





S7-LAN Connector | Art.Nr. 9352-LANCON



Documentation for Version 1.71



1 Description

The S7/MPI-LAN connects the computer via a TCP / IP network, with a MPI - or Profibus - interface (9 pin connector of the PLC).

2 System requirements

2.1 Operating system(s)

Windows

- 10
- 8
- 7
- Vista
- XP
- ME/2000/NT

2.2 Software

- PLC programming software (eg. PG2000, Step $\ensuremath{\mathbb{C}}$ 7, S7 for Windows, Microwin)
- Direct driver for Simatic-Manager for LAN
- PLC VCOM Software

A video description of the installation of direct-driver and how to configure it can be found on the page support!

2.3 Hardware

- Network card 10/100MBit
- 24V power supply (Phoenix socket or RS485 interface)

2.4 Provided PLC

- S7-200
- S7-300 (provides baud rates up to 12M (when the PLC is able to support this)
- S7-400 (provides baud rates up to 12M)
- FM-devices
- Sinamix (Step7-direct-driver up V1.20 or PLCVCom up V2.71)
- MicroMaster and other electrical drives and inverter-feds (Step7-direct-driver up V1.20 or PLCVCom up V2.71)
- Sinumerik (only PLC-side)
- SEW-EURODRIVE power inverter

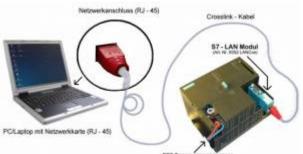
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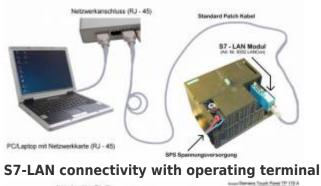
• and at last routing of S7-PLCs

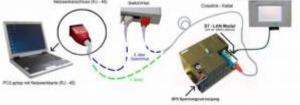
3 Connecting options

S7-LAN connected directly to the PC



S7-LAN connected to the PC via a switch or hub





4 Installation

4.1 Hardware

The S7-LAN module is plugged directly to the PLC. About the network connection of the module, the PLC can be connected as follows:

S7-LAN to Switch/Hub

Here, the network cable is plugged from the S7-LAN module to the switch / hub. If you use a crosslink cable, you plug this cable to the uplink port on the switch / hub. If you use a switch with auto - negotiating function, then you can plug the network cable into a free port on the switch.

S7-LAN to PC

In this variant, you must use a crosslink cable. This you plug with one end into the S7-LAN module and with the other end into the network card of your computer.

S7-LAN with operating terminal

The connecting cable of the panel must be plugged on the PPI / MPI / PROFIBUS - interface of the PLC. The



S7-LAN module will be plugged directly into the cable end (PLC side) of the operator terminal. The S7-LAN module is connected to the network as described above.

If your operator terminal is new, a serial communications must have taken place before. Therefore connect your terminal with the PC. After a successful communication, the terminal can be controlled via the PPI - / MPI - or PROFIBUS.

4.2 Software

To communicate with the PLC, please install following products for MPI-USB, S7-USB, MPI-II[only USB], MPI-LAN and en:hardware:s7:s7-lan:

Product	Driver
TIA-Portal	TIC \Rightarrow TIC ETH/USB for MPI, PPI or PROFIBUS configuration of driver with control-panel \Rightarrow PG/PC-interface
Simatic-Manager	TIC \Rightarrow TIC ETH/USB for MPI, PPI or PROFIBUS
Starter-Software	TIC \Rightarrow TIC ETH/USB for MPI or PROFIBUS
MicroWin	TIC \Rightarrow TIC ETH/USB for PPI and S7-22x-PLC
	PLCVCom for S7-21x-PLC (no MultiMaster-Protocol)
PG-2000	PLCVCom or for S7-LAN/MPI-LAN direct in interface-settings
S7 for Windows	TIC \Rightarrow TIC ETH/USB for MPI or PROFIBUS over PG/PC-interface
S7 for Windows	PLCVCom

To communicate with the PLC, please install following products for MPI/PPI and MPI-II[only serial]:

Product	Driver
TIA-Portal	No support has since Siemens drivers PC adapter serial support has taken out
Simatic-Manager	included driver "PC-Adapter" for MPI and PROFIBUS
Starter-Software	included driver "PC-Adapter" for MPI and PROFIBUS
MicroWin	included driver "PC/PPI-cable"
PG-2000	Standard-function, configuration in the interface-settings
S7 for Windows	Standard-function, configuration in the interface-settings

5 Control elements

5.1 Ethernet-LEDs



Green LED Off:	Link OFF (There is no connection to the network)
Green LED On:	Link ON (There is a connection to the network)
Yellow LED Off:	Listening (No data transfer)
Yellow LED flashing:	Transmission (data transfer running)
only yellow LED On (only for S7-LAN!):	Module is starting up, after ready for work LED is OFF



5.2 Lateral LEDs



The lateral LEDs behave exactly like the LEDs on the Ethernet socket.

5.3 Webbrowser

1. Open the web browser on your PC and enter the IP-address of your module. Confirm with <enter>. The main window of the module will open now.

Bitte wählen Sie die gewünschte Sprache aus	Please select desired Language
Deutsch	German
Englisch	English
Optionen	Optionens
<u>S7 Gateway</u> ist nicht lizenziert	<u>S7 Gateway</u> is not licensed
<u>Variable Steuem</u> ist nicht lizenziert	<u>Modify Variables</u> is not licensed
<u>Watchdog</u> ist nicht lizenziert	<u>Watchdog</u> is not licensed

2. In the main window of the module you can select your desired language, it shows you which options the S7/MPI-LAN owns and which options are unlocked for you.

3. Click on the desired language and then you will get into the configuration interface. Here you are able to select from different configuration options on the tab.

4. Further steps and the configurations of your module/ cable are descript in the chapter Configuration.

5.4 WebBrowser from V2.10 (S7-LAN) / V2.36 (MPI-LAN)

With following browser you can connect to the S7-/MPI-LAN:

1. Open the web browser on your PC and enter the IP-address of your module. Confirm with <enter>. The main window of the module will open now.



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2. On the top you can see the Firmware-version, the name and the IP-address of your module.

3. On the left side on your menu you can do various settings of your S7-LAN.

4. In the middle you have an overview of those information, which parameters you have already set to the network and the bus profile and further options which you can unlock for an extra charge.

5. Simultaneously you will see the current operating mode of the module. You are able to set this in the menu "configuration". So you are able as a user to quickly click on one of the necessary parameters and if it is necessary to separate the not used parameters.

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S7-LAN V2.14

Modul von BE

IP:192.168.1.86

Name: Betriebsart: Werkseinstellungen laden: Netzwerk	Modul von BE S7-200 💌 Jetzt laden
Werkseinstellungen laden: Netzwerk	
Netzwerk	
a the company of the second	
2002203888000000	
DHCP aktivieren:	
IP-Adresse:	192.168.1.86
Subnetzmaske:	255.255.255.0
Gateway-Adresse:	192.168.1.254
Gratuitous ARP versenden:	
Buseinstellungen	
Bus-Konfig von PC verwenden:	
Baudrate:	Automatik 💌
Höchste Stationsadresse:	126 👻
PG/PC ist einziger Master:	
Profit	MPt
Lokale Teilnehmeradresse:	0
Restainstellungen	
Booteinstellungen	
Profit Für RS232/485-Umsetzer	PPI MMaster 💌
Baudrate:	Automatik 😒
Datenbit:	B ~
Parität:	keine M
Stopbit:	1 v
Für RFC1006 Verbindunge	
Umsetzen Rack/Slot(TSAP) auf BU	
Ziel CPU:	255
S7-Subnetz-ID:	0000-0000
Busparameter:	Konfig 👻
Sonstiges	
Protokollart:	Automatik 🛩
TS-Adapterfunktionalität:	
Fehlerausgabe auf Display:	
	2 <mark>51</mark>
Speichern	

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6. Here are the possible selectable opportunities:

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Allgemein	
Name:	Modul von BE
Betriebsart:	S7-200 💌
Werkseinstellungen laden:	87-200 87-300/400 MPI
Netzwerk DHCP aktivieren:	87-300/400 DP RS232/485-Umsetzer Manuell
IP-Adresse:	

7. Further steps and the configurations of your module/ cable are descript in the chapter Configuration

6 Implementing

Connect your module as described in the chapter **Hardware Installation** to the PLC and to the programming device or to your computer.

If you want to respond to a PLC via the module you have to comply the requirements as descript in the chapter system requirements. In addition, please make sure that the module is properly connected

6.1 Using the PLC-VCOM

(The PLC-VCOM is only needed if your module is not connected via the 9 pin COM port to the computer. For products with USB, Ethernet connection, etc., the PLC-VCOM is required)

1. Start the PLC - VCOM application (If it has not already started yet).

2. Click in the main window of the PLC-VCOM, in the status area "configure". The configuration wizard will start.

3. It lists all the found modules / cables and the additional information's such as IP address and MAC address of the module.

4. Choose the desired MPI cable and click "OK" to go on.

5. If the connection is established the chosen cable is shown in the section state and on the left side you can see the status connected.

6. It also displays, the PLC-VCOM the IP address for the module and the IP address of the computer which is connected to the module.

If you have any promlems with the use of PLC-VCOM software, go to the chapter 10-PLC-VCOM and look there for operating instructions.

The PLC-VCOM supports as well the communication to special assemblies like Sinamix, MicroMaster and other drives also to S7-200 - S7-400 devices.

6.2 Programming software to use with direct access

After you have adjusted and connected the PLC-VCOM or the programming adapter to the COM-port on your computer, you will be able to connect with your programming software to the PLC and work with it.

How you have to adjust your programming software is described in the following points:



6.2.1 PG2000 for S7 (V5.10)

1. Start the PG 2000 software by using the desktop link or by using the application entry in the start menu.

Optionen	Fenster	Controller	Hilfe
Symbol	ik		
Alle Syr	mboliken ai	nzeigen	
absolut	en Operar	nden zeigen	
Symboli	ikkomment	ar	
Symboli	ik & absolu	iten Operano	den
Referen	nzdatei be	nützen	
Referen	nzdatei wä	ihlen	
Druckfo	ormate für	Ausgabe	
Symbol	ikdatei		Þ
Schriftf	ußdatei		×
Einstelle	ungen		
Packer			
Adress	e des S-Me	erkerbereichs	5
Schnitte	stellen	N	-
Buspfac	de	12	2

Sprache... Sprache...

2. Choose from "View" \Rightarrow "S7-300/400". In the menu "Options" click "Interfaces"...

chnittstelle	i i		
Schnittstelle	a provinsi da secondar da	loons	1
	G-Schnittstelle:	СОМЗ –	1
Ti	meout (>= 550):	2500	ms
Wiederho	lungsversuche:	3	
Pause zw.	Datenblöcken:	220	ms
Anweisung	wird n.Bearb.:	2500	ms
Dateiweise Zusammen	speichern fasung anzeigen	N	
🔲 stat.AG	austeinweiser AG Zugriff 🥅 FB-N stellen prüfen	2 CONTENSION	ło
Baudrate:	19,2k 💌	lokale Adress	e 0
PC-MPI	187,5kBau]	
	folgende Netzw	erkkarte:	
			lan lide
	FL8168C(P)/811		abit 👻

A dialog appears, in which you are able to set the "AG-Interface" (COM-port) in the section "Interfaces".
 Configure the baud rate in the section "Bus access" to "19,2k". Below change the value for PC - MPI to "187,5kBaud".

5. Save your configuration by pressing "OK".







6. Now the software is ready to establish a connection to the PLC Click the symbol "Open" and afterwards press "PLC". Alternative you can click:

"File" ⇒ "Open" ⇒ "PLC"

		DB SDB FB I	FC OB SFB SFC VAT	гк v Σ»		
Aark	Baustein	Größe	Adresse	Bib-Nr	Bausteinname	
	OB 001	128 W				zyklischer Bau:
	SFC 000	90 VV			SET_CLK	Uhrzeit setzen
	SFC 001	90 VV			READ_CLK	Uhrzeit lesen
	SFC 006	126 W			RD_SINFO	Startinformation
	SFC 020	92 W			BLKMOV	Variable kopier
	SFC 021	92 W			FILL	Variablenspeic
	SFC 022	96 VV			CREAT_DB	Datenbaustein
	SFC 023	90 VV			DEL_DB	Löschen eines
	SFC 024	94 VV			TEST_DB	Testen eines D
	SFC 036	96 VV			MSK_FLT	Synchronfehler
	SFC 037	96 VV			DMSK_FLT	Synchronfehler
	SFC 038	96 VV			READ_ERR	Ereignisstatusr
	SFC 039	92 W			DIS_IRT	Bearbeitung ne
	SFC 040	92 W			EN_IRT	Bearbeitung ne
	SFC 041	88 W			DIS_AIRT	Bearbeitung vo
	SFC 042	88 W			EN_AIRT	Bearbeitung vo
	SFC 043	86 W			RE_TRIGR	Zykluszeitüber
	SFC 046	86 W			STP	CPU in Betriebs
	SFC 047	88 W			WAIT	Verarbeitung v

The connection between PG 2000 and the PLC is now established. A new window appears. Now you can edit the blocks in the PLC.

6.2.2 Set PG/PC interface

This step is required for the following software:

- \Rightarrow SIMATIC Step[©] 7 Manager (v5.2 + SP1)
- \Rightarrow Windows Control Center (WinCC) (v6.0)
- \Rightarrow Windows Control Center flexible 2004 (WinCC flexible) (v5.2.0.0)
- \Rightarrow ProTool/Pro (v6.0 + SP2)
- ⇒ Microwin 3.2



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	mory Card ametrieren	Netzwer	kverbindun	, Opc	Xml-Sett	ings	
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Ordr	neroptionen		-Schnittstelle nstellen		egions- u achoptio		
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- 1. Open the system configuration by using the start menu.
- 2.Click on "Set PG/PC interface".

G/PC-Schnittstelle einstellen	
Zugriffsweg	
Zugangspunkt der Applikation:	
S7ONLINE (STEP 7)	-
(Standard für STEP 7)	
Benutzte Schnittstellenparametrierung:	Eigenschaften
<keine></keine>	Ligensenditens
lew <keine></keine>	
	Kopieren
	Löschen
Schnittstellen	
Hinzufügen/Entfernen:	Auswählen
ОК	Abbrechen Hilfe

3. A Dialog with a list box named "Interface Parameter Assignment Used:" appears. This box should offer some "PC - Adapter" entries

If this is the case, please continue with the step MPI settings or Profibus settings.

If you can't find these entries go ahead with step PC-Adapter or TCP/IP installation.

6.2.2.1 PC-Adapter(Auto, MPI, PROFIBUS)

4. Click on "Choose" to add these entries to the PG/PC interface configuration

Auswahl: Baugruppe CP5511 (Plug&Play)	Installiert:	
E CP5611 (Plug&Play)	Installieren>	
	<- Deinstallieren	
Adapter für MPI/PROFIBUS	Netz über serielle Schnittstelle des P(Cs (COM-Port)

5. In this dialog you can deinstall every installed construction set

Furthermore you can add various modules (see "Selection")

Choose "PC - Adapter" from the "Selection" box on the left side and click on "Install".

6. The chosen construction set will be installed and a question appears which asks you to use the "MPI" access for the PLC used.

Click "Yes" if you want to use the "MPI"communication type.

Otherwise click "No" (e.g. if you want to use the "PROFIBUS" communication type).

Warnun	ng 🔀
?	Um mit Ihrer installierten Schnittstelle sofort ONLINE gehen zu können, müssen Sie den Zugriffsweg des Zugangspunkts Ihrer Applikation auf die erstellte Schnittstellenparametrierung einstellen. Soll 'S7ONLINE' jetzt auf 'PC Adapter(MPI)' zugreifen?
	Ja Nein Hilfe

6.2.2.2 TCP/IP RFC1006 Communication

Auswahl:	Installiert:
Baugruppe	Baugruppe
CP5611 (Plug&Play)	einstallieren
Microsoft TCP/IP Protokoll auf Ihrer f	Nur betriebsbereite Baugruppen anzeigen DIS-Netzbaugruppe (CP) Hilfe

7. Press "Select" to add the RFC1006 required elements to the PG / PC - interface configuration.



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8. In the dialog "Select", choose" TCP / IP" and click on "Install".

9. After successful installation, click "Close".

10. Back to the "Set PG/PC interface" dialog you will now find the desired entries called "PC -

Adapter(Auto)" (not supported), "PC - Adapter(MPI)" and "PC - Adapter(PROFIBUS)". Now you are able to configure the bus.

If you want to use the "MPI"communication type go ahead with stepMPI Settings. The settings for "PROFIBUS" is explained in Profibus settings.

6.2.2.3 MPI Settings

oter(MPI)
Eigenschaften
-
Kopieren
Löschen
i)
Auswählen

11. Select "PC Adapter (MPI)" and click "Properties".

12. Open the properties dialog

Choose the register "Local Connection"



Eigenschaften - PC Adapter(MPI)	×
MPI Lokaler Anschluß	
COM-Port: 3 • Obertragungsgeschwindigkeit: 19200 •	
OK Standard Abbrechen Hilfe	

13. Set here the COM port.

14.You	also	change	the	"transfer	rate"	to	"19200"	
11100	0150	change	circ	crunsier	ruce	.0	19200	1

Eigenschaften - PC Adapter	(MPI) 🛛 🕅
MPI Lokaler Anschluß	
- Stationsbezogen	
F PG/PC ist einziger Master	am Bus
Adresse:	0 -
Timeout:	30 s 💌
Netzbezogen	
0bertragungsgeschwindigkeit:	187.5 kbit/s 💌
Höchste Teilnehmeradresse:	126 💌
OK Standard	AbbrechenHilfe

15. In the register card "MPI" choose the "Transmission Rate" to "187,5 kbit/s".

Change the "Highest Station Address" (HSA) to "126".

16. Accept your settings with "OK" and exit the "PG / PC interface setting" dialog with "OK"

6.2.2.4 Profibus Settings





G/PC-Schnittstelle einstellen	D
Zugriffsweg	~~
Zugangspunkt der Applikation:	
S70NLINE (STEP 7)> PC Adapter(P	ROFIBUS) 💌
(Standard für STEP 7)	
Benutzte Schnittstellenparametrierung:	
PC Adapter(PROFIBUS)	Eigenschaften
Keine> I PC Adapter(MPI)	
E PC Adapter(PROFIBUS)	Kopieren
	Löschen
ı (Parametrierung Ihres PC Adapters für ein PROFIBUS-Netz)	
Schnittstellen	
Hinzufügen/Entfernen:	Auswählen
OK At	obrechen Hilfe

17. Mark the entry "PC - Adapter(PROFIBUS)" and click on "Properties".

Eigenschaften - PC Adapter(PF	ROFIBUS) 🛛 🔀
PROFIBUS Lokaler Anschluß	
COM-Port:	3 🗸
Übertragungsgeschwindigkeit:	19200 💌
OK Standard	Abbrechen Hilfe

18. In the registry card "Locale connection" you have to set the COM Port.

19. Set the "Transmission Rate" to "19200"

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Eigenschaften - PC Adapter(Pl	ROFIBUS) 🛛 🔀
PROFIBUS Lokaler Anschluß	Bus
Adresse:	0 ÷
Netzbezogen Übertragungsgeschwindigkeit:	187.5 kbit/s 💌
Höchste Teilnehmeradresse: Profil:	126 •
	Standard Universell (DP/FMS) Benutzerdefiniert Busparameter
Netzkonfiguration Folgende Netzkonfiguration be Master: 1 Sta	erücksichtigen aves: 0 📑
OK Standard	Abbrechen Hilfe

- 20. Choose the registry card "PROFIBUS" and set the "Transmission Rate" to "187,5kbit/s".
- 21. Set the "Profile" to "DP" ("decentralized Peripherals ").
- 22. Save your settings by clicking the "OK" button and close the opened "Set PG/PC interface" dialog.

6.2.2.5 TCP/IP RFC1006 Settings

23. For this kind of communication you only have to install the corresponding software.

6.2.2.6 ProTool/Pro RunTime (RT) Configuration

Zugangspunkt der Applikation:	
Micro/WIN -> PC Adapter[PR0FI8US]	<u> </u>
CP L2_1: -> PC Adapter(MPI)	
DPSONLINE -> TCP/IP(Auto) -> Intel 21	143-baserter
PwL_LOAD → PC Adapter(MPI)	- 144 C
Micro/WIN -> PC Adapter(PROFIBUS) MPI (WinCC) -> PC Adapter(MPI)	9377
S70NLINE [STEP 7] -> PC Adapter[h	(Pt)
150 Ind. Ethernet -> Intel 21143-bac	
150 Ind. Ethernet -> Intel 21143-bac	Ecopieren.
PC Adapter(Auto)	Linche
1	
Parametrierung lives PC Adapters für ein PROFIBUS Netz) Schwitstellen	
Hindukigen/Entlemen	Auswählen_

24. If you want to use ProTool/Pro RunTime you can set the "PG/PC Interface" by selecting the entry "DPSONLINE". Therefore you have to select "Access Point of Application" and configure it as described above. The easiest way is to use the S7-LAN/MPI-LAN/MPI-USB- driver which supports USB and LAN products.

The interface configuration for these programs is finished.





Continue with the software which you want to use:

- \Rightarrow SIMATIC Step[©] 7 Manager (v5.2 + SP1)
- \Rightarrow Windows Control Center (WinCC) (v6.0)
- \Rightarrow Windows Control Center flexible 2004 (WinCC flexible) (v5.2.0.0)
- \Rightarrow ProTool/Pro (v6.0 + SP2)
- ⇒ Microwin 3.2

6.2.3 SIMATIC Step[©] 7 Manager (v5.2 + SP1)

Configurate the interface as described in Set PG/PC-interface.

SIMATIC Manager
Datei <mark>Zielsystem</mark> Ansicht Extras Fenster Hilfe
C Erreichbare Teilnehmer anzeigen
PROFIBUS Ethernet-Teilnehmer bearbeiten Betriebssystem aktualisieren
Öffnet ein Fenster mit den erreichbaren Teilnehmern.

1. Klick in the drop - down menu "target system" on "Display Accessible Nodes".

2. If you can see the list with possible Bus-devices, a communication over the cable has taken place. "Direct" connected devices will be shown, also the conditions if it is an "active" or "passive" assembly.

3. In this window you can edit each assembly with his blocks.

6.2.4 Windows Control Center (WinCC) (v6.0)

Configurate the interface as described in Set PG/PC-interface

- 1. Start WinCC by using the desktop link or the program entry in the start menu.
- 2. Choose "New" in the menu "File" or click on the white ("letter") symbol to start a new project.

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3. he next dialog offers you several project types "Single-User Project", "Multi-User Project" and "Client Project".

The next steps are the describing for the "Single- User Project".

ues Projekt anlegen		?
<u>P</u> rojekt Name : Projekt Neues <u>U</u> nterverzeichnis : Projekt	Projektpfad c:\ Verzeichnis :	<u>An</u> legen <u>A</u> bbrechen <u>H</u> ilfe
Mit dieser Maske kann ein neues WinCC Projekt angelegt werden.	Laufwerk :	

4. "OK" leads you to a new dialog. Type in the "Project Name" and the "Subfolder" of the project path. The chosen configuration is confirmed with "Create".

To use one of the other options please go ahead and read in the manual of WinCC software.

5. Please wait until the project is created. The project content will be shown in the left part of the main window.



WinCCExplorer - C:\Pro	ojekt\Projekt.MCP
Datei Bearbeiten Ansicht	E <u>x</u> tras <u>?</u>
」 🗅 😂 ■ 🕨 🐰 🤇	6 fe 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1:
E- & Projekt Bechner E- III Variablenhaushalt	Name
Strukturtypen	<u>N</u> euen Treiber hinzufügen
∱- Graphics Designe ∰ Alarm Logging	<u>S</u> uchen
	Eigenschaften
Global Script Text Library User Administrato	
Projekt\Variablenhaushalt\	Externe Variabler

6. For a proper working communication with the PLC there must be defined how the software has to communicate with the PLC

Therefore you have to right-click on "Tag Management" it opens the context menu. Choose "New Driver Connection ... ".

Neuen Treibe	er hinzufügen		<u>?</u> ×
<u>S</u> uchen in:	🔄 bin	- 🖬 📩 –	č
SIMATIC SIMATIC SIMATIC	S5 Ethernet TF.CHN S5 Profibus FDL.chn S5 Programmers Port AS511.CHN S5 Serial 3964R.CHN <mark>S7 Protocol Suite.chn</mark> TI Ethernet Layer 4.CHN	SIMATIC TI Serial.CHN System Info.chn windows dde.chn	
T			►
Datei <u>n</u> ame:	SIMATIC S7 Protocol Suite	Ö <u>í</u> fn	ien
Datei <u>t</u> yp:	WinCC-Kommunikationstreiber (*	.chn) 💌 Abbre	chen

7. In the "Add new driver" dialog select the driver which fits to your PLC For a S7 PLC choose "SIMATIC S7 Protocol Suite.chn".

If you want to use an other PLC please inform yourself first, which driver fits with your PLC.

It is very important that the selected driver fits with the PLC otherwise the connection cannot be established.

8. You should see now in the Explorer under the branch "Tag Management" the branch "SIMATIC S7 PROTOCOL SUITE". Expand the branch and many protocols for various compounds will appear. The General way of proceeding a new connection is to:

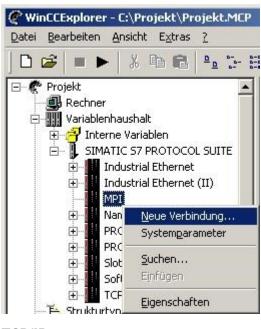
Right-click on the desired connection (MPI - > Picture: "MPI", TCP/IP - > Picture: "TCP/IP"). A context menu opens. Click on "New Driver Connection…".

This manual describes the connection configurations:

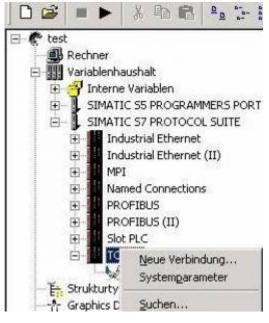
- for MPI (MPI-II-cable, MPI-USB-cable, S7-USB-modul, S7-LAN-modul and MPI-LAN-cable)
- for TCP/IP (only S7-LAN-modul and MPI-LAN-cable).



MPI



TCP/IP



6.2.4.1 MPI Configuration

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ndungsparameter - M	1PI	
bindung		
7-Netzadresse		
Stationsadresse :	8	
Segment-ID :	0	
Back-Nummer:	0	
Steckglatz-Nr.	0	
Rohgatenblock send	en/empfangen	
⊻erbindungsressource :	02	
ieben Sie die Stationsach ulässiger Adressbereich:		
OK	Abbrechen	Hilfe

9. Now you are able to type in the name of the connection. With a click on "Configuration" a new dialog will appear. Now you are able to set the properties of the connection.

Set up the station address of the PLC (in this example "2").

Confirm with "OK" until you are back to the main window.

Read further "Communication and fault diagnosis".

6.2.4.2 TCP/IP Configuration

ndungsparameter - T	CP/IP
oindung	
7-Netzadresse	
IP-Adresse :	192,1168,1155
Back-Nummer :	0
Steckglatz-Nr. :	2
Rohgatenblock send	len/empfangen
⊻erbindungsressource :	02
eben Sie die IP-Adresse eispiet 142,11.0.123	des AS ein.
ОК	Abbrechen Hilfe

10. A dialog appears where you can configure the connection parameters.

Set up the IP - Address of the module and configure the rack number as well as the slot number. Confirm this configuration by clicking "OK".

Example configuration: IP - address 192.168.1.55 Rack - Number: 0 Slot - Nr.: 2

11. With a right-click on the new connection you can start the properties dialog. In this dialog please click on properties.

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Verbindungen werden zu bestimmten Treibern eingerichtet orhandene Verbindungen ZUAN	eibern eingencaker.
7LAN Neu	
	Neu
Financebalt	Löschen
Eigeneonum	Eigenschafter

12. In this "Channel unit properties" you are able to see all "available connections".

Choose the latest created connection and click again on "Properties".

Now you can see all the variables which has been created for this connection.

In fact this connection is a new connection so there should not be any variable in the list. To add a new variable click on "New".

13. Now you are able to set up the name of the variable and different more properties. In our example, we assign the following values:

Name: "S7LAN_MW0" Data type : "unsigned 16 - Bit value" Length: "2" Address: "MW0" Format adaptation: "WordToUnsignedWord"

Click on "Choose" beside the Address to define the address from the variable.

Example configuration: The data area from the variable is set to "Mark" and the address is set to "Word". The edit box "MW" is set to "0".

14. Confirm all open dialogs with "OK" until you reach the main window.

15. The connection needs to know which network interface card it should be used to send data via the Ethernet. Open the "System parameters" dialog from the context menu (right-click on TCP/IP).

16. Choose from the registry card "Unit" and set the "logical device name" to your network interface card (usually the name of the NIC begins with a "TCP/IP - > ").

17. Confirm with "OK".

18. Now you are able to start 🕨 the communication. Stop it by clicking on 💻

6.2.4.3 Communication and fault diagnosis

To clean up errors faster the WinCC Software offers a tool named "Channel Diagnosis". This tool analyses all connections from your WinCC software. For demonstration purposes please stop the last started connection from your WinCC explorer. 19. Start the software "Channel Diagnosis" by using your link in the start menu.

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Simatic Gira AuthorsW		*			
Image: Simple state WinCC Image: Simatic NET Simatic NET Image: Simatic NCM PC Mar SIMATIC NCM PC Proj		• 🐯 Autostar	s Control Center 5.1 t Iformation System	E Easy Lar Project D Project S Project S Scope Scope Script Up	ication Configurator nguage Duplicator Switcher
WinCC Channel Diagnosis Channels/Connections Configuration				Always on top	<
SIMATIC S5 Programmers Port AS511	Counters State First Error Code E Help Unit Device PDU Size PLC Flags Request Queue Request Queue Request Counte Response Counte Response Counte Max. AS Cycles Max. AS Cycles Cycle Overflow	t i	Value disconnected 4110 0 TCP/IP TCP/IP -> Ethem unknown 0 2 1 0 0 unknown 0	etadapt	
Cyclic Update J 1000					

20. The tool could not detect a running connection so it marked the connection/s with a red 'X' (registry card "Channels/Connections").

Click on the last created, not active connection (with the red 'X') and some informations from the connection will appear in the right part of the dialog.

One of these counters is called "Last Error Code".

WinCC Channel Diag	gnosis			?
hannels/Connections	Configuration		Γ	Always on to
Sta 100 100 100 100 100 100 100 100 100 10	ogrammers Port AS511	Counters	Value	•
i× test1 i× SIMATIC S7 PF i× S7LAN	ROTOCOL SUITE	State First Error Code Last Error Code Error Count	disconnected 4110 4110 0	
	Connection could connection initial		PLC rejects	ietadapt
	Connection could connection initial Configured wr	d not be established. I ization. ong network address.	PLC rejects	ietadapt
	Connection could connection initial Configured wr PLC turned of	– I not be established. I ization. ong network address. f.	PLC rejects 🖛	etadapt
	Connection could connection initial Configured wr PLC turned of	d not be established. I ization. ong network address.	PLC rejects 🖛	ietadapt

21. If you take a right-click on the error value a window opens with "Help".

Click on the "Help" window and a yellow window appears (tooltip) with detailed error descriptions.

X SIMATIC S5 Programmers Port AS511	Counters	Value 🔺
📉 🗙 test1	State	ready
SIMATIC S7 PROTOCOL SUITE	First Error Code	none
S7LAN	Last Error Code	none
	Error Count	0
	Unit	TCP/IP
	Device	TCP/IP -> Ethernetadapt
	PDU Size	480
	PLC Flags	0001 —
	Request Queue Size	0
	Request Counter	15
	Response Counter	55
	Own Cycles	0
	AS Cycles	1
	Max. AS Cycles	16
	Cycle Overflow	1 (250 ms) 📃 💆

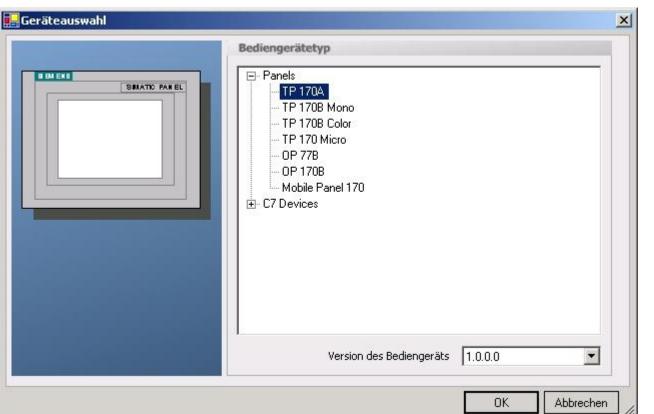
22. Lets see what happens if the connection runs properly. Start the connection from your WinCC Explorer. The "Channel Diagnosis" dialog marks the connection with a green hook if everything worked out.

6.2.5 Windows Control Center flexible 2004 (WinCC flexible) (v5.2.0.0)

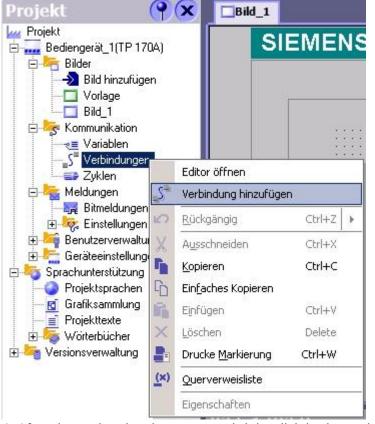
Please make sure that the interface configuration is correct as described in Set PG/PC-interface

- 1. Start the WinCC flexible 2004 software by using the desktop link or the program entry in the start menu.
- 2. First you need to select "Create an empty project" on your first page.





3. In the "Device selection" mark the used operator panel (example: "TP 170A") \rightarrow confirm with "OK".



4. After the project has been created right-click in the project window on "Connections" of the sub menu "Communication".

In the context menu click on "Add Connection".

5. A new configuration window "Connections" opens in the right part of the main window. This offers you different setting options.

Important for the connection is:

 \Rightarrow the communication driver (set up which PLC you are using (example: "SIMATIC S7 300/400"))

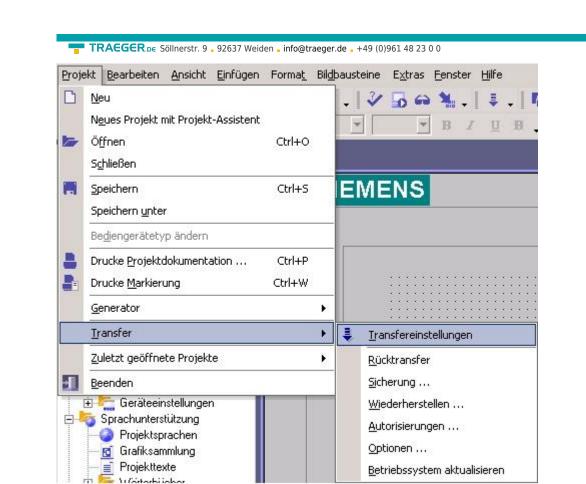
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- \Rightarrow the Baud rate (Set this on "187 500")
- \Rightarrow the address of the terminal (HMI) (in this example "1")
- \Rightarrow the Profile ("MPI" for example)
- \Rightarrow the Highest Station Address (HSA) (e.g. "126")
- \Rightarrow the address of the PLC (e.g. "2")

Bild_1 SVer	bindungen		6	00
		У	ERBINDUNG	E
Name	Kommunikationstreiber Online	Kommentar		
Verbindung_1	SIMATIC S7 300/400 · Ein	•		
	Allen Bradley DF1 Allen Bradley DF1 GE Fanuc SNP LG GLOFA-GM Mitsubishi FX Mitsubishi Protocol 4 Modicon MODBUS Omron Hostlink / Multilink SIMATIC 500/505 seriel SIMATIC 55 AS511 SIMATIC 57 200			
	eichse SIMATIC S7 300/400			
	170A Schnittstelle		Station	
TP E	170A Schnittstelle JF1 B Sediengerät	Netzwerk	Station Station Steverung	
Тур	170A Schnittstelle IF1 B Sediengerät Baudrate	Profil MPI		
TP	170A Schnittstelle JF1 B Sediengerät		Steverung	
Тур © ТТУ	170A Schnittstelle IF1 B Sediengerät Baudrate	Profil MPI	Adresse 2	



6. Now you can start with your work.

If you have finished work you can transfer this project to the panel by reading the next steps.

7. Wählen Sie im Menü Projekt das Untermenü "Transfer" ⇒ "Transfereinstellungen".

8. Es erscheint ein Dialog in dem Sie den Modus (im Beispiel auf "MPI/DP") einstellen und die

Stationsadresse des Terminals angeben (Beispiel: "1"). Nach Wunsch können Sie nun den "Delta -Transfer" "Ein" oder "Aus" schalten (im Beispiel "Aus").

Bediengeräte für Transfer a	uswählen Einstellungen für B Modus Stationsadresse	ediengerät_1 (TP MPI/DP 1	• 170A)	Transfer in Flash Delta-Transfer Ein Rücktransfer	×
			Transferi	Rezepturdater	 n

9. Press the button "Transfer" to start communication with the terminal. Your project is about to be transferred.

The WinCC flexible software is now able to communicate with your operator panel.

6.2.6 ProTool/Pro v6.0 SP2

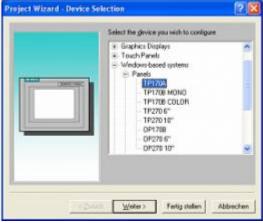
Configurate the interface as described in Set PG/PC-interface

1. Start ProTool/Pro by using the desktop link or program entry in the start menu.

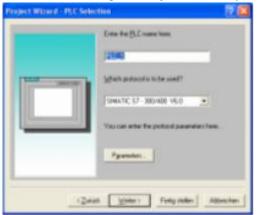
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2. Choose from the menu "File" the sub menu "New" or click on the right symbol.



3. The next dialog askes you which operator panel you are using. Mark the used panel (e.g. "TP 170A")



4. "Next" leads you to a new dialog. Type in the specific fields the name of the PLC device and choose the used PLC in the driver selection (e.g. "SIMATIC S7 – 300/400 V6.0").



5. Via "Parameter..." you are calling an configuration dialog from the chosen PLC driver Set up the station address of the panel (example "1") and of the PLC (example "2"). Leave the point "Interface" in the standard configuration. In the sector "Net parameter" choose the interface which uses your module on the PLC (e.g. "MPI"). Configure the baud rate to "187.5".

<u>h</u> öchste Adresse (HSA): Anzahl der <u>M</u> aster:	126 -	OK Abbrechen
--	--------------	-----------------

6. The button "More …" leads you to a small dialog where the "Highest Station Address" should be configured to "126". Set up the "Number of masters" (e.g. "1")

7.confirm with "OK" until you got back to the "Control Selection".Go on with "Next".

8. In the main window start the Transfer Settings dialog by clicking on "File" "Transfer" "Settings...". Choose "MPI / PROFIBUS DP" from the listbox and type in the station address of the operator panel (e.g. "1").



Confirm with "OK" and start with your work

If you have finished working on this project you can go on with the next steps.

Datei	Bearbeiten	Ansicht	Einfügen	Zielsyst
Neu	l		Str	g+N
Öffi	nen		Str	g+0
Sch	i <u>l</u> ießen			
Spe	eichern		Str	g+S
Spe	eichern <u>u</u> nter.			6401
Kon	v <u>e</u> rtieren			•
Inte	egrieren in ST	EP 7 - Pro	ojekt	
Кор	ieren aus ST	EP 7 - Pro	jekt	
Pro	Tool-Integrat	ion in STE	Ρ7	
Erse	etzen			•
Ger	nerieren		Str	g+G
) If vo	u want to tr	ancfor v		to the n

9. If you want to transfer you project to the panel you have to generate the project first. This can be done with a click on "File" - "Compile".

Datei Bearbeiten Ansicht Einfü	igen Ziel	lsystem Extras Fenster ?
<u>N</u> eu	Strg+N	🛛 🕞 👷 🛛 Deutsch (Deutschland)
Öffnen	Strg+O	Takana IIIa
Schließen		Pr Tahoma12
Speichern	Strg+S	
Speichern <u>u</u> nter		
Kon <u>v</u> ertieren		SIMATIC PANEL
Integrieren in STEP 7 - Projekt	,	SIMATIC FANEL
Kopieren aus STEP 7 - Projekt.,.		
ProTool-Integration in STEP 7		
Ersetzen		•
Generieren	Strg+G	
<u>T</u> ransfer		Projekttransfer starten Strg+T
Rüc <u>k</u> transfer		• Backup
Testen		▶ <u>R</u> estore
Projekt- <u>M</u> anager		<u>A</u> utorisieren,
Projekt-Info		Optionen
		<u>O</u> S Update
Drucken	Strg+P	Einstellung

10. To transfer the project just click on "File" "Download" "Start Project Download" or click on the right symbol

Please wait while the project is transferred. The communication between the operator panel is now established.

6.2.7 Microwin v3.2 (only for S7 200)

Configurate the interface as described in Set PG/PC-interface

1. Start Microwin using the desktop link or program entry in the Start menu.

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Zielsystem	Testen	E <u>x</u> tras	Eenster
<u>R</u> UN <u>S</u> TOP			
<u>Ü</u> bersetz <u>A</u> lles übe			
<u>U</u> rlöscher Rüc <u>k</u> setz	n :en beim 4	Anlauf	
Informat Sp <u>e</u> icher Daten <u>b</u> a E <u>c</u> hzeitul Vergleich	modul ustein au hr	s RAM er	stellen
Tun			

2. Click on "Type" in the menu "PLC. Configure the "PLC Type" (e.g. "CPU 224") as well as the "CPU Version" (e.g. "01.22") to the dialog.

СРИ-Тур		×
aus dem Zielsystem, wenn Sie r	er CPU aus oder lesen Sie den Typ des Zielsy möchten, dass die Software die Bereichsprüfu ulässigen Speicherbereichen des Zielsystems	ifung der
CPU-Typ CPU 22	4 T ielsystem lese	sen
CPU-Version: 01.22	▼ Kommunikatior	
CPO-version. 101.22		<u>on</u>
	OK Abbre	prechen
Kommunikation		2
Adresse		
Lokal:	0	🗐 🖶 PC Adapter(MPI)
Entfernt:		
Typ des Zielsystems:		Doppelklicken zum Aktualisieren
Einstellungen mit Projekt	t speichern	
Schnittstelle:	PC Adapter(COM 3)	
Protokoll:	MPI	
Modus:	11-Bit	
Höchste Station (HSA):	126	
Schnittstelle unterstützt	t mehrere Master	
– Übertragungsgeschwindigke	it	
Baudrate:	187,5 kBps	
🔲 In allen Baudraten such	en	
PG/PC-Schnittstelle einstelle	en	OK Abbrechen

3. Click on "Communications…" to start the next dialog.

In the sector "Address" set up the "Remote" listbox with the station address of the PLC (e.g. "2").





If you skipped the point b Set PG/PC interface you can configure the PG/PC interface with a click on "Set PG/PC interface".

4. In the right part of the dialog double click on the blue arrow \mathbf{e} symbol to test the communication with the PLC.

5. The sector "Address" should be updated and displays the "PLC Type". Also the CPU of the PLC is displayed in the right part of the dialog.

Adresse		
Lokal:	0	PC Adapter(MPI) Adresse: 0
Entfernt:	2 💌	CPU 224 REL 01.22
Typ des Zielsystems:	CPU 224 REL 01.22	Adresse: 2
		zum Aktualisieren
Einstellungen mit Projek	t speichern	
Vetzparameter		
Schnittstelle:	PC Adapter(COM 3)	
Protokoll:	MPI	
Modus:	11-Bit	
Höchste Station (HSA):	126	
Schnittstelle unterstütz	t mehrere Master	
Übertragungsgeschwindigke	it	
Baudrate:	187,5 kBps	
🔲 In allen Baudraten such	en	
PG/PC-Schnittstelle einstell		OK Abbrechen

6. Confirm with "OK" until you get back to the main window. The communication with the PLC is now established.

6.2.8 Microwin v4.0 in PPI-Multimaster-Mode

1. The PPI-Multimaster-Mode was developed that more devices can communicate parallel with one PLC. The following steps describe how to configure this mode in hardware and software.

2. The module or cable has to switched in the PPIMulti-Mode. This mode can be switched in the menu-tree under "Generally" and "Bootconfiguration"

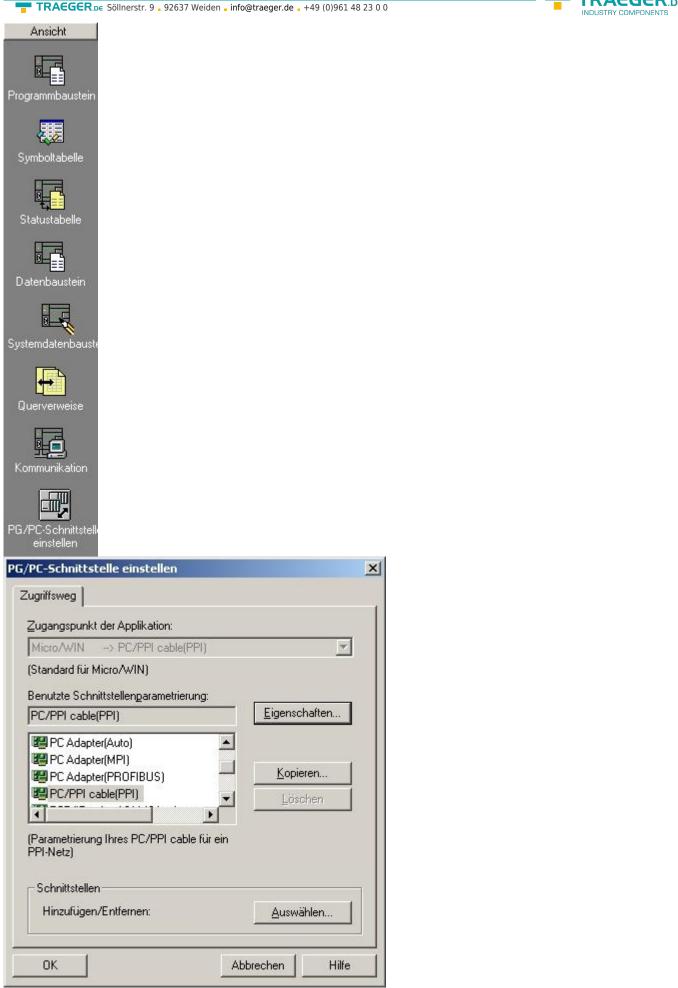
3. There you have to select "PPIMMaster" and confirmed with "Saving".

For LAN-devices you can do this in the integrated WebServer, also.

4. Now, you have to configure the PG/PC - Interface. This could you also do within the Microwin-Software.

5. Start your Microwin-Software.

- 6. Click on the button "Set PG/PC-Interface" under "View" in the left down part of the window.
- 7. Select the entry "PC/PPI cable(PPI)" and click on the button "Properties".



8. In the menu "PPI" you are able to configure diverse settings like for e.g. "HSA".

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Stationsbezogen		
<u>A</u> dresse:	0	÷
<u>T</u> imeout:	1 s	•
⊠ <u>M</u> ulti Master Netzwerk 0 <u>b</u> ertragungsgeschwindigkeit:	9.6 kbit/s	•

9. In the menu "Local Connection" you select the com-port "Interface to" to the port which is served from the tool PLCVCom.

10. Click on the button "OK" and click in the left down area in your windows on "Communikations".

PPI	2	PC/PPI cable Anschluß	(PP1)	
100	schluß an: <u>M</u> odemve	erbindung	COM3	
0	к	<u>S</u> tandard	Abbrechen	Hilfe
J.	K	<u>S</u> tandard	Abbrechen	Hilfe

11. Click double on "Double-Click to refresh". The PLCs would be searched.



dresse			
_okal:	0	PC/PPI cable(PPI) Adresse: 0	
Entfernt:	2 💌	Doppelklicken zum Aktualisieren	
Fyp des Zielsystems:		zum Aktualisieren	
Einstellungen mit Projek	t speichern		
etzparameter			
Schnittstelle:	PC/PPI cable(COM 3)		
Protokoll:	PPI		
Modus:	11-Bit		
löchste Station (HSA):	31		
🗸 Unterstützt mehrere Ma	aster		
bertragungsgeschwindigke	it		
Baudrate:	9,6 kBit/s		
In allen Baudraten such	ien		

12. When the PLC was found, the picture changes it like this:

nmunikation		
Adresse Lokal: Entfernt:	0	Adresse: 0 CPU 224 REL 01.22
Typ des Zielsystems:	CPU 224 REL 01.22	Adresse: 2
Einstellungen mit Projek	t speichern	
Netzparameter		
Schnittstelle:	PC/PPI cable(COM 3)	
Protokoll:	PPI	
Modus:	10-Bit	
Höchste Station (HSA):	126	
🔽 Unterstützt mehrere Ma	aster	
Übertragungsgeschwindigke	it	
Baudrate:	9,6 kBit/s	
🔲 In allen Baudraten such	ien	
PG/PC-Schnittstelle einstelle	en	OK Abbrechen

13. Prove the dialog with "OK" until you would be in the main window. The communication to the PLC is now ready.

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6.2.9 S7 for Windows v5.02

1. Start the "S7 for Windows" software by using the link on your desktop or use the link in your start menu (standard is "Programs\S7 for Windows\S7 for Windows")

2. Choose File - >Preferences... to configure the communication configuration between the computer and the PLC.

A new dialog appears which provides to set up a lot of configuration data about the communication with your PLC.

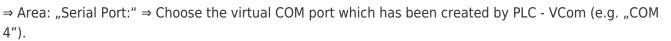
Öffnen F11	
Vinsin III	
Speichern F12	
Speichern unter Umschalt+F12	
Weitere Funktionen	
Importieren	
Exportieren	
Importieren aus STEP7-Projekt	
Exportjeren in STEP7-Projekt	
Drucken	
Einstellungen	
Beenden	
llungen	<u>1</u>
	C COM 1 Baudrate: C COM 2 19200 C COM 3 38400 C COM 4 56000 C COM 4 57600 Exklusiv 115200 MPI-Umsetzer: ✓ ✓ Einziger Master am Bus MPI Adresse S7 <u>W</u> : 0
C IBH-Net	MPI Adresse SPS: 2
	SPS a <u>u</u> swählen
S7 - SoftSPS intern	MPI Adresse Ma <u>x</u> : 15 💌

3. Choose the first registry card "Interface" (standard) and set up the configuration data as descriped below:

 \Rightarrow Area: "Preferences from:" \Rightarrow PC

 \Rightarrow Area: "PLC Type:" \Rightarrow S7

 \Rightarrow Area: "Protocol:" \Rightarrow MPI - converter



 \Rightarrow Area: "Baud Rate" \Rightarrow Choose the speed you want to use at the bus (e.g. "115200")

⇒ Area: "MPI Converter:"

- Activate the checkbox "Only Master at the Bus" if you have only one PLC in the bus.
- Leave the fields " S7W MPI Address" and "MPI Address PLC" as it is.
- The number in the listbox "Max MPI Address" must be higher than the PLC with the highest station address in your MPI bus. Otherwise every PLC which is higher than this number will not been seen (e.g. if there is only one PLC in your bus "15" is more than enough).

4. After the software is configured , please click "Select PLC" in the area "MPI Converter". A new dialog appears where you can select the desired PLC

CPU-Auswahl	?:
<u>V</u> orhandene MPI-Adressen:	2
<u>K</u> Abbrech	en <u>H</u> ilfe

5. The dialog displays all the PLCs that can be found in your MPI bus.

Select the desired one and confirm with "OK".

6. Close the preferences dialog by pressing the "OK" button.

🔟 S7 für Windows@	🖲 - [SPS Bausteinverze	ichnis]	
🛄 SPS Baustein S	57-Funktionen Fenster	Hilfe	
2 🕮 🏛	I 🛲 🛃 II.		

7. Back in the main window press the "PC Block List" button for testing the new established communication configuration.

8. Please wait a moment for the software to read the desired blocks from the PLC. The blocks will be displayed in the listbox below the menu bar (see picture to the right).

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		INDUSTRY COMPON
57 für Windo	wsīk - [SPS Bausteinverzeichnis]	
	n SZ-Funktionen Eenster Hilfe	X
22 100	E # 1. 1. B 😫 N 🗉 🔜 🗠 📯	
夏四國	6ES7 315-1AF00-0AB0> COM4, MPI-Adresse: 2	
Baustein	Adresse	
OB 1	*	-
SFC 0		-
SFC 1		
SFC 2		
SFC 3	•	
SFC 4	*	
SFC 20		
SFC 21		
SFC 22	•	
SFC 28	•	
SFC 29	2 ⁻	
SFC 30	5	
SFC 31	-	
SFC 32	•	
SFC 33	•	
SFC 34	•	
SFC 36	•	
SFC 37		
SFC 38		
SFC 39		
SFC 40	•	
SFC 41	-	
SFC 42		
SFC 43	•	
SFC 44		
SFC 46		
SFC 47		
SFC 49		
SFC 50		
SFC 51		-
•		2
fiels Projektangevisibit	(TestecherPC2, Process-Informatil)	

The communication between the software and your PLC is established.

6.2.10 Including S7-LAN module into a STEP 7 project

6.2.10.1 Direct communication using TCP/IP with Step7© v5.3 (CP mode)

This communcation does not need a simulated virtual COM port (PLC – VCom is not needed). A direct connection will be established to your network device. The CP mode is also called ISO protocol or RFC1006. At the moment it is not possible to exchange a CP completely.

This descritption needs an existing project. Please read the Step 7 manual for more information about creating new projects. **Please be sure that you enter in the S7-LAN-module in the configuration menu the Subnet-ID of the connected bus.**

Without this entry, a function is not given!

- 1. SExecute the Step 7 software by using the link on your desktop or use the link in your start menu.
- 2. Open your existing project and start the "Set PG/PC Interface..." dialog by using the menu "Options".



Extras Fenster Hilfe	20
Einstellungen Ctrl+4	Alt+E
Textbibliotheken Sprache für Anzeigegeräte Texte mehrsprachig verwalten	•
Umverdrahten <u>A</u> blaufeigenschaften	
Bausteine vergleichen <u>R</u> eferenzdaten Globaldaten definieren <u>N</u> etz konfigurieren	•
Baugruppen <u>si</u> mulieren Proze <u>ß</u> diagnose projektieren	
PG/P <u>C</u> -Schnittstelle einstellen	
PG/PC-Schnittstelle einstellen Zugriffsweg Zugangspunkt der Applikation: S70NLINE (STEP 7) -> TCP/IF (Standard für STEP 7) Benutzte Schnittstellengarametrierung:	> SiS 900-Based PCI Fa
TCP/IP -> SiS 900-Based PCI Fast	Eigenschaften
TCP/IP -> NdisWanIp	Diagnose
TCP/IP(Auto) -> Intel 21143 Based	approximation of the second
TCP/IP(Auto) -> SiS 900-Based PC	
(Parametrierung Ihrer NDIS-CPs mit TCF Protokoll (RFC-1006)) - Schnittstellen	P/IP
Hinzufügen/Entfernen:	<u>A</u> uswählen
	Abbrechen Hilfe

3. WIn the listbox "Interface Parameter Assignment Used:" choose "TCP/IP - > XXX". The "XXX" stands for the network interface card you want to use. Confirm your input with "OK".

For the Step 7 software version 5.2 you need the SIMATIC NET package, otherwise the Step 7 software will not show the desired entries (TCP/IP, etc.) because it is not supported. The Step 7 software version 5.3 has this package included after installation.

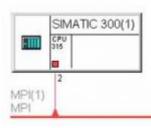
4. Back in the main window call, by using the menu "Options", "Configure Network". A new window appears

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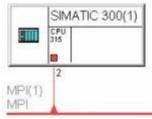


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Einst	ellungen.		Ctrl+Alt+E
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<u>R</u> efe Glob	teine vero renzdater aldaten de konfigurie	efinieren	•
	ruppen si eßdiagnos	mulieren æ projektieren	
PG/P	⊆-Schnitte	stelle einstellen	

5. This window shows the available devices and busses (in this example there is a PLC "CPU 315" with the station address "2" using the "MPI" bus).



6. In the explorer "Selection of the network" choose "Subnets" and do a double click on "Industrial Ethernet". The left part of the window should change like the picture (below) shows.



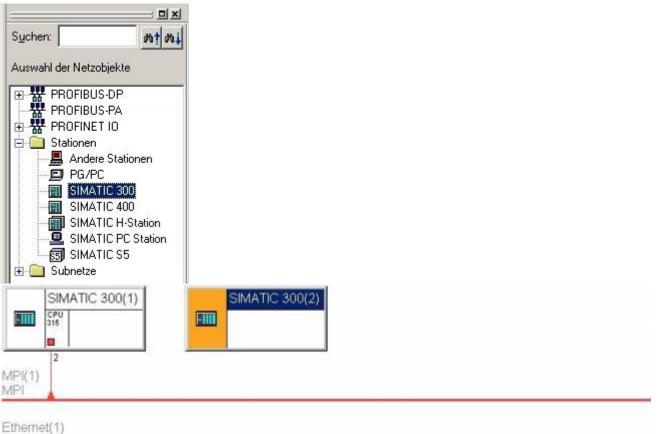
Ethernet(1) Industrial Ethernet

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Auswahl der Netzobje	ekte
	P
ROFIBUS-F	PA .
🗄 🃅 PROFINET IO	D
🗄 🦲 Stationen	
🗄 🦲 Subnetze 👘	
🔓 Industrial	Ethernet
PROFIBL	JS
PTP	

7. Now add a S7-PLC as replacement for S7-LAN/MPI-LAN which will be used for the CP mode later. In the explorer "Selection of the network" choose "SIMATIC 300" from the branch "Stations" to add a new virtual PLC. This takes effect to the left part of the window (see picture below). A rectangle with a orange (not always orange) marked area is shown.







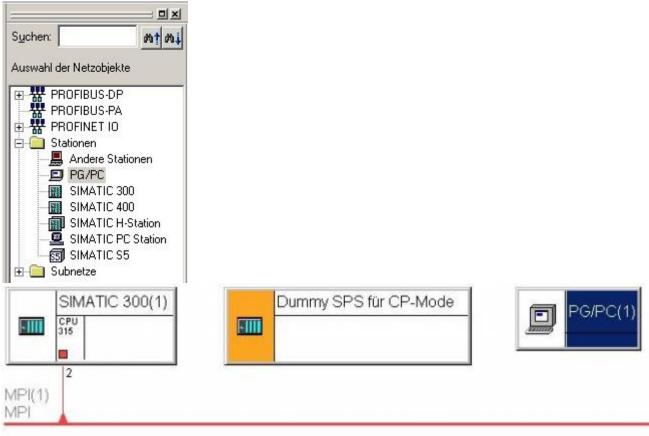
Industrial Ethernet

8. This is our replacement-PLC which is called "SIMATIC 300(2)". Change this with a right click on the object. From the context menu choose "Object Properties..." to open the "Object Properties" dialog.

SIM.	ATIC 300(2)	
	Objekt öffnen	Ctrl+Alt+O
	Kopieren	Ctrl+C
	Löschen	Del
	Neu anordnen	
	Objekteigenschaft	en Alt+Return

Ilgemein Schnittsteller	n Einstellungen	1
<u>N</u> ame:	Dummy SPS für CP-Mode	
Projektpfad:	CPMode\SIMATIC 300(2)	
Speicherort des Projekts:		<u>+</u>
∆utor:		
Erstellt am:	08.04.2005 10:04:40	
Zuletzt geändert am:	08.04.2005 10:04:40	
Kommentar:		*

9. Type in the edit box "Name" the new name of the PLC (e.g. "S7-LAN-module/MPI-LAN-cable for CP mode").Confirm the new name with a click on "OK". The rectangle should be updated by the application.
10. In the explorer "Selection of the network" choose the branch "Stations" and from there choose the object "PG/PC". The graphical presentation will be extended with a "PG/PC(1)" object.



Ethernet(1) Industrial Ethernet

11. To configure the newly created object perform a right click on the "PG/PC(1)" object and in the context

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menu choose "Obje	ct Properties".			
PG/PC(1)	Kopieren	Ctrl+C		
	Löschen	Del		
	PG/PC zuordnen Neu anordnen			
]	Objekteigenschaften.	Alt+Return		
Eigenschaften - PG/PC			×	
Allgemein Schnittste	ellen Zuordnung			
Name	Тур	Adresse	Subnetz	
Neu	Eigenschaften	LDB <u>G</u> enerieren	Löschen	
ОК			Abbrechen Hilfe	

12. The "Properties - PG/PC" dialog offers the possibility to create new interfaces. Therefore choose the registry card "Interfaces". With the registry card "Interfaces" opened click on "New...".

Neue Sch Iyp:	Ind: MPI	elle – Typauswah ustrial Ethernet DFIBUS	<u> </u>
0	ĸ	Abbrechen	Hilfe

13. Select "Industrial Ethernet" from the selection box and confirm with "OK".

14. Now configure the IP address and the subnet mask from your (e.g. IP address: "192.168.2.106", subnet mask: "255.255.255.0"). Before confirming with "OK" choose "Ethernet(1)" as the subnet you want to use. 15. The dialog "Properties – PG/PC" should have two interfaces added to his list.

Name	Тур	Adresse	Subnetz	
Ethernet Schnittstelle(1)	Industrial Ethernet	192.168.2.106	Ethernet(1)	
Neu	igenschaften	Generieren	Löschen	

16. Select the registry card "Assignment" and mark "Ethernet port(1)" by using the list "Configured Interfaces:". In the list "Interface Parameter Assignments in the PG/PC:" choose "TCP/IP - > XXX". "XXX" stands for the network interface card you want to use.

17. Assign the active connection to the device.

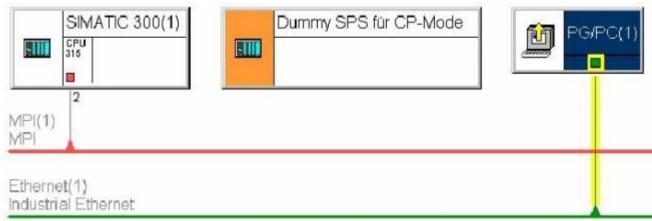
TRAEGER.DE Söllnerstr. 9 9	2637 Weiden 🗕 info@traeger.de	• +49 (0)961 48 23 0 0		-	TRAEGER.DE
Eigenschaften - PG/PC					×
Allgemein Schnittstelle	n Zuordnung				
- Nicht zugeordnet					
Projektierte Schnittstell	en:				
Name	Typ	Subnetz			
Ethernet Schnittstelle	 Industrial Etherne 	et Ethernet(1)	-		
Schnittstellenparametri	177				
TCP/IP -> NdisWanlp TCP/IP(Auto) -> Intel	21143 Based PCI		1		
TCP/IP(Auto) -> SiS S TCP/IP -> SiS 900-Ba			700	irdnen	
Zuge <u>o</u> rdnet:			μà	isen	
Schnittstelle	Parametrierung	Subnetz \$70	nline		
			SZONLIN	IE-Zugriff:	
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ок (Abbrechen	Hilfe	
			Abbiechen		
18. If this warning messag Bearbeiten Objekteigenscha		re it. Press "OK".			
Baugruppentyp (Eth	chnittstelle können bei die: ernet Schnittstelle) nicht üb ene Parametriersoftware ex	ernommen			
ein Neuanlauf der B	augruppe durchgeführt wei eter verändert wurden.	rden muß,			
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lgemein Schnitts	tellen Zuordnung			
Nicht zugeordnet- Projektierte Schnitt	stellen:			
Name MPISchnittstelle(Typ 1) MPI	Subnetz MPI(1)		
See as as				
Schnittstellenparan	netrierungen im PG/PC:			
ISO Ind. Ethernet	netrierungen im PG/PC: -> Intel 21143 Based -> SiS 900-Based PC		.	
ISO Ind. Ethernet	-> Intel 21143 Based -> SiS 900-Based PC FIBUS)			Zuordnen
ISO Ind. Ethernet ISO Ind. Ethernet PC Adapter(MPI) PC Adapter(PR0F	-> Intel 21143 Based -> SiS 900-Based PC FIBUS)			Zuordnen Lösen
ISO Ind. Ethernet ISO Ind. Ethernet PC Adapter(MPI) PC Adapter(PROF TOD #D. 111100 Zugeordnet:	-> Intel 21143 Based -> SiS 900-Based PC FIBUS) Per Parametrierung	Subnetz	S7Online.	
ISO Ind. Ethernet ISO Ind. Ethernet PC Adapter(MPI) PC Adapter(PROF TOD #D. 111100 Zugeordnet:	-> Intel 21143 Based -> SiS 900-Based PC FIBUS)	Subnetz	S70nline; aktiv	

19. SBe sure to activate the checkbox "S7ONLINE Access:". Confirm the dialog with "OK". Because of your "PD/PC(1)" configuration the graphical presentation should have changed (as shown in the picture below). The yellow marked connection (green line) between "PG/PC(1)" and "Ethernet(1)" shows that the assigned interface ("Ethernet(1)") from the "PG/PC(1)" object is used for the "S7ONLINE - Access".



20. Now "Save and Compile..." your configuration by using the menu "Network". The option "Compile changes only" is good enough for our purpose.

	NetPro	o – [CPMode	: (Netz)	C:\Docur					
	Netz	Bearbeiten	Einfügen	Zielsyste					
é	0.67	fnen Njeßen							
	Speichern								
	Speichern und übersetzen								
	Kor	nsistenz prüfe	en						

21. A small window appears with a lot of error and warn messages. Do not panic that is part of the plan.

As you can see in the graphical section the "S7-LAN-module/MPI-LAN-cable for CP mode" has a red marked area. This signals that this object is currently not working.



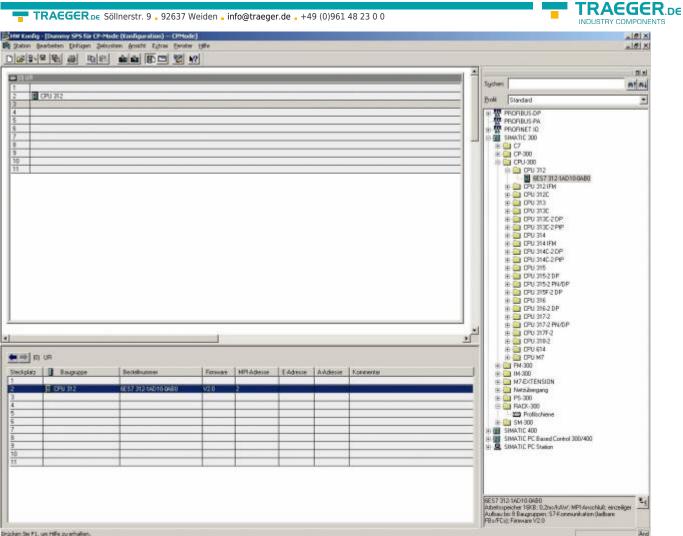
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To solve this problem perform a double click to the "S7-LAN-module/MPI-LAN-cable for CP mode" or perform a right click to the object and choose "Open Object".

	SIMATIC 300(1)	SPS für CP-Mode	g PG/PC(1)
	2	Objekt öffnen	Ctrl+Alt+O
1PI(1)	2	Kopieren	Ctrl+C
1PI		Löschen	Del
		Neu anordnen	
them	et(1) al Ethernet	Objekteigenschaft	en Alt+Return

22. A new window opens (the hardware configuration). On the right you can see the hardware explorer where you should choose "Rail" from the branch "SIMATIC 300" - > "RACK - 300".

B Salan	Durning SPS for CPJ Instatem Driftgen Zel	tode (Konfiguration) CPS system Anskht Edites Em	tode) ster tille					_			X
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									() in weak	hedenen Längen Sefetbar	3
Drücken Sie På	un Hilfe zu erhalten.										And



The picture below shows how the window should appear after you have added the "Rail".

23. In the hardware explorer open the branch: "SIMATIC 300" - > "CPU - 300" - > "CPU 312". From there double click on "6ES7 312 - 1AD10 - 0AB0".

The application is now adding this cpu to your rail.

The view should have changed as shown below.

24. In the hardware explorer mark "V2.0" from the branches "SIMATIC 300" - > "Industrial Ethernet" - > "CP 343 - 1" - > "6GK7 343 - 1EX11 - 0XE0" and select one of the green slots at the bottom left (see the dark green marked slot).

Now rapidly click twice on "V2.0" to add the object to your rail.

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(MY Konlig - [Dummy SI'S für CP-Mode (conliguration) CPMode) § Jaton Beateten [Privan Zelosten Analit Eytne Bender tille		X X
		1 (4)
		lyches nt ni
2 CPU 312 3		the Standard
4 9		H TPORBUS.0P
6 7		E PROFINET IG E III SIMATIC 200
		₩ CP-300
10 31		R 🚰 A5-Interface R 🚰 Industrial Ethemet B 🚰 CP 343 1
		8 6647 343-15-00-0-60 8 6647 343-15-10-0-0-60
		COX7 340-10/01-04E0
		(#) 66K7 343 1E/20-0KE0 (#) 66K7 343 1E/21-0/E0
		(R 🧰 CP 3431 ISO (R 🎦 CP 3431 PN
		⊞ GP 343-1 Advanced // ⊞ GP 340-1 Lean
		B POPBUS B Point-to-Point
		± 0 CPU-308 ≡ 0 FM-300
		MI 308 MI 308 MI 47EXENSION
J		
	<u> </u>	E Politichiene
💶 🕶 IDI UR		SIMATIC 400 SIMATIC PC Based Control 300/400
1	Mådesse Eådresse Aådesse Kommertar	an 💆 SIMATIC PC Station
2 DPU 312 6657 312-14D10 0480 V2.0 2		
6 7		
9		
10 11		
		65K7 543 15/11 0/60
		57 CP for Industrial Ethennel ISO and TCP/IP net IEND REDE/VE- and FETCH-WRITE Schnitzbele, lange Daten, UDP, TCP. ISO, 57 Kommunikation, Routing and
icken Sie F1, um Hilfe zu erhalten.		And
igenschaften - Ethernet Schnittstelle CP	343-1 (R0/54)	×
Allgemein Parameter		
MAC-Adresse einstellen / IS <u>D</u> -Protokoll ve	wenden	
	Bei Anwahl eines Subnetzes werden die	
MAC- <u>A</u> dresse:	nächsten freien Adressen vorgeschlagen	
☑ IP-Protokoli wird genutzt		
IP-Adresse: 192,168,1,55	Netzübergang	
	 Keinen Router verwenden 	
Subnetz <u>m</u> aske: 255.255.255.0	C Router <u>v</u> erwenden	
	Adresse: 192.168.1.55	
<u>S</u> ubnetz:		
	<u>N</u> eu	
Ethernet(1)	<u><u>N</u>eu</u>	
	Eigenschaften	
	Löschen	
<u> </u>	AbbrechenHilfe	

25. Before the application can add the object to your rail you have to configure it.

Therefore set, in the registry card "Parameters" of the new dialog, the IP address of the used S7-LAN module (e.g. "192.168.1.55") and select "Ethernet(1)" in the list "Subnet:" (the newly created interface).





The subnet mask should fit to the given IP address (e.g."255.255.255.0"). Confirm with "OK".

In our example we used a computer with the IP address 192.168.2.106 and a S7-LAN module with the IP address 192.168.1.55. Because of the different subnets (red marked numbers) of the devices a direct communication cannot be established. To solve this problem you can change the subnet mask from the computer to 255.255.252.0. Now the computer is available for exact three subnets 0, 1 and 2. Read the chapter 9.1 "Frequently Asked Questions" for further informations.

26. Right click on "CPU 312" in the bottom left sector and in the context menu choose "Object Properties...".

		Symbole bearbeiten	
		Objekteigenschaften	Alt+Return
	魡 (0) UR 🍯	Produktsupport-Informationen	Ctrl+F2
S	Baugru	FAQs	Ctrl+F7
1		Handbuch-Suche	Ctrl+F6
2	CPU 312	6E57 312-TAUTU-	UABU

27. In the dialog "Properties – CPU 312 - (R0/S2)" press the "Properties..." button. In the new dialog you can assign the MPI address to the CPU and choose the subnet the CPU should use.

Select the "MPI(1)" "Subnet:" we have created in the steps before. The address (e.g. "10") of the CPU should be the only one in the entire network.

Also be sure that the next higher address is also free for use (it will be used later for the CP object). Save your configuration with "OK".

igenschaften - MPI Schnittstelle CPU 312 (R0/S2)		x
Allgemein Parameter		
Adresse:		
Übertragungsgeschwindigkeit: 187.5 kbit/s Subnetz: nicht vernetzt	<u>N</u> eu	-
[MPI(1)] 187.5 kbit/s	Eigenschaften.	
	<u>L</u> öschen	
OK Abbre	echen Hilf	fe

28. Right-click on the created CP object **CP343 - 1** and select **Object properties** from the shortcut menu.

		Symbole bearbeiten	
(🔌 (0) UR 🚪	Objekteigenschaften	Alt+Return
S	Baugn	Produktsupport-Informationen	Ctrl+F2
J 1	B Daugit	FAQs	Ctrl+F7
$\frac{1}{2}$	CPU 312	Handbuch-Suche	Ctrl+F6
3		Adressierung	
4	CP 343-1	DOIX-343-LEATT	une o pr

29. Another property dialog will open.

Set the name of the CP object to "S7-LAN" (optional). Also set the MPI address which should be exact one



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station higher than the address you have given your "CPU 312" in the step 30 (e.g. "10" has been set for the "CPU 312" object.

So "11" has been the only right address for the CP object). Confirm with "OK".

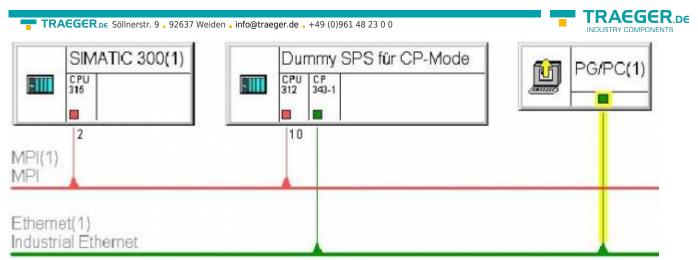
enschaften - CP 343							
llgemein Adressen	Optionen Diagnose						
Kurzbezeichnung:	CP 343-1						
	S7 CP für Industrial Ethernet ISO und TCP/IP mit SEND-RECEIVE- und FETCH-WRITE-Schnittstelle, lange Daten, UDP, TCP, ISO, S7-Kommunikation, Routing und BG-Tausch ohne PG, 10/100 Mbit, feste MAC-Adresse, Initialisierung über LAN, IP-Multicast, Firmware V2.0						
Bestell-Nr./Firmware	6GK7 343-1EX11-0XE0 / V2.0						
<u>N</u> ame:	S7-LAN						
- Schnittstelle							
Typ: Eti	hemet <u>M</u> PI-Adresse: 11						
Adresse: 19	32.168.1.55						
Vernetzt: Ja	i <u>Eigenschaften</u>						
Kommentar:	<u> </u>						
⊻ommentar:							
K_ommentar:	Abbrechen Hilfe						
OK	Abbrechen Hilfe						
OK "Save and Comp etPro - [CPMode (1	bile" the hardware configuration and the network configuration						
OK "Save and Comp letPro - [CPMode (1 Netz Bearbeiten E	bile" the hardware configuration and the network configuration						
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OK "Save and Comp letPro - [CPMode (f Netz Bearbeiten E Öffnen Schljeßen	bile" the hardware configuration and the network configuration						
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OK "Save and Comp letPro - [CPMode (f Netz Bearbeiten E Öffnen Schljeßen Speichern Speichern und übe Konsistenz pröjekt	Dile" the hardware configuration and the network configuration						
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OK "Save and Comp letPro - [CPMode (f Netz Bearbeiten E Öffnen Schljeßen Speichern Speichern und übe Konsistenz pröfen Konsistenz pröjekti	Dile" the hardware configuration and the network configuration Netz) C:\Doci Einfügen Zielsyst ersetzen übergreifend prüf Ny SPS für CP-Mode (Konfigurati						
OK "Save and Comp letPro - [CPMode (f Netz Bearbeiten E Öffnen Schließen Speichern Speichern und übe Konsistenz pröjekt IW Konfig - [Dumm Station Bearbeiten	Dile" the hardware configuration and the network configuration Netz) C:\Doct Einfügen Zielsyst #rsetzen Wergreifend prüf Ty SPS für CP-Mode (Konfiguration Einfügen Zielsystem Ansicht E						

31. After you have saved the network configuration the graphical presentation of the devices and busses should appear as shown in the picture below. As you can see there are no more red marked sections.

Speichern und übersetzen

Eigenschaften...

Ctrl+S



32. The last thing you have to do before the connection is established is to configure the S7-LAN module. You can access the configuration menu via web browser. In the address bar you must enter the S7-LAN IP address. Press the "Enter" key to start the web based configuration menu.

You do not know the S7 - LAN IP address? In this case you can use the PLC – VCom software to determine the S7-LAN IP address. Tip: The "Configuration" dialog shows every connected device (to the computer or the network). See chapter "PLC - VCOM".

33. Choose the desired language in the first site and click on "CP - Mode" in the second site.

The only option you can configure for the CP mode is the "Destination - PLC". You can set "255". In this case the S7-LAN module connects automatically to the directly connected PLC.

If you are using the IPS7Link software you could set the station address of the PLC CPU which is connected directly to your S7-LAN module (in this example "2").

Or type in the station address of the PLC CPU which you have configured in step 30 for the "CPU 312" (e.g. "10").

Aligemein	Netzwerk	RFC1006	MPI/PROFIBUS	Turing	Anzeige S7 an SS/S7 Gateway VarSteuern KonfigVarSt Watchdog Passwort
Ziel-CPU					255

34. In the menu "MPI/PROFIBUS" set the "Locale Station Address" which you have configured to your CP object in the step 32 (e.g. "11").

Aligemein	Netzwerk	REC1006	MPI/PROFIBUS	Turing	Anzeige S7 an S5/S7 Gateway VarSteuem KonfigVarSt Watchdog Passwo
Baudrate					18765 💌
höchste State	onsadresse				126 🛩
lokale Teilneh	meradresse				11
Profil					MPI 👻
PG/PC ist ein	ziger Master				NEIN M

35. Back in the main application window (the SIMATIC Manager) set the real existing PLC into "Online" state.

Therefore just click on "Online" in the menu "View".

SIMATIC Manager - [CPMode -	- C:\Doci	uments and Settings\\manual\
🛃 Datei Bearbeiten Einfügen Zie	elsystem	Ansicht Extras Fenster Hilfe
	m 💿	<mark>v _0ffline</mark> Online
CPMode CPU 312 CPU 312 Graves S7-Programm(2) CPU 312 CPU 312 CPU 315 CPU 315 CPU 3	Objektn	Große Symbole
🖂 🔂 Quellen		<u>A</u> ktualisieren F5

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36. To test the communication open the branch of your real existing PLC (e.g. "SIMATIC 300(1)"). The branch below the PLC is the CPU Type (e.g. "CPU 315"). A additional red symbol is displayed next to the standard CPU symbol. Open this branch, too. The next branch you should open is named as "S7 Program" (e.g. "S7 Program(3)"). Finally click on "Blocks" to get a complete list of available blocks from your PLC.

	Debysten änsicht Editres Denster Hilfe	Prote William Co.						_10
日 日 CPWode	Disektrane Symbolischer Name	Kein Filter >	・ V 紀 · · · · · · · · · · · · · · · · · ·	Entekpache	Golle in Arbeitupe	1	Vecson (Header)	Name (Head
Dunny SPS M CP Mod	Systemater -		w sonur Leonpecter	Lineerplacter		508	Vector (respect	Trane pread
SIMATIC 300(1)	and characterize	-	RAM	Alert.			0.1	
E J CPU 315	G-081	-				Organication/baustein		100 miles
8 - \$7-Program(1)	G SFC0	4m	-	Alw/L		Systembunktion	1.0	SET_CLK
CH Hauterra	G SFC1	Ja		AlwL.	-	Systemfunktion	1.0	READ_CLK
and subsciences	G SFC2	1m	-	Abult.	-	Systemburktion	1.0	SET_RTM
	G SFC3	J.a		Alut.	-	System/unktion	1.0	CTRL_RTM
	G SFC4	Ja	- 10-	Alw?L	100	System/unktion	1.0	READ_RTM
	G SFC20	44	-	Alm'L.	-	Systembunktion	1.0	BLKMOV
	G SFC21	Ja	-	Alw1.	-	Systemfunktion	1.0	FILL
	G SFC22	Ja	-	Alark.	-	Systemunition	1.0	CREAT_DB
	G SFC28	Ja.		Aler.	-	Systemburktion	1.0	SET_TINT
	G SFC29	Ja		Alsa/L	_	System/unition	1.0	EAN_TINT
	G SFC30	Ja	-	Alm'L.	_	Systemlunktion	1.0	ACT_TINT
	G SFC31	Ja		NwL.	-	Systembucktion	1.0	DRY_TINT
	G SFC32	Ja	-	Alul		System/unition	10	SRT_DINT
	G \$FC33	Ja	-	Aler1.		Systemburktion	1.0	CAN_DINT
	O SFC34	Ja	-	AlarL		Systemburktion	1.0	QRY_DINT
	CO SPC 34	aL.		Alan			1.0	
			-		-	Systemlunktion		MSK_FLT
	G SFC17	40	-	Aberl,		Systemarktion	10	DMSK_PLT
	G 5FC38	Ja	-	AlwL.		Systemfunktion	1.0	READ_ERR
	G SFC39	Ja	-	Als/L	-	Systemburktion	1.0	DIS_IRT
	G SFC40	Ja	-	Alert.		Systembunktion	1.0	ENJRT
	G SFC4)	Ja	-	Alw1_	-	Systemfunktion	1.0	DIS_AIRT
	CD-SFC42	Ja	-	dim'L.	-	Systemburktion	1.0	EN_AIRT
	G SFC43	Ja		Ala/L	-	Systemburktion	1.0	RE_TRIOR
	G SFC44	da	-	AlmL	_	System/unition	1.0	REFL_VAL
	CO-SFC4E	Ja	-	Aller1.	-	Systembunktion	1.0	STP
	G SFC47	da.	1.00	AWL		Systembunktion	1.0	WAIT
	G SFC49	Ja	-	AWL		System/unktion	1.0	LEC_GADR
	G SFC50	Ja	-	Mal.		Systemurktion	1.0	RD_LGADR
	G SFC51	Ja		Alw1		Systemborktion	10	RDSYSST
					-			
	CD SFC52	4e	-	Alw/L		System/unktion	1.0	WR_USHS
	G SFCS5	Ja.	1	AberL.		Systemurktion	1.0	WR, PARM
	G SFC56	Ja	-	AlwL	-	System/unition	1.0	WR_DPAR
	O SFC57	18	-	Ala'L.		Systemunition	1.0	PARM_MOD
	G SFC58	da:	-	Abert.	-	Systemfunktion	1.0	WR_REC
	SFC59	Ja	-	Abult	-	System/unition	1.0	RD_REC
	G SFC64	Ja.	-	Aler1.	-	Systematication	1.0	TIME_TOK
	and a second sec							
				10				
1.								

As soon as the blocks are shown, right beside the device explorer, the CP communication with the PLC over the S7-LAN module is established.

HINT: It is not possible to establish a normal communication and a CP communication at the same time. If you do so only the CP mode should work properly because it has a higher priority.

6.2.10.2 Direct communication with Step - 7 © v5.3 (S7-LAN-project)

Another possibility is to keep including a S7-LAN-project. This project will be delivered with the S7-LAN as a zip file and must dearchived on Step 7. It is currently not possible to replace a CP completely.

This description is based on an existing project. For more information about creating a new project, we ask the help or the manual to use the Step 7 software.

Please be sure that you enter in the S7-LAN-module in the configuration menu the Subnet-ID of the connected bus.

Without this entry, a function is not given!

- 1. Start the Step 7 $\, \mathbb{C}\,$ software. This can be run through the desktop shortcut or Start menu.
- 2. Next open the existing project and start with the menu "extras" the dialog "PG / PC interface set"



Extras Fenster Hilfe	
Einstellungen Ctrl+Alt+E	
Te <u>x</u> tbibliotheken	•
Sprache für Anzeigegeräte	
Texte mehrsprachig <u>v</u> erwalten	•
Umverdrahten	
Ablaufeigenschaften.,,	
Bausteine vergleichen	
Referenzdaten	•
Globaldaten definieren	
<u>N</u> etz konfigurieren	
Baugruppen simulieren	
Prozeßdiagnose projektieren	
PG/PC-Schnittstelle einstellen	
PG/PC-Schnittstelle einstellen	
Zugangspunkt der Applikation:	
S70NLINE (STEP 7)> TCP/IP -> S	SiS 900-Based PCI Fa 💌
(Standard für STEP 7)	
Benutzte Schnittstellengarametrierung:	
TCP/IP -> SiS 900-Based PCI Fast	<u>E</u> igenschaften
TCP/IP -> NdisWanIp	Diagnose
TCP/IP -> SiS 900-Based PCI Fast.	
TCP/IP(Auto) -> Intel 21143 Based	Kopieren
E TCP/IP(Auto) -> SiS 900-Based PCI	Löschen
(Parametrierung Ihrer NDIS-CPs mit TCP/IP Protokoll (RFC-1006))	
- Schnittstellen	
Schnittstellen Hinzufrigen/Entfernen:	Auswichlen
Schnittstellen Hinzufügen/Entfernen:	Auswählen
	Auswählen
Hinzufügen/Entfernen:	Auswählen

3. Select under "Used Interface". The entry "TCP / IP \Rightarrow XXX", where "XXX" is for the used network card. Then confirm with "OK".

In version 5.2 of the Step 7 software, you must acquire and install additional SIMATIC NET packet,

otherwise the Step 7 software required entries (TCP, etc.) are not supported. The version 5.3 includes this package after the first installation.

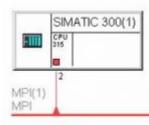
4. Back in the main window of software STEP 7 in the menu "Extras" select "network settings". It opens a new window.

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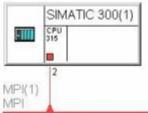


Extras	Fenster	Hilfe	
Einst	ellungen	•	Ctrl+Alt+E
Spra		en Izeigegerät achig <u>v</u> erw	
	erdrahten ufeigensch		
<u>R</u> efe Glob	teine verg renzdaten aldaten de konfigurie	ı Finieren	•
	ruppen sir eßdiagnos	nulieren e projektier	ren
PG/P	⊆-Schnitts	telle einste	llen

5. The window shows the available devices and busses (in our example, a PLC "CPU 315" on one MPI - Bus Station with the address "2").



6. Select in the network explorer the subnet "industrial ethernet". The window should change how the image



Ethernet(1) Industrial Ethernet

	므로
S <u>u</u> chen:	m† mi
Auswahl der Netzobjek	te
	-
- ROFIBUS-PA	1
🗄 📅 PROFINET IO	
🗄 🧰 Stationen	
🗄 🦲 Subnetze	
📲 Industrial B	thernet
B MPI	
PROFIBU:	S
PTP	

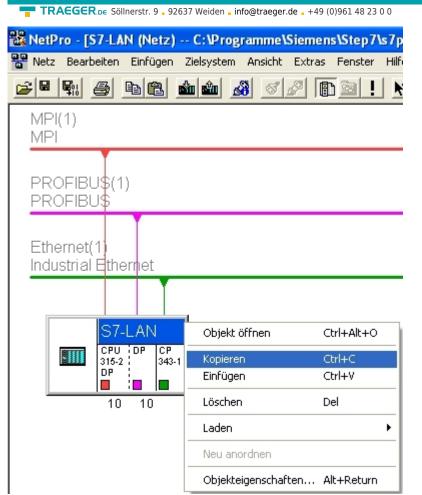
7. Now unzip the zip file included and select the location to unzip the files.

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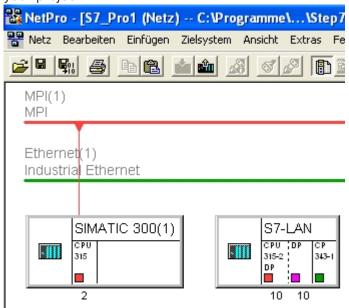


SIMATIC Ma	nager - S7	-LAN					
Datei Bearbeiten	Einfügen	Zielsystem	Ansicht	Extras	Fenster	Hilfe	
Neu						Ctrl+N	
Assistent 'Neue Öffnen	s Projekt'				1	Ctrl+O	
Schließen							
Multiprojekt							×
S7-Memory Car Memory Card-D							•
Speichern unter	·				I	Ctrl+S	
Löschen Reorganisieren. Verwalten							
Archivieren							
Dearchivieren							
Drucken Seite einrichten							۲
2 S7-LAN (Proje 3 S7_Pro1 (Proj 4 Erreichbare Tr Beenden	ekt) ⊂:\	\Siemens\Ste				Alt+F4	
Zielverzeichni	s auswähl	en					
		s7ifc S7IKX S7INF S7LIBS S7MANUAL S7MET S7NGD S7NVB S7NVB S7Proj S7SKA S7SYM S7TIC.405 S7TIC.505 S7TIC.505					
ок Shoot open the		echen	Hilfe		d on on	then	ot

Shoot open the project with the name S7-LAN and open the network configuration. 8.Select the preconfigured S7-LAN Projekt and copy it into your own project.



9. Here you only have to connect the S7-LAN with the network and the addresses may change according to your project.



10. Double clicking on the CP, open the properties of the object. Here addresses the CP with the IP of your S7-LAN and networked it with the industrial network

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🖁 NetPro - [S7_Pro1 (Netz) C:\Progra	mme\\Step7\s7proj\S7_Pro1]
📮 Netz Bearbeiten Einfügen Zielsystem An	isicht Extras Fenster Hilfe
2 8 9: 5 B B B A	
MPI(1)	· · · · · ·
MPI	
	Ť
Etherne <mark>t</mark> (1) Industria <mark>l</mark> Ethernet	
SIMATIC 300(1)	S7-LAN
315	315-2 343-1 DP
igenschaften - Ethernet Schnittstelle (
Allgemein Parameter	
MAC-Adresse: 08-00-06-01-00-00	
IP-Protokoll wird genutzt	
IP-Adresse: 192.168.1.160	 Netzübergang Keinen Router verwenden
Subnetzmaske: 255.255.255.0	G Router verwenden
	Adresse: 192.168.1.160
Subnetz:	
nicht vernetzt	Neu
Ethernet(1)	Eigenschaften
	Löschen
ок	Abbrechen Hilfe

The MPI and PROFIBUS addresses must be 1 less than the address on the back wall of the CP. In this image the MPI and Profibus address is 10 therefore the address on the back panel of the CP is 11 11. You can also adjust the back panel bus in the object properties of the CP.

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--	---------------	--------------	-----------------	------------	-----------



Eigenschaften - CP 34	3-1 - (R0/S4)			
Allgemein Adressen 0	otionen Diagnose			
Kurzbezeichnung:	CP 343-1			
	S7 CP für Industrial Ethernet ISO und TCP/IP mit SEND-RECEIVE- und FETCH-WRITE-Schnittstelle, lange Daten, UDP, TCP, ISO, S7-Kommunikation (Server), Routing und BG-Tausch ohne PG, 10/100 Mbit, Firmware V1.0			
Bestell-Nr:	6GK7 343-1EX10-0XE0			
Name:	CP 343-1			
Schnittstelle	Rückwandanschluß			
Typ: Ethe	met MPI-Adresse: 11			
Adresse: 192.1	168.1.160			
Vernetzt: Ja	Eigenschaften			
Kommentar:				
1				
ОК	Abbrechen Hilfe			

12. Below save and translate everything and transfer it to the PLC

Speichern und übersetzen 🛛 🗙
Übersetzen C Alles übersetzen und prüfen C Nur Änderungen übersetzen
OK Abbrechen Hilfe

In the following part of the description assumes that you are familiar with the configuration of the S7-LAN module. If you have problems in the following steps please read chapter 2.6 "Operation" 13. Now we just have to configure the S7-LAN accordingly. This is done via the web browser.Enter the IP - address of your S7-LAN module into the address bar of your browser and press "Enter".

You do not know the IP address of your S7-LAN? then you can use the PLC-VCOM software to determine the IP address. Tip: In the "Configure" dialog will display all connected devices (a PC or on the network). More on this in Chapter 7, "PLC - VCOM".

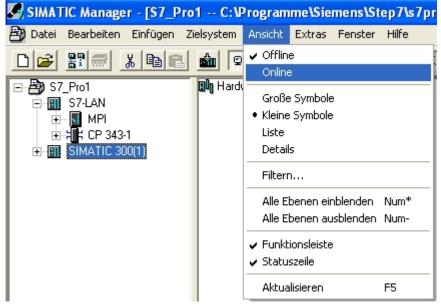
Nun öffnet sich die Startseite des S7-LAN's wo Sie nun rechts im Menübaum in die Configuration müssen 14. These are the settings that you need to do in the configuration of the en:hardware:s7:s7-lan:

- The same IP that you have given your CP in the Step7 project and the S7-subnet-ID of the net which you communicate to your real PLC
- The local station address must be the same as that of the backplane bus of your CP's in the Step 7 project



S7-LAN V2.13

- Startseite
- Verbindungen
- Display
- Optionen
- Konfiguration
- Passwort
- Neustart
- In the target CPU must you enter the value "255" so that the S7-LAN can communicate automatically with the directly connected CPU. If you use the Software IPS7Link, please enter here the address of the CPU station which is directly connected to the S7-LAN (in our example would be "2")



15. Back in the main program (the SIMATIC Manager). You put your real existing PLC (eg "SIMATIC 300 (1)") in the "online" - status. Just click on "Online" in the menu "View".

16. To test the communication you click on your real PLC (example: "SIMATIC 300 (1)"). A sub-branch with the corresponding CPU specification appears (example: "CPU 315-2 DP"). This now has a blue icon (which stands for the run mode). Open this and the next branch "S7 - Program (1)". Finally, you click on the "blocks" to a block list of the PLC to receive.

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S7-LAN C:\Programme\S	iemens\Step7\s	7proj\\$7-LAN O		
🖃 🎒 S7-LAN	🚵 Systemdaten	🕞 OB1	🖽 DB1	
🖻 🏢 S7-LAN	🖽 DB10	🖽 DB13	🖽 DB20	
🕀 🖓 MPI	🖽 DB30	🖽 DB31	🕞 DB32	
🔃 况 CP 343-1	🖽 DB33	🖽 DB100	🕞 DB101	
SIMATIC 300(1)	🖽 DB110	🕞 DB111	💼 DB112	
🖻 📲 CPU 315-2 DP	🖽 DB130	🕞 DB131	💼 DB155	
⊡@_ S7-Programm(4) @ Bausteine	🖽 DB160	🕞 DB191	🖽 DB200	
Bausteine	🗗 DB201	🕞 DB508	💼 SFBO	
	🕞 SFB1	🕞 SFB2	🖽 SFB3	
	🕞 SFB4	🕞 SFB5	🕞 SFB32	
	SFB52	🕞 SFB53	🕞 SFB54	
	🕞 SFB75	🕞 SFCO	🕞 SFC1	
	SFC2	🕞 SFC3	💼 SFC4	
	SFC5	🕞 SFC6	🕞 SFC7	
	SFC11	SFC12	🕞 SFC13	=
	SFC14	🕞 SFC15	🕞 SFC17	_
	SFC18	SFC19	🕞 SFC20	
	SFC21	🕞 SFC22	🕞 SFC23	
	SFC24	🕞 SFC28	🕞 SFC29	
	SFC30	🕞 SFC31	💼 SFC32	
	SFC33	🕞 SFC34	🕞 SFC36	
	SFC37	🕞 SFC38	🕞 SFC39	
	SFC40	🕞 SFC41	🕞 SFC42	
	SFC43	🕞 SFC44	💼 SFC46	
	SFC47	🗊 SFC49	💼 SFC50	
	SFC51	💼 SFC52	💼 SFC55	
	SFC56	💼 SFC57	🗊 SFC58	
	SFC59	💼 SFC64	💼 SFC65	
	SFC66	💼 SFC67	🚍 SFC68	
	SFC69	🕞 SFC72	🕞 SFC73	
	SFC74	SFC81	SFC82	~
P		- CEC04	- 000101	

Once the blocks of your PLC is listed, is the communication with your PLC established successfully

6.2.10.3 Direct communication with Step - 7 \odot v5.3 (CP 343-1)

It can be inserted instead of a S7-PLC-replacement or S7-LAN-project immediately a CP in your configured PLC to communications. Under the presuppositions that the structure of the PLC with the CP (S7-LAN) is not checked for correctness, but ignores any errors and anyway the PLC switches to RUN mode.

This description is based on an existing project. For more information about creating a new project, we ask the help or the manual to use the Step 7 software.

1. Start the Step - 7 $\ensuremath{\mathbb{C}}$ software. This can be run through the desktop shortcut or Start menu.

2. Now open your existing project and start using the "Tools" and "PG / PC - Setting interface ..." - dialog.



Extras Fenster Hilfe	
Einstellungen Ctrl+Alt+E	
Te <u>x</u> tbibliotheken Sprache für An <u>z</u> eigegeräte… Texte mehrsprachig <u>v</u> erwalten	>
Umverdrahten Ablaufeigenschaften	
Baus <u>t</u> eine vergleichen <u>R</u> eferenzdaten Globaldaten definieren <u>N</u> etz konfigurieren	•
Baugruppen simulieren Proze <u>ß</u> diagnose projektieren	
PG/P⊆-Schnittstelle einstellen	
PG/PC-Schnittstelle einstellen Zugriffsweg Zugangspunkt der Applikation: S70NLINE (STEP 7) -> TCP/IP -> SIS (Standard für STEP 7) Benutzte Schnittstellengarametrierung:	900-Based PCI Fa
TCP/IP -> SiS 900-Based PCI Fast	<u>E</u> igenschaften
TCP/IP -> NdisWanIp	Diagnose
TCP/IP(Auto) -> Intel 21143 Based	Kopieren
TCP/IP(Auto) -> SiS 900-Based PCI	Löschen
(Parametrierung Ihrer NDIS-CPs mit TCP/IP Protokoll (RFC-1006)) Schnittstellen Hinzufügen/Entfernen:	Auswählen
Ab	brechen Hilfe

3. Select under "used Interface parametrization" the entry "TCP / IP \Rightarrow XXX", where "XXX" for the used network card. Then confirm with "OK".

In version 5.2 of the Step 7 software, you must additionally purchase and install the SIMATIC NET Packet, otherwise the STEP 7 software does not support the required entries (TCP, etc.). Version 5.3 includes this package after the initial installation.

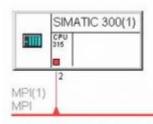
4. Back in the main window of the Step 7 software, call up the menu "Tools", "Configure network". A new window appears.

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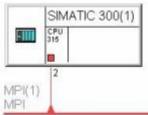


Extras	Fenster	Hilfe	
Einst	ellungen		Ctrl+Alt+E
Spra		en nzeigegerä rachig <u>v</u> erv	
11745 YO	erdrahten ufeigensch		
<u>R</u> efe Glob	teine vero renzdater aldaten de konfigurie	efinieren	•
	iruppen <u>s</u> i e <u>ß</u> diagnos	mulieren :e projekti	eren
PG/P	⊆-Schnitts	stelle einst	ellen

5. The window shows the existing devices and buses (in our example a PLC "CPU 315" on an MPI bus with the station address "2").



6. Select the **Subnet Industrial Ethernet** in the Explorer for **Network Objects** . The window should then change as in the picture.



Ethernet(1) Industrial Ethernet

	므고
S <u>u</u> chen:	nt ni
Auswahl der Netzobjekte	
- ROFIBUS-PA	
E 📅 PROFINET IO	
🗄 🦲 Stationen	
🗄 🦲 Subnetze	
- Se Industrial Eth	nernet
B MPI	
PROFIBUS	
PTP	

7. Now open the HW configuration of your PLC. Here you can see the menu tree under SIMATIC 300 on the right

⇒ CP-300



⇒ Industrial Ethernet

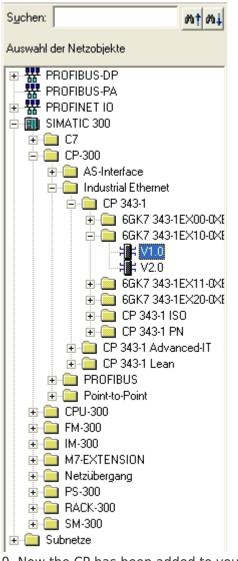
⇒ CP 343-1

 \Rightarrow The CP 6GK7 343-1EX10-0EX0 in the V1.0. Please add this to your PLC.

8. In the now populating window, you must now give the IP of your S7-LAN to the CP and connect it to Ethernet

Eigenschaften - Ethernet Schnittstelle	CP 343-1 (R0/S5)
Allgemein Parameter	
MAC-Adresse: 08-00-06-01-00-01	Bei Anwahl eines Subnetzes werden die nächsten freien Adressen vorgeschlagen
IP-Protokoll wird genutzt	
IP-Adresse: 192.168.1.160 Subnetzmaske: 255.255.255.0	Netzübergang Keinen Router verwenden Router verwenden Adresse: 192.168.1.160
Subnetz:	
nicht vernetzt Ethernet(1)	Neu
	Eigenschaften
	Löschen
ОК	Abbrechen Hilfe





9. Now the CP has been added to your rack with the CPU. Double-clicking on the CP opens its properties. Here, only the backplane connection is to be set. The address should be 1 higher than the MPI or Profibus address on which your S7-LAN is to be plugged. In this example, the 3 should be set since the MPI interface of your CPU is addressed with 2.

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Eigenschaften - CP 34	43-1 - (R0/S4)
Allgemein Adressen 0	Iptionen Diagnose
Kurzbezeichnung:	CP 343-1
	S7 CP für Industrial Ethernet ISO und TCP/IP mit SEND-RECEIVE- und FETCH-WRITE-Schnittstelle, lange Daten, UDP, TCP, ISO, S7-Kommunikation (Server), Routing und BG-Tausch ohne PG, 10/100 Mbit, Firmware V1.0
Bestell-Nr:	6GK7 343-1EX10-0XE0
Name:	CP 343-1
Schnittstelle	Rückwandanschluß
Typ: Ethe	ernet MPI-Adresse: 11 💌
Adresse: 192.	.168.1.160
Vernetzt: Ja	Eigenschaften
Kommentar:	
	~
OK	Abbrechen Hilfe
Eigenschaften - CPU 3	315-2 DP - (R0/S2)
	weckalarme Diagnose / Uhr Schutz Kommunikation Inlauf Zyklus / Taktmerker Remanenz Alarme
🔽 Anlauf bei Sollausba	u ungleich Istausbau
🔽 Ausgänge zurückset	zen bei Wiederanlauf
	n bei Anlauf durch Bedienung (z.B. von PG) sauftrag (z.B. von MPI-Teilnehmern)
Anlauf nach NETZ EIN	4
C Wiederanlauf	Neustart (Warmstart) C Kaltstart
- Überwachungszeit für	
Fertigmeldung durch B	augruppen [100 ms]: 650
Übertragung der Paran	meter an Baugruppen [100 ms]: 100
Wiederanlauf [100 ms]	:
	Abbrechen Hilfe

10. In the network configuration, open the object properties of the CPU. There you will find under the tab **Start-up** the option **start-up for construction of the building is not the actual version**, this option must be set with the hacking. TRAEGER.DE Söllnerstr. 9 . 92637 Weiden . info@traeger.de . +49 (0)961 48 23 0 0



11. Then save and translate everything and transfer the PLC into your.

Speichern und übersetzen 🛛 🔀
Übersetzen
OK Abbrechen Hilfe

In the following part of the description it is assumed that you are familiar with the configuration of the S7-LAN module. If you have problems in the following steps, please refer to chapter 2.6 **Commissioning** 12. Now you just have to configure the S7-LAN accordingly. This is done via the web browser. Enter the IP address of your S7 - LAN module in the address bar of the browser and confirm with **Enter**.

You do not know which IP address your S7 - LAN has? Then you can use the PLC - VCOM software to determine this IP address. Tip: In the **Configure** dialog, all connected devices (on the PC or the network) are displayed. For more information, see chapter 7 **PLC - VCOM**.

Now open the start page of the S7-LAN where you have to go to the right of the menu tree to the configuration.

13. You must set up everything in the

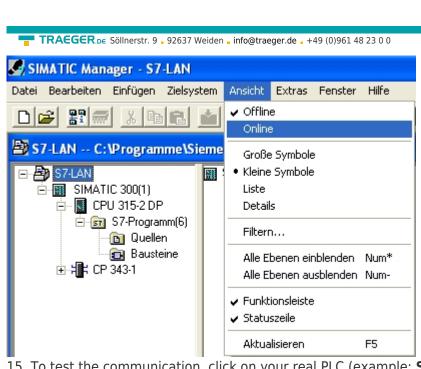
configuration of the en:hardware:s7:s7-lan:

- The same IP that you have given to your CP in the Step 7 project and the S7 subnetwork ID of the network with which you are addressing your real PLC
- The local subscriber address, which must be the same as the backplane of your CP's in step 7 project

S7-LAN V2.13

- Startseite
- Verbindungen
- Display
- Optionen
- Konfiguration
- Passwort
- Neustart
- You should enter **255** for the target CPU so that the S7-LAN automatically connects to the directly connected CPU. If you are using the IPS7Link software, please enter the station address of the CPU, which is connected directly to the S7 LAN (in our example the **2**).

14. Back in the main program (the SIMATIC Manager), Place your existing PLC (**SIMATIC 300 (1)**) in the **Online** state. To do so, click **Online** in the **View** menu.



15. To test the communication, click on your real PLC (example: **SIMATIC 300 (1)**). A branch with the relevant CPU specification opens (example: **CPU 315-2 DP**). This has now a blue symbol (which stands for the run mode). Open this and the next branch **S7 program (1)**. Finally, click **Blocks** to get a block list from the PLC.

🞒 S7-LAN C: \Programme\S	iemens\Step7\s7	proj\\$7-LAN OI	NLINE	
🖃 🖶 S7-LAN	🚵 Systemdaten	🕞 OB1	🕞 DB1	🖽 DB10
🗄 🞆 SIMATIC 300(1)	🖪 DB13	🖽 DB20	🕞 DB30	🖽 DB31
🖨 🖓 CPU 315-2 DP	🗖 DB32	🖽 DB33	🕞 DB100	🖽 DB101
🖻 💼 S7-Programm(6)	🖽 DB110	🖽 DB111	🖪 DB112	🖽 DB130
Bausteine	🗖 DB131	🖽 DB155	🖽 DB160	🖽 DB191
🗄 📲 CP 343-1	🗖 DB200	🖽 DB201	🖽 DB508	🖽 SFBO
	🖪 SFB1	🖽 SFB2	💼 SFB3	🖽 SFB4
	🗊 SFB5	🖽 SFB32	💼 SFB52	🖽 SFB53
	🖪 SFB54	🖽 SFB75	💼 SFCO	🖽 SFC1
	SFC2	🖽 SFC3	🖽 SFC4	🖽 SFC5
	SFC6	🖽 SFC7	🕞 SFC11	SFC12
	SFC13	🖽 SFC14	🖽 SFC15	SFC17
	SFC18	🖽 SFC19	💼 SFC20	SFC21
	SFC22	🖽 SFC23	🕞 SFC24	SFC28
	SFC29	🖽 SFC30	🕞 SFC31	SFC32
	SFC33	💼 SFC34	🕞 SFC36	SFC37
	SFC38	🖽 SFC39	🕞 SFC40	SFC41
	SFC42	🖽 SFC43	🕞 SFC44	🖽 SFC46
	SFC47	🖽 SFC49	🕞 SFC50	SFC51
	SFC52	🖽 SFC55	🕞 SFC56	SFC57
	SFC58	🖽 SFC59	🕞 SFC64	I SFC65
	SFC66	🖽 SFC67	🕞 SFC68	I SFC69
	SFC72	🖽 SFC73	🕞 SFC74	SFC81
	SFC82	🖽 SFC83	🕞 SFC84	🖽 SFC101
	SFC102			
s coop as the blacks of a DLC				

As soon as the blocks of a PLC are listed, communication with your PLC is successfully established

TRAEGER.DE

6.2.11 Direct communication with ProTool / Pro v6.00 (CP – Mode)

1. Creating a new project

Start the ProTool/Pro CS software and click on File ? New. . A assistant will appear for entering the project settings.(for more Information about creating projects with ProTool/Pro CS v6.00 read the manual of the developer).

2. Choosing a destination device

The destination device must support the Ethernet interface.

3. Choosing a PLC

Enter a typical PLC Name and select the used PLC type (e.g. "SIMATIC S7 300/400 V6.0"). After choosing the PLC type click on parameter.

SIMATIC S7 - 300/400	\mathbf{X}
OP mit <u>N</u> etz verbinden: - Parameter selbst definieren MPI (1) - PROFIBUS (1)	①P-Parameter Schnittstelle: Ethernet ①K Protokoll: IP ▲ Abbrechen Adresse: 192 . 168 . 2 . 100 Subnetzmaske: 255 . 255 . 255 . 0
Kommunikationspartner/Symbolliste auswählen: Parameter selbst definieren ⊕ -nicht vernetzt-	Routing verwenden
	Parameter des Partners Adresse: 192.168.2.151 Steckplatz: 1 Baugruppenträger: 1 Zyklischer Betrieb: I Protokoll: I

OP-Parameter

Interface

If the desired destination device supports "Ethernet" you can change the interface to "Ethernet".

Protocol

Communication is established by using the IP protocol.

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Address

Enter the IP address of your computer.

Subnet mask

Enter the subnet mask of your computer.

Routing

Activate this check box to reach members outside your subnet. Requires that the construction components of the station supports routing (CPUs und CPs). More information you will get in the "STEP 7 Online Help".

Parameter of the partner

Address

Enter the IP Address of the S7-LAN module which is plugged onto the PLC.

Slot

Enter the slot number of the destination CPU

Construction components

Enter the construction components.

Cyclic operation

If this check box is active the PLC optimizes the operation between ProTool/Pro Runtime and the PLC. This is used to get a better performance. For Parallel operations of more than one computers the cyclic operation check box should be deactivated.

Confirm the configuration with "OK".

4. Complete the project

Click on "Next" and then on "Complete" to end the project start configuration.

5. Alternative configuration

If you select the group "Controls" in the left part of the window you can see the available PLCs in the right part. Right click with the mouse button on the PLC and select "Properties" in order to get back to the configuration dialog we used in the project configuration at the beginning. At least to get there you have to click on "Parameter".

6. Transfer Properties

In the file menu click on "Transfer" - "Properties..." and the following dialog appears.

Choose "Ethernet" so that the connection can be established in the CP mode. If "Ethernet" is activated you can enter the "IP address" of the destination device (S7-LAN).

Confirm with "OK" to complete the configuration.

TRAEGER.De Söllnerstr. 9 . 92637 Weiden . info@traeger.de . +49 (0)961 48 23 0 0

thernet 💌	OK
	Abbrecher
IP-Adresse:	
192 . 168 . 2 . 151	
C Computername:	
<u>R</u> ücktransfer ermöglichen	
<u>Trackitarister ennoglichen</u>	

7. Configuration is complete Now you can transfer the project.

6.2.12 Coupling of two PLC devices over the network

By coupling two PLCs it is possible to transfer data from one PLC to the other one. Can be joined two S5/S7 PLCs or one S5 with a S7. Per each S7/MPI-LAN are up to 8 connections possible, per S5 Gateway up to 2. For this example one S7-PLC was coupled with one S5-PLC. The interface between S7 and S5 are a S7/MPI-LAN and a S5-Gateway.

6.2.12.1 S7-LAN Configuration

Enter here the IP address of your S7-LAN module in the address bar of the browser and confirm with **Enter** . Call up the configuration page S7 at S5 / S7 Bridge. The following window appears.

Algemein		Netzwerk	CR-Mode	MEVEROFIEUS	S7 an S5/S7 Bridge		
/erbindung	styp	Stationsnummer	Datenbaustein	Datenwort	P-Adresse Partner	TSAP	Polizeit
DB-Aktiv	8	1	1	0	192.168.2.103	Unique	100
AUS		255	65535	65535	255.255.255.255	000000000000000000000000000000000000000	65535
AUS	2	255	65535	65535	255 255 255 255	2000000000000000	65535
AUS	2	255	65535	65535	255,255,255,255	>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	65535
AUS	4	255	65535	65535	255.255.255.255	y,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	65535
AUS	2	255	65535	65535	255 255 255 255	200000000000000000000000000000000000000	65535
AUS	12	255	65535	65535	255 255 255 255	9393339393939393939399	65535
AUS	1	255	65535	65535	255.255.255.255	10000000000000000000000000000000000000	65535

S7 to S5 / S7 license must be purchased. Otherwise you will see the note that you have not purchased.

Speichem

Connection type

Туре	Description
AUS	Connection not used
DB-Aktiv (*1)	Establishes the connection actively via TCP
DB-Passiv (*1)	Wait for another device to connect
S7-Aktiv (*2)	Establishes the connection actively via TCP
S7-Passiv (*2)	Wait for another device to connect

(* 1) DB Use the Active and Passive function blocks FC 55 (send) and FC 56 (receive) to exchange data



(* 2) S7 Active and passive use a bridge function for data exchange.

Station number:

Defines the local communication partner of the connection. These stations must be in the same MPI bus as the S7 module. **Data block:**

Determines the data block used for the communication.

Data word:

Determines the memory area used for communication. At least 32 bytes per connection.

IP - Address Partner:

Enter the IP address of the partner with whom a connection should be established. You can specify an S5 gateway here to establish communication with an S5 PLC.

TSAP:

In order to uniquely identify the connection, the transport service access point must be specified here. Both devices must have the same TSAP. Maximum of 16 characters.

Polling time:

The module must constantly read from the partner. The polling time can be increased to reduce the load on the network. The specification is in 10ms units. With 20 units, the communication module of the counter is read in 200 ms. Note the higher this value is, the longer the communication can last.

If you want to establish a connection with an S5 gateway, please note that the S7 module should always be the Active Partner (DB Active Set for connection type). Furthermore, the polling time should be 60 - 100 units because the PG port can not send fast enough.

6.2.12.2 Data exchanging with the help of the data blocks

Adresse	Name	Тур	Anfangsvert	Konnentar
0.0		STRUCT		
+0.0	9X	STRUCT		Empfangsfach für Daten
+0.0	TYP	WORD	W\$16\$0	Datentyp, unteres Byte auf E,A,M,T,Z,D
+2.0	DENR	ROBD	Wsl6s0	Datenbausteinnummer Quelle (bei Typ = 'D')
+4.0	START	WORD	W#16#0	Anfangsadresse in Bytes im Datenbaustein (Typ = 'D') oder Operandennummer
+6.0	LEN	WORD	W\$16\$0	Länge des Faches
+8.0	reserved	WORD	W\$16\$0	für spätere Anwendung reserviert
=10.0		END_STRUCT		
+10.0	TX	STRUCT		Sendefach für Daten
+0.0	TYP	WORD	W#16#0	Datentyp, unteres Byte auf E.A.H.Y.Z.D
+2.0	DENR	WORD	W#16#0	Datenbausteinnummer Ziel (bei Typ = 'D')
+4.0	START	WORD	Wg16g0	Anfangsadresse in Bytes im Datenbaustein (Typ = 'D') oder Operandennummer
+6.0	LEN	ROBD	W#16#0	Långe des Faches
+8.0	reserved	WORD	W\$16\$0	für spätere Anwendung reserviert
=10.0		END_STRUCT		
+20.0	TXLEN	WORD	W\$16\$0	Die wirklich zu Übertragende Datenlänge
+22.0	TXSTATUS	WORD	W\$16\$0	Status der Übertragung (siehe \$C55/\$C56 und Dokumentation)
+24.0	TXACT	BOOL	FALSE	Sendeauftrag ausführen wenn = 1
+24.1	TXERR	BOOL	FALSE	Fehler bei Ausführung aufgetreten wenn = 1
+24.2	TODONE	BOOL	FALSE	Auftrag wurde ausgeführt wenn = 1
+25.0	TXRESERVED	BYTE	B#16#0	für spätere Anwendung reserviert
+26.0	POCLEN	WORD	W#16#0	Anzahl Bytes die gelesen wurden
+28.0	PXSTATUS	WORD	W#16#0	Status der Übertragung (siehe FC55/FC56 und Dokumentation)
+30.0	POCACT	BOOL	FALSE	Sap fangs freigabe
+30.1	PXEPR	BOOL	FALSE	Fehler bei Ausführung aufgetreten wenn = 1
+30.2	FODONE	BOOL	FALSE	Auftrag wurde ausgeführt wenn = 1
+31.0	POCRESERVED	BYTE	B#16#0	für spätere Anwendung reserviert
=32.0	1220	END_STRUCT		

 \Rightarrow Structure of the communication data block

Data bytes	Access type	Description
00 - 09	Read	Receive area. At this place the data received over the network will be saved.
10 - 19	Write	Send area. At this place the data will be send over the network.
20 - 30	Read, Write	Length, status and control byte for the send or receive area.



Format von TXERRRDY und RXERRRDY

These bytes are containing the transfer status.

Bit	Status	Description
0	0 1	Start of the transfer (TXERRRDY).
	Receiving allowed (RXERRRDY).	
1	1	An error occurred.
2	2 1	Transfer completed (TXERRRDY).
	Received data (RXERRRDY).	
3-7	?	Reserved

Usable data types

The following values are possible with the data types TX.TYP and RX.TYP.

Wert	Туре	Responsible data types
D, d	Data block	TX.DBNR, RX.DBNR
	Byte of the data block	TX.DWNR, RX.DWNR
E, e, l, i	Reception byte	TX.DWNR, RX.DWNR
A, a, Q, q	Output byte	TX.DWNR, RX.DWNR
M, m, F, f	Keeping byte	TX.DWNR, RX.DWNR
T, t	Timer	TX.DWNR, RX.DWNR
Z, z, C, c	Counter	TX.DWNR, RX.DWNR

Status values (TXSTATUS, RXSTATUS)

Status values	Description	
0000h	Instruction completed	
7000h	Instruction will not be processed.	
80B0h	Construction component does not know the record.	
80B1h	Wrong length in the parameter.	
80C3h	Memory temporary used.	
80C4h	Communication error.	
8183h	Project planning's not available or service has not been started yet.	
8184h	Data type or source data range is wrong.	
8185h	Length exceeds the maximum size of the source data range or the destination data range is too small.	

 \Rightarrow Function blocks

- FC 55 (S7LAN_SEND)

- FC 56 (S7LAN RECV)

These function blocks are used to send and receive data.

6.2.13 Coupling over WLAN with WLAN-Klemme or S7-WLAN-Bridge

To support this way of communication you need an S7-LAN with firmware version V2.12 or later, or a MPI-LAN with firmware version V2.38 or later. You have to unlock the "Gratuitous-ARP" in the integrated web server.

\$7-LAN V2.15			IP:192.168.1.89
Startseite	Allgemein		
Verbindungen Display	Name:	AW	
Optionen	Betriebsart:	S7-300/400 MPI	
 Konfiguration Passwort 	Werkseinstellungen laden:	Jetzt laden	
Neustart	Netzwerk		
	DHCP aktivieren:		
	IP-Adresse:	192.168.1.89	
	Subnetzmaske:	255.255.255.0	
	Gateway-Adresse:	0.0.0.0	
	Gratuitous ARP versenden:		

Agree the button "Send Gratuitous-ARP" and your device will send this ARP as the modul or the cable will recognize a link-state.

Only with this ARP builds the connected WLAN-Klemme or the S7-WLAN-Bridge the WLAN-connection to the notebook (for Ad-Hoc-mode) or to the WLAN-router.

6.2.14 Direct setting of a slave address to a passive Profibus-Slave

With the S7-LAN-module or MPI-LAN-cable and Step7-direct-driver V1.21 (or later) and the MPI-II-cable (only with USB) or S7-USB and Step7-direct-driver V1.22 (or later) is it possible to give a directly connected Profibus-Slave a bus-address.

Important here is that the subscriber is connected directly to the S7-interface and the external supply of 24V DC is also connected. In the Step7-direct-driver must then in the properties set that "PD/PC is only master". There is no another note in this case, you will use this function as if you are connected with your PD to the module.

6.2.15 Option NTP-Server

With this charge option you can get the current time of an time server and save it inside the project PLC-device.

This option is configurated over the WebBrowser. Open in the WebBrowser "Options" the "NTP-Server" and following issue appears:

S7-LAN V2.13		КМ	IP:192.168.1.13
 Startseite Verbindungen Display Optionen Variablen-Steuern S7-Gateway Watchdog NTP-Server Konfiguration 	Zustand Die Zeit wurde erfolgreich mi Schreiben der Daten in SPS Einstellungen Automatisch mit einem Zeits		8.02.2011 um 08:25:01 Uhr.
Passwort	IP-Adresse Zeitserver	192.168.1.250	
Neustart	Zeitzone	+1:00	
	Automatische Sommer-/ Winterzeit Umstellung		
	Aktualisierung in Sekunden	30	
	Ziel-CPU	2	
	Direkt in SPS schreiben		
	Ziel-Datenbaustein	2	

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Agree the button "synchronize automatically with a time-server" and your device gets the time from the parameterized time-server.

In the area "Condition" the condition of the NTP-option is shown. When was the last synchronized, could you write into the PLC-device.

For that you have the following parameter:

Parameter	Definition
IP-Address timeserver	Here you have to enter the IP-Adresse of the timeserver. Attention: If the timeserver hasn't the same subnet, you have to enter a gateway-address in the module/cable! Don't use any timeserver outside the network. They have to be inhouse!
Timezone	Here you have to enter the difference to the GMT (G reenwich M ean T ime) that the recorded time inside the PLC is correct. for example: +1:00 for Germany
Automatic change from summer- to wintertime	If you need the summertime change in your PLC you have to activate this control field.
Update in seconds	Interval of the Update; here you have to enter the time duration, in which the time is read from the server and enter in the PLC-device.
Target-CPU	Here you have to enter the Bus-address of the receiver.
Write direct in the PLC	If the time should recorded direct into the PLC-device, this control field have to be activated. If this option is activated you can't do any messages in the field "Target-Datablocks".
Target-Datablocks	Here enter the datablock, in which the timeinformation should saved (ASCII- Format) for further processing.

Here an example of the datablock format:



Dataword	Definition
DW0	Day, Day for example: '2' '8'
DW2	Month, Month for example: '0' '2'
DW4 + 6	Year, Year, Year, Year for example: '2' '0' '1' '1'
DW8	Hour, Hour for example: '1' '0'
DW10	Minute, Minute for example: '2' '8'
DW12 (Bit8)	Synchronizing OK for example: 0x100

6.2.16 Option Watchdog

1. With this Option (you must buy it to use it) you could continueosly check the MPI/Profibus. The Number of detected Parity errors and Spikes are counted and saved into a 8 Bit Register. This Register could then be read from the PC or displayed by a WebBrowser. Try to use the special WebSide "WD.HTM", the following Output is displayed.

🎒 Watch	dog ¥ 1.74 -	Microso	it Internet	Explorer	8						
<u>D</u> atei	<u>B</u> earbeiten	<u>A</u> nsicht	<u>Eavoriten</u>	E <u>x</u> tras	2						
🛛 🕝 Zu	rück 🕶 📀	- 💌	2	Su 🔎	uchen	S Fa	avoriten	💽 Me	dien 🧹	8	»
Adresse	🕘 http://19:	2.168.1.5	5/wd			-	🔁 Wech	nseln zu	Links	»] 🔁	•
nero	- Y! -	Q- [•	iuche 👻	🥭 Jetzt	: IE down	loaden!	• 2	>>
Parity:	0										^
Spikes	: 16										
			$\overline{\mathbf{k}}$								~
ど Fertig							🥝 Interr	net			11.

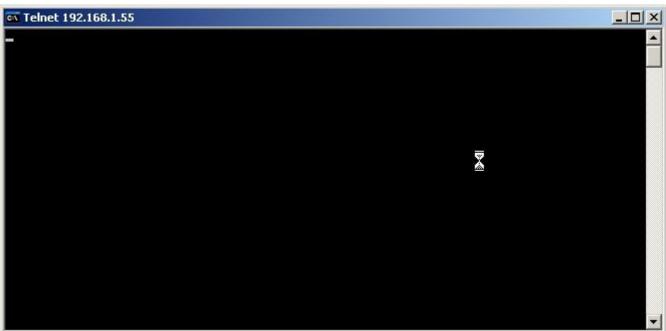
This side will refresh every second after completely loaded. The Counters are always reset to 0 when read.

2. You could also access the S7/MPI-LAN directly. Start in a Command-Shell

You could also access the S7/MPI-LAN directly. Start in a Command-Shell "telnet 192.168.1.56 133" and Press <ENTER>.

Telnet will establish a connection to the S7/MPI-LAN with the IP-Address 192.168.1.55 and on Port 133 (Statistic Service), a blank screen is displayed:





3. The S7/MPI-LAN sends only data when something is recieved on the open TCP/IP Socket on Port 133 (regardless of the length).

Press now the <ENTER>-Key several times, then the S7/MPI-LAN will response with some data:

••• Telnet 192.168.1.55	
000235ù 000018‡ 000011	
000012	
000039' 000002 000002 000003♥ 000004◆ 000001 ©	
	-

4. The Structure of the recieved data is descriped in the next table:

Data	Description
30h	Parity – Counter as ASCII-Text, including leading Zeros and ending ,\0' here "001
30h	
31h	
00h	
32h	Spike - Counter as ASCII-Text, including leading Zeros and ending ,\0'
35h	
35h	
00h	
01h	Binary Parity - Counter (8 Bit)
FFh	Binary Spike - Counter (8 Bit)



5. On the product website is also a console-application including source available which shows an example of access to S7/MPI-LAN.

```
//WDTest.cpp : Defines the entry point for the console application.
#include stdafx.h
#include stdafx.h
typedef struct {
   unsigned char ucASCIIParity[4]; //Number of parity errors since last query
   //3 Digits with final '\0'
   unsigned char ucASCIISpikes[4]; //Number of detected spikes since last query
   //3 Digits with final '\0'
   unsigned char ucBINParity; //Binary value of the number of parity errors
   unsigned char ucBINSpikes; //Binary value of the number of spikes
 } S7LANINF0;
 int main(int argc, char* argv[])\\ {
   int main(int argc, char* argv[])
   {
      SOCKET sS7LAN;
      DWORD dwTimeout = 1000L; // 1 second Timeout
      int NaggleOn = 1;
      struct sockaddr in sS7LANAdr;
      struct linger sLinger;
      S7LANINF0 sInfo;
      WSADATA sWSAData;
      printf("S7LAN Watchdog Test V1.00\n\n");
      memset(&sInfo,,sizeof(sInfo));
      if (WSAStartup(MAKEWORD(1,1),&sWSAData) != ) {
        printf("WSA Startup faulty => Cancel\n");
        return();
   }
   sS7LAN = socket(AF_INET, SOCK_STREAM, ); //0
   if (sS7LAN != INVALID_SOCKET) {
        // set Send/Receive timeout
        setsockopt( sS7LAN, SOL SOCKET, SO SNDTIMEO,(char *)&dwTimeout, sizeof(dwTimeout));
        setsockopt( sS7LAN, SOL_SOCKET, S0_RCVTIME0,(char *)&dwTimeout, sizeof(dwTimeout));
        // Naggle-Algorithms off
        setsockopt(sS7LAN, IPPROTO_TCP, TCP_NODELAY,(char*) &NaggleOn, sizeof(NaggleOn));
        sS7LANAdr.sin_family = AF_INET;
        sS7LANAdr.sin port = htons(133); // Port 133; Statistic Service
        sS7LANAdr.sin_addr.S_un.S_un_b.s_b1 = 192; // IP-Address of S7LAN's
        sS7LANAdr.sin addr.S un.S un b.s b2 = 168;
        sS7LANAdr.sin_addr.S_un.S_un_b.s_b3 = 1;
        sS7LANAdr.sin_addr.S_un.S_un_b.s_b4 = 56;
        if (connect(sS7LAN, (struct sockaddr *)&sS7LANAdr, sizeof(sS7LANAdr)) !=
SOCKET_ERROR) {
```

// send something => Then end S7LAN answer

```
TRAEGER.DE Söllnerstr. 9 92637 Weiden info@traeger.de +49 (0)961 48 23 0 0
            send(sS7LAN, (const char *) "A", 1, );
            // receive data from S7LAN
            if (recv(sS7LAN, (char *)&sInfo, sizeof(sInfo), )) {
            printf("Parity: %s Spikes: %s\nParity: %3d Spikes:
3d\n",&sInfo.ucASCIIParity[],&sInfo.ucASCIISpikes ],(unsigned int)
sInfo.ucBINParity,(unsigned int) sInfo.ucBINSpikes );
            } else {
            printf("Received by the S7LAN disturbed\n");
            }
            sLinger.l linger = ;
            sLinger.l_onoff = 1; // immediately grind
            shutdown(sS7LAN,2); // Read and Write
            setsockopt(sS7LAN, SOL_SOCKET, SO_LINGER, (char *)&sLinger, sizeof(sLinger));
            closesocket(sS7LAN);
        } else {
        printf("S7LAN not reachable\n");
        }
   } else {
   printf("Socket not openable\n");
    ł
    return ;
```

6.2.17 Settings TIA Portal

Please proceed as follows:

- configure S7-LAN
 - set IP-Address
 - $\circ~$ set MPI-Address
 - $\circ\,$ select Protocoll (e.g. MPI 187 KB)
 - $\circ\,$ use Bus-config from PC \rightarrow disable
 - $\circ\,$ Permanently on the bus $\rightarrow\,$ enable
 - $\circ~$ Save config permanently
- In the TIA, a "proxy" / replacement must be created for the S7-LAN which is the gateway to the MPI bus.
- This PLC does not have to be programmed since it corresponds to the S7-LAN. The S7-LAN has an MPI / ProfiBus interface and an Ethernet interface. The IP address of the S7-LAN corresponds to the entered IP address and the entered MPI address corresponds to the set MPI address in the S7-LAN.
- Set the mains connection as shown in the figure

PLC with S7-LAN CPU 314 MPI_1: 2 MPI_1		
S7-Lan-Proxy CPU 314	PLC_1 CPU 315-2 PN/DP	HMI_1 KTP600 Basic co
MPI_1: 5 PN/IE_1: 192.168.0.1	PN/IE_1: 192.168.0.2 2	PN/IE_1: 192.168.0.3

• Use the Ethernet driver from Siemens

6.2.18 S7-LAN via VPN

For full operation via VPN, you need the following ports

Port	Description
102	communication
80	Web interface from S7-LAN
292	Service port TIC, e.g. Firmware update
40501	TIC-Configuration

Since no broadcast is passed via VPN, you will not find the S7-LAN via the "undefined" search. Select "S7-LAN" from the drop-down menu and enter the IP address of the S7-LAN module.

You may have to enter a gateway in the S7-LAN so that the S7-LAN can process the data correctly.

7 Configuration

7.1 Web-Interface

1. Start the Web – Browser and enter in the address line "http://" and the IP address from the module you are using. The IP address is shown in the PLC-VCOM software. Confirm with ENTER to load the main page (Select language).



You do not know which IP address your S7 / MPI LAN has? \\Then you can use the PLC - VCOM software to determine the IP address. In the "Configure" dialog, all connected devices (on the PC or in the network) are displayed. For more information, see the chapter "PLC - VCOM".

2. In the main page select the desired language to go on with the configuration pages

3. If a password for general access is defined, you are asked for it.

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On the top of the window you can see the unselected menus (gray background) and the selected menu (green background). The configurations are listed up below of the menu hyperlinks and are marked with a yellow background. The button "Save" is displayed below the configuration part and is always on the left.

7.1.1 Content

Set up the main configuration part of the cable.

Aligemein	Netzwerk	REC1006	MPI/PROFIBUS	Turing	Anzeige S7 an S5/S7 Gateway VarSteuem KonfigVarSt Watchdog Passwort
Betriebssyster	m				V 2.09
Name					TestKM
TS-Funktion					OEIN @AUS
BUS-Konfigur	ation vom PC ven	wenden			O JA O NEN
Booteinstellun	g				Autometik. 👻
Protokollart					Automatik 🛩
Baudrate (nur	bei Booteinstellur	ng Sonder)			Autometik -
Datenbit (nur t	ei Booteinsteilun	g Sonder)			the second se
Pantat (nur be	i Booteinstellung	Sonder)			April 1
Stopbit (nur be	ei Booteinstellung	Sonder)			0.5

Operating System:

Displays the current operating system version.

Name:

Enter the name of your MPI cable (up to 16 characters).

TS-Function:

Switches the TeleService function "ON" or "OFF".

use BUS-Configuration from PC:

Select "YES" if you want the cable to take the configuration from the PC.

Booting:

This configuration sets the mode of the cable.

The following booting modes are available:

Booting mode	Description
Automatic	Selects the used mode automatically.
MPI/PROFIBUS	Use this for the standard MPI/PROFIBUS configuration.
PPI 9K6	PPI mode with 9600 baud.
PPI 19K2	PPI mode with 19200 baud.
PPI MMaster	PPI mode. There are more than 1 Master devices in the bus.
Special	Special mode offers you the possibility to configure the used bus configuration by yourself.

Protocol-Type

Select the protocol version that should be used to communicate on the bus.

Protocol-Type	Description
Automatic	Selects the protocol type automatically.
V5.1	Faster than v5.0
V5.0 (alt)	More stable than v5.1.

Baudrate (only when Booting Special):

Set the desired speed on the bus.

Databit (only when Booting Special):

Defines how many usable bits will be transferred per block. A high value speeds up the connection.

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Parity (only when Booting Special):

To make the transfer more checkable you can set the parity.

Stopbit (only when Booting Special):

Configure how many stop bits should be send per block. A high value could make the communication more stable.

7.1.2 Network

Special configurations are needed in the network. On this page they can be set more comfortable.

Aligemein	Netzwerk	REC1006	MPI/PROFIBUS	Turing	Anzeige S7 an S5/S7 Gateway VarSteuern KonfigVarSt Watchdog Passwort
DHCP-Client					OEIN @AUS
IP-Adresse (b)	ei kein DHCP-Cli	ent oder kein DHC	P-Server gefunden)		192.168.1.151
Sub-Netzmask	ke (bei kein DHC	P-Client oder kein I	DHCP-Server gefunder	0	255 255 255 0
Gateway-Adre	isse (bei kein DH	CP-Client oder kei	n DHCP-Server gefund	en)	0000
0.0.0.0 für kein	n Gateway				0000

DHCP-Client:

Since the version 1.68 you can start a DHCP client for the MPI-LAN cable. In this case the IP address of the cable is set automatically. Requires a DHCP server. If there is no DHCP server in the network the cable sets the IP address automatically to a standard value.

IP-Address:

To make the module recognizable in the network you have to set the IP address. This address consists of four numbers separated by a point. Each number can be a value between 0 and 254. It has to be unique which means that the IP address does not appear more than 1 times in the whole network.

Ask your system administrator for a usable IP address for the cable.

SubNet-mask:

The format of the subnet mask is identical to the format of the IP address. It describes the subnet (IP address range in the network) of your cable. In the picture above it is set to 255.255.255.0 which means that the cable is a member of the subnet 1 (third number of the IP address).

Gateway-Address:

For the reason that the cable can receive requests from other subnets you can define a gateway. The format is identical to the format of the IP address.

Usually the gateway is another computer or a router which routes the received packets to another subnet.

7.1.3 RFC1006

Also known as CP-Mode (CP = Communication Processor).

Aligemein	Netzwerk	REC1006	MPI/PROFIBUS	Turing	Anzeige S7 (an 55/57	Gateway VarSteuern KonfigVa	St Watchdog Passwort
Ziel-CPU								265
S7-Subnetz-ID								0000-0000
Busparameter								Konfig 👻
Zustand								RFC1006 AUS
1 keine TCP/IP 2 keine TCP/IP 3 keine TCP/IP 4 keine TCP/IP 5 keine TCP/IP 6 keine TCP/IP	-Verbindung nich -Verbindung nich -Verbindung nich -Verbindung nich -Verbindung nich -Verbindung nich	it im MPI-Bus it im MPI-Bus it im MPI-Bus it im MPI-Bus it im MPI-Bus it im MPI-Bus						

Destination-PLC:

Enter the PLC number of the device you want to communicate with directly. The value 255 defines that the MPI-LAN cable takes the PLC it is connected with.



S7-Subnetz-ID:

This ID marks the used bus unique. Enter the S7-Subnet-ID of the bus where the MPI-LAN cable is connected with.

Busparameter:

You could choose if at connection start the BUS-Parameter are determined automaticaly or if the configuration from the S7/MPI-LAN is used (See MPI/PROFIBUS). The Automatic is only possible when one of the PLC's is cyclic distributing the Bus - parameters.

State:

In this bloc you see if at minimum one RFC1006 communication is active and on a per channel basis the connected IP-address and PLC. Errors are also displayed here.

7.1.4 MPI/PROFIBUS

The MPI/PROFIBUS needs specific configurations, too. This configurations are listed up on this page.

Aligemein	Netzwerk	REC1006	MPI/PROFIBUS	Turing	Anzeige S7 an S5/S7 Gateway VarSteuern KonfigVarSt Watchdog Passwort
Baudrate					Autometik 🔗
hochste State	onsadresse				126 🛩
lokale Teilneh	meradresse				0
Profil					MPI
PG/PC ist ein	ziger Master				NEIN 💌

Baudrate:

Sets the speed of communication. Alternatively you can set it to the option "From PC" (takes the configuration from the PC) or "Automatic" (selects the baud rate automatically).

Highest Station Address:

Enter the maximum station address. A high value slows down the communication.

Local Station Address:

Enter the station address of the cable. This number must be unique and has to be smaller than the number in the Highest Station Address field.

Profile:

Select "Standard" to use the standard PROFIBUS mode. "DP" (Decentral Peripherie), "DP/FMS" (Field Message System) and "MPI" (Multi Point Interface) are deviations of the PROFIBUS standard.

7.1.5 **TUNING**

In this dialog some functions are inserted which could not be inserted in the other dialogs.

Aligemein	Netzwerk	RFC1006	MPIPROFIBUS	Tuning	Anzeige S7 an S5/S7 Gateway VarSteuem KonfigVarSt Watchdog Passwort
Werkseinstell	ung				Ausfuhren
Sprache der \	WebSeite andem i	n			Englisch
Neustart (erfo	lgt sofort ohne Rüc	kmeldung I)			Austühren
Fehlerausgab	e auf Display				O'EIN @AUS

Set to Default:

The configuration of the S7/MPI-LAN is erased and set to default. There will be an Query to acknowledge the erase, keep in mind that the IP-address of the S7/MPI-LANs is changed to the default-address 192.168.1.56 and additionally the DHCP-Client is activated.



Change language of WebSide to:

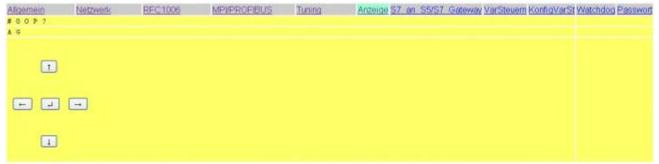
Click on the link to change the used language of the WebSide to German.

Restart:

The S7/MPI-LAN is restarting straight after the receive of the click, so no response is possible to send.

7.1.6 Display

In this Dialog you could remotely access the Menü of the display. The usage is exactly the same as when you are using the built in Keyboard. With "Display" a refresh of the LCD-Display is done.



7.1.7 S7 to S5/S7 Bridge

This configuration page makes it possible to define connections with other PLCs for data exchange. The MPI-LAN cable supports up to 8 connections.

HINT: You have to buy the S7 on S5/S7 license to see this page. Otherwise there will be a page with the notice that you haven't bought the license.

Allgeme	in	Netzwerk	REC1006	MPVPROFIBUS	Tuning	Anzeige	S7 an S5/S7 Gateway
Verbind	ungstyp	Stationsnummer	Datenbaustein	Datenwort	IP-Adresse Partner	TSAP	Poltzeit
AUS	~	255	65535	65535	255.255.255.255		65535
AUS	¥	255	65535	65535	255.255.255.255	1	65535
AUS	~	255	65535	65535	255.255.255.255		65535
AUS	*	255	65535	65535	255.255.255.255		65535
AUS	*	255	65535	65535	255.255.255.255]	65535
AUS	~	255	65535	65535	255.255.255.255		65535
AUS	*	255	65535	65535	255.255.255.255		65535
AUS	1	255	65535	65535	255.255.255.255	1	65535

Connection-type



Туре	Description
OFF	Connection is not used.
DB-Active (*1)	Establishes the connection by using the TCP protocol.
DB-Passive (*1)	Waits until another device establishes the connection with it.
S7-Active (*2)	Establishes the connection by using the TCP protocol
S7-Passive (*2)	Waits until another device establishes the connection with it.

(*1)DB Active and Passive are using, for data exchange, the function block FC 55 (send) and FC 56 (receive).

(*2)S7 Active and Passive are using for data exchange a special bridge function.

Defines the locale communication partner. This station must be in the same MPI bus as the MPI cable.
Determines the data block which is used for communication.
Determines the memory range which is used for communication. At least 32 byte for each connection.
Enter the IP address of the partner which should be connected with the MPI cable. You can enter the IP address of a S5 – Gateway to establish a connection to an S5 PLC.
Every connection must be unique. To identify a unique connection you have to enter the Transport Service Access Point. Both devices must have the same TSAP. Length must not exceed 16 characters.
The cable has to read data frequently from the partner. To minimize the traffic on the network you can rise up this poll time. Every unit delays the polling for 10 milliseconds. For example 20 units delay the module to read every 200 milliseconds from his partner. Notice that a high value slows the communication down.

If you would like to establish a connection with a S5 Gateway you should set the cable to be the active partner (setting DB Active as connection type).

Also be sure to set the poll time between 60 and 100 units because the PG port cannot send data faster.

7.1.8 VarModif

With this Option you could access up to 16 variables of PLC's which are connected on the same MPI/Profibus as the S7/MPI-LAN. In the Demo version is only a single operand possible.

PU	Operand	Anzeigeformat	Statuswert	Stenerwort	
005	MD 00000	Hexedosimal	000037FB	-	-2
005	MD 00000	Decimal +	0000014375		
005	MD 00000	SMATIC Timer **	848.3		
005	MD 00000	Zörini +	86F		2
005	MD 00000	Benhe 🗠	000000000000000011100010010011		
003	MD 00000	Howedesimal +	CPU nicht ansprechber		
005	DB 00010.DBD 01000	Havedatima! •	lesen nicht möglich		3
			200		->

If a password for VarModif defined, you encounter a password check at access to this Dialog, if the password is wrong or not inserted the modification of operand-values is not permitted.

With the Button on the bottom of values you could reread the status value. If the PLC is not accessible or the operand could not be read the Text is colored red and displayed a corresponding error message.

According to the Display format the Modify value is inserted, erroneous inputs are ignored and not transferred to the PLC. The transfer of the value is started with the buttons " \rightarrow " on the right side. Only one of the modified value is transferred,



After transfer the status values are reread and displayed.

Operand	Format	Input	Description			
		1234	Too much digits (Byte=2digits)			
MB40		12	Spaces are ignored. Value is then 12h and will be transferred to PLC			
	Hexadecimal	Ab	Capitalized/little is ignored, here the value ABh will be transferred to PLC			
		AG	Last Char is no hexadecimal digit			
MD40	Hexadecimal	1234	The value 00001234h is transferred to PLC			
		11110001	Will be transfer to PLC			
MB40	Binary	12110011	2 is no binary digit			
	Dillary	1111111111	Too much digits			
		1111 0010	Spaces are ignored, Value is transferred to the PLC			
M40.3	Binary	1	Bit is set in the PLC			
MW40	Binary	111	The value 000000000000111 is transferred to the PLC			
	Decimal	1234	The decimal value 1234 is transferred to the PLC			
MW40		1a2B	No decimal digit (,a','B')			
1111140		012	The value 12 is transferred to the PLC			
		123456	Too much digits			
		123.2	The timer-value 001.3 is transferred to the PLC			
		1.3	The timer-value 001.3 is transferred to the PLC			
T5	Timer	1,3	Error, Comma instead of a dot			
15	Inner	1234.2	Too much digits before the dot			
		123.5	Wrong measure (0-3)			
		A22.3	Erroneous digit			
		123	The Counter-value 123 is transferred to the PLC			
Z12345	Counter	A12	Erroneous digit			
212343	Counter	1	The counter-value 001 is transferred to the PLC			
		123	Spaces are ignored, value 123 is transferred to PLC			

7.1.9 KonfigVarModif

In this dialog the operands for "VarModif" are configured. When you choose this dialog a possible defined configration password is checked.

lloen	iein Netzwerk	RFC10	06	MPVPROFIBUS	Turing	Anzeige S7 an S5/S7 Gateway VarSteuern KonfigVarSt Watchdog Passwo
onfin	wation Status/Steuern Va	aniable				
yklist	ches Beobachten in Seku	nden 003				
		hand have been set of the set of				
Spe	ichem					
CPU	Operand	Anzeigeformat	ant			
005	MD 00040	Hexadepimal	-			
005	MD 00040	Dezimal	~			
005	MD 00040	SIMATIC Timer	*			
005	MD 00040	Zähler	~			
005	MD 00040	Binar	¥			
003	MD 00040	Hexadezmal	*			
005	DB 00010.DBD 01000	Hexadepimal	¥			
		Hexadezimal	4			
		Hexadezimal	*			
		Hexadezimal	¥			
-		Hexadezimal	4			
		Hexadezimal	4			
		Hexadezimal	*			
		Hexadezimal	¥			
		Hexadezimal	~			
		Hexadenmel	4			

With "cyclic View in seconds" the reread of the status values of the operands is done automatically.



The value is in seconds, 0 up to 255. The value 255 is the same as 000.

The reread of the status value is only started by the button below the status value or at seletion of "VarModif".

With the button "Save" the configured data is written in a permanent flash memory.

You could select the used PLC, the address of the operand and the display format on a line-by-line basis.

If one of the parameters are missing, this line is not used or displayed in "VarModif".

The PLC could be 1 to 126.

The following operands are possible, you could also input the addresses in the German format:

Operand	Description
M12345.1 F12345.1	Flagbit
MB 12 FB 12	Flagbyte, Spaces are ignored
MW1 FW1	Flagword
MD100 FD100	Flagdoubleword
E12345.1 l12345.1	Inputbit
EB 12 IB 12	Inputbyte, Spaces are ignored
AW1 QW1	Inputword
ED100 ID100	Inputdoubleword
A12345.1 Q12345.1	Outputbit
AB 12 QB 12	Outputbyte, Spaces are ignored
AW1 QW1	Outputword
AD100 QD100	Outputdoubleword
T12345	Timerword
12345 C12345	Counterword
DB12345.DBX12345.0	Data-Bloc-bit
DB 12345.DBB 12345	Data-Bloc-byte
DB 12345.DBW 12345	Data-Bloc-word
DB 12345.DBD 12345	Data-Bloc-doubleword

The operands could be displayed in the following display-formats, Binary operands (F123.4) are always displayed in binary, regardless the display-format.

Display format Description						
Hexadecimal	digits 0-9 and Chars a-f and A-F, Spaces are ignored					
Decimal	Digits 0-9, Spaces are ignored					
	max 3 BCD - coded digits 0-9 before the dot and one digit 0-3 (0=10ms,1=100ms,2=1s,3=10s) after the dot					



Display format	Description
Counter	Max. 3 BCD – coded digits 0-9
Binary	Digits 0-1,max. amount of digits due to the operand-size

7.1.10 Watchdog

Here you can monitor your MPI / Profi-BUS for parity errors and spikes. These are counted up into a counter and output as decimal values.

After the page is fully loaded and the errors are read, the counters are reset.

7.1.11 Password

In this dialog the passwords are configured. All passwords could be maximal 4 chars wide. To Display this dialog, the needed password must be checked. According the configuration the higher prior password is denied:

Passwords	Will Check password]
none defined	none	1
General-Access	General-Access	1
Variable Modif	Variable Modif	1
Configuration Variable Modif	Configuration Variable Modif	
General-Access + Variable Modif	Variable Modif	1
General-Access + Configuration Variable Modif	Configuration Variable Modif	
Variable Modif + Configuration Variable Modif	Configuration Variable Modif	
General-Access + Variable Modif + Configuration Variable Modif	Configuration Variable Modif	
Alfgemein Netzwerk REC 1006 MPNPROFIBUS Tuning Anzeige S7 an generelies Zugnffs-Passwort verwenden (Achtung: unten Passwort angeben I) generelies Zugnffs-Passwort (max 4stellig)	S5/S7 Gateway VarSteuern KonfigVarSt Watch OJA 1234	ONEN
Passwort für Variable Steuern (Achtung: unten Passwort angeben I) Passwort für Variable Steuern (max 4steilig)	AL ©	ONEIN
		ONEN
Passwort für Konfiguration StVar (Achtung: unten Passwort angeben I) Passwort für Konfiguration StVar (max Astellig)	AL® abcd	ONEIN

The configuration of the passwords are done in normal text-mode, if the usage of a passowrd is activated but the password is empty, saving the configuration will deactivate the password (on the upper image the password for Variable Modif will be DEACTIVATED on saving)

The general Access-Password is checked at access to the WebSides of the Device right after the Language Selection:

Bitte geben Sie	e das generelles Zugriffs-Passwort ein:	
	Weiter	

On all HTML-Pages will then be an additional link "Log out" on the top right corner, which could erase ALL the inserted passwords. On the next access to the HTML- Pages the password is then again checked.



Password	Description
General Access-password	Checked on the first access to HTML-Pages after the language selection
Password for Variable Modif	Checked when "VariableModif" is selected, if the password is correct the modification of variavles is possible. If the password is wrong only the status values of the operands are displayed, the modification is locked.
Password for Configuration of Variable Modif	Checked when "ConfigVarMod" is selected

7.1.12 Ports

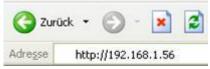
Please check that these ports are open (in/out) in your firewall on the PC or external!

Port	Туре	Description
40501	UDP	Configuration MPI- / S7-LAN
64738	UDP	Communication port
291	UDP	NOT-Loader
292	UDP	Firmware-Update TIC
80	ТСР	Web browser
102	ТСР	RFC1006, CP-Mode
64738	ТСР	Communication port (MPI)

7.2 Web interface from V2.10 (S7-LAN) / V2.36 (MPI-LAN)

Start your Web browser and enter the IP address of the module in the address bar with the preceding "http://". Confirm with the <ENTER> key to load the Main page (Language selection).

Datei Bearbeiten Ansicht Eavorit



You dont know which IP address has your S7/MPI-LAN?

Then you can use the PLC - VCOM software to determine the IP address. In the dialog "Configure" are displayed all connected devices (on the PC or on the network). See chapter 10-PLC-VCOM.

7.2.1 Main page

This is a purely informational site that always appears at the beginning without password query because nothing can be changed.

87-LAN V2.24		Modul	IP:192.168.1.86
Startseite	Allgemein		
Verbindungen	Produktname:	S7-LAN	
Display	Version:	2.24	
Optionen	Name	Modul	
Konfiguration Passwort	Seriennummer:	7091008	
Neustart	- Netzwerk		
	DHCP:	Aus	
	IP-Adresse:	192.168.1.86	
	MAC-Adresse:	00:0B:F4:6C:33:40	
	Subnetzmaske:	255.255.255.0	
	Gateway-Adresse:	0.0.0	
	Gratuitous ARP versenden:	Ein	
	Betriebsart: S7-300/400 M	MPI	
	Profil:	MPI	
	Baudrate	187K5	
	Lokale Adresse:	0	
	Booteinstellung.	MPI/PROFIBUS	
	Freigeschaltene Optionen		
	Variablen Steuern:	lizenziert	
	S7-Gateway:	nicht lizenziert	
	Watchdog:	lizenziert	
	NTP-Server	lizenziert	

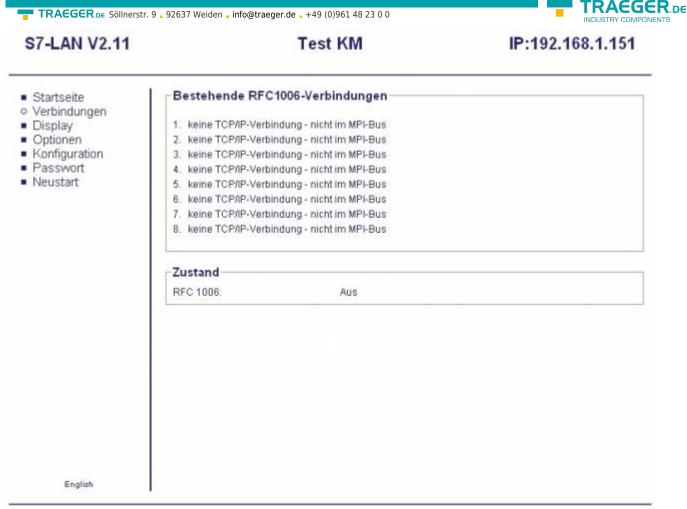
© copyright PI 2013

Head-line	Displays the product name, the latest version of the operating system, the name and the IP address.
Menu tree:	Here you can navigate through the settings and change the language at the bottom.
General:	This are informations about your module, such as product name, operating system version and a name you specified.
Network:	Displays the status of the DHCP mode of your module / cable. Furthermore the currently used network settings are displayed.
Bus profile:	Displays the current used bus profile. This can be detected automatically or entered manually.
Enabled options:	ZShows you the options and behind if this option is licensed to you or not.

7.2.2 RFC1006

Is also referred as CP-mode (CP = Communication Processor).

TRAEGER.DE



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Existing RFC1006 connections:

In this field is indicated, whether a RFC1006 communication is active and per channel, the associated destination IP address, as well as the addressed CPU. Also here are displayed possible errors.

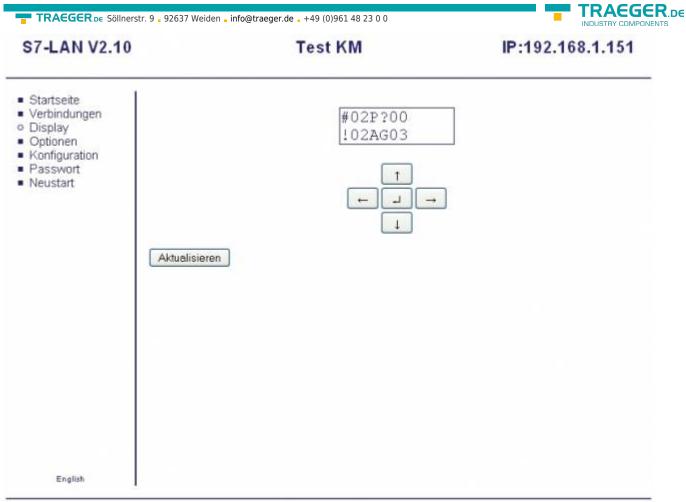
No TCP / IP connection = it is no computer or PG connected to the module via RFC1006. not in the MPI bus = the participants connected via RFC1006 does not access the MPI bus

State:

Displays whether RFC1006 is enabled in your module (ON) or disabled (off).

7.2.3 Display

In this mask it is possible to remote control the menu on the screen as in the MPI cables. Operation is the same as with the keyboard. "Upgrading" the display is new read in.



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First row:

 $#02 \Rightarrow$ Means that (in this example) 2 active stations have been found on the MPI bus PD \Rightarrow Is the character recognition of the PC baud rate

Display	Description
PD	115,2k or Baud rate detection active
P?	Baud rate detection and access path active
PG	19,2k
Pg	38,4k
pG	57,6k
_	•

Second row:

 $! \Rightarrow$ Means how the S7-LAN is connected to the PLC.

Display	Description	
!	S7-LAN is directly connected to the PLC	
?	S7-LAN is not connected directly to the PLC	
!	(inverse) S7-LAN is directly connected to the PLC (passive module)	
?	(inverse) S7-LAN is not connected directly to the PLC (passive module)	
02 ⇒	Represents the station numbers of the connected and active stations in the MPI bus	
$AG \Rightarrow$ The protocol type that leads the S7-LAN to the PC.		

Display	Description
AG	Unknown since no communication or before v5.0 protocols.
Ag	v5.1 Protocol
ag	v5.0 Protocol



Display	Description
$11/4 \Rightarrow$	Displays the station number of the device currently connected to the PC software (in this example station number 04).

7.2.4 Options

The menu tree will unfold and you have the following options to choose:

- control variable
- S7-Gateway
- Watchdog
- NTP-Server

The main window shows which of these options are licensed in this module and thus you can use.

7.2.4.1 Control variables

This option allows access to up to 16 variables of the controllers that are connected to the same MPI or Profibus. In the demo version only a single operand is possible.

S7-LAN V2.24

IP:192.168.1.86

ndungen	CPU	Operand	Format	Statuswert	Steuerwert	
ay	2	MD 00000	Hexadezimal	A8D6816B		OK
nen riablen-Steuern	2	MD 00000	Dezimal	2832630123		OK
-Gateway atchdog	2	MD 00000	SIMATIC Time	16B.8		OK
TP-Server	2	MD 00000	Zähler	16B		OK
guration wort	2	MD 00000	Binër	10101000110101101000		OK
tart	3	MD 00000	Hexadezimal	CPU nicht ansprechbar		OK
	2	DB 00011.DBD 01000	Hexadezimal	lesen nicht möglich		OK
	_	lisierung alle 10 Sekunde				19
	_	gurieren				
	_					2
	_					
	_		211			2
	_					2
	_		211			2
	_		211			

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Controlling variables can always be opened with a configured password, and the configured status values can be read out. Do you want at a configured password transferred the control values in the PLC you are asked for the password. At incorrect or missing input the controlling of the variables is not allowed.

With the "Reload" button below the status values can be triggered a reading out of the operands . If the CPU can not be reached or the specified operand could not be read, it will be highlighted in red and indicated with an appropriate error message.

Were set points assigned to each variable, then the condition is also shown in the table. As long as the condition is fulfilled should be the table with a "green" status value deposited. If the condition is not fulfilled the background color changes and by activated e-mail-delivery (only for S7-LAN) an e-mail is sent. If the condition is satisfied again, on exchange an e-mail (only for S7-LAN) will be sent again.

Update every x seconds, shows the automatic update time of the status values that was adjusted under "Configure".

Depending on the display format the control value must be indicated. Incorrect entries are ignored and are not transferred to the PLC. The transfer value of the individual is triggered by the button "OK". There is always only the value that is to transfer at the left side of this button.

Operand	Format	entry	remark		
		1234	To many digits (Byte = 2 digits)		
MB40	Hexadecimal	1 2	Spaces are ignored here. Value is 12h and then is transferred to the PLC		
MD40	nexauecimai	Ab	Upper / lower case does not matter. Here, the value ABh is transferred to the PLC		
		AG	Last letter is not a hexadecimal digit		
MD40	Hexadecimal	1234	It is transmitted 00001234h to the PLC		
		11110001	Is transferred to the PLC		
MB40	Binary	12110011	2 is no binary digit		
MD40	Dillary	1111111111	to many digits		
		1111 0010	Spaces are ignored. Value is transferred to the PLC		
M40.3	Binary 1 E		Bit in the controlling is set at 1		
MW40	Binary	111 It is transferred the value 000000000000111 to			
	Decimal	1234	The decimal value 1234 is transmitted to the PLC		
MW40		1a2B	No decimal number ('a','B')		
1111040		012	It 12 is transferred to the PLC		
		123456	To many digits		
		123.2	The value 123.2 is transferred to the PLC		
		1.3	The value 001.3 is transferred to the PLC		
T5	Timer	1,3	Error, comma instead of dot		
15		1234.2	Too many digits before the dot		
		123.5	Unitspan wrong (0-3)		
		A22.3	FFaulty letter		
		123	The counter value 123 is transferred to the PLC		
Z12345	Counter	A12 Faulty letter			
212343	Counter	1	The counter value 001 is transmitted		
		123	Spaces are ignored		

After the transfer, a reading in of the status values is triggered.

7.2.4.2 Configure variable controlling

In this mask, the operands for "variable Controlling" configured. In the selection this mask if you have a configured password that previously queried.

	onfigurieren	T			Colleged	
CP 2	U Operand MD 00000	Format Hexadezimal	~	and the second se	Sollwert	
2	MD 00000	Dezimal	~			
uem 2	MD 00000	SIMATIC Timer				
2	MD 00000	Zähler	~			
2	MD 00000	Binär	v			
3	MD 00000	Hexadezimal	~			
	and the first of t		~			
2	DB 00011.DBD 0100		× ×			
		Hexadezimal	×		0	
-		Hexadezimal	~			
-		Hexadezimal	~			
		Hexadezimal	*			
		Hexadezimal Hexadezimal	v			_
		Hexadezimal	v			
-		Hexadezimal	v			
-			~			
		Hexadezimal	~			
Akt	ualisierung in Sekunden:	255 255 = Aus				
- F	Mail					
1.1	Children and the second second					
	and a second		al.			
	1	max@mustermann.de				
En		alarm@musterman	n d	e		
Se	rver:	192.168.1.254				
Po	rt	25				
Be	nutzername:					
Pa	sswort					

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When set to "update in seconds" can the reading in the status values effected cyclically.

This specification is in seconds, value range is from 000 to 255.

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A value of 255 is such as the value of 000 is triggered only on request or during the first display of the "Variable Control" screen, the status values reading in

There would be following query possible:

==	Query on equality
!=	Query on inequality
>=	Query whether equal or greater
⇐	Query whether equal or smaller
>	Query whether greater
<	Query whether small
With	the button "Save", the configure

With the button "Save", the configured data are transferred to a permanent storage.

Per line can be selected a CPU, the address and the display format.





Missing any of this information, the line "Variable Control" will be not used or displayed.

The value range of the CPU is 1 to 126

If an e-mail (**only for S7-LAN**) has to be sent on a condition change, then this is by the selest-field "E-Mail Supervision" activated.

Sender	Here is specified the e-mail address of the module (sender). Maximum 64 characters!					
Receiver	eceiver Here is specified the recipient's e-mail address. Maximum 64 characters!					
Sorvor	Here is specified the IP-address of the e-mail-server, names are not possible! Maximum 15 characters separator is the "."!					
PORT	Here is specified the communication-port for the e-mail-server. Standard-port: 25 Range of values 065535!					
Username	Here is specified the username of the used e-mail-account. Maximal 32 characters!					
Password	Here is specified the password of the used e-mail-account. Maximal 32 characters!					
To send a te	est-e-mail, you can call the "sm"-page in the WebBrowser:					

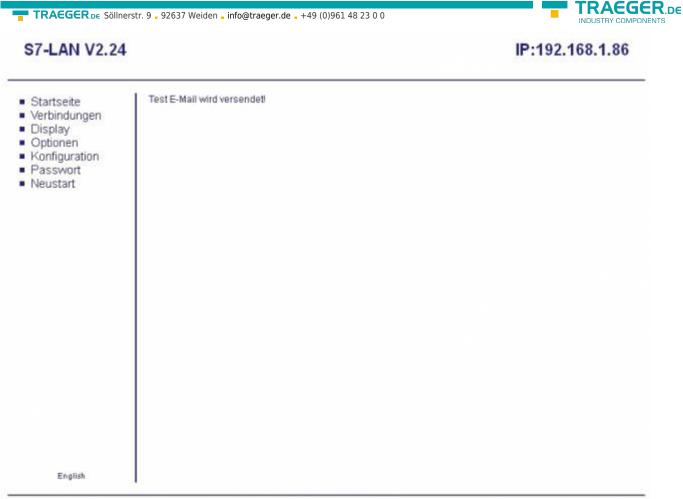
1								
÷	+	🕘 192.168.1.86/sm						
		TrT/S7-Firewall	al 🔂 Auswahl Server	PI [] TP-II	57-LAN (Hotline)	TR Traeger	Homepage-Administar	. 5

S7-LAN V2.24

IP:192.168.1.86

 Verbindungen 	CPU	Operand	Format	Statuswert	Steuerwert	
Display Optionen	2	MD 00000	Hexadezimal	ASASCOBC		OK
 Variablen-Steuern 	2	MD 00000	Dezimal	2846215612		OK
 S7-Gateway Watchdog 	2	MD 00000	SIMATIC Tim	DBC.C		OK
 NTP-Server 	2	MD 00000	Zähler	DBC		OK
Konfiguration Passwort	2	MD 00000	Binër	10101001101001011100		OK
Neustart	3	MD 00000	Hexadezimal	CPU nicht ansprechbar		OK
Card Sector Control - Card	2	DB 00011.DBD 01000	Hexadezimal	lesen nicht möglich		OK
		lisierung alle 10 Sekunde gurieren	en	Neuladen		25

The call of this page would be confirmed with following message:



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When the settings were done correctly, the user gets an e-mail with the following content:

Sie haben Ihre E-Mail Übertragung erfolgreich eingerichtet! You have set up your E-Mail transfer successfully!

Now, the sending of the e-mails would be OK.

The following operands are possible:

(Entry can also be made in the English format)

Operand	Remark
M12345.1 F12345.1	Flag bit
MB 12 FB 12	Flag byte, spaces are ignored
MW1 FW1	Flag word
MD100 FD100	Flag double word
E12345.1 I12345.1	Input bit
EB 12 IB 12	Input byte
AW1 QW1	Input word
ED100 ID100	Input double word

Operand	Remark
A12345.1 Q12345.1	Output bit
AB 12 QB 12	Output byte, spaces are ignored
AW1 QW1	Output word
AD100 QD100	Output double word
T12345	Timer word
Z12345 C12345	Counter word
DB12345.DBX12345.0	Data block bit
DB 12345.DBB 12345	Data block byte
DB 12345.DBW 12345	Data block word
DB 12345.DBD 12345	Data block double word

The operands can be displayed in the following formats in binary. Operands (M123.4) are always displayed binary, no matter what was selected for a display format.

display format	remark
Hexadecimal	Numbers 0-9 and letters a-f as well as A-F admissible, spaces are ignored
Decimal	Numbers 0-9, spaces are ignored
SIMATIC Timer	Maximum 3 BCD - coded numbers 0-9 before the dot and a digit 0-3 ($0 = 10ms 1 = 100ms$, $2 = 1s$, $3 = 10s$) after the period.
Counter	Maximum 3 BCD - coded digits 0-9
Binary	Digits 0-1, max. Number of digits depending on operand

7.2.4.3 S7-Gateway

This configuration page is possible to establish connections with other controls for the data exchange. S7/MPI-LAN is supporting up to 8 connections.

NOTE: S7 gateway license must be purchased. Otherwise there will be the notice that you have not purchased them.

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7-LAN V2.11		Test KM				IP:192.168.1.151		
Startseite	Gatewa	y-Ver	bindungen					
Verbindungen			IP-Adresse	TSAP	Pollzeit	CPU	DB	Datenwort
Display Optionen	Aus	~	255.255.255.255		65535	255	65535	65535
 Variablen-Steuern 	Aus	~	255.255.255.255		65535	255	65535	65535
S7-Gateway	Aus	~	255.255.255.255		65535	255	65535	65535
 Watchdog Konfiguration 	Aus	~	255.255.255.255		65535	255	65535	65535
Passwort	Aus	~	255.255.255.255		65535	255	65535	65535
Veustart	Aus	~	255.255.255.255		65535	255	65535	65535
	Aus	*	255.255.255.255		65535	255	65535	65535
	Aus	¥	255.255.255.255		65535	255	65535	65535
	Speiche	rn						

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Connection type:

Туре	Description
OFF	Connection is not used
DB-Active (*1)	Establishes the connection via TCP
DB-Passive (*1)	Waits until another device establishes the connection

(*1) DB Active and Passive used for data exchange the function block FC 55 (send) and FC 56 (received)

	-			
IP-Address:	Enter the IP address of the partner to which a connection should be established. You can specify one S5 gateway to establish communication with the S5 PLC.			
TSAP:	To flag the connection clearly ,here must be entered in the Transport Service Access Point. Both devices must have the same TSAP. Maximum of 16 characters.			
Poll time:	The module must be constantly read by the partner. To reduce the full network utilization, here you can increase the polling time. The indication is in 10ms units. Read with 20 units in 200ms from the communication module of the opponent. Note: the higher the value is, the longer last the communication.			
CPU:	Defines the local communications partner of the connection. This station must be located in the same MPI bus like the S7 module.			
DB:	Determines the data block which is used for communication.			
	Determines the memory range which is used for communication. At least 32 bytes per connection.			
Save:	This allows you to take the gateway settings in a permanent memory.			

If you want to connect with a S5 gateway, please note that the S7 module should always be the active partner (adjust DB on Active as connection type).

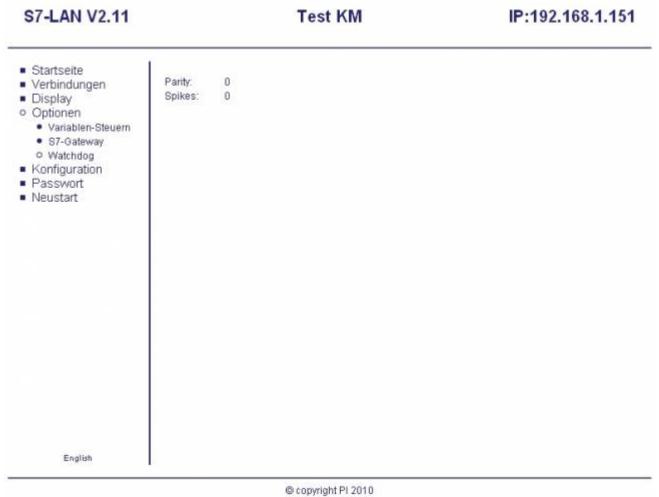
Furthermore should the polling time be 60 - 100 units, because the PG port can not send data fast enough.

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7.2.4.4 Watchdog

Here you can monitor your MPI / Profibus bus on Parity Error and spikes. These are counted in a counter and displayed as decimal values .

The counter will be reset after the site is fully loaded and the errors have been read out.



7.2.5 Configuration

INDUSTRY COMPONENT



S7-LAN V2.11

Test KM

artseite	Allgemein				
rbindungen	Name:	Test KM			
play tionen	Werkseinstellungen laden:	Jetztladen			
nfiguration sswort ustart	Netzwerk				
USLAR	DHCP aktivieren:				
	IP-Adresse:	192.168.1.151			
	Subnetzmaske	255.255.255.0			
	Gateway-Adresse:	0.0.0.0			
	Buseinstellungen				
	The state of the s				
	Bus-Konfig von PC verwenden: Baudrate:				
	Höchste Stationsadresse:	187K5			
		126			
	PG/PC ist einziger Master: Profil				
	Lokale Adresse:				
		(2)			
	Booteinstellungen				
	Profil:	MPI/PROFIBUS			
	Für manuelle Profileinst	tellung			
	Baudrate:	Automatik ~			
	Datenbit:	8 🛩			
	Parităt:	keine 😪			
	Stopbit:	1 -			
	Für RFC1006 Verbindung	jen			
	Für RFC1006 Verbindung Ziel CPU:	jen 255			
	Für RFC1006 Verbindung	jen			
	Für RFC1006 Verbindung Ziel CPU: S7-Subnetz-ID: Busparameter.	1en 255 0000-0000			
	Für RFC1006 Verbindung Ziel CPU: S7-Subnetz-ID: Busparameter: Sonstiges	Ien 255 0000-0000 Konfig			
	Für RFC1006 Verbindung Ziel CPU: S7-Subnetz-ID: Busparameter: Sonstiges Protokollart:	255 0000-0000			
	Für RFC1006 Verbindung Ziel CPU: S7-Subnetz-ID: Busparameter: Sonstiges	Ien 255 0000-0000 Konfig			

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General:

Name:	The module hereby obtains a meaningful name and is displayed to you in the MPI-LAN Manager or PLC-VCOM. The module is not adressable by this name on the network.
	Allows the S7/MPI-LAN to can be reset to factory settings. It also appears the security query. It should be noted that the IP address is adjusted to the default S7/MPI-LANs address 192.168.1.56. In addition, DHCP is enabled.



Wollen Sie das S7-LAN wirklich auf Werkseinstellung zurücksetzten? III Vorsicht: IP-Adresse ist danach 192.168.1.56 III



Network:

r

In the network are necessary special settings which you can edit here.

Activate DHCP:	Since version 1.68, you can operate S7/MPI-LAN in DHCP mode. Thus, the IP address allocation is done automatically. However, there is required a DHCP server. When exists no DHCP server in the network, either is used a manually registered or the default IP address.
IP-Address:	To make the module on the network identified, it must have an IP address. This address consists of 4 numbers that are separated by dots. It must be unique on the network. Note that you can only use numbers from 0-254. Ask your system administrator for an appropriate IP address for the cable.
Subnet mask:	The format of the subnet mask is identical to the one of the IP address. It describes, in which subnet (area in the network) is the cable. In the example, 255.255.255.0 is configured. This means that the cable is located in subnet 1 (third digit of the IP address).
Gateway-Address:	You can specify the gateway here so that the S7/MPI-LAN also can process with queries from devices outside the subnet. The format of the address matches with the IP address The gateway is usually an other computer or router which to forward incoming packets to that subnet routes.
Bus:	The MPI / PROFIBUS also requires specific settings which can be configured here.
Use Bus config from the pc:	Without a "tick" the cable ignores incoming configuration data from the PC. (necessary to use "3M" and higher baud rates). If the a "tick" you set all the settings of the PC driver which are taken and it can only be the maximum baud rate of the PC driver are used.
Baud rate:	Here you can adjust the speed, at which the MPI / PROFIBUS should be communicated. Alternatively, you can select "Default PC" (adopts settings from the PC) or use "Automatic" (which chooses to use speed).
Highest station address:	Specify the maximum user address. The higher this value is the slower the communication is.
PG / PC is the only master:	The "tick" is required if your S7/MPI-LAN is the only master on the bus and all other participants must be addressed to build a communication.
Profile:	Select "Enable Default" to use the standard PROFIBUS operation. "DP" (decentralized peripherals) "DP / FMS" (Field Message System) and "MPI" (Multi-Point Interface) are variations of the PROFIBUS standard.
Local User Address:	Enter the participant address, which should used from the S7/MPI-LAN cable. This number can be present only once and must be less than the number in the field "Highest station address".
Boot Settings:	This setting specifies the mode in which to run the module / cable.
The following operating mo	des are available:

ne ronowing operating modes are available:

Operating mode	Description
Automatic	Automatically selects the mode to used
MPI/PROFIBUS	For standard MPI / PROFIBUS communication
PPI 9K6	PPI mode with 9600 baud
PPI 19K2	PPI mode with 19200 baud
PPI MMaster	PPI mode with multiple devices configured as a master in the BUS
manually	Special mode that enables you to manually configure the bus settings used



Baud rate (only when booting setting manual):	Set the desired speed on the BUS.
Data bit (only when booting setting Manual):	Indicates how much capacity should be transmitted per block. The higher the number the faster the data can be transferred.
Parity (only when booting setting Manual):	To make the data transfer can be tested you can adjust the parity.
Stop bit (only when booting setting Manual):	Configure how many stop bits to be used in the transmission. General rule the more stop bits, the more stable the connection could run.

For RFC1006 connections:

Reacting rack / slot from TSAP on BUS address:	Once this check box is enabled, for each communication, the RFC1006 slot address is read from the TSAP word and used as the destination address bus.
Target CPU:	255 means the module is always talking to the CPU on which it is plugged. If it does not you enter here the CPU number with which you want to communicate.
S7-Subnet-ID:	Is the local subnet mask of the MPI / Profibus
Bus parameter:	Here you can select whether the bus parameters is to be used with bus settings which are configured under "Config" or whether it should identify itself with the parameter "Automatic".

Other:

Protocol type:

Select the protocol version to be communicated on the bus.

Protocol type	description	
Automatic	selects the protocol automatically	
V5.1	faster than V5.0	
V5.0 (alt)	Stable than V5.1 but slower	

TS-adapter function:

Error output on screen:

Displays the error code on the display in the web browser in the case of an error. Disabled by default.

7.2.6 Password

In this mask, the passwords are configurated. All passwords have up to 4 digits. To invoke this screen, the corresponding password is required. Depending on configuration, the higher priority password is required.

S7-LAN V2.11		Test KM	IP:192.168.1.151
 Startseite Verbindungen Display Optionen Konfiguration Passwort Neustart 	Passwort für generell Passwort verwenden Passwort: Passwort wiederholen:	(max. 4 Zeichen)	
	Passwort für die Opti Passwort verwenden Passwort: Passwort wiederholen:	on Variablen-Steuern (max. 4 Zeichen)	
	Passwort zur Konfigu Passwort verwenden Passwort: Passwort wiederholen:	mation der Option Variablen- (max. 4 Zeichen)	Steuern
	Speichern		
English			

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Put a "tick" in the password you want to set up, and for erasure the password remove this "tick". The input of the passwords are hidden with points. Confirm below to be able to exclude your password to an input error. Should the use of the password and the password is switched among them his empty then activate NO password for safety reasons.

Passwords	remark
general access password	Is queried for all menu items except the Main page and variable control.
Password for variable control	Is queried when calling "variable-control". With correct password the controlling of the operand is allowed. For wrong password is now shown the state of the variables and the control is locked.
Password for configuration StVar	This password is required when you call the Configure mask under variable control.

7.2.7 Restart

Click on "Restart" to restart your module for a configuration or possible changes in the bus again.

7.2.8 Logout

This appears after logging into your module with a defined password. Confirm this entry in order to unsubscribe from your module and to protect it against outside intervention.

DE



7.2.9 NOT-Loader

If a problem occurs during the update, the device is located in the EMERGENCY Loader. Possible causes:

- Firewall
- Network
- Defect in the device

Fix error:

- Download the current TIC version
- Connect the device directly to your PC. Make sure you have a network address in your PC.
- S7-LAN connection
- S7-LAN automatically obtains an IP address (its IP address + 1)
- Follow the instructions in the TIC under the menu "Extra" \rightarrow "Notloader"
- The S7-LAN receives the current version

8 S7-Interface Configurator Help

Language selection User interface Bus configuration Network settings Parameterize TELEService Index "Network" Index "Modem" Index "Modem" Index "Serial Parameter" Index "Serial Parameter" Index "Serial Parameter" Index "GSM/ISDN/SMS" Index "Internet/Mail" Tuning Factory defaults PPI Boot off Emergency-Loader

8.1 Language selection

Select the menu Configuration to change the language permanently: $\fbox{}$

8.2 User interface

Select near Search which interfaces are searched permanently for devices. You could choose:

```
SerialAll existing COM-Ports are scanned for devicesUSBSearch devices which are connected by USB
```



LAN Search devices on all network-cards

The button Search starts a parallel search on all selected interfaces. After selecting a updateable device the button Update gets available.

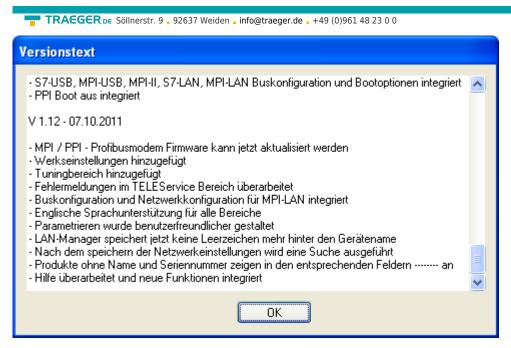
uchpfad	Seriell	0.1	Update	Update mit WE	Bootstrap	Werkseinste	llungen	
		Suchen	Parametrieren	PPI Boot aus	Not-Lader	Tuning		eenden
	Тур	•]	Name	Zugriff		Seriennr.	Version	Diskette
~	S7-LA	N	Halle3-01	IP:192.168.1.89		02345609	2.15	2.15
Ø	MPI-II oder N	IPI-USB		COM1 19200 Bau	ıd		2.41	2.52
P	Tele-Servic	e Gerät		COM12 19200 Ba	ud		1.53	1.54

Below the buttons is a list of the found devices. In each line an image, the type of the device, name (if existing), interface, serial number (if possible) and the OS-version of the device is displayed. On the rightmost position the actual OS-version on the harddisk is displayed.

DThe background of the lines could use the following colours:

White	DThe OS of the device is up-to-date		
Light blue	The OS of the device is not up-to-date, the device could be updated		
Red	An error occured by accessing the device		
Yellow	Update is in progress for this device		
Dark blue	Selected device		

Double click onto a device which could be updated shows the version-documentation of the device (only available in German):



The button **Update with FD** updates the OS of the device and sets the factory default.

The button **Bootstrap** sets the firmware/configuration to factory default.

The button **Factory defaults** sets the configuration to factory default.

The button **Parametrize** activates a dialog regarding to the device:

Overview:

Device	Dialog
TELEService MPI / PPI - Profibusmodem	Parametrize TELEService
MPI/PPI	Parametrize TELEService
MPI-II MPI-USB	Choices: Bus configuration Parametrize TELEService
S7-USB	Bus configuration
S7-LAN MPI-LAN	Choices: Bus configuration Network settings

The button PPI Boot off disables the PPI boot option of a serial connected device.

The button Emergency-Loader tries to repair LAN products which are in emergency-loader mode.

The button Tuning activates a dialog for special parameters.

The button Exit leaves the application.

8.3 Bus configuration

To parametrize the connection to the device, select a device and click "Parametrize".

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Regarding to the device you maybe have to click on the button Bus configuration (see parameterize table).:

param_frage.html

Here you can parametrise the following:

Buseinstellungen			
Baudrate	Buskonfig von PC verwend Vom PC	den	OK
Höchste Stationsadresse	126 PG/PC ist einziger Master	~	
Profil	MPI	*	
Lokale Teilnehmeradresse	0		
Protokollart	Automatik	*	
Booteinstellungen	Automatik	~	

Use bus config for PC	Tooks the bus configuration from the PC		
Baud rate	chooses the Baut rate for the cable to bus communication		
Highest station address	The highest station-address in the bus (the less you use, the more performanceon the MPI-bus, must be corresponding with the configuration in the CPU's)		
PG/PC is the only master on the busThe TS-Adapter is the one and only master in the MPI-bus (adapter hast to to all passive clients)			
Profile	Bustype of the connection		
Local client address	Which local station-address is used for the TS-Adapter. Please consider that a programming device has normally the number 0, operator panel have 1, CPU's use 2, FM/CP's 3 etc. Please : Never use the same station-number for 2 different stations!		
Protocol type	Protocol type of the connection		
Boot settings	bt settings Boot setting of the connection		

8.4 Network settings

Here you can set the network configuration of the selected device:



Einstellungen des ausgewählten Geräts 🛛 🔀				
	S7-LAN Halle3-01			
	192.168.1.89			
Werkseinstellungen				
Konfiguration				
IP Adresse	192 . 168 . 1 . 89			
Subnetzmaske	255 . 255 . 255 . 0			
Gateway Adresse	0.0.0.0			
Gerätename	Halle3-01			
Übernehmen Abbrechen				

Factory defaultThis button sets all over the network reachable devices to factory default.	
DHCP-Client active	When set the device acts as DHCP-client.
IP Address Here you could enter the IP Address over which the device is accessed network.	
Subnetmask Here you could enter the Subnetmask of your network.	
Gateway-Address Here you could enter the IP address of your Gateway. Usual a router address.	
Device name Here you could change the device name.	
Factory default:	

DHCP-Client active	not set
IP Address	192.168.1.56
Subnetmask	255.255.255.0
Gateway-Address	0.0.0.0
Device name	empty

8.5 Parametrize TELEService

To parameterize the device, first click on the device, after that on "Parametrize".

🔹 S7-Interface Konfigurator 🛛 🔀							
Konfiguratio	Konfiguration ?						
Suchpfad Seriell Update Werksupdate Bootstrap Werkseinstellungen Beenden					eenden		
	Тур	Name	Zugriff	Seriennr.	Version	Diskette	
	Tele-Service Gerät		COM3 19200 Baud		1.54	1.54	
~	S7-LAN		IP:192.168.1.56	02345609	2.15	0.00	

Regarding to the device, you maybe have to click on the TELEService button.

TRAEGER.DE Söllnerstr. 9 _ 92637 Weiden _ info@traeger.de _ +49 (0)961 48 23 0 0	
Was möchten Sie parametrieren? Buseinstellungen	
TELEService	
After clicking on "TELEService" a message will show up:	



Depending on the version of your TELEService software choose Yes or No. The regular parameters can be changed manually in the following categories:

8.5.1 Index "Network":

Here you can configurate following:

Adapter parametrieren		
Netz Modem Serielle Parameter Zugriffsschutz GSM/IS	SDN/SMS Intern	met/Mail
Stationsbezogen	Adresse:	0 Abbrechen
Netzbezogen		
Netztyp: MPI 🗸	Profil: MPI	
Übertragungsgeschwindigkeit: 6MBit 🗸	Tslot	415
Aktuelle Übertragungsgeschwindigkeit: Automatik 💉	min Tsdr	20
Höchste Teilnehmeradresse: 126 💌	max Tsdr	60
	Tset	12
	Tqui	0
	GAP	20
	Retry Limit	5
	Ttr	34304

Station related::

PC/PG is the only master on the bus	The TS-Adapter is the only master on the MPI-bus (adapter must speak to all passive clients)
Address	Which local station-address is used for the TS-Adapter. Please consider that a programming device has normally the number 0, operator panel have 1, CPU's use 2, FM/CP's 3 etc. Remind : Never use the same station-number for 2 different stations!

Network related::

Network type	The network type MPI or PROFIBUS

Current transfer rate	Shows the current transfer rate of the device		
Highest station address	The highest station address in the bus (the less you use, the more performance on the MPI bus, must be corresponding with the configuration in the PLC's)		

8.5.2 Index "Modem":

In this dialog you could configure the modem related setup.

Adapter parametrieren	
Netz Modem Serielle Parameter Zugriffsschutz GSM/ISDN/SMS Internet/Mail Modemeinstellungen Initialisierung:	OK Abbrechen
AT&FE0L1M1Q0V1&C1S0=1	
Abwahl: +++ATH	
Standort	
Wählverfahren: • MFV (Tonwahl) • IWV (Pulswahl) • Amtskennzahl:	
Rufeinstellungen	
Vor dem Wählen auf Freizeichen warten	
Anzahl Wahlwiederholungen: 3 Wahlwiederholung nach: 60 Sekunden	

Modem Settings::

Initialization	The initialization string consists of several commands to the modem: AT \Rightarrow start command &F \Rightarrow set Factory Settings E0 \Rightarrow Echo off L1 \Rightarrow volume of speaker is low M1 \Rightarrow speaker is on at connection Q0 \Rightarrow output of the return values V1 \Rightarrow return values plain text &C1 \Rightarrow DCD shows status of the carrier sound S0=1 \Rightarrow automatic connection after 1 ring
Hang up	The de-selection text is made up of 2 parts: +++ \Rightarrow Switch to command mode AT \Rightarrow start command H \Rightarrow Hang up connection

Location:

The phone system	There are two possible call techniques: MFV tone, the telephone number is transfered by several frequencies IWV pulse, the telephone number is transfered with the amount of several pulses on the line
	If you need a prefix before your number to establish a call outside, you must enter the prefix here e.g. 0.
Call Preferences:	·

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Wait for dial tone before dialing	In case the modem should wait for a free line, you should set the corresponding checkbox.		
	At number of retries you could configure the number of retries for a connection before the call is stopped.		
Redial after	Using a retry you could enter the seconds the application sho between calls.	ould wait	

8.5.3 Index "Serial parameter":

In this dialog the transfer rate between modem and TS-Adapter is selected.

Adapter parametrieren	\mathbf{X}
Netz Modem Serielle Parameter Zugriffsschutz GSM/ISDN/SMS Internet/Mail Verbindungseinstellungen </th <th>OK Abbrechen</th>	OK Abbrechen

Connection Preferences:

Transfer rate	The transfer-rate could chosen between the following values: 2400, 4800, 9600, 19.2k, 38.4k, 57.6k and 115.2kBaud
Parity	The parity could be chosen, but this is modem depended because some modems could not handle the parity bit: None: (There is no parity testing) Odd: (The amount of bits set to 1 is odd) Even: (The amount of bits set to 1 is even)

8.5.4Index "Access Protection":

The access over a telephone line could be configured in this dialog.

Adapter parametri	eren		
Netz Modem S	erielle Parameter	ugriffsschutz GSM/ISDN/SMS Internet/Mail	 ОК
Zugriffsschutz			Abbrechen
Administrator	Kennwort	Rufnummer	
ADMIN			
Benutzer	Kennwort	Rufnummer	

Access Protection:

The administrator can change the configuration over a telephone line. The two user accounts can not change the configuration.

The username is maximal 8 characters long. Every user and the administrator should use a password which is used to login in the TELEService over a telephone-line.

After three failed retries the connection is hanged up, so you must call again (not like the original TS-adapter).

After changing the password for a user/administrator you must re-type it again correctly.

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You can enter a callback number which is used for a callback from the TS-adapter. After you dialed the number of the TS-adapter, you are asked for username and password. In case the username and password is valid, the connection is hang up and the TS-adapter calls back the configured callback number.

8.5.5 Index "GSM/ISDN/SMS":

Information about the three different devices:

Analog Modem:

Adapter parametrieren	
Netz Modem Analog Modem Typ Germany(DE)	OK Abbrechen

Type You could choose the location of the modem.

ISDN Modem:		
Adapter parametrieren		
Netz Modem Serielle Parameter Z ISDN Typ EurolSDN NET3 Protokoll X.75 EAZ/MSN 8	Cugriffsschulz	OK Abbrechen
Choose the type of AT&T 5ESS Nothern Telecom E EuroISDN NET3 (St INS64 US NI-1 VN4		



Protocol	Choose the transfer protocol type: Modem like V.120 X.75 (Standard) ML-PPP SoftBonding HDLC CLEAR
EAZ/MSN	Multiple Subscriber Number is used for all ISDN channels. If empty no MSN is used.

GSM Modem:

Ada			a la sa
Aua	ner	parame	rieren

PIN	PIN number of the SIM card, up to eight numeric characters (only for TELE-SERVICE GSM).
Provider	With the button "Provider" the provider could be choosen. Read the list of providers could be elapse more than a minute. In the end the possible provider are listed for selection. With "Automatic" the GSM-Modem tries to connect automatically to a provider. On the right side of the button, the actual used selection is displayed. Display Description: Automatic: The provider is automatically searched and selected from the GSM-modem. Manual: The Provider is selected manually from the GSM-Modem no network registered: No connection to the GSM-network, the receive-quality is too bad set format: The format of the provider is select manually the provider, if this fails an automatic search is done unknown: Unknown response from GSM-Modem

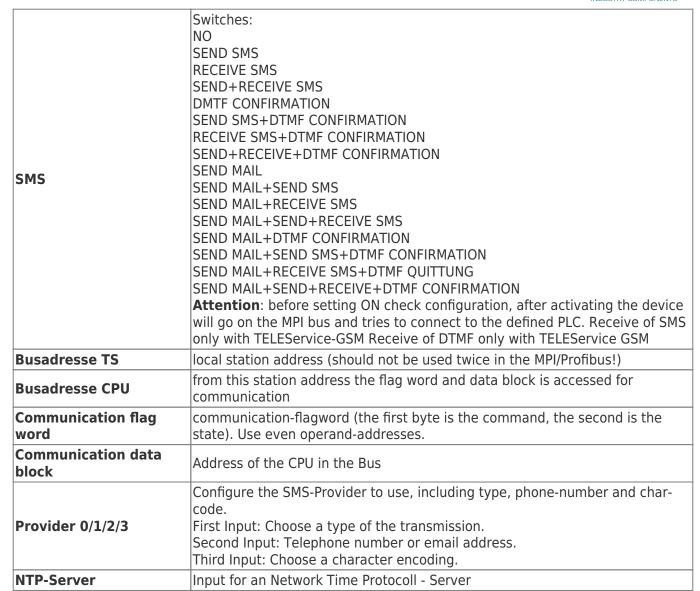


	The button "Refresh" reads the signal strength from the modem, the quality is displayed. Display Description:
	Unknown: Unknown state of the GSM-network no registration: The modem is not registered in the GSM network, no provider found registration denied: Registration in the GSM-network is denied Search network: In Search for a GSM-Provider GSM: Attached to GSM
Refresh	GSM(ROAMING): Attached to GSM, but with a Roaming-Partner. This could lead to high costs! The radio quality is displayed, together with the bit-error-rate.
	Value Description: 99 No network, no receive 00 Very, very bad receive-quality
	01 Very bad receive-quality 02 to 09 Bad receive-quality
	10 to 17 Medium receive-quality 18 to 25 Normal receive-quality
	26 to 30 Good receive-quality 31 Best receive-quality

Information about the rest of the Index GSM/ISDN/SMS:

Adapter parametri	eren							×
Netz Modem Se	rielle Parameter	Zugriffsschutz GS	M/ISDN/S	MS Internet/	Mail			OK Abbrechen
			Analog	Modem				
			Тур	Germany(DE)			~	
SMS SMS	SENDEN SMS	_			Kommunika Merkerwort Kommunika	12		
Busadresse TS					Datenbaust	ein 💾		
Dienstanbieter 0	UCP 🔽	0090032669002			GSM 7 Bit	*		
Dienstanbieter 1	MAIL 🔽	00			KEIN	~		
Dienstanbieter 2	MAIL 🔽				KEIN	~		
Dienstanbieter 3	MAIL 🔽				KEIN	*		
NTP-Server	nt6p0.fau.de							
Modem bereit CPU 005								

SMS:



Error analysis:

The possible error conditions for the modem, mpi bus problems or other problems are displayed in this text-field. First the modem-related information is shown:

Message

- Modem ready
- Modem error
- No answer from modem
- Modem detects ring
- End of connection
- connected via modem line
- No dialtone detected
- Phone-line or telephone busy
- Phone-number is blacklisted in modem
- Phone-number delayed. Access denied for 1 minute.
- Fax-call detected
- Data-call detected
- unknown error
- The selected direct-access-number not configured
- The configured PIN-Number is wrong for the inserted SIM-Card

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 $\bullet\,$ The SIM-Card is not or wrong inserted or the SIM-Card is a 5V

Possible MPI-Bus error-messages

- MPI/Profibus-Configuration erroneous
- Timeout at MPI/Profibus detach from device.
- The local station-address is used twice in the MPI/Profibus.
- A20/M20/TC35 Modem operation
- The MPI/Profibus is not correctly configured
- The HSA is not configured optimal
- The MPI/Profibus-Baudrate is not detectable
- Overflow in the internal MPI-Readbuffer
- Overflow in the internal LAN-Readbuffer
- Overflow in the serial Buffer
- The selected MPI/Profibus-Baudrate is wrong
- Overflow in internal LAN-Writebuffer
- LAN-Recieve-Error
- LAN-Send-Error
- The PD-Numberr is wrong
- The transferred SAP is wrong/unknown
- ErrCode 01: The Destination address (XXX) of a State protocol > 127 detected. In the MPI/Profibus-Bus there are no stations possible which station number is greater than 127. (FC=YYh)
- ErrCode 02: At state-protocol the Source-Address is detected as 127. This is the Broadcast-address which is not possible.
- ErrCode 03: The received State protocols destination address (XXX respectively YYY) does not exist in the MPI-Bus. (FC=ZZh)
- ErrCode 04: The function-code (YYh) of the received State protocol from XXX is incorrect. The 7th Bit is High, but according to the specification the Bit has to be low.
- ErrCode 05: A State protocol has been received. But the function-code (YYh) means that the participant is not ready to enter the bus.
- ErrCode 06: The function-code in the State-protocol received from XXX is unknown (FC=YYh)
- ErrCode 11: The sender (XXX) of the received data-protocol is unknown. To send data the participant must get the Token. (SSAP=YYh, FC=ZZh, length=UUU)
- ErrCode 12: Data-protocol with Source-address 255 (Broadcast) is useless. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)
- ErrCode 13: The sender (XXX) of the received data-protocol is unknown. To send data the participant must get the Token. (SSAP=YYh, FC=ZZh, length=UUU)
- ErrCode 14: The 7th Bit of the function-code is High, but according to the specification the Bit has to be low. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)
- ErrCode 15: The upper 4 Bit of the Function-code are wrong/unknown) (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)
- ErrCode 16: Unknown function-code has been transmitted to the cable. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)
- ErrCode 17: Destination-SAP are defined till 3Fh in data-protocols. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)
- ErrCode 18: Source-SAP are defined till 3Fh in data-protocols. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)
- ErrCode 19: Received a data-protocol with destination-SAP=0, Connection request from another busparticipant with our cable. (CPU=XXX,SSAP=YYh,FC=ZZh,DSAP=UUh)
- ErrCode 1A: Participants are sending data to our cable with source-SAP = 0, which means that the



participant has not made a connection establishment or has lost the negotiated SAP. (CPU=XXX,SSAP=YYh,FC=ZZh,DSAP=UUh)

- ErrCode 1B: Data-protocol with unknown data-function-code received. (CPU=XXX,SSAP=YYh,FC=ZZh,DFC=UUh)
- ErrCode 1C Data-protocol with unknown data-function-code received. (CPU=XXX,SSAP=YYh,FC=ZZh,DFC=UUh)
- ErrCode 1D: Received a state-protocol with error-code. (CPU=XXX,FPGA=YYh,RAM=ZZh)
- ErrCode 1E: FPGA has caused an interrupt although no data present. (SD1=XXh,SD1=YYh,CPU=ZZZ,FC=UUh)
- ErrCode 20: Unknown protocol at PPIMultimaster-Mode. (FC=XXh,Länge=YYY)
- ErrCode 21: Unknown baud-rate at PPIMultimaster-Mode. (Baudrate=XXh)

After that additional hints are displayed.

8.5.6 Index "Internet/Mail":

Netz Modem Serielle Parameter Zugriffsschutz GSM/ISDN/SMS Internet/Mail Internetzugang per PPP Benutzername Passwort Mail Server Mail von Benutzername Passwort Passwort	

The internet connection is configured by PPP, often a username and password is needed. Define them in "Internet access over PPP".

Attention: This is NOT the username and password of your E-Mail-account!

In the next section "Mail" the E-Mail-account is defined:

Internet access over PPP:

Unter dem Bereich Mail wird der E-Mail-Zugang konfiguriert:

Internetzugang per PPP:

Username	Username for internet access
Password	Userpassword for the internet access
Mail:	

	Name of the SMTP-Email-Servers, which is used to send the E-Mail.		
Mail from	Source-E-Mail-Address (should be from the same Free-mailer, instead a delivery is often not possible)		
Usename	Name of the User-account (often the E-Mail-address or Customer-number)		
Password	Password for EMail-access		



8.6 Tuning

This menu is only used in some special cases. Select the device and click the button "Tuning" and after that the following dialog is displayed:

Tuning	
Wartezeit bis Senden 0 HMI-Kabel Version A20-Terminal ErrCode-Meldungen im Display	OK Abbrechen anzeigen
Booteinstellungen Automatisch Erkennen MPI PPI (direkt) PPIMultimaster (Modem) Sprachauswahl	Modem bereit kein MPI 2 als TS CPU 005 nicht im MPI-BUS
 Deutsch Englisch S5 an MPI Mode aus 	 Paritäts fehler Baudrate
sende Reset an Kabel	6MBaud falsch

The following configuration is possible, it will be transferred to the Cable by pressing the button "OK". The configuration is saved permanently in the Flash-ROM:

The first selection fields:

Delay before send	At ProTool RT the communication could break down, because the MPI-Cable is transferring the answer-protocol to fast. In this case you could insert a time in 0.1ms ticks. Insert at first 300, to great values are preventing the communication.
HMI-Cable-version	Some Touch-panels has the problem, that when they get a wrong version- information they never retry to connect (and then the correct version is transferred). In this case the HMI-version-information could be transferred immediately.
A20-Terminal	When using the A20 or M20-Terminal, the control-lines on the serial port are not used. In that case the TELEService-function is not working. With this property the control-lines are no longer used and therefore the A20/M20 can communicate over TELEservice.
Show ErrCode messages in display	Shows error messages on the display of the connected device
Boot settings	

Boot settings:

Normally the MPI-Cable automatically selects the correct bus type, no changes are needed. In specialcases the MPI-Bus could be selected as PPI.

For example: This application and the PLC are powered on at the same time. The application is communicating immediately with the cable, the PLC is booting, in this case the MPI-Bus is not running. The MPI-Bus is erroneous, so no communication is starting. If this occurs you could choose, that the cable is working as MPI-Adapter only.

Language:

You could select the language which is used on the cable (German or English).



S5 on MPI mode off:

Deactivates temporary the "S5 on MPI" function, the cable doesn't poll the bus anymore.

send reset to cable:

Send reset to cable.

Console:

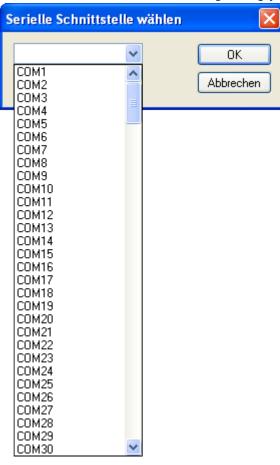
Shows some information about the status of the connection.

8.7 Factory defaults

This button sets the configuration of the selected device to factory defaults.

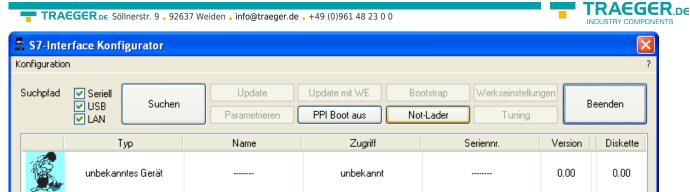
8.8 PPI Boot off

In PPI boot mode S7IFC cannot communicate with the cable. To disable the PPI boot mode, click on the button PPI Boot off. In the following dialog you must select the serial port where the cable is connected:



8.9 Emergency-Loader

LAN products running in emergency-loader are automatically found by S7IFC:



After a click on Emergency-Loader the following dialog appears:

S7IFC	
2	Hauptprogramm starten?
Ja	Nein Abbrechen

On a click on Yes the emergency-loader tries to run the main program of the firmware. On a click on No the emergency-loader tries to rewrite the complete firmware.

9 MPI-Cable Manager

9.1 Description

The MPI cable manager allows you to install an update in your cables and modules and configure them.

The MPI cable manager can be used for the following products:

- MPI-LAN Cable Art. Nr. 9352-LAN
- S7-LAN Module Art. Nr. 9352-LANCon
- MPI-USB Cable Art. Nr. 9352-USB
- S7-USB Module Art. Nr. 9352-S7-USB
- MPI-II Cable (USB operation) Art. Nr. 9352 + 9352.1
- MPI/PPI Cable Art. Nr. 9350
- Tele-Service Art. Nr. 9377-(ANALOG/ISDN/GSM)-OP
- MPI/PPI-Profibusmodem Art. Nr. 9379-(G)-OP

9.2 Installation

1. Download the MPI-Kabelmanager from the product-page of your MPI-product and start the installation.

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2. Following the Language selection the installation starts and a welcome-screen is displayed. Next click onto the button "Next".

To change the installation path, click on "Browse".

Then click "Continue".

Programmordner aus	wählen 🔀
	Setup fügt den unten aufgeführten Programmordnern neue Symbole hinzu. Sie können einen neuen Ordnernamen eingeben oder einen vorhandenen Ordner aus der Liste auswählen. Wählen Sie Weiter, um den Vorgang fortzusetzen. Programmordner: MPI-Kabel Manager Vorhandene Ordner: AvG 8.5 Catalyst Control Center Dreamweaver 2 EAGLE Layout Editor Macromedia Microsoft Nachschlagewerke Microsoft Office Tools
	< Zurück Weiter > Abbrechen

3. Select in this dialog the program folder for the MPI cable manager startup items. Then click "Continue".



- 4. Wait for the installation of the files.
- 5. End the installation after a successful copy of data with "Finish".

9.3 Overview

9.3.1 Language

christelie Updale Teleservice	Sprache Tuning	Beender
	Bitte wählen Sie die Sprache aus Please select the desired language	
	- Sprache/Language	Direkt
	 Deutsch / German Englisch / Englisch 	
Ab V1.26 kann da	Das MPI-II-Kabel (Art.Nr: 9352) muß zum Update am PC am SERIELLEN COM-Port angeschloßen werden. as MPI-II Kabel auch über den virtuellen COM-Port (USB) upgedatet werden. Es kann an einer S7-200, S7-300 und S7-400 oder mit externer Einspeisung von 24V DC betrieben werden.	
Ab	PPI - Kabel (Art.Nr: 9350) wird ebenfalls Seriell am PC angeschloßen. 9 Version V1.70 kann dieses Kabel zusätzlich zu S7-300/400 S7-200 oder mittels Netzadapter (Art.Nr: 9350-4) upgedatet werden.	
	Das MPI-MODEM (Art.Nr: 9379) muß zum Update am PC am SERIELLEN COM-Port angeschloßen werden.	
Das MPI-USB K	abel (Art.Nr: 9352-USB) ist über den virtuellen COM-Port (USB) updatebar.	
Das S7/MPI-LAN	Kabel (Art.Nr: 9352-LAN) ist über den virtuellen COM-Port (LAN) updatebar.	
	Unter Schnittstellen die COM-Schnittstelle und Baudrate einstellen. Unter Update dann Button Versions-Check drücken	

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After starting the application the tab Language is displayed at first:

In this Dialog you could choose the used language in the application.

You could choose between German and English and confirm by clicking on the desired language.

9.3.2 Interface

MPI Kabel Manager V3.29	
chnittstelle Update Teleservice Sprache Tuning	Beenden
eingestellte Schnittstelle: COM3 💌 Suchen	
eingestellte Schnittstelle: COM3 💌 Suchen	Direkt
verwendete originale Tele-Service Software	?
COM1 COM2	
COM2	
COM4	
COM5	
COM6	
COM7	
COM8	
COM9	
COM10	
COM11	
COM12	
COM13	
COM14	
COM15	
COM16	

In "set interface" you can choose the COM-port you device is connected at. Only the COM-port which was aktive at starting the MPI-Kabel-Manager are shown.

",Search" update the COM-port listed in "set interface" and put the Kabelmanager to the respective COMport.

Zugriff		
direkt ar üb	: den MPI/PPI/HMI/T h eine COM-Schnittste er ein TELE-NETWOF am PC angeschloßen?	ille oder RK
	MODEM	
DIREKT	TELE-NETWORK	Abbruch

For access query choose "Direct" if your product connects via USB-cable or Nullmodem-cable. "Modem" if your product connects via telephone line or "TELE-Network" if your product connects with a TELE-Network device via telephone line.

The bars below shows at which COM-port something was found or not.



9.3.3 Update

MPI Kabel Manager V3.29	E
Schnittstelle Update Teleservice Sprache Tuning	Beenden Direkt ?
Reset des Kabels Spezialloader übertragen	
Spezialloader brennen	
Loader übertragen	
Loader brennen	
Hauptprogramm übertragen	
abschliessender Reset des Kabels	
Abbruch	

The diskette show the current operating system installed on your PC for corresponding product.

The cabel-symbol on the right show the operating system which is installed on your product at the moment.

With the button "default settings" you can set your products on default settings. Should the device be out of order after configurated. This button is selectable after the version check.

With "Update" you can install the current operating system. This button also is selectable after version check.

With "version check" your cable which is connected to the COM-Port reviewed.

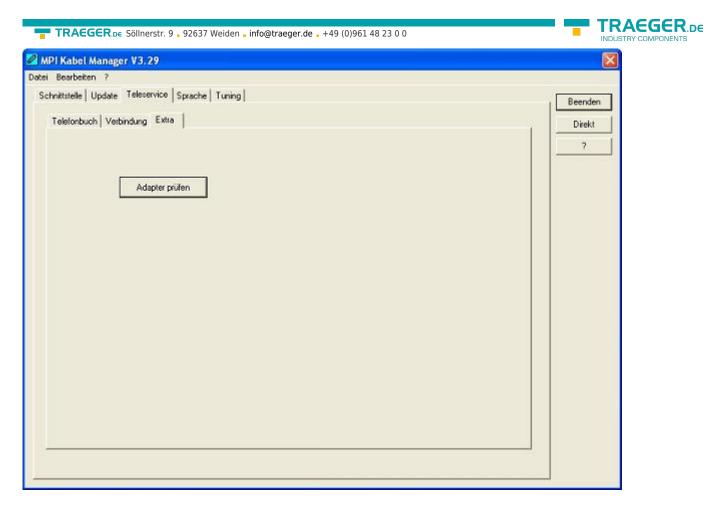
The symbol next to version check shows the running update.

While update do not plug out the cable from the PLC or turn off the power supply (The cable will lost all data)!

If the update is breaking before finished, it could be that the MPI-Cable displays in the first line of the LCD "Load 1.50" and in the second line "CheckUpd". Close the MPI-Cable-Manger and restart it. After "check version" (which could time about 30 seconds) and following "Update" the broken update is restarted and finished.

9.3.4 Teleservice

In this dialog the spezific configuration of the Tele-Service is taken. There are 3 Tabs, where the last one is activated:



9.3.4.1 Telephone book

At the moment not implemented!

In this dialog you could define new elements or edit/erase existing elements in your telephone-book.

You could edit the following data:

- \Rightarrow Name for the connection (these are displayed at connection)
- ⇒ street
- \Rightarrow ZIP-code and country
- \Rightarrow Telephone number you can reach the TS-adapter

9.3.4.2 Connect

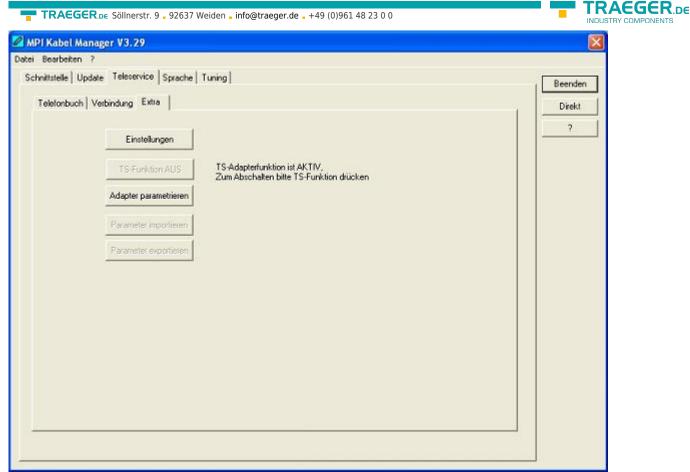
At the moment not implemented!

In this dialog the connection to another modem with a MPI-cable connected is started. Choose on the right side the named connection, then press "connect" to establish it.

With "Hang-Up" you could stop an existing connection.

With the button "State" the state of the connection is displayed at the lower side of the dialog.

9.3.4.3 Extra



In this dialog, all configuration to the TS-adapter is done.

The actual state of the MPI-cable is displayed right of the button "TS-function", where the follwing 4 possible Messages could apear:

"TS-Adapterfunction is NOT activ. To activate press TS-function"

The MPI-cable acts like an PC-Adapter. There will no answer for TS-spezific protocols, the attached modem will not initialized and the baud-rate to the PG/Modem is not fixed. The baud-rate is detected automatically.

"TS-Adapterfunktion is ACTIVE. To disable press TS-function"

The MPI-cable acts like an TS-Adapter. There will an answer to TS-spezific protocols, the adapter could now configured. An attached Modem will be initiliazed and the baud-rate to the modem is fixed.

"SNDERR" or "RCVERR"

There is a communication error at sending or recieving data from the mpi-cable. Disconnect the MPI-cable from the power supply (PLC). Change to the tab Connect and after that back to Extra. If the problem remains, check the connection to the MPI-cable, especially the COM-port in the dialog interface.

With the buttons you could define which modem is used, activate or disable the TS-function or configure the TS-adapter:

9.3.4.3.1 Setup

In the follwing dialog you could choose the used modem.

	R.be Söllnerstr. 9 _ 92637 Weiden _ info@traeger.de _ +49 (0)961 48 23	300	
Einstellungen			
Modemanschluß Modems:	Eigenschatten	OK Abbrechen	
Standort	Wählparameter		
- Überwachungsze Quittung / Zeichr			

Here you can define the modem, the location of the modem as well as the monitoring times.

9.3.4.3.2 TS-Function

With this button you select the function of the MPI-cable as TS- or PC-adapter. Right of this button the actual state of the MPI-cable is displayed.

9.3.4.3.3 configure adapter

In the following dialog you could, after activating the MPI-cable as TS-adapter, configure the TS-spezific setup.

Network

etz Modem Serielle Parameter Zugri	ilfsschutz GSM	4/ISDN/S	SMS Internet/	Mail		OK
Challmanhamman						Abbrech
Stationsbezogen						
Adresse:	0					
Netzbezogen						
and the second se	Luni	121	D a 10	N#2		
Netzlyp:	MPI	-	Profit M	n.	-	
Übertragungsgeschwindigkeit:	Automatik	•	Tslot	415		
aktuelle Übertragungsgeschwindigkeit:	Automatik.	¥	min Tsdr	20		
Höchste Teilnehmeradresse:	126	+	max Tsdr	60		
Hochste Teinenmeradresse:	1.40		Tset	12		
			Tqui	0	2	
			GAP	20		
			Retry Limit	5		
			Ttr	9984		



station related:

Here you can configurate following:

The TS-Adapter is the one and only master in the MPI-bus

Which local station-address is used for the TS-Adapter. Please consider that a programming device has normally the number 0, operator panel have 1, PLC's use 2, FM/CP's 3 etc.

Please: Never use the same station-number for 2 different stations!

network related:

Modom

Here you can configurate following:

The Nettype MPI or PROFIBUS

The transfer-speed on the MPI-bus

The highest station-adress in the bus (the less you use, the more performanceon the MPI-bus, must be corresponding with the configuration in the PLC's)

itz Modem Serielle Para	neter Zugriffsschutz GSM/ISDN/SMS Internet/Mail	OK Abbrech
Modemeinstellungen		Abbrech
Initialisierung:	2	
AT&FEOL1M1Q0V1&C1S0	-1	
+++ATH		
1		
Standort		
Wählverfahren:	MFV [Tonwahl]	
	C IWV (Pulswahl)	
Amtskennzahl		
Rufeinstellungen		
Vor dem Wählen auf Fr	sizeichen watten	
Anzahl Wahlwiederholunge		
Wahlwiederholung nach	60 Sek.	

In this dialog you could configure the modem-related setup.

The Init-String is composed out of several commands to the modem:

 $AT \Rightarrow start command$

- &F \Rightarrow use factory settings
- $E0 \Rightarrow Echo off$
- $L1 \Rightarrow$ loudness of speaker is low
- $\text{M1} \Rightarrow \text{speaker}$ is on at connection
- $Q0 \Rightarrow output of the return values$
- $V1 \Rightarrow$ return values plain text
- &C1 \Rightarrow DCD shows status of the carriersound
- S0=1 \Rightarrow automatic connection after 1 ring

The Hang-Up-String is composed of 2 elements:



+++ ⇒ Change to command-mode AT ⇒ start command H ⇒ Hand-Up connection

There are 2 possible calling technics: MFV tone, the telephone-number is transfer by several frequencies IWV pulse, the telephone-number is transferred with the count of several pulses on the line

When you must a pre-call to establish a call outside your company, you could define it at Official number.

When the modem should wait for a free line, so you should set the corresponding checkbox.

At number of retries you could configure the number of retries for a connection before the call is stopped.

When using a retry you could choose the seconds which the application should wait between calls.

Serial Parameter

pter parametrieren		
etz Modem Scrielle Parameter	Zugriffsschutz GSM/ISDN/SMS Internet/Mail	ОК
Verbindungseinstellungen		Abbreche
Übertragungsgeschwindigkeit	115.2kBaud -	
Datenbits:	8	
Parität:	keine	
Stopbits:	1	

In this dialog the transfer-rate between modem and TS-Adapter is selected. The transfer-rate could chosen between the following values: 2400, 4800, 9600, 19.2k, 38.4k, 57.6k and 115.2kBaud

The Parity could be chosen, but this is modem-dependant because some modems could not transfer the parity-bit:

None: (There is no parity testing) Odd: (The number of one-bits are odd) Even: (The number of one-bits are even)

Password

z Modem Serielle F	Parameter Zugriffsschutz (SM/ISDN/SMS Internet/Mail	OK
Administrator ADMIN	Kennwort	Bufnummer	Abbrechen
Benutzer	Kennwort	Bulnummer	
	1		

The Access over a telephone-line on the PLC could be configured in this dialog.

The Administrator could change the configuration over a telephone line, where an 2 User could not change the configuration.

The User-Name is maximal 8 Chars long. Every user and the administrator could use a password which is used to log into the PLC over a telephone-line. These have to enter for each new call.

After 3 wrong retries the connection is hanged up, so you must call again (Not so with an original TS-adapter).

After changing the password for one user/administrator you must re-type it again correctly before it is used.

In call-back-number you could define a telephone-number which is used for call-back from the TS-adapter. After you connect with the TS-adapter, you are asked for your user-name and password. When the correct password and user-name is transfered, the connection is hanged-up and the TS-adapter is calling back this configured call-back-number.

GSM/ISDN/SMS

Analogue Modem:

RAEGER DE

tz Modern Serie	alle Parameter Zug	iffsschutz GSM/	ISDN/SMS	Internet/Mail			OK
							Abbreck
			Analor	g Modem			
			Тур	Deutschland(DE)		-	
F.0							
Fehlerausweitung Modem bereit						~	
and the second se							
Modem bereit							
Modem bereit		<u>▼</u> TS 0	CPU [2	55 MW 254	DB 65		
Modem bereit	MAJL	<u>•</u> TS 0	CPU [2	55 MW [254 [KEIN	DB [65		
Modem bereit	MAIL -	▼ TS 0	CPU [2	a second and a second sec	<u> </u>		
Modem bereit SMS SMS NEIN Dienstanbieter 1		<u>•</u>] TS [0	CPU [2	KEIN			

You could choose the Location of the Modem.

ISDN Modem:

etz Madem Serie	elle Parameter Zug	nilfsschutz GSM/IS	iDN/SMS Internet/Mail	1		Abbrec
ISDN			-			
Тур	EuroISDN NET3	-				
Protokoli	X.75					
DN/MSN	[
	-					
Fehlerausweitung			_			
Modern bereit					< >	
SMS						
SMS NEIN		• TS 0	CPU 255 MW	254 DB	65535	
Dienstanbieter 1	MAIL 💌		KEIN	-		
Dienstanbieter 2	MAIL -		KEIN	•		
Dienstanbieter 3	MAIL -		KEIN	-		
Dienstanbieter 4	MAIL +		KEIN	•		
				the fact of the second s		

Type: Choose the type of the ISDN-network switch:

AT&T 5ESS Nothern Telecom DMS-100 EuroISDN NET3 (Standard) INS64 US NI-1 VN4 TRAEGER.DE

INDUSTRY COMPONENT





Protocol: Choose the transfer-protocol-type:

Modem like V.120 X.75 (Standard) ML-PPP SoftBonding HDLC CLEAR

DN/MSN: Directory Number resp. Multiple Subscriber Number Is used for both ISDN-channels. When using the number 255 no DN/MSN is used.

GSM Modem:

etz Modern Serie GSM	elle Parameter Zugr	ilfsschutz GSM/I	SDN/SMS Intern	et/Mail		OK.
PIN			Refresh	registriert: KE	IN EMPFANG	
Fehlerausweitung Modern bereit			GPRS APN Server APN Usernam eplus	internet.eplus		
 D3-3 SMS						-
SMS NEIN		• TS 0	CPU 255	MW 254	DB 65535	5
Dienstanbieter 1	MAIL		KEIN	L.	•	
Dienstanbieter 2	MAIL		KEIN	N -	•	
Dienstanbieter 3	MAIL		KEIN	ų.	-	
Dienstanbieter 4	MAIL •	-	KEIN	8	•	
	nt6p0.fau.de	1				

PIN:

PIN-Number of the SIM-Card, up to 8 numeric chars, (only for TELE-SERVICE GSM).

Provider:

With the button "Provider" the provider could be choosen. Reading of the list of providers could be elapse more than a minute. At end the possible provider are listed for selection. With "Automatic" the GSM-Modem tries to connect automatically to a provider. On the right side of the button, the actual used selection is displayed.

Display Description:

Automatic: The provider is automatically searched and selected from the GSM-modem.

Manual: The Provider is selected manually from the GSM-Modem

no network registered: No connection to the GSM-network, the receive-quality is too bad set format: The format of the provider is set

Manual/automatic: The modem tries to select manually the provider, if this fails an automatic search is done

unknown: Unknown response from GSM-Modem





Refresh: The button "Refresh" reads from the Modem the receive quality, the quality is displayed.

Display Description:

Unknown: Unknown state of the GSM-network no registration: The modem is not registered in the GSM network, no provider found registration denied: Registration in the GSM-network is denied Search network: In Search for a GSM-Provider GSM: Attached to GSM GSM(ROAMING): Attached to GSM, but with a Roaming-Partner. This could lead to high costs!

The Receive Quality is displayed, also as value together with the bit-error-rate.

Value Description:

Value	Beschreibung
99	No network, no receive
00	Very, very bad receive-quality
01	Very bad receive-quality
02 to 09	Bad receive-quality
10 to 17	Medium receive-quality
18 to 25	Normal receive-quality
26 to 30	Good receive-quality
31	Best receive-quality

Error analysis:

The possible error conditions for the modem, mpi-bus-problems or other problems are displayed in this text-field. Firstly, the modem-related information is shown:

Message Modem ready Modem error No answer from modem Modem detects ring End of connection connected via modem line No dialtone detected Phone-line or telephone busy Phone-number is blacklisted in modem Phone-number delayed. Access denied for 1 minute. Fax-call detected Data-call detected unknown error The selected direct-access-number not configured The configured PIN-Number is wrong for the inserted SIM-Card The SIM-Card is not or wrong inserted or the SIM-Card is a 5V Type

Following the possible MPI-Bus error-messages

Message MPI/Profibus-Configuration erroneous Timeout at MPI/Profibus detach from device. The local station-address is used twice in the MPI/Profibus. A20/M20/TC35 Modem operation TRAEGER.De Söllnerstr. 9 . 92637 Weiden . info@traeger.de . +49 (0)961 48 23 0 0



The MPI/Profibus is not correctly configured

The HSA is not configured optimal

The MPI/Profibus-Baudrate is not detectable\ Overflow in the internal MPI-Readbuffer

Overflow in the internal LAN-Readbuffer

Overflow in the serial Buffer

The selected MPI/Profibus-Baudrate is wrong

Overflow in internal LAN-Writebuffer

LAN-Receive-Error

LAN-Send-Error

The PD-Number is wrong

The transferred SAP is wrong/unknown

ErrCode 01: The Destination address (XXX) of a State protocol > 127 detected. In the MPI/Profibus-Bus there are no stations possible which station number is greater than 127. (FC=YYh)

ErrCode 02: At state-protocol the Source-Address is detected as 127. This is the Broadcast-address which is not possible.

ErrCode 03: The received State protocols destination address (XXX respectively YYY) does not exist in the MPI-Bus. (FC=ZZh)

ErrCode 04: The function-code (YYh) of the received State protocol from XXX is incorrect. The 7th Bit is High, but according to the specification the Bit has to be low.

ErrCode 05: A State protocol has been received. But the function-code (YYh) means that the participant is not ready to enter the bus.

ErrCode 06: The function-code in the State-protocol received from XXX is unknown (FC=YYh)

ErrCode 11: The sender (XXX) of the received data-protocol is unknown. To send data the participant must get the Token. (SSAP=YYh, FC=ZZh, length=UUU)

ErrCode 12: Data-protocol with Source-address 255 (Broadcast) is useless. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)

ErrCode 13: The sender (XXX) of the received data-protocol is unknown. To send data the participant must get the Token. (SSAP=YYh, FC=ZZh, length=UUU)

ErrCode 14: The 7th Bit of the function-code is High, but according to the specification the Bit has to be low. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)

ErrCode 15: The upper 4 Bit of the Function-code are wrong/unknown)

(CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)

ErrCode 16: Unknown function-code has been transmitted to the cable. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)

ErrCode 17: Destination-SAP are defined till 3Fh in data-protocols. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)

ErrCode 18: Source-SAP are defined till 3Fh in data-protocols. (CPU=XXX, SSAP=YYh, FC=ZZh, length=UUU)

ErrCode 19: Received a data-protocol with destination-SAP=0, Connection request from another busparticipant with our cable. (CPU=XXX,SSAP=YYh,FC=ZZh,DSAP=UUh)

ErrCode 1A: Participants are sending data to our cable with source-SAP = 0, which means that the participant has not made a connection establishment or has lost the negotiated SAP.

(CPU=XXX,SSAP=YYh,FC=ZZh,DSAP=UUh)

ErrCode 1B: Data-protocol with unknown data-function-code received.

(CPU=XXX,SSAP=YYh,FC=ZZh,DFC=UUh)

ErrCode 1C Data-protocol with unknown data-function-code received.

(CPU=XXX,SSAP=YYh,FC=ZZh,DFC=UUh)

ErrCode 1D: Received a state-protocol with error-code.

(CPU=XXX,FPGA=YYh,RAM=ZZh)



ErrCode 1E: FPGA has caused an interrupt although no data present.

(SD1=XXh,SD1=YYh,CPU=ZZZ,FC=UUh)

ErrCode 20: Unknown protocol at PPIMultimaster-Mode. (FC=XXh,Länge=YYY)

ErrCode 21: Unknown baud-rate at PPIMultimaster-Mode. (Baudrate=XXh)

After that additional hints are displayed.

SMS:

SMS: Switches Processing OFF / Only Receive / Only Send / Receive and Send. Attention: before setting ON check configuration, after activating the device will go into the MPI-BUS and tries to connect to the defined PLC. Receive of SMS only with TELESERVICE-GSM Receive of DTMF only with with TELESERVICE GSM

TS: local station-address (should not be used twice in the MPI/Profibus!)

PLC: from this station-address the Flagword and Data-block is accessed for communication

MW: communication-flagword (the first byte is the command, the second is the state). Use even operandaddresses.

DB: communication-data-block.

Provider 1/2/3/4: Configure the SMS-Provider to use, including type, phone-number and char-code.

ne [modelin] beine	er administr j zagintete	hutz GSM/ISDN/SMS Internet/Ma	- L	, ОК
Internetzugang per l	PP			Abbreck
Benutzername				
Passwort				
Mail				
Server				
Mail von				
Benutzername				
Passwort				
Passwort				
				-

Internet/Mail

9.3.4.3.4 **Import parameter**

With this button you could import the parameter from an ASCII-file. This file is compatible to the original file-format.

9.3.4.3.5 **Export parameter**

With this button you could export the parameter to an ASCII-file which has the same file-format as the original.

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9.3.5 Tuning

MPI Kabel Manager V3.29			X
?			
Schnittstelle Update Teleservice Sp	rache Tuning		Beenden
			Direkt
r			?
S5anMPI Mode AUS	Adapter prüfen	\$7-200 PP19K6	
sende Reset an Kabel	PPI-800T aus	\$7-200 PPI19K2	
		S7-200 PPI Multimaster	
		S7 300/400 MPI	
		Sonder	

This tab is only used in some special cases. If you press the button "Check Adapter" the cable is connected und after that the following dialog is displayed:

S5anMPI Mode AUS	bel Version minal C Autonatisch Erker C MPI C PPI (direkt) C PPIMultimaster (Mr im Display anzeigen	odem) Ikein Fehler	1 Direkt
S5anMPI Mode AUS	IOT avs	odem)	Direkt
	OT aus	kein Fehler	
HWConlig sende Reset an Kabel	EnCode-Meldungen im Display anzeigen	kein Fehler	-
		angezeigt	^
	Sprachauswahl Deutsch C English	kein MPI 2 als TS	
			v

There are the following configuration possible, they will be transferred to the MPI-Cable by pressing the



button "Transfer". The configuration is saved permanently in the Flash-ROM:

Time to send:

At ProTool RT the communication could break down, because the MPI-Cable is transferring the answerprotocol to fast. In this property you could insert a time in 0.1ms ticks. Insert at first 300, to great values are preventing the communication.

HMI-Cable-Version:

Some Touch-panels have the problem, that when they get a wrong version-information they never retry to connect (and then the correct version is transferred). In this case the HMI-version-information could be transferred immediately.

A20-Terminal:

When using the A20 or M20-Terminal, the control-lines on the serial port are not used. In that case the tele-service-function is not working. With this property the control-lines are no longer used and therefore the A20/M20 can communicate over tele-service.

Bootconfiguration:

Normally the MPI-Cable automatically selects the correct bus-type, no changes are needed. In specialcases the MPI-Bus could be selected as PPI.

For example: This application and the PLC are powered on at the same time. The application is communicating immediately with the cable, the PLC is booting, in this case the MPI-Bus is not driven. The MPI-Bus is erroneous, so no communication is starting. If this occurs you could choose, that the cable is working as MPI-Adapter only.

Language:

You could select the language which is used from the cable (German or English).

10 PLC-VCOM

10.1 Description

It creates a new, virtual com-port in your system, with which the programming software of your PC (such a. PG 2000, Step© 5/7, S5/S7 for Windows, WinCC, Microwin) can communicate with the device

The PLC-VCom application is needed for use with the following devices:

- MPI-LAN Kabel Art. Nr. 9352-LAN
- S7-LAN Modul Art. Nr. 9352-LANCon
- MPI-USB Kabel Art. Nr. 9352-USB
- S7-USB Modul Art. Nr. 9352-S7-USB
- MPI-II Kabel (USB mode) Art. Nr. 9352 + 9352.1
- S5-LAN Modul Art. Nr. 9359-LAN
- Tele-Service (as programming adapter) Art. Nr. 9377-(ANALOG/ISDN/GSM)-OP

By installing the PLC-VCOM adiconalmente were installed the S5-LAN and the MPI-LAN. Both offer the possibility to manage the network configuration of your products



10.2 Installation

1. Download the PLCVCom from the product-page of your MPI-product and start the installation.

Zielpfad wählen	×.
	Setup wird MPI-Kabel Manager in folgendem Ordner installieren. Klicken Sie auf Weiter zur Installation in diesem Ordner, auf Durchsuchen zur Auswahl eines anderen Ordners. Wählen Sie Abbrechen, um Setup zu beenden, wenn MPI-Kabel Manager nicht installiert werden soll. Zielordner C:\Programme\PI\MPI-Kabel Manager Durchsuchen
	< Zurück Weiter > Abbrechen

2. After choosing language the welcome dialog appears in the chosen language.

Click "Next" to define the installation path (see right picture).

This can be done with a click "Browse ... "

If you are ready press "Next" to go on.

Programmordner ausv	vählen 🔀
	Setup fügt den unten aufgeführten Programmordnern neue Symbole hinzu. Sie können einen neuen Ordnernamen eingeben oder einen vorhandenen Ordner aus der Liste auswählen. Wählen Sie Weiter, um den Vorgang fortzusetzen. Programmordner: MPI-Kabel Manager Vorhandene Ordner: AvG 8.5 Catalyst Control Center Dreamweaver 2 EAGLE Layout Editor Macromedia Microsoft Nachschlagewerke Microsoft Office Tools
	< Zurück Weiter > Abbrechen

3. In the next dialog you can choose the program folder for your start menu.

Go on with "Next".



10.2.1 Final configuration of the PLC-VCOM

PLC VCom V2.20) 🛛 🔀
Bitte wählen sie eine den virtuellen	
СОМЗ	_
ОК	

8. Choosing the COM – Port

Already occupied COM port can be viewed in Windows Device Manager if you are not sure which COM ports are still available.

If you are not sure which port is unused, press "OK".

Later you can start this dialog again by clicking in the application folder of your start menu on "SelectCOM".

SelectCo	m 🛛 🔀
	Um die Einstellungen wirksam zu machen, muß nach der Installation der PC neu gestartet werden
	ок

9. The installation ends with a click on "OK".

10.3 Overview

Beside your watch, in your Windows – Taskbar, appears a new Symbol. This one is for the PLC – VCom software.

It shows the actual connection status with your cable/module MPI-II, MPI-USB, MPI-LAN, S7-USB, S7-LAN or S5-LAN.

10.3.1 Status description:

PLC -VCOM is connected with your cable/module and operational.

PLC – VCOM is not connected.

The red symbol indicates that sending/receiving data has been failed.

Send status: (left field): Data is send to the cable/module if this one is green.

Receive status: (right field): Data is received from the cable/module if this one is green.

10.3.2 Main Window

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---------------------------------------	-----------------	----------------------



III PLC-VCom	
Konfiguration Info)
Status S7/MPI-LAN verbunden IP 192.168.1.151 Konfigurieren Name Test KM	
Rechnerverbindung IP 192.168.001.066 PLCVCOM	
virtueller Port COM3 geöffnet von PG-2000	
Programm Beenden Sprache Hilfe Minimieren	

- **1. Configuration**: Select and open the configuration program for your products.
- \Rightarrow PLC-VCOM: Management, connection and communication with the cables
- \Rightarrow S5-LAN: configuration of your S5-LAN modules
- \Rightarrow MPI/en:hardware:s7:s7-lan: Configuration of your MPI-LAN or S7LAN
- 2. Info: information about the PLC-VCOM and your computer.
- **3. Status**: Display the connection parameters of the cable connected.
- \Rightarrow Top left: shows the name of the currently connected product
- \Rightarrow semi-left: shows the connection status
- \Rightarrow half right: shows the IP address of the connecting cable
- \Rightarrow Top right: Click here to search or select a device
- \Rightarrow right middle: name of the connected cable
- \Rightarrow bottom right: displays information about current computer connections
- 4. Virtual Port: Display of selected virtual COM ports and
- the program that the last has accessed on this COM port.

5. Program: Buttons to adjust the PLC-VCOM

- \Rightarrow Exit. This button closes the program and the COM Port
- \Rightarrow Language: Switch the Language to english/german.
- \Rightarrow Help: opens the Help menu of the PLC-VCOM, when they should have problems or questions
- \Rightarrow "Minimize" the dialog. This button does not close the program. It just minimizes the program. You will find the PLC VCom symbol in the Windows taskbar beside the watch.

10.3.3 Configuration window

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LAN - IP - VCOM - Zuordnung

Name		LAN - Typ	IP-Adresse	MAC-Adresse	Version	Serien-Nr	Port	Neta
Test KM		S7/MPI-LAN	192.168.1.151	00-0B-F4-72-ED-E9	2.09	7532009		0
<u><</u>				100				>
P Adresse:		192 . 168 . 1	00:08:F4:	72:ED:E9			Suc	hen
iber Netz- verkkarte	0:Realtek RTL8168C(P)/8111C(P) PCI-E Gigabit Ethernet NIC - Paket							lía
.AN-Type:	ST	7/MPI-LAN	manu manu	elle Eingabe	serielle Pau:	senzeiten		le
			A CONTRACTOR OF A CONTRACTOR O	letzwerk			0	К
			Install	ation im Gerätemanager			Abbre	

1. List of available cable / modules:

 \Rightarrow Line wise display of the products found with your properties

2. IP-Adress:

 \Rightarrow IP address and MAC address of the selected cable / module

3. Via network card:

 \Rightarrow Selection of the used network interface card

4. LAN-Type:

 \Rightarrow Selection of the be connected cable / Module Types

5. Several check boxes:

- \Rightarrow Manual entry: allows you to enter the parameters manually
- \Rightarrow no network: for products which are not in any network
- ⇒ Installing in the device Manager: Installs the PLC-VCOM COM port in Device Manager
- (required only for S7 for Windows and S7 Doctor software)
- \Rightarrow RFC1006: activation of RFC1006 communication method
- \Rightarrow no network card selection: Passes the routing of packets to the operating system
- \Rightarrow serial interval times: slow down the serial transmission eg panel transfers

6. Search:

 \Rightarrow With a click on Search you are sending an broadcast to every cable/module that is connected with your network or your system. Every responding cable/module will be inserted to the list.

7. Help:

 \Rightarrow opens the Help menu of the configuration, if they have problems or questions

8. OK:

 \Rightarrow Ends the PLC-VCOM configuration and accepts the entered / selected settings

9. Cancel:

 \Rightarrow Ends the PLC-VCOM configuration and discards the entered / selected settings



10.4 Configuration

1. Start the PLC – VCom application, if this is not already running.

2. Open the PLC-VCOM by clicking on the icon \blacksquare PLC-VCOM in the system tray.

3. After the PLC-VCOM is open, click in the status area on the "Configure" and the wizard to configure is launched.

10.4.1 S7-LAN

Name		LAN - Typ	IP-Adresse	MAC-Adresse	Version	Serien-Nr	Port	Net
Test KM		S7/MPI-LAN	192.168.1.151	00-0B-F4-72-ED-E9	2.09	7532009		0
6								
		92 . 168 . 1 .	151 00:08:F4:7		1			-043
⁾ Adresse: ber Netz-	-						Suc	hen
verkkarte AN-Type:		7MPI-LAN		it Ethernet NIC - Paketj 🐱 le Eingabe 📃 :	serielle Paus	enzeiten	Hil	fe
			kein No					ĸ
			🔄 Installa	tion im Gerätemanager			Abbre	

10.4.1.1 Automatically

1. With a click on "Search" you send a broadcast to all cables and modules that are located on your network or directly connected to the computer. Each reacting cable / module to this broadcast, is entered in the list of participants.

2. Select the desired cable / module so that it is highlighted in blue. Here, all parameters are automatically included in the configuration wizard.

10.4.1.2 Manually

The manual entry relates to the network users that are behind routers in other networks because of the broadcast for the automatic detection is not passed from routers and these network devices thus can not be found.

1. If the IP address of your cable is known, you can enter them manually. To activate the input field for this purpose, click on the box "Manual input".

2. Type in the "IP address" the address of your cable / module, with that you want to connect and select your type of cable in the "LAN Type".



10.4.1.3 Final settings

3. Select the options that you may need, eg. RFC1006, no network card selection, installation in the device manager or serial breaks.

Information about the options which can be selected and deselected with the help of checkboxes, can be found in the section "Overview" of the PLC VCOMs.

4. Confirm your entry / selection with "OK".

PLC-VCom				
Konfiguration				Info
Status	verbunden	IP [192.168.1.151	Konfigurieren
Rechnerverbindu	pa		Test KM 192.168.001.066 I	PLOYCOM

5. After a successful connection, in the main window of the PLC VCOMs appears the cable type with which the computer connects, the connection status is "connected", the IP address and the name of the connected participant and the existing connections to the cable / module.

6. Finally click "Minimize" to decrease the PLC-VCOM in the notification area, so that this can continue to manage the virtual COM port.

11 MPI-LAN Manager

11.1 Installation

The MPI-LAN Manager is installed automatically with the PLC-VCOM and the S5-LAN Manager. See chapter " PLC – VCOM ", to install this pack.

11.2 Operation

Start the PLC-VCOM and connect to the S7/MPI-LAN as described in " PLC - VCOM ".

Now start the MPI-LAN Manager from either the Start menu or in the PLC-VCOM menu under "Configuration" \Rightarrow "MPI/S7-LAN"

LAN Konfigurationsmana ei Bearbeiten ?	ger ¥ 2.38			×
Nr Name	IP-Adresse	MAC - Adresse	Version	Geräte suchen
001 Test SO	192.168.1.57	00:08:F4:00:00:09	2.10 0	Einstellungen
				Werks Einstellung
erkseinstellung		-E Gigabit Ethernet NIC		

Search devices:

With a click on "Search devices" you send a broadcast to all cables which are available in your network. Each cable is responsive to these broadcast entered in the list.

Settings:

Click on a found cable / module to mark it. Click on "Settings".

Einstellungen o	les ausgewählter	i Gerätes	
Position 1	MAC - Adresse aktuelle IP - Adres	00:0B:F4:00:00:0 se 192.168.1.5	
an 0:Realtek RTI Paketplaner-M Konfiguration		PCI-E Gigabit Ethernet	
Bitte geben Sie hie IP-Adresse an	er ihre neue	192.168.1.	57
Subnetzmaske		255 . 255 . 255 .	0
Gateway-Adresse	(0.0.0.0 für keine)	0.0.0.	0
Name des MPI-LA	N		
		ОК АЬ	bruch

This dialog gives you the option:

- read adjusted parameter
- To activate the DHCP mode
- To change the IP address, subnet mask, gateway address, and the name of the cable

Click "OK" to save the settings.

Factory settings:



This feature allows you send the default setting to all the devices MPI/S7-LAN. For security reasons, here asked twice.

12 Technical data

Supply voltage:	24V/DC +/- 20%
Power consumption:	2 Watt
Display:	Web-Browser
	2 Status-LEDs
Handling/Configuration:	Web-Browser
	Kabelmanager-Software
Interfaces:	zur AG: PPI/MPI/Profibus interface: 9,6 KBd - 12 MBd to PG/PC: 9pol. PG/Diagnose-Buchse 10/100BaseTX RJ45-Ethernetbuchse
Galvanic separation:	1500V PPI/MPI/Profibus to the PC
Operating temperature:	5 - 55°C
Case:	ABS-plastic case
Dimensions:	65 x 43 x 17 mm

12.1 Pin assignment

Pin No.	Notation	Signalname	Direction (of cable)
1	NC	Not Connected	
2	M24V	Ground of the 24V	In
3	Ltg_B	Data line B	BiDir.
4	RTS-AS	Request to Send from the PLC	In
5	M5V	Ground of the 5V	In
6	P5V	5V output	Out
7	P24V	24V Supply input	In
8	Ltg_A	Data line A	BiDir.
9	RTS-PG	Request to Send to the PLC	Out

Note:

The shield is attached with the MPI/PPI connector via the shield of the adapter casing. To find directly attended PLC's , RTS-AS and M5V must be connected in the cable. P5V means a output of the cable and works only as an output for a bus-termination with resistors. This 5V output doesn't drive any load and have a 100R resistor inside his direction.

Observe:

Don't lengthen the connection by a 1:1 cable to the PLC, because there are 24V and 5V inside of the cable. The quality of the bus-signal will be risen down!

To lengthen the connection, please use a MPI-NETZ-Adapter and connect only the signals Ltg_A and Ltg_B 1:1 and the shield at both sides of the metal-casing at the SUB-D connector

For an extension of the cable please supply the cable with external power and only prolong the signals Ltg_A and Ltg_B 1:1. Connect the shield on the SUB-D connector, possibly include a termination resistors (on the bus-END).



12.2 Pinning Ethernet

Pin No.	Short name	Notation	Direction
1	TX +	receive line +	Out
2	TX –	receive line -	Out
3	RX +	send line +	In
6	RX –	send line –	In

13 Examples of applications

13.1 S5 to S7 – Gateway Communication

13.1.1 S5 – Configuring Gateway

Requirements: S5-LAN Manager

Supported since firmware version 0.44 of the S5 - Gateway.

1. Start the S5-LAN Manager and search for your S5 - Gateway module. As soon as found, select it and click on the button "S5 - Gateway - connection". It appears a dialog where you can set up the gateway connection.

55-Gateway V	erbir	ndungen								
Verbindungs-	-Nr:	1								
Name:		Example								
Konfiguration	is-DB:	20 ab D'	20 ab DW 0							
Verbindungs-	Тур:	ISO-on-TCP-	Verbindu	ing	~	🗌 ak	tiver Verbindu	ungsaufbau		
Pollzyklus:		1000 r	ns							
Adressen										
		lokal				Partr	ner			
IP-Adresse		192.168.1.54			192 . 168 . 1 . 56					
Port		0				0				
TSAP (Hex)		TSAP				TS/	AP		-	
TSAP-Länge	÷ 4					4				
Nr N	lame	Тур	aktiv	P-Zyklus	Konfi	g-DB	IP-Partner	Port Lokal	Po	
	kam	ISO on		1000		DBW0	192.168	0	0	
2		ISO on		0	DB0.D)BW0	0.0.0.0	0	0	
<									>	
							ОК	Abbreche	n	

2. In the lower part of the dialog you will find the connection list where you select the connection you want to edit.



3. At the top of the dialog a edit box called "name:" allowes you to give the connection a logical name.

4. Below set up the position of the "configuration data block". Therefore just set the position of the data block (DB) to the left edit box (e.g. "1" for DB1). Then set up the starting point which specifies when the configuration area starts (the edit box is called " from DW").

5. Set the connection type list box (it is called "connection type" in the dialog) to "ISO - on - TCP - connection". This connection type uses the TCP port 102.

6. The polling cycle (ms) specifies the elapsed time until the S5 - Gateway reads the configuration area and checks wether something has to be done. If this box is set to 0, the configuration area will be readed constantly.

7. Only the member of the IP address ("Partner") can be set in the address part ("Adresses"). The IP address of the S5 - Gateway you have to set as known by using the S5-LAN Manager.

8. Configure the TSAP (Transport - Service - Access - Point) to both devices. This one consists of 16 characters and identificates the connection. This will be needed to identify a connection to an IP address which has running more than one connections.

9. The communication is compatible to the "ISO - on - TCP - connection" connection of the CP343 - 1. In this case only has to be configured the required connections of the S7 - CP343 - 1. Set the TPDU - size (Transport - Protocol - Data - Unit) to 512. So you have specified that the maximum package size which can be received or transmitted is 512.

Finally the S5 - Gateway communication is set up.

13.1.2 Configure the S7 gateway

Start your Internet Explorer and type in the address bar the IP of the S7-LAN module. This will open the configuration page of the S7 - LAN.

13.1.2.1 With the web browser

Set in the "General" what should be the name for your module.

Among other things, the "TS function" must be turned off and "BUS - configuration use from PC" must be set to "NO". "Boot Settings" and "protocol type" must both be set to "Automatic".

	5	Statement in and statements	7 1	
Netzwerk	REC1006	MP/PROFIBUS	Tuning	Anzeige S7_an_S5/S7_Gateway VarSteuern KonfigVarSt Watchdog Passw
n				V 2.07
				Example
				O EIN @ AUS
ation vom PC ver	wenden			O JA ⊙ NEIN
9				Automatik 👻
				Automatik 🛩
bei Booteinstellu	ng Sonder)			Automatik
ei Booteinstellun	g Sonder)			8 v
Booteinstellung	Sonder)			Keine m
i Booteinstellung	Sonder)			
	n ation vom PC ver 9 bei Booteinstellu 19 Booteinstellung	Netzwerk RFC1006	Netzwerk RFC1006 MPI/PROFIBUS n ation vom PC verwenden g bei Booteinstellung Sonder) ei Booteinstellung Sonder) Booteinstellung Sonder)	Netzwerk REC1006 MPI/PROFIBUS Turning ation vom PC verwenden bei Booteinstellung Sonder) lei Booteinstellung Sonder) Booteinstellung Sonder)

Speichem

Under "Network" you must set the "DHCP - client" to "OFF", and adjust the IP - address of the module.

Algemein	Netzwerk	REC1006	MPI/PROFIBUS Tuning	Arzeige S7_an_S5/S7_Gateway VarSteuem KonfigVarSt Watchdog Passwort
DHCP-Client				O EIN @ AUS
IP-Adresse (be	si kein DHCP-Cli	ent oder kein DHC	P-Server gefunden)	192.168.1.52
Sub-Netzmask	e (bei kein DHC	P-Client oder kein	DHCP-Server gefunden)	255 255 255 0
Gateway-Adre 0.0.0.0 für kein		CP-Client oder ke	in DHCP-Server gefunden)	0000

Speichern

Set the baud rate in "MPI / PROFIBUS" on 187K5 and determine the highest station address. Under "Local





Station Address" give an number to your S7-LAN. The "profile" must be set to "MPI".

Allgemein	Netzwerk	RFC1006	MP/PROFIBUS	Tuning	Anzeige S7_an_S5/S7_Gateway VarSteuern KonfigVarSt Watchdog Passwort
Baudrate					187K5 🛩
höchste Static	insadresse				126 🛩
lokale Teilneh	meradresse				9
Profil					MPI 💌
stärkere Busa	nschaltung				AUS 🛩

Speichem

The next step is to configure the gateway. Here you have to set "Connection Type", "DB - Active" (the partner device "passive") and in the "Station Number" you must enter the number of your PLC. Now you should decide which of the configuration data block is in your PLC and from which data word. Type in the IP - address of your S5 - LAN in the field "IP - address partner". In "TSAP" your store the same name as you have assigned in the S5 - LAN Manager to your - S5 LAN.

Allgemein	3	Netzwerk	REC1006	MPI/PROFIBUS	Tuning	Anzeige	S7_an_S5/S7_Gateway VarSteuerr
Verbindur	ngstyp	p Stationsnummer	Datenbaustein	Datenwort	IP-Adresse Partner	TSAP	Pollzeit
DB-Aktiv	~	5.	10	0	192.168.1.54	1234	500
AUS	×	255	65535	65535	255 255 255 255		65535
AUS	*	255	65535	65535	255 255 255 255		65536
AUS	٣	255	65535	65535	255 255 255 255		65535
AUS	۷	255	65535	65535	255.255.255.255	1	65535
AUS	¥	255	65535	05535	255.255.255.255		65535
AUS	×	266	66535	65535	255.255.255.255		65535
AUS	*	255	65535	65535	255.255.255.255		65536

Speichern

Finally, you still have to enter the number of your CPU that is stored in your PLC about "RFC1006" in "destination - CPU", and the "Bus" should be "Config".

Algemein	Netzwerk	RFC1006	MPIPROFIBUS Tuning	Anzeige S7_an_S5/S7_Gateway VarSteuern KonfigVarSt Watchdog Passwor
Ziel-CPU				5
S7-Subnetz-ID)			0000-0000
Busparamete	r.			Konfig 🛩
Zustand				RFC1006 Aktiv
1 keine TCP/I 2 keine TCP/I 3 keine TCP/I 4 keine TCP/I 5 keine TCP/I 6 keine TCP/I	tus:OK Auftrag ai P-Verbindung nic P-Verbindung nic P-Verbindung nic P-Verbindung nic P-Verbindung nic P-Verbindung nic	ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus		

Speichem

13.1.2.2 With the web browser from V2.10 (S7-LAN) / V2.36 (MPI-LAN)

Allgemein	law law
Name:	Test KM
Werkseinstellungen laden:	Jetzt laden
Netzwerk	
DHCP aktivieren:	
IP-Adresse:	192.168.1.151
Subnetzmaske:	255.255.255.0
Gateway-Adresse:	0.0.0.0
Buseinstellungen	
Bus-Konfig von PC verwenden:	
Baudrate:	187K5 💌
Höchste Stationsadresse:	126 🛩
PG/PC ist einziger Master:	
Profil:	MPI
Lokale Adresse:	0
Booteinstellungen	
Profil:	Automatik.
-Für manuelle Profileinste	
Baudrate:	Automatik 🛩
Datenbit:	8 *
Parität	keine M
Stopbit:	1 ~
Für RFC1006 Verbindunge Ziel CPU:	5
S7-Subnetz-ID:	0000-0000
Busparameter:	Konfig 💌
C	- Transmission
Sonstiges	
	1 A A A A A A A A A A A A A A A A A A A
Protokollart: TS-Adapterfunktionalität:	Automatik 💌

Set in the "General" what should be the name for your module.

Under "Network" you must set the "DHCP - client" to "OFF" and adjust the IP - address of the module.

Set the baud rate in "Bus Settings", to 187K5 and determine the highest station address. Under "Local Station Address" you give a number to your S7-LAN. The "profile" must be set to "MPI" and at "BUS - use config from PC" must be set no "tick.

Under "other", the "TS Adapter functionality" must be off. "Boot Settings" and "protocol type" must both be set to "Automatic".

Finally, you still have to enter the number of your CPU that is stored in your PLC about "RFC1006" in "destination - CPU" and the "Bus" should be "Config".

S7-LAN V2.10			Те	st KM			IP:19	2.168.1.151
Startseite Verbindungen	-Gateway-\		bindungen IP-Adresse	TSAP	Polizeit	CPU	DB	Datenwort
Display.	DB-Aktiv	-	192.168.1.54	1234	500	5	10	0
Optionen Variablen-Steuern	Aus	¥	255.255.255.255		65535	255	65535	65535
 S7-Gateway 	Aus	*	255.255.255.255		65535	255	65535	65535
Watchdog Konfiguration	Aus	×	255.255.255.255		65535	255	65535	65535
Passwort	Aus	~	255.255.255.255		65535	255	65535	65535
Neustart	Aus	۷	255.255.255.255		65535	255	65535	65535
	Aus	*	255.255.255.255		65535	255	65535	65535
	Aus	*	255.255.255.255		65535	255	65535	65535

The final step is to configure the gateway. Here you have to set "Connection Type", "DB - Active" (the partner device "passive") and at "Station Number" you have to enter the number of your PLC. Now you should decide which is the configuration data blocks in your PLC and from which data word. Type in the IP - address of your S5 - LAN in the field "IP - address partner". In "TSAP" your store the same name as you have assigned in the S5 - LAN Manager to your - S5 LAN.

13.1.3 Transfer blocks in PLC

1. Start your programming software and open the S5D - file "S5toS5 - Gateway".

2. Now connect with your S5 - Gateway modules and transfer all the blocks (OB1, FB55 and FB56) in the module belonging to the PLC. The same blocks you now even transfer into the second PLC. The blocks DB20 and DB100 are generated by itself.

3. Now open the S7P - file "S5toS7 - Gateway".

4. Now connect with your S7 - LAN module and transfer the blocks (OB1, FB10, FC15, FC16, DB10 and DB14) into the PLC

13.1.4 Start transmission cycle

S5-controller

In the following example, the DB20 is used as configuration - DB. M10.0 controls the sending and M12.0 controls the receiving. If M10.0 is "1", then 20 bytes of the DB100 are sent from the DW0. M12.0 the receive mailbox DB100 gives free 20 bytes from DW100.

:	SPA	FB	55
Name	:	S5L_SEND	
JDBN	:	KF	+00020
JDBW	:	KF	+00000
STYP	:	КС	D
SDBN	:	KF	+00100
SBEG	:	KF	+00000
SLEN	:	KF	+00020
ACT	:	М	10.0
LEN	:	KF	+00020
DONE	:	М	11.0



ERR	:	М	11.1
STAT	:	MW	20
:			
:	SPA	FB	56
Name	:	S5L_RECV	
JDBN	:	KF	+00020
JDBW	:	KF	+00000
RTYP	:	КС	D
RDBN	:	KF	+00100
RBEG	:	KF	+00100
RLEN	:	KF	+00020
ACT	:	М	12.0
LEN	:	MW	24
NDR	:	М	13.0
ERR	:	М	13.1
STAT	:	MW	22

Set the inputs E8.0 and E9.0 to "1" for sending and receiving.

S7-controller

In the following example, the DB10 is used as DB configuration. M10.0 controls the sending and M11.0 controls the receiving. If M10.0 is "1", then 20 bytes of the DB14 are sent from DW0. M11.0 the receive mailbox DB14 gives free 20 bytes from DW100.

CALL "S7LAN_SEND"			
KOMDB	:	=	S7LAN KommunikationsDB.KOM
SENDTYP	:	=	'D'
SENDDB	:	=	14
SENDADR	•	=	0
SENDLEN		=	20
ACT		=	M10.0
LEN		=	20
DONE	•	=	M10.1
ERROR	•	=	M10.2
STATUS		=	MW12
	CALL "S7LAN_RECV"		
KOMDB		=	"S7LAN KommunikationsDB".KOM
RECVTYP	:	=	'D'
RECVDB	:	=	14
RECVADR	:	=	100
RECVLEN	:	=	20
ACT		=	M11.0
NDR	:	=	M11.1
ERROR	:	=	M11.2
STATUS	•	=	MW14
LEN		=	MW16

13.1.5 Test of the structure

1. Open the each DB100 in your PLCs and enter any values in the first 20 bytes.

TRAEGER.DE Söllnerstr. 9 . 92637 Weiden . info@traeger.de . +49 (0)961 48 23 0 0



e.g.:(1; 2; 3; 4; 5; 6; 7; 8; 9)

🔼 DB 10	0 - C:\DOKUMENTE UND	EINSTELLUNGEN\\S5ANS5-GATEWAY\S5ANS5 🔳 🗖 🔀
		Bib = 🔥
6:	KH = 0001;	
1:	KH = 0002;	
2:	KH = 0003;	
3:	KH = 0004;	
4:	KH = 0005;	
5:	KH = 0006;	
6:	KH = 0007;	
7:	KH = 0008;	
8:	KH = 0009;	
9:	KH = 0000;	
10:	KH = 0000;	
11:	KH = 0000;	
12:	KH = 0000;	
13:	KH = 0000;	
14:	KH = 0000;	
15:	KH = 0000;	
16:	KH = 0000;	
17:	KH = 0000;	×
<u> </u>		.::

2. Save the blocks and set the inputs E8.0 and E9.0 to "1" in your PLC with the active S5 - Gateway module and restart the cycle.

Mark			the second se			
and the second s	Adresse	Art	Wert	Kommentar		
• E	8.0	KM	1			
• E	9.0	KM	1			

3. Now open the DB100 and check whether the values of the 20 bytes which you have configurated in the other PLC in DB100 match with those from DW100.

🔼 DB 10	0 - C:\DOKUMENTE	UND EINSTELLUNGEN\\S5ANS5-GATEWAY\S5ANS5 🔳 🗖 🔀
97:	KH = 0000;	A
98:	KH = 0000;	
99:	KH = 0000;	
100:	KH = 0001;	
101:	KH = 0002;	
102:	KH = 0003;	
103:	KH = 0004;	
104:	KH = 0005;	
105:	KH = 0006;	
106:	KH = 0007;	
107:	KH = 0008;	
108:	KH = 0009;	
109:	KH = 0000;	
110:	KH = 0000;	
111:	KH = 0000;	
112:	KH = 0000;	
113:	KH = 0000;	
114:	KH = 0000;	
115:	KH = 0000;	💌 🖂 🖉
<		

If they match, the communication was successful.

4. Open the DB14 in your S7 - PLC and enter any values in the first 20 bytes.

e.g.: (1; 2; 3; 4; 5; 6; 7; 8; 9; 10)

Date Searbe	etan Emfugan I I I I I I I I I I I I I I I I I I I	Erreichbare Teil Deisystem Test A	nsiðt Extres Au	ister Hilfe	
Conse Rase 0.0 STAC 2.0 STAC		<u>e</u> o	1		- 8 ×
resse Rase 0.0 91A 2.0 91A	<u>#</u>] <u>×</u> %	statuted , and stand , see		istait mina	
resse Rase 0.0 91A 2.0 91A	<u>#</u>] <u>×</u> %	statuted , and stand , see		istat min	
resse am 0.0 SIA 2.0 SIA	ie.	statuted , and stand , see			2 ml
0.0 STA: 2.0 STA:	a la fai a sua da s	Typ	the second se	and the second second second	<u>Re</u>
2.0 STA:	10(1)		Lacen ngavert	Aktualwert	Romentar
		NORD	W#16#0	N#16#1	
4.0 5743	10[2]	NORD	Neideo	X#16#2	
	10(0)	NORD	Nel6e0	X#16#3	
6.0 STA	170[4]	WORD	N#16#0	N#16#4	
8.0 STA:	10[5]	NORD	10#16#0	N#16#5	
10.0 STA		WORD	N#16#0	N#16#6	
12.0 STA		NORD	N#16#0	N#16#7	
14.0 STAT		WORD	N#16#0	X#16#8	
16.0 STA:		W08D	N#16#2	X#16#9	
16.0 STA		NORD	N#16#0	N#16#10	
20.0 SIA		W080	W#16#0	N#16#0	
22.0 STA		NORD	Nelded	X#16#0	
24.0 STA		NORD	N#16#0	N#16#0	
26.0 STA		WORD	N#16#0	N#16#0	
28.0 STA	Carlot Contraction of	NORD	10#16#0	20#16#0	
30.0 STA		WORD	N#16#0	X#16#0	
32.0 5723		NORD	N#16#0	N#16#0	
34.0 STA		WORD	N#16#0	X#16#0	
36.0 5720		WORD	N#15#0	N#16#0	
38.0 514		NORD	N#16#0	Nel6e0	
40.0 STA		NORD NORD	W#16#0	Welfed	
42.0 STA		NORD	Nelde0 Nelde0	X#16#0 X#16#0	
44.0 STA: 46.0 STA:		WORD NORD	N#16#0	N#16#0	
45.0 514		WORD	Neldec	N#16#0	
60.0 STA		WORD	Wel640	N#16#0	
52.0 STA		NORD	Nelded	N#16#0	
54.0 STA		NORD	N#16#0	N#16#0	
56.0 8230		WORD	N#16#0	N#16#0	
58.0 STA	Carl Carl Carl Carl Carl Carl Carl Carl	NORD	N#16#0	20#16#0	
Contraction of Contract	10[31]	WORD	N#16#0	X#16#0	

6. Open the DB14 in your S7 - PLC and check if the values of the 20 bytes which you configurated in the other PLC in DB100 and DB14 from DW0 match with those from DW100. If that is the case, the communication between S5 and S7 was successfully performed.

<

>

			den _ info@traeger.de _ +49 (0)961 48 23 0 0	INDUSTRY COMPONEN
P/AWL/FUP [DB	14 - Erreichbare	Teilnehmer MPt -	(direkt) ONLINE)	
el Bearbeiten Einfüg	pen Zielsystem Tes	it Ansicht Extras P	ster Hilfe	- & ×
00 20 00 12 10	al f			
		Card A LTT - AA		
	明唱 日文	E	si os s	
4.0 STATO [43]	WORD	2001000	Nelded (A
6.0 STAT0[44]	WORD	W#16#0	W#16#0	
8.0 STAT0[45]	NORD	WeldeD	N#16#D	
0.0 STAT0[46]	WORD	W#16#0	N#16#D	
2.0 STAT0[47]	WORD	X#16#0	Ne16eD	
4.0 STAT01401	100R.D.	WelceD	Nelfer	
6.0 STAT0[49]	WORD	W#16#0	WelfeD	
8.0 STATO (50)	NORD	10#16#D	NeldeD	
0.0 STAT0[51]	WORD	W#16#0	Walfal	
2.0 STAT0[52]	0.900	164164D	N+16+2	
4.0 STATO (53)	WORD	261680	W#16#3	
6.0 STAT0[54]	NOR.D	W#16#0	N#16#4	
8.0 STAT0[55]	WORD	Welce0	W#16#5	
0.0 STATO [56]	CROW	W#16#0	N#16#6	
2.0 STATO[57]	NORD	1001600	9#14#T	
4.0 STAT0[58]	NORD	W#16#D	Walfas	
6.0 STAT0[59]	CROW	W#16#0	V#16#9	
e.o STATOIGOI	WORD	261640	Weldeld	
0.0 STAT0[61]	WORD	W#16#0	W#16#0	
2.0 STAT0[62]	NORD	W#18#0	10#16#D	8
4.0 STAT0[63]	WORD	W#16#0	WelfeD	
6.0 STAT0[64]	CROW	W#16#0	N#16#0	
8.0 STATO[45]	WORD	2001600	N#16#D	
0.0 STAT0[66]	WORD	W#16#0	N#16#0	
2.0 STAT0(07)	NORD	2001000	N#16#0	
4.0 STATO[68]	NORD	W#16#0	N#16#0	
6.0 STATO[69]	0008.0	1001600	N#16+D	
8.0 STAT0[70]	WORD	201600	N#16#0	
0.0 STAT0[71]	WORD	W#16#0	N#16#0	
2.0 STAT0[72]	NORD	061640	Nelde0	
4.0 SIAT0(73)	WORD	W#16#0	N#16#0	
6.0 STAT0[74]	NORD	10+18+0	W#16#0	×.

The bytes from DW100 should be the same as the ones you have configured in the DB100 S5 - PLC from DW0.

If they match, the communication was successful

13.2 S7 to S7 - Gateway communication

13.2.1 S7- Configure Gateway

Start your Internet Explorer and enter the IP of the S7-LAN module in the address bar. This will open the configuration page of the S7 - LAN.

13.2.1.1 With the web browser

Set in the "General" what name should be have your module. Among other things must be the "TS" function is turned off, and "use BUS - configuration from the PC" must be set to "NO". "Boot Settings" and "protocol type" must both be set to "Automatic"

Algemein	Netzwerk	REC1006	MPI/PROFIBUS Tuning	Anzeige S7_an_S5/S7_Gateway VarSteuern KonfigVarSt Watchdog Passwo
Betriebssyste	m			V 2.07
Name				Example
TS-Funktion				O EIN ⊚ AUS
BUS-Konfigur	ation vom PC ver	wenden		O JA ⊙ NEIN
Booteinstellun	g			Automašk 🛩
Protokoliart				Automatik 🛩
Baudrate (nur	bei Booteinstellu	ng Sonder)		Automatik
Datenbit (nur l	bei Booteinstellun	g Sonder)		8.4
Parität (nur be	Booteinstellung	Sonder)		keine an
Stopbit (nur b	ei Booteinstellung	Sonder)		

Speichem

Under "Network" you have to set the "DHCP - client" to "OFF" and set the IP - address of the module.

TRA	AEGER.de Sö	llnerstr. 9 <mark>-</mark> 9263	37 Weiden _ info@traeger.de _	+49 (0)961 48 23 0 0	
Algemein	Netzwerk	REC1006	MPI/PROFIBUS Tuning	Anzeige S7_an_S5/S7_Gateway VarSteuern KonfigVarSt	Natchdog Passwort
DHCP-Client					O EIN ⊚ AUS
	the second s				A P L P P L P P

IP-Adresse (bei kein DHCP-Client oder kein DHCP-Server gefunden)	192.168.1.52
Sub-Netzmaske (bei kein DHCP-Client oder kein DHCP-Server gefunden)	255 255 255 0
Gateway-Adresse (bei kein DHCP-Client oder kein DHCP-Server gefunden) 0.0.0.0 für kein Gateway	0.0.0.0
Speichern	

Adjust the baud rate in the "MPI / PROFIBUS" on 187K5 and determine the highest station address. Under "Local Station Address" give your S7-LAN a number. The "profile" must be set to "MPI".

Allgemein	Netzwerk	RFC1006	MPI/PROFIBUS Tuning	Anzeige S7_an_S5/S7_Gateway VarSteuem KonfigVarSt Watchdog Passwort
Baudrate				187K5 🛩
höchste Statio	onsadresse			126 💌
lokale Teilneh	meradresse			9
Profil				MPI 💌
stärkere Busa	anschaltung			AUS 🛩
				Contract of the second s

Speichem

The next step is to configure the gateway. Here you have to adjust "Connection Type", "DB - Active" (the partner device "passive") and at the "Station Number" you must enter the number of your PLC. Now you should decide which is the configuration data block in your PLC, and from which data word. Enter the IP - address of your S5 - LAN in the field "IP - address partner". In "TSAP" you store now have the same name as assigned in the S5 - LAN Manager to your S5 - LAN .

Allgemein	1	Netzwerk	RFC1006	MPIPROFIBUS	Tuning	Anzeige	S7_an_S5/S7_Gateway VarSteuern	
Verbindungstyp Stationsnumme		o Stationsnummer	Datenbaustein	Datenwort	IP-Adresse Partner	TSAP	Pollzeit	
DB-Aktiv	~	5.	10	0	192.168.1.54	1234	500	
AUS	×	255	65535	65535	255 255 255 255		65535	
AUS	~	255	65535	65535	255 255 255 255		65536	
AUS	٣	255	65535	65535	255 255 255 255		65536	
AUS	۷	255	65535	65535	255.255.255.255		65535	
AUS	۷	265	65535	05535	265.255.265.265		65535	
AUS	×	266	66535	65535	255.255.255.255		65535	
AUS	*	265	65535	65535	255.255.255.255		65536	

Speichern

Finally, you still have to see "RFC1006" in "Target - CPU", enter the number of your CPU that is stored is in your PLC and the "Bus" should be set on "Config".

Algemein	Netzwerk	RFC1006	MPIPROFIBUS Tuning	Anzeige S7_an_S5/S7_Gateway VarSteuern Kon	figVarSt Watchdog Passwort
Ziel-CPU					5
S7-Subnetz-ID	÷				0000-0000
Busparameter					Konfig 💌
Zustand					RFC1006 Aktiv
000:Sendestat 1.keine TCP/IF 2.keine TCP/IF 3.keine TCP/IF 4.keine TCP/IF 5.keine TCP/IF 5.keine TCP/IF	tatus OK Auftrag au 2-Verbindung nici 2-Verbindung nici 2-Verbindung nici 2-Verbindung nici 2-Verbindung nici 2-Verbindung nici	usgeführt ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus			

Speichem

13.2.1.2 With the web browser from V2.10 (S7-LAN) / V2.36 (MPI-LAN)

Allgemein	52
Name:	TestKM
Werkseinstellungen laden:	Jetzt laden
Netzwerk	
DHCP aktivieren:	
IP-Adresse:	192.168.1.151
Subnetzmaske:	255.255.255.0
Gateway-Adresse:	0.0.0.0
Buseinstellungen	
Bus-Konfig von PC verwenden:	
Baudrate:	187K5
Höchste Stationsadresse:	126 🗙
PG/PC ist einziger Master:	
Profil:	MPI
Lokale Adresse:	0
Booteinstellungen	
Profil:	Automatik.
Für manuelle Profileinste	
Baudrate:	Automatik 👻
Datenbit:	8 ×
Parität	keine Y
Stopbit:	1 4
Für RFC1006 Verbindunge	
Ziel CPU:	5
S7-Subnetz-ID:	0000-0000
Busparameter:	Konfig 💌
Sonstiges	
Protokollart:	Automatik 💌
TS-Adapterfunktionalität:	
ehlerausgabe auf Display:	

Adjust in the "General" what should be the name for your module.

Under "Network" you have to adjust the "DHCP - client" to "OFF" and set the IP - address of the module.

Adjust the baud rate in "Bus Settings" to 187K5 and determine the highest station address. Under "Local Station Address" you have to enter your S7-LAN a number. The "profile" has to be on "MPI" and at the "use BUS - config from PC" must be set no "tick".

Under "other", the "TS Adapter Functionality" must be set off. "Boot Settings" and "protocol type" must both to be set to "Automatic".

Finally, you still have to enter the number of the CPU under "RFC1006" in "Target - CPU", which is stored in your PLC and the "Bus" should be set "Config".

S7-LAN V2.10			Те	IP:19	2.168.1.151			
Startseite Verbindungen	-Gateway-	Datenwort						
 Display 	DB-Aktiv	-	IP-Adresse 192.168.1.54	TSAP 1234	Polizeit	CPU 5	DB	0
Optionen Variablen-Steuern	Aus	¥	255.255.255.255		65535	255	65535	65535
O S7-Gateway	Aus	*	255.255.255.255		65535	255	65535	65535
Watchdog Konfiguration	Aus	×	255.255.255.255		65535	255	65535	65535
Passwort	Aus	~	255.255.255.255		65535	255	65535	65535
 Neustart 	Aus	۷	255.255.255.255	1	65535	255	65535	65535
	Aus	*	255.255.255.255		65535	255	65535	65535
	Aus	*	255.255.255.255		65535	255	65535	65535

The last step is to configure the gateway. Here you have to adjust at "Connection Type", "DB - Active" (the partner device "passive") and at "Station Number" you have to deposit the number of your PLC. Now you should decide which is the configuration data block in your PLC and from which data word. The IP - address of your S5 - LAN you enter in the field "IP - address partner". In "TSAP" you deposit only the same name as you have assigned in S5 - LAN Manager to your S5 - LAN.

13.2.2 Overwrite blocks in PLC

1. Now open the S7P - file "S5toS7 - Gateway".

2. Now connect with your S7 - LAN module and overwrite the blocks (OB1, FB10, FC15, FC16, DB10 and DB14) in the PLC

13.2.3 Start transmission cycle

In the following example the DB10 is used as configuration - DB. M10.0 controls the sending and M11.0 the receiving. If M10.0 is "1", then 20 bytes are sent of the DB14 from DW0. M11.0 gives free 20 bytes the receive mailbox DB14 from DW100.

	_		
CALL "S7L	A	<u>N</u>	_SEND"
KOMDB	:	=	"S7LAN KommunikationsDB".KOM
SENDTYP	:	=	'D'
SENDDB	:	=	14
SENDADR	:	=	0
SENDLEN	:	=	20
ACT	:	=	M10.0
LEN	:	=	20
DONE	:	=	M10.1
ERROR	:	=	M10.2
STATUS	:	=	MW12
	C	A	L "S7LAN_RECV"
KOMDB	:	=	"S7LAN KommunikationsDB".KOM
RECVTYP	:	=	'D'
RECVDB	:	=	14
RECVADR	:	=	100
	_		



RECVLEN	:	=	20
ACT	:	=	M11.0
NDR	:	=	M11.1
ERROR	:	=	M11.2
STATUS	:	=	MW14
LEN	:	=	MW16

13.2.4 Test of the structure

1. Open the DB14 in your S7 - PLC and enter any desired values in the first 20 bytes.

e.g: (1; 2; 3; 4; 5; 6; 7; 8; 9; 10)

esse 1	laze	Typ	Laden	Aktualwert	Ebumentar
0.0 5	STATO (1)	WORD	W#16#0	N#16#1	
2.0 5	STATO[2]	NORD	Neldeo	X#16#2	
4.0 8	STATO [0]	NORD	N#16#0	N#16#3	
6.0 5	STATO [4]	CROW	N#16#0	N#16#4	
4.0 5	51A10[5]	NORD	N#16#C	N#16#5	
10.0 5	91A10[6]	WORD	W#16#0	N#16#6	
12.0 5	STATO (7)	NORD	N#16#0	N#16#7	
14.0 5	STATO[8]	NORD	N#16#C	Nelces	
16.0 5	BTATO(9)	WORD-	W#16#0	N#16#9	
16.0	51A10[10]	NORD	N#18#0	N#16#10	
20,0 8	STATO[11]	WORD	W#16#0	W#16#0	
22.0 5	STATO[12]	NORD	N#1d#C	X#16#0	
24.0 8	STATO[13]	NORD	N#16#0	W#16#0	
26.0 5	STAT6[14]	NCED	N#16#0	W#16#0	
28.0 5	SIATO[15]	WORD	N#16#0	2641640	
30,0 \$	91A10[16]	1009.2	W#16#0	W#16#0	
32.0 5	STATO[17]	NORD	N#16#0	X#16#0	
34,0 5	STATO[18]	NORD	N#16#C	X#16#0	
36.0 5	STAT0[19]	W08.D	N#15#0	N#16#0	
38.0 5	51A10[20]	NORD	N#15#0	2001600	
40.0 5	STAT0[21]	WORD	N#16#0	W#16#0	
42.0 5	STATO[22]	NORD	Neldeo	X#16#0	
44.0 8	STAT0[23]	NORD	N#16#0	NelGeo	
46.0 5	STAT0[24]	NCED	N#16#0	W#16#0	
45.0 5	STAT0[23]	NORD	Nelde0	2001600	
60.0 5	91AT0[26]	WORD-	W#16#0	X#16#0	
52.0 5	STAT0[27]	NORD	Nelded	N#16#0	
54.0 5	STAT0[28]	NORD	N#16#0	X#16#0	
56.0 5	STATO(29)	WORD	N#16#0	N#16#0	
55.0 3	5TAT0[30]	NORD	N#15#0	20#16#0	
60.0 5	STATO[31]	WORD	W#16#0	W#16#0	

Mark	Adresse	Art	Wert	Kommentar					
	E 8.0	KM	1						
	E 9.0	KM	1						
<				>					

3. Open the DB14 in your S7 - PLC and check if agree with those from DW100 the values of the 20 bytes that you configured in each others PLC in DB100 and DB14 from DW0. If that is the case, the communication between S5 and S7 was successfully completed.

macdel	LUE SUITIEIS	1.9 92037 W	den _ info@traeger.de _ +49 (0)961 48 23 0 0	INDUSTRY COMPONENT
P/AWL/EUP [DB	14 - Erreichbare	Teilnehmer MPt -	5 (direkt) ONLINE]	
tel Bearbeiten Einfüg	pen Zielsystem Tes	it Ansicht Extres P	ster Hife	- # ×
	all			
			and the second	
		E	<u> </u>	
04.0 STAT0 (43)	WORD	2001000	NeldeD	<u> </u>
86.0 STAT0[44]	WORD	W#16#0	W#16#0	
88.0 STAT0[45]	WORD	WelceD	NeldeD	
90.0 STAT0[46]	WORD	N#16#0	W#16#0	
92.0 STAT0[47]	900RD	X#16#0	N#16#0	
94.0 STAT0 [40]	WORD.	WelceD	Nelseo	
96.0 STAT0 [49]	WORD .	W#16#0	W#16#0	
PB.0 STATO (50)	WORD	10#16#D	NeldeD	
00.0 STAT0[51]	WORD	N#16#0	Walfal	
02.0 STAT0[52]	0.900	1641640	N#16#2	
04.0 STAT0(33)	WORD	N#16#0	W#16#3	
06.0 STAT0[54]	CROW	W#16#0	N#16#4	
08.0 STAT0[55]	WORD	WelceD	We16#5	
10.0 STAT0[56]	WORD	W#16#0	W#16#6	
12.0 STATO [57]	WORD	1041640	N#16#7	
14.0 STAT0[58]	NORD	201600	Welfes	
16.0 STAT0[59]	CROW	W#16#0	W#16#9	
10.0 STATO(60)	WORD	261660	Neldel0	
20.0 STAT0[61]	WORD	W#16#0	N+16+0	
22.0 STAT0[62]	NORD	10#16#0	W#16#0	
24.0 STAT0[63]	WORD	W#16#0	Wel6eD	
26.0 STAT0[64]	CROW	W#16#D	N#16#0	
28.0 STATO (45)	WORD	2001600	NelfeD	
30.0 STAT0[66]	CROW	W#16#0	N#16#0	
32.0 STAT0(67)	NORD	Ne1640	N#16#D	
34.0 STATO[68]	WORD	W#16#0	Naléac	
36.0 STAT0[69]	00000	1001600	Neldeo	
38.0 STAT0[70]	WORD	201600	Nel6e0	
40.0 STAT0[71]	CROW CROW	W#16#0	N#16#0	
42.0 STAT0[72]	NORD	1001600	Nelde0	
44.0 SIAT0(73)	WORD	W#16#0	N#16#D	
46.0 STRT0[74]	NORD	10#18#0	N#16+0	· · · · · · · · · · · · · · · · · · ·

The bytes from DW100 should be the same as the ones you have configured in the DB100 S5 - PLC from DW0.

If they match, then the communication was successful

13.3 S7CP to S5 - Gateway communication

13.3.1 S7CP to S5 - Gateway communication

Required tools: S5-LAN Manager

Supported from firmware - version 0.44 of the S5 - Gateway

1. Start the S5-LAN Manager and search for your module. Mark this, and click with the mouse on the button "S5 - Gateway - Connection". It opens a dialog for setting the connection.

Gateway Verb	indungen					X		
Verbindungs-Nr:	1							
Name:	Example	Example						
Konfigurations-DI	3: 20 ab DW	0						
Verbindungs-Typ	ISO-on-TCP-Ver	bindung	🔽 🗌 ak	tiver Verbindu	ungsaufbau			
Pollzyklus:	1000 ms							
Adressen								
	lokal							
IP-Adresse	192.168.1.54		19	192 . 168 . 1 . 56				
Port	0		0					
TSAP (Hex)	TSAP		TS/	AP		-		
TSAP-Länge 2	Ļ		4					
Nr Name	: Typ a	ktiv P-Zyklus	Konfig-DB	IP-Partner	Port Lokal	Po		
1 Exam.		1000	DB20.DBW0	192.168	0	0		
2	ISO on	0	DB0.DBW0	0.0.0.0	0	0		
<						>		
				ок	Abbreche	-		

2. In the bottom of the dialog you find the link list, in which you can select the connection which you want to configure.

3. At "Name" you can now give the connection a logical name.

4. Under "Configuration - DB", enter the position of the data block in the left entry field, (eg "1" for DB1) and in the right field from which data word (eg "1" for DW1) the configuration area is located.

5. As "connection - type" you adjust "ISO - on - TCP - Connection". In this setting is used the TCP - port 102.

6. The polling cycle (ms) specifies how much time elapses until the S5 - Gateway cyclically reads out the configuration area and checks if something needs to be done. If 0 is specified here is readed constantly from the PLC.

7. In the area "Addresses" you can only specify the IP - address of the partner. The IP - address of the S5 - Gateway module you further configurated via the S5 - LAN Manager.

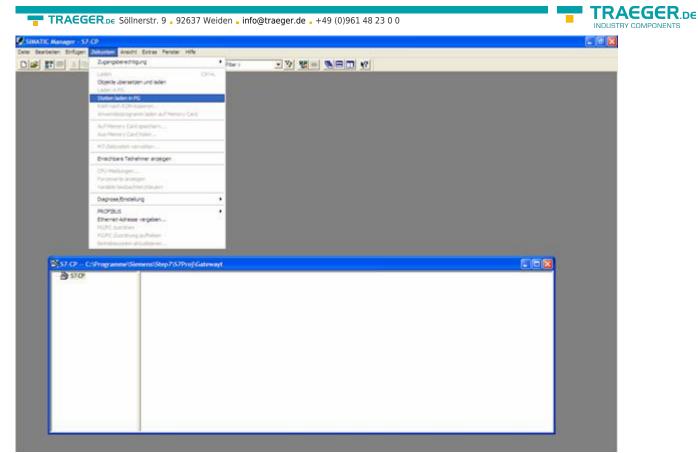
8. With both devices you can adjust the "TSAP" (Transportation - Service - Access - Point). This consists of 16 characters and represents the identification of the connection. This is needed when several compounds with a IP - address exists. (From firmware version 0.45 in the S5 - Gateway can be built a connection with any TSAP)

9. In the second module must be described here in addition to the steps and the "tick" must be set on "Active connection establishment" in "Connection - Type".

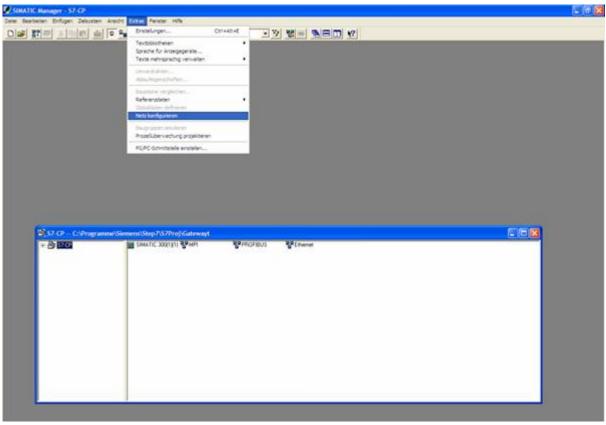
Communication via S5 - Gateway is now configured.

13.3.2 Configurate S7-CP

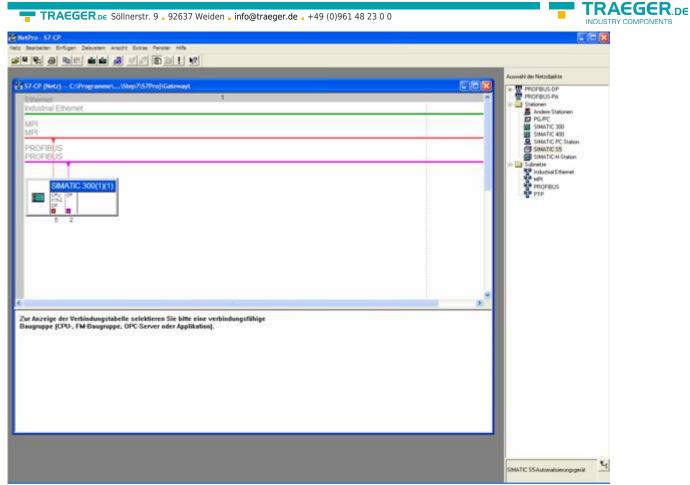
1. Start your programming software and load your station in the software.



2. Now open the "NetPro" window over the "Tools" and "Configure Network", in which you can set up your stations and subnets.



3. If you now execute a double click on your projected S7 opens the "Configure Hardware".



4. In the "Configure Hardware" you can select your CP in the right library from the list and paste it into your rack from slot 4. Save and translate your settings and close the "Configure Hardware".

and the state of the		1						D-4	Standard
PROFENS	27-Madenyates (3)	1 CP 30						「「「「」」の「」」の「」」の「」」の「」」の「」」の「」」の「」」の「」」の	PropEllus of PropEllus of PropEllus of C7 Prove C7 Prove C7 Prove C7 C700
								1	SIMATIC PC Station
iiiαun datur i II taanaar	- Bertellauren	(Fernant	MPLAtern	Eddara	Lader	Kommerka	1		
ciplat: 📳 Baugrupor	Betakuman KFS7 315 24610 0480	1	MPI-Adesse	EAdmon	AAdeuse	Kanamerikar			
and the second second	Detallourner GES7 315 24510 GADD	Fetsware V2.0	MPLAdecce	E Admin	AAdeue	Kotamentar			

5. Now open the object properties with a right click on your projected CP. Under "General" you can now connect under interfaces these to the Ethernet network and assign an IP to him.

TRAEGER.De Söllnerstr. 9 - 92637 Weiden	n 🖕 info@traeger.de 🖕 +49 (0)961 48 23 0 (
---	--



Eigenschaften - CP :	343-1 - (R0/S4)	
Allgemein Adressen	Optionen Diagnose	
Kurzbezeichnung:	CP 343-1	
	FETCH-WRITE-Schnittstelle, lan	und TCP/IP mit SEND-RECEIVE- und ige Daten, UDP, TCP, ISO, iting und BG-Tausch ohne PG, 10/100
Bestell-Nr:	6GK7 343-1EX10-0XE0	
Name:	CP 343-1	
Schnittstelle		Rückwandanschluß
	hernet	MPI-Adresse: 3 💌
and see the	2.168.1.160	
Vernetzt: Ja	Eigenschaften	
Kommentar:		
		3
1		
Schließen		Hilfe
igenschaften - Ethe	ernet Schnittstelle CP 343-	1 (R0/S4) 🛛 🔀
Allgemein Parameter		
MAC-Adresse:	08-00-06-01-00-00	
, in lot labore. It		
✓ IP-Protokoll wird ge		
IP-Adresse:	97 168 1 160	pergang nen Router verwenden
Subnetzmaske:	255.255.255.0	uter verwenden
Subnetz:		esse: 192:168:1.160
nicht vernetzt		
		esse: 192.168.1.160
nicht vernetzt		esse: 192.168.1.160
nicht vernetzt		esse: 192.168.1.160 Neu Eigenschaften
nicht vernetzt		esse: 192.168.1.160 Neu Eigenschaften

6. At the "Address" you can now determine the "beginning" and the "length" of the inputs and outputs.

ngänge	A			Ţ
nfang:	0	Länge: 16	🗖 Systemvorgabe	
usgänge				
fang:	0	Länge: 16	🗖 Systemvorgabe	
g	0	Länge: 16	■ Systemvorgabe	

7. In the diagnosis part, you can open a diagnostic window that we need later to check our structure. So for the moment, you can close the object properties.

Eigenschaften - CP 343-1 - (R0/S4)	
Allgemein Adressen Optionen Diagnose	
Baugruppendiagnose	
Start der Spezialdiagnose	Ausführen
1	
Schließen	Hille

8. Now it is time to project your S5 - PLC in said you select from the right library and create by a double click.

TRAEGER.ce Söllnerstr. 9 . 92637 Weiden . info@traeger.de . +49 (0)961 48 23 0 0	
Str. C. Chrops annet	Australia de Matacolaria PROFIEUS OP PROFIEUS A PROFIEUS A PROFIEUS Stantis 200 Stantis 20
	SMATIC SS-Jutonativeurgigenit

9. By right-clicking on your S5 you must now open the object properties in which you project a "Ethernet Interface" under interfaces as follows.

Name thernet Schnit	Typ tstelle(1) Industrial Ethernet	Adresse 192,168,1.54	Subnetz Ethernet
Neu	Eigenschaften		Löschen

jemein Schr	ittstellen			- 1
Vame	Tun	Adresse	Subnetz	
	Neue Schnittstelle	- Typauswahl		
	Typ: Industrial MPI PROFIBU PTP			
Neu			Löschen	1
		obrechen Hilfe		

10. Type in "Parameters" then the IP of your S5 - LAN gateways, and confirm by clicking OK so that the object properties are now closed again.

Eigenschaften - I	thernet Schnittstelle		×
Allgemein Paran	neter einstellen / ISO-Protokoll ve 08-00-06-01-00-01	erwenden	
IP-Protokoll wi IP-Adresse: Subnetzmaske:	rd genutzt 192.168.1.54 255.255.255.0	Netzübergang Keinen Router verwenden Router verwenden Adresse: 192.168.1.54	
Subnetz: nicht vernetz Ethernet OK	t	Neu Eigenschaften Löschen Abbrechen Hilfe	

11. Now mark your CPU that is projected in your S7 by clicking. Now you can generate a new connection below in the connection table and indeed with a right click.

DE.

- AMERICAN STREET	Mancelsk				100 (Sec. 1999)	Aussnahl der Nietzsbankte
ennot ustrial Ethernet 1 SFIBUS OFIBUS			3	-1		The PROFILES OF PROFILES OF PROFILES OF Subarran Subarts Solution Sharts Shar
5 2			SMATIC S5(1)		E Daveta Volucial Eternet PROFEDS
		Day.	AdverVerterslurgsauft		3	PROFESS PROFESS

12. Now select here as the connection type the previously configured S5 - PLC and the "ISO-on-TCP connection".

Verbindungsp	partner		
🖃 💽 lm a	ktuellen Projekt		
8	\$7-CP		
H	SIMATIC S5(1)		
	— (unspezifiziert)		
	 Alle Broadcast-Teilnehmer Alle Multicast-Teilnehmer 		
Ba to un	— Alle Multicast-Leinenmer nbekanntem Projekt		
Byind	ibekanntein Projekt		
		Ŧ.	
Projekt:	\$7-CP	ŧ.	<
Projekt: Station:	S7-CP SIMATIC S5(1)	1	<
		<u>t</u>	<
Station:		<u>*.</u>	<
Station: Baugruppe:			4
Station: Baugruppe: Verbindung Typ:	SIMATIC S5(1) ISD-on-TCP-Verbindung	[•] .	<
Station: Baugruppe: Verbindung Typ:	SIMATIC S5(1) ISO-on-TCP-Verbindung ISO-on-TCP-Verbindung ISO-TCP-Verbindung		<
Station: Baugruppe: Verbindung Typ:	SIMATIC S5(1)		<

13. Now open the properties of the connection with "OK", where you must now put a "tick" under the "General" in "active connection".

Lokaler End	dpunkt	Bausteinparameter
ID (Hex): Name: Ober CP:	0001 A050 ISO-on-TCP-Verb-2 CP 343-1 - (R0/S4)	1-ID W#16#0000-LADDR
Aktiver	Wegewahl	

14. Under "Addresses" you just must now adjust the same "TSAP" like the one you have have given in S5 -LAN Manager to your S5 - LAN gateway.

Eigenschaften	- ISO-on-TCP-Verbindu	ng 🛛 🔀
Allgemein	Adressen Optionen Üb	ersicht Statusinformationen
	Lokal	Partner
IP (DEZ):	192.168.1.160	192.168.1.54
TSAP (ASC):	1234	1234
TSAP (HEX):	31.32.33.34	31.32.33.34
TSAP-Länge:	4	4
ОК		Abbrechen Hilfe
UK		Abbrechen Hilfe

13.3.3 Overwrite blocks in PLC

- 1. Start your programming software and open the S5D file "S7 CPtoS5 Gateway"
- 2. Now connect with your S5 Gateway module and overwrite all blocks (OB1 FB55 and FB56) in the PLC. The blocks DB20 and DB100 are generated by itself.
- 3. Now open the S7P file "S7 CPtoS5 Gateway".
- 4. Now connect with your S7 PLC and overwrite the blocks (OB1 FB1 FC5, FC6, and DB10) in the PLC



13.3.4 Start transmission cycle

S7 - Control:

The following example DB10 is used as the configuration - DB. M0.0 controls the sending and receiving. When M0.0 is "1", then 20 bytes of DB10 sent from DW0 and gives free the receive shelf DB10 from DW100 20 bytes.

CALL AG_SEND			
ACT	:	=	M0.0
ID	:	=	1
LADDR	:	=	W#16#0
SEND	:	=	P#DB10.DBX0.0 BYTE 20
LEN	:	=	20
DONE	:	=	M15.0
ERROR	:	=	M15.1
STATUS	:	=	MW11
	0	M 15.0	
0	M 15.1		
R	M 0.0		
SPB	noER		
L	MW 11		
noER	:	SET	
	CALL AG_RECV		
ID	:	=	1
LADDR	:	=	W#16#0
RECV	:	=	P#DB10.DBX100.0 BYTE 20
NDR	:	=	M20.0
ERROR	:	=	M20.1
STATUS	:	=	MW21
LEN	:	=	MW23
	0	M 20.0	
0	M 20.1		
S	M 0.0		

S5 -Control:

The following example DB20 is used as the configuration - DB. M10.0 controls the sending and M12.0 the receiving. When M10.0 is "1", then 20 bytes of DB100 sent from DW0. M12.0 gives free the receive shelf DB100 from DW100 20 bytes.

:	SPA	FB	55
Name	:	S5L_SEND	
JDBN	:	KF	+00020
JDBW	:	KF	+00000
STYP	:	КС	D
SDBN	:	KF	+00100
SBEG	:	KF	+00000
SLEN	:	KF	+00020
ACT	:	М	10.0
LEN	:	KF	+00020
DONE	:	М	11.0



ERR	:	М	11.1
STAT	:	MW	20
:			
:	SPA	FB	56
Name	:	S5L_RECV	
JDBN	:	KF	+00020
JDBW	:	KF	+00000
RTYP	:	KC	D
RDBN	:	KF	+00100
RBEG	:	KF	+00100
RLEN	:	KF	+00020
ACT	:	М	12.0
LEN	:	MW	24
NDR	:	М	13.0
ERR	:	М	13.1
STAT	:	MW	22

Then set the inputs E8.0 and E9.0 to "1" to start the cycle.

13.3.5 Test of the structure

1. Open the DB100 in your S5 PLCs and enter any desired values in the first 20 bytes. e.g:(1; 2; 3; 4; 5; 6; 7; 8; 9)

🔼 DB	100 - C:\DO	KUMENTE UND EINSTELLUNGEN\\S5ANS5-GATEWAY\S5ANS5	
		Bib =	· ·
	0: KH =	= 0001;	
	1: KH =	= 9902;	
	2 : KH =	= 9993;	
:	3: KH =	= 0004;	
	4: KH =	= 0005;	
	5 : KH =	= 9996;	
	5: KH =	= 0007;	
	7: KH =	= 0008;	
	8: KH =	= 0009;	
9	9: KH =	= 0000;	
1	9: KH =	= 0000;	
1	1: KH =	= 0000;	
13	2: KH =	= 0000;	
		= 0000;	
1	4: KH =	= 0000;	
1!		= 0000;	
1	5: KH =	= 0000;	
1	7: KH =	= 0000;	×
<			1.1

2. Open the DB14 in your S7 - PLC and enter any desired values in the first 20 bytes. e.g.: (1; 2; 3; 4; 5; 6; 7; 8; 9; 10)

and the second second	and the second second second					
			Teilnehmer WPI +		INE]	
			t Ansicht Extras Re	nster Hife		_ # ×
79 0	224 00 12 40	1				
0812		000	10 m m	ustati min	R #2	
resse	200	Typ	Laden		Rosmentar	*
Conceptual states	STATO (1)	WORD	N#16#0	Nø16ø1		
	STATO[2]	NORD	N#16#0	X#16#2		
	STATO[3]	NORD	N#16#C	241643		
	STATO[4]	NCRD	N#16#0	X#16#4		
	51A10[5]	NORD	N#16#C	X#16#5		
	STAT0[6]	WORD	W#16#0	N#16#6		
	STATO(7)	NORD	N#16#0	N#16#7		
	STATO[8]	NOSO	N#16#0	X#16#8		
	STATO[9]	WORD	N#16#0	N#16#9		
	57AT0[10]	NORD	1041640	N#16#10		
	STATO[11]	WORD	W#15#0	N#16#0		
	STATO[12]	NORD	N#16#0	X#16#0		
	STAT0[13]	NORD	N#16#0	N#16#0		
	STATO[14]	NCSD	N#16#0	W#16#0		1
	SIATO[15]	NORD	N#16#0	2001600		
and the second s	STAT0[16]	WORD	N#16#0	X#16#0		
	STATO[17]	NORD	N#16#0	N#16#0		
	STATO[18]	NORD	N#16#0	X#16#0		
	STAT0[19]	WORD	N#16#0	N#16#0	7	
	STAT0[20]	NORD	N#16#0	20#16#0		
a la fan ar far yn ar	STAT0[21]	WORD	N#16#0	W#16#0		
	STATO[22]	NORD	N#1d#0	N#16#0		
44.0	STAT0 [23]	NORD	N#16#0	2001600		
	STATO[24]	NORD	N#16#0	N#16#0		
45.0	STAT0[23]	NORD	N#16#C	20#16#0		
80.0	91AT0[26]	WORD	W#16#0	W#16#0		
52.0	STATO[27]	NORD	N#16#0	N#16#0		
\$4.0	STATO [28]	NORD	Nelded	2011680		
56.0	STAT0[29]	NCRD	N#16#0	N#16#0		
55.0	STAT0[30]	NORD	N#16#0	20#16#0		
60.0	STAT0[31]	WORD	W#16#0	N#16#0		10

3. Save the blocks and set the inputs E8.0 and E9.0 in your PLC with the active S5 - Gateway module to "1" and start the cycle.

🔳 STR	UE	RN VARIA	BLE		
Mark	1	Adresse	Art	Wert	Kommentar
	E	8.0	KM	1	
•	E	9.0	KM	1	
<					

4. Now open the "NetPro" window again and mark your CPU. Now activate the "Connection Status". Now should be etablished the connection status below in your connection.

hemet lustrial Ethemet Pl ROFIBUS	icht Extras Fenster	1	ISiemensb OHLINE]		
A SIMATIC 300(1)(1)		1 1 55 SIMAT	NC S5(1)		
themet dustrial Ethemet PI PI ROFIBUS ROFIBUS SIMATIC 300(1)(1)		1 55 SIMAT	NC S5(1)		
API PROFIBUS ROFIBUS SIMATIC 300(1)(1)		55	NC S5(1)		
SIMATIC 300(1)(1)		55	NC S5(1)		
SIMATIC 300(1)(1)		55	NC S5(1)		
SIMATIC 300(1)(1)		55	NC S5(1)		
SIMATIC 300(1)(1)		55	NC S5(1)		
CPU DP CP 3152 0 0 00		55	NC S5(1)		
CPU DP CP 3152 0 0 00		55	NC S5(1)		
		55	NC S5(1)		
5 2			1		
				1	
				1	
				1	
				1	×
indungsstatus Lokale ID Partner ID	Partner	Тур	Aldiver Verbindungsaufbau	Subnetz	2
aufgebaut 0001 A050	SMATIC S5(1)	ISO-on-TCP-Verbindung	ja	Ethernet [E]	

5. Now open the "diagnostic window" in the object properties of the "CP", as previously mentioned before. Then start the "Cyclic Refresh" and observe under your "ISO-on-TCP connection" the statistics, where the sent and received messages are counted. So you can check if your connection is available and also runs.

EBaugruppe Industrial Ethernet Betriebszustand Diagnoseputter Verbindungen	Verb-Nr.: Verbindungszustand: Emplangszustand:	1 aufgebaut Waten auf Etti	Partner Adresse:	192.168.1.54	
SO on TCP ISO on TCP. ISO-on-TCP.Verb-2	Sendezustand	Datentransfer ü	ber Ethernet		
Statistik S7-Verbindungen	Lokaler TSAP (ASCII):	1234			
	Lokaler TSAP (HEX):	31.32.33.34			
	Partner TSAP (ASCII):	1234			
	Partner TSAP (HEX):	31.32.33.34			
	Statutik				
	Enlogreich gesendete N	achrichten:	62		
	Nicht erfolgreich gesend	ete Nachrichten:	0		
	Emplangene Nachrichte	n.	62		

6. Now open the DB100 in your S5 - PLC and the DB10 in your S7 - PLC and check if the values are consistent with those from DW100 of the 20 bytes that you configured in the other PLC in DB100 and DB10 from DW0. If that is the case, the communication between S5 and S7 was successfully completed.

TRAEGER.DE Söllnerstr. 9 _ 92637 Weiden _ info@traeger.de	+ 49 (0)961 48 23 0 0
---	------------------------------

🖾 DB 100	- C:\DOKUMENTE UND	EINSTELLUNGEN\\S5ANS5-GATEWAY\S5ANS5 🔳 🗖 🔀
97:	KH = 0000;	
98:	KH = 0000;	
99:	KH = 0000;	
100:	KH = 0001;	
101:	KH = 0002;	
102:	KH = 0003;	
103:	KH = 0004;	
104:	KH = 0005;	
105:	KH = 0006;	
106:	KH = 0007;	
107:	KH = 0008;	
108:	KH = 0009;	
109:	KH = 0000;	
110:	KH = 0000;	
111:	KH = 0000;	
112:	KH = 0000;	
113:	KH = 0000;	
114:	KH = 0000;	
115:	KH = 0000;	■ 1
<		2

The marked bytes should be the same as the ones you have configured in DB10 of the S7 - PLC from DW0.

of sharpened been diversities and the second s	and the second se	Teilnehmer MPt =		
Datei Bearbeiten Einfü		st Ansicht Extras Fe	ster Hilfe	-
米島 20 00 ほう				
	Inded why	Ended to ect		
	Tool and the last			
04.0 STAT0[43]	WORD	261240	Neldeo	
86.0 STAT0[44]	WORD	W#16#0	W#16#0	
88.0 STAT0[45]	NORD	W#16#0	Sel6+D	
90.0 STAT0[46]	WORD	W#16#0	Wel6e0	
92.0 STAT0[47]	0.90%	X#16#0	N#16#D	
94.0 STAT0 [40]	WORD	WelceD	Nelfec	
96.0 STAT0[49]	WORD	W#16#0	W#16#D	
98.0 STAT0(50)	WORD	N#16#D	Welded	
100.0 STAT0[51]	WORD	W#16#0	W#16#1	
102.0 STATO (52)	WORD	W#16#0	W#16#2	
104.0 STAT0(33)	WORD	2001600	Welfe3	
106.0 STAT0 [54]	CROW	W#16#0	N+16+4	
108.0 STAT0[55]	NORD	2001600	Neldes .	
110.0 STAT0[56]	WORD	W#16#0	N#16#6	
112.0 STATO(57)	NORD	1001600	N#16#7	
114.0 STAT0[58]	NORD	N#16#0	Welfes	
116.0 STATO(59)	CROW	W#16#0	Welfep	
110.0 STATO (60)	WORD	2001600	Weldeld	
120.0 STATO(61)	WORD	W#16#0	N#16#0	
122.0 STAT0[62]	NORD	W#16#0	1916e0	
124.0 STAT0[63]	WORD	W#16#0	W#16#0	
126.0 STATO [64]	CROW	W#16#0	N#16#0	
128.0 STATO(45)	WORD	2001600	Welder	
130.0 STAT0[66]	WORD	W#16#0	N#16#0	
132.0 STATO(67)	NORD	2001000	N#16#D	
134.0 STATOJEBJ	NORD	W#16#0	N#16#0	
136.0 STATO(69)	NORD	10#16#0	Neldeo	
138.0 STAT0 [70]	WORD	201600	Welfe0	
140.0 STAT0[71]	NORD	N#16#0	N#16#0	
142.0 STAT0[72]	WORD	2001000	Nelde0	
144.0 STAT0[73]	WORD	N#16#0	N#16#0	
146.0 STATO [74]	NORD	001240	Nel6e0	

The marked bytes from DW100 should be the same as the ones you have configured in DB100 of the S5 - PLC from DW0.

13.4 S7CP to S7 - Gateway communication

13.4.1 S7- configure gateway

Start your Internet Explorer and type in the address bar the IP of the S7-LAN module. Now opens the configuration page of the S7 - LAN.



13.4.1.1 With the web browser

Set in the "General" which should be the name for your module.

Among other things, the "TS" function is turned off and "use BUS - configuration from the PC" must be set to "NO". "Boot Settings" and "protocol type" must both be set to "Automatic".

Allgemein	Netzwerk	REC1006	MPIPROFIBUS Tuning	Anzeige S7_an_S5/S7_Gateway VarSteuern KonfigVarSt Watchdog Passwort		
Betriebssyste	m			V 2.07		
Name				Example		
TS-Funktion	Funktion					
BUS-Konfigur	US-Konfiguration vom PC verwenden					
Booteinstellun	g			Automašk 🛩		
Protokollart				Automatik 💌		
Baudrate (nur	bei Booteinstellu	ng Sonder)		Automatik 😁		
Datenbit (nur l	8 M					
Parität (nur be	Booteinstellung	Sonder)		Keine 🖉		
Stopbit (nur b	ei Booteinstellung	Sonder)		1 W 1		

Speichem

Under "Network" you have to adjust the "DHCP - client" to "OFF" and set the IP - address of the module.

Algemein	Netzwerk	REC1006	MPI/PROFIBUS Tuning	Arzeige S7_an_S5/S7_Gateway VarSteuern KonfigVarSt Watchdog Passwor
DHCP-Client				O EIN @ AUS
IP-Adresse (b	ei kein DHCP-Cli	ent oder kein DHC	P-Server gefunden)	192.168.1.52
Sub-Netzmas	ke (bei kein DHC	P-Client oder kein	DHCP-Server gefunden)	255 255 255 0
Gateway-Adr 0.0.0.0 für kei		CP-Client oder ke	0000	

Speichern

In "MPI / PROFIBUS" set the baud rate on 187K5 and determine the highest station address. Under "Local Station Address" give your S7-LAN a number. The "profile" must be set to "MPI".

Aligemein	Netzwerk	REC1006	MPI/PROFIBUS Tuning	Anzeige S7_an_S5/S7_Gateway VarSteuern KonfigVarSt Watchdog Passwo
Baudrate				187K5 👻
höchste Statio	insadresse			126 🛩
lokale Teilneh	meradresse			9
Profil				MPI 💌
stärkere Busa	nschaltung			AUS 🛩

Speichem

The next step is to configure the gateway. Here you have to set "Connection Type" "DB - active"

("passive" in partner device) and in "Station Number" you must enter the number of your PLC. Now you should decide what is the configuration data block in your PLC and from which data word. The IP - address of your S5 - LAN is specified in the field "IP - address partner". In "TSAP" you store now the same name as you assigned in the S5 - LAN Manager to your S5 - LAN.

Allgemein	3	Netzwerk	RFC1006	MPI/PROFIBUS	Tuning	Anzeige	S7_an_S5/S7_Gateway VarSteuerr
Verbindur	ngstyp	p Stationsnummer	Datenbaustein	Datenwort	IP-Adresse Partner	TSAP	Pollzeit
DB-Aktiv	~	5.	10	0	192.168.1.54	1234	500
AUS	Y	255	65535	65535	255 255 255 255		65535
AUS	*	255	65535	65535	255 255 255 255		65536
AUS	٣	255	69535	65535	255 255 255 255][65535
AUS	۷	255	65535	65535	255.255.255.255	1	65535
AUS	¥	255	65535	05535	265.255.265.265		65535
AUS	Y	266	66535	65535	265.255.265.265]	65535
AUS	*	255	65535	65535	255.255.255.255	1	65535

Speichern

Lastly, you must now enter the number of your CPU that is stored in your PLC under "RFC1006" in "destination - CPU" and the "Bus" should be "Config".





Aligemein	Netzwerk	RFC1006	MPIPROFIBUS Tuning	Anzeige S7 an S5/S7 Gateway VarSteuern KonfigVarSt V	Vatchdog Passwort
Ziel-CPU					i .
S7-Subnetz-ID					0000-0000
Busparameter					Konfig 🖌
Zustand				R	FC1006 Aktiv
000 Empfangs 000:Sendestat 1 keine TCP/IP 2 keine TCP/IP 3 keine TCP/IP 4 keine TCP/IP 6 keine TCP/IP	Autor OK Auftrag aus OK Auftrag au -Verbindung nic -Verbindung nic -Verbindung nic -Verbindung nic -Verbindung nic -Verbindung nic	usgeführt ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus ht im MPI-Bus	, 		

Speichem

13.4.1.2 With the web browser from V2.10 (S7-LAN) / V2.36 (MPI-LAN)

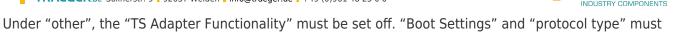
Startseite	Allgemein						
/erbindungen	Name:	Test KM					
Display Optionen	Werkseinstellungen laden:	Jetzt laden					
Configuration Passwort	Netzwerk						
leustart	and the second sec						
	DHCP aktivieren:						
	IP-Adresse:	192.168.1.151					
	Subnetzmaske:	255.255.255.0					
	Gateway-Adresse:	0.0.0.0					
	Buseinstellungen						
	Bus-Konfig von PC verwenden:						
	Baudrate:	187K5					
	Höchste Stationsadresse:	126 💌					
	PG/PC ist einziger Master:						
	Profil	MPI V					
	Lokale Adresse:						
	Booteinstellungen						
	Profil:	Automatik.					
	Für manuelle Profileinste	ellung					
	Baudrate:	Automatik 👻					
	Datenbit:	8 *					
	Parität	keine 👻					
	Stopbit:	1 ~					
	Für RFC1006 Verbindungen						
	Ziel CPU:	5					
	S7-Subnetz-ID:	0000-0000					
	Busparameter:	Konfig 💌					
	Sonstiges						
	Protokollart:	Automatik 💙					
	TS-Adapterfunktionalität:						

Set in the "General" what should be the name of your module.

Under "Network" you have to adjust the "DHCP - client" to "OFF" and set the IP - address of the module.

Adjust the baud rate in "Bus Settings" to 187K5 and determine the highest station address. Give your S7-LAN a number under "Local Station Address". The "profile" must be set to "MPI" and at "BUS - use config from PC" must be set no "tick".





both be set to "Automatic".

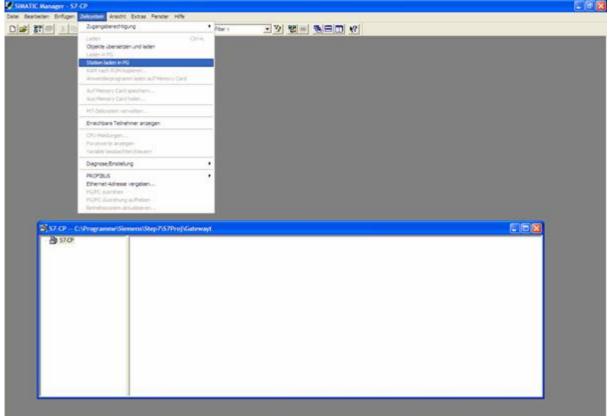
Lastly, you still have to enter the number of your CPU that is stored in your PLC under "RFC1006" in "destination - CPU" and the "Bus" should be "Config".

 Startseite 	Gateway-	Ver	bindungen					
 Verbindungen Diepleu 		_	IP-Adresse	TSAP	Pollzeit	CPU	DB	Datenwort
 Display Optionen 	DB-Aktiv	*	192.168.1.54	1234	500	5	10	0
Variablen-Steuern	Aus	*	255.255.255.255		65535	255	65535	65535
 S7-Gateway 	Aus	*	255.255.255.255		65535	255	65535	65535
Watchdog Konfiguration	Aus	×	255.255.255.255		65535	255	65535	65535
Passwort	Aus	~	255.255.255.255		65535	255	65535	65535
 Neustart 	Aus	*	255.255.255.255		65535	255	65535	65535
	Aus	~	255.255.255.255		65535	255	65535	65535
	Aus	*	255.255.255.255		65535	255	65535	65535

The final step is to configure the gateway. Here you have to set "Connection Type" to "DB - active" and at (the partner device" passive) "Station Number" you must enter the number of your PLC. Now you should decide which is the configuration data block in your PLC and from which data word. The IP - address of your S5 - LAN type in "IP - address partner" field. In "TSAP" you store now have the same name as in the S5 - LAN Manager your S5 - LAN are assigned.

13.4.2 Set S7-CP

1. Start your programming software and load your station in the software.



2. Now open the "NetPro" window over "Extras" and "Configure Network", in which you can set up your



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stations and subnets.

an Enfloren Deixutten	Answer Brocker Bandar State				
	Anson Line Pender Hile	Col+Ab+E	<u> 2 2 = 3 = 0 2</u>		
	Textsblotheken Soriahe for Andegegerste Texte nervsprachig vervalten	:			
	inned dan Alla Argentia Pan				
	Beuerterier vergleichen Referenzisteten Gazuablichen derfinieren				
	Netz konfigurismi Bislignarian analismi Prozečiloenvadrung projekteren				
	PGPC-Schnittatele ensteller				
57-07 - C:Program	ntwSiemens(Step787Proj/Gateway)			E 16	
	ane General Step 75579/03/Gatewayt 교통 Satalic Scottyn) 왕태여	Se monous	¥[frend	E 1	
		≹ PROFBUS	V (rese	E	
		¥ PROFIBUS	¥ [friend	E	
》57 07 — Ci Program * 참 部區		PROFISUS	¥ [hend	€.C	

3. If you now double clicking on your configured S7, the "Configure Hardware" opens.

P (Hetz) - C:\Programme\\Step/7577Fu)\Catewayt meet strial Ethermet	Acumenti der Netzotageter
intet /1 strial Ethernet	PROFILUS PA
strial Ethernet	Andere Stationen
*	
*	SIMATIC 300
	SIMATIC 400
FBUS	C SMATIC SS SMATIC + Suise
PR005	the second se
	Southal Etheret
SIMATIC 300(1)(1)	PROFILIUS PTP
6 2	
	~
	2
zeige der Verbindungstabelle selektieren Sie bitte eine verbindungsfähige	
uppe (CPU-, FM-Baugruppe, OPC-Server oder Applikation),	

4. In the "Configure Hardware" you can select the right in the library your CP from the list and paste it into your rack from slot 4. Save and translate your settings and close the "Configure Hardware".

The second second	 2 2 2 4 8 8 7 1 2 7 1 2 7 1 2 7 1 2 7 1 2 1 2 1 2 1	Perster Hole Set V					C 2431 F0 C 2431 F0		
								PS-300	
C Steckplat	Inteleformer	Ferman	(MPLAdeue	EAdense	Adeus	Konmeria		RADC-300 SIMATIC 400 SIMATIC PC Based Carleol 200/400 SIMATIC PC Station	
	Bestelburner	Fersinger V2.0	MPi Adesse	E Adense	AAdesse	Konneita		RADX 300 SM-300 SMATIC 400 SMATIC 400 SMATIC PC Based Canitol 300/400	

5. Now open the object properties by right-clicking on your configured CP. Under "General", you can now connect these to the Ethernet network under interfaces and assign an IP to him.

Eigenschaften - CP	343-1 - (R0/S4)	
Allgemein Adressen	Optionen Diagnose	
Kurzbezeichnung:	CP 343-1	
	FETCH-WRITE-Schnittstelle, la	D und TCP/IP mit SEND-RECEIVE- und nge Daten, UDP, TCP, ISO, uting und BG-Tausch ohne PG, 10/100
Bestell-Nr:	6GK7 343-1EX10-0XE0	
Name:	CP 343-1	
Schnittstelle		Rückwandanschluß
Typ: Et	hemet	MPI-Adresse:
Adresse: 19	32.168.1.160	
Vernetzt: Ja	Eigenschaften	
Kommentar:		-1
		<u>_</u>
1		
Schließen		Hilfe

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Eigenschaften - Ethernet Schnittstell	le CP 343-1 (R0/S4) 🛛 🛛 🔀	
Allgemein Parameter MAC-Adresse: 08-00-06-01-00-00 ✓ IP-Protokoll wird genutzt IP-Adresse: 192.168.1.160 Subnetzmaske: 255.255.255.0	Netzübergang Keinen Router verwenden Router verwenden Adresse: 192.168.1.160 	
Subnetz:		
nicht vernetzt Ethernet	Neu	
	Eigenschaften	
	Löschen	
ОК	Abbrechen Hilfe	
6. In the "Address" you can now det	ermine the "beginning" and the "length" of the in	nputs and outputs.

			F .	
infang:	0	Lange: 16	🗖 Systemvorgabe	
usgänge				
nfang:	0	Länge: 16	🗖 Systemvorgabe	

7. In the diagnosis part, you can open a diagnostic window that we later need for checking our construction. So for now, you can close the object properties.

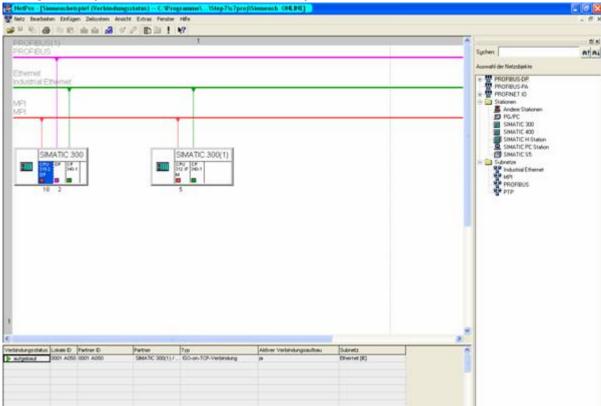
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Figenschaften - CP 343-1 - (R0/S4)

Allgemein Adressen Optionen Diagnose
Baugruppendiagnose
Start der Spezialdiagnose
Ausführen...

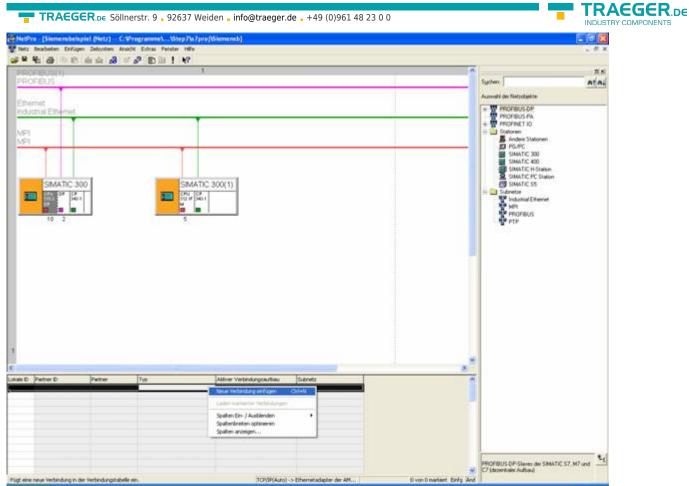
Schließen Hille

8. Now it is time for your partner to configure S7 - PLC with S7 - LAN gateway in which you selecting from the right library and double-click to create, like your first S7 PLC.



9. Now you have to adjust the "Configure Hardware" as with the S7 PLC before. There you add the same CP as in the first and of course the CPU of the PLC. The CPU and the CP (see 5 - 7) you adjust in the same manner as before. Download the configured stations in the respective PLCs after configuration.
10. Now mark your CPU in your first have configured S7 - PLC by clicking. Now you can generate a new connection by right-clicking below in the connection table.

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11. Now select the CPU of the previously configured partner S7 - PLC and as the connection type the "ISOon-TCP connection."

Neue Verbin	dung einfügen	
Verbindungsp	sartner	
	ktuellen Projekt Siementbeispiel SIMATIC 300(1) Uropeoficient) Alle Broadcast-Teinehmer Alle Muticast-Teinehmer bekanntem Projekt	
Projekt	Siemenobeispiel	- t i
Station	SIMATIC 300(1)	-
Bauguppe:	CPU 312 IFM	_
Verbindung		
Турс	S7-Verbindung	
Vor dem	PP-Vebindung	1
	S7-Verbindung S7-Verbindung S7-Verbindung hochverfugbar	

12. With OK now opens the properties of the compound where you have to put a tick under "General" at "active connection".

Lokaler Endpur	ener -	persicht Statusinformationen Bausteinparameter
ID (Hex):	0001 A050 🗸	
Name:	50-on-TCP-Verb-2	
Ober CP:	P 343-1 - (R0/S4)	- burned
	Wegewahl	1
Aktiver Vert	bindungsaufbau	

13. Under "Addresses" you just have to adjust the same "TSAP" like the one you have already assigned to your S7-LAN gateway.

Eigenschaften	- ISO-on-TCP-Verbind	lung	×
Allgemein	Adressen Optionen	Obersicht Statusinformationen	_
	Lokal	Partner	
IP (DEZ):	192.168.1.160	192.168.1.54	
TSAP (ASC):	1234	1234	
TSAP (HEX):	31.32.33.34	31.32.33.34	
TSAP-Länge:	4	4	
ОК		Abbrechen Hilfe	1

14. When you have everything configurated, play again everything in the respectively associated PLC.

13.4.3 Overwrite blocks in PLC

1. Start your programming software and open now S7P - file "S7-CP."

2. So connect with your S7 - PLC (the PLC with the CP) and overwrite all the blocks (OB1, FB1, FC5, FC6, and DB10) in the PLC.

3. Now open the S7P - file "S7 - Gateway".

4. So connect with your S7 - PLC (the one with the S7 - LAN gateway module) and overwrite the blocks (OB1, FB10, FC15, FC16, DB10 and DB14) in the PLC

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13.4.4 Start transmission cycle

In the following example DB10 is be used as the configuration - DB. M0.0 controls the transmission and receiving. When M0.0 is "1", then 20 bytes are sent from DW0 of DB10, and gives free the receive mailbox DB10 from DW100 20 bytes.

CALL "AG_SEND"			
ACT	:	=	M0.0
ID	:	=	1
LADDR	:	=	W#16#0
SEND	:	=	P#DB10.DBX0.0 BYTE 20
LEN	:	=	20
DONE	:	=	M15.0
ERROR	:	=	M15.1
STATUS	:	=	MW11
	0	M 15.0	
0	M 15.1		
R	M 0.0		
SPB	noER		
L	MW 11		
noER	:	SET	
	CALL "AG_RECV""		
ID	:	=	1
LADDR	:	=	W#16#0
RECV	:	=	P#DB10.DBX100.0 BYTE 20
NDR	:	=	M20.0
ERROR	:	=	M20.1
STATUS	:	=	MW21
LEN	:	=	MW23
	0	M 20.0	
0	M 20.1		
S	M 0.0		

13.4.5 Test of the structure

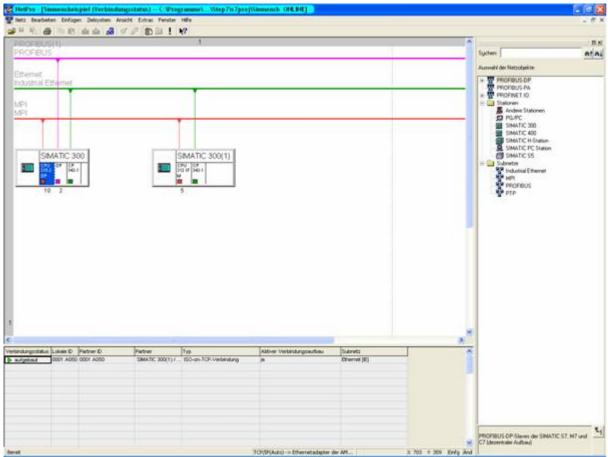
1. Click on DB10 in your S7 - SPS (with CP) and enter any desired values in the first 20 bytes. Then open the DB14 in your S7 - SPS (with S7 - LAN gateway), and enter any desired values in the first 20 bytes and start the cycle, you will see later in communicating immediately the changed values. e.g.: (1; 2; 3; 4; 5; 6; 7; 8; 9; 10)

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79 4	220 00 12 14				
) <mark>@</mark> =		15 B		1< >1] [] []	<u>n</u> <u>n</u> 2
iresse	Nane	Typ	Laden	Aktualwert	Romentar
0.0	STATO(1)	NORD	W#16#0	N#16#1	
2.0	STATO[2]	NORD	Nelde0	X#16#2	
4.0	STATO[0]	NORD	W#16#0	X#16#3	
6.0	STATO[4]	WORD .	N#16#0	N#16#4	
0.0	STATO[5]	NORD	1001600	X#16#5	
10.0	STAT0[6]	NORD-	W#16#0	N#16#6	
12.0	STATO[7]	NORD	N#16#0	N#16#7	
14.0	[8]0TATE	WORD	N#16#0	X#16#8	
	87270(9)	W08/D	W#16#0	N#16#9	
16.0	5TAT0[10]	NORD	10#16#0	N#16#10	
20.0	STAT0[11]	19082	W#16#0	W#16#0	
22.0	STAT0[12]	NORD	Neldeo	X#16#0	
24.0	STAT0[13]	NORD	N#16#0	N#16#0	
26.0	STAT6[14]	W092	N#16#0	N#16#0	
	STATO[15]	NORD	1001600	20#16#0	
	STAT0[16]	W0925	W#16#0	X#16#0	
	STAT0[17]	NORD	N#16#3	10#16#0	
	STATO[18]	NOSD	N#16#0	X#16#0	
36.0	STAT0[19]	CIBOW.	W#16#0	N#16#0	
38.0	5TAT0[20]	NORD	N#26#0	20#16#0	
40.0	STAT0[21]	100920	W#16#0	X#16#0	
42.0	STATO[22]	NORD	N#16#0	N#16#0	
	STAT0{23]	WORD	N#16#0	N#16#0	
	STAT0[24]	WORD	N#16#0	W#16#0	
	STAT0[25]	NORD	N#16#0	20#16#0	
	STAT0[26]	WORD	W#16#0	W#16#0	
52.0	STATO[27]	NORD	N#16#3	N#16#0	
	STATE(28]	WORD	N#16#0	X#16#0	
56.0	STAT0[29]	CI80W	N#16#0	N#16#0	
and the second	STAT0[30]	NORD	N#16#0	20#16#0	
60.0	STAT0[31]	WORD	W#16#0	W#16#0	

2. Save the changes in your DB. Now open the "NetPro" window again and select your PLC CPU (with CP). Now select the "Connection Status". Now should be established the connecting state below in your connection



3. Now open as previously mentioned the "diagnostic window" via the object properties of the "CP". There you start the "Cyclic Refresh" and under your observe "ISO-on-TCP connection," the statistics where the sent and received messages are counted. So you can check if your connection is available and also runs.

CM S7 Diagnose - CP 343-1	0/4 3 ONLINE				
ose Betriebszustand Diagnose	puffer Ansichit Extras H	ife .			
C 66 60 37 10 20					
Industrial Ethemet Betriebszustand	Verb-Nr.:	1	Partner Adresse:	192 168 1 54	
Diagnosepuller	Verbindungszustand	adgebait			
Verbindungen ISD on TCP	Emplongszustand	Waten auf Eng	langsdaten		
\$ ISD-on-TCP-Verb-2	Sendezustand:	Datentransfer U	ber Ethernet		
Statistik S7-Verbindungen	Lokaler TSAP (ASCII):	1234			
and the second s	Lokaler TSAP (HEX):	31.32.33.34			
	Partner TSAP (ASCII)	1234			
	Partner TSAP (HEX)	31.32.33.34			
	Statistik.				
	Enfolgreich gesendete N		62		
	Nicht erfolgreich gesend		0		
	Emplangene Nachrichte	6	62		

4. For added control, you can now take the DB10 in your S7 - SPS (with CP) and take the DB14 in your S7 - SPS (with S7 - LAN gateway), and check if the values of the 20 bytes you have configure in the each other PLC in DB10 and DB14 from DW0, match with those from DW100. If that is the case, the communication between S7 and S7-CP-LAN was completed successfully.

KOP/AWL/EUP [DB1	4 - Erreichbare	Teilnehmer MPL -	5 (direkt) ONLINE]	
Datel Bearbeiten Einfüg	en Zielsystem Test	t Ansicht Extras I	Fenster Hilfe	- 0
****	al l'			
and the second second second second second	The second secon			
		Une 845 1 C 00		
04.0 STAT0[43]	NORD	2681680	WeldeD	
86.0 STAT0[44]	WORD	W#16#0	Welfe0	
88.0 STAT0[45]	NORD	1091690	WeldeD	
90.0 STAT0[46]	WORD	W#16#0	Welfed	
92.0 STAT0[47]	CRCW	X#16#D	Nel6eD	
94.0 STAT0 [40]	WORD	WelceD	WelceD	
96.0 STATO [49]	WORD	W#16#0	WelfeD	
98.0 STATO (50)	WORD	10#16#D	Welded	
100.0 STAT0[51]	WORD	N#16#0	Walfal	
102.0 STAT0[52]	100R.D	1641640	1/#16#2	
104.0 STATO(53)	WORD	2001600	W#16#3	
106.0 STAT0[54]	CROW	W#16#D	N#16#4	
108.0 STAT0[55]	WORD	2001000	Weldes	
110.0 STAT0[56]	WORD	W#16#0	W#16#6	
112.0 STATO[57]	WORD	10#16#0	N#16#7	
114.0 STAT0[58]	NORD	W#16#0	Welfes	
116.0 STAT0[59]	CROW	W#16#D	Welfep	
110.0 STATO160]	WORD	201000	Weldeld	
120.0 STATO(61)	WORD	Weifed	W#16#0	
122.0 STAT0[62]	NORD	10#16#0	Welded	
124.0 STAT0[63]	WORD	W#16#0	Welfed	
126.0 STAT0[64]	0.000	W#16#0	N#16#0	
128.0 STATO(45)	WORD	7001600	Neldep	
130.0 STATO[66]	WORD	W#16#0	Wel6e0	
132.0 STAT0(07)	NORD	261640	NeldeD	
134.0 STATO[68]	NORD	W#16#0	Walfab	
136.0 STATO[69]	WORD	10#16#0	NeldeD	
138.0 STAT0[70]	WORD	201600	Nelfeo	
140.0 STAT0[71]	(NOR.D	W#16#0	N#16#0	
142.0 STAT0[72]	NORD	2001600	Welded	
144.0 STAT0[73]	WORD	N#16#0	N#16#D	
146.0 STAT0[74]	NORD	1001200	We16+0	

The highlighted bytes should be the same as those that you have configured in the other DB from DW0.







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