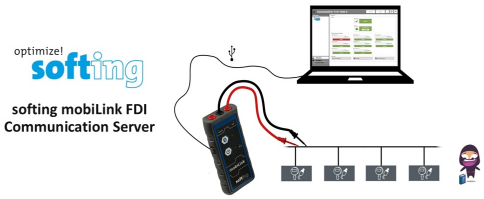

softing mobiLink FDI Communication Server User Guide

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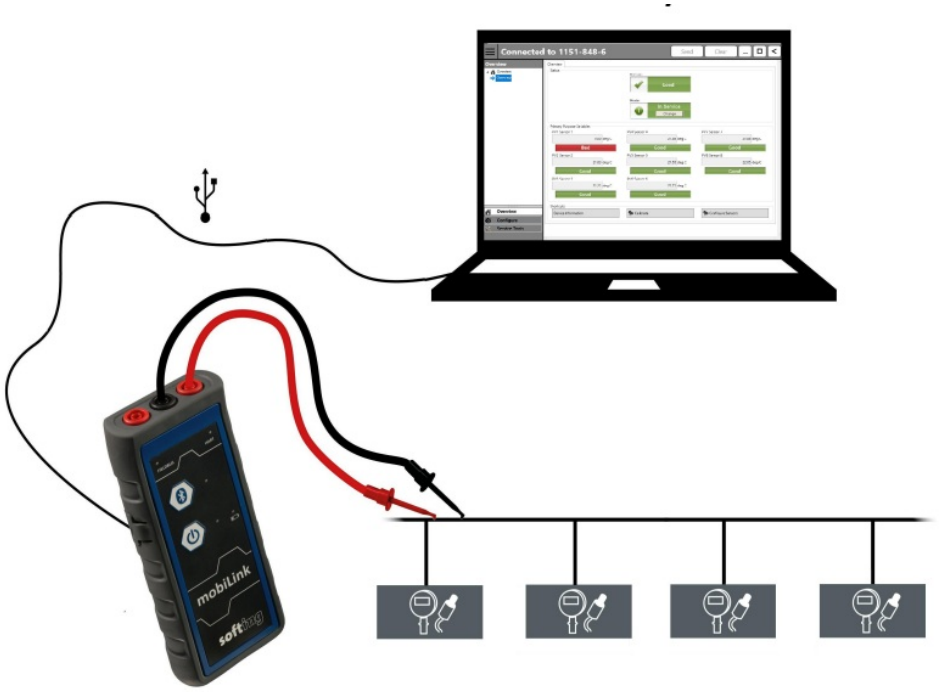
softing mobiLink FDI Communication Server



Specifications

- Product: mobiLink FDI Communication Server
- Version: EN-102024-1.10
- Manufacturer: Softing Industrial Automation GmbH
- Location: Richard-Reitzner-Allee 6, 85540 Haar, Germany
- Contact: +49 89 4 56 56-340, **info.automation@softing.com**
- Website: **https://industrial.softing.com**

Product Usage Instructions

About mobiLink FDI Communication Server

The mobiLink FDI Communication Server is designed to facilitate communication in industrial automation settings. It supports various host systems and comes with software packages for efficient functionality.

Installing the mobiLink FDI Communication Server

1. Ensure proper power supply and network connection.
2. Follow the installation guide provided with the product for step-by-step instructions.
3. Configure the server settings as per your requirements.
4. Complete the installation process by verifying all connections.

Using the mobiLink FDI Communication Server

To utilize the server effectively:

1. Access the server interface through a web browser using the provided IP address.
2. Authenticate using the default or custom credentials.
3. Explore the available features such as certificate management and port number configurations.
4. Refer to the user manual for detailed usage instructions based on your specific needs.

FAQ

- **Q: Where can I find more information about open source software used in the product?**
  A: For details on open source software and source modifications, visit **https://opensource.softing.com**. You can also contact **info@softing.com** for further inquiries.
- **Q: What should I do if I encounter difficulties during installation?**
  A: If you face challenges during installation or operation, please report the issues in writing to receive assistance from the manufacturer.

About this guide

Read me first
Please read this guide carefully before operating the product to ensure safe and proper use. Softing does not assume any liability for damages due to improper installation or operation of this product.
This document is not warranted to be error-free. The information contained in this document is subject to change without prior notice. If you have any problems understanding the information and instructions in the guide, please report them to us in writing.

Target audience
This guide has been written for experienced operation personnel and network specialists responsible for configuring and maintaining HART, Profibus PA and Foundation Fieldbus devices with an adequate FDI host system. Any person using mobiLink or mobiLink Power must have read and fully understood the safety requirements and instructions described in the user guides.

Typographic conventions
The following conventions are used throughout our product documentation:

- Keys, buttons, menu items, commands and other elements involving user interaction are set in bold font and menu sequences are separated by an arrow
- Buttons from the user interface are enclosed in brackets and set to bold typeface
- Coding samples, file extracts and screen output is set in Courier font type
- Filenames and directories are written in italic

Open Start → Control Panel → Programs
Press [Start] to start the application
MaxDlsapAddressSupported=23
Device description files are located in C:
\<Application name>\delivery\software\Device Description files

 **CAUTION**
This symbol is used to indicate a potentially hazardous situation which, if not avoided, may result in minor to moderate damage or injury.

 **Note**
This symbol is used to call attention to notable information that should be followed during installation, use, or servicing of this device.

 **Hint**
This symbol is used when providing you with helpful user hints.

Document history

Document version	Changes since last version
1.00	Initial version
1.10	22 Chapter Working the the Emerson AMS Device Configurator updated. Some editorial changes.

Related documentation
The following documentation describes the initial startup of your mobiLink. See the product website for more info and downloads

- mobiLink User Guide
- mobiLink Power User Guide

About mobiLink FDI Communication Server

The mobiLink FDI Communication Server has been developed for mobiLink and mobiLink Power according to FDI Specification version 1.2.0 to help you configure, diagnose and maintain HART, PROFIBUS PA and Foundation Fieldbus field devices via an FDI host system. It has been tested and evaluated with the FDI host system Emerson AMS Device Configurator (Foundation Fieldbus) and ABB Field Information Manager (HART, PROFIBUS PA).

Software packages
Both mobiLink and mobiLink Power support the network protocols HART, Profibus PA and Foundation Fieldbus (FF) which can be addressed by installing individual software packages.
These can be downloaded from the product website:

- Install_MobilinkHARTFDICommServer32.exe
- Install_MobilinkHARTFDICommServer64.exe
- Install_MobilinkProfibusFDICommServer32.exe
- Install_MobilinkProfibusFDICommServer64.exe
- Install_MobilinkFFFDICommServer32.exe
- Install_MobilinkFFFDICommServer64.exe

Software and functionality
The mobiLink FDI Communication Server is a OPC UA server accessed by the FDI host system working as a client.

Note
For communication with FF devices and PROFIBUS PA devices, you will first have to activate an optionally available FF or PROFIBUS PA license for your mobiLink or mobiLink Power. For more information see the mobiLink User Guide or mobiLink Power User Guide.

Supported FDI host systems
The following host system is supported with this software version:

- Emerson AMS Device Configurator
- ABB Field Information Manager

Installing mobiLink FDI Communication Server
Before you can work with your mobile communication device mobiLink or mobiLink Power within the FDI host system, install required software package mentioned above.

1. Download the latest version of the mobiLink FDI Communication Server from the mobiLink product website.
2. Double click the .exe file for 32 or 64 bit to start the installation.
3. Follow the installation instructions.
4. If your FDI host system requires the FDI package of the communication server, install one of the FDI package you find here: ProgramData\Softing\<protocol>CommunicationServer\FDIPackage\.

   Note

   FDI host systems which have not been tested and evaluated (see Chapter 7 22) must first exchange their digital certificates and thereby confirm each others identity before establishing a secure communication.
5. Start the FDI host system. See the quick start instructions further down in this document.

Using mobiLink FDI Communication Server
The Softing mobiLink FDI Communication Servers support up to 10 connected mobiLink and mobiLink Power devices. These are called channels. For each connected mobiLink a separate set of parameters is provided to configure the access to the network. If you want to change parameters (wiring of the mobiLink device), you must first deactivate the connected channel and then reactivate the channel. See Chapter 7 for details.

CAUTION
Before activating a channel for a specific mobiLink with a specific serial number, please make sure that this channel is not already activated for another communication server (i.e. PROFIBUS PA or Foundation Fieldbus). You can run only one communication server per mobiLink.

Parameters
The following parameters apply to the mobiLink FDI Communication Server.

General parameters

Parameter	Meaning	Default value	Valid Range
Serial number	Serial number of the mobiLink or mobiLink Power		
Activate channel	Activate channel Access via mobiLink is active Access via mobiLink is inactive	False	TRUE (255) FALSE (0)

HART parameters

Parameter	Meaning	Default value	Valid Range
ScanRange Start	Start address of the scan	0	0 .. 63
ScanRange End	End address of the scan	1	0 .. 63

Note
Devices with an address out of the scan range will not be accessible by the FDI host system. Reducing the scan range will increase the speed of scanning.

Parameter	Meaning	Default value	Valid Range
MasterType	mobiLink works as a primary master. mobiLink works as a secondary master.	Secondary Master	Primary Master
PreambleCounts	number of preamble bytes used for HART communication	5	5 .. 20

Profibus PA parameters

Parameter	Meaning	Default value	Valid Range
ScanRange Start	Start address of the scan	0	0 .. 126
ScanRange End	End address of the scan	126	0 .. 126

Note
Devices with an address out of the scan range will not be accessible by the FDI host system. Reducing the scan range will increase the speed of scanning.

Parameter	Meaning	Default value	Valid Range
StationAddress	This is the address assigned to the mobiLink PA master.	0	0 .. 126
SlotTime (Tsl)	Slot Time. The time interval that the master wait s for the response of a participant before it repea ts the telegram or sends the next telegram. The l ower limit of the slot time is the sum of Max Tsdr + Tqui + 14.	320	37 .. 16383
MinStationDelay	Min Station Delay Responder (Min Tsdr). The mi nimum time interval that must elapse before a participant is allowed to answer.	11	11 .. 1023
MaxStationDelay	Max Station Delay Responder (MaxTsdr). The ti me interval within which a participant must answ er.	250	37 .. 65535
TargetRotationTime	Target Rotation Time (Ttr). Maximum duration of a token circulation.	20000	256 .. 16777215
HighestStationAddress e	The highest station address addressed by the m obiLink PA master.	126	1 .. 126
QuietTime	Quiet Time (Tqui). The time interval required by a transmitting station to switch to reception.	0	0 .. 255
SetupTime	Setup Time (Tset). The time interval that may ela pse between receipt of a telegram and the requir ed response to it. The upper limit value results fr om the difference of 494 -Tqui.	32	1 .. 255
GapUpdateFactor	The number of token cycles after which a newly added master can be included in the token ring.	1	0 .. 100
MaxRetryLimit	The maximum number of repetitions if a station doesnot respond.		0 .. 7

FF parameters

Parameter	Meaning	Default value	Valid Range
ScanRange Start	Start address of the scan		16 .. 255
ScanRange End	End address of the scan		16 .. 255

Note
Devices with an address out of the scan range will not be accessible by the FDI host system. Reducing the scan range will increase the speed of scanning.

Parameter	Meaning	Default value	Valid Range
Node Address	Node address assigned to mobiLink or mobiLink Power.	252	16 .. 247 252 .. 255
Slot Time	H1 bus time unit. See also Max Response Delay and Min Inter PDU Delay.	8	1 .. 4095
First unpolled node address	The first node address which mobiLink or mobiLink Power ignores when detecting connected devices. Together with the number of unpolled nodes this defines the range of addresses which are not taken into account.	20	20 .. 248
Number of unpolled nodes	The number of nodes starting from the first unpolled node address which mobiLink or mobiLink Power ignores when detecting connected devices. Together with the first unpolled node address this defines the range of addresses which are not taken into account. The last unpolled node may not exceed the value 247. Devices with an address outside the polled range are not taking part in the bus communication and are therefore not detected during the scan. If all nodes are to be considered the value must be set to 0.	0	0 .. 228
Max Response Delay	Maximum time interval in slot times which may lapse between request and response. Devices which do not respond within this interval are excluded from the bus communication. Each device has its own value for this parameter. The set value should be at least as large as the largest value of all devices connected to the H1 segment. The values of the individual devices can be found in the respective device description.	10	1 .. 11
Min Inter PDU Delay	Minimum time interval in slot times which has to lapse between two frames on the bus so the frames can be processed. Each device has its own value for this parameter. The set value should be at least as large as the largest value of all devices connected to the H1 segment. The values of the individual devices can be found in the respective device description.	16	0 .. 255

Using mobiLink FDI Communication Server mobiLink Power

The Softing mobiLink FDI Communication Servers support up to 10 connected mobiLink and mobiLink Power devices. These are called channels. For each connected mobiLink a separate set of parameters is provided to configure the access to the network. If you want to change parameters (wiring of the mobiLink device), you must first deactivate the connected channel and then reactivate the channel. See Chapter 7 for details.

CAUTION

Before activating a channel for a specific mobiLink with a specific serial number, please make sure that this channel is not already activated for another communication server (i.e. PROFIBUS PA or Foundation Fieldbus). You can run only one communication server per mobiLink.

Certificates
FDI communication is based on OPC UA providing secure communication. Therefore the certificates of the server (mobiLink Communication Server) and the client (FDI host system) have to be exchanged. This is typically done by copying the own certificate of the server (Softing mobiLink FDI communication server) into the trusted folder of the client (FDI host system) and copying the own certificate of the client to the trusted folder of the server.
You will find the certificates of the Softing mobiLink FDI communication servers here:

- C:\ProgramData\Softing\Mobilink<protocol>CommunicationServer\CertificateStores\own\certs

  Copy the own certificate of the host system to C:
- C: \ProgramData\Softing\Mobilink<protocol>CommunicationServer\CertificateStores\TrustedCertificates\cert s

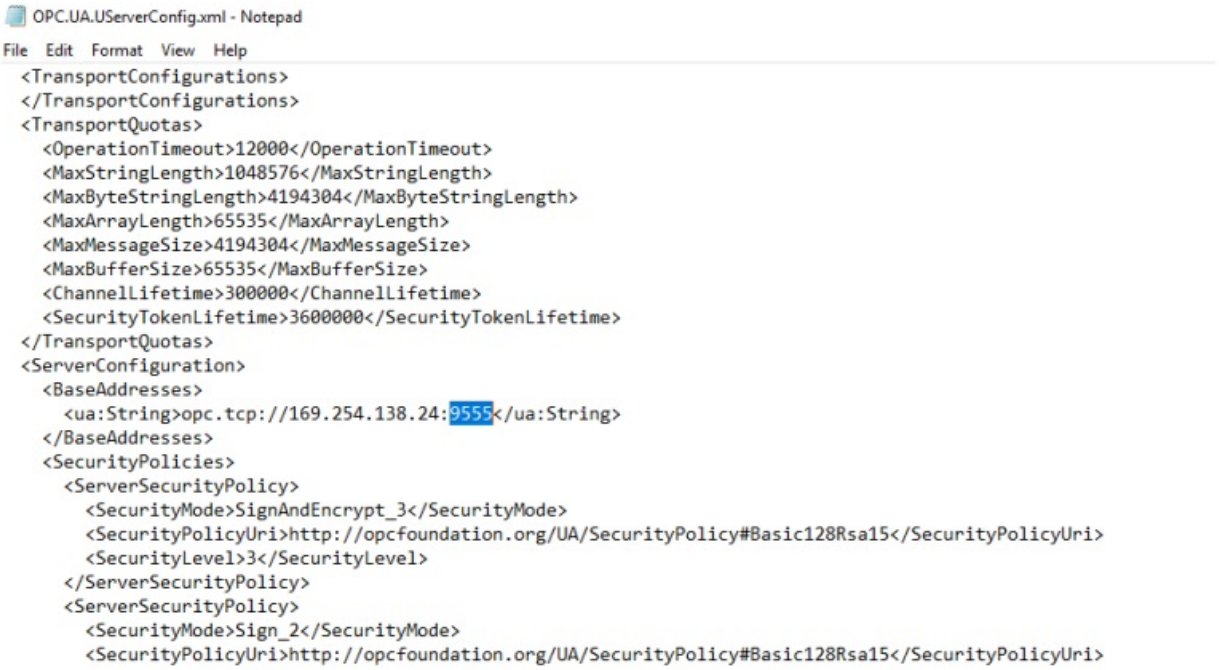
Certificates for the Emerson Instrument Inspector Application and the Softing FDI communication servers are managed automatically. For other FDI host systems please refer to the framework's user guide.

Changing a port number
The following chapter describes how to change the port number used to access and communicate with the communication server. The mobiLink HART FDI Communication Server uses port number 9555, the mobiLink Profibus FDI Communication Server uses port number 9556 and the mobiLink FF FDI Communication Server uses port number 9557 as default.

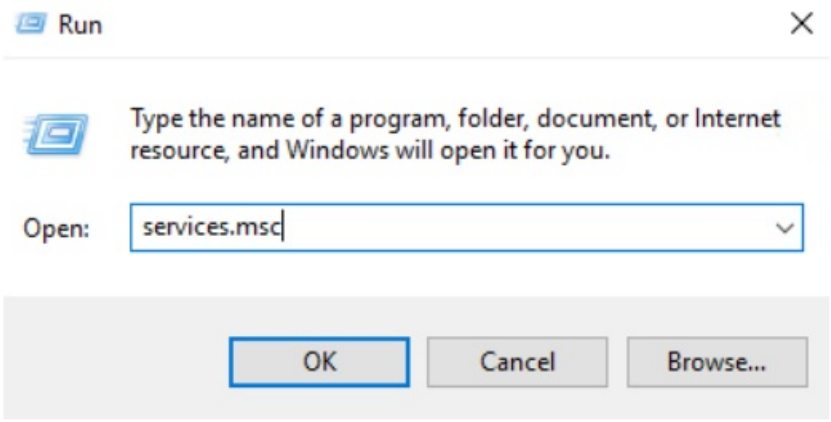
Caution
Only change the port number if the FDI host system you use does not support the default port settings. The Emerson AMS Device Configurator 22 will no longer work if you change the port number.

Note
You need administrator rights to save the changes. If you cannot save the changed port number, you will first need to open Notepad with administrator rights. Click Start and type Notepad. Right-click on the program that appears in the search results and click Run as Administrator.

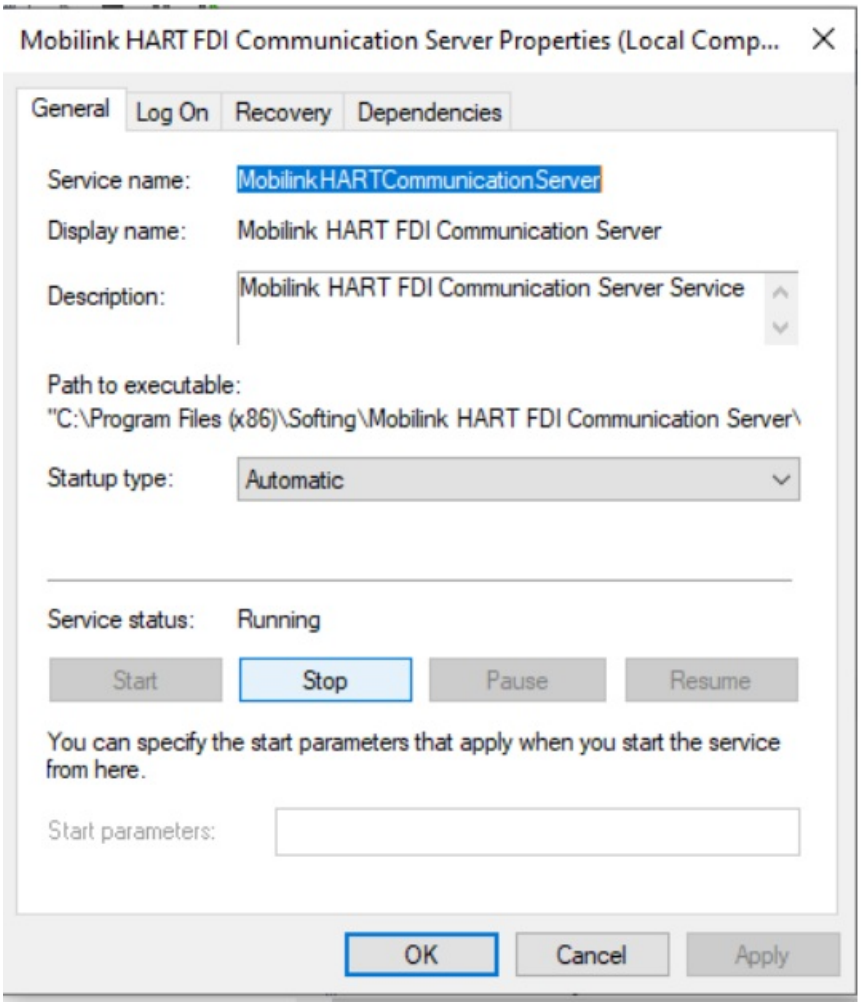
1. Open Windows Explorer.
2. Select Program Files Softing Mobilink<protocol>CommunicationServer.
3. Select the file OPC.UA.UServer.Config.xml in Windows Notepad.
4. Change the port number (last 4 digits behind the IP address).



5. Save the file.
6. Right-click Windows Start and click Run.
7. Enter services.msc and click [OK].



The Windows Services Manager opens. Here you can start, stop, pause, resume and restart any of the Windows services.



8. Right-click the service for which you have changed the port number (i.e. Mobilink HART FDI Communication Server) and select click [Start] to restart the communication server with the changed port number.

Working with the ABB Field Information Manager

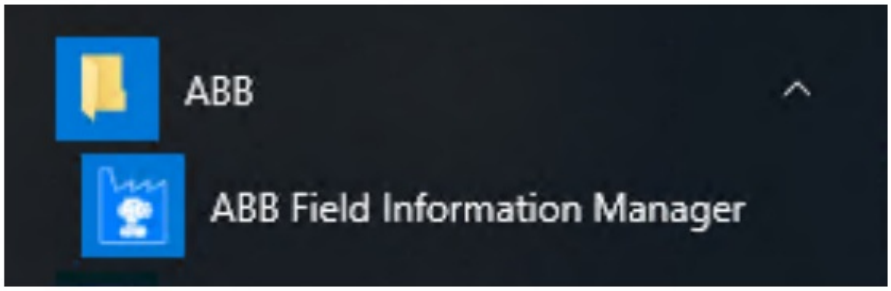
mobiLink can be connected via USB interface or Bluetooth. See the Chapters Using mobiLink in a HART environment and Using mobiLink in a fieldbus environment in the mobiLink User Guide for details on how to connect your mobiLink device via USB or Bluetooth with FIM. This chapter describes how to set up and configure a mobiLink or mobiLink Power device with the ABB Field Information Manager (FIM).

Prerequisites
mobiLink can be connected via USB interface or Bluetooth.

- The latest fully-licensed version of FIM is installed and running on your PC.
- If you intend to connect to PROFIBUS PA devices, your mobiLink has a PROFIBUS PA license.
- The mobiLink User Guide or mobiLink Power User Guide with details on how to connect to your mobiLink device has been downloaded, read and understood.

Adding a communication server
The following chapter describes how to add a HART or PROFIBUS PA communication server in FIM.

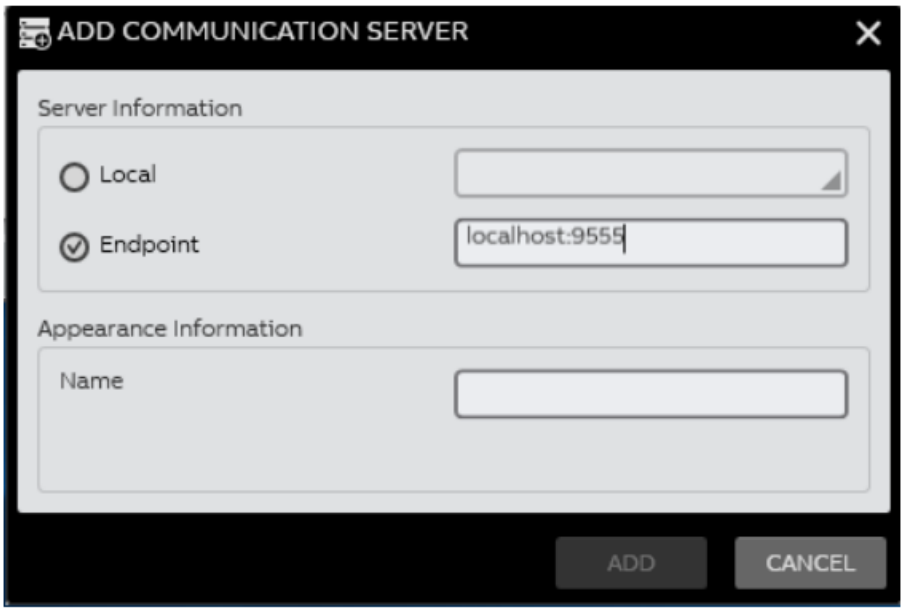
1. Click Start ABB ABB Field Information Manager on your PC (Windows 10) to open the FIM.



2. Select [Add Server] in the menu bar-
3. Enter localhost:9555 to add the HART Communication Server or localhost:9556 to add the PROFIBUS PA Communication Server in the Endpoint input field.

   Note

   9555 and 9556 states the port number that is used for communication. If this port is blocked or already used, see Chapter Changing a port number to change the port number that is used by the communication server.
4. Enter a name (HART or PA in the Name field) to identify the communication protocol type.

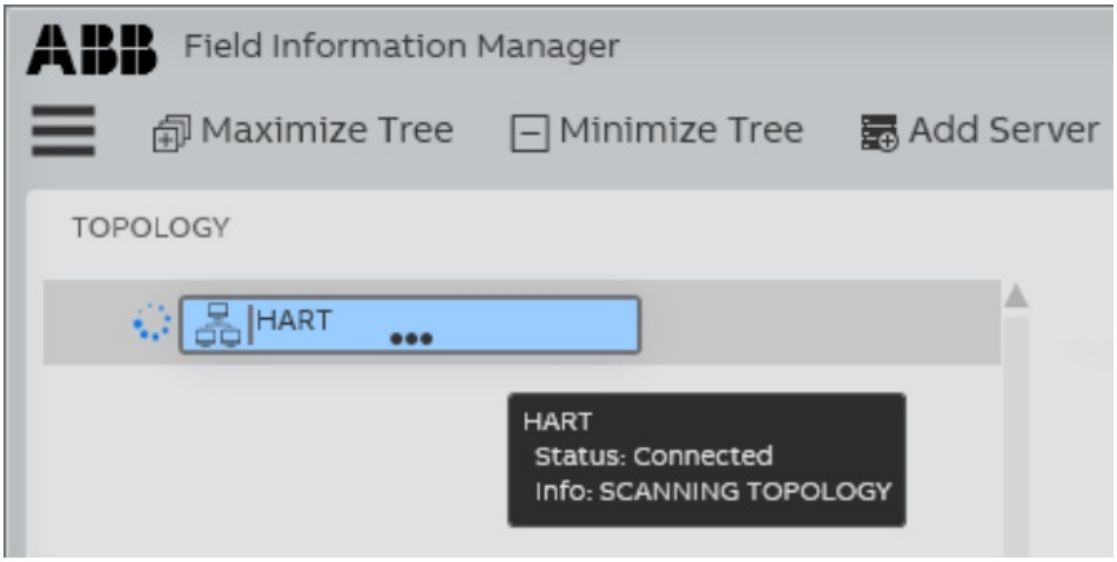


5. Click [Add].

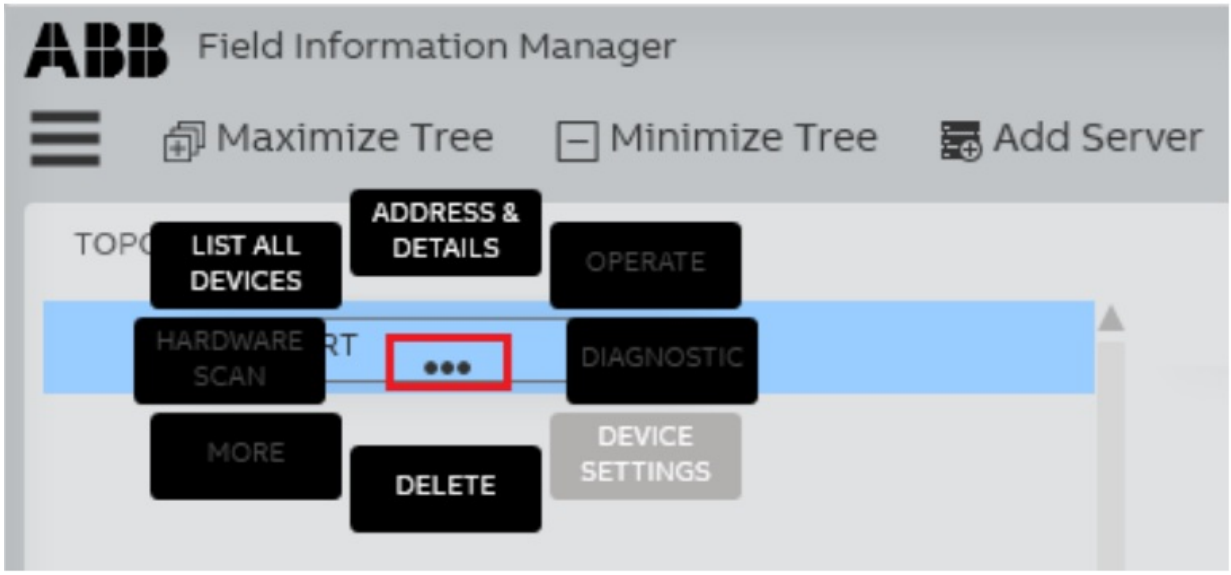
   The specified communication server appears in the topology view as a communication server tile.

Setting up a mobiLink for HART
In this chapter you will learn how to set up a mobiLink for HART communication.

1. Move the mouse pointer over the HART communication server [•••] icon in the topology view to see status of the communication server.



2. Click the HART communication server [•••] icon to display the context menu and select the Device Settings tile.

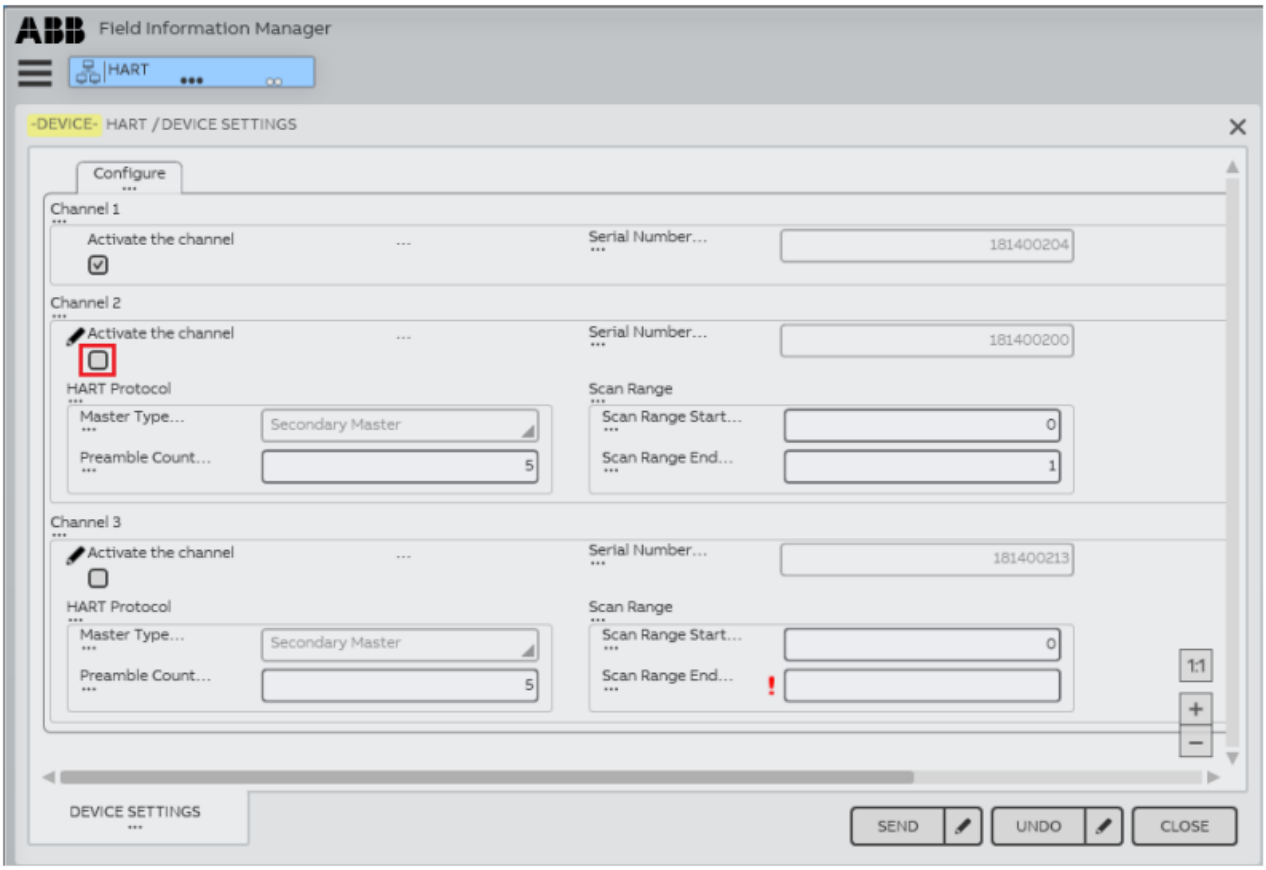


The Device Settings window showing connected HART field devices.

3. Enter a start and end value from 0 to 63 for the scan range (depending on the addresses of the connected devices).

Note

The pencil icon  alerts you to values that have been changed and that the change has not yet been saved. The exclamation icon  indicates that an incorrect value has been **applied.**



Note

Define the other parameters as required. For a definition of the other parameters, see the Section Parameters .

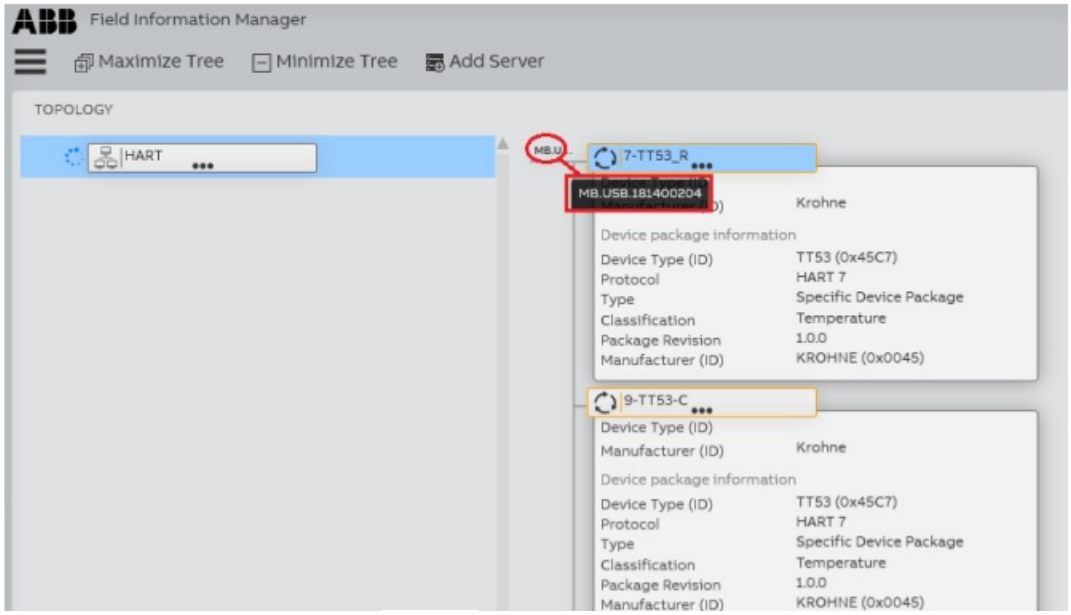
4. Click [Send] to save the changed configuration.
5. Tick the Activate the channel checkbox to active this mobiLink device.

   Note

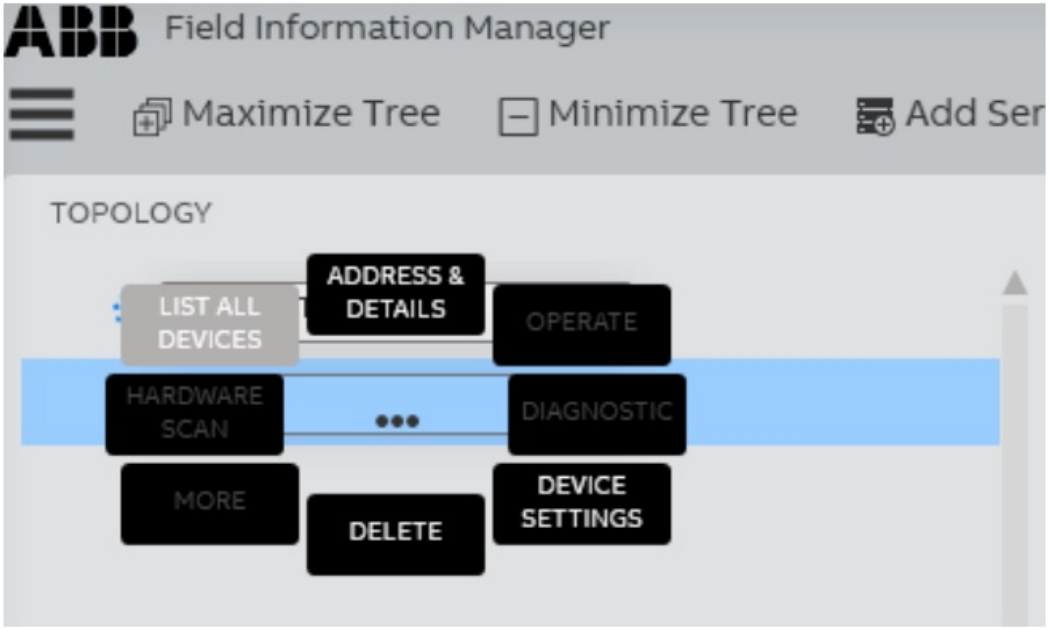
   When you have activated a mobiLink device you can no longer change the setting. If you want to change setting you first need to deactivate the device. If you have several mobiLink devices connected to both HART and Profibus PA, make sure that only one mobiLink is activated for one at a time and not for both.
6. Click [Send] to save the changed configuration and click [Close] to exit the window. The topology view shows the activated mobiLink device with the connected field device. It may take a moment before field devices are shown.

   Note

   If you have several mobiLink devices connected, move your mouse pointer over the string at the top of the device tile and check the serial number of the mobiLink.



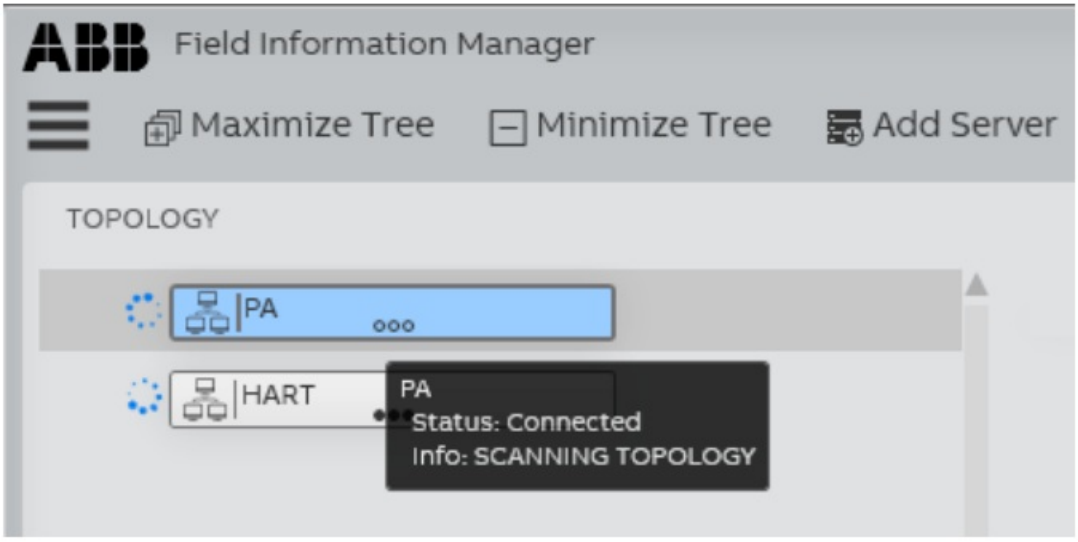
7. Click on the HART communication server [•••] icon and select List All Devices to launch an overview of the connected field devices.



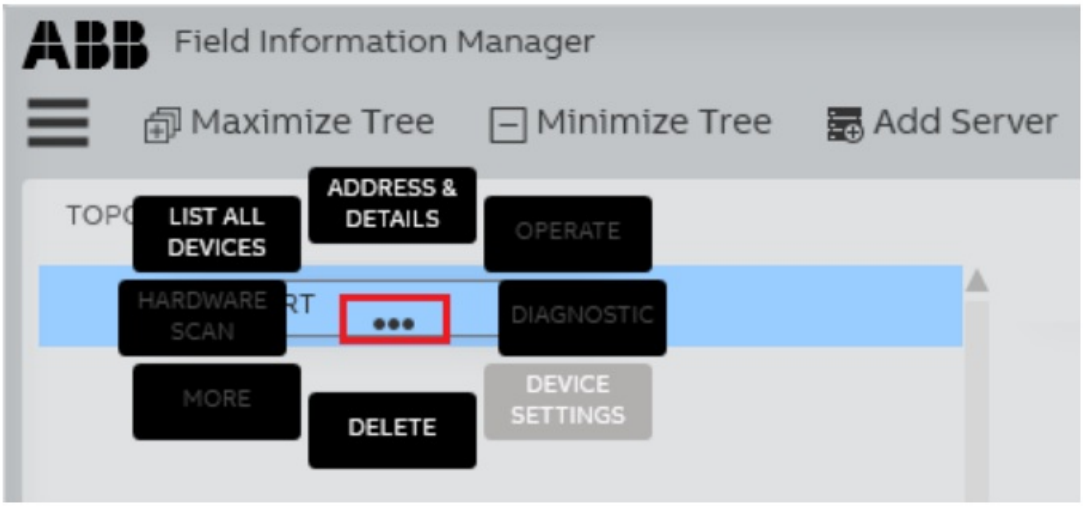
Setting up a mobiLink for PA

In this chapter you will learn how to set up a mobiLink for PA communication.

1. Move the mouse pointer over the PA communication server [•••] icon in the topology view to see status of the communication server.



2. The Device Settings window opens showing connected PA field devices.
3. Enter the scan range of the connected devices. This will limit the bus scan time. If you do not know the range of the connected devices, enter the default scan range 0..126, defining the number of endpoint devices.



Note

The pencil icon  alerts you to values that have been changed and that the change has not yet been saved. The exclamation icon  indicates that an incorrect value has been applied.

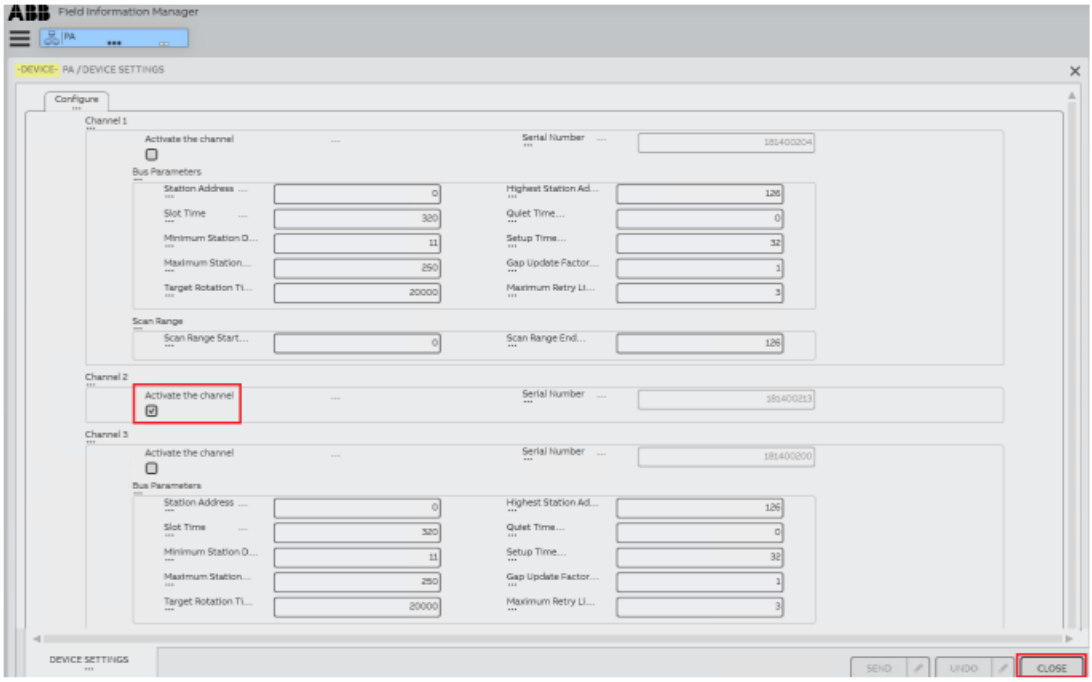


Figure 1:

Note

Define the other parameters as required. For a definition of the other parameters, see the Section Parameters .

4. Click [Send] to save the changed configuration.
5. Tick the Activate the channel checkbox to active this mobiLink device

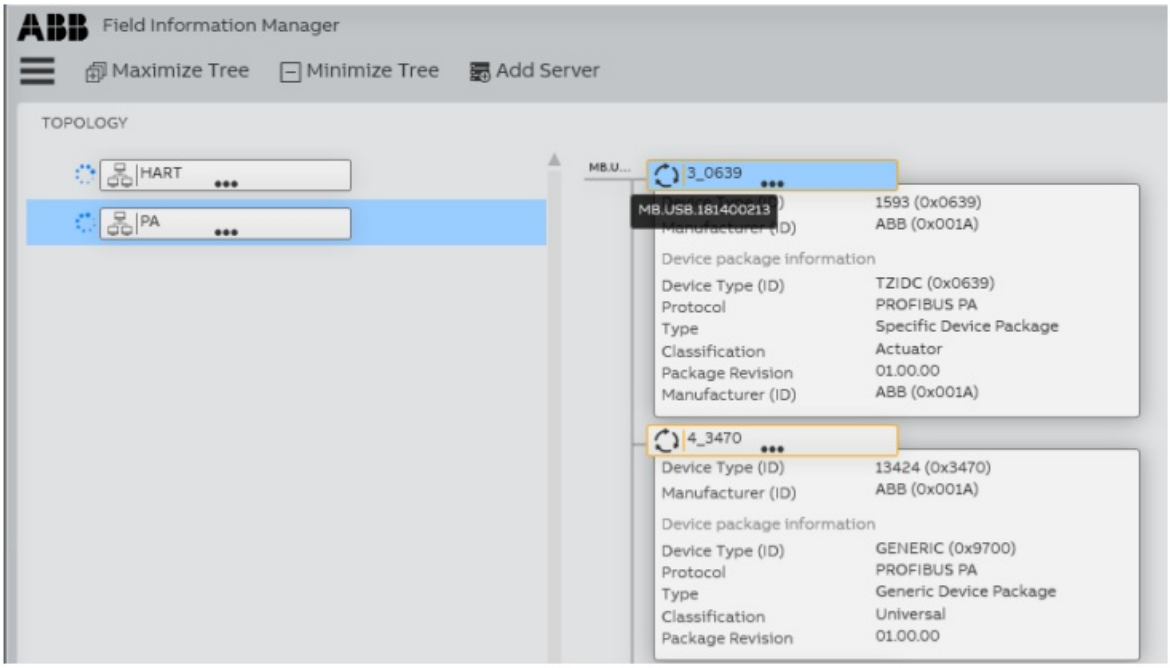
Note

When you have activated a mobiLink device you can no longer change the setting. If you want to change setting you first need to deactivate the device. If you have several mobiLink devices connected to both HART and Profibus PA, make sure that only one mobiLink is activated for one at a time and not for both.

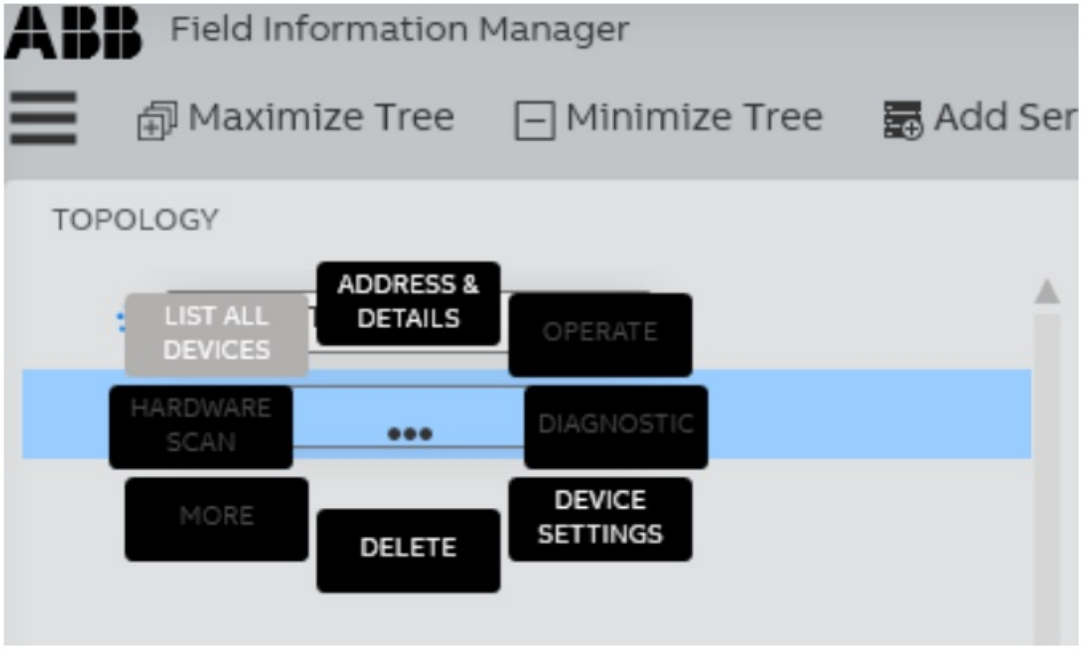
6. Click [Send] to save the changed configuration and click [Close] to exit the window. The topology view shows the activated mobiLink device with the connected field device. It may take a moment before field devices are shown.

Note

If you have several mobiLink devices connected, move your mouse pointer over the string at the top of the device tile and check the serial number of the mobiLink.



7. Click the PA communication server [•••] icon and select List All Devices to launch an overview of the connected field devices.



Changing mobiLink protocols

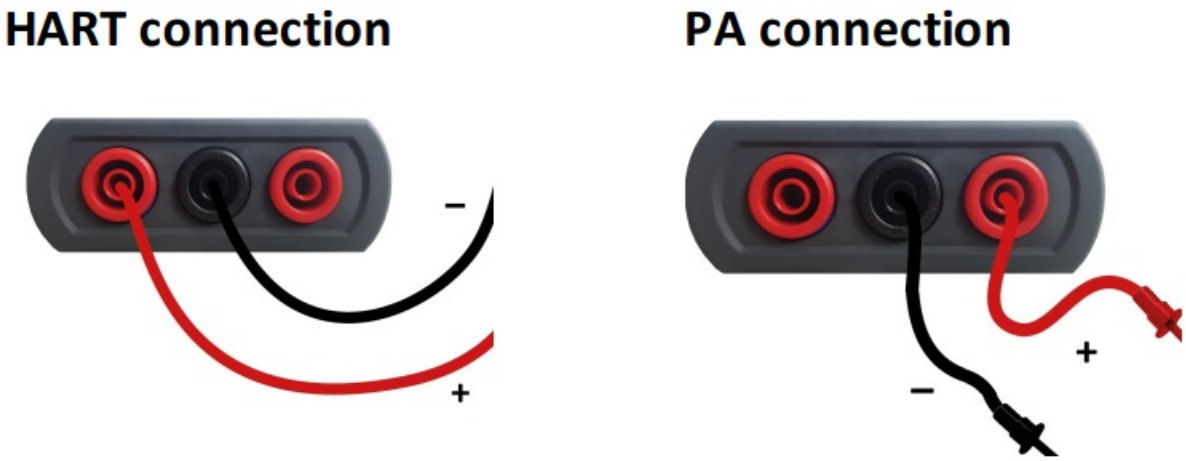
If you want to change the communication protocol of a mobiLink device from HART to PA or PA to HART follow these steps:

1. Click Start ABB ABB Field Information Manager
2. Select the Communication Server (HART or PA) in the topology view.
3. Click the Device Settings tile [•••] icon.
4. Disable the checkbox Activate the channel to deactivate the mobiLink device supporting HART or PA communication.
5. Click [Send] to save the changed configuration and click [Close] to exit the window.

Note

The mobiLink device will disappear from the topology view.

6. Disconnect the mobiLink device from the network segment.
7. Re-connect the the mobiLink device as shown for HART or PA.



Note

See mobiLink User Guide for more details.

8. Select a communication server.
9. Select the Device Settings tile.
10. Select the mobiLink device you want to activate in the topology view.
11. Tick the checkbox Activate the channel.

Note
See mobiLink User Guide for more details.
Note
See mobiLink User Guide for more details.
Note
The mobiLink device and the connected field devices appear in the topology view.

Working with the Emerson AMS Device Configurator
This chapter describes how to set up and configure a mobiLink Power device with the Emerson AMS Device Configurator

Prerequisites

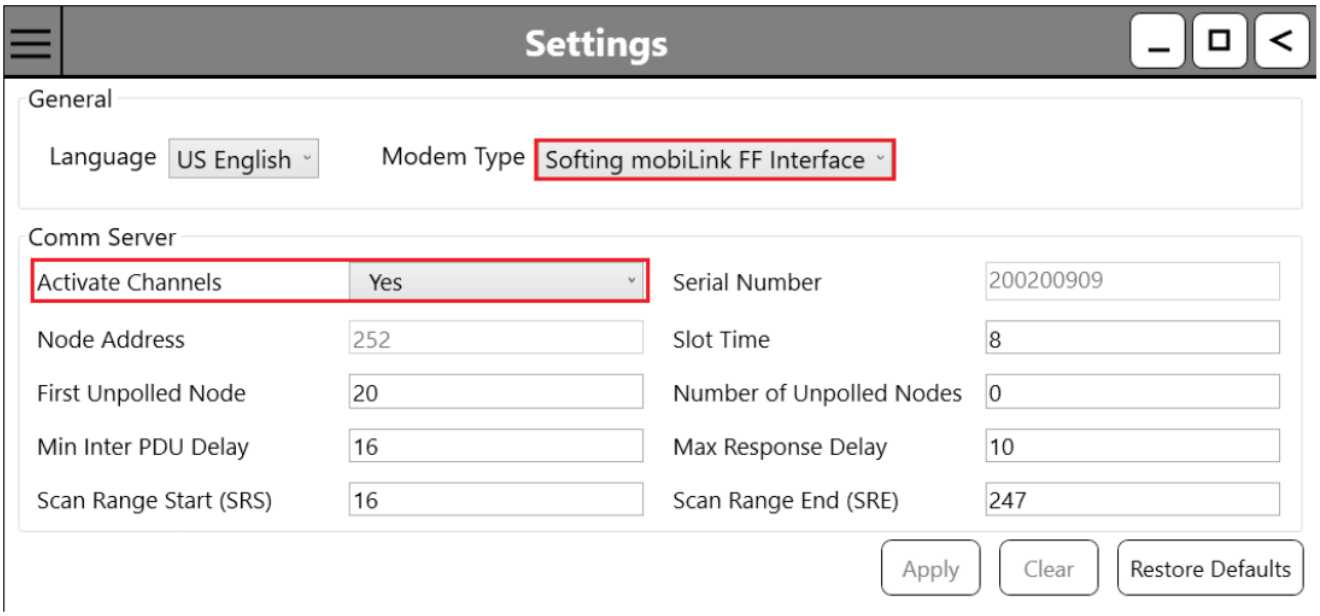
- The latest fully-licensed version of the AMS Device Configurator is installed and running on your PC.
- Your mobiLink Power is connected to your PC.
- Your mobiLink Power is connected to an FF network.
- Your mobiLink Power has an FF license.
- The mobiLink Power User Guide with details on how to connect your mobiLink device has been downloaded, read and understood.

Configuration

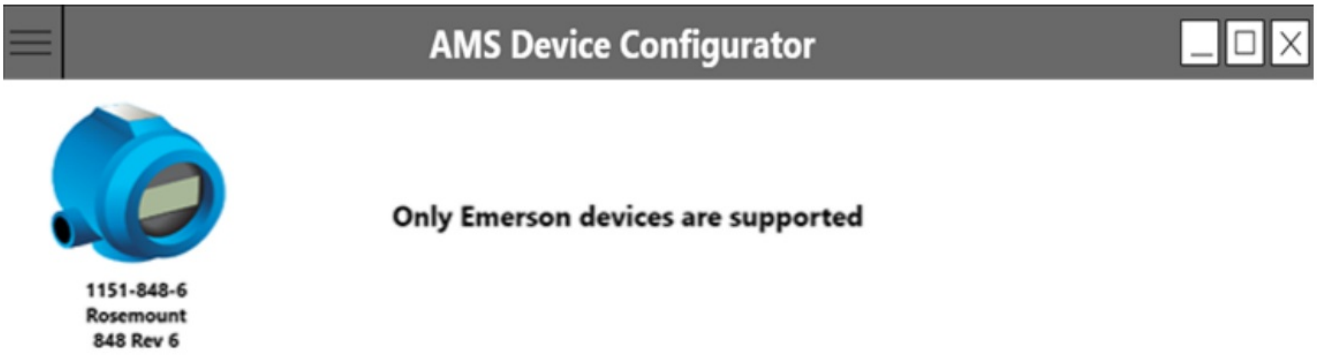
Note
The AMS Device Configurator is running only on port 9557.

1. Start the Emerson AMS Device Configurator.

2. Open the Settings page.
3. Make sure that the Softing mobiLink FF Interface is selected as Modem Type.



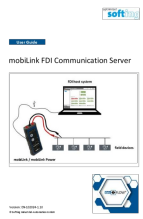
4. Check the communication parameters and change Activate Channels to Yes to activate the mobiLink
5. Click the icon  to return to the field device overview.
   The scanning will start automatically and all Emerson devices within the configured scan range will be displayed.



Softing Industrial Automation GmbH
Richard-Reitzner-Allee 6
85540 Haar / Germany
https://industrial.softing.com

+ 49 89 45 656-340
+ 49 89 45 656-488
info.idn@softing.com

Documents / Resources

	softing mobiLink FDI Communication Server [pdf] User Guide mobiLink FDI Communication Server, Communication Server, Server

References

- Support Form | Softing
- ABB Field Information Manager (FIM) fieldbus device management tool - ABB Fieldbus products and integration solutions
- index
- User Manual