

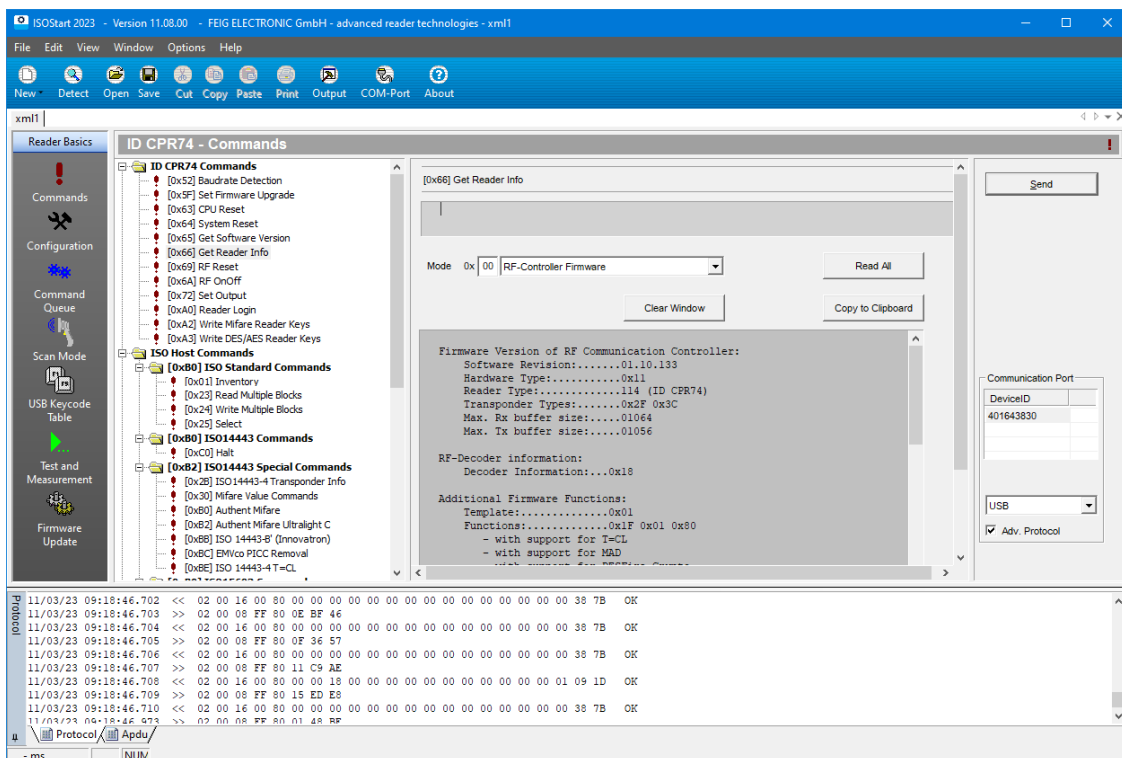
MANUAL

ISOStart

Demo program for FEIG HF and UHF readers

Version 11.10.00

Windows® 10/11 (32/64-Bit)



Note

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Content

Licensing Agreement for Use of the Software "ISOStart"..... 3

Third-Party Licensing Agreements 5

Licensing Agreement of OpenSSL Organization5

1. Overview..... 8

2. What's New! 9

3. Installation..... 10

4. First Steps 11

4.1. Supported FEIG HF and UHF Readers 11

4.2. Connecting a FEIG HF or UHF Reader using the Quick Start Wizard 12

5. Program Description 16

5.1. Overview 16

5.2. Program Settings 17

5.3. Communication Ports 19

 5.3.1. Settings for Physical Serial Port and Virtual COM Ports (Bluetooth / USB Converter). 19

 5.3.2. Settings for USB 21

 5.3.3. Settings for TCP/IP 21

5.4. The Reader Editor 22

 5.4.1. Commands 24

 5.4.1.1. *Reading the Serial Number (UID) of a Transponder..... 25*

 5.4.1.2. *Reading/Writing Transponder Data..... 26*

 5.4.2. Configuration 27

 5.4.2.1. *Physical View and Logical View..... 27*

 5.4.2.2. *Changing of Configuration Settings 28*

 5.4.2.3. *How to Store and Load a Complete Reader Configuration into an XML-File 29*

 5.4.2.4. *Load Reader Profile..... 31*

 5.4.3. Host Commands 34

 5.4.4. Buffered Read Mode..... 35

 5.4.5. Notification Mode 37

 5.4.6. Scan Mode..... 38

 5.4.7. USB Keycode Table 39

 5.4.8. EPCglobal..... 40

 5.4.9. Action on EPC 41

 5.4.10. Test and Measurement..... 42

5.5. The Protocol Editor 44

5.6. The Protocol Window..... 46

6. Handling Communication Problems 47

7. Uninstalling ID ISOStart 48

1. Overview

The demo program **ID ISOStart** has been developed to familiarize you with the functionality of the FEIG HF and UHF readers.

Using this software, you can:

- Test communication with HF and UHF transponders.
- Read out and modify the configuration of FEIG HF and UHF readers.
- Communication with Function Units like Multiplexer or Dynamic Antenna Tuner
- Activate a Firmware Upgrade

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 FEIG HF and UHF readers. The respective system manuals should be referred for interpreting the protocols and for studying the reader properties.

Unique features of **ID ISOStart**:

- Reader Editor for editing the FEIG HF and UHF 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.
- Test of the automatic reader modes like: Buffered Read Mode, Scan Mode, Notification Mode.

This manual gives you a brief introduction into the program **ID ISOStart**. Some special features and assistance's 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!

Please refer to the ISOStart Release Notes document to obtain the change history.

3. Installation

System Requirements

- Windows Vista (32/64Bit) or Windows® 10 (32/64Bit) or 11 with Intel x86 CPU.
- Hard disk with minimum free 50MB memory space
- Minimal graphics resolution: 800x600. (1024x768 or higher recommended)

ID ISOStart 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 ISOStart. The new ISOStart can be installed parallel to older versions.*
- *Under Windows® 10 or 11, the corresponding administrator rights are required. Check with your network administrator if needed.*

4. First Steps

4.1. Supported FEIG HF and UHF Readers

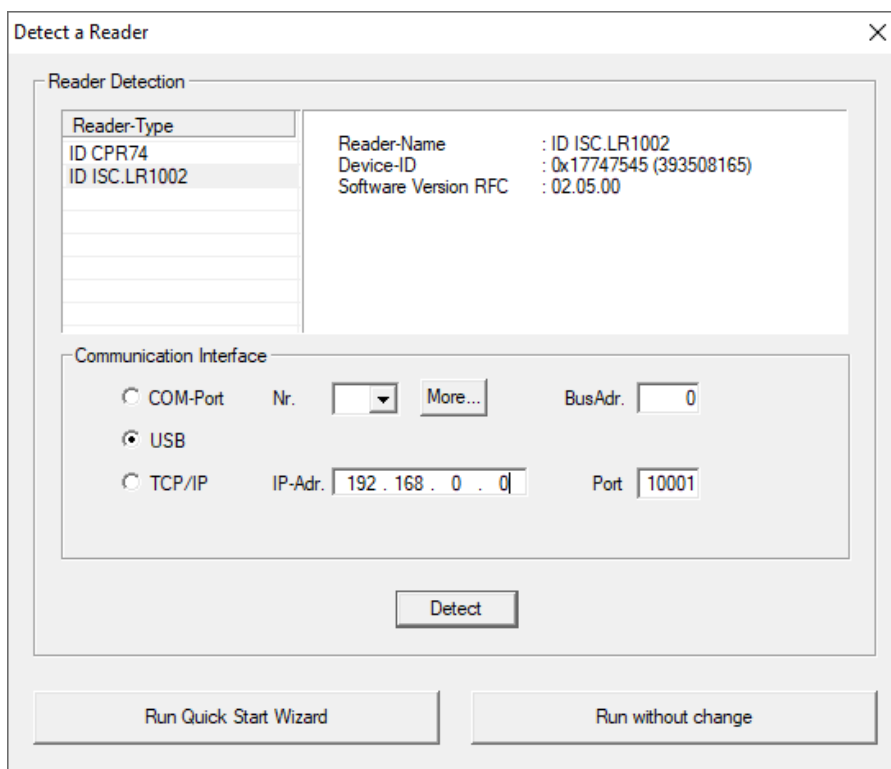
ID ISOStart supports the following reader types:




4.2. Connecting a FEIG HF or UHF Reader using the Quick Start Wizard

After successfully installing of **ID ISOStart** and before starting the program you can immediately connect a FEIG HF or UHF reader to serial port COM1¹, USB or the LAN/WLAN 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 ISOStart**. 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.



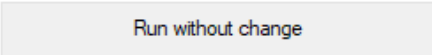
If the connected and activated reader is not in the list, check the interface settings (see [6. Handling Communication Problems](#)).

If the connected reader is detected successfully you can use the “Quick Start Wizard” by a click on the button:  and follow the instructions on the next pages.

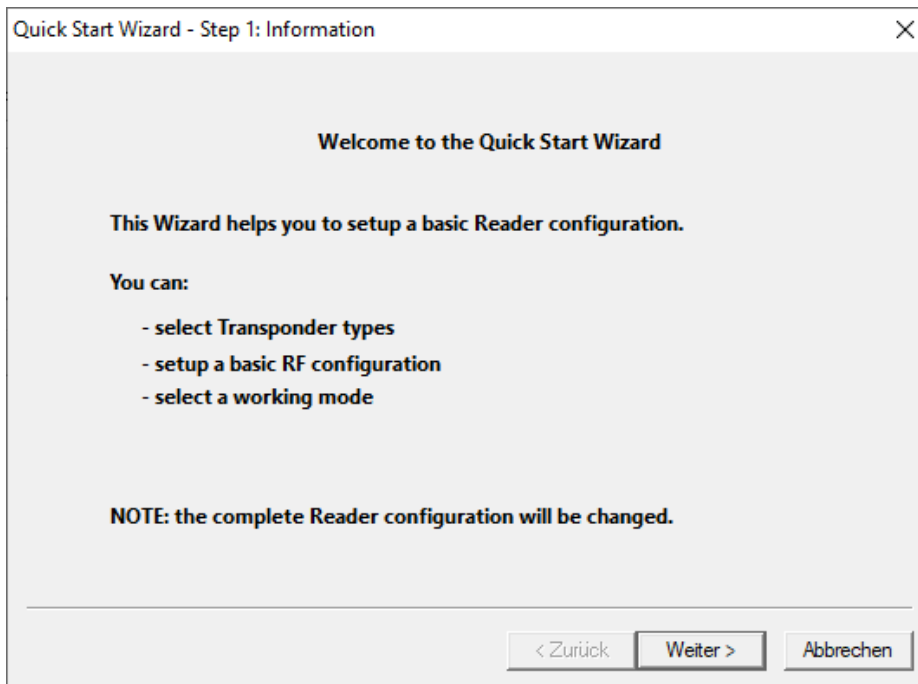
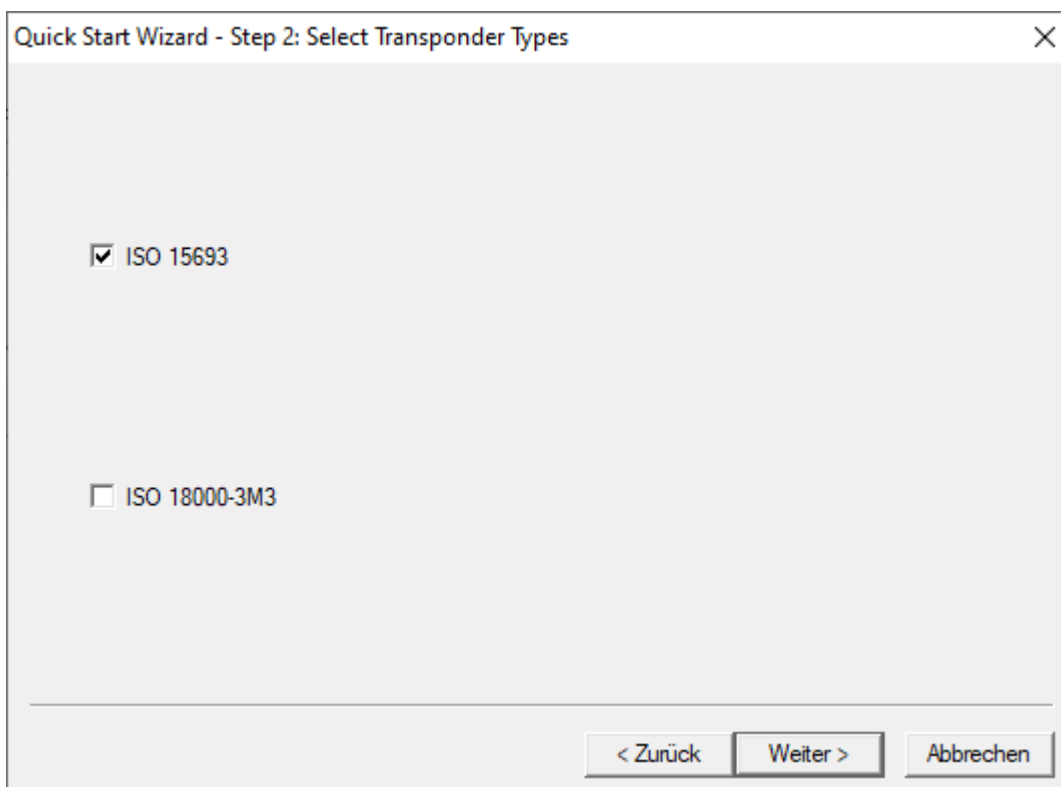
Note:

The Quick Start Wizard will change the existing reader configuration.

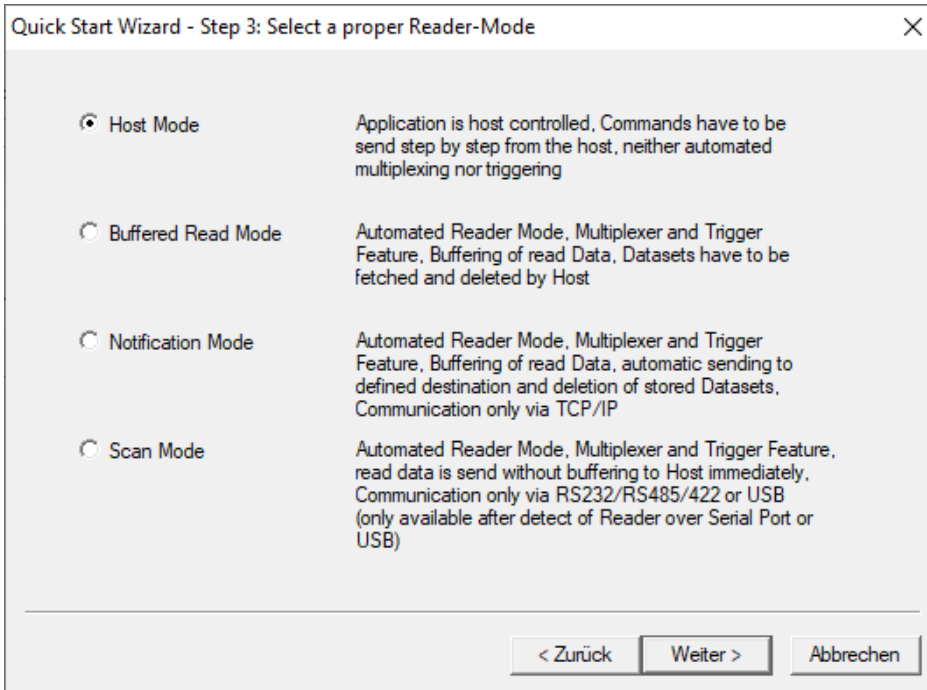
If you want to keep the existing reader configuration unchanged please click on the button:

. Now the existing reader configuration will be read without any modification.

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](#)).

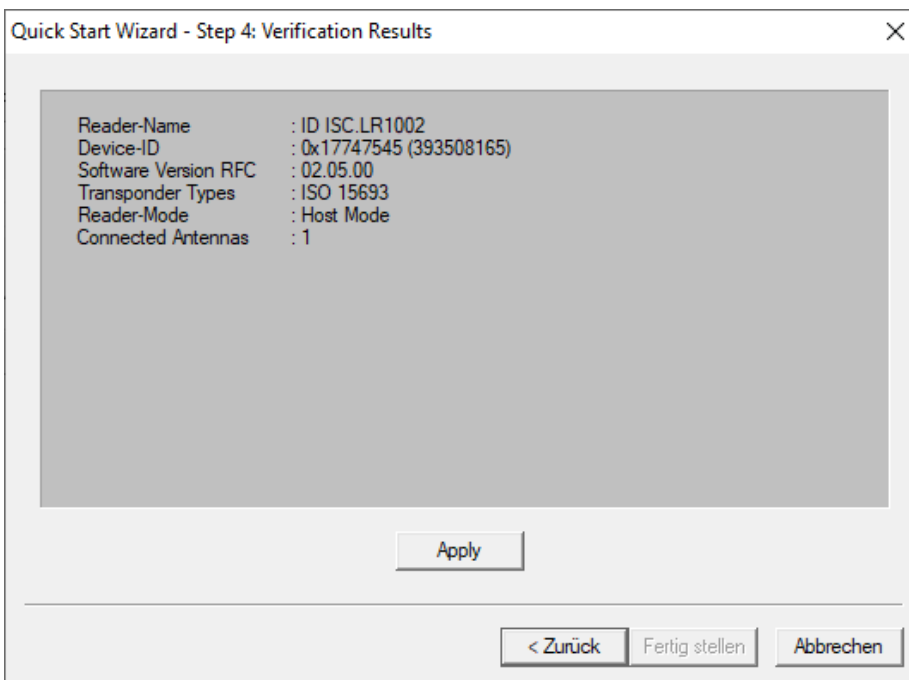
Step 1: Advice message**Step 2: Choose the transponder driver.**

In Step 3: You can choose the desired reader mode.

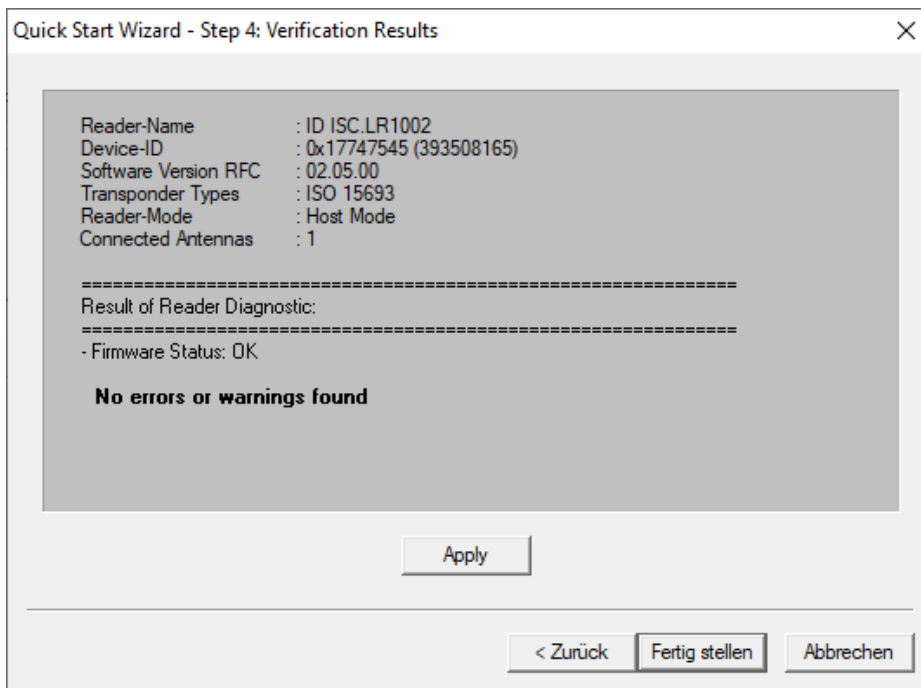


Click on **Next**.

Step 4: Gives an overview of the reader details.



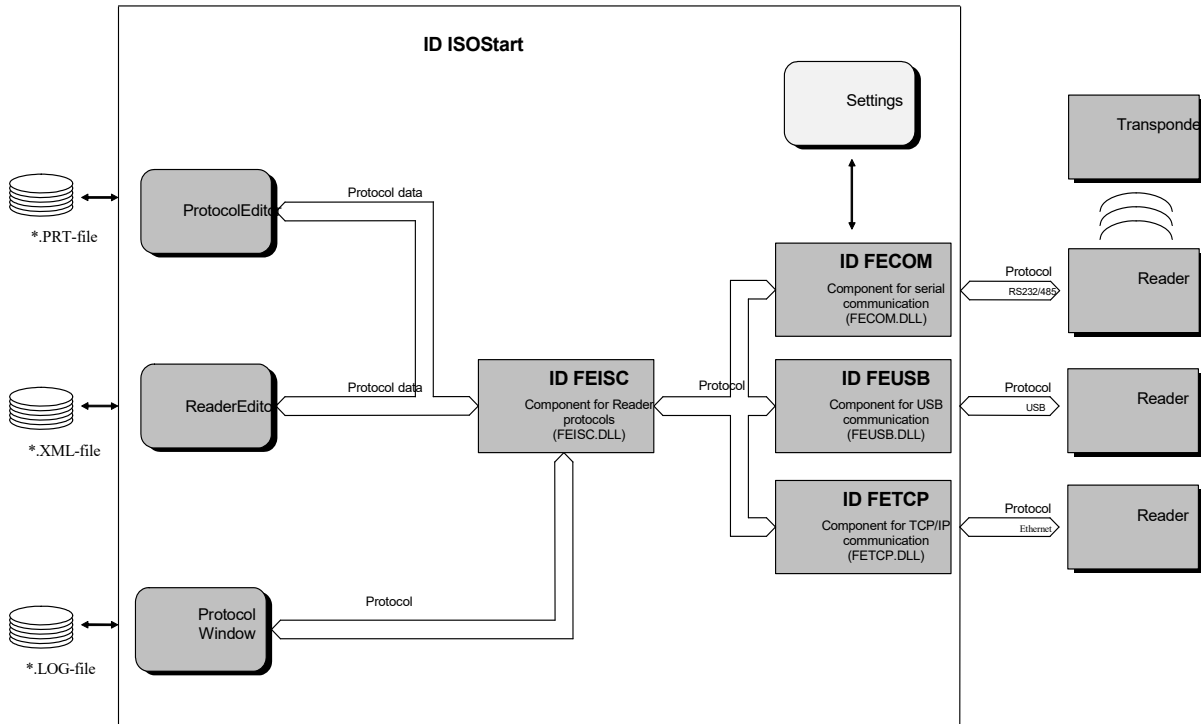
Click on **“Apply”** for confirmation. The wizard configures the reader and the verification results will be shown:



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 FEIG HF or UHF readers or transponders.

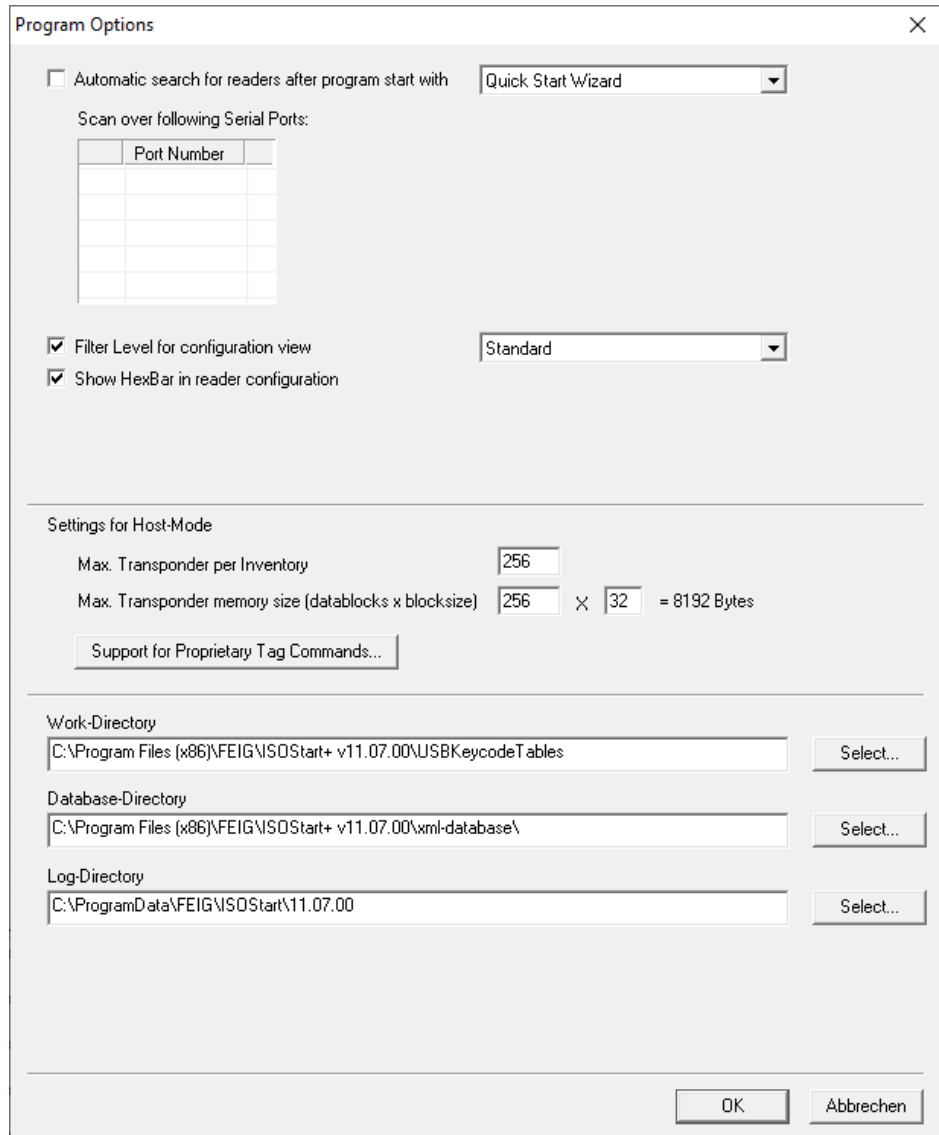
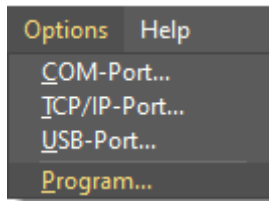
The protocols transported over the interfaces are displayed in the protocol window.

The demo program does not use error messages in separate notification windows if the communication was defective or if the FEIG 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 FEIG 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. It can be chosen between the “Quick Start Wizard” (for beginners) and the “Simple Detect Wizard” as known from the older ISOStart versions.
- Scan over following serial ports**
 The COM-Ports can be enabled / disabled for the automatic search for the reader.

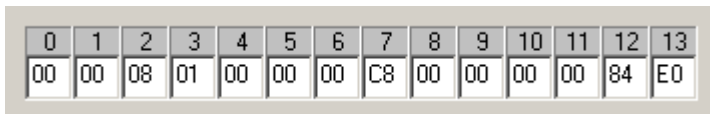
- **Filter Level for configuration view**

It can be selected between “Standard”, “Expert” and “No Filter”.

Level	Description	User
Standard	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**

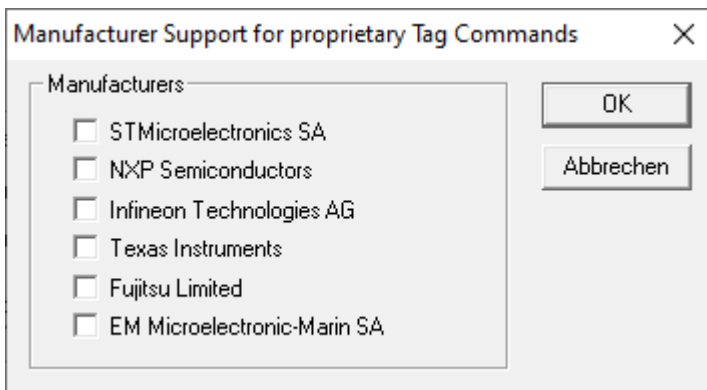
This option displays the hex edit bar in the configuration pages if the “physical view” is used.



- **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.

- **Log Directory**

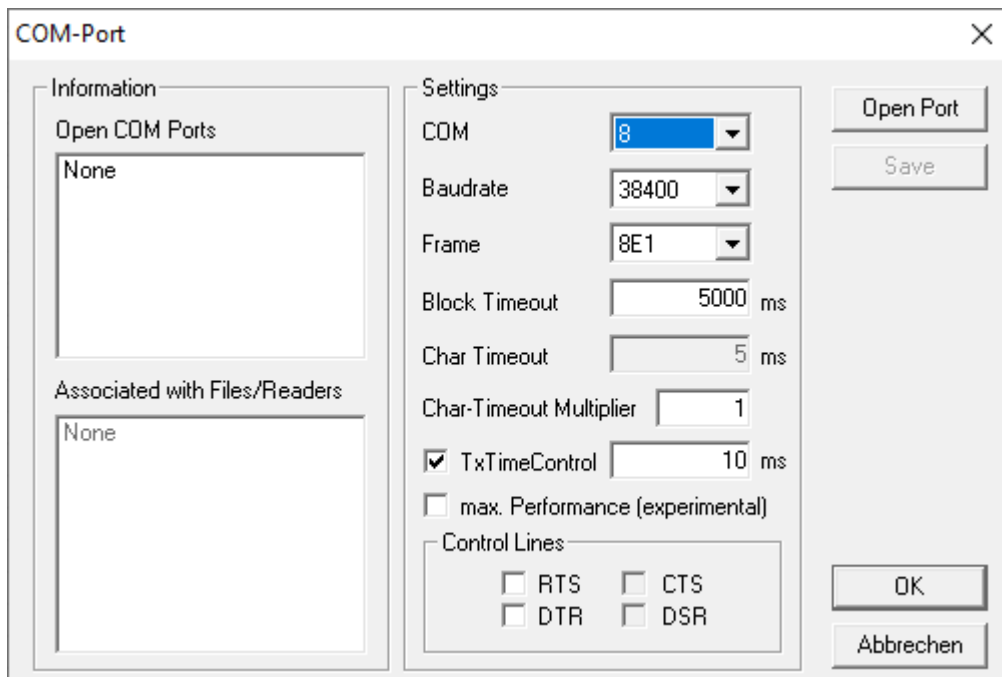
Location where the Log Files should be stored.

5.3. Communication Ports

5.3.1. Settings for Physical Serial Port and Virtual COM Ports (Bluetooth / USB Converter)

The ID ISOStart supports up to four simultaneously opened serial ports which can be assigned to any editor. Each port can also use a RS232/485-converter¹ to operate a data bus to which in turn multiple FEIG HF or UHF 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 goes 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 ISOStart 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 "AirInterface.TimeLimit" (ex. 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.

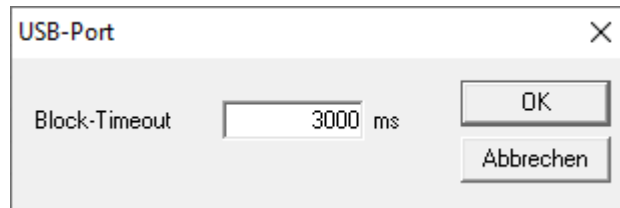
If not set (0), the send protocol is always output as soon as possible, which however can result in a Receive-Timeout (-1030).

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 ISOStart** supports simultaneously opened USB devices which can be assigned to any editor.



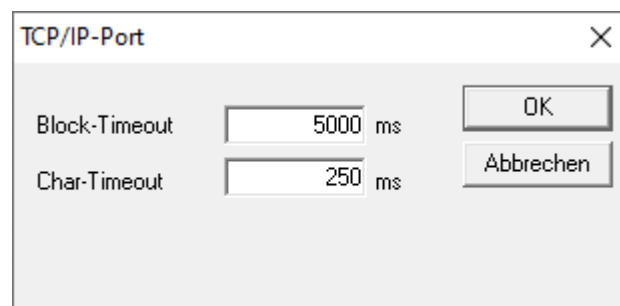
Block Timeout (Timeout):

Maximum wait time for the receive protocol. If this time is too short, the status message "Receive Timeout" (-1130) 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 "AirInterface.TimeLimit" (TR-RESPONSE-TIME) (see system manual for the Reader)

5.3.3. Settings for TCP/IP

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

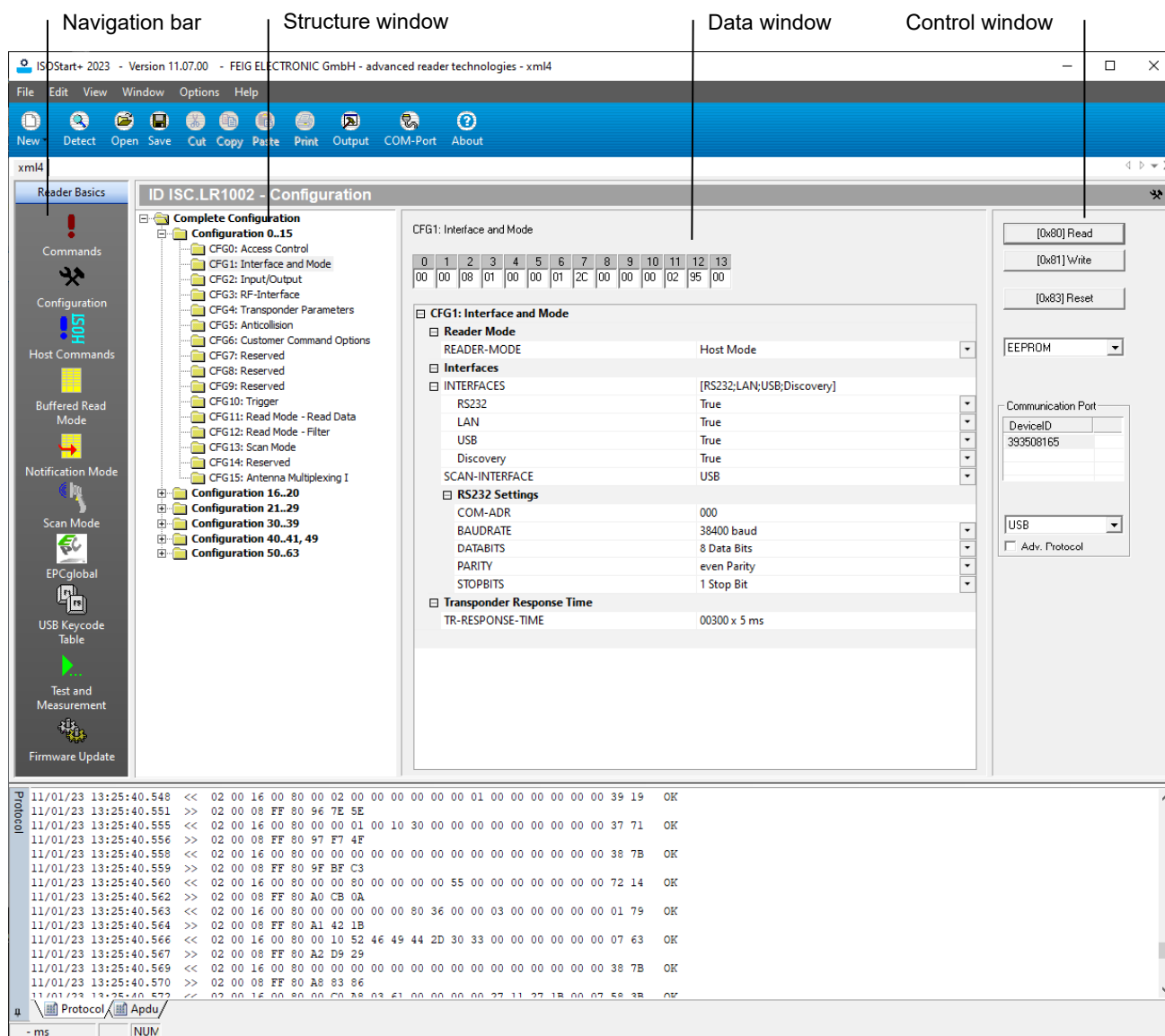


Block Timeout (Timeout):

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 "AirInterface.TimeLimit" (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 FEIG 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 a 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 types will be shown in separate reader editor windows.

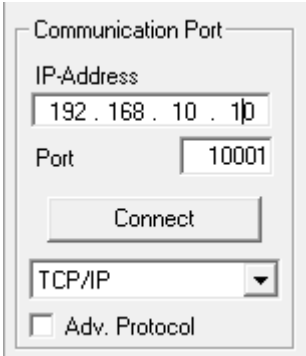


The screenshot shows a window titled "Communication Port". It contains a table with the following data:

DeviceID	
393508165	

Below the table is a dropdown menu set to "USB" and 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.



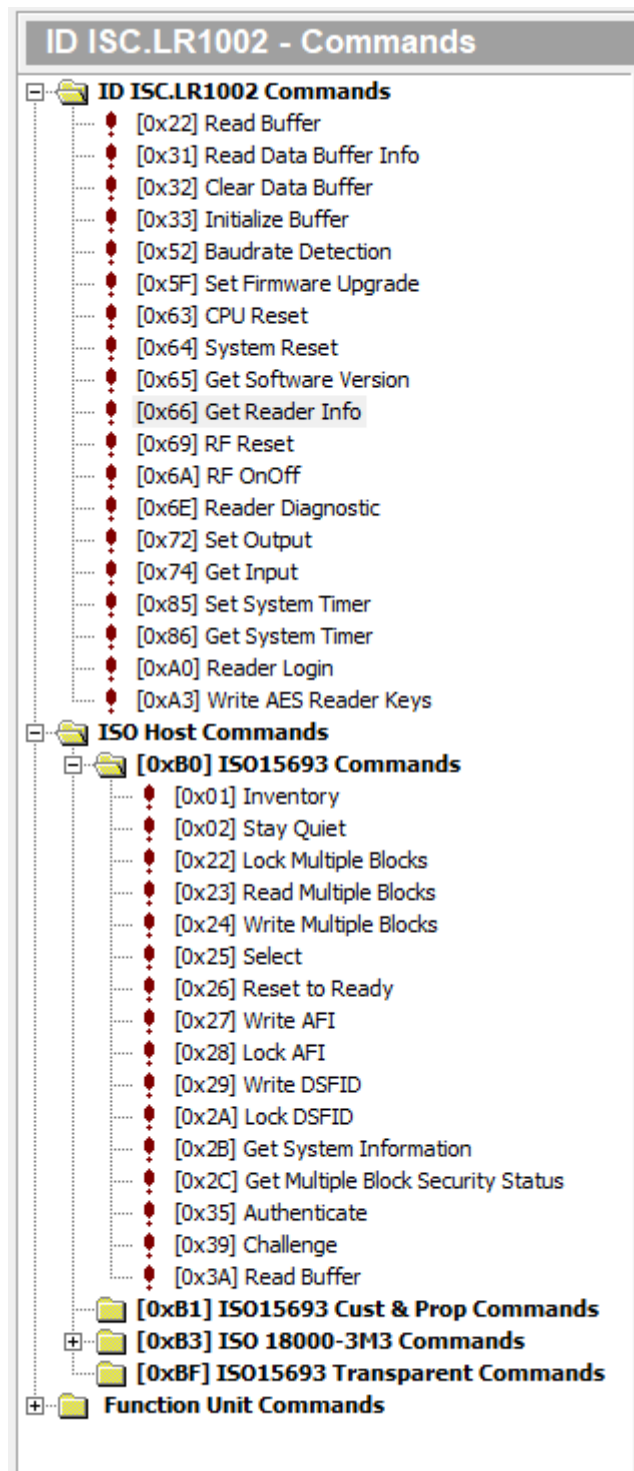
The screenshot shows a window titled "Communication Port". It contains the following fields:

- IP-Address: 192 . 168 . 10 . 10
- Port: 10001
- Connect button
- Protocol dropdown menu: TCP/IP
- Adv. Protocol checkbox: unchecked

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 will be 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.

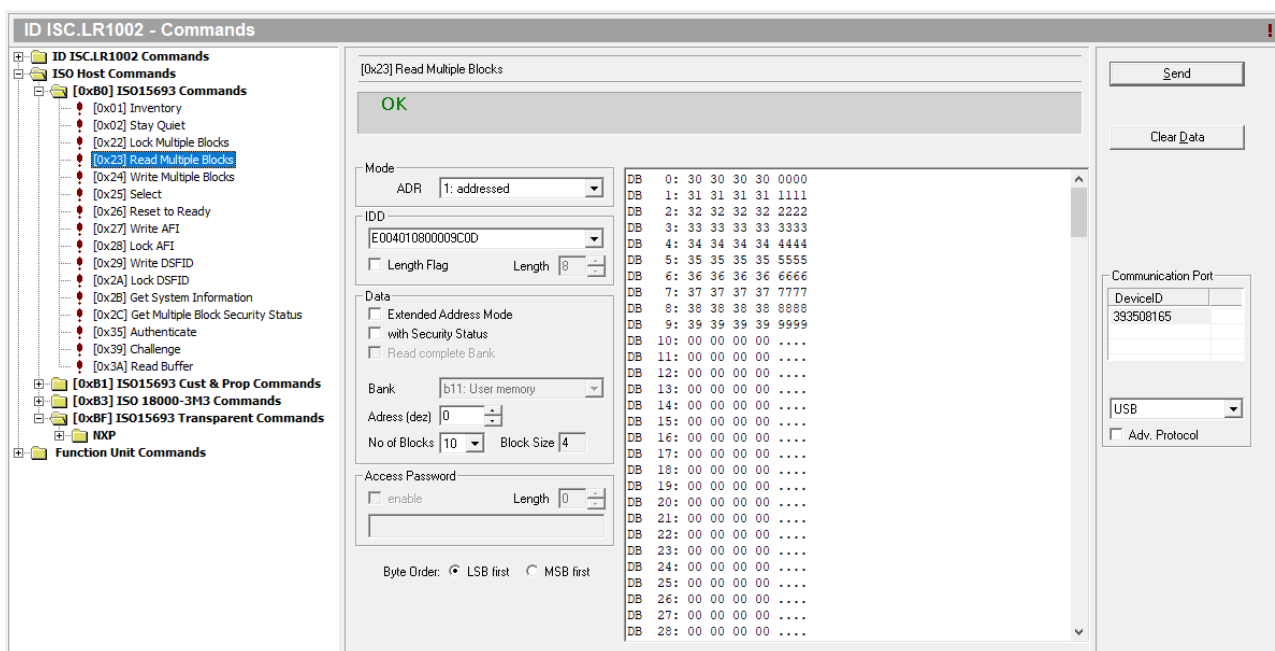
```
3 Transponder in Protocol
  1. Transponder
    TR-TYPE....: 0x03 - ISO 15693 : NXP Semiconductors I-Code SLIX2
    DSFID.....: 0x99
    SNR.....: E004010800009C0D
  2. Transponder
    TR-TYPE....: 0x03 - ISO 15693 : NXP Semiconductors I-Code SLIX-L
    DSFID.....: 0x99
    SNR.....: E004035004F6A1DE
  3. Transponder
    TR-TYPE....: 0x03 - ISO 15693 : STMicroelectronics SA ST25DV16/64K-IE
    DSFID.....: 0x00
    SNR.....: E0022600A133C37D
```

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:

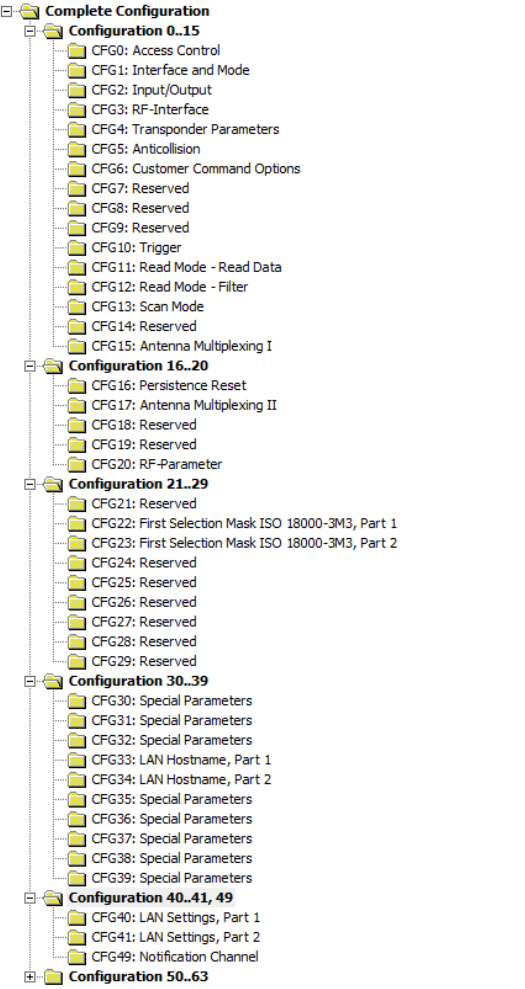
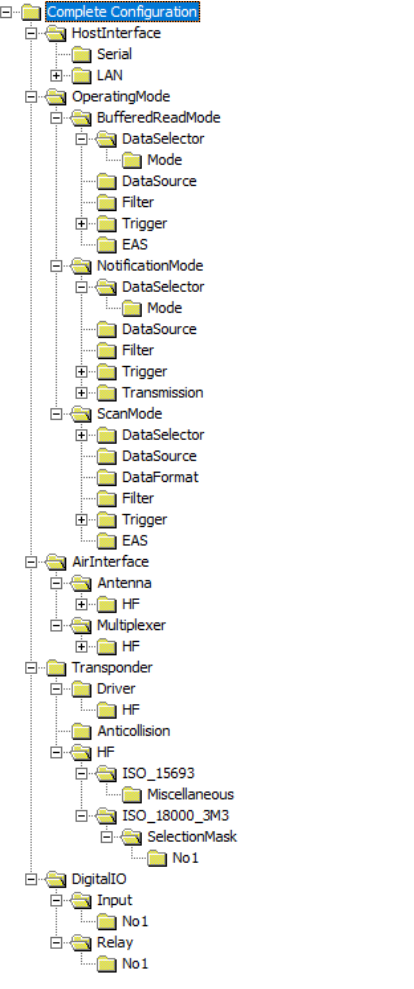
- **Addressed Mode**: the selection of the address mode depends of the transponder type
- **UID**: in addressed mode the UID must be selected
- In addressed mode with UIDs other than 8 bytes, the **Length** field must contain the number of bytes and the **Length Flag** must be enabled
- The flag **Extended Address Mode** is reserved for UHF transponder
- The flag **Security Status** is reserved for HF transponder
- The **Bank** is reserved for UHF transponder and HF GEN2 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



5.4.2. Configuration

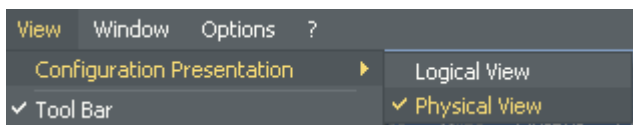
5.4.2.1. Physical View and Logical View

The ISOStart 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 ISOStart 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! ISOStart 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.

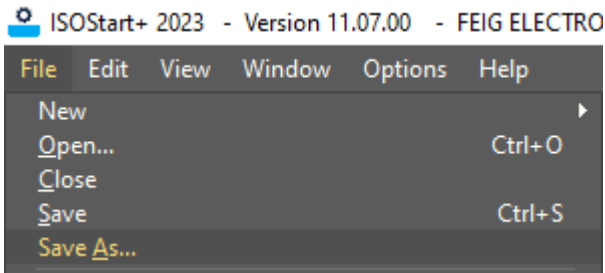
Depending on the selected reader operating mode, the not used parameters can't be modified in the "logical view" of the configuration, they are shown in gray letters.

5.4.2.3. How to Store and Load a Complete Reader Configuration into an XML-File

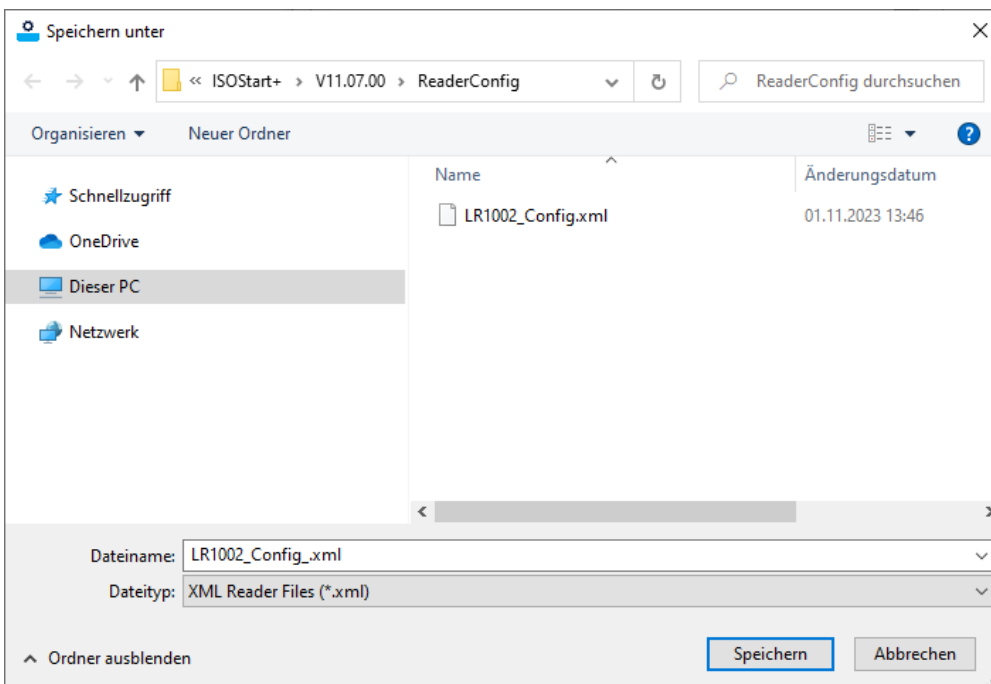
After reading and/or changing the reader configuration in ISOStart it is possible to store the complete reader configuration into an xml-file.

Storing a configuration into an xml-file:

1. Select „File – Save As...“

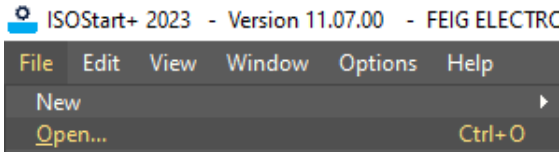


2. Choose a location and a file name and click on store:

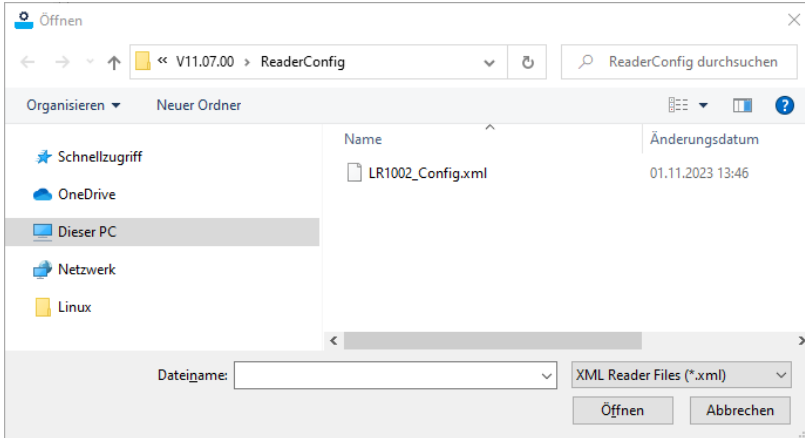


Loading a configuration xml-file into the ISOStart and store it into the reader:

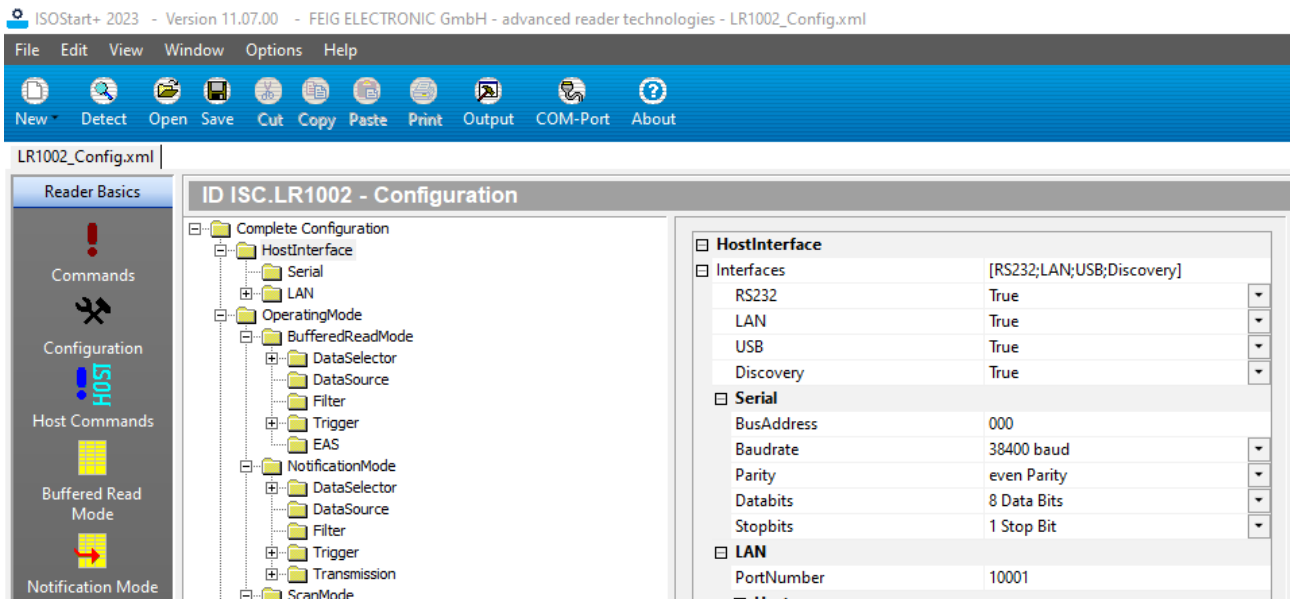
1. Select „File – Open...“



2. Choose the configuration file you want to load into the ISOStart

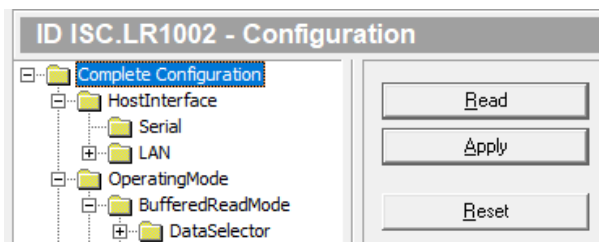


3. The configuration is now visible in ISOStart



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

4.1 Select the „Complete Configuration“ folder and click on „Apply“ into the EEPROM.



Now the complete reader configuration is stored into the reader.

5.4.2.4. Load Reader Profile

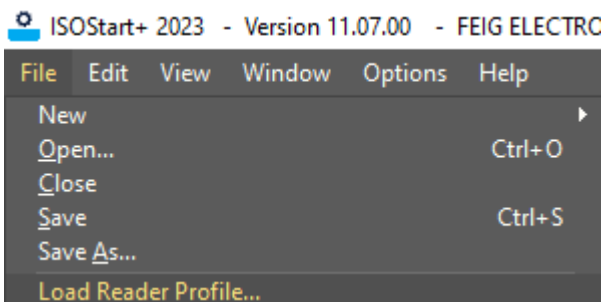
With this special feature it is possible to load a reader configuration file with only a selection of one or more specific parameters. All not enabled parameters will be retained and untouched after loading the profile into the reader. So it is possible for example to change the HF parameter only and 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 to load a profile into the reader:

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

Please follow the instruction step by step:

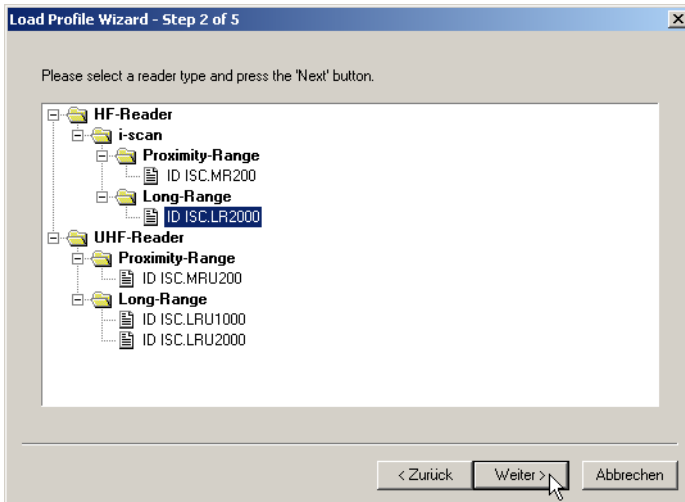
Go to “File” – “Load Reader Profile”.



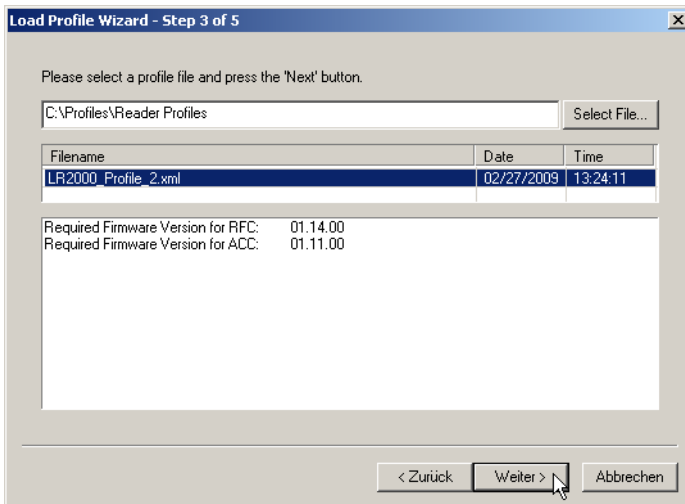
Step 1: Click on the “Next”-button.



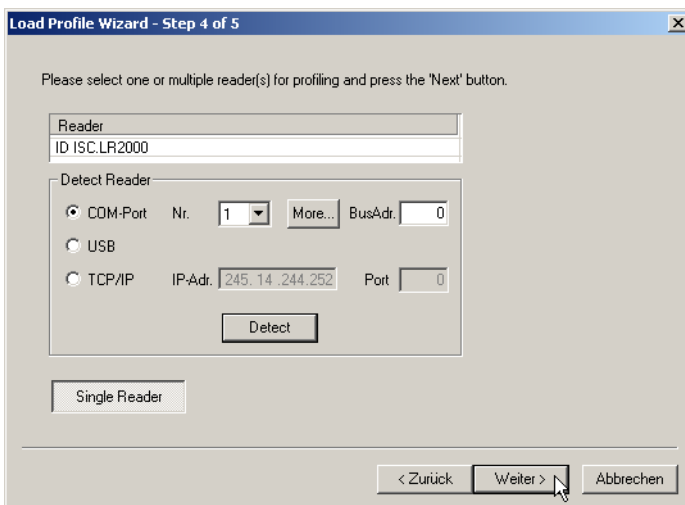
Step 2: Choose the connected reader type.



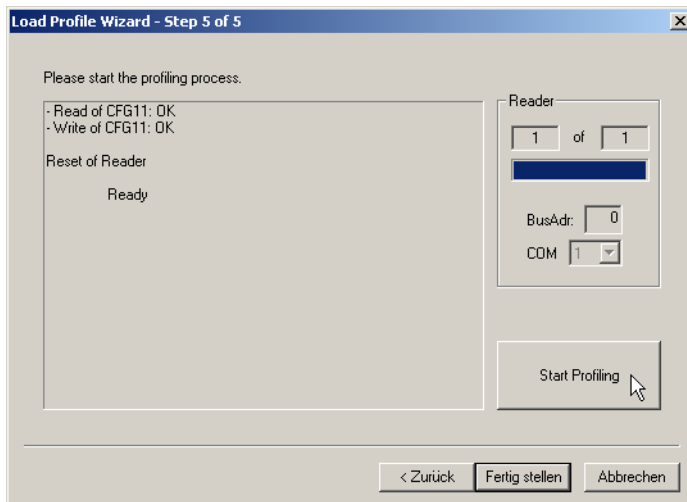
Step 3: Select the new reader configuration profile (xml-file).



Step 4: Detect the connected reader.



Step 5: 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



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 transponders.

The screenshot displays the 'ID ISC.LR1002 - Host Commands (3 Tags in field)' window. It features a table with columns for 'No.', 'Sel...', 'Tag-Type', 'Serial Number', 'DSFID/Info', 'AFI', 'Me...', and 'IC...'. Three tags are listed:

No.	Sel...	Tag-Type	Serial Number	DSFID/Info	AFI	Me...	IC...
1		ISO15693 - NXP Semiconductors	E004010800009C0D	99	00	0000	00
2		ISO15693 - NXP Semiconductors	E004035004F6A1DE	99	00	0000	00
3		ISO15693 - STMicroelectronics SA	E0022600A133C37D	00	00	0000	00

Overlaid on this is the 'Host Command Dialog' window. It contains the following fields and options:

- Command:** '[0x23] Read Multiple Blocks' (dropdown menu)
- Serial Number (UID):** 'E004010800009C0D' (dropdown menu)
- Mode:**
 - Only Data Blocks
 - Security Status and Data Blocks
- ADR:** '1: addressed' (dropdown menu)
- Data:**
 - Address (dez):** 0 (spin box)
 - Block Size:** 4 (spin box)
 - No of Blocks:** 9 (spin box)
- Do it** (button)

On the right side of the main window, there is an 'Inventory' panel with buttons for 'Start', 'Halt', 'Step', and 'Continue'. It also includes checkboxes for 'with RF-Reset' and 'PersResetTime = 0', a '[0x69] BF-Reset' button, and 'Edit...', 'Clear List', and 'Clear Data' buttons. At the bottom, there is a 'Communication Port' section with a 'DeviceID' field containing '393508165' and a 'USB' dropdown menu.

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. Buffered Read Mode



If the reader is configured to work in Buffered Read Mode, you can use the **Buffered Read Mode** button to open a corresponding window for reading out data stored in the buffer.

ID ISC.LR1002 - Buffered Read Mode - 21 Records					
No.	Type	Serial No.	Data Block	Time	Ant No.
1	ISO 15693 GS1-coded	E0025E2E8A584E92	0x05FF40E1	00:46:13.345	1
2	ISO 15693 GS1-coded	E004010800009C0D	0x30303030	00:46:13.440	1
3	ISO 15693 GS1-coded	E004035004F6A1DE	0xD6FCC4E4	00:46:13.455	1
4	ISO 15693 GS1-coded	E0025E2E8A584E92	0x05FF40E1	00:46:21.335	1
5	ISO 15693 GS1-coded	E004010800009C0D	0x30303030	00:46:21.430	1
6	ISO 15693 GS1-coded	E004035004F6A1DE	0xD6FCC4E4	00:46:21.445	1
7	ISO 15693 GS1-coded	E0025E2E8A584E92	0x05FF40E1	00:46:25.975	1
8	ISO 15693 GS1-coded	E004010800009C0D	0x30303030	00:46:26.070	1
9	ISO 15693 GS1-coded	E004035004F6A1DE	0xD6FCC4E4	00:46:26.080	1
10	ISO 15693 GS1-coded	E0025E2E8A584E92	0x05FF40E1	00:46:31.045	1
11	ISO 15693 GS1-coded	E004010800009C0D	0x30303030	00:46:31.135	1
12	ISO 15693 GS1-coded	E004035004F6A1DE	0xD6FCC4E4	00:46:31.150	1
13	ISO 15693 GS1-coded	E0025E2E8A584E92	0x05FF40E1	00:46:36.275	1
14	ISO 15693 GS1-coded	E004010800009C0D	0x30303030	00:46:36.370	1
15	ISO 15693 GS1-coded	E004035004F6A1DE	0xD6FCC4E4	00:46:36.385	1
16	ISO 15693 GS1-coded	E0025E2E8A584E92	0x05FF40E1	00:46:40.515	1
17	ISO 15693 GS1-coded	E004010800009C0D	0x30303030	00:46:40.610	1
18	ISO 15693 GS1-coded	E004035004F6A1DE	0xD6FCC4E4	00:46:40.620	1
19	ISO 15693 GS1-coded	E0025E2E8A584E92	0x05FF40E1	00:46:44.660	1
20	ISO 15693 GS1-coded	E004010800009C0D	0x30303030	00:46:44.755	1
21	ISO 15693 GS1-coded	E004035004F6A1DE	0xD6FCC4E4	00:46:44.765	1

Read Buffer

Start

Halt

Step

Continue

Data-Sets

Clear before Start

Autom. Stop after

ms

Buffer Commands

[0x31] Buffer Info

[0x33] Initialize

Write in File

Disable List

Recommended sequence:

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

With the “Start” button the command **[0x21] Read** or **[0x22] Read** executes the read of the saved transponder data. You can define the number of **Data-Sets** to read using the edit box. The actual number of data sets in the response protocol depends on the amount of data per data set. A maximum of 255 bytes with standard protocol length¹ can be sent with a read command.

¹ The maximum number of bytes with advanced protocol length depends on the reader hardware and can be 4096 or 65535 bytes.

After read out of data sets, the acknowledge command **[0x32] Clear** deletes the transferred data records in the readers internal buffer. Otherwise, the same records are transferred again.

The **Read** and **Clear** command will be now automatically executed after clicking the Start button.

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

5.4.5. 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:

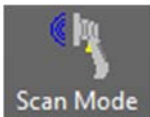
The command **[0x33] Initialize** clears and initializes the readers internal buffer.

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 reader’s 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.

5.4.6. 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.

ID ISC.LR2000 - Scanner Mode

```

-1- 02/26/09 11:31:57.203 E00700001874D10C,00000000,01,0A2C10B7,1409021300
-2- 02/26/09 11:31:57.765 E00700001874D10B,00000000,01,0A2C129C,1409021300
-3- 02/26/09 11:31:57.875 E00700001874D10A,00000000,01,0A2C134B,1409021300
-4- 02/26/09 11:31:59.578 E00700001874D0FD,84747454,01,0A2C1A03,1409021300
-5- 02/26/09 11:32:00.281 E00700001874D103,00000000,01,0A2C1CAB,1409021300
-6- 02/26/09 11:32:01.312 E00700001874D109,00000000,01,0A2C211F,1409021300
-7- 02/26/09 11:32:01.453 E00700001874D107,00000000,01,0A2C2151,1409021300
-8- 02/26/09 11:32:02.343 E00700001874D108,00000000,01,0A2C2471,1409021300
-9- 02/26/09 11:32:02.687 E00700001874D10C,00000000,01,0A2C2679,1409021300
-10- 02/26/09 11:32:03.531 E00700001874D10A,00000000,01,0A2C29B7,1409021300
E00700001874D10B,00000000,01,0A2C29C1,1409021300
-11- 02/26/09 11:32:03.828 E00700001874D0F8,00000000,01,0A2C2A48,1409021300
-12- 02/26/09 11:32:04.906 E00700001874D0FA,00000000,01,0A2C2EC1,1409021300
-13- 02/26/09 11:32:05.078 E00700001874D0F9,85566774,01,0A2C2F1B,1409021300
-14- 02/26/09 11:32:05.343 E00700001874D0FC,6E696C6B,01,0A2C3079,1409021300
-15- 02/26/09 11:32:05.750 E00700001874D103,00000000,01,0A2C31E6,1409021300
E00700001874D106,00000000,01,0A2C325E,1409021300
-16- 02/26/09 11:32:05.828 E00700001874D0FD,84747454,01,0A2C32B3,1409021300
-17- 02/26/09 11:32:05.937 E00700001874D104,00000000,01,0A2C32B8,1409021300
E00700001874D105,00000000,01,0A2C331C,1409021300
-18- 02/26/09 11:32:06.109 E00700001874D101,AAAAAAAA,01,0A2C334E,1409021300
E00700001874D102,00000000,01,0A2C33B7,1409021300
E00700001874D0FB,00000000,01,0A2C33C6,1409021300
E00700001874D0FE,00000000,01,0A2C33D0,1409021300
-19- 02/26/09 11:32:06.250 E00700001874D100,67696546,01,0A2C33DA,1409021300
E00700001874D0FF,00000000,01,0A2C344D,1409021300
-20- 02/26/09 11:32:07.265 E00700001874D107,00000000,01,0A2C3830,1409021300
E00700001874D109,00000000,01,0A2C3849,1409021300
-21- 02/26/09 11:32:07.875 E00700001874D108,00000000,01,0A2C3AA1,1409021300
-22- 02/26/09 11:32:08.640 E00700001874D10C,00000000,01,0A2C3D58,1409021300
-23- 02/26/09 11:32:09.218 E00700001874D10A,00000000,01,0A2C3FD8,1409021300
E00700001874D10B,00000000,01,0A2C3FE7,1409021300
-24- 02/26/09 11:32:09.359 E00700001874D0F8,00000000,01,0A2C4019,1409021300
    
```

Format: ASCII

Line Number
 Date+Time

Output Window: Clear Screen

Show Data

write in file

Communication Port: BusAdr: 0, COM: 1, Serial Port

Adv. Protocol

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 Scan Mode send data to the HID kernel driver of the PC and act 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.

5.4.7. USB Keycode Table



As described in chapter “ScanMode”, USB readers working in Scan Mode, send data to the HID kernel driver of the PC and act like a keyboard. Depending on the keyboard-layout, some keys have a different key-codes. For example, the “Z” and “Y” of the German and English keyboard-layout are swapped. This makes it necessary that the used keycodes of the reader can be modified. This can be done with the Keycode table. The keycodes for the German, French and English keyboard can be found in the installation path of ISOStart (ISOStart vXX.XX.XX\USBKeycodeTables). With the button **Load Table** one of the keycode tables can be opened with ISOStart. By clicking the button **Transfer** the table can be send to the reader. The 127 characters of the ASCII table can be edited in ISOStart and saved (**Save Table**) to a textfile and loaded afterwards to a different reader.

The keycode is limited to 128 items and cannot be extended!

Dec-Value	Hex-Value	ASCII-Char	Key-Code	Comment
0	0x00	NUL	0000	
1	0x01	SOH	0000	
2	0x02	STX	0000	
3	0x03	ETX	0000	
4	0x04	EOT	0000	
5	0x05	ENQ	0000	
6	0x06	ACK	0000	
7	0x07	BEL	0000	
8	0x08	BS	0000	
9	0x09	HT	002B	
10	0x0A	LF	0028	
11	0x0B	VT	0000	
12	0x0C	FF	0000	
13	0x0D	CR	0028	
14	0x0E	SO	0000	
15	0x0F	SI	0000	
16	0x10	DLE	0000	
17	0x11	DC1	0000	
18	0x12	DC2	0000	
19	0x13	DC3	0000	
20	0x14	DC4	0000	
21	0x15	NAK	0000	
22	0x16	SYN	0000	
23	0x17	ETB	0000	
24	0x18	CAN	0000	
25	0x19	EM	0000	
26	0x1A	SUB	0000	
27	0x1B	ESC	0000	
28	0x1C	FS	0000	
29	0x1D	GS	0000	
30	0x1E	RS	0000	
31	0x1F	US	0000	
32	0x20	SPACE	002C	
33	0x21	!	201E	
34	0x22	"	201F	
35	0x23	#	0031	
36	0x24	\$	2021	
37	0x25	%	2022	
38	0x26	&	2023	

ID CPR74 - USB Keycode Table

Dec-Value	Hex-Value	ASCII-Char	Key-Code	Comment
0	0x00	NUL	0000	
1	0x01	SOH	0000	
2	0x02	STX	0000	
3	0x03	ETX	0000	
4	0x04	EOT	0000	
5	0x05	ENQ	0000	
6	0x06	ACK	0000	
7	0x07	BEL	0000	
8	0x08	BS	0000	
9	0x09	HT	002B	
10	0x0A	LF	0028	
11	0x0B	VT	0000	
12	0x0C	FF	0000	
13	0x0D	CR	0028	
14	0x0E	SO	0000	
15	0x0F	SI	0000	
16	0x10	DLE	0000	
17	0x11	DC1	0000	
18	0x12	DC2	0000	
19	0x13	DC3	0000	
20	0x14	DC4	0000	
21	0x15	NAK	0000	
22	0x16	SYN	0000	
23	0x17	ETB	0000	
24	0x18	CAN	0000	
25	0x19	EM	0000	
26	0x1A	SUB	0000	
27	0x1B	ESC	0000	
28	0x1C	FS	0000	
29	0x1D	GS	0000	
30	0x1E	RS	0000	
31	0x1F	US	0000	
32	0x20	SPACE	002C	
33	0x21	!	201E	
34	0x22	"	201F	
35	0x23	#	0031	
36	0x24	\$	2021	
37	0x25	%	2022	
38	0x26	&	2023	

Communication Port

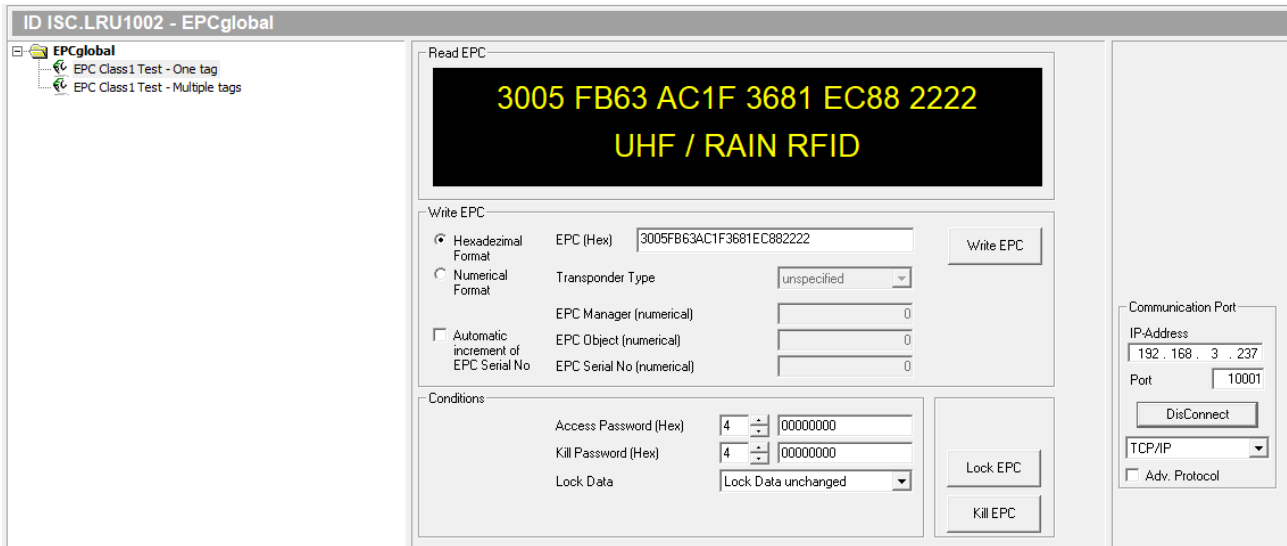
DeviceID	400052260

Adv. Protocol

5.4.8. EPCglobal



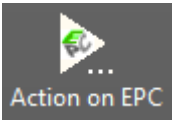
If the reader is configured to work in Host-Mode, you can use the **EPCglobal** button to open a corresponding window for working with EPC (UHF) transponder class1 GEN2 or 18000-6-B/C.



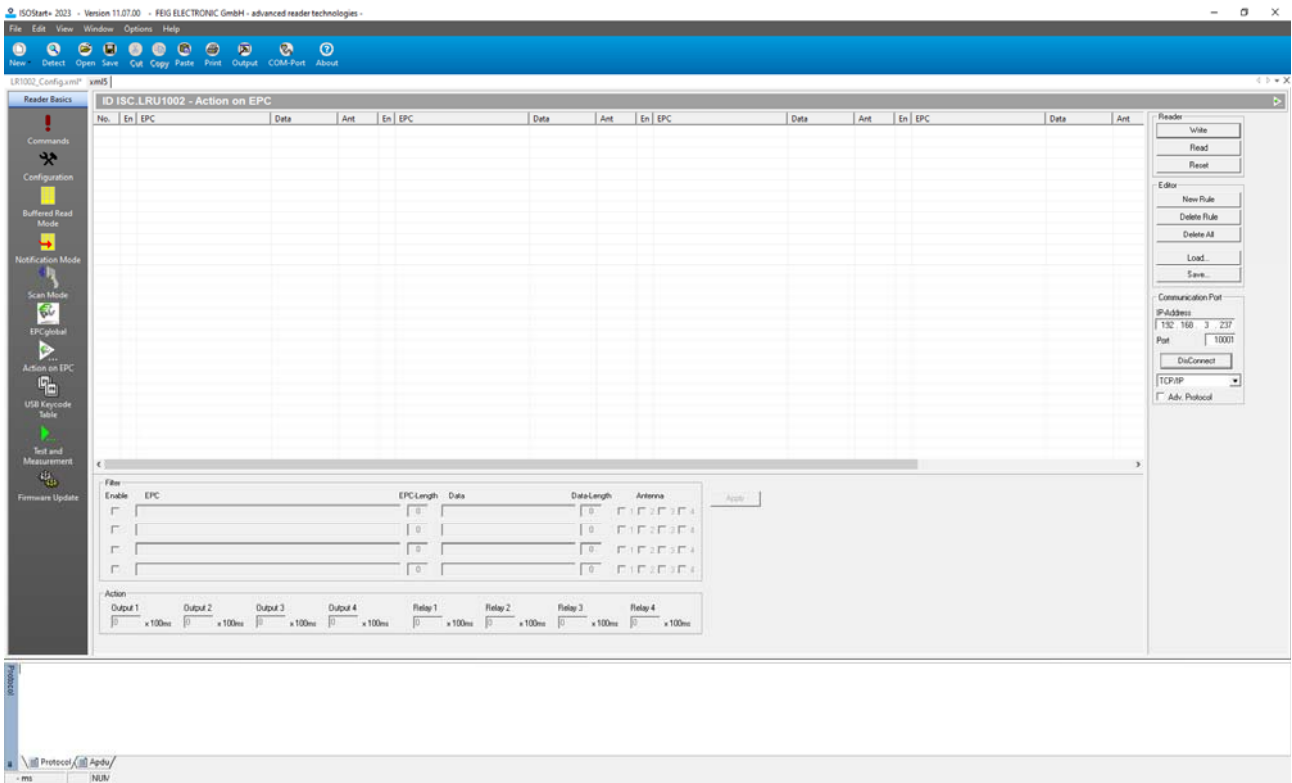
For working with one EPC transponder, the item **EPC Class 1 Test – One Tag** must be selected. The dialog window allows the **Write**, **Lock** and **Kill** of an UHF-EPC transponder. For HF-EPC transponders, only the **Write** button is accessible.

These functions should be used with care because of the risk of irreversible damage of the EPC transponder. More information about the access and kill password and the lock data can be found in the GS1 specification *EPC™ Radio-Frequency Identity Protocols Generation-2 UHF RFID Standard* ready for download from the GS1 homepage www.gs1.org.

5.4.9. Action on EPC



The **Action on EPC** group offers the possibility to define rules for automatic output events. This group is limited to some UHF readers.



Please refer to the Application Note N40612-0e-ID-B.pdf for detailed description.

5.4.10. Test and Measurement



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

ISO Inventory:

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.

No.	Tag-Type	Serial Number	DSFID/Info
1	ISO15693 - ...	E0025E2E8A584E92	FF
2	ISO15693 - ...	E004010800009C0D	99
3	ISO15693 - ...	E004035004F6A1DE	99

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.

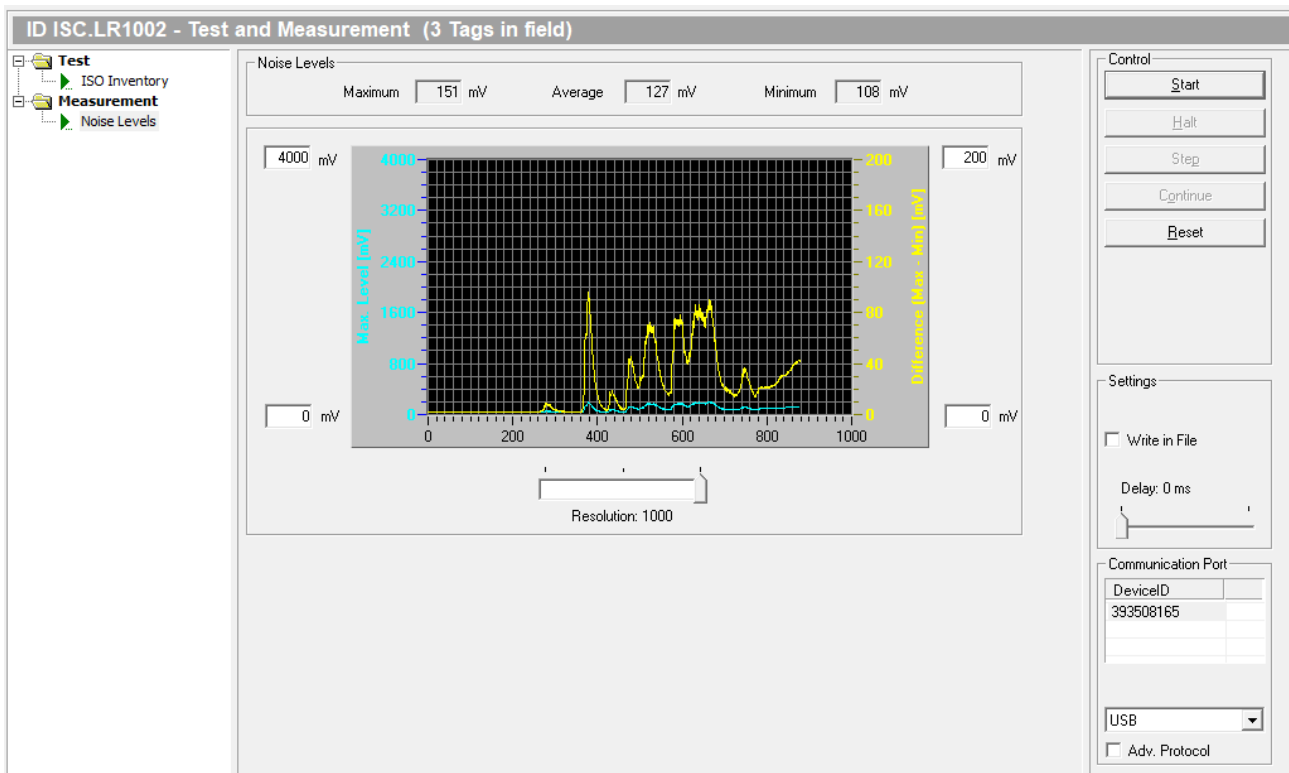
Noise Level:

The second **Test and Measurement** function **Noise Level** is available only for the HF Long Range Reader MR102, LR1002 and LR2500.

This function permits continuous measurement of the noise levels which are transmitted through the antennas. This allows time changes in the noise levels in the antenna surroundings to be graphically detected over a longer period of time.

The displayed voltage ranges for the maximum level can be freely defined. The **Resolution** slider can be used to vary the displayed time range on-the-fly into three ranges.

For the execution of this function the same control buttons are available as for the ISO Inventory function.



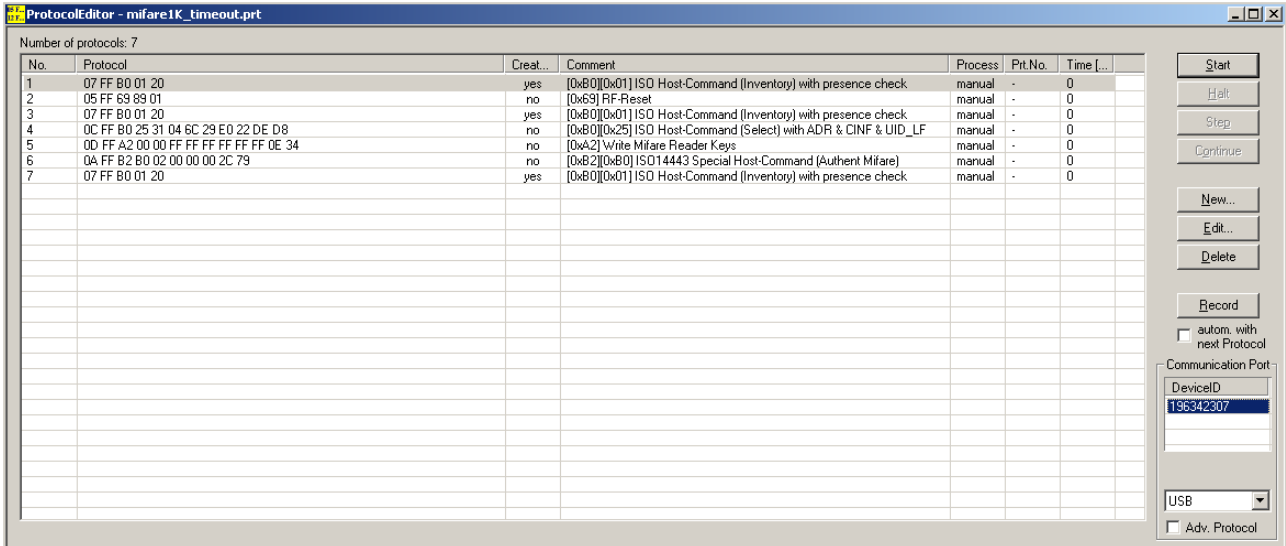
For additional information about noise level, refer to the manual for the corresponding antennas.

Activating the **write in file** function allows the noise level data to be saved to a file. The filename is built with the prefix NL followed by the date, e.g. NL060717.txt.

5.5. The Protocol Editor

The protocol editor is a helpful tool for checking the response of the FEIG HF or UHF 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.

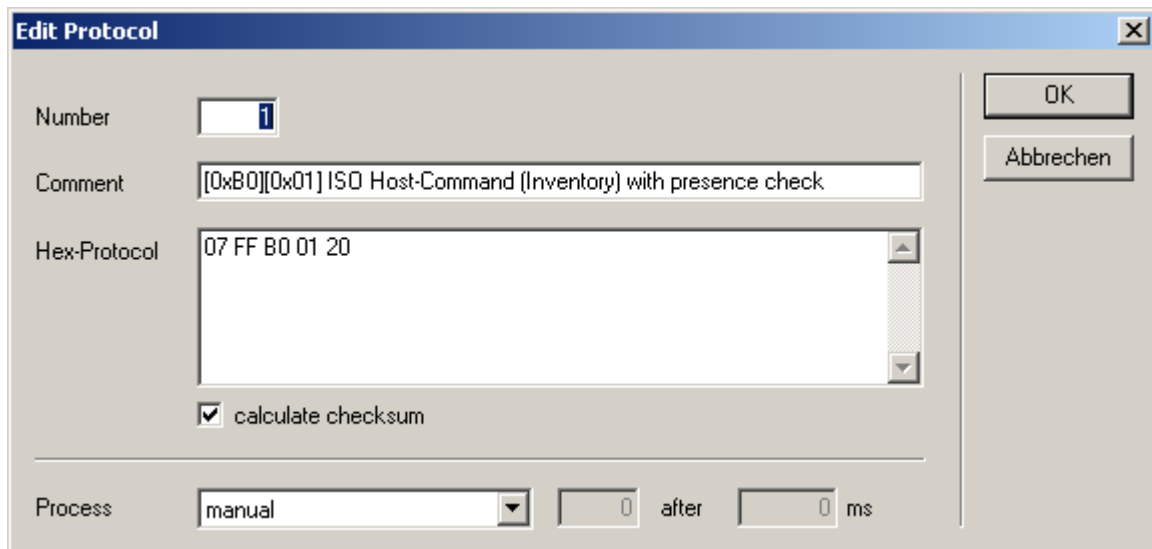
With the protocol editor one can collect any protocols and the scheduling of the protocol is arbitrary.



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.

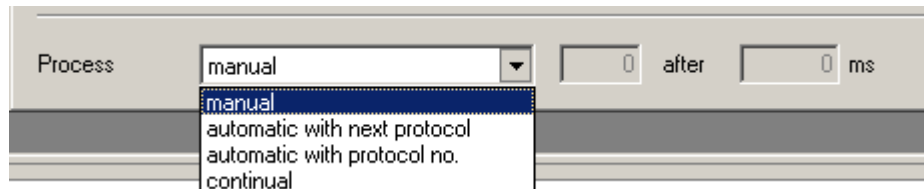


Every protocol item must have an individual **item number**. After changing this number the protocol item can be moved in the list with the context menu one step up or one step down to have a continual increasing order.

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.

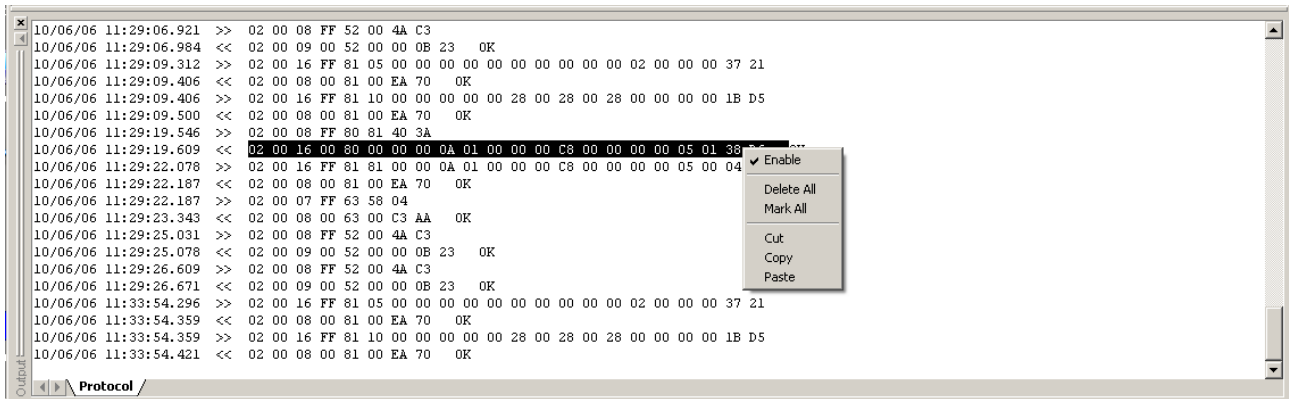
The hex protocol must contain the complete protocol frame except the checksum, which is calculated and added internally if the option **calculate checksum** is set. Recorded and unmodified protocols have a valid protocol checksum and the option calculate must not be set.

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 Communication Problems

If you have communication problems with the FEIG 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 try the broadcast 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 Physical Serial Port and Virtual COM Ports \(Bluetooth / USB Converter\)](#):
- 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 if a COM port is used.

7. Uninstalling ID ISOStart

To uninstall **ID ISOStart** go to the Start Menu → Settings → Control Panel → Add/Remove Programs. From the Install/Uninstall tab look for the entry **ID ISOStart** 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 ISOStart** will be removed from your computer.