

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6GK1151-2AA00

INDUSTRIAL AUTOMATION MODULE

Used with the applicable SCALANCE industrial networks configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official manufacturer document: 6GK1151-2AA00.pdf

SIMATIC NET

Installation Instructions

C79000-N8974-C001-01

Release 12/2001

CP 1512

6GK1151-2AA00

This document contains information in English.

Classification of Safety-Related Notices

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



Danger

indicates that death or severe personal injury **will** result if proper precautions are not taken.



Warning

indicates that death or severe personal injury **can** result if proper precautions are not taken.



Caution

with warning triangle indicates that minor personal injury can result if proper precautions are not taken.

Caution

without warning triangle indicates that damage to property can result if proper precautions are not taken.

Notice

indicates that an undesirable result or status can occur if the relevant notice is ignored.

Note

highlights important information on the product, using the product, or part of the documentation that is of particular importance and that will be of benefit to the user.

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Disclaimer

We have checked the contents of this manual for agreement with the hardware and software described. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the data in this manual are reviewed regularly and any necessary corrections included in subsequent editions. Suggestions for improvement are welcomed.

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Safety Instructions Regarding your Product

Before you use the product described here, read the safety instructions below thoroughly.

Qualified Personnel

Only qualified personnel should be allowed to install and work on this equipment. Qualified persons are defined as persons who are authorized to commission, to ground, and to tag circuits, equipment, and systems in accordance with established safety practices and standards.

Correct Usage of Hardware Products

Please read the relevant Installation Instructions and adhere to the instructions regarding the correct usage of hardware products.

Correct Usage of Software Products

Please note the following regarding the correct usage of software products:

Caution

This software may only be used for the applications described in the catalog or the technical description, and only in connection with devices or software products from other manufacturers which have been approved or recommended by Siemens.

Before you use the supplied sample programs or programs you have written yourself, make certain that no injury to persons nor damage to equipment can result in your plant or process.

Prior to Startup

Before putting the product into operation, note the following warning:

Caution

Prior to startup you must observe the instructions in the relevant documentation. For ordering data of the documentation please refer to the catalogs or contact your local SIEMENS representative.

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1 Introduction

SIMATIC NET PC Software Products

Thank you for deciding to purchase a communication product from SIMATIC NET. You have bought an innovative product that combines fast access to automation systems with simple installation and commissioning.

The CP 1512 communications processor has been released for the following SIMATIC NET software products:

- SOFTNET-S7 Industrial Ethernet / Windows
- SOFTNET-PG Industrial Ethernet / Windows

Purpose of this Document

This document explains the properties of the CP 1512. It also describes how to install the SIMATIC NET CP 1512 communications processor in your computer along with the driver for the module.

Validity of the Installation Instructions

These Installation Instructions relate to the CP 1512 (MLFB no. 6GK1151-2AA00) and the driver software supplied with this device.

2 Description of the CP 1512

Components of the Product

The following components are supplied with the CP 1512:

- Communications processor CP 1512
- Cable adapter for connecting an Ethernet cable with an RJ-45 connector to the CP 1512
- CD-ROM with drivers for the CP 1512
- These Installation Instructions

Please check that the consignment you have received is complete. If it is not, please contact your supplier or your local Siemens office immediately.

Caution

If the consignment is not complete, do not install or operate the module under any circumstances.

Hardware Requirements

The SIMATIC NET CP 1512 is an Ethernet adapter complying with the PCMCIA CardBus standard. To be able to use this device, your PC must be equipped with a PCMCIA slot type II or type III and must have a CardBus (32-bit) interface.

To install a driver from the supplied CD, you must have a CD-ROM drive available.

Description

The CP 1512 communications processor connects a PC with an Ethernet network complying with the specification IEEE 802.3 or 802.3u (Fast Ethernet). The CP 1512 is also suitable for use in PC networks.

The CP 1512 detects the maximum data transfer rate and the mode (half duplex or full duplex) automatically. This assumes that the connectivity device (switch) supports autonegotiation functionality.

In a network with category 5 TP cables, you can use the functions of Fast Ethernet 100Base-TX in the half or full duplex modes with the CP 1512. Functions of 100Base-T4 and 100Base-FX are not available.

You can also use the 10 Mbps Ethernet functions in the half-duplex and full-duplex modes with the CP 1512.

Connectors

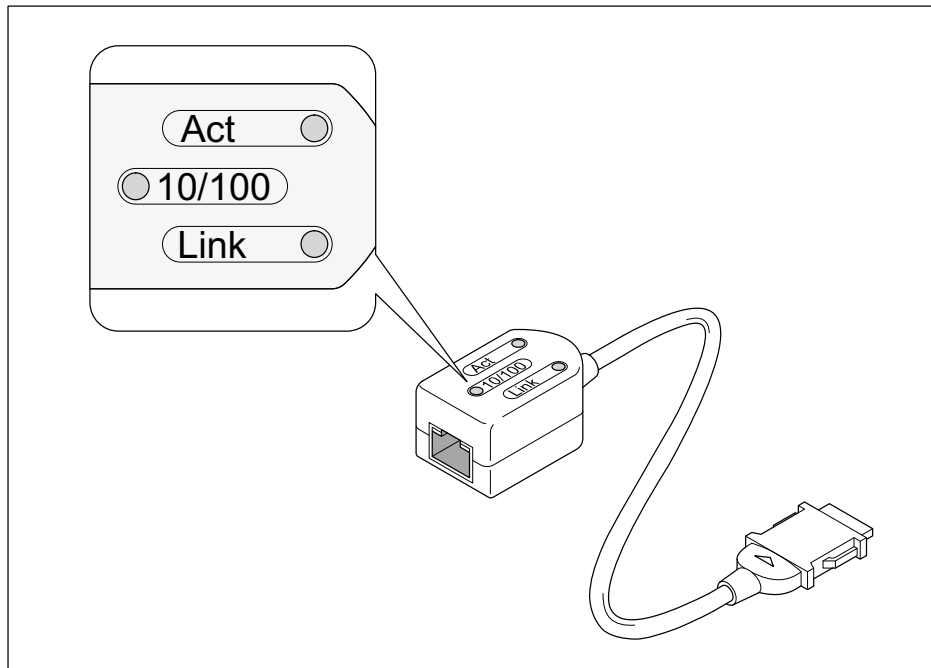
On the edges of the casing, the CP 1512 has two sockets:

- On the front edge, it has a 68-pin male connector for connecting to the PC.
- On the back edge, the cable adapter can be attached via a 15-pin male connector.

LEDs

The cable adapter has three LEDs that indicate the mode:

LED Name	Appearance	Meaning
Act (green)	lit	Problem-free connection to the network.
	flashing	Network adapter is sending or receiving data.
10/100 (orange)	lit	Network adapter operating at 100 Mbps.
	off	Network adapter operating at 10 Mbps.
Link (green)	lit	Problem-free connection to the network.
	off	Problem on connection to the network.



3 Hardware

3.1 Installing the CP 1512

Description

In keeping with the PCMCIA specification, the CP 1512 can be inserted or removed during operation. It is therefore not necessary to shut down and turn off the PC before installing or uninstalling the CP 1512.

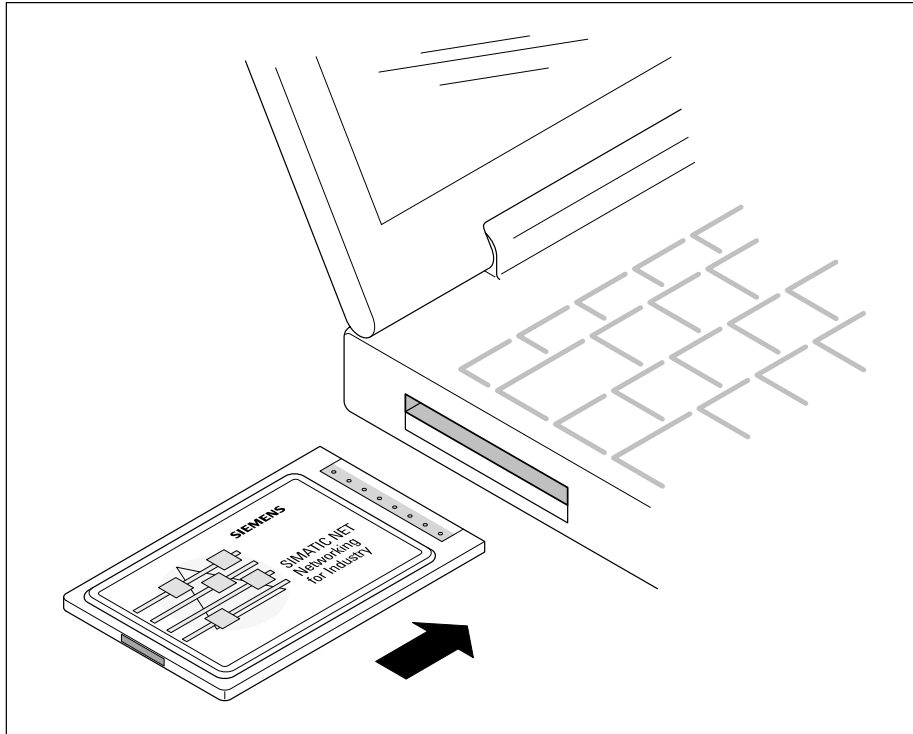
You can tell the upper side of the CP 1512 by a label with the colored SIMATIC NET symbol (five pictograms for the various bus systems). The slogan "SIEMENS SIMATIC NET Networking for Industry" points to the front edge with the 68-pin connector.

Deactivating the CP 1512

You should, however, deactivate the CP 1512 before removing it from the PC. How you deactivate a PCMCIA card depends on the operating system you are using.

Inserting the CP 1512

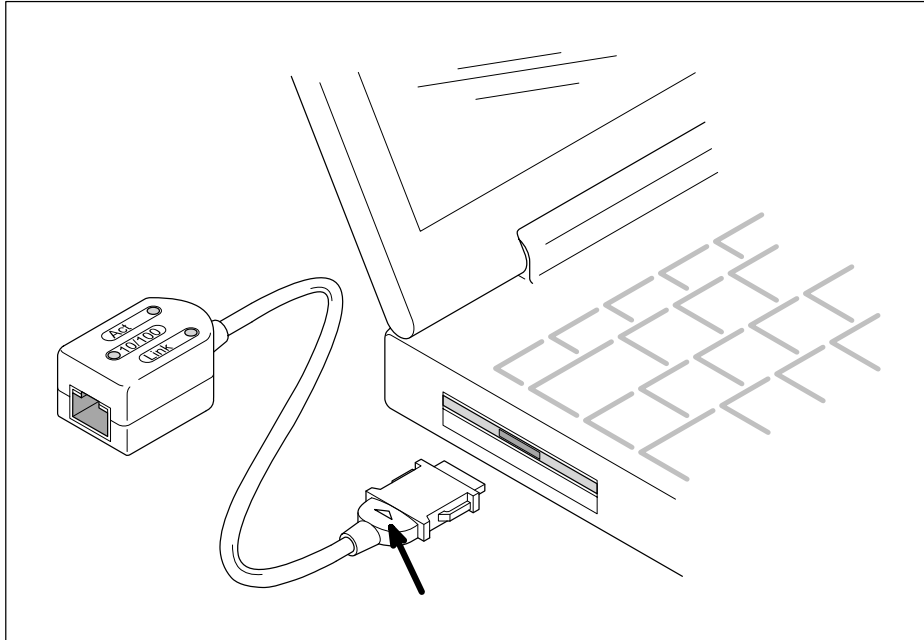
Insert the front edge of the CP 1512 in a free PCMCIA type II or type III slot. Push the CP 1512 fully into the PCMCIA slot of your PC.



Inserting the Cable Adapter

The 15-pin connector on the rear edge of the casing remains accessible when the CP 1512 is inserted correctly.

The connector of the cable adapter is inserted here. You can recognize the top of the connector by the triangular depression (indicated by an arrow in the graphic below).



Connecting the Network Cable

Connect one of the RJ-45 connectors of your TP cable to the RJ-45 jack of the cable adapter. Connect the other RJ-45 connector of the TP cable to the connectivity device (switch or hub).

Checking the Connection

If the installation was correct and both the PC and the switch or hub are turned on, the "Link" LED of the cable adapter lights up.

If this LED is not lit, check the 68-pin connector between the CP 1512 and the PC. Make sure that you read the information in the following section "Instructions on Removing the CP 1512" and then remove the CP 1512 from the PCMCIA slot.

If there are still problems, repeat all steps of the hardware installation. In particular, make sure that the CP 1512 is correctly oriented (colored label at the top, front edge with the 68-pin connector toward the PC) when you insert it in the PCMCIA slot and that it sits firmly in the PCMCIA slot.

Note

You may have to wait for several seconds after turning on the PC before booting is completed. During this time, the "Link" LED remains unlit.

There may also be a brief delay after inserting the CP 1512 before the LED lights up.

3.2 Removing the CP 1512

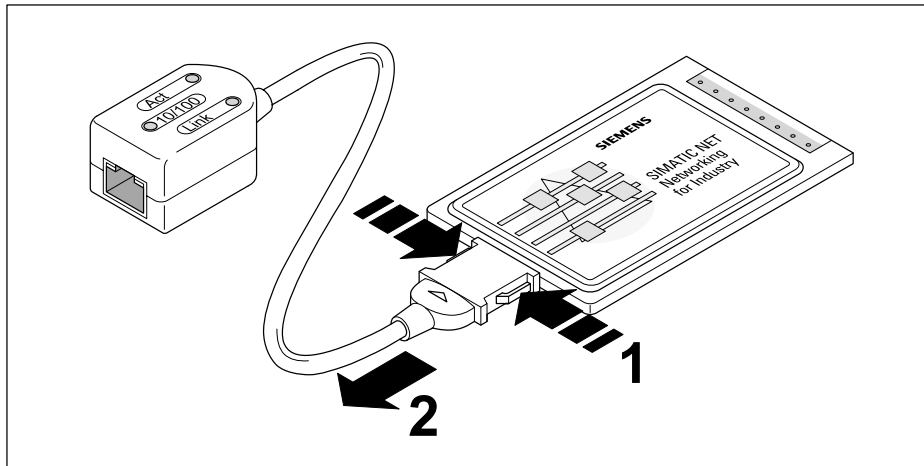
Deactivating the CP 1512

Before removing the CP 1512, you must deactivate the device in the operating system. Otherwise the operating system displays a warning.

Instructions on Removing the CP 1512

The cable adapter is locked in position by two catches.

1. These catches must be released before you detach the cable adapter from the CP 1512. Press in the narrow levers on the left and right of the connector casing and then pull out the connector from the socket of the CP 1512.



2. The press the ejector button of the PCMCIA slot and remove the CP 1512.

Note

The adapter cable connector to the PCMCIA card is not designed for frequent removal and insertion. Under no circumstances must the adapter cable be used to pull out the CP 1512!

4 Installing, Configuring, and Uninstalling the Driver

4.1 Overview

Selecting the Driver

Use the drivers supplied on the accompanying CD if you use an operating system in which the drivers for the CP 1512 are not yet integrated.

Operating Systems Supported

Drivers for the CP 1512 are available for the following operating systems from Microsoft:

- Windows 2000
 - Windows 2000 Professional Multilanguage with Service Pack 1 and 2
 - Windows 2000 Server Multilanguage with Service Pack 1 and 2
- Windows NT
 - Windows NT Workstation, Version 4.0 with Service Pack 6a
 - Windows NT Server, Version 4.0 with Service Pack 6a
- Windows Me
- Windows 98 / Windows 98 Second Edition

For information about the approvals of further service packs, contact your Siemens representative (see page 88).

The subsections of this chapter contain the installation instructions for the various operating systems.

Note

Depending on the operating system, the computer will be restarted during the installation.

This is a normal part of the installation!

Following a restart on your computer, the installation will continue automatically with the next step. You only need to follow the installation instructions in this description. No further measures are necessary.

Screen Savers

If you use a screen saver, remember that processing the saver costs CPU time and this can lead to the system being overloaded.

Some screen savers are known not to release memory resources again. This means that usable main memory is continually reduced.

Required Privileges

To install under Windows NT 4.0 and Windows 2000, you require administrator privileges.

Virus Scanners

Using a virus scanner during operation can cause problems with hardware expansions. When working with SOFTNET, this can therefore lead to a deterioration in communication.

We recommend that you do not run virus tests while operating a SIMATIC NET PC software product. After a virus test, you should reset your computer before you activate communication again.

Note

Dynamic virus protection using gatekeeper mechanisms is not possible.

4.2 Windows 2000

4.2.1 Installation

Requirements

The CP 1512 is installed in the computer.

Installing the CP automatically starts the Wizard that looks for new hardware. The dialog of this wizard is displayed on your screen.

Insert the CD supplied with the CP 1512 in your CD drive.

Procedure

To install the CP 1512 driver, follow the steps outlined below:

Step	Description
1	Click the "Next" button. Reaction The wizard displays a dialog in which you can decide whether to look for the driver files or whether the system should display a list of Windows drivers. The default is the option of looking for the driver files. Use this option.
2	Click the "Next" button. Reaction In the next dialog, you can select the drive in which you inserted the driver CD.
3	Select the option "CD-ROM" and click the "Next" button. Reaction The hardware wizard displays the drivers it has selected for installation.
4	Click the "Next" button. Reaction The next dialog reports the absence of a digital signature.
5	Click the "Yes" button to continue the installation. Reaction The final dialog box confirms successful installation of the driver.
6	Click the "Finish" button.

4.2.2 Changing the Connection Type

Description

In Windows 2000, you can change the connection type. We, however, recommend that you retain the factory default setting "AutoSense".

Procedure

Follow the steps outlined below, to change the connection type:

Step	Description
1	Open "System" in the Control Panel of Windows 2000 (taskbar Start → Settings → Control Panel → System).
2	Click on "Device Manager" in the "Hardware" tab.
3	Open "Network Adapters" and double-click on the "Siemens CP1512" adapter.
4	Select the "Advanced" tab.
5	Select the "Connection Type" property in the list box.
6	In the list box with the title "Value", select the mode you require (data transmission rate 10 or 100 Mbps, full or half duplex).
7	Complete the changes with "OK".

4.2.3 Changing the Ethernet (MAC) Address

Description

Every CP 1512 has an Ethernet (MAC) address that is unique worldwide. This generally avoids any address conflicts in PC networks. Modules whose Ethernet (MAC) address can be set freely by the user are an exception (for example, the CP 443-1). If such modules are used in the network, it is unlikely but conceivable that the freely selected Ethernet (MAC) address of a partner module is the same as the default Ethernet (MAC) address of the CP 1512. **In this case only, you must change the Ethernet (MAC) address.** If you are in doubt, ask your network administrator.

Procedure

To change the Ethernet (MAC) address, follow the steps outlined below:

Step	Description
1	Open "System" in the Control Panel of Windows 2000 (taskbar Start → Settings → Control Panel → System).
2	Click on "Device Manager" in the "Hardware" tab.
3	Open "Network Adapters" and double-click the "Siemens CP1512" adapter.
4	Select the "Advanced" tab.
5	Select "Network Address" in the list.
6	Select the option button to the left of the "Value" input box and enter the required network address in the form of six hexadecimal numbers (range 00 to FF) in the input box. Note Make sure that the address is unique worldwide!
7	Complete the changes with "OK".

4.2.4 Uninstalling

Procedure

Follow the steps outlined below to uninstall the CP 1512 driver under Windows 2000.

Step	Description
1	Open the "Hardware" tab in "System" in the Control Panel (taskbar Start → Settings → Control Panel → System → Hardware).
2	Select the "Hardware" tab:
3	Click the "Device Manager" button in the "Device Manager" dialog box.
4	Open "Network Adapters".
5	Right-click on the "Siemens CP1512" network adapter and select the "Uninstall" option.
6	Confirm that you want to uninstall the adapter in the next dialog box with "OK". Reaction The network adapter will now be uninstalled.

4.3 Windows NT 4.0

4.3.1 Requirements

To operate the CP 1512 under Windows NT 4.0, you also require the CardWizard from Systemsoft Version 5.2 or higher as additional software. This is a separate software package that must be installed prior to installation of the CP 1512.

Information on the Software CardWizard is not included in this documentation.

4.3.2 Installation and Configuration of the CP 1512

Procedure

Follow the steps outlined below to install the CP 1512 driver under Windows NT 4.0 after inserting the supplied CD with device drivers in your CD drive.

Step	Description
1	Open "Network" in the Control Panel of Windows NT 4.0 (taskbar Start → Settings → Control Panel → Network).
2	Select the "Adapters" tab and click on "Add...".
3	Click on the "Have Disk" button and then on "OK". Reaction The "Select OEM Option" dialog box opens.
4	Select the entry "CP 1512" and click "OK". Reaction A dialog box opens in which you can change the connection type and the Ethernet (MAC) address (network address).

Steps continued on following page

continued

	Note on the Connection Type In the "Value" list box, you can select the mode you require (data transmission rate 10 or 100 Mbps, full or half duplex). We recommend that you retain the factory default setting "AutoSense". Note on the Ethernet (MAC) Address Every CP 1512 has an Ethernet (MAC) address that is unique worldwide. This generally avoids any address conflicts in PC networks. Modules whose Ethernet (MAC) address can be set freely by the user are an exception (for example, the CP 443-1). If such modules are used in the network, it is unlikely but conceivable that the freely selected Ethernet (MAC) address of a partner module is the same as the default Ethernet (MAC) address of the CP 1512. In this case only, you must change the Ethernet (MAC) address. If you are in doubt, ask your network administrator. If you have to change the Ethernet (MAC) address, enter the required address in the form of six hexadecimal numbers (range 00 to FF) in the input box. Make sure that the address is unique worldwide!
5	Click the "OK" button. Reaction You automatically return to the "Network" window.
6	Click the "Close" button. Reaction The "Microsoft TCP/IP Properties" dialog box appears.
7	Select "Siemens CP1512" in the "Adapter" list box (IP Address tab → Adapter list box → entry Siemens CP1512). There are two ways of assigning the IP address: "Obtain an IP address from a DHCP server". "Specify an IP address" You can select this configuration if you already have an IP address. For operation outside the local area network, please specify an IP address for the default gateway.
8	Click on "OK". Reaction You will now be asked whether or not you want to restart.
9	Confirm with "Yes". Reaction The computer boots. The installation is completed.

4.3.3 Uninstalling

Procedure

Follow the steps outlined below to uninstall the CP 1512 driver under Windows NT 4.0.

Step	Description
1	Open "Network" in the Control Panel of Windows NT (taskbar (taskbar Start → Settings → Control Panel → Network)).
2	Open the "Adapters" tab, select the network adapter "Siemens CP1512" and click on "Remove".
3	Confirm that you want to uninstall the adapter in the next dialog box with "Yes". Reaction You automatically return to the "Network Adapters" dialog box.
4	Click "Close". Reaction You will now be asked whether or not you want to restart.
5	Confirm with "Yes". Reaction The computer restarts.

4.4 Windows Me

4.4.1 Installation

Procedure

Follow the steps outlined below to install the CP 1512 driver under Windows Me.

Step	Description
1	Boot your computer. Reaction A dialog box opens in which you can select between searching for the best driver and displaying a list of drivers.
2	Select the option "Automatic search for a better driver" and click on "Next". Reaction The driver is installed.
3	Click "Finish". Reaction You will now be asked whether or not you want to restart.
4	Confirm with "Yes". Reaction As soon as the computer has booted, the installation is completed.

4.4.2 Changing the Connection Type

Description

In Windows Me, you can change the connection type. We, however, recommend that you retain the factory default setting "AutoSense".

Procedure

To change the connection type, follow the steps outlined below:

Step	Description
1	Open "Network" in the Control Panel of Windows Me (taskbar Start → Settings → Control Panel → Network).
2	Select the network adapter "Siemens CP1512" in the list box and click on "Properties".
3	Select the "Advanced" tab.
4	Select the "Connection Type" property in the list box.
5	In the list box with the title "Value", select the mode you require (data transmission rate 10 or 100 Mbps, full or half duplex).
6	Complete the changes with "OK".

4.4.3 Changing the Ethernet (MAC) Address

Description

Every CP 1512 has an Ethernet (MAC) address that is unique worldwide. This generally avoids any address conflicts in PC networks. Modules whose Ethernet (MAC) address can be set freely by the user are an exception (for example, the CP 443-1). If such modules are used in the network, it is unlikely but conceivable that the freely selected Ethernet (MAC) address of a partner module is the same as the default Ethernet (MAC) address of the CP 1512. **In this case only, you must change the Ethernet (MAC) address.** If you are in doubt, ask your network administrator.

Procedure

To change the Ethernet (MAC) address, follow the steps outlined below:

Step	Description
1	Open "Network" in the Control Panel of Windows NT (taskbar (taskbar Start → Settings → Control Panel → Network)).
2	Select the network adapter "Siemens CP1512" in the list box and click on "Properties".
3	Select the "Advanced" tab.
4	Select "Network Address" in the list.
5	Select the option button to the left of the "Value" input box and enter the required network address in the form of six hexadecimal numbers (range 00 to FF) in the input box. Note Make sure that the address is unique worldwide!
6	Complete the changes with "OK".

4.4.4 Uninstalling

Procedure

Follow the steps outlined below to uninstall the CP 1512 driver under Windows Me.

Step	Description
1	Open "System" in the Control Panel (taskbar Start → Settings → Control Panel → System).
2	Select the "Device Manager" tab".
3	Open "Network Adapters".
4	Right-click on the "Siemens CP1512" network adapter and select the "Remove" option.
5	Confirm that you want to uninstall the adapter in the next dialog box with "OK". Reaction You will now be asked whether or not you want to restart.
6	Confirm with "Yes". Reaction The network adapter will now be uninstalled.

4.5 Windows 98 / Windows 98 Second Edition

4.5.1 Installation

Requirements

The CP 1512 is installed in the computer.

The computer has booted, the operating system has detected the CP 1512 as a new card and the wizard for finding new hardware was started automatically. The dialog of this wizard is displayed on your screen.

Insert the CD supplied with the CP 1512 in your CD drive.

Procedure

Follow the steps outlined below to install the CP 1512 driver under Windows 98.

Step	Description
1	After starting the computer, the hardware wizard appears automatically. Click "Next". Reaction A dialog box opens in which you can select between searching for the best driver and displaying a list of drivers.
2	Select the option "Search for the best driver for your device" and click on "Next".
3	Select the option "CD-ROM drive", deactivate all other options and click on "Next". Reaction You will be asked to provide information on the drive.
4	Click "Next". Reaction You may be prompted to insert the Windows 98 CD. In this case, remove the driver CD and insert the Windows 98 CD. Click on "OK" to start copying the data. You return automatically to the hardware wizard.
5	Click "Finish". Reaction You will now be asked whether or not you want to restart.
6	Confirm with "Yes". Reaction As soon as the computer has booted, the installation is completed.

4.5.2 Changing the Connection Type

Description

In Windows 98/Windows 98 Second Edition, you can change the connection type. We, however, recommend that you retain the factory default setting "AutoSense".

Procedure

Follow the steps outlined below, to change the connection type:

Step	Description
1	Open "Network" in the Control Panel of Windows 98/Windows 98 Second Edition (taskbar Start → Settings → Control Panel → Network).
2	Select the network adapter "Siemens CP1512" in the list box and click on "Properties".
3	Select the "Advanced" tab.
4	Select the "Connection Type" property in the list box.
5	In the list box with the title "Value", select the mode you require (data transmission rate 10 or 100 Mbps, full or half duplex).
6	Complete the changes with "OK".

4.5.3 Changing the Ethernet (MAC) Address

Description

Every CP 1512 has an Ethernet (MAC) address that is unique worldwide. This generally avoids any address conflicts in PC networks. Modules whose Ethernet (MAC) address can be set freely by the user are an exception (for example, the CP 443-1). If such modules are used in the network, it is unlikely but conceivable that the freely selected Ethernet (MAC) address of a partner module is the same as the default Ethernet (MAC) address of the CP 1512. **In this case only, you must change the Ethernet (MAC) address.** If you are in doubt, ask your network administrator.

Procedure

To change the Ethernet (MAC) address, follow the steps outlined below:

Step	Description
1	Open "Network" in the Control Panel of Windows NT (taskbar (taskbar Start → Settings → Control Panel → Network)).
2	Select the network adapter "Siemens CP1512" in the list box and click on "Properties".
3	Select the "Advanced" tab.
4	Select "Network Address" in the list.
5	Select the option button to the left of the "Value" input box and enter the required network address in the form of six hexadecimal numbers (range 00 to FF) in the input box. Note Make sure that the address is unique worldwide!
6	Complete the changes with "OK".

4.5.4 Uninstalling

Procedure

Follow the steps outlined below to uninstall the CP 1512 driver under Windows 98.

Step	Description
1	Open "System" in the Control Panel (taskbar Start → Settings → Control Panel → System).
2	Select the "Device Manager" tab".
3	Open "Network Adapters".
4	Right-click on the "Siemens CP1512" network adapter and select the "Remove" option. Reaction The "Confirm Device Removal" dialog box opens.
5	Confirm that you want to uninstall the adapter with "OK". Reaction You will now be asked whether or not you want to restart.
6	Confirm with "Yes". Reaction The network adapter will now be uninstalled. Afterwards, the computer will be restarted.

5 Technical Specifications

Data Transmission	
Transmission rate	10/100 Mbps
Modes	Full duplex at 10/100 Mbps Half duplex at 10/100 Mbps
Network standards	Ethernet 100Base-TX Ethernet 10Base-T Autonegotiation
Interfaces	
Attachment to Industrial Ethernet	RJ-45 connector
Attachment to PC/PG	PCMCIA slot type II or type III with 68-pin connector, CardBus (32-bit) interface
Power consumption	2.0 W
Construction	
Dimensions (L x W x H) in mm	85.6 x 54.0 x 3.0 mm
Permitted Ambient Conditions	
Operating temperature	0 to 60 °C
Transportation and storage temperature	-20 to 70 °C
Humidity	10 % to 90 % no condensation

6 Dealing with Installation Problems

Introduction

This chapter explains some of the possible causes if the installed CP 1512 does not function as expected.

Hardware

Please check the following:

- For Fast Ethernet connections (100 Mbps), you must use category 5 TP cable.
- The hubs or switches must be turned on and be designed for 10Base-T or 100Base-TX.
- The network cables to the computers must not be plugged into the uplink port of the hub; this port is intended for a link to another hub or switch.

Network Configuration

Please check the following:

- No two computers must have the same name.
- Within a network, the MAC and IP addresses must be unique.

Checking the Installation

Follow the steps below to check whether or not your CP 1512 is installed correctly:

Step	Description
1	Open "Hardware" in the Control Panel (taskbar Start → Settings → Control Panel → System → Hardware tab).
2	Click the "Device Manager" button.
3	Double-click on the "Network Adapter" entry if this is not already expanded.
4	Check whether the CP 1512 has been entered. • If there is no entry for the CP 1512, the CP was not correctly installed. - In this case, repeat the installation. • If the branch of the CP 1512 has an additional icon (yellow triangle or red dot), double-click on the entry for the CP 1512 to display further information on possible causes of the problem.

7 Glossary

100BASE-FX	Two-strand glass fiber cable.
100BASE-T4	Four-pair twisted copper cable.
100BASE-TX	Two-pair twisted copper cable for data transmission.
Autonegotiation	A device that supports autonegotiation functionality automatically detects the maximum possible data transmission rate and the mode (half duplex or full duplex) in the network.
Fast Ethernet	Fast Ethernet is specified in the IEEE standard 802.3u and extends 10 Mbps Ethernet to achieve a data transmission rate of 100 Mbps.
Full duplex mode	In the full duplex mode, a node can send and receive data at the same time.
Gatekeeper mechanism	The gatekeeper mechanism is a function of virus scanners which checks every file that is read or written during run time for virus signatures. Refer to the description of your virus scanner to find out how to deactivate this functionality.
Half duplex mode	When operating in the half duplex mode, a node can either only send or only receive data at any one time. It is not possible to send and receive at the same time.
PCMCIA	P ersonal C omputer M emory C ard I ndustry A ssociation – An association of computer component manufacturers that has defined standards for insertable cards.

8 Where to Get Help

Services

The following services are available:

- Premium Hotline (for owners of the SIMATIC Card)
- Basic Hotline (technical support)
- Authorization Hotline

Availability and Languages

The Service & Support of A&D (**A**utomation and **D**rives) is available worldwide and at all times.

The languages spoken are German and English. French, Italian, and Spanish are also spoken on the authorization hotline.

Procedure

If you require assistance from the Premium or Basic Hotline, follow the steps outlined below:

1. Have the following information ready:
 - Manufacturer and type of the computer
 - Operating system version
 - BIOS version
 - Other modules inserted in your PC
 - Version of the CP/network adapter
 - Software version

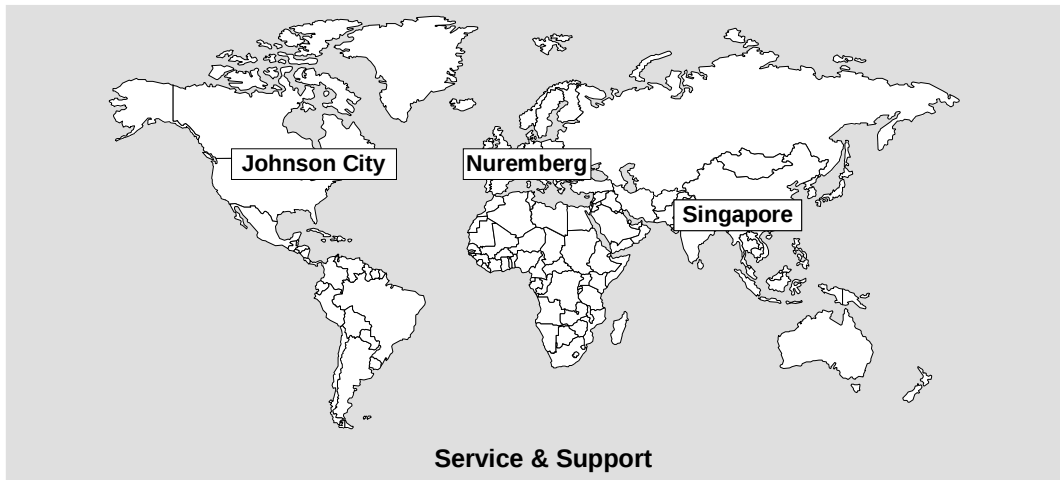
If you have installed SIMATIC NET PC software products, you can check the version as follows:

For example if you have version 6.0 build 2420, you will see the entry "SIMATIC NET PC Software V6.0 Build 2420" (Start > Control Panel > Software > SIMATIC NET PC Software V6.0 Build ...).

2. If you are in possession of the SIMATIC Card, please phone the following number:

Premium Hotline	
Worldwide (Nuremberg)	
workdays	Fast callback,
0:00 to 24:00 (local time, GMT +1)	guaranteed within a maximum of two
Phone: +49 - (0) 911 - 895 - 7777	hours
Fax: +49 - (0) 911 - 895 - 7001	(charged, only with the SIMATIC Card)
E-mail: techsupport@ad.siemens.de	

If you do not have a SIMATIC Card, please phone one of the three hotline centers listed below that is on duty at the time of your call:



Basic Hotline	Authorization Hotline
Europe and Africa (Nuremberg) Mo. to Fr. 7:00 to 17:00 (local time, GMT +1) Phone: +49 - (0) 180 - 5050 - 222 Fax: +49 - (0) 180 - 5050 - 223 E-mail: techsupport@ad.siemens.de	Europe and Africa (Nuremberg) Mo. to Fr. 7:00 to 17:00 (local time, GMT +1) Phone: +49 - (0) 911 - 895 - 7200 Fax: +49 - (0) 911 - 895 - 7201 E-mail: authorization@nbgm.siemens.de
America (Johnson City) Mo. to Fr. 8:00 to 19:00 (local time, GMT -5) Phone: +1 - (0) 423 - 262 - 2522 Fax: +1 - (0) 423 - 262 - 2231 E-mail: simatic.hotline@sea.siemens.com	
Asia and Australia (Singapore) Mo. to Fr. 8:30 to 17:30 (local time, GMT +8) Phone: +65 - (0) 740 - 7000 Fax: +65 - (0) 740 - 7001 E-mail: simatic.hotline@sae.siemens.com.sg	

Service & Support on the Internet

On the World Wide Web, you will find the very latest information on the entire SIMATIC product range, for example, answers to frequently asked questions (FAQs), Tips and Tricks, software updates, and user information.

In addition to this free information, you can also obtain the following directly for a fee that will be charged to your account:

- Manuals
- Software products
- Sample application programs

These are charged to your SIMATIC CARD.

The Internet address is as follows:

<http://www.siemens.de/automation/service&support>

You can also formulate a question for the SIMATIC Knowledge Manager that will find the solution in the knowledge database.

If you are working in an area without an online connection, part of the free information area is available on the CD "SIMATIC Customer Support Knowledge Base".

Training for SIMATIC NET

Who to Contact about Training Courses:

Siemens AG
Trainings-Center für Automatisierungs- und Antriebstechnik
A&D PT 49 Kursbüro
Östliche Rheinbrückenstraße 50
76181 Karlsruhe
Germany

Phone: +49 - (0) 721 - 595 - 2917

Fax: +49 - (0) 721 - 595 - 6087

Internet: <http://www.sitrain.com>

Who to Contact

If you cannot find answers to technical questions on the software in the sources listed above, please contact your local Siemens office.

You will find the addresses in the following:

- Internet (<http://www.siemens.de/simatic-net>)
- In catalog IK PI

9 Certificates and approvals

9.1 Notes on the CE Mark of SIMATIC NET Products

Product Name:

SIMATIC NET CP 1512 – 6GK1151-2AA00

EMC Directive



The SIMATIC NET product described above meets the requirements of the following directive:

89/336/EEC "Electromagnetic Compatibility"

Area of Application

The products are designed for use in the following areas:

Area of Application	Requirements	
	Noise emission	Noise immunity
Household, commercial, light industry	EN 50081-1 : 1992	EN 50082-1 : 1997
Industry	EN 50081-2 : 1993	EN 50082-2 : 1995

Installation Guidelines

The product meets the requirements providing you adhere to the guidelines for installation and safety described in the following documentation:

- SIMATIC NET Twisted-Pair and Fiber-Optic Networks, manual
- SIMATIC NET Industrial Twisted-Pair Networks, manual

Conformity Certificates

The EU conformity certificates are available for the relevant authorities according to the EU directive and are kept at the following address:

Siemens Aktiengesellschaft
Bereich Automatisierungs- und Antriebstechnik
Industrielle Kommunikation (A&D PT 2)
Postfach 4848
D-90327 Nürnberg
Germany

Directive on Machines

The product remains a component in compliance with Article 4(2) of the EU directive on machines 89/392/EEC.

According to the directive on machines, we are obliged to point out that the product described is intended solely for installation in a machine. Before the final product can be put into operation, it must be tested to ensure that it conforms with the directive 89/392/EEC.

9.2 FCC Approval



The SIMATIC NET product CP 1512 meets the requirements for compliance with FCC Standard Part 15 Subpart B Class B in the range of 450 kHz to 2 GHz.

9.3 UL and CSA Approval

The SIMATIC NET product CP 1512 is approved in compliance with the UL 1950 standard and CSA C 22.2 No. 950 standard.

General Licence Conditions for Software Products for Automation and Drives

1. One Off Licence

- 1.1 The Customer is supplied with the software products detailed in the Confirmation of Order/Software Product List (hereinafter referred to as "Software") on the data medium indicated therein. The Documentation relating to the Software must be purchased separately, unless the Confirmation of Order states that it shall be supplied together with the Software.
- 1.2 The Customer is granted the non-exclusive right to use the Software for an unlimited period of time on the Hardware indicated in the Confirmation of Order, although each Software supplied to the Customer and - if the Customer has been granted a Copy Licence - each copy made by the Customer shall only be used on one item of Hardware at one time. Provided that the Customer is not merely granted a production or run time licence, he shall be entitled to use the Software for a limited time on the appropriate hardware in order to generate a custom application.
- 1.3 Unless expressly prohibited on the data medium, the Customer shall be entitled to make up to three (3) copies of each item of Software, which shall be used exclusively for back-up purposes. Otherwise, the Customer shall not be entitled to make copies of the Software unless Siemens has previously granted him a Copy Licence in writing.
- 1.4 The Customer shall not be entitled to modify, redevelop or translate the Software, nor may he extract individual parts. Furthermore, the Customer shall not be entitled to remove alphanumeric identifiers, trademarks or details of copyright from the data medium and, insofar as he is entitled to make copies of the Software, shall copy these details without alteration. The aforementioned regulation applies equally to the Documentation supplied in accordance with Clause 1.1.
- 1.5 The Customer shall be entitled to transfer the right to use the Software granted to him in accordance with Clause 1 to a third party, provided he makes a written agreement with the grantee in conformance with all the conditions contained in this Clause. The Customer shall, however, only grant to third parties the right to use the Software in conjunction with the Hardware specified in Clause 1.2 for which he has been granted the right to use. The Customer is aware that - e. g. by virtue of its nature or application - the Software including the Documentation relating to it may be subject to an export approval in accordance with the German Foreign Trade and Payments Law (see also note on bill of delivery or invoice). The Customer shall assume responsibility for obtaining the necessary export approvals and shall make delivery only in accordance with the stipulations of such approval.

2. Copy Licence

- 2.1 If Siemens has granted the Customer a copy licence to a Software, the Customer shall receive a written confirmation of the number of copies he is entitled to make of the data medium supplied with One Off Licence, which represents the precondition for the Copy Licence. The Customer is granted for an unlimited period of time the non-exclusive and non-transferable right to make the number of copies specified in the Confirmation of Order, use the copies in accordance with Clause 1 and grant the right to use these copies to third parties.
- 2.2 The Customer shall observe the instructions on copying that are delivered to him together with the Copy Licence. Furthermore, the Customer shall keep a record of the whereabouts of all the copies, which must be open for inspection by Siemens on request.

3. Warranty

- 3.1 Siemens shall remedy defects in the data media by replacement.
- 3.2 Warranty shall be assumed for the Software in accordance with the warranty class. Software shall be divided into classes A, B and C. The classification can be determined from the Confirmation of Order/Software Product List or from the catalogues and product manuals current at the time of delivery.
Such reproducible deviations from the relevant Documentation demonstrated by the Customer and appearing in the last data medium delivered to the Customer shall be deemed to be defects in the Software.
- 3.3 In the case of Software of warranty class A, Siemens shall remedy defects by delivery of a data medium with the new product release/version. Until such time as a new product release/version is delivered, Siemens shall provide an interim solution bypassing the defect, provided that it is feasible at reasonable cost and that the Customer can demonstrate that he is prevented from processing imperative jobs due to such defect.
In the case of Software of warranty class B, Siemens shall be obliged to provide the Customer on request with such means of correcting or bypassing the defects as are available to Siemens.
In the case of Software of warranty class C, Siemens has no obligation to correct defects.
- 3.4 If Siemens has granted the Customer a Copy Licence, the Customer shall be entitled to make a number of copies corresponding to the Copy Licence of the new product release/version delivered in accordance with Clause 3.3. Clause 2 also applies accordingly.
- 3.5 The defect diagnosis and correction shall be made at Siemens' option either at the Customer's or at Siemens' premises. If a (repair-) service agreement exists between the Customer and Siemens, defect diagnosis and correction may also be carried out at the place where the Hardware, on which the Software is used in accordance with Clause 1.2, is installed.
The Customer shall provide Siemens with all the documents and information in his possession necessary for correcting the defect. If Siemens corrects the defect at the Customer's premises, the Customer shall provide Siemens, free of charge, with access to the relevant Hardware and Software and undertakes to provide the appropriate working conditions with suitable operating personnel to ensure that the work can be executed efficiently. If no (repair-) service agreement has been made, the Customer shall reimburse Siemens for any travelling and accommodation costs incurred by sending personnel to the place of installation.
- 3.6 If any defect cannot be corrected within a reasonable period of time or bypassed so as to be acceptable to the Customer, the Customer shall be entitled to demand a price reduction or to cancel the contract.
- 3.7 The warranty period for all Software shall be twelve (12) months from the date of delivery of the data medium with the Software in accordance with Clause 1.1 to the Customer or from the date of notification of readiness for dispatch. For copies made within the framework of a Copy Licence, the warranty period of the copy sample (One Off Licence) shall apply.
- 3.8 Siemens assumes warranty for Software extended by the Customer via an interface provided for this purpose by Siemens, but only up to such interface.
- 3.9 All other claims under warranty are hereby excluded, except where liability is binding on the grounds of intent, gross negligence or the absence of promised characteristics.

4. Software Maintenance Service

For One Off Licences and Copy Licences, a Software Maintenance Service comprising automatic delivery of Updates and Upgrades can be agreed upon against separate order. Siemens shall then ensure for the duration of the Software Maintenance Service Contract that the Software is kept up-to-date with the newest official release.

5. Payment

- 5.1 Siemens will invoice separately at the rates in force at the time for the following:
- Support with the start-up of the Software;
 - Support with analysing and correcting defects due to improper use or any other circumstances not inherent in the Software.
- 5.2 Payment shall be effected immediately after delivery/completion of service and receipt of invoice.

6. Liability

- 6.1 If the Supplier is responsible for a delay in delivery, the Purchaser who can establish credibly that he suffered a loss from such delay may claim agreed compensation of 0.5 % for every completed week of delay but in no event shall the aggregate of such compensation exceed a total of 5 % of the price of that part of the Supplies which, because of the delay, could not be put to the intended use.
- 6.2 Purchaser's claims for compensation which exceed the limits specified in para. 6.1. shall be excluded in all cases of delayed delivery even after expiry of an extension of time that may have been granted to the Supplier. This exclusion shall not apply where in cases of wilful misconduct or gross negligence there is a legally binding liability on the part of the Supplier. Purchaser's right to terminate the contract shall remain unaffected after the expiry of an extension granted to the Supplier that did not result in delivery.
- 6.3 Siemens shall be fully liable for death or personal injury arising from its negligence and shall be responsible for direct damage to property up to an amount of EUR 500.000,— per event where such damage is caused by Siemens' negligence. In the event of loss of or damage to data media, Siemens shall not be liable for the cost of restoring lost data.
- 6.4 Any further claims for damages from the Customer other than those expressly specified in this Contract, whatever the cause in law, in particular claims on the grounds of damages resulting from consultation, support with the introduction of the Software or as a result of software errors, are excluded insofar as liability is not binding, e. g. in the case of damage to items for private use or in cases of wilful misconduct, gross negligence, the absence of characteristics promised to the Customer or of the fundamental non-performance of contractual obligations. However, liability for damages arising from the fundamental non-performance of contractual obligations shall be limited to the foreseeable damage normally covered by a contract except in cases of wilful misconduct or gross negligence. This limitation does not imply a change in the burden of proof to the detriment of the Customer.
- 6.5 No change in the burden of proof to the detriment of the Purchaser is involved in the above stipulations as per para 6.2 to 6.4.

7. Industrial Property Rights and Copyright

- 7.1 If a third party, because of an infringement of an industrial property right or copyright (hereinafter called "Property Rights") by products furnished by the Supplier and used in conformity with the contract, asserts legitimate claims against the Purchaser, the Supplier shall be liable to the Purchaser as follows:
- a) At his own option and expense, the Supplier shall either obtain a right to use the product, modify the product so as not to infringe the Property Rights or replace the product. If this is not possible to the Supplier on acceptable terms, he shall have to take back the product and refund the purchase price.
 - b) Supplier's aforesaid obligations shall exist only on condition that the Purchaser immediately notifies the Supplier in writing of the claims asserted by the third party, that he does not acknowledge an infringement and that all countermeasures and settlement negotiations are reserved to the Supplier. If the Purchaser stops using the product to reduce the damage or for other important reasons, he shall be obliged to make it clear to the third party that the suspended use does not mean acknowledgment of an infringement of Property Rights.
- 7.2 Claims of the Purchaser shall be excluded if he is responsible for an infringement of Property Rights.

- 7.3 Claims of the Purchaser shall also be excluded if the infringement of Property Rights was caused by specific demands of the Purchaser, by a use of the product not foreseeable by the Supplier or by the product being altered by the Purchaser or being used together with products not provided by the Supplier.
- 7.4 Further claims against the Supplier due to infringement of Industrial Property Rights and Copyright shall be excluded. However, Clauses 6.3 to 6.5 shall remain unaffected and so shall be Purchaser's right to terminate the contract.

8. Export Approvals, Sub-Agreements, Assignment, Law

- 8.1 Export of the Software including the data and Documentation relating to it may be subject to approval - e. g. by virtue of its nature or application - (see also notes on bills of delivery and invoices).
- 8.2 Any sub-agreements must be made in writing. Siemens has the right to transfer its rights and obligations under this Contract to a third party, unless the Customer objects in writing within four (4) weeks from being notified of such intention. Siemens' notification shall include details of the Customer's right to object.
- 8.3 Except where precluded by statute, the place of jurisdiction shall be the domicile of Siemens head office and the governing law shall be the law of the Federal Republic of Germany.

