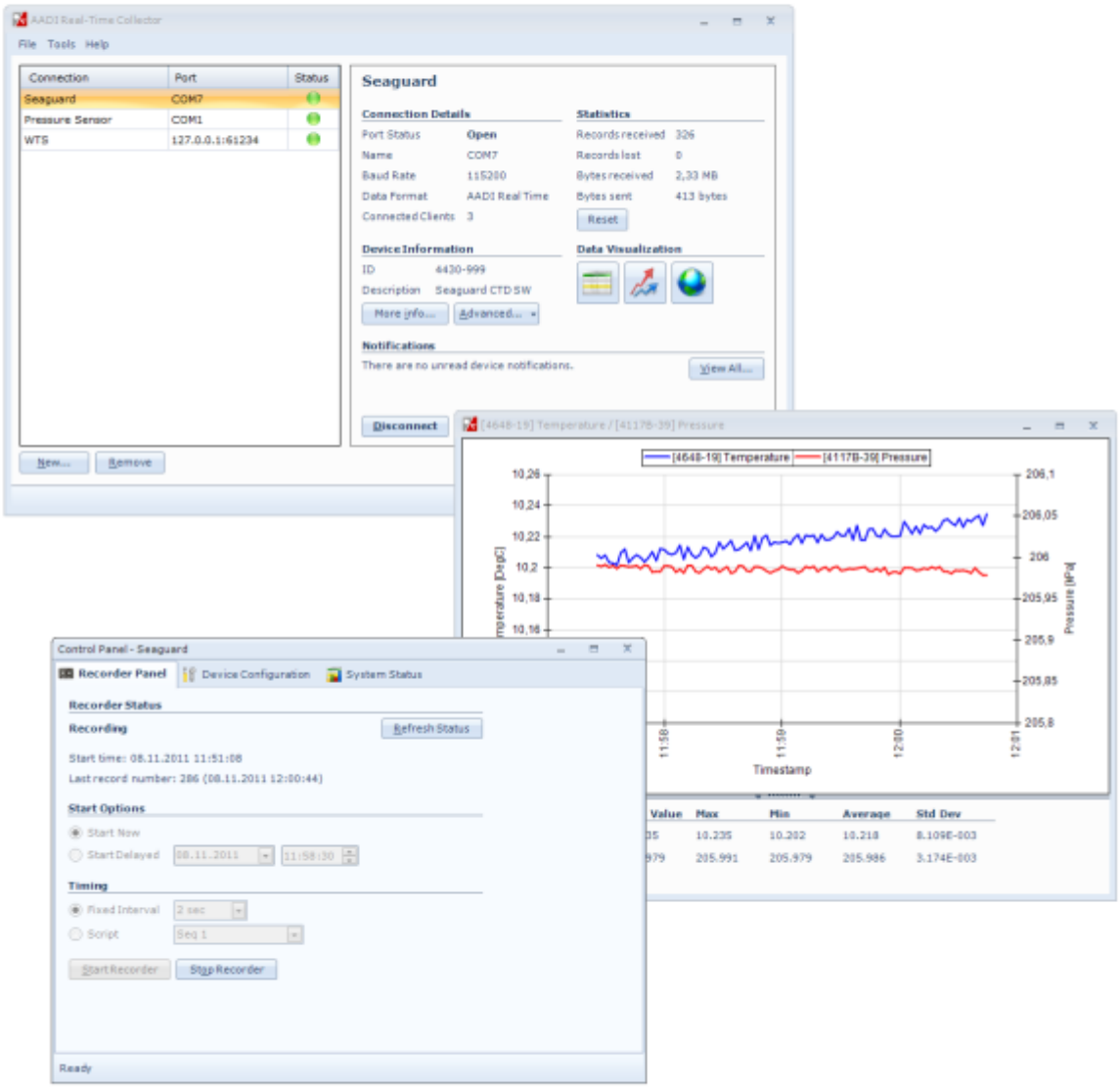
# TD 268 Users Manual
# AADI Real-Time Collector




AADI

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| 1st Edition | 30 September 2007 | PRELIMINARY EDITION |
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| 3rd Edition | 16 November 2007 | |
| 4th Edition | 14 December 2007 | |
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| 6th Edition | 6 June 2008 | Control Panel |
| 7th Edition | 15 September 2008 | Socket Connection |
| 8th Edition | 13 October 2008 | Custom Data Format and Licensing |
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# Introduction

## Purpose and scope

The purpose of this document is to describe how the AADI Real-Time Collector can be used to collect data from a large range of instruments and sensors.

## System requirements

The AADI Real-Time Collector requires:

- At least 512MB RAM.
- At least 500MHz CPU.
- One RS232 or RS422 port for each device connected by cable. RS232/RS422-to-USB converters may be used.
- Windows 2000 SP4, Windows XP SP2, Windows Vista or Windows 7.
- Microsoft .NET 4 (full version).

## Related documents

| | |
|---|---|
| TD267a | AADI Real-Time Output Protocol |
| TD271 | AADI Real-Time Communication |
| TD278 | AADI Real-Time Programming Reference |

# CHAPTER 1 Short description of the AADI Real-Time Collector

The main objectives of the AADI Real-Time Collector are to:

- Receive data from devices that uses the AADI Real-Time Output Protocol.
- Receive and convert data from devices that uses certain custom data formats.
- Configure and control connected devices.
- Provide an interface for client applications that utilize the data, e.g. a display program.

The AADI Real-Time Collector can:

- Receive data from multiple devices.
- Serve multiple client applications through the provided .NET programming interface.
- Store data to files.
- Display data in a basic chart view.

Please note the main purpose of the AADI Real-Time Collector is not to display data, although a basic chart view is included in the application.

# CHAPTER 2 Installing the application

Insert the installation CD or run the downloaded installation file (setup.exe). Follow the instructions on the screen.

It is not necessary to remove older versions of the software before installing.

When installed, you will find a shortcut to the program on the desktop and in the start menu.

The application will automatically start with windows. You may change that setting as described in chapter 8.1.

The installation will check for a Windows component called .NET 4 and request an upgrade if the component is missing. This upgrade requires an active internet connection, and may take some time.

# CHAPTER 3 Licensing

The AADI Real-Time Collector application requires activation with a valid license key in order to be used. A fully functional 30 day demo version is also available. When first starting the application, the dialog in Figure 3-1 will be displayed.

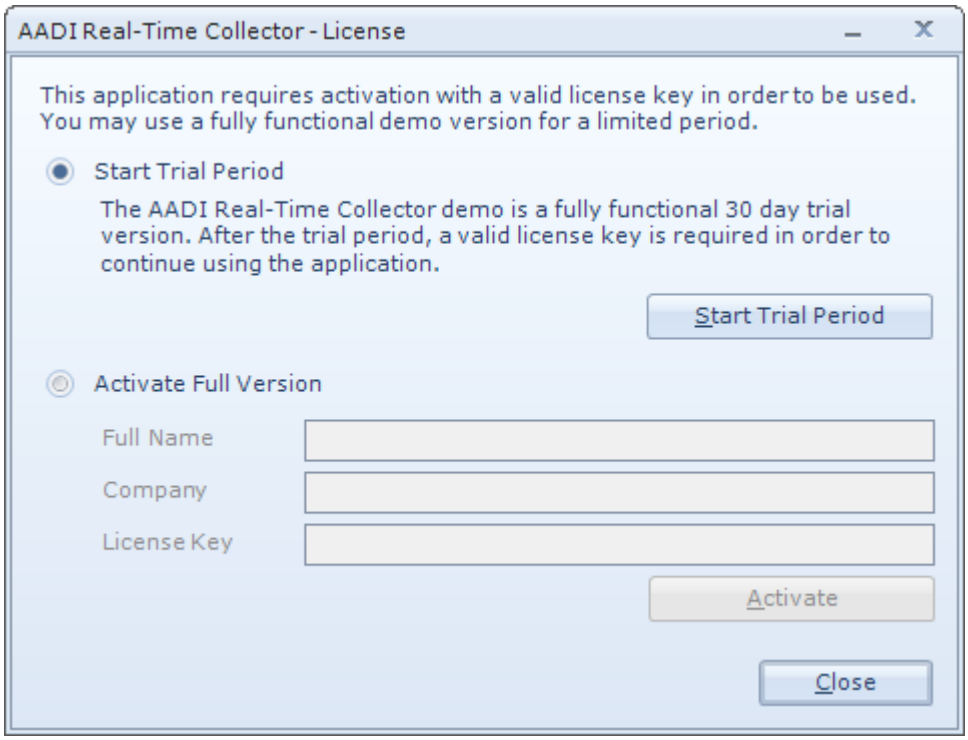


**Figure 3-1 The application requires a license key. A 30-day trial period is also available.**

Press the ***Start Trial Period*** button to start the 30 day trial period.

Activate the licensed version by filling out your full name, company and license key, and then pressing the ***Activate*** button.

If you choose to start the trial period, the application will function normally for 30 days. After this period, a valid license key is required in order to continue using the application. Select ***Activate Full License*** from the ***Help*** menu in the main window and fill out the license information.

The license key determines the number of connections that may be open at any given time. It is possible to upgrade the license to allow more connections. After buying an upgraded license key, select ***Upgrade License*** in the help menu and fill out the new license information.

The current license status can be found in the ***About*** dialog, which is opened from the ***Help*** menu.

# CHAPTER 4 Using the AADI Real-Time Collector

## 4.1 Starting the application

Double click the AADI Real-Time Collector icon on the desktop (Figure 4-1) or in the start menu to start the application.

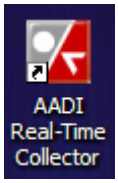


**Figure 4-1 Desktop icon. Double-click to start the application.**

If the application is already running, you will find an icon in the Windows system tray. Open the main window by right clicking this icon and choosing ***Open AADI Real-Time Collector*** from the popup menu (Figure 4-2).

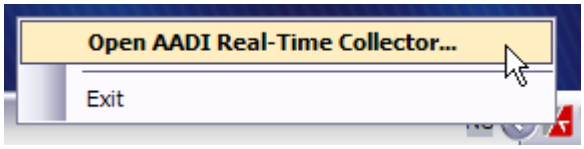


**Figure 4-2 Open a running instance of the AADI Real-Time Collector from the Windows system tray.**

It is only possible to run one instance of the AADI Real-Time Collector at the same time. Trying to start a second instance will automatically open the main window of the already running instance.

## 4.2 Create a new connection

The Collector has a main window from which the application is controlled. When first starting the application, the connection list is empty and the window will appear as in Figure 4-3.

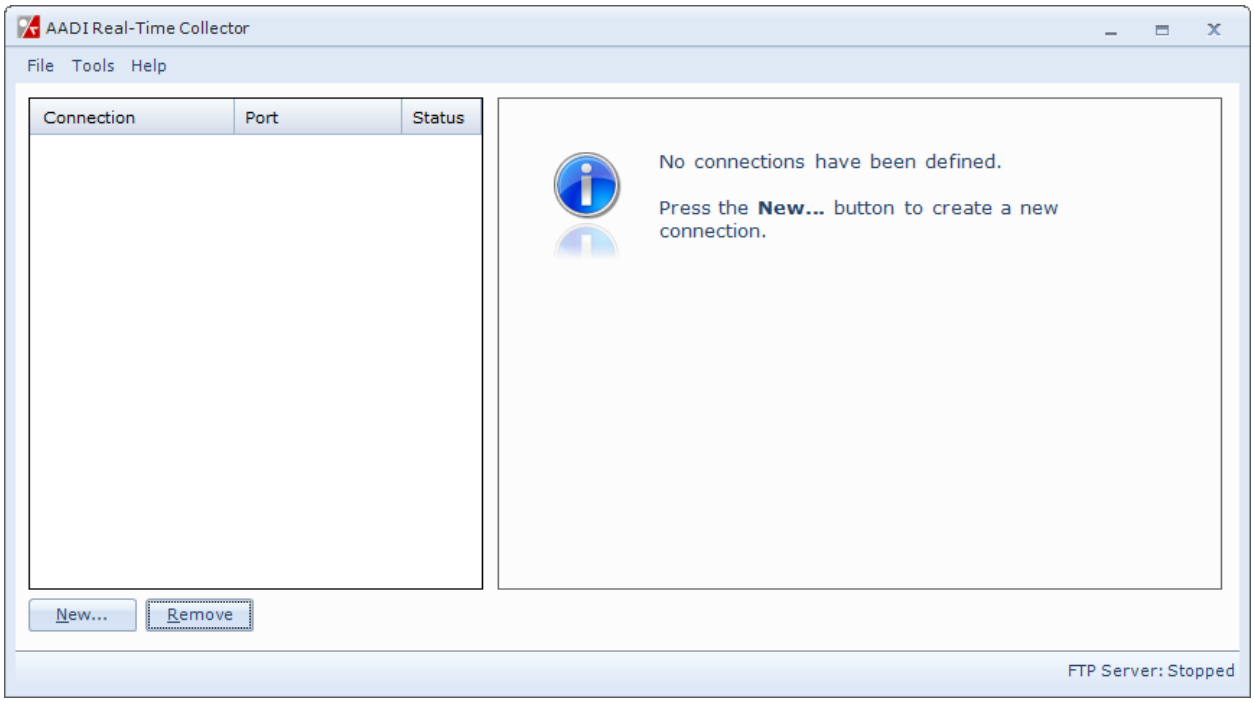


**Figure 4-3 The main window as it appears with no connections defined.**

Press the ***New*** button in the lower left corner of the window to create a new connection. This will open the ***Connection Settings*** window (CHAPTER 5). Fill out all relevant settings in this window and press ***OK***.

With one or more connections defined, the main window will look similar to Figure 4-4.

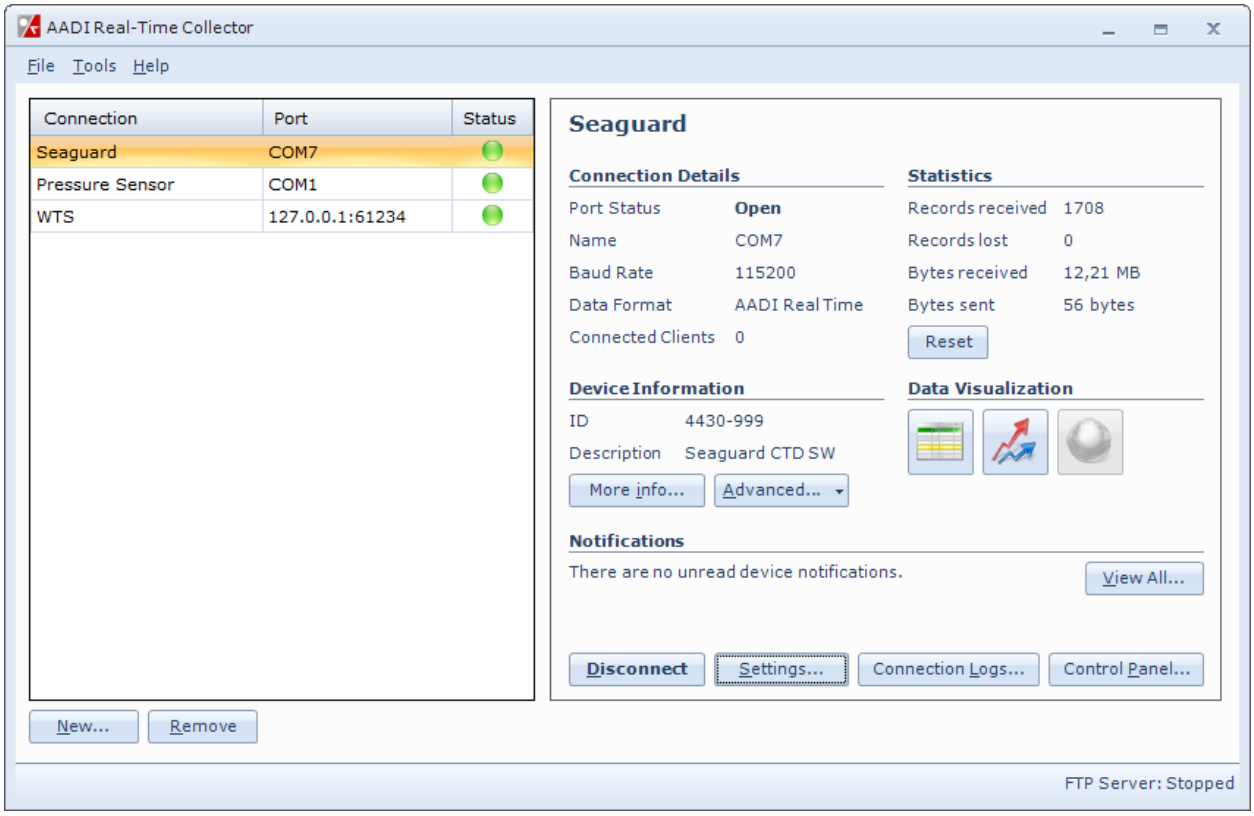


**Figure 4-4 The main window with three connections.**

The connection list to the left shows all defined connections. The status of each connection is illustrated by colored dots.

- A silver (white) dot means that the connection is closed.
- A yellow dot means that the connection is open, but that contact with the device has not yet been confirmed, or has been lost.
- A green dot means that the connection is open and that contact with the device has been confirmed.

When clicking on a connection in the list, information and options for the selected connection is displayed in the right part of the window.

## 4.3 Open a connection

Press the ***Connect*** button to open a connection. The Collector will try to determine the type of device by sending a connection request to the device. A progress bar is displayed during this process (Figure 4-5).

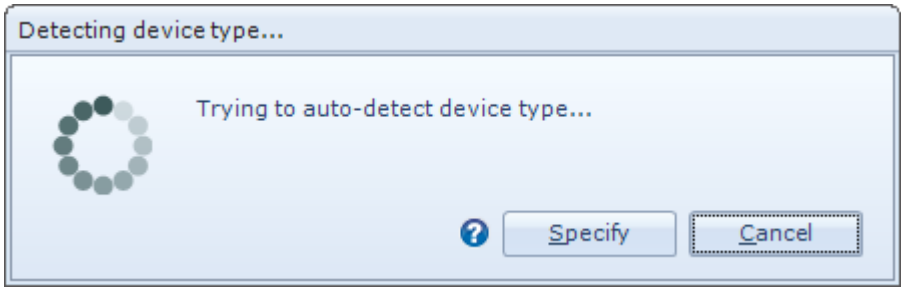


**Figure 4-5 A progress bar is displayed while the Collector is trying to determine the device type.**

The device will normally respond within a few seconds, at which point the progress bar will disappear and the connection is ready for use. If no response is received from the device (as indicated by the progress bar not disappearing), you have two options. Pressing the ***Cancel*** button will cancel the connection attempt and close the port. Pressing the ***Specify*** button will bring up a new dialog with three options (Figure 4-6).

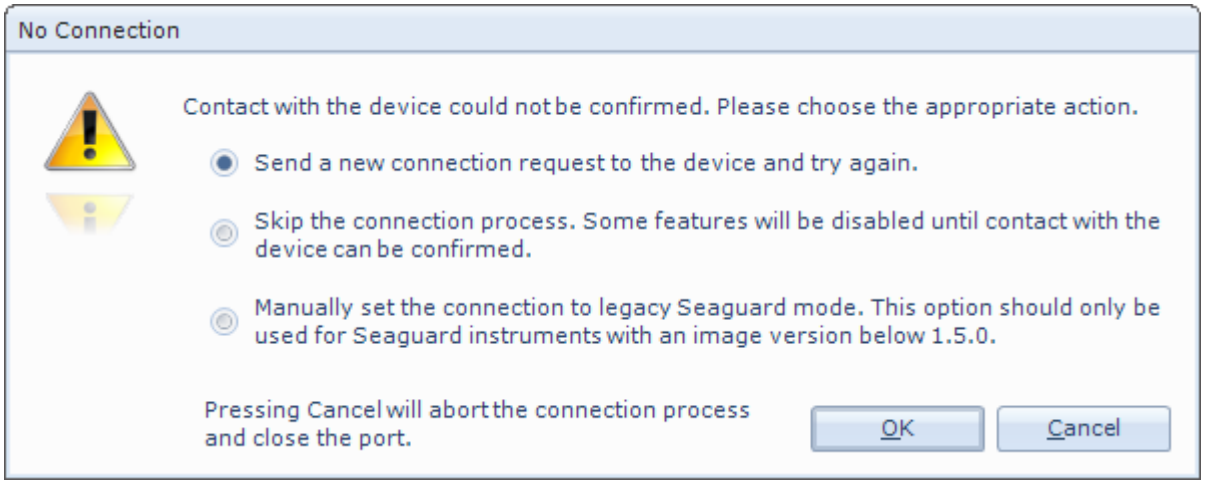


**Figure 4-6 You are given three options when a connection cannot be established.**

When choosing the first option, a new connection request is sent to the device and the wait process continues. Choosing the second option skips the connection process entirely. This will leave the port open, but some features will be disabled, most notably the control panel.

The third option should be selected if the connected device is a SEAGUARD® with an image version (firmware version) below 1.5.0. These devices do not respond to connection requests, and the connection settings must therefore be specified manually.

## 4.4 View connection information

Information on a selected connection is displayed in the right part of the main window, as seen in Figure 4-7. The information is divided into five parts.

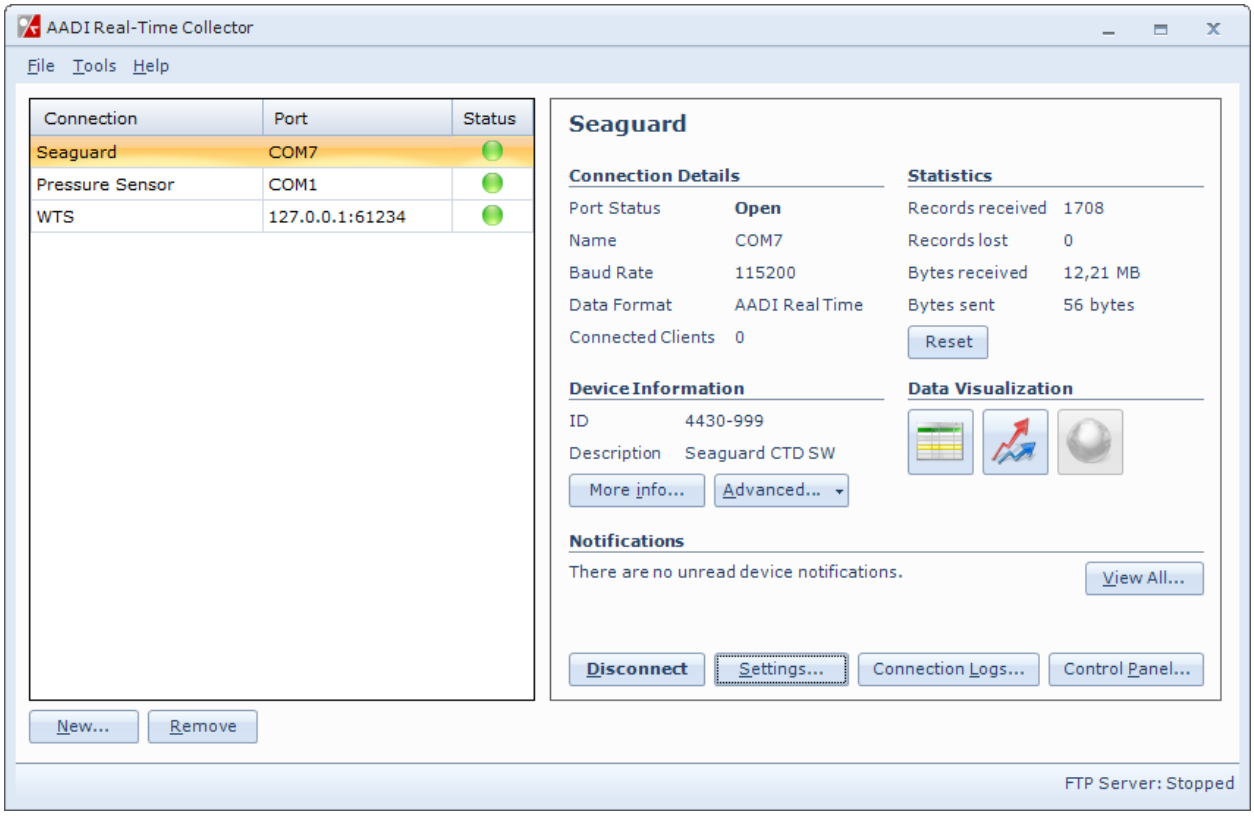


**Figure 4-7 Connection information.**

### *Connection Details*

The ***Connection Details*** area lists for example the port status, the port name and the number of connected clients. The amount of information here may vary to some degree depending on the type of connection.

### *Device Information*

The ***Device Information*** area displays information about the connected device. This information is provided by the device during the connection process described above. Press the ***More info*** button to show even more information about the device (if available).

The ***Advanced*** button provides three actions:

- ***Send Ping***: Transmits a short ping message to the device. The device will reply immediately if a connection exists. No visual feedback will be given after sending a ping, regardless of whether a response was received or not. Open the connection logs (CHAPTER 7) to verify if a response was received.
- ***Request Features***: Transmits a new feature request message to the device (exactly like the message that is automatically sent when first opening the port). This may be useful to detect if a new device has been connected to the port.
-

### *Statistics*

The ***Statistics*** area displays a couple of key figures related to the connection:

- ***Records received***: The number of data messages that the Collector has received on this particular connection.
- ***Records lost***: The *estimated* number of lost data messages on this connection (please note that this number may not always be completely correct). Lost messages may indicate that incoming messages are corrupted as a result of an unstable connection. The retransmission mechanism discussed in chapter 5.5.2 can often reduce this problem significantly.
- ***Bytes received***: The number of bytes that have been received from the device.
- ***Bytes sent***: The number of bytes that have been sent to the device.

The statistics may be reset by pressing the ***Reset*** button. Doing so will only affect the information in the main window, and will not affect the actual data or any connected clients. The statistics are not automatically reset if the port is opened and closed, but they will be reset if the Collector is restarted.

***Data visualization***

The Collector provides two ways of visualizing data from connected devices; a text viewer and a chart viewer. These may be opened by pressing the two buttons marked with a spreadsheet image and a graph image, respectively. The viewers are further explained in CHAPTER 10. If the device is outputting its GPS position, the button marked with a globe icon will open this position in Google Maps. If no position is available, the button will be grayed out.

***Notifications***

A device may transmit notification messages in various scenarios, for example to indicate that the recorder status changed, that the device configuration was updated, that the space on the SD-card is running out, or a number of other reasons. Some of these notifications are classified as warnings or errors, and will be displayed in the Notifications area. See Figure 4-8 for an example. In this example, the SD card was removed from the device, which is classified as a warning. An icon is displayed in the connection list, next to the connection status icon, and the notification text is displayed in the notification area. Clicking ***Mark as read*** will mark the notification as read and disable the warning. All current and previous notifications, including those with lower priority which are not explicitly displayed, can be viewed by clicking the ***View All*** button in the notification area. The notifications are also visible in the connection logs CHAPTER 7) along with all other messages sent to and from the device.

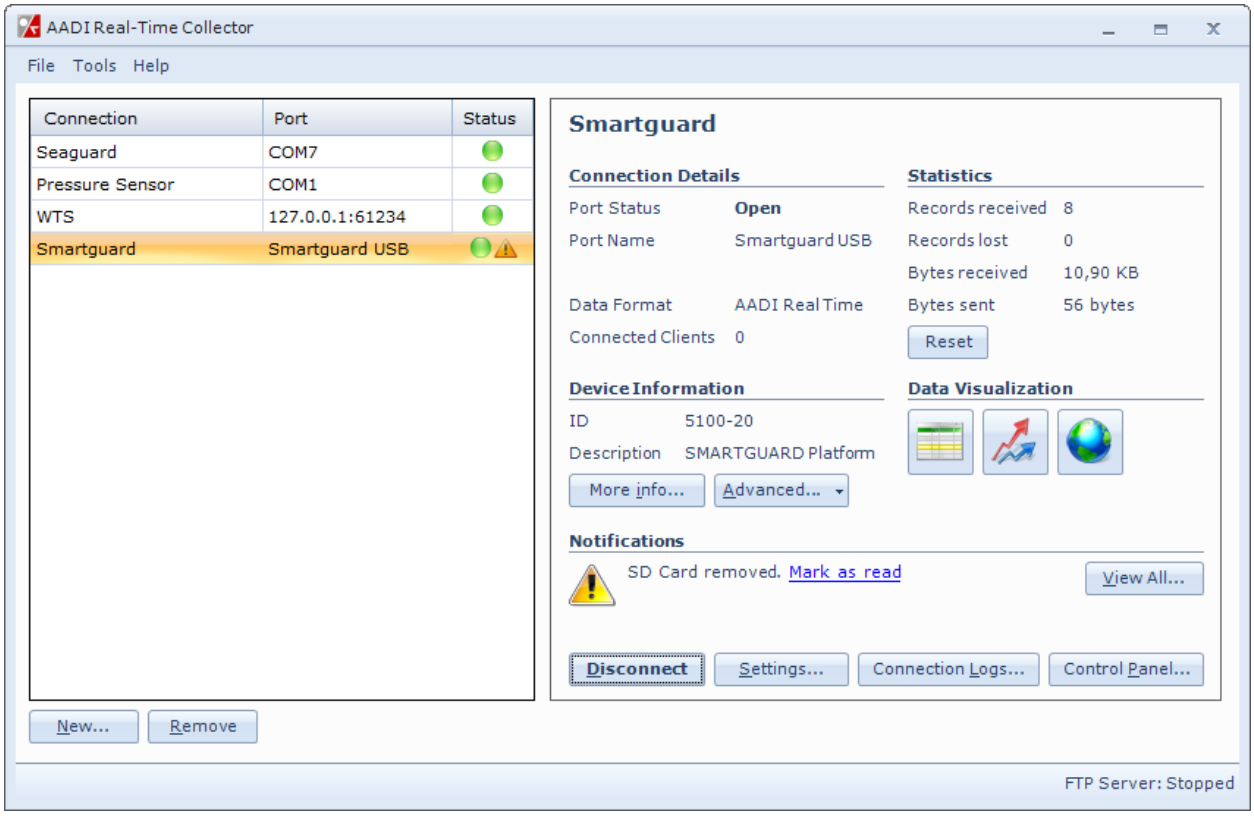


**Figure 4-8 Notifications from a device are displayed in the main window.**

## 4.5 Remove a connection

Click a connection in the connection list and press ***Remove*** to remove the selected connection. Please note that this operation cannot be undone.

## 4.6 Application menus

### *The File menu*

From the file menu, you may import and export connection settings. This process is further described in chapter 5.6.

Press ***Exit*** to close all connections and exit the application. All connection settings are stored on your computer and will be available the next time you start the Collector.

### *The Tools menu*

Choose ***Network Services*** to view and edit the network services settings. This is further described in CHAPTER 11.

Choose ***Custom Data Formats*** to view and edit the custom data formats. This is further described in CHAPTER 6.

Choose ***FTP Server*** to view and edit the FTP server settings. This is further described in CHAPTER 12.

Choose ***Application Error Log*** to view a summary of all errors that have occurred in the Collector (if any). The error information found here may be useful if you need to report a bug to AADI.

Choose ***Open Log Folder*** to open a Windows Explorer window with the folder in which all log files created by the application are placed, including the aforementioned error log.

Choose ***Settings*** to open the application settings dialog. This is further described in CHAPTER 8.

***The Help menu***

Choose ***About*** to view more information about the application, such as version and licensing status.

Depending on the current licensing status, the ***Help*** menu may contain additional items related to licensing. See CHAPTER 3 for details.

# CHAPTER 5 Connection settings

When pressing the ***New*** button in the main window, a new connection is created and the settings dialog is displayed (Figure 5-1). The same window is also displayed when pressing the ***Settings*** button on an existing connection. This window contains all connection specific settings. Please note that the settings can only be changed when the connection is closed.

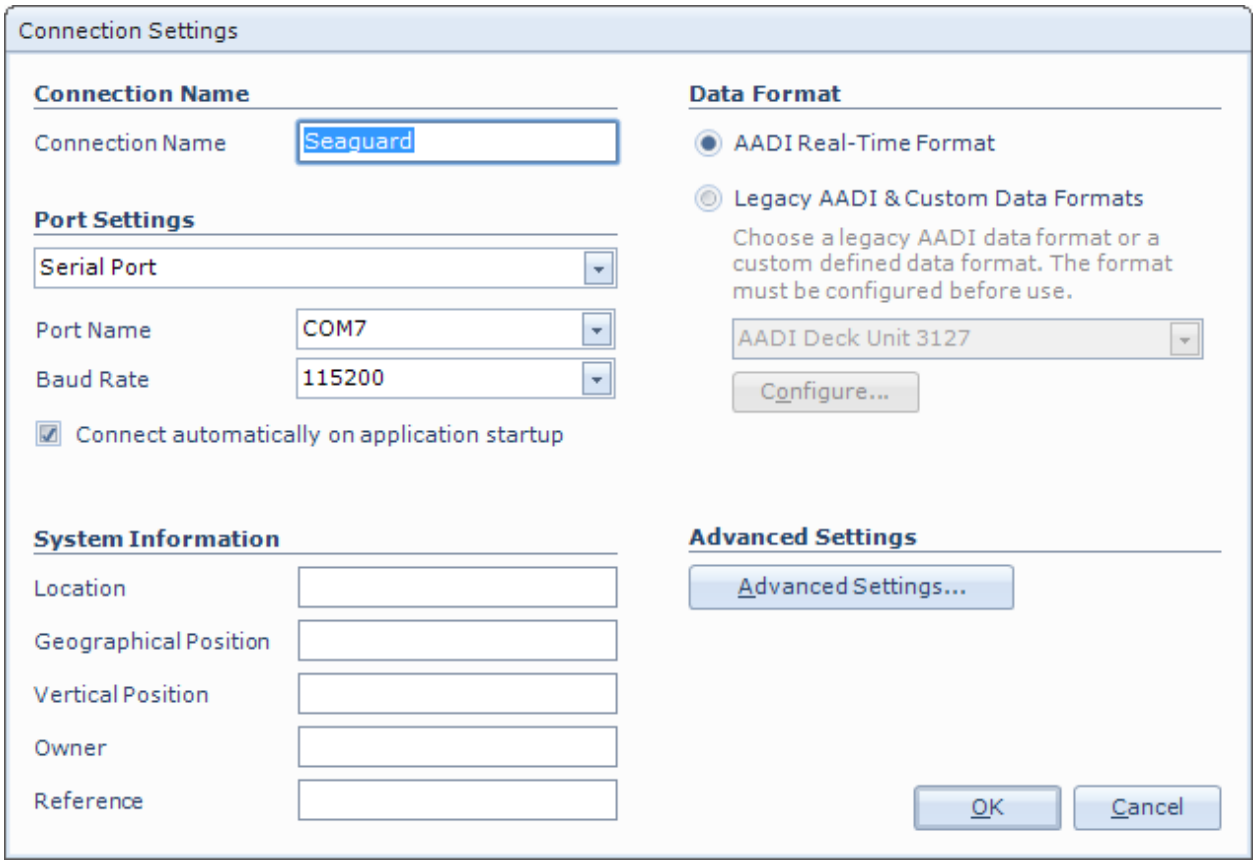


**Figure 5-1 The settings window.**

## 5.1 Connection name

The connection name must be unique and consist of only letters and numbers. Duplicates will be rejected. The name should be short and precise as it used to identify this particular

connection in other parts of the Collector. If data are stored to file, the connection name is also used in the folder name to ensure unique directories for each connection (chapter 5.5.6).

## 5.2 Port Settings

You can choose from a few different connection types, depending on the kind of device that is used (Figure 5-2). Each connection type has its own settings. Select ***Connect automatically on application startup*** to automatically open the connection whenever the Collector is started. For most of the connection types, additional advanced settings may also be found in the Advanced Settings dialog (chapter 5.5).

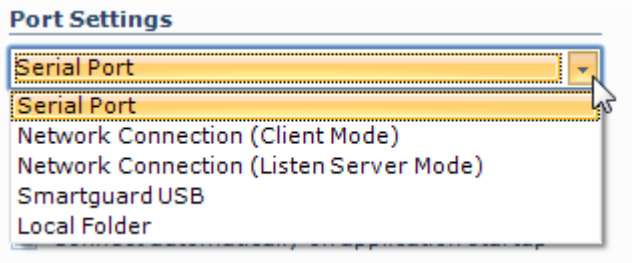


**Figure 5-2 Select a connection type.**

### *Serial Port*

Use this connection type when the device is connected to the PC through a serial port. Select the port to which the device is connected, e.g. COM1, and the correct baud rate. It is very important that the baud rate exactly equals the baud rate configured for the transmitting device.

### *Network Connection (Client Mode)*

Use this connection when the device is connected to the network in server mode (accepting incoming connections). The Collector will then act as client to the device. Select the server (device) address and server port.

### *Network Connection (Listen Server Mode)*

Use this connection when the device is connected to the network in client mode. The Collector will then act as a server, by accepting connections on a given port. The device must initiate contact by explicitly contacting the Collector on the selected address and port. Note that only one device can be connected to the same connection at any given time.

### *Smartguard USB*

Use this connection when the device is an AADI Smartguard connected to the PC through a USB cable. No further configuration of the connection is required.

### *Local folder*

Use this connection when device data exists in files on the local computer. When the connection is opened, all compatible files in the selected folder will be read and its contents treated like data from an actual device. The connection is automatically closed when all files have been read. This connection type can never be used to connect to an actual physical device. Please contact AADI for more information on what types of files are supported.

## 5.3 System information

In cases where the device does not provide any, or not enough, system information (referred to as “site information” in earlier versions), you may manually add this information. Devices that use the AADI Real-Time format are normally capable of providing their own system information, while devices that use legacy AADI or custom data formats are not.

All five fields are optional, and may contain whatever information is required. This is however the recommended usage:

- ***Location***: Typically the place where the device is currently located, e.g. Bergen Harbour.
- ***Geographical Position***: Typically a GPS position. In order for this position to be recognised by the Collector as a GPS position, it should be in WGS-84 coordinates in decimal degrees format (DD), without the degree symbol, e.g. “38.889722,-77.008889”. See http://en.wikipedia.org/wiki/Decimal_degrees for more information on this format.
- ***Vertical Position***: The depth (negative number, e.g. -20m) or the altitude (positive number, e.g. 50m) where the device is currently located.
- ***Owner***: Typically the company owning the device, e.g. AADI.
- ***Reference***: Typically a project or the person responsible for the device.

Please note that the information provided here will be ignored if the corresponding information is also provided directly by the device, i.e. any system information stored in the device will always overwrite the information provided in this dialog.

## 5.4 Data format

You must specify which data format the connected device is using. Choose ***AADI Real-Time Format*** for AADI devices that use this format, such as the SEAGUARD®, SMARTGUARD or the WTS. This is an XML data format and does not need to be configured.

Legacy AADI devices (e.g. Datalogger 3660 or Deck Unit 3127), older AADI stand-alone sensors, and other 3rd party sensors do not use the AADI Real-Time format. For these devices, select the ***Legacy AADI & Custom Data Formats*** option. Select the appropriate device type in the drop-down list.

The AADI legacy and custom data formats must be configured before use. Press the ***Configure*** button to open the configuration window. It will not be possible to open the connection before the data format has been properly configured.

Please refer to CHAPTER 6 for a detailed description of how to use legacy AADI formats or custom data formats.

## 5.5 Advanced settings

Press the ***Advanced Settings*** button (Figure 5-1) to edit the advanced connection settings.

The Advanced Connection Settings dialog (Figure 5-3) contains additional connection settings, that don’t normally need to be modified. The settings are divided into a number of tabs, all of which are described below. The default settings for all tabs can always be restored by pressing the ***Default*** button. Please note that depending on the connection type, not all settings will be relevant (the serial port settings will for example not affect a network connection).

### 5.5.1 General

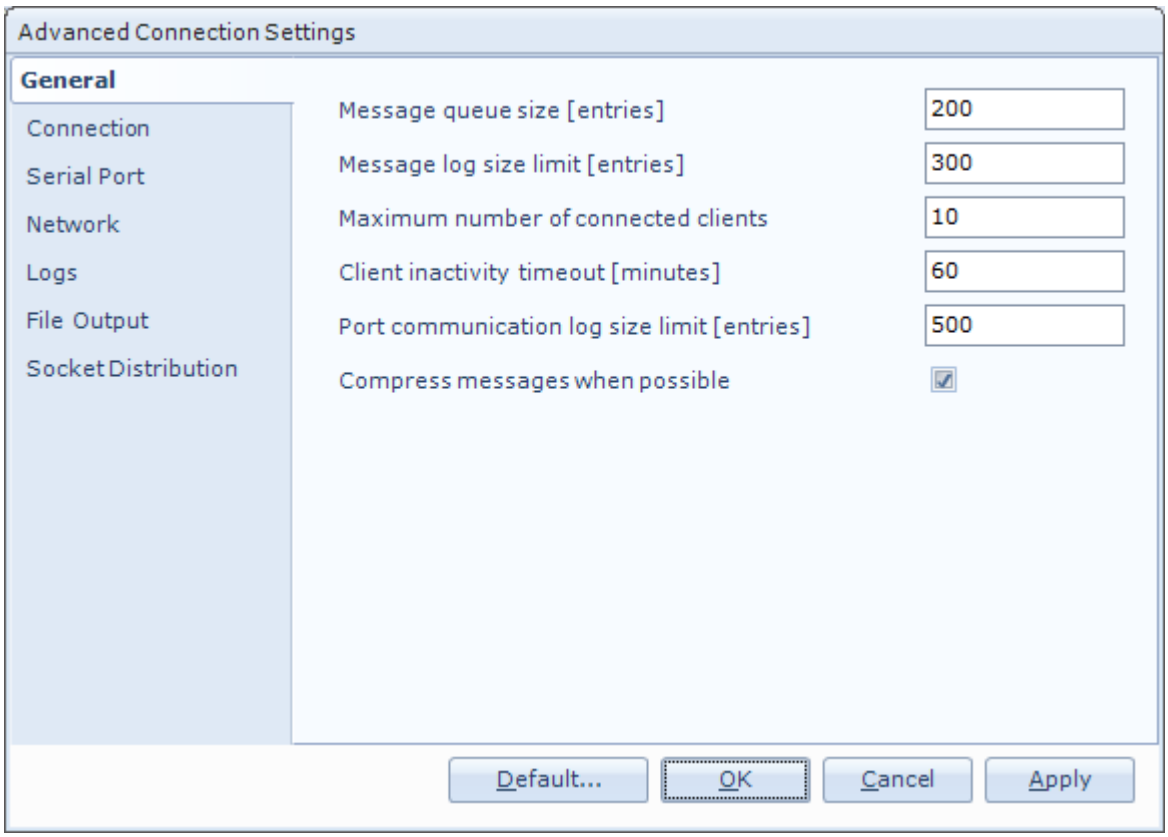


**Figure 5-3 Advanced Connection Settings – the General tab.**

- ***Message queue size***: Set the maximum number of messages kept in queue and available for reading by client applications. The default value is 200.
- ***Message log size limit***: Set the maximum number of messages kept in the message log. The message logs contain all kinds of messages to and from the device, e.g. data or notifications. The default value is 300.
- ***Maximum number of connected clients***: Set the maximum number of client applications allowed for this connection. The default value is 10.
- ***Client inactivity timeout***: A client application that communicates with Collector will be disconnected if no communication has been registered within the configured timeout. The default value is 60 minutes.
- ***Port communication log size limit***: Set the maximum number of entries kept in the port communication log. This log keeps track of all incoming and outgoing events on the physical port. The default value is 500.
- ***Compress messages when possible***: If checked, messages sent to the device will be compressed if the messages size is large enough, and compression is supported by the device. This setting is enabled by default.

### 5.5.2 Connection

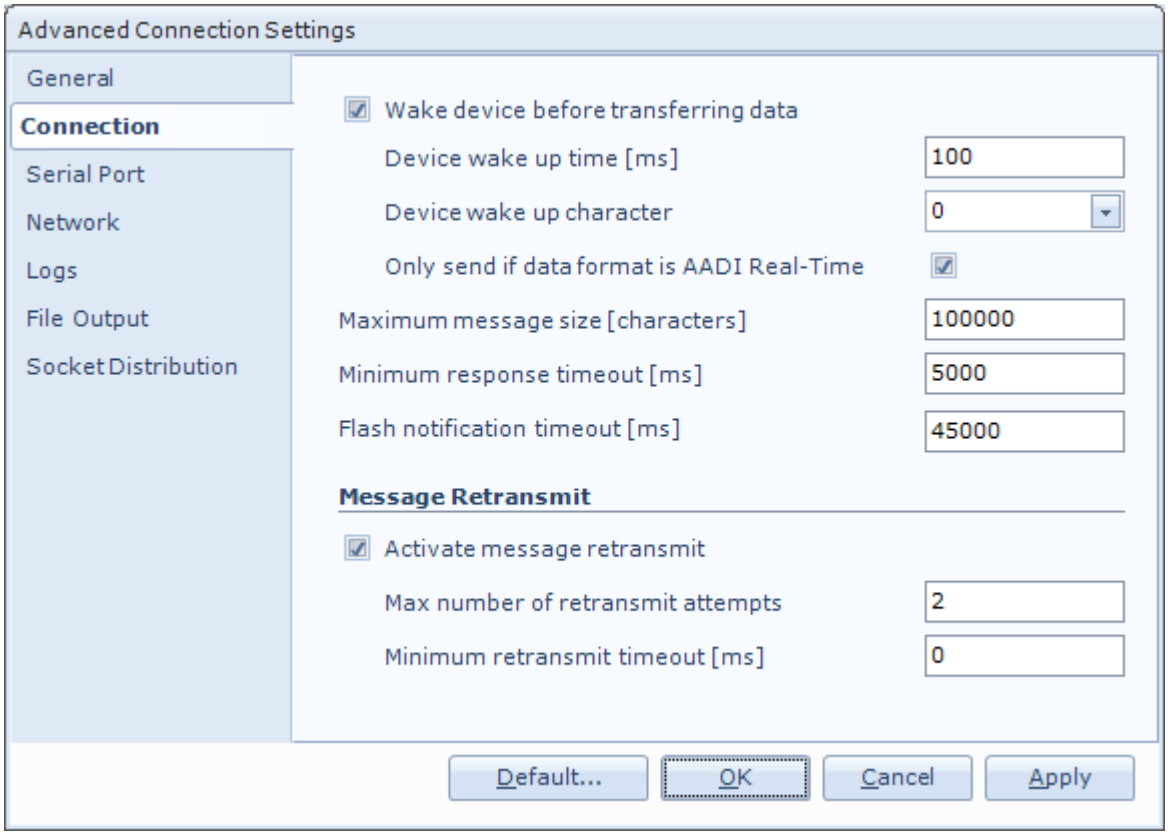


**Figure 5-4 Advanced Connection Settings – the Connection tab.**

- ***Wake device before transferring data***: If checked, the Collector will wake up the device by sending a wake up character, before sending an actual message. This option is enabled by default.
  - ***Device wake up time***: The time needed by the connected device to wake up before it can start receiving messages. The default value is 100 milliseconds. Setting this value to 0 effectively disables the wake up (similar to the checkbox above).
  - ***Device wake up character***: The character used as a wake up the device. The default value is '0' (ASCII 48/0x30).
  - ***Only send if data format is AADI Real-Time***: If checked, the wake up mechanism is only used if the data format for the connection is set to AAI Real-Time. This option is enabled by default.
- ***Maximum message size***: The maximum expected message size in characters. This value *must* be larger than all possible output messages from the device. If uncertain, set it to a higher value. This value is needed by the Collector in order to detect the situation when incoming data cannot be read, and the input buffers should be reset and an error message generated in the logs. The default value is 100000 characters.
- ***Minimum response timeout***: When sending control messages to the device, the Collector automatically calculates how long it should wait for an answer from the device before giving up and generating a timeout error message. The ***minimum response timeout*** is a lower limit to this value. Increase this value if you experience timeout errors in the control panel. The default value is 5000 milliseconds.

- ***Flash notification timeout***: When waiting for nodes to be flashed after a configuration update using the Control Panel, this value determines the timeout before giving up. The default value is 45000 milliseconds.
- ***Activate message retransmit***: If checked (and supported by the device), the Collector application will request retransmission of missing or corrupted messages from the connected device. The mechanism is limited to a maximum of one single missing message. When the sequence gap becomes two or more (messages), the missing messages are considered lost. The system may automatically disable the retransmit system (or lower the maximum number of attempts) if the message interval is too low.
  - ***Max number of retransmit attempts***: The maximum number of times the Collector will request retransmission of a single message before giving up.
  - ***Minimum retransmit timeout***: The Collector automatically calculates the timeout for a response to a retransmit request. In some situations, for example if the device is connected to the Collector via a slow communication device such as a GPRS modem, this value should be increased to ensure that multiple retransmit requests are not unnecessarily sent to the device. The default value is 0 milliseconds.

### 5.5.3 Serial Port

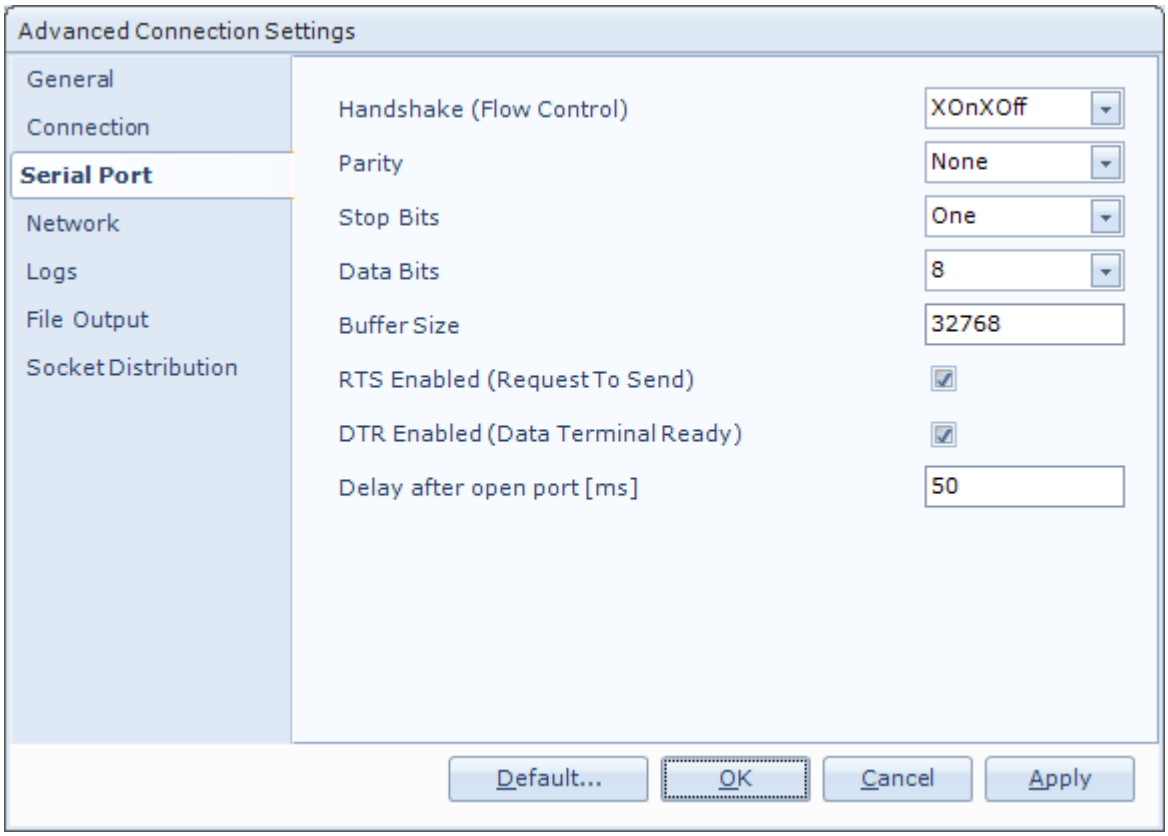


**Figure 5-5 Advanced Connection Settings – the Serial Port tab.**

- ***Handshake (Flow Control)***: The handshaking protocol for serial port transmission of data. The default value is XOnXOff.
- ***Parity***: The parity-checking protocol. The default value is None.
- ***Stop Bits***: The number of stop bits per byte. The default value is One.

- ***Data Bits***: The standard length of data bits per byte. The default value is 8.
- ***Buffer Size***: The size of the serial port input and output buffer. The default value is 32768.
- ***RTS Enabled (Request To Send)***: If checked, the Request to Send (RTS) signal is enabled during serial communication. The default value is enabled.
- ***DTR Enabled (Data Terminal Ready)***: If checked, the Data Terminal Ready (DTR) signal is enabled during serial communication. The default value is enabled.
- ***Delay after open port***: The number of milliseconds to wait before writing to the port directly after opening it. The default value is 50 milliseconds.

### 5.5.4 Network

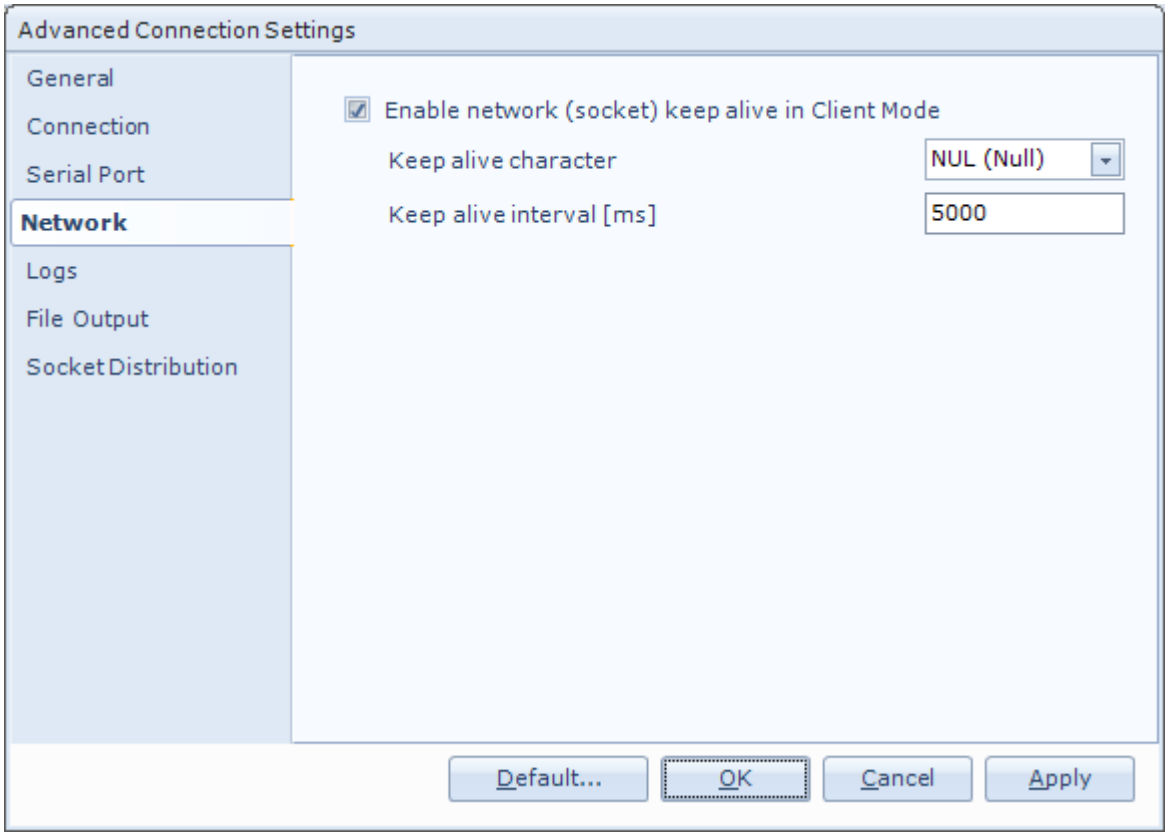


**Figure 5-6 Advanced Connection Settings – the Network tab.**

- ***Enable network (socket) keep alive in Client Mode***: Due to the nature of socket communication, the only way to detect a broken connection is to actively use it. The Collector can therefore periodically send a keep alive character to make sure that the connection is working, and try to re-establish the connection if it is broken. Please note that this only applies to network connections in client mode. This option is enabled by default.
  - ***Keep alive character***: A character sent periodically to the device in order to ensure that the connection is alive. The default value is NUL (Null).
  - ***Keep alive interval***: The interval at which the keep alive character is sent. The default value is 5000 milliseconds.

### 5.5.5 Application Logs

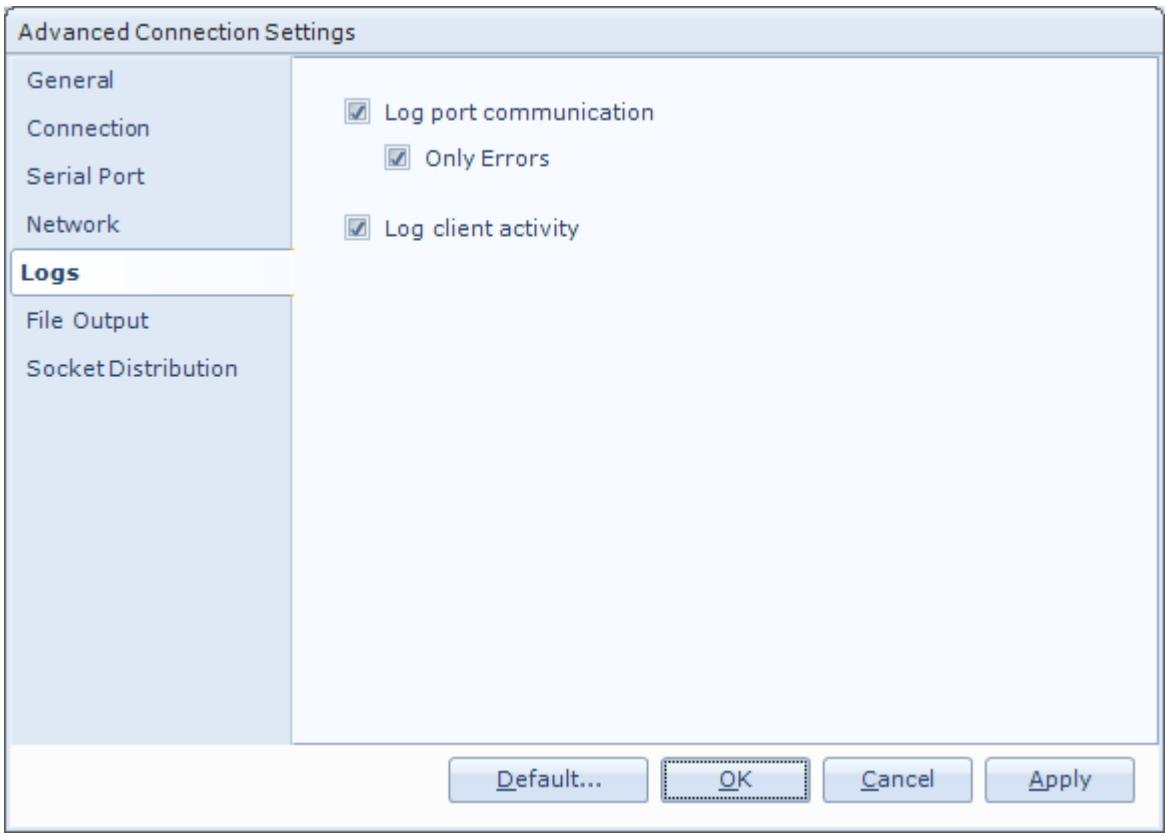


**Figure 5-7 Advanced Connection Settings – the Logs tab.**

- ***Log port communication***: If checked, port communication is logged to "Port Communication.log" in the log folder. This option is enabled by default.
  - ***Only Errors***: If checked, only error situations are included in the port communication log. Please note that disabling this option may create very large log files. This option is enabled by default.
- ***Log client activity***: If checked, all client connections are logged to "Client Connections.log" in the log folder. This option is enabled by default.

### 5.5.6 File Output

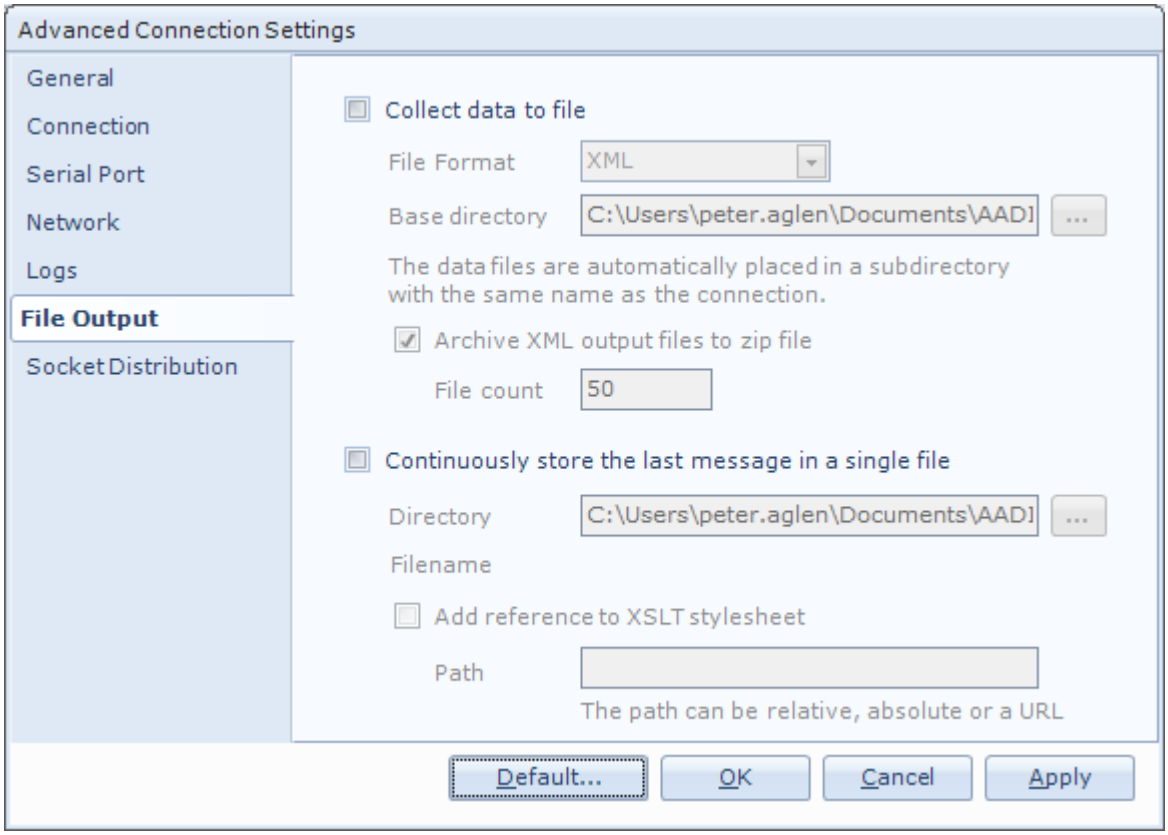


**Figure 5-8 Advanced Connection Settings – the File Output tab.**

- ***Collect data to file***: If checked, incoming data messages are saved to file in a specified directory (see below). This option is disabled by default.
  - ***File Format***: Determines which file format that should be used for the file output. Choose XML to write each data messages to a time stamped XML file. Choose TXT to write each data message as a tab delimited record in a single text file, which later can be imported directly into an Excel spreadsheet. The default value is XML.
  - ***Base directory***: The base directory in which the output file(s) are stored. The Collector will automatically add a subdirectory with the same name as the connection to ensure unique directories for each connection.
  - ***Archive XML output files to zip file***: If checked (and the output format is XML), the XML files are zipped and placed in a subdirectory called *Archive*. This option saves space on the hard drive and is enabled by default.
  - ***File count***: This value controls how many XML are placed in each zip file. The default value is 50.
- ***Continuously store the last message in a single file***: If checked, all incoming data messages on this particular connection are written to a single XML file. This file will then always contain the last data message and may be used as a data source for a frequently refreshed web-page or similar application. Make sure not open the file in an application (such as Microsoft Word or Excel) that will lock the file, as this will prevent the Collector from writing to it. Any internet browser should be safe to use in that respect.

- ***Directory***: The directory in which to place the last message file. The file itself will always have the same name as the connection (as illustrated in Figure 5-8).
- ***Add reference to XSLT stylesheet***: If checked, an XSLT stylesheet reference is inserted into the XML file. This option is disabled by default. An XSLT stylesheet can transform an XML document into another format, for example HTML to allow viewing in a web browser. When the XML file is opened in the browser, the browser will detect the stylesheet reference and use it to transform the XML into whatever design the stylesheet specifies. Read more about XSLT stylesheets on http://www.w3schools.com/xsl/.
- ***Path***: The path to the style sheet may be relative to the directory in which the XML file resides, an absolute path or a URL.

### 5.5.7 Socket Distribution

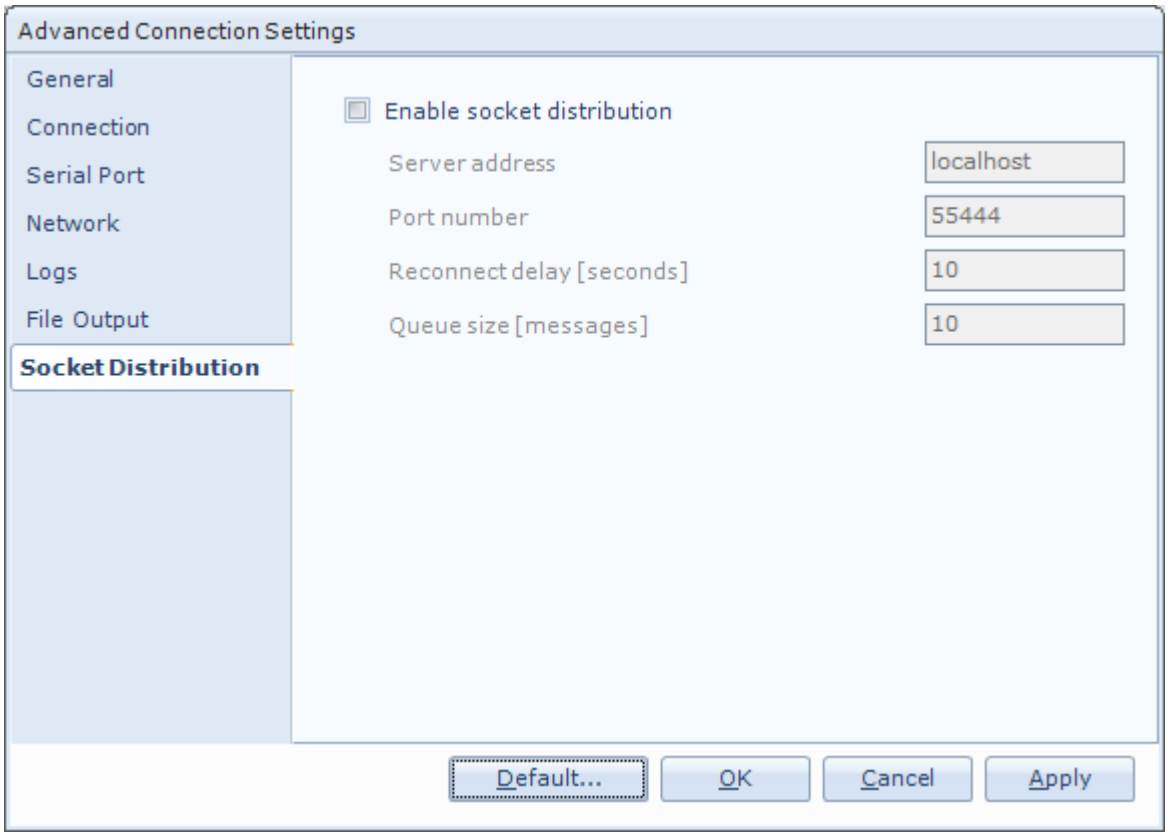


**Figure 5-9 Advanced Connection Settings – the Socket Distribution tab.**

- ***Enable socket distribution***: If checked, each incoming XML data message will be pushed to the specified network socket.
- ***Server address***: The address where the server is running, and to which the Collector will connect as a client.
- ***Port number***: The server port number.
- ***Reconnect delay***: The number of seconds to wait before attempting to re-open a broken connection. The default value is ten seconds.

- ***Queue size***: In case of a broken connection, this value determines the number of messages that are queued up for when the connection is restored. The default value is 10.

## 5.6 Import and export connection settings

The current list of connection settings can be exported to a file by selecting ***Export Connections*** in the File menu in the main window (Figure 5-10). This will create a file that contains the current list of connections, including for example port settings, custom format configuration and advanced settings. The exported file may be used as a backup of the settings at the current machine, but can also be used on other computers.

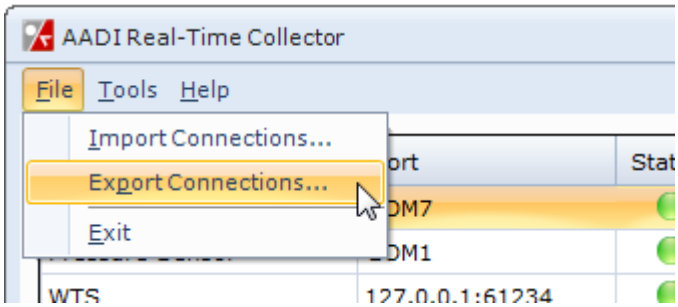


**Figure 5-10 Import and export connection settings.**

Select ***Import Connections*** (Figure 5-10) to import a list of connection settings from file. A dialog will be displayed (Figure 5-11), where you must choose which file to import from. You must also decide if the current connection list should be kept, or if it should be removed (i.e. replaced by the connection list in the file). An imported connection that has the same name as an existing connection will be automatically renamed.

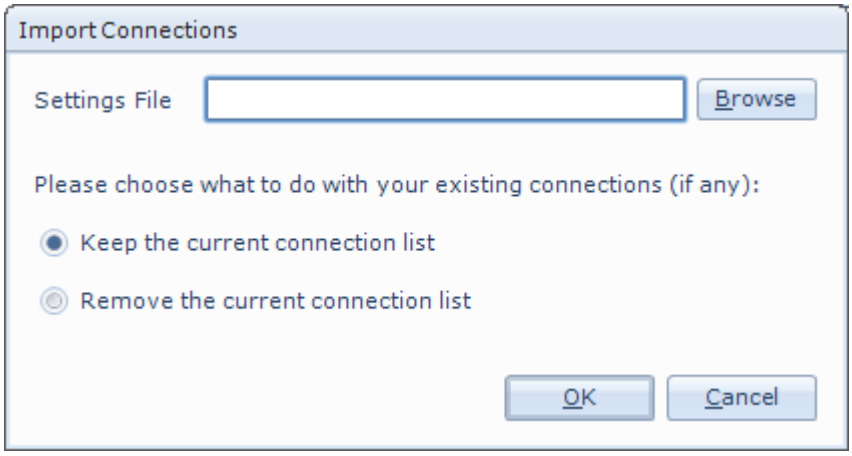


**Figure 5-11 Import connection settings.**

Each imported connection must be manually opened in order to start receiving data, even if the ***Connection automatically on application startup*** option is enabled.

If an imported connection is configured to use a custom data format that does not exist on the current computer, a warning will be given during the importing process and the connection will

automatically be configured to use the default AADI Real-Time Format. Make sure to first import any relevant custom data formats (chapter 6.2) in order to avoid this situation.

Make sure that the port or network settings are correct for imported connections, even if the imported file was originally exported from the same computer. Serial port names may be changed by Windows at any time.

# CHAPTER 6 Legacy AADI and custom data formats

Legacy AADI and custom data formats may be used to retrieve data from many sensors and instruments that does not use the AADI Real-Time Output format.

The legacy AADI data formats have been designed specifically for certain older AADI instruments, and come pre-installed with the AADI Real-Time Collector.

Custom data formats are used to retrieve data from other sensors or instruments. These formats must however adhere to the following requirements:

- Every data message (device measurement) must be a single line of ASCII data that ends in any of the three standard newline character sequences.
  - Line Feed (LF) – used in UNIX, Linux, Max OS X and others.
  - Carriage Return + Line Feed (CR+LF) – used in Microsoft Windows, DOS, Symbian OS and others.
  - Carriage Return (CR) – used in Mac OS up to version 9, OS-9 and others.
- The elements of the data message (measurements, meta-data etc.) must be delimited by any combination of *tabs, semicolons, colons, commas, spaces or asterisks*.

Using custom data formats is a two-step process. First the data format must be specified. This is only done once for a particular device format, and the resulting format specification can be used on more than on connection. This process is described in chapter 6.1.

The second step is to select the desired data format for a particular connection, and configure it for use. This also applies for the built-in legacy AADI data formats. The configuration process is described in chapter 6.3.

## 6.1 Edit the list of custom data formats

Select ***Custom Data Formats*** on the Tools menu (Figure 6-1) to open the ***Custom Data Formats*** dialog (Figure 6-2).

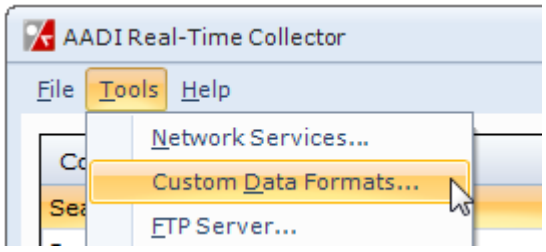


**Figure 6-1 Opening the custom data formats dialog.**

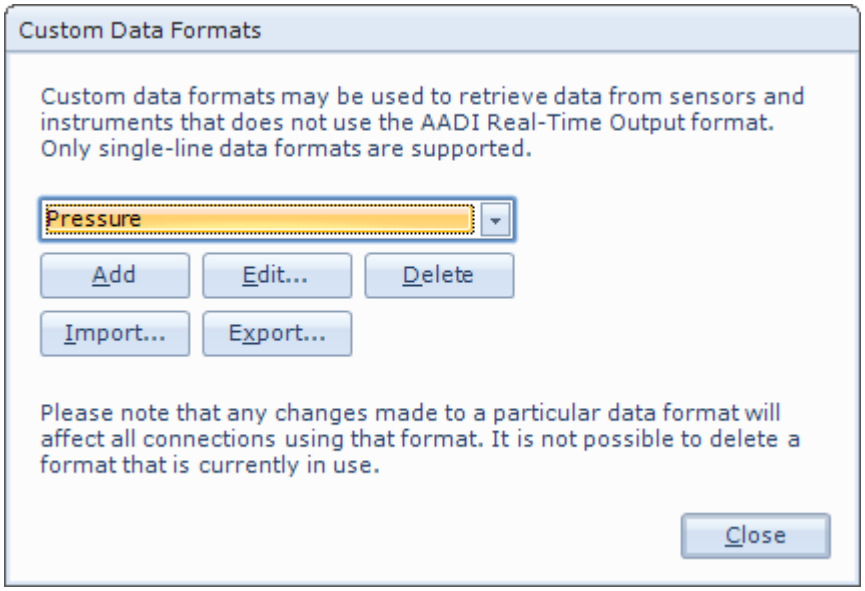


**Figure 6-2 The Custom Data Formats dialog.**

The drop-down list holds the current list of custom data formats. The first format in the list is selected by default when opening the window, e.g. the Pressure Sensor format in Figure 6-2. The built-in legacy AADI data formats cannot be modified or removed, and are thus not displayed in this list.

Press the ***Add*** button to add a new format, or the ***Edit*** button to modify an existing format. Give the format a suitable name. The ***Edit Custom Data Format*** dialog is automatically opened (Figure 6-3). It is not possible to edit a format that is currently being used by one or more *open* connections. Formats that are being used only by *closed* connections can be edited, but a warning will be displayed.

Press the ***Delete*** button to delete the selected format. It is not possible to delete a format that is currently in use by one or more connections (either open or closed).

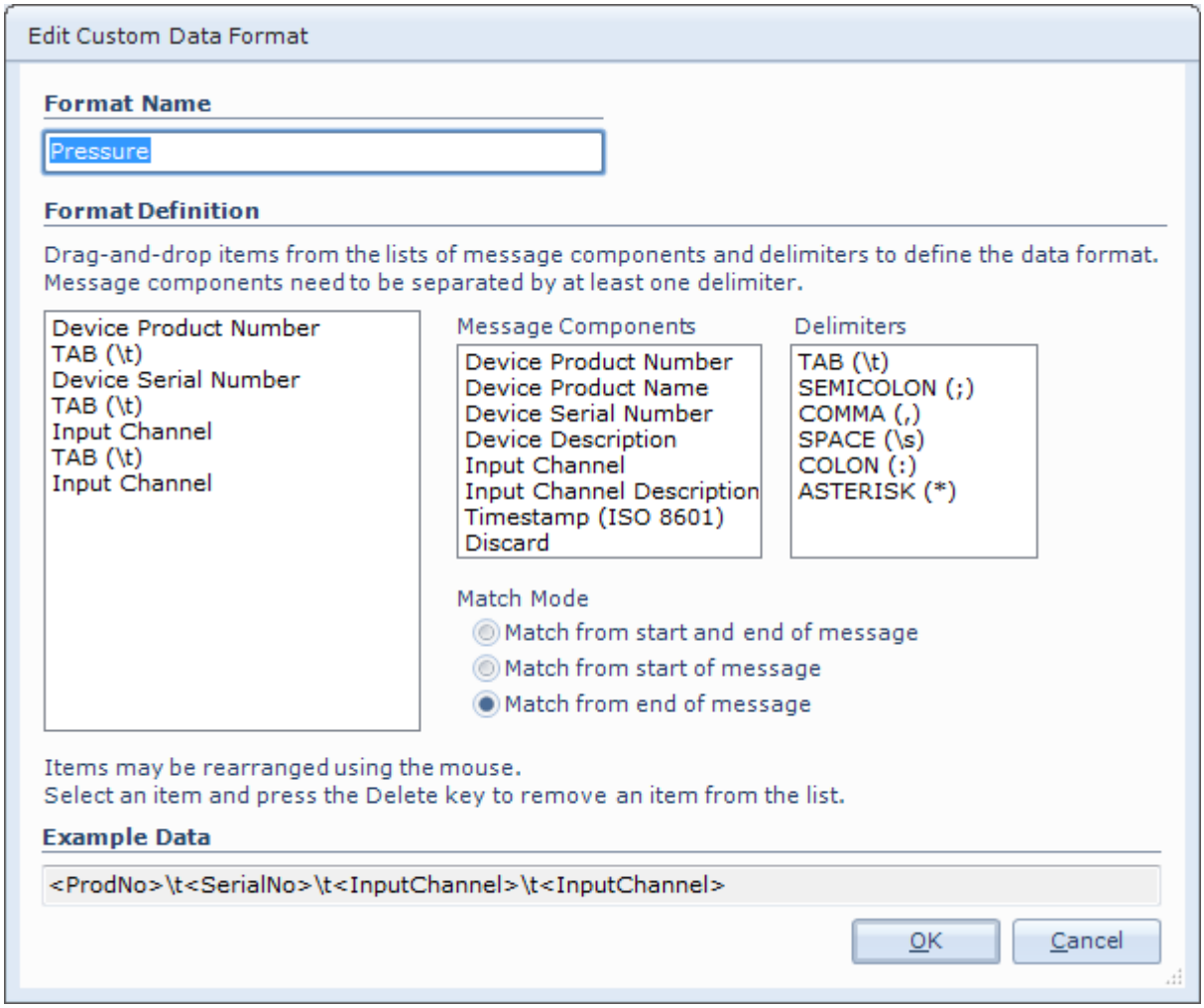


**Figure 6-3 Edit Custom Data Format dialog.**

The format name may be edited in the text box at the top of the dialog.

The larger list box to the left displays the elements that together make up a complete data message. The top-most element corresponds to the first (left-most) element in the data message.

To the right are two list boxes. The Message Components is a list of actual message components, while the Delimiters list holds the elements that simply separate the message components.

Drag-and-drop items from these two list to define the data format. Message components must always be separated by at least one delimiter. The ***Device Product Number***, ***Device Product Name***, ***Device Serial Number*** and ***Device Description*** components are used to match the corresponding metadata, if available. If this information is not provided by the device, the information may be added manually to each individual connection that uses this format (chapter 6.3).

The ***Input Channel*** component matches actual data values from the device.

The ***Timestamp*** component matches timestamps on the format specified in ISO 8601 (http://en.wikipedia.org/wiki/ISO_8601). Timestamps on other formats are *not* supported.

The ***Discard*** component matches any element in the data format that cannot be properly matched or that simply should not be saved, e.g. a description text or some other data that cannot be used.

Items in the format definition may be rearranged using the mouse (drag-and-drop inside the list box).

Select an item and press the Delete key on the computer keyboard to delete an item from the format definition.

The ***Match Mode*** controls how the input data is parsed (matched).

- Select ***Match from start and end of message*** to require an exact match. No other data can occur either before or after the message.
- Select ***Match from start of message*** to match only the beginning of an input message. Trailing data is ignored.
- Select ***Match from end of message*** to match only the end of an input message. Un-match data at the beginning of the input message is ignored.

The ***Example Data*** field in the bottom of the window shows an example string using the current setting.

Press the ***OK*** button save the data format, or ***Cancel*** to discard your changes.

## 6.2 Import and export custom data formats

Press the ***Import*** button (Figure 6-2) in the ***Custom Data Formats*** dialog to import a custom data format from a file. If the import is successful, the new format will be displayed in the format list.

Select a custom data format in the format list (Figure 6-2) and press ***Export*** to export the selected format to a file.

Exported formats can if necessary be transferred (by email, USB flash drive etc.) to another computer and imported to an instance of the AADI Real-Time Collector running on that computer.

## 6.3 Configure a data format for use

Legacy AADI and custom data formats can be used by more than one connection, but they must always be individually configured for each connection. As described in chapter 5.4, select the desired data format in the ***Connection Settings*** dialog, and press the ***Configure*** button to open the configuration window (Figure 6-4).

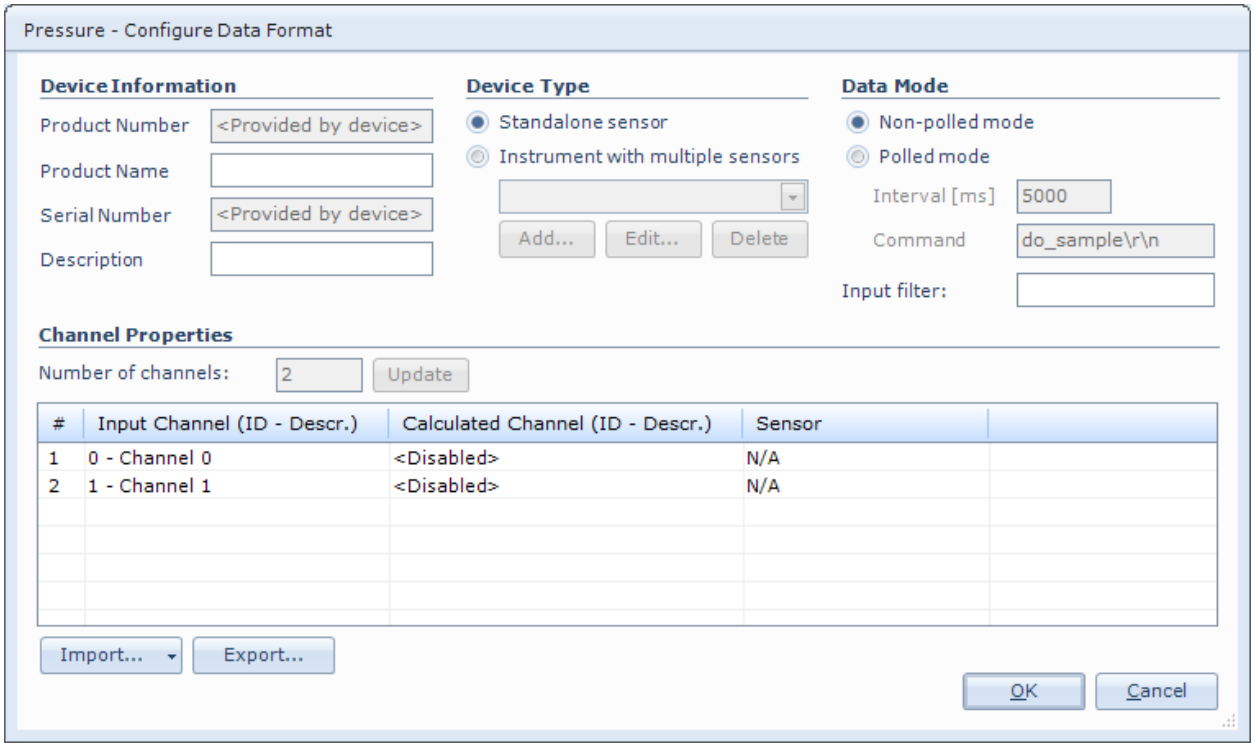


**Figure 6-4 Configure legacy AADI and custom data formats.**

### *Device Information*

The ***Product Number***, ***Product Name***, ***Serial Number*** and ***Description*** of the device can be specified. This information will be included in the output from the Collector and might be useful in for example a display program or a database. If the information is already included in the incoming data messages, the corresponding fields will be disabled, as seen in Figure 6-4.

### *Device Type*

The device type can be set to either ***Standalone Sensor*** or ***Instrument with multiple sensors***. Choose the option that best describes the connected device. Choose ***Standalone Sensor*** if you are uncertain.

If the device type is set to instrument, the sensors connected to the instrument must be specified. Click ***Add*** to add a new sensor (Figure 6-5). Note that all the fields (***Product Number***, ***Product Name***, ***Serial Number*** and ***Description***) must be specified for each sensor. Press ***OK*** to save the sensor specification. Add more sensors as required. Press the ***Edit*** button to modify, or the ***Delete*** button remove an existing sensor.

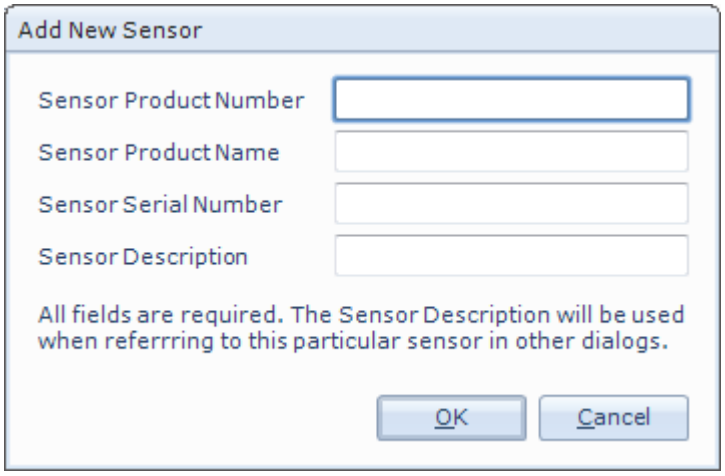


**Figure 6-5 Add a new sensor.**

### *Data Mode*

Select ***Non-polled mode*** for devices that transmit data automatically on regular intervals.

Select ***Polled mode*** for devices that must be polled in order to transmit data. In polled mode, ***Interval*** determines how often the sensor is polled, and ***Command*** is the actual command that is sent to the device on each interval. In the command string, \r means Carriage Return (CR) and \n means Line Feed (LN).

The ***Input filter*** is a list of characters that are automatically removed from any data received from the device. This applies to both non-polled and polled mode. For example, to filter out the characters '#' and '%' from the device input, type '#%' in the text box (without the quotation marks). Do not separate the characters with whitespace, unless of course all whitespaces should also be removed from the device input.

### *Channel Properties*

The ***Channel Properties*** section in the lower part of the configuration window (Figure 6-4) contains the list of input channels for this particular data format. An input channel is defined as a single data value, such as temperature, pressure or any other type of measurement.

For custom data formats, such as the pressure sensor format shown in Figure 6-4, the number of input channels is fixed in the format specification and cannot be changed.

For legacy AADI data formats however, the number of input channels must be specified. Type the appropriate number of channels in the text box and press ***Update*** to change the number of channels. The channel list below will be automatically updated to reflect the changes.

The channel list has four columns:

- ***#*** is the channel number (starting from 1). This number is only used to make reading the channel list easier. It is not used in the output from the Collector.
- ***Input Channel (ID – Descr.)*** is the ID and name/description of the input channel. This information may be edited by double clicking the channel (explained below).
- ***Calculated Channel (ID – Descr.)*** is the ID and name/description of the *calculated* channel. The calculated channel is disabled by default, but can be set to contain a value calculated (derived) from the input channel.

- ***Sensor*** is the sensor that this channel belongs to. Only relevant if the device type is set to instrument.

### 6.3.1 Configure an input channel

Double click a channel in the channel list to edit the information for that particular input channel (Figure 6-6).

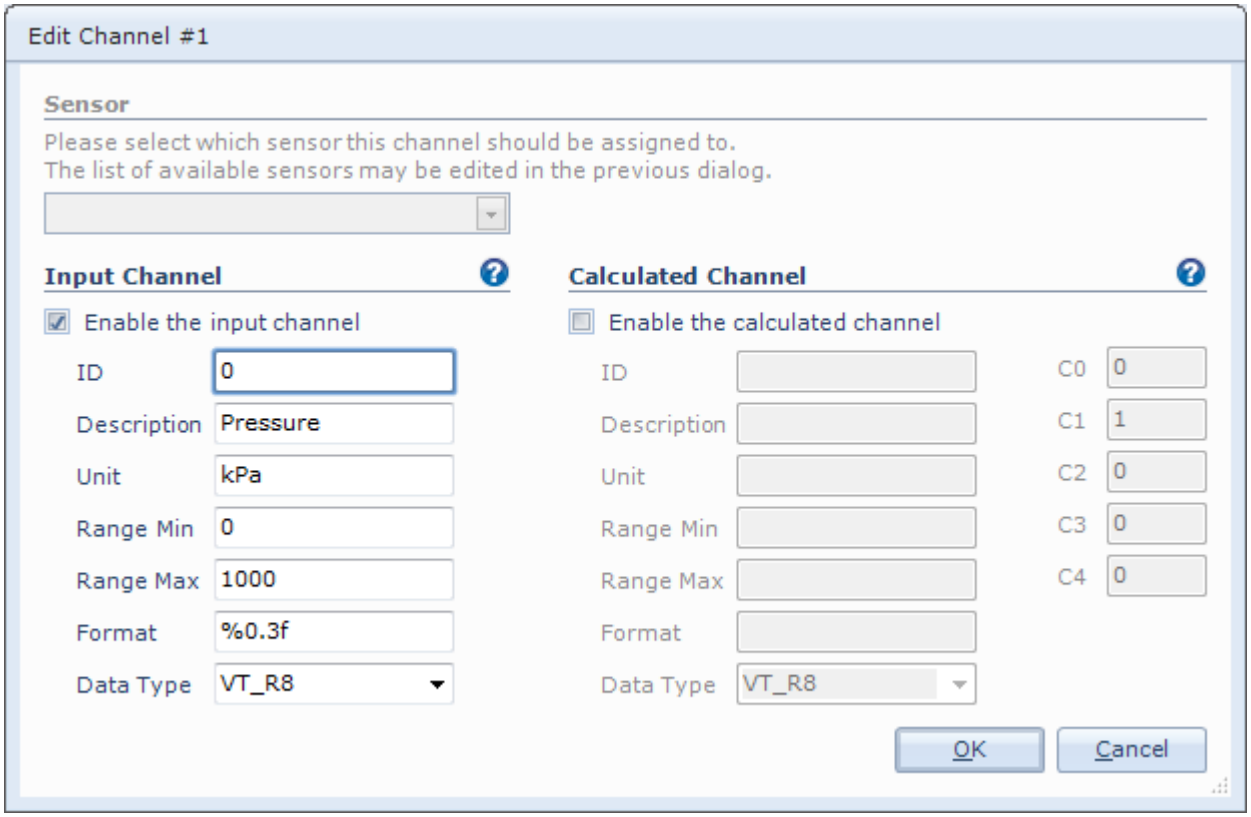


**Figure 6-6 Configure an input channel.**

If the device type has been set to instrument, the input channel must be assigned to one of the defined sensors. If the device type is set to standalone sensor, this option will be disabled.

The ***Input Channel*** section allows you to add additional information about the channel, or disable the channel completely by un-checking the ***Enable the input channel*** checkbox.

Change the information here as required, or leave the fields blank if the information is not available.

- ***ID*** is used to identify this particular input channel in the output from the Collector. All input channels must have a unique ID.
- ***Description*** is the name/description of the input channel, e.g. Pressure, Temperature or Salinity.
- ***Unit*** is the unit of the input channel, e.g. kPa, DegC or percent.
- ***Range Min*** is the minimum value (lower calibration limit) for this input channel.
- ***Range Max*** is the maximum value (higher calibration limit) for this input channel.
- ***Format*** is the output format of the channel value, e.g. %0.3f.

- ***Data Type*** is the data type of the channel value.

How much of this information that needs to be provided depends on where and how the data will be used. It is recommended to provide at least description and unit, but it is perfectly possible to leave all values except for the ID blank.

For the built-in legacy AADI formats, some channel information is pre-configured and cannot be modified.

The Calculated Channel section allows you to add an additional channel which is based on the input channel. This is useful in situations where the input channel contains raw data, and conversion to engineering units is required. The general channel information is specified as described above. The output value is calculated using the formula $M = C0 + C_1X + C_2X^2 + C_3X^3 + C_4X^4$, where $C_0$, $C_1$, $C_2$, $C_3$, $C_4$ are the calibration coefficients, and X is the raw data value (input channel).

The calculated channel may be enabled even if the input channel is disabled.

Press ***OK*** to save any changes, or ***Cancel*** to exit without saving changes.

Configure the rest of the channels as required. Press ***OK*** in the ***Configure Data Format*** dialog (Figure 6-4) to store the changes and return to the ***Connection Settings*** dialog. Open the port to start receiving data.

Verify that the data conversion from the original data format is working by checking the connection logs; refer to CHAPTER 7 for details.

# CHAPTER 7 Connection Logs

Press the ***Connection Logs*** button in the main window to open a new window displaying logs for the currently selected connection. The ***Connection Logs*** window contains three tabs, called ***Message Log, Connected Clients*** and ***Port Communication*** (Figure 7-1).

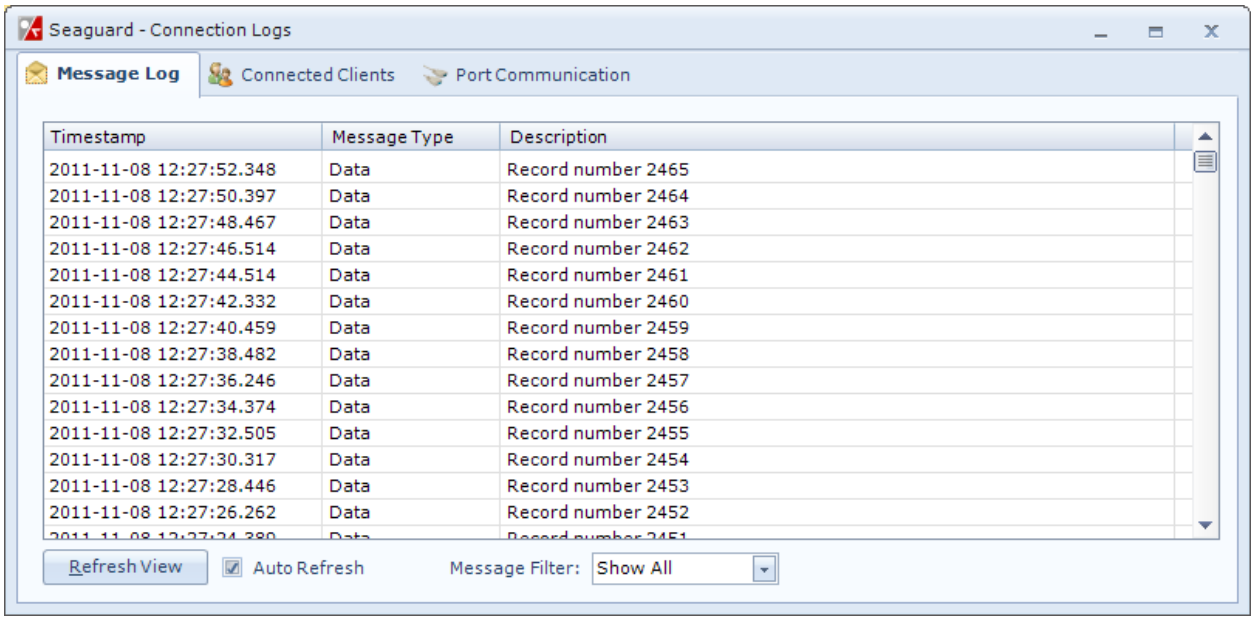


**Figure 7-1 The Connection Logs window.**

## 7.1 Message Log

The ***Message Log*** tab contains entries for the last 300 received messages (the log size can be changed in the advanced connection settings, refer to chapter 5.5). Each entry has a timestamp, a message type and a status description. The log will also indicate if messages have been lost. Double click a log entry to view the full message, or error information in case of an error. Press ***Refresh View*** to update the message log.

When ***Auto Refresh*** is checked, the log is updated automatically as new messages arrive.

The log can be filtered by selecting a specific message type in the drop down list below the log.

## 7.2 Connected Clients

The ***Connection Clients*** tab shows a list of currently connected clients (Figure 7-2). Both internal components, such as the control panel, or external applications, such as a display program, are shown in this list.

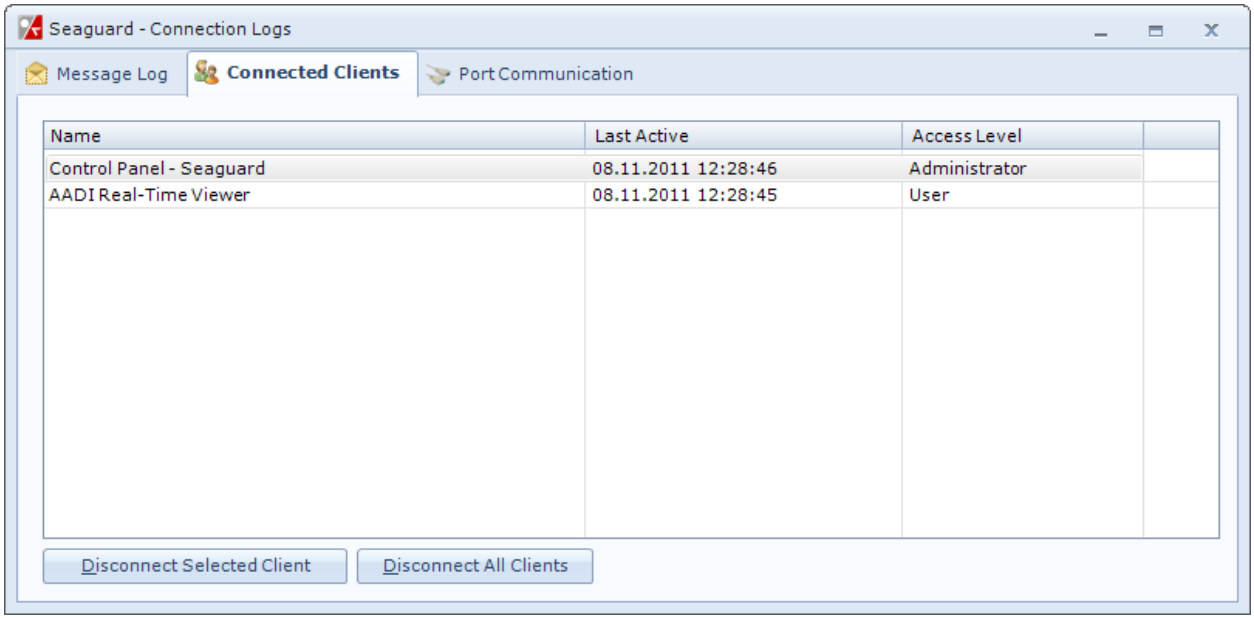


**Figure 7-2 Connected clients.**

The client list contains the following details:

- ***Name***: Optional name that the client application can choose to provide when connecting to the Collector.
- ***Last Active***: Date and time when the client last contacted the collector.
- ***Access Level***: The access level granted to the connected client application, i.e. 'User' or 'Administrator'.

Click ***Disconnect Selected Client*** to forcefully disconnect the selected client from the Collector. This feature may be particularly useful when a custom designed user application has exited or crashed without first un-subscribing from the Collector. Inactive clients are however eventually removed automatically (chapter 5.5.1). Click ***Disconnect All Clients*** to disconnect all currently connected clients.

## 7.3 Port Communication

The ***Port Communication*** tab shows a detailed log of the low level activity on the serial port or socket (Figure 7-3). Each log entry contains a timestamp and a short description of the entry.

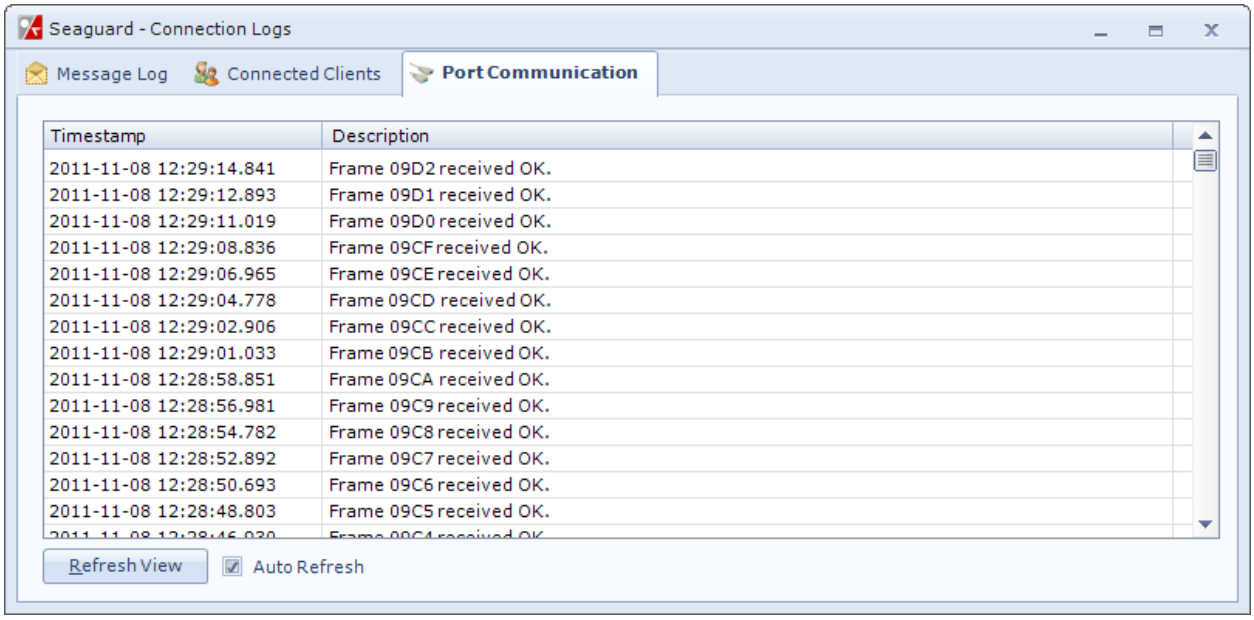


**Figure 7-3 Port communication log.**

When ***Auto Refresh*** is checked, the log is updated automatically as new log messages arrive. Press ***Refresh View*** to update the log manually.

# CHAPTER 8 Application settings

The application settings are accessed from the Tools menu (Figure 8-1) in the main window. The ***Application Settings*** dialog is divided into three tabs (Figure 8-2).

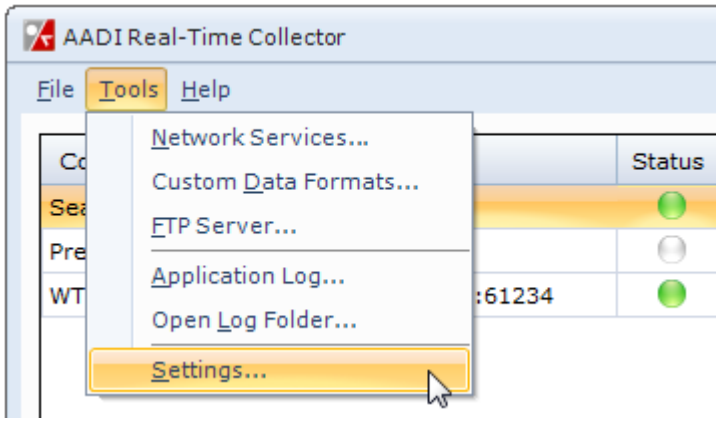


**Figure 8-1 Opening the Application Settings window.**

## 8.1 General

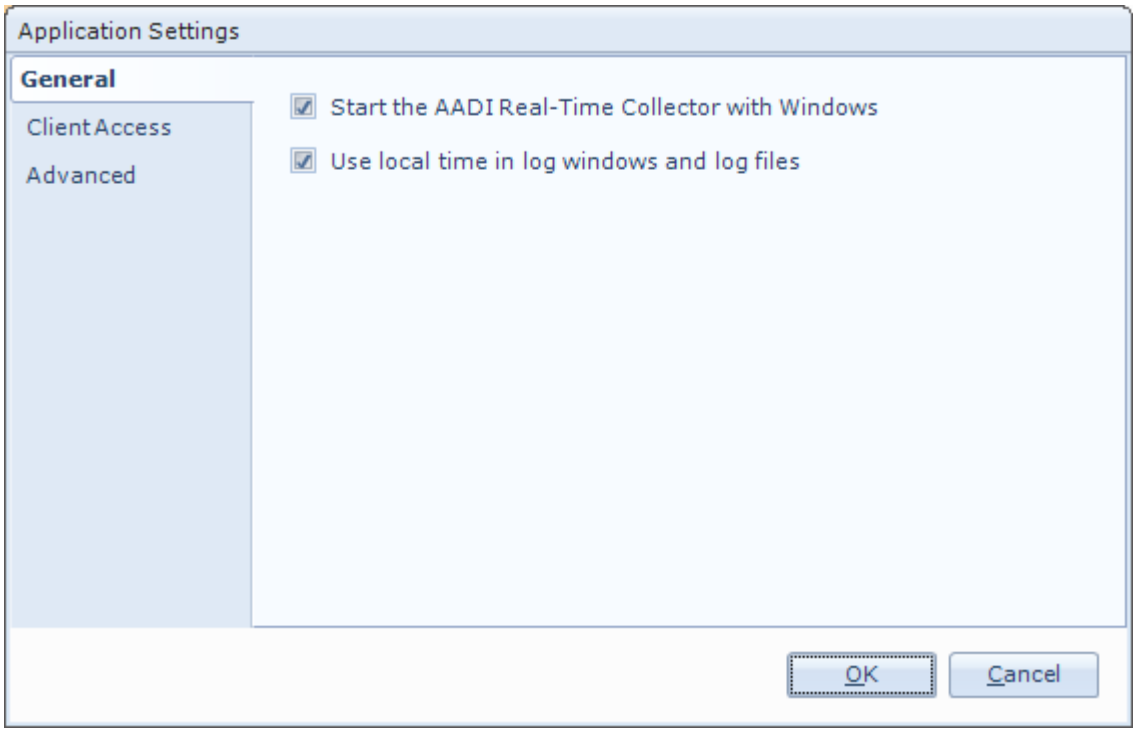


**Figure 8-2 Application Settings – the General tab.**

- Select ***Start the AADI Real-Time Collector with Windows*** in order to have the application start when logging into Windows.

- Select ***Use local time in log windows and log files*** to use the local computer time (rather than UTC) in log windows and log files. This *does not affect* the timestamps in the data messages.

## 8.2 Client Access

**Figure 8-3 Application Settings – the Client Access tab.**

The AADI Real-Time Collector provides access to a programming interface through which it is possible to control a connected device (assuming that the device supports the control commands). This access is protected by an administrator password which can be set by clicking the ***Change Password*** button. The client application that connects to the Collector must provide the administrator password when subscribing to a device connection.

Clicking the Change Password button opens the window seen in Figure 8-4. Type in a new password, confirm it, and then press ***OK*** to change the password. Leave the fields blank to disable the password protection.

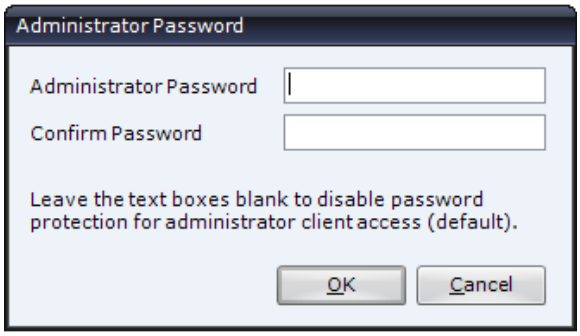


**Figure 8-4 The Administrator Password window.**

The default is no password, which means that any client application will be able to connect as administrator. The password should therefore always be set in situations where restricted access to control commands is desired. Please note that The Collector allows only one connected administrator at any given time, and that the password is verified only when the client is first connecting. If the password is changed, a client application that is already connected with the old password will not be affected until it disconnects and then tries to re-connect again.

## 8.3 Advanced

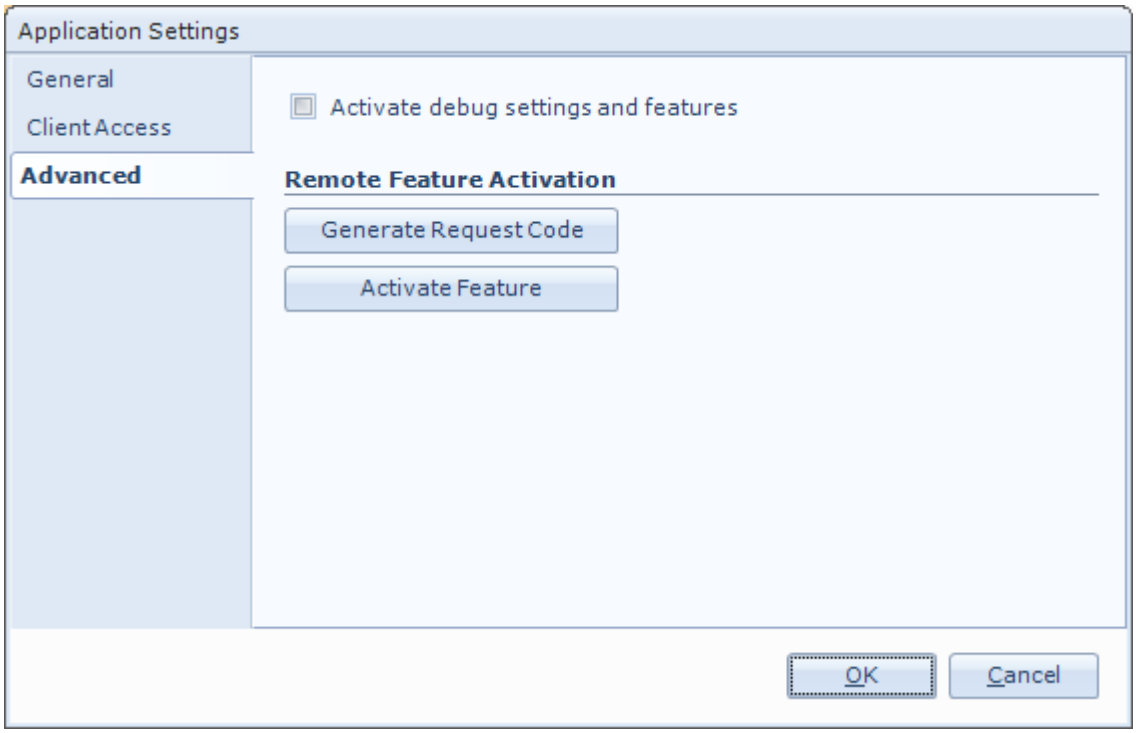


**Figure 8-5 Application Settings – the Advanced tab.**

Check the ***Activate debug settings and features*** to enable some extra functions that are normally hidden from view.

The ***Remote Feature Activation*** module is currently only for internal use.

Please contact AADI for more information on the functions on this tab.

# CHAPTER 9 Using the Control Panel

The AADI Real-Time Control Panel allows a client to control the device recorder and to change the device configuration remotely. The Control Panel is built into the AADI Real-Time Collector and can be accessed from the ***Control Panel*** button in the main window (Figure 9-1).

**Figure 9-1 Opening the Control Panel**

The Control Panel will only be available for devices that support the AADI Real-Time Output and the AADI Real-Time Control protocols.

In order to use the Control Panel, an open connection must exist between the Collector and the device at all times.

Please note that there will always be a slight delay when communicating with the device through the Control Panel. The length of this delay depends on the type of operation, and the baud rate used for the connection.

Also note that the Control Panel cannot be used if another client is connected to the Collector with Administrator privileges.

When the Control Panel is opened, it automatically attempts to read the recorder status from the connected device. If this operation is successful, the Control Panel is ready to use. If contact with the device cannot be established within a certain time, the operation will fail with an error message describing the problem.

## 9.1 Recorder Panel

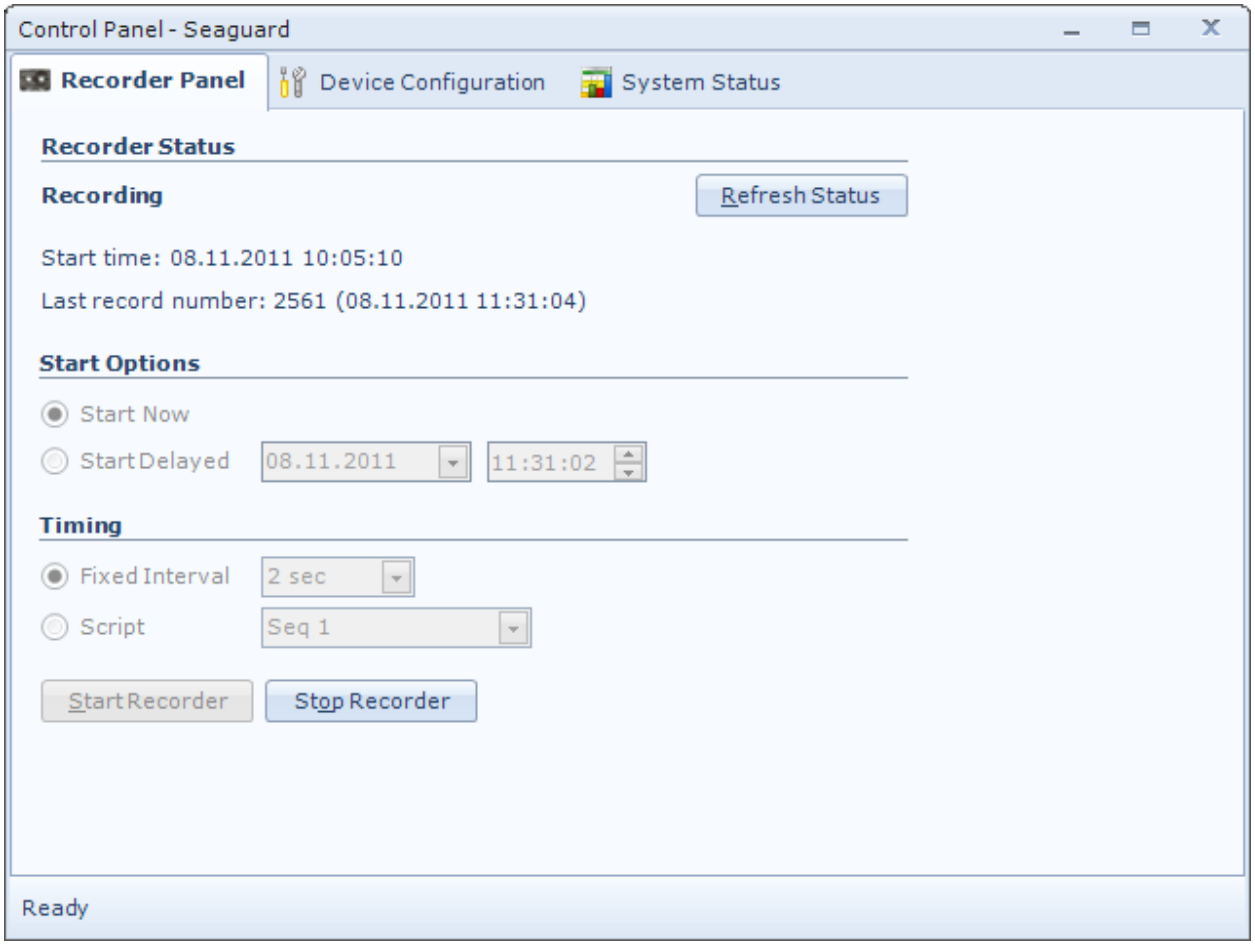


**Figure 9-2 The Recorder Panel.**

The Recorder Panel (Figure 9-2) provides methods to directly control the device recorder. The current Recorder status can always be found in the top left part of the tab. This status is automatically updated as needed, but can be also be manually refreshed by using the ***Refresh Status*** button.

### *Starting and Stopping the Recorder*

The recorder is started using the ***Start Recorder*** button. This button will be disabled if the recorder is already running or armed (set to start at a later time).

Check ***Start Now*** to start recording immediately, or choose a later starting time by checking ***Start Delayed*** and setting the date and time from the drop down lists.

Check ***Fixed Interval*** and set a fixed recording interval in seconds, or check ***Script*** and select one of the preconfigured timing sequences.

When the recorder is running or armed, it can be stopped using the ***Stop Recorder*** button.

## 9.2 Device Configuration

The second tab in the Control Panel provides full access to the device configuration (Figure 9-3).

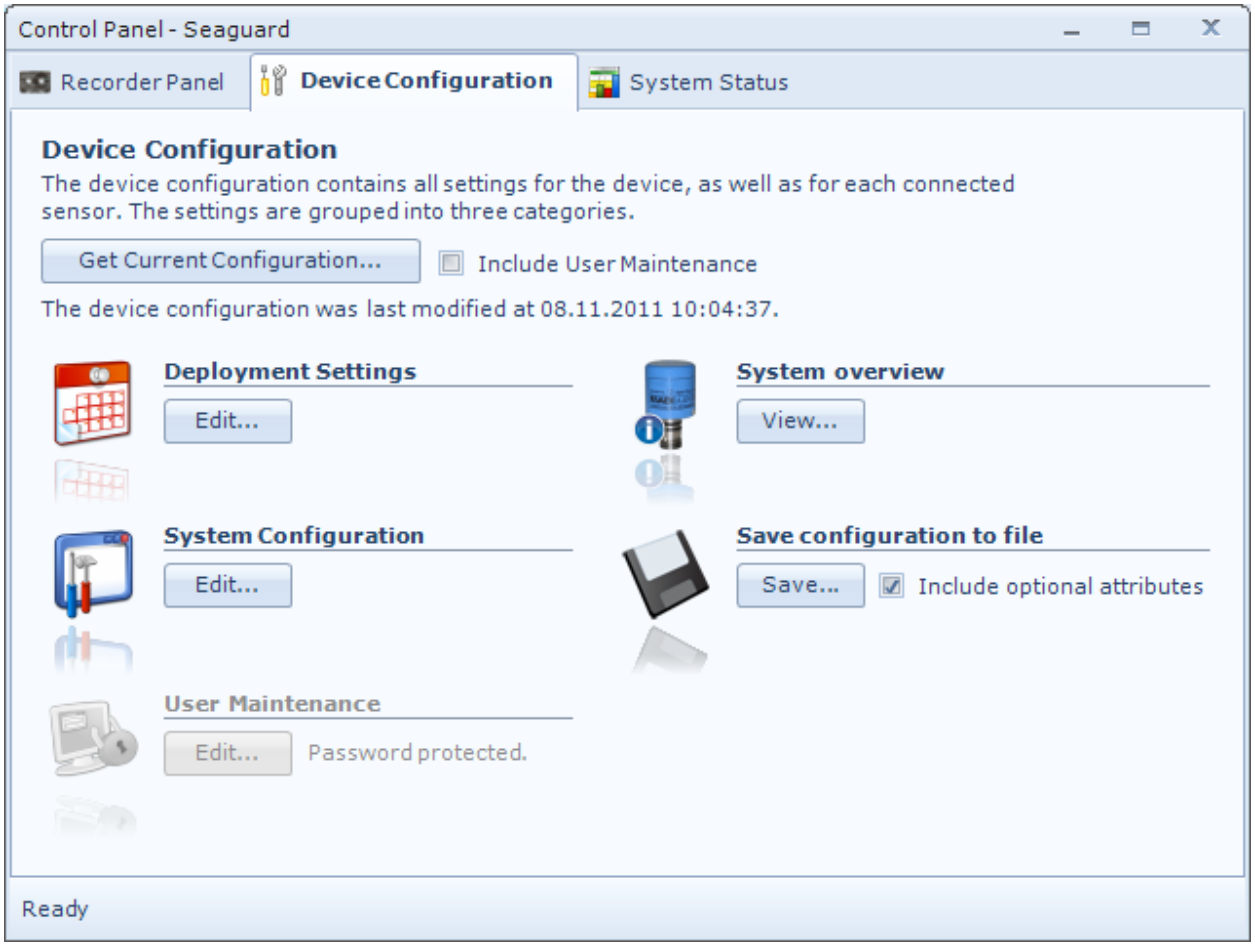


**Figure 9-3 Device Configuration.**

The device configuration is divided into three categories; ***Deployment Settings***, ***System Configuration*** and ***User Maintenance***.

The ***Deployment Settings*** category is configured by the user based on the specific site and usage of the instrument on that site. Typical properties that are modified are recording interval, which sensors to include and some options regarding data storage.

The ***System Configuration*** is configured by the user based on the application of the system. Typical properties that are modified are enable/disable extended data, number of pings (DCS) and number of samples (WTS).

The ***User Maintenance*** category is configured on the production site, but can also be modified by a trained user if necessary. Typical properties in this category are calibration settings.

### 9.2.1 Changing the Device Configuration

In order to secure proper operation, the current device configuration must always be fetched from the device before any configuration changes can be made.

Press ***Get Current Configuration*** to retrieve the current configuration from the device. This operation will fetch the settings from the ***Deployment Settings*** category and the ***System Configuration*** category. Check the ***Include User Maintenance Settings*** checkbox in order to also fetch the settings from the ***User Maintenance*** category. Type the correct password in the dialog box that appears as the ***Get Configuration*** button is pressed. The password is *1000*.

The recorder must usually be stopped prior to changing configuration settings. This is indicated by the ***Get Current Configuration*** being disabled while the recorder is running. Press ***Stop Recorder*** in the Recorder Panel, (Figure 9-2). Press ***Start Recorder*** to restart the recording when the configuration is completed.

Refer to the instrument operating manual for further information on how to configure the device.

Press the ***View*** button under the ***System overview*** header to open a new window with basic information about all device nodes and connected sensors.

Press the ***Save*** button under the ***Save configuration to file*** header to save the current device configuration to an XML file on the computer.

Some settings in the system configuration and the user maintenance will influence the minimum recording interval. Ensure that the recording interval is as expected before you start recording. Refer to the instrument operating manual for more details.

The configuration can be changed in one category (e.g. ***Deployment Settings***) at a time. Press the corresponding button to start the configuration process.

A new dialog opens, where you are given the choice to either run a configuration wizard, which steps through all settings for the available nodes, or to manually select which node to configure. An example of this dialog can be seen in Figure 9-4. Please note that the selection of available nodes and sensors will vary depending on the type of device, and which sensors that are connected to it.

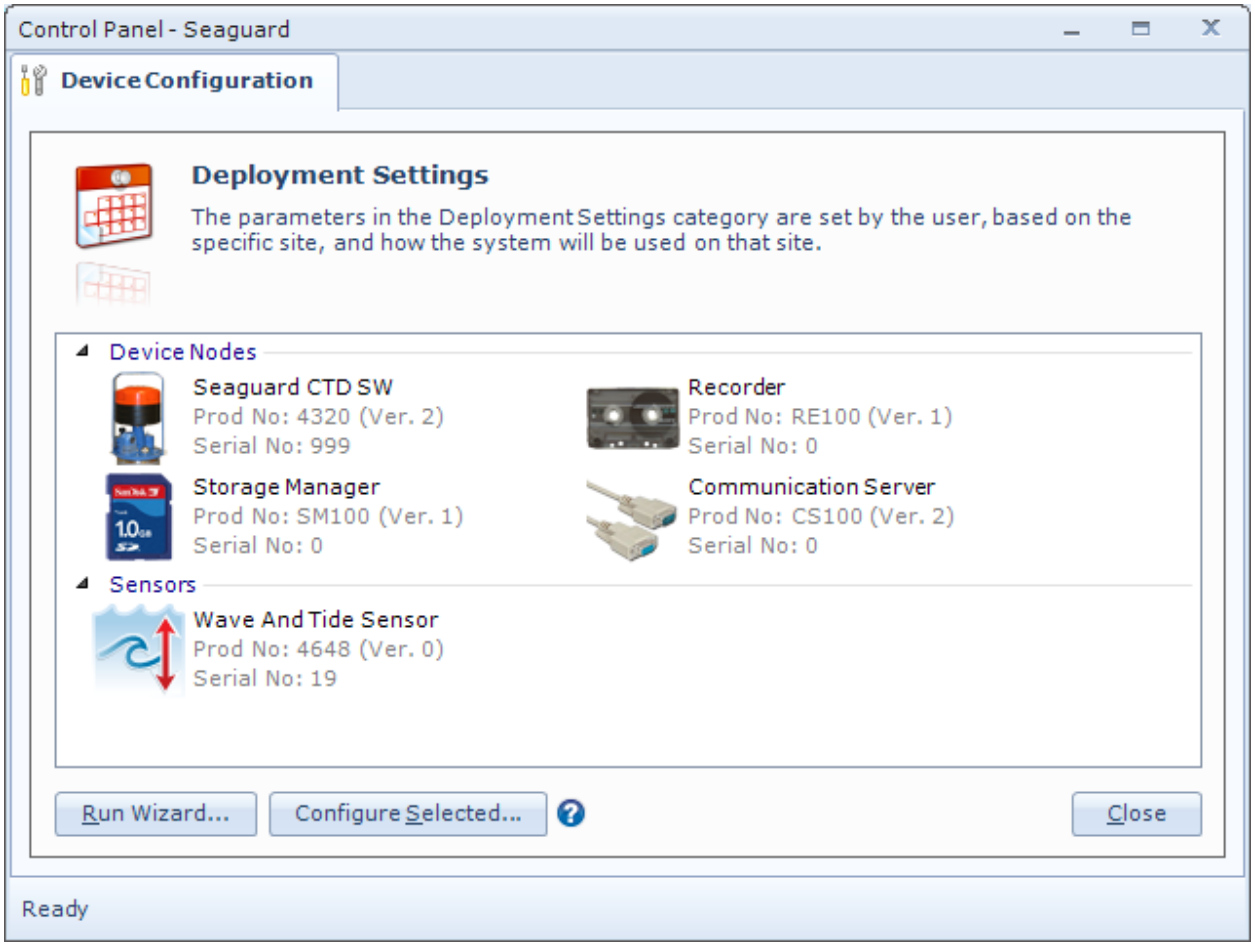


**Figure 9-4 Example of the Deployment Settings window.**

Using the Wizard, you can either step through the available nodes using the ***Next*** and ***Back*** buttons, or by clicking on the corresponding icons in the toolbar to the left in the wizard dialog (Figure 9-5).

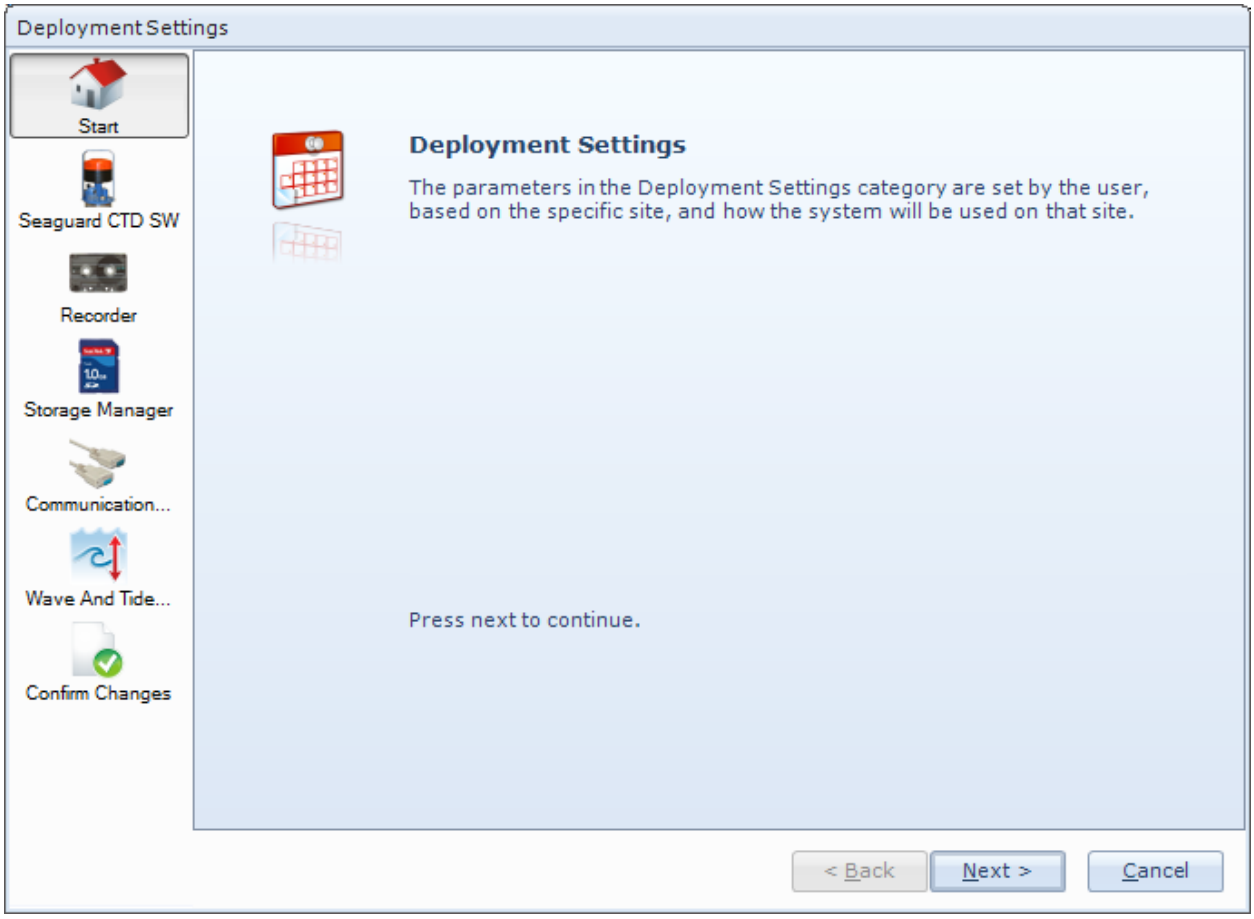


**Figure 9-5 Example of Deployment Settings wizard.**

Before sending the new configuration to the device, you are asked to confirm the changes (Figure 9-6). Use the ***Back*** button or click on the icons to the left if you wish to revise any of the changes.

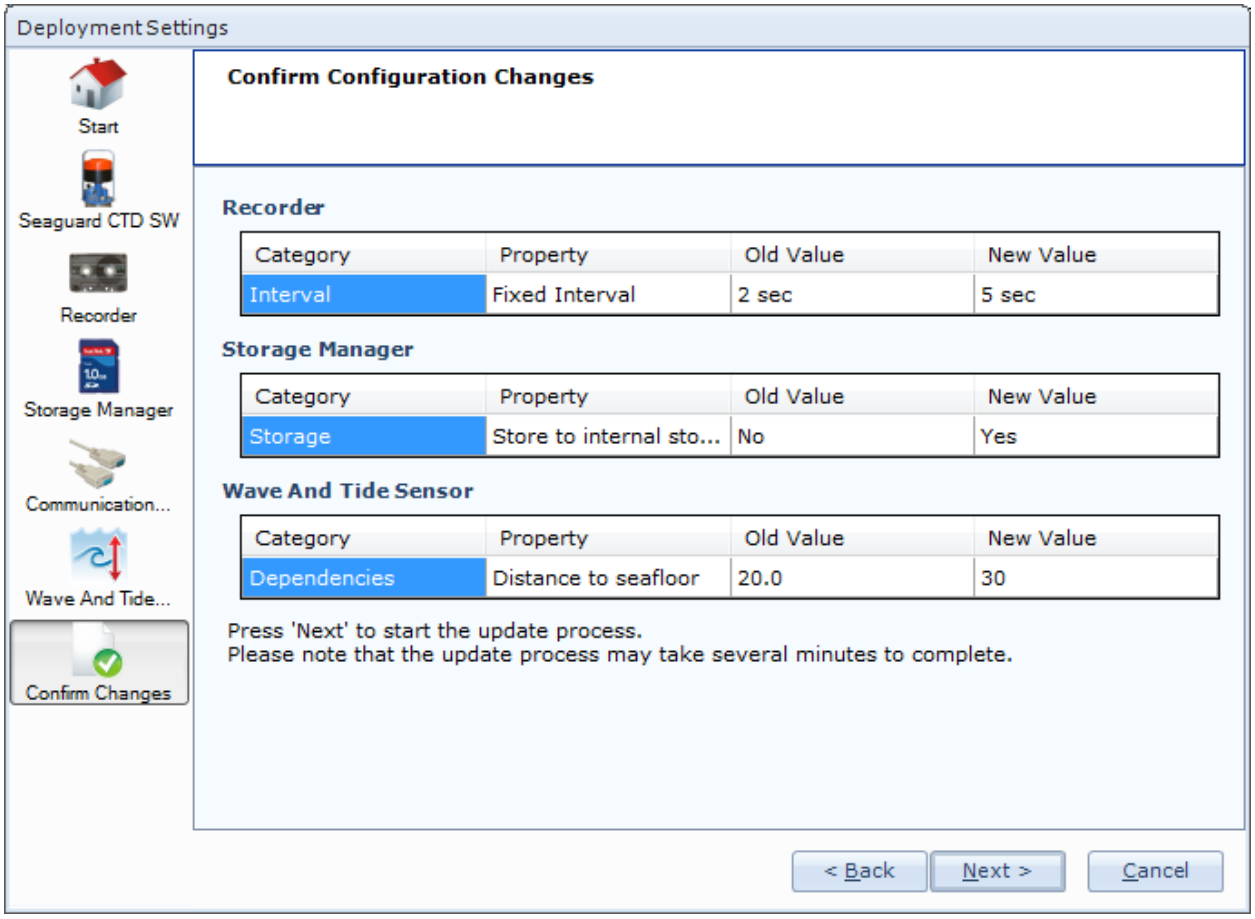


**Figure 9-6 Confirm configuration changes.**

Press the ***Next*** button when you are certain that all changes are correct. This will start the update process. A new window shows how the update process is proceeding (Figure 9-7).

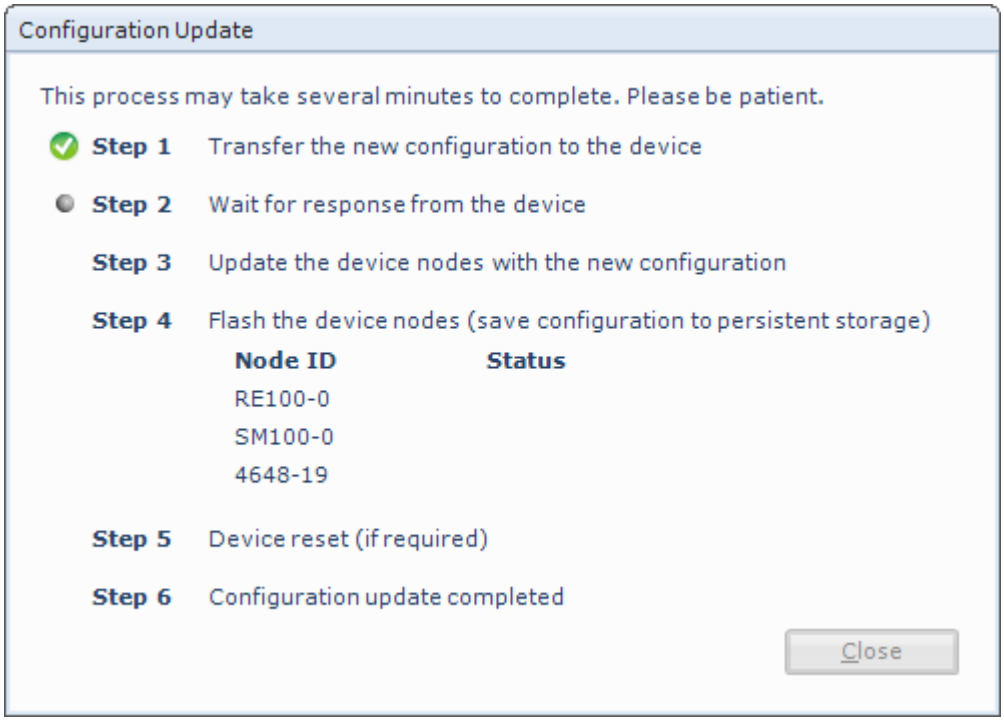


**Figure 9-7 Configuration update process.**

The update process may take several minutes, and cannot be cancelled by the user. Please be patient!

Wait until the ***Configuration Update*** window shows that the update process is completed, and the ***Close*** button is enabled. Press the ***Close*** button to return to the Settings dialog. The device is now ready for another configuration update, if necessary.

If you get an error message during the update process (e.g. the connection to the device is lost) the update process will automatically be cancelled. When this happens, the recorder status must be manually refreshed using the ***Refresh Status*** button in the ***Recorder Panel*** and the current configuration must again be fetched from the device, before it is possible to again attempt to change the configuration. This procedure is necessary to ensure proper device operation.

## 9.3 System Status

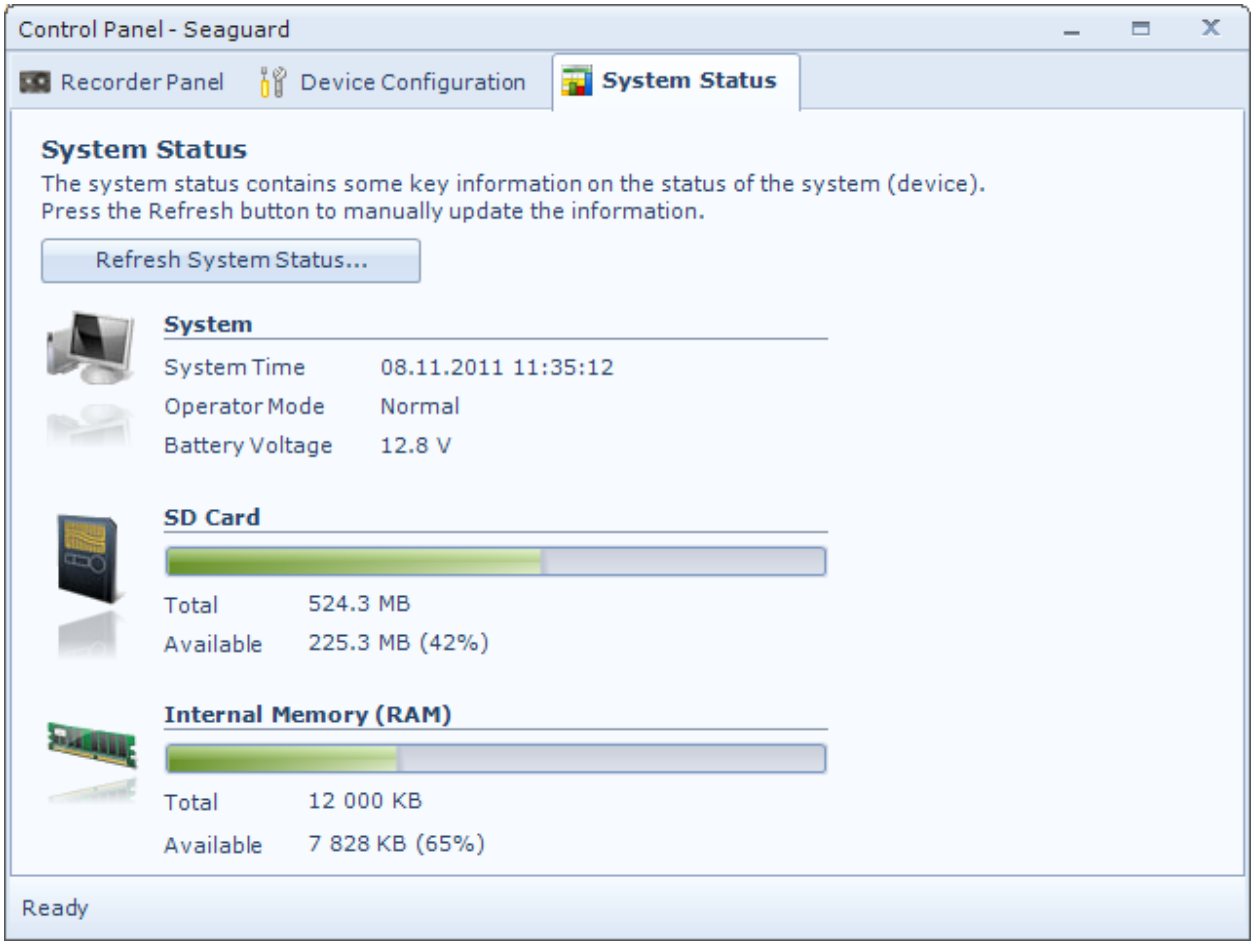


**Figure 9-8 The System Status tab.**

The ***System Status*** tab displays information about the device, e.g. battery capacity and available space on the SD memory card (Figure 9-8).

# CHAPTER 10 Data visualization

The AADI Real-Time Collector provides two ways to visualize incoming data, a text viewer and a chart viewer. This chapter offers a brief explanation of these.

## 10.1 Text Viewer

Press the ***Text Viewer*** icon in the main window to open the text viewer.

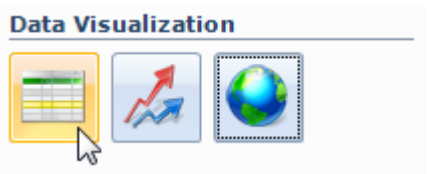


**Figure 10-1 Opening the Text Viewer.**

The Text Viewer displays data in a text format, and the view is automatically updated as new data messages arrive. It is only possible to show the latest data message, no historical data is available.

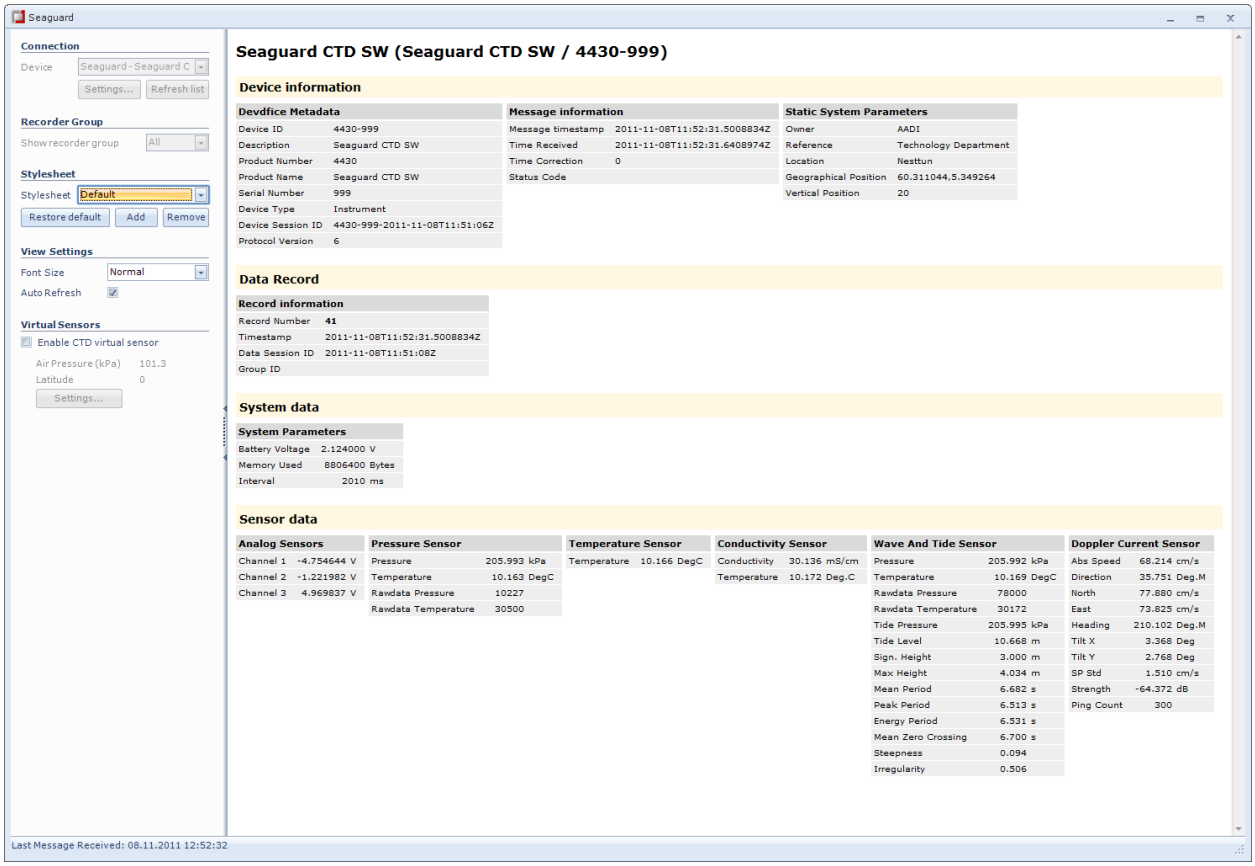


**Figure 10-2 The Text Viewer.**

### 10.1.1 Text Viewer settings

- ***Connection***: Not in use when the Text Viewer is opened from the Collector.
- ***Recorder Group***: Reserved for future use.
- ***Stylesheet***: The selected stylesheet determines the layout of the view. New stylesheets may be added and removed as needed (in xlst format).
- ***Font Size***: Determines the font size in the view.
- ***Auto Refresh***: Click to have the view refresh automatically when new messages arrive.
- ***Virtual Sensors***: Click to add a CTD virtual sensor to the view (see Figure 10-2). The virtual sensor data is calculated using the UNESCO equation of state for sea water, given that enough input data is available (such as a pressure reading). Press the ***Settings*** button to set the air pressure and latitude used in the calculations.
- ***Chart View***: Not in use when the Text Viewer is opened from the Collector.

## 10.2 Chart Viewer

Press the ***Chart Viewer*** icon (Figure 10-1) in the main window to open the ***Create New Chart*** dialog (Figure 10-3).

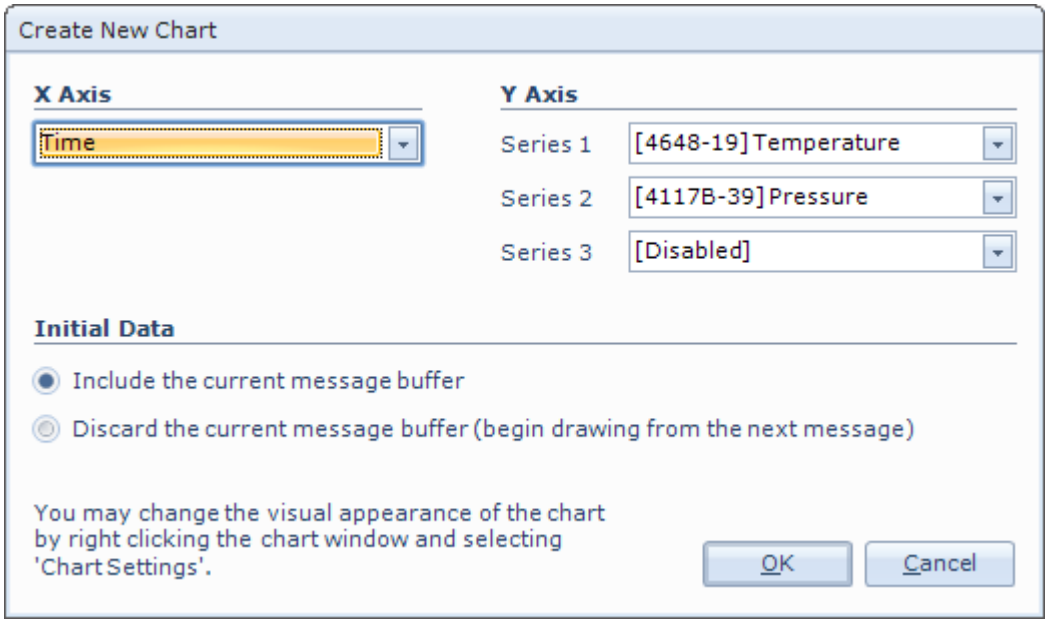


**Figure 10-3 Create a new chart view.**

Select which data should be displayed on the X axis and on the Y axis. It is possible to display up to three data series on the Y axis. You may also choose to include the current message buffer in the chart. Press ***OK*** to save the settings and open the chart window (Figure 10-4).

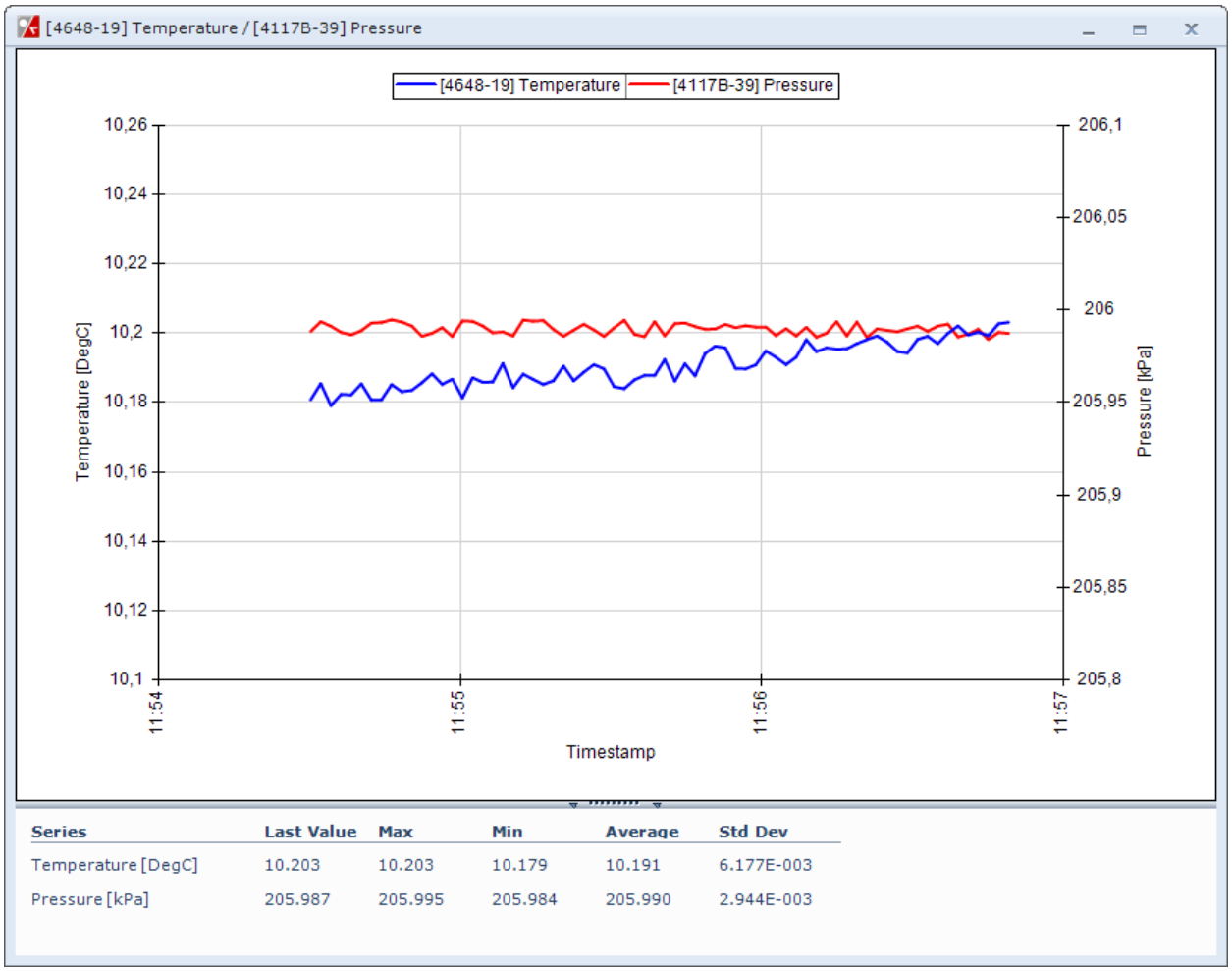

**Figure 10-4 The chart window.**

The chart is automatically updated as new data messages arrive. Right clicking the chart brings up an options menu:

- ***Chart Settings***: Open a settings window (see below).
- ***Adjust Chart Range To Data***: Adjust the Y axis range to the *current* dataset. Note that because of performance considerations, this is not automatically repeated when more data arrives. If subsequent data points are located outside the chart range, select this option again to readjust the range.
- ***Set Default Chart Range***: Set the Y axis range to the default value.
- ***Zoom Series***: Select which data series should be zoomed when clicking and moving the mouse inside the chart area.
- ***Save As***: Save a snapshot of the current chart view to file.
- ***Clear All Data Points***: Clear all data points and start drawing again from the next data message.

### 10.2.1 Chart Settings

The Chart Settings dialog provides options to manually adjust the chart view (Figure 10-5). The following settings are available on the X axis:

- ***View range***: The view range (min and max axis values) may be adjusted if the X axis displays some other parameter than time.
- ***Max data points***: This setting controls how many points are drawn before the oldest ones are removed. Note that displaying a large number of data points may affect the computer performance.
- ***Show grid lines***: Turn grid lines on and off on the X axis.

The following settings are available for each enabled data series:

- ***Line color***: The color of the line graph.
- ***View range***: Set min and max axis values.
- ***Show grid lines***: Turn grid lines on and off on the axis for this series.
- ***Show axis***: Turn axis visibility on and off.
- ***Axis location***: Choose where the axis should be located.

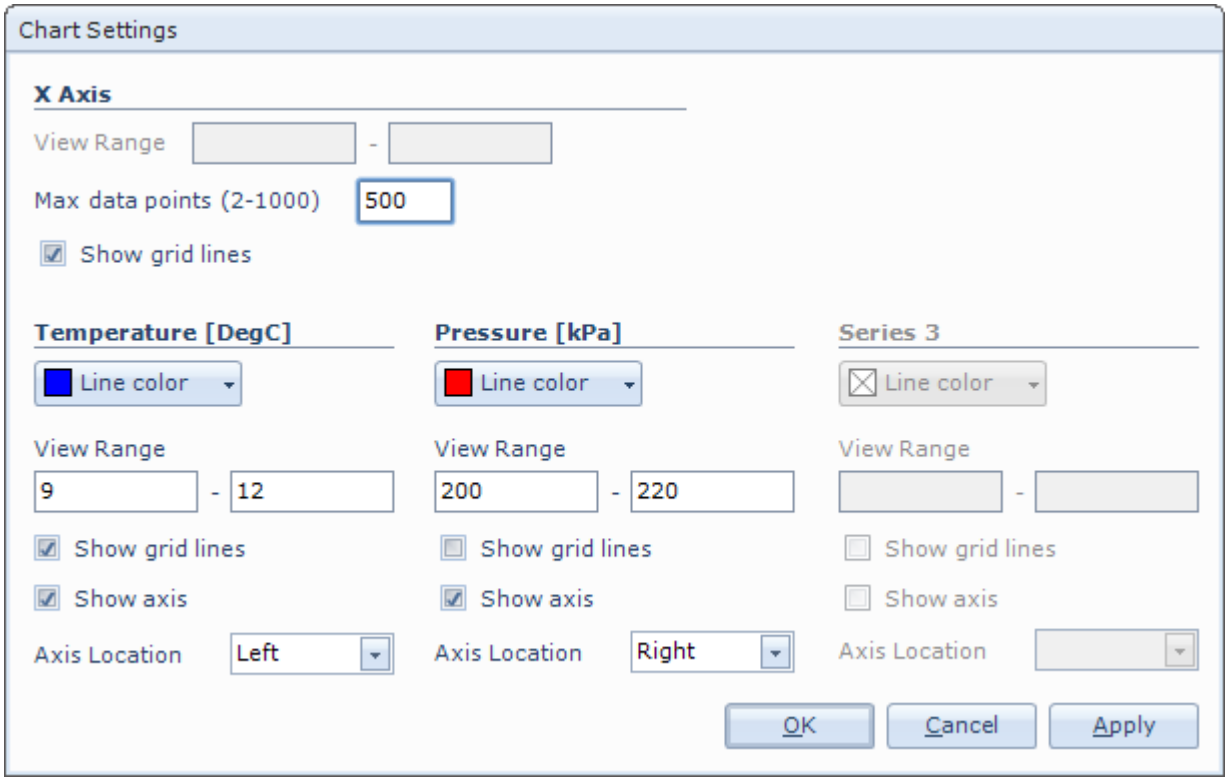


**Figure 10-5 The Chart Settings window.**

# CHAPTER 11 Network services

Clients may connect to the Collector through one or more network services, implemented in WCF (Windows Communication Foundation). The settings for these services are found in the Network Services dialog, which is opened from the ***Tools*** menu in the main window. There are three different services available, all of which have same basic functionality, but they are used in different situations. The services are described in the following sections.

Please refer to ***TD278 AADI Real-Time Programming Reference*** for more detailed information on how to create a client application which can connect to the Collector.

## 11.1 IPC Service

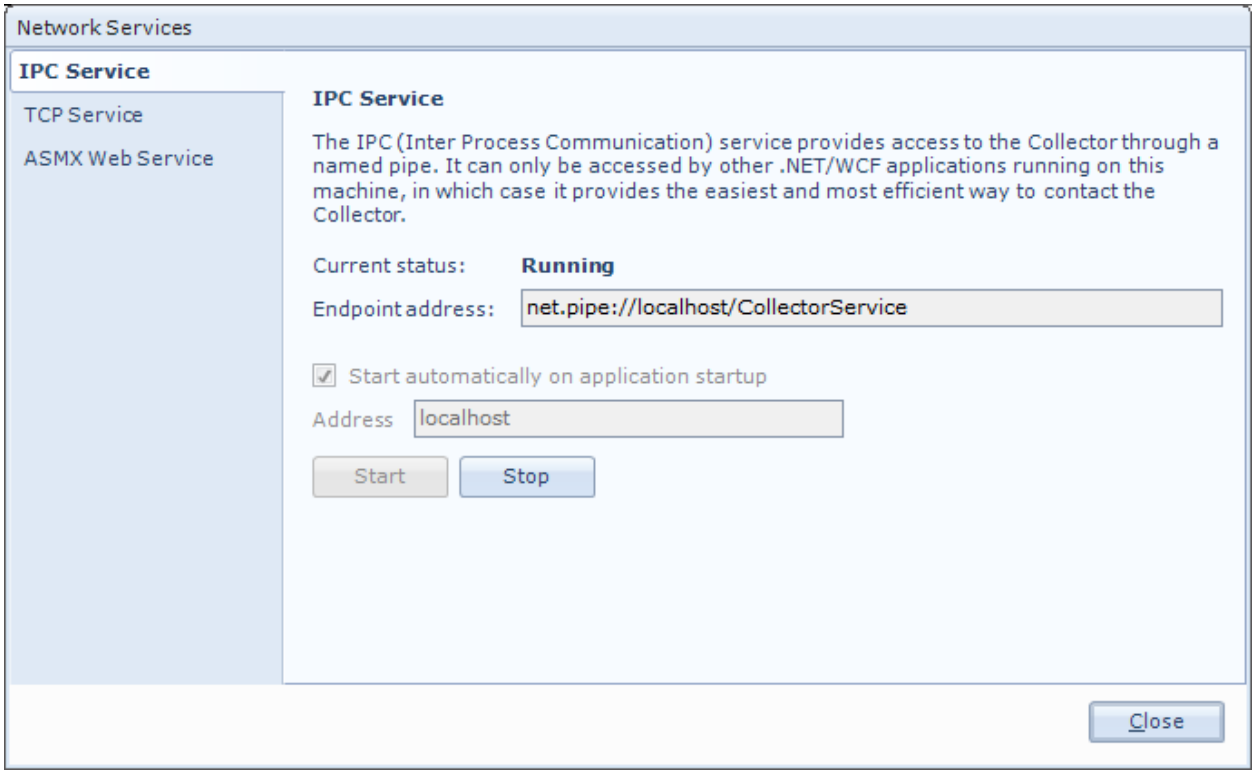


**Figure 11-1 Network Services - the IPC Service tab**

The IPC (Inter Process Communication) service provides access to the Collector through a named pipe. It can only be accessed by other .NET/WCF applications running on the same computer, in which case it provides the easiest and most efficient way to contact the Collector.

The ***Current status*** field indicates if the service is currently running or not.

The ***Endpoint address*** field is the address a client would need to connect to this service. This field is read-only.

Check ***Start automatically on application startup*** to have the service start automatically when the Collector is started.

When the service is stopped, the service ***Address*** may be changed. The default value is *localhost*, which essentially means “this computer”. Since an IPC service by definition only can be contacted from the same computer, changing the address should not be necessary.

This service is enabled by default, but can safely be disabled if no clients exist on the same computer. Leave the service running if you are uncertain.

## 11.2 TCP Service

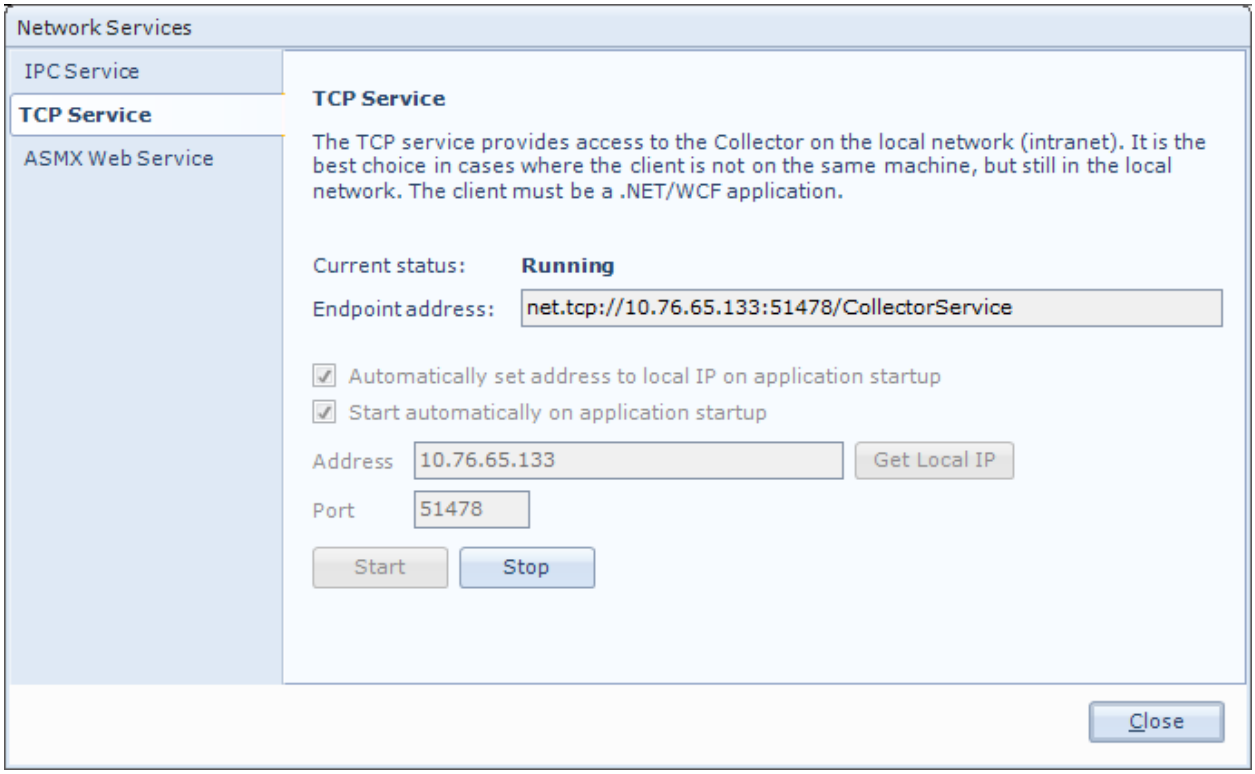


**Figure 11-2 Network Services - the TCP Service tab.**

The TCP service provides access to the Collector on the local network (intranet). It is the best choice in cases where the client is not on the same computer, but still in the local network. The client must be a .NET/WCF application.

The settings are the same as for the IPC service, with the addition of two new settings.

The ***Port*** field is the TCP port that the service is using. The default value is 51478.

Check ***Automatically set address to local IP on application startup*** to make sure that the service is always running on the local IP address. This setting is enabled by default.

Please note that the address *localhost* should not normally be used for this service, as that would prevent clients running on the network from connecting to the service.

This service is enabled by default, but can safely be disabled if no clients exist on the local network. Leave the service running if you are uncertain.

## 11.3 ASMX Web Service

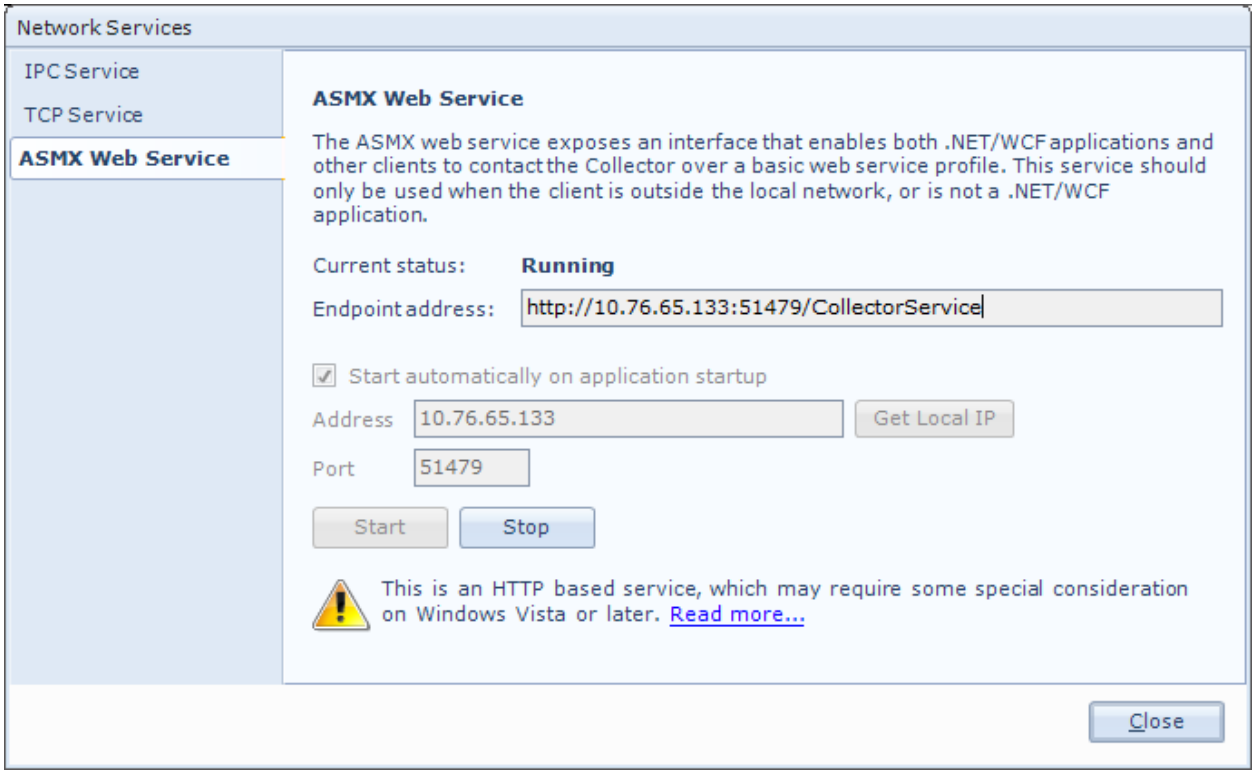


**Figure 11-3 Network Services - the ASMX Web Service tab**

The ASMX web service exposes an interface that enables both .NET/WCF applications and other clients to contact the Collector over a basic web service profile. This service should only be used when the client is outside the local network, or is not a .NET/WCF application.

Refer to the previous section, chapter 11.2, for a description of the settings.

If the Collector is running behind a router with Network Address Translation (NAT), the address should normally be the routers public IP number, which (unlike the local IP) is accessible from the internet. The firewall in the router must then be configured to forward all TCP traffic on the specified port to the computer running the Collector. Please refer to your system administrator for more information on these topics.

This service is disabled by default. Enable it if there are clients outside the local network, or if there are non-WCF clients that require an ASMX web service interface.

# CHAPTER 12 FTP server

The Collector implements a standard FTP server, which allows you to access the file system on those devices which supports this feature, through the Collector.

The FTP server is managed in the ***FTP Server*** window (Figure 12-1), which is opened from the ***Tools*** menu in the main window.

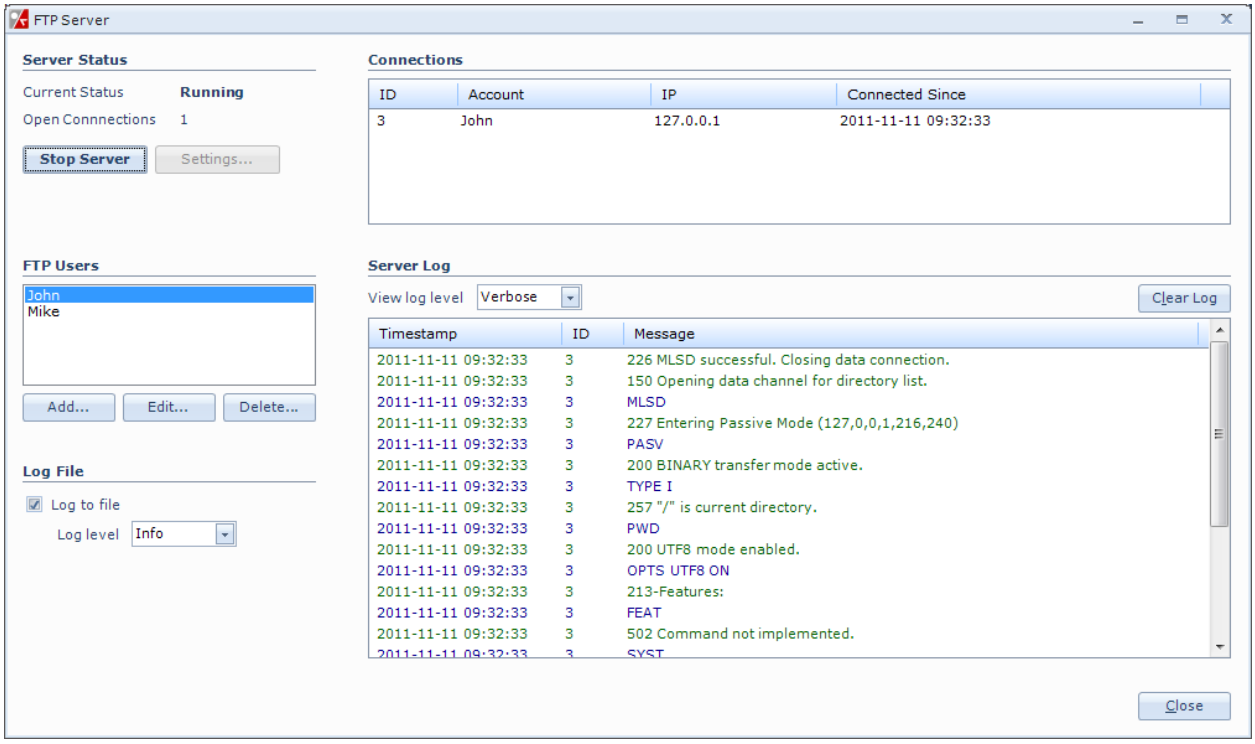


**Figure 12-1 The FTP Server window.**

### *Server Status*

The ***Current Status*** shows whether the server is currently running or not. ***Open Connections*** is the number of connections to the server that are currently open. Press ***Start Server*** or ***Stop Server*** (the button changes text accordingly) in order to start or stop the FTP server. When the server is stopped, press the Settings button to open the ***FTP Server Settings*** dialog (chapter 12.1).

### *FTP Users*

The ***FTP Users*** section lists the registered users. Anonymous access is not allowed, so at least one password protected user must be defined. Use the buttons ***Add***, ***Edit*** and ***Delete*** to manage the list of users.

### *Log File*

If ***Log To File*** is checked, log messages are written to a file in the Collector log folder (open from the ***Tools*** menu in the main window). Select the appropriate ***Log level***.

### *Connections*

This section lists some basic information about each open connection.

### *Server Log*

This section lists the server log messages. Select the appropriate ***View log level***. Press the ***Clear Log*** button to reset the log.

## 12.1 FTP server settings

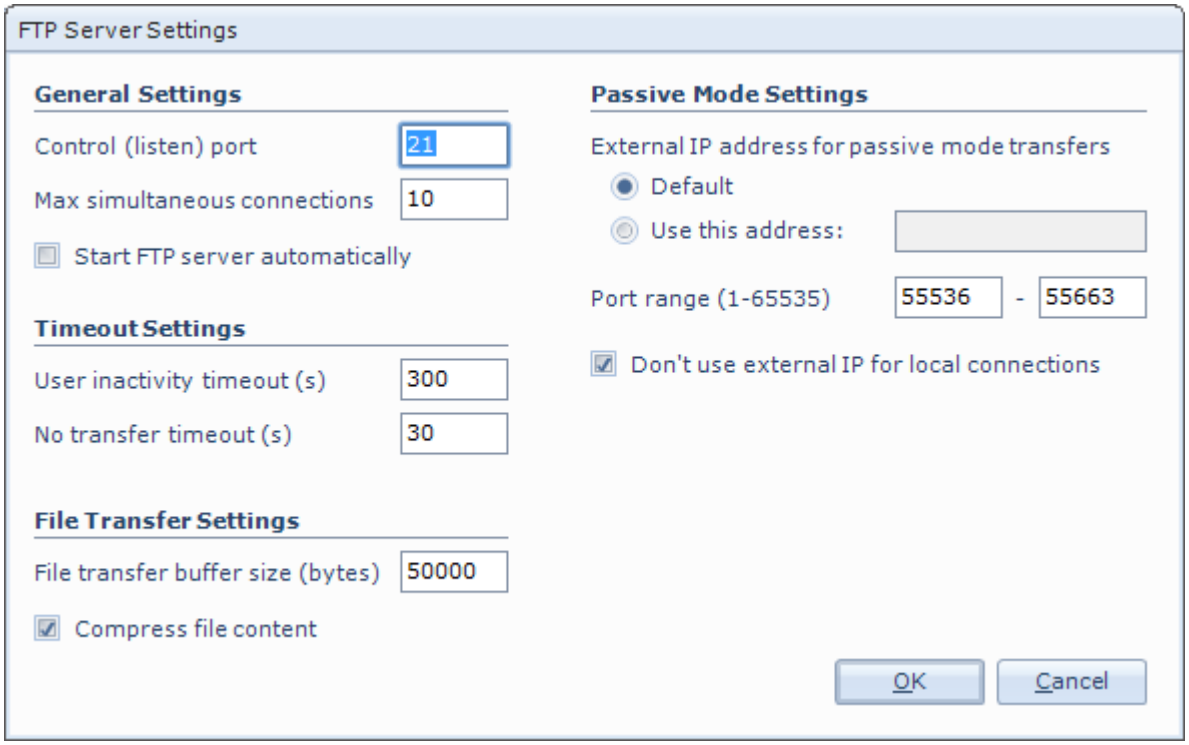


**Figure 12-2 FTP server settings dialog.**

### *General Settings*

- ***Control (listen) port***: The FTP server control port, i.e. the port on which the server is listening to incoming connections. The default value is 21.
- ***Max simultaneous connections***: The maximum number of simultaneous connections to the server. The default value is 10.
- ***Start FTP server automatically***: If checked, the FTP server is automatically started when the Collector is started. The default value is false.

### *Timeout Settings*

- ***User inactivity timeout***: The number of seconds before an inactive user is automatically disconnected. The default value is 300 seconds.
- ***No transfer timeout***: The number of seconds before an open and inactive transfer socket in passive mode is closed. The default value is 30 seconds.

### *File transfer settings*

- ***File transfer buffer size***: The size of the file transfer buffer, i.e. the number of bytes read and written at a time when transferring files. The default value is 50 000 bytes.
- ***Compress file content***: If checked, file content is compressed (zipped) when transferred between the Collector and the device.

***Passive Mode Settings***

- ***External IP address for passive mode transfers***: Select default to use the local IP in passive mode transfers, or type in a specific address (typically the external IP address when behind a firewall).
- ***Port Range***: Passive mode port range. The default range is 55536 – 55663.
- ***Don't use external IP for local connections***: If checked, the address *localhost* will be used in passive mode transfers when the client is on the same computer. This option is enabled by default.

# CHAPTER 13 File output

If file output is enabled in the ***Advanced Connection Settings*** dialog (chapter 5.5.6), the data messages from a particular connection are stored to files in the selected folder (Figure 13-1). The files are named according to the UTC timestamp when they were received by the Collector.

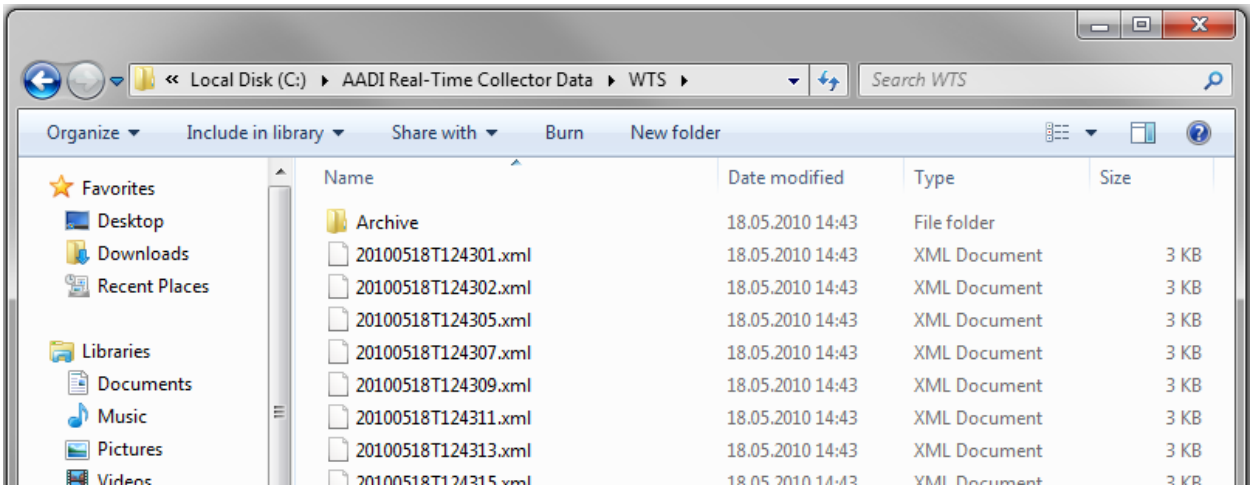


**Figure 13-1 Folder overview.**

As the number of xml files in the folder reaches the specified limit, the files are compressed to a zip file with a name equal to the timestamp for the oldest and the most recent file, e.g. 20070921T132842-20070921T133019.zip. The zip file is then automatically moved to a subfolder called ***Archive***.

## 13.1 Utilizing the 'last data message' file – getting-started example

As described in chapter 5.5.6, the option also exists to repeatedly save the last data message to a single file. This file may be used as a data source for continuous updates of a web page or similar application displaying the latest data from the device.

One way of utilizing the file is by applying a style sheet to the data as described in chapter 5.5.6.

The following example provides a quick start option for a user who wants to view real-time data from the device. It also serves to illustrate the style sheet technology as a simple and effective way to display real-time information.

Applying the example style sheet distributed with the installation may be done as follows:

- Locate the application folder for AADI Real-Time Collector on your computer (typically C:\Program Files\AADI\AADI Real-Time Collector), and open the ***Stylesheets*** subfolder.
- Copy the ***Default.xslt*** file to the base directory where the last message file is stored.
- Type “Default.xlst” into the style sheet reference field in the ***Advanced Connection Settings*** dialog (chapter 5.5.6).
- Open the connection.
- Wait until new data has arrived from the device.
- Open the last message xml file in a web browser, for example Internet Explorer. The xml data will be formatted according to the stylesheet specification (Figure 13-2).
- Use the refresh button to update the page with the latest data. The stylesheet can also be modified to refresh automatically at any given interval.

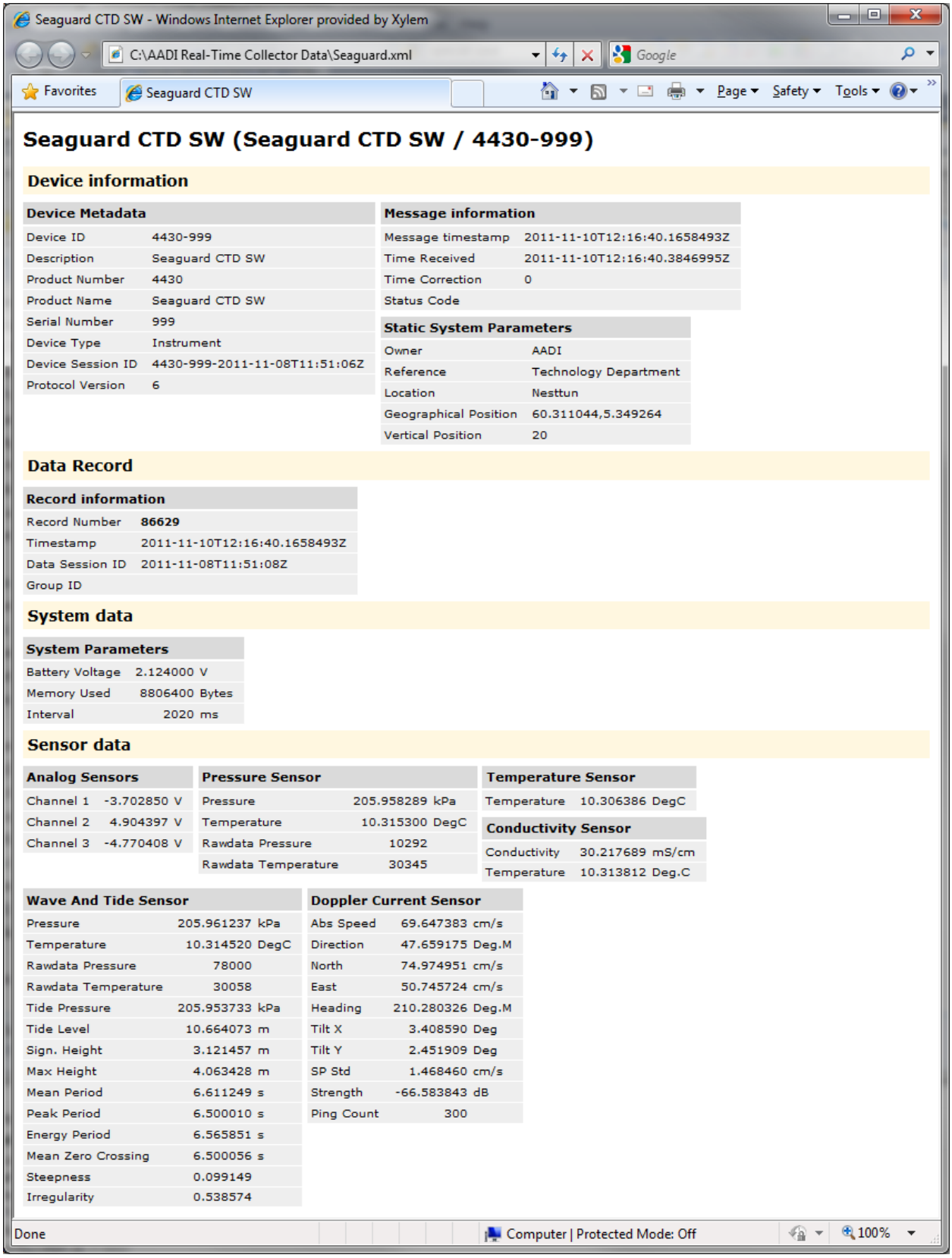


**Figure 13-2 Viewing an xml file in Internet Explorer by using a style sheet to format the output.**