SIEMENS

SIMATIC HMI

Communication by Modem Link

Start Up Instructions

Release 09/02

A5E00177291

Safety Guidelines

This manual contains notices which you should observe to ensure your own personal safety, as well as to protect the product and connected equipment. These notices are marked as follows according to the level of danger:

Danger

indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Warning

indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution

used with the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Caution

used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Notice

indicates that unwanted events or status can occur if the relevant information is not observed.

Note

draws your attention to particularly important information on the product, handling the product, or to a particular part of the documentation.

Qualified Personnel

Equipment may be commissioned and operated only by **qualified personnel**. Qualified personnel within the meaning of the safety notices in this manual are persons who are authorized to commission, ground and identify equipment, systems and circuits in accordance with safety engeneering standards.

Correct Usage

Please note the following:

Warning

The device may only be used for the application cases specified in the catalog and the technical description and may only be used in combination with third-party equipment and components recommended or approved by Siemens.

Startup must not take place until it is established that the machine which is to accommodate this component is conforms with the guideline 98/37 EC.

Appropriate transport, and appropriate storage, installation and assembly, as well as careful operation and maintenance, are required to ensure that the product operates perfectly and safely.

Trademarks

The registered trademarks of the Siemens AG can be found in the preface.

Impressum

Editor and Publisher: A&D PT1

Preface

Using the manual

This electronic manual describes the actions required to establish a modem link for

- Downloading configuration data by means of TeleService (data transfer using the MPI/PROFIBUS DP port on the HMI operating unit)

- Downloading configuration data by means of a direct modem link (data transfer using the RS232 port on the HMI operating unit)

- Remote maintenance of a SIMATIC S7 automation system with ProTool/Pro Runtime

- Remote maintenance of a SIMATIC S7 automation system with pcAnywhere®

We recommend that you print this manual if you wish to read large sections, since the reading rate on paper is higher than on the screen.

Audience

This manual is intended for commissioning engineers, service technicians and system administrators. They learn how a modem link (in conjunction with SIMATIC TeleService, for example) is installed and operated for downloading configuration data and remote maintenance.

Online Help

In support of the manual, you are given in-depth assistance, when using the software, in the form of an integrated online Help, which you can activate by means of the Help menu or by pressing F1.

Others documents

TeleService for S7, C7 and M7, Remote Maintenance of an Automation System, Manual (C79000-G7000-C525)
The manual is printed with the TS adapter and supplied as an electronic document in PDF format on CD-ROM. The manual contains extensive information about configuring and operating a TeleService link.
Furthermore, the manual contains tables for simplifying troubleshooting when problems occur.

Conventions

Different font styles help you to find your way around the text:

`Motor on`	Text on the screen of the operating unit is shown as typewriting.
Output	Input and output on the screen of the operating unit are shown in italic type.
File ⇒ Edit	Menu options, the names of dialog boxes, tabs and buttons of the operating system and the application are shown in italic type.
	The full path of menu options is always specified.

Trademarks

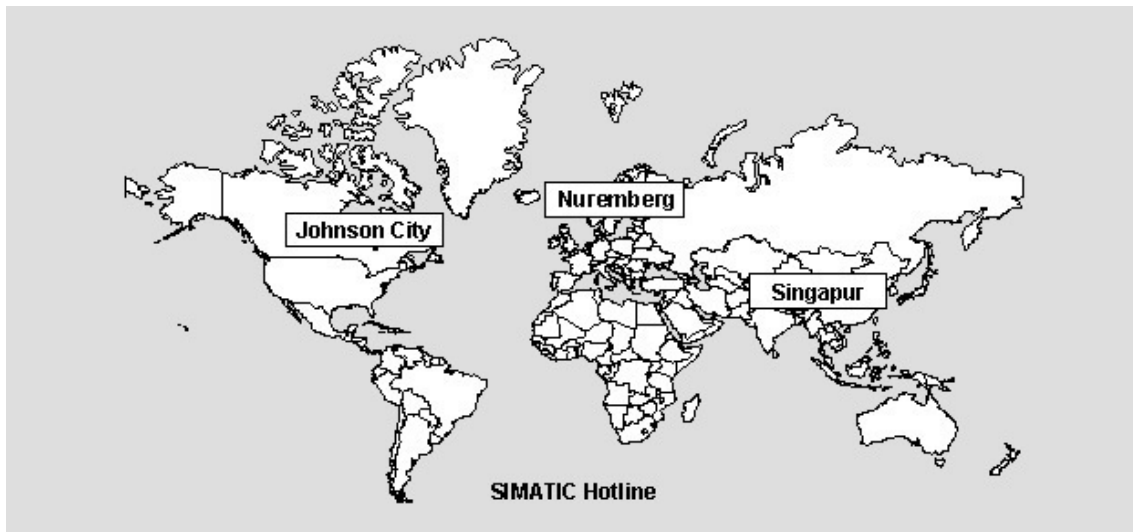The following designations are registered trademarks of Siemens AG:

- SIMATIC®
- SIMATIC HMI®
- SIMATIC Multi Panel®
- SIMATIC Multifunctional Platform®
- SIMATIC Panel PC®
- HMI®
- MP 270®
- ProAgent®
- ProTool®
- ProTool/Lite®
- ProTool/Pro®
- STEP7®

The following designation is a registered trademark of the Symantec Corporation

- pcAnywhere®

Customer and Technical Support

Available throughout the world:

Worldwide (Nuremberg) **Technical Support** (FreeContact)	**Worldwide** (Nuremberg) **Technical Support** (subject to charge, only with SIMATIC Card)	
Local time: Mon. thru Fri. 8.00 a.m. to 5.00 p.m.	Local time: Mon. thru Fri. 0.00 a.m. to 12.00 p.m.	
Phone: +49 (180) 5050-222	Phone: +49 (911) 895-7777	
Fax: +49 (180) 5050-223	Fax: +49 (911) 895-7001	
E-mail: techsupport@ ad.siemens.de	GMT: +01:00	
GMT: +1:00		
Europe/Africa (Nuremberg) **Authorization**	**America** (Johnson City) **Technical Support and Authorization**	**Asia/Australia** (Singapore) **Technical Support and Authorization**
Local time: Mon. thru Fri. 8.00 a.m. to 5.00 p.m.	Local time: Mon. thru Fri. 8.00 a.m. to 7.00 p.m.	Local time: Mon. thru Fri. 8.30 a.m. to 5.30 p.m.
Phone: +49 (911) 895-7200	Phone: +1 423 461-2522	Phone: +65 740-7000
Fax: +49 (911) 895-7201	Fax: +1 423 461-2289	Fax: +65 740-7001
E-mail: authorization@ nbgm.siemens.de	E-mail: simatic.hotline@ sea.siemens.com	E-mail: simatic.hotline@ sae.siemens.com.sg
GMT: +1:00	GMT: -5:00	GMT: +8:00

Generally speaking, the languages spoken on the SIMATIC Hotlines are English and German – French, Italian and Spanish are also spoken on the Authorization Hotline.

Further assistance

Please contact your local Siemens representative and offices if you have any technical queries.

SIMATIC Customer Support online services

SIMATIC Customer Support offers you extensive additional information about SIMATIC products in its online services:

- You can obtain general up-to-date information
  - on the Internet at
    http://www.siemens.com/simatic
- Current product brochures, FAQs, tips and tricks, and downloads can be obtained
  - on the Internet at
    http://www.siemens.com/automation/service&support

Training Center

We offer you suitable courses to help you get started with your automation systems. Contact your regional Training Center or the central Training Center at Nuremberg in Germany.

Phone: +49 (911) 895-3200

Internet: http://www.sitrain.com

E-mail: info@sitrain.com

Further assistance

Please contact your local Siemens representative or offices if you have any more queries about SIMATIC HMI products.

You will find the addresses:

- in Siemens Catalog ST 80
- on the Internet at
  http://www.siemens.com/automation/partner
- in the Interactive Catalog CA01
  http://www.siemens.com/automation/ca01

Contents

Introduction 1

Application

During the commissioning phase or when servicing is being performed, the configuration computer is frequently not anywhere near the system. For it nevertheless to be possible to enable an exchange of data, a connection can be established over a transmission link (such as a modem link).

This connection is used essentially for two applications:

- The downloading of configuration data between the configuration computer and the HMI operating unit equipped with ProTool CS

- The remote maintenance of a process with ProTool/Pro Runtime

The following table lists the methods possible in both applications.

Connection method	Transfer of configuration data (refer to Section 1.1)	Remote maintenance of a process (refer to Section 1.2)
TeleService (modem links and TS adapter through MPI/DP interface)	**X** (refer to Section 1.1.1)	**X** (refer to Section 1.2.1)
Direct modem link (modem link through RS232 port)	**X** (refer to Section 1.1.2)	—
pcAnywhere ® [1] (modem link [ISDN] or LAN connection [TCP/IP])	(**X**) [2]	**X** (refer to Section 1.2.2)

The methods are presented in the introduction to Sections 1.1 and 1.2:

ProTool CS

You create a ProTool project with the ProTool Configuration System (ProTool CS). It contains the system-specific basic settings, messages and screens that form part of the system.

In this manual, the term "ProTool CS" stands for the three versions of the configuration software: ProTool/Pro CS, ProTool and ProTool/Lite.

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[1] pcAnywhere is a registered trademark of the Symantec Corporation
[2] For this, ProTool CS must be installed on the host system. You can copy a project created or modified on the "remote" PC with the file transfer integrated in pcAnywhere to the "host" PC, start ProTool on this PC and thus transfer the configuration data to the HMI operating unit.

1.1   Downloading configuration data

Introduction

The project in which you have set the functions of the operating unit with ProTool CS must be downloaded to the operating unit. The configuration computer has to be connected to the HMI operating unit for this to take place.

Configuration computer   **HMI operating unit**
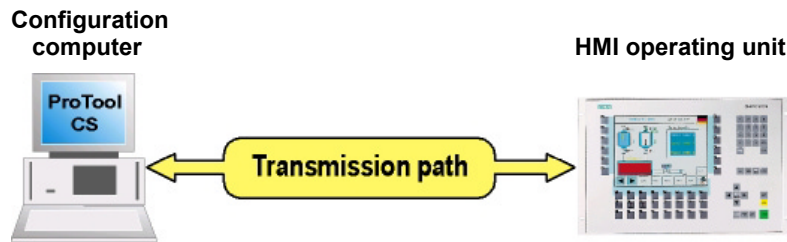
Figure 1-1   Download principle between the PC and HMI operating unit

The connection over the transmission path can be achieved in two possible ways:

* Using **TeleService** through the MPI/PROFIBUS DP interface on the operating unit

* **Direct modem link** through the serial interface on the operating unit

TeleService

TeleService is based on a software and a hardware component (Figure 1-2).

The software is installed on the configuration computer. It controls the transfer of data between ProTool CS and the HMI operating unit (over a telephone network, for example).

The hardware supports a connection from an RS232 port to a SIMATIC S7 interface (MPI/PROFIBUS DP).

The following table shows the devices that support data transfer with TeleService.

Device family	Device type
Text-based displays	OP3
Graphic displays	OP27, OP37, TP27, TP37
Windows CE devices	TP170A, TP170B, OP170B, Mobile Panel 170, TP270, OP270, MP270, MP270B, MP370
Windows-based systems	PC-based systems based on ProTool/Pro Runtime **Note** The ProTool/Pro RT loader must be active on the destination device. Refer in this respect to the Runtime documentation.

Direct modem link

The modem link establishes a direct connection between the configuration computer and the serial interface on the HMI operating unit (Figure 1-3).

The following table shows the devices that support data transfer with a direct modem link.

Device family	Device type
Windows CE devices	TP170A, TP170B, OP170B, Mobile Panel 170, TP270, OP270, MP270, MP270B, MP370
Windows-based systems	PC-based systems based on ProTool/Pro Runtime **Note** The ProTool/Pro RT loader must be active on the destination device. Refer in this respect to the Runtime documentation.

1.1.1 Downloading with TeleService

You have access to remote system components with ProTool CS and TeleService. To make this possible, TeleService connects your PC to automation components S7/C7/M7 on an MPI/PROFIBUS DP network over a telephone network.

By means of this connection, you can

– Download your ProTool configuration data to the operating unit

olgende Dateien werden übertragen:

Device family	Downloaded files
Windows CE devices	*.fwd [1] *.pdz [2]
Windows-based systems	*.fwd [1] *.pdz [2]

– Transfer SIMATIC configuration data from STEP 7 to your PLC.

The TeleService product includes

– A software program (has to be installed on your configuration computer)
– The TS adapter hardware component

The TS adapter converts the data protocol from an RS232 port to a SIMATIC S7 interface (MPI/PROFIBUS DP).

With the TS adapter, the MPI/PROFIBUS DP network parameters are set with the TeleService software in a parameterization session and written to the non-volatile memory of the TS adapter. These parameters stored on the TS adapter are activated on establishing the online connection.

Storage of the network parameters on the TS adapter has the advantage that you can communicate from any telephone connection with a node on the MPI/PROFIBUS DP network without the caller having to know the network parameters at the system end.

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[1] The *.fwd file contains the data required by ProTool/Pro Runtime.

[2] The *.pdz file contains the compressed data of the source file (*.pdb). It is only created and transferred if the "Allow Upload" button is activated in the Download dialog box.

Connection diagram

Figure 1-2   Data transfer over ISDN/analog modem and TS adapter

The standard modem cable is supplied together with the modem. You will find a cable wiring diagram in Appendix **A.2**.

An extension cable must not be inserted in the connection between the adapter and the SIMATIC system at transfer rates of 187.5 kbps or higher.

The analog and digital connection over the national fixed network has been system-tested and released. Connections over mobile telephones have neither been tested nor released.

Configuration

You will find guidance on configuration of the data transmission link in Section 3.1.

You will find more information in the modem device manual, in the manual "TeleService for S7, C7 and M7 – Remote Maintenance of an Automation System" and in the short guide "PC adapter/TS adapter".

1.1.2 Downloading over a direct modem link

With this transfer procedure, the ProTool CS configuration software initiates the exchange of data between the configuration computer and the operating unit. Downloading is performed through the RS232 port on the operating unit.

Use of teleservice and a TS adapter are not required. STEP 7 is needed only if you wish to download projects integrated in STEP 7.

Many (Hayes-compatible) standard modems (ISDN or analog) can be used as a modem adapter.

Connection diagram
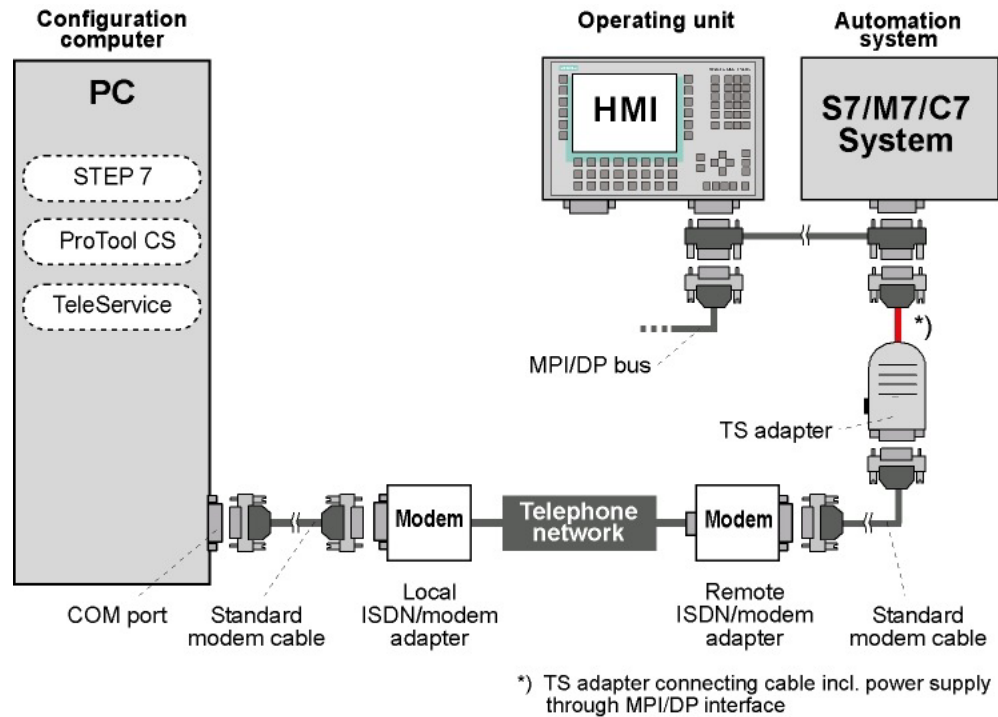

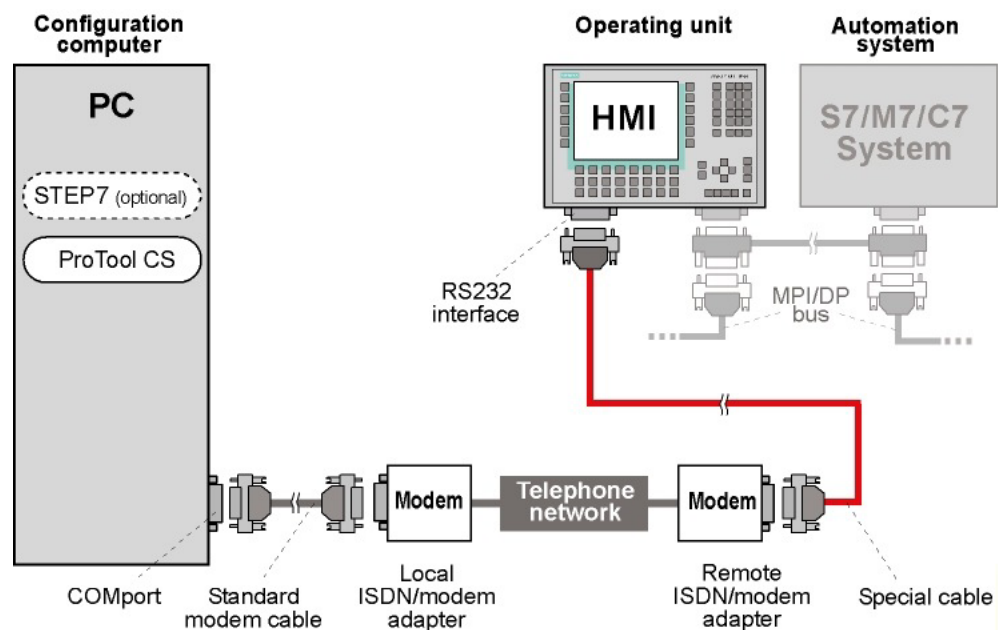Figure 1-3   Data transfer over a direct modem link

The standard modem cable is supplied together with the modem. You will find a cable wiring diagram in Appendix **A.2**.

The connection of the system modem to the HMI operating unit requires a special cable. You will find the cable wiring diagram in Appendix A.3.

Configuration

You will find notes on configuration of the data transmission link in Section 3.2.

1.2   Remote maintenance with ProTool/Pro Runtime

Principle

Two different scenarios are possible for remote maintenance with ProTool/Pro Runtime:

- ProTool/Pro Runtime is installed on a PC remote from the system (such as on the configuration computer). The user works on this PC with ProTool/Pro Runtime, and it directly accesses the automation system by means of **Teleservice** (including the transmission path and the MPI/DP bus of the system) - refer to Section 1.2.1.
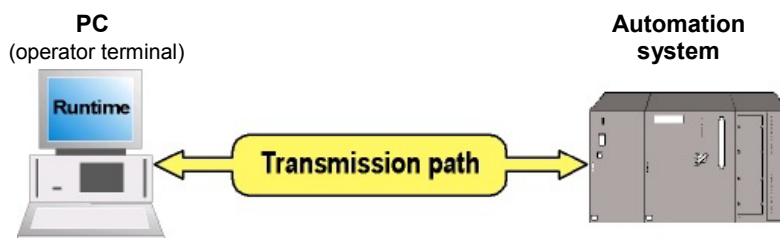
Figure 1-4   Transmission principle for remote maintenance with TeleService

- ProTool/Pro Runtime is installed on a PC in the system. Assisted by the remote control software **pcAnywhere** ® [1]. The user works from a remote PC using pcAnywhere with ProTool/Pro Runtime locally on the system (refer to Section 1.2.2).
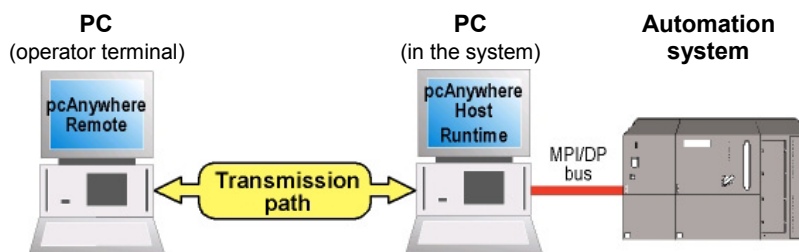
Figure 1-5   Transmission principle for remote maintenance with TeleService

Both scenarios establish a link (transmission path) between the operator's computer and the SIMATIC S7 automation system, over which you can directly access values on the connected PLC and I/O.

As a result of this, you can view and even control the process using the process screens contained in your Runtime project (for example, you can enter setpoints by means of standard entry fields).

If you have to access PLC data for which input/output fields have not been configured, you require the function Status/Force. This option is particularly useful during the test and commissioning phase of your project.

Supported HMI control systems

Remote maintenance can be performed solely in connection with ProTool/Pro Runtime on a PC hardware basis.

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[1]   pcAnywhere is a registered trademark of the Symantec Corporation

1.2.1 Remote maintenance with TeleService

You have access to remote system components with ProTool RT and TeleService. To make this possible, TeleService connects your PC to automation components S7/C7/M7 on an MPI/PROFIBUS DP network over a telephone network .

By means of this connection, you can

– Remotely maintain your SIMATIC S7 automation system. For this, the familiar functions of STEP 7 and Engineering Tools are available to you, comparable to a local MPI port.

– Access systems, machines and PLCs and perform technical services such as maintenance, update service and defect analyses at a low cost from a central support point at all times.

The TeleService product includes

– A software program (has to be installed on the PC)

– The TS adapter hardware component

The TS adapter converts the data protocol from an RS232 port to a SIMATIC S7 interface (MPI/PROFIBUS DP).

With the TS adapter, the MPI/PROFIBUS DP network parameters are set with the TeleService software in a parameterization session and written to the non-volatile memory of the TS adapter. These parameters stored on the TS adapter are activated on establishing the online connection.

Storage of the network parameters on the TS adapter has the advantage that you can communicate from any telephone connection with a node on the MPI/PROFIBUS DP network without the caller having to know the network parameters at the system end.

Connection diagram

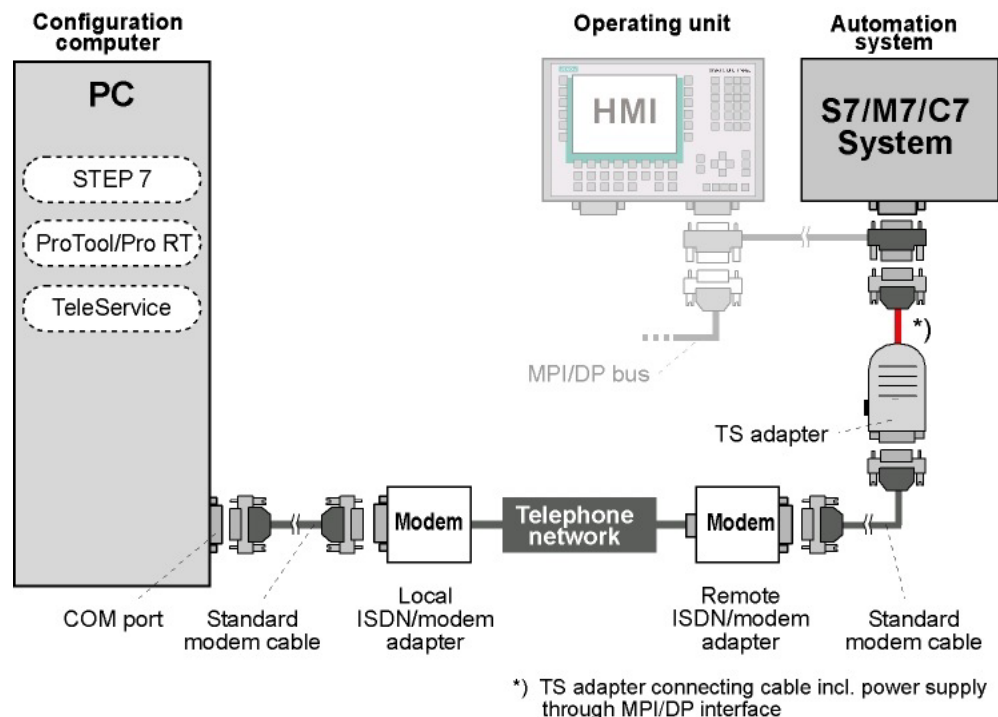Figure 1-6 Remote maintenance over ISDN/analog modem and TS adapter

The standard modem cable is supplied together with the modem.You will find a cable wiring diagram in Appendix **A.2**.

An extension cable must not be inserted in the connection between the adapter and the SIMATIC system at transfer rates of 187.5 kbps or higher.

The analog and digital connection over the national fixed network has been system-tested and released. Connections over mobile telephones have neither been tested nor released.

Establishment of a connection by the remote system

If a connection has to be established automatically (such as triggered by an event) by the automation system, you will additionally require the following products:

– PRODAVE MPI v.5.0

   This software program is installed on the PC and waits for a remote system to call. When the call arrives, your application program is informed.

– Function block PG_DIAL

   This function block is included in the STEP 7 library during the installation of TeleService. Should a remote system establish a long-distance connection to a PC, the application program of the system must call the function block *PG_DIAL*.

You will find detailed information about this in the manual "TeleService for S7, C7 and M7 – Remote Maintenance of an Automation System" (Chapter 6).

Configuration

You will find guidance on configuration of the data transmission link in Section 3.4.

You will find more information in the modem device manual, in the manual "TeleService for S7, C7 and M7 – Remote Maintenance of an Automation System" and in the short guide "PC adapter/TS adapter".

1.2.2 Remote maintenance/operation with pcAnywhere

Principle

pcAnywhere® is a comprehensive remote control and file transfer solution for service and maintenance. by using this program, you can quickly and safely access a PC on your system. pcAnywhere® features security functions for this which make sure that the remote controlled PC ("host") is correctly configured and protected in an optimum manner. pcAnywhere [1] consists essentially of two software function packages:

• pcAnywhere Host

   This functionality is installed on the PC in the system that you want to control. It monitors access to this PC, transfers the screen data to the remote PC and executes operator commands on the remote PC.

• pcAnywhere Remote

   This functionality is installed on the PC remote from the system from which the system is to be accessed. It displays the screed data of the host PC and transfers the operator commands to the host PC.

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[1] pcAnywhere is a registered trademark of the Symantec Corporation

The interconnection diagrams are displayed in Figure 1-7 (connection over LAN) and Figure 1-8 (connection over telephone network).

No TeleService or ProTool functions are required for pcAnywhere operation. The work procedure and the user interface of pcAnywhere will therefore not be described in greater detail in this manual. If required, the detailed product description and the online Help of pcAnywhere are available to you.

Connection diagram

Two different connection concepts are available:

1.   Control of the remote PC with pcAnywhere over Intranet (LAN)

PC (operator terminal)   **PC (in the system)**
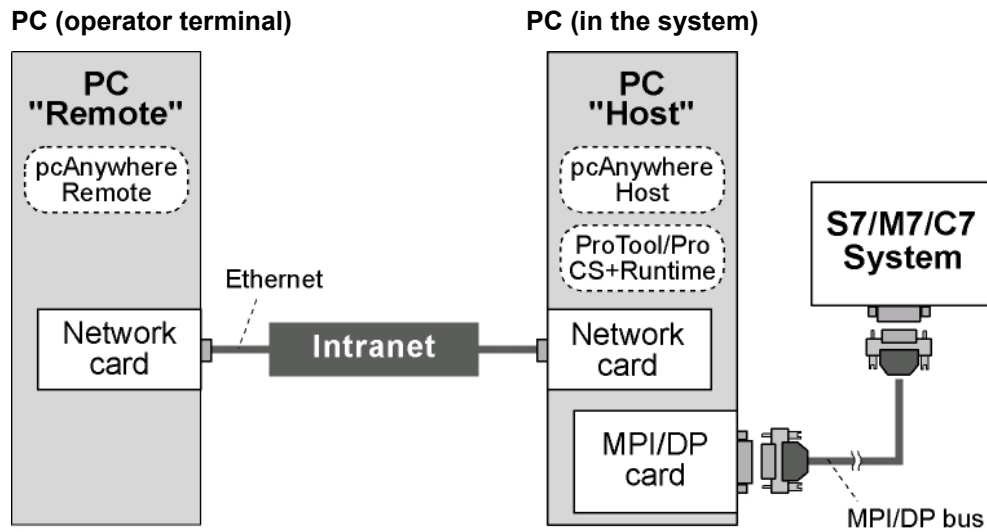
Figure 1-7   Control with pcAnywhere over Intranet (LAN)

2.   Control of the remote PC with pcAnywhere over telephone network (WAN)

PC (operator terminal)   **PC (in the system)**
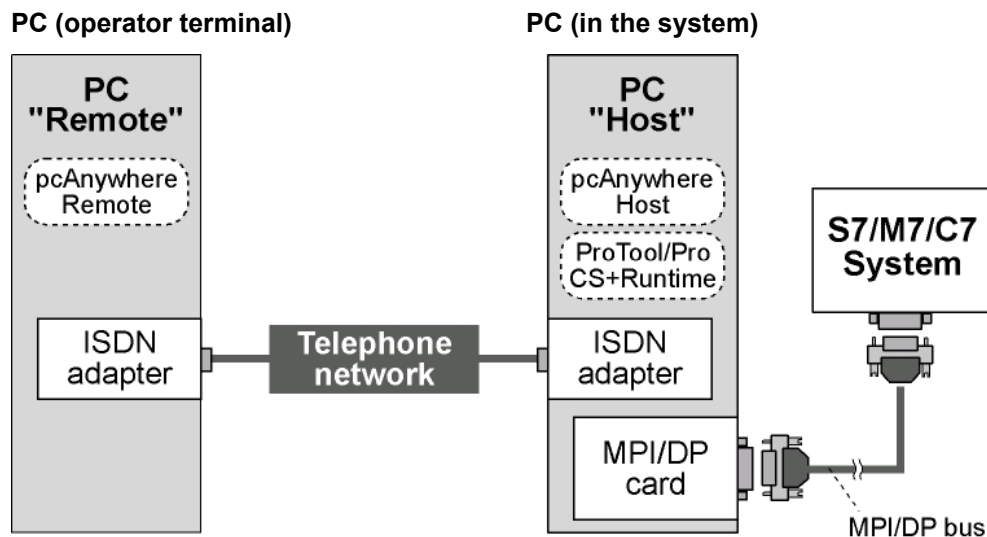
Figure 1-8   Control with pcAnywhere over telephone network (WAN)

General notes on operation

- If possible, you should preferably use an LAN connection.

- Make sure your PC has high performance capability and as few as little active (started) tasks/programs:

  – Deactivate unnecessary processor loads (including in the background) such as screen savers, virus scanners, system monitor etc.

  – Make sure the hard disks on the client and server are properly fragmented

  – Especially when working with an ISDN connection you should perform deliberate actions to ensure you do not press keys twice.

Example applications

The main application option of pcAnywhere is remote control. Using pcAnywhere, you start the ProTool/Pro Runtime software on the remote computer by remote control. The read out data and system messages of the system are transferred by pcAnywhere to your PC, where you evaluate them.

Note

With pcAnywhere®, solely screen data and keyboard and mouse data are transferred dependably between the host and the remote PCs.

Configuration

In-depth information on how to install and run the product will be found in the pcAnywhere user's guide and in online Help.

Hardware and software requirements $\quad$ **2**

2.1   Using TeleService

Hardware requirements

You require the following hardware to use TeleService:

– A PC that satisfies the system requirements of ProTool/Pro CS and RT and STEP 7

– Two modem cable between the PC and modem and between the modem and TS adapter, respectively (for the cable wiring diagram refer to Appendix A.2)

– Two modems that are interconnected over a telephone line (for precise details refer to the description of TeleService)

– A TS adapter v.5.0 for MPI and PROFIBUS-DP with different baud rates (v.3.0 only for MPI with 187.5 kBd)

– An MPI or PROFIBUS-DP network supported by the TS adapter.

The following PLCs are supported in a remote maintenance context:

SIMATIC S7-200 [1]
SIMATIC S7-300
SIMATIC S7-400

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[1]   The connection between the TeleService adapter, the SIMATIC S7-200 and the OPs must be established through an interface of the S7-200 submodule EM277 PROFIBUS-DP (MLFB 6ES7 277-0AA21-0XA0) requires TeleService 5.1 or higher.

Software requirements

You require the following software on the PC to use TeleService:

Software program	Downloading configurations	Remote maintenance
Operating system	Win 98 SE Win NT with SP 6a Win 2000 with SP2	
STEP 7	v.5.0, v.5.1 + SP2 or higher	
TeleService	v.5.0 and v.5.1 or higher	
ProTool/Pro CS ProTool ProTool/Lite	v.6.0 v.6.0 v.6.0	— — —
ProTool/Pro Runtime	—	v.6.0
PRODAVE MPI [1]	—	v.5.0

Should these software packages not be available on your PC, install them in the order shown above. Follow the installation instructions of the software product concerned.

If the corresponding Microsoft Service Pack is not installed on your PC, you will find all relevant Service packs for Windows NT 4.0 and Windows 2000, including Internet Explorer 6.0, on two CD-ROMs supplied with ProTool/Pro Runtime 6.0.

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[1]   Required only for automated access to the configuration computer of a remote SIMATIC S7 (connection buildup by the system)

2.2   Direct modem link

To be used only for downloading configuration data

Hardware requirements

You require the following hardware for a direct modem link:

– A PC satisfying the system requirements for ProTool/Pro CS
  A serial port (COM1 or COM2) must be available.

– A modem cable between the PC and the modem
  (refer to Appendix A.2 for the cable wiring diagram)

– Two modems that are interconnected over a telephone line
  (Hayes-compatible devices are recommended)

– A modem cable to the HMI operating unit (special cable)
  (refer to Appendix A.3 for the cable wiring diagram)

– A Windows-based HMI operating unit that supports the exchange of data.

The following HMI operating unit are supported:

Device family	Device type
Text-based displays	OP3
Graphic displays	OP27, OP37, TP27, TP37
Windows CE devices	TP170A, TP170B, OP170B, Mobile Panel 170, TP270, OP270, MP270, MP270B, MP370
Windows-based systems	PC-based systems based on ProTool/Pro Runtime **Note** The ProTool/Pro RT loader must be active on the destination device. Refer in this respect to the Runtime documentation.

Software requirements

You require the following software on the configuration computer to use a direct modem link:

Software program	Downloading configurations	Remote maintenance
Operating system	Win 98 SE Win NT with SP 6a Win 2000 with SP2	
STEP 7 (optional) [1]	v.5.0 or v.5.1 + SP2	
ProTool/Pro CS ProTool ProTool/Lite	v.6.0 v.6.0 v.6.0	— — —

If you wish to use the functionality of SIMATIC Manager, ProTool must be "integrated in STEP 7" when it is installed.

Should these software packages not be available on your PC, install them in the order shown above. Follow the installation instructions of the software product concerned.

If the corresponding Microsoft Service Pack is not installed on your PC, you will find all relevant Service packs for Windows NT 4.0 and Windows 2000, including Internet Explorer 6.0, on two CD-ROMs supplied with ProTool/Pro CS 6.0.

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[1] If you want to download integrated projects in STEP 7, you must install STEP 7 on the configuration computer.

2.3   Using pcAnywhere

Hardware requirements (for host and remote PCs)

You require the following hardware for remote maintenance and remote control by means of pcAnywhere:

	Remote PC	**Host PC**
The hardware requirements of the following products must be met:	pcAnywhere v.10.5	pcAnywhere v.10.5 <u>and</u> ProTool/Pro RT v.6.0
Requirement for installation	CD-ROM <u>or</u> DVD drive	
Network connection <u>or</u> telephone connection	Network card 10/100 MHz including driver and Ethernet connecting cable ISDN adapter incl. driver and telephone connection cable	

Software requirements

Software program	Remote PC	Host PC
Operating system	Win 98 SE Win ME Win NT with SP 6a Win 2000 with SP2 Win XP	Win 98 SE Win ME Win NT with SP 6a Win 2000 with SP2
Internet Explorer [1]	Microsoft Internet Explorer 5.5 with SP 2 or higher	
pcAnywhere	v.10.5	
ProTool/Pro Runtime	—	v.6.0

Should these software packages not be available on your PC, install them in the order shown above. Follow the installation instructions of the software product concerned.

If the corresponding Microsoft Service Pack is not installed on your PC, you will find all relevant Service packs for Windows NT 4.0 and Windows 2000, including Internet Explorer 6.0, on two CD-ROMs supplied with ProTool/Pro RT 6.0.

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[1] Required by pcAnywhere

2.4 Authorization

A product-specific authorization (user license) is required to use the SIMATIC TeleService software. The protected software can only be used if the necessary authorization for the program or package is detected on the hard disk of the programming device/PC concerned.

Installing TeleService

Refer to the manual "*TeleService for S7, C7 and M7 – Remote Maintenance of an Automation System"* for detailed information on installing the authorization.

For the installation, you require the copy-protected authorization diskette, which is supplied as part of the package. It contains the authorization for TeleService.

You should install the authorization when prompted to do so by a corresponding message in the course of initial installation.

AUTHORSW, the program required to display, install and uninstall the authorization, can be found on the ProTool CD-ROM.

⚠️ **Caution**

Take note of the information contained in the README.TXT file in the Installation directory of AUTHORSW. There is the risk of the authorization being irretrievably lost if the notes are not followed.

An authorization cannot be lost, for example, if a hard disk defect occurs and you are no loner in a position to uninstall the authorization from the defective fixed disk.

Loss of authorization

If an authorization is lost, you can fall back on the emergency authorization. It is similarly contained on the authorization diskette. The emergency authorization allows you to continue using the software for a limited period of time. In such an instance, the time to go until it becomes invalid is displayed on the screen when you start up. You should procure a replacement for the lost authorization within that period of time. Please contact you local Siemens representative for this.

Procedure and settings

3

3.1   Settings downloading with TeleService

With the transfer of configuration data, we distinguish between:

- Transfer from the configuration computer to the operating unit (**download**)

- Transfer from the operating module to the configuration computer (**upload**)[1]

Requirements for transfer

before you can start to transfer, the following criteria must be satisfied:

	Transferring with TeleService
1.	ProTool CS, STEP 7 and Teleservice have been installed on your configuration computer (refer to Section 2.1 for the software requirements)
2.	Your entire project and a single,complete section has been completed and has been complied without error by ProTool CS : A file that can be executed on the operating unit is created from the project
3.	An ISDN or analog modem is connected to an unassigned COM port on your configuration computer
4.	Transmission facilities, adapter, and the PLC and operating unit are ready to start
5.	The operating unit is connected to the PLC.

The following setting guide describes the steps that have to be taken for a ProTool project integrated in STEP 7.

---

[1] Important requirements have to be satisfied for the "Upload" function, depending on the HMI unit. Refer to online Help and the equipment manual.

3.1.1 Parameterizing the PG/PC port (RS232)

Perform the following steps:

1. Compare your hardware configuration with Figure 1-2. Switch on all components.

2. In SIMATIC Manager, choose Options $\Rightarrow$ Set PG/PC Port... from the menu (as an alternative, this can be done on the Control Panel).

3. In the "Used interface parameterization" selection box, select the entry "TS adapter": S7ONLINE (STEP7) --> TS Adapters is automatically entered in the "Access point" field of the application. Click Properties...

4. On the "Local Connection" tab, select the option "Modem connection" and confirm your input by clicking "OK".

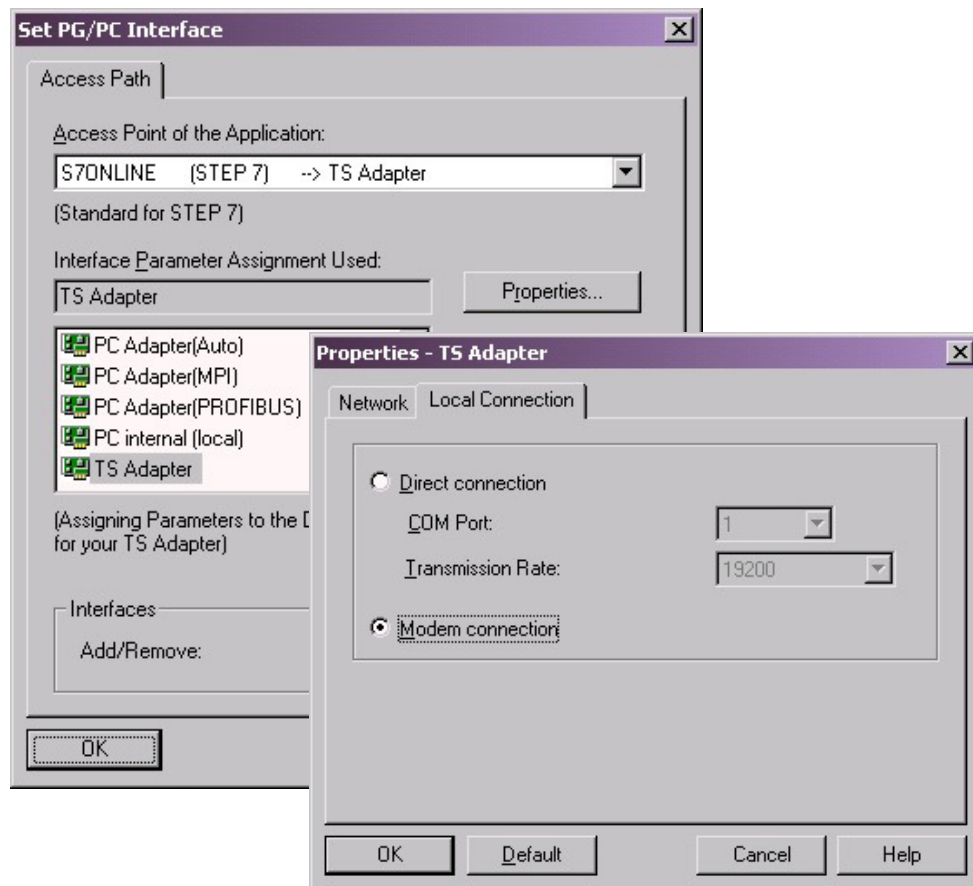   Parameterization of the serial port is described together with parameterization of the modems.

Figure 3-1   Parameterization of the PU/PC port for TeleService

3.1.2   Parameterizing the local modem

Parameterization of the modem is described at length in the manual
"***TeleService for S7, C7 and M7 – Remote Maintenance of an Automation
System***" (Chapter 3) and therefore only brief details will be mentioned at this
point.

Note

The register for parameterization of the local modem is also accessible through
the Control Panel in Windows, but the changes performed in Windows do not
have any effect on data management in TeleService. Therefore, always define
the properties of the TeleService modem directly in TeleService. The advantage
of this is that changes that might have been performed on the Control Panel for
other programs do not have any effect on the settings performed in TeleService.
As a general rule, the parameters required as set as default values so that you
only have to check the entries to be on the safe side.

Perform the following steps:

1.   In SIMATIC Manager, choose the *Options ⇒ TeleService* from the menu
   (alternatively you can choose *Start ⇒ SIMATIC ⇒ STEP7 ⇒ TeleService*)
   The *TeleService* application starts and the start window is displayed.

2.   Choose Options ⇒ Customize... from the menu. This opens a dialog box in
   which the following settings are possible:

   –   The modem being used (such as MicroLink 33 6TQV)
        Only modems installed under Windows are listed.

   –   Its properties

   –   The local location

   –   The selected parameters and the
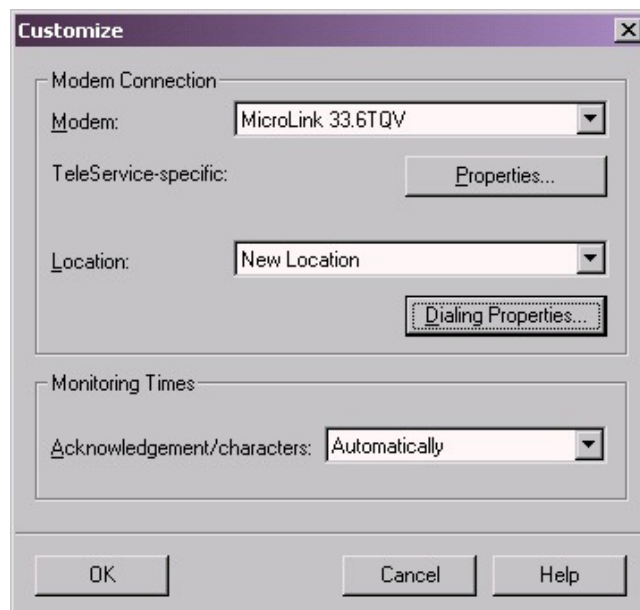
   –   Monitoring times

Figure 3-2   TeleService: dialog box for modem settings

3.1.3 Parameterizing the remote modem

Perform the following steps:

1. Switch off the remote modem.

2. Plug the TS adapter into the automation system.

3. Connect the TS adapter to the modem using a mode cable.

4. Connect the modem to the telephone access.

5. Switch on the components.

   The modem is given all the parameters required operation from the TS adapter:

   – Data for modem initialization

   – Settings for serial transfer between the TS adapter and the modem.

   The data are set when the TS adapter is parameterized and are described in the section that follows.

Note

The default parameters of the TS adapter should guarantee successful operation in the majority of cases so that it is only necessary in exceptional cases to re-assign parameters.

Parameterization of the TS adapter is necessary only when a modem link is not built up or the factors settings have to be customized optimized.

3.1.4 Parameterizing the TS adapter

You have the following options for parameterizing the TS adapter:

- Parameterizing the TS adapter in direct connection (with null modem cable):
  A condition is that the TS adapter and the configuration computer are collocated. An interconnection diagram and a cable wiring diagram for the null modem cable will be found in Appendix A.1.

- Parameterizing the TS adapter in modem connection (Figure 1-2):
  A requirement is that a modem connection can be established from the local configuration computer to the TS adapter.

Note

The TS adapter is supplied with universal default values in the parameter memory. When you parameterize the TS adapter, the latest values to be parameterized or the default values are read from the adapter and displayed in a dialog box (Figure 3-3) that consists of several registers. If you modify the parameters and exit the dialog box by clicking "OK", the new parameter values on all registers of the dialog box are transferred directly to the TS adapter following a prompt. The old values in the parameter memory are overwritten and are lost.

With a reassignment of parameters, the data are written to the non-volatile memory, the checksum is recalculated and comparative reading takes place. The parameterization operation is not positively acknowledged until all precautions have been taken to ensure the parameter modification has been executed properly and thus survives a power failure.

Parameterization of the TS adapter is described at length in the manual "*TeleService for S7, C7 and M7 – Remote Maintenance of an Automation System*" (Chapter 4) and therefore only brief details will be mentioned at this point.

1. For parameterizing, the TS adapter must be supplied with voltage. For this, connect it to the MPI/DP interface of an automation system (S7/M7/C7) or use an external power pack.

2. In SIMATIC Manager, choose the *Options* ⇒ *TeleService* from the menu (alternatively you can choose *Start* ⇒ *SIMATIC* ⇒ *STEP7* ⇒ *TeleService*) The *TeleService* application starts and the start window is displayed.

3. Choose *Options* ⇒ *Parameterize adapter*... from the menu. TeleService reads the currently set parameters from the TS adapter and display them in the dialog box (Figure 3-3) that opens.
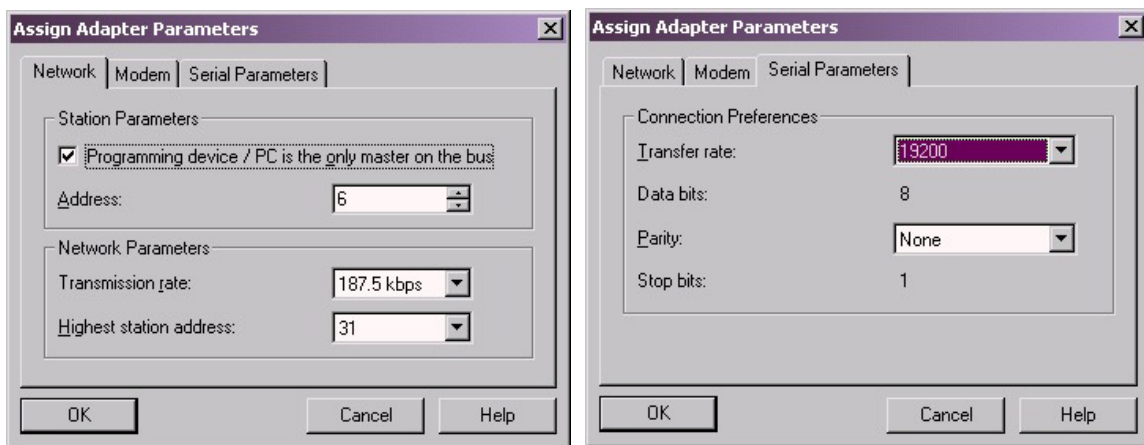

Figure 3-3   Parameterizing the TS adapter

4. Set the required parameters on the tabs *Network, Modem, Serial Parameters* and *Access Protection*. For details of the possible settings refer to the online Help for the registers concerned.

5.   Confirm your input by clicking "OK".

After clicking "OK", the settings are stored in a non-volatile memory of the TS adapter following a prompt. The previous parameters are overwritten and are thus lost.

The serial parameters, the modem parameters and the parameters for access protection are activated after the modem connection has been released. The modified network parameters are activated by means of the TS adapter the next time you go online.

Note

If you want to modify the current parameters, there is a risk that no further modem connection can be established with the modified parameters. In this case the TS adapter can only be parameterized when directly connected.

3.1.5   Establishing a connection to a remote system

The establishment of a connection to the TS adapter is described at length in the manual "*TeleService for S7, C7 and M7 – Remote Maintenance of an Automation System*" (Chapter 5.2) and therefore only brief details will be mentioned at this point.

Perform the following steps:

1.   Start TeleService and open a phone book

2.   In a folder, select the system to which you want to establish a connection.

3.   Choose *Connection ⇒ Establish...* from the menu or double-click on the system to which you want to establish the connection. The *Establish connection* dialog box then opens (refer to Figure 3-4).
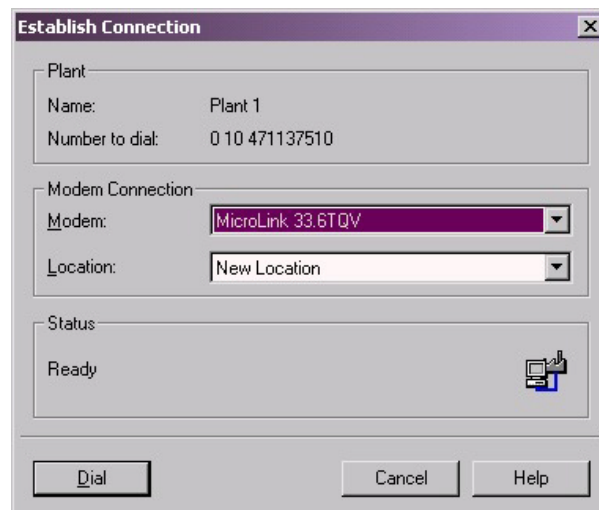

Figure 3-4   Establishing a connection to a remote system

4.   Click the "Select" button.
     The long-distance connection is then established.

3.1.6 Transferring configuration data

Perform the following steps:

1. Start ProTool and open your project

2. Compile an executable project:

   – Click on the icon

   – Or, start the compilation by choosing *File ⇒ Compile...* from the menu

   – Follow the instructions on the screen

   – A file with the extension * . fwd is created

3. Check the download settings in ProTool:

   – Open the dialog box by choosing *File ⇒ Download ⇒ Setting*... from the menu and set the OP address required for your configuration.

   Select the check box "Allow upload" if you want to transfer the source file for the project as well to the operating unit in order to support a subsequent upload [1].
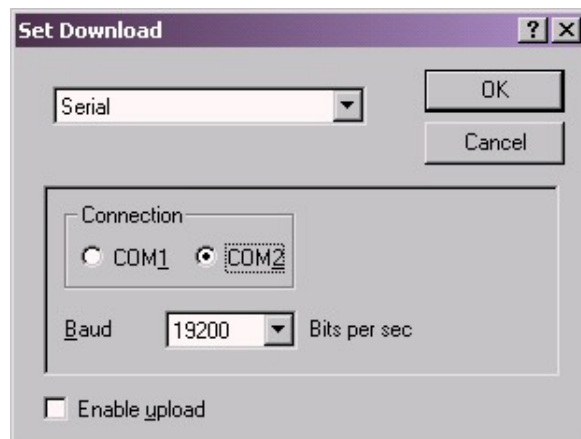
Figure 3-5   Settings for downloading configuration data

4. Download the executable project to the operating unit

   To transfer the executable project from the configuration computer to the operating unit, the operating unit must be in Download mode or go automatically to Download mode when the transfer starts. For this, the corresponding Download option must be activated on the Configuration menu of the operating unit.

---

[1]   Important requirements have to be satisfied for the "Upload" function, depending on the HMI unit. Refer to online Help and the equipment manual.

When the operating unit starts up for the first time, it automatically goes to Download mode. With every further download operation, you can reboot the operating unit, should the operating unit not go automatically to Download mode, or configure the function *Change_Mode* on a function key or a button. You will find details in the manual for your operating unit.

– Make sure that your operating unit is in Download mode

– Start transferring the project by clicking ![icon]
  or choosing *File ⇒ Download ⇒ Start Project Download...* from the menu bar

After the transfer has run successfully, the operating unit starts up again and shows the start screen of the downloaded project.

You can then test the project on the operating unit.

3.1.7   Disconnecting

When you have completed the transfer to the remote system, close all windows in ProTool and/or STEP 7 that are displaying online views.

Then change to TeleService and release the long-distance connection by choosing *Connection ⇒ Disconnect*.

3.2   Settings for downloading over direct modem link

The interconnection diagram is illustrated in Figure 1-3.

Requirements for transfer

Before you can start to transfer, the following criteria must be satisfied:

	Requirements for downloading over a direct modem link
1.	ProTool CS and STEP 7 have been installed on your configuration computer (refer to Section 2.2 for the software requirements
2.	Your entire project and a single,complete section has been completed and has been complied without error by ProTool CS : A file that can be executed on the operating unit is created from the project
3.	An ISDN or analog modem is connected to an unassigned COM port on your configuration computer
4.	Transmission facilities and operating unit have been set up and are ready to start

3.2.1   Initializing the local modem

Perform the following steps:

1.   Start *HyperTerminal* by selecting and double-clicking
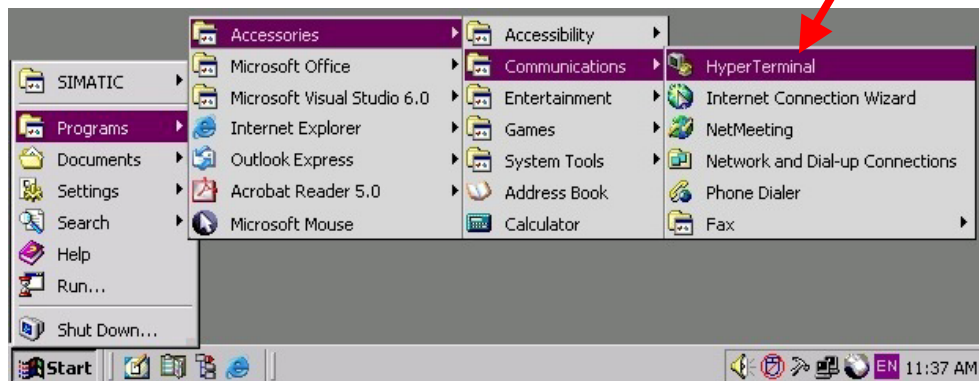
Figure 3-6   Starting HyperTerminal (example)
                (the path structure depends on the PC installation and operating system)

2.   Enter the name of the connection and click OK to confirm (Figure 3-7)

3.   At *Connect using*, select the COM port you are using and click OK to confirm (Figure 3-8)
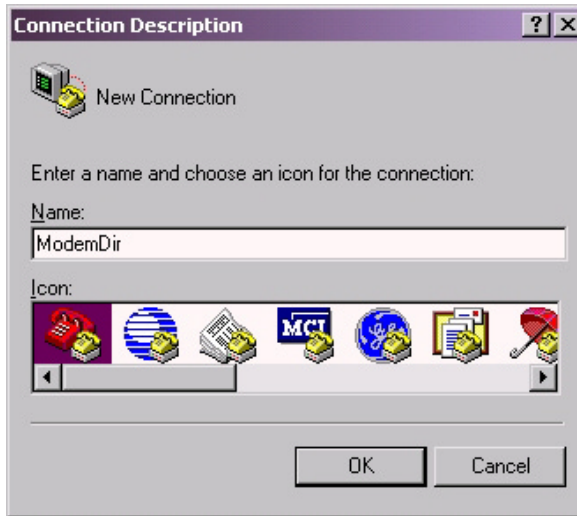
Figure 3-7 HyperTerminal: Determine the name   Figure 3-8 HyperTerminal: Select the
             of the connection   COM port

4.   Set the port as follows and click OK to confirm.

After closing the Settings window, *HyperTerminal* makes a blank input field available.
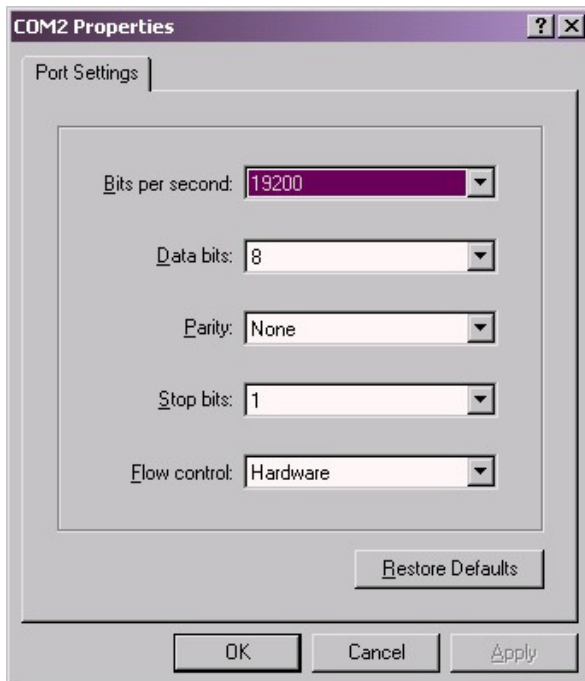
Figure 3-9   HyperTerminal: Set the port

5. Initialize the modem

AT commands are used to set/change your modem. They are sent in Terminal mode of your communication software (such as HyperTerminal) to the modem.

Enter the control commands to the modem directly in the input field. In doing so, make sure that each valid control command line begins with **AT** and ends with E.

The list below shows the AT commands that have to be entered, using the ELSA MicroLink 33.6.QTV modem as an example. Enter the commands in the specified order:

| AT command	Meaning
AT&F	Load default configuration (the modem then has the factory default settings). This command must be sent first to the modem.
ATL1	Set "low" volume
ATX3	Ignore dial tone to dial /display busy signal
AT&D0	Ignore DTR status change
AT&G2	Ringing tone enabled, guard tone 1800 Hz
AT&K3	Flow control authorized over RTS/CTS lines
AT&T5	Select loopback: deny request for remote digital loopback
AT%D20	Buffer empty delay (20 = 20 seconds)
AT\K0	Modem goes to command mode, does not send break to remote system
AT\V0	No modified CONNECT messages

You have to set the internal registers of the modem with the following AT commands:

ATS00=001	Autoanswer after 1 ring pulse
ATS07=060	Sets pause for carrier to 60 sec
ATS10=020	Sets disable time to 20 sec (if no carrier detected)
ATS21=032	Bit-oriented: corresponds to commands AT&D0 and AT&C1
ATS22=101	Bit-oriented: corresponds to commands ATL1, ATM1 and ATX3
ATS23=156	Bit-oriented: corresponds to command AT&T5
ATS31=194	Bit-oriented: corresponds to commands AT&G2, AT&D0 and others
ATS38=020	Sets delay time for emptying buffer to 20 sec
ATS41=195	Bit-oriented
ATS48=004	Bit-oriented: corresponds to commands AT-J, AT\C and AT\K (bit 2=1: detect phase enabled)
ATS95=000	Bit-oriented: corresponds to commands AT\V, AT-M, AT*Q and ATQ

Note. Should it not be possible to make an entry in the input field, check the settings in *HyperTerminal*: Choose *File ⇒ Properties* from the menu and open the *Settings* register.

Double-click on the *ASCII Setup* button and activate *Echo typed character locally*. Entered characters are then shown in the input field (refer to Figure 3-10).
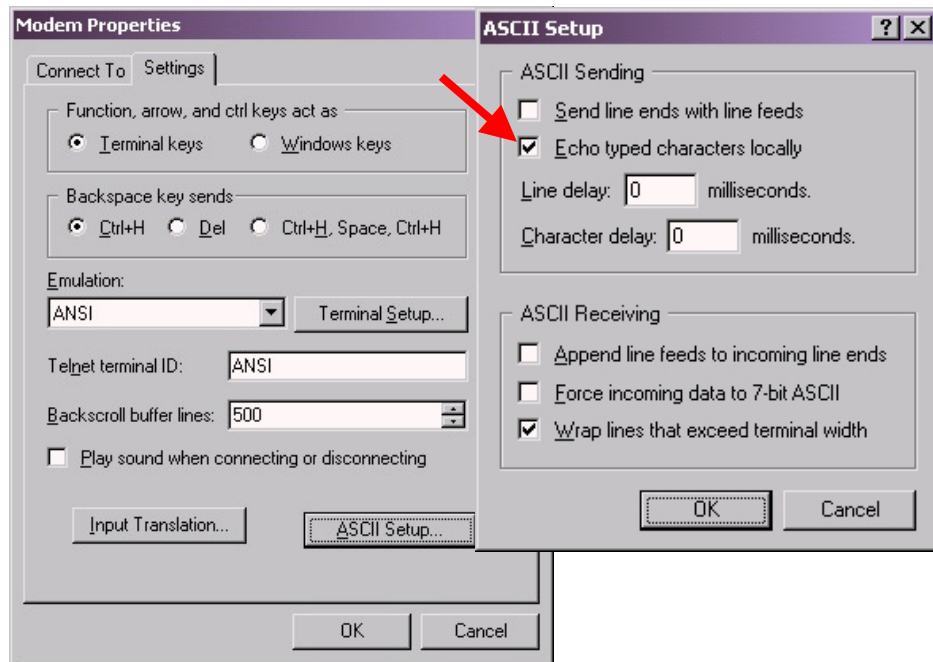
Figure 3-10   Procedure for displaying entered AT commands

The following example shows input with the HyperTerminal program:
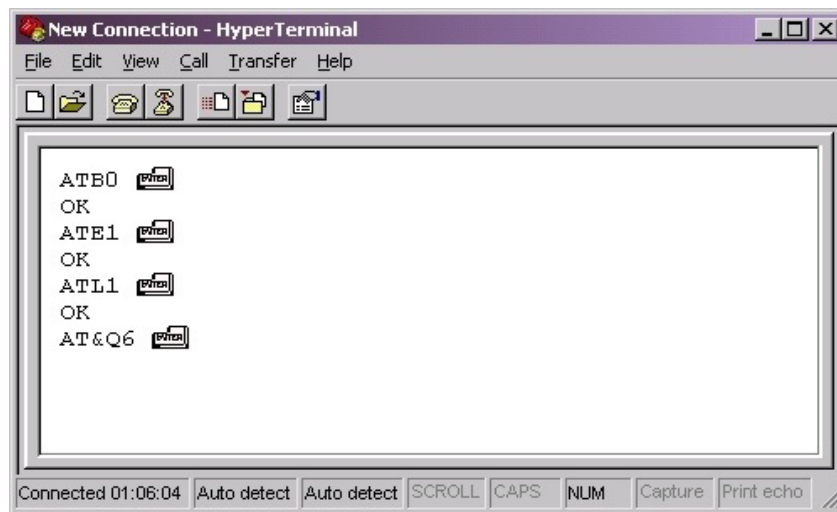
Figure 3-11   Example of entering AT commands

6.   Save the data on the modem

Since the data have so far only been contained in the RAM, they must now be saved. To save the data, enter the following commands:

AT&W0   Data on the RAM are retentively stored in register "0"
AT&Y0   Retentive register "0" is permanently set as the start register after "Power ON"

The modems are ready after switching off and on.

Typically, further settings are not necessary but cannot be excluded since some modems deviate from the Hayes standard.

Note:

Execute these two commands every time after modifying parameters.

3.2.2   Establishing the connection

Perform the following steps:

1.   Perform steps 1 to 5 described in the preceding section, "Initializing the modem": *HyperTerminal* shows a blank input field.

      Note that the baud rate for RMOS devices must only be 9600 bd.

2.   Enter the following command directly into the input field:

      ATD T *123*   *123* being the telephone number to be dialed.
                        Note that there must not be a blank or dash between the area code and the telephone number.

3.   Wait until the connection has been established and the modem is sending the acknowledgement.

4.   Exit the *HyperTerminal* program

      –   Press the *Exit* (cross) button

      –   Acknowledge the prompt with "Yes"

      Only the program is terminated, whereas the connection remains in force. This allows subsequent transfer of data in ProTool CS.
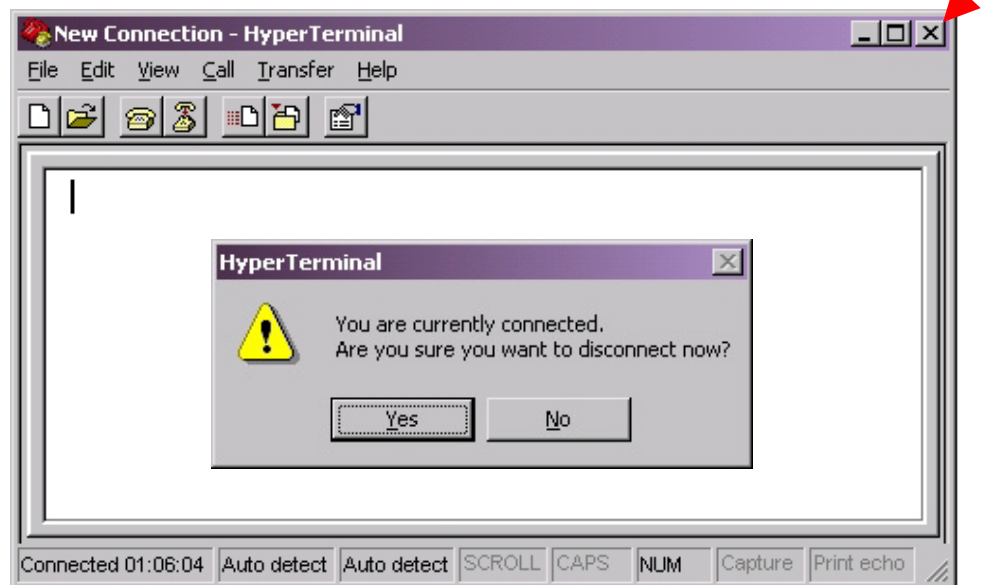
Figure 3-12   Close the *HyperTerminal* program

3.2.3   Transferring configuration data with ProTool CS

Perform the following steps:

1.   Open your project in ProTool CS.

2.   On the *File ⇒ Download ⇒ Setting...* menu, select the *Serial* parameter.
      Select the COM port you are using and the transmission rate for the
      modem (19200 bd are mandatory). Click OK to confirm.
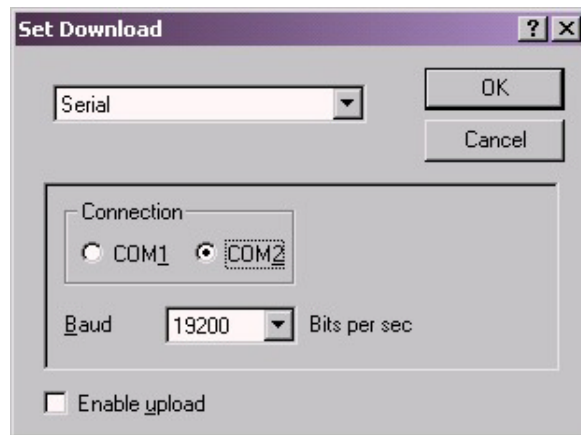
Figure 3-13   Settings for serial download

Note

Select the check box "Allow upload" if you want to transfer the source file for
the project as well to the operating unit in order to support a subsequent
upload[1]).

---

3.   Make sure that your operating unit is in Download mode. You will find
      more information on this in the equipment manual for the HMI operating
      unit.
      If the operating unit is a PC, use the program *PC Loader*: *Start ⇒
      SIMATIC ⇒ ProTool/Pro RT ⇒ ProTool/Pro RT Loader*
      (refer to the operator's guide for ProTool/Pro Runtime, Section 5.5.2)

4.   Choose *File ⇒ Download ⇒ Start Project Download* on the menu: ProTool
      establishes the connection to the operating unit.
      Wait until the download operation has finished.

3.2.4   Disconnecting

1.   Check whether the download operation has finished.

2.   Restart HyperTerminal.

      Enter "**+**" three times ("**+++**") within one second to reset the modem to
      Control mode.
      Note. A different ASCII character can be agreed in register S2.

3.   Enter the command "**ATH**". The link is then disconnected.

---

[1]   Important requirements have to be satisfied for the "Upload" function, depending on the HMI unit.
       Refer to online Help and the equipment manual.

3.3 Settings for uploading projects

Constraint

Projects cannot be uploaded with the TP 170A.

Important requirements have to be satisfied for the "Upload" function, depending on the HMI operating unit. Refer to online Help and the equipment manual.

Application

A download operation normally transfers the executable project to the operating unit. If you want to use the original project data to expand the project or for error analysis, they must reside on the configuration computer.

On Windows CE devices (only with external storage medium), however, you can not only store the compiled project but also the project itself in the source format so that the project can be retrieved (uploaded) later from the operating unit.

Advantage:

In this way you can subsequently perform analyses and changes to an existing project, even though the original configuration computer might not be available or the source file (`*.pdb`) belonging to the project is no longer present on the configuration unit.

Requirements

For a project to be uploaded later, the following criteria must be satisfied:

	Requirements for uploading projects
1.	There must be sufficient memory on the operating unit for it to be possible to store the additional project data.
2.	The storage location for the source file must be set on the operating unit. The storage locations for the project file and the source file can be set separately: internal flash memory or PC card (refer to the equipment manual).
3.	The project file must be downloaded with transfer of the source file.

Note

The uploaded and decompressed project file (*.pdb) can only be opened in a version of ProTool whose version number is higher or equal to the ProTool version with which the project was created.

Caution

ProTool cannot check whether the source file on the operating unit really does belong to the project being run on it. If, at some stage or other, you really have performed a download operation without downloading the source file while doing so, there might be old project data still on the operating unit. The data might no longer match the current project.

Settings for uploading by means of TeleService

The TS adapter settings performed for the download operation are used.

Note the following:

1. Check the upload settings in ProTool:

    Open the dialog box by choosing *File ⇒ Upload ⇒ Setting*... from the menu.

    The following dialog window opens:
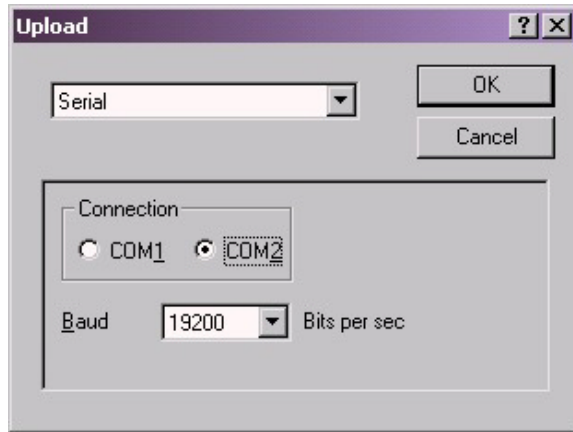
Figure 3-14   Upload settings

2. Select the type of connection between the operating unit and the configuration device:

    – Serial: Port and baud rate

    – MPI: OP address of the operating unit

    – Ethernet: IP address or name of the computer

    Your settings will be saved and used as default values for subsequent uploads.

3. Start the upload operation by choosing *File ⇒ Upload ⇒ Start* from the menu.
    The upload operation sets the operating unit to Upload mode via remote control.
    A requirement for this is that the type of upload being used has been configured on the operating unit.

4. If the upload operation has been performed successfully, the "Save As" dialog box opens.

    Enter the name concerned or select an existing project so that it will be overwritten, and click *Save*.

    The retrieved project will be saved and automatically opened immediately in ProTool.

3.4 Settings for remote maintenance with TeleService

Principle

State-of-the-art automation concepts make high demands on process visualization. A major factor in this respect is powerful and simple process monitoring and maintenance by service points spatially separated from the systems.

In ProTool/Pro Runtime (ProTool/Pro RT), ProTool features program with which you can run your configuration in Windows, visualize the process (Operator & Monitor) and access the remote PLC to perform maintenance and troubleshooting.

Requirements for commissioning

The following criteria must be satisfied before you can access the remote system:

	Requirements for remote maintenance with TeleService
1.	ProTool/Pro RT must be installed on the service PC[1]. You will find the Runtime software on the *SIMATIC ProTool/Pro* CD-ROM. Its installation is described in the User's Guide for ProTool/Pro Runtime (Section 5.2.1). The hardware and software requirements are listed in the same manual (Section 2.1).
2.	The Runtime software authorization must be installed on the system before the Runtime software can run. The authorization for PCs has to be ordered separately on a license disk. The license is subdivided by the number of process tags, called power tags. A process tag contains a connection to the PLC. There are licenses for power tags having 128, 256, 512 and 2048 tags. There are also upgrades (power packs) for updating to a larger number of power tags.
3.	It must be possible to connect the PLC, on which remote control has to be performed, to ProTool/Pro Runtime. The following PLCs can be connected by means of TeleService to ProTool/Pro RT: **SIMATIC S7 over MPI** – S7-200 (except for S7-212) – S7/M7-300 (all CPUs) – S7/M7-400 (all CPUs) **SIMATIC S7 over PROFIBUS-DP** [2] – S7-200 (all CPUs having an integrated PROFIBUS-DP interface [3]) – S7/M7-300 (all CPUs with integrated PROFIBUS-DP interface [2]) – S7/M7-300 with CP342-5 [2] – S7/M7-400 (all CPUs with integrated PROFIBUS-DP interface) [2] – S7/M7-400 with CP443-5 [2]
4.	On your service PC[1], there must be a loaded ProTool/Pro RT project with which you can access the STEP7 program on the remote system.

[1] The service computer is the PC on which ProTool/Pro RT is running and which is used to establish the connection to the remote system.
[2] ProTool/Pro RT is the active node; communication takes place with the S7 driver
[3] Refer to Catalog ST70

Remote maintenance scenarios

The interconnection diagram is illustrated in Figure 1-6.

Two scenarios are possible for remote maintenance/Operator & Monitor:

- The ProTool/Pro RT runtime software is installed on the same PC as the ProTool/Pro CS configuration software (used to create the Runtime project)

- The ProTool/Pro RT runtime software is installed on a different PC from the ProTool/Pro CS configuration software.
  In this latter case the Runtime project has to be transferred from the configuration computer to the service computer[1].

Configuration software and runtime software are on the same PC

In this scenario, the golden rule is to perform the steps described in Section 3.1 *Settings downloading with TeleService*:

1. Parameterize the PU/PC interface (refer to Section 3.1.1).

2. Parameterize the local and remote modems (refer to Sections 3.1.2 and 3.1.3).

3. Parameterize the TS adapter (refer to Section 3.1.4).

4. Establish a telephone connection to the remote system (refer to Section 3.1.5).

5. Open your project in ProTool/Pro CS.

6. Start the ProTool/Pro RT runtime software directly from the running

   configuring software by clicking on
   You can then access the remote system.

7. Disconnect after you have finished your work (refer to Section 3.1.7)

Configuration software and Runtime are on different systems

In this scenario the Runtime project is only on the configuration computer in the first instance.

1. Copy this project from the configuration computer to the service computer[1]

   The following options are available to you in Windows for transferring the compiled file:

   − Copy the `*.fwd` file to a floppy disk and then from the floppy disk to the service computer. If your project is too large for one floppy disk, use disk download

   − Floppy disk download:
     In ProTool/Pro CS, choose *File ⇒ Download* and select drive *A:\ in the Destination directory* dialog box. The executable project file is transferred to one or more floppy disks (file extension *`.f00`)

---

[1]   The service computer is the PC on which ProTool/Pro RT is running and which is used to establish the connection to the remote system.

To unpack the compressed project file on the destination device, choose *SIMATIC ⇒ ProTool/Pro RT ⇒ ProTool/Pro Disk Download* from the Start menu. Select the compressed file (*.f00) in the Download dialog box and specify the destination directory to which you want to copy the unpacked project file.

– Copy the *.fwd file over a parallel or serial cable by means of the PC direct connection from Windows 98 SE to the service computer.

– Copy the *.fwd file over a parallel or serial cable by means of the data communication connection from Windows NT or Windows 2000 to the service computer.

– Copy the *.fwd file over a network to the service computer.

– If the service computer is connected to the configuration computer over an MPI/DP network, you can download the RT project with the ProTool/Pro RT Loader program and start it. You will find more information in the *ProTool/Pro Runtime User's Guide* (Section 5.5.2).

Note

Before starting a new Runtime project, delete all archive files on your service computer that were not created with the new project.

1. Parameterize the PU/PC interface (refer to Section 3.1.1).

2. Parameterize the local and remote modems (refer to Sections 3.1.2 and 3.1.3).

3. Parameterize the TS adapter (refer to Section 3.1.4).

4. Establish a telephone connection to the remote system (refer to Section 3.1.5).

5. Start the Runtime software on the service computer by double-clicking on the compiled project file (*.fwd).

   You can then access the remote system.

6. Disconnect after you have finished your work (refer to Section 3.1.7)

Appendix

A

A Cable wiring diagrams

A.1 RS232 cable (PC ⇒ TS adapter)

RS232 cable (null modem cable)
such as 6ES7 901-1BF00-0XA0)

To PC:	**To TS adapter**
9-pin sub D female connector	9-pin sub D female connector

DCD	1	NC
RxD	2	
TxD	3	
DTR	4	
GND	5	
DSR	6	
RTS	7	
CTS	8	
RI	9	NC
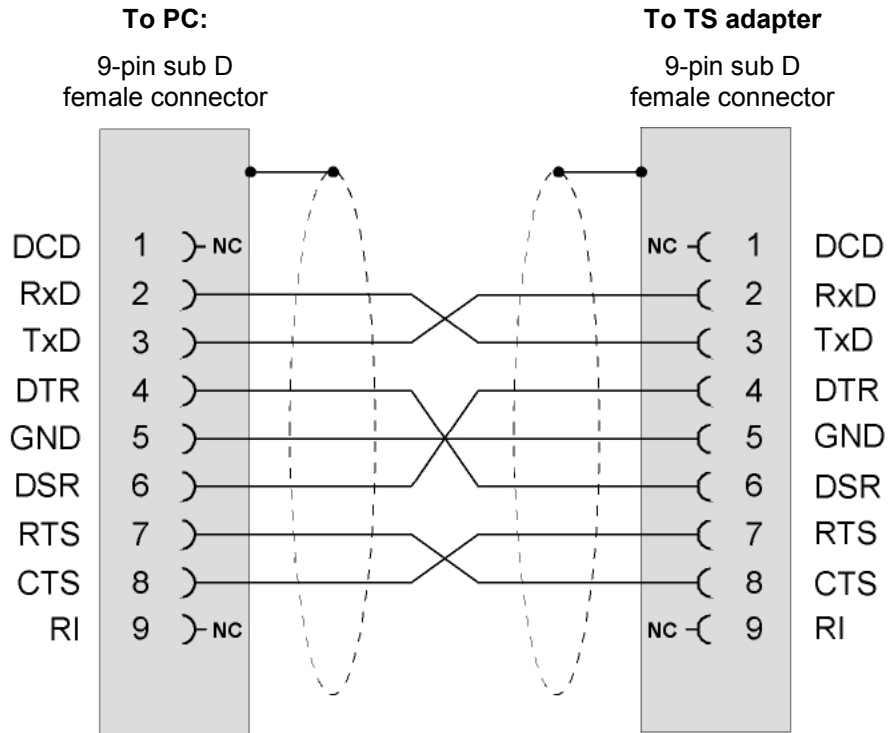
Interconnection diagram for direct connection of the TS adapter
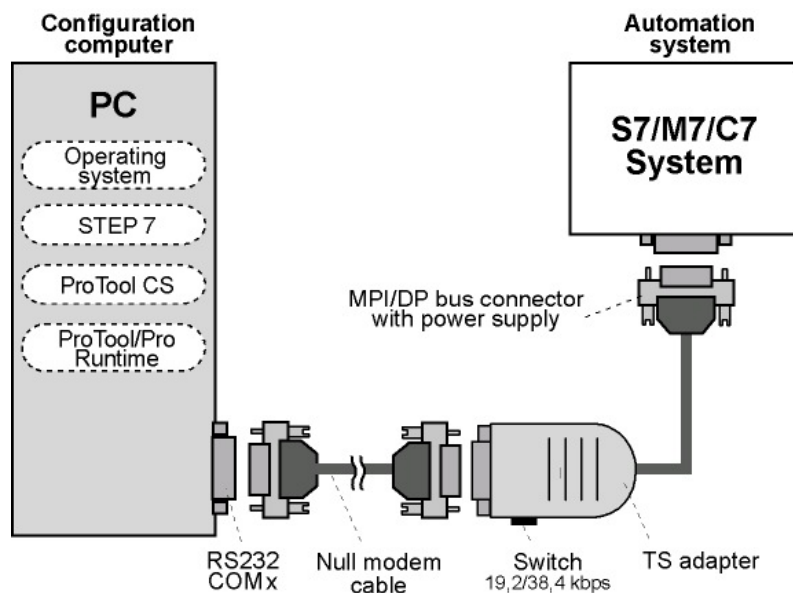
If an external power pack is available for the TS adapter, the TS adapter can be parameterized without the automation system.

A.2 Standard modem cables (PC ⇒ modem and modem ⇒ TS adapter)

Standard mode cable for Hayes-compatible modem with 25-pin socket connector (enclosed with every modem)

To PC / To TS adapter: **To modem:**

9-pin sub D   25-pin sub D
female connector   male connector

DCD	1	8	DCD
RxD	2	3	RxD
TxD	3	2	TxD
DTR	4	20	DTR
GND	5	7	GND
DSR	6	6	DSR
RTS	7	4	RTS
CTS	8	5	CTS
RI	9	22	RI
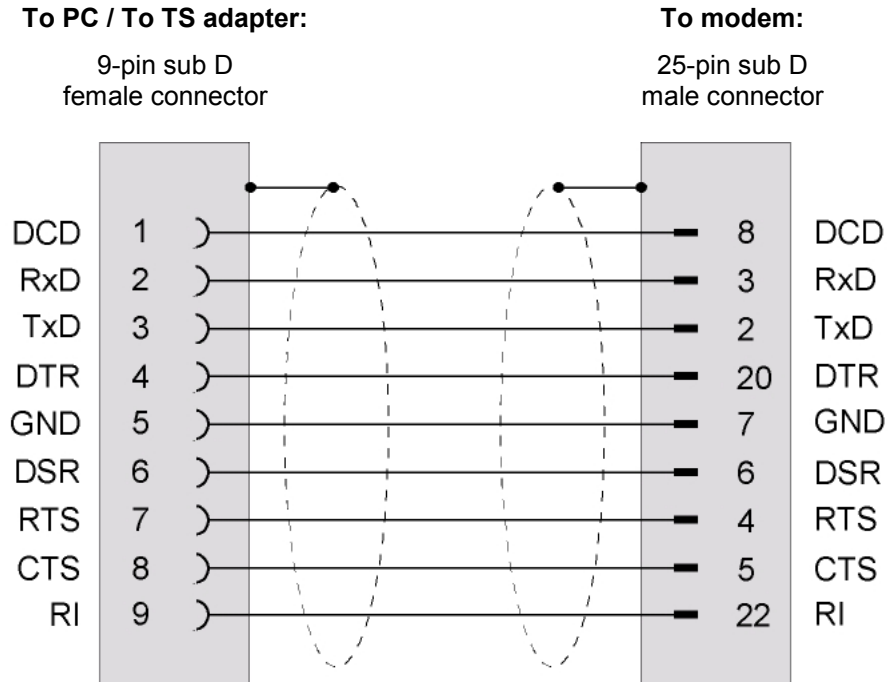
If your modem is equipped with a 9-pin socket connector, the standard modem cable must be configured as follows:

To PC / To TS adapter: **To modem:**

9-pin sub D   9-pin sub D
female connector   male connector

DCD	1	1	DCD
RxD	2	2	RxD
TxD	3	3	TxD
DTR	4	4	DTR
GND	5	5	GND
DSR	6	6	DSR
RTS	7	7	RTS
CTS	8	8	CTS
RI	9	9	RI
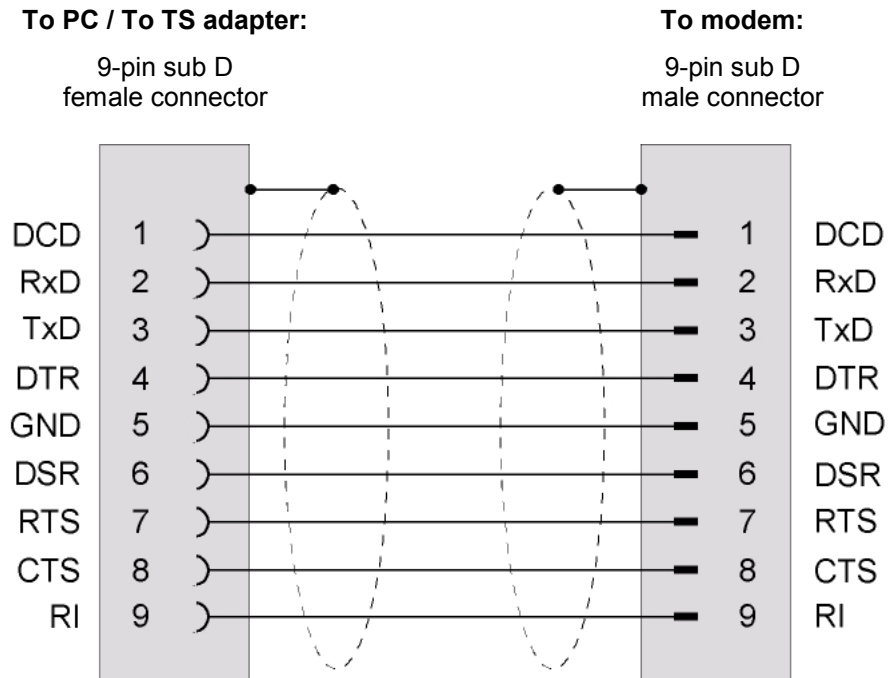
A.3   Special cables (modem ⇒ HMI operating unit)

Special cable (has to be created)

To modem   **To HMI operating unit**

25-pin sub D
female connector

9-pin sub D
female connector

TxD	2		NC ┤ 1	DCD
RxD	3		2	TxD
RTS	4		3	RxD
CTS	5		4	DTR
GND	7		5	GND
DSR	6		6	DSR
DCD	8		7	RTS
DTR	20		8	CTS
RI	22		9	RI
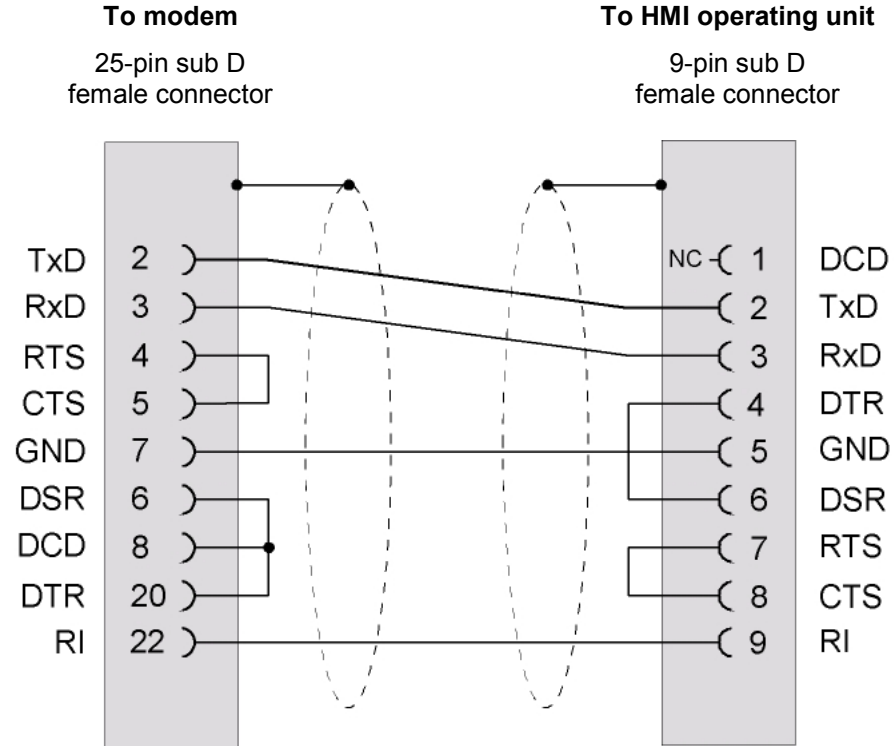
Abbreviations

The meanings of the abbreviations used in this document are as follows:

ANSI	**A**merican **N**ational **S**tandards **I**nstitute
AS 511	Driver of the PU interface on SIMATIC S5
ASCII	**A**merican **S**tandard **C**ode for **I**nformation **I**nterchange
CAPI	**C**ommon **A**pplication **P**rogramming **I**nterface
COM	Serial communications port on configuration computer
CPU	**C**entral **P**rocessing **U**nit
DP	Distributed I/O
HMI	**H**uman **M**achine **I**nterface
ISDN	**I**ntegrated **S**ervices **D**igital **N**etwork
LED	**L**ight-**e**mitting **d**iode
Modem	**Mo**dulator/**dem**odulator
MPI	**M**ulti**p**oint **I**nterface (SIMATIC S7)
OLE	**O**bject **L**inking and **E**mbedding
OP	**O**perator **P**anel
PC	**P**ersonal **C**omputer
PU	**P**rogramming **U**nit
RAM	**R**andom **A**ccess **M**emory
PLC	**P**rogrammable **L**ogic **C**ontroller
TCP/IP	**T**ransmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol
TP	**T**ouch **P**anel
USB	**U**niversal **S**erial **B**us

Glossary

Automation system	Controller in the SIMATIC S7 series (such as SIMATIC S7-200/300/400).
Baud rate	Unit of the speed with which data are transferred. The baud rate is stated in bps or kbps.
Boot	Load procedure that transfers the operating system to the working memory of the operating unit.
CAPI	**C**ommon **A**pplication **P**rogramming **I**nterface: Interface through which the programs can access ISDN devices.
Click	An event that you trigger by pressing the left button on your mouse or, on touch-operated devices, by briefly touching a button with the finger tip.
COM interface	Serial communications port on configuration computer The modem or operating units are connected to this interface.
Configuration	Definition of system-specific default settings, messages and screens with the help of the ProTool CS configuration software.
Controller	Expression covering all devices and systems with which the operating unit communicates (such as SIMATIC S7 or PC).
Double-click	An event that you trigger by quickly pressing the left button twice on your mouse or, on touch-operated devices, by briefly touching a button twice with the finger tip.
Download mode	Operating mode of the operating unit in which data are transferred from the configuration computer to the OP.
ISDN	**I**ntegrated **S**ervices **D**igital **N**etwork: service offered by a service provider for the digital transmission of data and speech.
ISDN adapter	ISDN device connected to a serial COM port to transfer data over the digital network.
ISDN modem	ISDN adapter with integrated analog modem functionality.
Modem	**Mo**dulator/**Dem**odulator: communication device that allows a computer to send and receive data over telephone circuits. It converts digital pulses of the computer into analog signals, and the other way round.

Modem connection	In a modem connection, the connection between the configuration computer, on which TeleService is installed, and the automation system, on whose MPI the TS adapter is plugged in, is established over a modem link. In this way the configuration computer is connected over the long-distance connection and the TS adapter to the MPI bus of the automation system.
MPI	The interface with multipoint capability (MPI) is the programming unit interface of the SIMATIC S7/M7. It supports simultaneous operation of several programming units, text displays, operator panels conencted to one or more central processing units. The nodes on the MPI can communicate with each other. On an MPI network, a separate MPI address has to be assigned to each node.
Multi Panel (MP)	Multi-function configurable operating unit with graphic display and Windows CE operating system for the operation and monitoring of machines and systems.
Operator Panel (OP)	Configurable operating unit for the operation and monitoring of machines and systems.
PPP	Point-to-Point protocol. A standard procedure for data communications over the Internet. PPP is used for communication between a computer and an Internet service provider.
ProTool CS	ProTool **C**onfiguration **S**ystem. The name ProTool CS includes three versions of the configuration software: **ProTool/Pro CS**, **ProTool** and **ProTool/Lite**.
ProTool/Pro RT	ProTool/Pro Runtime. Process visualization software with which you can run the configuration created with ProTool CS on your Windows-based system.
RAM	The RAM (Random Access Memory) is a read/write memory in which every memory location can be addressed individually and whose contents can be modified. RAMs are used as data and program memories.
Retentive	Data are referred to as retentive when they have the same value after a power supply failure as they did before the power failure.
RS232	Standard interface for serial data transmission with a defined voltage level. The transmitter and the receiver are electrically connected.
RS485	Standard interface for serial data transmission with very high transmission rates.
Runtime software	Refer to ProTool/Pro RT
Set PU/PC interface	”Set PU/PC interface” is an application in STEP 7 in which you can parameterize your COM port. For TeleService, you install the TS adapter and parameterize this interface depending on your configuration.

STEP 7   Programming software for SIMATIC S7, SIMATIC C7 and SIMATIC WinAC

Transmission rate The transmission rate is the transmission speed on the telephone circuit. The maximum transmission rate is the main criterion for the performance capability of a modem. The faster data can be transmitted, the lower are the telephone charges.

TS adapter   The TS adapter is used to connect an automation system by means of a modem to a telephone network in order to prepare it for using TeleService. For this purpose, the TS adapter has a parameter memory in which different parameter records are stored for TeleService mode. Furthermore, the TS adapter has a switch at which you ca set the transmission rate for a direct connection.