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The contents of this publication has been checked with the hardware and software described herein. Nevertheless, discrepancies cannot be ruled out, and we do not provide guarantee for complete conformity. However, the information furnished in this publication is updated regularly. Any corrections required are incorporated in subsequent editions or can be downloaded from the Internet.

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

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<th>Revision -chapter / page</th>
<th>Author</th>
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1 About this Manual

This documentation describes the function and application of the software ibaPDA-Interface-SINAMICS-Xplorer.

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 of ibaPDA-Interface-SINAMICS-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 drive system

1.2 Notations

In this manual, the following notations are used:

<table>
<thead>
<tr>
<th>Action</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu command</td>
<td>Menu Logic diagram</td>
</tr>
<tr>
<td>Calling the menu command</td>
<td>Step 1 – Step 2 – Step 3 – Step x Example: Select the menu Logic diagram - Add - New function block.</td>
</tr>
<tr>
<td>Keys</td>
<td>&lt;Key name&gt; Example: &lt;Alt&gt;; &lt;F1&gt;</td>
</tr>
<tr>
<td>Press the keys simultaneously</td>
<td>&lt;Key name&gt; + &lt;Key name&gt; Example: &lt;Alt&gt; + &lt;Ctrl&gt;</td>
</tr>
<tr>
<td>Buttons</td>
<td>&lt;Key name&gt; Example: &lt;OK&gt;; &lt;Cancel&gt;</td>
</tr>
<tr>
<td>File names, paths</td>
<td>&quot;Filename&quot;, &quot;Path&quot; Example: &quot;Test.doc&quot;</td>
</tr>
</tbody>
</table>
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 SINAMICS-Xplorer

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

- ibaPDA v6.38 or higher
- Basic license for ibaPDA + license for ibaPDA-Drive-Xplorer or ibaPDA-Interface-SINAMICS-Xplorer
- For more than 32 SINAMICS drives, you need additional one-step-up-Interface-SINAMICS-Xplorer licenses
- Siemens SINAMICS drive
- Commissioning tool Siemens STARTER or SIMOTION SCOUT

Other documentation

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

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.

License information

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Product name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.00030</td>
<td>ibaPDA-Interface-SINAMICS-Xplorer</td>
<td>Extension license for an ibaPDA system adding the data interface:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+ SINAMICS-Xplorer (interface for up to 32 SINAMICS drives).</td>
</tr>
<tr>
<td>31.10030</td>
<td>one-step-up-Interface-SINAMICS-Xplorer</td>
<td>Extension license for another 32 SINAMICS drives (max. 15)</td>
</tr>
</tbody>
</table>

Table 1: Available SINAMICS-Xplorer licenses, version ibaPDA-V6.38.0

Note

If you want to use more than 32 data connections on one interface, you need one-step-up-extension licenses. Up to 32 further connections to drives can be established on each one-step-up-license. Up to 512 connections can be configured and used per data interface with the multiple purchase or multiple release of these licenses (up to 15 in total).

Consider the limitation of the number of signals by the ibaPDA base license.
3 SINAMICS-Xplorer data interface

3.1 General information

The SINAMICS-Xplorer interface is suitable for the acquisition of measurement data of SINAMICS frequency converters via TCP/IP using the standard network interface cards as well as Profibus via SIMATIC NET interface cards. Access thereby is transparent for the drive controller. Separate engineering and programming is not necessary.

The signals to be measured can be comfortably selected by entering the parameter indices- and data types in the ibaPDA I/O manager.

There is a Parameter Constructor available, in case you want to enter more than one parameters.

3.2 System topologies

The connections to the SINAMICS drives can be established via standard interfaces of the computer or corresponding CP modules.

On the SINAMICS-side the following interfaces are supported:

- LAN X127 (TCP)
- PROFINET X150 P1 and X150 P2 (TCP)
- Communication Board Ethernet CBE20 X1400 (TCP)
- PROFIBUS interface X126 (PROFIBUS)

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 SINAMICS connections
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 SINAMICS

In principle, no specific engineering and programming is necessary on the drive 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 Setting PG/PC interface / defining new access point, page 26).

3.4 Configuration & engineering ibaPDA

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

If all the system requirements are met, (see System requirements SINAMICS-Xplorer, page System requirements SINAMICS-Xplorer, page 7), the "SINAMICS-Xplorer" interface will be displayed in the signal tree.

3.4.1 General interface settings

The interface itself has the following functions and configuration options:

Set all values to zero when the connection to a drive is lost
If this option is enabled, all measured values of a drive are reset to 0 as soon as the connection gets lost.

Start acquisition even if a drive is not accessible
If this option is enabled, the acquisition will start even if a drive 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 drive, ibaPDA will periodically attempt to connect to the drive.
Allow inaccessible parameters
Enable this option to start the acquisition even if no drive parameters are accessible. The inaccessible operands are indicated as a warning in the validation dialog.

Open log file
If connections to the drives 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 SINAMICSLog.txt, the name of the archived log files is S7Log_yyyy_mm_dd_hh_mm_ss.txt.

Reset counter
Resets the counter 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 Connection table, page 21.

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.
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.

SINAMICS

Update time
Indicates the target update time when the data will be requested from the drive. If the drive needs more time for transferring the data, the real current update time may be higher than the set value in course of the measurement. In the connection table you can check the real updating time of the data.

Connection (read only)
Connection ID that is used to access the drive.

Link “Add parameters”
Click on this link after the connection has been successfully established in order to configure the signals to be measured.

For more information, see ➔ Signal configuration, page 16.

3.4.4 Connection settings

The connection of the module to the drive is configured in the Connection tab.
You can choose between the TCP/IP and PC/CP connection modes.

3.4.4.1 Connection mode TCP/IP
This mode activates a connection via the standard network interface of the PC.
Connection mode
Selection of the TCP/IP connection mode.

Timeout
Timeout of the connection

Address
IP address of the drive. You can determine this value by accessing the running drive configuration of SINAMICS, e.g. with Siemens STARTER or SIMOTION SCOUT.

Activate S7 Routing
Enable this option, in case the CPU and the ibaPDA PC are not running on the same network, but only can communicate via a Gateway supporting the S7 Routing. Such a Gateway may e.g. be an IE/PB Link which allows the user to access an S7 CPU without an Ethernet connection. There will be displayed two additional entry fields:

- Address of the device with Gateway function: Enter the address of the Gateway:
- S7 subnet ID of the target net: Enter the subnet ID from STEP 7 NetPro

For more information about S7 Routing, see S7 routing, page 30

Drive object number
ID of the Control Unit or the drive object in the Control Unit
You can determine this value by accessing the running drive configuration of SINAMICS, e.g. with Siemens STARTER or SIMOTION SCOUT.

Test
Performs a connection test to the drive. Available diagnostic data will be displayed, e.g. Firmware when connecting to the CU.

Please consider, that at this point in time, the validity of the drive object number will not be checked. This can only be done at the start of the acquisition.

Note
Port 102 in the firewall must be released for the communication with the CPU for signal request.
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. 7: Connection configuration PC/CP](image)

**Connection mode**
Selection of the PC/CP connection mode

**Timeout**
Timeout of the connection

**Access point for applications**
Selection of the access point that is to be used.

For notes on creating and adapting an access point, see Setting PG/PC interface / defining new access point, page 26

---

**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-SINAMICS-Xplorer to SINAMICS drives via PC/CP connections, we generally recommend setting a specific access point for ibaPDA when ibaPDA-Interface-SINAMICS-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-SINAMICS-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
Address of the drive
You can determine this value by accessing the running drive configuration of SINAMICS, e.g. with Siemens STARTER or SIMOTION SCOUT.

Activate S7 Routing
Enabling S7 Routing (see TCP/IP connection mode).

Drive object number
ID of the Control Unit or the drive object in the Control Unit
You can determine this value by accessing the running drive configuration of SINAMICS, e.g. with Siemens STARTER or SIMOTION SCOUT.

Test
Connection test to the CPU and available diagnostic data are displayed.
Please consider, that at this point in time, the validity of the drive object number will not be checked. This can only be done at the start of the acquisition.

3.4.5 Signal configuration
By entering the parameter indices and their data types, the signals can be selected in the I/O manager. The parameters can be determined using the Siemens software STARTER or SIMOTION SCOUT.

You can configure the parameters that are to be read from the SINAMICS drive on the Analog and Digital tabs of the module.

Enter the index of the parameter in the Parameter column As you can see in the following figure, you can put the letters ‘p’ and ‘r’ in front of the index. This perfectly complies with the usual notation of the SINAMICS parameters. However, ibaPDA ignores the letters.

![Signal table for analog signals](image)

Additionally, you have to configure the correct data type of the parameter.
You can choose from the following data types:

- Unsigned8
- Integer16
- Unsigned16
- Integer32
- Unsigned32
- Float32

Also the array format is supported. If you want to address array elements, enter the array index in brackets directly after the parameter index.

Example:

p5[0] reads the first element of the array which is represented by the parameter 5.

You can configure the digital signals on the Digital tab in a similar way. You do not only have to define the parameter index, but also the bit position (Bit No.) of the signal you want to measure.

Adding parameters with the Parameter Constructor

With the SINAMICS Parameter Constructor, you can add a whole range of parameters to the Analog and Digital tabs.

![Fig. 9: Parameter Constructor with analog selection](image)

![Fig. 10: Parameter Constructor with digital selection](image)

You can open the Constructor on the General tab of the module. Click on the blue link Add Parameter.

First of all, choose, if you want to add analog or digital signals. Then, define the beginning and the end of the parameter range you want to add. When enabling the “Array index” field, you can additionally add (sub-) arrays.

For digital signals you can define a range of bit numbers. In our example, the following signals would be added on the Digital tab for the digital signals.
Bits 0 to 15 of the array elements 0 to 15 of the parameters 5 to 7. This makes a total number of 768 digital signals (16*16*3).

3.4.6 Module diagnostics

You will find another diagnostic aid with a tabular display of the configured parameters and the data types on the Diagnostics tab.

Fig. 11: Module diagnostics, example for analog values
4 Diagnostics

4.1 License

If the "SINAMICS-Xplorer" interface is not displayed in the signal tree, you can either check in ibaPDA under General - Settings - License info in the I/O manager or in the ibaPDA server status application whether your license "Interface S7-Xplorer" has been properly recognized. The number of licensed connections is indicated in brackets.

![License displayed in the ibaPDA I/O manager, example of the SINAMICS-Xplorer license.](image)

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.

With no existing connection you receive error messages.
4.4 Connection table

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

![Connection table example](image)

Fig. 15: Connection table, example for SINAMICS-Xplorer

The columns display different values, depending on the type of the interface. The connected target systems (controllers) 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:

<table>
<thead>
<tr>
<th>Color</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>The connection is OK and the data are read.</td>
</tr>
<tr>
<td>Orange</td>
<td>The connection is OK, however the data update is slower than the configured update time.</td>
</tr>
<tr>
<td>Red</td>
<td>The connection has failed.</td>
</tr>
<tr>
<td>Grey</td>
<td>No connection configured.</td>
</tr>
</tbody>
</table>

Table 2: Background colors of the connection table

4.5 Module diagnostics

You will find another diagnostic aid with a tabular display of the current analog and digital values and the data types on the Diagnostics tab of each Xplorer module.

For more information, see 📚 Module diagnostics, page 18
### 4.6 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.

![Add diagnostic module, example Generic TCP](image)

**Fig. 16: Add diagnostic module, example Generic TCP**

#### Module settings diagnostic module

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

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.
4.7 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.

![Configuring PG/PC interface, Example SIMOTION-Xplorer](image1)

Open the diagnostics dialog.

![Open Diagnostics](image2)

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.
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.

![](image)

**Fig. 23: 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. 24: Set access point
5.2 S7 routing

S7 routing is defined as the possibility to use S7 controls as router to access secondary target systems, i.e. controls or drives, which are in different subnets. This also includes changing the bus system (Ethernet / PROFINET / MPI).

5.2.1 Routing from Ethernet to Ethernet

Please do not mix up the “S7 Routing” function with “IP Routing”.

The following constellation will make this clear:

![Fig. 25: S7 Routing, example system topology](image)

We want to access the CPU412 controller from the engineering PC (also with ibaPDA). The computer and the controller are not directly connected via a common network/bus. We want to run the connection over the CPU314C controller. “Passing” the communication in this controller is called “S7 Routing”.

In our example, engineering PC and CPU314C are also located in two different (logic) subnets. You need an (IP-) Router for establishing a communication connection. This is completely independent of the “S7 Routing” function and should not be confounded with it.
5.2.1.1 Configuration of STEP 7/ NetPro

The following configuration steps are required to be able to access the secondary CPU412 control with the SIMATIC STEP 7 programming software. These are not required for using ibaPDA.

Inserting a PG/PC station:

Assigning an interface (network interface card):

![NetPro configuration](image)

Fig. 26: NetPro configuration

![PG/PC interface assigned](image)

Fig. 27: PG/PC interface assigned
Result:

![Image of interface assigned](image1)

Fig. 28: Interface assigned

The connection line of PG/PC to the network should be highlighted yellow now.

The following figure shows the communication channel using arrows (these are not shown in SIMATIC NetPro).

![Image of communication channel](image2)

Fig. 29: Communication channel

Finally, load all hardware configurations and connection data from NetPro.
5.2.1.2 ibaPDA configuration

The following entries have to be made:

**Activate S7 routing**
Enable to use S7 routing

**Address**
Address of the target control (here CPU412)

**Address of device acting as gateway**
Enter address of the gateway (here CPU314C)

**S7 subnet ID of target net**
Enter subnet ID from STEP 7 NetPro

You can identify the S7 subnet ID in NetPro. For doing so, right-click on the secondary bus system and open the “Properties”.

Fig. 30: Enable S7 routing

Fig. 31: Determine S7 subnet ID
5.2.2 Routing from Ethernet to PROFIBUS

We want to implement the following way of access:

We want to access the CPU319 controller from the engineering PC (also with ibaPDA). The computer and the controller are not directly connected via a common network/bus. We want to run the connection over the CPU412 controller. “Passing” the communication in this controller is called “S7 Routing”.

Fig. 33: S7 Routing, example system topology Ethernet PROFIBUS
5.2.2.1 Configuration STEP 7/ NetPro

The following configuration steps are exclusively required for accessing the subordinate controller CPU319 via the SIMATIC STEP 7 programming software. For using ibaPDA, these configuration steps are not required. Adding a PG/PC station:

Fig. 34: Configuration NetPro

Assigning an interface (network card):

Fig. 35: Assign PG/PC interface
Appendix

ibaPDA-Interface-SINAMICS-Xplorer

Result:

Fig. 36: Interface has been assigned

Now, the connection line from PG/PC to the network has to be marked in yellow. In the following figure, the communication path is shown using arrows (these are not displayed in SIMATIC NetPro).

Fig. 37: Communication path

Finally, all HW configurations and connection data are loaded from NetPro.
5.2.2.2 ibaPDA configuration

The following entries have to be made:

![ibapda-interface-sinamics-xplorer-appendix-5.2.2.2-ibaPDA-configuration](image)

**Activate S7 routing**
Enable to use S7 routing

**Address**
Address of the target control (here CPU319)

**Address of device acting as gateway**
Enter address of the gateway (here CPU412)

**S7 subnet ID of target net**
Enter subnet ID from STEP 7 NetPro

You can identify the S7 subnet ID in NetPro. For doing so, right-click on the secondary bus system and open the “Properties”.

![ibapda-interface-sinamics-xplorer-appendix-5.2.2.2-ibaPDA-configuration](image)
Appendix ibaPDA-Interface-SINAMICS-Xplorer

Fig. 40: S7 subnet ID

Reference

For more information about the S7-Routing, please see:

Which modules support the "S7 Routing" function in S7 subnets?

Which requirements must be fulfilled and what do I have to observe if I want to execute routing?
https://support.industry.siemens.com/cs/ww/de/view/2383206

How do you enable cross-project S7 Routing in the TIA Portal and in STEP 7 V5.x?
6 Support and contact

Support

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Note

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

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