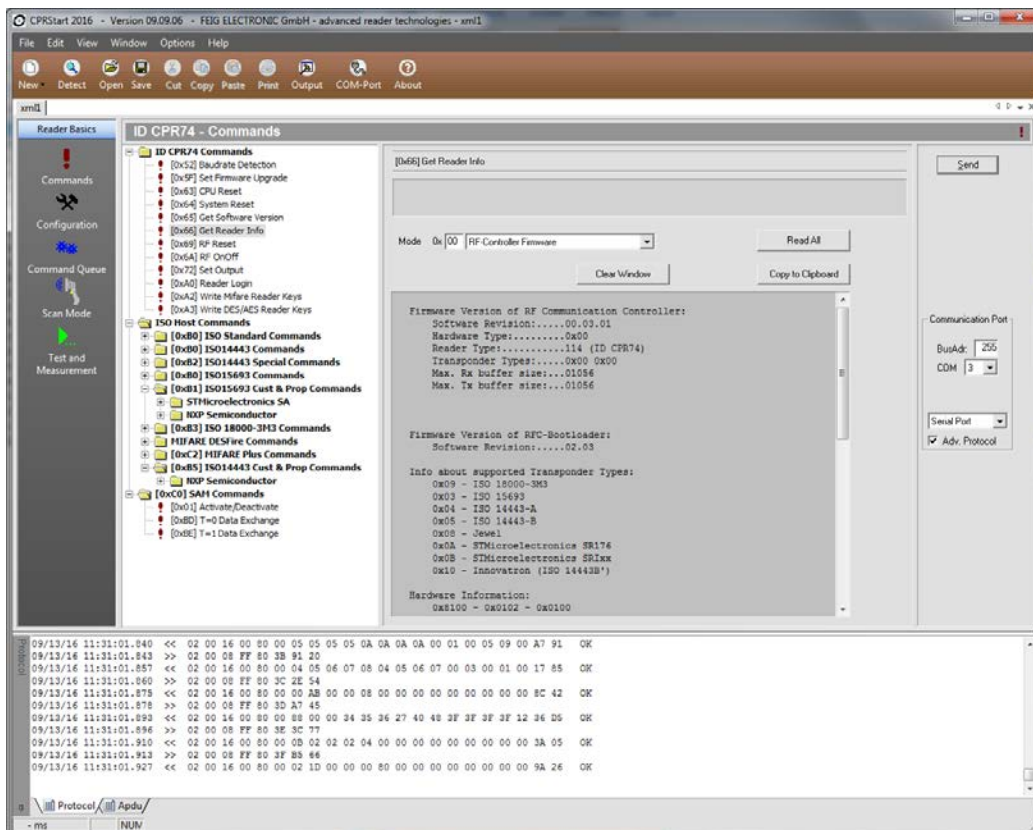


ID CPRStart 2017

V10.00.00

Demo Program for OBID[®] classic-pro Reader

Windows[®] XP (32 bit) / Windows[®] Vista/7/8/10 (32/64 bit)



Note

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FEIG ELECTRONIC GmbH
Lange Strasse 4
D-35781 Weilburg-Waldhausen
Tel.: +49 6471 3109-0
<http://www.feig.de>

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1. Overview

The demo program **ID CPRStart 2017** has been developed to familiarize you with the functionality of the OBID[®] *classic-pro* readers.

Using this software you can:

- Test communication with HF transponders.
- Read out and modify the configuration of OBID[®] *classic-pro* readers.

With each action the transmission protocols between PC and Reader are displayed on the screen. This transparency guides you to the software interface of the OBID[®] *classic-pro* readers. The respective system manuals should be referred for interpreting the protocols and for studying the reader properties.

Unique features of **ID CPRStart 2017**:

- Reader Editor for editing the OBID[®] *classic-pro* reader parameters. You can open any number of reader files and “link” them with various interface types.
- Protocol Editor for manual protocol entry and editing.
- Protocol Window for visualizing the communication.

This guide gives you a brief introduction into the program **ID CPRStart 2017**. Some special features and assistances in the program operation can be accessed using context menus which you open using the right mouse button. If you have any questions concerning this program, FEIG ELECTRONIC GmbH will be happy to provide you with additional information.

2. What's new!

- Updated Reader Configurations
- Bugfixes

3. Installation

System Requirements

- Personal computer IBM PC Pentium III 1000 MHz or faster recommended
- Windows XP[®] (32Bit) or Vista (32/64Bit) with 256MB RAM or Windows[®] 7 or 8 or 10 (32/64Bit)
- Hard disk with minimum free 50MB memory space
- Windows[®] compatible mouse
- Windows[®] compatible Super VGA graphics card (800x600). (1024x768 recommended)

ID CPRStart 2017 can only be installed on a computer using the supplied setup program.

Start the installation program SETUP.EXE and follow the instructions.

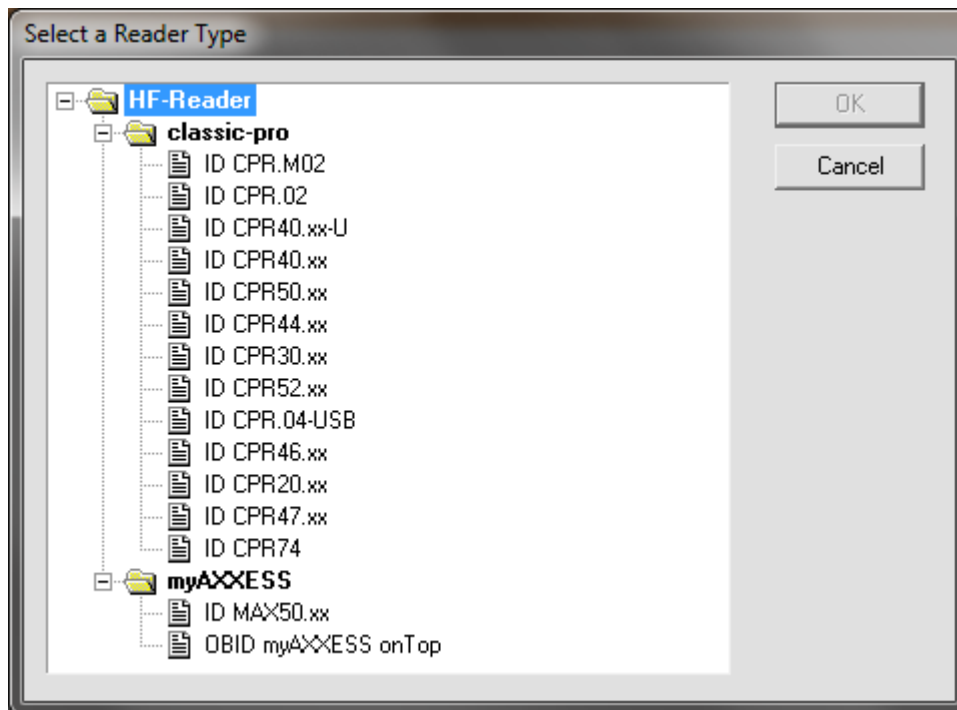
Note:

- ***The setup program does not update an earlier version of ID CPRStart. You can first uninstall the older version or use it parallel to an older version.***
- ***Under, Windows[®] XP, Windows[®] Vista and Windows 7 or 8 or 10 the corresponding administrator rights are required. Check with your network administrator if needed.***

4. First steps

4.1. Supported OBID® classic-pro Reader

ID CPRStart 2017 supports the following Reader types. If a new Reader is released, post a request for an actual CPRStart to obid-support@feig.de.

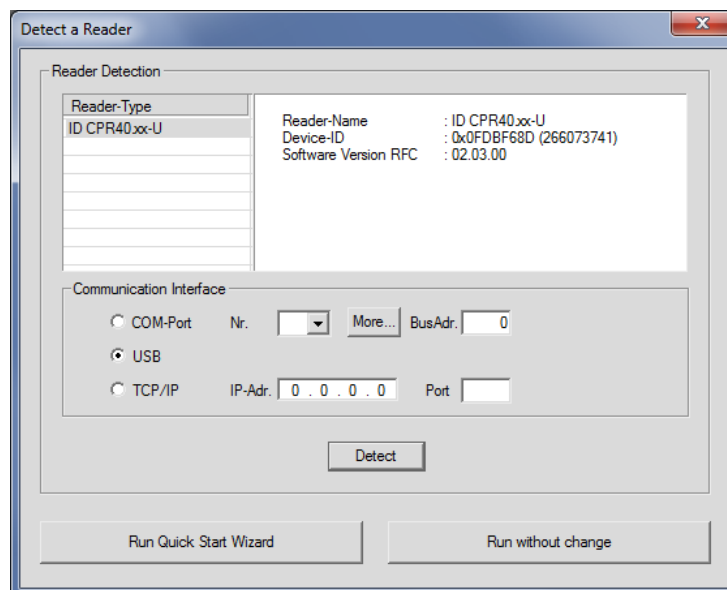


4.2. Connecting an OBID® classic-pro Reader using the Quick Start Wizard

After successfully installing of **ID CPRStart 2017** and before starting the program you can immediately connect an OBID i-scan® reader to serial port COM1¹, USB or the LAN interface on your PC. The Quick Start Wizard will lead you for a fast configuration of the reader.

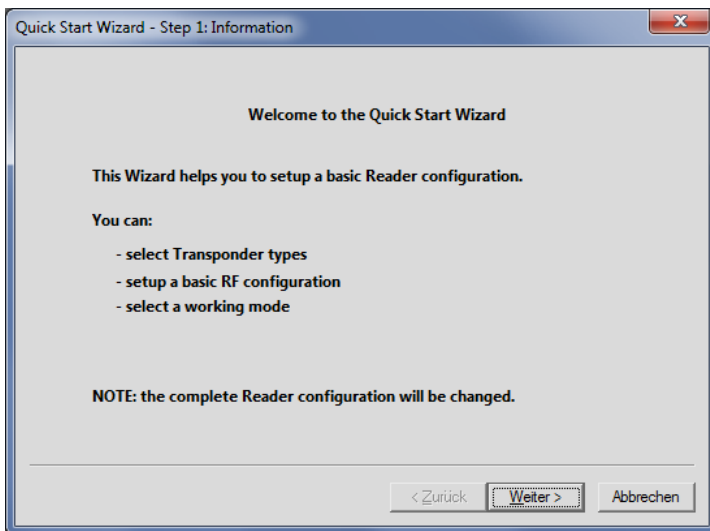
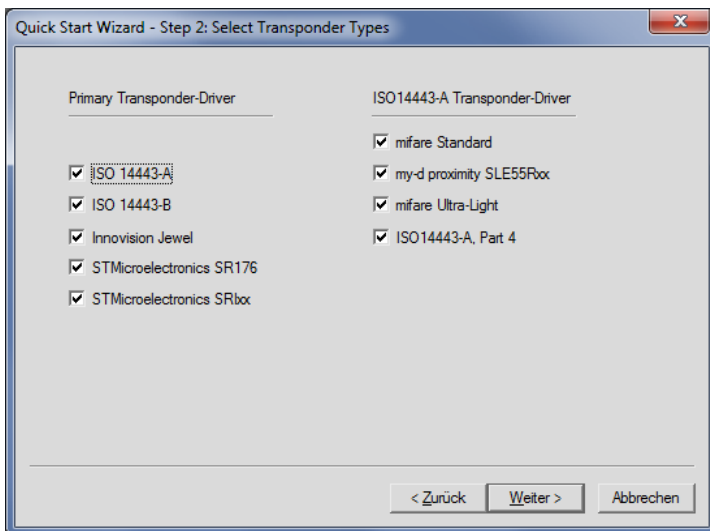
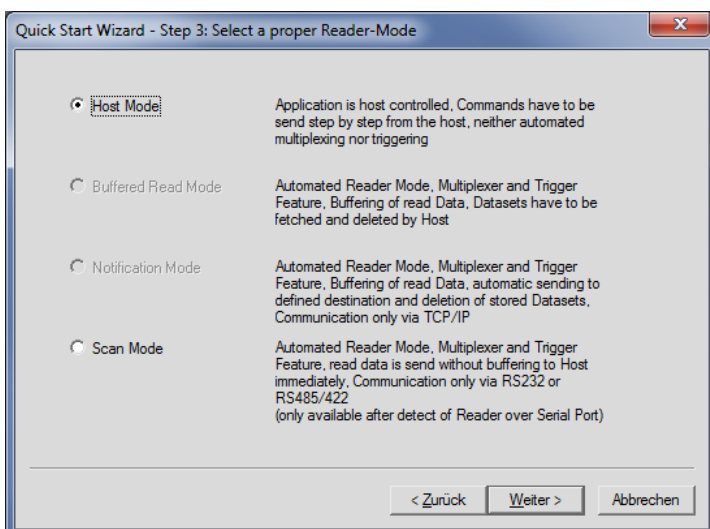
Step 1: Start the demo program **ID CPRStart 2017**. In the default configuration of the program, the “Quick Start Wizard” starts automatically, which helps you in detecting the reader and configuring the reader. Choose the used interface type and click on the “Detect” button. Click on the **Run Quick Start Wizard** button when you want to make the Reader’s configuration properly to your application. Click on **Run without change** if you want to work with the detected Reader, but keep the Reader’s configuration unchanged.

Close the dialog, if you want to select a Reader manually.

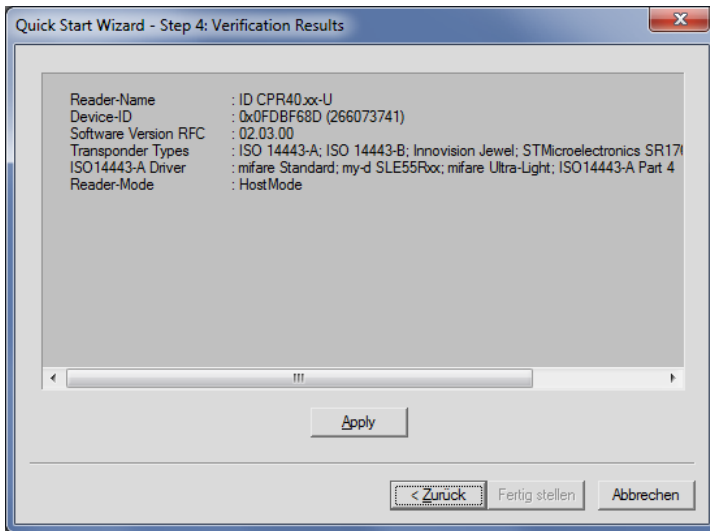


If the connected and activated reader is not in the list, check the interface settings (see [6. Handling communications problems](#)).

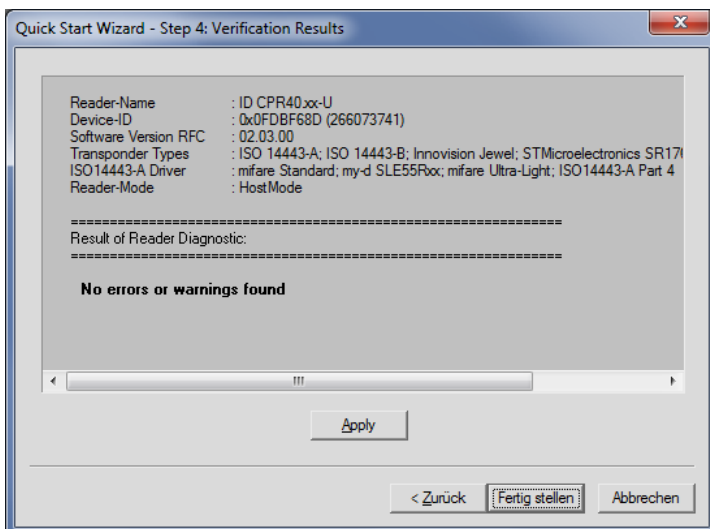
¹ COM1 is preset. All other serial ports are initially not in the search list. To change this, open the “Program Options” dialog in the Options menu and select your preferred serial port ([5.2. Program Settings](#)).

Step 2: Welcome Dialog of Quick Start Wizard.**Step 3:** Choose the transponder driver.**In Step 4:** you can choose the desired reader mode.Click on **Next**.

Step 5: gives an overview of the reader details.



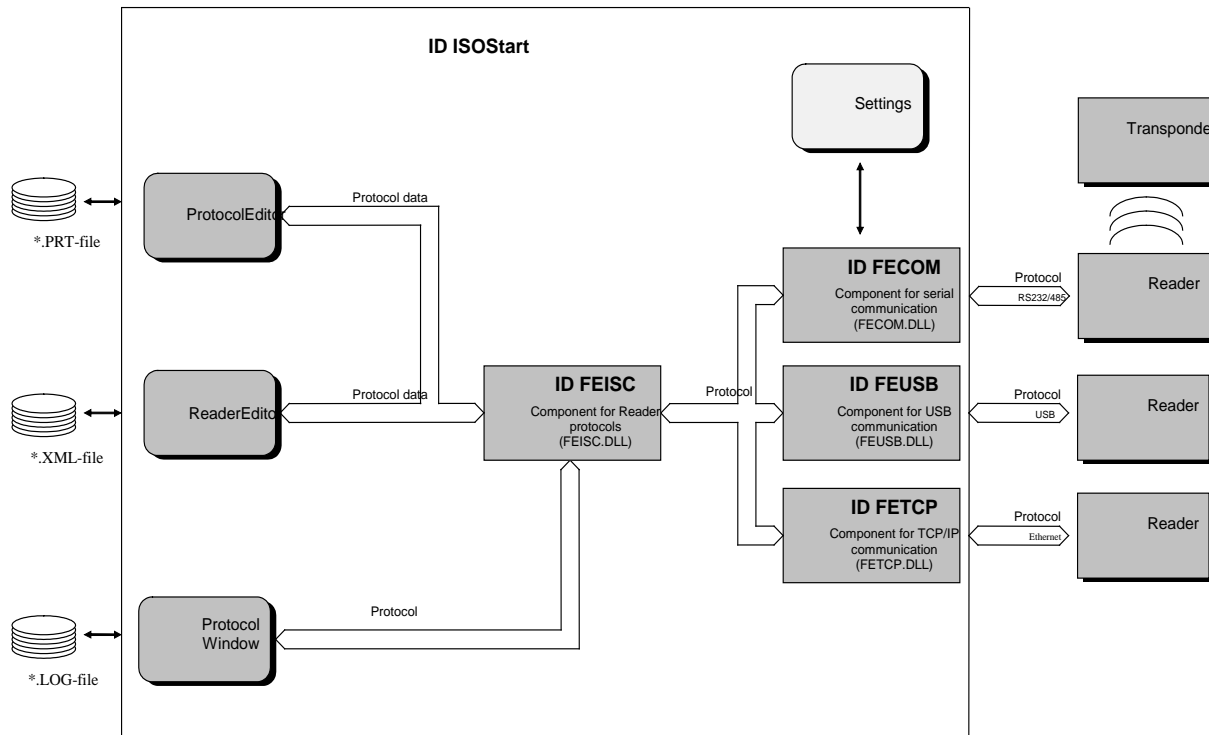
Click on “**Apply**” for confirmation. The wizard configures the reader and the verification results will be shown:



Click on “**Finish**”.

5. Program description

5.1. Overview



This graphic illustrates the data-oriented structure of the program.

Each data type has a special visual editor which can be used to edit the data or protocols, save them and send them to the OBID® classic-pro Readers or transponders.

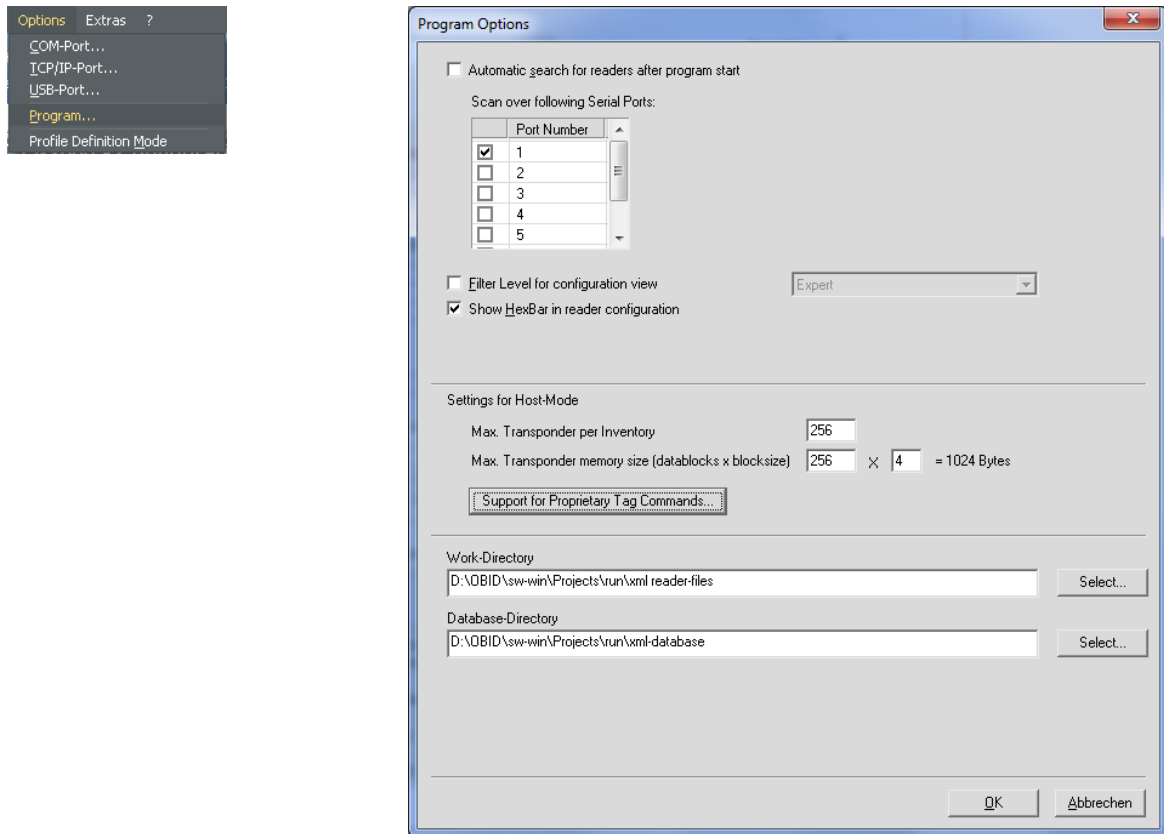
The protocols transported over the interfaces are displayed in the protocol window.

The demo program does not use error messages in separate notification windows if the communication was defective or if the OBID® classic-pro Reader signals an error status in the reply protocol. All outputs are sent to the Protocol Window along with a comment. To interpret the reply protocols, please refer to the system manuals for the respective Reader families.

The ID FECOM, ID FEUSB, ID FETCP and ID FEISC components are special DLLs (Dynamic Link Library) for communicating with OBID® classic-pro products and are available together in a Software Development Kit (SDK) for supporting your own program developments.

5.2. Program Settings

The program can be adapted by settings in the menu **Options/Program**.



- Automatic search for readers after program start**
 This option enables the automatic search for readers after program start. The search for readers is limited to serial ports in the list below and to USB devices.
- Scan over following serial ports**
 The COM-Ports can be enabled / disabled for the automatic search for the reader.
- Filter Level for configuration view**
 It can be selected between “Normal”, “Expert” and “No Filter”.

Level	Description	User
Normal	limited view of the most important parameters	Beginners
Expert	additional parameters for experts are shown	Experienced user
No Filter	all reader parameters will be shown	Professional user

- **Show hexBar in reader configuration**

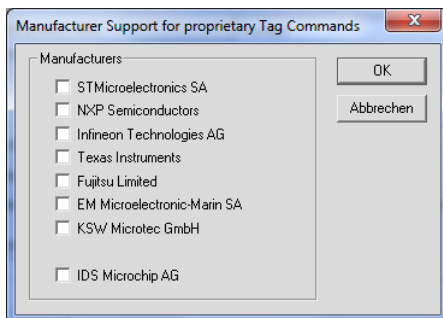
This option displays the hex edit bar in the configuration pages.

0	1	2	3	4	5	6	7	8	9	10	11	12	13
00	00	08	01	00	00	00	C8	00	00	00	00	84	E0

- **Settings for Host-Mode**

The maximal number of Tags per Inventory can be adjusted. The maximal memory size of Transponders can be customized.

Support for Custom commands must be enabled before use with the dialog below.



- **Work Directory**

Location where the last reader configuration xml-file was stored

- **Database Directory**

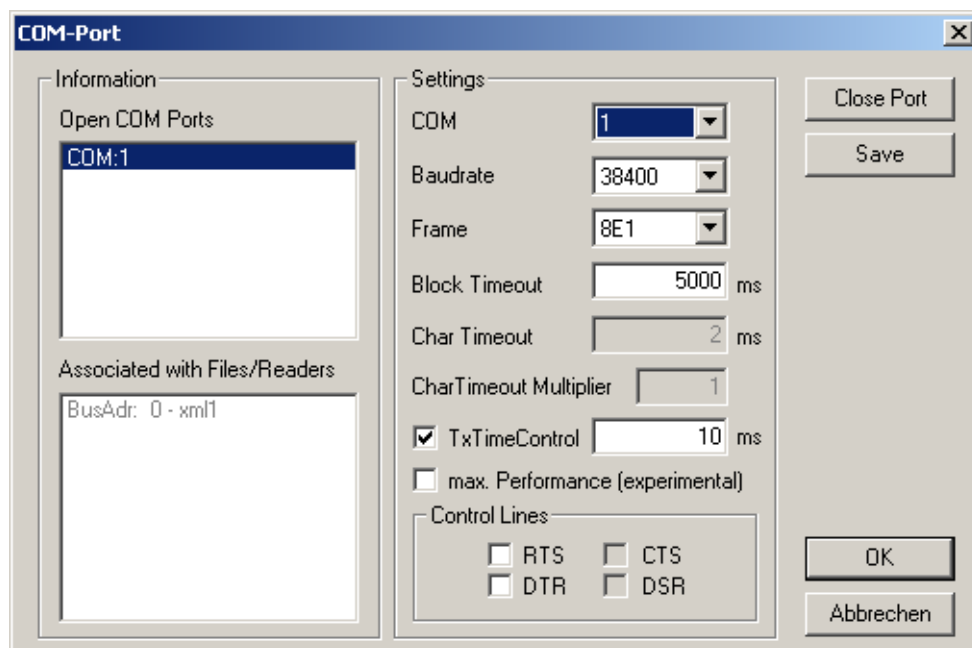
Location where the different FEIG reader definition files are stored. Should not be changed.

5.3. Communication Ports

5.3.1. Settings for Serial Port

The **ID CPRStart** supports up to four simultaneously opened serial ports which can be assigned to any editor. Each port can also use an RS232/485-converter¹ to operate a data bus to which in turn multiple OBID® *i-classic pro* Readers can be connected. This makes it possible in principle to have a larger number of Reader Editors active at the same time and for each to be connected to a port.

These serial ports are administered using the **COM-Port** dialog box. Open this dialog box by clicking on the **COM-Port** button in the toolbar or by using the **Options / COM-Port** menu.



Use this dialog box to open or close a port or to change its configuration. In addition the two left list fields give you an overview of which ports are already open and which files or editors are using a port.

If you want to close a port which is still being used by files or editors, you will be shown a message and the affected editors go offline.

Open ports are automatically closed when the program is quit and automatically opened again with the same parameters after restarting the program.

¹ Changing the data direction is not handled by the ID CPRStart program. The RS232/485 converter must be able to make this switch itself.

Note:

- Serial ports are unique system resources which can be assigned only once by the operating system. If a port cannot be opened, first make sure that this port is not being used by another program.
- By the use of an RS232/TTL converter on a Notebook it is partly necessary to activate **RTS-** and **DTR-**signal to support the converter with sufficient power.

Block Timeout (Timeout):

Maximum wait time for the receive protocol. If this time is too short, the status message "Receive Timeout" (-1030) appears. This value depends on various other settings and states, e.g.:

- The number of transponders located in the antenna field.
- Which transponder types are being used and the number of active transponder drivers.
- The Block Timeout should be greater than the "TR-RESPONSE-TIME" (see system manual for the Reader)

TxTimeControl

If set (1), output of the next send protocol is delayed until at least TxDelayTime (ms) after the last receive protocol has elapsed.

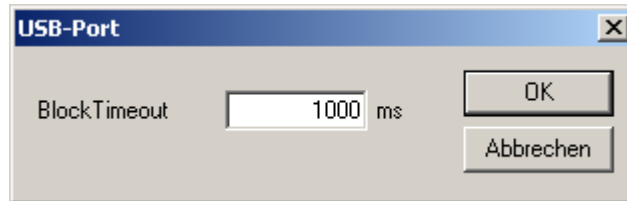
If not set (0), the send protocol is always output as soon as possible, which however can result in a Receive-Timeout (-1030).

TxDelayTime

Minimum time between the last receive and the next send protocol. Only applicable if TxTimeControl=1

5.3.2. Settings for USB

The **ID CPRStart** supports simultaneously opened USB devices which can be assigned to any editor.



Block Timeout (Timeout):

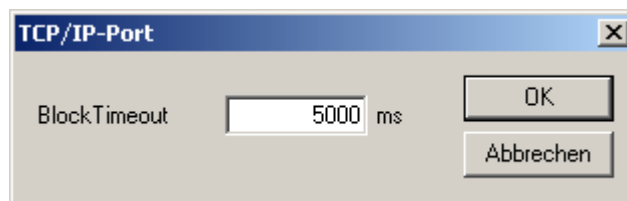
Maximum wait time for the receive protocol. If this time is too short, the status message “Receive Timeout” (-1030) appears. This value depends on various other settings and states, e.g.:

- The number of transponders located in the antenna field.
- Which transponder types are being used and the number of active transponder drivers.
- The Block Timeout should be greater than the “TR-RESPONSE-TIME” (see system manual for the Reader)

The USB-Port – Block Timeout will be adjusted automatically in dependence of the “Transponder Response Time” of the reader.

5.3.3. Settings for TCP/IP

The **ID CPRStart** supports simultaneously opened socket connections which can be assigned to any editor.

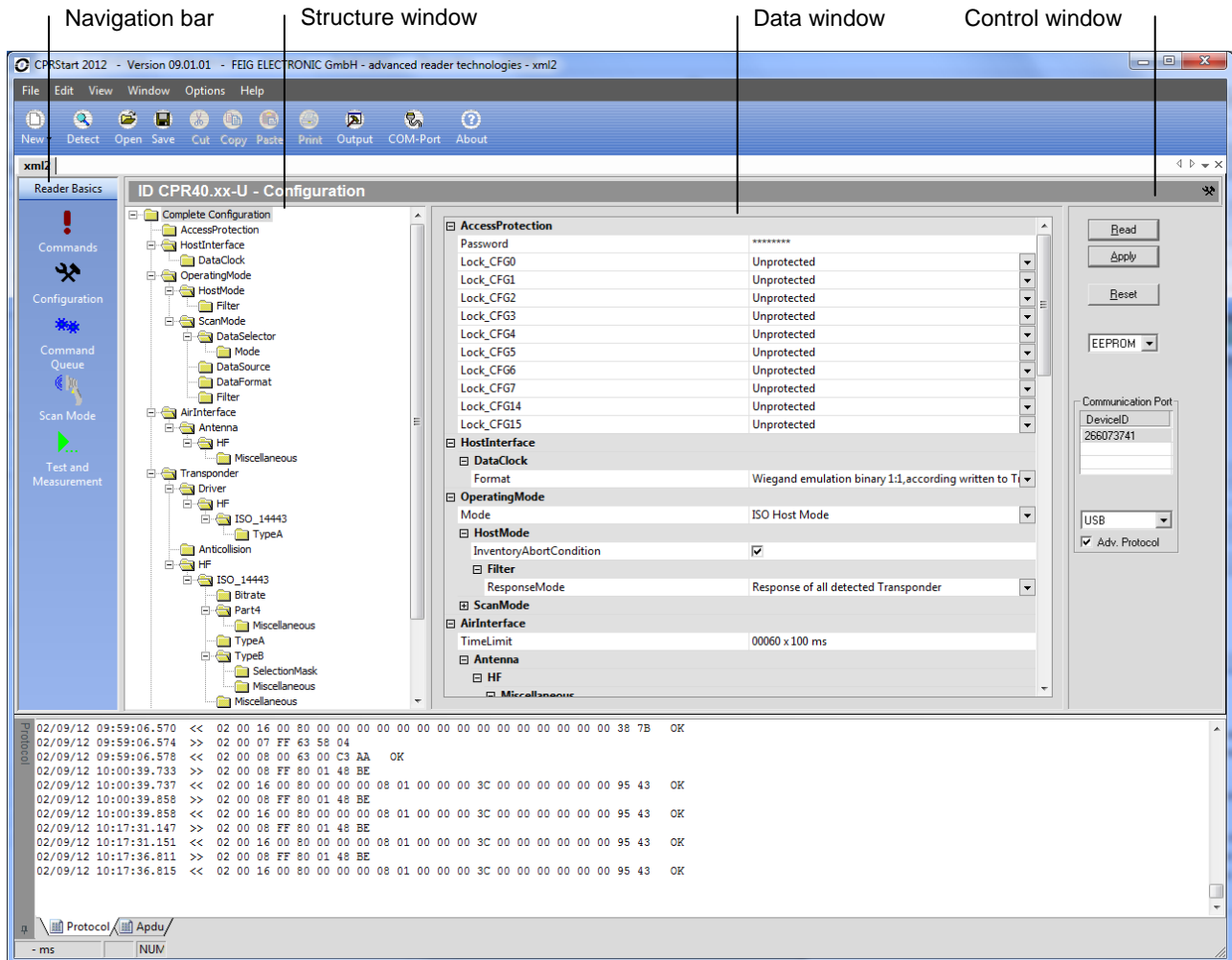


Block Timeout (Timeout):

Maximum wait time for the receive protocol. If this time is too short, the status message “Receive Timeout” (-1230) appears. This value depends on various other settings and states, e.g.:

- The number of transponders located in the antenna field.
- Which transponder types are being used and the number of active transponder drivers.
- The Block Timeout should be greater than the “TR-RESPONSE-TIME” (see system manual for the Reader)

5.4. The Reader Editor



The Reader Editor is divided into the four split boxes shown above:

- Navigation bar For selecting a function group
- Structure window For sub-dividing the protocols and configurations
- Data window For displaying and/or editing Reader and transponder data
- Control window For activating communication

The function of the parameters in the entry windows can be found in the respective system manuals for the OBID® classic-pro Reader family.

After creating a new Reader file, a serial or USB port is assigned to it which is visible in the control window. If multiple serial ports are open at the same time, you can use the list box **COM** in the control window to switch the port at any time. If a "-" character is visible in **COM**, there is no connection to a Reader and no protocols can be exchanged.

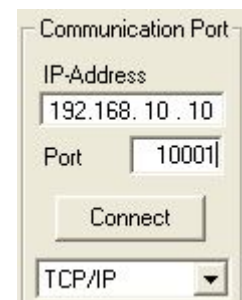
The current bus address of the Reader is set in the text field **BusAdr** in the control window (above **COM**). If this address is unknown, you can use the value **255**. This addresses each Reader, independent which bus address is currently used with the reader.

If an USB-Reader is used, they will be detected automatically and the DeviceID will be shown in the Communication Port window. If there are several readers of the same type detected, each DeviceID will be shown in the list and can be selected. Different reader type will be shown in separate Reader Editors windows.



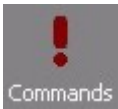
The screenshot shows a window titled "Communication Port". It contains a text field labeled "DeviceID" with the value "196342307". Below this is a dropdown menu currently set to "USB". At the bottom, there is a checkbox labeled "Adv. Protocol" which is unchecked.

If a reader is connected via an Ethernet adapter than you can enter the IP-Address and the Port number in the Communication Port window. The used IP-Address and the Port should be released by the system administrator.

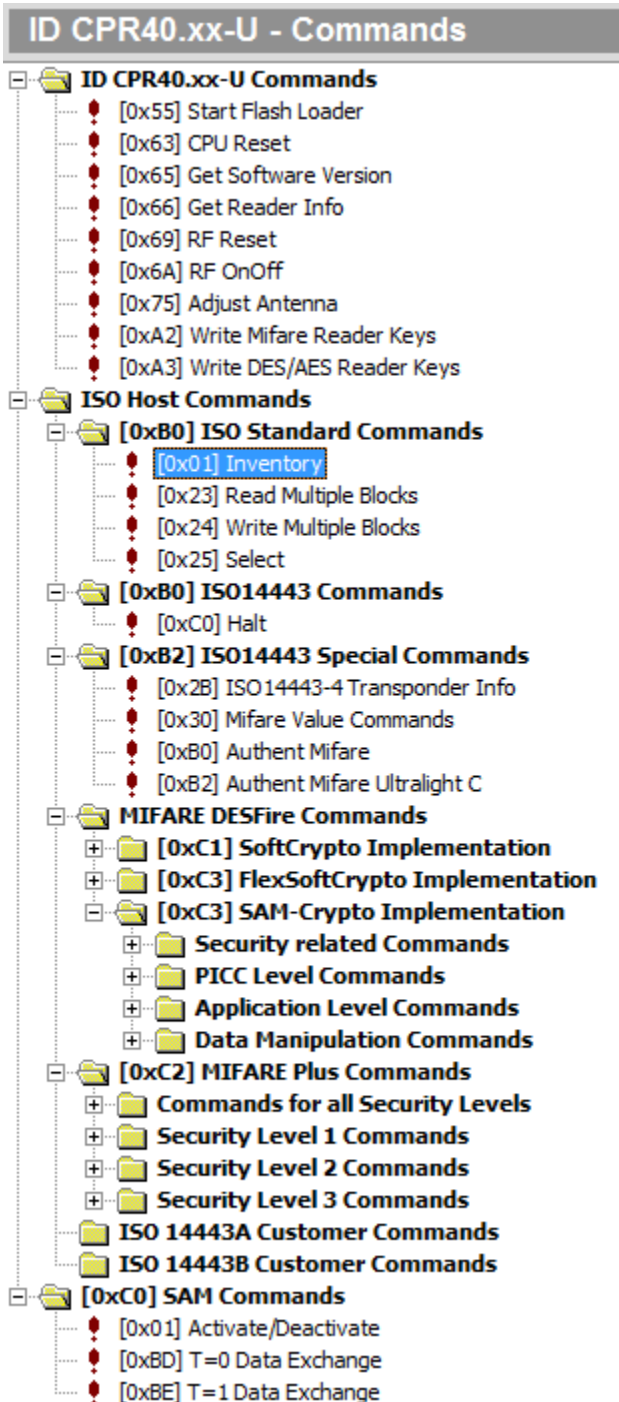


The screenshot shows a window titled "Communication Port". It contains two text fields: "IP-Address" with the value "192.168.10.10" and "Port" with the value "10001". Below these fields is a "Connect" button. At the bottom, there is a dropdown menu currently set to "TCP/IP".

5.4.1. Commands



The **Commands** window contains all the Reader protocols associated with the Reader and the **ISO Host Commands** for communication with transponders in ISO Host Mode.



The protocol is sent to the Reader by selecting a protocol and then press the **Send** button.

With some protocols, parameters can be entered in the data window and sent along to the Reader.

Detailed protocol descriptions can be found in the system manual for the respective Reader.

5.4.1.1. Reading the serial number (UID) of a transponder.

Before each data exchange with the transponder, a Reader file must first be opened and the ISO Host Command **[0x01] Inventory** (Read Serial Number) must be executed. The report with the collected serial numbers (UID) of the transponders is shown below.

```
Inventory Results:
[0xB0] [0x01] Read Serial Number
Statusbyte: 0x00 (OK)

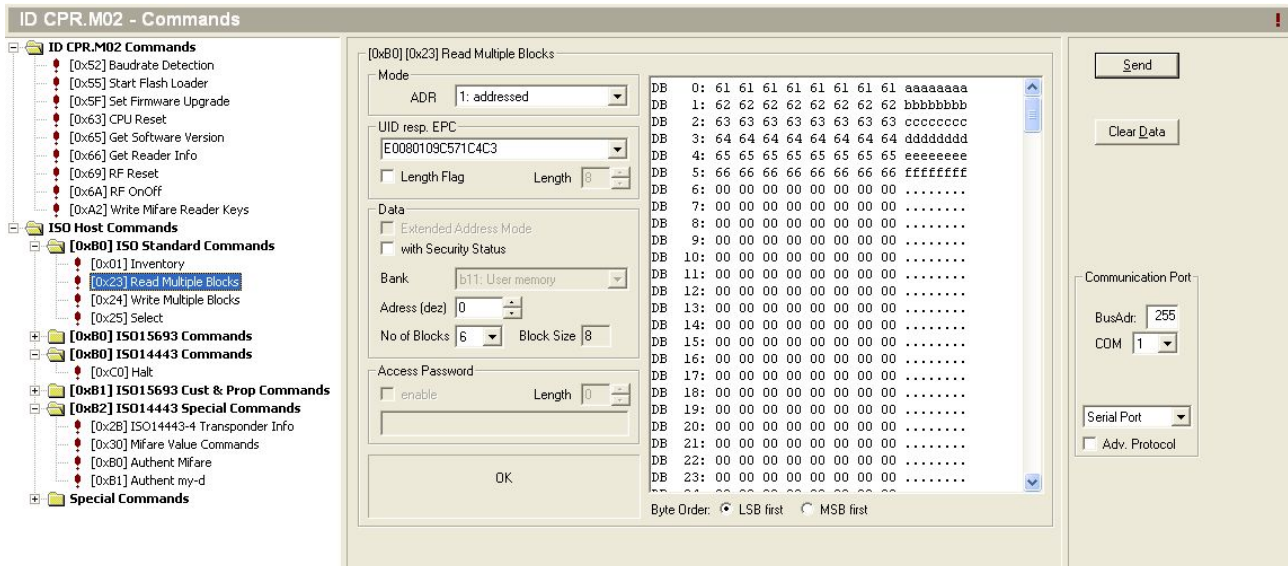
2 Transponder in Protocol
1. Transponder
  TR-TYPE....: 0x04 (ISO14443-A - NXP Semiconductors)
  TR-INFO....: 0x00
  OPT-INFO....: 0x01
  SMR.....: 008025EDEL85804
2. Transponder
  TR-TYPE....: 0x04 (ISO14443-A)
  TR-INFO....: 0x08
  OPT-INFO....: 0x00
  SMR.....: 00000009C0DCCE2
```

After this, any other action (e.g., reading and writing data blocks) can be performed with the transponder. See following section.

5.4.1.2. Reading/Writing transponder data

After selecting the ISO Host Command **[0x23] Read Multiple Blocks ([0x24] Write Multiple Blocks)** you can make the necessary settings:

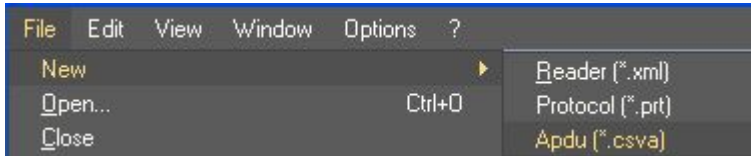
- **Addressed Mode:** the selection of the address mode depends of the transponder type
- **UID:** in addressed mode the UID must be selected
- In addressed mode with UIDs other than 8 bytes, the **Length** field must contain the number of bytes and the **Length Flag** must be enabled
- The flag **Extended Address Mode** is reserved for UHF transponder
- The flag **Security Status** is reserved for HF transponder
- The **Bank** is reserved for UHF transponder
- **Address** and **No. of Blocks** specifies the range and number of transponder data
- The **Blocksize** is read with the command **[0x23] Read Multiple Blocks** from the transponder, but for **[0x24] Write Multiple Blocks**, the Blocksize must be set
- The **Access Password** is reserved for UHF transponder



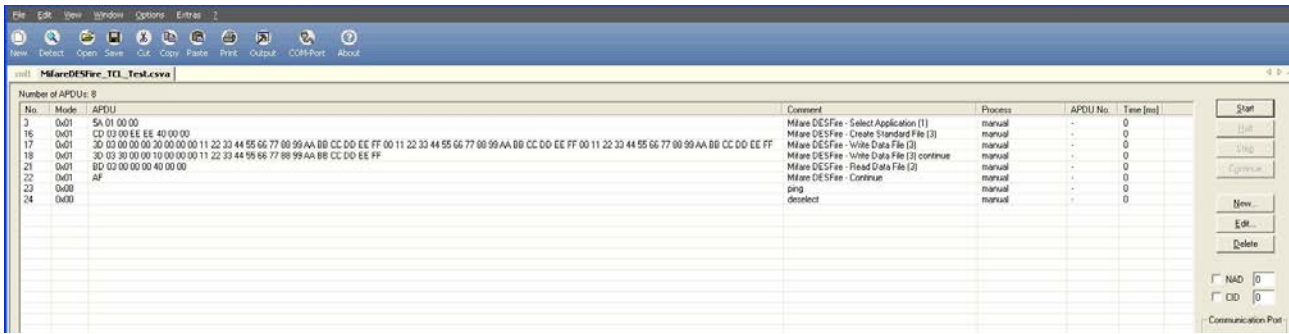
5.4.1.3. APDU window

After you've detected and opened a reader window, you can use the APDU command editor for sending and receiving APDU commands.

You can open a APDU window by using the menu "**File**" → "**New**" and then choose the entry "**Apdu (*.csva)**".



APDU command window with APDU commands inside:



Use the **New**, **Edit** and **Delete** buttons to create, modify and clear the entries.

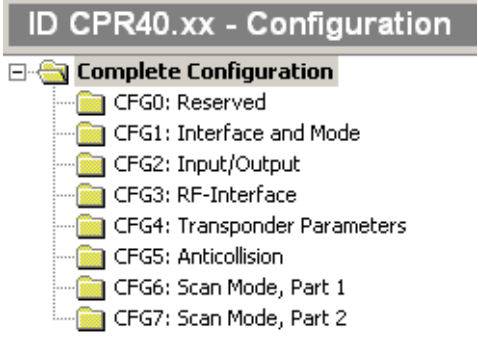
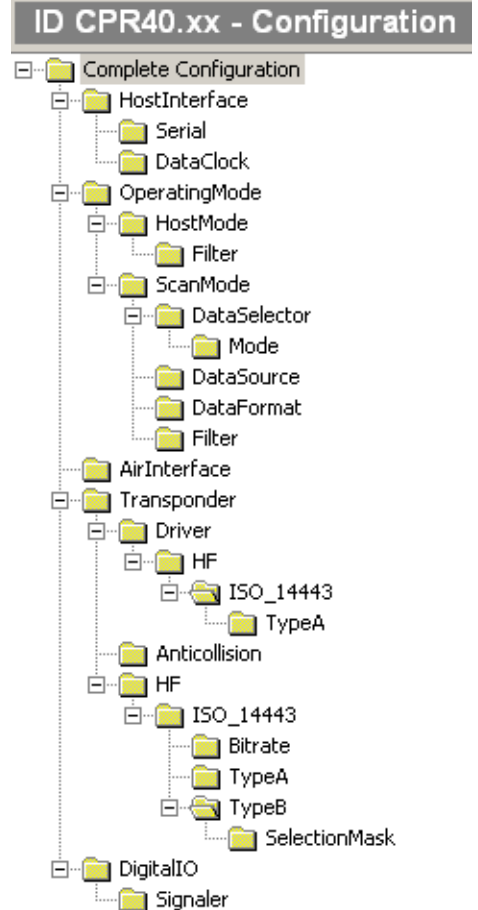
To start the sequence of APDUs you must choose the first command line and press the "Start" – button.

You can also activate "NAD" (Node Address) and "CID" (Card Identifier) and set values for these parameters, if necessary. For further information regarding "NAD" and "CID" please have a look at the system manual from the reader.

5.4.2. Configuration

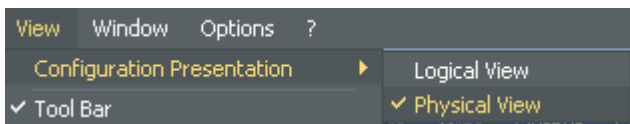
5.4.2.1. Physical view and the logical view

The CPRStart can show the configuration area in two different modes.

Physical View	Logical View
	
<p>The configuration parameters are sorted according to the physical memory location and addressing as shown in older CPRStart versions.</p>	<p>The configuration parameters are arranged according to logical grouping of parameter.</p>

The view mode can be changed any time:

Go to “View” -> “Configuration Presentation” and choose “Logical View “ or “Physical View”:



5.4.2.2. Changing of configuration settings

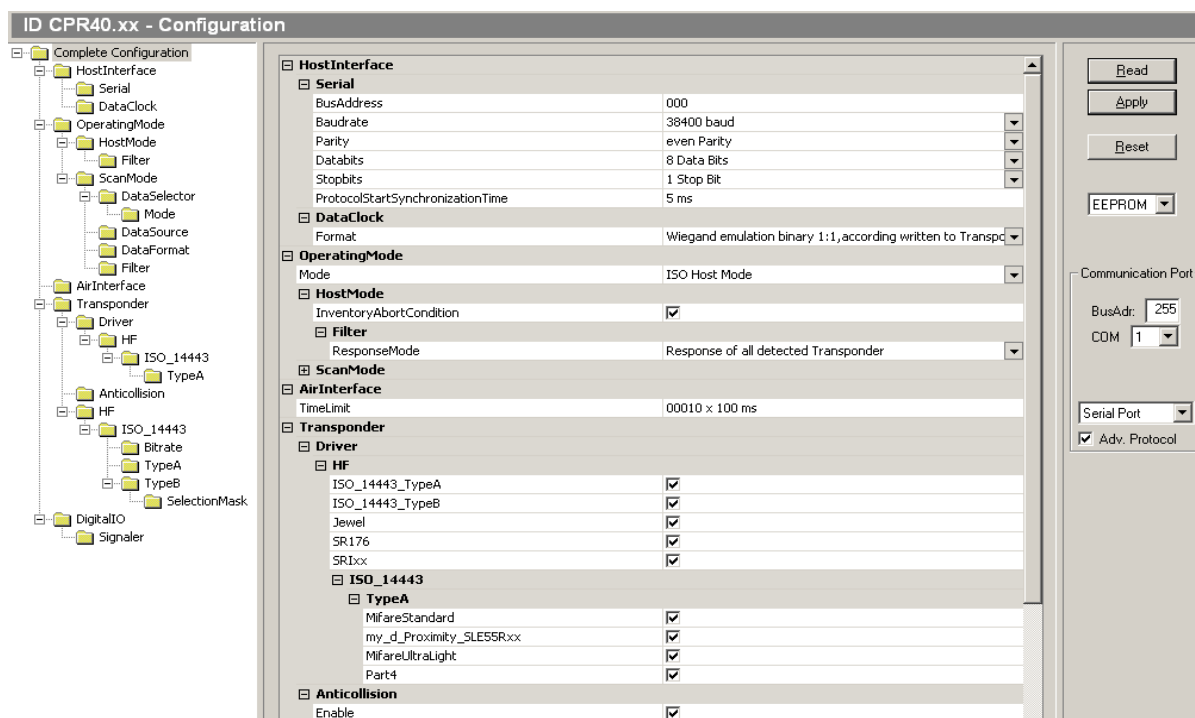


The **Configuration**- window is used to read out, modify and write back the current Reader configuration.

A control element for selecting the memory type of the Reader is included in the control window for **Configuration**. Depending on the text in the list box (**RAM** or **EEPROM**), the corresponding parameter data are affected in the Reader. This selection also exchanges the configuration data in the current data window. A mixing of RAM and EEPROM data is thus precluded.

Note:

As a rule the entire configuration of the Reader should be read out first, then modified and then written back! CPRStart prevents writing of configuration data if the configuration is previously not read.



Press the **Read** button to read out the selected configuration page of the reader. To read the complete reader configuration, select the first item (e.g. **Complete Configuration**) in the structure window.

Use the **Apply** button to write modified parameters to EEPROM or RAM. When writing to the EEPROM, the program automatically performs a [0x63] CPU-Reset to apply the change to RAM as well.

The **Reset** button is used to restore the entire configuration to the default values (factory setting).

Information on the individual parameters can be found in the system manual for the respective Reader.

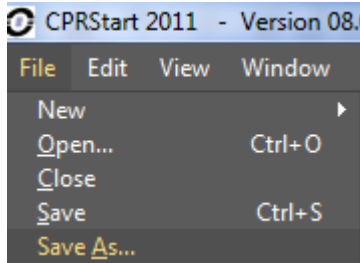
Depending on the selected reader operating mode, the not used parameters can't be modified in the "logical view" of the configuration, they are shown in gray letters.

5.4.2.3. How to store and load a complete reader configuration into a xml-file

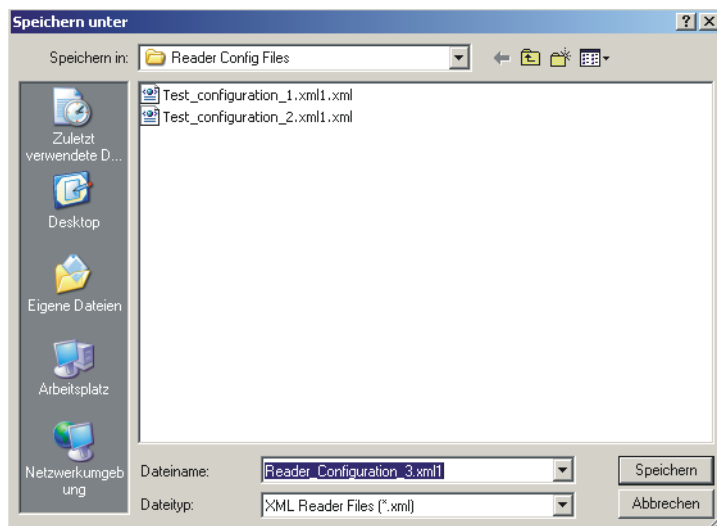
After reading and /or changing the reader configuration in CPRStart it is possible to store the complete reader configuration into a xml-file.

Storing a configuration into a xml-file:

1. Select „File – Save As...“

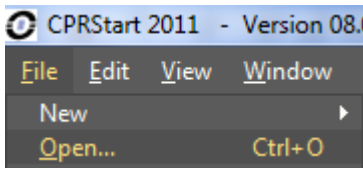


2. Choose a location and a file name and click on store:

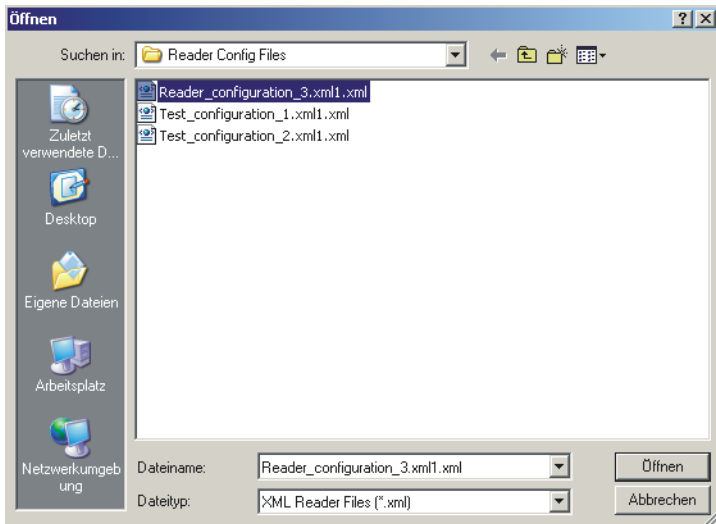


Loading a configuration xml-file into the CPRStart and store it into the reader:

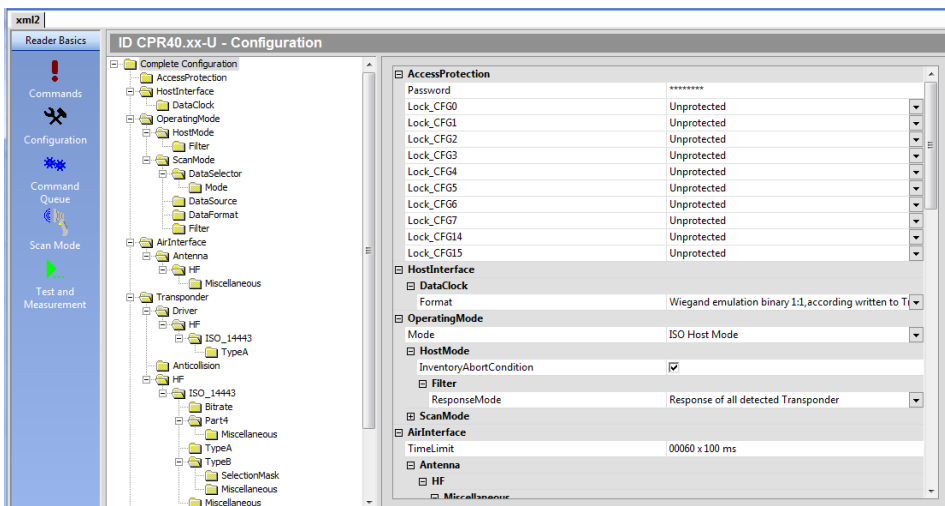
1. Select „File – Open...“



2. Choose the configuration file you wants to load into the CPRStart

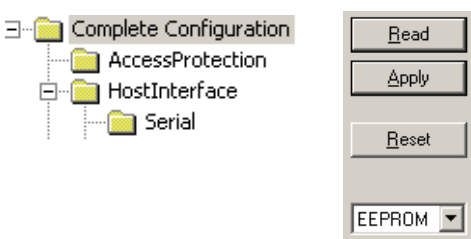


3. The configuration is now visible in CPRStart



4. To store the new configuration into the reader the „Apply“ command can be used.

4.1 Click on „Apply“ while the EEPROM is selected.



Now the complete reader configuration is stored into the reader.

5.4.2.4. Load Reader Profile

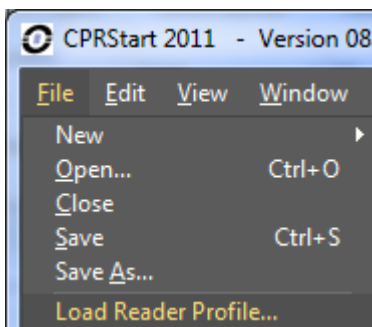
With this special feature it is possible to load a reader configuration file with only a selection of one or more specific parameters. All not enabled parameters will be retained and untouched after loading the profile into the reader. So it is possible for example to change the HF parameter only and leave the LAN and WLAN settings as it has been already configured by the customer. A "Reader Profile" can be generated by Feig Electronic GmbH only.

How loading a profile into the reader:

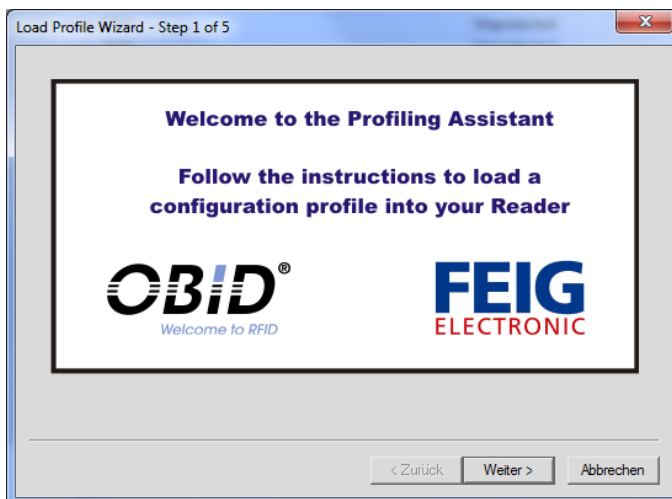
With the help of CPRStart and the "Load Profile Wizard" it is possible to load a new configuration profile into the reader.

Please follow the instruction step by step:

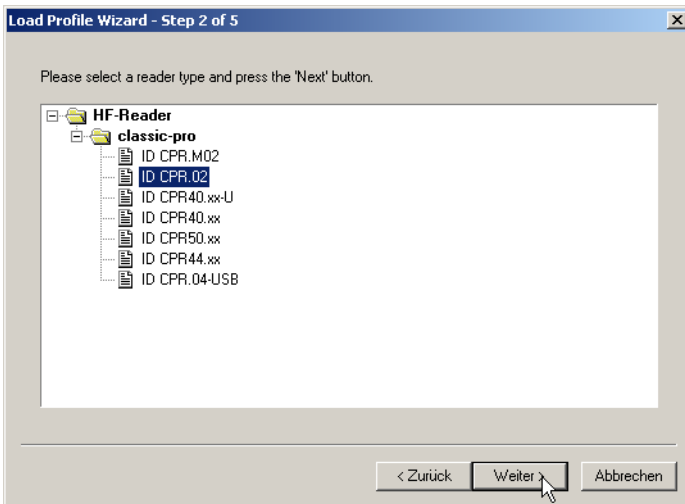
Go to "File" – "Load Reader Profile".



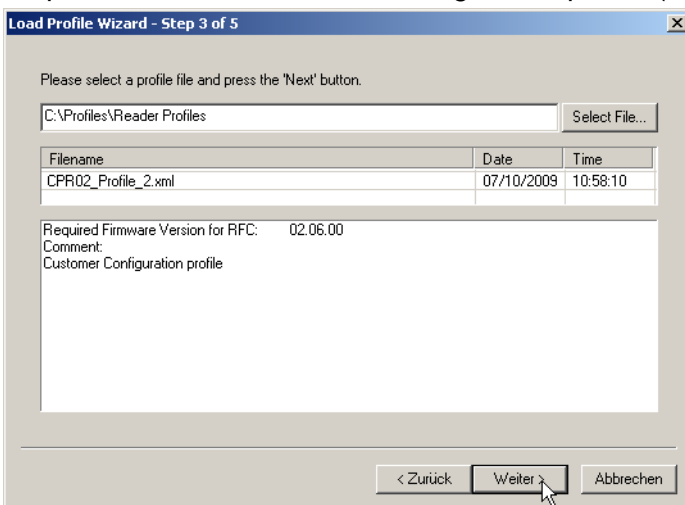
Step1: Click on the "Next"-button.



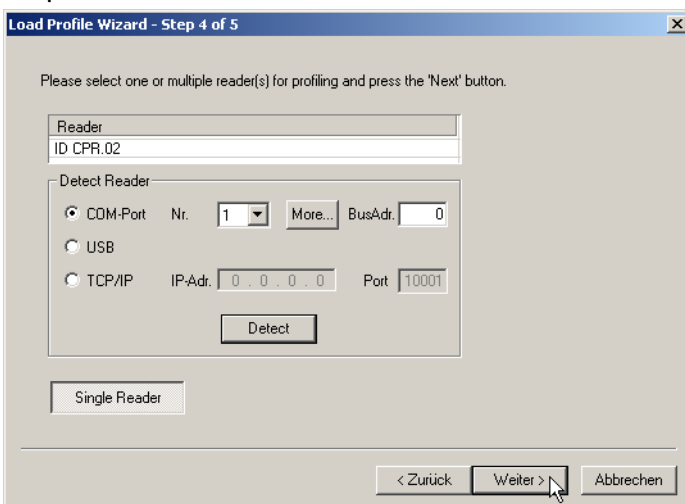
Step2: Choose the connected reader type.



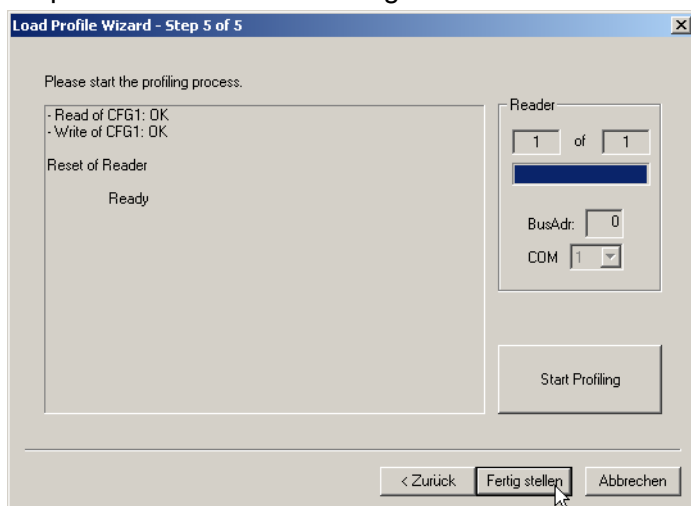
Step3: Select the new reader configuration profile (xml-file).



Step4: Detect the connected reader.



Step5: Click on “Start Profiling” and wait until the “Ready” message appears.



Now the configuration has been finished and the reader can be tested with new configuration.

5.4.3. Host Commands (HF only)



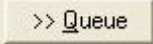
If the Reader is configured to work in ISO Host Mode, you can use the **Host Commands** button to open a corresponding window for communicating with HF transponders. **This function is only available for ID CPR.M02, ID CPR.02, ID CPR30.xx and ID CPR50 readers.**

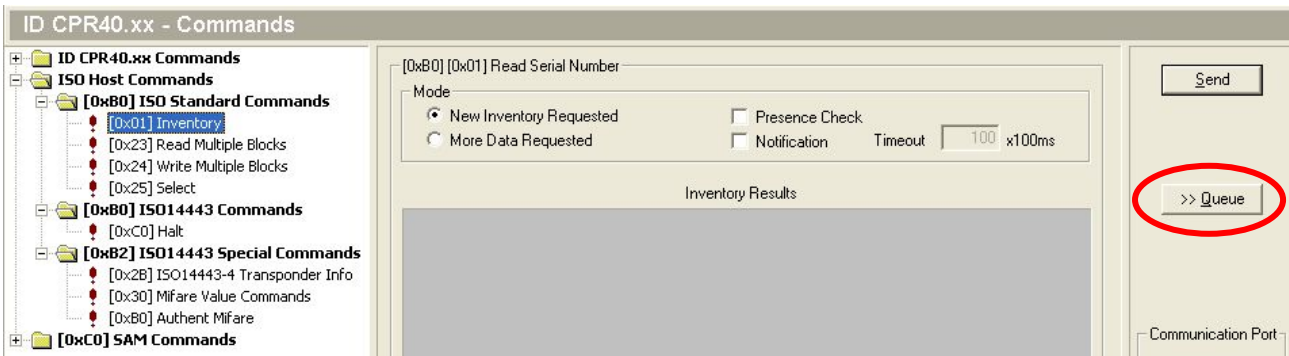
With the **Start** button, Inventory commands are executed continuously and the response is displayed in the list window. After stop of Inventory the **Edit** button opens a modal dialog window (always on top) with edit boxes for all Host Commands.

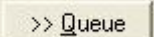
5.4.4. Command Queue



When the Reader is configured to work in ISO Host Mode, you can use the Command Queue to make execution of command sequences more comfortable.

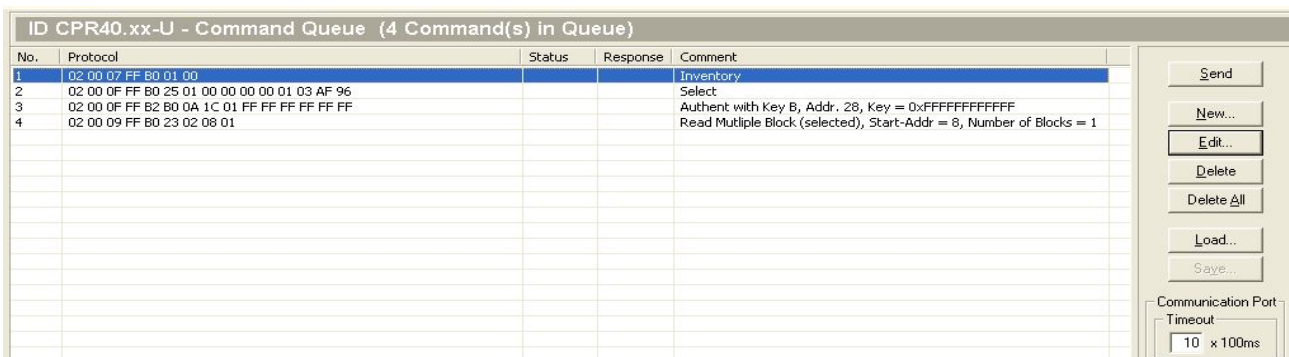
If the button  on the right side of the command window is visible, you can use the command queue to build a command sequence.



If you want to add a command to the Command Queue choose the command first and then press the  button.

After you've built your command sequence you can switch to the Command Queue window to start or edit your command queue sequence.

For example the command sequence for executing a "Read Multiple Block" in junction with a ISO14443 Mifare Transponder:

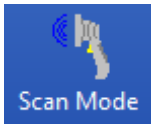


You can start the queue by choosing the first command in the sequence and press the **Send** button. Every command in the queue will be executed automatically.

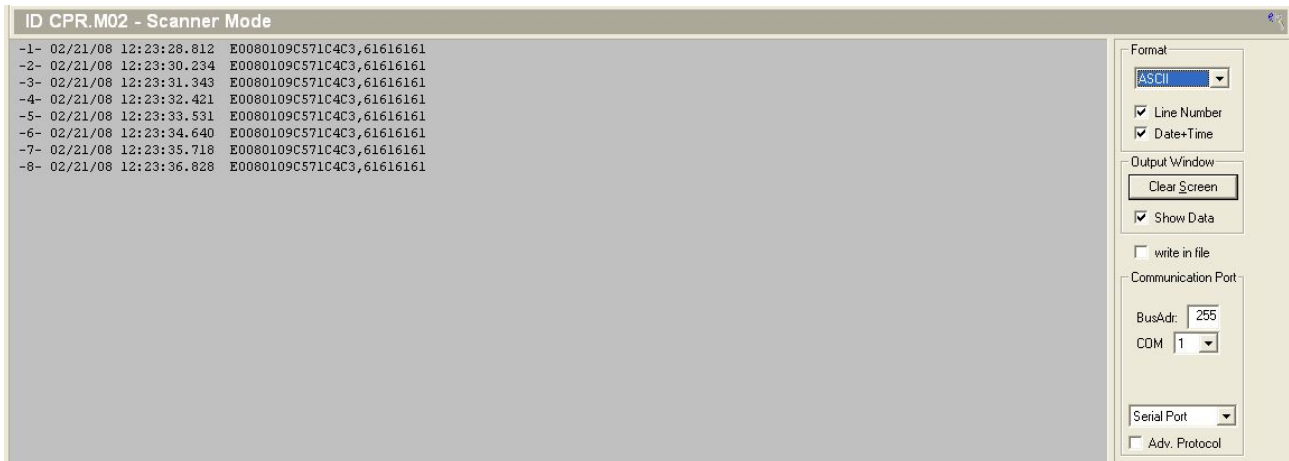
You can use these command queue nearly similar like a protocol editor.

Use the **New**, **Edit** and **Delete** buttons to create, modify and clear the entries.

5.4.5. Scan Mode



If the Reader is configured to work in Scan-Mode, you can use the **Scan Mode** button to open a corresponding window for displaying the transponder data sent by the Reader.



To receive Scan Mode data, the communication port type **Serial Port** must be selected. All other port types are not supported.

The **display format** must be set to the format setting of the reader. In addition, you can add in front of each data record a line number and Date and Time.

For long runs, the display of the data should be disabled. **Show Data** controls the data output. Otherwise, the performance will decrease and/or the memory of the PC can run out.

Activating the **write in file** function allows the scanned data to be saved to a file. The filename is built with the prefix Scan followed by the date, e.g. Scan060317.txt.

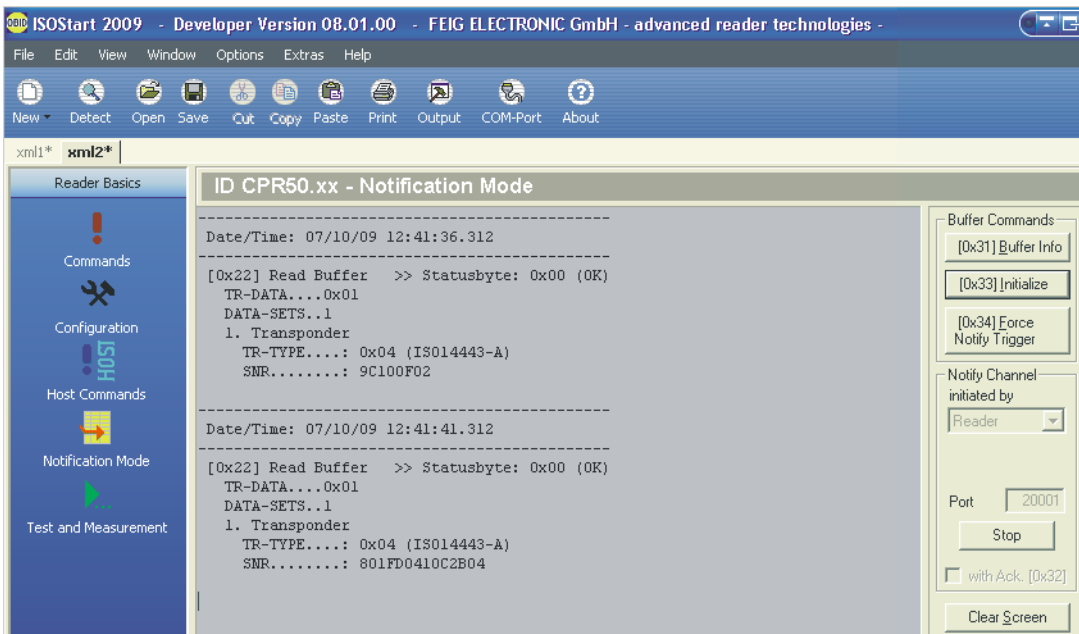
Note:

USB Readers working in Scanner Mode sends data to the HID Kernel driver of the PC and acts like a keyboard. The data can be displayed in this gray window after positioning the cursor in this window. The data can be also visualized within any other Windows application where the cursor is positioned.

5.4.6. Notification Mode



If the Reader is configured to work in Notification Mode, you can use the **Notification Mode** button to open a corresponding window for receiving and displaying notifications. The Notification Mode is an extended mode of the Buffered Read Mode. Thus, the structure of the notified data is the same.



Recommended sequence:

The command **[0x33] Initialize** clears and initializes the readers internal buffer.

The **Apply** button starts the receive process and incoming notifications are displayed in the text window. The Port Number must be the same as configured in the readers configuration.

If configured in the reader, the acknowledge of the notification must be enabled. Otherwise, the reader notifies always the same data.

Information about the current status of the buffer (number of saved data sets) can be obtained using the **[0x31] Buffer Info** command.

5.4.7. Test and Measurement



The **Test and Measurement** group collects some helpful functions.

ISO Inventory:

No.	Tag-Type	Serial Number	DSFID/Info
1	ISO15693 - Fujitsu Limited	E0080109C571C4C3	55
2	ISO15693 - Fujitsu Limited	E0080109C595044D	01
3	ISO14443-A	0000000047FBA0D4	08,00

Control:

Start
Halt
Step
Continue
Reset

Settings:

Sound
Delay: 0 ms

Communication Port:

BusAdr: 255
COM: 1
Serial Port: [dropdown]

This test function can be used for continuously executing the Host Protocol **[0xB0][0x01] Inventory**. This presumes the Reader is configured to work in Host Mode.

Select the function **ISO Inventory** in the **Test** folder and press the **Start** button.

All transponders located in the antenna field are displayed in the list window with serial number and transponder type. The **Stop** button stops the ISO Inventory execution. The **Halt** button sets the Inventory process into a wait status to execute single steps with the **Step** button. The **Continue** button finishes the wait status and continues the Inventory process.

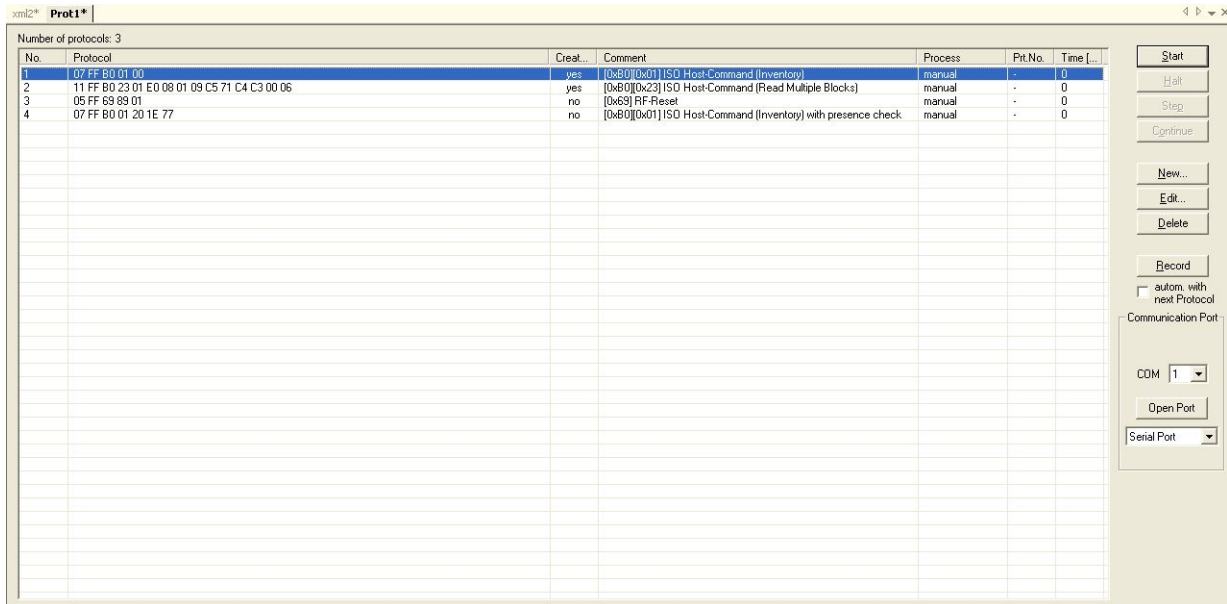
The **Reset** button clears the display window.

To send the individual protocols to the Reader with a delay, use the **Delay** slider to set the pause between protocols at up to 1000ms.

5.5. The Protocol Editor

The Protocol Editor is a helpful tool for checking the response of the OBID[®] classic-pro Reader for faulty, new or unknown protocols. As in the case of the Reader Editor, a port type must be allocated to the Protocol Editor. This may in principle be the same port.

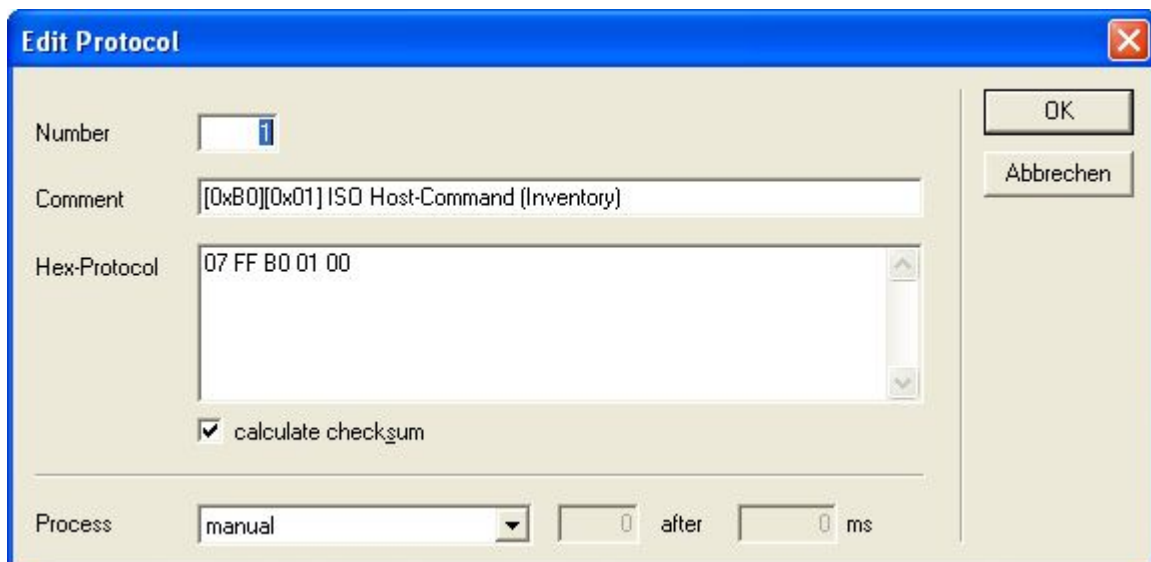
With the Protocol Editor one can collect any protocols and the scheduling of the protocol is arbitrary.



Use the **Start**, **New**, **Edit** and **Delete** buttons to transfer, create, modify and clear the entries.

With the **Record** button you can activate the record of any protocols sent by the Reader Editor. This presumes to have opened the Reader Editor first. The recorder can set the process state for each recorded protocol to **automatic with next Protocol** if this option is enabled. This is helpful for the automatic step-by-step scheduling of protocols.

The **Edit** button opens a dialog for the selected protocol item.

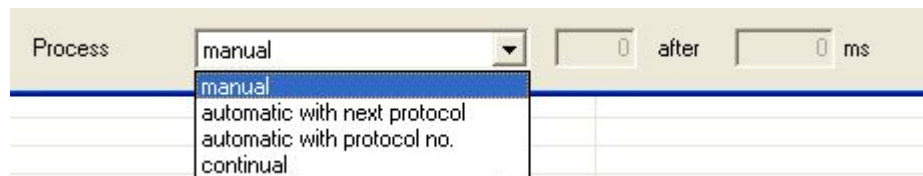


Every protocol item must have an individual **item number**. After changing this number the protocol item can be moved in the list with the context menu one step up or one step down to have a continual increasing order.

The edit box for the **hex protocol** accepts every chars, but all non-hex chars will be removed before the protocol is sent. This allows to use the space char as a separation char between every hex number.

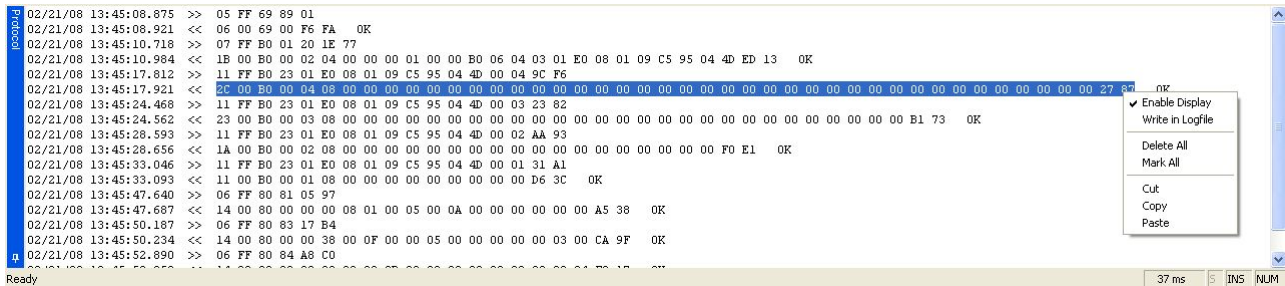
The hex protocol must contain the complete protocol frame except the checksum, which is calculated and added internally if the option **calculate checksum** is set. Recorded and unmodified protocols have a valid protocol checksum and the option calculate must not be set.

To organize the scheduling the drop-down box **Process** lists a number of scheduling options.



The item manual disables a scheduling for this protocol item. All other options enables the scheduling for this protocol item.

5.6. The Protocol Window



The Protocol Window lists each protocol action. All error messages occurring in connection with protocol traffic are diverted to this window

The Protocol Window is a normal editor and allows copying of text lines to the clipboard. Use the context menu with the right mouse button. In this way you can very easily copy protocols to the Protocol Editor and manipulate them.

For long runs of a test function or high performance tests, the Protocol Window should be disabled.

6. Handling communications problems

If you have communications problems with the OBID[®] *classic-pro* Reader, please check the following points:

- Is the cable to the Reader properly connected?
- Is power to the Reader turned on?
- Is the correct port type assigned?
- In case of a serial connection, is an opened serial port allocated to the Reader file? Go to the Reader Editor and check the list box **COM** at lower right.
- In case of a serial connection, is the correct bus address set in the Reader Editor? Try address 255.
- In case of a serial bus connection (RS485) with multiple Readers, each Reader must be set with its own bus address. Check these settings.
- In case of a serial connection, check the settings for the serial port in [5.3.1. Settings for Serial Port](#):
- In case of an Ethernet connection, does the IP address of the Reader match the subnet mask of the PC?

Test every change using the protocol **[0x52] Baudrate Detection** from the Reader Editor Commands group.

7. Uninstalling ID CPRStart

To uninstall **ID CPRStart 2017** go to the Start menu → Settings → Control Panel → Add/Remove Programs. From the Install/Uninstall tab look for the entry **ID CPRStart 2017** and select it. Click on the Add/Remove button. In the next dialog box select **Remove** and confirm the prompt for uninstalling with “Yes”. Now all components of **ID CPRStart 2017** will be removed from your computer.