



See the Big Picture



ibaPDA-Interface-SINUMERIK-Xplorer

Data Interface for Siemens
SINUMERIK Controllers

Manual

Issue 1.0

**Measurement Systems
for Industry and Energy**

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The current version is available for download on our web site www.iba-ag.com.

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1 About this Manual

This document describes the function and application of the software interface

ibaPDA-Interface-SINUMERIK-Xplorer

This documentation is a supplement to the *ibaPDA* manual. Information about all the other characteristics and functions of *ibaPDA* can be found in the *ibaPDA* manual or in the online help.

1.1 Target group and previous knowledge

This documentation addresses qualified professionals, who are familiar with handling electrical and electronic modules as well as communication and measurement technology. A person is regarded as a professional if he/she is capable of assessing the work assigned to him/her and recognizing possible risks on the basis of his/her specialist training, knowledge and experience and knowledge of the standard regulations.

This documentation in particular addresses persons, who are concerned with the configuration, test, commissioning or maintenance of Programmable Logic Controllers of the supported products. For the handling *ibaPDA-Interface-SINUMERIK-Xplorer* the following basic knowledge is required and/or useful:

- Windows operating system
- Basic knowledge of *ibaPDA*
- Knowledge of configuration and operation of the relevant control system

1.2 Notations

In this manual, the following notations are used:

Action	Notation
Menu command	Menu <i>Logic diagram</i>
Calling the menu command	<i>Step 1 – Step 2 – Step 3 – Step x</i> Example: Select the menu <i>Logic diagram - Add - New function block</i> .
Keys	<Key name> Example: <Alt>; <F1>
Press the keys simultaneously	<Key name> + <Key name> Example: <Alt> + <Ctrl>
Buttons	<Key name> Example: <OK>; <Cancel>
File names, paths	"Filename", "Path" Example: "Test.doc"

1.3 Used symbols

If safety instructions or other notes are used in this manual, they mean:

Danger!



The non-observance of this safety information may result in an imminent risk of death or severe injury:

- Observe the specified measures.

Warning!



The non-observance of this safety information may result in a potential risk of death or severe injury!

- Observe the specified measures.

Caution!



The non-observance of this safety information may result in a potential risk of injury or material damage!

- Observe the specified measures

Note



A note specifies special requirements or actions to be observed.

Tip



Tip or example as a helpful note or insider tip to make the work a little bit easier.

Other documentation



Reference to additional documentation or further reading.

2 System requirements SINUMERIK-Xplorer

The following system requirements are necessary for the use of the SINUMERIK-Xplorer data interface:

- *ibaPDA* v7.1.0 or higher
- Basic license for *ibaPDA* + license for *ibaPDA-Interface-SINUMERIK-Xplorer*
- For more than 16 SINUMERIK NCUs (Numerical Control Unit), you need additional *one-step-up-Interface-SINUMERIK-Xplorer* licenses
- Siemens SINUMERIK CNC control type 840D sl (Solution line) or 840D pl (Power line) or 828D sl (Solution line)
- SIMATIC NET or SIMATIC STEP 7 in case of connecting via SIMATIC NET communication board (CP)

Other documentation



For more prerequisites concerning the used PC hardware and the supported operating systems, please see the *ibaPDA* documentation.

Order No.	Product name	Description
31.000033	ibaPDA-Interface-SINUMERIK-Xplorer	Extension license for an ibaPDA system adding the data interface: + SINUMERIK-Xplorer (interface for up to 16 SINUMERIK NCUs).
31.100033	one-step-up-Interface-SINUMERIK-Xplorer	Extension license for another 16 SINUMERIK NCUs (max. 15)

Table 1: Available SINUMERIK-Xplorer licenses, version ibaPDA v7.1.0

Note



If you want to use more than 16 data connections on one interface, you need *one-step-up-...* extension licenses. Up to 16 further connections to SINUMERIK NCUs can be established on each one-step-up-license. Up to 256 connections can be configured and used per data interface with the multiple purchase or multiple release of these licenses (up to 15 in total).

System constraints

The following technical constraints apply:

The number of S7-, SINAMICS-, SIMOTION- or SINUMERIK-Xplorer connections is limited to 240. TCP and PC/CP connections of the SINAMICS-, SIMOTION- and SINUMERIK-Xplorer are evaluated differently. A SINAMICS-, SIMOTION- or SINUMERIK-Xplorer connection over TCP only counts 1/16. A PC/CP connection is calculated in full.

This means:

Number of S7 connections

- + number of SINAMICS-Xplorer TCP connections not routed / 16 ¹⁾
 - + number of SIMOTION-Xplorer TCP connections not routed / 16 ¹⁾
 - + number of SINUMERIK-Xplorer TCP connections not routed / 16 ¹⁾
 - + number of SINAMICS-Xplorer TCP connections routed
 - + number of SIMOTION-Xplorer TCP connections routed
 - + Number of SINAMICS-Xplorer PC/CP connections
 - + Number of SIMOTION-Xplorer PC/CP connections
 - + Number of SINUMERIK-Xplorer PC/CP connections
- <=240!

¹⁾ Only active connections are taken into account. The division must always be rounded to the next larger number ("one connection resource per started 16 connections").

Access to the SINAMICS Control Units which are integrated in the SIMOTION controls is not supported.

3 Data interface SINUMERIK-Xplorer

3.1 General information

The SINUMERIK-Xplorer interface is suitable for the acquisition of measurement data from the NCK (numerical control kernel) part of Siemens SINUMERIK CNC controllers via Ethernet using the standard network interface cards as well as Profibus via SIMATIC NET interface cards. Access thereby is transparent for the SINUMERIK controller. Separate engineering and programming is not necessary.

The signals to be measured can be selected by using the Sinumerik symbol browser in the *ibaPDA* I/O manager.

3.2 System topologies

The connections to the SINUMERIK NCUs (numerical control units) can be established via standard interfaces of the computer or corresponding CP modules.

Additional Siemens software (e.g. SIMATIC NET or SIMATIC STEP 7) is needed for operation, in case the connection to the control system is established via a SIMATIC NET communication card (CP) in the computer to an integrated Ethernet interface of the CPU (if available) or to a CP module in the PLC.

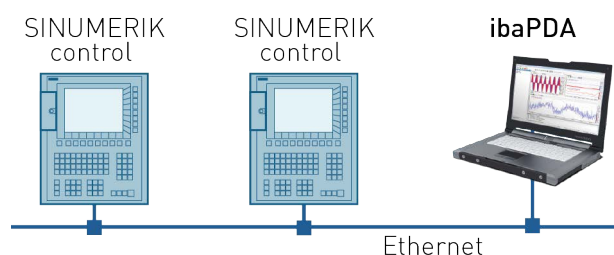


Fig. 1: Example of a topology for SINUMERIK connection

Note




It is recommended carrying out the TCP/IP communication on a separate network segment to exclude a mutual influence by other network components.

3.3 Configuration and engineering SINUMERIK

In principle, no specific engineering and programming is needed on the SINUMERIK side.

When using the PC/CP connection mode, a suitable access point is to be configured in the SIMATIC PG/PC interface of the ibaPDA computer, see chapter ↗ *Setting PG/PC interface / defining new access point*, page 27

3.4 Configuration and engineering ibaPDA

Open the I/O manager, e.g. with the toolbar .

If all system requirements are met, (see chapter [↗ System requirements SINUMERIK-Xplorer](#), page 6), the SINUMERIK Xplorer interface will be displayed in the signal tree.



Fig. 2: Interface in the I/O manager

3.4.1 General interface settings

The interface itself has the following functions and configuration options:

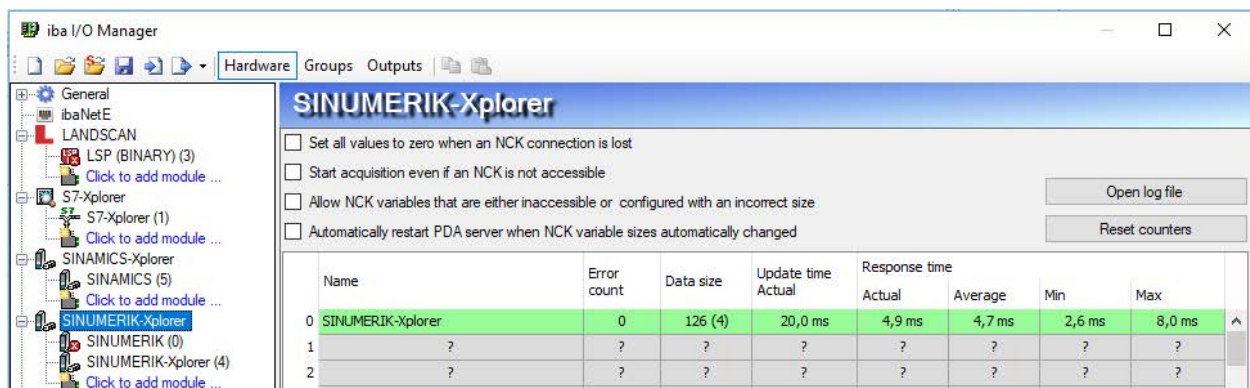


Fig. 3: General interface settings

Set all values to zero when an NCK connection is lost

If this option is enabled, all measured values of an NCK are reset to 0 as soon as the connection gets lost.

Start acquisition even if an NCK is not accessible

If this option is enabled, the acquisition will start even if an NCK is not accessible. Instead of an error, a warning is indicated in the validation dialog. If the system was started without a connection to the NCK, *ibaPDA* will periodically attempt to connect to the NCK.

Enabling this option is recommended if multiple connections have been configured to one CPU. Because the SINUMERIK CPU is unable to launch multiple connections at a time this will provide for a smooth start of acquisition.

Allow NCK variables that are either inaccessible or configured with an incorrect size

Enable this option to start the acquisition even if no NCK variables are accessible or if they are configured with an incorrect size. The inaccessible variables are indicated as a warning in the validation dialog.

Automatically restart PDA server when NCK variable sizes automatically changed

If this option is enabled, the PDA server will automatically be restarted when the NCK variable sizes changed automatically.

Open log file

If connections to the NCKs have been established, all connection-specific actions are recorded in a text file. With this button, you can open and have a look at this file. In the file system on the harddisk, you will find the log files in the program path of the *ibaPDA* server (...Programs(x86)\iba\ibaPDA\Server\Log\). The file name of the current log file is SINUMERIKLog.txt, the name of the archived log files is SINUMERIKLog_YYYY_MM_DD_HH_MM_SS.txt.

Reset counters

Resets the counters as well as the response times in the connection table to zero.

Connection table

The table shows the counters as well as the response times of the individual connections during data measurement.

For more details see chapter [➤ Connection table](#), page 22

3.4.2 Add module

Add a module by clicking below the interface. Select the desired module type and click on <OK>.

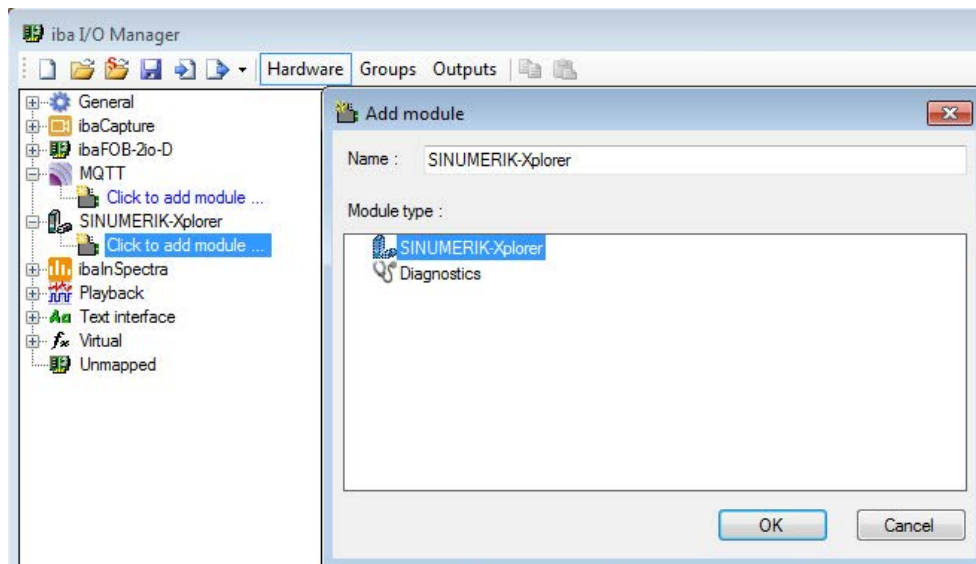


Fig. 4: Add module

3.4.3 General module settings

All modules have the following settings in common:



Fig. 5: General module settings

Basic settings

Module type (read only)

Display of the module type

Locked

A module can be locked for preventing accidental or unauthorized changes of the module settings.

Enabled

Disabled modules are excluded from signal acquisition.

Name

Here, the clear text name of the module designation has to be entered.

Module No.

Internal reference number of the module. This number serves to identify signals uniquely, e.g. in expressions and *ibaAnalyzer*.

Time base

All signals of this module are acquired with this timebase.

Use name as prefix

Puts the module name in front of the signal name.

Sinumerik NCU

NCK version

Version of the NCK software on the flash drive in the Sinumerik controller, also referred to as the firmware version of the NCU. The version specifies the symbols in the symbol browser that are documented to work with the selected firmware. It can be selected via a drop-down menu.

How to determine the NCK version is described in chapter [➤ NCK version](#), page 13.

NCU device

The hardware type of NCU device (read only)

Module layout

No. of analog/digital signals

Defines the number of configurable analog/digital signals in the signal tables. The predefined value is 32. You can change the number. 1000 is the maximum value.

Note



Observe the maximum number of signals permitted by your basic license for ibaPDA.

Note



Take into consideration that the number of signals, which are read by a CPU, influences the minimum achievable update cycle. The more signals acquired, the longer the achievable update time.

PLC

Update time

Indicates the target update time when the data will be requested from the PLC. The actual resulting update time may be higher depending on the CPU load, communication load, etc. Please check the diagnostic overview for measured update rates as overload will result in lost samples.

“Select symbols” link

A click on this link opens the Sinumerik symbol browser in order to configure the measurement signals.

For more information, see chapter [➤ Signal configuration](#), page 17.

Open NC-Var Selector file

A click on the link "Open NC-Var Selector file" opens the file browser in which you can select a variable file (*.var). All variables contained in the var file will be added. Var files can be created with the NC-VAR-Selektor, a program that is bundled with the Siemens Sinumerik Toolbox for both Step 7 and TIA Portal.

3.4.3.1 NCK version

The NCK version is the version of the firmware that is installed on the flash card inserted in the Sinumerik controller. The firmware version is printed on the flash card. If you want to pull out the flash card and read the firmware version, you have to switch off the Sinumerik controller.

However, the NCK version can also be found by using the HMI. In the HMI, open the *Diagnostics* tab by pressing the “ALARM” or “Diagnostics” key.



Fig. 6: Diagnostics key

In the *Diagnostics* area, click the softkey *Version* at the bottom of the screen.

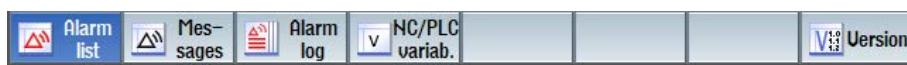


Fig. 7: Softkeys at the bottom of the screen

Now, an overview of the versions of different components in the NC controller is displayed. In the image below, you can see that firmware version 4.7 is used.

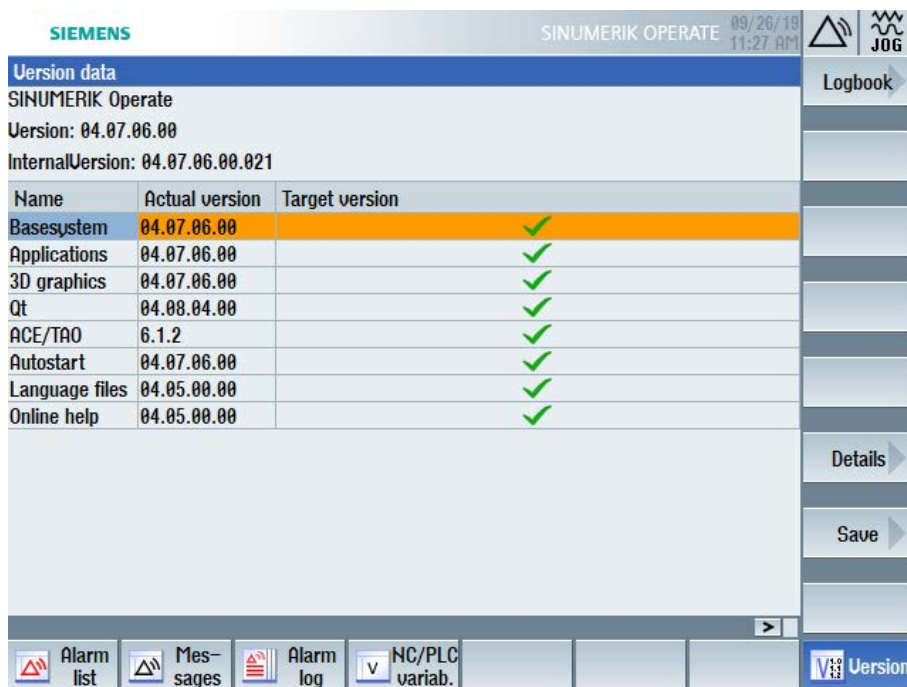


Fig. 8: Display example

The next image shows an example of the version data of a different controller, with firmware version 4.8

Version data		
SINUMERIK 840D sl - 840DSL-711		
Name	Actual version	Target version
CNC software	V04.08 + SP 02 + HF 03	✓
Basic PLC program	04.08.06	✓
System extensions		
OEM applications		
User		
Hardware		

Fig. 9: Display example

3.4.4 Connection settings

The connection of the module to the NCK CPU of a Sinumerik NCU.

You can choose between the TCP/IP and PC/CP connection mode.

Note



Make sure that you connect to the NCK and not to the PLC. Both can have the same IP or MPI address, but it is not possible to read NCK variables using a connection to the PLC part of the NCU.

3.4.4.1 Connection mode TCP/IP

This mode activates a connection via the standard network interface of the PC.

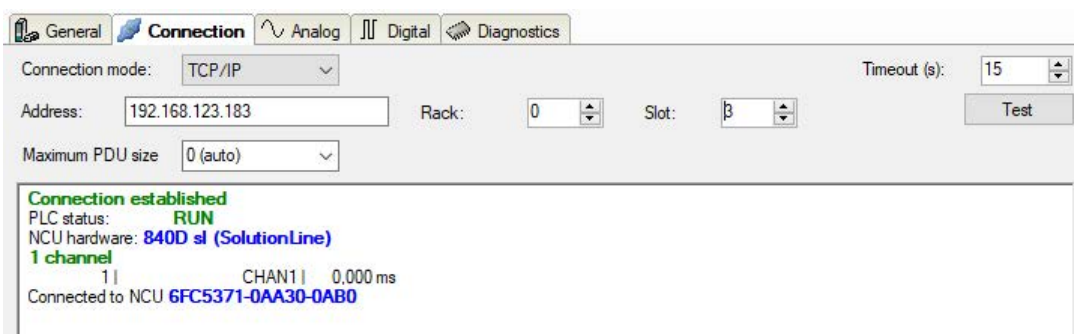


Fig. 10: Connection configuration TCP/IP

Connection mode

Selection of the TCP/IP connection mode.

Connection type

Selection of the connection type PG, OP or other connections (determines which type of connection resource is occupied on the CPU)

Timeout

Timeout of the connection

Address

IP address of the NCK.

Rack

Rack number of the NCK

Slot

Slot number of the NCK in the rack

Maximum PDU size

The PDU (packet data unit) can be limited to a maximum size (240 Bytes or 960 Bytes).
0 = the PDU size is automatically negotiated by the network protocol (default setting)

Test

Performs a connection test to the NCK. Available diagnostic data will be displayed. E.g. if a CPU was connected but not the NCK, the MLFB number of the CPU that was found is displayed if possible.

Note

Port 102 in the firewall must be released for the communication with the CPU for signal request.

Note

When using an MPI/DP to Ethernet converter, like the Helmholtz NetLink-PRO compact, you can connect using TCP/IP after the adapter is configured through its web interface. There is then no need to install Siemens SIMATIC NET.

3.4.4.2 Connection mode PC/CP

This mode activates a connection over the interface card of the PC, which is configured using SIMATIC Net.

The interfaces configured in SIMATIC Net can be used, e. g.:

- PROFIBUS (CP5611)

Note

If you want to use this connection type, the Siemens software SIMATIC Net (e.g. SIMATIC Manager or Softnet) has to be installed. When using the modules CP55..., CP56..., the installation of the device drivers will be sufficient.

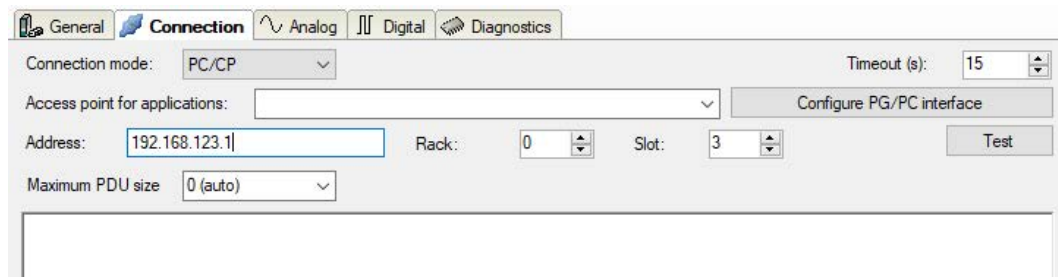


Fig. 11: Connection configuration PC/CP

Connection mode

Selection of the PC/CP connection mode

Connection type

Selection of the connection type PG, OP or other connections (determines which type of connection resource is occupied on the CPU).

Timeout

Timeout of the connection

Access point for applications

Selection of the access point that is to be used.

For notes on how to create and adapt an access point, see [➔ Setting PG/PC interface / defining new access point, page 27](#)

Note

The access points that are available under SIMATIC Net are configured by Siemens using the tool "PG/PC interface settings".

For the connection of ibaPDA-Interface-SINUMERIK-Xplorer to SINUMERIK systems via PC/CP connections, we generally recommend setting a specific access point for ibaPDA when ibaPDA-Interface-SINUMERIK-Xplorer and SIMATIC Manager run on the same computer. With an own access point, there is no longer the risk that the access for ibaPDA-Interface-SINUMERIK-Xplorer will be disturbed in case the standard access point is changed in the SIMATIC Manager.

Configure PG/PC interface

Opens the dialog box for setting the PG/PC interface of SIMATIC STEP 7

Address

IP address of the NCK

Rack

Rack number of the NCK

Slot

Slot number of the NCK in the rack

Maximum PDU size

The PDU can be limited to a maximum size (240 or 960).

0 = the PDU size is automatically negotiated by the network protocol (default setting)

Test

Connection test to the NCK and available diagnostic data are displayed.

3.4.5 Signal configuration

The signals you want to acquire are selected in the I/O manger. There are multiple ways to specify the variables to be acquired:

- Enter the required parameters directly in the analog or digital signal grid or select them via a drop-down menu.

An NCK variable is determined by 5 parameters, which are shown in both the analog and the digital signal grids: Area, Area Number, Module, Column and Row. Each analog variable also has a data type, which is determined by the NCK.

General Connection Analog Digital Diagnostics									
	Name	Symbol	Area	Area number	Module	Column	Row	Data Type	Active
0	rotation	rotation	C	1	FA	2	1	Double	<input checked="" type="checkbox"/>
1		<input type="text" value="..."/>		1	AD	1	1	Double	<input type="checkbox"/>
2				1	AD	1	1	Char	<input type="checkbox"/>

- Open the NC-Var Selector file via the corresponding link in the *General* tab, see chapter [↗ General module settings](#), page 11
- Use the Sinumerik symbol browser, see the following description.

Sinumerik symbol browser

For opening the Sinumerik symbol browser, click on the little browser button (...) in the *Symbol* column.

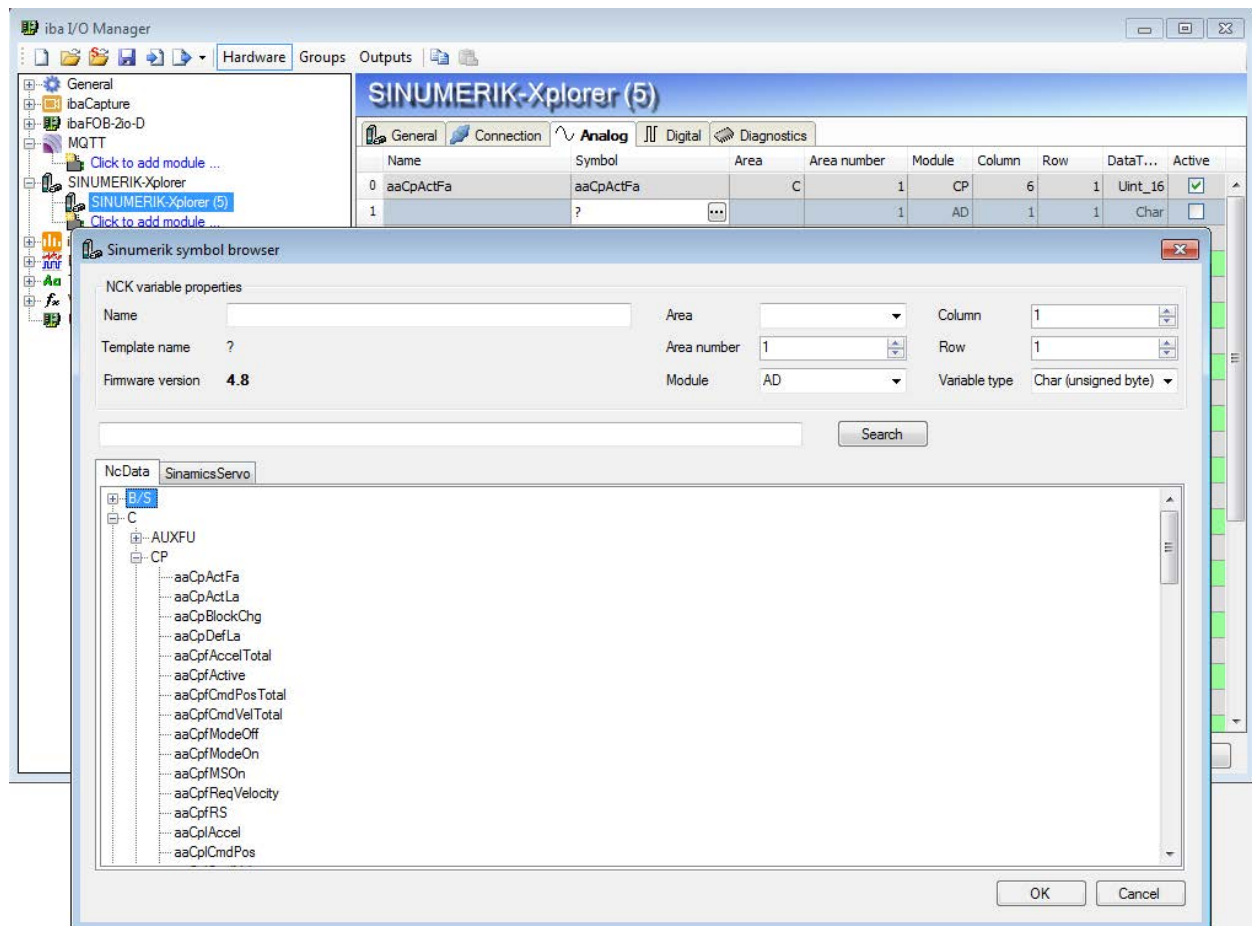


Fig. 12: Sinumerik symbol browser

All available signals are displayed on 2 tabs of the dialog:

- *NcData* (NCK variables)
- *Sinamics Servo* (signals from the Integrated Sinamics in an NCU).

Note



It is not possible to start acquiring NCK and integrated Sinamics variables of the same NCU at exactly the same time. If you want to acquire variables from both parts observe the notes at the end of this chapter.

Mark the desired signal in the Sinumerik symbol browser and click on <OK>. Now, the signal is being entered in the row of the signal table that you used for opening the symbol browser. When <OK> is clicked the symbol browser is closed again.

However, the symbol browser remains open when you open it via the “Select symbols” link on the bottom on the *General* tab of the module. If you then select signals, these signals are entered automatically in the next free row of the signal table. The symbol browser is closed with a click on <OK> or <Cancel>.

Variables with Bool data type will be digital signals, others will be analog. If you want a digital signal to be shown in the analog tab, you can change its data type to char or byte.

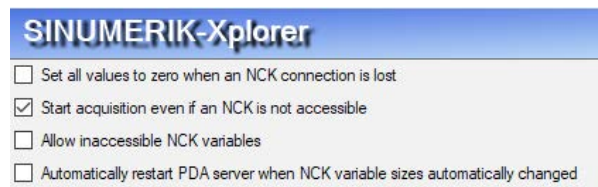
By means of the *Search* tab, you can search for symbols with their name. The tree with the search results works exactly the way as the whole symbol tree.

Notes on measuring both NCK and Integrated Sinamics signals

The Sinumerik NCU consists internally of multiple hardware parts. With SINUMERIK-Xplorer it is possible to access the NCK of an NCU and the Integrated Sinamics.

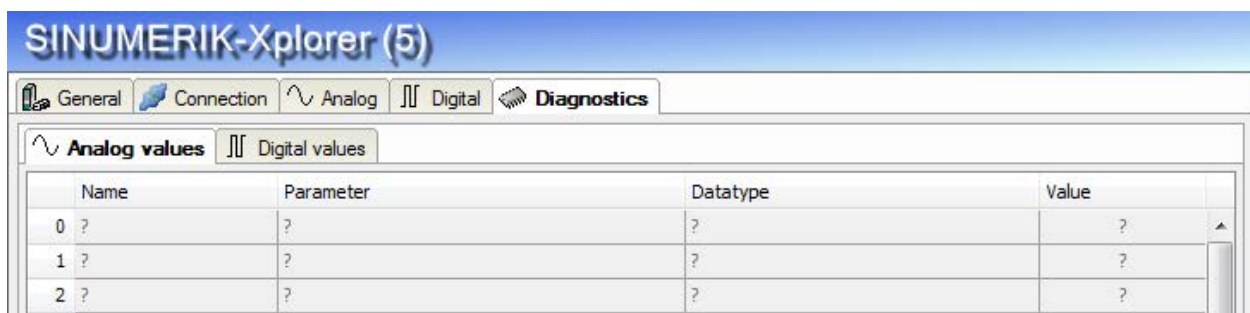
However it is not possible to start acquiring NCK and Sinamics variables of the same NCU at exactly the same time. In order to correctly configure *ibaPDA* to acquire both NCK and Integrated Sinamics values the following measures must be taken:

- Integrated Sinamics and NCK signals must be defined in separate modules
- In the SINUMERIK-Xplorer interface, the option *Start acquisition even if an NCK is not accessible* must be checked. This enables to independently connect to the NCK and the Integrated Sinamics.



3.4.6 Module diagnostics

You will find a tabular display of the configured parameters, the data types and the current values on the *Diagnostics* tab.



Name	Parameter	Datatype	Value
0 ?	?	?	?
1 ?	?	?	?
2 ?	?	?	?

Fig. 13: Module diagnostics, example for analog values

4 Diagnostics

4.1 License

If the "SINUMERIK-Xplorer" interface is not displayed in the signal tree, you can either check in *ibaPDA* under *General - Settings - License options* in the I/O manager or in the *ibaPDA* server status application whether your license "Interface SINUMERIK Xplorer" has been properly recognized. The number of licensed connections is indicated in brackets.

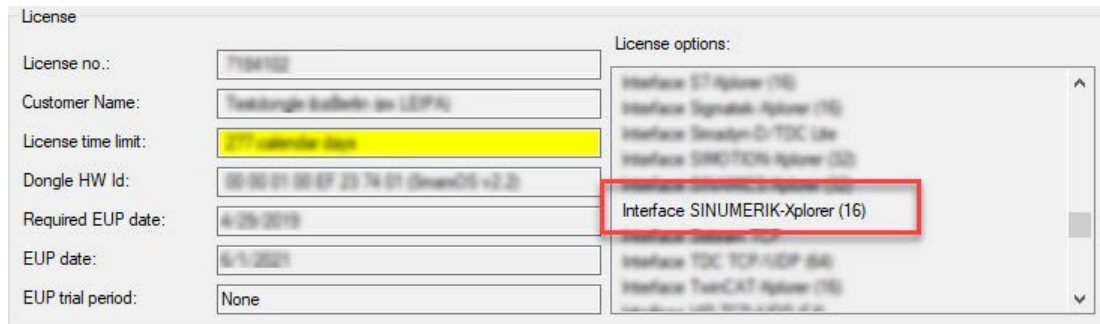


Fig. 14: License displayed in the ibaPDA I/O manager, example of the SINUMERIK-Xplorer license

4.2 Log files

If connections to target platforms or clients have been established, all connection-specific actions are logged in a text file. You can open this (current) file and, e.g., scan it for indications of possible connection problems.

The log file can be opened via the button <Open log file>. The button is available in the I/O Manager:

- for many interfaces in the respective interface overview
- for integrated servers (e.g. OPC UA server) in the *Diagnostics* tab.

In the file system on the hard drive, you will find the log files in the program path of the *ibaPDA* server (...\\Programs\\iba\\ibaPDA\\Server\\Log\\). The file names of the log files include the name or abbreviation of the interface type.

Files named `interface.txt` are always the current log files. Files named `Interface_yyyy_mm_dd_hh_mm_ss.txt` are archived log files.

Examples:

- `ethernetipLog.txt` (log of EtherNet/IP connections)
- `AbEthLog.txt` (log of Allen-Bradley Ethernet connections)
- `OpcUAServerLog.txt` (log of OPC UA server connections)

4.3 Connection diagnostics with PING

PING is a system command with which you can check if a certain communication partner can be reached in an IP network.

Open a Windows command prompt.



Enter the command “ping” followed by the IP address of the communication partner and press <ENTER>.

With an existing connection you receive several replies.

```
Administrator: C:\Windows\system32\cmd.exe
C:\Users>ping 192.168.21.120
Pinging 192.168.21.120 with 32 bytes of data:
Reply from 192.168.21.120: bytes=32 time<1ms TTL=128
Reply from 192.168.21.120: bytes=32 time<1ms TTL=128
Reply from 192.168.21.120: bytes=32 time=1ms TTL=128
Reply from 192.168.21.120: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.21.120:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\Users>
```

Fig. 15: PING successful

With no existing connection you receive error messages.

```
Administrator: C:\Windows\system32\cmd.exe
C:\Users>ping 192.168.21.121
Pinging 192.168.21.121 with 32 bytes of data:
Reply from 192.168.21.104: Destination host unreachable.
Reply from 192.168.21.104: Destination host unreachable.
Reply from 192.168.21.104: Destination host unreachable.
Reply from 192.168.21.104: Destination host unreachable.

Ping statistics for 192.168.21.121:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
C:\Users>_
```

Fig. 16: PING unsuccessful

4.4 Connection table

For every SINUMERIK-Xplorer interface there is a table available in the I/O manager which shows the status of each connection. Each row represents one connection.

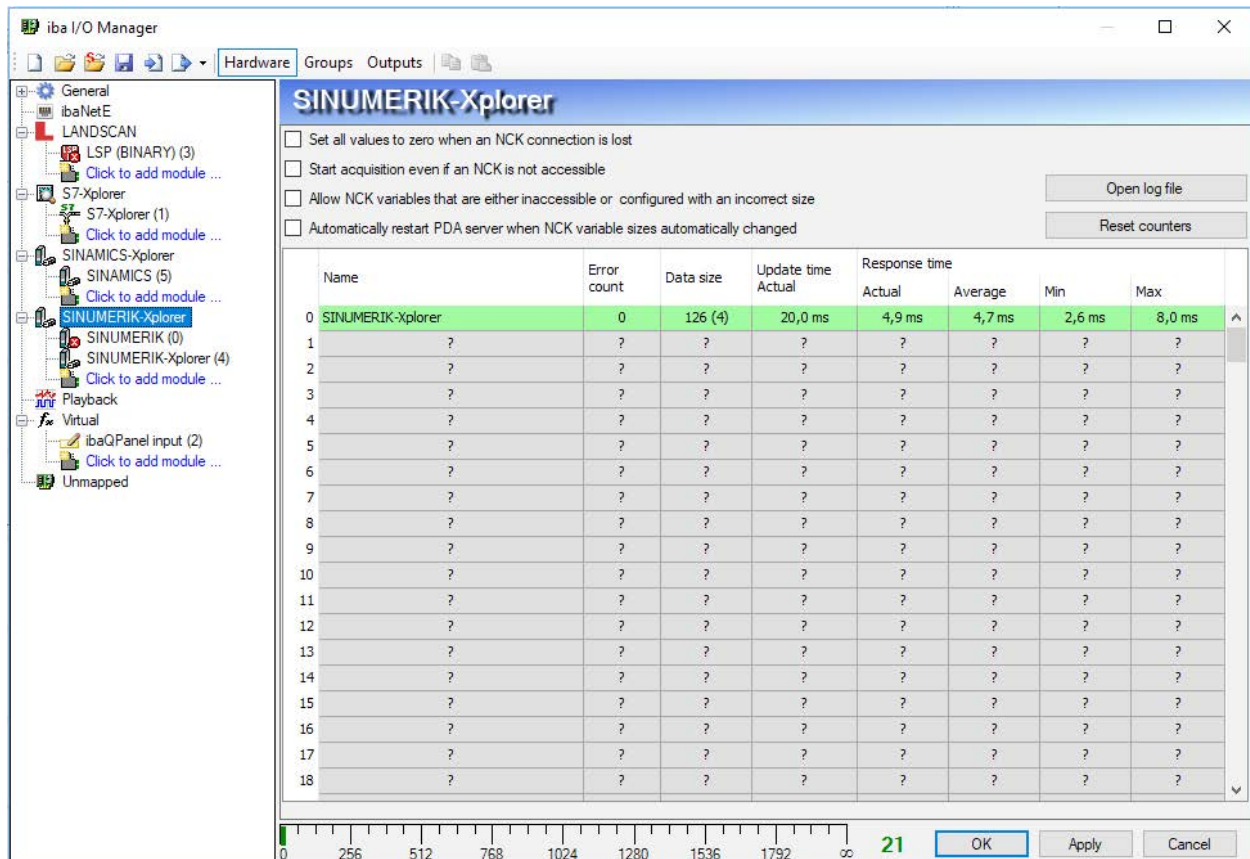


Fig. 17: Connection table

The columns display different values, depending on the type of the interface. The connected target systems (NCKs) are identified by their name or IP address in the first (left) column.

The table shows the cycle times and error counters of the different connections during the data acquisition. In the *Data size* column, the number of requested bytes and - in brackets and for support purposes - the number of Request telegrams are displayed.

Click the <Reset counters> button to reset the error counters and the calculation of the response times.

Additional information is provided by the background color of the table rows:

Color	Meaning
Green	The connection is OK and the data are read.
Orange	The connection is OK, however the data update is slower than the configured update time.
Red	The connection has failed.
Grey	No connection configured.

Table 2: Background colors of the connection table

4.5 Diagnostic modules

Diagnostic modules are available for most Ethernet based interfaces and Xplorer interfaces. Using a diagnostic module, information from the diagnostic displays (e. g. diagnostic tabs and connection tables of an interface) can be acquired as signals.

A diagnostic module is always assigned to a data acquisition module of the same interface and supplies its connection information. By using a diagnostic module you can record and analyze the diagnostic information continuously in the *ibaPDA* system.

Diagnostic modules do not consume any license connections, since they do not establish their own connection, but refer to another module.

Example for the use of diagnostic modules:

- A notification can be generated, whenever the error counter of a communication connection exceeds a certain value or the connection gets lost.
- In case of a disturbance, the current response times in the telegram traffic may be documented in an incident report.
- The connection status can be visualized in *ibaQPanel*.
- You can forward diagnostic information via the SNMP server integrated in *ibaPDA* or via OPC DA/UA server to superordinate monitoring systems like network management tools.

In case the diagnostic module is available for an interface, a "Diagnostics" module type is shown in the "Add module" dialog.

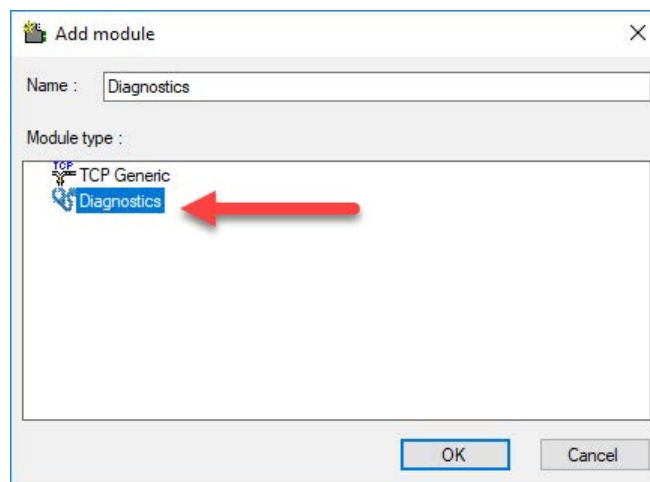


Fig. 18: Add diagnostic module, example Generic TCP

Module settings diagnostic module

For a diagnostic module, you can make the following settings:

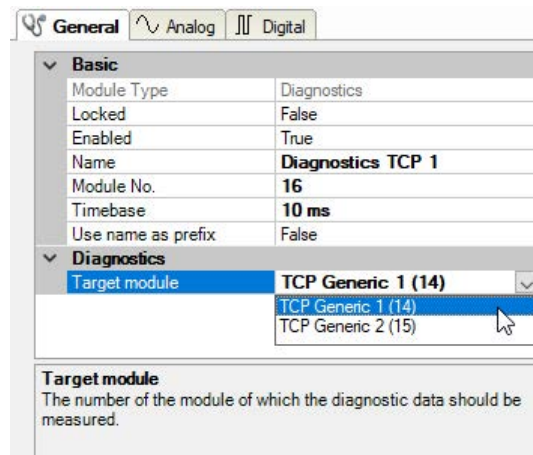


Fig. 19: Module settings diagnostic module, example TCP Generic

The basic settings of a diagnostic module equal those of other modules.

There is only one setting which is specific for the diagnostic module: the target module.

By selecting the target module, you assign the diagnostic module to the module on which you want to acquire information about the connection. You can select the supported modules of this interface in the drop down list of the setting. You can assign exactly one data acquisition module to each diagnostic module. When having selected a module, the available diagnostic signals are immediately added to the *Analog* and *Digital* tabs. It depends on the type of interface, which signals exactly are added.

Name	Unit	Gain	Offset	Active	Actual
0 IP address (part 1)		1	0	<input checked="" type="checkbox"/>	
1 IP address (part 2)		1	0	<input checked="" type="checkbox"/>	
2 IP address (part 3)		1	0	<input checked="" type="checkbox"/>	
3 IP address (part 4)		1	0	<input checked="" type="checkbox"/>	
4 Port		1	0	<input checked="" type="checkbox"/>	
5 Message counter		1	0	<input checked="" type="checkbox"/>	
6 Incomplete errors		1	0	<input checked="" type="checkbox"/>	
7 Packet size (actual)	bytes	1	0	<input checked="" type="checkbox"/>	
8 Packet size (max)	bytes	1	0	<input checked="" type="checkbox"/>	
9 Time between data (actual)	ms	1	0	<input checked="" type="checkbox"/>	
10 Time between data (min)	ms	1	0	<input checked="" type="checkbox"/>	
11 Time between data (max)	ms	1	0	<input checked="" type="checkbox"/>	

Fig. 20: Example: Analog values of a diagnostic module for a TCP Generic module

For example, the IP (v4-) address of a TCP Generic module (see fig. above) will always be split into 4 parts derived from the dot-decimal notation, for better reading. Also other values are being determined, as there are port number, counters for telegrams and errors, data sizes and telegram cycle times.

General Analog Digital		
Name	Active	Actual
0 Active connection mode	<input checked="" type="checkbox"/>	
1 Invalid packet	<input checked="" type="checkbox"/>	
2 Connecting	<input checked="" type="checkbox"/>	
3 Connected	<input checked="" type="checkbox"/>	

Fig. 21: Example: Digital values of a diagnostic module for a TCP Generic module

4.6 Connection diagnostics by means of PG/PC interface

By means of the diagnostic function of the PG/PC interface, the functionality and connection configuration can be tested.

For this purpose, open the PG/PC interface.

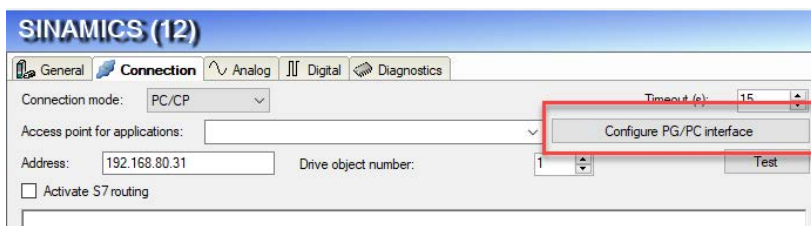


Fig. 22: Configuring PG/PC interface, Example SIMOTION-Xplorer

Open the diagnostics dialog.

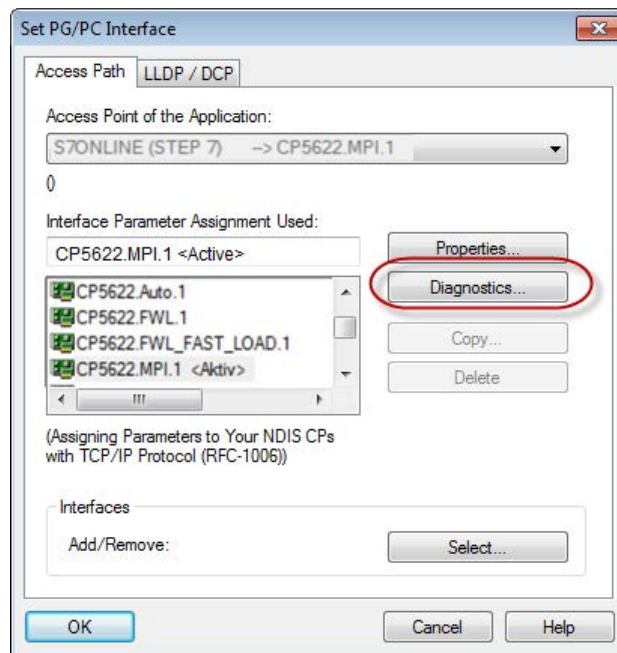


Fig. 23: Open Diagnostics

The following figure shows an example of a diagnostics of a SIMATIC Net CP5622 (Profibus). By clicking <Test>, a network diagnostics will be started.

By clicking on the button <Read>, an availability check of the bus devices will be started.

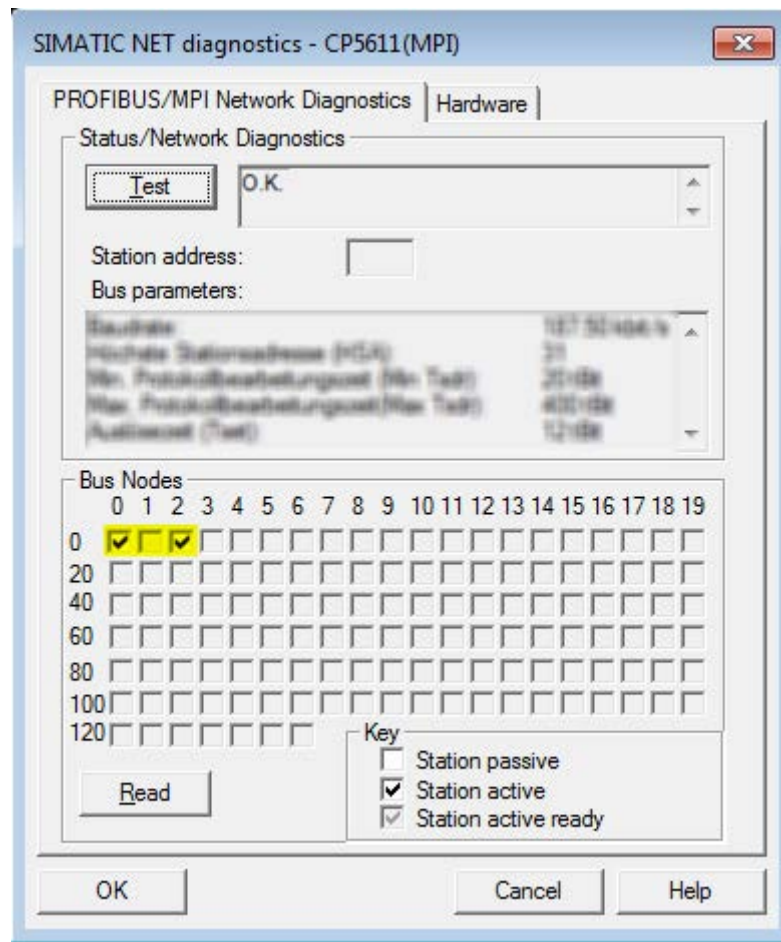


Fig. 24: SIMATIC NET diagnostics

In this example, one active station was found on the address 0 and 2 each.

5 Appendix

5.1 Setting PG/PC interface / defining new access point

Example of *ibaPDA-Interface-S7-Xplorer*.

ibaPDA-Interface-SIMOTION-Xplorer only supports PROFIBUS!

ibaPDA cannot establish a connection to a S7-CPU, if the parametrization "AUTO" for an access point (MPI-adapter or CP) has been set in the SIMATIC Manager. There are 2 possible remedies:

Changing the interface with remaining access point name

Change interface in the SIMATIC Manager e.g. from "CP5622 (AUTO)" to "CP5622 (MPI)" or "CP5622 (PROFIBUS)".

Disadvantage of this method: If the setting of the access point will be changed again in the SIMATIC Manager, the measurement does no longer work because *ibaPDA* no longer has any access.

Adding a special access point for *ibaPDA*

To avoid conflicts with the setting of SIMATIC Manager and *ibaPDA* when both programs run on the same computer, a new access point should be defined.

There is the <Configure PG/PC interface> button in the dialog window of the PC/CP module. It can be used to open the dialog for configuring the PG/PC interface.

The setting for the SIMATIC Manager will also be changed.

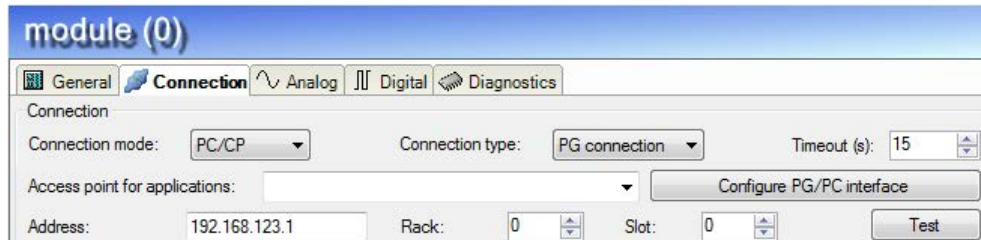
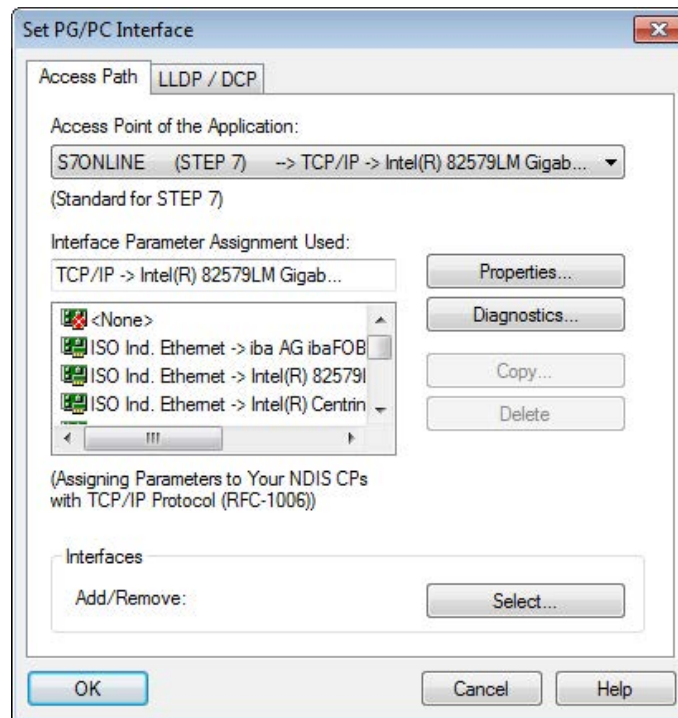


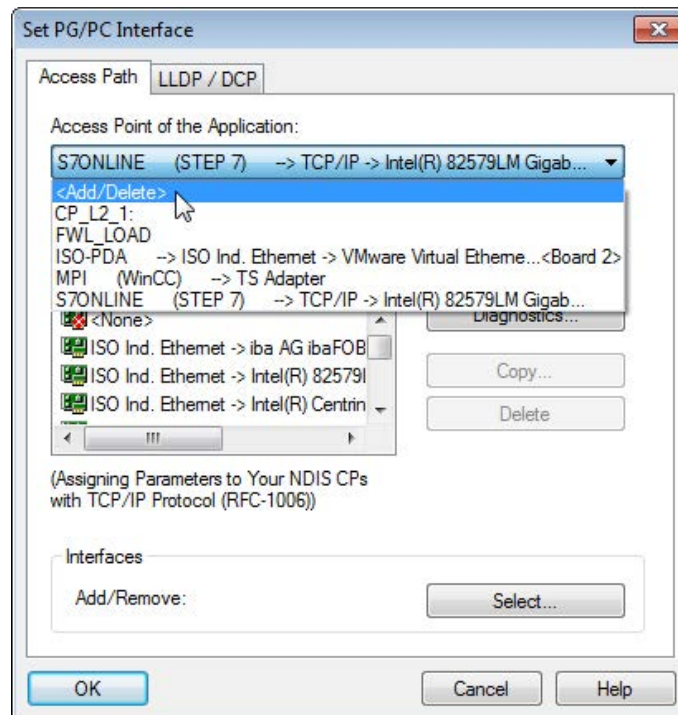
Fig. 25: Open PG/PC interface

Procedure

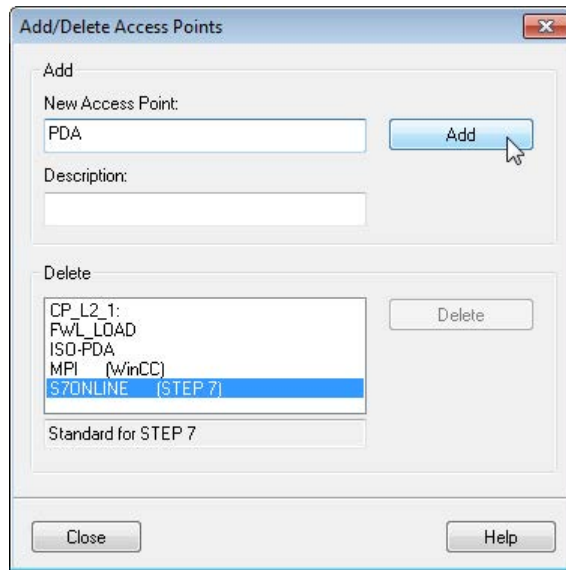
1. Open the dialog box with the <Configure PG/PC interface> button.



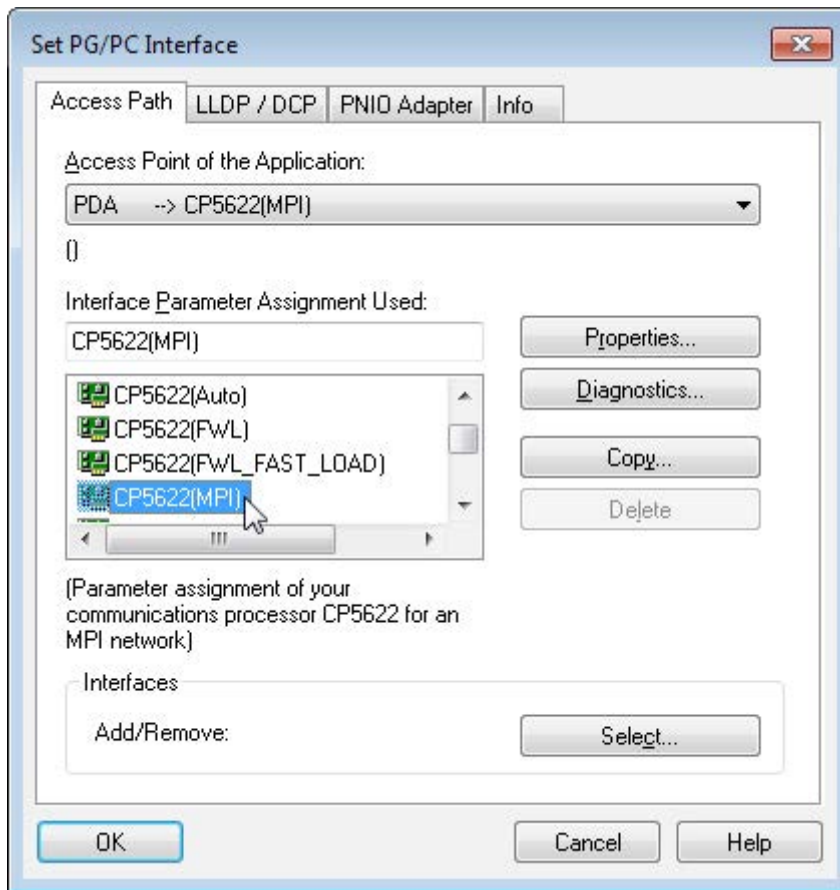
2. Select the row <Add/Delete> under "Access Point of the Application".



3. Define a new access point; enter a name, e.g. PDA and optionally a description for a better understanding, click on <Add> and <Close>.



4. Add an interface to the access point, e.g. "CP5622.MPI.1" and exit with <OK>.



The newly defined access (e.g. PDA --> CP5622.MPI.1) is displayed subsequently in the connection dialog of *ibaPDA* under "Access points for applications".

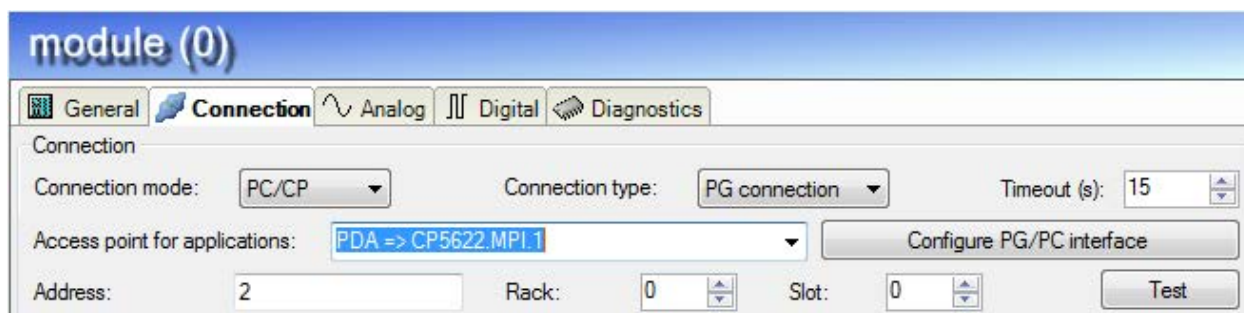


Fig. 26: Set access point

6 Support and contact

Support

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Note



If you require support, indicate the serial number (iba-S/N) of the product and the license number.

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