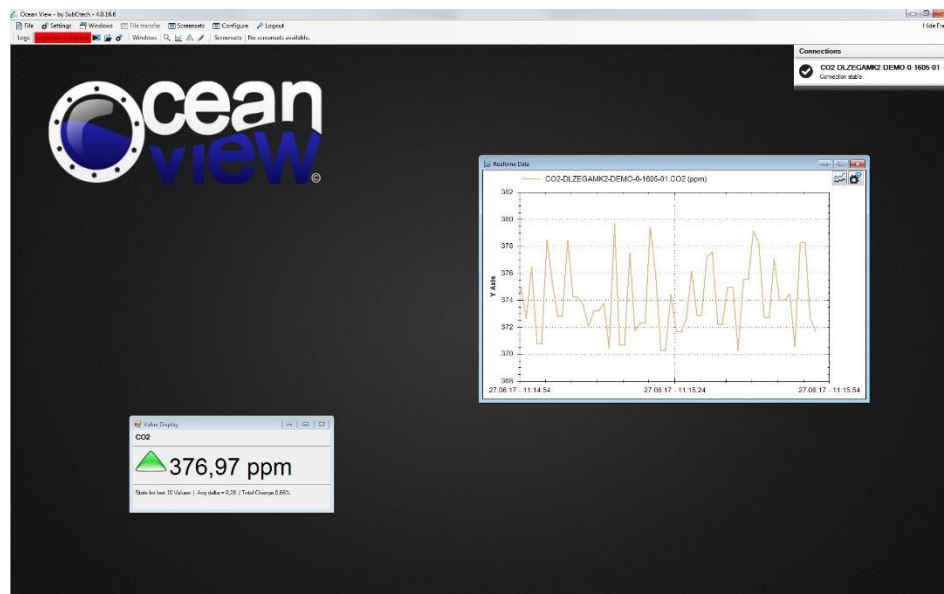# *OceanView 4 - Basic*

Software to configure and remotely operate SubCtech sensors and to display measured values

operation manual

Version history

Revision	Date	Author	Comment
0-1	02.05.17	TR	Document initiated
0-2	05.05.17	TR	Protection notice included in copyright statement and footer
4-4	21.09.17	RG	New format
4-5	10.11.17	RG	Minor format changes
4-6	05.12.17	RG	Added configuration import and export function
4-7	23.01.18	RG	Added Installation warning
4-8	27.04.18	RG	New Installer Version
4-9	14.05.18	RG	Added GPIO-Test-Dialog
4-10	16.11.18	RG / SM	New Appendix "Configuration data order" Added new troubleshooting hint / Minor format changes.
4-11	18.11.26	RG	Added Moxa NPort Installation Reorganised Installation process

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Content

1. General information

1.1. About this document

Warning:

➡ Important or safety notes

Note:

● Practical tips

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1.3. Liability

This manual has been developed with the highest due diligence. Nevertheless, we cannot provide any warranty whatsoever for absence of errors and accuracy of the given information. We disclaim any liability for damage that might, directly or indirectly, result of using this manual, as long as they have not been caused intentionally or through gross negligence.

Please note: in view of our continual improvement policy, the design and specifications of our products may vary from those illustrated in this brochure.

1.3.1. Limited Liability Statement

Extreme care should be exercised when using or servicing the equipment. It should only be used or serviced by personnel with knowledge of and training in the use and maintenance of oceanographic and sub-sea offshore electronic equipment.

SubCtech disclaims all product liability risks arising from the use or servicing of this system. SubCtech has no way of controlling the use of this equipment or of choosing the personnel to operate it and therefore cannot take steps to comply with laws pertaining to product liability, including laws which impose a duty to warn the user of any dangers involved in operating this equipment. Therefore, acceptance of this system by the customer shall be conclusively deemed to include a covenant by the customer to defend, indemnify, and hold SubCtech harmless from all product liability claims arising from these or servicing of the product.

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We guarantee that this product complies with the quality and specification stipulated. We undertake to remedy any defect from faulty design, material or workmanship during one year after delivery of the equipment. This guarantee is not extended to underwater connecting cables supplied by SubCtech where break or malfunction occurs to the cable during installation or when caused by wear or other external forces, e.g. to the membranes.

1.5. Support

We encourage exchange of information and cooperation! If any queries or problems occur, please contact us. To evaluate your concern, we need as much detailed information as possible, for example:

- Hardware and software configuration of your PC or laptop
- Program version
- Description of problem(s)
- Data logs
- Can the equipment be returned to SubCtech or an authorized dealer if required?

All SubCtech manuals are available as PDF downloads from our FTP-Server subject to a special username and password – allocated on application.

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1.6. Safety

This Software has to be operated by experienced and trained personnel only. All procedures, operations and measures must be approved by the supplier prior to operate the system.

1.7. Manufactory Contact

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sales:	info@subCtech.com	
support:	support@subCtech.com	

1.8. Abbreviations

API	**A**pplication **P**rogramming **I**nterface.
CRC	**C**yclic **R**edundancy **C**heck.
FTP	**F**ile **T**ransfer **P**rotocol
GSM	**G**lobal **S**ystem for **M**obile Communication.
HDLC	**H**igh Level **D**ata **L**ink **C**ontrol. IEEE binary protocol
HTML	**H**yper**t**ext **M**ark-up **L**anguage.
IEEE	**I**nstitute of **E**lectrical and **E**lectronics **E**ngineers.
LAN	**L**ocal **A**rea **N**etwork
NetDI	**Net**work **D**ata **I**nterface, SubCtech's high-performance data logger
NMEA	The **N**ational **M**arine **E**lectronics **A**ssociation (NMEA) is the unifying force behind the entire marine electronics industry, bringing together all aspects of the industry for the betterment of all in our business. SubCtech is member of the NMEA.
ODAS	**O**ceanographic **D**ata **A**cquisition **S**ystem.
PLC	**P**rogrammable **l**ogic **C**ontroller. In German SPS: **S**peicher**p**rogrammierbare **S**teuerung, IEC61131-3
RS-232, RS-485	IEEE physical layers 1 of the ISO-communication model, later changed to EIA RS-232, RS-485
SmartDI	**Smart D**ata **I**nterface, SubCtech's former data logger
UNESCO	**U**nited **N**ations **E**ducational, **S**cientific and **C**ultural **O**rganization.

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2.   Installation

2.1.   Preface

In the past OceanView only received data from the OceanPack via RS232 or RS485 interface.
Since these hardware interfaces become more and more obsolete, different solutions for the data transfer are used.

1. USB to RS232/485 converter
   These converters extend a local PC with an RS232 port, so the OceanPack can be connected almost directly to a PC located close to the OceanPack. For longer distances RS485 converters are recommended.
   These transmission interfaces need exclusive additional cabling.
2. RS232 to ethernet converter
   These converters use a local area network (LAN) to transmit the measured data which is nowadays available on most research vessels. The DataServer is connected to this LAN.

Both converter types use virtual comports to emulate the serial interface.
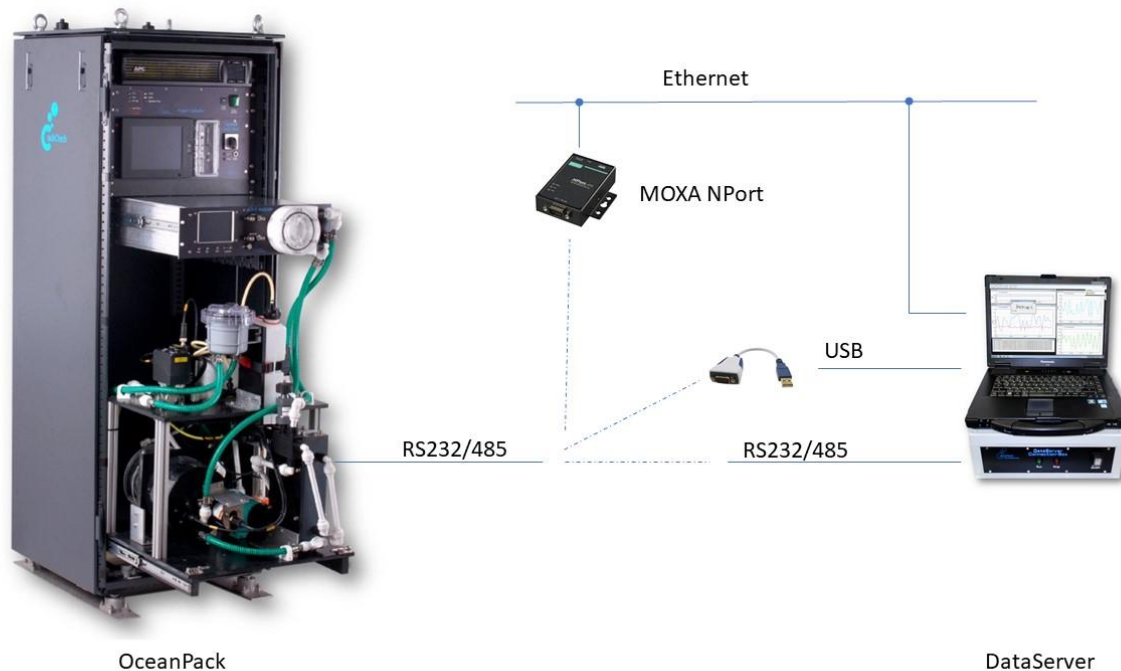
2.2.   The installation

1. Depending on the used converter different configuration methods should be conducted:
   In case of a USB converter there is nothing special to do after it is detected by Windows© because OceanView will configure the serial port.
   In case of an ethernet converter the configuration is described in chapter Installation of Moxa NPort Serial-Ethernet-Converter.

2. Install the Microsoft®.NET runtime environmental Version 4.5 or later – only if not already installed.

3. Start the OceanView installer and follow the instructions of the installer program.

- **You DO NOT NEED to change the COM port settings in Windows© !**

2.2.1. Installation of the OceanView Software

In this chapter you learn how to install OceanView. Your actual Version could be slight different, but has to be version 4. The OceanView Software will be delivered in a setup file style which needs **administrator rights** to be installed correctly. After successful installation process no administrator rights are needed to run OceanView Software.

➡ Since the user of should only have administrator during installation processes, the SubCtech program data folder must be given write access for the default user group to store application data in this folder.

The OceanView installer should do this on Windows7 and newer systems.

2.2.2. Update preparation

In case of updating OceanView
1. copy the content of the folder "C:\programdata\subCtech" to a backup destination, or use the "Export Sensor Configuration" function in the sensor configuration menu for every installed sensor, and "Save as new screenset" in the Screenset Menu to save the current settings.
2. Uninstall the OceanView via Windows© Control Panel → Software → OceanView
3. Install new OceanView version according to the following chapter
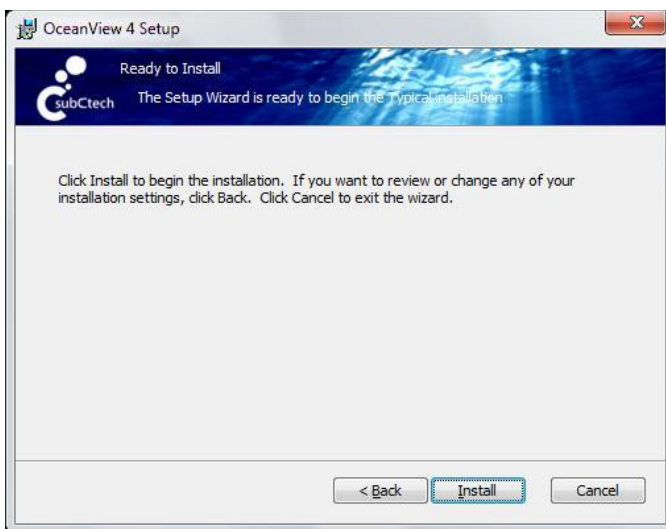
2.2.3. Installation

1. Start the OceanView installer "OceanView.Setup.msi"
2. Following the welcome dialog, the installer asks to accept the end-user licence agreement.
3. After that different installation configurations can be chosen.
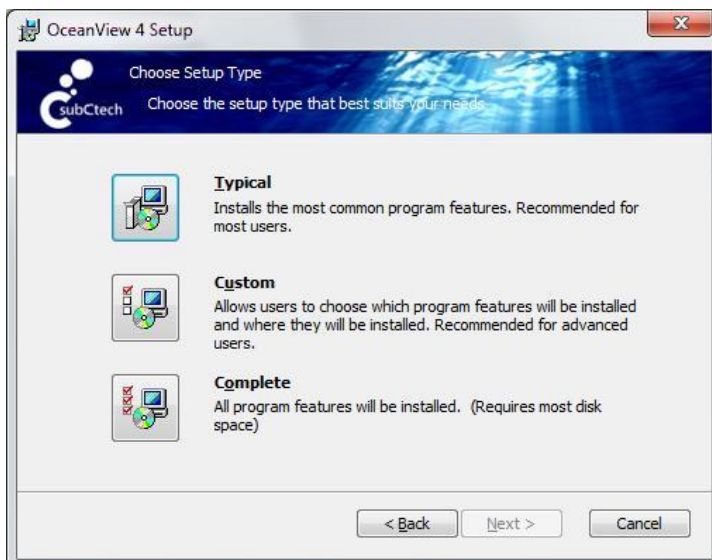
4.   Choosing Typical or Complete installation leads the same result of a complete installation.
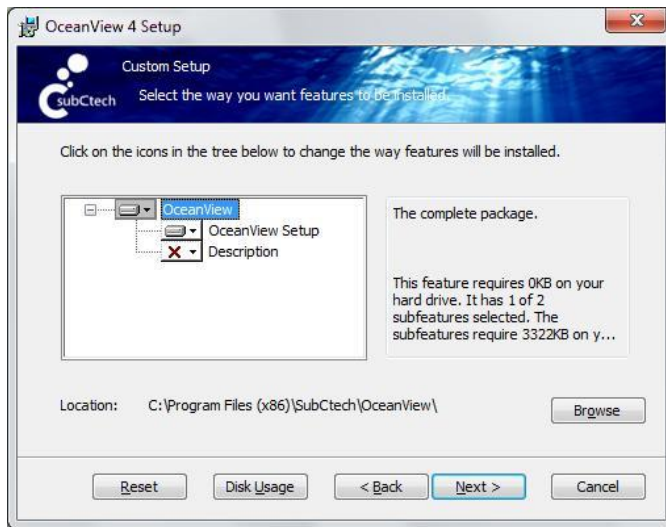
Choosing Custom installation opens another dialog where the installation path and the extent of the OceanView installation can be set.

After confirming the chosen installation method the Windows© operating system requests - in case the current user has no administration rights - if OceanView really should be installed.

5. In the last dialog there are activities listed that will be started after closing the dialog.

"Launch OceanView 4" means that application just now installed will be started.

"Show Manual" opens a pdf-reader in case the OceanView manual was part of the installation.

"Visit http://www.subctech.com" opens the website in an internet browser.

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2.3. Removing

With the OceanView installation software you have some options to remove the software:

1. Use the START → Windows© Control Panel → Software → OceanView (recommended for Versions of OceanView older than 4.0.16.37)

2. Start OceanView.Setup.msi

3. choose "Remove"
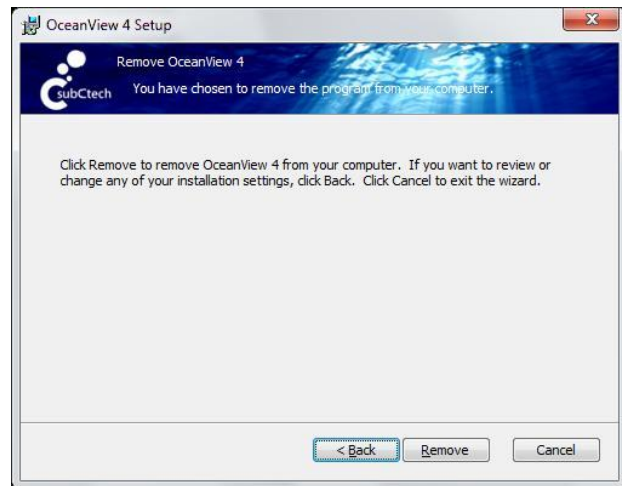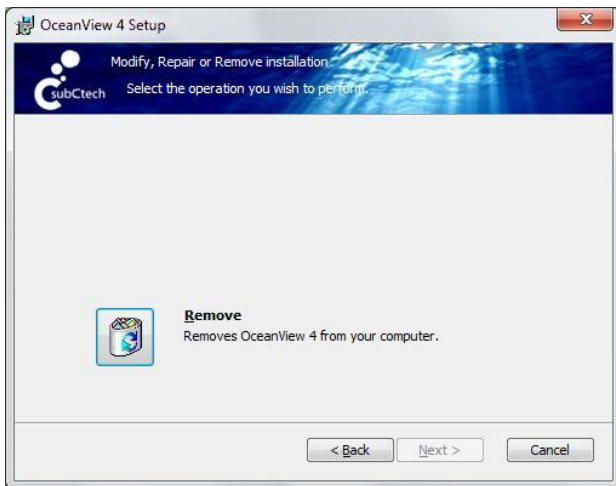
4. confirm the Windows© operating system request if dialog appears

5. confirm the installer completeness message.

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3. Operation

The main purpose of OceanView software is to collect and log data generated by the connected sensors, and to visualize these values.

OceanView gives the opportunity to show single measurement in a numerical display or a random number of different measurements in a graph assigned over a time interval.

Furthermore, it is possible to log measurements in user-defined files and to program alerts depending on user-defined thresholds controlling signal lamps or something like that.
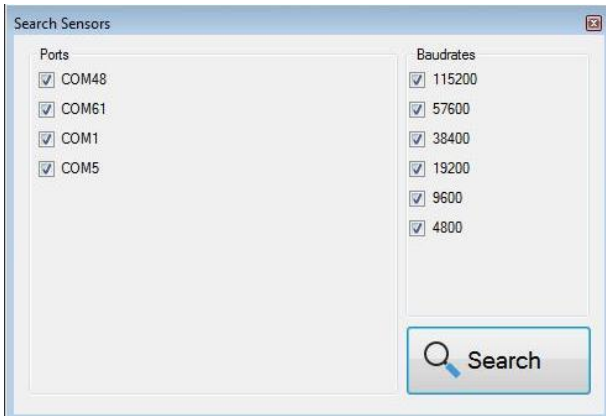
On the other side, it is possible to control OceanView and connected sensors remotely with the aid of external buttons.

3.1. About OceanView's data transfer

OceanView only receives and sends data in NMEA-0183 format. This format consists of the start delimiter „$", the talker id describing the data source and the used protocol, several comma separated data fields, an optional checksum (marked by „*", in hexadecimal format) and the string delimiter „\r\n" (aka <CR><LF>).

The NMEA protocols generated by SubCtech sensors are described in a separate document.

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3.2. First Start

At the very first start OceanView prompts a dialog to search for connected sensors.

This dialog shows all available serial ports on the PC and supported baud rates.

If the port and baud rate of the connected sensor is known all other parameters can be unchecked what speeds up the search. Clicking the Search button starts the search.
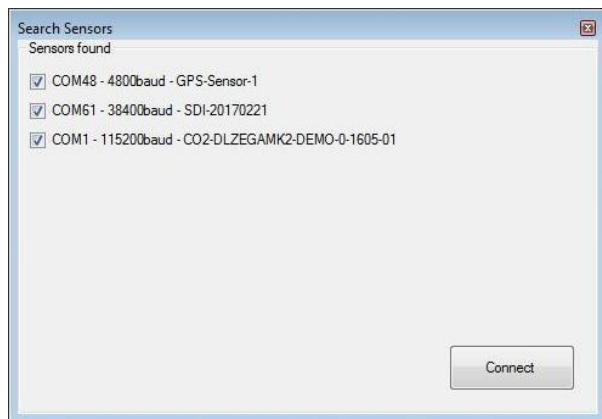
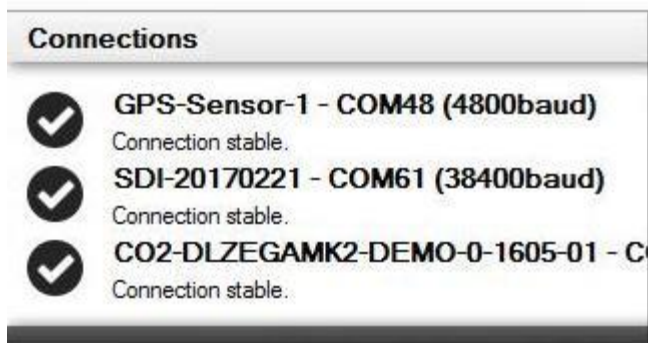After a while the dialog either shows the found sensors

or a message that no sensors were found.

In the first case clicking the Connect button populates all checked sensors to the Sensor management system of OceanView for further use.

The second case requires troubleshooting described in chapter Troubleshooting.

3.2.1. Connections state box

After the successful search the known sensor names and parameters like comport, baud rate and connection stability were shown in the connections status field in the upper right corner of the main screen.

At first for SubCtech sensors the serial number is used as the sensor's name. It can be changed to a more user friendly name.

Sensors which are not compatible to SubCtech sensors make OceanView prompt a dialog in which an unchangeable sensor name must be given.

The connection stability display is triggered by every data set received by OceanView from the belonging sensor. OceanView requests in regular intervals data from the sensors if they do not send data by themselves. If there is no data received for a while the status changes from „Connection stable" over „Possible connection loss - timeout 1/3", „timeout 2/3", „timeout 3/3" to „Connection lost". Any valid data frame received from the sensor changes the state back to „Connection stable".
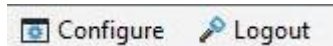
3.3. Configuration

3.3.1. Sensor data configuration

At first the received data fields only contain numbers or text. This information is less meaningful since there is missing an appropriate name and the physical scale. Both of them and more parameter can be set in the configuration dialog.

To get access to the configuration dialog the operator has to log in.
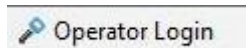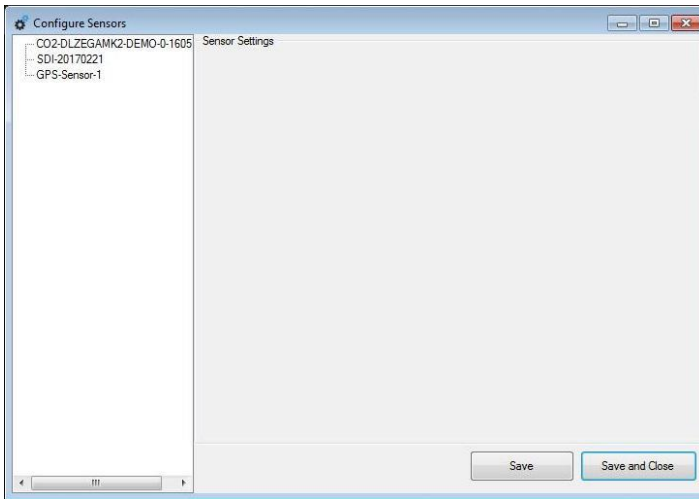

After typing in the right password, an additional menu item appears and the operator's login menu item changes to Logout.

- After one hour, the operator will be logged off automatically.

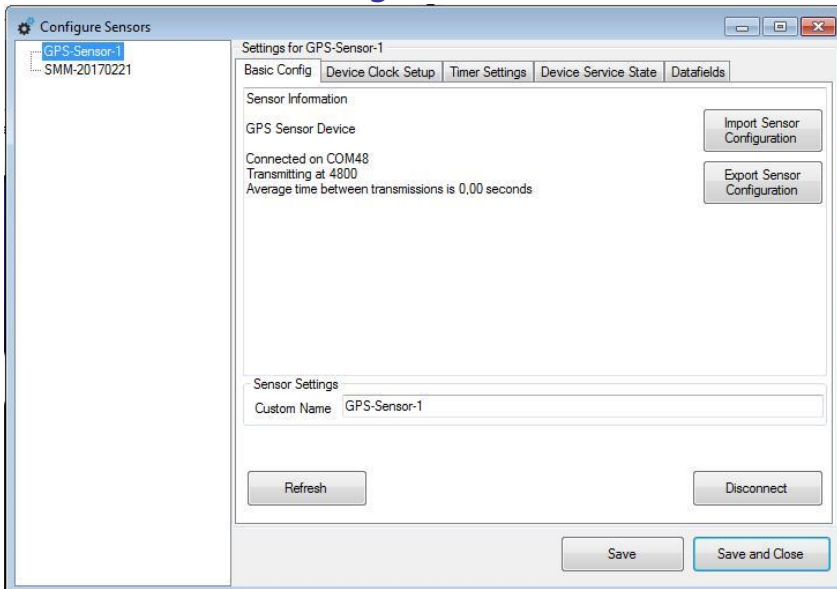Clicking the Configure menu opens the sensor configuration dialog.

This dialog shows on the left side the names of the connected sensors. Choosing one of the names changes the content of the right panel to a tab view.

- Depending on the NMEA protocols supported by the chosen sensor more or less tabs are available.

3.3.1.1. The Basic Config tab

shows information about the sensor like the sort of sensor, serial number, hardware version, software version, comport, baud rate and average time between two data transmissions.

In the custom name text box the sensor can be given a more user friendly name. In case the selected sensor contains a power management module a "Device power off" button is shown. A click on this button sets the sensor to its standby mode after confirming the shutdown dialog.

In case the selected sensor is a battery management system an "Edit Configuration" button is shown. A click on this button opens a dialog where the battery parameters can be set or edited.

The save and close button saves the changes to the local database and closes the configuration dialog. The save button does the same but keeps the dialog open for further changes made to other tabs.

The refresh button requests a new version of parameter list from the sensor.

The disconnect button disconnects the sensor from the software after confirming.

It can be reconnected by starting the sensor search.

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OceanView allows to export the current sensor's configuration data so it can be copied to another PC. Configuration data exported earlier can be imported into OceanView.

To *export the current sensor's configuration data* press the associated button. A dialog opens where the destination directory can be chosen. OceanView saves the configuration data in XML formatted file named after the sensor's factory name in case of a SubCtech sensor. Files of generic sensors are named with the custom name given by the user. OceanView asks if it should overwrite an already existing file.

> ➡ Change the destination directory in case you want to keep different configurations of one sensor.

To *import existing configuration data* e.g. provided by SubCtech support, press the associated button. A dialog opens where an XML file can be chosen. OceanView checks if the data fits for the currently selected sensor. In case of a successful import, OceanView prompts a message box the save the new configuration data to the system.

> ➡ The current configuration will be overwritten without any notification when OceanView is shut down regularly.

3.3.1.2. The Device Clock Setup tab
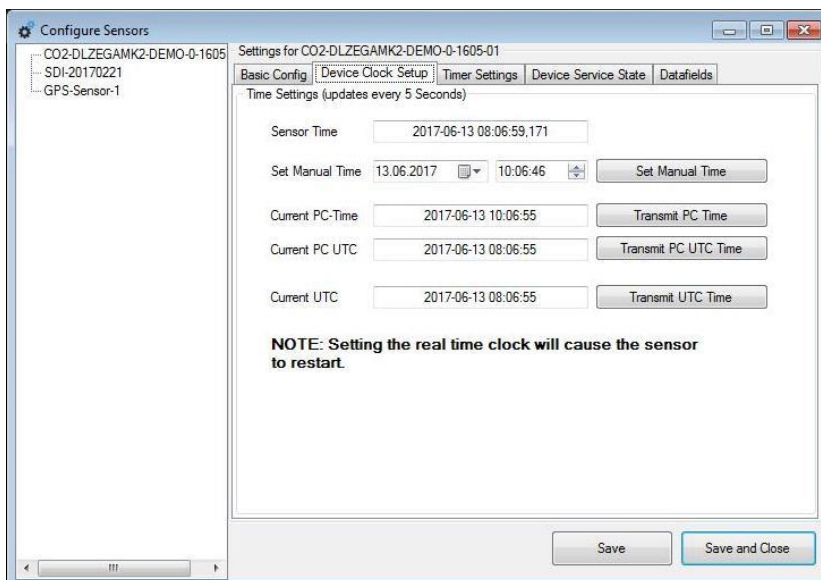
shows the current sensor time.

This time can be set depending on different clock sources and formats.

Selecting date and time and clicking "set manual time" sets the sensor clock to the selected date and time.
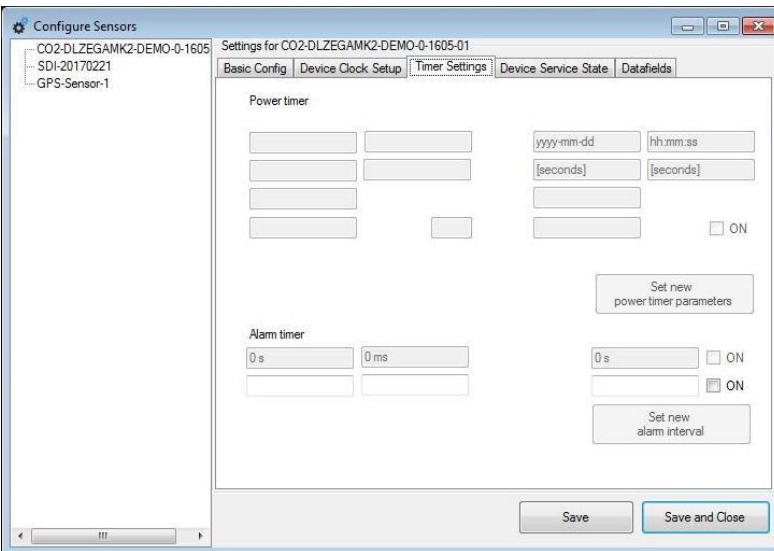
Clicking "Transmit PC time" uses the clock of the host PC and sets the sensor clock to the local date and time.

Clicking "Transmit PC UTC time" uses the clock of the host PC and sets the sensor clock to the calculated UTC („Coordinated Universal Time") (recommended if no GPS time is available). If a GPS receiver is connected to OceanView its time information can be used best.

Clicking the "transmit UTC time" button transmits the next received UTC timestamp to the sensor.

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3.3.1.3. The Timer Settings tab

shows textboxes to control the wakeup timer and uptime intervals of the selected sensor if the sensor supports this function.

3.3.1.4. The Device Service State tab
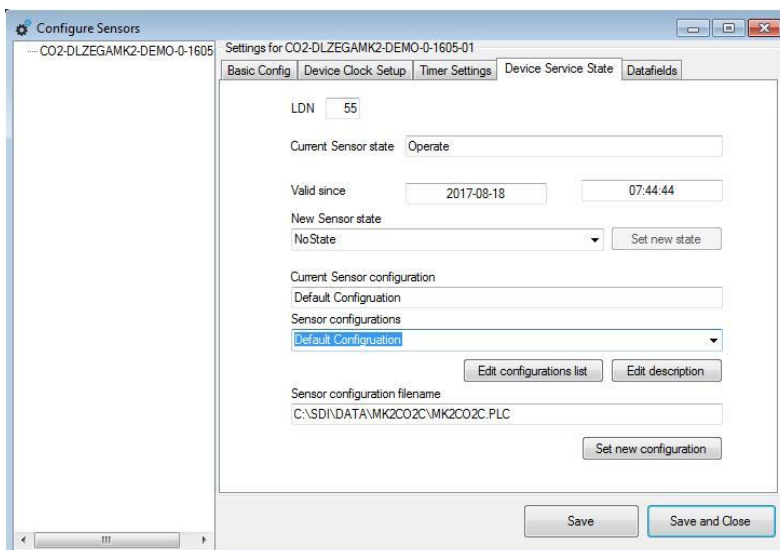
shows in the top section the LDN ("logical device number", default: 55). The next line shows the current operating state of a SubCtech data logger and the date since the state is valid.

Below this, a new state can be set by selecting one from the option box and clicking the button.

The state display will be updated constantly.

Software version V6.14 and upper of the SubCtech data logger firmware supports a remote control of the sensors' configuration.

As before the different configuration files must be available on the local operating system of the sensor.

The list of configuration file names and their descriptions is stored in a local data base on the host PC.

OceanView requests the file name of the current sensor configuration running and receives its file name.
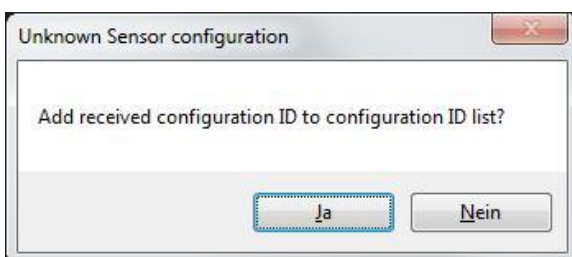
In case of a known configuration OceanView displays the description in the corresponding text box.

In case of an empty data base or an unknown configuration file name, a dialog opens asking the user for adding the name to the list. Closing this dialog without adding the name to the list makes OceanView prompt this dialog again only after reopening the sensor configuration dialog.
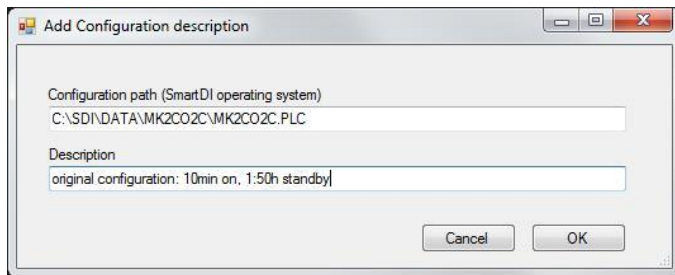
It is recommended to add the configuration file name and description to the data base.

In Order to do this a dialog opens with two text boxes.

In the upper box OceanView filled in the received file name.

In the lower box the user can type in a meaningful description of the configuration, e.g. like in this example the working interval of the sensor. Clicking OK adds the file name and description to the data base.

The configuration list can be edited by clicking the corresponding button.
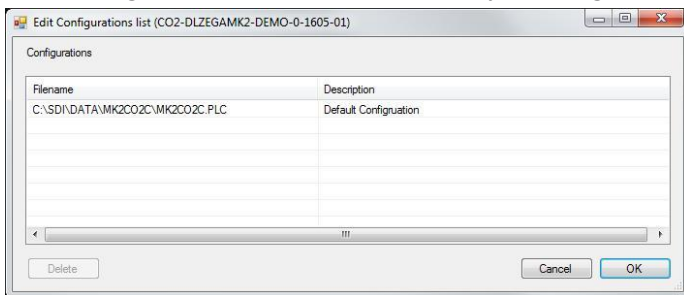
Double clicking on a list entry, a dialog opens in which the file name and the description can be edited equivalent to the dialog for adding a new configuration description combination.

It is also possible to add a new combination to the list by double clicking the empty line below the last entry or in case of an empty list the first line.

Clicking the save button or the save and close button, OceanView applies the new values to the data base.

The sensor configuration is changed by typing in the new configuration file name or selecting the new configuration from the dropdown list and clicking the set new configuration button.

Then OceanView sends the new file name to the sensor.

If this file name is a no valid configuration file name (e.g. wrong typed name) the sensor sends an error message which will be displayed by OceanView and must be confirmed by the user.

If the file name is valid, the sensor changes the configuration and needs to be restarted by altering the device service state from operate to standby and back to operate.

3.3.1.5. The Datafields tab
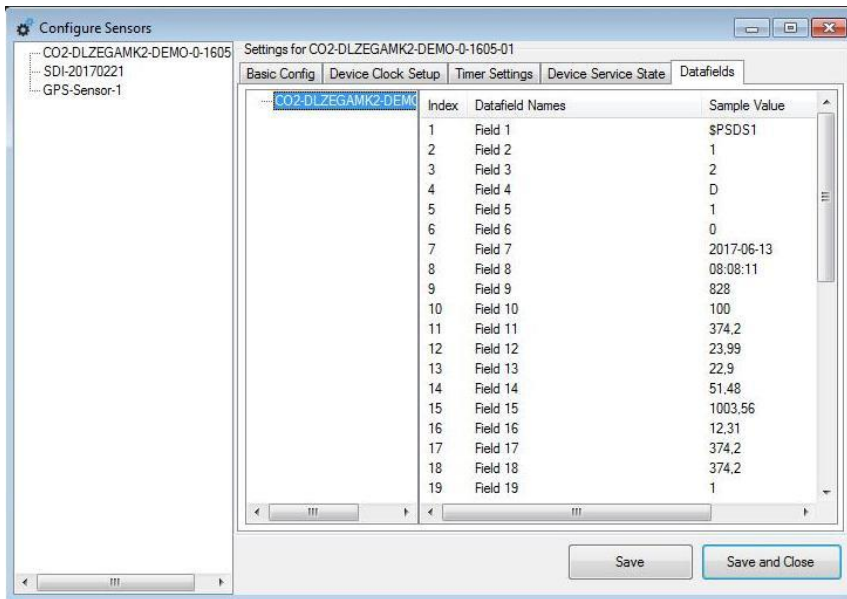
is divided into two panels. The left panel shows a tree view of the chosen sensor and its supported NMEA protocols if there are more than one available. The right panel shows four columns: one for an index, one for the data field name, one for the data field value and one for the measurement unit of the selected sensor.

The default name of the data fields is Field and a numerical index starting at 1.
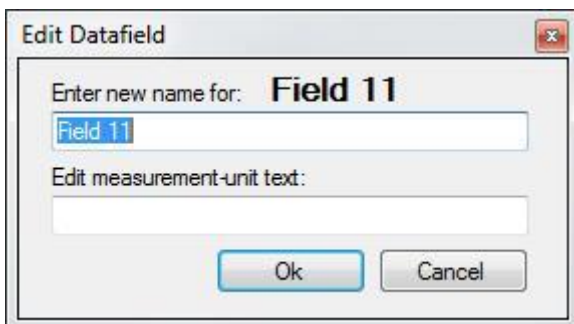
Clicking a line opens a dialog where the name and the measurement unit can be set.

These two parameters will be used in further operations.

Clicking the Save button or the Save and Close button applies the new values to the data base.

3.3.2. Set up Satellite Modem

Part of OceanView "Expert".

3.3.3. Workspaces

Part of OceanView "Expert".

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3.3.4. GPIO
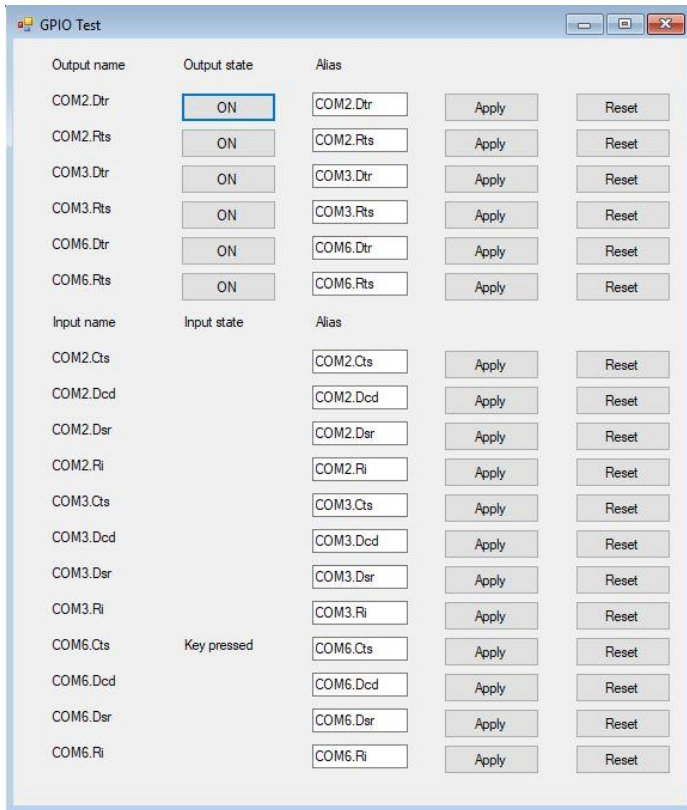
This dialog can be used to test input controls like push buttons or output controls like lamps connected to the flow control lines of the serial ports of the data server. It shows all available control lines.

In the upper part of the dialog the output lines can be set on or off by pressing the appropriate button. The button's caption shows the next output state ("ON" means the output is switched off - press to switch on).

The lower part of the dialog shows the state of the input lines. In case an external push button is pressed, the corresponding field shows "Key pressed".

The three rows on the right side allow the operator to rename the lines with more understandable names.

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3.4. Display of sensor measurements

The different methods of displaying values can be accessed through the Windows menu.
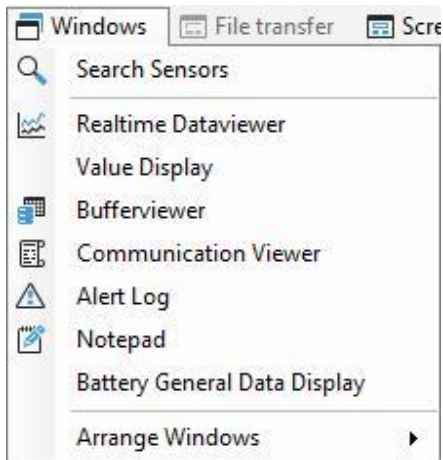
3.4.1. Search Sensors

This menu item starts the sensor search known from the first start chapter. It makes it possible to search for sensors newly attached to the system. The search can be accessed through the search toolstrip , too.

3.4.2. Realtime Dataviewer
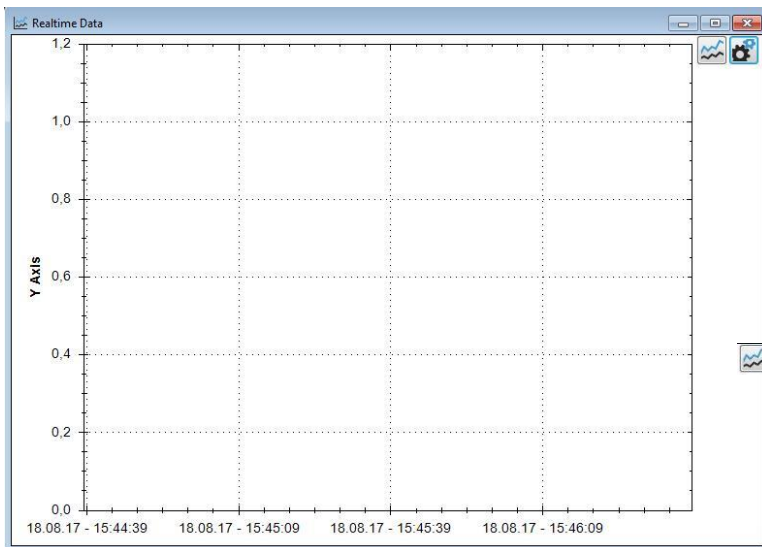
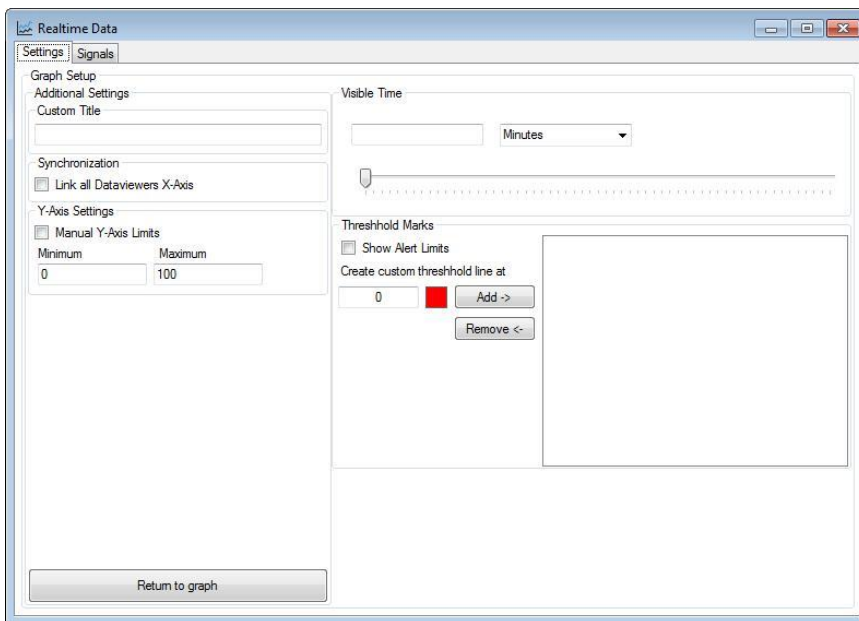The Realtime Dataviewer shows a graph of a random number of measurements over a time interval.

The measurements to be displayed can be selected by clicking the configuration icon in the upper right corner of the window.

This changes the Dataviewer window's appearance into a tab view with two tabs.

The other icon changes the Dataviewer window's appearance into a numerical display of the selected measurements.

This dialog can be accessed through the toolstrip , too.

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In the *realtime dataviewer settings tab* the graph can be configured by giving a custom title, by setting the visible time interval, by setting all graphs synchronic, by setting the Y-axis limits manually and by adding alert limits.
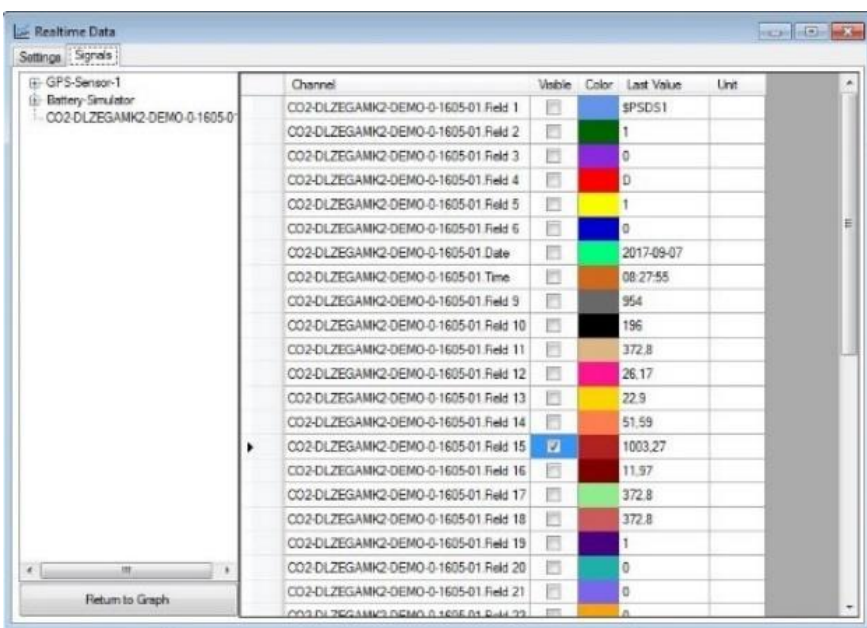
The "Return to graph" button changes the view back to the graph including all settings made. In the *realtime dataviewer signals tab* the data fields of the sensors that shall be displayed in the graph can be selected.

First, one of the sensors need to be selected.

In case this sensor supports more than one NMEA-protocol one has to be selected.

On the right side, the available data fields will be shown in a list with four columns.

The first column shows the data field name combined the sensor's name. The data field name can only be set in Sensor configuration dialog.

The second column named "visible" contains checkboxes. If the checkbox is checked the data field will be displayed as a curve in the graph. The third column shows the colour of the curve. A double click on the coloured field opens a dialog where another colour for the curve can be chosen.

The last two columns show the last received values and the measurement scales of the data fields given in the Sensor config dialog.

Any channel of any sensor can be chosen and combined with others to be displayed in the graph. A random number of realtime dataviewer windows can be opened.

3.4.3. Value Display

The value display shows a single data field of an NMEA data frame sent by a sensor.

Depending on the format of the value to be displayed, there are further information.

In case of a numerical value OceanView averages the time between the incoming updates of the field, averages the last values, and determines the value drift. Text fields will be displayed without any interpretation.

3.4.4. Buffer Viewer

The Buffer Viewer shows all received data of the selected sensor and the selected NMEA-Protocol since the last program start.

3.4.5. Communication Viewer
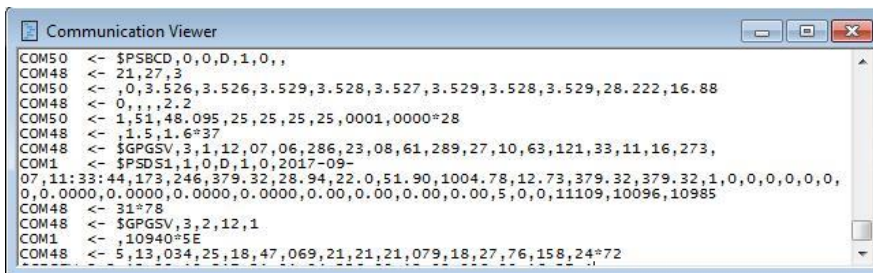
The Communication Viewer shows the data traffic of the serial interfaces between OceanView and the sensors.
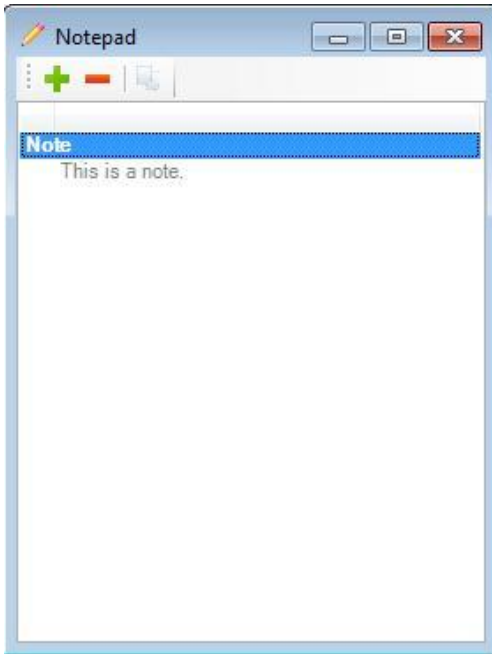
3.4.6. Alert Log

The Alert Log shows a list of occurrences of alerts. These alerts can be configured in the setting menu.

The alert log can be accessed through the toolstrip ⚠, too.

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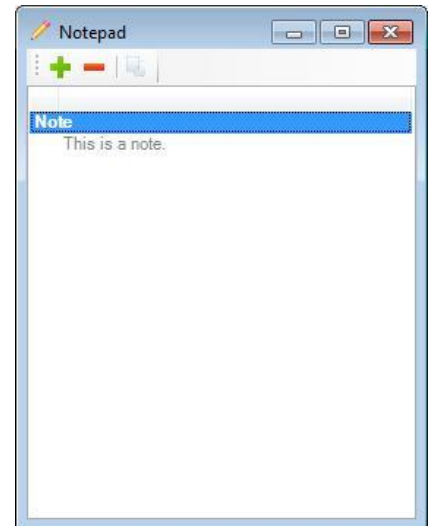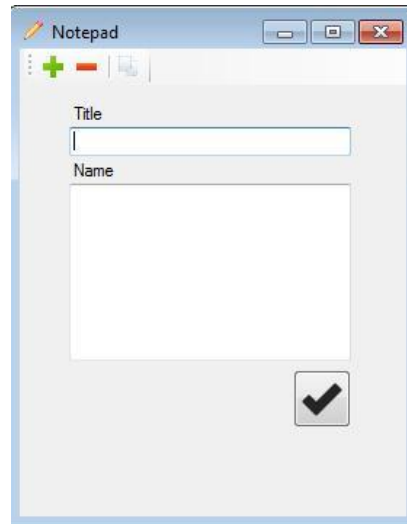
3.4.7. Notepad

The Notepad is an editor to take notes.

To add a note the plus-sign must be clicked.

Clicking the hook confirms the end of editing.

To remove a note the desired note must be selected and then the minus-sign must be clicked.

These notes will be available at the next program start until they will be removed. The alert log can be accessed through the toolstrip , too.

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3.4.8. Battery General Data Display
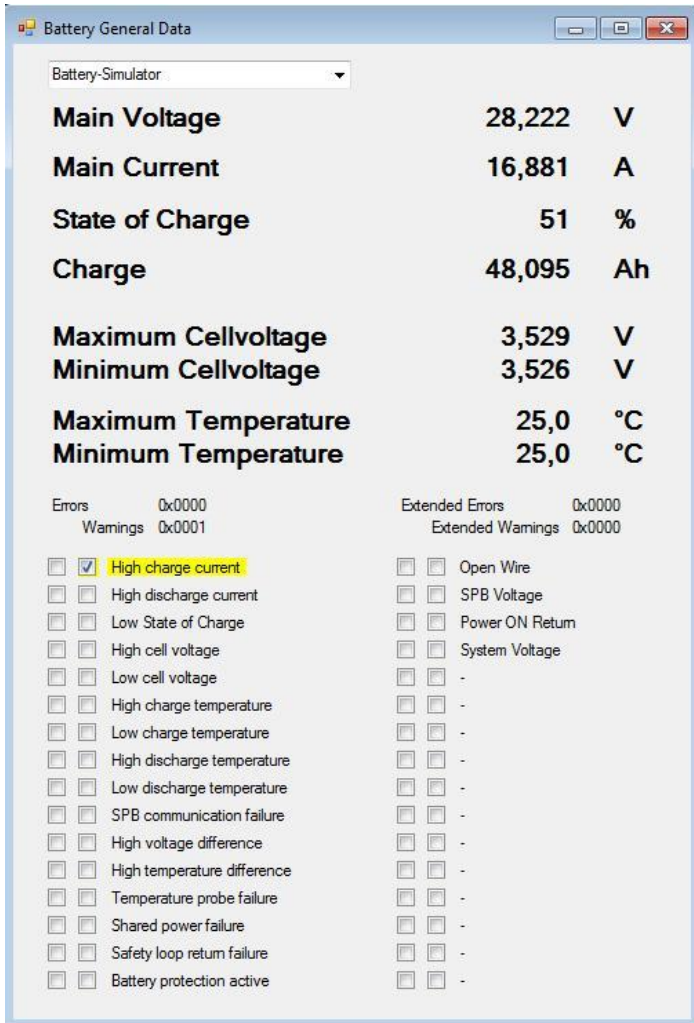
The Battery General Data Display dialog shows the general data like main voltage, main current, the charge as percental and absolute value, the minimum and maximum values of the cell voltages and the temperature and the warning and error information of a connected battery management system.

In case of an unknown battery configuration theses parameters will be requested from the user before the Battery General Display dialog is opened. The necessary parameters for the general data display are listed in the upper half of the dialog.

Parameters entered in this dialog will only be valid until OceanView is closed.

They can be saved using the sensor config dialog.

The Battery General Display dialog allows to show the general battery data for more than one battery.
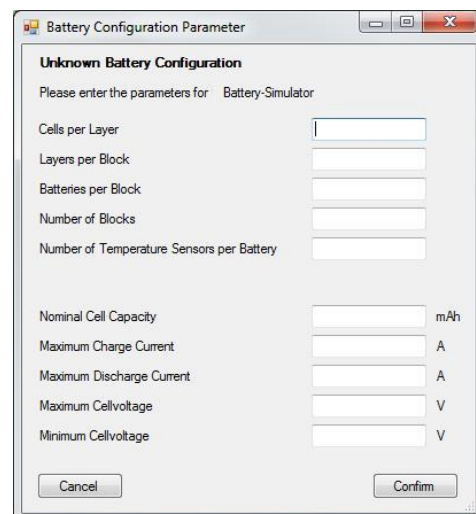

- If OceanView finds multiple batteries during the sensor search, their names will be listed in the drop-down list. Selecting another battery may open the parameter request dialog, since the battery parameters are unknown. This will only happen once for every newly selected device.

3.4.9. Arrange Windows

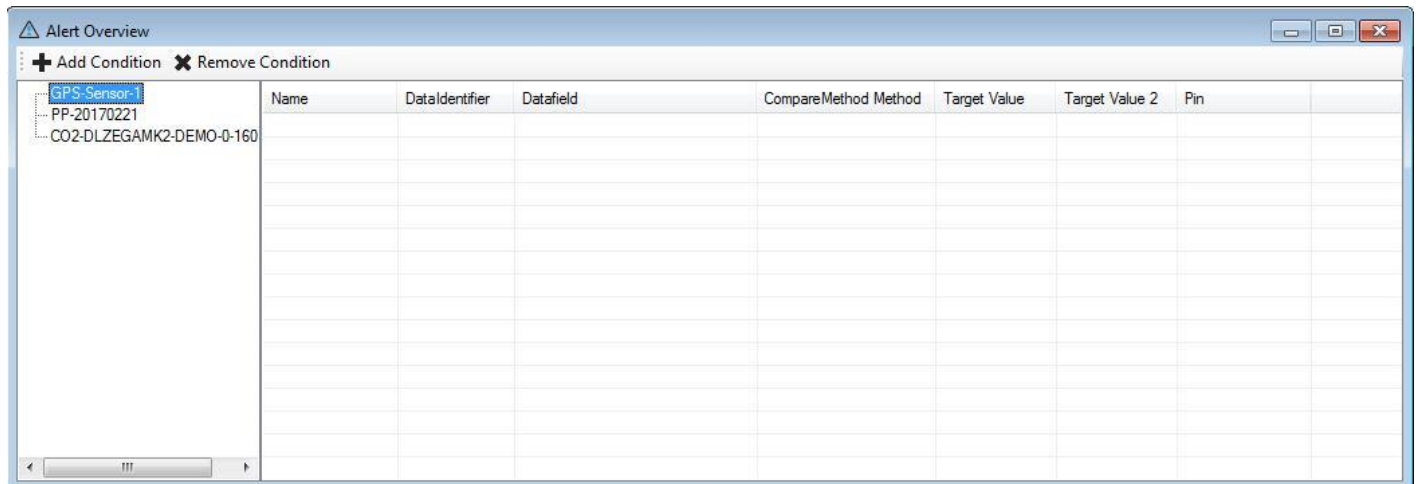The related menu items arrange the open windows in an automatic way known from the windows operating system.

3.5. Settings
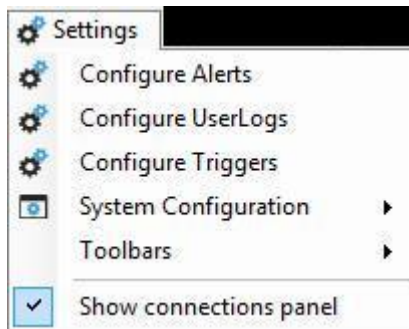
The settings menu gives access to different configuration dialogs.

3.5.1. Configure Alerts

OceanView provides the ability to set limits for different measurements and to set signals if these limits were exceeded.

To add a new condition, click on the appropriate menu item in the dialog. Another dialog opens:
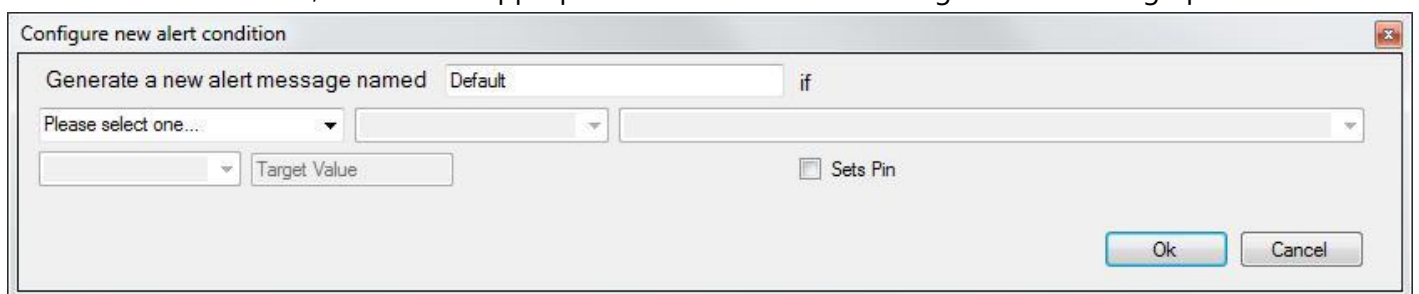
The new condition should be given an appropriate name.

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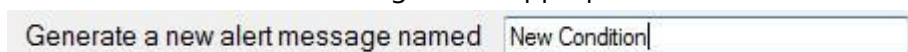
Then a value source, the equation, the compare value and the action must be set:

The value source is the descriptive combination of names of the sensor, the protocol and the data field.

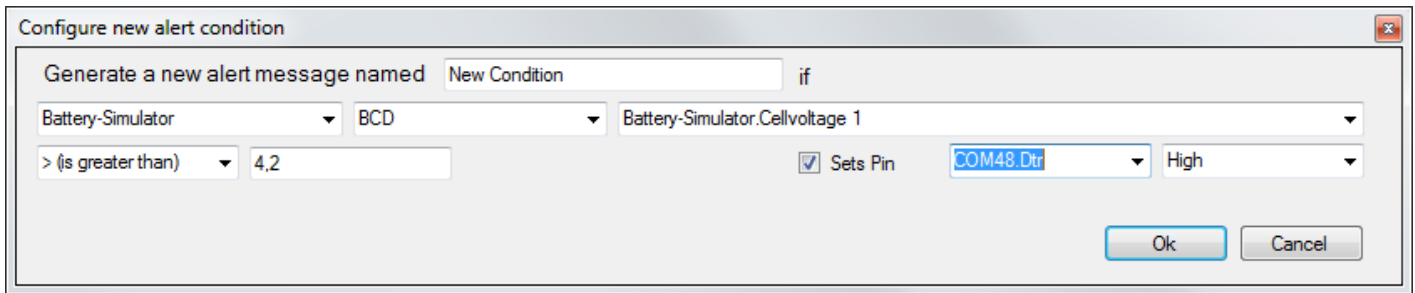In case of exceeded limits a message is written to the log file, and if the "set pin"-checkbox is checked a hardware output can be set.

OceanView can control the control output lines DTR and RTS of the serial interfaces available on the system. If there is any alarm equipment (e.g. Lamps, flash lights etc.) connected to these line, OceanView can control its states.

3.5.2. UserLogs
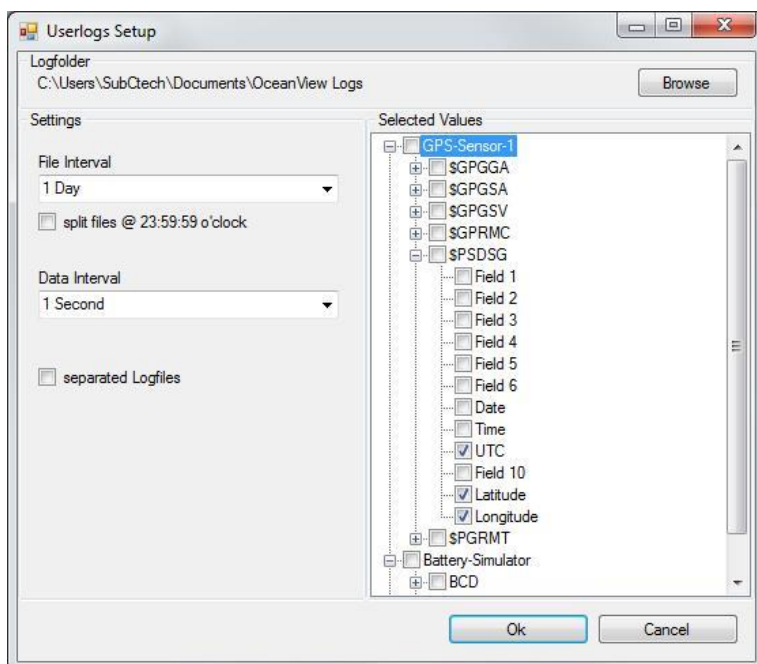
In this dialog, the user can set the appearance and the destination-folder of user-defined log files.

Since not all data fields or NMEA-Frames are interesting for later use, the user can reduce the data to be logged.

This can be made by checking or unchecking the desired data fields of the sensors and their protocols in the tree view on the right side.

Checking the root checkbox of a sensor branch makes OceanView log all data of all protocols of this sensor.

Checking the root checkbox of a protocol branch makes OceanView log all data of this protocol.

The default log folder can be changed clicking the "browse" button. This opens a folder dialog where a new folder can be chosen.

There are two drop-down menus containing different timespans. The file interval describes the timespan of a log file. After the chosen timespan elapsed a new file is written. If a timespan greater than 12 hours is chosen, a checkbox is shown with what a file split at midnight can be programmed. This is used to synchronize several measurement systems.

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The Data interval describes how often received data is written to the log file, to minimize file access. This could lead to data loss in case of an instable power supply.

In case the "separated Logfiles" checkbox is checked, a separate log file is written for every chosen sensor.

3.5.3. Triggers
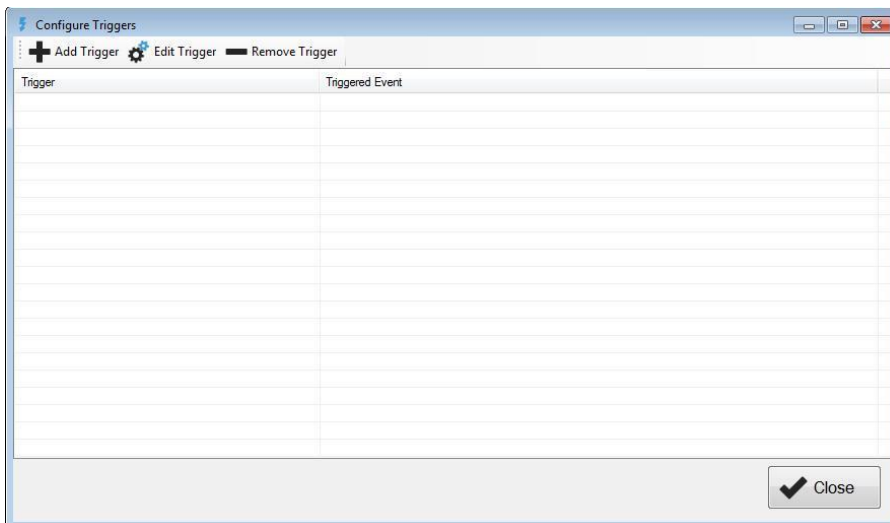
On the one hand OceanView can switch the output control lines of the available serial interfaces, on the other hand it can react on the input control lines (CTS, DCD, DSR and RI) of the available serial interfaces and trigger an NMEA-message dispatch to the sensors. These triggers e.g. can be used to change remotely the operation state of SubCtech's data logger.

To add a new trigger the plus-sign must be clicked.
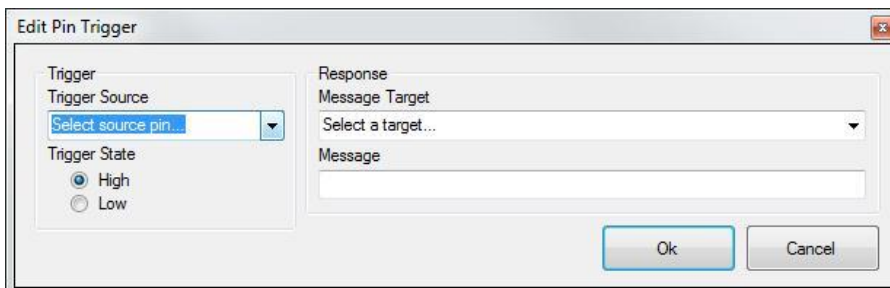
In the opened dialog, the drop-down list on the left side shows all available inputs. One trigger source must be chosen. The other drop-down list shows the available destinations. One of them must be chosen. The message box must contain an NMEA-frame, which the selected sensor understands.
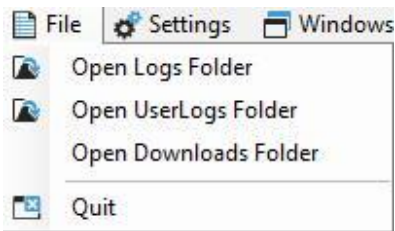
Clicking OK adds the new trigger to the list.

Existing triggers can be edited by marking the desired line and clicking the edit menu item or just double-click the desired line. The workflow is equivalent to adding a new trigger. To remove a trigger mark the desired line, click the remove trigger menu item and confirm the following dialog.

3.5.4. System configuration

OceanView can export and import its system configuration for backup or migration purpose. This comprises all data that is permanently available for the current system, like workspace and sensor settings.

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3.6. File menu

The File menu gives access to the log directories by opening the folder in a Windows Explorer instance.

The first sort of log files contains all data from the sensors as a backup.

The user-defined log files contain a user-defined (maybe reduced) scope of sensor data fields. The configuration of these files is described in chapter UserLogs.
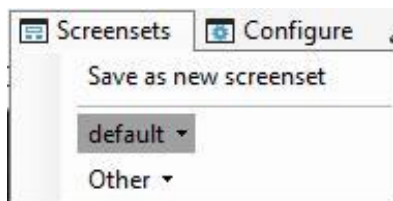
The Downloads folder contains the database dumps from SmartDI data loggers sorted by their custom name.
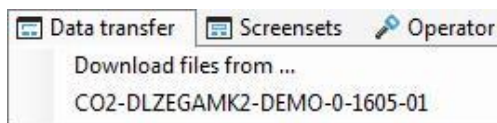
The Quit menu item ends the program after confirmation. Then OceanView saves the windows arrangement to the local hard drive for the next program start. Other changes will be discarded if not saved before ending program.

3.7. Screensets

Sometimes the measurement purpose of OceanView changes temporarily, so there is a need of more than one display layout of OceanView. The current windows arrangement of the OceanView desktop can be exported as a screenset.

Existing screensets can be imported, overwritten, renamed or deleted.

A Screenset is composed of different windows like realtime dataviewer or value display displaying the desired data of connected sensors. This setup can be saved for later use in case another data display setup is needed. So it is possible to switch between different display setups.
Screensets have no effect to the UserLog's configuration.

3.8. Data transfer

This menu shows a list of the connected sensors which support data transfer between their internal flash memory and the host PC. This means that there is no need to open the sensor's housing and to remove the CompactFlash-Card from the sensor to copy the data to the local file system. At the moment only SmartDi data loggers with firmware version 6.14 and newer support the remote data transfer from the sensor's database to the local file system.

It is recommended not to download data during data recording by OceanView since data loss can occur.

After selecting a sensor by clicking the corresponding menu entry, a new dialog opens. In this dialog the sort of data transfer can be chosen by selecting one of the different tabs.
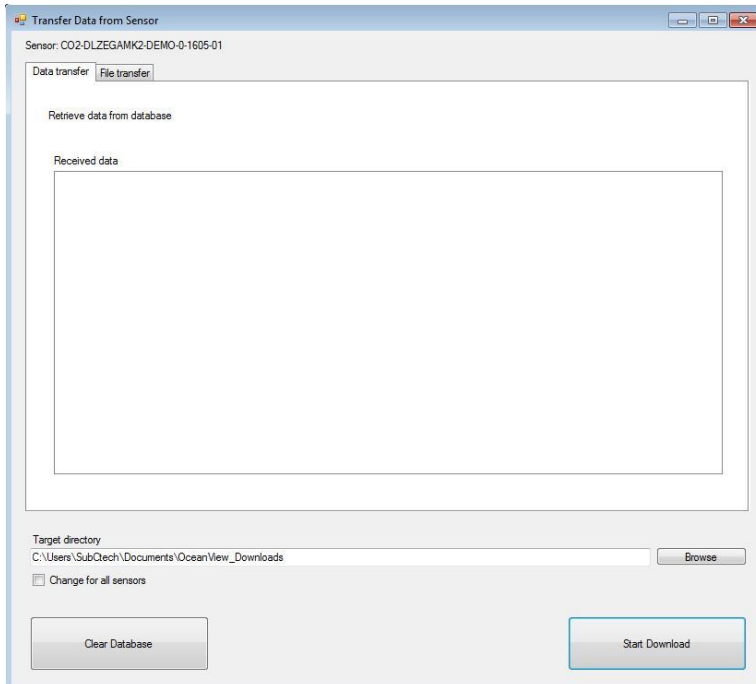
3.9. File transfer
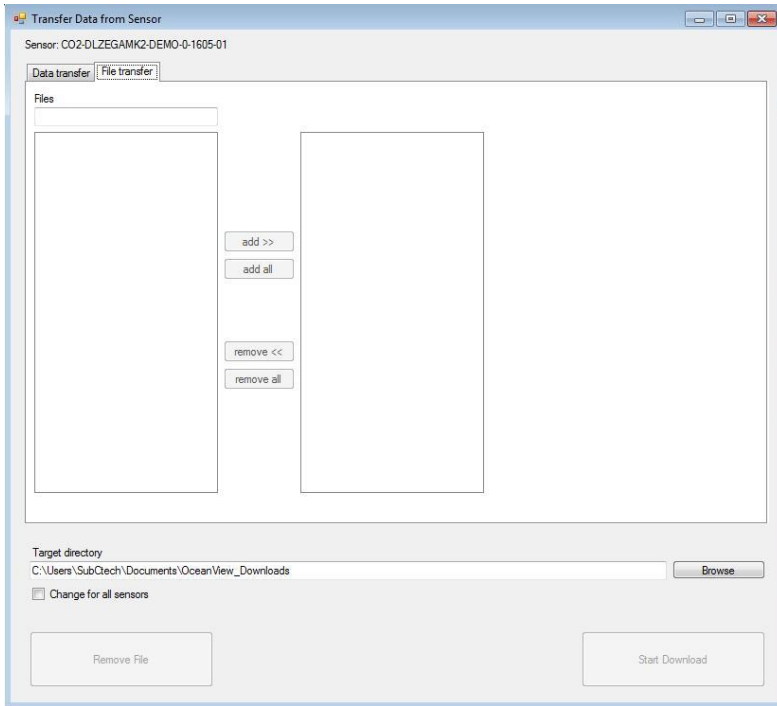
means to manipulate the sensor's file system. Here single or multiple files can be copied from or to, or can be removed from sensor's file system.

This function is for further use e.g. to copy new configuration files to the sensors operating system.

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3.9.1. Data Transfer

means to manipulate the sensor's database. SubCtech's data logger compatible sensors record their measured values opposite to older systems in a single data file. This file is filled with data depending on the parameters set in the currently selected configuration file.

Target directory describes the path to the root folder on the local storage where the data will be written to. OceanView creates a sub-folder below the root folder with the sensor's custom name and writes the data file to this folder. The root folder path can be changed by clicking the Browse button and selecting another one in the folder-dialog. This path is also valid for the next OceanView sessions.

The database can be cleared by clicking the corresponding button (not implemented yet).

By clicking **Start Download** OceanView sends the data base request string to the sensor. Then the sensor sends the current data file name, which OceanView also uses for the local copy. If the file name already exists, OceanView appends the received data to the file without requesting of deletion or renaming either of them.

The data sets received from the sensor are shown in the list box

After a successful data transfer, OceanView opens a dialog to notify the user. If the transfer suspends for more than five seconds, OceanView asks the user, whether to restart, or to terminate the download.

The data received by now is written to the local file.

The target directory where the database copy is located, can be accessed via the file menu.

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4. Battery Data Display

4.1. Display General Battery data

In case a battery management system ("BMS ", smartBMS™ or PowerPack™) was found its general data can be displayed by choosing "Battery General Data Display" from the "Windows" menu.

If the BMS supports the Battery Parameter Configuration NMEA protocol ("$PSBPC") a dialog opens where the general data of the battery are shown.

Depending on the connected type of BMS the data of the Battery General Data NMEA protocol ("$PSBGD") is shown or the converted data of the Battery Cell Data NMEA protocol is shown.

If the BMS does not support the $PSBPC protocol OceanView inquires the necessary configuration parameters in a dialog before opening the display dialog.

On the one hand theses configuration parameters can be delivered by SubCtech on request, on the other hand, SubCtech delivers predefined configuration data files to import into OceanView.

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4.2. Import sensor configuration files

SubCtech provides predefined configuration files for the batteries and sensors manufactured by SubCtech. These files contain named data fields for the NMEA protocol(s) supported by the sensor.
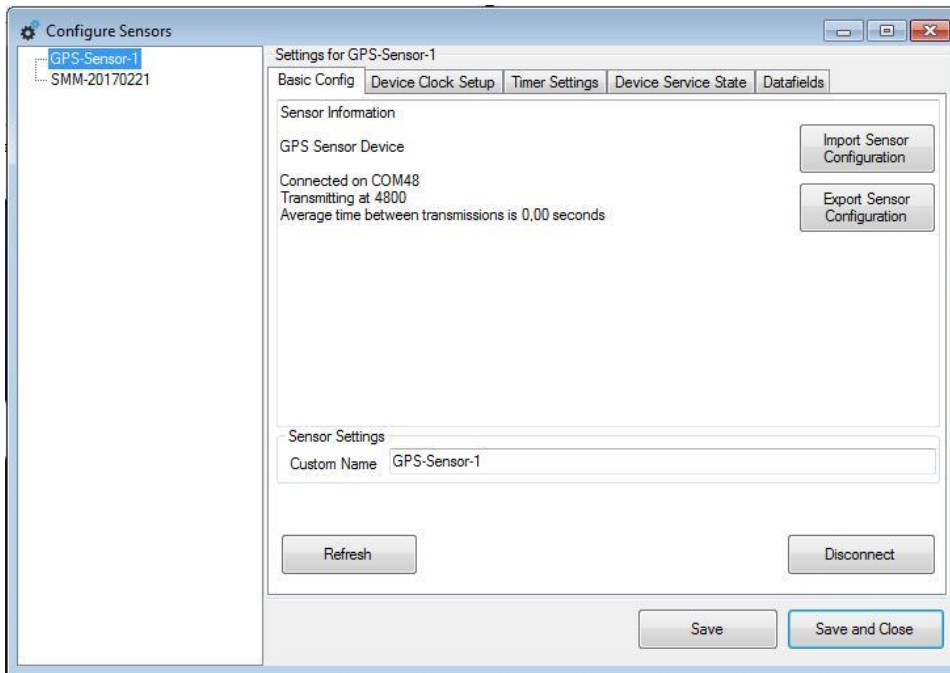

To import a configuration file an operator must be logged in and the Configure menu shall be displayed.

By choosing "Sensors" from the configure menu a dialog opens where the names of the connected sensors are shown in a list on the left side. Selecting one of the sensors' names shows different tabs containing information about the sensor and parameters to be set.

Clicking the Import Sensor Configuration button opens a file dialog where the configuration file in XML format can be selected.
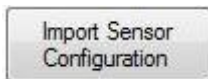

The new configuration data can be checked by switching through the tabs. In Order to keep the new configuration the "Save" or "Save and Close" Button must be pressed.

Closing the dialog without saving discards the changes.

4.3. Export sensor configuration files

It is also possible to distribute or backup the current configuration data. To do so, OceanView provides the Export Sensor Configuration button.
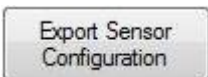
Clicking this button opens a dialog where the destination folder can be chosen. OceanView then copies the configuration data of the currently selected sensor to an XML file named after the sensor's system name / the SubCtech serial number.

This file can be copied and distributed to systems where the sensor may be used.

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5. Troubleshooting

OceanView is designed easy to use. But some circumstances lead to error messages or faulty states, which will be described and solutions will be presented here. Please feel free to contact SubCtech in case there is no solution for your problem described. Contact data is available in chapter Manufactory Contact.

5.1. No sensor found

If there is no sensor found during the sensor search, make sure that

- the sensor is switched on
- in case of a USB-RS232-converter, it is found in the Windows Device Manager and the driver is installed correctly
- the cabling is not faulty, respectively not null-modem like (e.g. TXD and RXD interchanged)
- in case of an Ethernet converter open the NPort administration tool to find the connected converter.

5.2. Error Message at program start or shutdown

OceanView tries to write a file to a program data folder to store configuration data in it.

If this folder is unavailable due to missing access rights, OceanView prompts an error message. The folder „C:\ProgramData\SubCtech" needs write access for every user group who works with OceanView on this PC.

5.3. OceanView shuts down immediately after program start

OceanView tries to open previous log data which might be faulty.

Move the older logs from the OceanView Logs folder (**not the user logs!**) to some other storage location in case they are needed or just delete them. See appendix for the exact storage location

If this does not work rename, move or delete the folders below the SubCtech folder mentioned in the appendix.

6. Appendix

6.1. Configuration data order

OceanView stores its configuration data in files and folders below the system folder "C:\ProgramData".
All configuration data is stored in XML data formatted textfiles.

Path: C:\ProgramData\subCtech

Folder's structure:

Folder name	Content
Sensors	XML coded description of the sensors' data fields and units
Workspaces	"LastLoaded.xml" contains the name of the workspace saved at the last proper program shutdown. Today (November 2018) only the default workspace can be used.
Default	Folders "Config" and "Logs"
Config	• "Main.xml" describes the appearance (position and size on screen) of the OceanView desktop • "Connections.xml" contains the assignments between sensors and communication interfaces (serial port / IP address)
Screensets	Contains screen sets created by OceanView users for different measurement purposes.
Logs	Log files of all sensors connected to the DataServer / OceanView. Accessible through the file menu item "Open Log Folder" of OceanView.

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6.2. Installation of the USB to Serial RS232 Converter

You will find a converter (if ordered or necessary) in the SubCtech Transport Box.

Most RS232/485 USB converters are supported by Windows$^{©}$ originally.

Please refer to the installation manual of your USB RS232 converter if any problems occur.

- The SubCtech Software Package supports USB – RS232 converter and virtual COM ports from COM1 to COM256.
- You do not have to set the configuration for the COM port, the program will configure all COM ports for the user.
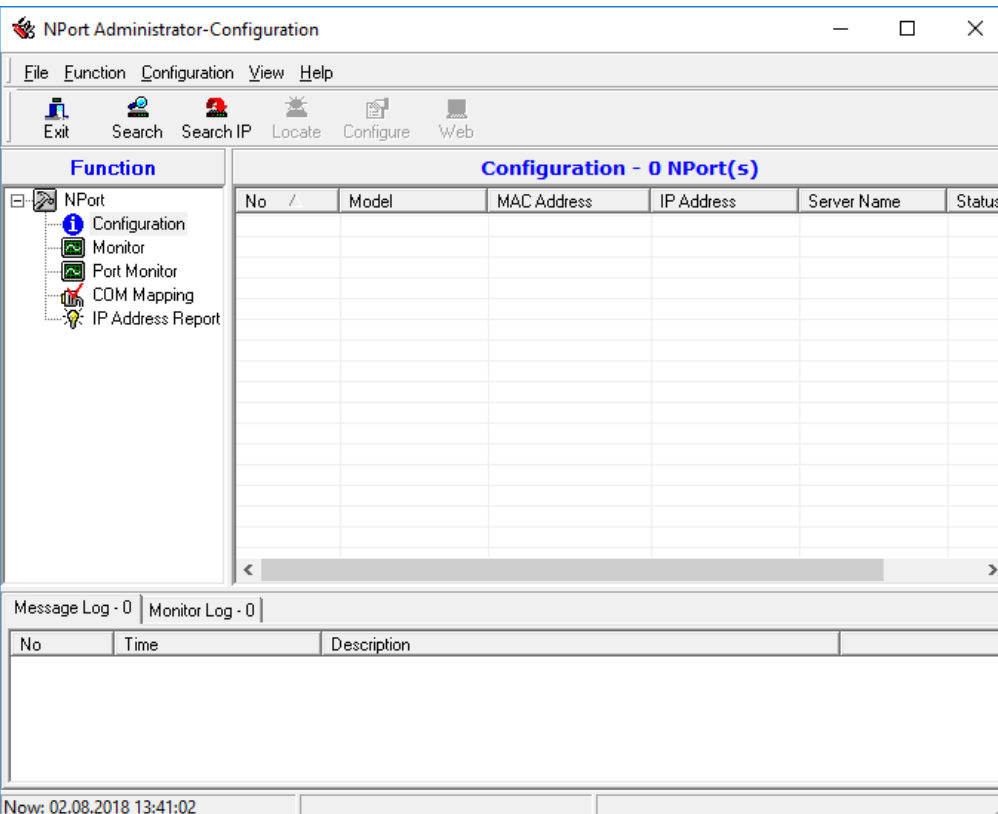
6.3. Installation of the Moxa NPort Serial to Ethernet Converter
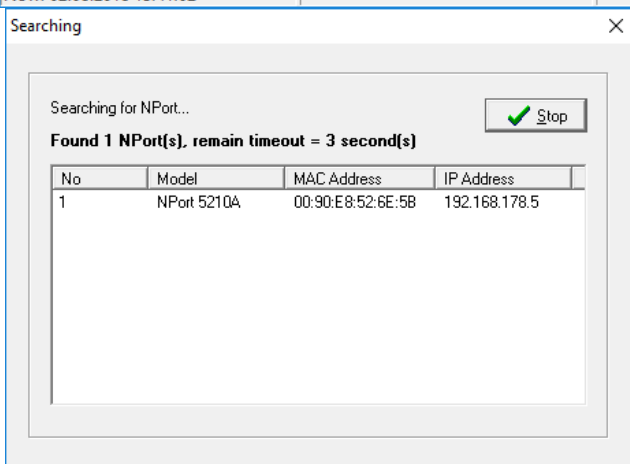
6.3.1. Getting started

- Consult the Moxa's manual for hardware installation.
- Install the NPort Administrator software on the DataServer and maybe on up to seven further OceanPack data sinks depending on the converter device.
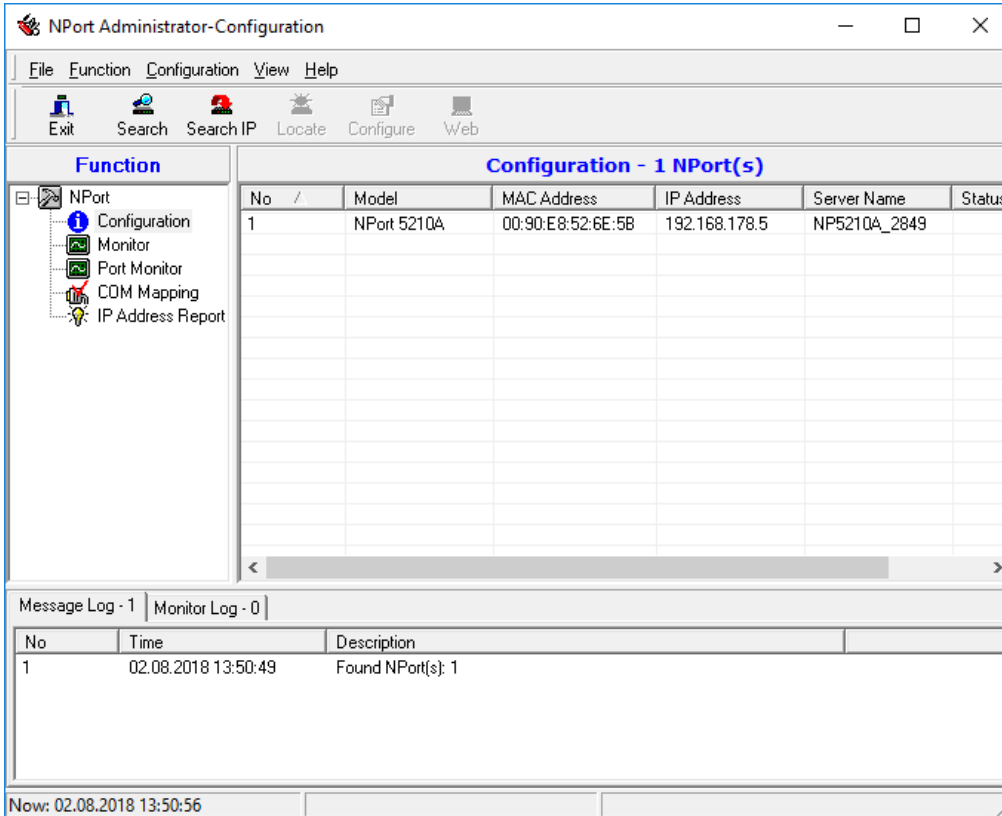
6.3.2. Configuration
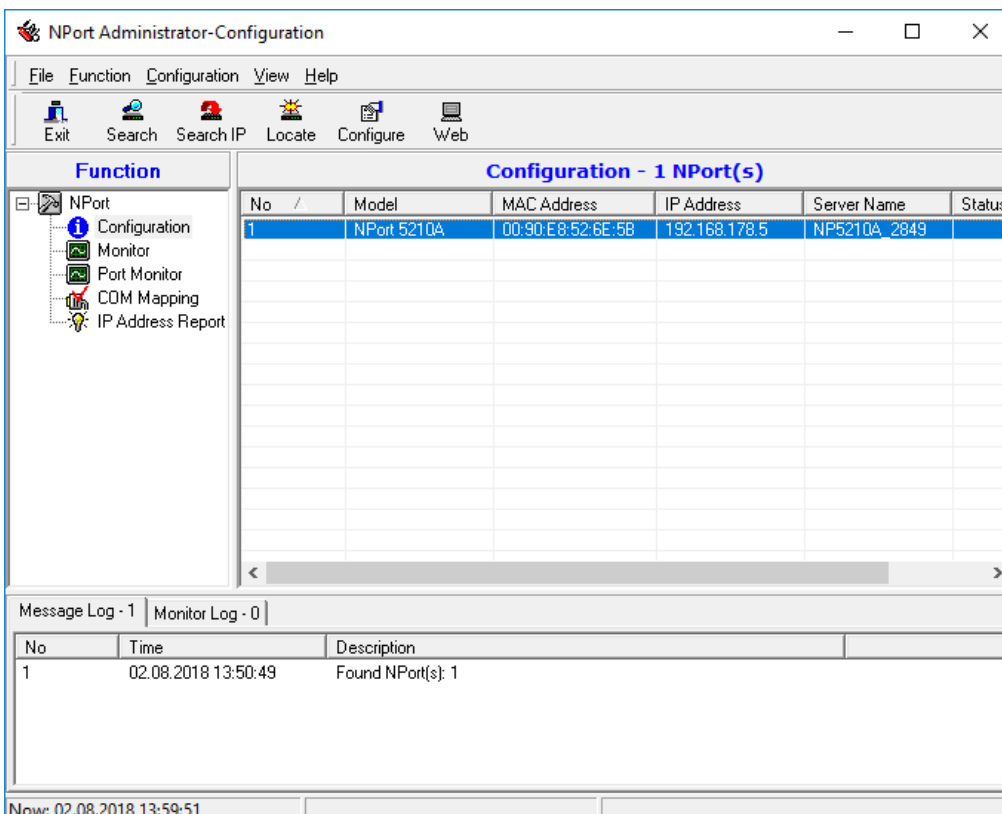
Start the NPort Administrator software

Clicking **Search** opens a dialogue with an automatic search for moxa NPort devices connected to the local area network.

A Dialogue opens which lists the NPort devices found in the local area network.

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This list is copied to the start screen after the search is completed.

Selecting a row of the list enables the three disabled buttons

Clicking the configure icon opens the configuration dialogue

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In the Basic tab the network name of the converter und its clock can be changed.

- The settings are only editable when the related checkbox is ticked off.

In the Network tab the IP address of the converter device can be changed.

➡ It is highly recommended to use a static IP address since the converter device hence the OceanPack would not be found when the address is change and this configuration procedure must be run through again.

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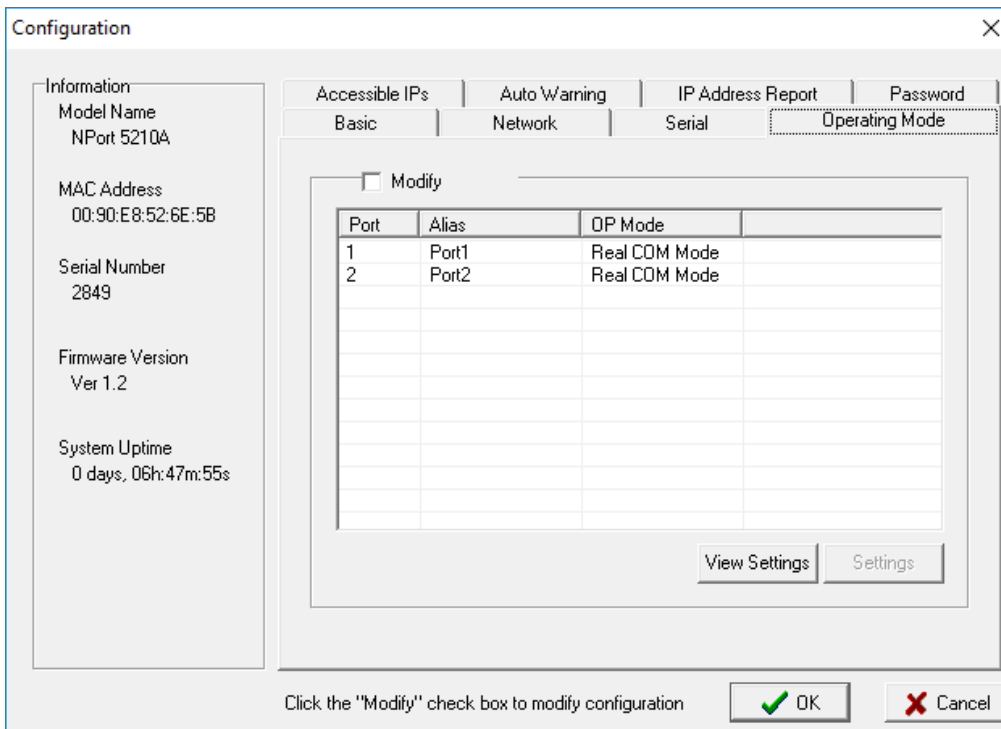
In the Serial tab the serial ports and their current settings are shown.

Here the settings have to be set depending on the setting of the connected sensor.

⚠️

➡️ These settings cannot be changed by use of the serial port settings of the operating system! It is only possible through this administration tool, the web console or the serial console.

➡️ These settings must match to the settings of the OceanPack (e.g Baudrate or Flow Control "None")

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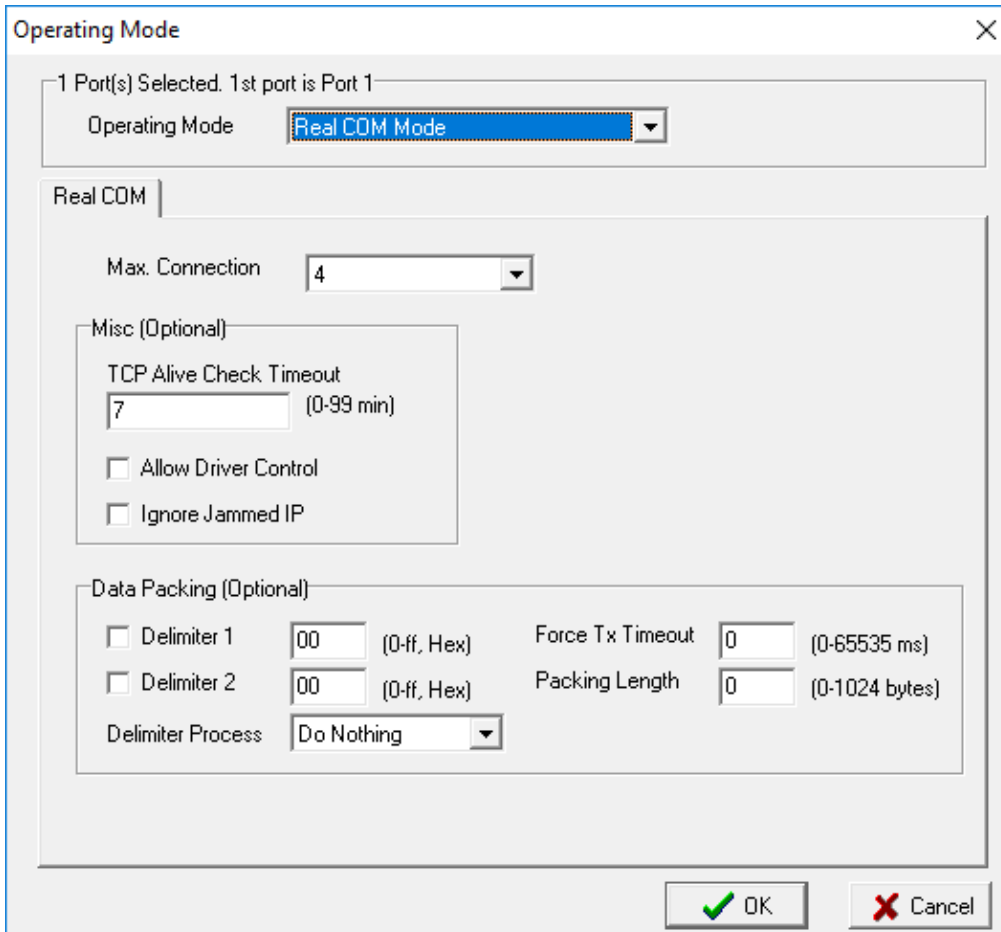
The **Operating Mode** defines which method is used to transfer serial data over ethernet.

RealCOM Mode uses virtual com port (VCP) drivers which are well-known from USB-serial-converters.

Max. Connection defines the number simultaneous ethernet connections to the serial port.

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➡ In case of permitting more than one connection **Ignore Jammed IP** should be ticked off to prevent jammed data messages to the OceanPack.

The remaining tabs are not relevant for the basic configuration.

● Leaving the Configuration dialogue by clicking OK applies the changes to the converter device and opens a message box informing the operator about changing success.
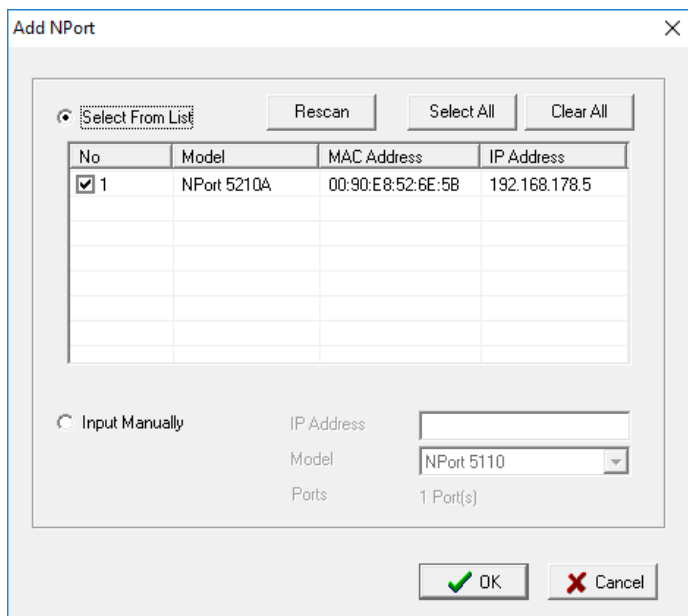
6.3.3. COM mapping

So far the converter device is configured. Now the driver on PC site needs configuration.

The serial ports of the converter device have to be introduced to the operating system.
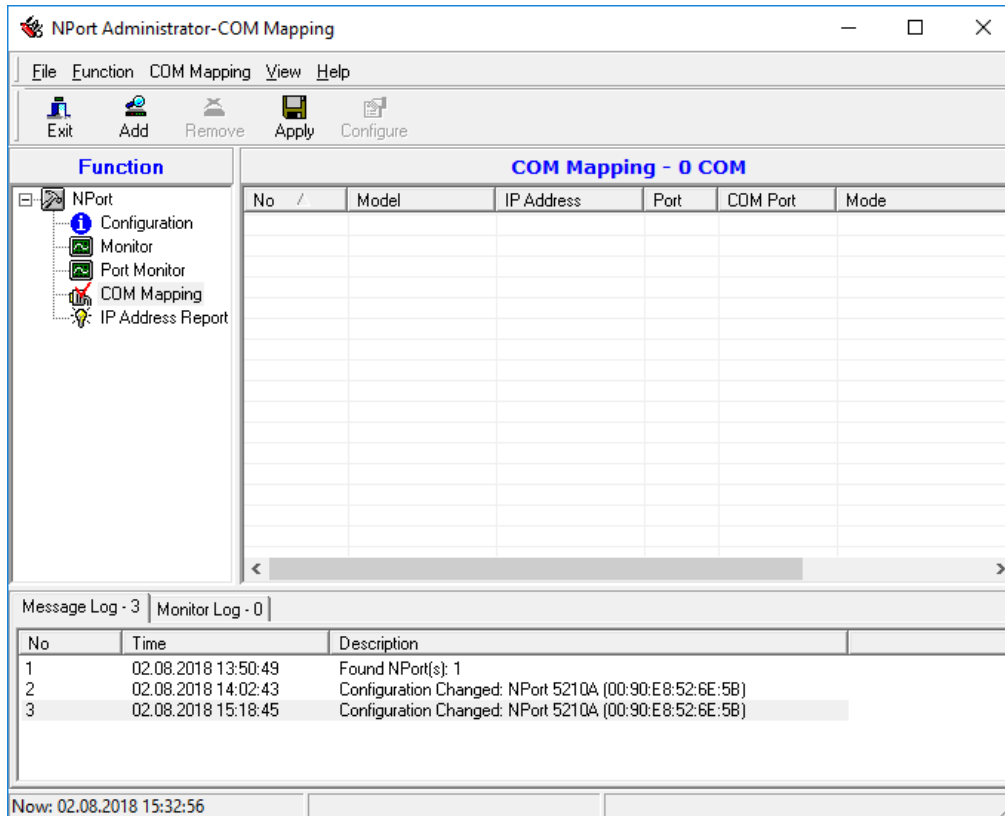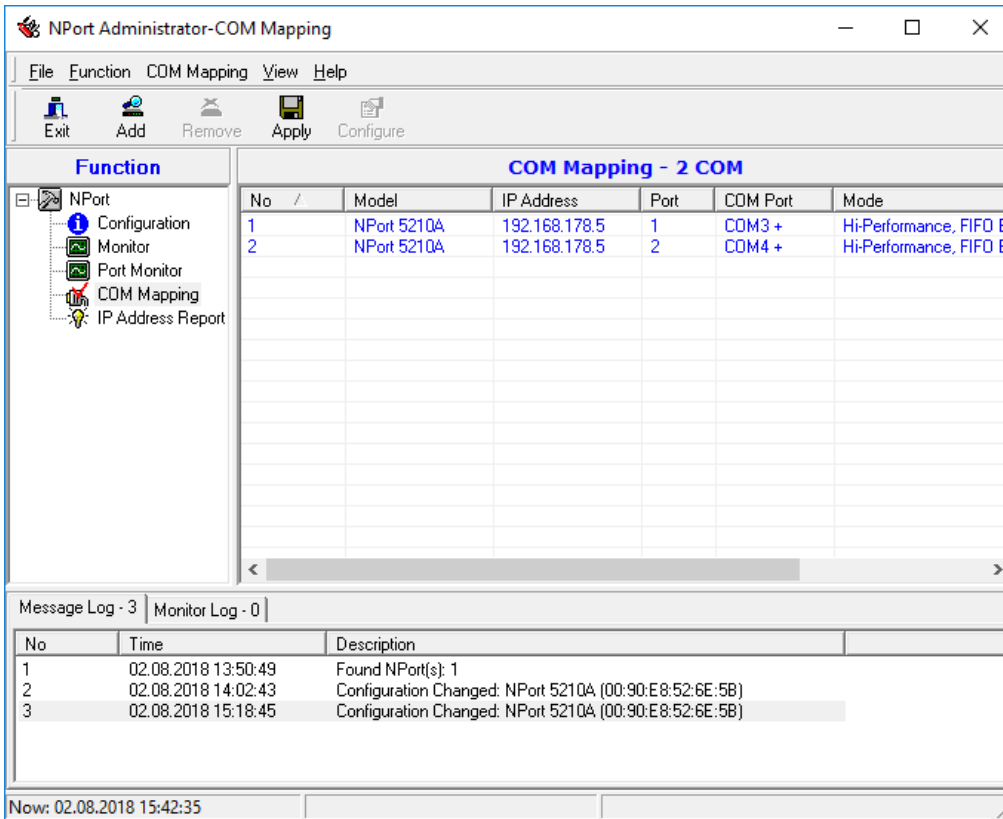

Choosing **COM Mapping** in the Function tree shows a list of serial ports of converter devices already mapped to the operating system.

Clicking **Add** to add serial ports opens a dialogue where the converter device can be chosen which has been found before or a rescan can be done.

Clicking **OK** copies the available ports to the COM Mapping list.

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Choosing one of the listed ports by double-clicking opens a dialogue where the COM number and other parameters can be set.

These parameters are not necessary for a basic setup.

Clicking **Apply** registers new comports to the operating system.

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