

Users Guide

Remote Sensor Configuration

The SignalFire Remote Sensor Configuration allows the configuration of HART devices using the SignalFire ToolKit wirelessly through a SignalFire Ethernet Gateway or from the Gateway RS232 debug port. The ToolKit has built in quick configuration for common parameters for the Vega Flex81 series guided wave radars, Magenetro 706 series GWS, Rosemount 5300 series GWR and the Yokogawa EJA series pressure transmitters. When using one of these devices many common settings can be changed quickly from within the SignalFire ToolKit software.

Additionally, either PACTware, RadarMaster, DeviceCare, and FieldCare can be operated through this wireless interface for advanced configuration or configuration of other sensor types.

Quick Configuration

After a remote node has been brought into a remote configuration session (see the Gateway manual for details), select the 'HART Sensor Advanced Configuration' menu item. This will open the quick configuration for the detected remote device.

For each supported HART device, the identification information and current HART variables will be displayed. The quick settings that are available for the detected device are also displayed. To change any settings, make the desired changes and click on the corresponding set button.

HART Sensor Advanced Configuration

VEGAFLEX 81

Refresh All Values

Device Identifier & Status

Mfg. ID Code: 0x62

Mfg. Dev. Type Code: 0xD5

Device ID Number: 0x737DC6

Field Device Status: 0x40

Probe

Probe Length: 4.000 ft

Set Probe Length

Application

Type of medium: Liquids

Application: Interface in the vessel

Superimposed gas layer present: Yes

Properties medium/Dielectric constant

Dielectric constant of upper medium: 2.800

Set Application Parameters

False Signal Suppression

Sounded distance from the sealing surface to the medium: 0.00 ft

Execute

Change Address

Address: 1

Set Address

Polling Address: 1

Timeout (sec): 5

Device Variables

Loop Current (mA): 4.0

Primary Variable (PV): 56.348 %

Secondary Variable (SV): 70.502 %

Tertiary Variable (TV): 1.622 ft

Quaternary Variable (QV): 69.096 °F

HART Values

First HART value (PV): Percentage, interface

Second HART value (SV): Lin. percent, level

Third HART value (TV): Distance to level

Fourth HART value (QV): Electronics temperature

Set HART Values

Level Adjustment

Max. adjustment in %: 100.00 %

Distance A: 0.000 ft

Min. adjustment in %: 0.00 %

Distance B: 5.500 ft

Set Level Adjustment

Interface Adjustment

Max. adjustment in %: 100.00 %

Distance C: 0.000 ft

Min. adjustment in %: 0.00 %

Distance D: 5.000 ft

Set Interface Adjustment

Success

Example VEGA Flex 81 configuration screen

HART Sensor Advanced Configuration

Magnetrol Eclipse 706

Refresh All Values

Device Identifier & Status

Mfg. ID Code: 0x56

Mfg. Dev. Type Code: 0xE0

Device ID Number: 0xDD8EF4

Field Device Status: 0x48

Identity

Product Name: Eclipse Model 706

S/N: FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF

HW Version: 3

FW Version: VerX1.1jA

Long Tag: Mag706

Set Long Tag

Basic Configuration

Measurement Type: Interface and Level

Level Units: cm

705 Adaptor

Probe Model: 7YT Coax Std

Probe Coating: [Blank]

Probe Mount: NPT

Probe Length: 30.5 cm

Level Offset: 43.2 cm

Dielectric Range: Below 1.7

Upper Dielectric: 2.9

Set Basic Configuration

Polling Address: 1

Timeout (sec): 5

Change Address

Address: 1

Set Address

Device Variables

Loop Current (mA): 4.0

Primary Variable (PV): 1.9 cm

Secondary Variable (SV): 68.5 cm

Tertiary Variable (TV): 70.4 cm

Quaternary Variable (QV): 20.9 °C

HART Values

First HART value (PV): Interface Thickness

Second HART value (SV): Interface Level

Third HART value (TV): Level

Fourth HART value (QV): Temperature

Set HART Values

Advanced Configuration

Sensitivity: 11

Level Trim: 4.3 cm

Level Threshold Value: 20

Set Advanced Configuration

Success

Example Magnetrol 706 configuration screen

HART Sensor Advanced Configuration

Rosemount Guided Wave Radar

Refresh All Values

Device Identifier & Status

Mfg. ID Code: 0x26

Mfg. Dev. Type Code: 0x51

Device ID Number: 0x206932

Field Device Status: 0xD8

HART Variables

Output Source (PV): Volume

Output Source (SV): Level Rate

Length Unit: ft

Set HART Variables

Tank Geometry

Tank Height (R): 20.000 ft

Mounting Type: Unknown

Inner Diameter, Pipe/Chamber/Nozzle: Unknown

Nozzle Height: 1.110 ft

Calibration Distance: 1.800 ft

Show level below probe end as 0

Set Tank Geometry

Device Variables

Loop Current (mA): 4.0

Primary Variable (PV): NaN

Secondary Variable (SV): NaN in/min

Tertiary Variable (TV): NaN in/min

Quaternary Variable (QV): NaN mV

Probe

Probe Type: Flexible Single PTFE

Probe Length: 20.000 ft

Hold Off Distance/UNZ: 0.000 ft

Set Probe Parameters

Environment

Upper Product Dielectric Constant: 1.400 Set

Advanced

Use Automatic Surface Threshold

Surface Threshold: 413 mV

Use Automatic Interface Threshold

Interface Threshold: 1000 mV

Set

Success

Example Rosemount 5300 configuration screen

HART Sensor Advanced Configuration

Yokogawa EJA Pressure Sensor

Refresh All Values

Device Identifier & Status

Mfg. ID Code	0x37
Mfg. Dev. Type Code	0x5C
Device ID Number	0x31EB9E
Field Device Status	0x48

Device Variable Information

Unit	psi
Lower Sensor Limit	-14.5 psi
Upper Sensor Limit	7251.9 psi
Min. Span	725.2 psi
Lower Range Value	0.0 psi
Upper Range Value	7200.0 psi

Set Unit and Range Values

Polling Address: 1

Timeout (sec): 5

Change Address: Address 1

Set Address

Device Variables

Loop Current (mA)	4.0
Primary Variable (PV)	-0.286 psi
Secondary Variable (SV)	0.0 psi
Tertiary Variable (TV)	20.033 °C
Quaternary Variable (QV)	(none)

Display Select

Display Output 1: PRES %

Set Display Output

Success

Example Yokogawa EJA configuration screen

Installation

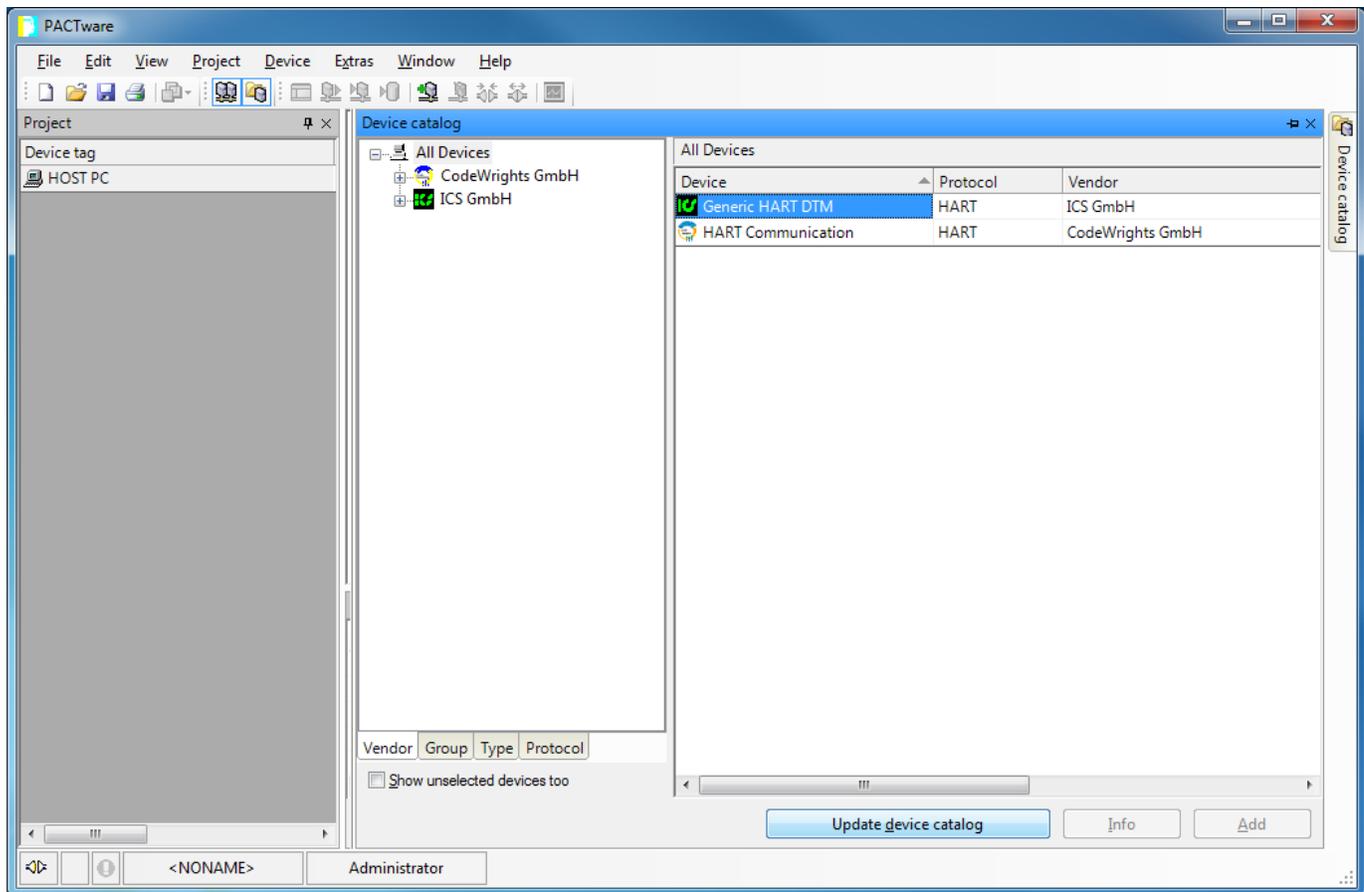
Install the SignalFire Virtual Serial Port driver (Required for both PACTware and Radar Master)

From the main ToolKit window go to the **Help** menu, select **Drivers**, and select Install SignalFire Virtual Serial Port. Follow the installation prompts

Install the HART Communication DTM Driver for PACTware

From the main ToolKit window go to the **Help** menu, select **Installer Downloads**, and select Download CodeWrights HART CommDTM Installer.

- Unzip and run setup.exe from the downloaded .zip file
- Open PACTware and go to the "view" menu and select "device catalog"
- Click on the 'Update device catalog' button to install the driver.
- Confirm that the CodeWrights GmbH driver appears under the devices menu.



Wireless PACTware Mode

The following steps are necessary to complete a PACTware session.

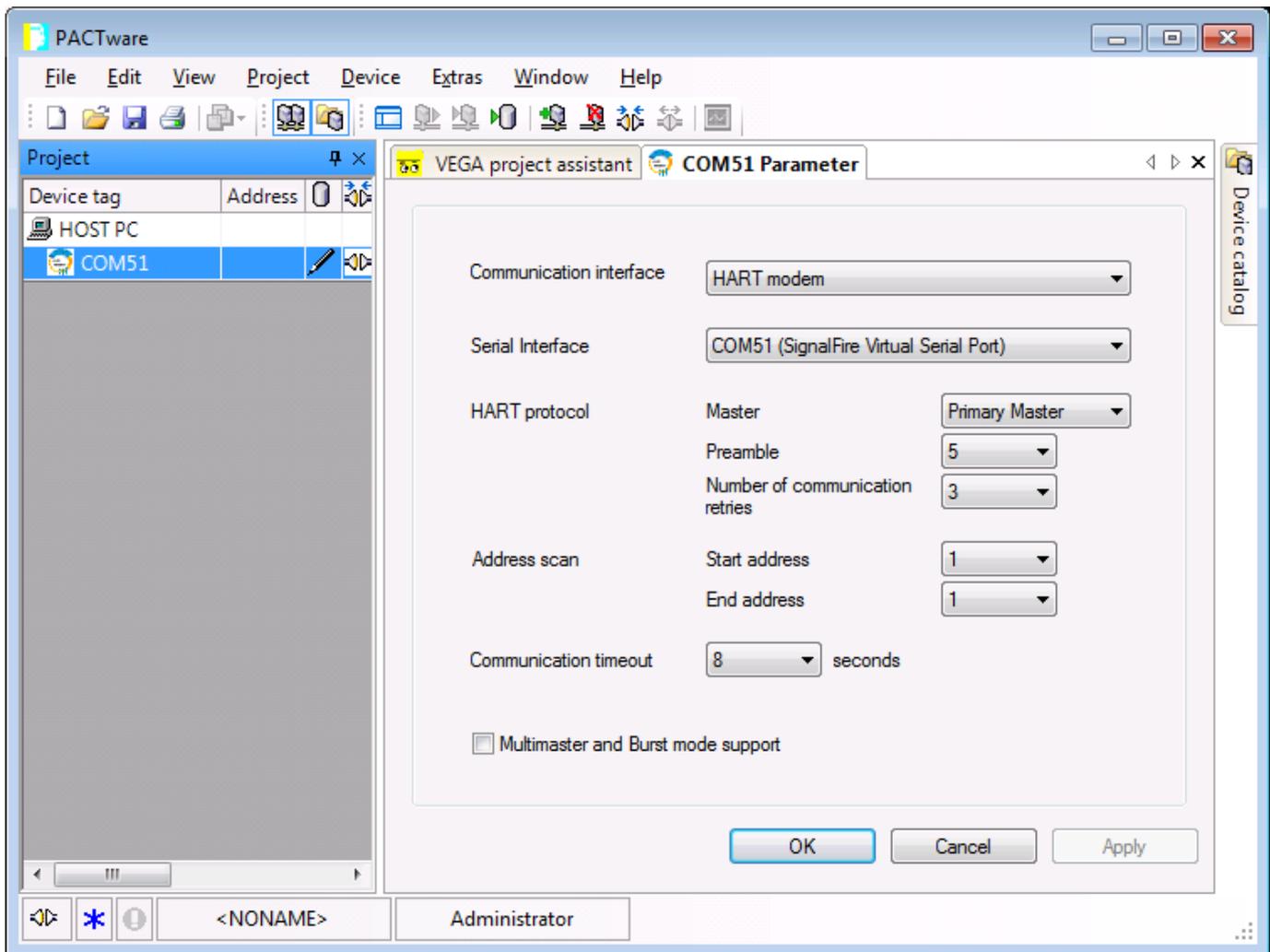
1. Place the SignalFire Node into Remote Configuration Mode

Click the "Start PACTware 4.1" button. Note the virtual COM port listed in the pop-up window. PACTware will automatically open.

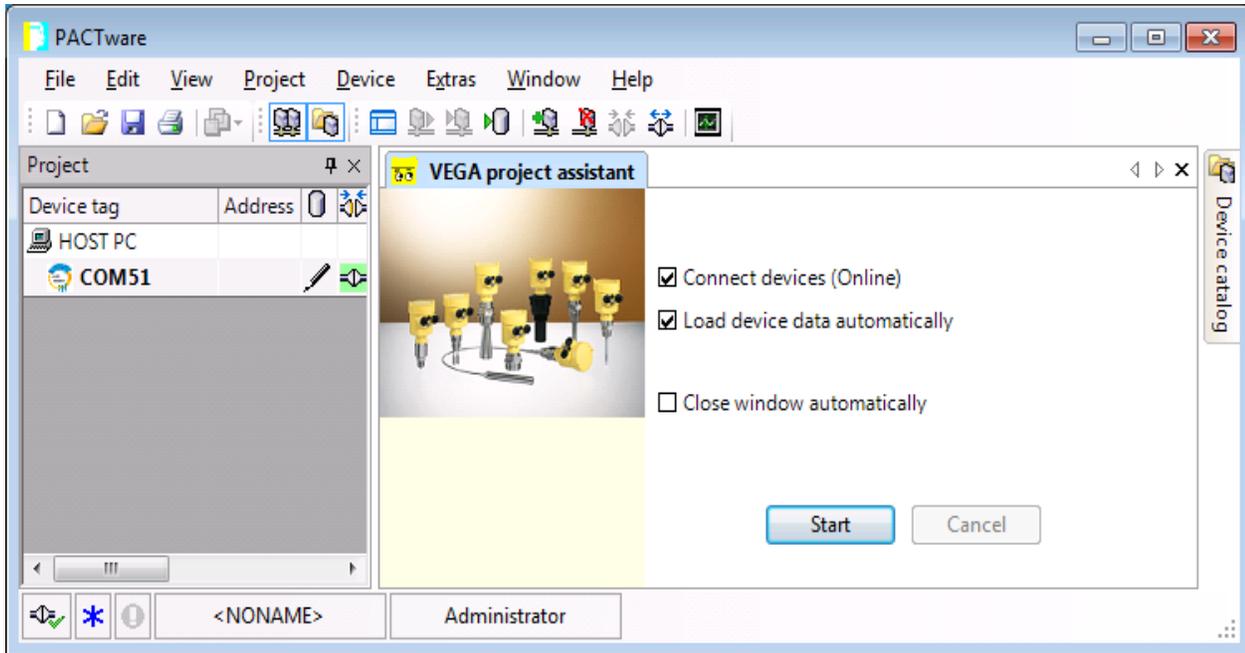
2. Connect to HART sensor

Once PACTware opens, connecting to the HART sensor is slightly different than you may be used to.

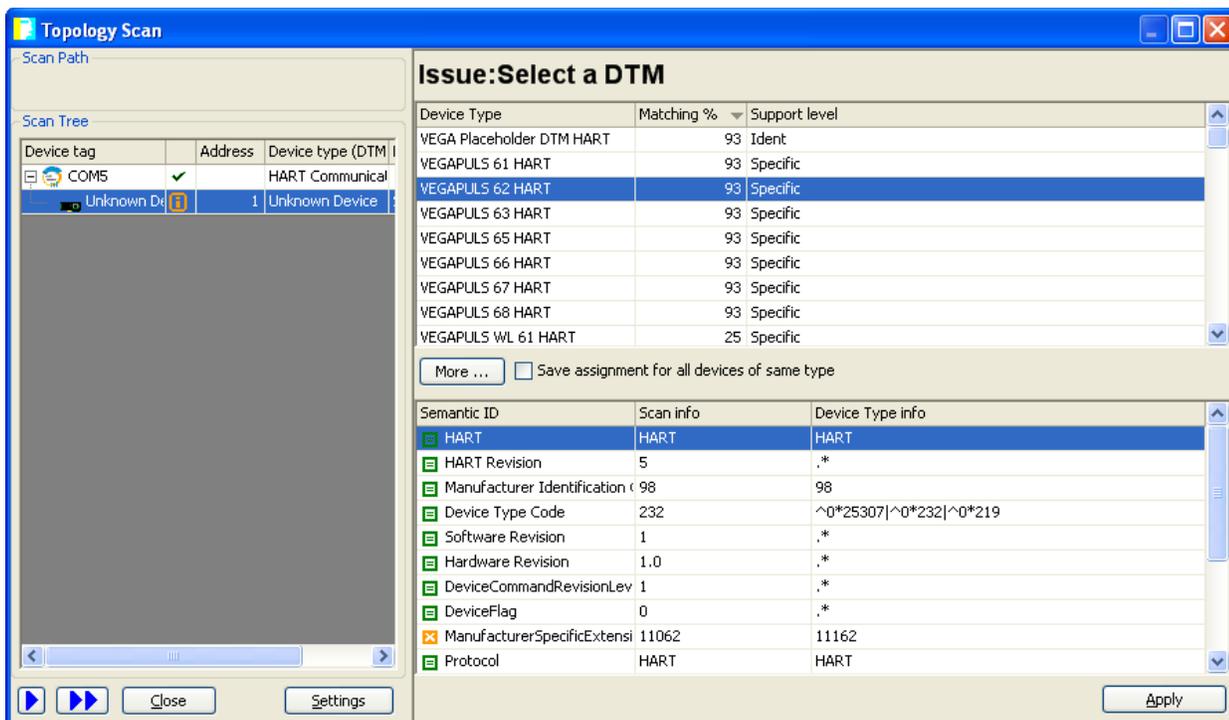
Double click on the COM port to open the COM configuration. Select the SignalFire Virtual Serial Port. Click "Apply and "OK". Then right click on the COM port in the Project tab and click "Connect"



- For Vega devices simply click on the "Start" button in the VEGA project assistant to connect to the device.



- For other HART devices use the PACTware Topology scan to detect the attached device



The attached HART sensor will be detected. Select the correct device DTM for the sensor and click Apply.

- Close the topology scan window
- Double click on the Sensor to open the device DTM
- Right click on the Sensor and select connect

The PACTware session is now fully active and the sensor may be configured as normal using the device DTM.

When finished, close PACTware and return to the Remote Configuration window. Close this window and then click on "End Session" in the gateway window to put the node back into normal operation (this will also happen automatically after a 10 minute inactivity timeout).

Wireless Rosemount Radar Master Mode

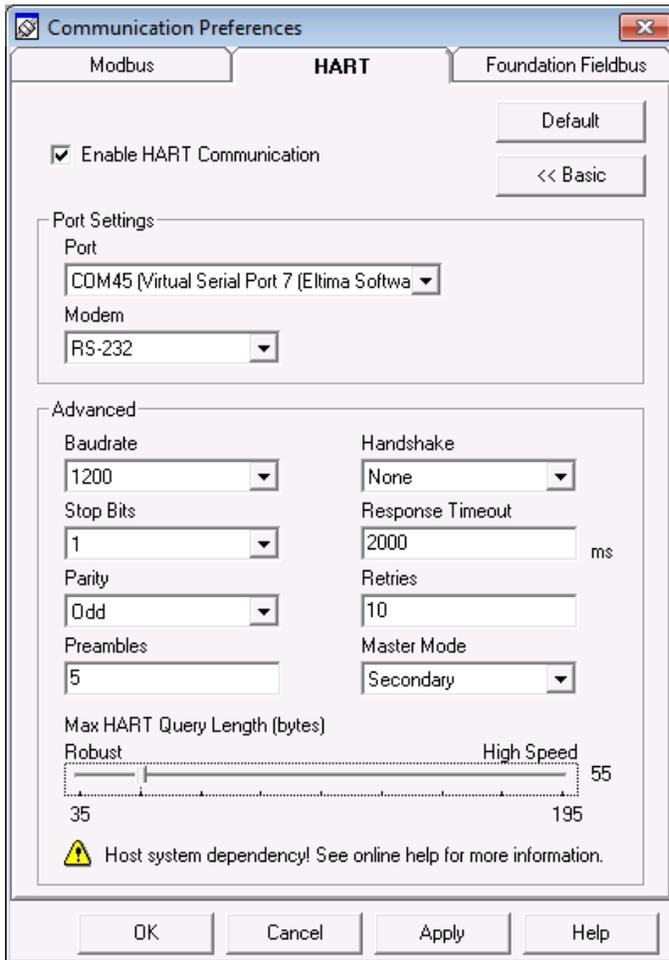
Starting a remote Radar Master Session

The following steps are necessary to complete a Remote Radar Master session.

1. After the node has been placed into Radar Master mode, click on "Start Rosemount Radar Master". This will automatically open the Radar Master application. A pop-up window will indicate the Virtual COM port number to use within the RadarMaster application
2. Connect to HART sensor using Radar Master

Select the Virtual Serial Port, **additionally the following setting must be changed**. See below:

- Handshake = Node
- Response Timeout = 2000
- Retries = 10
- Max HART Query Length = 55



Now simply start a Radar Master using the selected COM port and configure the sensor as would normally be done using a HART modem cable.

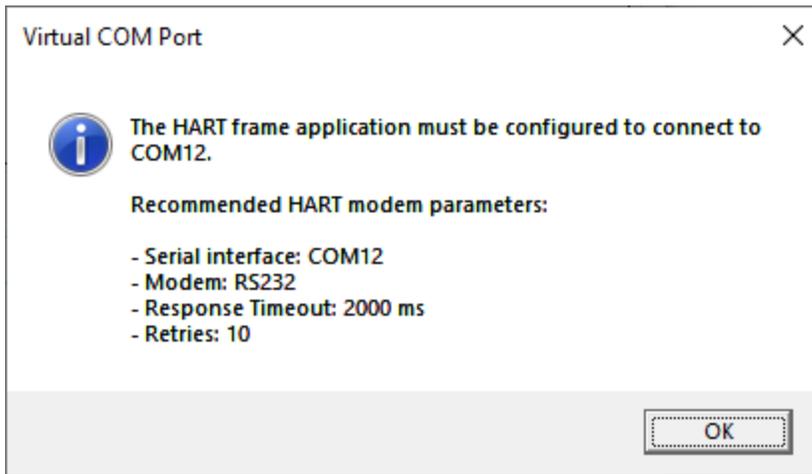
When finished, close Radar Master and return to the Remote Configuration window. Close this window and click on "End Session" to put the Sentinel node back into normal operation (this will also happen automatically after a 10 minute inactivity timeout).

Wireless DeviceCare/FieldCare Mode

Starting a remote DeviceCare/FieldCare Session

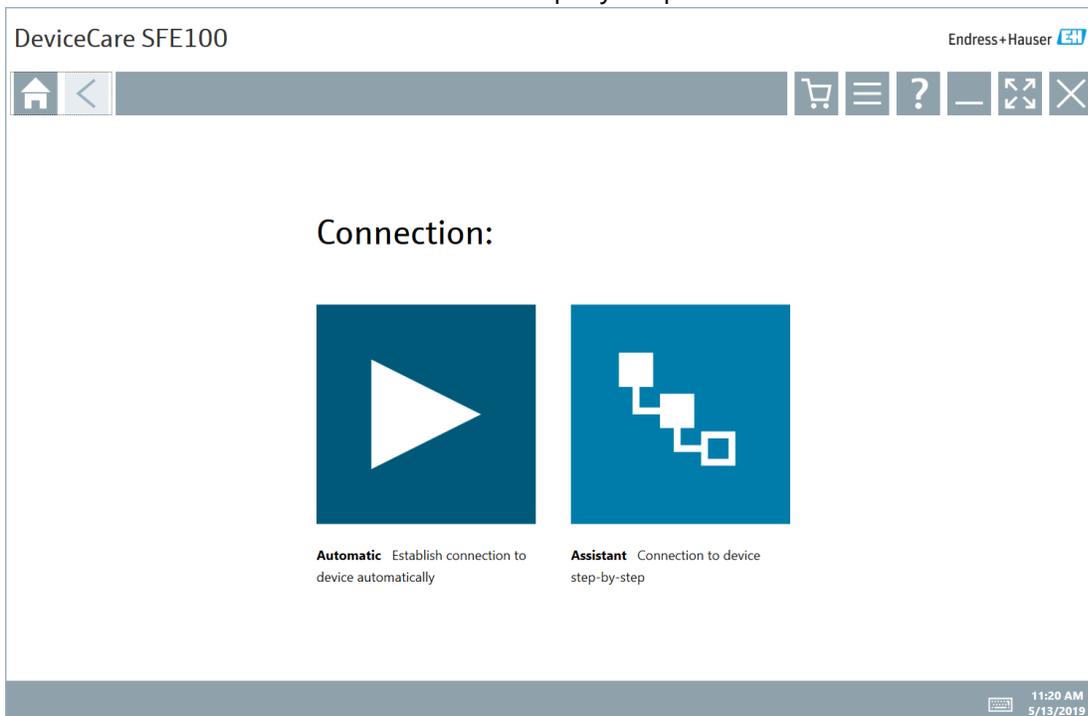
The following steps are necessary to complete a DeviceCare/FieldCare session.

1. After the node has been placed into Remote Configuration Mode, click on "Create Virtual COM Port". A pop-up window will indicate the Virtual COM port number to use within the DeviceCare/FieldCare application. This COM port number will be selected in step 7.

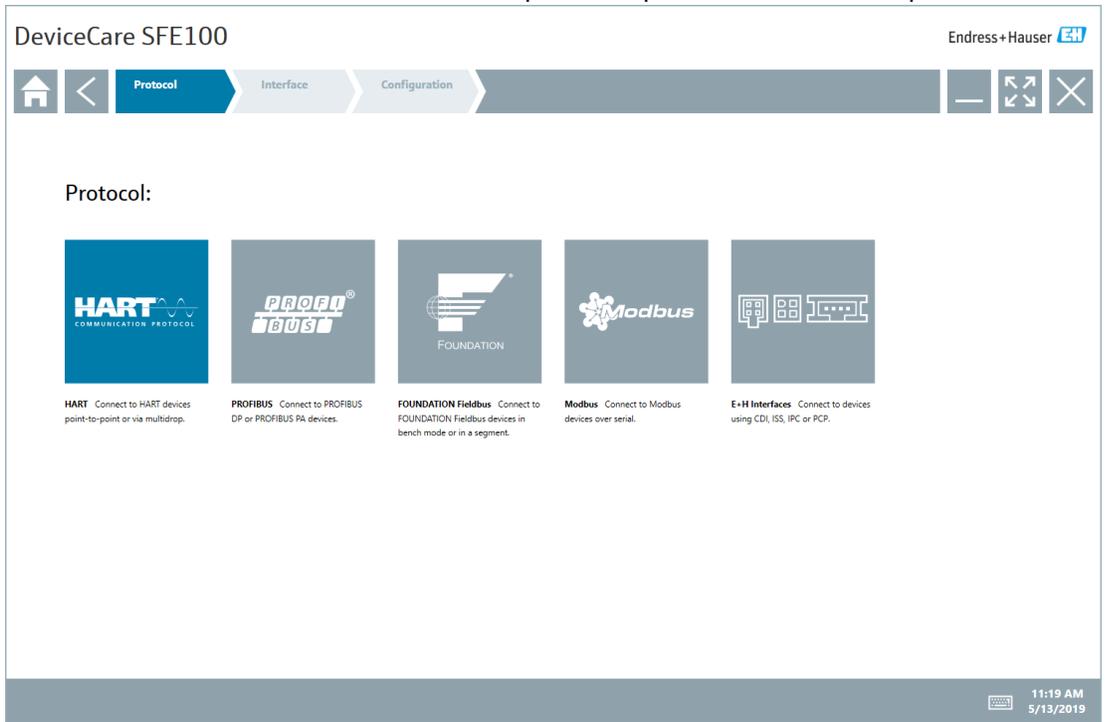


2. Open the Enress+Hauser DeviceCare or FieldCare application.

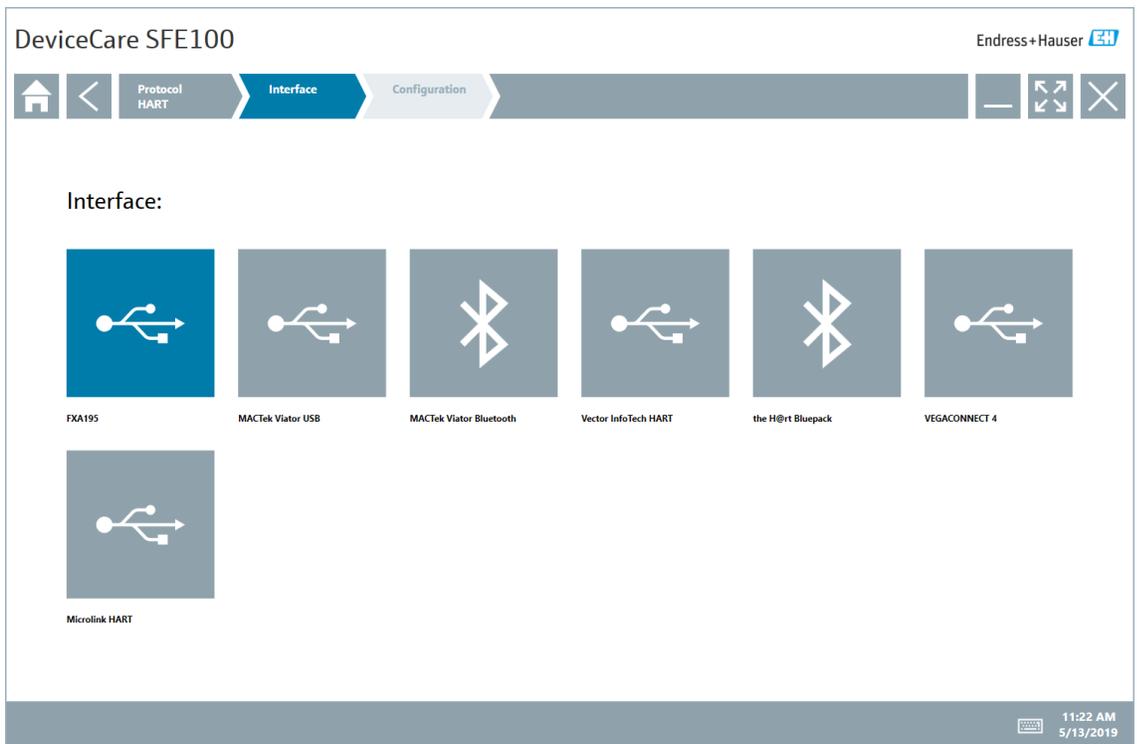
3. Select '**Assistant** Connection to device step-by-step'



4. Select 'HART' Connect to HART devices point-to-point or via multidrop'



5. Select Interface: 'FXA195'



6. Select '**Advanced**'

The screenshot shows the DeviceCare SFE100 configuration interface. The title bar reads "DeviceCare SFE100" and "Endress+Hauser EW". The navigation bar includes a home icon, a back arrow, and three tabs: "Protocol HART", "Interface FXA195", and "Configuration HART Communication". Below the navigation bar are three sub-tabs: "Configuration", "Advanced" (which is selected), and "Device address". The main area contains a "Found devices" section with a "USB port:" label and a dropdown menu. Below that is a "Scan range" section with "Start address:" and "End address:" labels, both with input boxes containing the number "0". In the bottom right corner, there is a play button icon and a timestamp "11:23 AM 5/13/2019".

7. Select the appropriate HART modem settings.

- Serial Interface: **COMx (SignalFire Virtual Serial Port)**
- Number of communication retries: **10**
- Start address: **1**
- End address: **1**

Click '**Apply**' and '**OK**'

DeviceCare SFE100 Endress+Hauser 

Navigation: Home | < | Protocol HART | Interface FXA195 | Configuration HART Communication | — | [Fullscreen] | [Close]

Configuration | **Advanced** | Device address

Communication interface: HART modem

Serial Interface: COM12 (SignalFire Virtual Serial Port)

HART protocol: Master | Secondary Master

Preamble: 5

Number of communication retries: 10

Address scan: Start address: 1 | End address: 1

Multimaster and Burst mode support

OK Cancel Apply




11:28 AM
5/13/2019

8. Click the right arrow in the lower right corner to scan for HART devices.

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DeviceCare SFE100 Endress+Hauser 

Navigation: Home, Back, Protocol HART, Interface FXA195, Configuration HART Communication

Configuration | **Advanced** | Device address

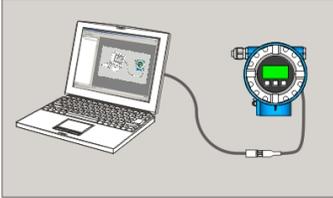
The DTM COM1 [HART Communication] has no GUI opened.

 Scans the next le

System tray: 11:31 AM, 5/13/2019

DeviceCare SFE100 Endress+Hauser 

Navigation: Home, Back, Program functions, DTM functions, Additional functions, Device report



Connection to device not established...

Problem	Remedy
• Connection in progress	» please wait
• DTM is offline	» please switch DTM Online
• No connection to device or communication adapter	» check wiring and power supply » check settings of Communication DTM » check device address
• Communication driver not installed	» check USB driver installation

Check Connected Device Type 

System tray: 11:42 AM, 5/13/2019

Navigation bar with icons for Home, Back, Program functions, DTM functions, Additional functions, Device report, and window controls (Minimize, Maximize, Close).

Language Mode selection

Device Type: Cerabar S / PMx 7x / V02.1y.zz SOFTWARE VERSION: 02.10.54 MEASURED VALUE: 1 inH2O
DEVICE DESIGN: PMCT1-ABD1P6AFB2A Tag: CERABARS OUTPUT CURRENT: 4.000 mA
Status signal OK MEASURING MODE: Pressure STATUS LOCKING: Unlocked

- Label
- Cerabar S / PMx 7x
- MEASURING MODE
- QUICK SETUP
- OPERATING MENU

Instrument health status

OK

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Technical Support and Contact Information

SignalFire Telemetry
140 Locke Dr, Suite B
Marlborough, MA 01752
(978) 212-2868
support@signal-fire.com

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Revision History

Revision	Date	Changes/Updates
1.0		Initial release
1.1	9/4/15	Added information on quick configuration, updated design
1.2	8/4/21	Added information on DeviceCare/FieldCare
1.3	11/30/21	Updated screen shots, added detail on Magnetrol 706 quick settings