

How to configure the Anybus comDTM



Document history

Revision	Date	Description	Author
1.00	2008-02-26	Created	Thorbjörn Palm
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More information about the network and products

For further information about the Anybus products, please consult the HMS webpage, www.anybus.com. The latest manuals, etcetera can be downloaded from that location.

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1 Applicable Anybus products

The following table specifies the relevant Anybus products for this document.

Description	Name / Type
Anybus X-gateway	PROFIBUS Master
Anybus-M Master	PROFIBUS Master
Anybus-PCI Master	PROFIBUS Master

2 Requirements

The following equipment is needed to setup a successful configuration.

Description	Name / Type	Version
Hardware access driver	HMS Anybus comDTM	1.0.1.7
Anybus Transport Provider	Anybus Transport Provider Setup	2.1.1.1
Bürkert DTM	Bürkert PROFIBUS IO Box DTM	0.9.0.19
Bürkert GSD-file	Buer6521.gsd	2.2
FDT SOFTWARE	PACTware	3.0.2.28
X-gateway terminal software	HyperTerminal or TeraTermPro	5.1, 2.3
X-gateway Network Interface Addendum	Anybus X-gateway PROFIBUS Master, Network Interface Addendum	1.10
X-gateway User Manual	X-gateway Generic User Manual	1.11
Master Fieldbus Appendix	Anybus-M PROFIBUS, Fieldbus Appendix	1.31
Power supply 24VDC	n.a.	n.a.
Configuration cables	n.a.	n.a.

Note: The PACTware software can be downloaded at www.pactware.com

3 Solution overview

This application note describes how to use the Anybus comDTM together with PACTware. In the chapters below you can find an overview of the system described in this document. The network layout is depending on what Anybus product is used. Other nodes may be attached to the network, but are not necessary.

The configuration is described in two steps.

- 1 Installing the Anybus Transport Provider, Anybus comDTM and Bürkert comDTM.
- 2 The PACTware configuration.

Note: This document is valid for all Anybus PROFIBUS Master products, however sections written in *italics* describe the configuration of a specific product.

The contents describe step by step how a configuration is done. This document assumes the reader is familiar with industrial communication, PROFIBUS networks and HMS gateways.

3.1 Anybus-PCI cards

The Anybus PCI-card is installed in the PC according to the picture below. The PROFIBUS access is achieved directly in the PC.

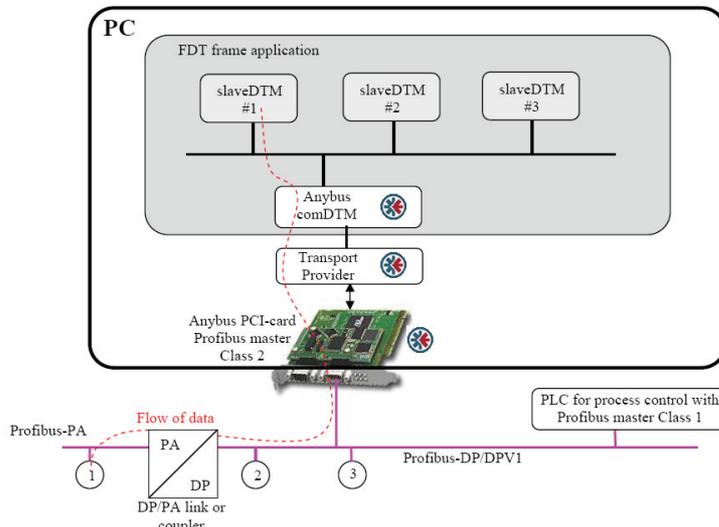


Figure 1 PCI-card hardware connection overview.

3.2 Anybus X-gateway

All Anybus X-gateways with PROFIBUS Master feature support for FDT. Remote access is achieved if an X-gateway with Ethernet is used. If Ethernet is not available it is possible to use the RS232 config port of the Profibus master. The figure below shows the network connection when using the Ethernet transport provider.

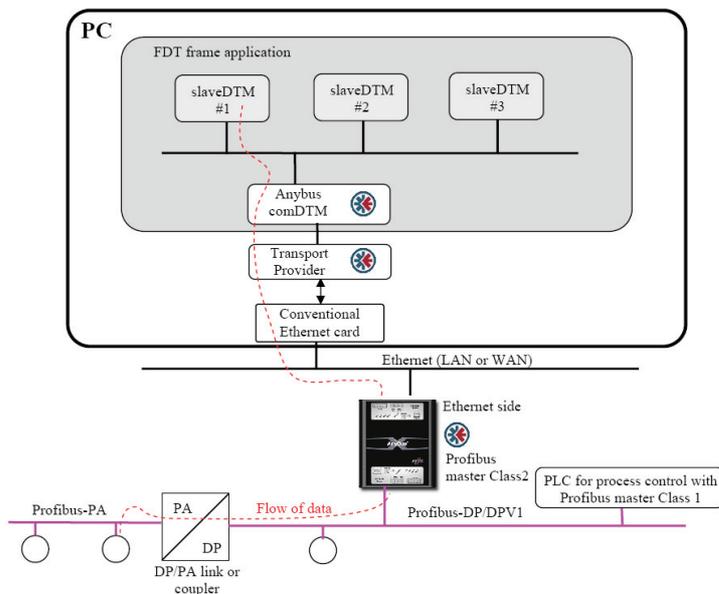


Figure 2 Anybus X-gateway hardware connection overview.

3.3 Anybus-M

Another opportunity to use the comDTM is directly together with our embedded cards and an OEM host product. Communication possibilities are then either through the RS232 config port of the Profibus master card, or via the DPRAM if the OEM manufacturer creates a transport provider according to the Anybus API. The illustration below outlines the scenario using a transport provider from an OEM manufacturer.

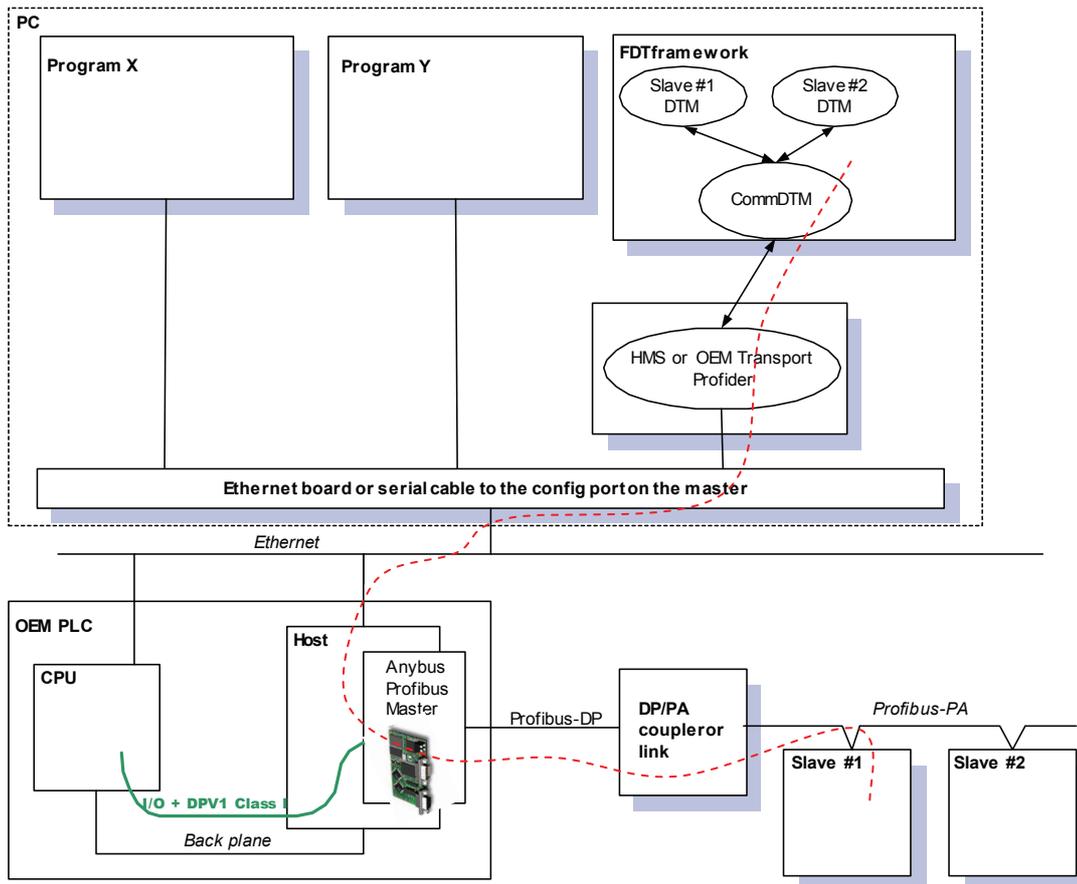


Figure 3 Anybus-M hardware connection overview.

4 Installing required software

To be able to use the comDTM solution a number of software packages have to be installed. The first step is to install the Anybus comDTM and the slave DTM. In this case the Bürkert slave is used. Also the Transport Provider has to be installed. Run the setup files as listed below.

- 1 HMS Anybus comDTM
- 2 Anybus Transport Provider Setup (Hardware drivers)
- 3 Slave DTM setup (use the slave DTM of interest, in this case the Bürkert slave DTM is used)

The files are attached to this application note and can also be downloaded from the HMS website¹. After installing the required software the configuration of the Anybus comDTM and the slave DTM can begin.

¹ HMS website is located at www.anybus.com

5 PACTware configuration

The next step is to start the PACTware program. In this particular case the X-gateway with a PROFIBUS master and Ethernet connection is used for test purpose.

Note: Make sure the Anybus comDTM and the desired slave DTMs are installed before following the steps below.

1 Adding the Anybus comDTM

Start the PACTware program and click on the Update device catalog button. This will update the device library catalog with the installed DTMs.

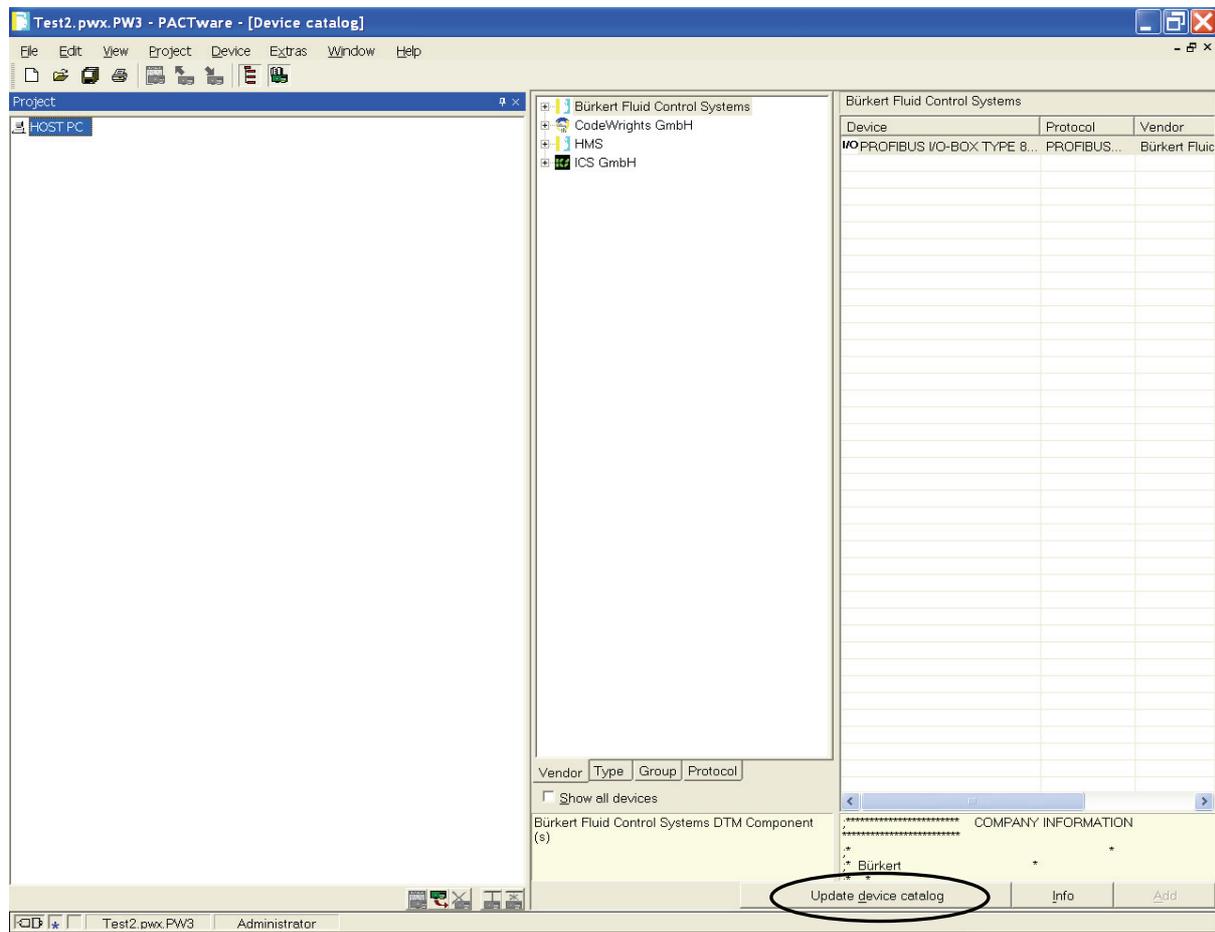


Figure 4 Starting the PACTware program.

To add the Anybus comDTM, right click on the HOST PC and select Add device.

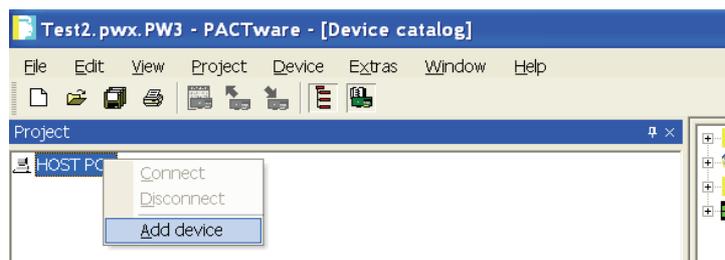


Figure 5 Adding a device.

Select the Anybus PROFIBUS comDTM and click on OK.

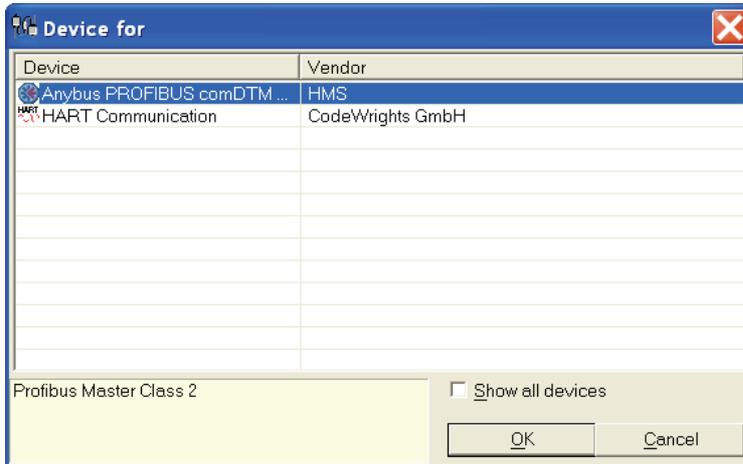


Figure 6 Selecting the type of device.

2 Configuring the comDTM parameters

After selecting the Anybus comDTM, right click on the Anybus master to open the ComDTM parameters as seen below.

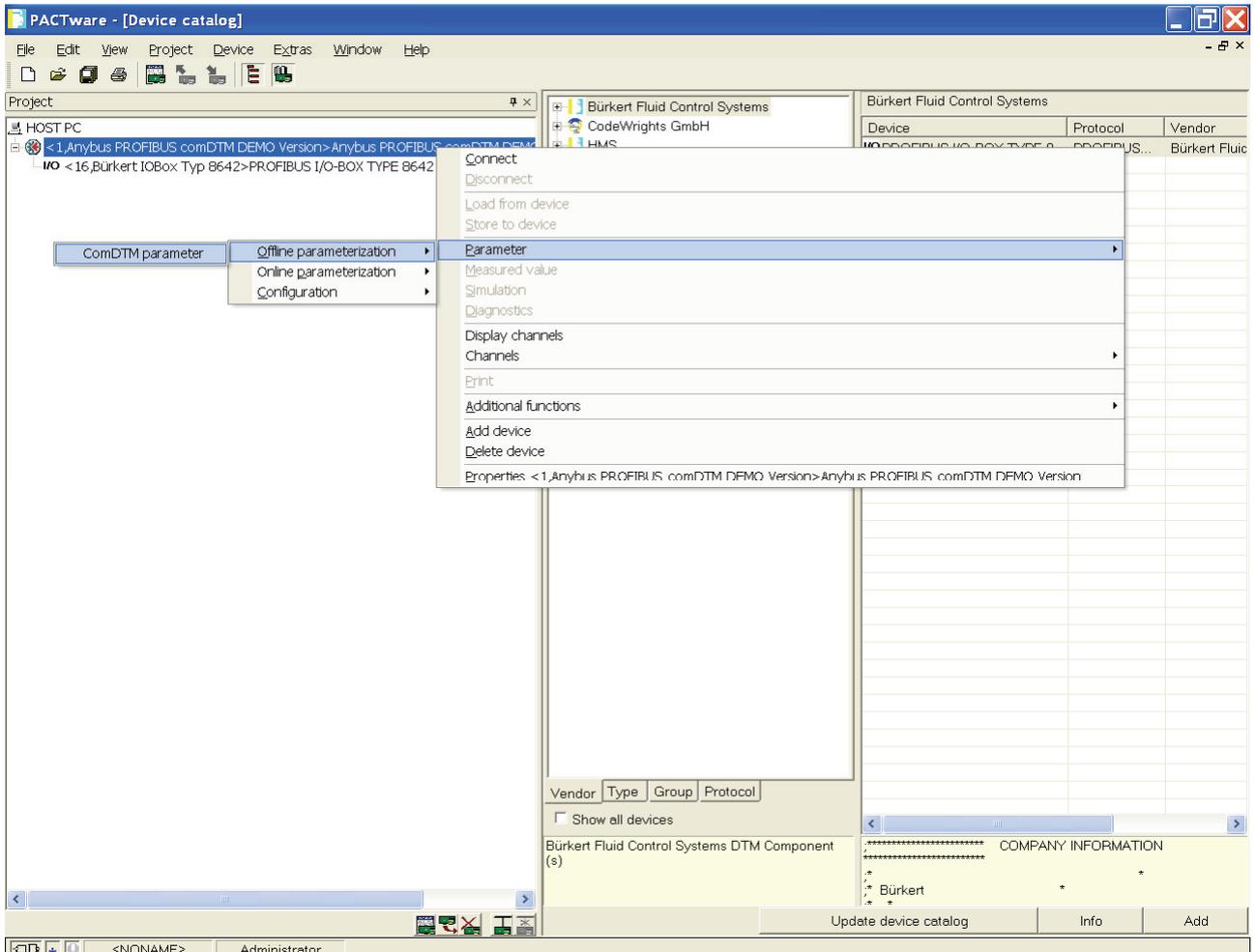


Figure 7 Opening the comDTM parameters.

The parameter setting is depending on how the Anybus PROFIBUS-DP Master module is initialised.

Anybus X-gateway

If the X-gateway is configured by the HyperTerminal Interface menu and the Master configuration is setup by using NetTool for PROFIBUS, make sure the box “Use bus parameters” is unchecked. Please see section 3 Not using bus parameters.

Note: Please see the application note, How to configure PROFIBUS with NetTool for PROFIBUS, for more information on how to configure the X-gateway².

If the X-gateway PROFIBUS Master is to be initiated by the FDT application, in this case PACTware, make sure the box “Use bus parameters” is checked. Please see section 4 Using bus parameters.

Anybus-M and Anybus-PCI Master

If the Anybus DP-Master module is initiated by another application, the “Use bus parameters” box has to be unchecked. Please see section 3 Not using bus parameters.

If the Anybus PROFIBUS Master module is to be initiated by the FDT application, in this case PACTware, the box “Use bus parameters” has to be checked. Please see section 4 Using bus parameters.

3 Not using bus parameters

Make sure the box “Use bus parameters” is unchecked.

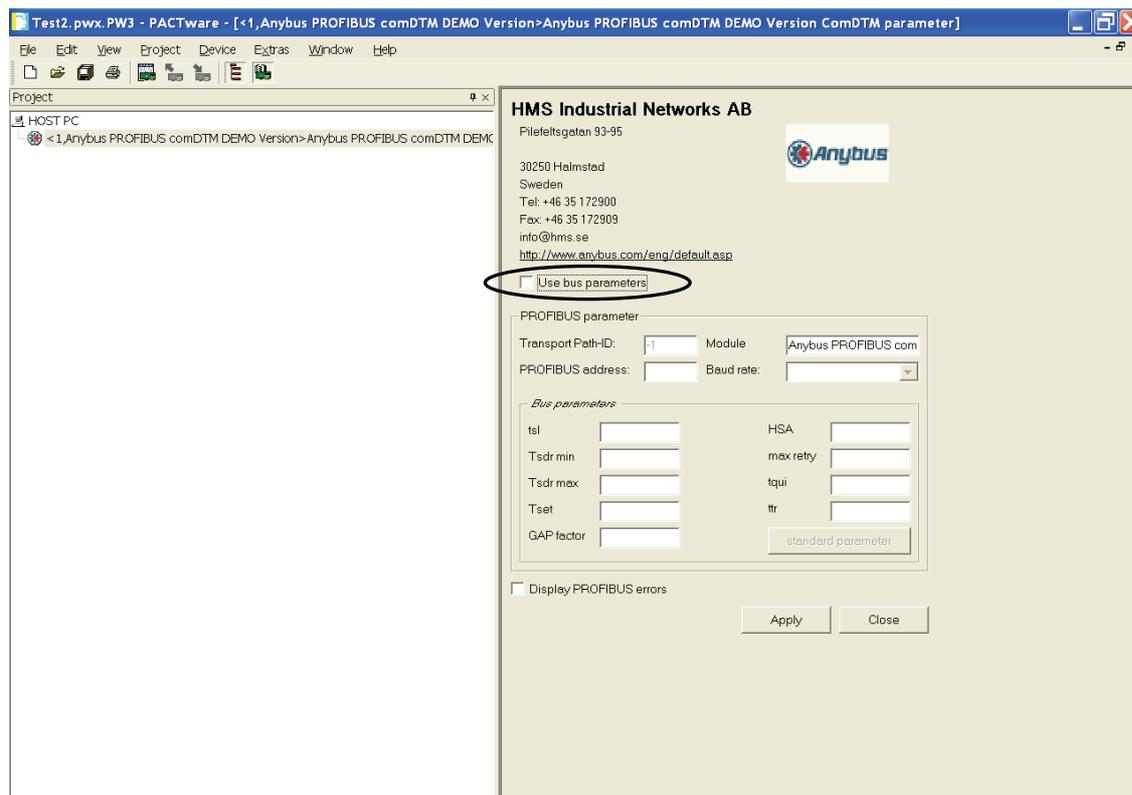


Figure 8 Configuring the bus parameters of the Anybus master module.

To accept the settings click on Apply followed by the Close button.

² The document can be downloaded at HMS website www.anybus.com

4 Using bus parameters

Then in PACTware make sure the box “Use bus parameters” is checked. Also the Baud Rate has to be set to a value supported by the slave. In this case 93,75 kbit/s is used.

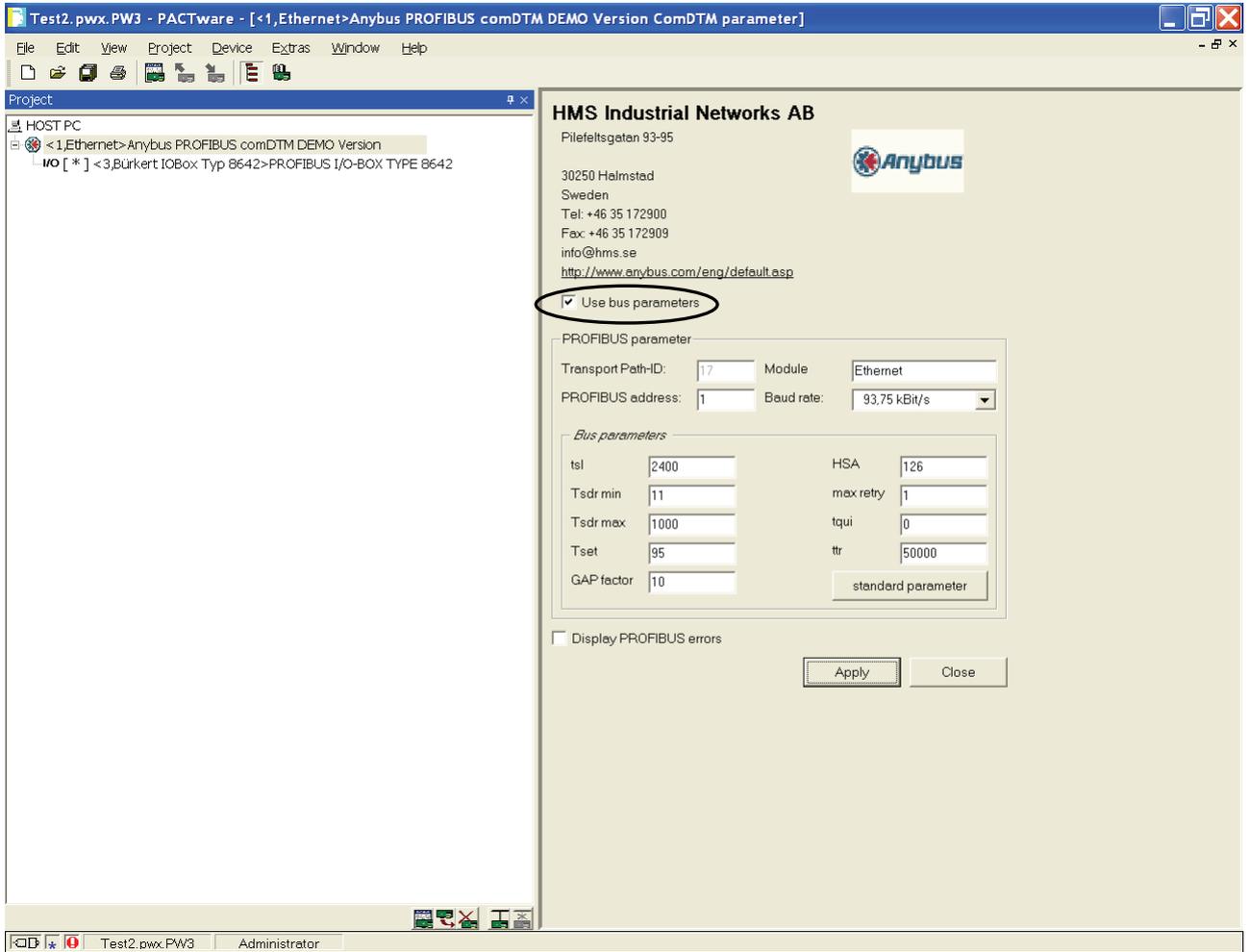


Figure 9 Configuring the bus parameters of the Anybus master module.

To accept the settings click on Apply followed by the Close button.

X-gateway: Using the X-gateway it is necessary to change the PROFIBUS Master operation mode to Stop. Open the configuration menu and select 9 Change operation mode. Set the operation mode to stop.

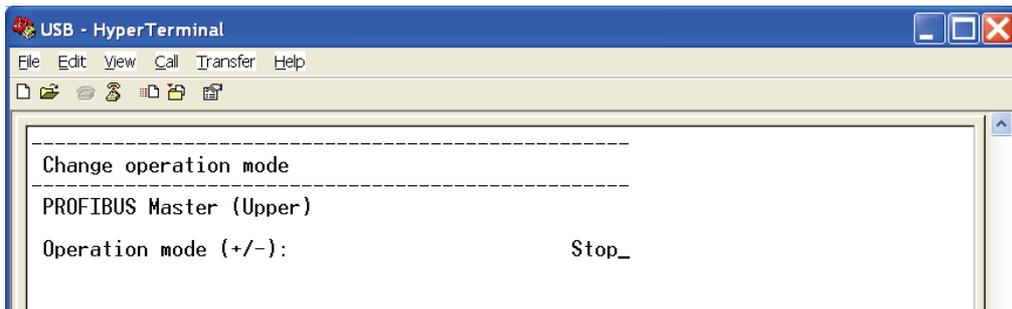


Figure 10 Changing the operation mode to Stop in the X-gateway.

5 Adding the slave device

Then right click on the Anybus PROFIBUS comDTM and select Add device to add the slave device.

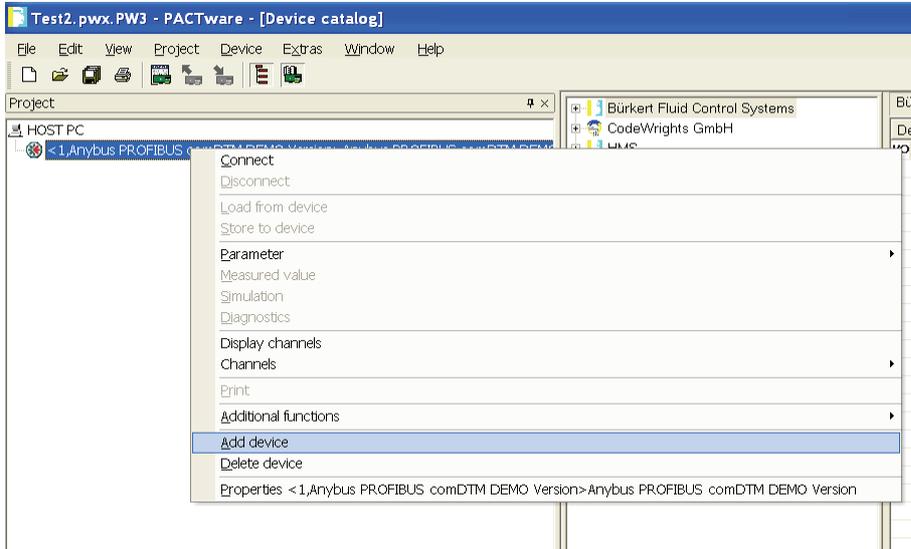


Figure 11 Adding the slave.

In this case the Bürkert slave device is added.

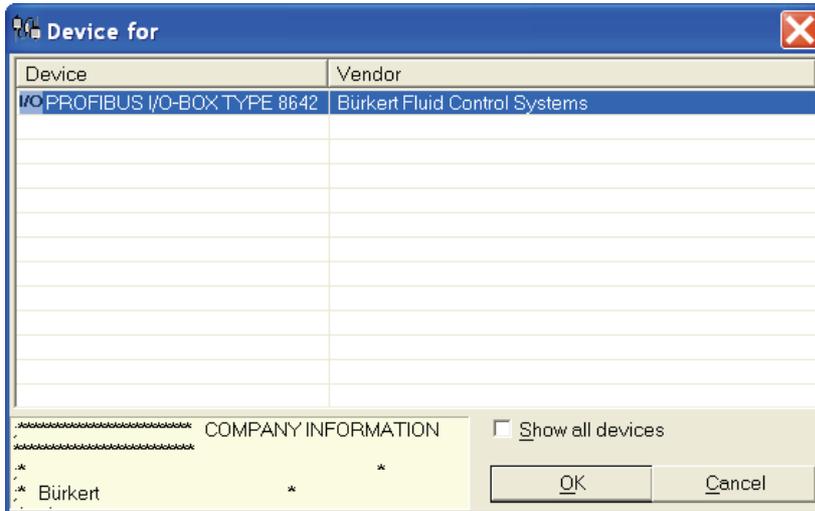


Figure 12 Selecting the Bürkert slave device.

Click on OK to add the Bürkert slave.

6 Configuring the slave device

When selecting the Bürkert slave device a configuration screen appears.

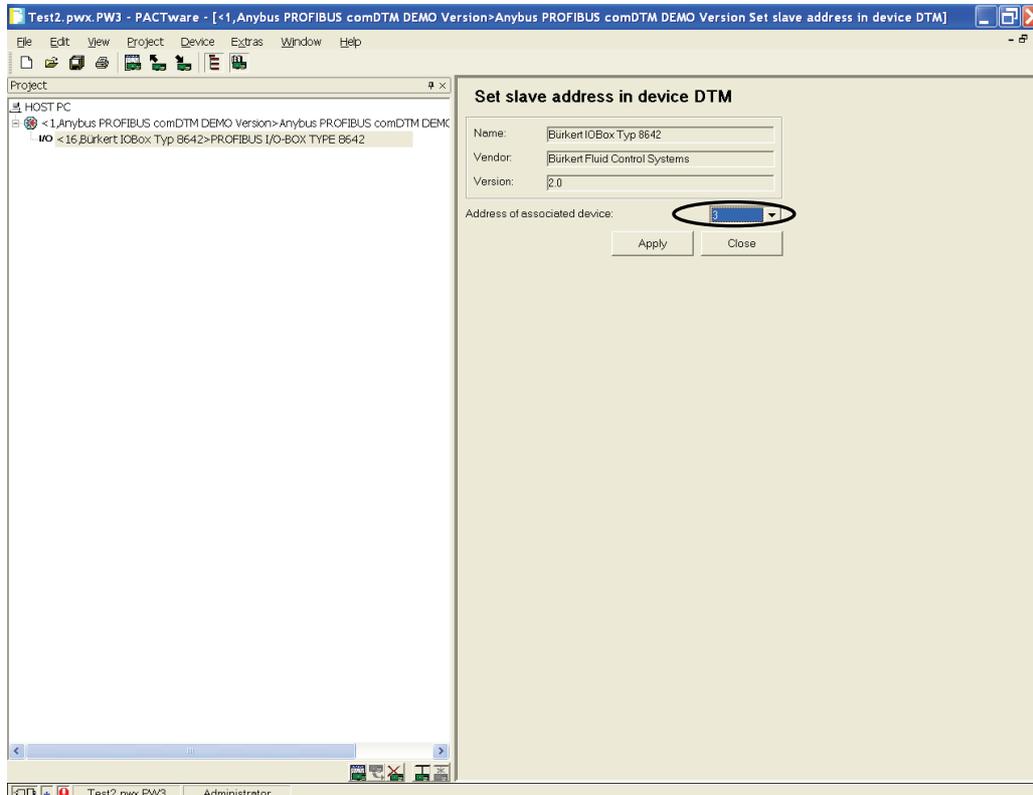


Figure 13 Configuring the slave address.

Select the PROFIBUS address of the slave, in this case node address 3. Click on Apply and then on Close.

Note: The PROFIBUS address has to be set to the same as the slave is configured for.

Now the Communication parameters for the Anybus comDTM are to be configured. Right click on the Anybus module and select the Communication Interface as seen below.

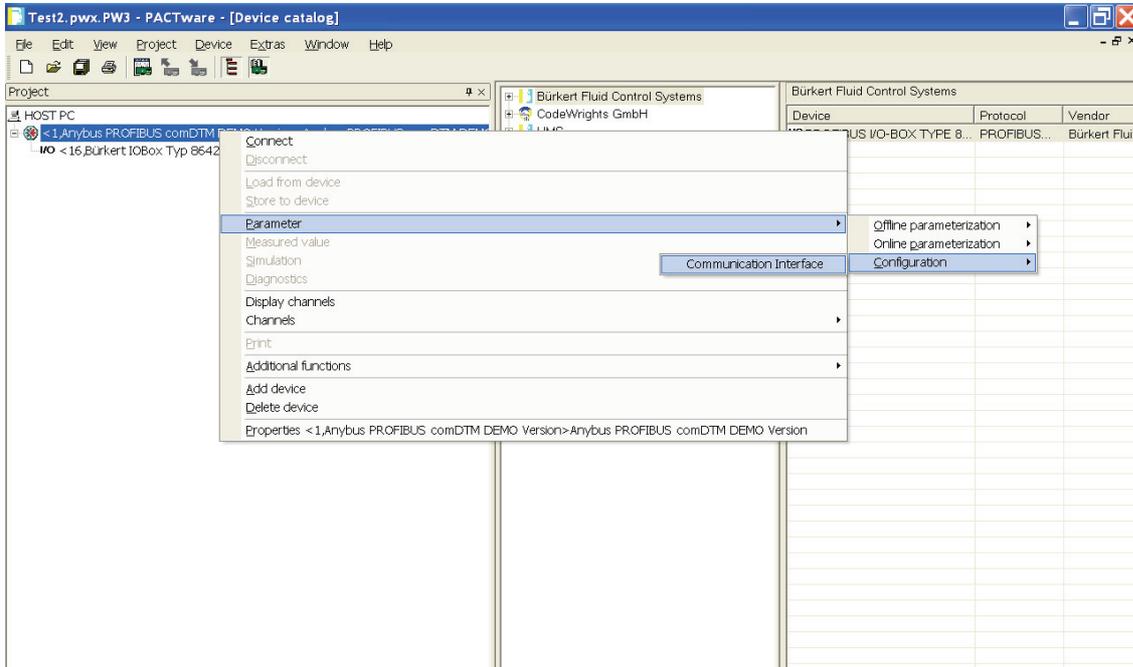


Figure 14 Opening the Communication Interface dialogue of the Anybus master module.

Then select the type of Communication Interface and press the Select and Close button respectively. In this case the Ethernet Communication Interface is used.

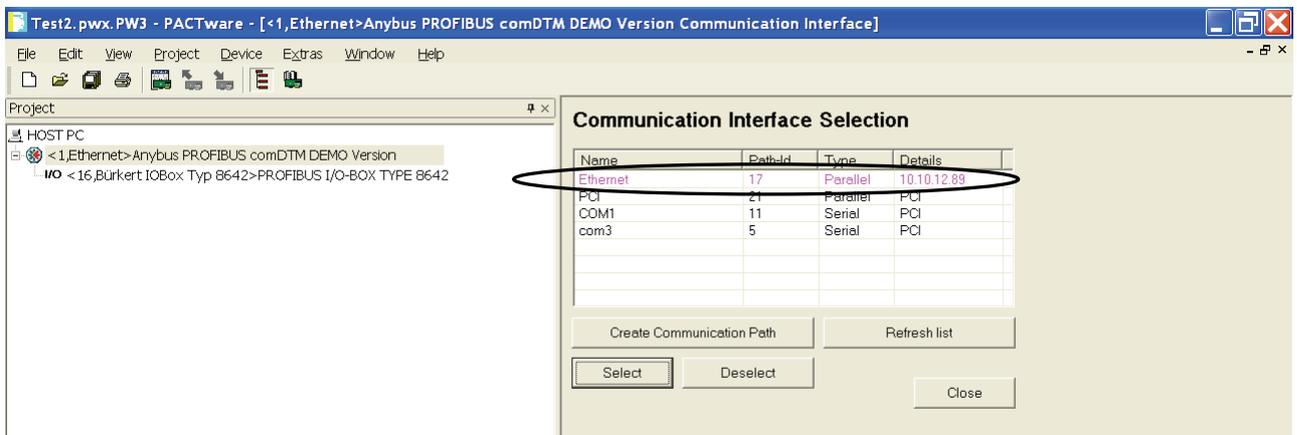


Figure 15 Selecting the type of Communication Interface.

Serial driver: Using the serial port on the Anybus-M the serial driver can be used. The serial driver can also be used if the PC is connected to the serial port of the PROFIBUS-DP Master module on the X-gateway and the PCI-card. The serial connector is located next to the fieldbus connector. Please see the Appendix Transport Path for details on how to configure the Transport Path.

Ethernet driver: In the case with the Anybus X-gateway with Ethernet interface the Ethernet driver can be used. Please see the Appendix Transport Path for details on how to configure the Transport Path.

PCI driver: For the Anybus PCI the PCI driver can be used. Please see the Appendix Transport PathAppendix for details on how to configure the Transport Path.

6 Testing

Now it is time to connect to the slave. Right click on the slave module and select connect as seen below.

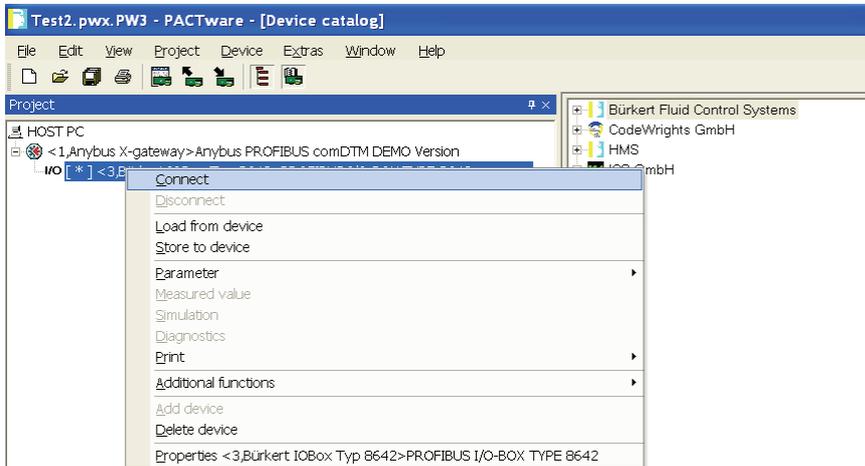
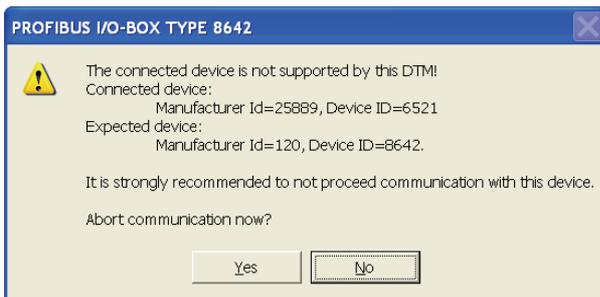


Figure 16 Connecting to the module.

If the window below appears select “No”.



To set the slave parameters, right click on the module and select Overview as seen below.

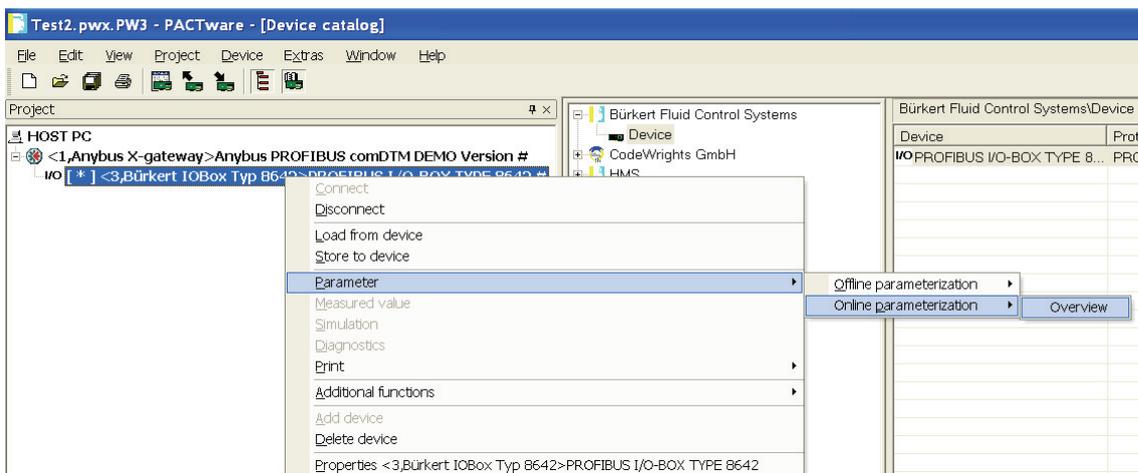


Figure 17 Opening the Overview window.

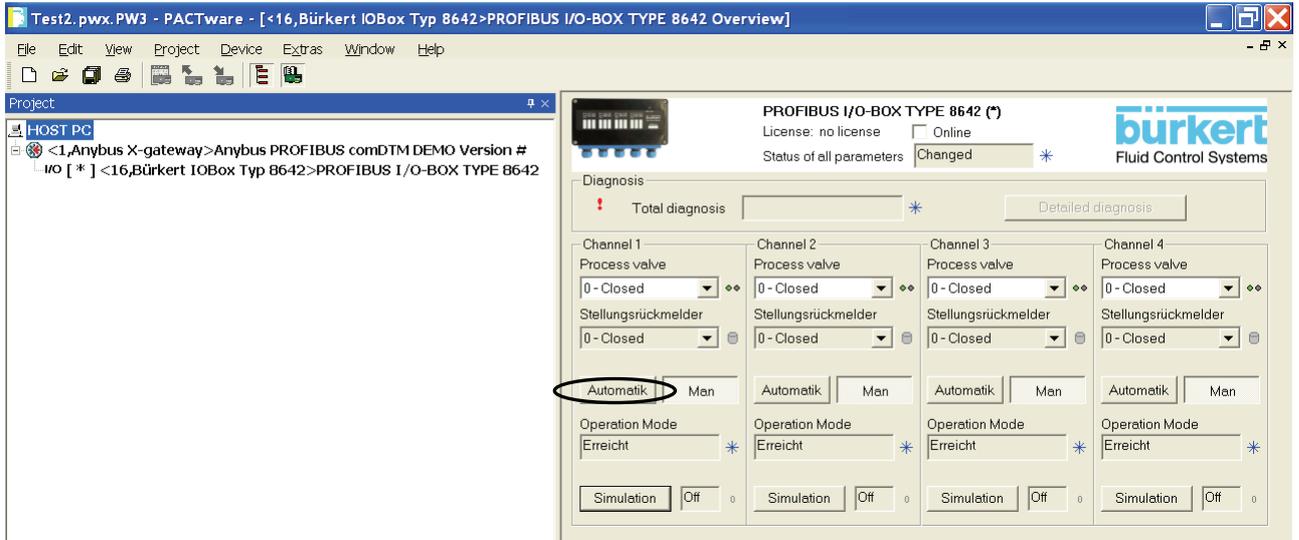


Figure 18 Monitoring the slave parameters.

In the Overview window it is possible to change the slave parameters. In this case the Automatik button is pressed. The result can be viewed in the next window. Also make sure the Online box is marked as seen below.

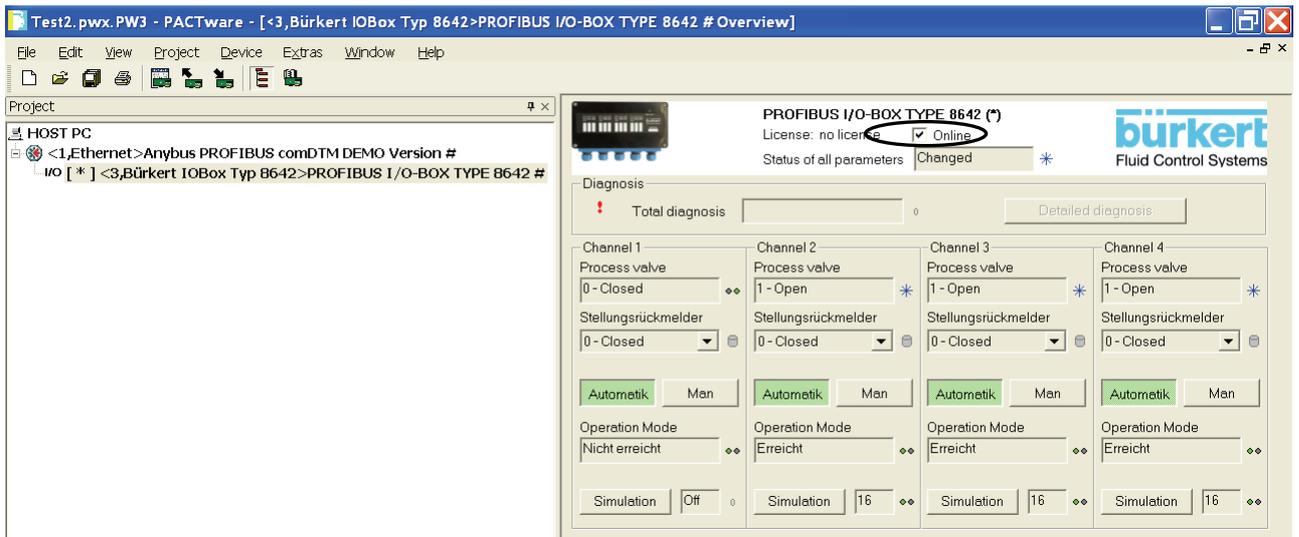


Figure 19 Changing the slave parameters.

The slave parameters for channel 1 to 4 have now changed to Automatik.

Appendix Transport Path

The Transport Paths available for connecting with the PACTware software is Serial, Ethernet and PCI. The choice of Transport Path is depending on the type of product. Below follows a description of the different Transport Paths.

Anybus-X gateway: Using the serial port of the PROFIBUS-DP Master module in the X-gateway the serial driver can be used. The serial port is located next to the fieldbus connector. In the case with the Anybus X-gateway with Ethernet interface the Ethernet driver can also be used.

Anybus-M: Using the serial port of the Anybus-M the serial driver can be used

Anybus-PCI: For the Anybus PCI the PCI driver can be used. Using the serial port of the PROFIBUS-DP Master module the serial driver can also be used.

Serial connection

Using the serial port of the Anybus-M the serial driver can be used. The serial driver can also be used if the PC is connected to the serial port on the PROFIBUS-DP Master module on the X-gateway and the PCI-card. Follow the steps below to create a new Transport Path.

Open the Serial tab and click on create.

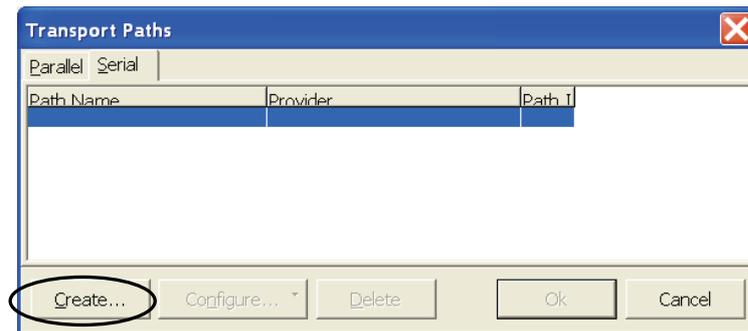


Figure 20 Configuring the Serial Transport path.

Select the COM-port path as shown below.

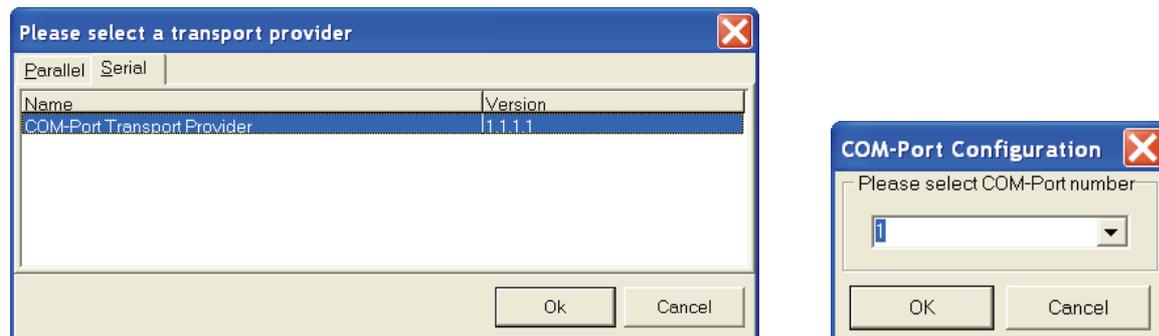


Figure 21 Selecting the COM-port Transport Provider and the number of COM-port.

In the following dialogue window enter the desired name of the Transport Path. Then select the desired COM-port.

Ethernet connection

In the case with the Anybus X-gateway with Ethernet interface the Ethernet driver can be used. Follow the steps below to create a new Transport Path.

Note: To be able to use the Ethernet Transport Path the following is required:

- Install NetTool Profibus version 3.1.1.1 or later on the PC
- Install Anybus Transport Provider version 2.1.0.0 or later on the PC
- Make sure that the X-gateway firmware version is 3.02.3 or later

Step 1

Select Parallel and press the Create button in the Transport Paths dialog.

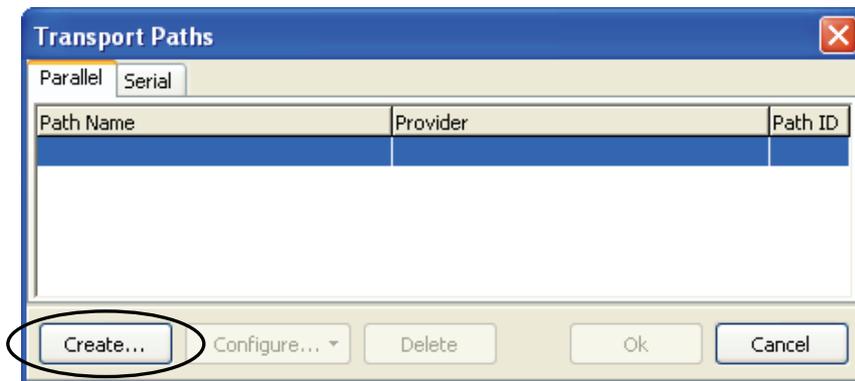


Figure 22 Creating a new Transport Path.

Step 2

Select the Ethernet Transport Provider and press OK. Then give the path a name, e.g. Ethernet and press OK again.

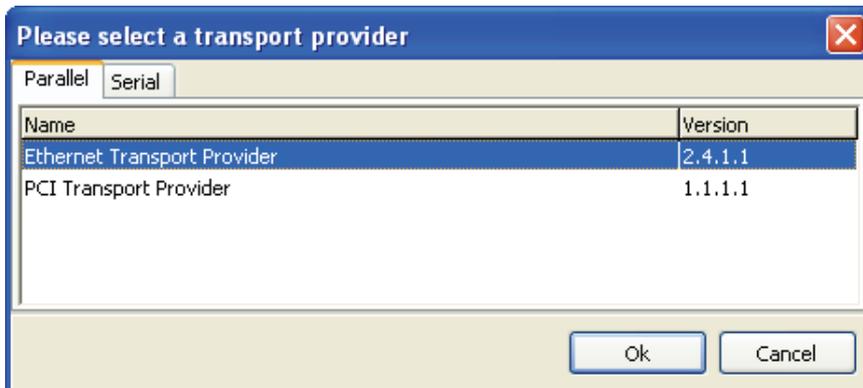


Figure 23 Selecting the Ethernet Transport Provider.



Figure 24 Naming the new Transport Path.

Step 3

If the IP-address of the X-gateway is in the same subnet-range as your PC, the gateway will automatically appear in the list shown in the Ethernet Configuration dialogue. Mark the X-gateway and press ok. If nothing is shown in the list, please proceed to Step 4. If the X-gateway appears in the window please proceed to Step 5.

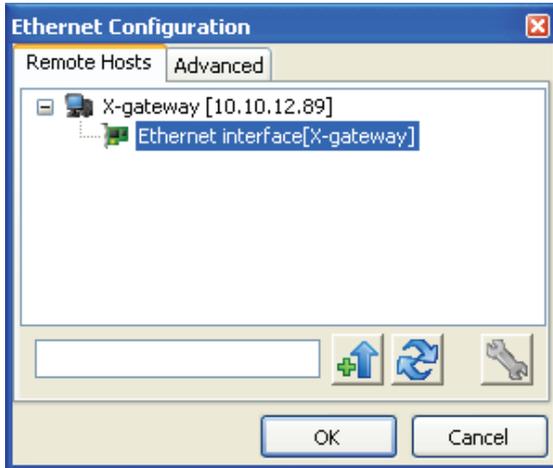


Figure 25 Browsing the IP-address of the connected gateway.

Step 4

Use the Anybus IPconfig utility to identify or edit the IP address of the X-gateway by clicking on the button



which will start the Anybus IPconfig tool.

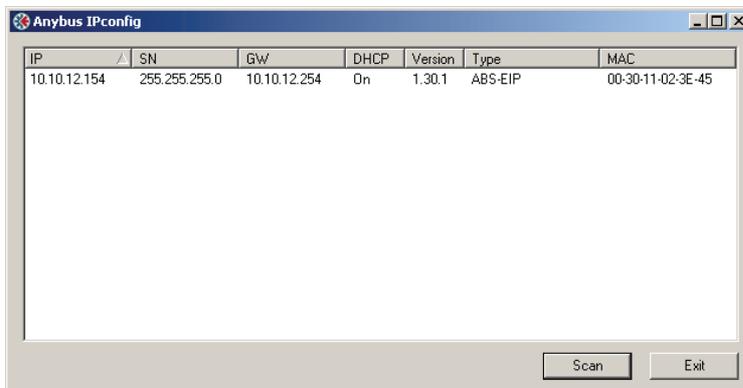


Figure 26 Scanning the network for Anybus modules.

If connected to the network the Anybus X-gateway will appear in the list and the IP settings can be modified by double-clicking the desired IP-address in the list.

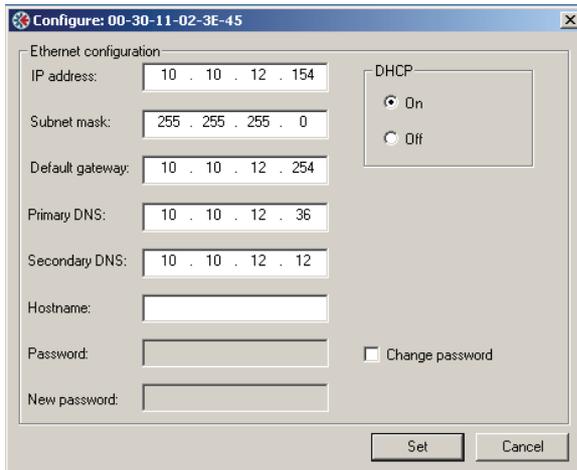


Figure 27 Configuring the IP-address.

Click on Set to apply the settings. Note that a valid IP-address setting is within the same subnet range as the PC you are using. If your PC has the address 192.168.0.24 and the subnet mask is 255.255.255.0 then the gateway needs to use any free address within 192.168.0.X.

Step 5

The X-gateway with its IP address will appear automatically under the Remote Hosts tab, if the IP settings are made correctly.

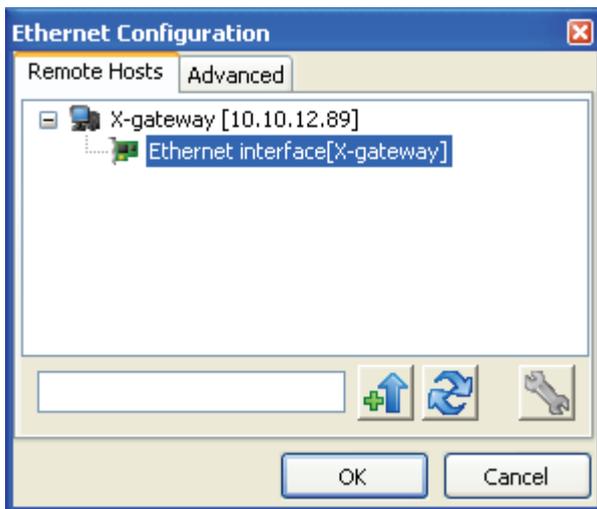


Figure 28 Browsing the connected gateway.

A network scan can also be forced by entering the IP address of the X-gateway and pressing the button



“Query Host”. Clicking on the button



will refresh the list under Remote Hosts.

PCI driver

When using the Anybus-PCI, the PCI driver can also be used. Select the Anybus PCI Transport Provider or click on create to make a new Transport Path. Make sure to select the PCI Transport Path if creating a new.

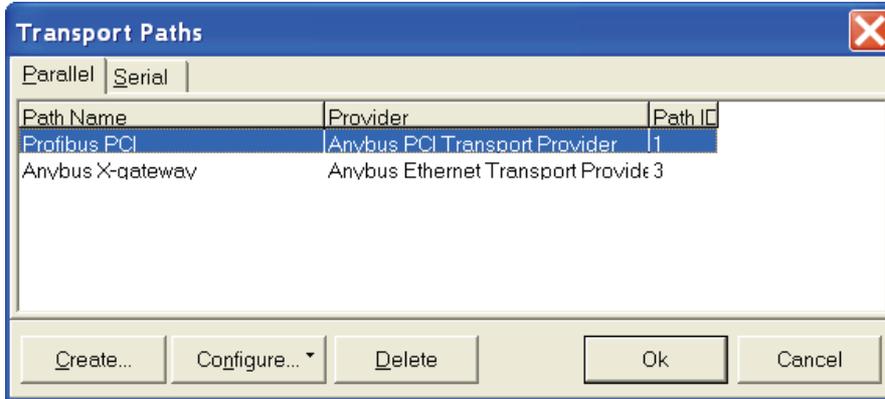


Figure 29 Selecting the PCI driver.