



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Operating Instructions

Field Xpert SFX100

Device configurator

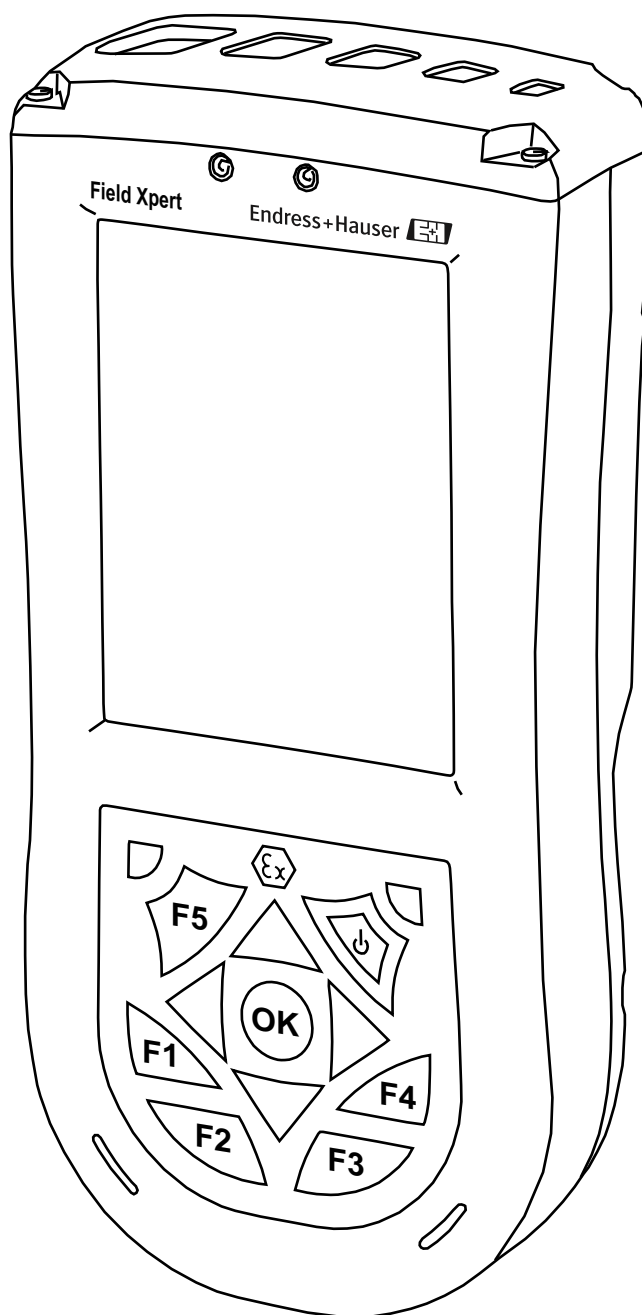


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Revision history

Product version	Manual	Changes	Comments
1.00.xx ¹⁾	BA060S/04/en/01.08	Original	
1.00.xx ¹⁾	BA060S/04/en/01.09	General	Updated, improved and restructured
1.01.xx ¹⁾	BA060S/04/en/04.09	New function	Special function: upload/download
1.01.xx ¹⁾	BA060S/04/en/09.09	New function	Special function: generic DD
1.06.xx ¹⁾	BA060S/04/en/03.10	Download	Download currently not supported
1.06.xx ¹⁾ 1.00.xx ²⁾	BA00060S/04/en/13.11	General	New manual structure with additional descriptions of Field Xpert and Device Xpert functions Renumbered according to new corporate rules
		HART	FXA520 architecture added
		FOUNDATION fieldbus	FOUNDATION fieldbus added
1.07.xx ¹⁾ 1.01.xx ²⁾	BA00060S/04/en/14.12	General	Alignment of HART and FOUNDATION fieldbus GUIs with new user prompts to simplify use
¹⁾ Device Xpert HART, ²⁾ Device Xpert FOUNDATION fieldbus			

Registered trademarks

PROFIBUS®

Registered trademark of PROFIBUS user organization, Karlsruhe Germany

FOUNDATION™ Fieldbus

Registered trademark of Fieldbus Foundation, Austin, TX 78759, USA

HART®

Registered trademark of HART Communication Foundation, Houston, USA

ActiveSync®, Microsoft®, Windows®, Windows Mobile® 5.0, Windows 2000®, Windows XP®, Windows Vista®, Windows 7®, Windows Explorer®, Internet Explorer® and the Microsoft logo are registered trademarks of the Microsoft Corporation.

MACTek®

Registered trademark of the MACTek Corporation, Ohio, USA

VIATOR®

Registered trademark of the MACTek Corporation, Ohio, USA

Bluetooth®

Registered trademark of Bluetooth SIG, Inc, Washington, USA

Acrobat Reader® is a registered trademark of Adobe Systems Incorporated.

All other brand names and product names are trademarks or registered trademarks of the respective companies and organizations.

1 Safety

1.1 Designated use

Field Xpert is an industrial PDA with integrated 3.5" touchscreen based on Windows Mobile. It offers wireless communication via Bluetooth or WiFi interfaces. The Bluetooth interface can be used in combination with a HART or FOUNDATION fieldbus modem to connect directly to HART or FOUNDATION fieldbus H1 devices. The WiFi interface can be used to connect with HART or FOUNDATION fieldbus devices via a gateway, e.g. Endress+Hauser Fieldgate FXA520 for HART or SFC162 gateway for FOUNDATION fieldbus. Field Xpert also works as a stand-alone device for asset management applications. It may be used only for the purposes described in these Operating Instructions and only in conjunction with third-party devices and components recommended or approved by Endress+Hauser.

1.2 Commissioning and operation

To ensure that the product operates correctly and safely, Field Xpert must be transported, stored, connected, operated and maintained in accordance with the instructions in this manual. Personnel must be authorized and have the necessary qualifications.

1.3 Operational safety

Operating environment

Field Xpert meets the requirements of the EU guidelines for the various operating environments in which it is designed to operate. The permitted operating conditions must be observed, see also Field Xpert CD-ROM (folder Documentation\Field Xpert\Safety Instructions)

Hazardous areas

- The non-Ex version of Field Xpert may not be operated in explosion hazardous areas
- The Ex version (ATEX) of Field Xpert may be operated hazardous areas, Zone 1
- The VIATOR Bluetooth modem is ATEX, FM and IS certified and may be operated hazardous areas, Zone 1
- The Softing FFblue Bluetooth modem is ATEX certified and may be operated hazardous areas, Zone 1
- Once a modem has been used in a non-Ex installation, it should never be used in an Ex installation, as there is a danger that the protective circuits have been inadvertently overloaded and no longer function correctly.

Repair

Do not open the Field Xpert housing. It does not contain any parts which the user needs to service or repair. In the event of a fault or defect, please return the Field Xpert to Endress+Hauser. Opening the Field Xpert invalidates the guarantee and Ex approval. The VIATOR Bluetooth and FFblue modem may be opened in order to replace the batteries, as described in this manual.

1.4 Declaration of conformity

A CE declaration of conformity has been issued for the Ex and non-Ex versions. The relevant documents can be found here:

Field Xpert CD-ROM (folder: Documentation\Field Xpert\Confirmations)





1.5 Technical improvement

Endress+Hauser reserves the right to make technical improvements hardware and software at any time and without prior notification. If such improvements do not affect the operation of the device, they are not documented. If the improvements affect operation, a new version of the Operating Instructions will be issued.




1.6 Conventions and icons

In order to highlight safety relevant or alternative operating procedures in the manual, the following conventions have been used, each indicated by a corresponding icon in the margin.






Safety conventions

Icon	Meaning
	DANGER! This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.
	WARNING! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.
	CAUTION! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
	NOTE! This symbol contains information on procedures and other facts which do not result in personal injury.

Explosion protection

Symbol	Meaning
	Explosion-proof equipment which has undergone type examination If this symbol is on the nameplate of the device, the device can be installed in accordance with the approval in a hazardous or non-hazardous area.
	Hazardous areas This symbol is used in the drawings in these Operating Instructions to indicate a hazardous area. – Devices located in hazardous areas or the wiring for such devices must have the relevant explosion protection.
	Safe area (non-hazardous area) This symbol is used in the drawings in these Operating Instructions to indicate a non-hazardous area. – Devices located in non-hazardous areas must also be certified if connecting cables enter the hazardous area.

Electrical symbols

Symbol	Meaning
	DC A terminal at which DC is present or through which DC flows.
	AC A terminal at which (sine-wave) AC is present or through which AC flows.
	Ground connection A grounded terminal which, from the user's point of view, is already grounded by means of a grounding system.
	Protective ground connection A terminal which must be grounded before making any other connections can be made.
	Equipotential connection A connection which must be connected to the grounding system of the plant. This may be, for example, an equipotential line or star grounding system, depending on national or company procedures.

2 Identification

2.1 Unpacking

2.1.1 Visual inspection

When unpacking:

- Check the packaging for visible damage arising from transportation.
- To avoid damage, remove the packaging with care.
- Retain the original packaging in case the Field Xpert needs to be transported again.
- Retain the accompanying documents also.

If you find that the contents are damaged, do not put the device into operation. In this case, please contact your Endress+Hauser Sales Center. Return the device to us, if possible in the original packaging.

2.1.2 Scope of delivery

Before commencing commissioning, please check that the delivery is complete and undamaged. The delivery comprises:

- Field Xpert PDA including Device Xpert software of choice
- Power unit (charger) LG x10
- Two stylus pens (on back of Field Xpert)
- Operating Instructions including Getting Started and safety instructions
- Field Xpert CD-ROM incl. application software and documentation

Optional:

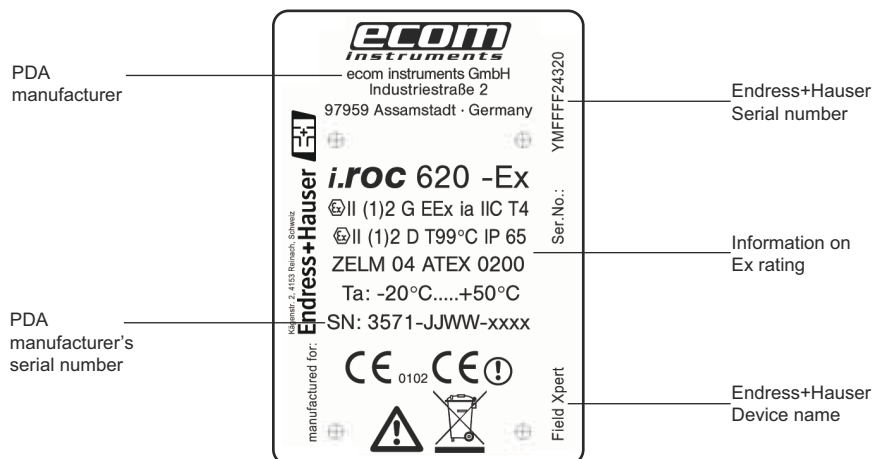
- VIATOR Bluetooth modem for use with HART field devices including 3 x AAA alkaline batteries and documentation
- FFblue Bluetooth modem for use with FOUNDATION fieldbus devices including 2x AA alkaline batteries and documentation
- USB x11 interface kit (one box, two cables)
- Leather case with strap and one stylus pen
- Docking station

2.1.3 Storage and transport

Although Field Xpert is of robust construction, some of its components can be sensitive to strong vibrations and shocks. For this reason, the Field Xpert must be protected against excessive mechanical loads of this kind.

2.2 Device name and serial number

The Endress+Hauser device name (Field Xpert) and serial number are to be found on the nameplate, which is attached to the rear of the housing.



The device type can be derived from the product code as follows:

SFX100 Field Xpert							
	Approval						
	A	Non-hazardous area					
	B	ATEX Zone 1/21					
	X	Without PDA					
	Y	Special version, to be specified					
	Application Software						
	A1	Device Xpert HART					
	A2	Device Xpert FF					
	A3	Device Xpert HART + FF					
	XX	Not used					
	Communication Interface						
	F1	FFblue - Bluetooth Interface for FF protocol					
	HF	VIATOR + FFblue - Bluetooth Interface for HART and FF protocol					
	H1	VIATOR - Bluetooth Interface for HART protocol					
	XX	not used					
	Device Xpert and Operating System Language						
	1	English					
	2	German					
	Software Update Service						
	A	Selected: Device Xpert Software Update Service SFX101					
	X	see Chapter 7.4					
		not used					
	USB Data Transmission Set						
	A	Selected (if no IR available)					
	X	not used					
	Leather Carry Case						
	A	Selected					
	X	not used					
SFX100-							

3 Function and System Design

3.1 Function

Field Xpert from Endress+Hauser is a high-performance industrial PDA based on Windows Mobile, with compact external dimensions, an integrated WLAN, USB, Bluetooth and infrared connection. This allows it to be connected to HART and/or FOUNDATION fieldbus devices via a modem or gateway. With a range of Ex approvals, Field Xpert meets the needs and requirements of the process industry for applications inside and outside hazardous areas.

Once the Field Xpert hardware and the Device Expert software are communicating with a device, it can be parameterized. Depending upon the system architecture, only one device may be seen, e.g. in HART point-to-point or all the devices connected to the segment, e.g. in FOUNDATION fieldbus applications.

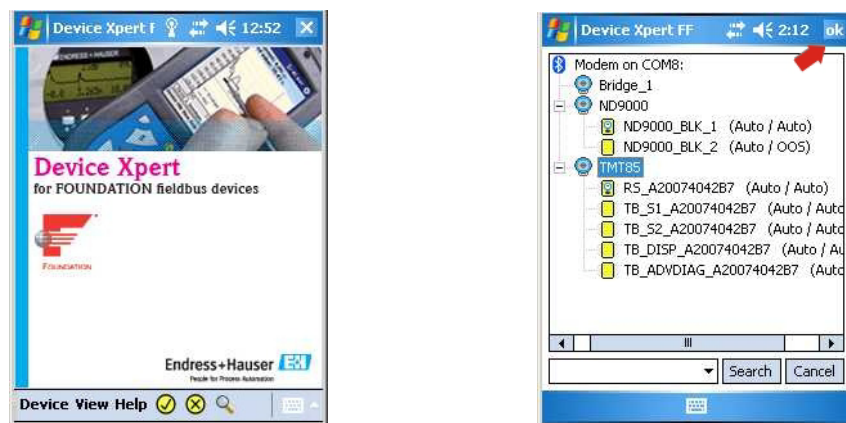


Fig. 3-1: Device Xpert FOUNDATION fieldbus start page and live list of connected devices

Other functions

Other functions, described in more detail in Chapter 6 are:

- Device Description (DD) updates
- Envelope curve
- Favorites folder
- Search function
- Device diagnosis
- Upload/Compare function
- Device Report (XML)
- Application help
- Generic DD

3.2 Connecting to HART devices

CAUTION

Caution!

- Proof of intrinsic safety must be checked when additional devices are introduced into a loop.

3.2.1 VIATOR Bluetooth modem

The VIATOR Bluetooth modem allows point-to-point connections to be made with a HART device. There are two possibilities of making it:

- For a normal transmitter power supply, e.g. RMA42, via a 270 Ω load resistor (250 Ω – 1100 Ω) connected into the loop as shown in Fig. 3-2
- With a transmitter power supply with built-in HART communication resistor, via the two HART communication sockets on the front panel as shown in Fig. 3-3. Suitable HART transmitter power supplies are:
 - RNS221, RMA422, for non-Ex applications
 - RN221, RMA421 for Ex and non-Ex applications

The connection between the Field Xpert and the modem is wireless (Bluetooth).

NOTICE

Notice!

- The modem is certified for use in hazardous areas, Zone 1. Once a modem has been used in a non-Ex installation, it should never be used in an Ex installation, as there is a danger that the protective circuits have been inadvertently overloaded and no longer function correctly.

Connection via a load resistor

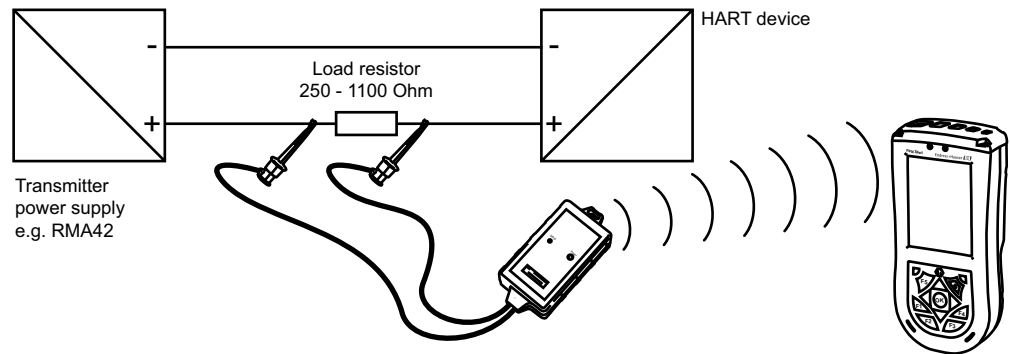


Fig. 3-2: Connection via load resistor

Connection via HART communication sockets

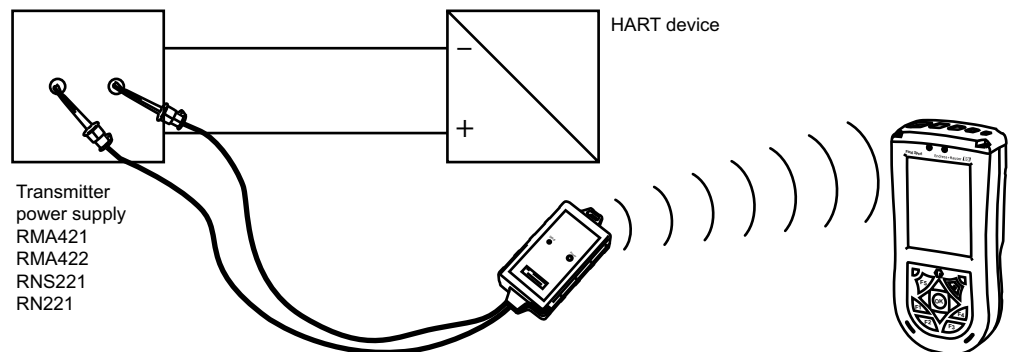


Fig. 3-3: Connection via a transmitter power supply with HART communication sockets (internal load resistor)

3.2.2 WiFi – HART point-to-point connection via Fieldgate

Two HART devices can be connected directly to the input channels of the Fieldgate FXA520. If the appropriate version of Fieldgate was ordered, the devices can be used in hazardous areas. The inputs meet the requirements of SIL 2 for 4 to 20 mA loops (IEC 61508). Fig. 3-4 shows the equipment architecture, whereby the Field Xpert communicates with the Fieldgate via a WiFi access point and the Fieldgates are powered by RN221 or RN221N-B transmitter power supplies.

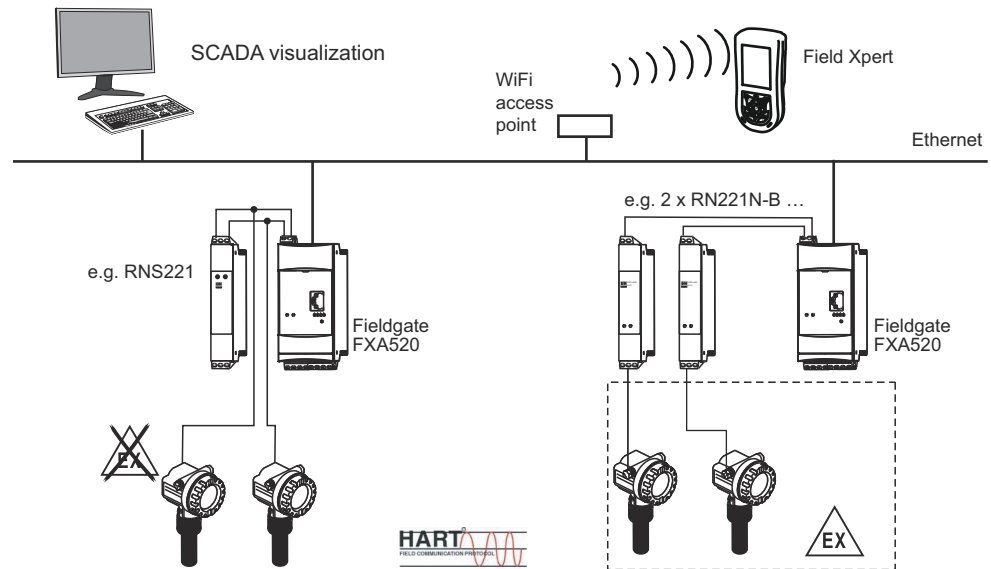


Fig. 3-4: Equipment architecture for HART point-to-point connection

3.2.3 WiFi – HART multidrop connection via Fieldgate

With the FXN520 multidrop module, up to 2x 8 HART devices operating in a non-hazardous area, can be connected to the Fieldgate. Fig. 3-5 shows the equipment architecture.

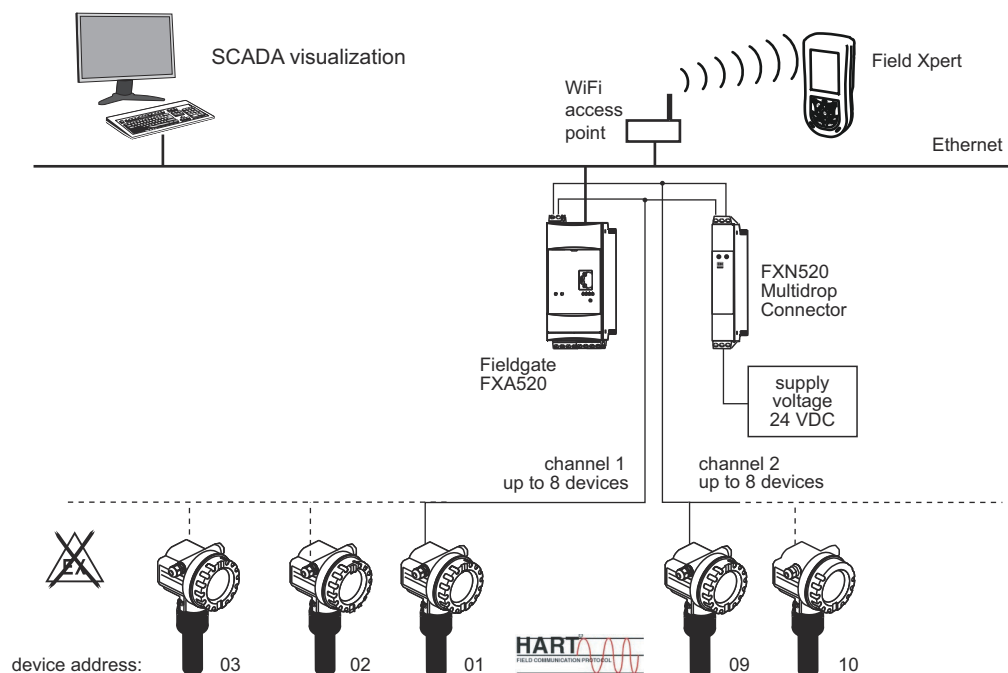


Fig. 3-5: Equipment architecture for HART multidrop connection

3.2.4 WiFi – HART multiplexer connection via Fieldgate

Fig. 3-6 shows the equipment architecture for an HART multiplexer connection. The RS-485 interface for Fieldgate FXA520 can be used for connecting up to two HART multiplexers, e.g. the KFD2-HMM-16 from Pepperl+Fuchs. Up to 30 HART devices can be connected in this way. If the devices are used in a safe area, the RNS221 transmitter power supply can be used to power two devices. Ex devices can also be installed in hazardous areas. In this case, the signal must be connected to the safe side of a RN221N-B transmitter power supply.

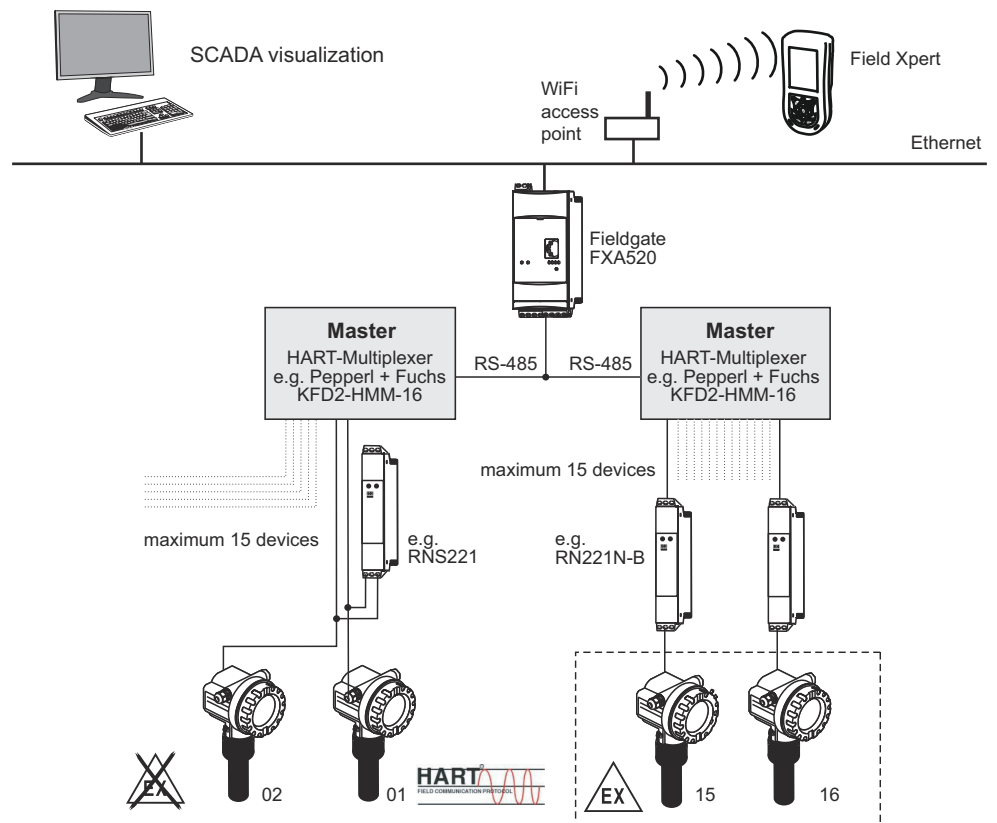


Fig. 3-6: Equipment architecture for HART multiplexer connection

3.3 Connecting to FOUNDATION fieldbus devices



Caution!

- Proof of intrinsic safety must be checked when additional devices are introduced into a loop.

3.3.1 FFblue Bluetooth modem

Field Xpert communicates with a FOUNDATION fieldbus device via the FFblue Bluetooth modem. The connection between the Field Xpert and the modem is wireless. The modem can be connected at any point on the H1 fieldbus segment, or directly to the fieldbus terminals of the device itself. The modem can also be used in explosion hazardous areas, provided that the Field Xpert used with it is also certified for Ex applications.

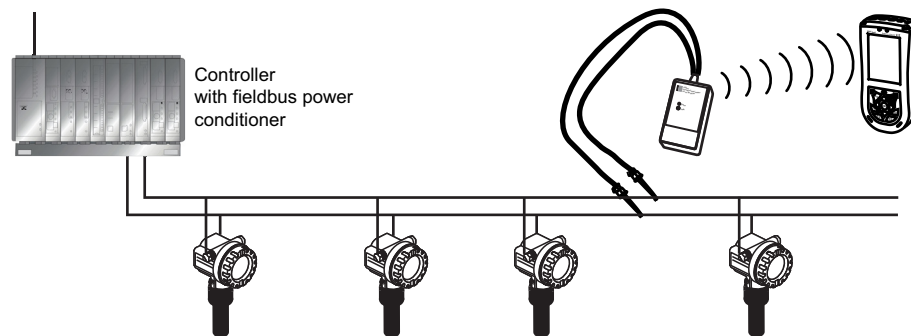


Fig. 3-7: Connection of FFblue modem to FOUNDATION fieldbus H1 segment

3.3.2 WiFi – FOUNDATION fieldbus connection via gateway

Fig. 3-8 shows the equipment architecture, whereby the Field Xpert communicates with the SFC162 gateway via a WiFi access point. The SFC162 gateway is connected in parallel to the controller. It has four channels, each of which may be connected to a different FOUNDATION fieldbus H1 segment.

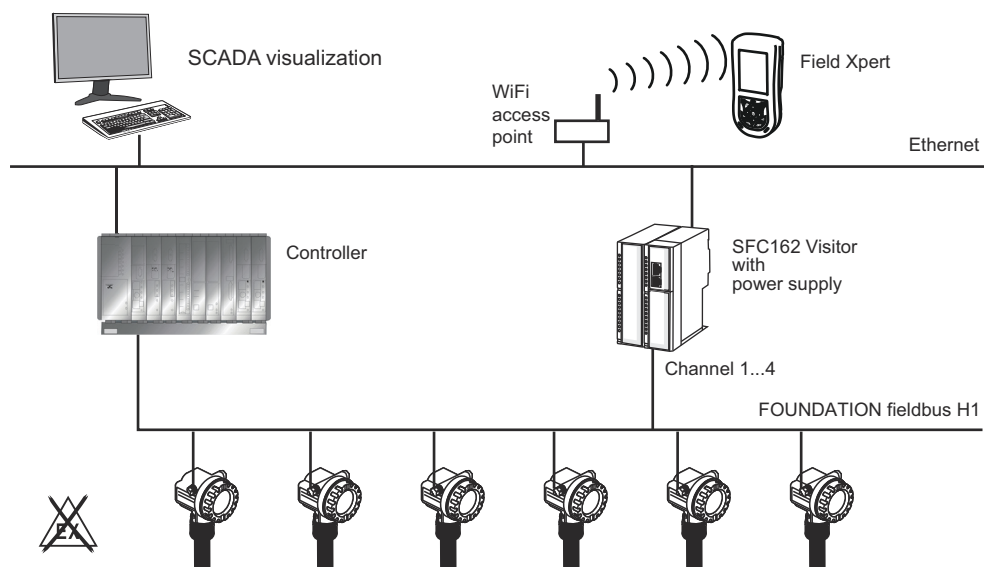


Fig. 3-8: Equipment architecture for FOUNDATION fieldbus network (Non-Ex)

4 Operability

4.1 Field Xpert PDA

4.1.1 Overview

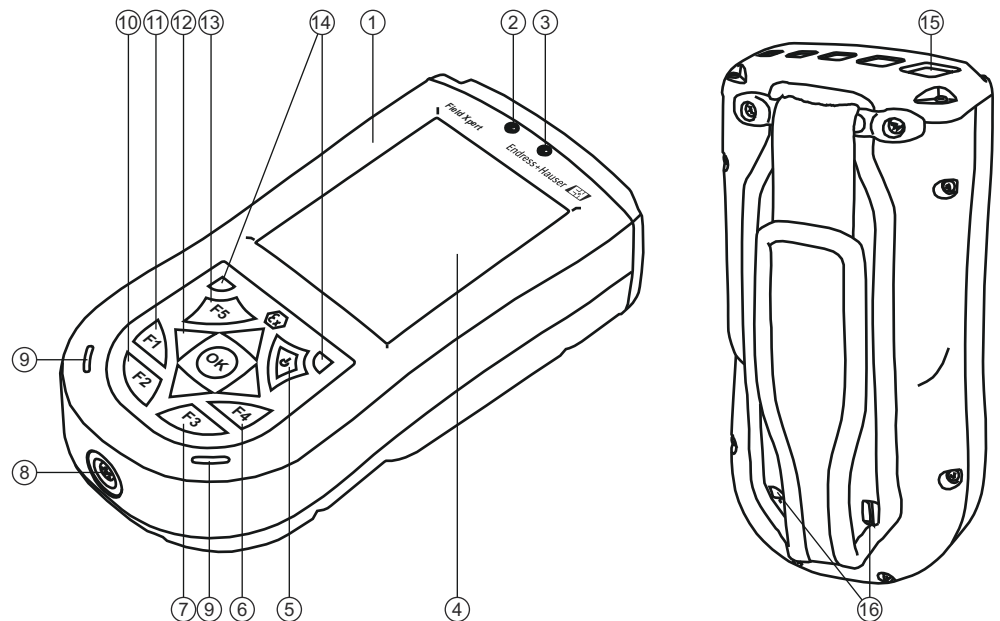


Fig. 4-1: Front and back panel components

- | | | | |
|---|--|----|--|
| 1 | Housing | 9 | Loudspeaker and microphone |
| 2 | Wireless/LED display
Off = WiFi and Bluetooth inactive
Blue flashing = WiFi and/or Bluetooth active
Green flashing = event display | 10 | F2 key (unassigned)
Hold F2 key (unassigned) |
| 3 | Charge LED
Off = not charging
Red flashing = charging
Red constant = charging complete | 11 | F1 key (unassigned)
Hold F1 key
For landscape or portrait view, press for min. 2 sec |
| 4 | Touchscreen | 12 | 5-way navigation key, scroll through lists or press to select (joystick function) |
| 5 | On/off button | 13 | F5 key (unassigned) |
| 6 | F4 key (HP: iTask)
Manages tasks currently running and serves as central switch for starting/closing programs
Hold F4 key (HP: Today)
Launches your "desktop" | 14 | 2 reset keys for soft reset |
| 7 | F3 key (HP: Messaging)
Opens or closes the touchscreen keyboard
Hold F3 key (unassigned) | 15 | IrDa infrared connection |
| 8 | 5-pin network and power connection with USB connector (active only when charger is connected) | 16 | Stylus pen holder |

NOTICE Notice!

- The standard key assignment can be adjusted manually in the Field Xpert Start menu under **Setting=>Personal=>Keys**. Assign any function or program from the picklist to each key and when finished, tap on **OK** in the top right-hand corner.

4.1.2 Charging the Field Xpert battery

⚠ CAUTION

Caution!

- Always connect the Field Xpert to the USB interface before you plug in the charger. A failure to do so may cause damage to the device.

- 1 Charge the Field Xpert batteries
 - The batteries can be charged directly or through the USB interface, see Fig. 4-2
 - When charging for the first time through the USB interface do not connect to the computer:

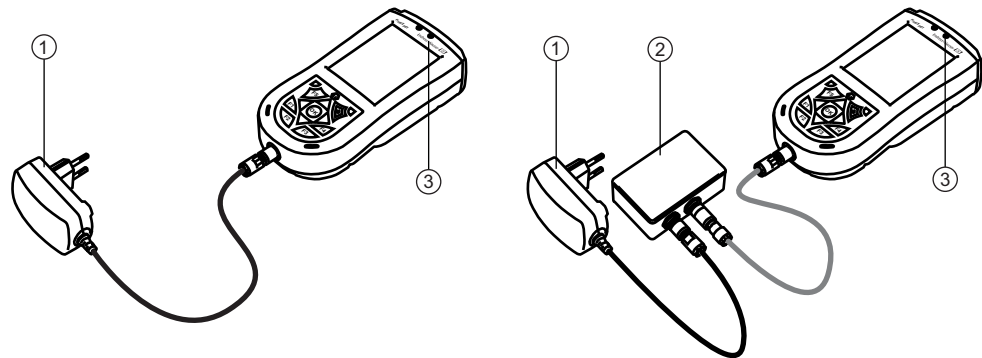


Fig. 4-2: Charging using a charger or USB interface box

- | | | | |
|---|---------------|---|------------|
| 1 | Charger | 3 | Charge LED |
| 2 | USB interface | | |

- 2 Wait until the batteries have been fully charged (indicated by a constant red Charge LED).

4.1.3 Switching on and off

The on/off button switches both the Field Xpert and the backlight on and off. The length of time the button is pressed determines the function. The Field Xpert remembers the last backlight setting when it is switched off.

Field Xpert

- Switch the Field Xpert on by briefly pressing the on/off button (< 3 seconds)
- Switch the Field Xpert off by briefly pressing the on/off button (< 3 seconds)

Backlight

- Switch on the Field Xpert backlight by pressing the on/off button until the display lights
- Switch off the Field Xpert backlight by pressing the on/off button until the display darkens

4.1.4 Battery life

The battery life of a Field Xpert depends greatly on how it is used.

- The Ex version (ATEX) of Field Xpert has an average battery life of 12 to 39 hours.
- The non-Ex version of Field Xpert has an average battery life of 9 to 27 hours

The actual life depends upon the type of Bluetooth, WLAN and infrared usage as well as the intensity of data transmission and the screen brightness.

If the battery becomes completely exhausted, any unsaved data will be lost.

4.1.5 Long-term data storage

Field Xpert is like any other computer in that important data must be stored regularly to the device memory or the SD card. Unsaved data is also retained, provided the battery is still charged. If the device is switched off for long periods, unsaved data will be retained for:

- approx. 69 days for the Ex version
- approx. 48 days for the Non-Ex version

If the battery does become exhausted, any unsaved data will be lost. After recharging and switching on, Windows Mobile restarts in a predetermined sequence. All data and/or programs stored on the SD card or to the device memory remain accessible.

4.1.6 Backlight for display

The use of the backlight will shorten the operating time of the battery considerably. Therefore, it is recommended that the backlight is set up to switch off after a short period of idleness (to switch it back on again, press any key or tap on the display) and that the brightness is not at the to the highest setting. You can make the necessary settings in the Start menu under **Setting => System =>**

Backlight, see Chapter 5.4.1.

4.1.7 Bluetooth transmission range

The Field Xpert is equipped with a Class 2 Bluetooth adapter, which limits the range to maximum 10 meters. The range can be reduced by interference from other nearby devices transmitting in the 2.4 Ghz ISM band. Sources of interference may include cordless telephones, wireless networking devices and also microwave ovens. In certain circumstances, reception interference may cause a Bluetooth connection to be terminated completely, making it necessary to reconnect to the HART or FOUNDATION fieldbus network.

4.1.8 USB interface box

The optional USB interface box allows Field Xpert to be connected to a computer via its USB port.

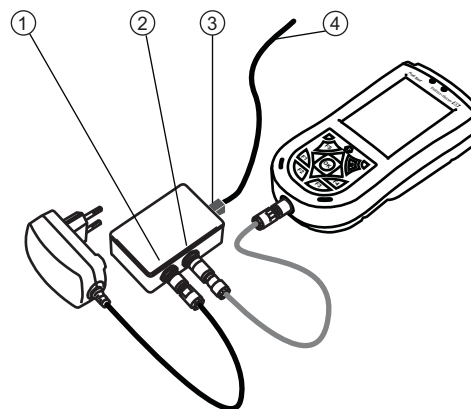


Fig. 4-3: USB interface box

- | | | | |
|---|------------------------------|---|---------------------------|
| 1 | Connection to charger | 3 | USB interface to computer |
| 2 | USB interface to Field Xpert | 4 | Connection to Laptop/PC |

4.2 VIATOR Bluetooth modem

The VIATOR Bluetooth modem is a point-to-point interface for temporary connection to HART-enabled field devices for configuration purposes. It is approved for hazardous areas and operates for approx. 20 hours when powered by replaceable batteries. Field Xpert and the modem communicate with each other via Bluetooth, with the modem connected via cable to the HART field device.

The VIATOR Bluetooth modem incorporates a Class 1 Bluetooth radio with a range of up to 100 meters. The Field Xpert is equipped with a Class 2 Bluetooth adapter, which limits the range to maximum 10 meters, see also Chapter 4.1.7.

NOTICE

Notice!

- The modem is certified for use in hazardous areas, Zone 1. Once a modem has been used in a non-Ex installation, it should never be used in an Ex installation, as there is a danger that the protective circuits have been inadvertently overloaded and no longer function correctly.

4.2.1 Overview

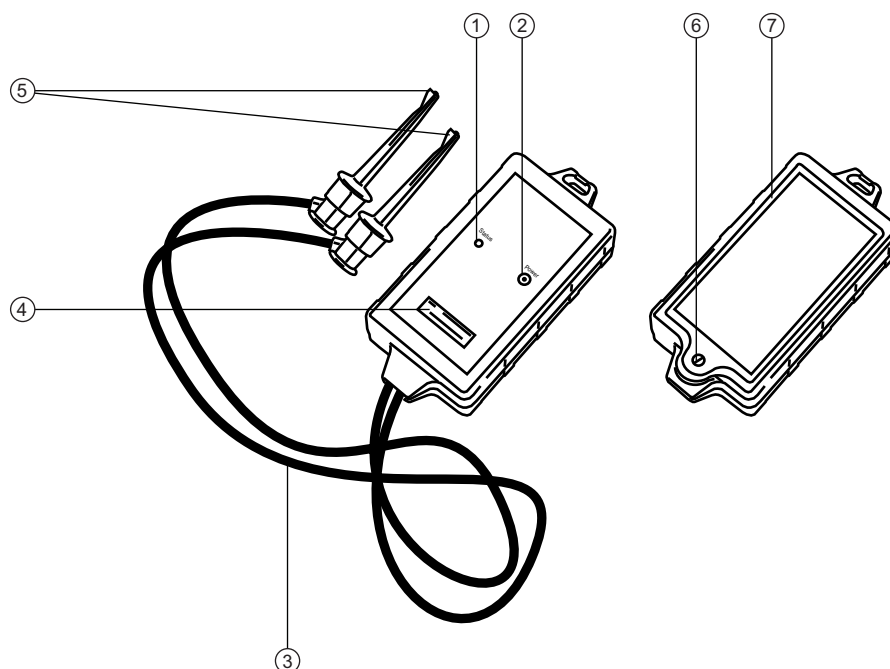


Fig. 4-4: Modem with connecting cables

- | | | | |
|---|-------------------------------|---|---------------------------------------|
| 1 | Status LED | 5 | Terminals |
| 2 | On/off button | 6 | Locking screw for battery compartment |
| 3 | Connecting cable | 7 | Battery compartment |
| 4 | Serial number and MAC address | | |

4.2.2 Batteries

The VIATOR Bluetooth modem requires three AAA alkaline batteries, which are included in the scope of delivery. Insert them into the Bluetooth modem, making sure that the polarities are correct. Replace the lid and secure the battery compartment by tightening the screw.

NOTICE**Notice!**

- To save battery power, we recommend that you switch off the modem when it is not in use.

4.2.3 On/off button

Switch on the modem by briefly pressing the on/off button. This action is confirmed by a constant green LED followed by a flashing green LED. Switching on the modem automatically activates the Bluetooth function.

Switch off the modem by pressing the on/off button for approx. 2 seconds. A constant green LED will illuminate while you press, indicating that the device is being switched off. The LED and the device are then switched off.

4.2.4 LED status (power indicator)

When you switch on the modem or press the on/off button briefly while the modem is switched on, the percentage amount of charge remaining in the batteries will be indicated:

- 4 flashes = 80% or more of battery power remaining
- 3 flashes = 50% or more of battery power remaining
- 2 flashes = 30% or more of battery power remaining
- 1 flash = 10% or more of battery power remaining
- 0 flashes = less than 10% of battery power remaining

At less than 10%, we recommend that you replace the batteries immediately.

4.2.5 Undervoltage lockout

As soon as the battery voltage drops below the shutdown voltage of 2.8 V, the modem immediately powers itself off. The batteries must be replaced.

NOTICE**Notice!**

- If the modem switches off automatically, please ensure that the last actions performed are transmitted to the field device again once the batteries have been replaced.

4.2.6 Inactivity power off

After 30 minutes of inactivity (no Bluetooth connection), the VIATOR Bluetooth modem switches itself off automatically in order to conserve battery life. To reactivate the modem, you must press the on/off button again.

NOTICE**Notice!**

- This setting can be adjusted manually. To do this, you can download software (VIATOR CheckBT software) free of charge from the web site of the modem manufacturer MACTek (www.mactekcorp.com/products.htm)

4.3 Fieldgate FXA520

The Fieldgate FXA520 is a HART gateway with an integrated web server for the remote acquisition of data from HART devices. These can be connected either directly via the HART multidrop connector of Fieldgate FXN520 or via a HART multiplexer. The Fieldgate communicates with the host computer via Ethernet. A connection between the FXA520 and the Field Xpert is established by accessing an Ethernet WiFi access point.

4.3.1 Overview

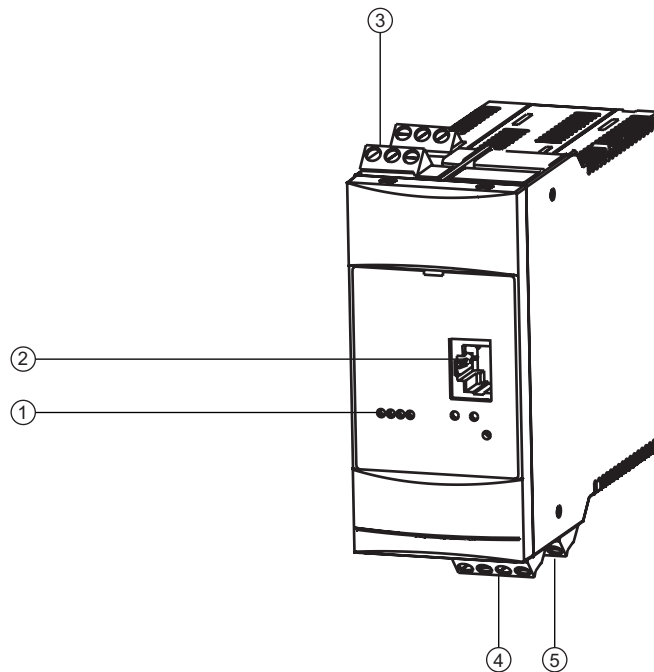


Fig. 4-5: Fieldgate FXA520

- | | | | |
|---|-----------------|---|--------------------------------|
| 1 | Status LEDs | 4 | Power supply/4–20 mA terminals |
| 2 | Ethernet socket | 5 | RS-485 terminals |
| 3 | HART terminals | | |

Full instructions on wiring and setting up Fieldgate FXA520 can be taken from Operating Instructions BA00051S/04/en.

4.3.2 Fieldgate Ports and IP addresses

During the configuration of the Fieldgate WiFi connection in the Field Xpert you will require the following information:

- Fieldgate FXA520 IP address (default 192.168.252.1)
- Fieldgate FXA520 subnet mask (default = 255.255.255.0)
- Fieldgate Web Server Port Number (default = 80)
- Fieldgate Pass-through HART Port Number (default = 3222)

It is normal that the IP address and subnet mask are changed to addresses assigned by your system administrator when Fieldgate FXA520 is installed in a control network. The access ports may also differ. Provided you know the IP address of the Fieldgate, however, you can use a Web browser to view the Fieldgate setup in the **Settings=>Network** menus **Ethernet Setup** and **Miscellaneous Server Setup**.

4.4 FFblue Bluetooth modem

The FFblue Bluetooth modem is an interface for temporary connection to a FOUNDATION fieldbus H1 segment. Field Xpert and the modem communicate with each other via Bluetooth, with the modem connected via cable to the H1 network.

The FFblue Bluetooth modem incorporates a Class 2 Bluetooth radio with a range of up to 10 meters. The Field Xpert is equipped with a Class 2 Bluetooth adapter, which limits the range to maximum 10 meters, see also Chapter 4.1.7.

NOTICE **Notice!**

- The modem is certified for use in hazardous areas, Zone 1. Once a modem has been used in a non-Ex installation, it should never be used in an Ex installation, as there is a danger that the protective circuits have been inadvertently overloaded and no longer function correctly.

4.4.1 Overview

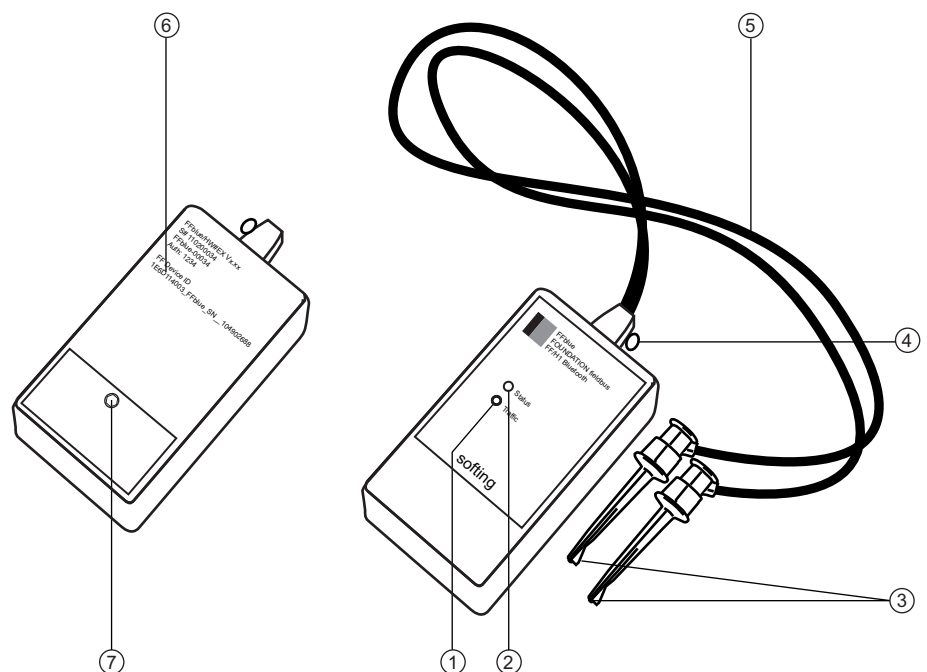


Fig. 4-6: Modem with connecting cables

- | | | | |
|---|---------------|---|---------------------------------------|
| 1 | Traffic LED | 5 | Connecting cable |
| 2 | Status LED | 6 | Nameplate with device information |
| 3 | Terminals | 7 | Locking screw for battery compartment |
| 4 | Securing loop | | |

4.4.2 Power/batteries

The FFblue modem takes the power for the communication interface from the FOUNDATION fieldbus H1 segment to which it is connected. The modem switches on automatically when a voltage is detected across its terminals.

The Bluetooth transmitter, however, requires two AA alkaline batteries, which are included in the scope of delivery. Insert them into the Bluetooth modem, making sure that the polarities are correct. Replace the lid and secure the battery compartment by tightening the screw.

4.4.3 LED status

The FFblue modem has two LEDs which indicate the state of communication and battery status. Their significance is shown in the table below.

LED combinations

Status LED	Traffic LED	Significance	Remarks
on, red	on, red	Power on	Indicates start up of FFblue
on, red	on, red	Flash CRC error, SW Exception	If red, red persists: No runnable firmware is available or a fatal error situation has been detected in the FFblue modem firmware.
on, green	on, red	Bluetooth in power down mode	This state is assumed after 5 minutes, if no active Bluetooth connection is available, in order to save the battery. It is necessary to powercycle the FFblue modem to switch on the Bluetooth again (disconnect/reconnect terminal)
Battery OK			
on, green	off	Bluetooth ON but no connection	Bluetooth module is switched on, wait for serial connection
on, green	on, blue	Bluetooth active (connected)	Serial connection with FFblue modem is established, but no traffic
on, green	flashing, blue	Bluetooth traffic	Serial connection with FFblue modem is established, serial messages are being transferred. Note that in order to save Bluetooth battery the traffic LED is switched on only 20% of the blink interval
0.5 Hz, green	according to Bluetooth connection state	Acting as H1 Linkmaster	Indicates that device is in the token ring, but not as LAS and battery state is OK. The traffic LED is displayed as indicated above when battery state is OK.
5 Hz, green	according to Bluetooth connection state	Acting as H1 LAS	Indicates that device is in the token ring, acts as LAS and battery state is OK. The traffic LED is displayed as indicated above when battery state is Battery state OK.
Battery Low			
1 Hz, red	on, red	Bluetooth in power down mode	Operation would be possible, but powercycle of modem is necessary to switch on Bluetooth module (disconnect/connect terminal)
1 Hz, red	off	Bluetooth ON, but no active connection	Bluetooth module is switched on, wait for serial connection
1 Hz, red	on, blue	Bluetooth active (connected)	Serial connection with FFblue modem is established, but no traffic
1 Hz, red	1 Hz, blue	Bluetooth traffic	H1 bus status not indicated as information about battery state is more important
Battery Empty			
red	off	Battery empty	Bluetooth interface cannot be used

4.5 SFC162 gateway

The SFC162 gateway is a FOUNDATION fieldbus linking device with an integrated web server which can be used as a gateway in visitor mode to a FOUNDATION fieldbus H1 network. A connection between the SFC162 and the Field Xpert is established by accessing an Ethernet WiFi access point.

4.5.1 Overview

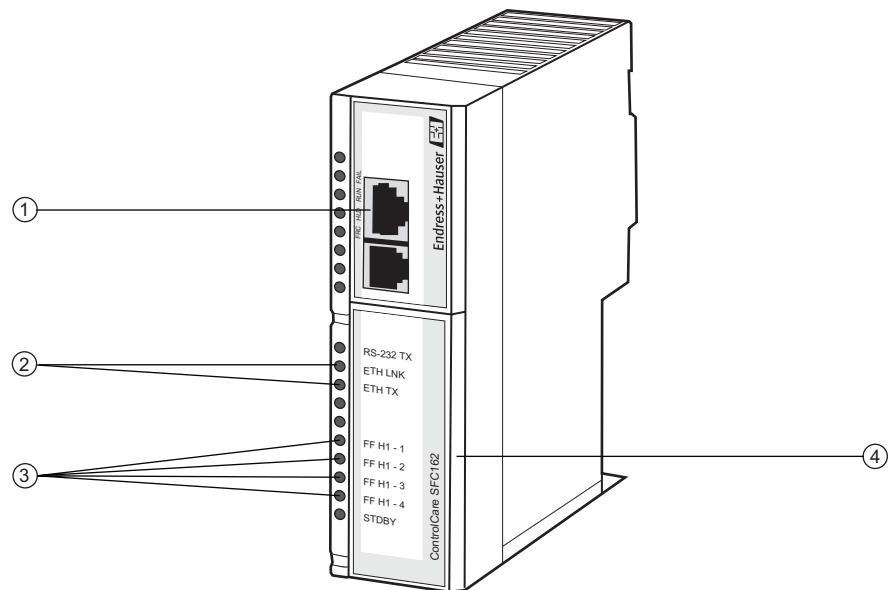


Fig. 4-7: ControlCare SFC162 gateway

- | | | | |
|---|-----------------|---|-------------------------------------|
| 1 | Ethernet socket | 3 | FF H1 traffic LEDs |
| 2 | Status LEDs | 4 | FF H1/24V supply terminals (hidden) |

Full instructions on wiring and setting up the SFC162 module can be taken from Operating Instructions BA00021S/04/en and BA00069S/04/en.

4.5.2 SFC162 IP address and operating mode

During the configuration of the WiFi connection in the Field Xpert you will require the following information for the SFC162 gateway:

- SFC162 IP address (default 192.168.164.100)
- SFC162 subnet mask (default = 255.255.255.0)

When the SFC162 is installed in a control network, change the IP address and subnet mask to the addresses assigned by your system administrator.

In addition, the SFC162 must be set to operate in visitor mode. This is done by calling up the SFC162 Web Server by entering its IP address in your Web browser. When the SFC162 web server opens, proceed as described in Chapter 3.1.3 of the Operating Manual BA00069S/04/en.

5 Commissioning Field Xpert

5.1 Getting Started

5.1.1 Connections

Bluetooth connections

Before Field Xpert can be used to configure HART or FOUNDATION fieldbus devices it must be commissioned. What exactly must be done depends upon the type of connection that is in use and the license that has been purchased. In general:

- a Bluetooth connection for HART has already been configured and installed in Field Xpert by Endress+Hauser prior to delivery if a HART or HART plus FOUNDATION Fieldbus Device Xpert license has been purchased
- a Bluetooth connection for FOUNDATION fieldbus has already been configured and installed in Field Xpert by Endress+Hauser prior to delivery if a FOUNDATION fieldbus or HART plus FOUNDATION Fieldbus Device Xpert license has been purchased
- a WiFi connection must always be configured and installed by the user

The user may also need to configure and install a Bluetooth connection if the license is upgraded or if the modem needs to be reconfigured following a Field Xpert clean reset. This procedure is described in Chapters 5.2.

WiFi connections

If a WiFi connection to a Fieldgate FXA520 (HART) or SFC162 gateway (FOUNDATION fieldbus) is to be used, then the connection must be set up before the associated Device Xpert software can be used. The set-up procedure is described in Chapter 5.3.

5.1.2 Power up

- 1 Charge the Field Xpert batteries as described in Chapter 4.1.2
 - The batteries can be charged directly or through the USB interface, see Fig. 3-2
 - First plug in the charger followed by the Field Xpert and the USB connector
 - Wait until the batteries have been fully charged (indicated by a constant red Charge LED)
- 2 Check that the Bluetooth modem is ready for use
 - For the VIATOR and FFblue Bluetooth modem, insert the batteries into the battery compartment, see Chapter 4.2.2 or Chapter 4.4.2
 - Switch on the VIATOR modem (status LED flashes)
 - Connect the FFblue Bluetooth modem to the fieldbus and check that the status LED is green

NOTICE

Notice!

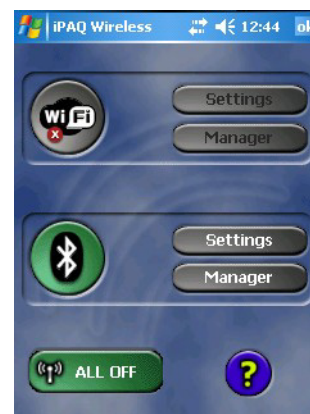
- The VIATOR HART modem switches off if there is no traffic for 30 minutes, and must be switched on again to reactivate it
 - The FFblue modem switches off if there is no traffic for 5 minutes and must be reconnected to the bus to switch it on again
- 3 If you are using the Fieldgate FXA520 or SFC162 gateway, check that the devices are powered up and that the network is up and running
 - 4 Switch on Field Xpert
(switches on automatically when the USB connector is inserted into the computer)

5.1.3 Connect to the modem

- 1 When powered up, the Field Xpert start screen is shown



- 2 **Tap Start => iPAQ Wireless** to open the wireless connection
 - Tap on WiFi or Bluetooth, according to your mode of connection



- 3 Tap the appropriate **Manager** button to open the shortcuts
 - Double tap on the connection you would like to use (in the example Bluetooth) (the dialog may show a list or icons, depending upon the setting in **Menu=>View As**)
 - The first time you use a Bluetooth connection you will be asked for a pass key (mactek for VIATOR modem or 1234 for FFblue modem)
 - The chosen connection goes green



5.1.4 Synchronize the DD library (DD updates)

Device Xpert is supplied with the latest set of HART and/or FOUNDATION fieldbus device descriptions (DDs) available at the time of factory configuration. For a period of 60 days after this time or longer if an optional DD updating licence has been purchased, Device Xpert will connect to the Endress+Hauser Field Xpert - Device Expert DD Update Server, where the latest DD libraries are available. Device Xpert automatically detects whether a valid licence is available, e.g. if purchased at a later date or updated. It is recommended that the library is synchronized during the initial setup of the device, then at regular intervals thereafter (if DD updates are licenced).

Updating the DDs in Device Xpert

To update your DD device library, the Field Xpert must be connected to the internet. This can be done either:

- directly via a WiFi connection or
- via a USB or Bluetooth connection with your laptop/PC.

To activate the license via a Bluetooth or USB connection, you will need ActiveSync Version 4.5 of higher (Windows XP) or Windows Mobile Device Center (Windows 7). Please check if ActiveSync or Windows Mobile Device Center is installed on your PC. If not, download ActiveSync or Windows Mobile Device Center from the Microsoft web site and install the software package.

Depending on the type of connection you have selected, connect the USB cable to your Field Xpert and a free USB port on your PC or activate the Bluetooth interfaces at the PC and Field Xpert.

The following steps are independent of the connection type and therefore apply equally to all of the internet connections described above.

- 1 Start ActiveSync/Windows Mobile Device Center
- 2 If Field Xpert is to access Internet via a proxy server, enter the appropriate server parameters, see Chapter 6.9.3
- 3 Start Device Xpert and select **Device=>Synchronize Library**.



- 4 Synchronization starts and Device Xperts checks automatically if there are new DDs
 - If there have been no updates since your last connection, a message will be displayed
- 5 Confirm the synchronization by Tapping on **Yes**
 - The download starts automatically
- 6 After download, you are ready to use the new device descriptions, see Chapter 6

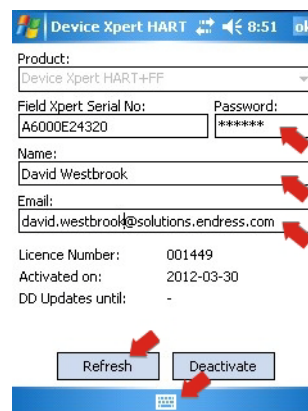
5.1.5 Update your personal licence details

Field Xpert is delivered with a licence filled with factory default values for name and e-mail. We suggest that you fill in your company or name and contact e-mail address.

- 1 From Device Xpert HART or Device Xpert FF select **Help=>Maintain Licence**



- 2 Tap on the keyboard at the bottom of the dialog and fill in your contact details
 - Enter company/name and e-mail address
 - Enter your password, to be found on the rear of the CD-ROM supplied
 - Tap on **Refresh** to confirm the changes



- 3 The licence information is shown at the top and bottom of the screen
 - Product: software package licenced on the Field Xpert
 - Device Xpert Software Licence Number
 - Activated on: date on which the licence was activated
 - DD Updates until: last date at which updates can be downloaded, see Chapter 5.1.4

5.2 Installing and configuring a Bluetooth modem

NOTICE

Notice!

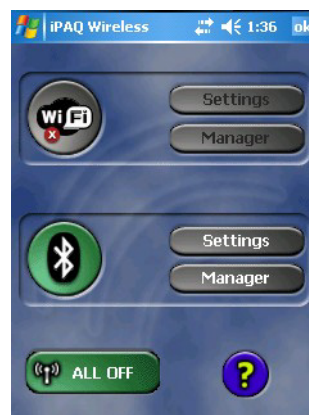
- The Bluetooth modem has already been configured and installed in Field Xpert by Endress+Hauser prior to delivery. You must follow the instructions in this section only if you need to reconfigure the modem following a Field Xpert e.g. clean reset or if you want to add a second Bluetooth modem.

5.2.1 Switch on Field Xpert Bluetooth

- 1 Switch on the Field Xpert by briefly pressing the on/off button.
- 2 Open the iPAQ Wireless dialog via **Start=>iPAQ Wireless**



- 3 Tap on the **Bluetooth button** to switch on Bluetooth. A change in the color of the icon (green) indicates that it is activated.
 - The lefthand Field Xpert LED over the display flashes blue to confirm the activation.



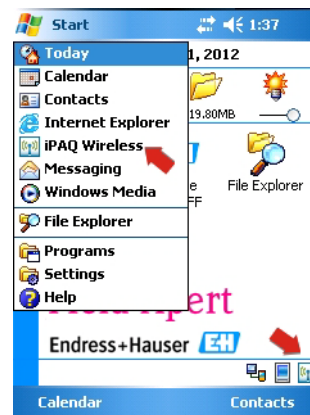
5.2.2 Add a VIATOR Bluetooth modem (HART)

NOTICE

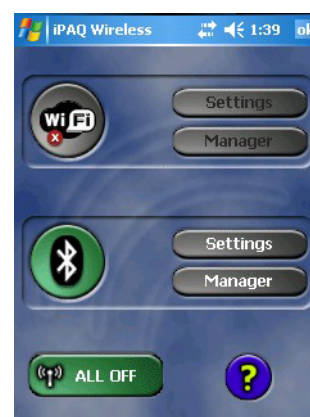
Notice!

- The VIATOR Bluetooth modem has a standard Bluetooth device name, "MACTekVIATORXXXX", where "XXXX" represents the last four hexadecimal digits of the device's Bluetooth MAC address. The Bluetooth MAC address can be found above the serial number on the front label of the modem.

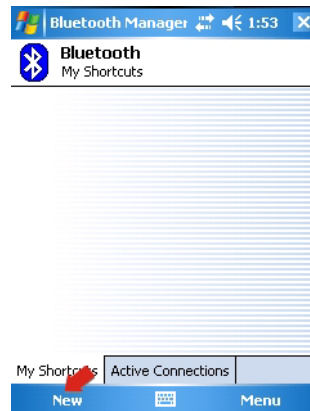
- 1 Switch on the Field Xpert by briefly pressing the on/off button
- 2 Switch on the modem by briefly pressing the on/off button.
 - Switching on the modem automatically activates the Bluetooth function of the modem
 - If the modem LED does not respond in this way, please see Section "4.1.4 LED status".
- 3 Open the **iPAQ Wireless** dialog (**Start=>iPAQ Wireless**) or choose the symbol in the lower right hand corner



- 4 If not already switched on, tap on the **Bluetooth button** in order to switch on Bluetooth communication
 - The icon first turns green



- 5 Select the Bluetooth Manager by tapping on the **Manager** button
 - The shortcut screen for the Bluetooth interface appears
 - Create a new connection by selecting **New**.



- 6 The **Connections Wizard** page is displayed
 - Scroll down and select the menu **Explore a Bluetooth device**



- 7 The Explore a Bluetooth device window appears showing all available Bluetooth devices
 - Tap on **MACTekVia...** (MACTek Viator Bluetooth modem)



Note: To see more details tap on **View => List**

- 8 The configuration window appears
 - Under **Service Selection**, select **SPP** and tap on **Next**



- 9 In the next window, tap on **Finish**

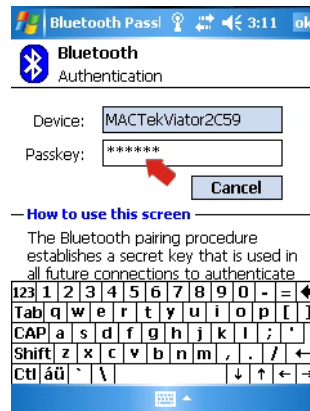


- 10 The modem is now available in **My Shortcuts**

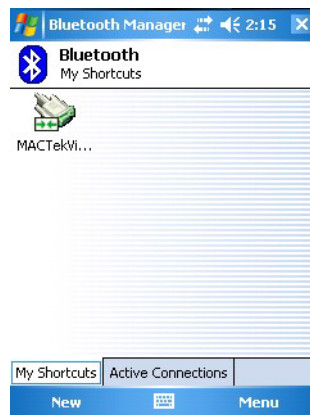


- To proceed, double tap on the modem icon

- 11 The first time you set up a connection with the Bluetooth modem, you will need a PIN code.
 The PIN code is **mactek** (all lower case)
 –Tap on **Enter** after typing in the code



- 12 On successful connection, the MACTek icon shows two green arrows



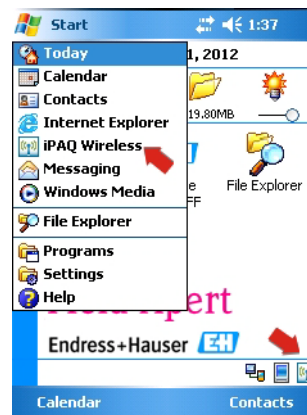
- 13 Tap on "X" and then **OK** in the upper righthand corner to return to the start screen.

5.2.3 Add a FFblue Bluetooth modem (FOUNDATION fieldbus)

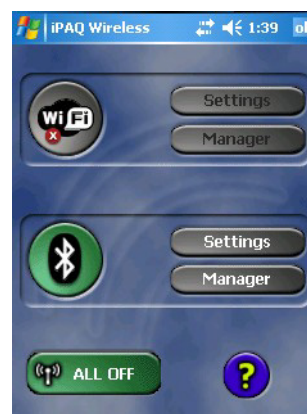
NOTICE**Notice!**

- The FFblue Bluetooth modem has a standard FOUNDATION fieldbus ID which can be found on the nameplate at the rear of the device.
- The modem must be connected to the FOUNDATION fieldbus H1 bus or e.g. a 9 V battery

- 1 Switch on the Field Xpert by briefly pressing the on/off button
- 2 Check that the FFBlue Bluetooth modem is switched on
 - If necessary, connect the modem to the bus again
- 3 Open the **iPAQ Wireless** function (**Start=>iPAQ Wireless**) or choose the symbol in the lower right hand corner



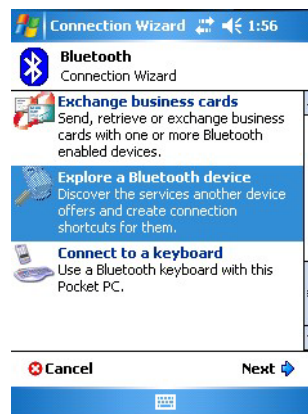
- 4 Tap on the **Bluetooth button** in order to switch on Bluetooth communication
 - The icon first turns green



- 5 Tap On the **Bluetooth Manager** button
 - The **My Shortcuts** page appears
 - Create a new connection by selecting **New**.



- 6 The **Connections Wizard** page is displayed
 - Scroll down and select the menu **Explore a Bluetooth device**



- 7 The Explore a window appears showing all available Bluetooth devices
 - If you prefer an icon to a list entry, tap on **View As=> Icons**



Note: if the modem is not found the first time, Tap **Refresh**

- 8 To proceed, tap on **FFblue-xxxxx** (FFblue Bluetooth modem)

- 9 The first time you set up a connection with the FOUNDATION fieldbus Bluetooth modem, you will need a PIN code. The PIN code is **1234** (see back of modem)
 – Tap on **Enter** after typing in the code



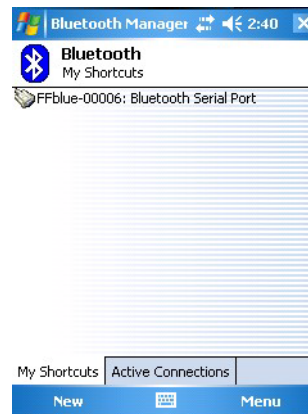
- 10 The configuration window appears
- Under **Service Selection**, select **Bluetooth Serial Port**
 - If required, check the **Security** check box
 - Tap on **Next** to proceed



- 11 In the next window, tap on **Finish**

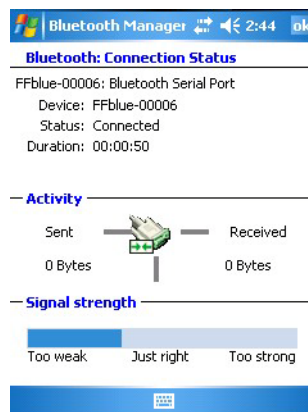


12 The modem is now available in **My Shortcuts**



- Double tap on **FFblue-xxxxx** icon to connect to the modem
- On successful connection, the FFblue Modem icon shows two green arrows

13 A double tap on a connected modem indicates the connection properties



14 Tap on **OK**, **"X"** and then **OK** in the upper righthand corner to return to the start screen.

5.3 Installing and configuring a WiFi access point

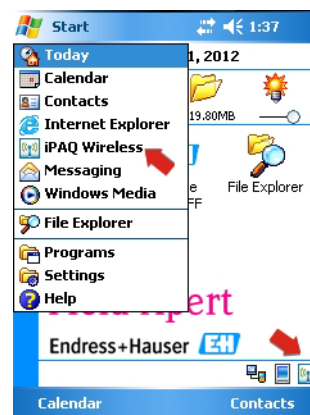
NOTICE

Notice!

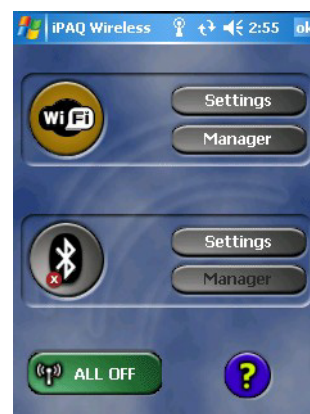
- It is not possible to establish a WiFi connection when Field Xpert is connected via USB to ActiveSync or Windows Mobile Device Center.

5.3.1 Connecting Field Xpert to the WiFi access point

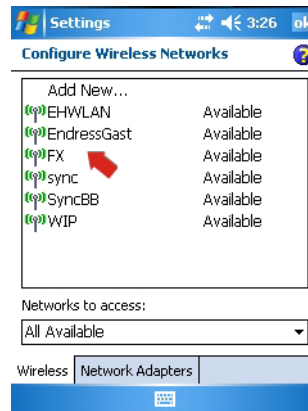
- 1 Switch on the Field Xpert by briefly pressing the on/off button, and navigate to the Field Xpert start page
- 1 Open the **iPAQ Wireless** function (**Start=>iPAQ Wireless**) or choose the symbol in the lower right hand corner



- 2 Tap on the **WiFi button** in order to activate WiFi communication
 - The icon first turns yellow



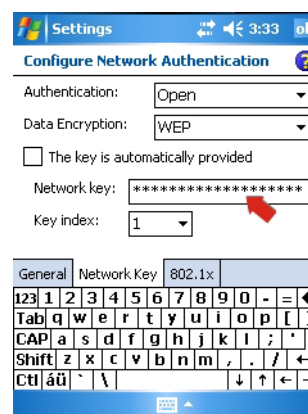
- 3 Tap on the **WiFi Settings** button
 - The first time WiFi is set up, all available WLAN networks are displayed otherwise the Configure Network Adapter page appears – go to Step 7



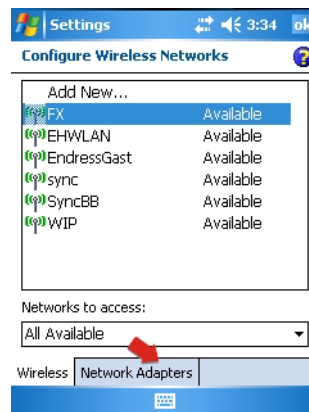
- 4 Select the desired network (in our case FX) and tap on it.
 - The **Configure Wireless Network** page opens at the **General** Tab
 - Select the connection **"Work"**



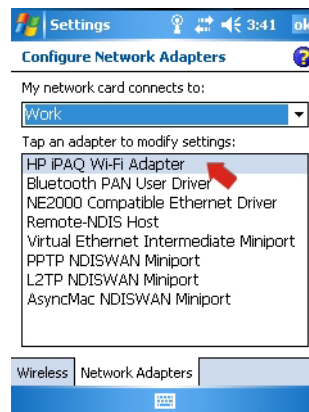
- 5 Tap on the **Network key** tab
 - Select the type of encryption you use and enter your network key.
The encryption type and network key can be obtained from your network administrator



- 6 Tap on **OK** in the upper right-hand corner, the Wireless connections are shown again
 - Select the tab **Network Adapters**



- 7 In the **Network Adapters** tab
 - Select **Work** then tap on "HP iPAQ Wi-Fi Adapter"



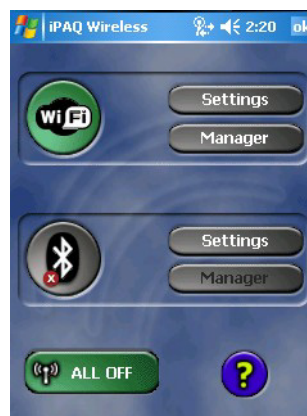
- 8 In the new page which appears
 - Tap on **Use server-assigned IP address** if your WiFi access point has a DHCP server
 - Tap on **Use specific IP address** if this is not the case
 - Enter the IP address and subnet mask of the WiFi access point.
 - The IP address assigned must be in the same subnet as the FXA520, see Chapter 5.3.2 or SFC162, see Chapter 5.3.3



- 9 Tap on **OK** three times until you have reached the **iPAQ Wireless** main menu again.
 - Tap on the **WiFi button** in order to deactivate WiFi communication



- 10 Tap on the **WiFi button** in order to activate WiFi communication
 - If connection to the network is successful, the color of the WiFi icon changes to green.
 - Close the menu by selecting **OK**



5.3.2 Adding a Fieldgate FXA520 for HART communication

NOTICE

Notice!

- Before you add a Fieldgate FXA520, check that its **IP address** is in the same range as the WiFi access point and that both a **Subnet IP** and a **Gateway IP** have been set
- You will also need the **HART Pass Through Port Number**, the **User name** and **Password**

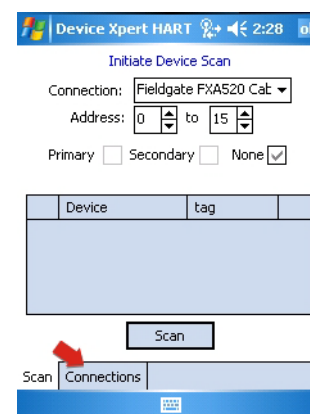
- 1 From the Field Xpert start page tap on the **Device Xpert HART** icon



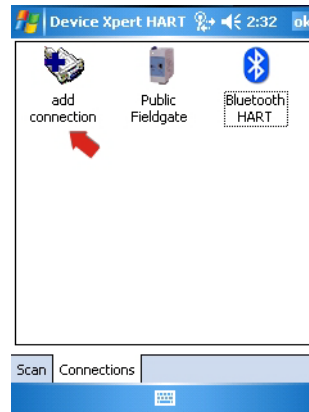
- 2 From the Device Xpert HART start page select **Device ==> Scan**



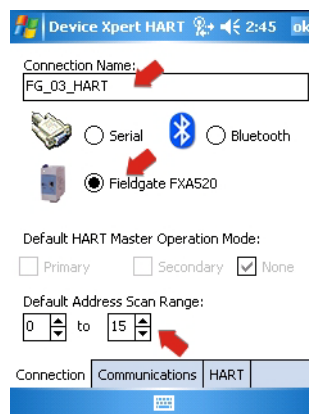
- 3 In the **Initiate Device Scan** page, select **Connections**



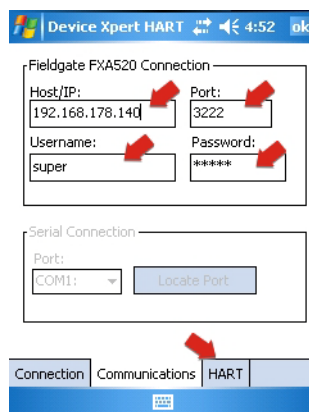
- 4 In the **Connections** page tap on the icon **Add Connection**



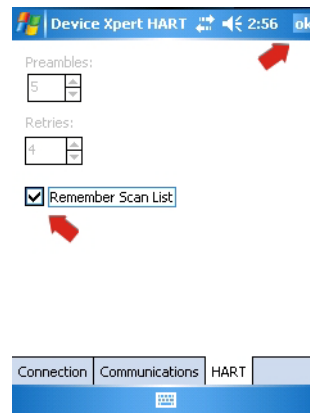
- 5 In the **Add Connection** page:
- Enter a name for the new connection
 - Tap on the Fieldgate FXA520 check box
 - If necessary change the scan range
 - Tap on the **Communications** tab



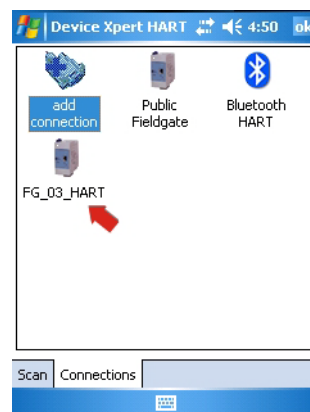
- 6 In the **Communications** page:
- Enter the **IP address** of the Fieldgate FXA520
 - Enter the **HART Pass Through Port Number** of the Fieldgate FXA520 (default: 3222)
 - Enter the **Username** and **Password** of the Fieldgate FXA520 (default: super, super)
 - Tap on the **HART** tab



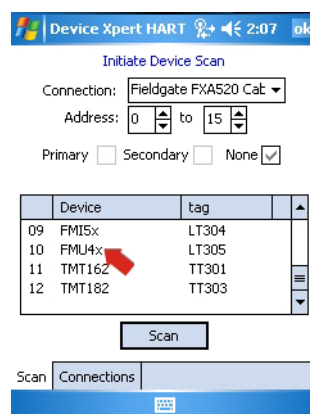
- 7 In the **HART** page:
 - Uncheck the **Remember Scan List** box, if you do not want the Device Xpert to store the last scan
 - Tap on **OK** to return to the connections page



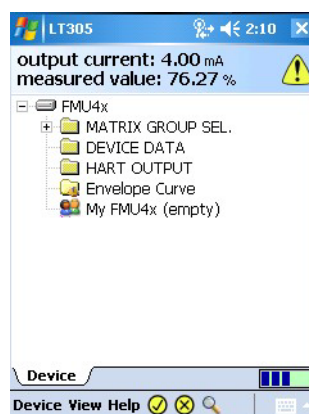
- 8 In the connection page,
 - Tap on the Fieldgate FXA520 icon which has now been added to the page



- 9 Field Xpert scans the HART network and displays the devices connected to the FXA520
 - Tap on a device tag to open the associated device parameter view



10 All the blocks from the device are loaded and presented in a tree



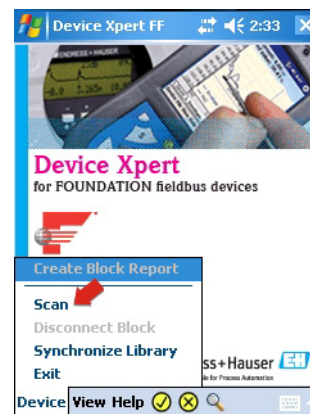
11 You are now ready to configure the device as described in Chapter 6.3

5.3.3 Adding a SFC162 gateway for FOUNDATION fieldbus communication

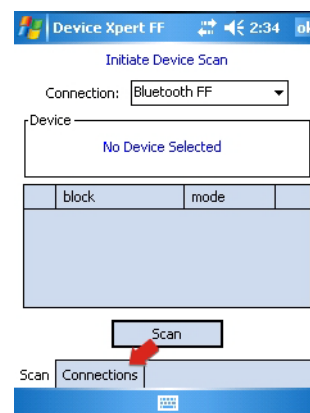
- 1 From the Field Xpert start page tap on the **Device Xpert FF** icon



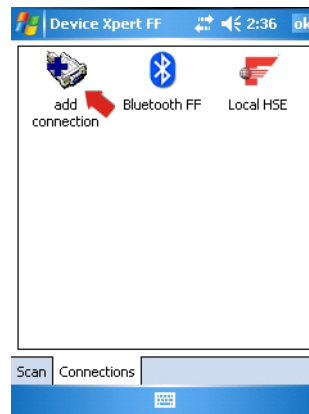
- 2 From the Device Xpert FF start page select **Device => Scan**



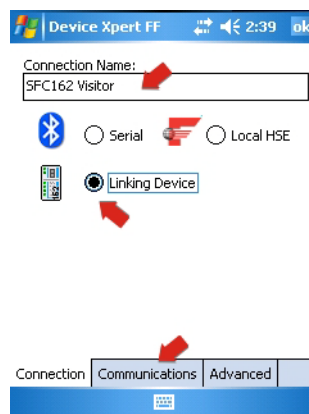
- 3 In the **Initiate Device Scan** page, select **Connections**



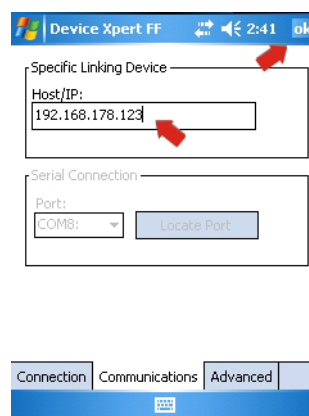
- 4 In the **Connections** page tap on the icon **Add Connection**



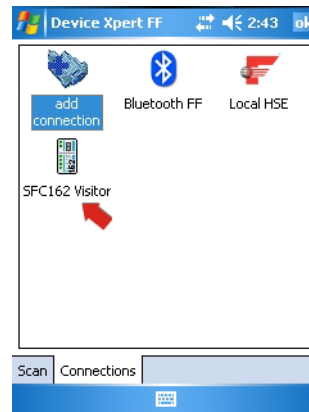
- 5 In the **Add Connection** page:
- Enter a name for the new connection
 - Tap on the **Linking Device** check box
 - Tap on the **Communications** tab



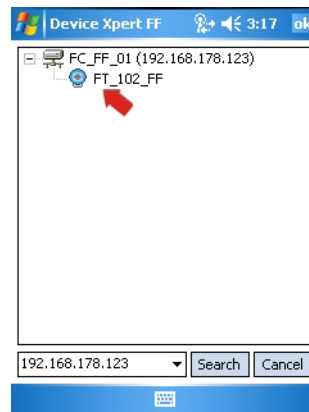
- 6 In the **Communications** page:
- Enter the **IP address** of the linking device as Host
 - Tap on **OK** to return to the **Connections** page
 - The linking device is now available as a connection



- 7 In the **Connection** page:
 - Tap on the **Linking Device** icon which has now been added to the page



- 8 Field Xpert scans the FF network, finds the linking device and displays the devices connected to it

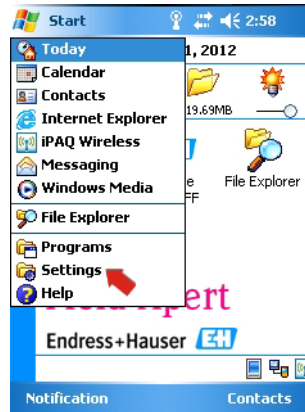


- 9 You are now ready to configure the device as described in Chapter 6.3.

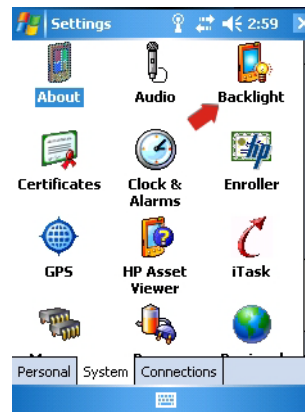
5.4 Optimizing battery use

5.4.1 Backlight

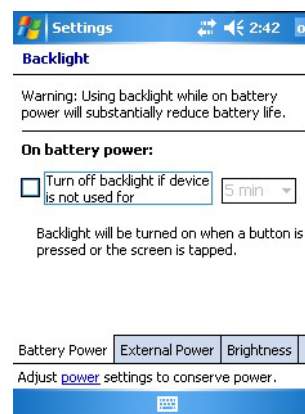
- 1 To change the backlight setting Tap the **Windows icon** and select **Settings**



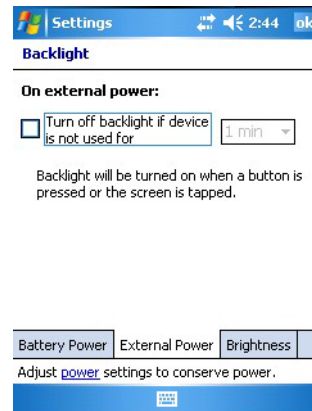
- 2 In the **Settings** menu and **System** tab tap on the **Backlight** icon



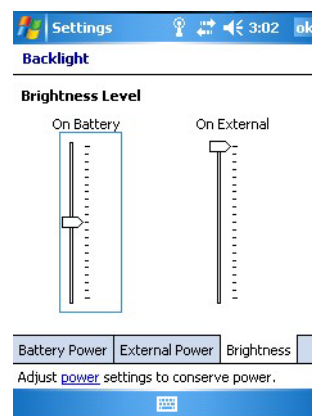
- 3 In the **Backlight** page open the **Battery Power** tag
 - Uncheck the box to switch off the battery save feature



- 4 Select the **External Power** tab to do configure the backlight settings when the charger is in use
 - Uncheck the box to switch off the battery save feature when used with external power



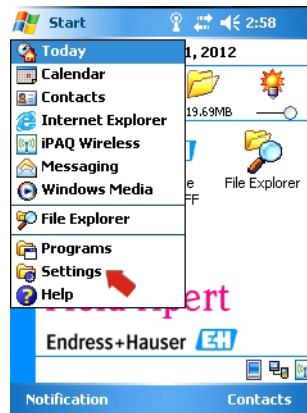
- 5 Select the **Brightness** tab to regulate the brightness of the display for operation with battery and/or external power



- 6 Tap on **OK**, then **"X"** to return to the start screen

5.4.2 Power saving

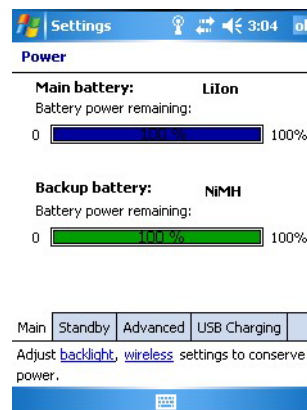
- 1 To change the power saving Tap the **Windows icon** and select **Settings**



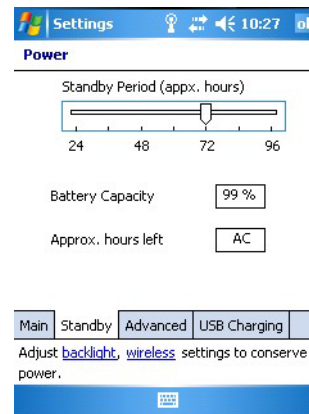
- 2 In the **Settings** menu and **System** tab, tap on the **Power** icon



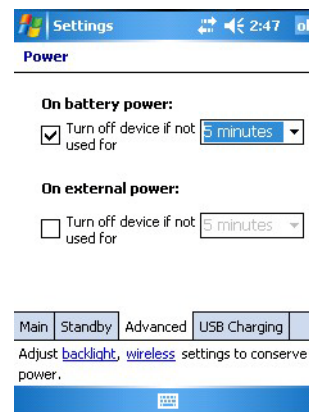
- 3 Select the **Main** tab to see the current status of the main and backup battery



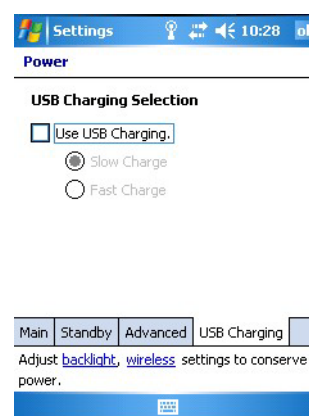
- 4 Select the **Standby** tab to view the remaining battery life



- 5 Select the **Advance** tab to configure the length of the inactive time period for switch off of the device



- 6 Select the **USB Charging** tab to configure the charging of the device via a USB connection



- 7 Tap on **OK**, then **"X"** to return to the start screen

5.5 Paired devices

The modems paired to the Field Xpert's Bluetooth interface can be viewed in the IPAQ Wireless dialog by selecting **Manager=>Menu=>Paired devices**



A dialog opens displaying the modems

- **Add** allows another modem to be paired with the Field Xpert
- **Delete** deletes the selected device



5.6 Additional Software

Field Xpert has the following additional software installed on delivery:

- **Calendar:** Appointment management
- **Contacts:** Phone numbers, address
- **Outlook E-mail:** Mailing program
- **Excel Mobile:** Spreadsheet for tabular calculations
- **Calculator:** Simple arithmetic functions
- **Word Mobile:** Word processing
- **Notes:** Simple notepad
- **Tasks:** Description, prioritization, scheduling and alarming of tasks

6 Operating Device Xpert

The Device Xpert configuration software from Endress+Hauser supports the Field Xpert as a complete HART and FOUNDATION fieldbus communicator for industrial applications.

NOTICE

Notice!

- If you are using the Ethernet gateway FXA520 (HART) or SFC162 (FOUNDATION fieldbus) to connect to your devices via WiFi, the connections must have been set up prior to using Device Xpert, see Chapter 5.3

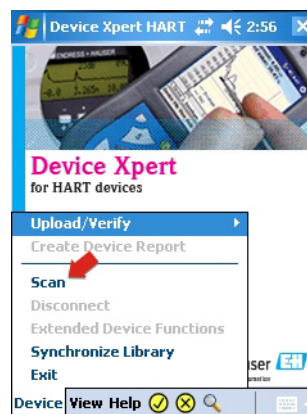
6.1 Connecting to a HART device

Device Xpert HART is configuration software for device commissioning, diagnosis and maintenance of HART devices that are registered at the HART Communication Foundation. It is available in English and German language. Device Xpert HART enables automatic scanning of the HART network as well as quick and easy configuration and diagnosis of the available devices.

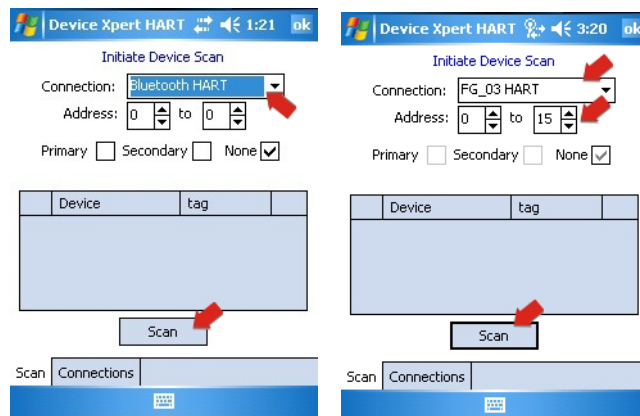
- 1 Check that your Field Xpert is switched on and has an active Bluetooth or WiFi connection, see Chapter 5.1.3
- 2 Start the Device Xpert HART software by tapping on its icon on the Field Xpert start screen



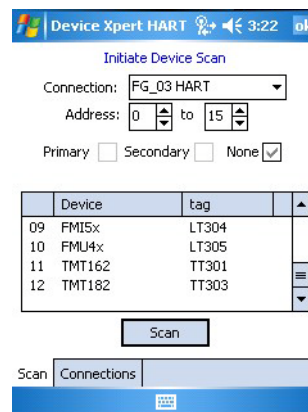
- 3 From the Device Xpert HART start screen select **Device => Scan**



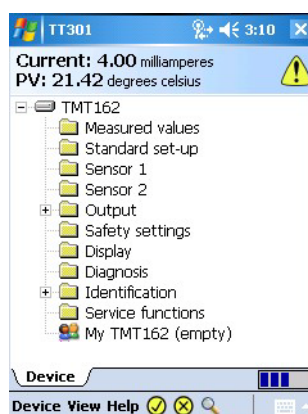
- 4 In the **Initiate Device Scan** menu
 - Check that the Connection is set to the correct modem or gateway
 - Opening the **Connections** tab and tapping on an icon changes the connection
 - By default the **address** range is 0 to 0, which corresponds to a 4–20 mA/HART signal
 - For HART multidrop, set the address range to cover all HART polling addresses used.
 - Tap on the **Scan** button
 - If you have not set up Field Xpert as described in Chapter 5.1.3 or you have setup two or more Bluetooth HART modems, you will be asked to select a modem before the scan starts.



- 5 Device Xpert now searches the connected network for HART devices and automatically assigns the appropriate device driver (DD) to the connected devices
 - For 4–20 mA/HART the parametrization overview page is shown, see Step 6
 - For HART multidrop or Fieldgate FXA520, several devices may be found



- 6 Tap on a device name to open the parametrization overview page:

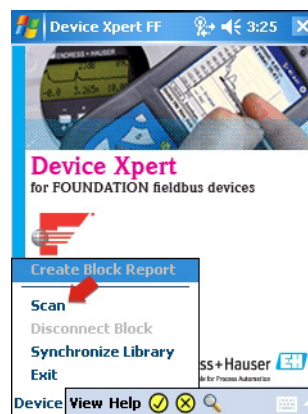


6.2 Connecting to a FOUNDATION fieldbus device

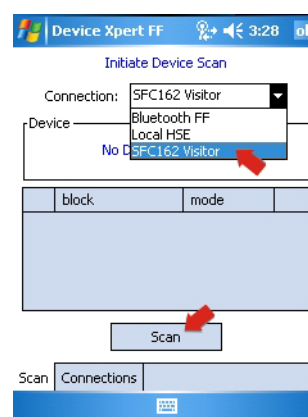
Device Xpert FF configuration is software for device commissioning, diagnosis and maintenance. It is available in English and supports FOUNDATION fieldbus devices that are registered at the Fieldbus Foundation. Device Xpert FF enables automatic scanning of the FOUNDATION fieldbus network as well as quick and easy configuration and diagnosis of the available devices

6.2.1 Generate a live list

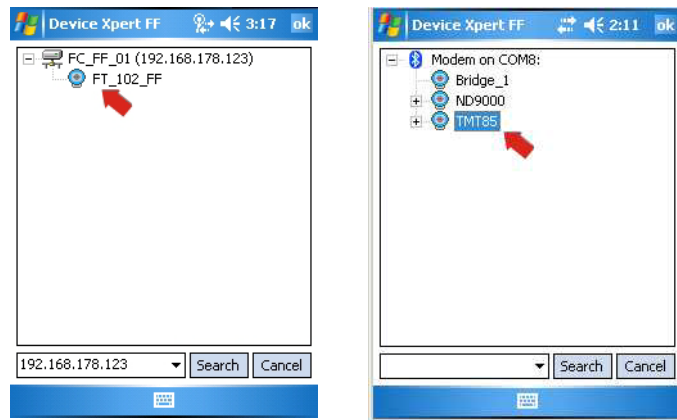
- 1 Check that your Field Xpert is switched on and has an active Bluetooth or WiFi connection, see Chapter 5.1.3
- 2 Start the Device Xpert FF software and select **Device => Scan**



- 3 In the **Initiate device Scan** menu
 - Check that the Connection is set to the correct modem or gateway
 - Opening the **Connections** tab and tapping on an icon changes the connection
 - Tap the **Scan** button
 - If you have not set up Field Xpert as described in Chapter 5.1.3, you may have to select a modem before the scan starts.



- 4 Device Xpert now searches the connected network for FOUNDATION fieldbus devices and publishes a live list
 - Example via SFC162 gateway left, via FFblue modem right
 - For uncommissioned devices, the device name and identifier normally appears



- 5 For commissioned devices, a block and parameter list can now be generated as described in Chapter 6.2.4
 - For uncommissioned devices, continue with Chapter 6.2.23.

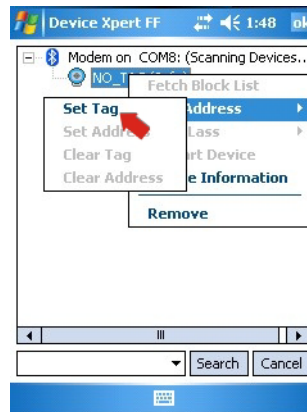
6.2.2 Setting a tag and device address

NOTICE

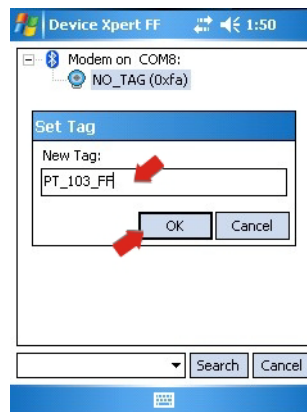
Notice!

- This function is primarily for commissioning of individual devices which are connected point-to-point with a modem or gateway, i.e. test bench operation.
- Device Xpert identifies commissioned devices and deactivates the corresponding menu items

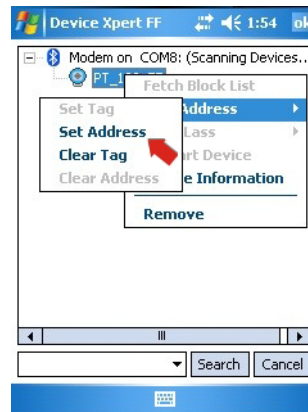
- 1 Tap and hold on a device
 - In the context menu that appears: Tap on **Tag/Address=> Set Tag**



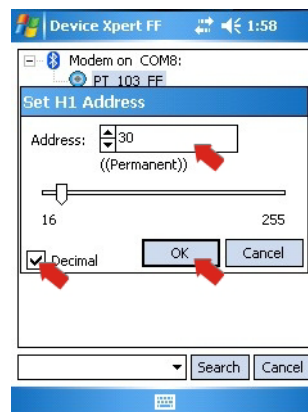
- 2 Enter the tag, Tap **OK** to register the change
 - Tap on **OK** to acknowledge the message that appears:
 - The new tag is displayed in the tree



- 3 Tap and hold on a device
 - In the context menu that appears: Tap on **Tag/Address=> Set Address**



- 4 Select the address from the drop-down menu, enter it or use the slider
 - Tap on the checkbox **Decimal** to change from hexadecimal to decimal addresses
 - Addresses from 0x10 (16) to 0x13 (19) are reserved for Bridges
 - Addresses from 0x14 (20) to 0xF7 (247) are reserved for field devices, whereby any device with BOF Class "Link Master" should have a lower address than a device with BOF Class "Basic"
 - A compact address range accelerates the scanning of the segment
 - Tap on **OK** to register the change and download the address to the device (takes time)



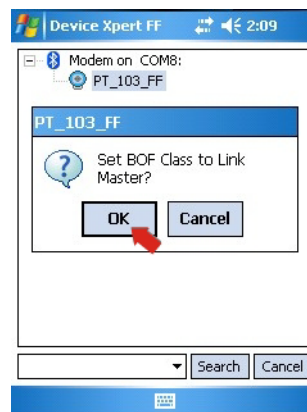
6.2.3 Setting a BOF Class

If the device is to be assigned link master functionality, the BOF Class can now be changed to "Link Master". Normally only one field device in an H1 segment will be allocated this functionality. Not all devices support Link master functionality.

- 1 Tap and hold on the device
 - In the context menu that appears: tap on **BOF Class => Set Link Master**



- 2 In the dialog that now appears, tap on **OK**, to confirm the change

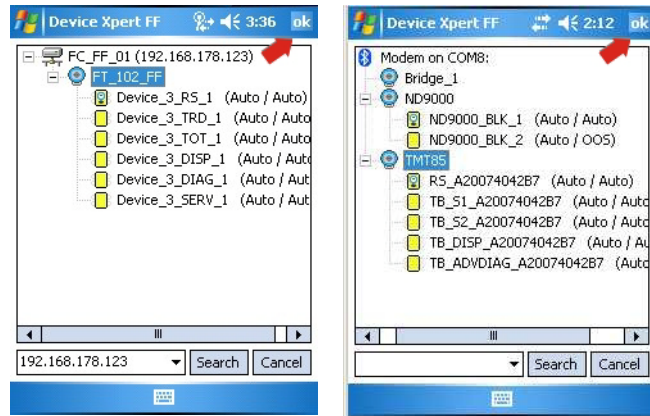


- 3 Tap and hold on the device
 - In the context menu that appears: Tap on **Restart Device**
 - In the dialog that now appears, tap on **OK**, to confirm the restart
 - When the device has restarted the "Link Master" functionality is activated

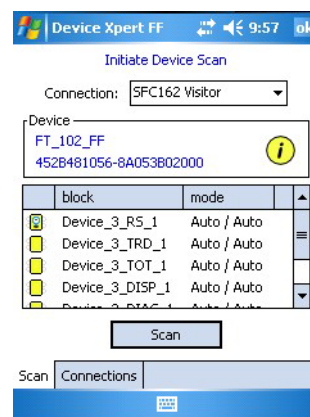


6.2.4 Generate a block and parameter list

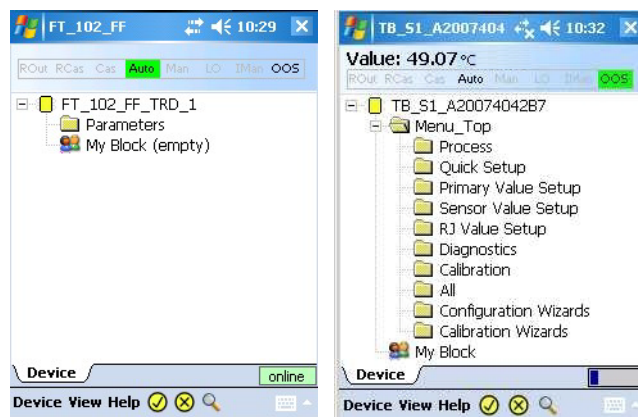
- 1 In the live list, tap and hold on a device to open the context menu
 - Select **Fetch Block List** to load all the blocks from the selected device



Alternatively, tap on a device and Tap **OK**, the blocks are loaded in the scan page



- 2 Now tap on the block you wish to open
 - The block opens: if necessary open the tree to show the menu items
 - To return to the block list tap on **Device => Disconnect Block**



NOTICE

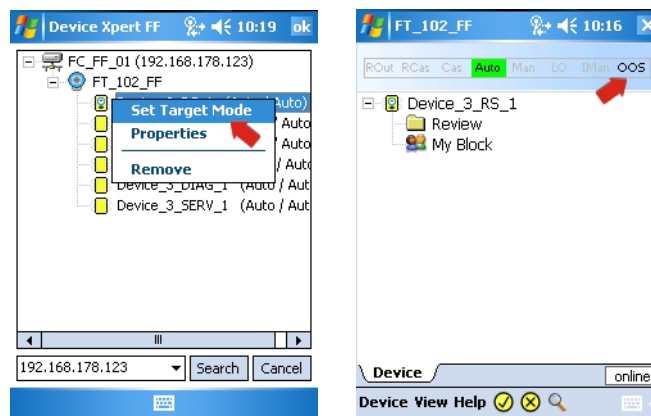
Notice!

- Depending on device DD, it is possible that not all input parameters are visible in their own block. The block "**Parameters**", however, contains all the parameters in the device not contained in menu items.

6.2.5 Change the block target mode

In general, the parameters of a FOUNDATION fieldbus transducer block can only be changed when the block is out of service (OOS). Depending on how you have chosen to generate your parameter list, this can be done from the live list, the block list or the parameter list. After all parameters have been changed and downloaded, the block target mode must be set to Auto again.

- 1 All blocks in the selected device can be put out of service by putting the resource block out of service in the live list
 - From the live list tap and hold on the resource block and select **Set Target Mode** from the context menu
 - Alternatively, from the block list tap on **OOS** in the block mode header

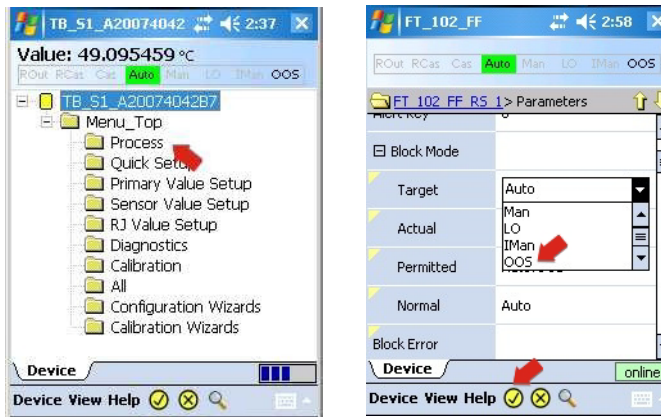


- 2 In the page which appears:
 - Remove the tick from Auto and tick **OOS**
 - Tap on **OK** in the top righthand corner to execute the change



- 3 An individual block can be put out of service in the same manner as above by selecting the block in the live list
 - Tap and hold on the block and select **Set Target Mode** from the context menu or from the block list tap on **OOS** in the block mode header
 - In the page which appears, see Step 2, remove the tick from Auto and tick **OOS**
 - Tap on **OK** in the top righthand corner to execute the change

- 4 If supported, an individual block can also be put out of service in the parameter list
 - Open the parameter group Process (name may differ according to device) or Parameters
 - In the parameter list, open the **Block Mode=>Target** parameter
 - Set the value to **OOS**
 - Tap on the yellow arrow and if necessary confirm with **Yes** to execute the change

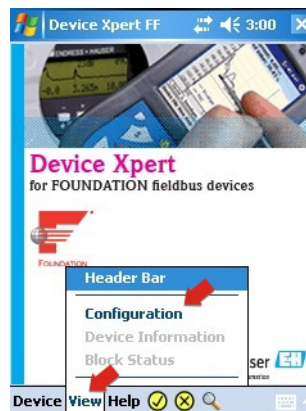


- 5 Put the blocks back into operation as in Steps 1 to 4 above, but select the option **Auto**

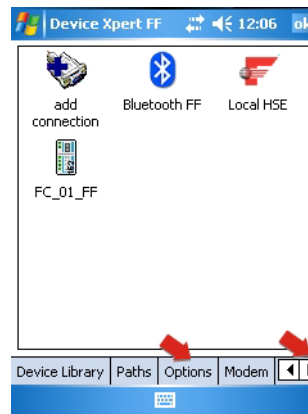
6.2.6 Enable function block viewing

Normally Device Xpert is not used to configure function blocks: this task is done in the engineering software for the DCS in use. For this reason, the default setting for Device Xpert is to hide the corresponding information. If you wish to see the function blocks in the block list, they can be enabled as follows.

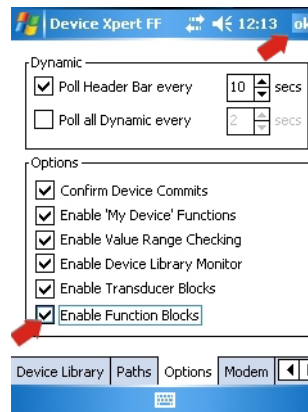
- 1 From the Device Xpert start page select **View => Configuration**



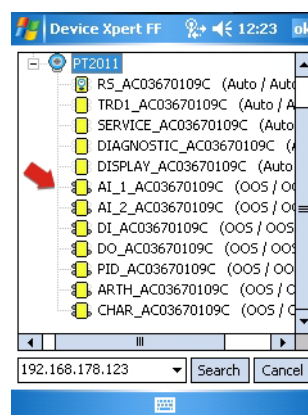
- 2 Scroll to the **Options** tab using the arrows in the corner of the Configuration dialog.



- 3 Tap on the **Options** tab
 - Tap on the check box **Enable Function Blocks** to enable viewing
 - Tap on **OK** to confirm the setting and close the dialog



- 4 The function blocks will now appear in the block list.
 - If you activate this function after you have already fetched the function blocks of a device, you will have to repeat the Fetch Function Block command, see Chapter 6.2.4



6.3 Parameterization of devices

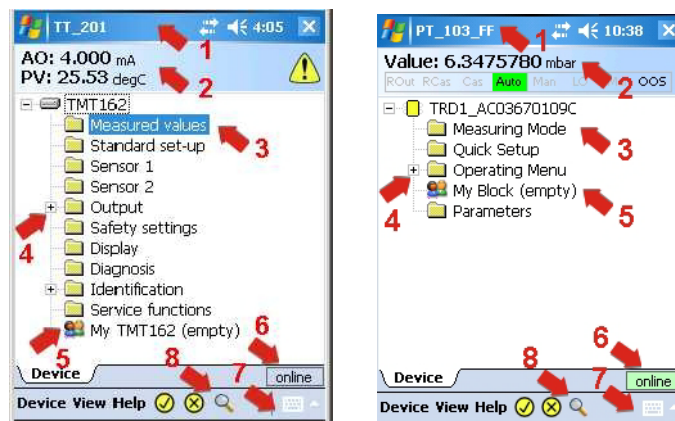
NOTICE

Notice!

- FOUNDATION fieldbus blocks must be put out of service (Target Mode = OOS) before any parameter changes can be downloaded to the device, see Chapter 6.2.5.

The parameters offered by a device depend upon its manufacturer, type and function. For this reason it is not possible to describe how a particular device is parameterized in order that it functions properly – here the user is referred to the device's operating manual. It should also be noted that not all the functions described in this chapter are available in all devices.

6.3.1 Parameter folder tree



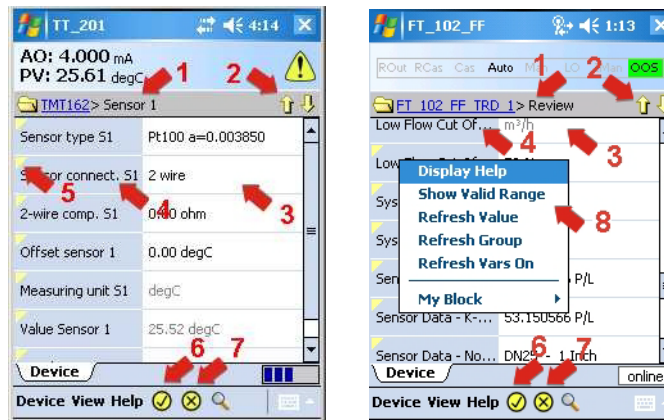
All parameterization starts at the parameter folder tree (HART, left) or block folder tree (FOUNDATION fieldbus, right) which is read from the Device Description (DD) of the device. The table below lists the most important features of the parameter tree page:

Item	Function	Remarks
1	Tag name	<ul style="list-style-type: none"> ■ HART: Tag name read from the connected device ■ FOUNDATION fieldbus: Block name
2	Header bar	<p>For HART devices (as shown left)</p> <ul style="list-style-type: none"> ■ Loop current (in the example the device is HART multidrop = 4 mA) ■ Primary value (in the example temperature) <p>For FOUNDATION fieldbus devices (as shown right)</p> <ul style="list-style-type: none"> ■ Primary value (in the example pressure) ■ Block target mode (permitted in black, actual with green background)
3	Parameter group folder	<ul style="list-style-type: none"> ■ Tap on the node to open the folder and display the associated parameters, see Chapter 6.3.2 ■ For FOUNDATION fieldbus, if the input parameters are not available in their own subblock, the block "Parameters" contains all said parameters for the block.
4	Expansion/contraction point	<ul style="list-style-type: none"> ■ "+" expands the tree to show the parameters beneath the node ■ "-" contracts the tree to hide the parameters beneath the node
5	Customized parameter folder	Folder in which a customized view of the device parameters can be stored
6	Connection status	Status indicating whether the device is online or offline
7	Keyboard	<ul style="list-style-type: none"> ■ Tap on the icon to show the keyboard ■ Tap on the icon when the keyboard is active to hide it again
8	Search	■ Tap on the icon to open the search function

The header bar of the parameter tree can be hidden/displayed by selecting **View=>Header Bar**.

6.3.2 Parameter folders

The parameter folders group together input and output parameters associated with particular device functions. The table below lists the most important features of the parameter tree page:

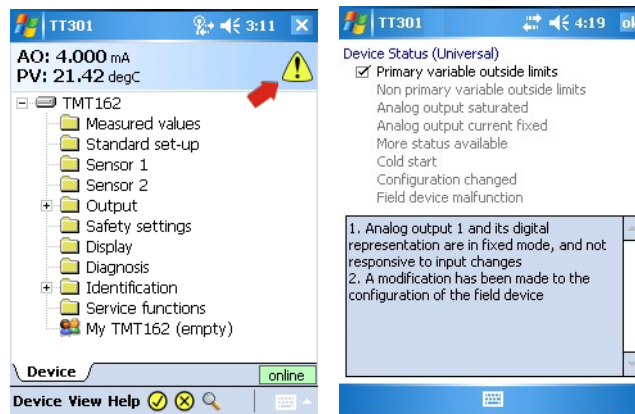


Item	Function	Remarks
1	Horizontal navigation	Indicates the current position in the navigation tree <ul style="list-style-type: none"> ■ A tap on the higher level closes the current level and moves upwards
2	Vertical navigation	Navigates between parameter group folders <ul style="list-style-type: none"> ■ Arrow up: moves to and opens the parameter group folder above ■ Arrow down: moves to and opens the parameter group folder below
3	Device parameter	Current value of a device parameter <ul style="list-style-type: none"> ■ Tap on the parameter to change the setting <ul style="list-style-type: none"> – Normal parameters can be changed – Grey parameters are read only and cannot be changed – Red parameters have not been accepted by the field device
4	Device parameter name	Designation of parameter, select to open context menu, see below <ul style="list-style-type: none"> ■ Normal parameters can be changed ■ Bold parameters have been changed in this session ■ Grey parameters are read only and cannot be changed <p>Tap and hold parameter to open the context menu for the parameter</p> <ul style="list-style-type: none"> ■ Display Help: display the help text for the parameter ■ Show Valid Range: Display the range of valid parameter values ■ Refresh Value: causes the value to be read from the device again ■ Refresh Group: causes the parameter group to be read from the device again ■ Refresh Vars On/Off: Toggles the automatic refresh of the selected value ■ Display Error: displays a parameter error ■ My <Device> or My Block: Adds the selected parameter to be added to the customized parameter folder <ul style="list-style-type: none"> – Select my device – a submenu "Add" appears – Select Add
5	Parameter help available	Yellow triangle indicates that the parameter has an online help, see above
6	Confirm updates	Transfers all updates made in the folder to the field device
7	Discard updates	<ul style="list-style-type: none"> ■ After confirmation with YES, discards all updates made since last edit
8	Parameter context menu	See Item 4 <ul style="list-style-type: none"> ■ Changes according to parameter properties

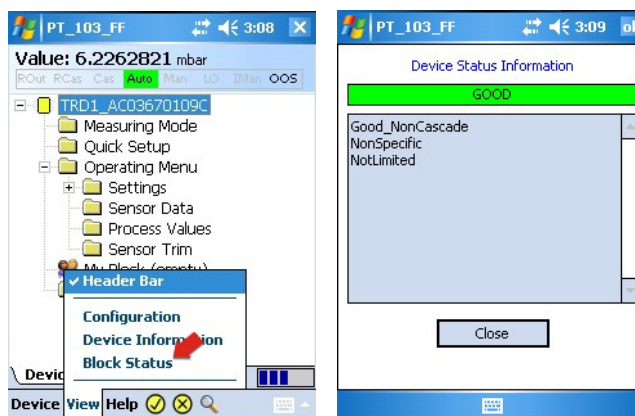
6.3.3 Device diagnosis

Device Xpert offers a range of device status and diagnostic information, which are provided by the device description.

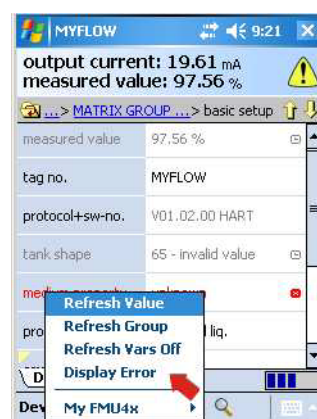
- 1 For HART devices, the presence of an error is indicated by a yellow triangle in the header
 - A tap on the triangle displays the diagnosis information



- 2 For FOUNDATION fieldbus (and HART) select **View=>Block Status (Device Status)**



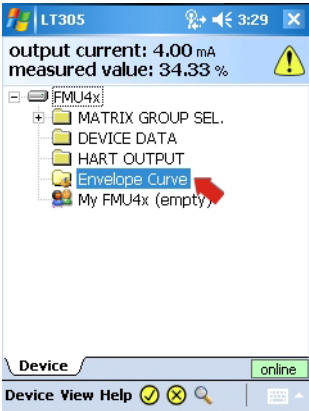
- 3 Parameters in the parameter list which are permanently displayed in red have an error
 - Open the parameter error description by tap and hold on the parameter name and selection of **Display Error**
 - A text box with a description of the error appears



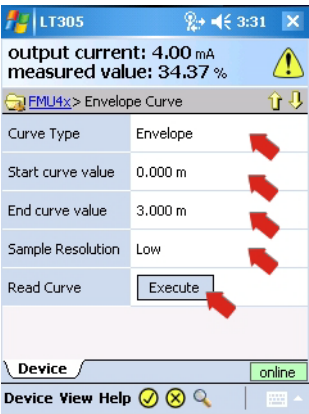
6.4 Envelope curve

Device Xpert provides an envelope curve display for all Endress+Hauser time-of-flight level transmitters using the HART protocol. It is added as an **Envelope Curve** parameter group in the parameter group tree. For a full description of the functions, the user is referred to the operating instructions of the connected device.

- 1 From the device parameter group tree tap on **Envelope Curve**

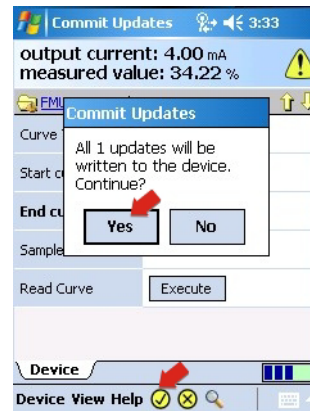


- 2 In the parameter page set the parameters as required (see operating instructions of connected device)

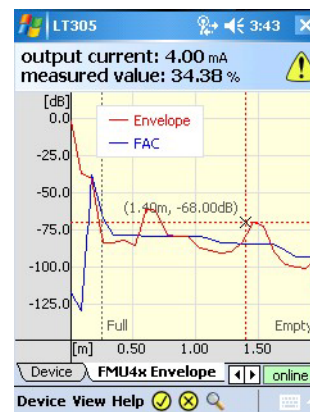


Parameter	Significance
Curve Type	Determines the type of curve to be sampled <ul style="list-style-type: none">■ Envelope■ FAC■ MAP■ Envelope + FAC
Start Curve Value	Value in meters from the probe head, at which the envelope sampling should start
End Curve Value	Value in meters from the probe head, at which the envelope sampling should end
Sample Resolution	Determines the resolution of the curve <ul style="list-style-type: none">■ Low■ Low-Medium■ Medium■ Medium-High■ High
Execute Curve	Tapping on Execute starts the sampling process

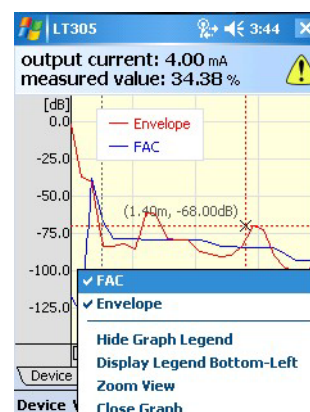
- 3 When the parameters have been changed, download them to the device by Tapping on the yellow tick at the bottom of the page
 - Confirm the download with **Yes**



- 4 Tap **Execute** to start the sampling
 - If necessary, confirm that the Device Xpert will wait for any pending updates with **Yes**
 - The envelope curve is sampled and displayed (depending on resolution may take several minutes)



- 5 Tap and hold on the graph opens a context menu that allows the user to
 - Change the presentation (**FAC, Envelope**)
 - **Hide** the display legend or **move** it to a bottom left (or top left)
 - Have a **Zoom View/Small View** of the envelope curve
 - Close the envelope curve (**Close Graph**)

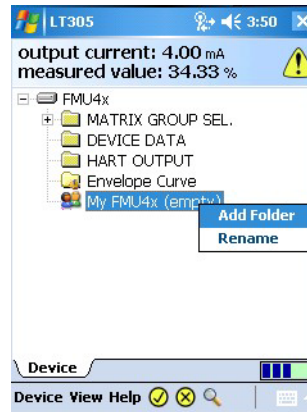


6.5 Favorites folder

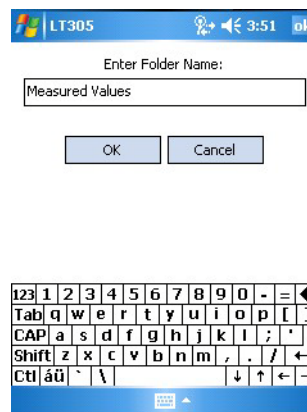
In every device description there is a Favorites folder with the name **My <device name>** (HART) or **My Block** (FOUNDATION fieldbus). Here you can put all of the parameters which you would like to have immediately to hand. It is also possible to group the parameters in different subfolders.

Adding a folder

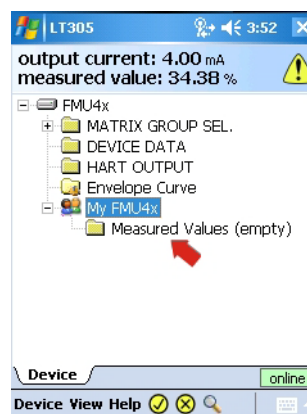
- 1 Tap and hold on the **My <device name>/My Block** folder to open the context menu



- 2 Tap on **Add Folder** to open the **Enter Folder Name** page

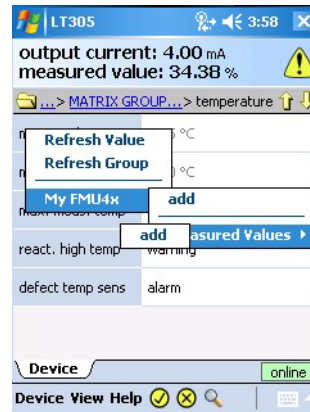


- 3 Enter the name and Tap on **OK** to add the subfolder to **My <device name>/My Block**

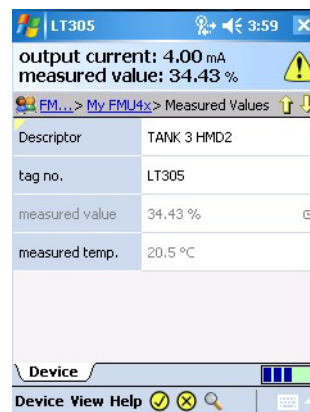


Adding parameters

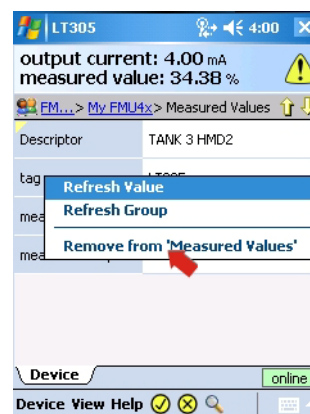
- 4 Open the parameter group folder containing the parameter that you want to add
 - Tap and hold on the parameter name you want to store until the context menu appears
 - Select **My <device name>/My block** then **Add** or **<Subfolder>=>Add**
 - Confirm with **OK**
 - The parameter is added to the My <device name>/My Block folder or the subfolder



- 5 Display the parameters by opening the **My <device name>/My block** folder or **subfolder**



- 6 Parameters can be removed from the My <device name>/My Block folder by calling the parameter context menu by tap and hold and selecting **Remove from "My <device name>/My Block"** or **Remove from "<Subfolder>"**

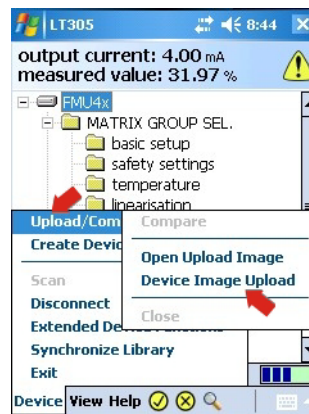


6.6 Upload/Compare function

The Upload/Compare function enables HART device configurations to be saved in the form of an upload image in the Field Xpert. Using such an image, the current device configuration can be easily compared with and verified against previous device configurations.

6.6.1 Upload

- 1 Upload the current image of the connected device by selecting **Device=>Upload/Compare**
 - Select **Device Image Upload**
 - Answer **Yes** to the device requery message which now appears



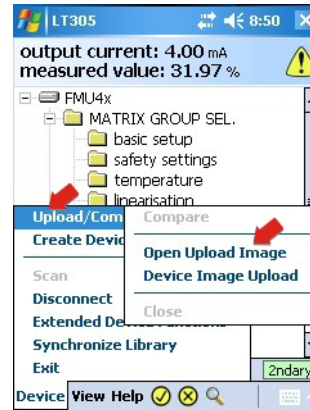
- 2 In the page which now appears enter the file storage information:
 - Default file name is tag, date and time of day (can be changed)
 - Tap on **OK** to store



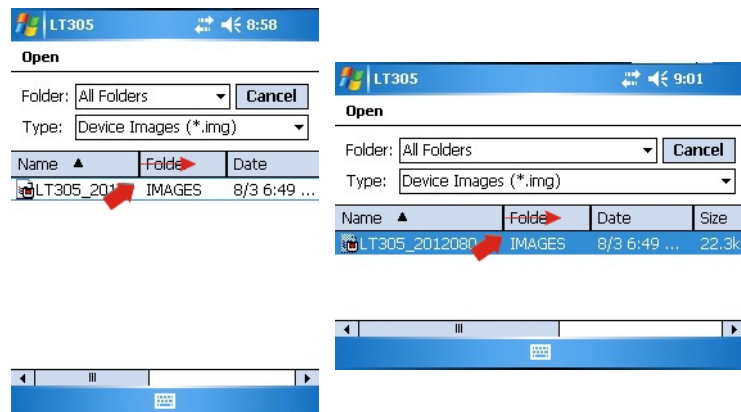
- 3 Field Xpert uploads the current device configuration and stores it as an .img file at the location \SD Card\IMAGES:
 - A successful upload is indicated by a corresponding message.
 - Tap on **OK** to confirm

6.6.2 Compare

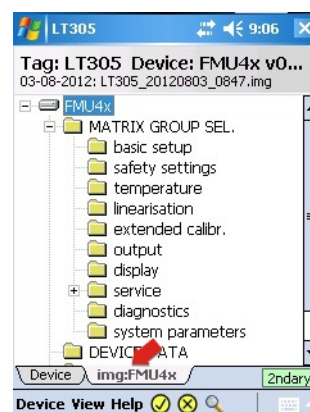
- 1 Open the upload image file with which you want to compare the current device configuration by selecting **Device=>Upload/Compare**
 - Select **Open Upload Image**



- 2 In the **Open** page which now appears
 - Tap on the file you wish to open
 - If the file name cannot be read, press the F1 key for a period to landscape display mode (Press the F1 key for a long period to return to portrait display mode)
 - The column width can be adjusted by dragging the cursor over the separating line (as Excel)



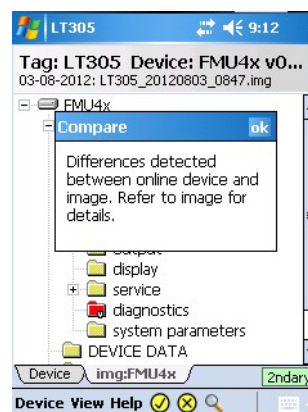
- 3 The image file is opened in a new tab
 - Previous parameter settings can be seen by navigating through the parameter groups



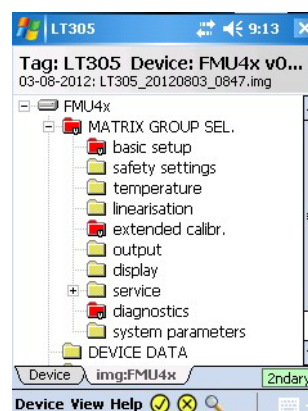
- 4 To compare the online configuration against the previously stored image, select **Device=>Upload/Compare**
 - Select **Compare** (only possible if image tab is selected)



- Answer **Yes** to the device requery messages which now appear
- 5 After comparison, a compare message informs of changes



- 6 Tap on **OK** to display the compare parameter tree
 - Parameter groups and parameters with differences are highlighted in red

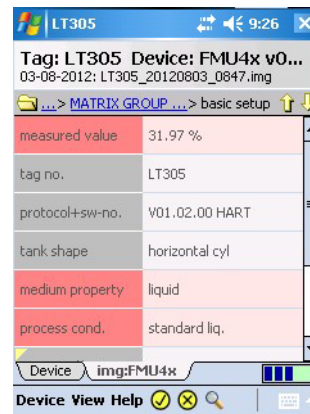


NOTICE

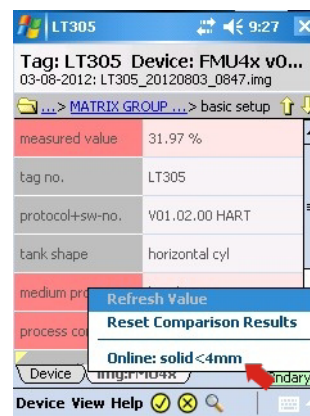
Notice!

- The compare function does not differ between dynamic (output) and static parameters, so that it is normal to find differences between parameter groups

- 7 Tap on a highlighted folder to see the changes in detail

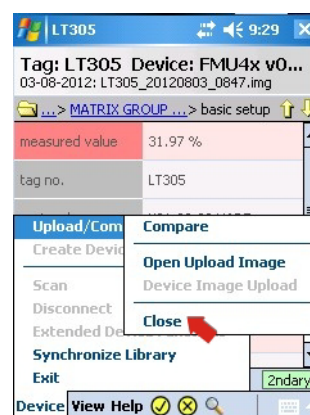


- 8 Tap and hold on a highlighted parameter to see the online configuration value



- **Reset Comparison Results** removes the highlighted comparison results

- 9 Close the image by selecting **Device=>Upload/Compare=>Close**

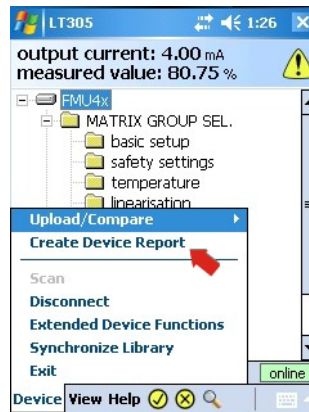


6.7 Device and Block Reports

6.7.1 Create Device Report (Device Xpert HART)

For documentation purposes, you can create a report of the online device configuration and save it on your PDA.

- 1 To create a report of the device configuration select **Device=>Create Device Report**
 - Answer **Yes** to the query which now appears and wait until the Save as page appears



- 2 In the page which now appears enter the file name
 - Default file name is tag, date and time of day (can be changed)
 - Tap on **OK** to store

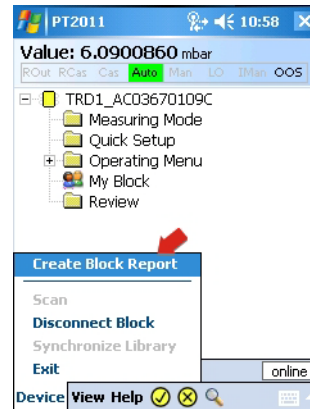


- 3 Field Xpert stores the current device configuration as an XML file with XSL style sheet at the location \SD Card\REPORTS
 - A successful save is indicated by a corresponding message
 - Tap on **OK** to confirm
- 4 The Device Report can be viewed with the PDA (web browser) or can be imported into Microsoft Excel.

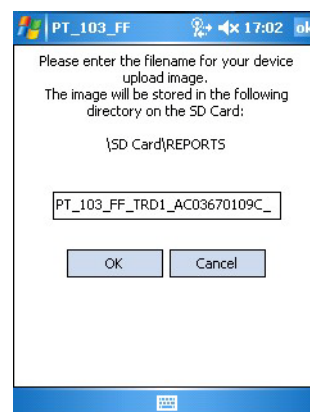
6.7.2 Create Block Report (Device Xpert FF)

For documentation purposes, you can create a report of the online FOUNDATION fieldbus block configuration and save it as an XML file on your PDA.

- 1 To create a report of the block configuration select **Device=>Create Block Report** when the block you require is connected
 - Answer **Yes** to the query which now appears and wait until the Save as page appears



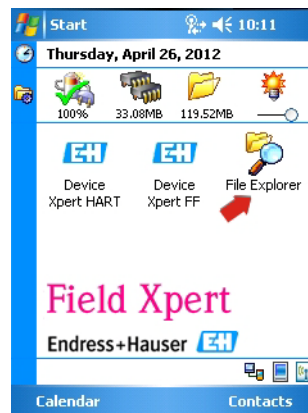
- 2 In the page which now appears enter the file name
 - Default file name is tag, date and time of day (can be changed)
 - Tap on **OK** to store



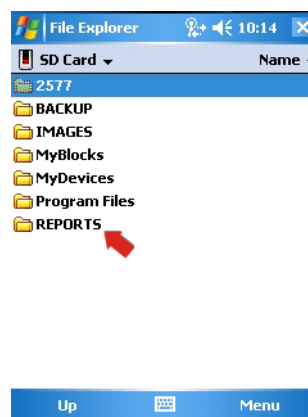
- 3 Field Xpert stores the current device configuration as an XML file with XSL style sheet at the location \SD Card\REPORTS
 - A successful save is indicated by a corresponding message
 - Tap on **OK** to confirm
- 4 The Device Report can be viewed with the PDA (web browser) or can be imported into Microsoft Excel.

6.7.3 View reports on PDA

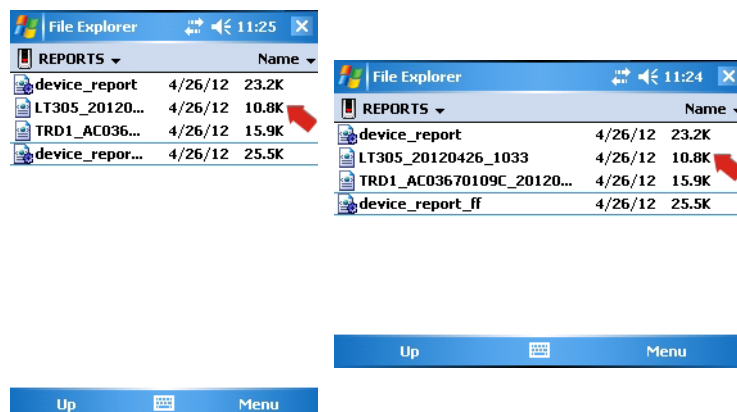
- 1 Tap on **File Explorer** in the start screen



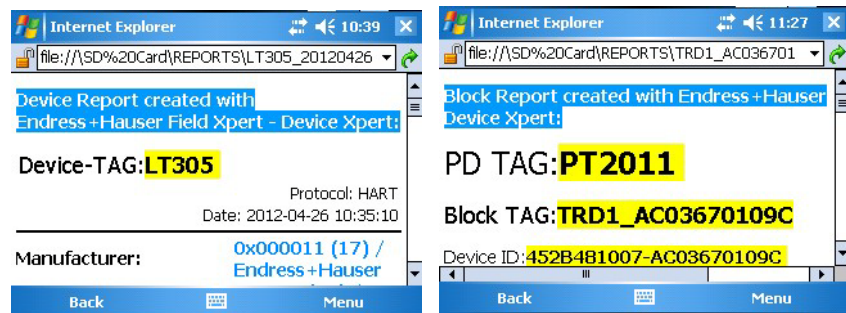
- 2 Navigate to chosen subfolder, e.g. **My Device => SD card => REPORTS**
 - Tap on the folder name



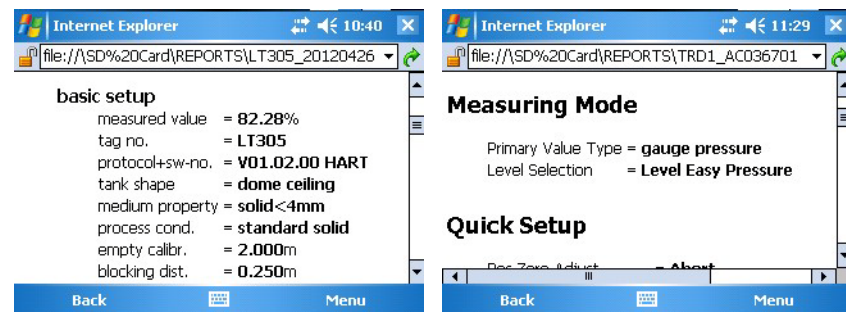
- 3 In the folder tap on the desired report
 - If the file name cannot be read, press the F1 key for a long period to landscape display mode (Press the F1 key for a period to return to portrait display mode)



- 4 The XML report (HART left, FOUNDATION fieldbus right) is displayed with Windows Internet Explorer using the style sheet (here shown in landscape mode and smallest font)



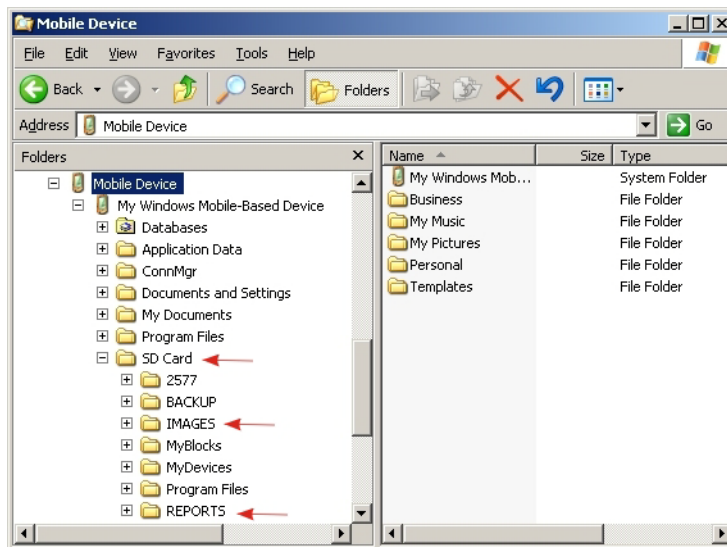
- Scroll down to see more information



6.7.4 Backup/Copy reports and images

By using an ActiveSync or Windows Mobile Device Center connection from Field Xpert to your PC or laptop, it is possible to view and back up device reports and images.

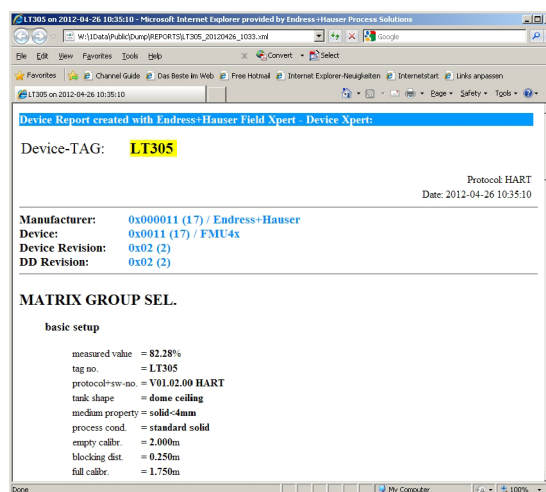
- 1 Make sure that the ActiveSync or Windows Mobile Device Center connection is up and running
- 2 Start Windows Explorer on the PC or Laptop
- 3 Navigate to the SD-card in the Mobile Device folder



- 4 The device configuration images and device reports are to be found in the IMAGES and REPORTS folders
- 5 Copy the desired files including the XSL style sheet to the PC or laptop in a separate folder

6.7.5 View report on PC/laptop

The reports can be viewed by opening the required report file using the Internet Explorer. Note that the style sheet needs to be in the same folder as the report.

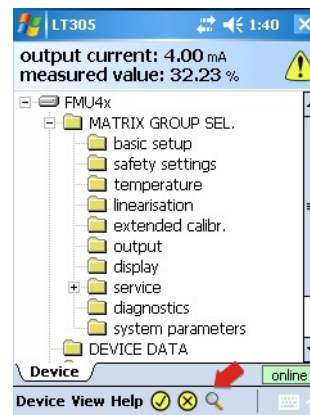


6.8 Additional functions

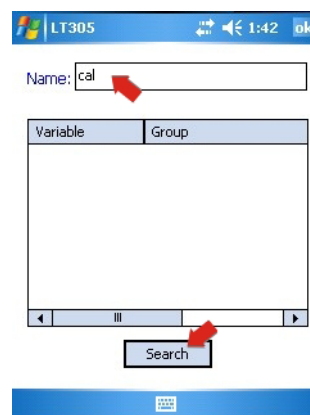
6.8.1 Search function

If the position of a specific parameter or special function in the device description is unknown, it can be found by using the integrated search function.

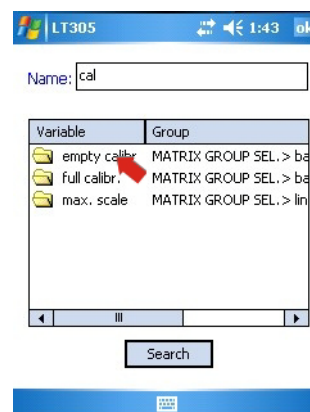
- 1 Select the magnifying glass icon in the lower menu bar



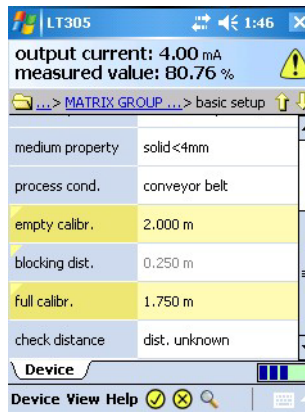
- 2 In the search page, enter the parameter name you wish to search for (or part of it) into the text field and then tap on **Search**



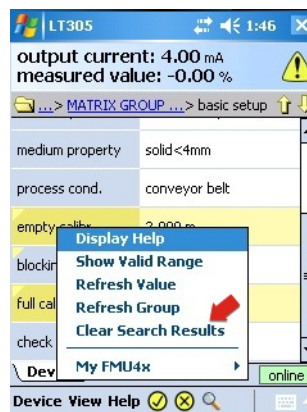
- 3 You will be provided with a list of all parameters containing your search term.



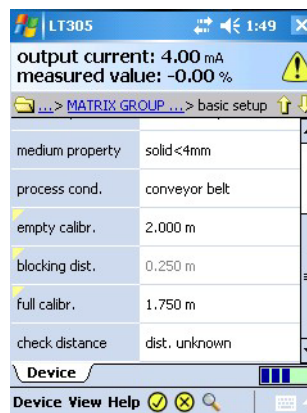
- 4 Tap on the parameter to jump to the parameter folder
 - The parameter searched for is highlighted in yellow



- 5 Tap on the magnifying glass to return to the search list, see Step 3
- 6 To delete the search result, tap and hold on a parameter
 - In the context menu tap on **Clear Search Results**



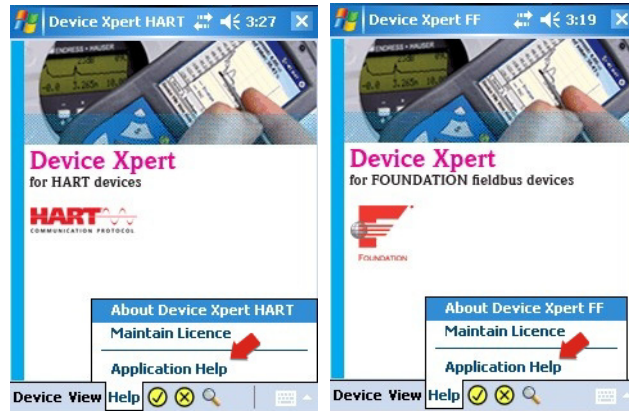
- 7 The parameters are displayed as normal:



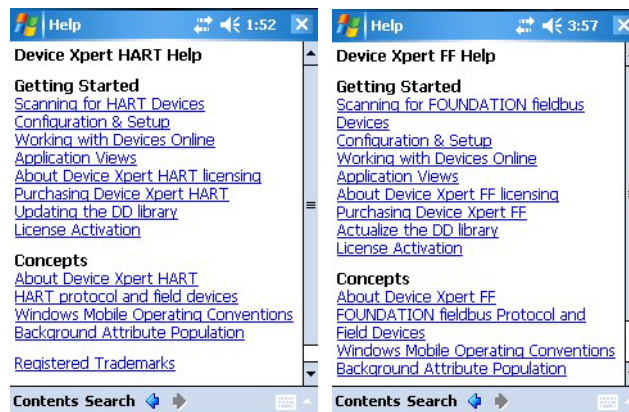
6.8.2 Application help

Device Xpert possesses an application help in which detailed information is available.

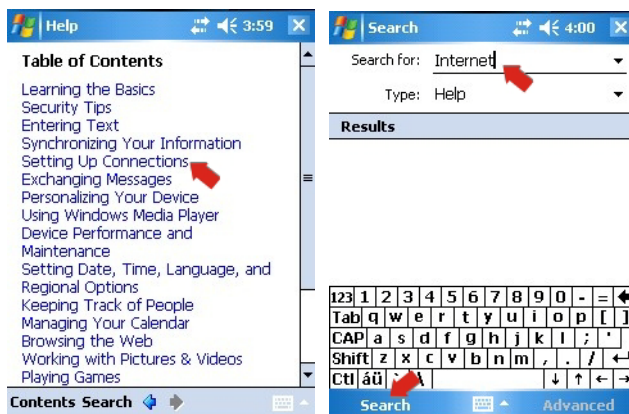
- 1 Open the application help by selecting **Help=>Application Help**



- 2 The list of topics appears
 - Tap on the topic you require



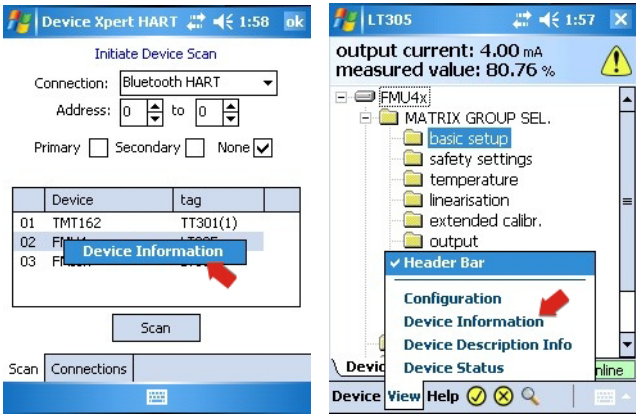
- 3 Tap on **Contents** or **Search** to look for individual subjects or specific words



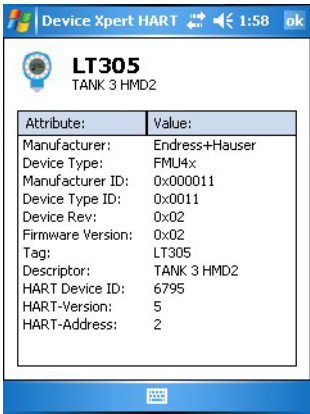
6.8.3 Device information (HART)

Device Xpert HART offers an overview of the device information

- 1 To open a device information page:
 - Tap and hold on the device line and select **Device Information** from the context window
 - or select **View=>Device Information** from the main menu



- 2 The device information is displayed

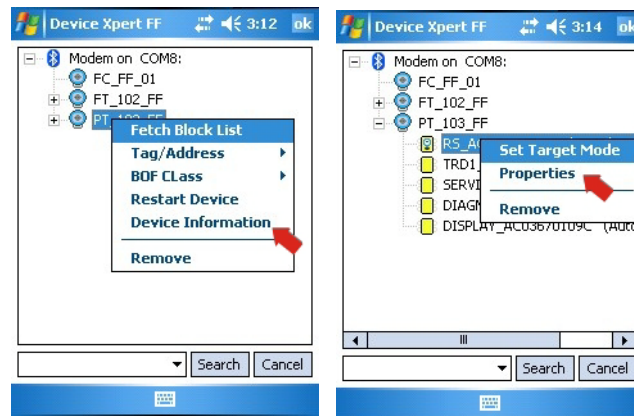


- 3 Close the Device Information page with **OK**

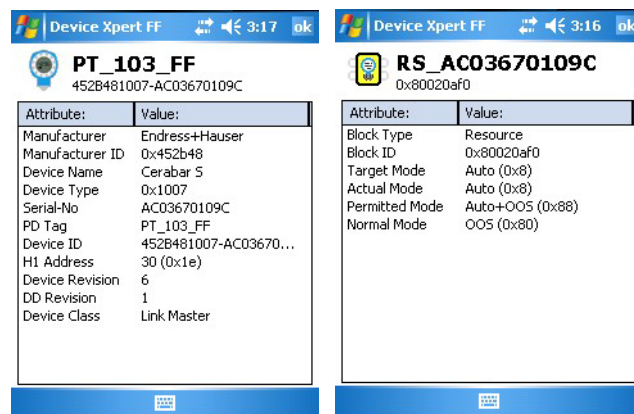
6.8.4 Device information and block properties (FF)

Device Xpert FF offers an overview of the device information and block properties

- 1 To open a device or block properties page:
 - Tap and hold on the device or block line
 - Select **Device Information** or **Properties** from the context window



- 2 The device information or block properties are displayed
 - Example: device left, block right

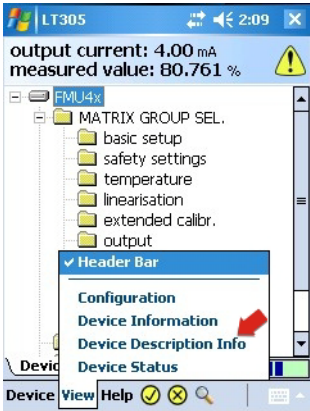


- 3 Close the Device Information or Properties page with **OK**

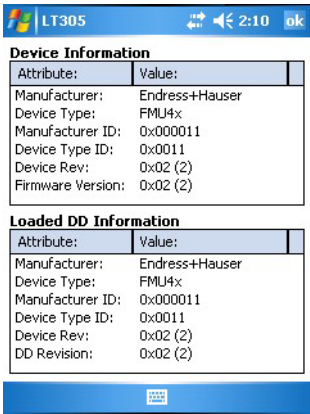
6.8.5 Device Description information

Information on the device descriptions held by the device can be obtained as follows:

- 1 In the block list, tap on **View => Device Description Info**



- 2 The device description information for the device online is displayed



- 3 Tap on **OK** to close the dialog

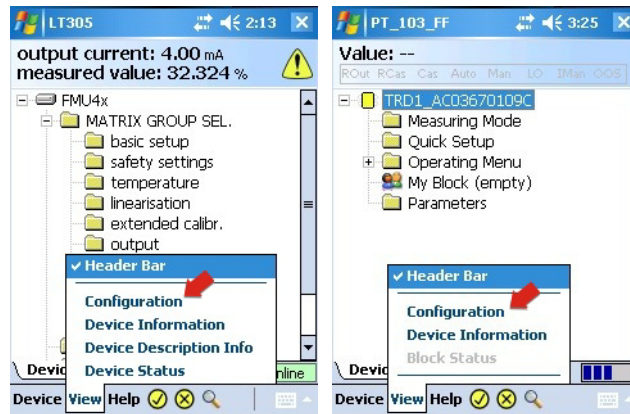
6.8.6 Generic DD

Device Xpert HART supports the HART Generic DD. This feature ensures that Field Xpert user can perform a basic configuration of a HART Device, even when the specific Device Description is not available in Field Xpert.

- 1 Open Device Xpert and open the Scan page with **Device=>Scan**
- 2 In the Scan menu tap on **Scan**
- 3 When the device has been found, tap on its name
- 4 If Field Xpert is unable to find a registered DD, it will automatically load the Generic DD
 - Confirm possible messages with Yes or OK

6.9 Configuration menu

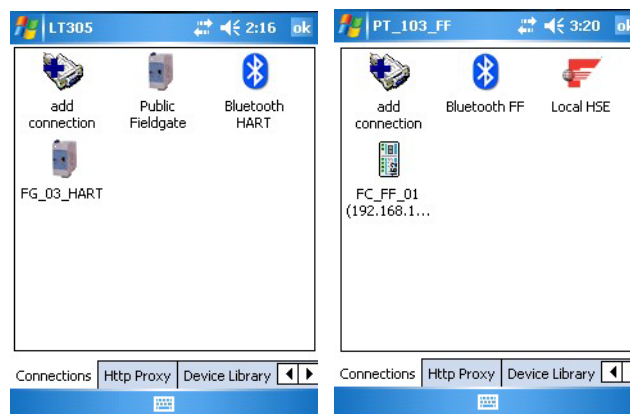
Device Xpert HART and Device Xpert FOUNDATION fieldbus have a configuration menu, under which all configuration dialogs are grouped. Some are called during commissioning and some offer additional options or device information. The menu is called by selecting **View => Configuration**.



The Configuration dialog has a number of tabs which can be selected by tapping directly on them. The arrows on the bottom righthand side allow navigation to hidden tabs.

6.9.1 Connection

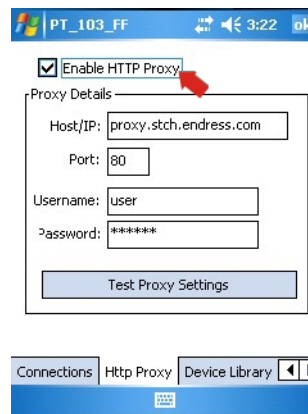
The **Connection** dialog shows the connections that are available for Device Xpert (HART left, FOUNDATION fieldbus right). Tapping on **Add Connection** allows a new connection to be set up, see Chapters 5.2.2, 5.2.3 and 5.3.2, 5.3.3 respectively.



6.9.2 HTTP Proxy

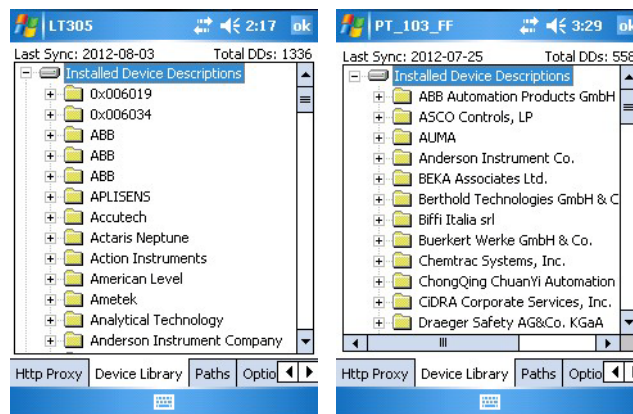
The **HTTP Proxy** dialog is required if Field Xpert is to access Internet via a proxy server.

- 1 Activate the dialog by tapping on the checkbox **Activate HTTP Proxy**
- 2 Enter the data required for your proxy
- 3 Tap on **Test the proxy settings** to check that Internet can be accessed



6.9.3 Device library

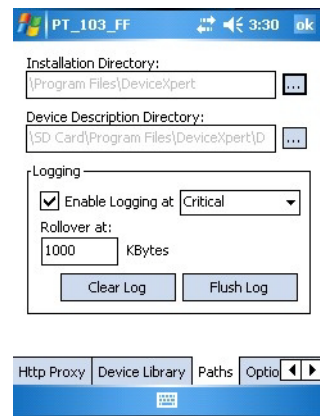
The **Device library** dialog shows a list of all the DDs (HART or FOUNDATION fieldbus) supported by Device Xpert. The tree can be opened out to reveal the device names and DD versions.



Tap and hold on any folder to get additional information via the context menu.

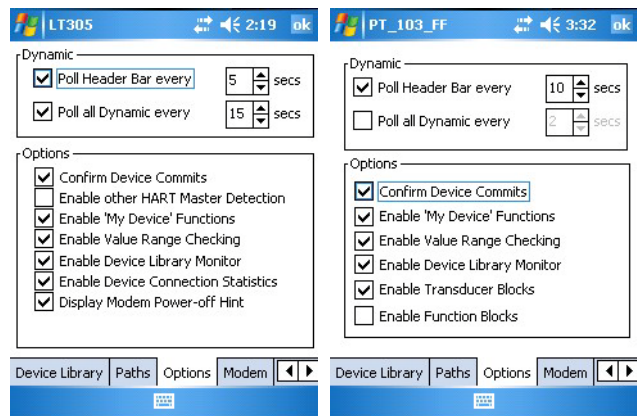
6.9.4 Paths

The **Paths** dialog displays the paths where the Device Xpert program and DDs are stored. It also controls the logging function for Field Xpert. When activated, the logs are to be found in `\Programs\DeviceXpert\en_log_hart.txt` or `en_log_ff.txt`.



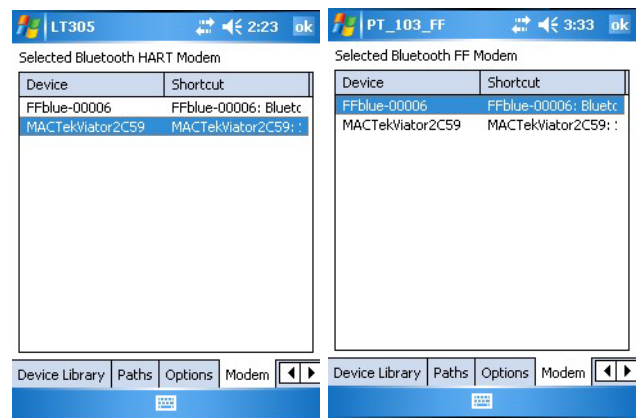
6.9.5 Options

The **Options** dialog controls the various Device Xpert functions, e.g. whether "My <Device>/My Block appears in the device or block list of a HART or FOUNDATION fieldbus device.



6.9.6 Modem

The **Modem** dialog lists the Bluetooth modems that are currently paired with Field Xpert and allows the default modem for the current application to be selected.



7 Troubleshooting

We expect our hardware and software products to function without any problems. Nonetheless, we are unable to provide a 100% guarantee that this will be the case. For this reason, here are some tips and solutions for dealing with possible faults.

7.1 Field Xpert

Some of problems may be resolved by switching the Field Xpert on and off. If this does not work, please proceed in accordance with the following examples.

7.1.1 Soft Reset

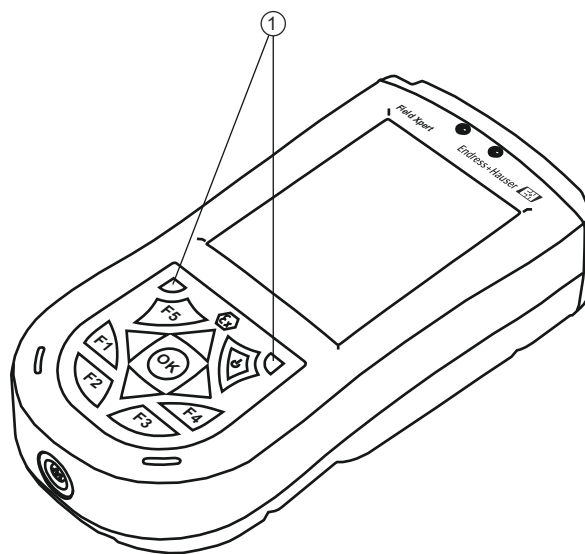


Abb. 7-1: Soft reset of the Field Xpert

- 1 Soft reset keys

A soft reset stops all applications which are currently running but does not delete any programs or saved data. Before carrying out a soft reset, please make sure that you save all unsaved data in any of the applications currently running.

To perform a soft reset:

- 1 Press both reset keys on the keyboard simultaneously
- 2 Field Xpert carries out a restart and returns to the start screen

A soft reset can be helpful if, for example, the DD device library can not be found. This is stored on the SD card, and if the SD card has not been read, the DD library will not be available. Following a soft reset, the SD card is readable again.

7.1.2 Hard Reset

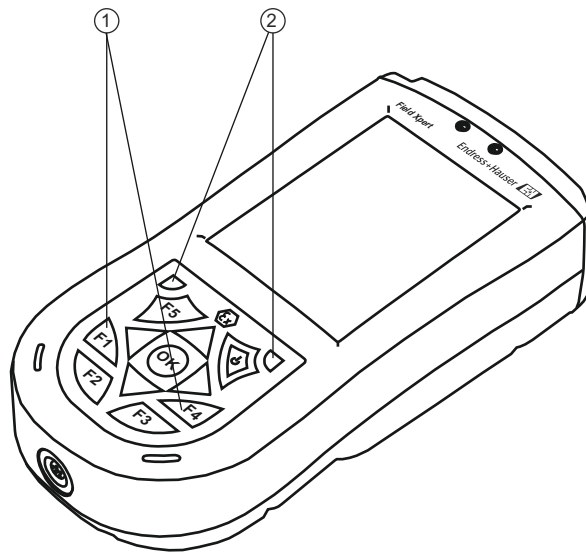


Fig. 7-2: Hard reset of Field Xpert

- 1 Additional keys F1, F4 for hard reset 2 Soft reset keys

A Hard Reset stops all running applications, but does not erase any programs or saved data. Additional to a soft reset, all hardware registers will be erased. A hard reset will also ensure that the device will operate in the same way if the battery was completely discharged.

To perform a hard reset:

- 1 Press and hold down the F1 and F4 buttons
- 2 While holding down these buttons, press the soft reset buttons for about two seconds
- 3 When screen begins to fade, release the F1 and F4 buttons and then release the soft reset buttons
 - To reset the hardware registers, the battery automatically disconnects for a short period
 - The Pocket PC resets

7.1.3 Clean Reset

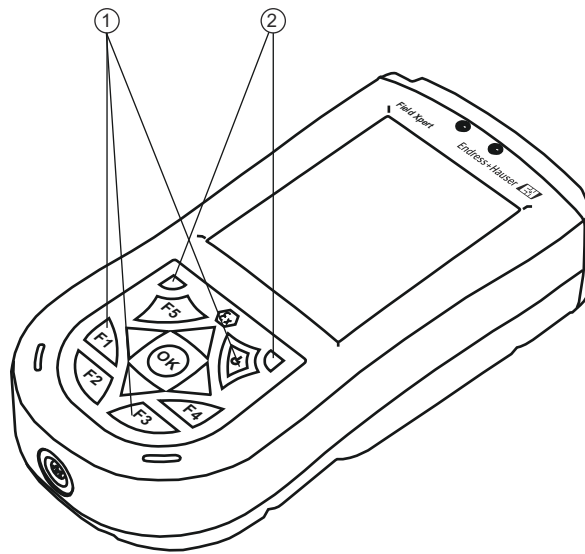


Fig. 7-3: Clean reset of Field Xpert

- | | |
|---|-------------------|
| 1 Additional keys F1, F3, on/off
for clean reset | 2 Soft reset keys |
|---|-------------------|

A Clean Reset clears all user-installed settings, applications and data from the device memory. It does not affect the SD card data.

NOTICE

Notice!

- Ensure that all data are saved on the SD card or an external PC before carrying out a clean reset on your Field Xpert.

To perform a clean reset:

- 1 Press F1, F3 and the on/off button simultaneously: while pressing these keys, also press the two soft reset keys.
- 2 Press all five keys until the screen reappears with text "Formatting PS" in lower left corner (the screen fades and Field Xpert reboots before this happens)
- 3 Now release all keys: Field Xpert has been completely reset
- 4 The AutoInstallation tool now starts automatically. Do not touch any keys until the Field Xpert beeps, performs a soft reset and the Windows Mobile screen appears.
- 5 Follow the instructions on the display until the "i.roc" screen appears
- 6 Now reinstall the Device Xpert software

7.1.4 Reinstalling Device Xpert

Notice:

NOTICE

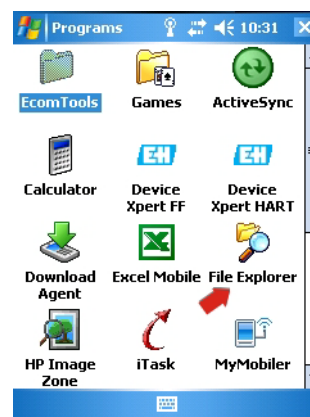
- For reinstallation your Laptop/PC must be linked to Internet via ActiveSync or Windows Mobile Device Center. One of these applications must be installed and connected before proceeding.

Device Xpert installation files are on the SD card of Field Xpert. After a clean reset, they must be reinstalled in Field Xpert's device memory and licensed again.

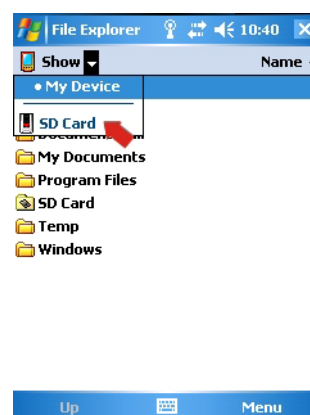
- 1 From the i.roc start screen, tap on **Start=>Programs**



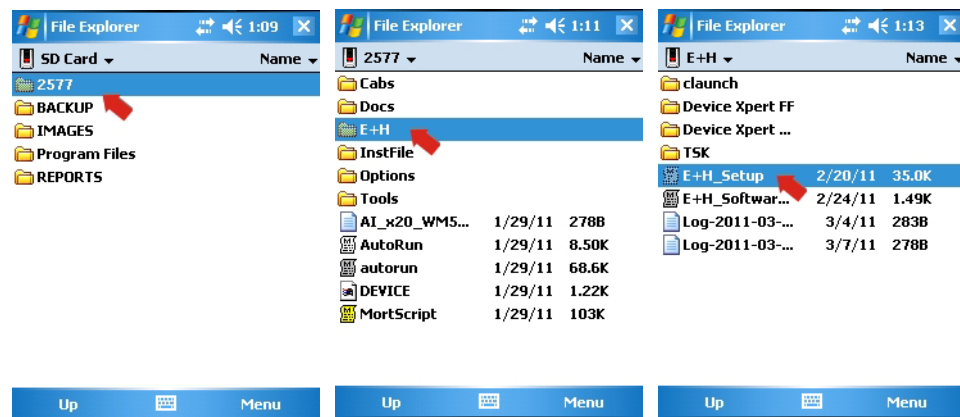
- 2 Tap on the **File Explorer** icon



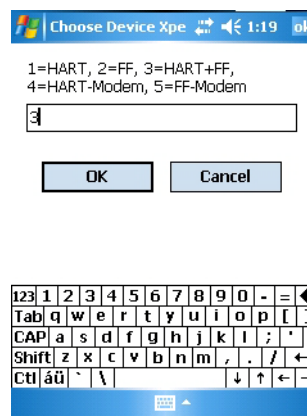
- 3 Navigate to the SD card: **My Documents=>SD Card**
 - Tap on SD Card



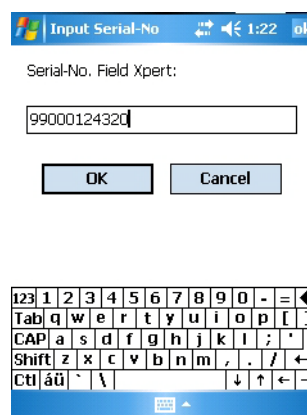
- 4 Tap on folder **2577**, then folder **E+H**, then **E+H_Setup**



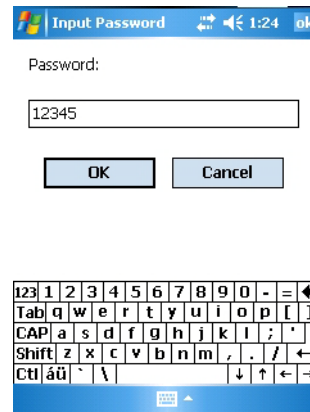
- 5 After a few seconds, the installation starts
- In the Choose Device Xpert page enter the index for your software package you ordered initially, e.g. 3
 - Tap on **OK**



- 6 Now enter the 11-character serial number of your Field Xpert (on rear of device)
- Tap on **OK**



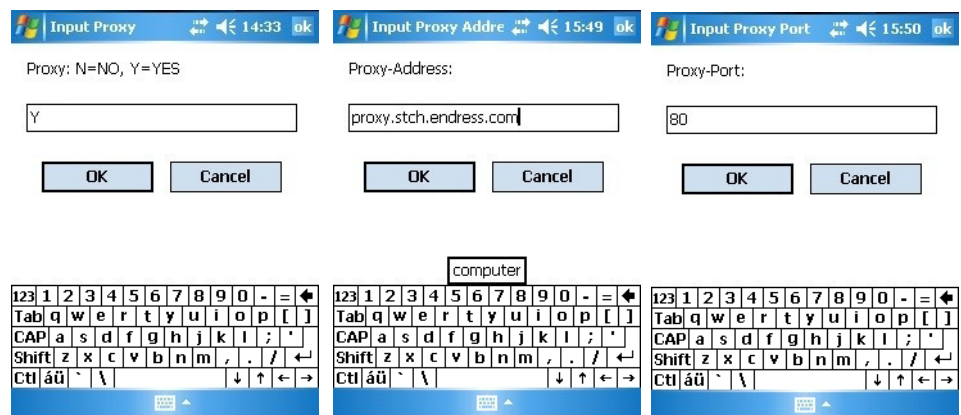
- 7 Now enter your 5-digit Field Xpert password (on rear of CD-ROM)
 - Tap on **OK**



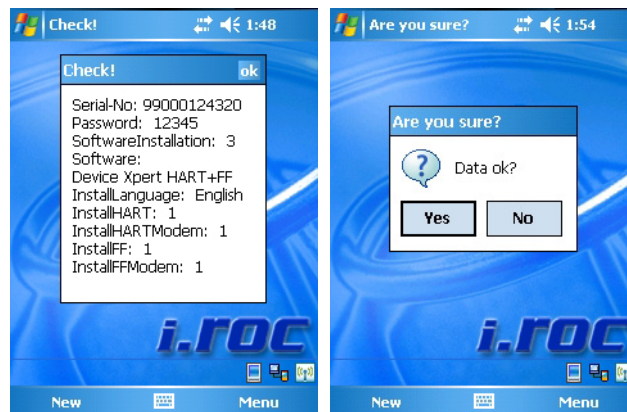
- 8 Now select the language to be used by Field Xpert (as operating system in use)
 - Tap on **OK**



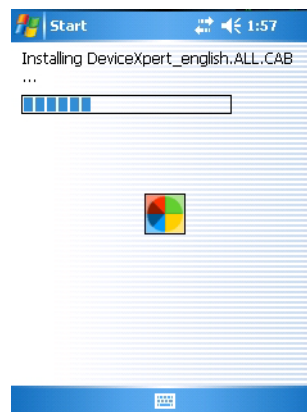
- 9 Select whether Field Xpert is to work with a proxy server to have Internet access to the software licencing server
 - Enter the data of the proxy server



- 10 Field Xpert asks the user to check the data
- Tap on **OK** to confirm the message



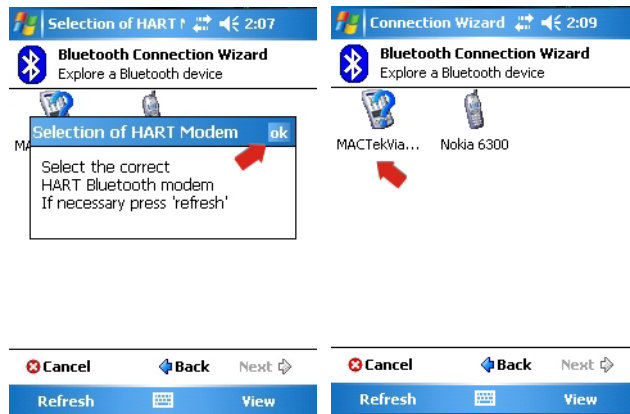
- Tap **Yes** to confirm when the data are OK
 - Tapping **No** causes the installation to be cancelled: the File Explorer screen appears (Step 4)
- 11 The Field Xpert auto installation program starts
- Do not do anything with Field Xpert until you are prompted to do so



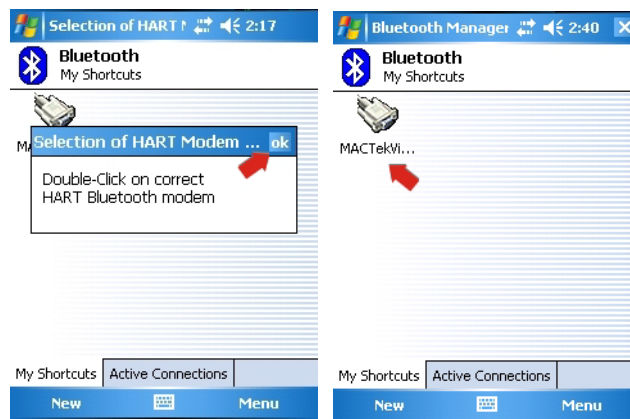
- 12 If HART or HART+FF was selected at Step 5, the Power on HART Modem message appears
- Switch on the corresponding modem, then tap on **OK** to continue
 - If you selected FF only go to Step 15



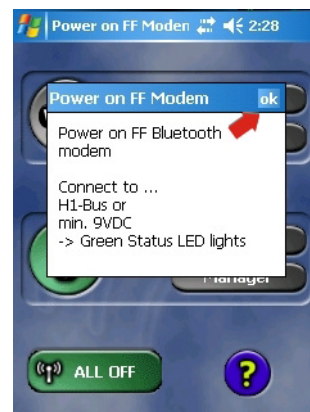
13 Tap on **OK** to confirm the message, then tap on the modem to be used



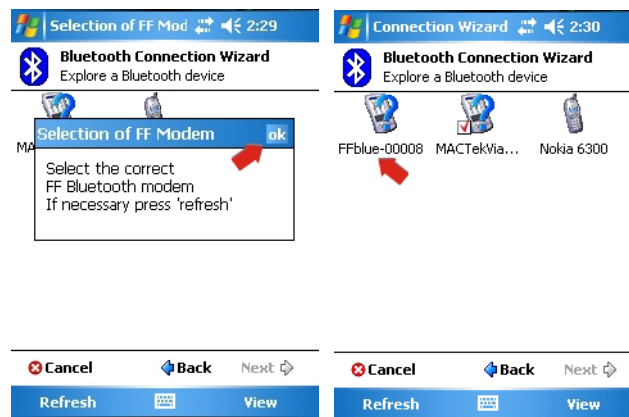
14 Tap on **OK** to confirm the message, then **double tap** on the modem to be used
 – The modem is paired with Field Xpert and two green arrows appear in the icon



15 If you selected FF or HART+FF at Step 5, the procedure is or continues as follows
 – The Power on FF Modem message appears
 – Switch on the corresponding modem, then tap on **OK** to continue



16 Tap on **OK** to confirm the message, then tap the modem to be used

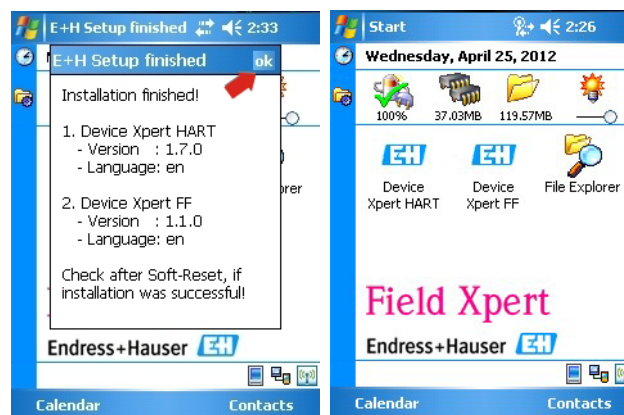


17 Tap on **OK** to confirm the message, then tap the modem to be used

- The modem is paired with Field Xpert

18 The installation is now complete

- Tap on **OK** to restart Field Xpert and open the start screen



7.2 Connection problems

All types of connection (Bluetooth modem, FXA520 and SFC162) should function without any faults or interruptions. If you notice any communication failures (values in the DD are colored red), please check your connections as shown below.

Fault	Cause/Remedy
VIATOR Bluetooth modem does not connect	Communication error <ul style="list-style-type: none"> Modem or Field Xpert Bluetooth communication not switched on Batteries flat (<10%), see Chapter 4.2.4 - exchange batteries Communication stalled: Switch off Field Xpert and the modem, wait 10 seconds, switch on the modem, wait 10 seconds, switch on Field Xpert Communication settings incorrect <ul style="list-style-type: none"> Check that the VIATOR modem has been selected, see Chapter 6.1 Check that the modem has been correctly configured, see Chapter 5.2.2 Check that the modem has been selected as default modem, see Chapter 6.9.7
FFblue Bluetooth modem does not connect	Communication error <ul style="list-style-type: none"> Modem or Field Xpert Bluetooth communication not switched on <ul style="list-style-type: none"> Modem sleeps if there is no traffic over a specific period (5 min) To awaken, disconnect from fieldbus, then reconnect to fieldbus Batteries flat (<10%), see Chapter 4.4.3 - exchange batteries Communication stalled: Switch off Field Xpert and disconnect the modem, wait 10 seconds, reconnect the modem, wait 10 seconds, switch on Field Xpert Communication settings incorrect <ul style="list-style-type: none"> Check that the FFblue modem has been selected, see Chapter 6.2 Check that the modem has been correctly configured, see Chapter 5.2.3 Check that the modem has been selected as default modem, see Chapter 6.9.7
Fieldgate FXA520 does not connect	Communication error <ul style="list-style-type: none"> Fieldgate FXA520 or Field Xpert WiFi communication not switched on Communication stalled: Switch off Field Xpert and the FXA520, wait 10 seconds, switch on the FXA520, wait 10 seconds, switch on Field Xpert Field Xpert communication settings incorrect <ul style="list-style-type: none"> Check that Fieldgate FXA520 has been selected Check that Fieldgate FXA520 has been correctly configured, see Chapter 5.3.2 Fieldgate FXA520 communication settings incorrect <ul style="list-style-type: none"> Check that the Ethernet network addresses have been correctly set up For more information see the operating instructions of Fieldgate FXA520
SFC162 gateway does not connect	Communication error <ul style="list-style-type: none"> SFC162 gateway or Field Xpert WiFi communication not switched on Communication stalled: Switch off Field Xpert and the SFC162, wait 10 seconds, switch on the SFC162, wait 10 seconds, switch on Field Xpert Field Xpert communication settings incorrect <ul style="list-style-type: none"> Check that SFC162 gateway has been selected Check that SFC162 gateway has been correctly configured, see Chapter 5.3.3 SFC162 gateway communication settings incorrect <ul style="list-style-type: none"> Check that the SFC162 is operating as visitor Check that the Ethernet network addresses have been correctly set up For more information see the operating instructions of SFC162 gateway
USB connection of Field Xpert to a PC does not work	ActiveSync connection lost <ul style="list-style-type: none"> Disconnect and reconnect USB port Restart PC WiFi connection operating in parallel <ul style="list-style-type: none"> Set up ActiveSync to accept a parallel wireless connection If necessary consult your IT specialist

7.3 Software problems

Fault	Cause/Remedy
Device Xpert freezes	Software error <ul style="list-style-type: none"> ■ No software error – function requires time to complete ■ Communication stalled: Switch off Field Xpert and the modem/gateway, wait 10 seconds, switch on the modem/gateway, wait 10 seconds, switch on Field Xpert ■ Device Xpert crash: perform a soft reset, see Chapter 7.1.1 Communication settings incorrect <ul style="list-style-type: none"> ■ Check that a modem is paired and ready to use, see Chapter 5.2.2/5.2.3
All values in parameter list go red	Communication interrupted <ul style="list-style-type: none"> ■ Check the modem/gateway, see Chapter 7.2
Changes to FOUNDATION fieldbus parameters cannot be downloaded	Operator error <ul style="list-style-type: none"> ■ Set the Block Target Mode to OOS and try again, see Chapter 6.2.3
Dynamic variables do not update	Normal operation <ul style="list-style-type: none"> ■ To maintain a low level of communication on the HART protocol, dynamic variables as per the initial setting are not updated. You can change these manually: <ul style="list-style-type: none"> – Select View=>Configuration=>Options – Select Poll all Dynamic every X seconds, and enter the desired number of seconds – Select OK to close and confirm.

7.4 DD updates

If it becomes necessary to synchronize the DD library, e.g. there are new devices on the market, this can be done by using the DD update service with the order number SFX101 provided by your local Endress+Hauser Sales Center. You will be requested to give the Endress+Hauser serial number of Field Xpert.

The DD Update Service will be enabled for specific Field Xpert, so that the user can synchronize the library as described in Chapter 5.1.4.

The product code is as follows:

Device Xpert - Software Update Service SFX101			
SFX101-	Serial Number of Field Xpert		
	A N	Existing licence, SNR xxxxxx24320	
		New licence, order code SFX100-xxxxxxxxxx	
	Software Update Service - Duration		
	1	1 year	
	2	2 years	
SFX101-			

8 Spare Parts and Accessories

Various spare parts and accessories are available for the Field Xpert which can be ordered from Endress+Hauser as follows:

Spare Part/Accessory	Order code
USB Interfaces for Field Xpert - Laptop/PC	
Docking station for Field Xpert SFX100 (stationary usage) including adapter for Field Xpert and USB cable	71137180
Docking station adapter for Field Xpert SFX100	71137181
USB data transmission set for Field Xpert SFX100 (mobile usage)	71066841
Field Communication Interfaces	
Bluetooth interface modem for HART protocol	71066844
Bluetooth interface for FOUNDATION fieldbus protocol	71096629
Power supply	
Charger LG*10 for Field Xpert SFX100	71066847
Miscellaneous	
Spare stylus for Field Xpert SFX100	71066850
Leather carry case for Field Xpert SFX100	71066838

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www.endress.com/worldwide
