
isFF USB

MANUAL



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

Thorsis Technologies GmbH
Oststr. 18
39114 Magdeburg
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Magdeburg, 2023-01-31

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General Manager

UK DECLARATION OF CONFORMITY

Thorsis Technologies GmbH declares as manufacturer under sole responsibility, that the products down in the list complies with the requirements of following UK legislation:

- S.I. 2019/1246 The Product Safety, Metrology and Mutual Recognition Agreement (Amendment)(EU Exit) regulations 2019
- S.I. 2020/852 The Product Safety and Metrology (Amendment)(EU Exit) regulations 2020
- S.I. 2016/1091 The Electromagnetic Compatibility Regulations 2016
- S.I. 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

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STANDARDS USED: EN 61326-1:2013
CERTIFICATION: NONE

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CA**

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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.

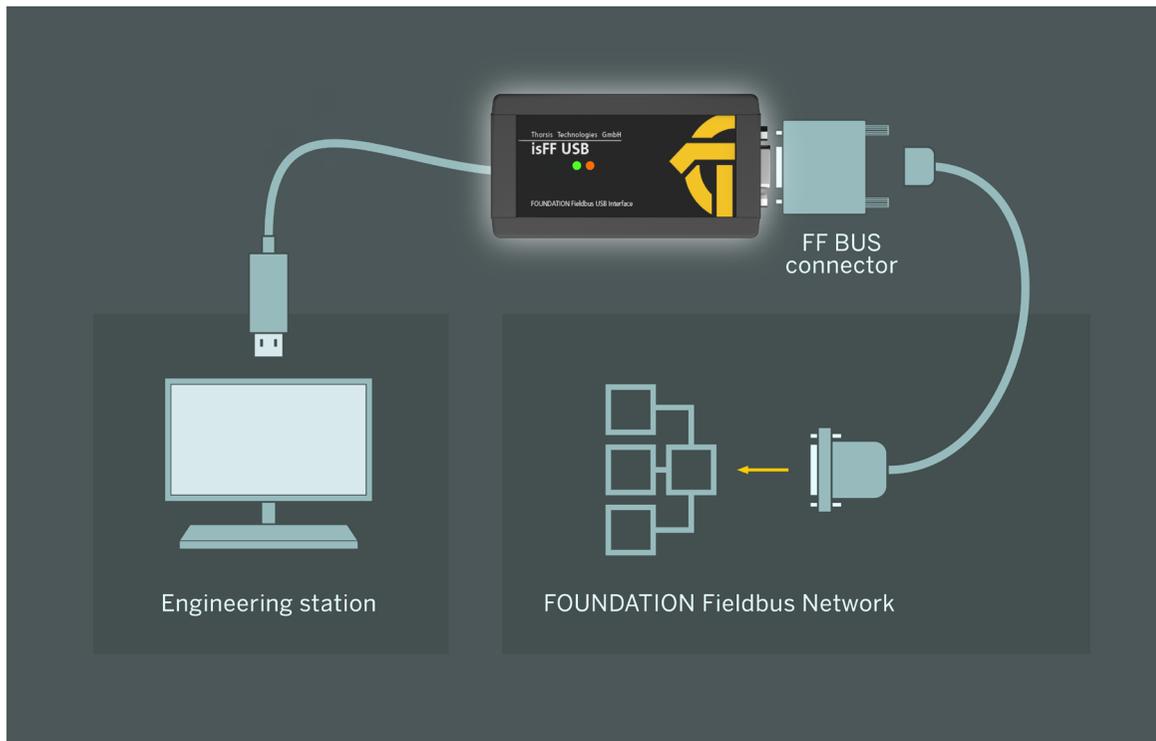
Installation process:

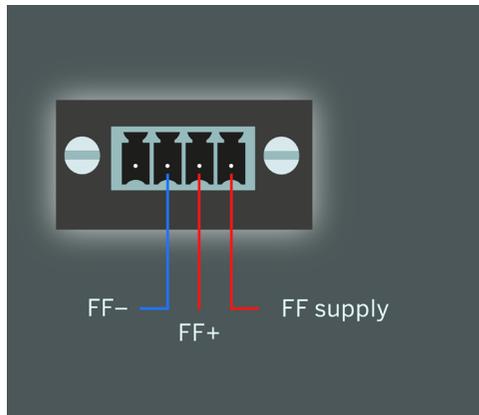
- Login as administrator.
- Insert the installation CD-ROM.
- The setup starts with an autoroutine; proceed according to the instructions displayed on the screen.
Should Autorun be disabled on your machine, run the setup.exe on the installation CD.
- The installation of the driver software is done in 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

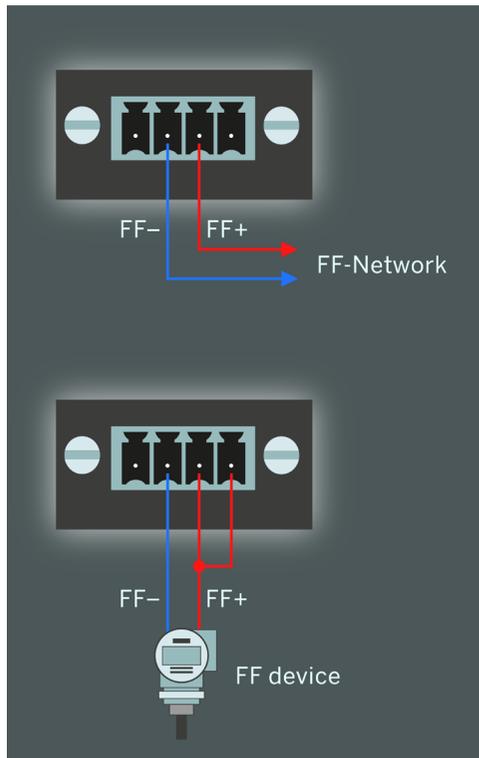
The isFF USB interface consists of two components: the basic unit and the adapter for the FF-bus connection. In order to work with an FF network, both components must always be operated together. The isFF USB is powered via the USB cable, a separate power cable is not necessary.

2.2.1 Connection Assignments





Pin assignment FF connection



Connection to an existing FF bus

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

Connection of a single field device

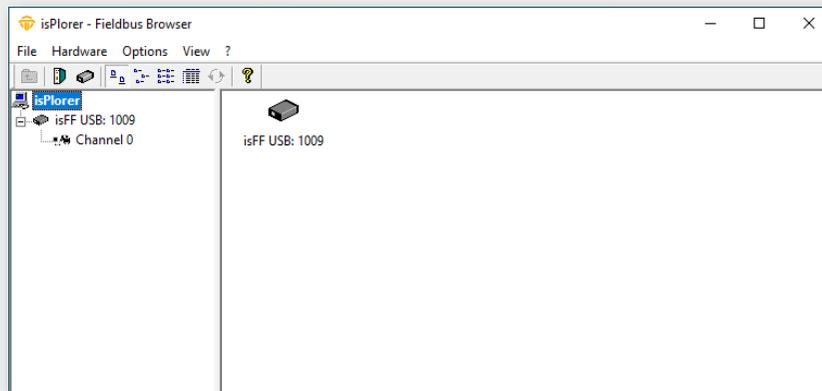
If you want to connect a single FOUNDATION Fieldbus Field device to the isFF USB interface, the adapter for the bus offers another pin to supply the field device. For this purpose, the Signal line FF+ has to be connected to the voltage output.

3. isPlorer

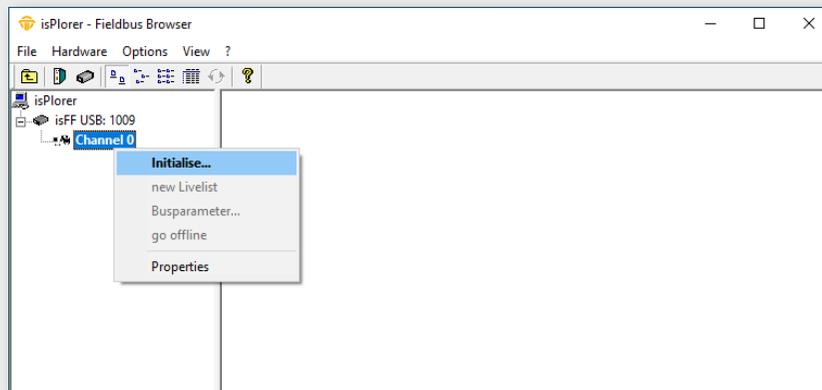
The driver software includes the demo program isPlorer to allow first steps with the isFF USB adapter.

With the demo program the correct functioning of the hardware or the correct installation of the driver software can be tested.

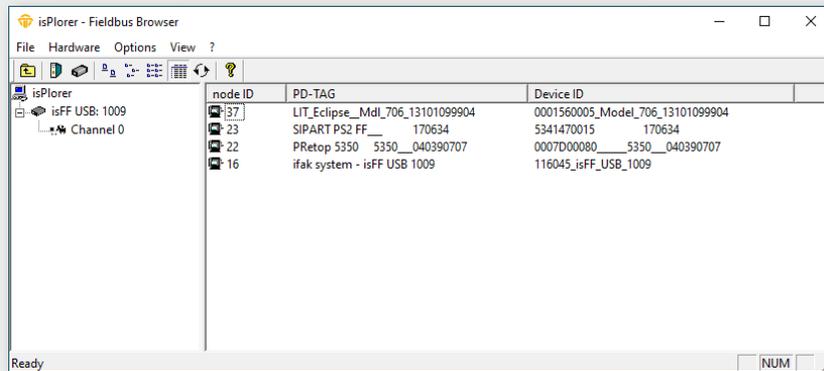
In addition, the software enables simple tasks of commissioning of FOUNDATION Fieldbus field devices.



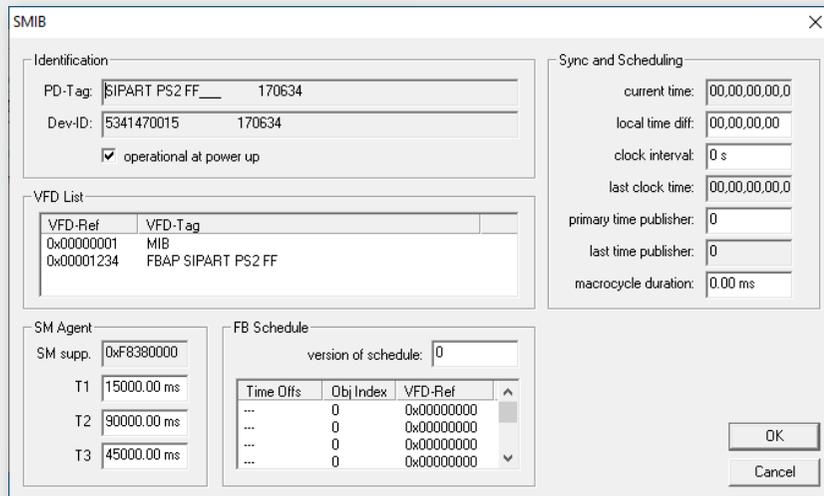
Before starting the software, you should connect the isFF USB Interface to your PC. After the subsequent start of isPlorer the device appears on the left in a tree view along with the FF-connector accompanying the appliance.



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 isPlover 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.

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

The screenshot shows a configuration window titled "isFF CommDTM SetDtmAddress" with the THORSIS TECHNOLOGIES logo. It contains the following fields and values:

- Device: isFF CommDTM
- Description: FF H1
- DTM Tag: SIPART PS2 (Firmware >= 3.00.00)
- Node ID: 23
- Link ID: 0
- Device ID: (empty)
- PD Tag: SIPART PS2 (Firmware >= 3.00.00)

Buttons: OK, Cancel

Status bar: Disconnected, Data set

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 screenshot shows a window titled "isFF CommDTM # Device List" with the THRSIS TECHNOLOGIES logo. It displays device information for "isFF CommDTM" (Description: FF H1). The table below lists the devices found on the bus.

Node ID	State	in use	Link ID	DTM Tag	PD Tag	Device ID
23	DTM	no	00	SIPART PS2 (Fir...	SIPART PS2 FF_...	5341470015 170...
22	DTM	no	00		PRetop 5350 5350_0...	0007D00080_5350...
247	DTM	no	00	Model 706 Rev 1	LIT_Eclipse_Mdl_706_13...	0001560005_Model_706...
44	DTM	no	00	Model R86 Rev 1	Model R86 Rev 1	

At the bottom of the window, there are buttons for "Set Address ..." and "Close", and a status bar showing "Connected" and "Data set".

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.

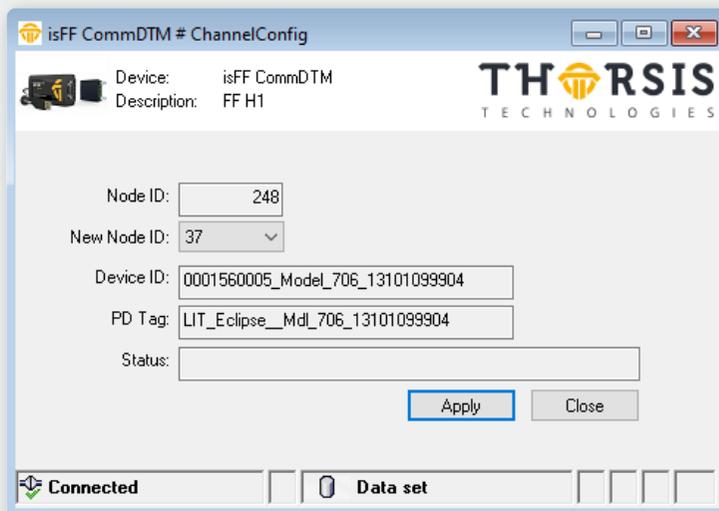
Tag

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	04.19.2016	initial version
1.1	09.22.2020	new texts and pictures
1.2	04.17.2023	added UK Conformity Assessed marking

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