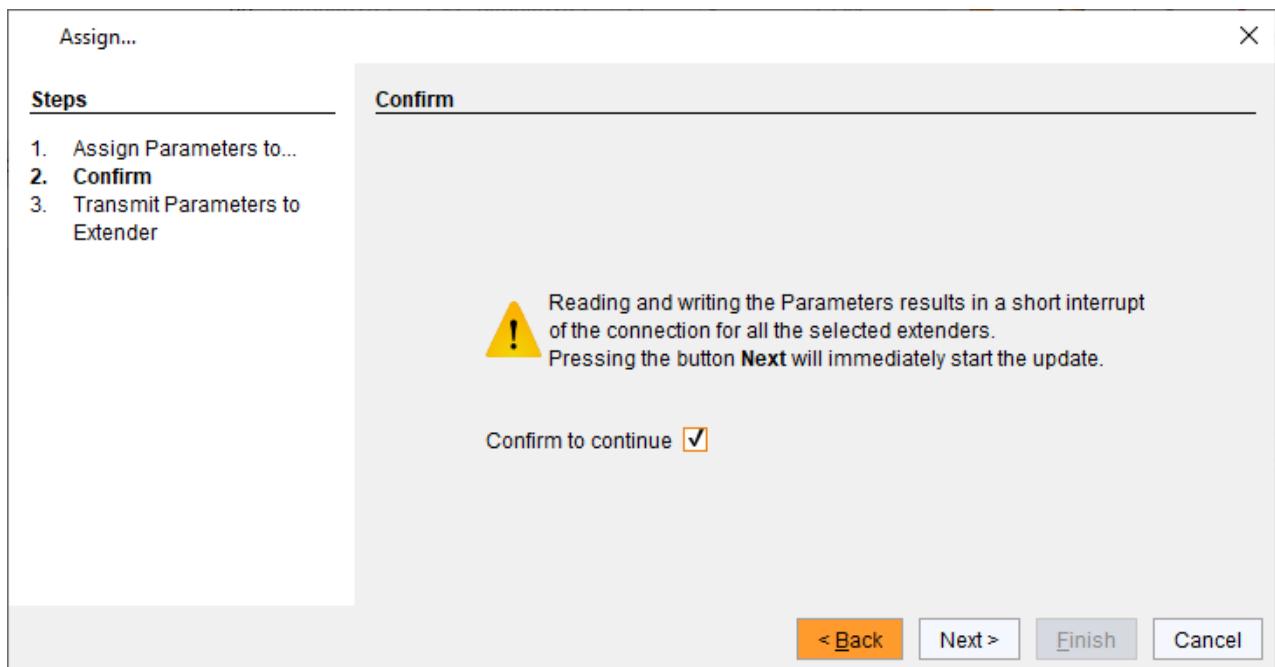


Fig. 42 Management software menu **Extender & Devices - EXT Units - start parameter assignment**

- The progress of the parameter assignment is displayed.
13. Click the **Finish** button when the parameter assignment is completed (green).

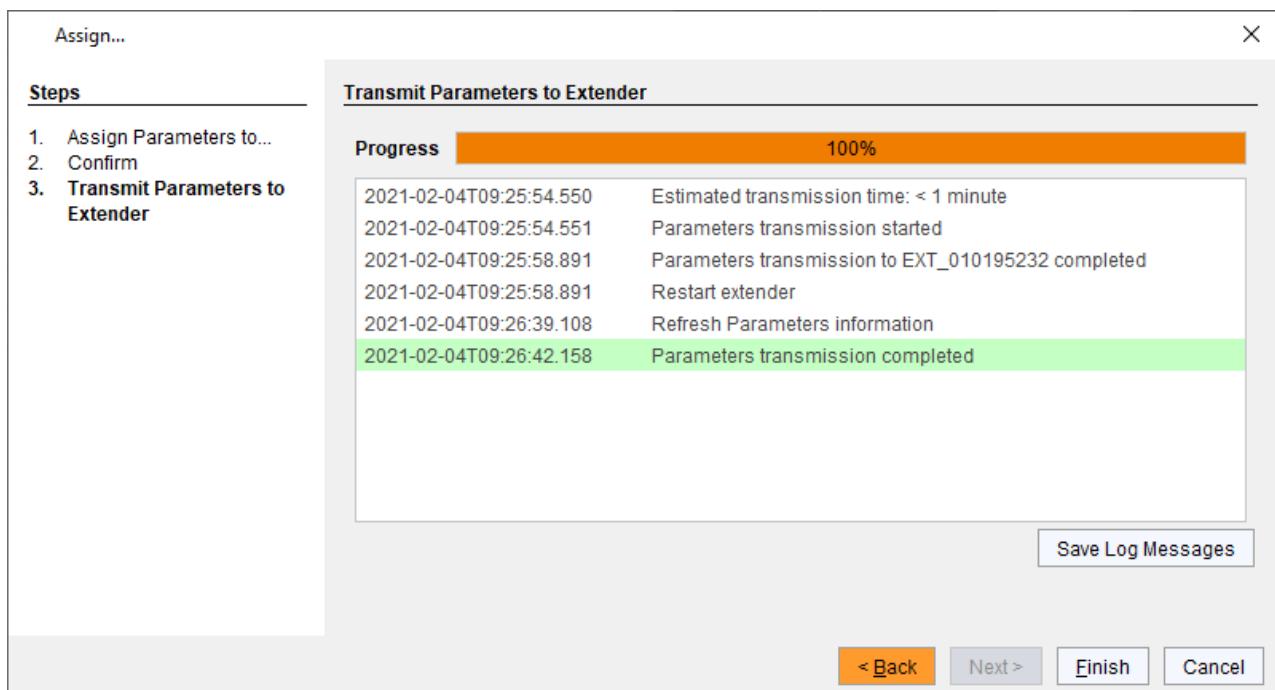


Fig. 43 Management software menu **Extender & Devices - EXT Units - assignment finished**

- The parameter assignment is finished.
14. Click the **Deactivate Edit Mode** menu item in the toolbar.

5.6.4 USB-HID Ghosting

To display the USB-HID ghosting of extender units, proceed as follows:

1. Select **Extender & Devices > EXT Units** in the task area.
 2. Click the **Activate Edit Mode** menu item in the toolbar.
 3. Click the extender unit to be displayed.
 4. Click the **USB-HID Ghosting** tab on the right side of the working area.
 5. Click the **Read** button.
- A query to read the USB-HID ghosting appears.
6. Click the **Yes** button to confirm the reading.
- The USB-HID ghosting settings are displayed.

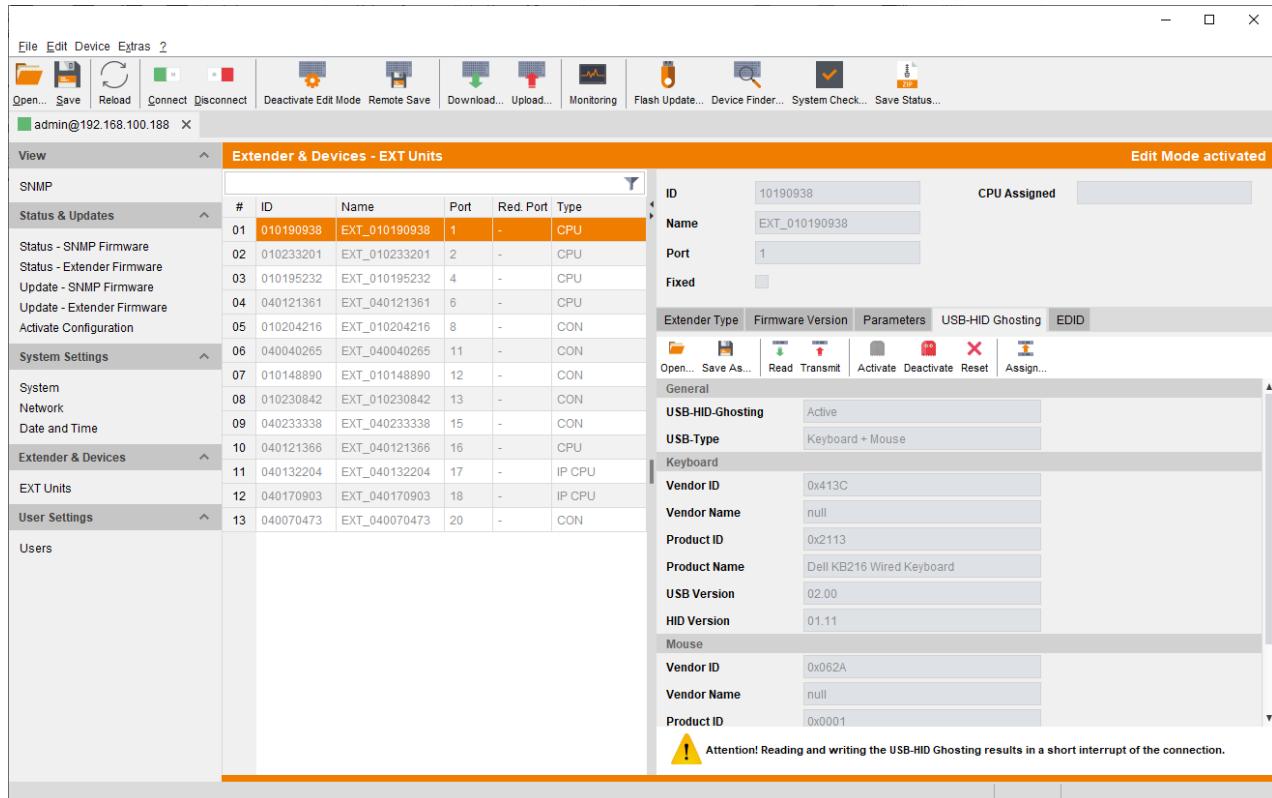


Fig. 44 Management software menu **Extender & Devices - EXT Units - USB-HID Ghosting**

The following functions are available:

Button	Function
Open...	Open locally saved parameters
Save As...	Save the USB-HID ghosting locally (file <code>EXT_ID-Nr.dhg</code>)
Read	Read the USB-HID ghosting of the extender unit
Transmit	Transmit the USB-HID ghosting to the extender unit and activate
Activate	Activate USB-HID ghosting
Deactivate	Deactivate USB-HID ghosting
Reset	Reset the USB-HID ghosting of the extender unit
Assign	Assign the USB-HID ghosting to several extender units at the same time

5.6.5 EDID

To display the active monitor EDID in the extender unit, proceed as follows:

1. Select **Extender & Devices > EXT Units** in the task area.
2. Click the **Activate Edit Mode** menu item in the toolbar.
3. Click the extender unit to be displayed.
4. Click the **EDID** tab on the right side of the working area.
5. Click the **Read** button.

A query to read the EDID appears.

6. Click the **Yes** button to confirm the reading.

The EDID is displayed on the right side of the working area.

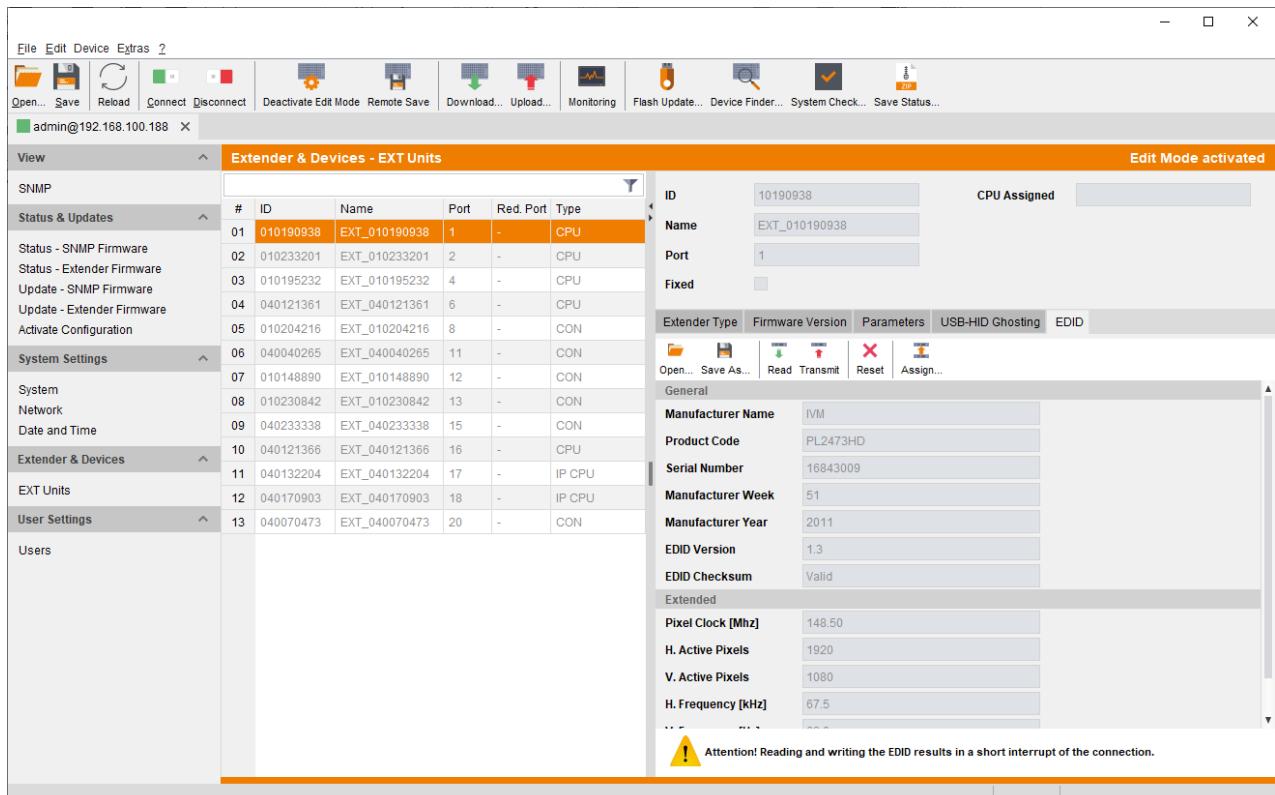


Fig. 45 Management software menu **Extender & Devices - EXT Units - EDID**

Button	Function
Open...	Open locally saved EDID
Save As...	Save EDID locally (file Config.txt)
Read	Read EDID of the extender unit
Transmit	Transmit EDID to the extender unit and activate
Reset	Reset EDID of the extender unit
Assign	Assign EDID to several extender units at the same time

5.7 Saving Configuration

NOTICE

By default, the last configuration that has been saved in the permanent SNMP module memory will be restored after a restart of the SNMP module.

When starting the SNMP module for the first time, the factory configuration will be copied into the current configuration. You have 3 possibilities to save configuration changes:

- saving the current configuration permanently into the SNMP module memory (**Remote Save**)
- saving the configuration into a local memory (**Save** or **Save as**)
- uploading the configuration into a storage slot to the SNMP module (**Upload**)

5.7.1 Saving the Current Configuration to the SNMP Module



By default, the last configuration that has been saved in this way will be restored after a restart of the SNMP module.

To save the current configuration permanently into the SNMP module memory, proceed as follows:

1. Click the **Remote Save** menu item in the toolbar.
A query to save the configuration appears.
2. Click the **Yes** button to confirm the saving.

The current configuration is saved into the permanent memory of the SNMP module.

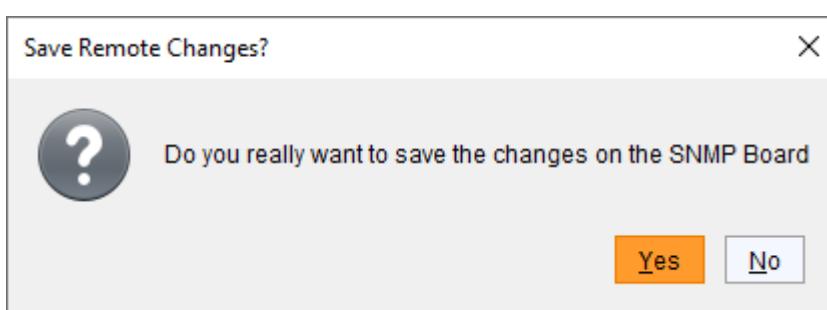


Fig. 46 Management software dialog **Save Remote Changes**

5.7.2 Saving the Configuration Locally

Configurations can be saved as a file that can be stored independently from the SNMP module.

To save a configuration file locally, proceed as follows:

1. Select **File > Save** or **File > Save As** in the menu bar.
2. Enter a name for the configuration.
3. Select the directory of the configuration on your storage medium where the configuration should be saved.



Configurations are always saved with the file extension .dtc.

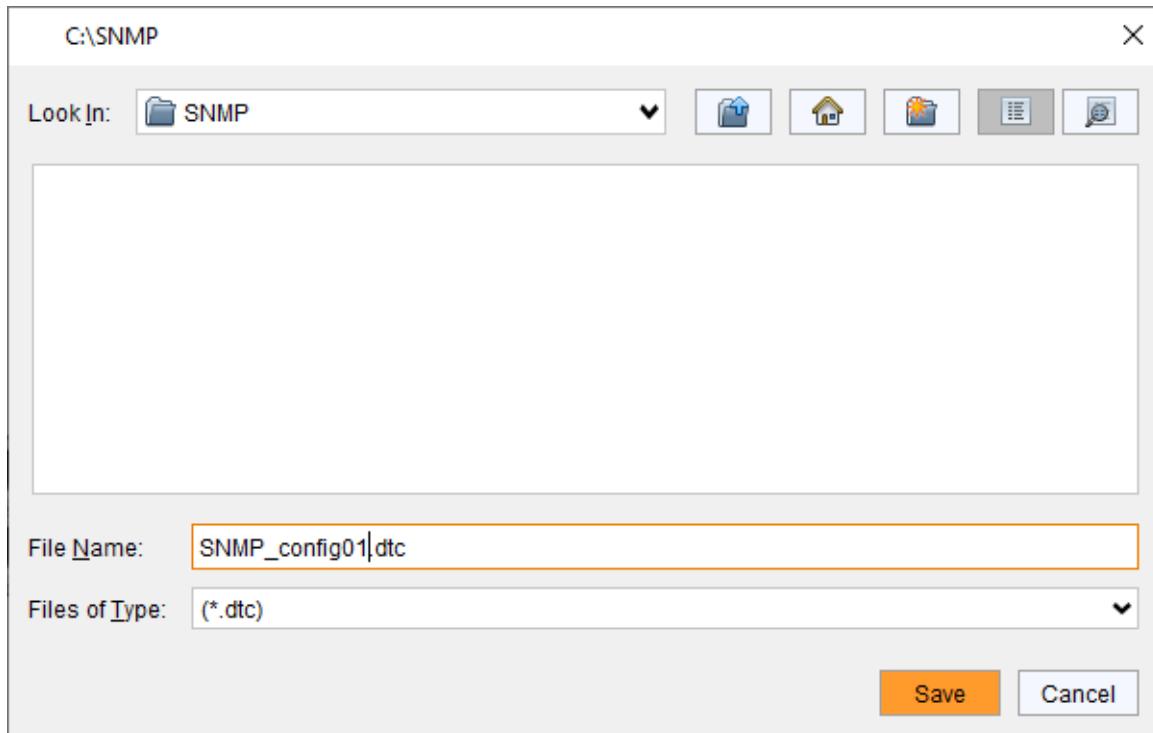


Fig. 47 Management software menu **File - Save As...**

Locally saved configurations files can be opened in the management software (see chapter 5.8, page 64), be uploaded to the SNMP module (see chapter 5.9, page 65) and be used as active configuration (see chapter 5.10, page 67) in the system.

5.8 Opening a Locally Saved Configuration

To open a locally saved configuration, proceed as follows:

1. Click the **Open...** menu item in the toolbar.
2. Navigate to the location of the configuration file to be opened.
3. Click the configuration file to be opened.
4. Click the **Open** button to open the configuration file.

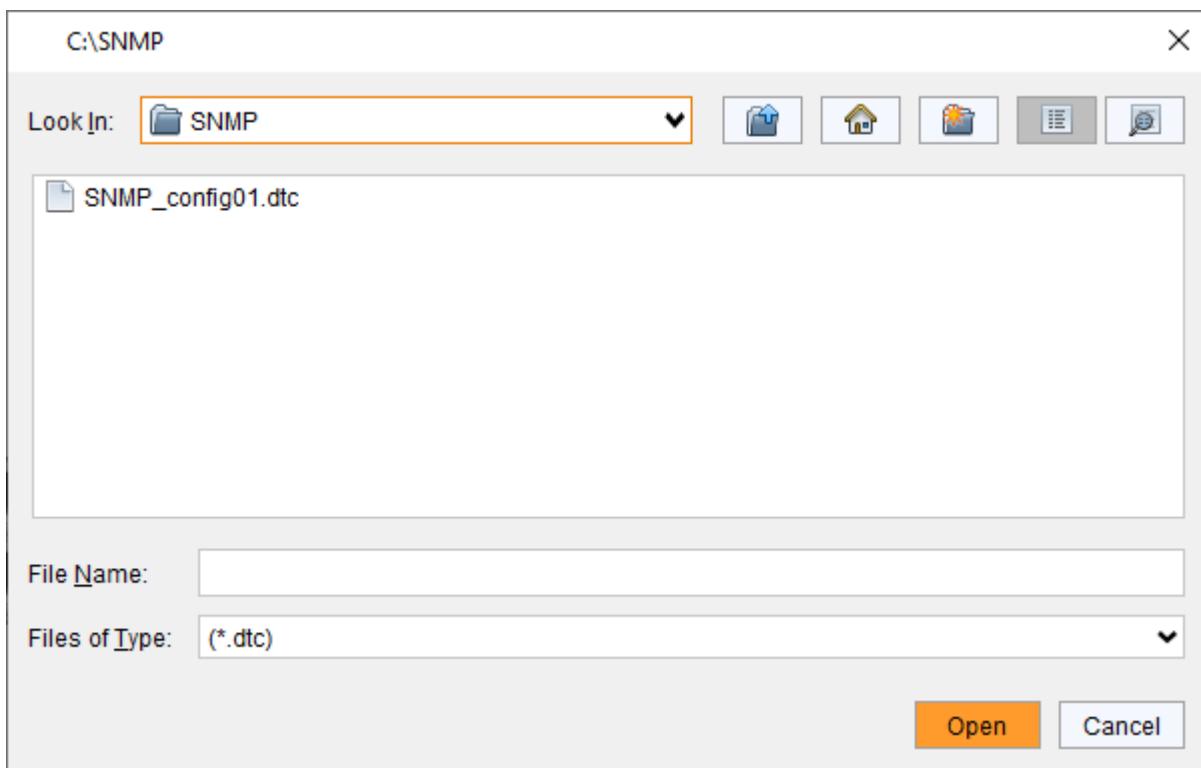


Fig. 48 Management software menu *Open*



The configuration can also be opened via drag & drop. To do this, click on the configuration file, hold down the primary mouse button and drag the configuration file into the management software.

5.9 Uploading a Configuration to the SNMP Module

Using the function **Upload**, the created configuration can be saved in a storage location in the SNMP module (**default**). However, it does not replace the buffering of an active configuration (see chapter 5.7.1, page 62).

To upload an opened configuration to the SNMP module, proceed as follows:

1. Click the **Upload** menu item in the toolbar.
An access window appears.
2. Enter the IP address of the SNMP module.
3. Enter the username and password of the administrator.
4. Click the **Next** button to display the selection of storage slots.

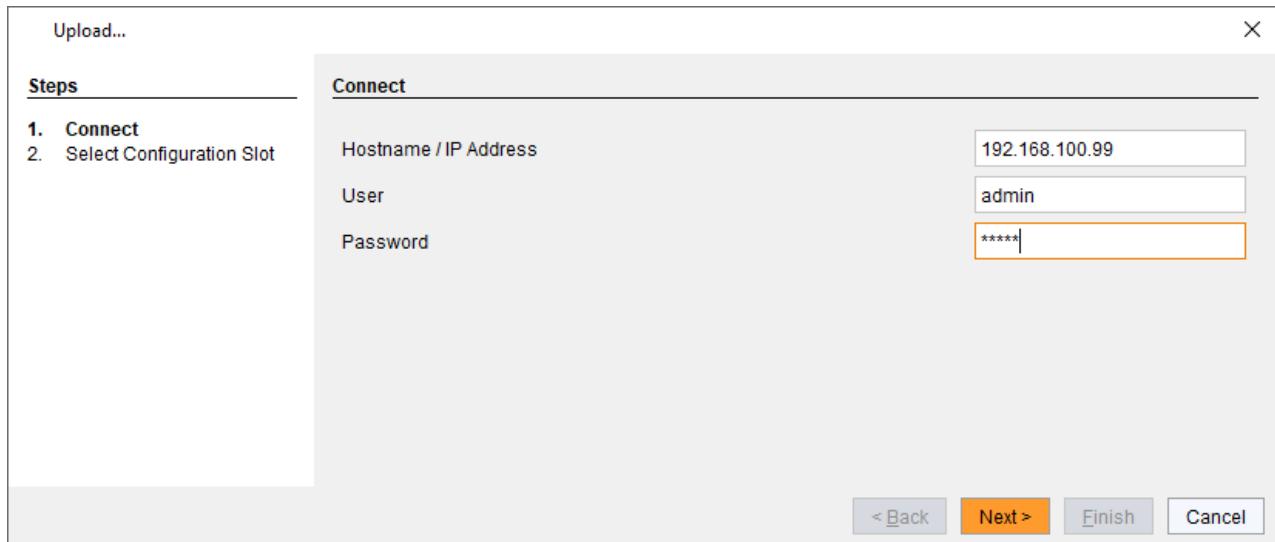


Fig. 49 Management software menu **Upload - Connect**

5. Under **Select Configuration Slot**, click the storage slot for the configuration (**default**).
6. Option: To activate the uploaded configuration immediately, click the **Activate configuration after upload** check box.

NOTICE

If you click the **Activate configuration after upload** option, the SNMP module will be restarted immediately after the save process has been completed. The restart of the SNMP module may take several minutes, and the SNMP module is not available during the restart.

7. Click the **Finish** button to save the configuration into the selected storage location.

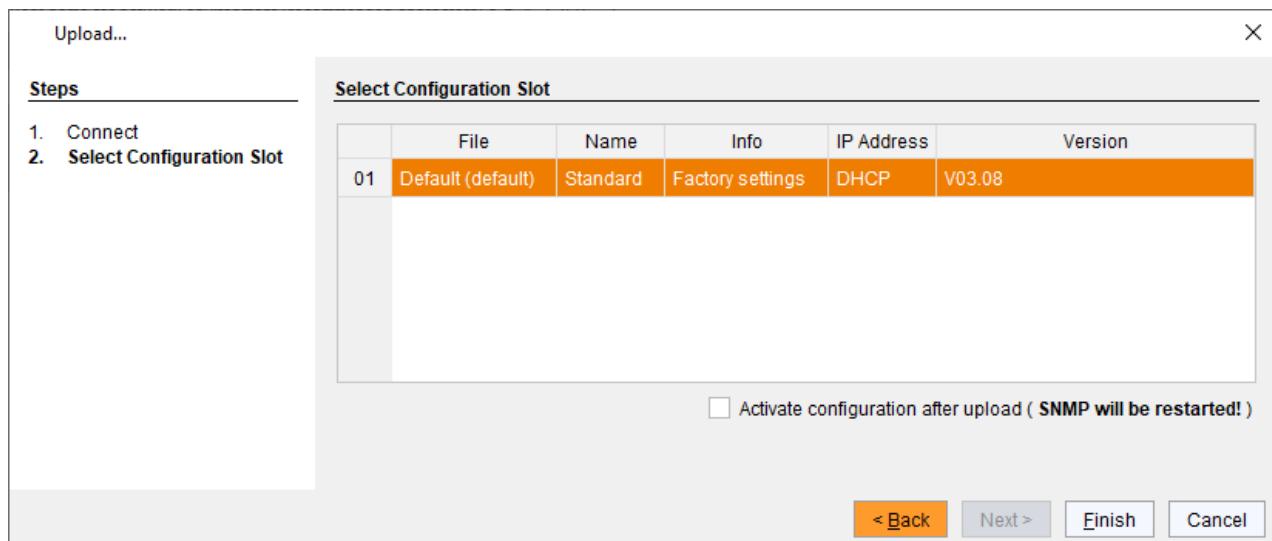


Fig. 50 Management software menu **Upload - Select Configuration Slot**

5.10 Activating a Predefined Configuration

To activate an uploaded configuration, proceed as follows:

1. Select **Status & Updates > Activate Configuration** in the task area.
2. Select the configuration to be activated.
3. Click the **Activate** button to activate the selected configuration.

A query to restart the SNMP module appears.

4. Click the **Yes** button to confirm the restart.

The connection is disconnected, and the SNMP module is restarted. The selected configuration is loaded on restart and is shown in the menu as active configuration under **Active Configuration** in the work area. The previously active configuration is overwritten

NOTICE

The restart of the SNMP module may take several minutes, and the SNMP module is not available during the restart.

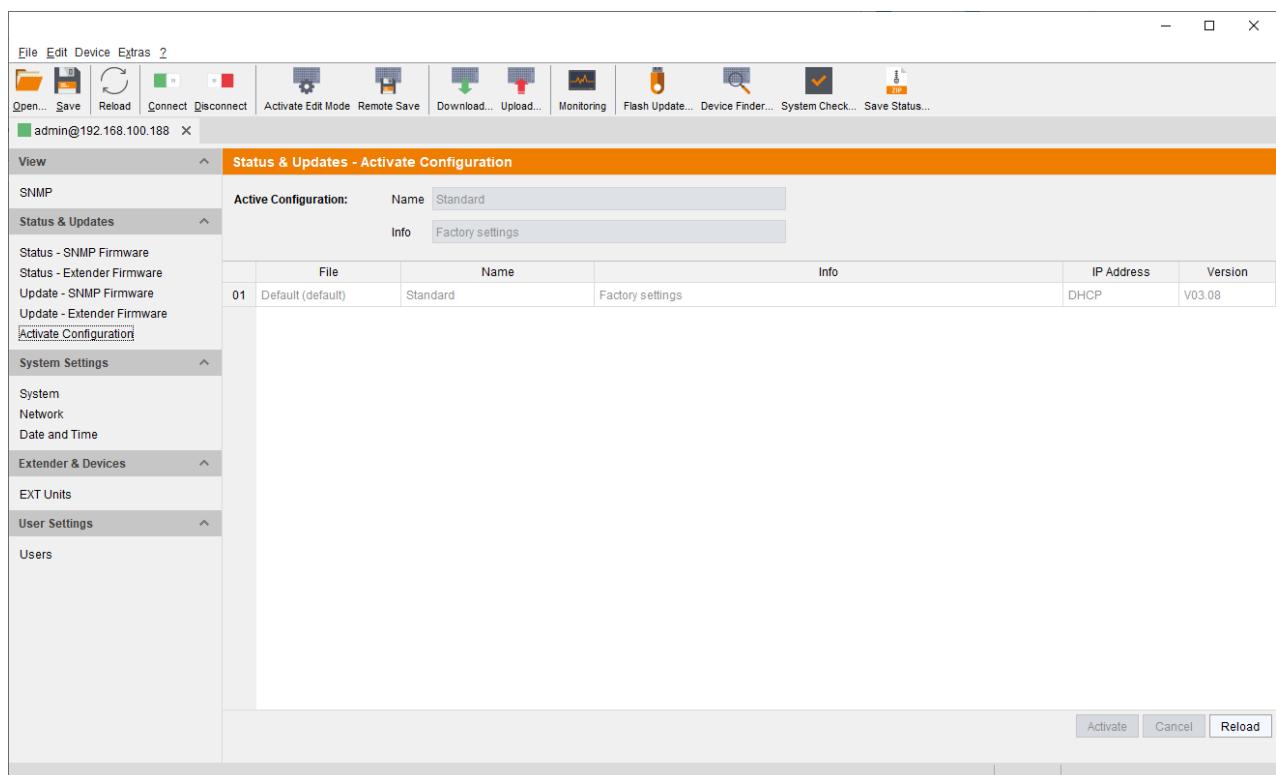


Fig. 51 Management software menu **Status & Updates - Activate Configuration**

5.11 Downloading a Configuration from the SNMP module

Configurations saved in the SNMP module can be downloaded for offline editing in this menu.

To download a configuration from the SNMP module, proceed as follows:

1. Click the **Download** menu item in the toolbar.
- An access window appears.
2. Enter the IP address of the SNMP module.
3. Enter the username and password of the administrator.
4. Click the **Next** button to display the selection of storage location.

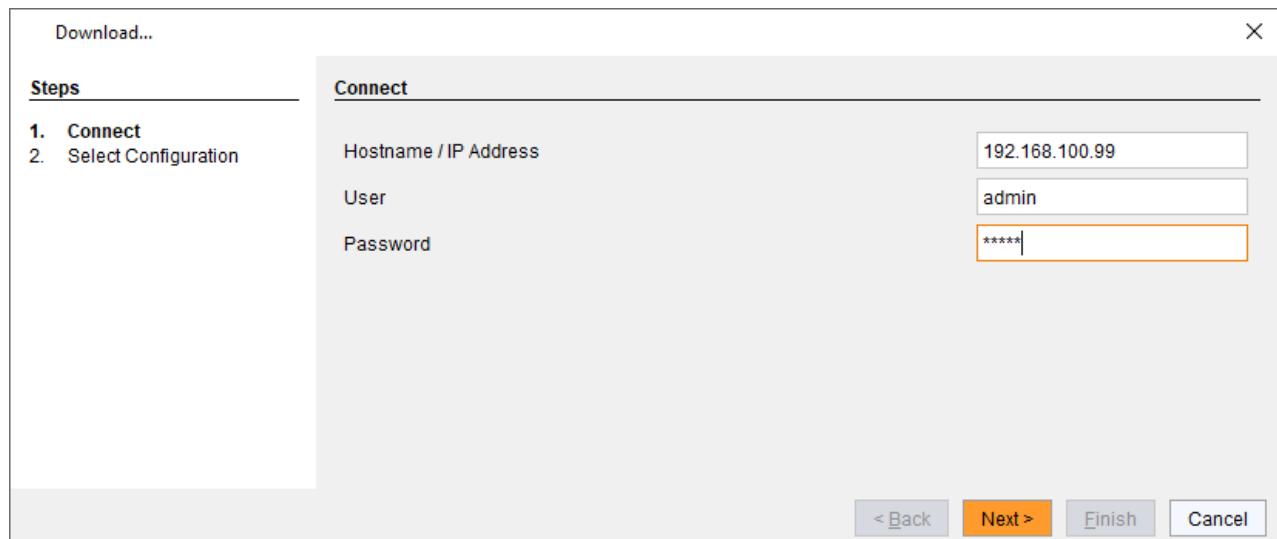


Fig. 52 Management software menu **Download - Connect**

5. Under **Select Configuration**, click the storage location of the desired configuration (**default**).
6. Click the **Finish** button to download the selected configuration to management software.

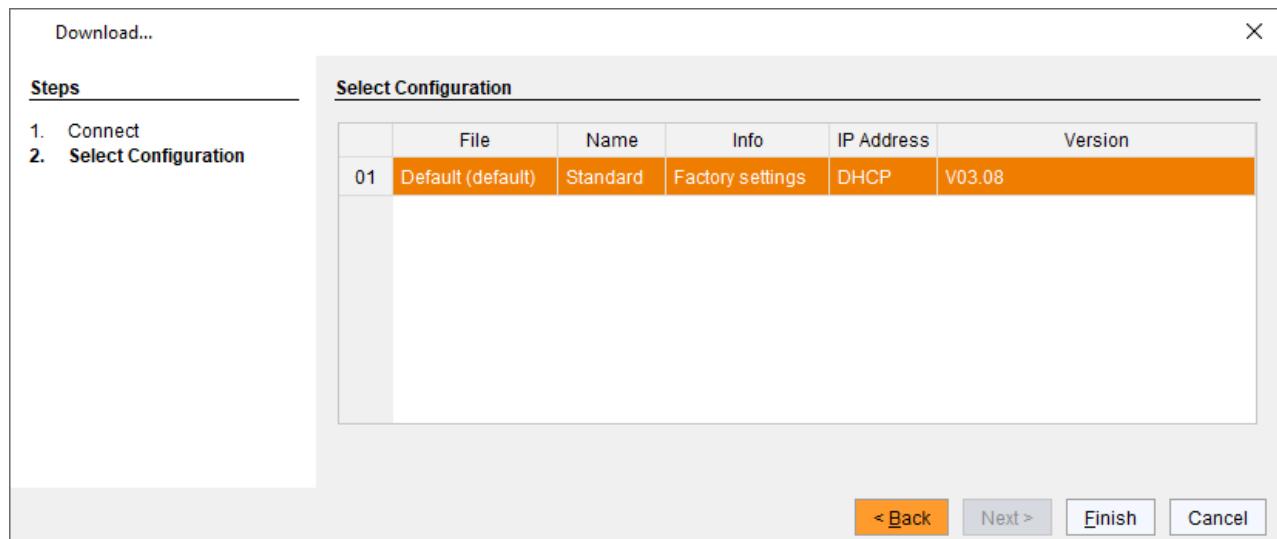


Fig. 53 Management software menu **Download - Select Configuration**

6 Operation

6.1 System Check

The system check offers a diagnostic function for checking the device configuration. The feature indicates non-optimal as well as incorrect settings and displays issues instructions. The system check is only used to check plausibility and does not make any active configuration changes.

The following configuration parts are checked:

- SNMP firmware
- Extender firmware
- System configuration

The following notification levels can be shown:

Level	Description
OK (green)	System check completed without any abnormalities.
WARNING (yellow)	System check revealed abnormalities in the configuration that point to incomplete parts of the configuration, firmware differences, duplications, or unconnected extenders, but without being system critical.
ERROR (red)	System check revealed errors in the configuration that can have both functional and system critical influences on the system.

NOTICE

If the messages “WARNING” or “ERROR” are generated by the system check function, the respective problem will be described, and an issue instruction will be provided.

NOTICE

The system check of the SNMP modules may take several minutes, and the SNMP module is not available during this time.

To start the system check, proceed as follows:

1. Click the menu item **System Check** in the tool bar.
A query appears to check the system.
2. Click the **Yes** button to start the system check.

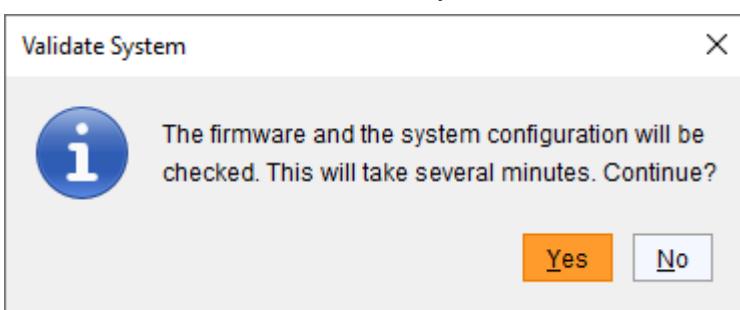


Fig. 54 Management software dialog **Validate System**

A report is displayed after the system check.

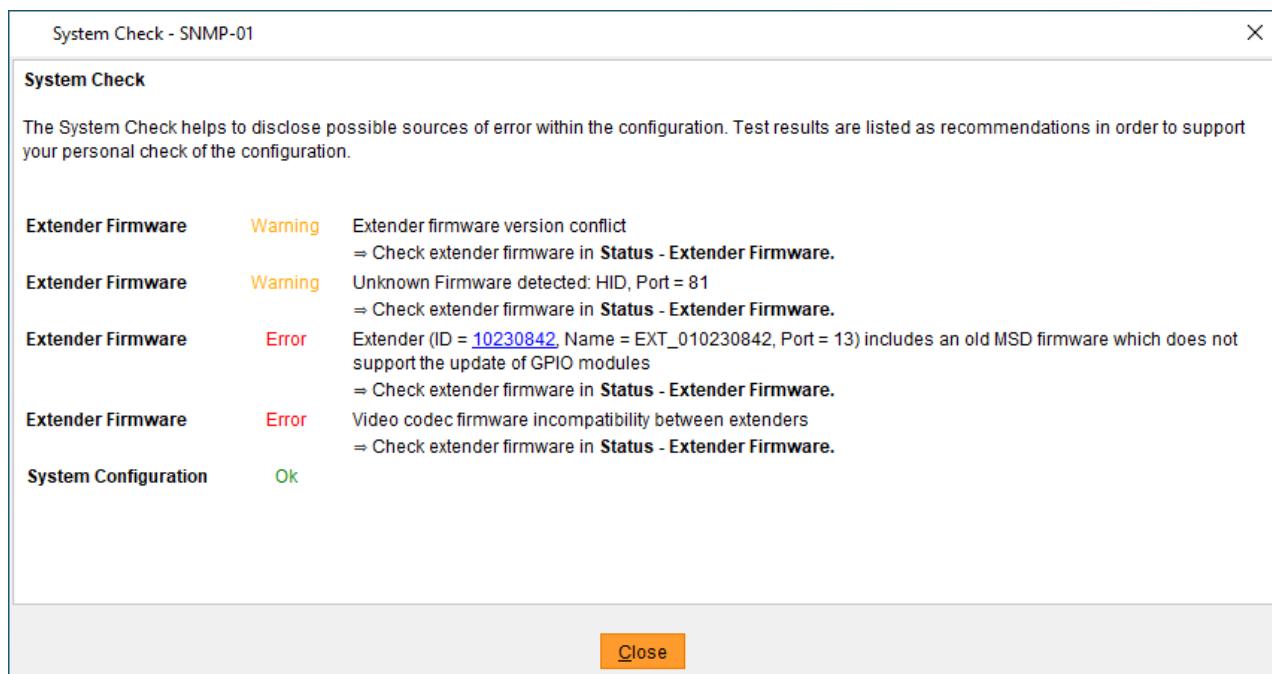


Fig. 55 Management software report **System Check**

6.2 Device Finder

The Device Finder offers the possibility to find all SNMP boards that are located in the same subnetwork. This is useful, for example, if the IP address of a specific SNMP board is unknown and should be accessed via IP.

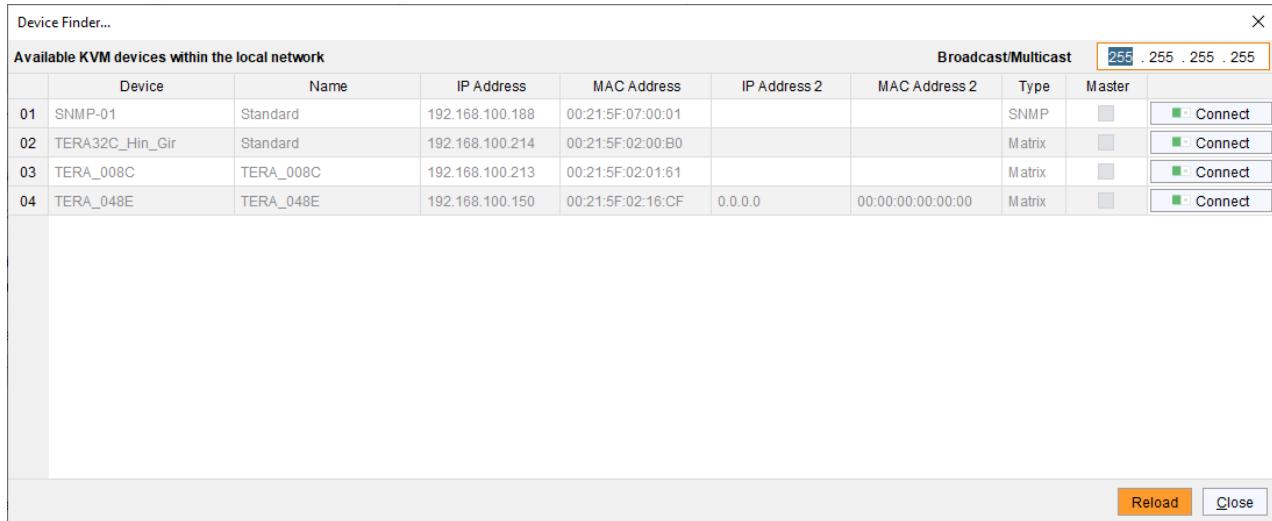


Fig. 56 Management software menu **Device Finder**

The following device information is shown in the Device Finder:

Information	Description
Broadcast/Multicast	Search parameters for finding devices. Search via broadcast: 255.255.255.255 (default). Input for search within a multicast group: multicast address (chapter 5.4.2, page 38)
Device	Name of the device
Name	Name of the active configuration
IP Address	Current IP address of the device
MAC Address	MAC address of the device
Type	Type of the device

To find a device, proceed as follows:

1. Click the menu item **Device Finder** in the tool bar.
2. For searching within a multicast group, enter the multicast address. By default, the search is set via broadcast: 255.255.255.255.



By clicking the button **Connect** in the last column of the Device Finder you can establish direct access to the respective device within the same subnet.

6.3 Network Check

The network check checks the firewall settings for the ports available in the network.

NOTICE

Available ports are shown in green. If a port is not available, the corresponding entry appears in red and instructions are displayed.

To start the network check, proceed as follows:

1. Select **Extras > Network Check** in the menu bar.
A query appears with an input field for the IP address of the SNMP module to be queried.
2. Enter the IP address of the SNMP module.
3. Click the **Start network check** button to start the network check.

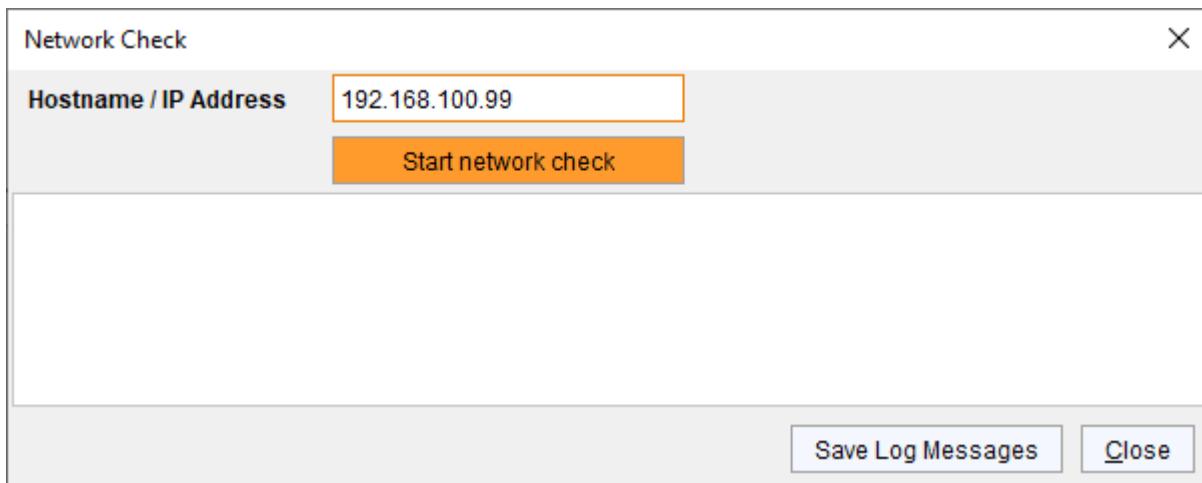


Fig. 57 Management software query **Network Check - enter IP address**

The availability of the ports is shown after a short moment.

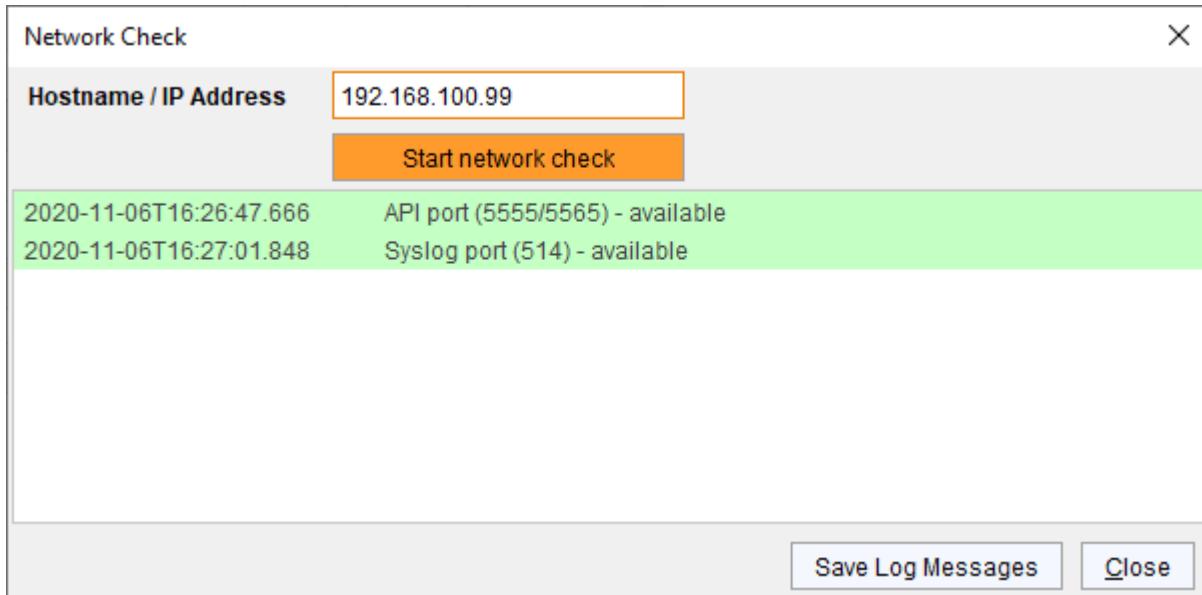


Fig. 58 Management software report **Network Check - available ports**

6.4 Status Query via Management Software

6.4.1 Device Status

The device configuration and the connections to the SNMP module are displayed in this menu.

- Select **View > SNMP** in the task area to display the current connections.

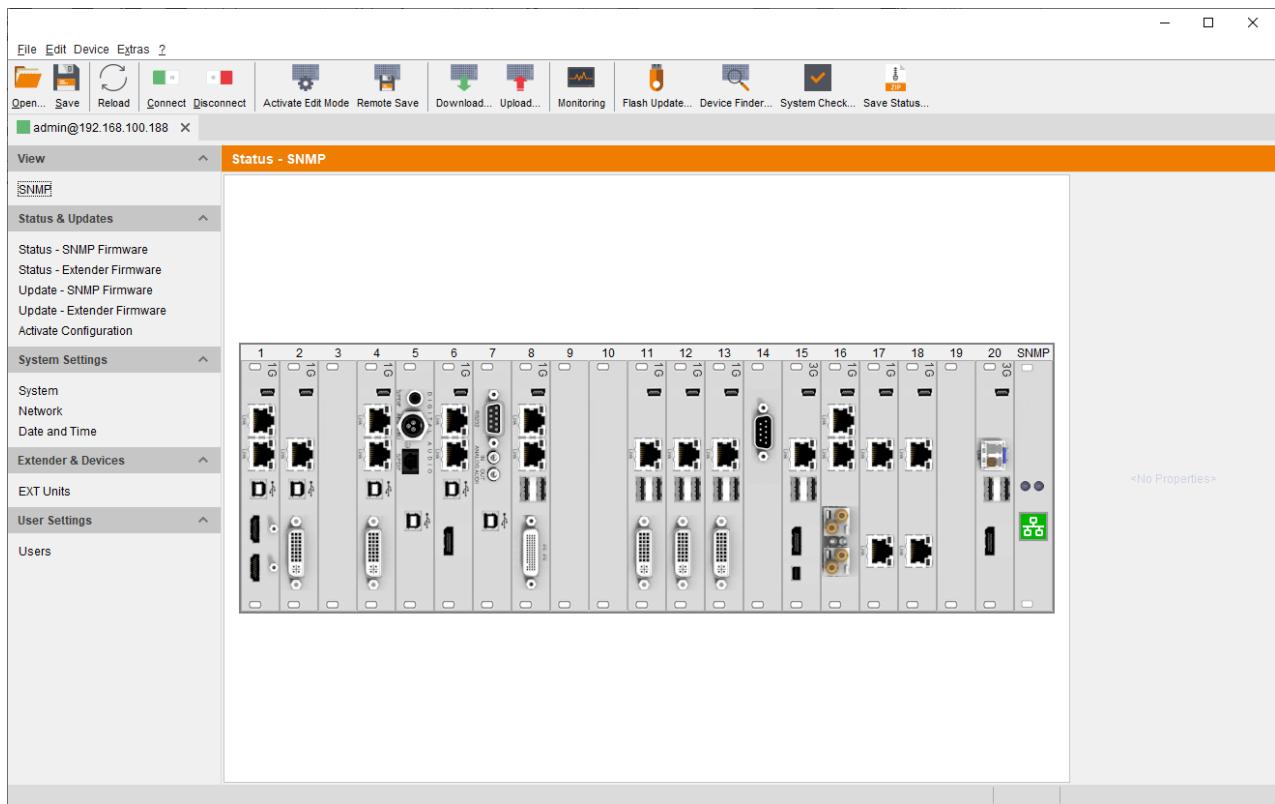


Fig. 59 Management software menu **View - SNMP**

Port Color	Description
Green	TC/IP Port is connected
Red	TC/IP Port is not connected or not accessible

6.4.2 Network Status

The current network connection is displayed in this menu.

⇒ Select **System Settings > Network** in the task area to query the network configuration.

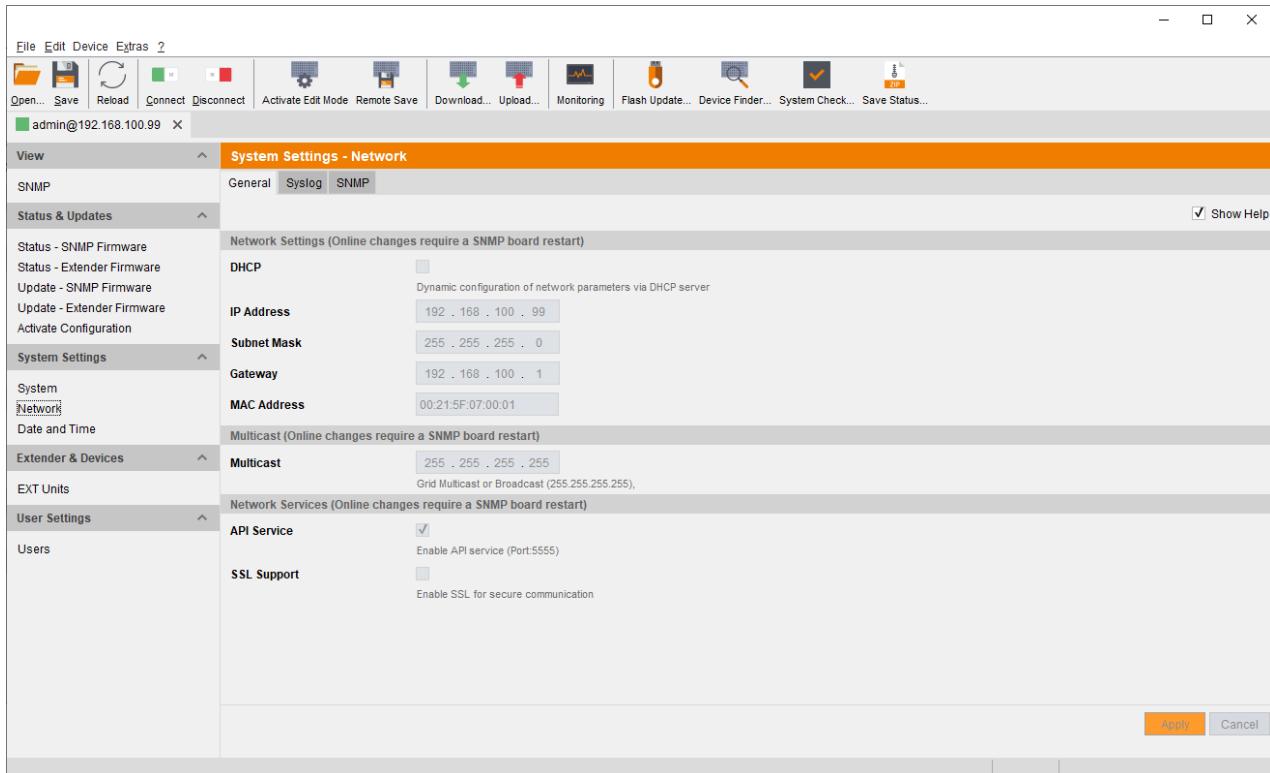


Fig. 60 Management software menu **System Settings - Network - General**



For information about the parameters, please see chapter 5.4.2, page 38.

6.4.3 SNMP Firmware Status

The firmware status of the SNMP module is displayed in this menu.

- Select **Status & Updates > Status - SNMP Firmware** in the task area to query the current firmware status of the SNMP module.

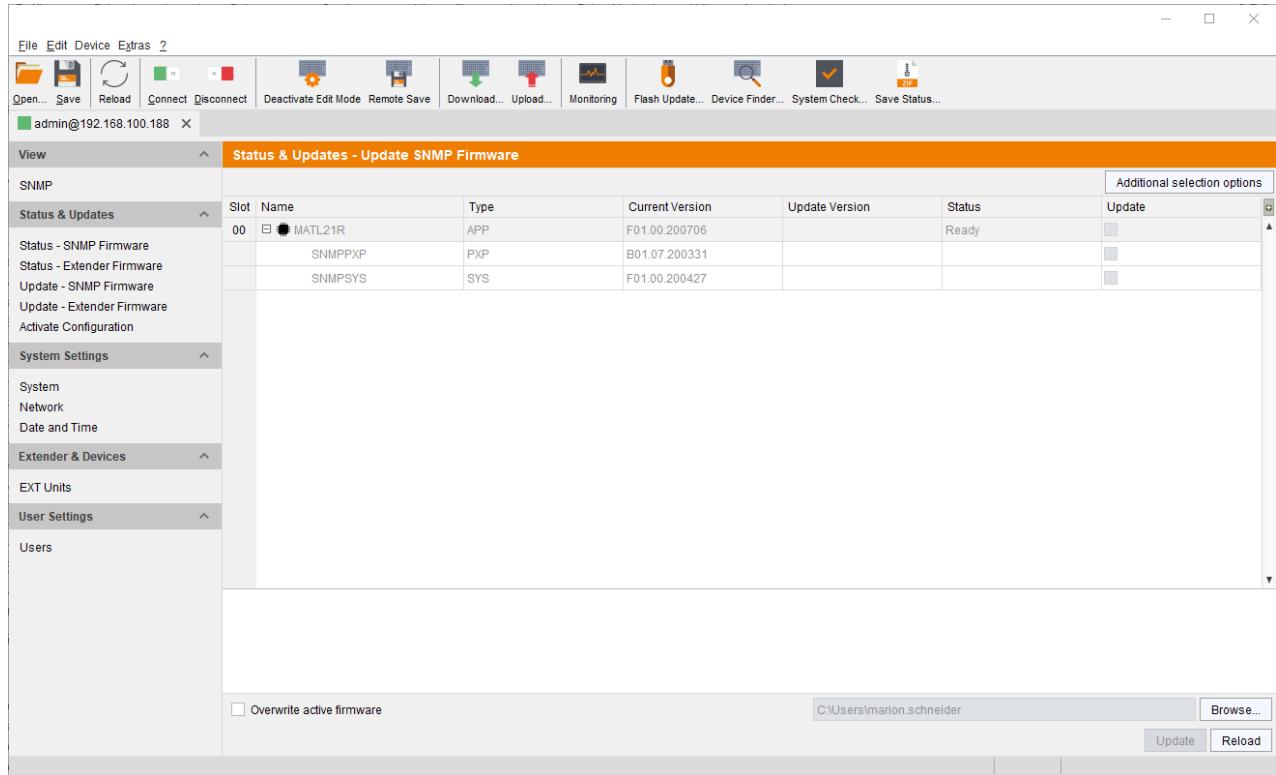


Fig. 61 Management software menu **Status & Updates - Status - SNMP Firmware**

The following information is displayed in the working area:

Column	Description
Name	Module description
Type	Type number
Port	Slot number of the installed SNMP module
Serial Number	Serial number of the installed SNMP module
Version	Installed firmware version
Date	Issue date of the installed firmware version
Status	Module availability

The different modules can be expanded and collapsed by left-clicking on the “plus” and “minus” symbols in the **Name** column.

By clicking on the “plus” and “minus” symbol in the upper right corner of the working area, you can expand and collapse all module information with a click of the primary mouse button.



To read out the overall status of the device and save it locally, select **Device > Save Status** or click the corresponding button in the toolbar (see chapter 6.5, page 83).

6.4.4 Extender Firmware Status

The firmware status of the extenders is displayed in this menu.

- Select **Status & Updates > Status - Extender Firmware** in the task area to query the current firmware status of the extenders.

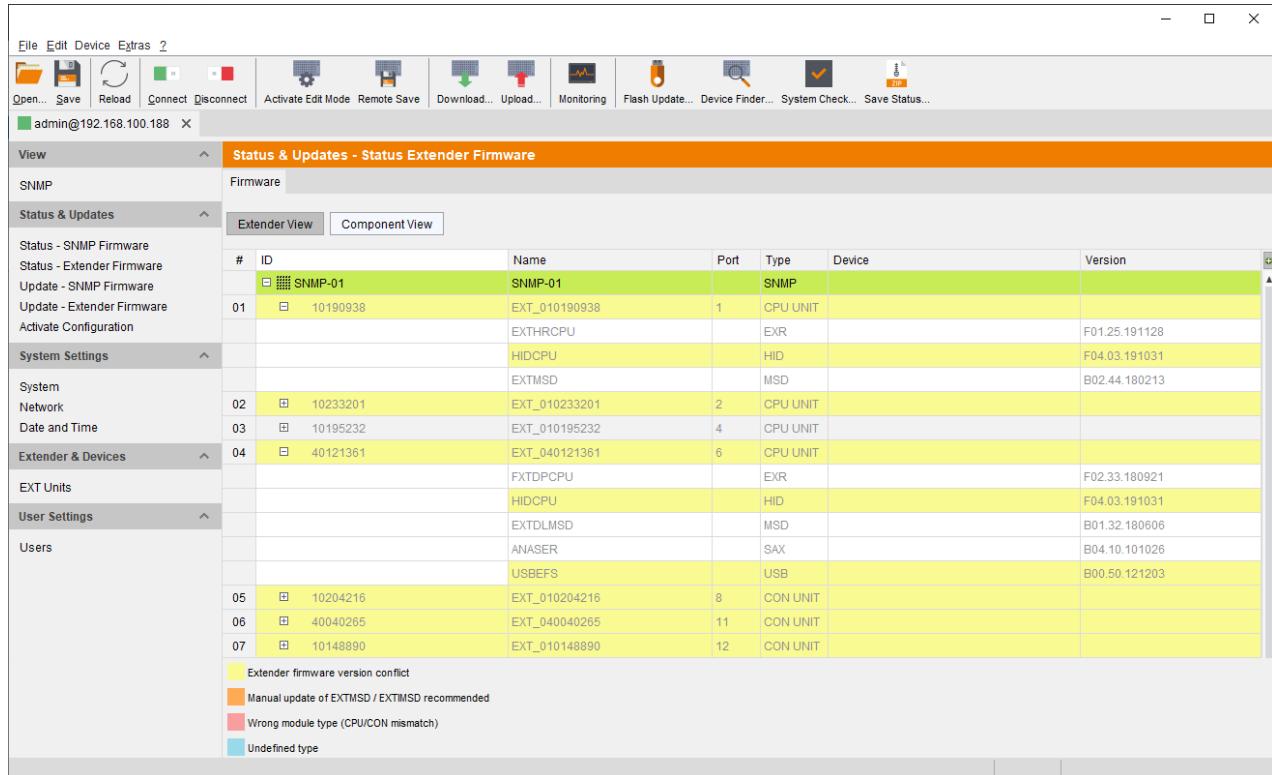


Fig. 62 Management software menu **Status & Updates - Status - Extender Firmware**

The following information is displayed in the working area:

Column	Description
ID	Ident number of the extender
Name	Name of the extender and the extender firmware
Port	Number of ports
Type	Extender type
Device	Device to which the extender is assigned
Version	Installed firmware version
Date	Issue date of the installed firmware version



Firmware types to be updated or firmware conflicts are highlighted in color:

- Yellow square: Extender firmware version conflict
- Orange square: Manual update of EXTMSD / EXTIMSD recommended
- Pink square: Wrong module type (CPU/CON mismatch)
- Blue square: Undefined type

The different modules can be expanded and collapsed by left-clicking on the “plus” and “minus” symbols in the **Name** column.

By clicking on the “plus” and “minus” symbol in the upper right corner of the working area, you can expand and collapse all module information with a click of the primary mouse button.

6.4.5 Syslog Monitoring

The syslog function offers a complete logging of the SNMP module, the extenders and the chassis for activities, warnings, and error messages. During logging all events are written continuously into log files and stored locally.

NOTICE

Syslog messages are transmitted via UDP. Therefore, port 514 within the used network should not be blocked, e.g. by a firewall.



The procedure for activating the syslog function is described in chapter 5.4.3, page 40.

Date	Facility	Severity	Host	App Name	Proc ID	Msg ID	Message
2020-08-18T11:18:27.488	local0	NOTICE	SNMP-01	-	475	SNMPAPP	systemSetUpdateClose(): MOD=6 IDX=10
2020-08-18T11:18:27.219	local0	NOTICE	SNMP-01	-	475	SNMPAPP	systemSetUpdateOpen(): MOD=6 IDX=10
2020-08-18T11:18:27.097	local0	NOTICE	SNMP-01	-	475	SNMPAPP	systemSetUpdateClose(): MOD=4 IDX=10
2020-08-18T11:18:26.833	local0	NOTICE	SNMP-01	-	475	SNMPAPP	systemSetUpdateOpen(): MOD=4 IDX=10
2020-08-18T11:17:18.832	local0	NOTICE	SNMP-01	-	475	SNMPAPP	netcomSocket(): socket=0 active [PID=528]
2020-08-18T11:17:18.832	local0	NOTICE	SNMP-01	-	475	SNMPAPP	taskNETCOM(): socket=0 connected (192.168.100.1)
2020-08-18T11:17:14.352	local0	NOTICE	SNMP-01	-	475	SNMPAPP	taskMONITOR(): ready
2020-08-18T11:17:14.352	local0	NOTICE	SNMP-01	-	475	SNMPAPP	monitorInit(): temp 2 ok
2020-08-18T11:17:14.352	local0	NOTICE	SNMP-01	-	475	SNMPAPP	monitorInit(): temp 1 ok
2020-08-18T11:17:14.337	local0	NOTICE	SNMP-01	-	475	SNMPAPP	monitorInit(): power 1 ok
2020-08-18T11:17:14.337	local0	NOTICE	SNMP-01	-	475	SNMPAPP	monitorInit(): power 0 ok
2020-08-18T11:17:13.661	local0	NOTICE	SNMP-01	-	475	SNMPAPP	modInsert(): MOD=6 done
2020-08-18T11:17:13.661	local0	NOTICE	SNMP-01	-	475	SNMPAPP	modGetKVMState(): MOD=6 no link state available
2020-08-18T11:17:13.599	local0	NOTICE	SNMP-01	-	475	SNMPAPP	modGetVersion(): MOD=6 FXTDPCPU EXR 1 F02.33
2020-08-18T11:17:13.583	local0	NOTICE	SNMP-01	-	475	SNMPAPP	modInsert(): MOD=6 initialization
2020-08-18T11:17:13.583	local0	NOTICE	SNMP-01	-	475	SNMPAPP	modInsert(): MOD=4 done
2020-08-18T11:17:13.583	local0	NOTICE	SNMP-01	-	475	SNMPAPP	modGetKVMState(): MOD=4 no link state available
2020-08-18T11:17:13.530	local0	NOTICE	SNMP-01	-	475	SNMPAPP	modGetVersion(): MOD=4 EXTRCPU EXR 1 F02.26
2020-08-18T11:17:13.514	local0	NOTICE	SNMP-01	-	475	SNMPAPP	modInsert(): MOD=4 initialization

Fig. 63 Management software menu **Monitoring - Syslog**

To open the syslog monitoring, proceed as follows:

- Click the **Monitoring** menu item in the toolbar.

The logged syslog messages are displayed in the working area.

Filter function

To filter relevant messages from the multitude of logged activities of the SNMP module, the extenders and the chassis, the syslog monitoring offers various filter options.

To set and activate a filter, proceed as follows:

1. Activate the respective checkbox(es) to activate the desired filter option(s).
2. Click the **Filter** button to activate the filter settings.
3. Click the **Clear** button to deactivate an activated filter setting.

The following filter options are available:

Option	Description
Date	Messages for a defined date range will be filtered
Facility	Messages for a defined facility will be filtered
Severity	Messages for a defined severity will be filtered
Host	Messages for a defined host will be filtered
Message	Messages with defined text parts will be filtered



Filter options are not valid within the locally stored log files.

Recording function

Various options are available for the messages displayed in the syslog log.

- ⇒ To save the displayed messages (filtered or unfiltered), click the **Save trace** button.
The messages are saved in a syslog file (extension .csv).
- ⇒ To clear the view with the displayed messages, click the **Clear trace** button.
The recorded messages will be kept.
- ⇒ To pause the display of messages, click the **Pause** button.
During the pause, the messages will be recorded continuously.
- ⇒ To display the messages recorded in the background during the pause, click the **Pause** button again.
All messages recorded in the background will be displayed immediately.

Search function

The search function can be used to search for specific Syslog messages from a variety of logged activities and relevant messages from the SNMP module, extenders, and chassis.

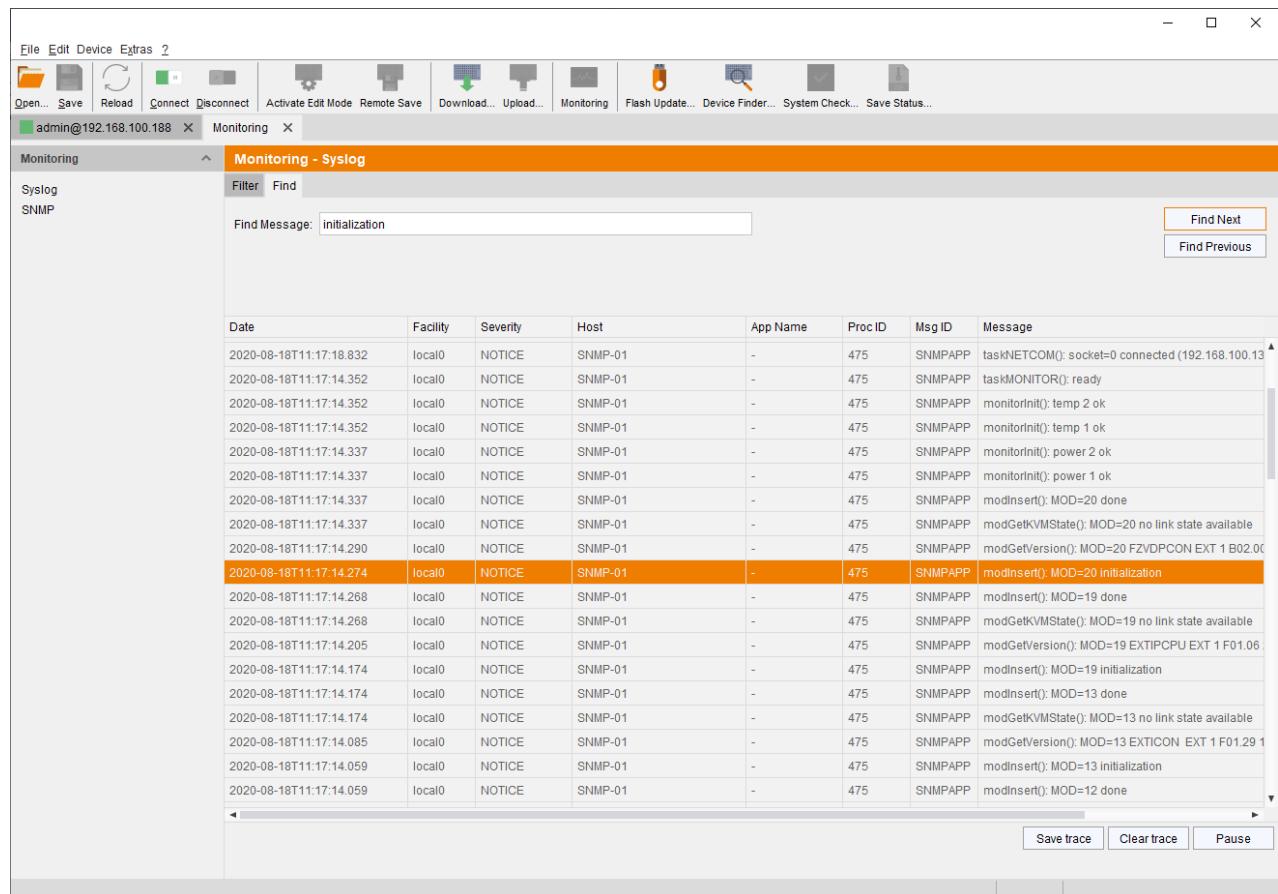


Fig. 64 Management software menu **Monitoring - Syslog** - example for search result

To find specific syslog messages, proceed as follows:

1. Click the monitoring menu item in the toolbar.
2. Click the **Find tab** in the working area.

The recorded SNMP messages are displayed in the working area.

3. Enter a search term in the **Find Message** search field.
4. Click the Find Next button.

The first message with the entered search term is highlighted.

5. Click the **Find Next** button again to find another message with this search term.

The next message with the entered search term is highlighted.



Possible search terms would be e.g. the port ID (e.g. MOD=10), the firmware (e.g. EXTCON), link status (e.g. link).

To go back to the previous search result, click the **Find Previous** button.

6.4.6 SNMP-Monitoring

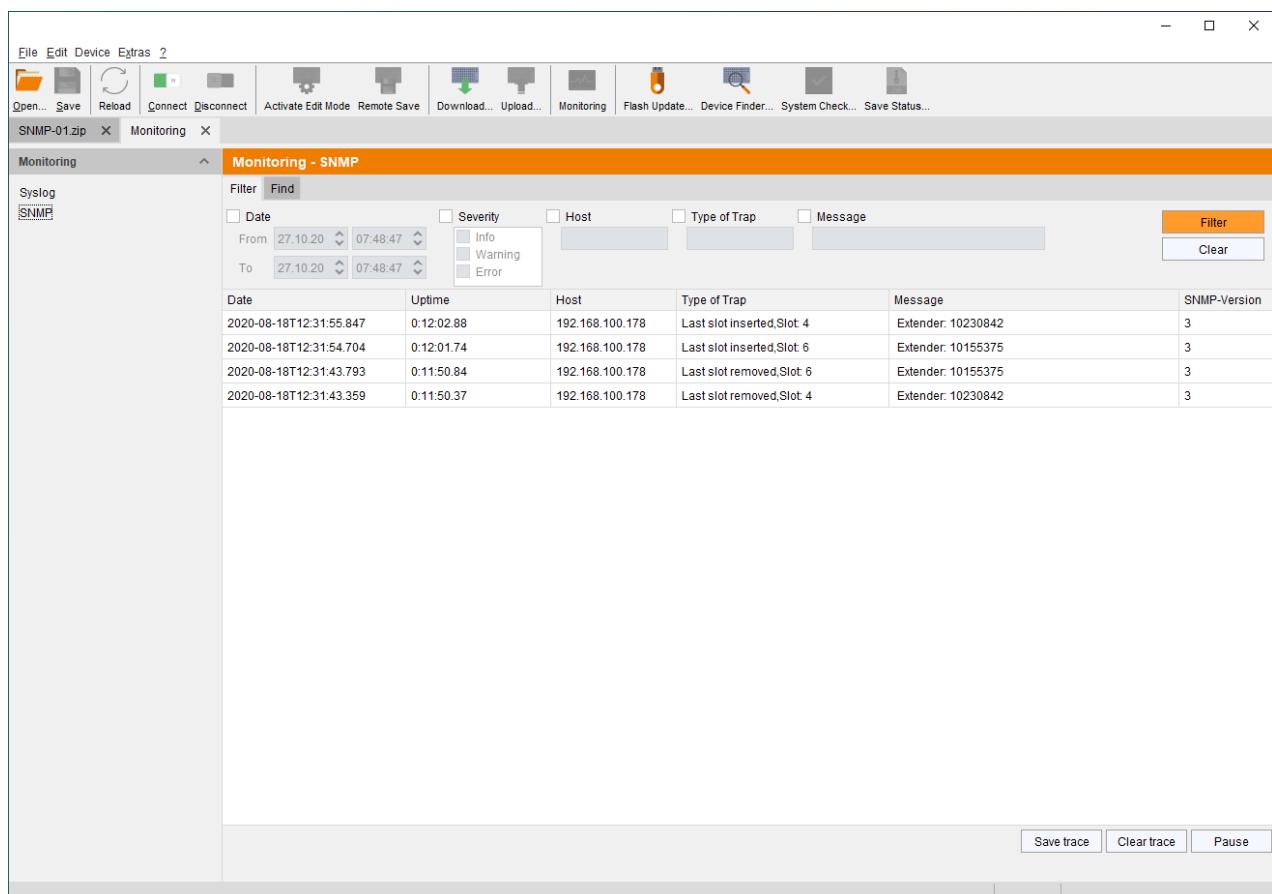
The SNMP function allows all function-critical and safety-critical elements of the SNMP module, the extenders, and the chassis to be monitored and queried. This function complies with the RFC 1157 conformal standard.

NOTICE

When using SNMP monitoring, for reasons of access security, the use of a dedicated network according to the IT-Grundschutz catalog is recommended. The read only community for the MIB file is **draco**.



The procedure for activating the SNMP agent or configuring an SNMP server is described in chapter 5.4.4, page 43.



*Fig. 65 Management software menu **Monitoring - SNMP***

To open the SNMP monitoring, proceed as follows:

1. Click the **Monitoring** menu item in the toolbar.
2. Click the **SNMP** button in the task area.

The logged SNMP messages are displayed in the working area.

Filter function

To filter relevant messages from the multitude of logged activities of the SNMP module, the extenders and the chassis, the SNMP monitoring offers various filter options.

To set and activate a filter, proceed as follows:

1. Activate the respective checkbox(es) to activate the desired filter option(s).
2. Click the **Filter** button to activate the filter settings.
3. Click the **Clear** button to deactivate an activated filter setting.

The following filter options are available:

Option	Description
Date	Messages for a defined date range will be filtered
Facility	Messages for a defined facility will be filtered
Severity	Messages for a defined severity will be filtered
Host	Messages for a defined host will be filtered
Message	Messages with defined text parts will be filtered



Filter options are not valid within the locally stored log files.

Recording function

Various options are available for the messages displayed in the SNMP log.

- ⇒ To save the displayed messages (filtered or unfiltered), click the **Save trace** button.
The messages are saved in a SNMP file (extension .csv).
- ⇒ To clear the view with the displayed messages, click the **Clear trace** button.
The recorded messages will be kept.
- ⇒ To pause the display of messages, click the **Pause** button.
During the pause, the messages will be recorded continuously.
- ⇒ To display the messages recorded in the background during the pause, click the **Pause** button again.
All messages recorded in the background will be displayed immediately.

Search function

The search function can be used to search for specific SNMP messages from a variety of logged activities and relevant messages from the SNMP module, extenders, and chassis.

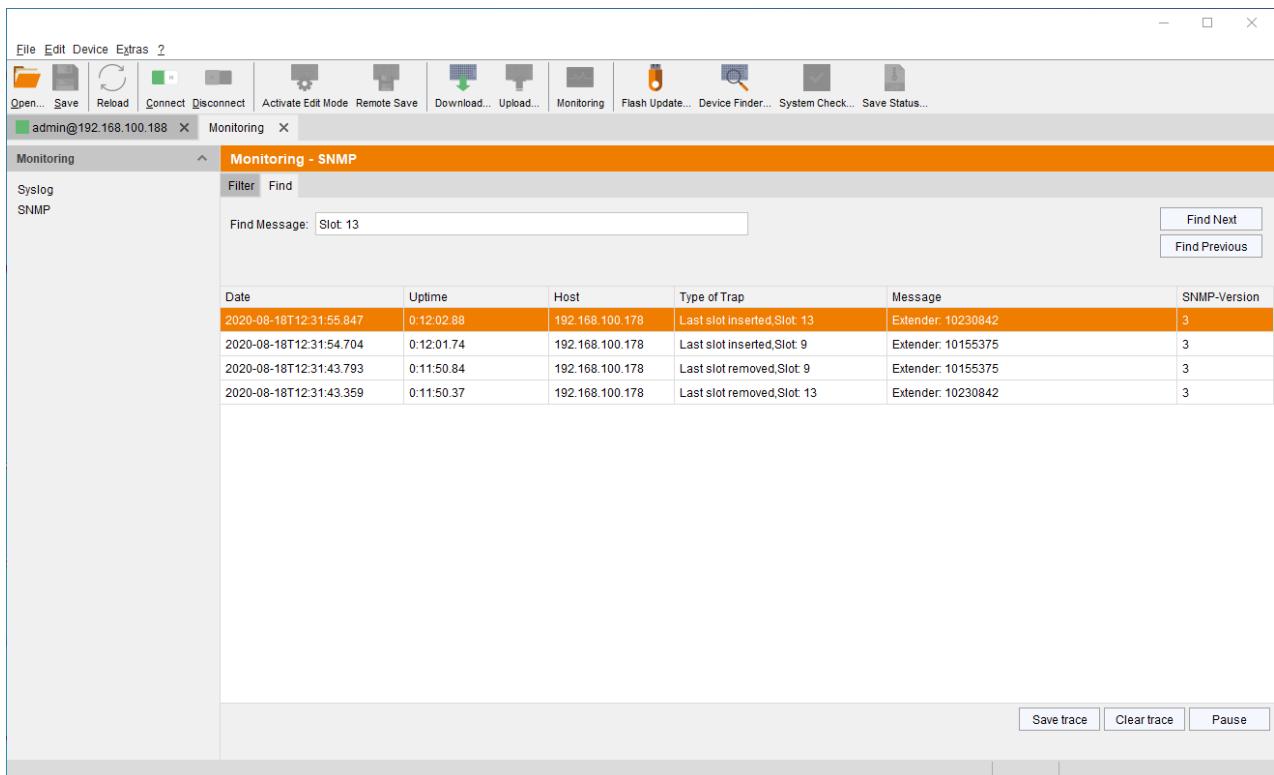


Fig. 66 Management software menu *Monitoring - SNMP* - example for search result

To find specific syslog messages, proceed as follows:

1. Click the monitoring menu item in the toolbar.
2. Click the **Find tab** in the working area.
The recorded SNMP messages are displayed in the working area.
3. Enter a search term in the **Find Message** search field.
4. Click the Find Next button.
The first message with the entered search term is highlighted.
5. Click the **Find Next** button again to find another message with this search term.
The next message with the entered search term is highlighted.

 Possible search terms would be e.g. the slot number (e.g. Slot: 13) or the serial number of an extender (z. B. 10155375).

To go back to the previous search result, click the **Find Previous** button.

6.5 Saving the Status via Management Software

1. Click the **Save Status** menu item in the toolbar to read out the overall status of the device and store it locally (file extension **.zip**).
A dialog appears.
2. Navigate to the directory you want to save the status file
3. Click the **Next** button.

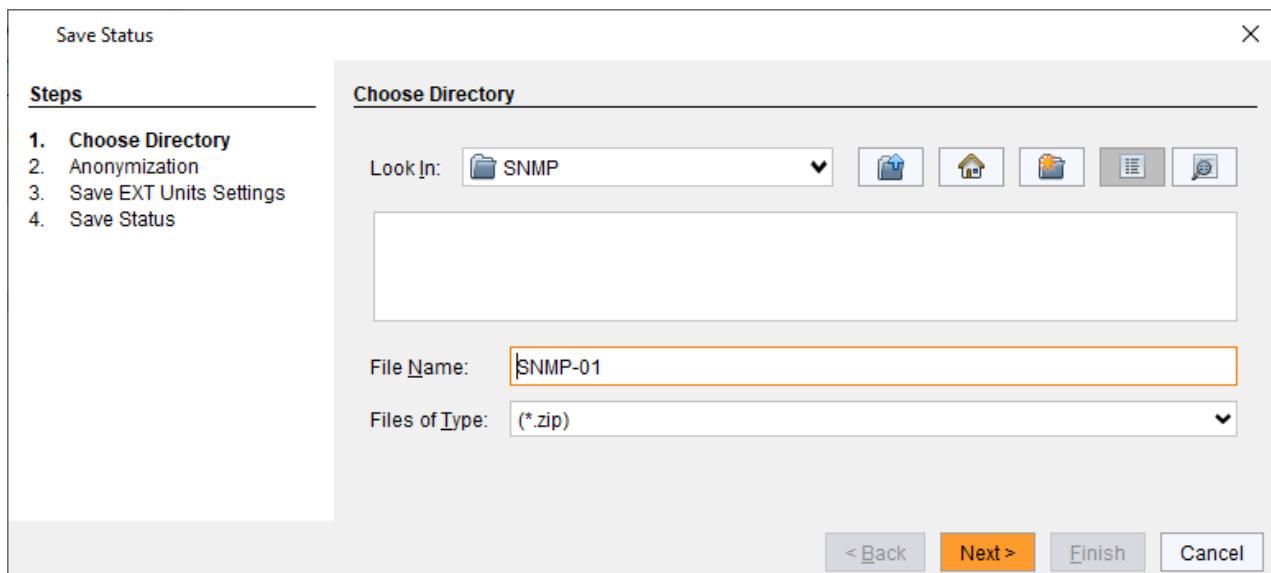


Fig. 67 Management software menu **Save Status - Choose Directory**

4. Click the **Anonymize** checkbox to anonymize your personal data when saving the status file if necessary (not recommended for trouble shooting).
If you want to use the status file as a backup, do not click the **Anonymize** checkbox.
5. Click the **Next** button to save the status file.

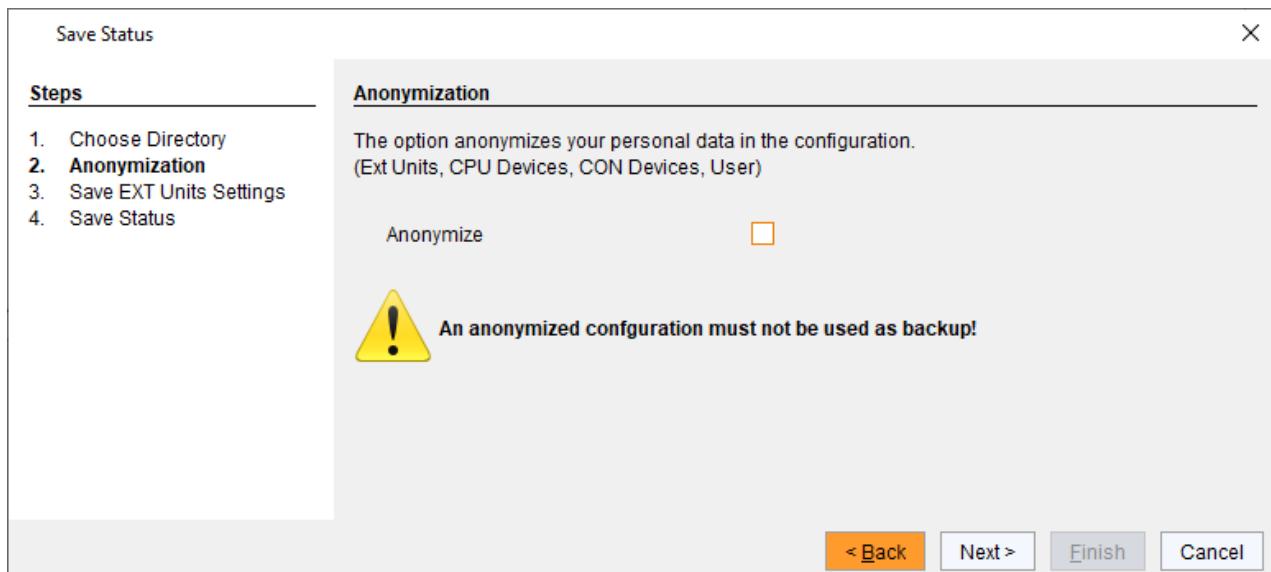


Fig. 68 Management software menu **Save Status - Anonymization**

6. Click the **Save EXT Units Settings** checkbox to save your extender settings.
7. Click the **Next** button.

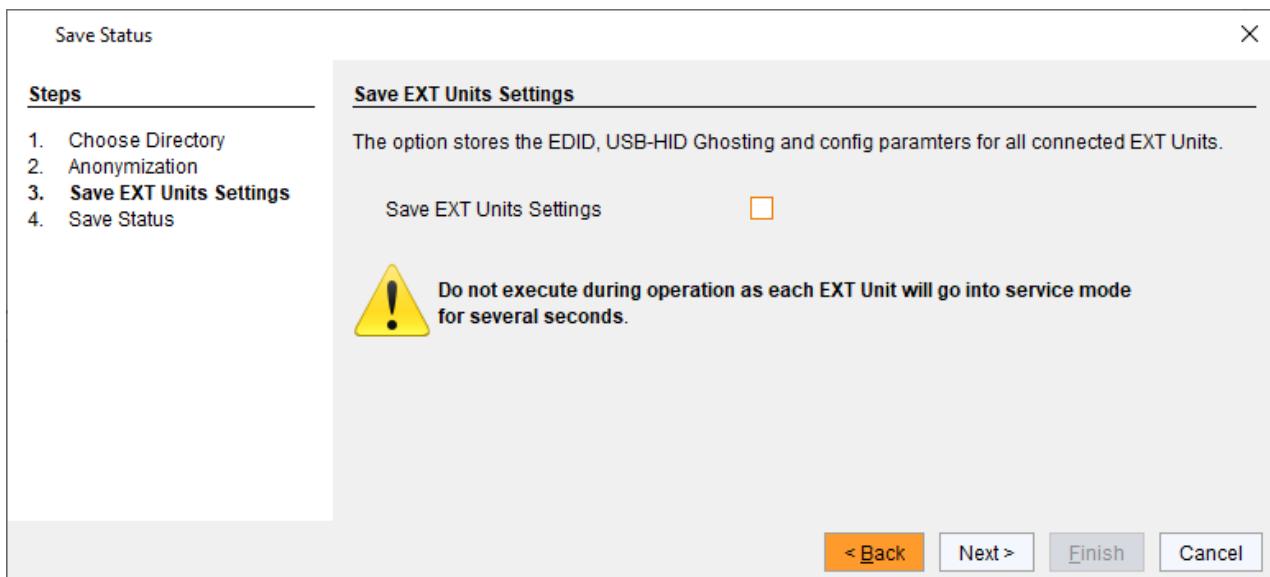


Fig. 69 Management software menu **Save Status - Save EXT Unit Settings**

8. Wait until all steps show green checkmarks and the “**Saving status successful**” message is displayed.
9. Click the **Finish** button to finish the saving.

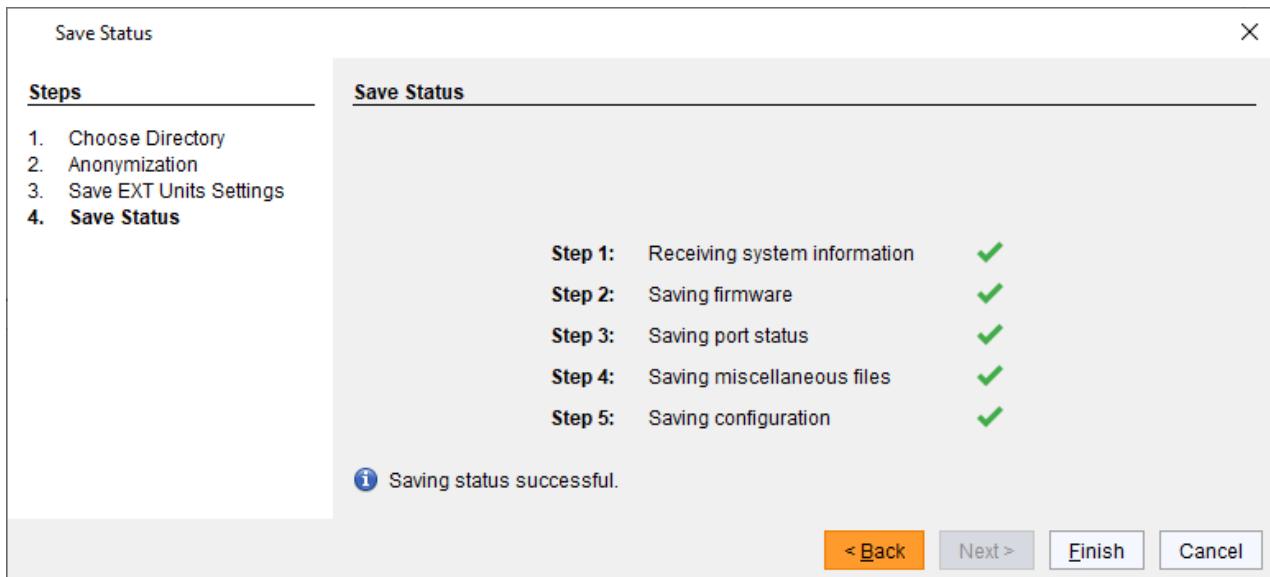


Fig. 70 Management software menu **Save Status - Save Status**

6.6 Opening the Locally Saved Status in the Management Software

To load a locally saved status, proceed as follows:

1. Select **Device > Load Status...** in the menu bar.
2. Navigate to the storage location of the status file to be opened.
3. Click the status file to be opened.
4. Click the **Open** button to open the status file.

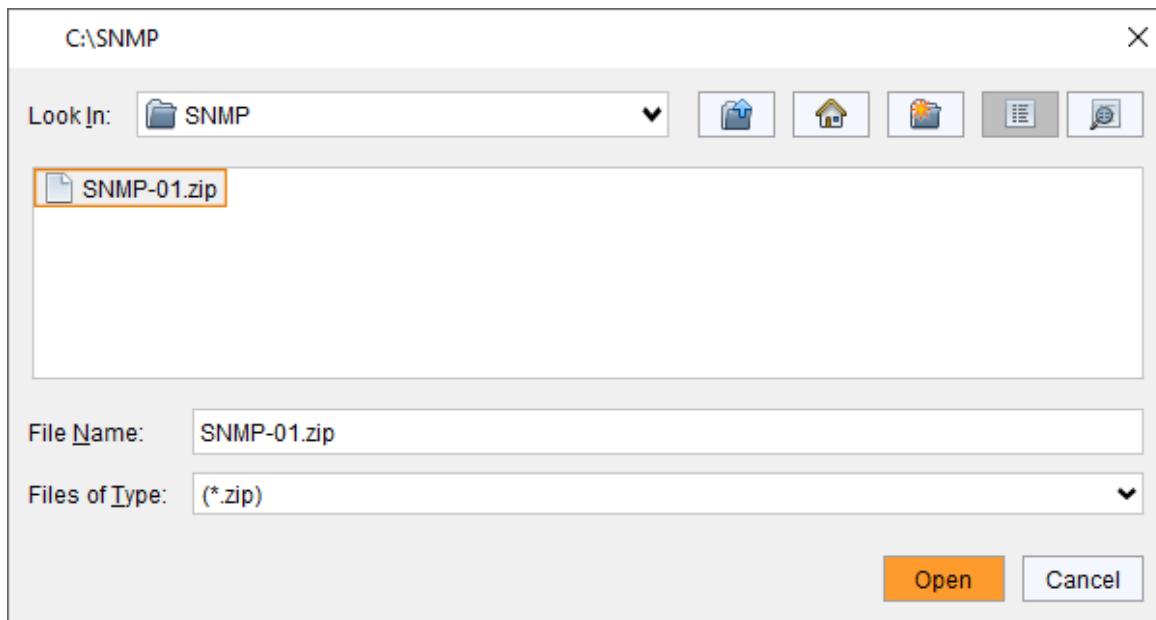


Fig. 71 Management software menu **Device - Load Status**



The status can also be opened via drag & drop. To do so, open the file browser, navigate to the storage location of the status file, click on the status file, hold down the primary mouse button and drag and drop the status file into the management software.

6.7 Status Query in an external SNMP Software

Using an external SNMP software, further information about the SNMP module is available, e.g. ID, configuration, version, or status.

Bit	Module status
0	Available
1	Ready
4	Service mode
28	No link status
31	Invalid

Bit	Power supply status
0	Ok
1	No power supply available
-1	Not available

Bit	Temperatuer status
0	Ok
1	Temperature high
-1	Not available

6.8 Updating the Firmware

6.8.1 Updating the SNMP Firmware via Management Software

NOTICE

To process successful firmware updates and avoid failures:

- ▶ Only use computers to update the SNMP module that are not integrated into the SNMP module setup,
- ▶ Ensure that the computer used for the update is not set into standby mode or sleep mode during the update,
- ▶ Save your configuration locally before starting the update,
- ▶ Proceed an update via direct LAN connection for reasons of network stability.

The firmware of the SNMP module can be updated in this menu.

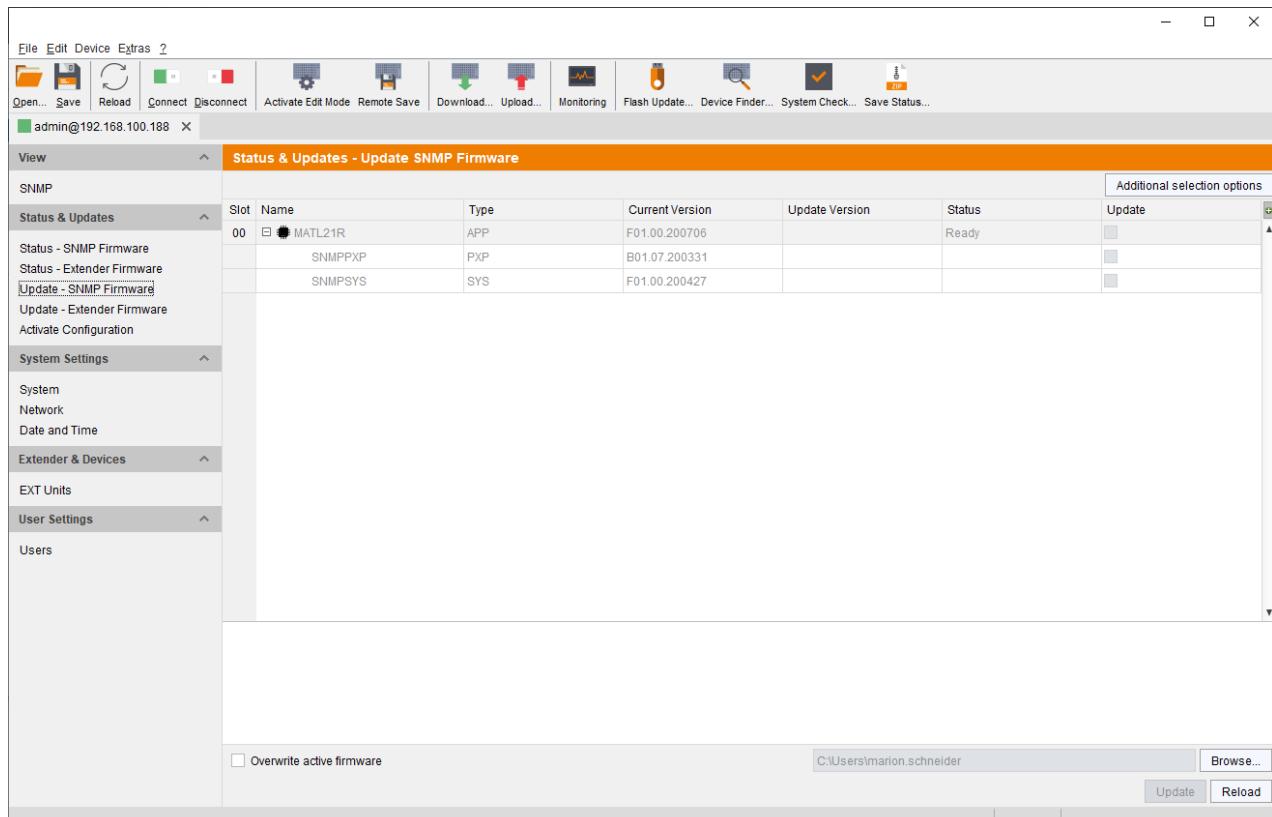


Fig. 72 Management software menu **Status & Updates - Update - SNMP Firmware**

The following information is displayed in the working area:

Option	Description
Name	Module name
Type	Type number
Cur. Version	Installed firmware version
Upd. Version	Current firmware version
Status	Module availability

Preparation



If the syslog function has not been set yet, we recommend activating the syslog function (see chapter 5.4.3, page 40) before updating the firmware to log the update in case of update errors.

To be prepared for a firmware update, proceed as follows:

1. Save the device status configuration locally (see chapter 6.5, page 83).
2. If the options settings for the management software have not yet been set:
Open **Extras > Options** in the menu bar.
Under **Firmware Directory** insert in the directory from which the update files should be standardly sourced.
3. Save the update files in the **Firmware Directory**.

Update

To update the firmware of the SNMP module, proceed as follows:

1. Select **Status & Updates > Update - SNMP Firmware** in the task area.

All updateable components of the SNMP module are automatically selected and highlighted in green.

2. Click the **Update** button in the lower part of the working area to start the update.

A request to save the device status appears.

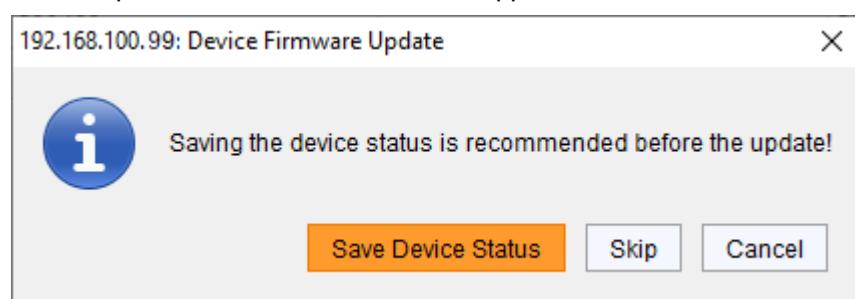


Fig. 73 Management software dialog **Save device status**

3. Click the **Save Device Status** button to save the device status locally.

After the update, a query to restart the SNMP module appears.

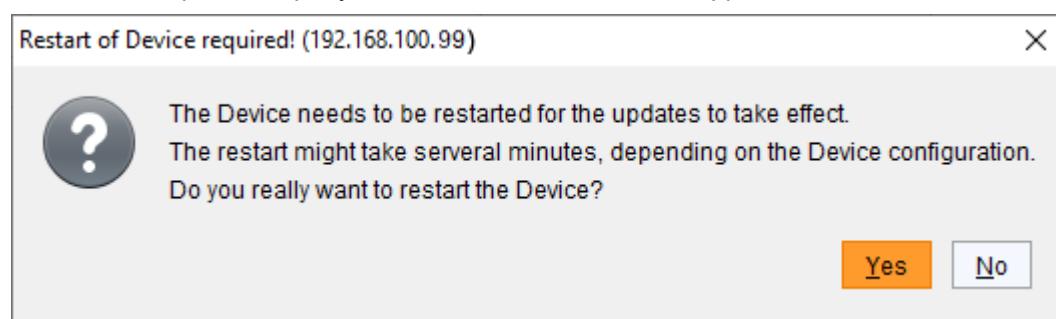


Fig. 74 Management software dialog **Restart Device**

4. Click the **Restart** button to restart the SNMP module.

6.8.2 Updating the Extender Firmware via Management Software

The firmware of the SNMP module can be updated in this menu, except the firmware type MSD.



For special function extensions, it may be necessary to update the firmware type MSD. This is usually done on the instruction of IHSE Tech Support.

#	ID	Name	Port	Type	Device	Current Version	Update Version	Update
01	10190938	EXT_010190938	1	CPU UNIT				<input checked="" type="checkbox"/>
02	10233201	EXT_010233201	2	CPU UNIT				<input checked="" type="checkbox"/>
03	10195232	EXT_010195232	4	CPU UNIT				<input checked="" type="checkbox"/>
04	40121361	EXT_040121361	6	CPU UNIT				<input checked="" type="checkbox"/>
		FXTDPCPU		EXR		F02.33.180921		<input checked="" type="checkbox"/>
		HIDCPU		HID		B00.00.010101		<input checked="" type="checkbox"/>
		EXTDMSD		MSD		B01.32.180606		<input checked="" type="checkbox"/>
		ANASER		SAX		B04.10.101026		<input checked="" type="checkbox"/>
		USBEFS		USB		B00.50.121203		<input checked="" type="checkbox"/>
05	10204216	EXT_010204216	8	CON UNIT				<input checked="" type="checkbox"/>
06	40011493	EXT_040011493	10	CPU UNIT				<input checked="" type="checkbox"/>
07	40040265	EXT_040040265	11	CON UNIT				<input checked="" type="checkbox"/>
		EXTCON		EXT		B03.28.190509		<input checked="" type="checkbox"/>
		HID		HID		B00.00.000101		<input checked="" type="checkbox"/>
		EXTMSD		MSD		B02.50.191009		<input checked="" type="checkbox"/>

Extender firmware version conflict
Manual update of EXTMSD / EXTIMSD recommended
Wrong module type (CPU/CON mismatch)
Undefined type

Fig. 75 Management software menu **Status & Updates - Update - Extender Firmware**

The following information is displayed in the working area:

Option	Description
Name	Module name
Type	Type number
Cur. Version	Installed firmware version
Upd. Version	Current firmware version
Cur. Date	Issue date of the currently installed firmware version
Upd. Date	Date of the latest firmware version
Status	Module availability



Firmware types to be updated or firmware conflicts are highlighted in color:

- Extender firmware version conflict
- Manual update of EXTMSD / EXTIMSD recommended
- Wrong module type (CPU/CON mismatch)
- Undefined type

The different modules can be expanded and collapsed by left-clicking on the “plus” and “minus” symbols in the **Name** column.

By clicking on the “plus” and “minus” symbol in the upper right corner of the working area, you can expand and collapse all module information with a click of the primary mouse button.



If a firmware update has failed, an error message and information appear in the update log in the lower area of the work area.

Preparation



If the syslog function has not been set yet, we recommend activating the syslog function (see chapter 5.4.3, page 40) before updating the firmware to log the update in case of update errors.

To be prepared for a firmware update, proceed as follows:

1. Save the device status configuration locally (see chapter 6.5, page 83).
2. If the options settings for the management software have not yet been set:
Open **Extras > Options** in the menu bar.
Under **Firmware Directory** insert in the directory from which the update files should be standardly sourced.
3. Save the update files in the **Firmware Directory**.

Update

NOTICE

After the update, the extenders are automatically shut down and restarted with the updated firmware without prior notice.

To update the extender firmware, proceed as follows:

1. Select **Status & Updates > Update - Extender Firmware** in the task area.
All updateable components of the extenders are automatically selected and highlighted in green.
2. Click the **Update** button in the lower part of the working area to start the update.
After the update, the extenders will automatically reboot with the updated firmware.

6.9 Powering Down and Resetting via Management Software

6.9.1 Powering Down the SNMP Module

NOTICE

After shutting down, the SNMP module can be disconnected from the power supply.

To shut down the SNMP module, proceed as follows:

1. Select **Device > Advanced Service > Shut down SNMP Board** in the menu bar.
An access window appears.
2. Enter the username and password of the administrator.
3. Click the **Ok** button.

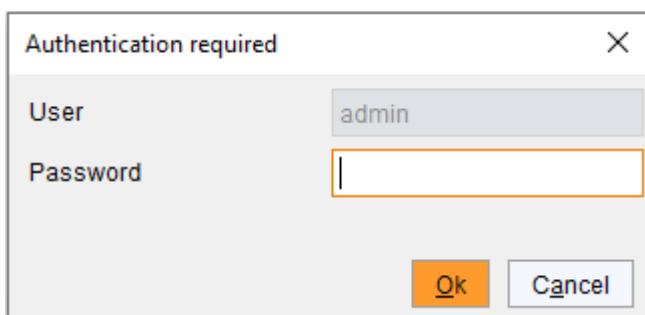


Fig. 76 Management software dialog **Authentication required**

A query to shut down the SNMP module appears.

4. Click the **Yes** button to start the shutdown.

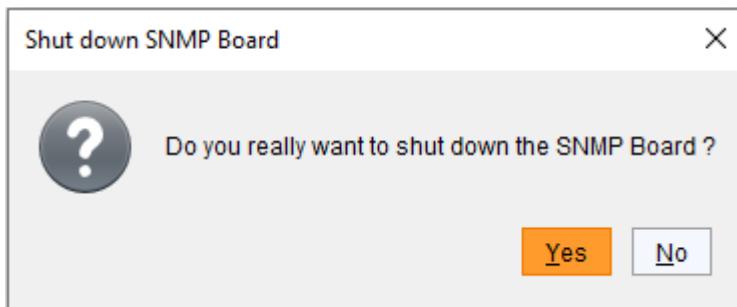


Fig. 77 Management software dialog **Shut down SNMP Board**

The current configuration is saved in the permanent memory of the SNMP module and the SNMP module will be shut down.

After shutting down, a notification to power off the SNMP module appears.

6.9.2 Restarting the SNMP Module

NOTICE

When restarting the SNMP module, the current configuration is saved in the permanent memory of the SNMP module and the SNMP module will be restarted with the active configuration.

To perform a restart of the SNMP module, proceed as follows:

1. Select **Device > Advanced Service > Restart SNMP Board** in the menu bar.
An access window appears.
2. Enter the username and password of the administrator.
3. Click the **Ok** button.

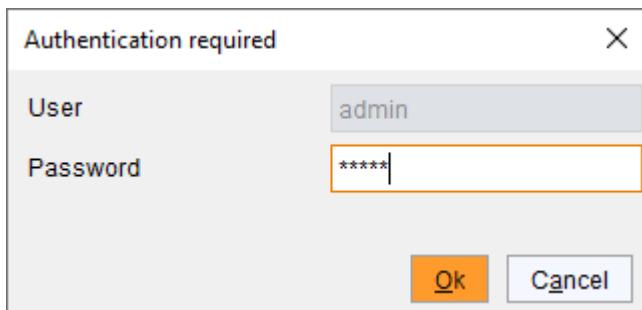


Fig. 78 Management software dialog **Authentication required**

A query to restart the SNMP module appears.

4. Click the **Yes** button to restart the SNMP module.

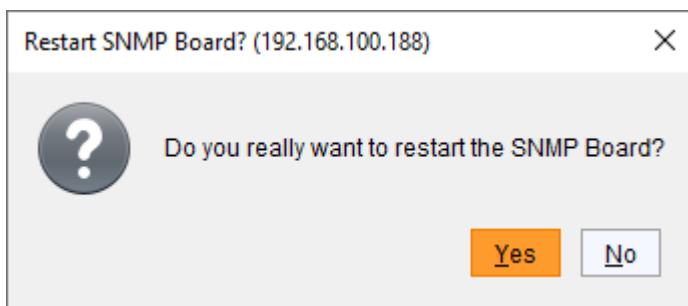


Fig. 79 Management software dialog **Restart SNMP Board**

The current configuration is saved in the permanent memory of the SNMP module and the SNMP module will be restarted.

6.9.3 Resetting the SNMP Module to the Factory Settings

NOTICE

If you perform a (factory) reset, all current settings and the configuration stored in the SNMP module will be lost. This also applies to the network parameters (reset to default IP-address and DHCP) and the admin password.

NOTICE

If a firmware update has been carried out since the delivery, this firmware version is retained.

To perform a reset of the SNMP module, proceed as follows:

1. Select **Device > Advanced Service > Factory Reset > Factory Reset** in the menu bar.
An access window appears.
2. Enter the username and password of the administrator.
3. Click the **Ok** button to confirm your entries.

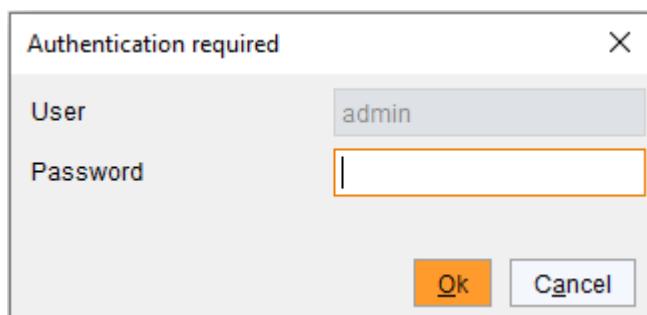


Fig. 80 Management software dialog **Authentication required**

- A query to reset the SNMP module appears.
4. Click the **Yes** button to reset the device.

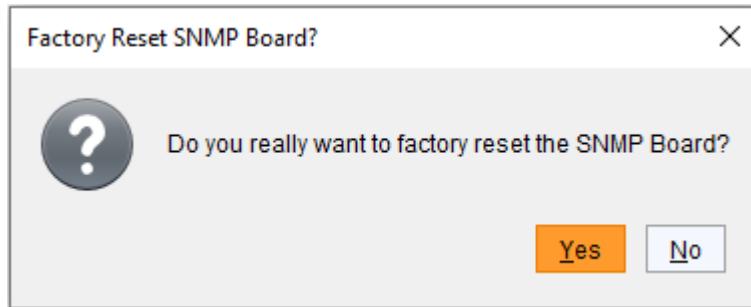


Fig. 81 Management software dialog **Factory Reset SNMP Board**

The SNMP module is reset to factory settings and DHCP is activated (474-SNMPV3) or deactivated (474-SNMP).

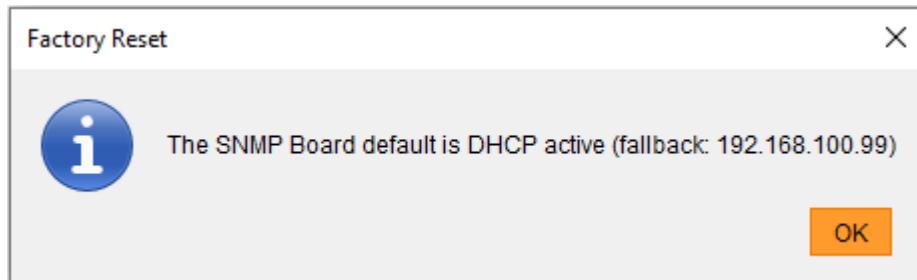


Fig. 82 Management software message **Factory Reset** (example 474-SNMPV3)

7 Technical Data

7.1 Interfaces

7.1.1 Mini-USB

This interface enables a customer specified communication with the SNMP module. The firmware could also be updated using this interface.

7.1.2 RJ45 (Network)

The network communication of the devices requires a 100BASE-T connection.

The cabling has to be done according to EIA/TIA-568-B (100BASE-T) with RJ45 connectors at both ends. All four wire pairs are used in both directions. The cabling is suitable for a full duplex operation. For the cable connection to a source (computer, CPU), a crossed network cable (cross cable) has to be used.

7.1.3 RS232 Serial

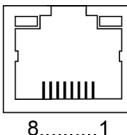
Communication takes place with a transmission speed of up to 115.2 KBaud, regardless of the file format. The transmission takes place with eight data bits and a stop bit, but without a parity bit. Limited hardware handshake (CTS and RTS) is possible.

7.2 Connector Pinouts

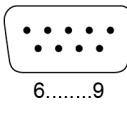
7.2.1 Mini-USB, Type B

Connector	Pin	Signal	Color
	1	+5 V (DC)	Red
	2	Data -	White
	3	Data +	Green
	4	Not connected	-
	5	GND	Black

7.2.2 RJ45 (Netzwerk)

Connector	Pin	Signal	Pin	Signal
 8.....1	1	D1+	5	Not connected
	2	D1-	6	D2-
	3	D2+	7	Not connected
	4	Not connected	8	Not connected

7.2.3 D-Sub 9 (Serial) RS232

Connector	Pin	Signal	Color	
 1.....56 6.....9	1	Not connected	6	DSR
	2	RxD	7	RTS
	3	TxD	8	CTS
	4	DTR	9	Not connected
	5	GND	-	-

7.2.4 Power Supply

Connector	Pin	Signal
	Inside	+5 V DC
	Out-side	GND

7.3 Power Supply, Current Draw and Power Consumption

NOTICE

Overheating of the power supply units

In case of having redundant power supply units, the maximum current must not exceed the value of one of the two power supply units due to the heat dissipation.

7.3.1 Power Supply of the Chassis (AC)

Product type	Maximum current draw	Maximum voltage AC	Frequency
474-BODY6BP	1.300 mA	100 V bis 240 V	50/60 Hz
474-BODY6BPF	1.300 mA	100 V bis 240 V	50/60 Hz
474-BODY21/4U	4.000 mA	2x 100 V bis 240 V	50/60 Hz

7.3.2 Current Draw and Power Consumption of the SNMP Modules

NOTICE

Exceeding the maximum permissible current draw

In addition to the current draw of the extender and additional modules, there is also the current draw of the connected peripherals.

- Note the maximum current draw of the housing (see chapter 7.3.1, page 96).

Product type	Maximum current draw	Maximum power consumption
474-SNMP	300 mA	1,4 W
474-SNMPV3	510 mA	2,4 W

7.4 Environmental Conditions and Emissions

Parameter	Value
Operating temperature	5 to 45 °C (41 to 113 °F)
Storage temperature	-25 to 60 °C (-13 to 140 °F)
Relative humidity	Max. 80% non-condensing
Operating altitude	Max. 2.500 m (7,500 ft)
Sound pressure level (SPL)	Max. 21 dBA per fan (474-6FAN)
Heat dissipation	Corresponds to power consumption in Watt (W)

7.5 Dimensions

Chassis	Dimension	Dimension of the shipping box
474-BODY6BP / 474-BODY6BPF	442 x 250 x 44 mm (17.4" x 9.8" x 1.7")	550 x 372 x 155 mm (21.7" x 14.6" x 6.1")
474-BODY21/4U	482 x 462 x 176 mm (19.0" x 18.2" x 6.9")	645 x 574 x 368 mm (25.4" x 22.6" x 14.5")

Module	Dimension
474-SNMP	129 x 20 x 145 mm (5.1" x 0.8" x 5.7")
474-SNMPV3	129 x 20 x 145 mm (5.1" x 0.8" x 5.7")

7.6 Weight

The following table contains the weight when the respective chassis is fully equipped, for both the CPU Unit and the CON Unit.

Chassis	Weight	Weight inclusive shipping box
474-BODY6BP / 474-BODY6BPF	2.5 kg (5.5 lb)	3.5 kg (7.7 lb)
474-BODY21/4U	10.0 kg (22.1 lb)	14.5 kg (32.0 lb)

Module	Dimension
474-SNMP	100 g (0.22 lb)
474-SNMPV3	100 g (0.22 lb)

7.7 MTBF

Specific MTBF values (mean time between failure) can be requested from the manufacturer if required.

8 Maintenance

The device contains no user serviceable parts inside.

- ➔ Do not attempt to open or repair the device.
- ➔ Do not attempt to open or repair a power supply unit.
- ➔ Please contact your supplier or manufacturer if there is a fault.

9 Troubleshooting

9.1 SNMP Module

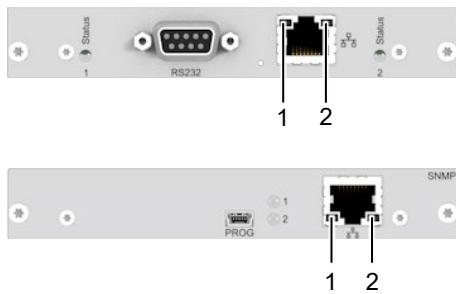


Fig. 83 Interface side SNMP modules - failure indication

Diagnosis	Possible reason	Measure
LED 1 or LED 2 off	No computer connected	<ul style="list-style-type: none"> ▶ Connect the computer. ▶ Check the network cable. ▶ Check the connectors.
No network connection possible	No connection between SNMP module and computer	<ul style="list-style-type: none"> ▶ Check the network cable. ▶ Check the connectors.
	Firewall settings are not correct	<ul style="list-style-type: none"> ▶ Release ports for the firewall (see chapter 4.1, page 27)
Serial device not operational	Settings of the serial interface	<ul style="list-style-type: none"> ▶ Check baud rate and general settings.
	No serial connection to source	<ul style="list-style-type: none"> ▶ Check connection via serial cable.
	No serial connection to end device (e.g. touch screen, keyboard)	<ul style="list-style-type: none"> ▶ Connect serial end device and switch it on. ▶ Check connection via serial cable.

9.2 No Access to the SNMP Modul

If no access to the SNMP module is possible because the administrator password or the IP address has been forgotten, you can reset the SNMP module to the factory settings via jumper.

9.2.1 474-SNMP Setting Jumper

1. Switch off the SNMP module / disconnect from power supply.
2. Set jumper 3.
3. Switch on the SNMP module.
4. Wait 2 minutes.
5. Switch off the SNMP module / disconnect from power supply.
6. Remove the jumper.
7. Switch on the SNMP module.

The SNMP module has been reset to factory settings, incl. administrator password and network configuration.

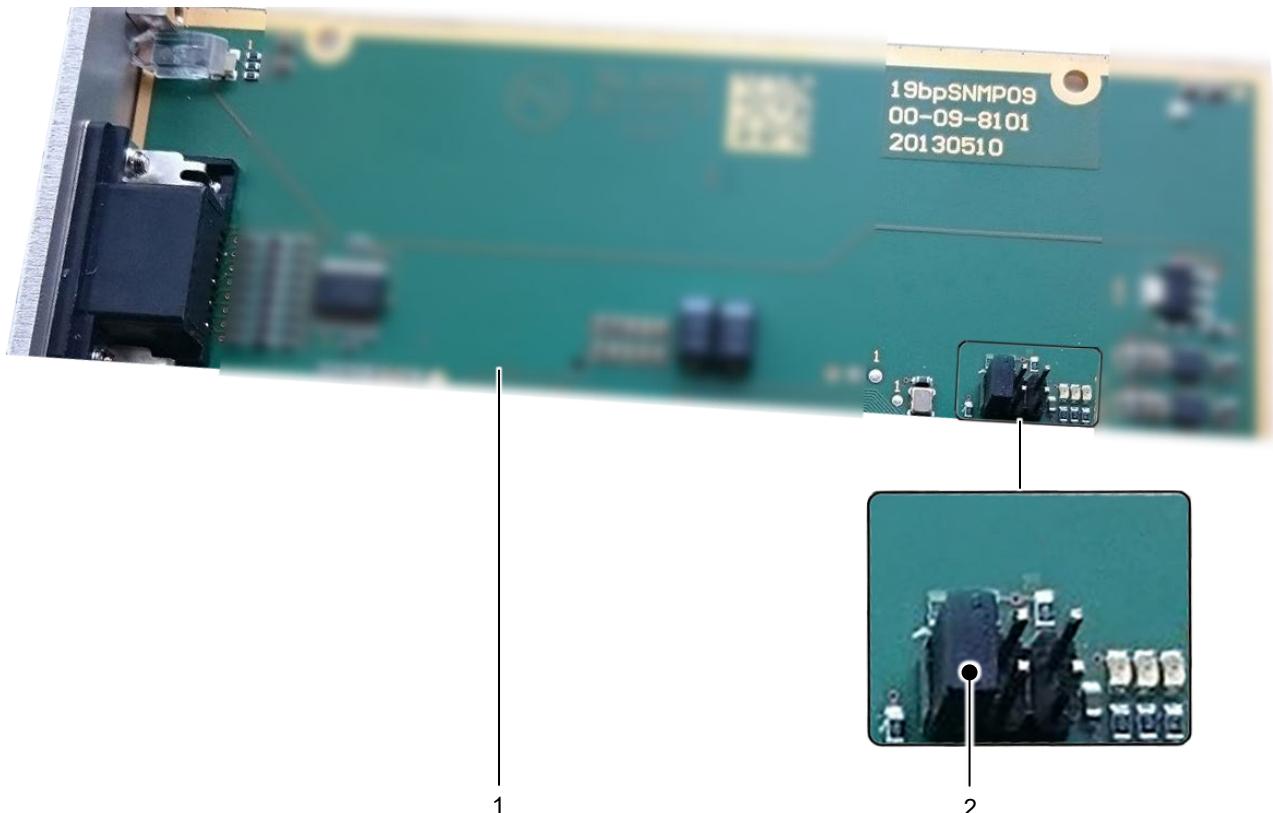


Fig. 84 474-SNMP - setting of jumper 3

1 SNMP module 474-SNMP

2 Jumper 3

9.2.2 474-SNMPV3 Setting Jumper

1. Switch off the SNMP module / disconnect from power supply.
2. Set jumper 2.
3. Switch on the SNMP module.
4. Wait 2 minutes.
5. Switch off the SNMP module / disconnect from power supply.
6. Remove the jumper.
7. Switch on the SNMP module.

The SNMP module has been reset to factory settings, incl. administrator password and network configuration.

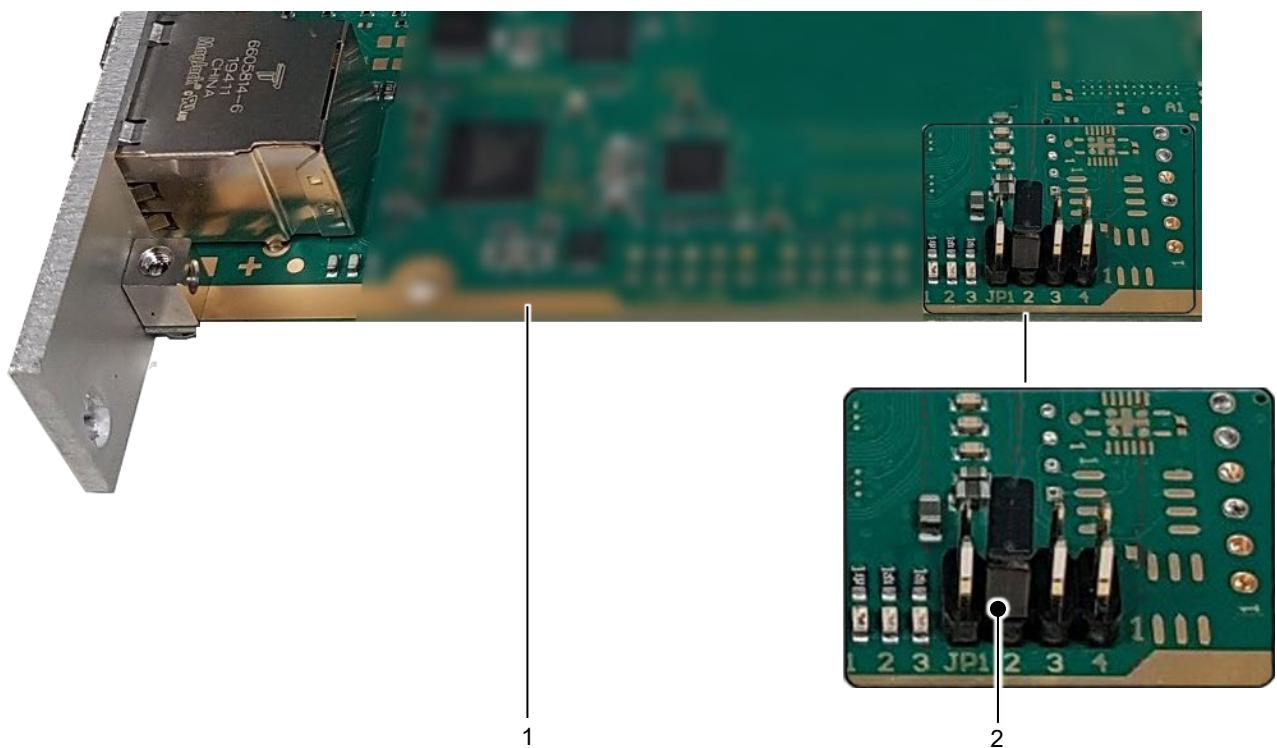


Abb. 1 474- SNMPV3 - Jumper 2 setzen

1 SNMP-Modul 474-SNMPV3

2 Jumper 2

10 Technical Support

Prior to contacting support please ensure you have read this manual, and then installed and set-up your KVM Extender as recommended.

10.1 Support Checklist

To efficiently handle your request, it is necessary that you complete a support request checklist ([Download](#)). Please ensure that you have the following information available before you call:

- Company, name, phone number and email
- Type and serial number of the device (see bottom of the device)
- Date and number of sales receipt and name of dealer if necessary
- Issue date of the existing manual
- Nature, circumstances, and duration of the problem
- Components included in the system (such as graphic source/CPU, OS, graphic card, monitor, USB-HID/USB 2.0 devices, interconnect cable) including manufacturer and model number
- Results from any testing you have done

10.2 Shipping Checklist

1. To return your device, you need an RMA number (Return-Material-Authorization). Therefore, please contact your dealer.
2. Package your devices carefully. Add all pieces which you received originally. Preferably use the original box.
3. Note your RMA number visibly on your shipment.



Devices that are sent in without an RMA number will not be accepted. The shipment will be sent back without being opened; postage unpaid.

11 Certificates/Directives

11.1 North American Regulatory Compliance

This equipment has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Shielded cables must be used with this equipment to maintain compliance with radio frequency energy emission regulations and ensure a suitably high level of immunity to electromagnetic disturbances.

All power supplies are certified to the relevant major international safety standards.

11.2 Product Safety

The product safety of the following devices is proven by the compliance to the listed standards

Type	Standards
474-BODY6BP	<ul style="list-style-type: none"> IEC 62368-1:2014 EN 62368-1:2014/A11:207
474-BODY6BPF	<ul style="list-style-type: none"> UL 62368-1:2014 CAN/CSA-C22.2 No. 62368-1:2014
474-BODY21/4U	<ul style="list-style-type: none"> EN 60950-1/A12:2011 IEC 60950-1/A1:2010 UL 60950-1-2007 CAN/CSA-C22.2 No. 60950-1:2007

The compliance to the standards is verified and confirmed by TÜV Süd, Germany.



11.3 WEEE

The manufacturer complies with the EU Directive 2012/19/EU on the prevention of waste electrical and electronic equipment (WEEE).

The device labels carry a respective marking.

11.4 RoHS

This device complies with the Directive 2011/65/EU of the European Parliament and of the council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (including the Commission Delegated Directive (EU) 2015/853 of 31 March 2015 amending Annex II to Directive 2011/65/EU).

The device labels carry a respective marking.

12 EU Declaration of Conformity

We as manufacturer hereby declare under our sole responsibility that the products listed below comply with the essential requirements which are determined in the following harmonization regulations described below:

Manufacturer IHSE GmbH
Benzstraße 1
88094 Oberteuringen
Germany

Product Type SNMP Module

Product number 474-SNMP and 474-SNMPV3

2014/30/EU	Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility.
2014/35/EU	Council Directive on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.
2011/65/EU	Council Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Compliance with the directives is verified by compliance with the following standards:

EN 55032:2015

EN 55024:2010 + A1:2015

EN 61000-3-2:2019

EN 61000-3-3:2013 + A1:2019

EN 61000-6-2:2019

EN 62368-1:2014/A11:2017

EN 63000:2018

Oberteuringen, January 28, 2021

Place, Date



Managing Director, Dr. Enno Littmann

This declaration certifies the compliance with the mentioned directives but does not include any assurance of properties within the meaning of the Product Liability Act. The safety instructions in the product documentation must be observed. If the device is modified without the manufacturer's consent and the safety instructions are not followed, this declaration becomes invalid.

A copy of the original, product-specific EU Declaration of Conformity can be requested. For contact details, see page 2 of this manual.

13 Glossary

The following terms are commonly used in this manual or in video and KVM technology.

Term	Description
CON Unit	Component of a KVM Extender or Media Extender to connect to the console (monitor(s), keyboard and mouse; optionally also with USB 2.0 devices)
CPU Unit	Component of a KVM Extender or Media Extender to connect to a source (computer, CPU)
Konsole	Monitor, keyboard and mouse
KVM	Keyboard, video and mouse
MTBF	Mean Time Between Failure (MTBF) is measured in power-on hours and describes the system reliability.
Single-Head	A system with one video connection
USB-HID	USB-HID devices (Human Interface Device) allow users to interact with computers. There is no need for a special driver during installation; “New USB-HID device found” is reported. Typical USB-HID devices include keyboards, mice, graphics tablets and touch screens. Storage, video and audio devices are not HID.

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