FAQ on the teleservice with MD 720-3

service & SUPPORT

Teleservice with STEP7-Micro/WIN for a S7-200 controller with MD 720-3

SIEMENS

FAQ

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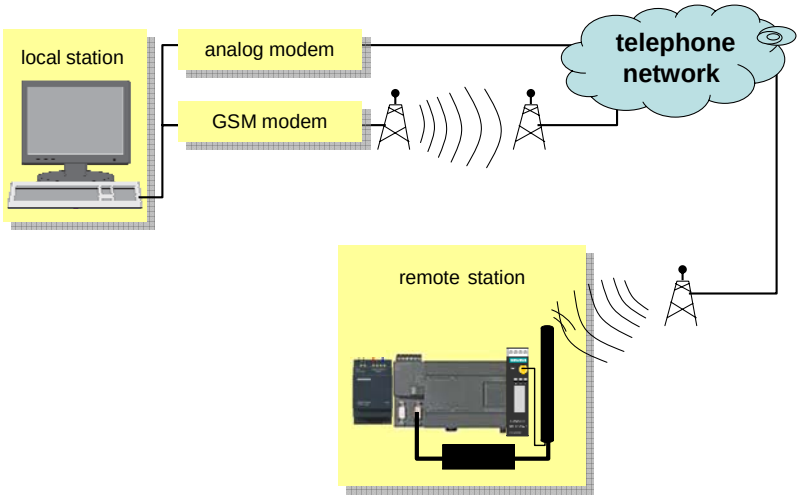
1 General information about the teleservice

1.1 What does the teleservice facilitate?

The teleservice function in STEP 7-Micro/WIN offers the user the opportunity of accessing an S7-200 controller via a telephone network. This means that there is a telephone connection between a remote S7-200 controller and a local PC/PG with STEP 7-Micro/WIN.

Fig. -1



This teleservice function guarantees complete access to the S7-200 controller.

- Downloading/uploading the user program
- Access to the status table
- Displaying the status information for the S7-200 controller
- Accessing the memory module of the S7-200 controller

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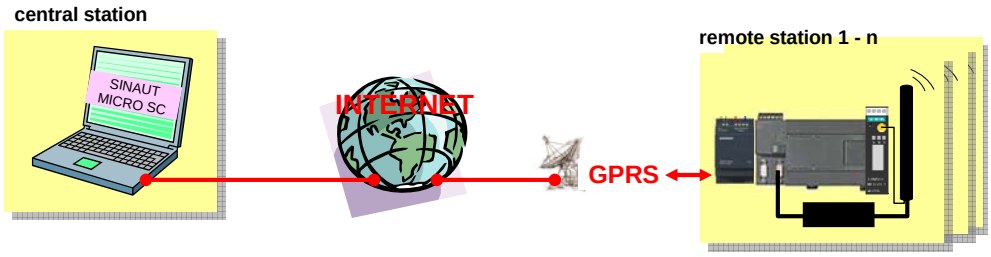
1.2 Requirements for the teleservice

1.2.1 Remote station

MD 720-3 used in association with SINAUT MICRO SC

In GPRS mode, the SINAUT MD720-3 GSM modem exchanges data from an S7-200 controller with the assigned SINAUT MICRO SC server or with other remote stations.

Fig. -2



The following documents provide support on configuration.

Table 1

No.	Description	Link
1.	SINAUT Micro SC system manual	http://support.automation.siemens.com/WW/view/de/23119827
2.	Micro Automation Set 21	http://support.automation.siemens.com/WW/view/de/22537809

Communication between the S7-200 controller and the MD720-3

The S7-200 controller and the SINAUT MD720-3 modem are connected via a serial PC/PPI cable.

The development status of the cable must be at least "E-Stand 03".

The DIP switches are set to 11100110.

Fig. -3, Rating plate and DIP switch settings

order number and development status

DIP-switch settings

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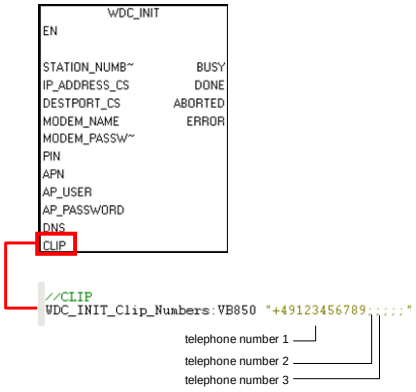
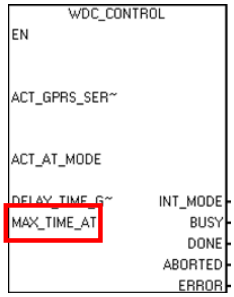
STEP 7 Micro/WIN user program

There are four library blocks available for configuring the S7-200 controller. The descriptions below explicitly only relate to the parameters of the blocks that are of importance to the teleservice function. (See "Table 1" for further information)

Table 2, Places in the program which influence the teleservice

No.	Parameters and description	Figure / Note
1.	WDC_INIT: CLIP List of all the permissible dialup numbers (local stations) for the teleservice connection to the remote station. • If there is phone number portability, phone numbers with teleservice authorization are stored in front of the first three semicolons. • If there isn't phone number portability, a wildcard (*) is entered instead of the first phone number in order to disable the phone number control. • The string must always contain five semicolons. • Service numbers can be stored behind the first three semicolons in order to update the firmware. You are advised not to assign them.	 Example: „+49123456789;;;;;“ Tip, test the phone number portability of the analog phone line: Insert the SIM card for your remote station into your cell phone and call it from the analog phone line.
2.	WDC_CONTROL: MAX_TIME_AT The maximum time limit in seconds for establishing a teleservice connection is entered here. This value should be set at 3600 seconds in order to prevent the connection from being broken early.	

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1.2.2 Provider, SIM card

Teleservice via an analog landline network

The provider must support CSD data dialup connections in its network.

The SIM card must have a separate phone number for data transmission. This data phone number must be known.

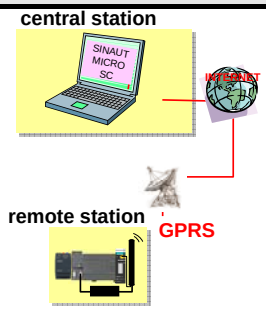
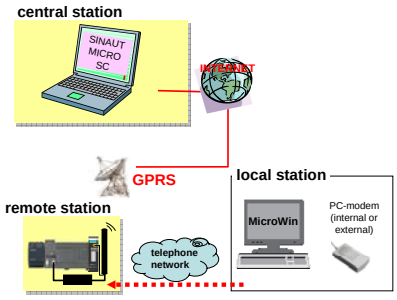
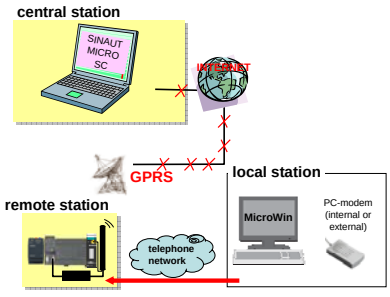
Teleservice via a mobile GSM modem

The PIN on the SIM card must be activated.

Only the voice phone number is required in order to establish the connection.

1.3 Setting up a teleservice connection

Table 3-2, Functioning principle

No.	Step	Figure / Note
1.	The remote station has established a GPRS connection with SINAUT MICRO SC.	
2.	The GPRS connection between the remote station and the central station is ended by the remote station once a teleservice request has been made by a modem with an authorized phone number.	
3.	The teleservice connection is established between the local station and the remote station. There is no further GPRS communication. The teleservice uses a CSD data dialup connection, not a GPRS connection.	

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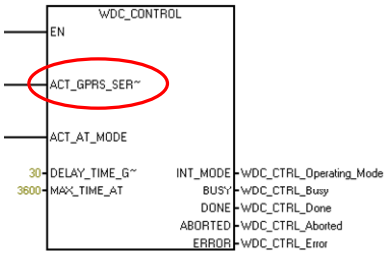
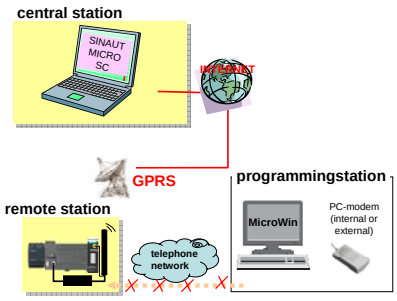
1.4 Ending a teleservice connection

Table -4

No.	Step	Figure / Note
1.	There are two ways of ending the teleservice and establishing the GPRS connection with the remote station. 1. User program By setting the "ACT_GPRS_SERVICE" to TRUE in the WDC_CONTROL block. The time that is configured under the word “DELAY_TIME_GPRS” now elapses, and GPRS mode is started again. 2. Restarting the CPU If the user program is reloaded, the teleservice connection is automatically ended, and the GPRS connection is established. (By switching from STOP to RUN)	
2.	The GPRS connection is established again. There is no longer a teleservice connection.	

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2 Teleservice with an analog modem on the landline network

2.1 Test configuration

The teleservice function using an analog modem as a local station on the landline network has been tested with the following system configuration. (LS =Local Station, RS = Remote Station)

Table 5

No.	Component	Release/Version
3.	LS: FUJITSU Siemens	Lifebook E 8110
4.	LS: Internal modem	Agere Systems HDA modem Driver version 2.1.64.5
5.	LS: Modem - external PC card (alternative)	Diva Mobile v.90 PC card ISDN and 56k modem Driver version 3.5.101.70
6.	LS: STEP 7-Micro/WIN version	V4.0.4.16
7.	LS: Operating system	WinXP pro SP2 (administrator rights)
8.	RS: SIM card	T-Mobile (with a CSD service, contract card)
9.	RS: S7-200 CPU224XP	MLFB: 214-2BD23-0XB0 Firmware version "E-Stand 01"
10.	RS: Sinaut MD 720-3 remote modem	Hardware release: 3.1 Firmware release 1.6
11.	RS: PC/PPI cable	MLFB: 6ES7 901-3CB30B0XA0 "E-Stand 03"

2.2 Configuring the modem

NOTICE **It is assumed that there will be a modem installed correctly at the local station end. The requirements of section 1.2 must be checked.**

Table 6

No.	Step	Note / Figure
1.	Open the "Phone and Modem Options" under "Start/Control Panel".	

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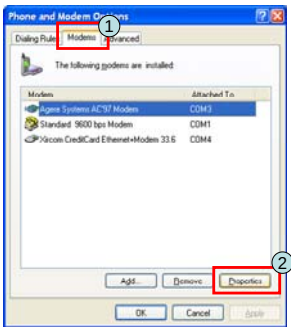
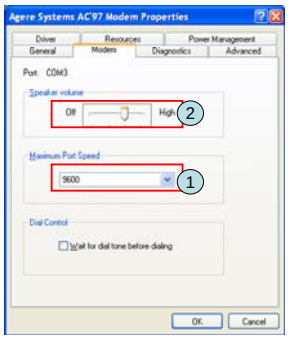
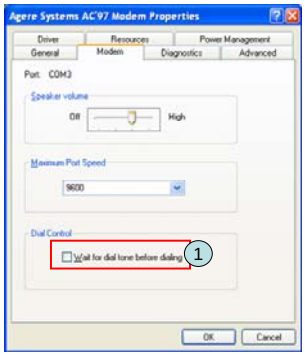
No.	Step	Note / Figure
2.	Switch to the "Modems" tab (1) and select the "Properties" button (2).	
3.	Set the maximum port speed (1) on the "Modem" tab to "9600". Tip: Be aware of how dialing is progressing by using the speaker (2).	
4.	If you are using a telephone system, disable the "wait for a dial tone" option. This is done by removing the marking in the checkbox (1).	
5.	Click "OK" to close the "Properties" options menu.	
6.	Select the "Dialing Rules" tab in the "Phone and Modem Options" menu. Create a new "Location" or edit an existing one via "Edit".	

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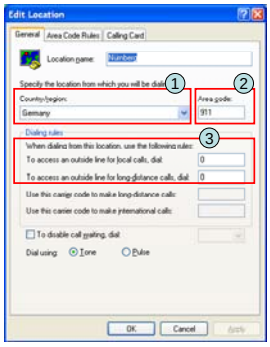
No.	Step	Note / Figure
7.	The following dialing rules have to be set: • Select your country (1) • Select the area code for your phone line (2) • If you are located within a telephone system, enter the number to access an outside line (3)	
8.	Click "OK" to close the "Edit Location" and "Phone and Modem Options" menus.	

2.3 STEP 7-Micro/WIN configuration

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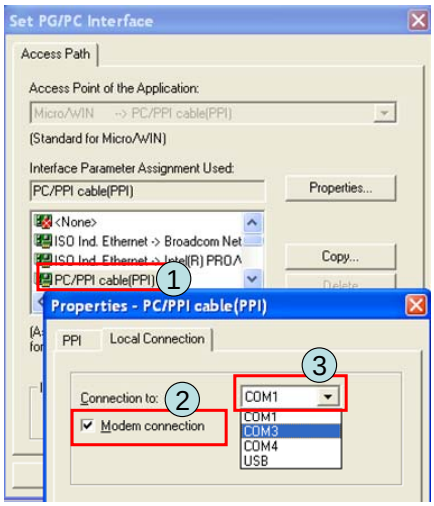
Table -7

No.	Step	Note / Figure
1.	Open STEP 7-Micro/WIN.	
2.	Open the settings for the PG/PC interface via "Start/Control Panel/Set PG/PC Interface".	
3.	The following settings need to be configured: • Select "PC/PPI cable(PPI)" as the communication medium (1) • Select the "Local Connection" tag in "Properties" and mark the "Modem connection" checkbox (2); then select the COM port (3) being used for the modem • Select the "PPI" tag in "Properties" and set a port speed of 9.6 kbps.	
4.	Click "OK" to set the "Properties" as well as the "Set PG/PC Interface" settings.	

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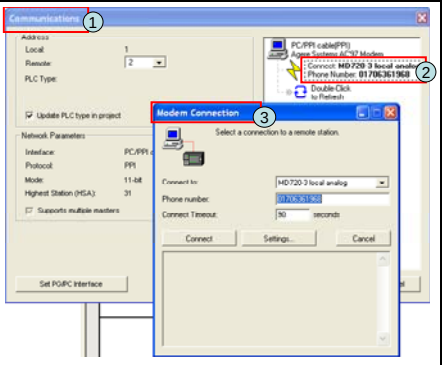
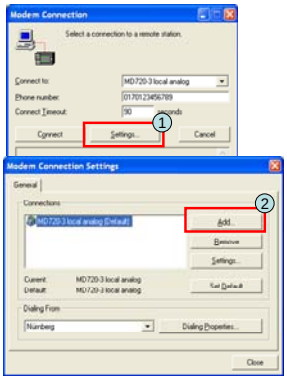
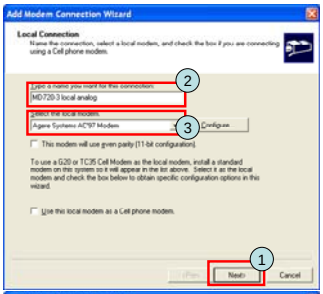
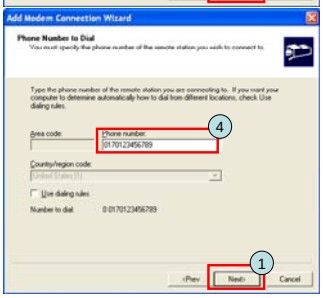
No.	Step	Note / Figure
5.	Open the "Communications" menu (1) in STEP 7-Micro/WIN and double-click the yellow "lightning symbol" (2) to open the "Modem Connection" menu (3).	
6.	Click the "Settings" button (1) to open the "Modem Connection Settings" menu. Create a new connection with "Add" (2).	
7.	Perform the following steps in this connection wizard and click "Next" (1) to confirm. Leave defaults unchanged in points that are not mentioned. • Assign a connection name (2) • Select the modem being used (3) • Enter the data phone number of the SIM card being used in your remote station (4) (e.g. 0170123456789)	 

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No.	Step	Note / Figure
8.	As soon as the connection wizard has ended, set a timeout of at least 90 seconds in the "Modem Connection" options menu.	
9.	The connection is established automatically when you click the "Connect" button. The info window shows you the current progress of the connection procedure.	*Placing call to T0170123456789* *Call placed* *Dialing...* *Proceeding...* *Connected* *Waiting for incoming messages...*
10.	Once the connection has been successfully established, the "Modem Connection" window closes automatically. You can now operate the remote station.	

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3 Teleservice with MC45 Terminal

3.1 Test configuration

The teleservice function using a MC45 Terminal modem as a local station has been tested with the following system configuration. (LS =Local Station, RS = Remote Station)

Table 8

No.	Component	Release/Version
1.	LS: FUJITSU Siemens	Lifebook E 8110
2.	LS: MC45 terminal	
3.	LS: SIM card	T-Mobile (with a CSD service, prepaid)
4.	LS: STEP 7-Micro/WIN version	V4.0.4.16
5.	LS: Operating system	WinXP pro SP2 (administrator rights)
6.	RS: SIM card	T-Mobile (with a CSD service, contract card)
7.	RS: S7-200 CPU224XP	MLFB: 214-2BD23-0XB0 Firmware version "E-Stand 01"
8.	RS: SINAUT MD 720-3	Hardware release: 3.1 Firmware release 1.6
9.	RS: PC/PPI cable	MLFB: 6ES7 901-3CB30B0XA0 "E-Stand 03"

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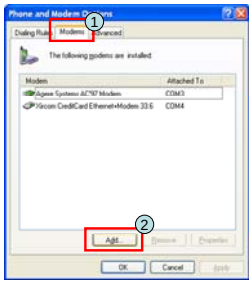
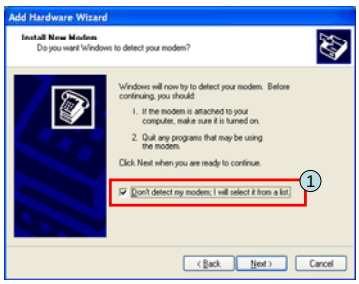
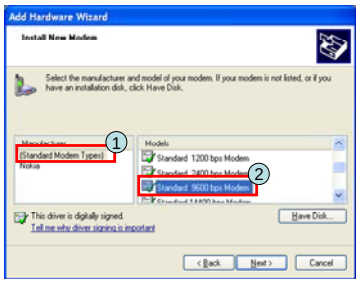
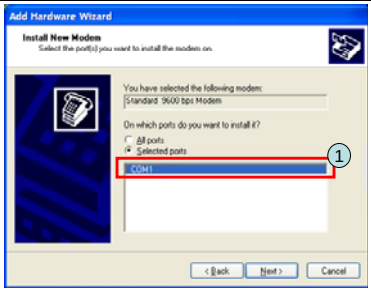
3.2 Configuring the modem

NOTICE

It is assumed that there will be a modem installed correctly at the remote station end. The requirements of section 1.2 must be checked.

Table -9

No.	Step	Note/Figure
1.	Open the "Phone and Modem Options" under "Start/Control Panel".	
2.	Switch to the "Modems" tab (1) and create a new modem by clicking the "Add" button (2).	
3.	Perform the following settings in the Add Hardware Wizard and click "Next" to confirm. • Enable the "Don't detect my modem; I will select it from a list" checkbox	
4.	• Click "(Standard Modem Types)" (1) in the "Manufacturer" box. • Select "Standard 9600 bps Modem" as the model (2).	
5.	• Select the COM port (1) being used for your modem. Following this step your modem is installed in Windows and you are taken back to the "Phone and Modem Options“ menu.	

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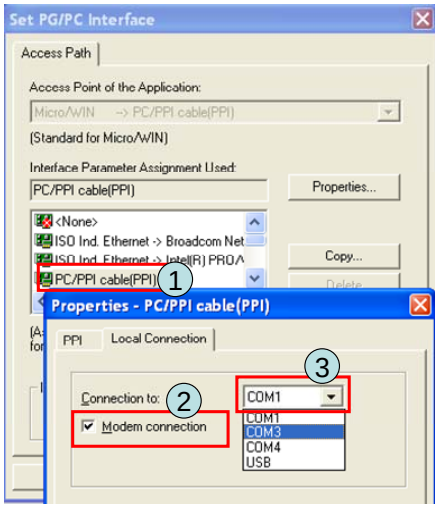
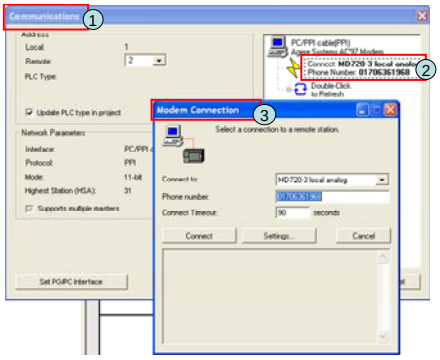
3.3 STEP 7-Micro/WIN configuration

Table -10

No.	Step	Note / Figure
1.	Open STEP 7-Micro/WIN.	
2.	Open the settings for the PG/PC interface via "Start/Control Panel/Set PG/PC Interface".	
3.	The following settings need to be configured: • Select "PC/PPI cable(PPI)" as the communication medium (1) • Select the "Local Connection" tag in "Properties" and mark the "Modem connection" checkbox (2); then select the COM port (3) being used for the modem • Select the "PPI" tag in "Properties" and set a port speed of 9.6 kbps.	
4.	Click "OK" to set the "Properties" as well as the "Set PG/PC Interface" settings.	
5.	Open the "Communications" menu (1) in STEP 7-Micro/WIN and double-click the yellow "lightning symbol" (2) to open the "Modem Connection" menu (3).	

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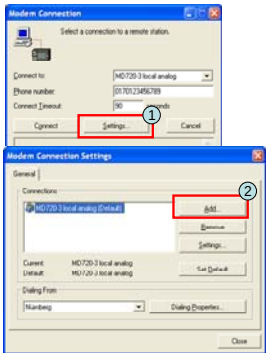
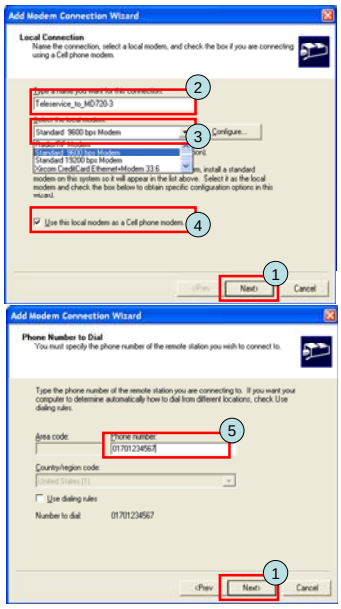
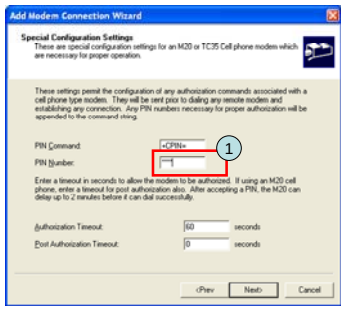
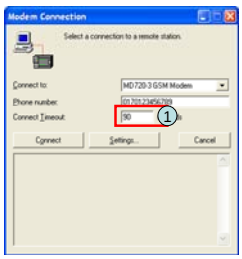
No.	Step	Note / Figure
6.	Click the "Settings" button (1) to open the "Modem Connection Settings" menu. Create a new connection with "Add" (2).	
7.	Perform the following steps in this connection wizard and click "Next" (1) to confirm. Leave defaults unchanged in points that are not mentioned. • Assign a connection name (2) • Select the modem being used (3) • Enable the "Use this local modem as a cell phone modem" checkbox (4). • Enter the voice phone number of the SIM card being used in your remote station (5) (e.g. 0170123456789)	
8.	• Enter the PIN number of the SIM card for the local modem.	
9.	As soon as the connection wizard has ended, set a timeout of at least 90 seconds in the "Modem Connection" options menu.	

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No.	Step	Note / Figure
10.	The connection is established automatically when you click the "Connect" button. The info window shows you the current progress of the connection procedure.	*Placing call to T0170123456789* *Call placed* *Dialing...* *Proceeding...* *Connected* *Waiting for incoming messages...*
11.	Once the connection has been successfully established, the "Modem Connection" window closes automatically. You can now operate the remote station.	

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4 Teleservice with SINAUT MD 720-3

4.1 Test configuration

The teleservice function using a SINAUT MD720-3 modem as a local station has been tested with the following system configuration. (LS =Local Station, RS = Remote Station)

Table 11

No.	Component	Release/Version
12.	LS: FUJITSU Siemens	Lifebook E 8110
13.	LS: SINAUT MD 720-3	Hardware release: 3.1 Firmware release 1.7.4
14.	LS: SIM card	T-Mobile (with a CSD service, prepaid, **PIN activated**)
15.	LS: STEP 7-Micro/WIN version	V4.0.4.16
16.	LS: Operating system	WinXP pro SP2 (administrator rights)
17.	RS: SIM card	T-Mobile (with a CSD service, contract card)
18.	RS: S7-200 CPU224XP	MLFB: 214-2BD23-0XB0 Firmware version "E-Stand 01"
19.	RS: SINAUT MD 720-3	Hardware release: 3.1 Firmware release 1.7.4
20.	RS: PC/PPI cable	MLFB: 6ES7 901-3CB30B0XA0 "E-Stand 03"

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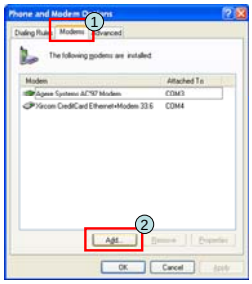
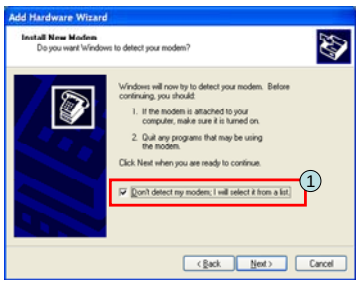
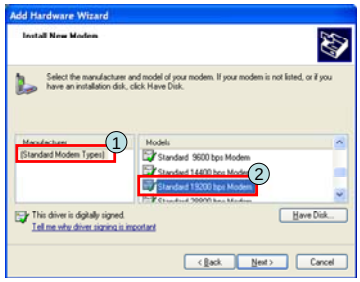
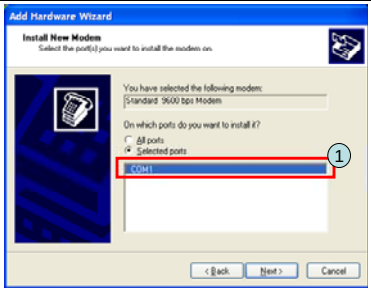
4.2 Configuring the modem

NOTICE

It is assumed that there will be a modem installed correctly at the remote station end. The requirements of section 1.2 must be checked.

Table -12

No.	Step	Note/Figure
21.	Open the "Phone and Modem Options" under "Start/Control Panel".	
22.	Switch to the "Modems" tab (1) and create a new modem by clicking the "Add" button (2).	
23.	Perform the following settings in the Add Hardware Wizard and click "Next" to confirm. • Enable the "Don't detect my modem; I will select it from a list" checkbox	
24.	• Click "(Standard Modem Types)" (1) in the "Manufacturer" box. • Select "Standard 19200 bps Modem" as the model (2).	
25.	• Select the COM port (1) being used for your modem. Following this step your modem is installed in Windows and you are taken back to the "Phone and Modem Options“ menu.	

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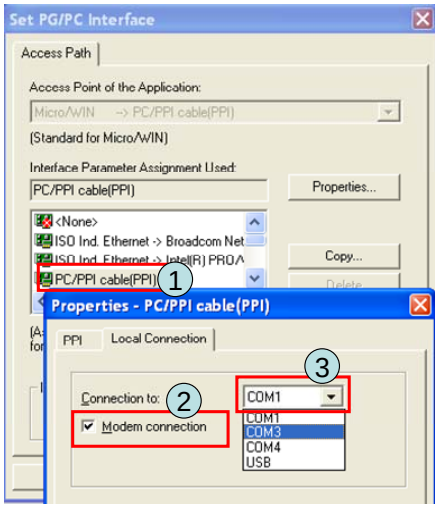
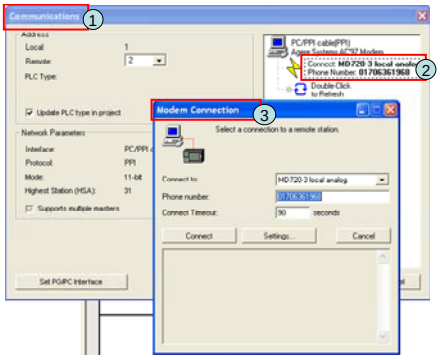
4.3 STEP 7-Micro/WIN configuration

Table -13

No.	Step	Note / Figure
26.	Open STEP 7-Micro/WIN.	
27.	Open the settings for the PG/PC interface via "Start/Control Panel/Set PG/PC Interface".	
28.	The following settings need to be configured: • Select "PC/PPI cable(PPI)" as the communication medium (1) • Select the "Local Connection" tag in "Properties" and mark the "Modem connection" checkbox (2); then select the COM port (3) being used for the modem • Select the "PPI" tag in "Properties" and set a port speed of 19.2 kbps.	
29.	Click "OK" to set the "Properties" as well as the "Set PG/PC Interface" settings.	
30.	Open the "Communications" menu (1) in STEP 7-Micro/WIN and double-click the yellow "lightning symbol" (2) to open the "Modem Connection" menu (3).	

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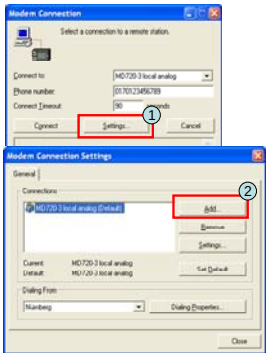
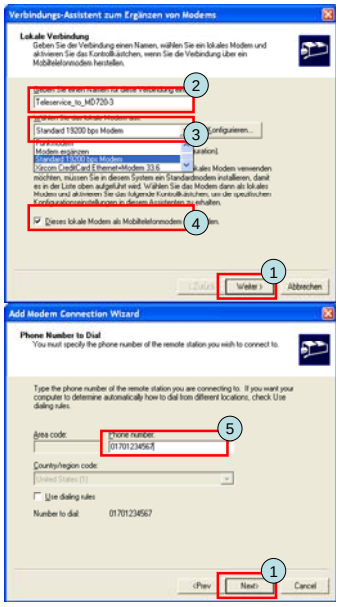
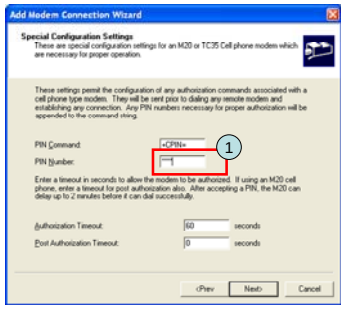
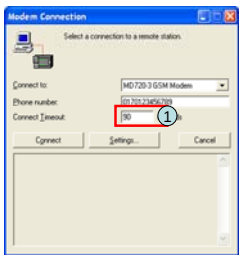
Teleservice mit MD 720-3

No.	Step	Note / Figure
31.	Click the "Settings" button (1) to open the "Modem Connection Settings" menu. Create a new connection with "Add" (2).	
32.	Perform the following steps in this connection wizard and click "Next" (1) to confirm. Leave defaults unchanged in points that are not mentioned. • Assign a connection name (2) • Select the modem being used (3) • Enable the "Use this local modem as a cell phone modem" checkbox (4). • Enter the voice phone number of the SIM card being used in your remote station (5) (e.g. 0170123456789)	
33.	• Enter the PIN number of the SIM card for the local modem. The PIN must not be deactivated!	
34.	As soon as the connection wizard has ended, set a timeout of at least 90 seconds in the "Modem Connection" options menu.	

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No.	Step	Note / Figure
35.	The connection is established automatically when you click the "Connect" button. The info window shows you the current progress of the connection procedure.	*Placing call to T0170123456789* *Call placed* *Dialing...* *Proceeding...* *Connected* *Waiting for incoming messages...*
36.	Setting the PIN to the MD720-3 takes more time than using other GSM modems like MC45 Terminal. If applicable you have to wait for the M20-Authorizationdelay until the teleservicerequest starts. Those delay can take place up to one minute.	*Waiting for M20-Authorizationdelay…* *Placing call to T0170123456789* *Call placed* *Dialing...* *Proceeding...* *Connected* *Waiting for incoming messages...*
37.	Once the connection has been successfully established, the "Modem Connection" window closes automatically. You can now operate the remote station.	

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Note

When your GSM Modem on the local side is the MD 720-3, then you maybe have to reset the modem. After resetting the modem the port speed is 19200 bps. With this setting you can follow the instruction above exactly. When the modem was applied at least one time for GPRS communication, then the port speed is set to 9600 bps by the Sinaut Micro SC library.

5 History

Table 14 History

Version	Date	Change
V1.0	20.12.2006	First edition
V1.1	11.05.2007	In this version it´s now described how to use a MD720-3 GSM Modem for teleservice functionality on the local station.