

Interface Manual Node Checker

SignalFire Number: Nodechecker-X

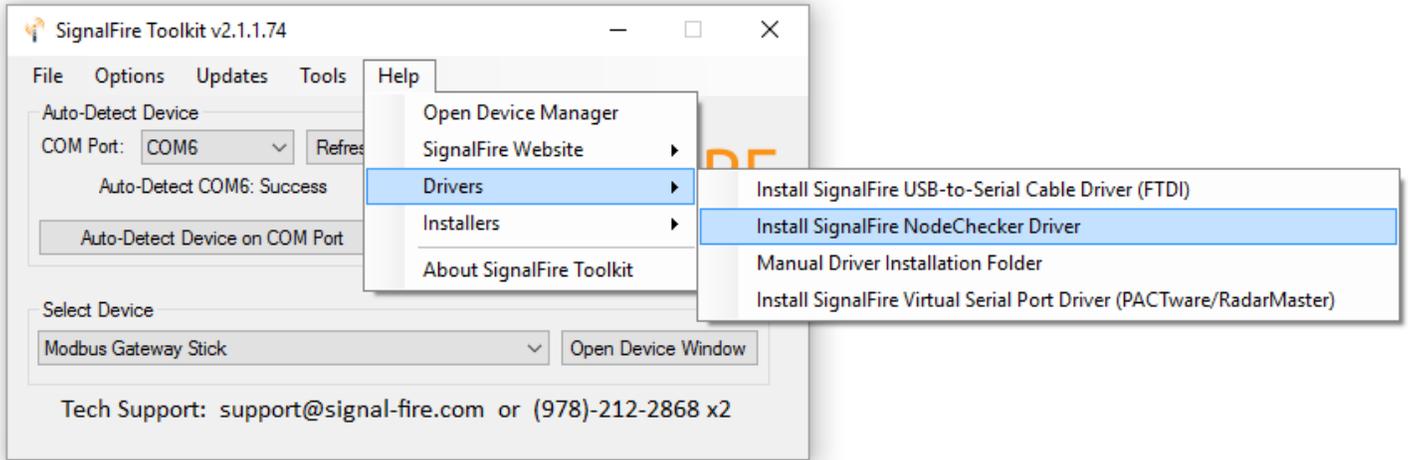


The SignalFire Node Checker has the following features:

- USB powered
- Provides advanced system diagnostics for entire network
- Can display register readings from any node within the network
- Shows wireless signal strength and links for each node
- Wireless configuration of SignalFire nodes
- Optional wireless PACTware/Rosemount Radar Master connection to remote HART devices with a Sentinel-HART node

Installation

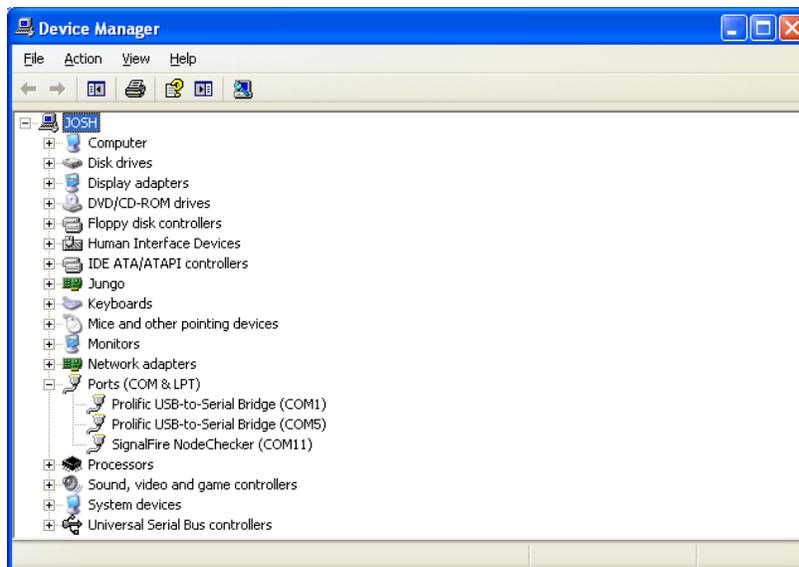
Before connecting the SignalFire Node Checker box to a USB port, open the SignalFire ToolKit and select **Install SignalFire Node Checker Driver** from the Help/Drivers menu.



Click 'Next' to install the driver.

Using the Node Checker Application

Connect the Node Checker USB cable to the PC. Windows should automatically detect a new device and install the necessary drivers.

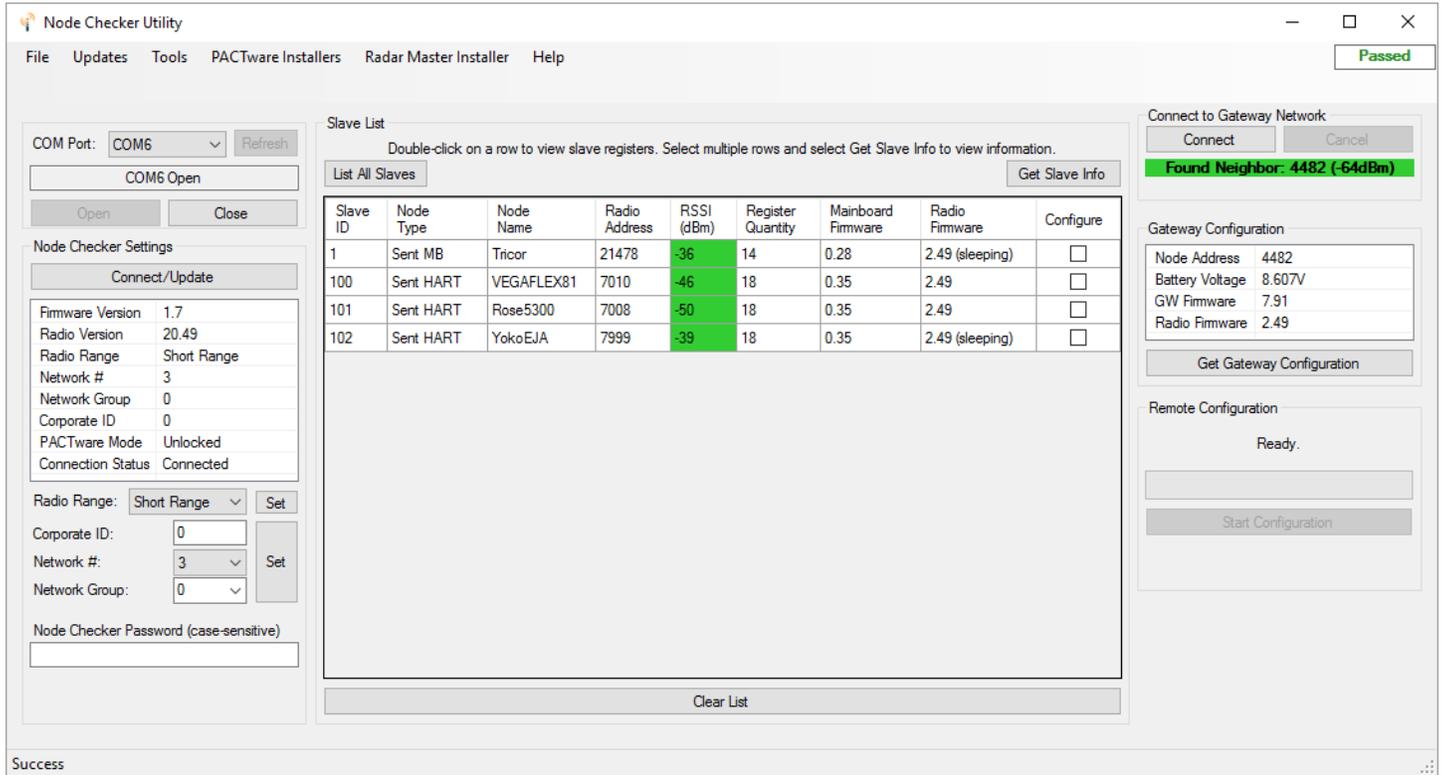


To determine the correct COM port, open the Windows Device Manager and look under **Ports**. In this example, the Node Checker is on COM 11.

Note: *The DB9 Port on the Node Checker is only used for Node Checker Firmware updates or for use by the Rosemount Radar Master software.*

Note: *The Gateway on the network must be running version 7.36 or later to use Node Checker.*

Open the SignalFire Toolkit, select the COM port associated with the Node Checker and click "Auto-Detect Device on COM Port." This will open the device configuration window, where all device settings can be configured. Make sure the **Network, Network Group, and Corporate ID** match the network you wish to access.



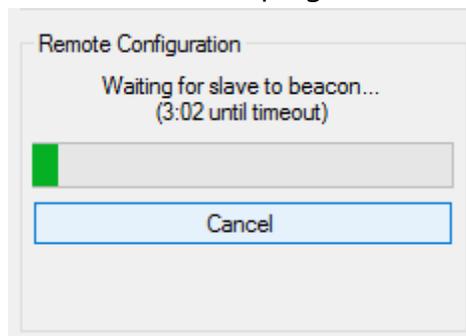
Click **Connect**. The Node Checker will connect to the configured network, read the gateway configuration, and list the slave IDs for the nodes connected to the Gateway. To read additional information from the remote devices highlight one or more rows and click the 'Get Slave Info' button. Double click on any slave ID to see detailed information for that node including versions, battery voltage, radio link information and register data.

For remote Modbus nodes the user must click add register and enter the register address to poll. Register maps can be built including descriptions and saved to a file for future list by using the 'Save Tags' and 'Load Tags' buttons.

Remote Configuration

The Node Checker supports wireless configuration of a device on the network. Both the node and the Node Checker must be connected to the network and be within radio range of each other. It is better to be positioned closer to the node to configure than the Gateway.

To initiate a configuration session of a node, select the 'Configure' checkbox next to one of the nodes in the list and click the **Start Configuration** button. If the node has an awake radio the remote configuration session will be ready start immediately. If it is a sleeping node you must wait for the node to send a "beacon" so that it can be commanded into configuration mode. The Sentinel nodes send a beacon every 2.5 minutes, while all other sleeping nodes send a beacon every 5.5 minutes.



A countdown timer will indicate the maximum time left before the node will enter remote configuration mode. Once the node is awake and ready for configuration click the **Open Configuration Window** that will appear.

Only settings applicable to the node type will be available to be changed. To update the configuration simply change a setting and click the **Set** button. Clicking **Force Device to Check-in to Gateway** will cause the node to read the sensor data and forward it to the gateway. *While in remote configuration mode regular check-ins are disabled, so the Gateway will not receive updated sensor data during the remote configuration session and may time-out any existing data for that node.*

To exit remote configuration mode, return to the main Node Checker window and click on End Session to return the node to normal operation. The remote configuration session will also automatically time-out after 10 minutes of inactivity.

Wireless PACTware Mode

If the Wireless PACTware/Radar Master mode has been purchased and unlocked for the Node Checker box, a wireless PACTware session can be run to a HART sensor connected to a SignalFire Sentinel Node. The HART sensor must be pre-configured in multidrop mode and set to HART ID 1.

In order to initiate and run the PACTware session the Node Checker must be within radio range of the node to configure. It is recommended that the Node Checker is located closer to the node to configure than the Gateway. The Node Checker must have a good radio direct link to the node to configure. PACTware cannot be run through a repeater node.

Requirements

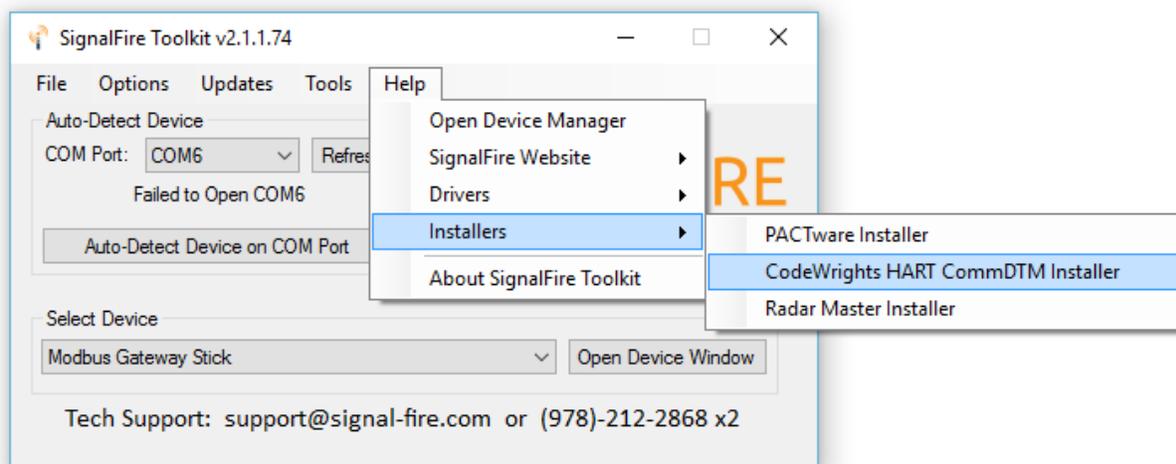
- PACTware enabled Node Checker
- PACTware Version 4.1 SP3
- CodeWrights Communication DTM Driver Version 1.0.51 (Supplied by SignalFire)
- Device specific DTMs for the sensor to configure

Installing the CodeWrights Communication DTM Driver

This step must be completed before using PACTware with the Node Checker

- Download the DTM driver by selecting **Download CodeWrights HART CommDTM Installer** from the **Installers** sub-menu of the **Help** menu

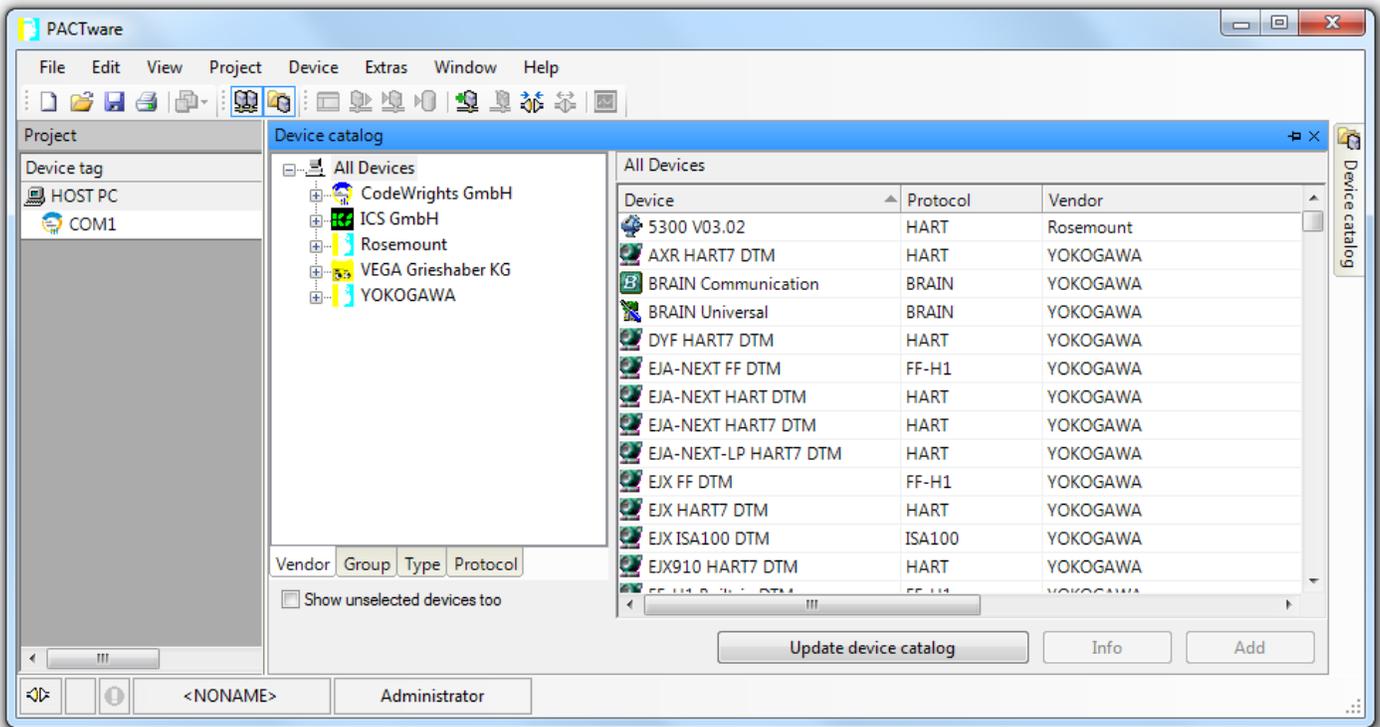
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Open the downloaded .ZIP file and run setup.exe

- Once the installation is complete, 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

7



The following steps are necessary to complete a PACTware session.

- 1 *Connect to the network with the Node Checker box*
Connect to the network as described in the Node Checker section above
- 2 *Start a remote configuration session wait for remote Sentinel node to wake up and beacon*
See the remote configuration section

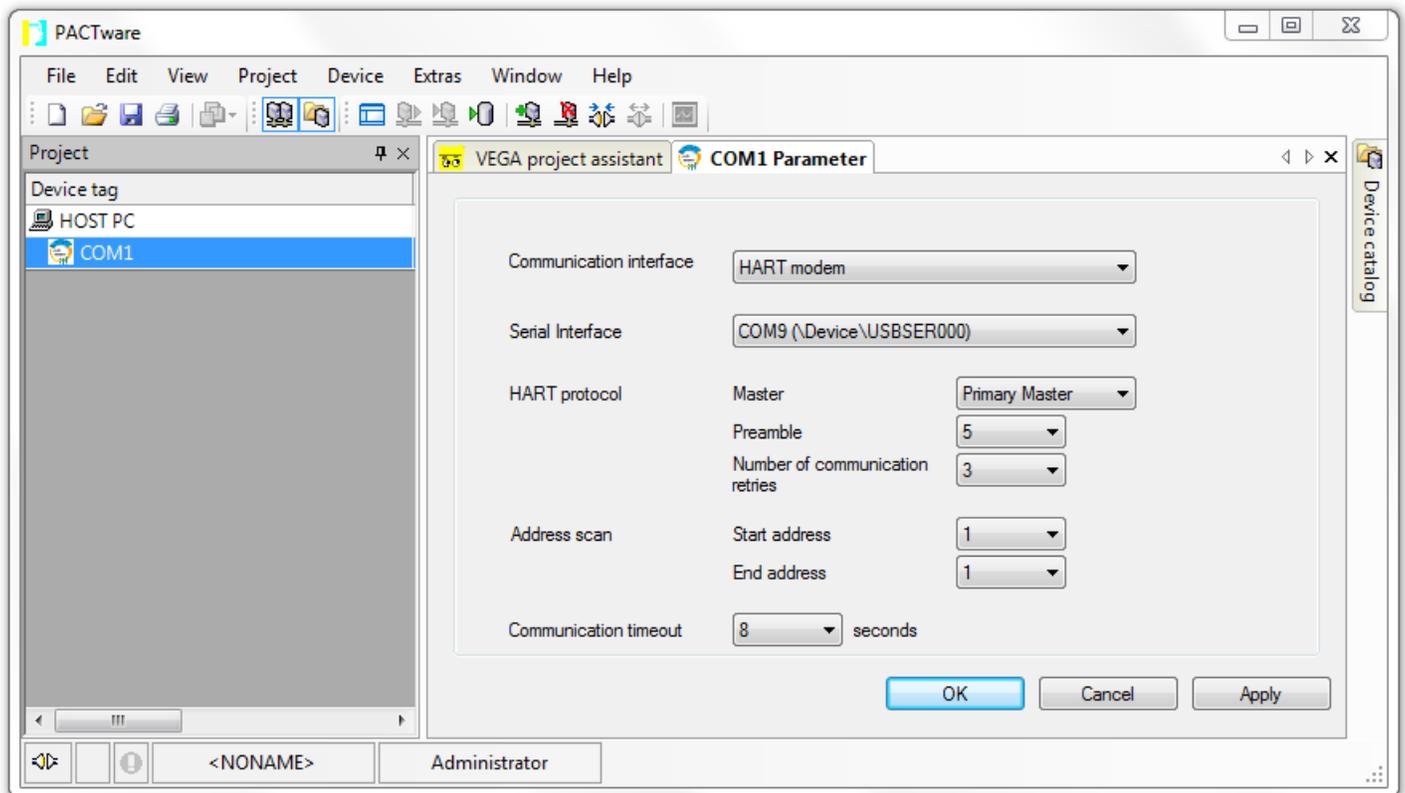
3 Launch PACTware

After the node has been placed into remote configuration mode, click on Launch PACTware 4.1 button in the remote configuration window. This will automatically open the PACTware application and add the CodeWrights COM DTM to the project with the correct settings.

4 Connect to HART sensor

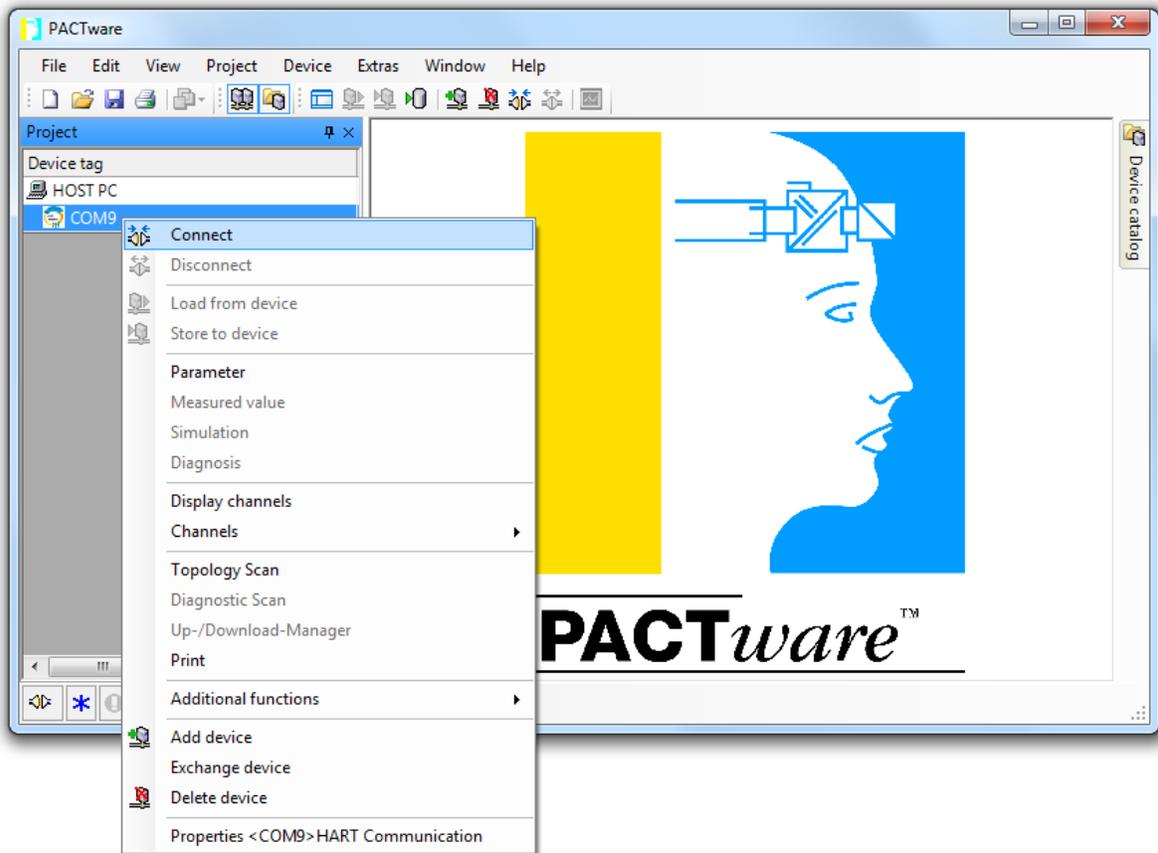
Once PACTware opens, connecting to the HART sensor is different than you may be used to.

- Double click on the COM label under the HOST PC. Select the COM port of the Node Checker. Click **Apply**, then click **OK** (Leave all other settings the way they are).



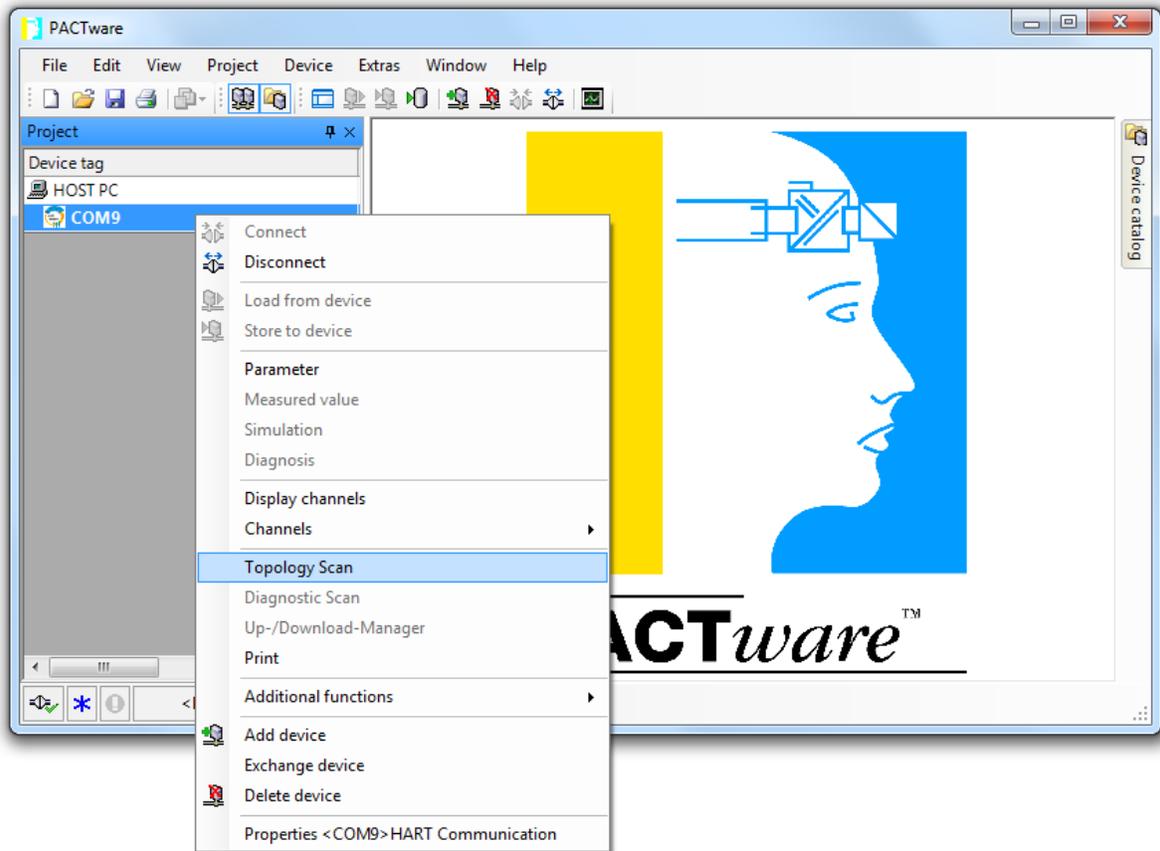
- Right click on the COM label and select **Connect**

10

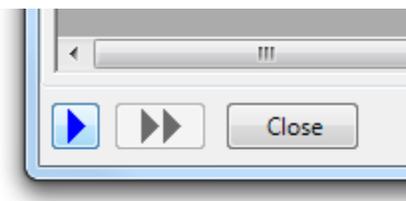


- Right click on the COM label and select Topology Scan

11



- Click the blue arrow in the lower left to start the scan and detect the HART sensor



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 Node Checker window. Click on End Session to put the Sentinel node back into normal operation (this will also happen automatically after a 10 minute inactivity timeout).

If the Wireless PACTware/Radar Master mode has been purchased and unlocked for the Node Checker box, a wireless Radar Master session can be run to a HART sensor connected to a SignalFire Sentinel-HART Node. The HART sensor must be pre-configured in multidrop mode and set to HART ID 1.

In order to initiate and run the Radar Master session the Node Checker must be within radio range of the node to configure. Radar Master cannot be run through a repeater node. It is recommended that the Node Checker is located closer to the node to configure than the Gateway. The Node Checker must have a good radio link to the node to configure. Radar Master cannot be run through a repeater node.

Starting a remote Radar Master Session

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

- 1 Connected to the network with the Node Checker box using the USB connection*

Connect to the network as described in the Node Checker section
- 2 Start a remote configuration session wait for remote Sentinel node to wake up and beacon*

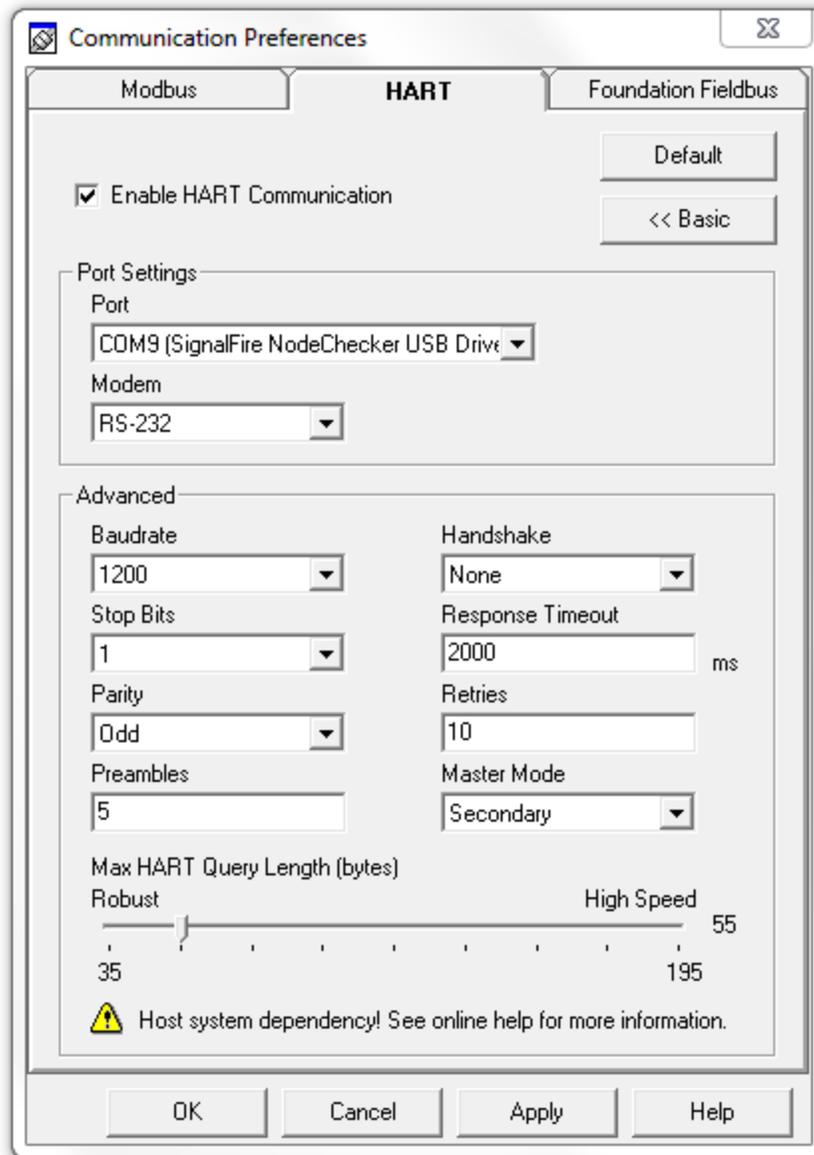
See the remote configuration section
- 3 Launch Radar Master*

After the node has been placed into remote configuration mode, click on **Launch Radar Master button** in the remote configuration window. This will automatically open the Radar Master application.

4 Connect to HART sensor using Radar Master

The Radar Master software requires that a serial COM port on the Node Checker is used (a USB-serial converter is OK), so the **DB9 port on the Node Checker box must be used for Radar Master**. The COM port connected to the DB9 port must be selected in the **Communication Preferences** window in the Radar Master software. Additionally the following setting must be changed:

- Handshake = None
- Response Timeout = 2000
- Retries = 10
- Max HART Query Length = 55



Now start 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 Node Checker window. Click on **End Session** to put the Sentinel node back into normal operation (this will also happen automatically after a 10 minute inactivity timeout).