isFF USB

Thorsis Technologies GmbH

isFF USB

FOUNDATION Fieldbus USB Interface

THORSIS
TECHNOLOGIES

CERTIFICATE OF CONFORMITY

according to EC Directive 2014/30/EU (electromagnetic compatibility) of 26 February 2014.

We hereby declare, that the device indicated below in its design and construction, is in conformity with the essential safety and health requirements of the EC Directive 2014/30/EU.

⚠ **CHANGES OR MODIFICATIONS NOT APPROVED BY THORSIS TECHNOLOGIES VOID THE VALIDITY OF THE DECLARATION.**

Device type	Order number
isFF USB	16290-0101

STANDARD USED:
EN 61326-1:2013

Manufacturer

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1.   isFF USB

The isFF USB interface supports an easy and quick commissioning of FOUNDATION Fieldbus devices. Due to its USB bus power supply and plug-and-play functionality it is ready to use within seconds.
Every FDT frame application can be used with the device as it can be accessed via an FDT 1.2-compliant communication-DTM.

The isFF USB is able to power one FOUNDATION Fieldbus Field device with the integrated power source. Therefore it is suitable especially as a tool for bench top commissioning and/or faster starting up, expensive wiring and additional power supply can be dropped. A powerless connection to an existing FF network segment is also possible.

1.1 Technical details

Interface	isFF USB
USB Interface	USB 2.0
Controller	Motorola Coldfire
FF-Interface	H1, Linkmaster
Transfer rate	31,25 kBit/s
Power supply	22 ... 24 V, max. 15 mA
Flash	256 kByte
RAM	256 kByte
Temperature range	0° C ... 60° C
Dimensions (Basic device)	105 x 54 x 30 mm
Dimensions (Converter)	36 x 35 x 16 mm
Driver software	Windows 7,8 & 10
Available software	FDT1.2 (isFF CommDTM)

1.2 Delivery content

FOUNDATION Fieldbus-USB-Interface „isFF USB" and a media access converter, communication DTM, driver-, configuration- and test-software as well as documentation in German and English on CD.

2. Installation and commissioning

2.1 Installation of the driver software

The driver software package isFF Driver contains a Dynamic Link Library (DLL) which allows the access to the
FF firmware under the operating systems Windows 7, 8 and 10.
The actual operating system is detected automatically by the driver DLL.

Installation process:

- Login as administrator.
- Insert the installation CD-ROM.
- The setup starts with an autoroutine; proceed according to the instructions displayed on the screen.
  Should Autorun be disabled on your machine, run the setup.exe on the installation CD.
- The installation of the driver software is done in the standard program directory of the target machine under:
  C:\Program Files (x86)\Thorsis Technologies\isFF_Driver_64bit
  respectively **C:\Program Files (x86)\Thorsis Technologies\isFF_Driver_32bit**
- The installation of the isFF CommDTM is done in the standard program directory of the target machine under:
  C:\Program Files (x86)\Thorsis Technologies\isFF CommDTM

## 2.2 Installation of the hardware

The isFF USB interface consists of two components: the basic unit and the adapter for the FF-bus connection.
In order to work with an FF network, both components must always be operated together.
The isFF USB is powered via the USB cable, a separate power cable is not necessary.

2.2.1 Connection Assignments
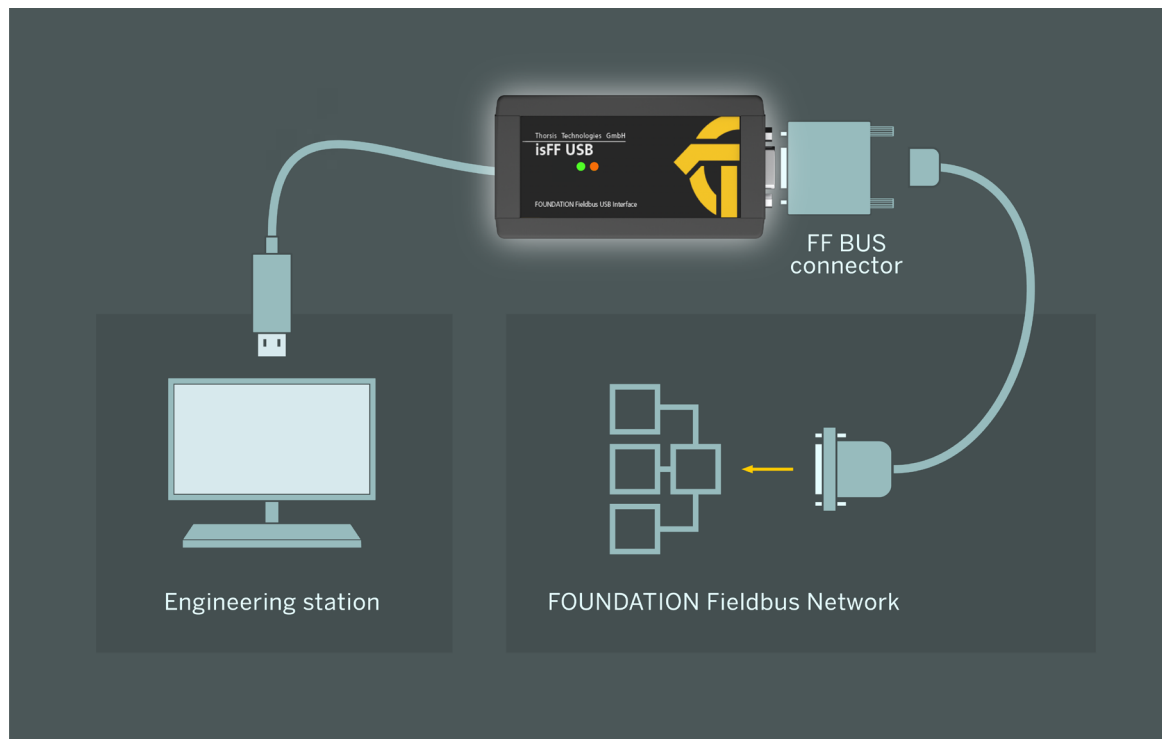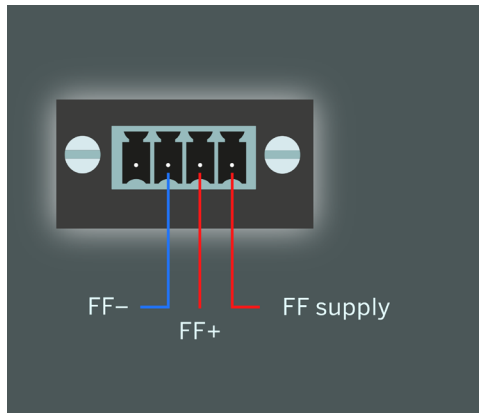
Pin assignment FF connection

FF− FF+ FF supply
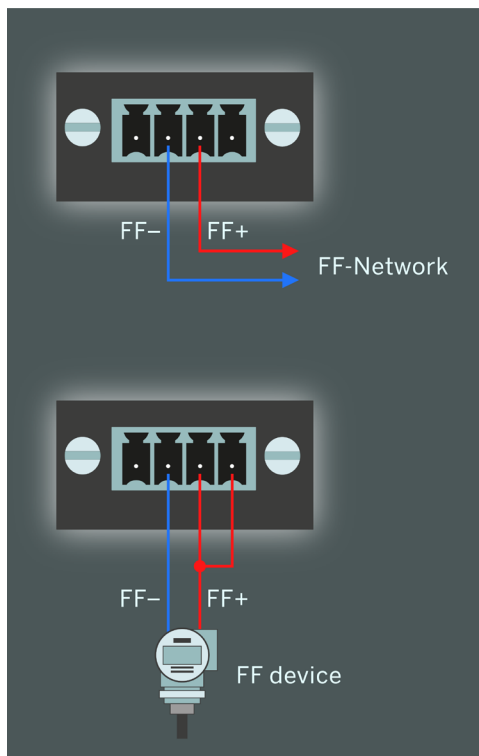
Connection to an existing FF bus
The adapter enables you to connect to an existing FF-Network via the signal lines FF+ and FF-.

FF− FF+ FF-Network

Connection of a single field device
If you want to connect a single FOUNDATION Fieldbus Field device to the isFF USB interface, the adapter for the bus offers another pin to supply the field device. For this purpose, the Signal line FF+ has to be connected to the voltage output.

FF− FF+ FF device

3.   isPlorer

The driver software includes the demo program isPlorer to allow first steps with the isFF USB adapter.
With the demo program the correct functioning of the hardware or the correct installation of the driver software can be tested.
In addition, the software enables simple tasks of commissioning of FOUNDATION Fieldbus field devices.
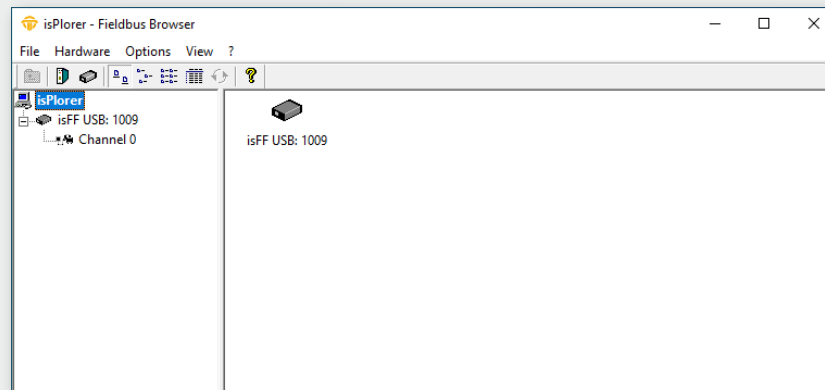

Before starting the software, you should connect the isFF USB Interface to your PC. After the subsequent start of isPlorer the device appears on the left in a tree view along with the FF-connector accompanying the appliance.
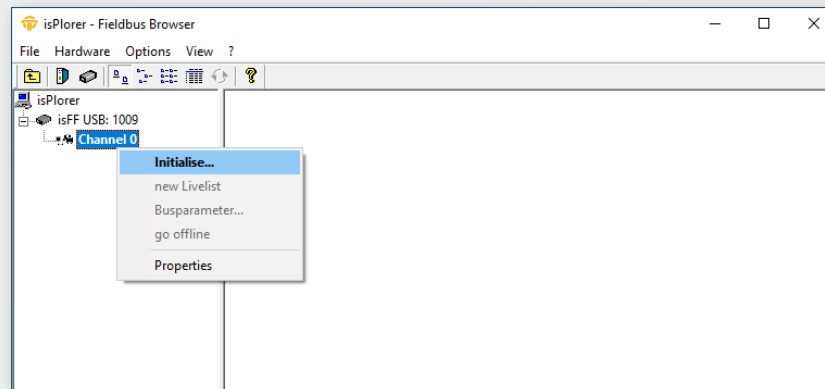

By double-clicking or selecting the menu option "Initializing ..." from the context menu the device is initialized.
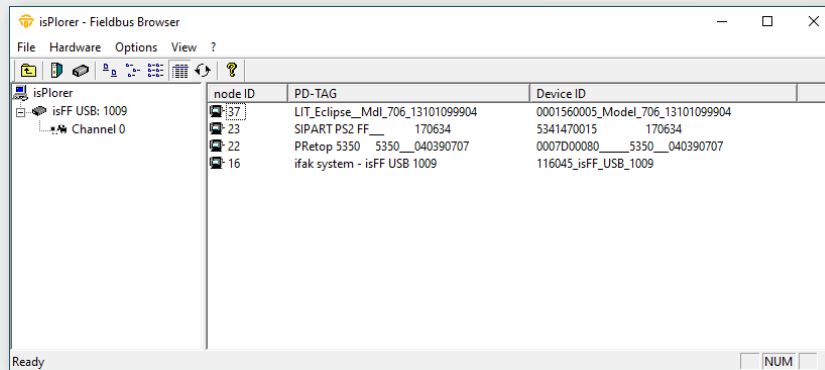
After completion of the initialization phase, the program isPlorer scans the bus for connected field devices and displays them in the right pane. In the detail view, further information such as the device ID or the PD-Tag of the connected field devices are shown.
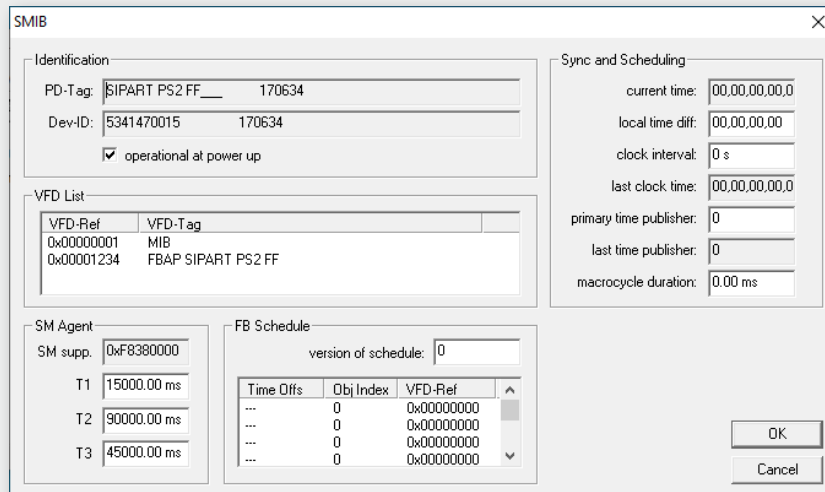
In this view, it is possible to change the address and PD-Tag of a field device and to display system information of the field device.
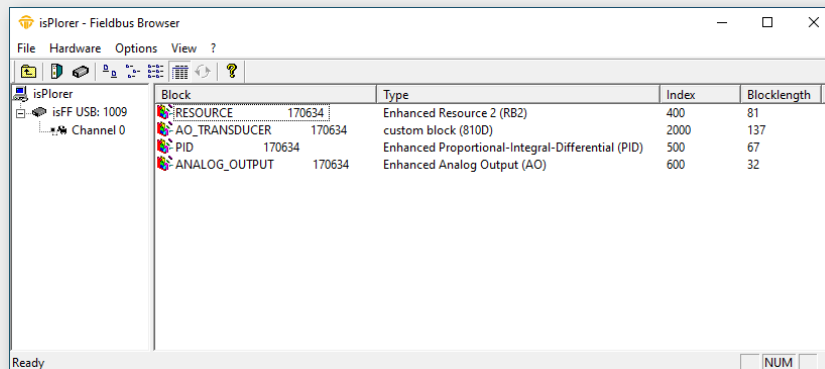
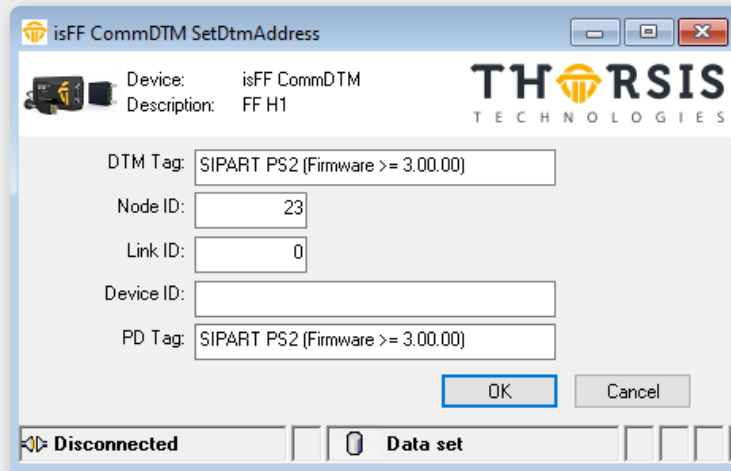By double-clicking on a field device you can browse blocks existing in the field device.
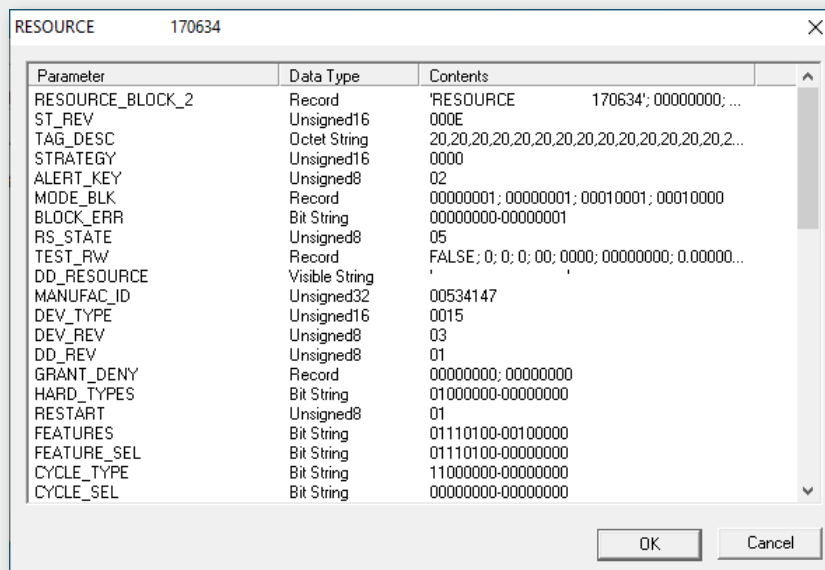
By double click on such a block, the program shows the block parameters.

4. Communication-DTM isFF CommDTM

The isFF CommDTM is a CommDTM for the interfaces isFF USB. The DTM offers communication access via the isFF Channel. This chapter describes the configuration of the isFF CommDTM. The configuration can be accessed by selecting the function "Channel Configuration" offered by the isFF CommDTM. The configuration dialog is only available in offline mode, i.e. the DTM is not connected.

The software isFF CommDTM can be integrated into any standalone frame application (e.g. PACTware, FieldCare). After the installation of the driver software (see „2.1 Installation of the driver software" on page 6), the CommDTM is ready for use. In order to actually use the CommDTM, it is necessary to start the frame application.
Then, the device catalogue of the Frame Application has to be updated. Now, the isFF CommDTM is registered and ready for work.

4.1 Connecting DeviceDTMs

DTM-Tag
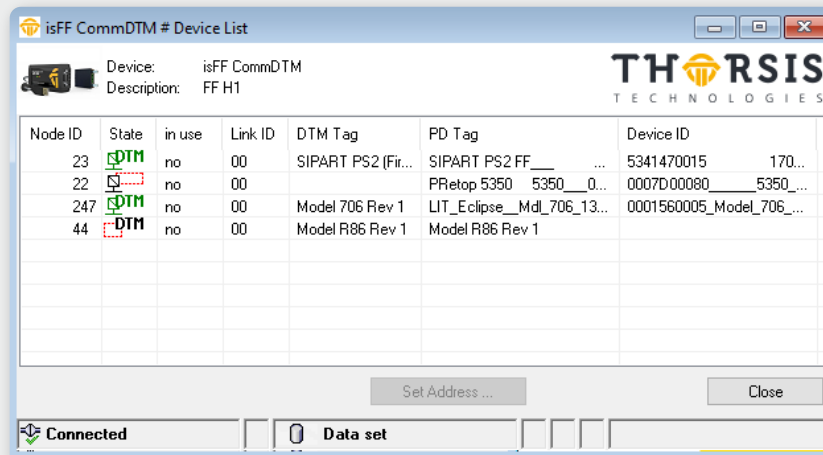This parameter is set as new tag in the DeviceDTM.

Node ID
This is the address of the device that the DeviceDTM should communicate with.

4.2   Device List

The FDT specification provides the scan request function for a CommDTM, with which it is possible to obtain a list of on the bus connected devices from a CommunicationDTM. In the isFF CommDTM this functionality is implemented by default. According to specification a scan request is permitted only in the DTM states ONLINE, COMMUNICATIONSET or GOING ONLINE. The isFF CommDTM follows the specification and devices on the bus can only be queried after the connection has been established.
The devices found are given by means of an XML document to the frame application and should then be presented to the user.
The isFF CommDTM offers in addition to the function ScanRequest an own ActiveX to scan the FF bus for devices. This ActiveX provides information about FF devices (vendor, type, channel information) that are connected to the FF networks. If this ActiveX is called in an offline situation, it provides a list of Child-DTMs, all with no associated device.

The list of connected devices displays the essential information about the devices on the FF bus. This information has the following meaning:

Node ID
The address of the device.

State

 This entry represents a Child-DTM. This DTM is not associated to any existing FF device.

 This entry represents an existing FF device. No Child-DTM is configured for this device.

 This entry represents a FF device which is configured with a Child-DTM.

In Use
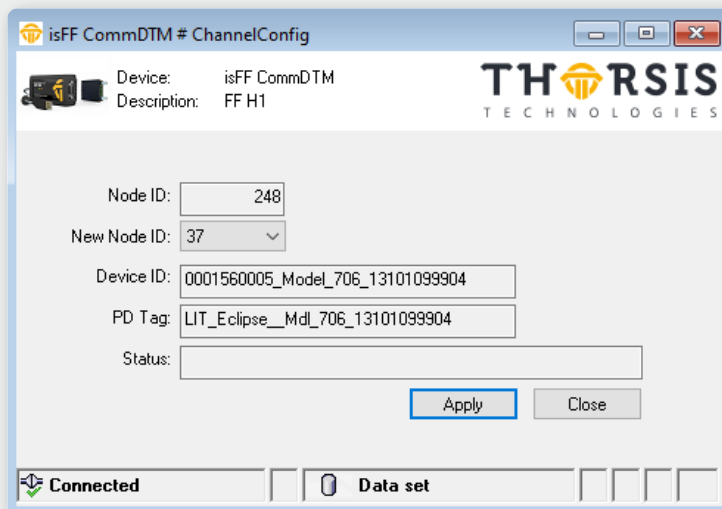The DTM/device is used in a communication connection.

Tag
The tag of the device stored in the device itself.
The button "Change Address" is used to open the ActiveX to change the address of the selected DTM and/or slave device.

Please note: Depending on the state the "Change Address" dialog box changes.

4.3   Changing Node ID

With the help of this ActiveX the Node ID for an FF device can be set to a new value. This menu is only available for slaves without Device DTM.

Node ID
This is the current address of the device on the FF bus. The content of this field is set automatically when the ActiveX is opened.

New Node ID
This is the desired new address for the device.

Change Node ID
Pressing this button starts the address change.

State
Displays the status of the address change.

5. Document History

Version	Date	Description
1.0	19.04.2016	initial version
1.1	22.09.2020	new texts and pictures

© *last change on 2. October 2020*