compatible with you

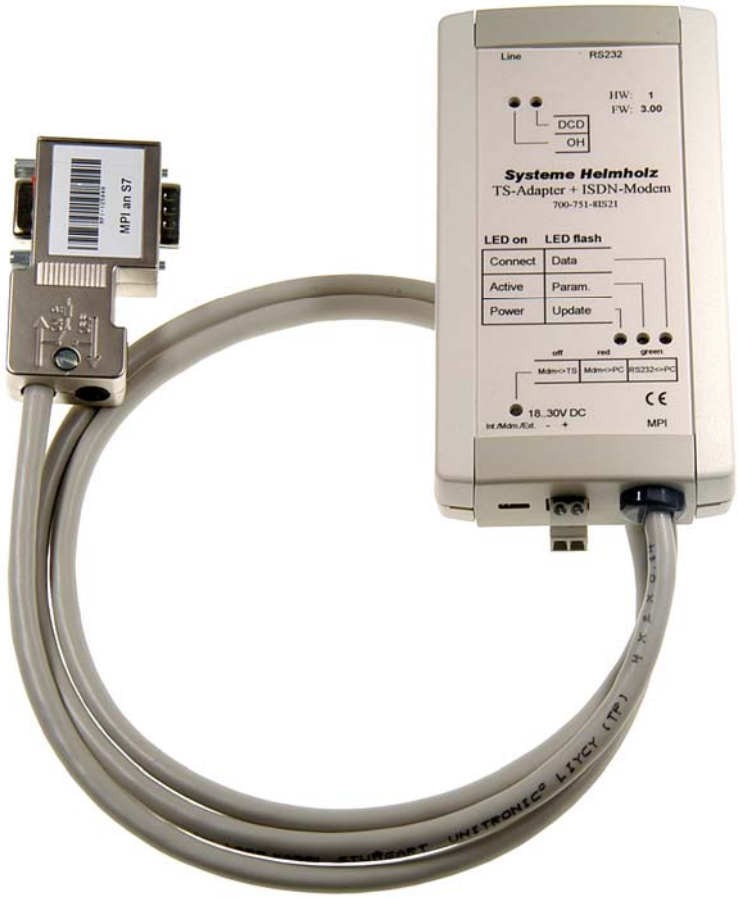
SSW7-TS with ISDN Modem

Teleservice via the MPI Bus

Manual

Version: 2 / 2005-02-02

HW: 1 / FW: 3.0 and higher



Order number: 700-751-8IS21

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Design

With the SSW7-TS with ISDN modem, teleservicing of a system can be performed via the MPI bus.

The SSW7-TS with ISDN modem has a 1.2 m long connecting cable which can be directly plugged into the CPU connector of the programmable controller or at any other point in the MPI network.

An ISDN modem prepared for use in many countries of the world is integrated into the housing of the SSW7-TS.

The 9-way SUB D connector can be connected for parameterization or for in-situ use as a PC adapter. The "Int./Mdm./Ext." switch switches between the internal modem and the RS232 interface. In switch position "Int.", the SSW7-TS works directly with the modem and the RS232 interface has no function.

In the "Ext." position, the LED lights up. In this mode, it is possible to use the SSW7-TS with modem as a normal PC adapter and the modem is deactivated.

In the "Mdm." Position, the LED is lit red and the modem can be used directly from the PC via the RS232 interface using the connecting cable described. In this condition, MPI bus operation is deactivated.

The SSW7-TS with modem receives its power supply from the CPU via the MPI cable. If 24V are not available at the point of connection or if several MPI adapters are connected to a CPU at the same time, 24V can be input from an external source.

The connection to the MPI bus can be extended with an additional cable. For that purpose, Systeme Helmholz GmbH offers the following products:

MPI bus extension cable, 5m	700-751-6VK11
MPI bus extension cable, 10m	700-751-6VK21
MPI bus extension cable, special length	700-751-6SO11

When extending the MPI bus, please follow the relevant configuring guidelines as defined in the documentation of your PLC.

The DIN mounting rail bracket for the SSW7-TS with ISDN modem can be re-ordered with order number 700-751-HSH10.

FM35x modules can not currently be parameterized with the SSW7-TS.

LED displays

The three LEDs on the top of the device provide you with information about the operating status of the SSW7-TS with modem. You can use them to locate sources of error quickly.

The LEDs have three different states: Off, on, blinking. If the LED is off, none of the labeled states applies.

LED "Power" off:	The adapter has no power or is faulty
LED "Power" on:	The adapter is being powered with 24V and the processor is running
LED "Active" on:	The SSW7-TS has parameterized the modem and registered in the MPI network
LED "Connect" on:	The SSW7-TS has established a connection
LED "Connect" is flashing:	The SSW7 is transmitting data
LED "OH" on:	A call is being switched through
LED "DCD" on:	A connection is being established with a modem
LED "RS232" off:	The internal modem is working with the SSW7-TS; the RS232 interface has not function.
LED "RS232" green:	The internal modem is deactivated and the RS232 interface can be used (for parameterization or use as a PC adapter)
LED "RS232" red:	The internal modem can be used directly from the PC via the RS232 interface.

If the SSW7-TS with ISDN modem that is on the system is connected to the modem and the PLC, it will establish contact with the MPI bus as soon as the internal modem has been successfully initialized. The LED "Active" should light up after a short time.

If only the LED "Power" lights up, either the modem has not responded to initialization with "OK", or the SSW7-TS with ISDN modem has not joined the MPI bus (e.g. wrong MPI address ?).

connection possibilities:

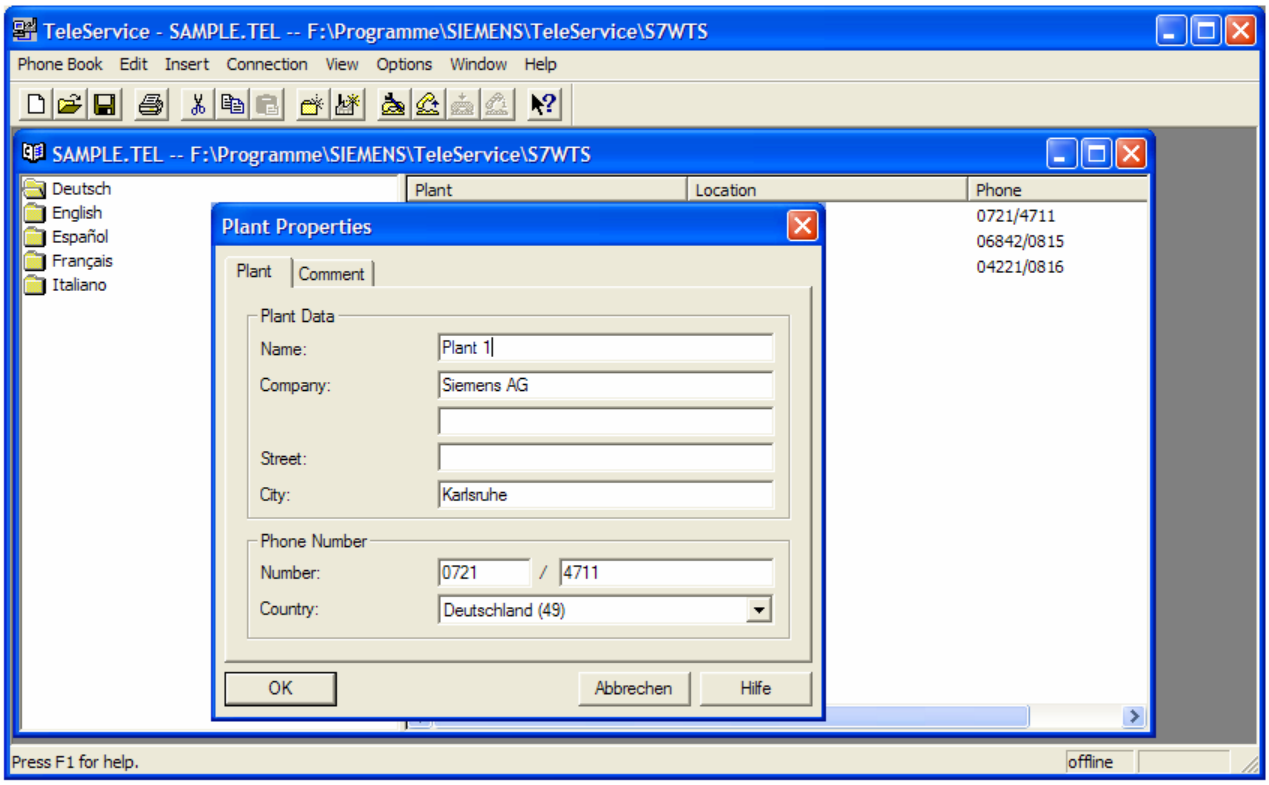
	analog	ISDN	GSM
analog	yes	no	yes
ISDN	no	yes	yes
GSM	yes	yes	yes

Parameterization

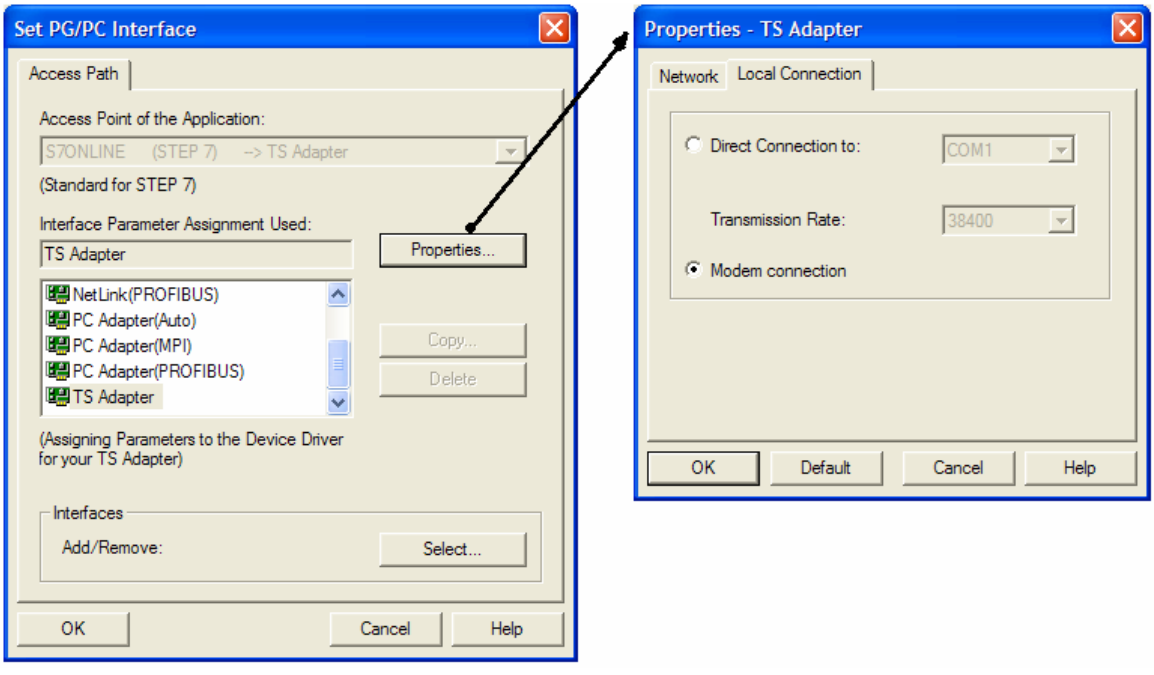
The SSW7-TS with ISDN modem settings are always defined in the software used for communication with the programmable controller.

In most cases, you will also need an additional software module for your programming software, e.g. TeleService from Siemens (version 3.0 and later), to parameterize the SSW7-TS with modem and operate the connection (telephone book of dialable systems).

Example: Setting up a system



Example: Dialing up the SSW7-TS



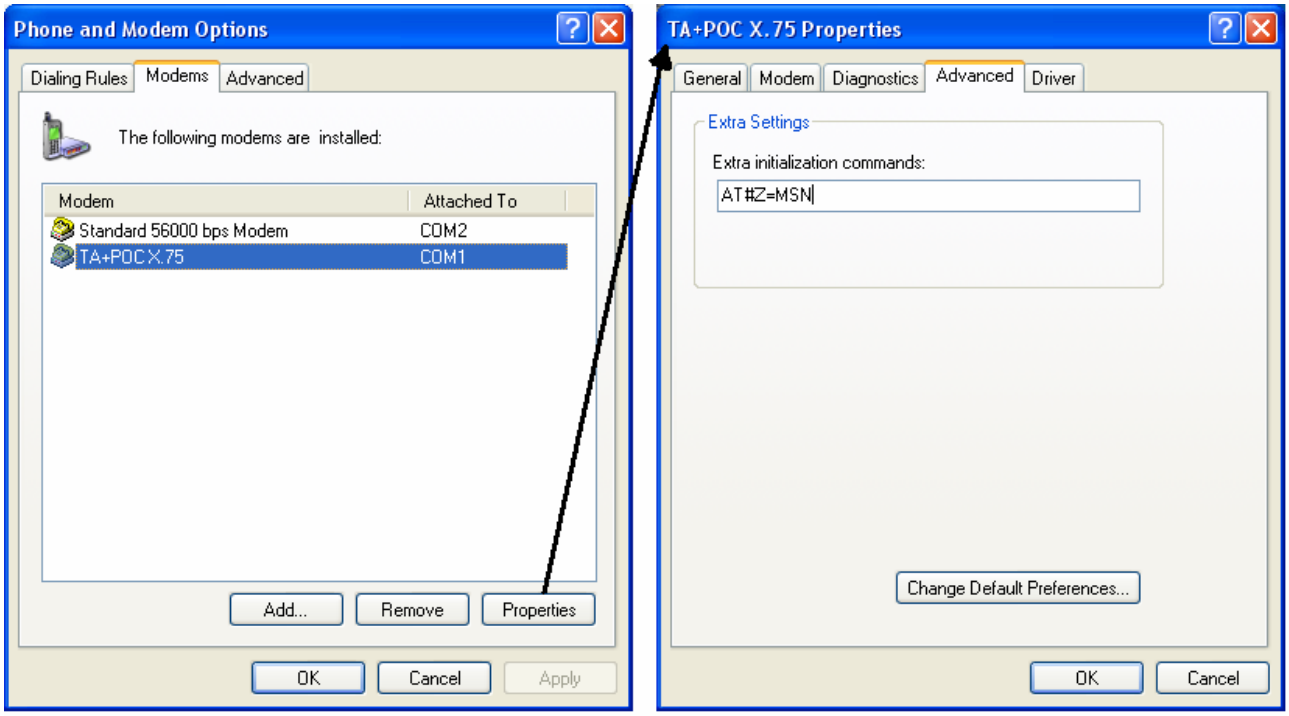
Installing the local modem

If you have already installed a modem under Windows, you can also use this modem for teleservice.

Plug-and-play modems are automatically recognized by the PC and integrated in the system as soon as they are connected. The driver supplied with the modem is required for this. You can manually install modems without plug-and-play capability via the control panel under the "Telephone and modem options" in the "Modems" dialog box. Please note that the data transmission protocol is set and supported on X.75.

It should be possible to address the modem as soon as you have installed it on one of the COM interfaces of your PC. Select the installed mode in the parameterization of the programming software.

Example: Settings on the local modem



For the call-back function of the TS adapter, please define an MSN (multiple subscriber number) for the data port on the local modem. See your modem documentation for the specific AT command to use.

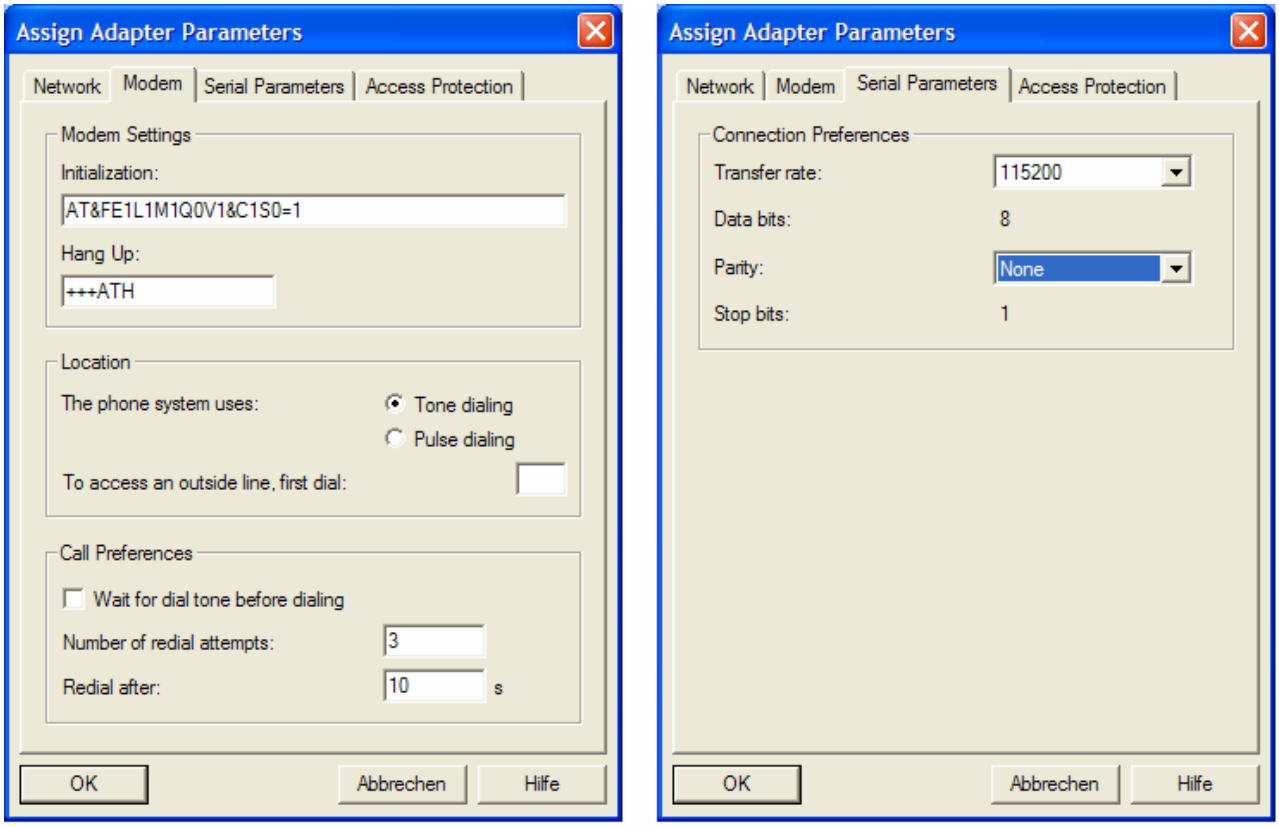
To test your teleservice software and the modem on the PC, you can dial our SSW7-TS test system. The phone number can be obtained from our Support.

Installing and parameterizing the modem in the system

The SSW7-TS with ISDN modem initializes the internal modem after switch-on to make it ready to receive calls. An initialization string is stored in the SSW7-TS for that purpose. This string can be changed with the software.

Parameterization is possible both locally at the workstation ("Direct connection") and for an existing phone connection ("Modem connection").

Example: Parameterizing the SSW7-TS



The "PG_DIAL" and "AS_DIAL" functions for starting a call from an S7-CPU are currently not implemented.

Please consult the programming software manuals for further information.

The SSW7-TS with ISDN modem can also be used as a normal "PC adapter" without the teleservice software. The "Int./Mdm./Ext." switch can switch from the internal modem to the RS232 interface. It is possible to connect a PC with a standard commercial type null modem cable. The SSW7-TS with modem automatically detects the mode ("Modem mode" / "Direct connection" / "PC adapter").

Modem setting / initialization string

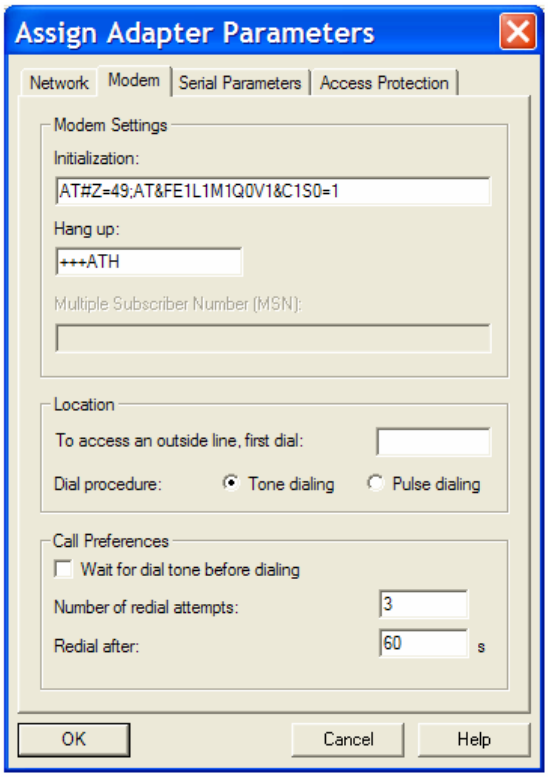
The internal modem of the SSW7-TS with ISDN modem is automatically initialized on power-on or connection. During initialization, the initialization string that has been entered in the TeleService software is sent to the modem and a positive response ("OK") is awaited.

`AT &F E1 L1 M1 Q0 V1 &C1 S0=1`

AT	Introducing modem commands
&F	Load factory configuration
E1	Echo input is ON
L1	speaker low volume
M1	speaker ON
Q0	Quiet control send messages to the PC
V1	Style of modem message in long form
&C1	DCD follows the telephone line carrier signal
S0=1	one ring to auto answer

If the SSW7-TS with ISDN modem is to be operated on a point-to-multipoint ISDN connection with several terminals, the MSN (multiple subscriber number) must be assigned to the internal modem module.

Example: Parameterization of the SSW7-TS with assignment of an MSN

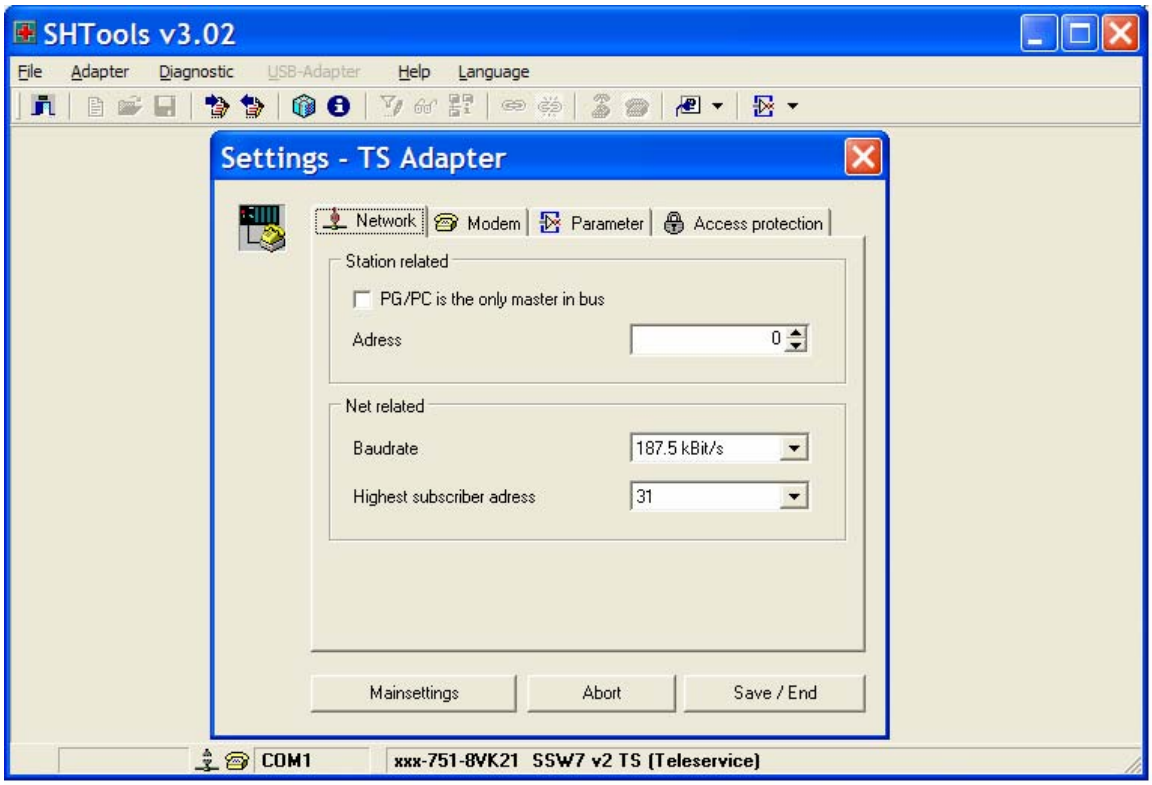


The AT command after the semicolon can also be assigned directly by a terminal program or via the HSComm software.

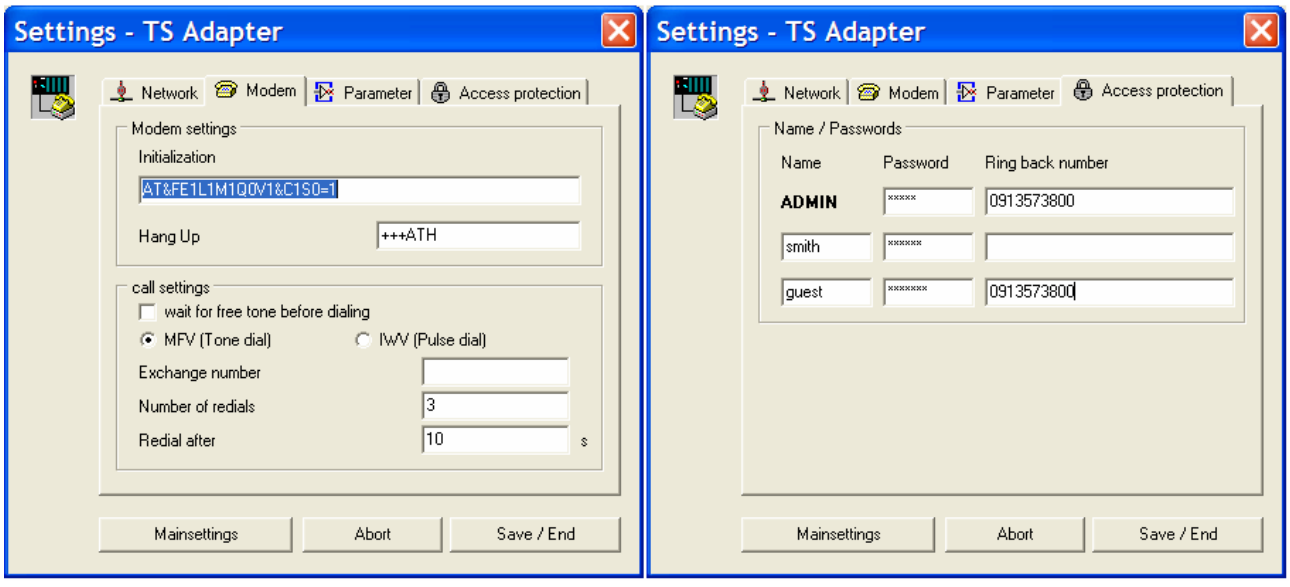
The programs are available on the enclosed CD.

SSW7-TS parameterization software

With the "SSW7 Tool V3", it is possible to preparameterize an SSW7-TS with any computer, even if there is no TeleService software installed on that computer.



Once set, parameters can be stored on the computer in a file and transmitted to further SSW7-TS's.



The "SSW7 Tool V3" can be obtained from our download area on our Internet site www.helmholz.de.

Speed up driver for Win 2000® and XP®

In direct mode the SSW7-TS can work with 115Kbaud. Therefor you have to install the Speed-up Treiber V3.0. The actual version is available at www.helmholz.de.

Is there an older high speed driver running you MUST close AND uninstall this before continuing!

The Speed-up tool creates a new serial COM port. The driver brings the data transfer from the virtual to the physical COM port and vice versa.

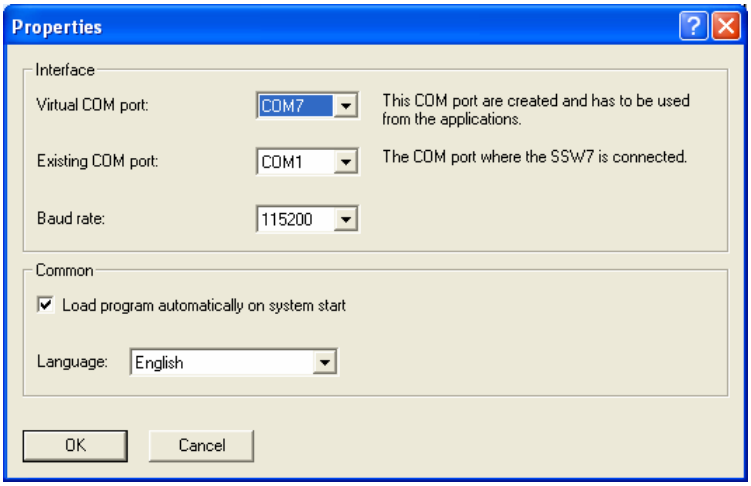
After the installation start the driver via the symbol in the start menu. There is only an additional symbol in the systray.

Right click to symbol opens the context menu for the properties.

1.) Activate the new virtual COM port in the dialog box.

2.) Set the COM port where the SSW7-TS is plugged in.

3.) Set the baud rate you want to use.



Select the „OK“ button to activate the driver.

This new COM port has to be used from your applications now. For more details please see the documentation for SSW7 driver software.

Right click to symbol opens the menu - select „end“ for deactivating the Speed-up tool.

Technical data

Order number	SSW7-TS with ISDN Modem, 700-751-8IS21
Dimensions	135 x 67 x 30 mm (LxWxH)
Weight	approx. 240g (incl. MPI cable & connector)
MPI interface	
Type:	RS485, isolated
Transmission rate:	19.2 kbps to 187.5 kbps
Cable:	1.2m
Connection:	Connector, SUB D 9-way
Modem connection	
Type:	ISDN connection, 64kbs
Connector:	RJ-11 socket
only modem function:	Connector, SUB-D 9-way V.24/V.28
Transmission Standards/Protocols	
B-channel:	V.110, X75, X25/X31, HDLC (transparent)
D-channel:	DSS1, X.31
dial-up procedure:	Hayes dial-up (AT-command set), V25bis async. Hotline 108 DTR, X.3 (PAD)
Transmission in D channel with 9.600 bps (X.31-D)	
Transmission in B channel with 64.000 bps (X.31-B)	
Communication interface	
Type:	RS232, serial asynchronous
Transmission rate:	9.6 kbps to 115 kbps
Connector:	Connector, SUB D 9-way
Power supply	
Voltage:	+24V DC ±25%, from the programmable control or external power supply
Power supply:	80mA (typ.) / 100mA (max.)
Degree of protection	IP 30
Electromagnetic compatibility (EMC)	
Interference emission	Class B to EN55022
Interference immunity on signal lines	±2kV acc. to EN61000-4-4
Noise immunity ESD	±6kV contact discharge EN61000-4-2 ±8kV air discharge EN61000-4-2
RF radiation fields	10V/m acc. to EN61000-4-3
Conducted RF interference	10V acc. to EN61000-4-6
Climatic conditions	
Temperature during operation	0° C to +60°C
Temp. storage/transport	-20° C to +60°C
Relative humidity operation	5% to 85% at 30°C (no condensation)
Relative humidity storage	5% to 93% at 40°C (no condensation)
Special features	
Quality assurance	According to ISO 9001:2000
Maintenance	Maintenance-free (no battery)

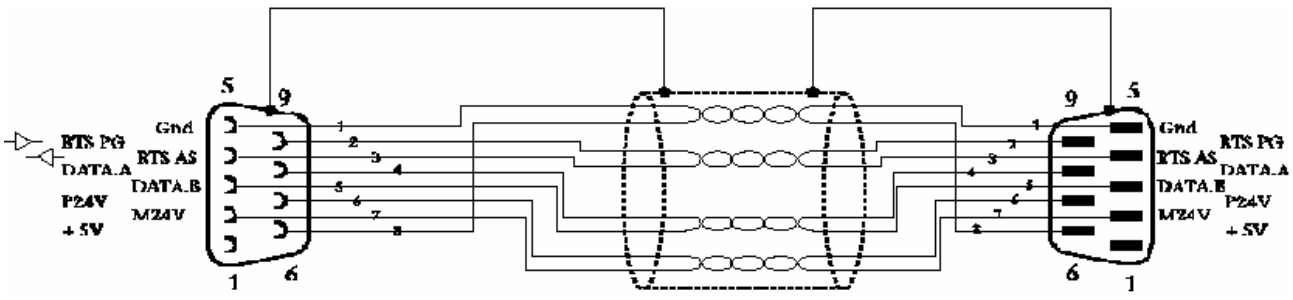
Pin assignment

Pin	SUBD connector PC	SUBD connector MPI
1	DCD	n.c.
2	Rx	M24V
3	Tx	DATA.B
4	DTR	RTS AS
5	GND	0V (M5V)
6	DSR	n.c.
7	RTS	+24V
8	CTS	DATA.A
9	RI	RTS PG

RJ11 Pins	Designation
1 - left	SRB / Rx-
2 - center left	STB / Tx-
3 - center right	SRA / Rx+
4 - right	STA / Tx+

Connecting cable

MPI extension cable (700-751-6VKx1):



PC to SSW7-TS for direct operation or use of the modem (700-751-7VK81):