

**SIEMENS**

**SIMATIC NET**

**Industrial Ethernet Wireless LAN  
CP 1515**

**Manual**

**for 6GK1151-5AA00**

**C79000-G8976-C169-01  
Release 11/2001**

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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 welcome.

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## 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:



### **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.



### **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.

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## **Safety Instructions Regarding your Product**

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

### **Qualified Personal**

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 use of Hardware Products

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

---

## Caution

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

This product can only function correctly and safely if it is transported, stored, set up, and installed correctly, and operated and maintained as recommended.

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.

EU Directive: Do not start up until you have established that the machine on which you intend to run this component complies with the directive 89/392/EEC.

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## Prior to Startup

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

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### **Caution**

Before installation and startup, read the instructions in the appropriate documentation. For ordering data of the documentation, please refer to catalogs or contact your local Siemens representative.

---

# Preface

## Purpose of the Operating Instructions

These Operating Instructions support you when configuring, commissioning, and troubleshooting networks including the Industrial Ethernet Wireless LAN CP 1515 and Radio Link Module RLM.

## The Package

Verify kit contents as described in chapter ["1.1 Kit Contents"](#) (page 13).

## Installation of the CP 1515

Follow the instructions in chapter ["2 Installation for Windows"](#) (page 20).

## Further Documentation

Please consult the Industrial Ethernet Wireless LAN manuals.

- Basics
- Radio Link Module RLM
- RLM Manager, CP 1515 Manager.

The manual "SIMATIC NET Industrial Ethernet Twisted Pair and Fiber Optic Networks" is containing information on other SIMATIC NET products that you can operate in conjunction with RLM in an Industrial Ethernet network.

All manuals are provided on the CD-ROM "SIMATIC Net Wireless LAN, Systemsoftware and Manuals" that was included with your product.

# Guide to the Manual

To help you to find specific information quickly, these operating instructions include the following parts:

- At the front of the operating instructions you will find a complete table of contents.
- In the Manual "Industrial Ethernet Wireless LAN, Basics" you will find a Glossary in which the most important specialist terms used in the instructions are defined.
- At the back of the operating instructions, you will find an index with which you can find topics quickly.

## Audience

These Operating Instructions are intended for persons involved in configuring, commissioning, and troubleshooting networks including the CP 1515.



## **Personnel Qualification Requirements**

Only qualified personnel should be allowed to install and work on this equipment.

Qualified personnel as referred to in the operating instructions or in the warning notes are defined as persons who are familiar with the installation, assembly, startup and operation of this product and who possess the relevant qualifications for their work, e.g.:

- Training in or authorization for connecting up, grounding or labeling circuits and devices or systems in accordance with current standards in safety technology;
- Training in or authorization for the maintenance and use of suitable safety equipment in accordance with current standards in safety technology;
- First Aid qualification.

## **Standards and Approvals**

The CP 1515 meets the requirements for the CE mark. For more detailed information about approvals and standards, refer to the manual "Industrial Ethernet Wireless LAN, Basics."

## **Important Notice**

The CP 1515 is a Low power radio LAN product operating in 2.4 GHz band for home, office and industrial environments. Please refer to the manual "Industrial Ethernet Wireless LAN, Basics" for details on restrictions.

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## **E Index**

# 1 About the PC Card CP 1515

## 1.1 Kit Contents

The PC Card kit includes the following items:

- a. One PC Card CP 1515.
- b. A transparent protective bag for storing your PC Card while not in use.
- c. One SIMATIC NET Wireless LAN CD-ROM.



### **NOTE:**

In order to extend the life of the PC Card hardware it is advised to store the card in the protective bag whenever carrying the computer on travel without operating the device.

# 1.2 Network Options

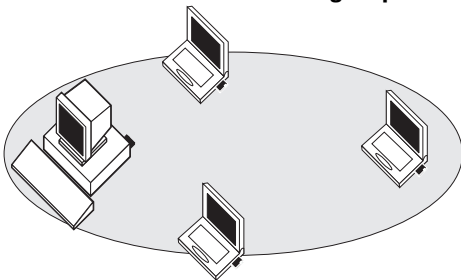
The CP 1515 PC Card Kit enables you to:

- Connect your computer to a Peer-to-Peer workgroup of wireless computing devices.
- Connect your computer to a Local Area Network (LAN) Infrastructure that includes Siemens Radio Link Modules RLM.

## 1.2.1 Peer-to-Peer Workgroup

The Peer-to-Peer workgroup configuration enables you to quickly set up a small wireless workgroup, where the workgroup participants can exchange files using features like “File and Printer Sharing” as supported by Microsoft Networking.

**Figure 1 Peer-to-Peer Wireless Workgroup**

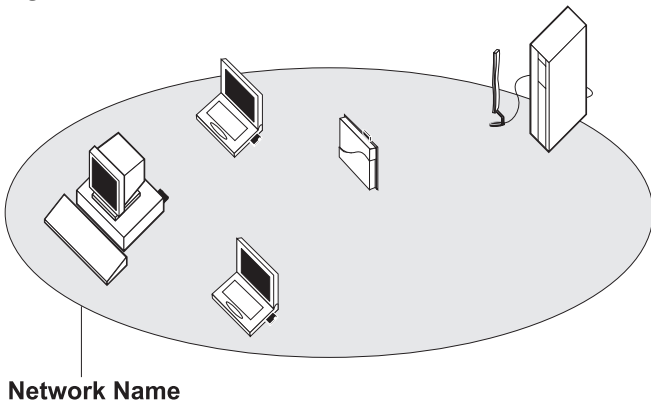


You can use this option to setup a temporary or ad-hoc network in environments where no access points are available (for example in Small Office/Home Office (SOHO) environments).

As long as the stations are within range of one another, this is the easiest and least expensive way to set up a wireless network.

### 1.2.2 Enterprise Networking

**Figure 2 Stand Alone Wireless LAN**



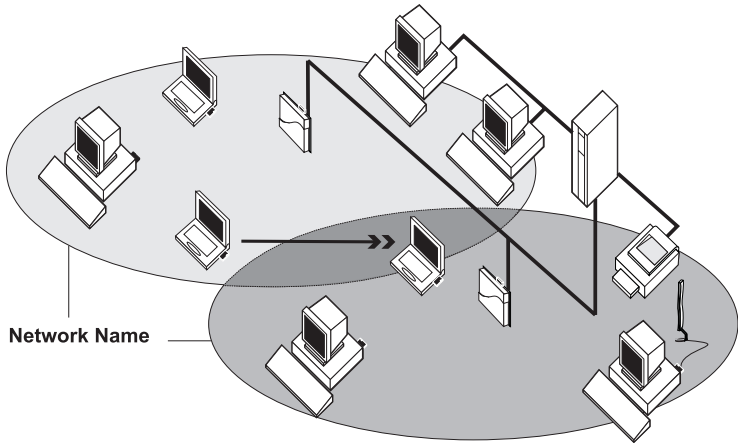
## Network Options

With Access Point RLM devices you can connect to a corporate Local Area Network (LAN) infrastructure to have wireless access to all network facilities.

LAN Infrastructures may either be:

- Stand-alone wireless LANs as pictured in [Figure 2 Stand Alone Wireless LAN](#).
- Wireless network infrastructures connected to an existing Ethernet network as pictured in [Figure 3 LAN Infrastructure](#).

**Figure 3 LAN Infrastructure**





### 1.2.3 It's Easy

The CP 1515 functions like any standard wired Ethernet card, but the CP 1515 does not need any wires!

Where an Ethernet card requires a cable connection to a hub and/or patch panel, the cable physically ties you down to the location of the wired connection.

Siemens SIMATIC NET Industrial Wireless LAN allows you to connect your computer to a Local Area Network (LAN) system from anywhere within the wireless coverage area. Expanding or re-designing your network is easy: Add or relocate SIMATIC NET and Radio Link Modules (RLM) devices, power-up your (new) wireless computers, and you're done!

Unlike Ethernet, wireless connectivity will enable you to roam throughout the network while remaining connected to the LAN.

**i**

#### **NOTE:**

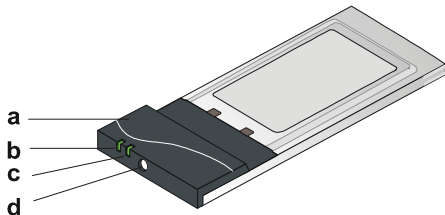
Siemens SIMATIC NET Industrial Wireless LAN products are radio products. Refer to the manual "Industrial Ethernet Wireless LAN Basics" for regulatory information that may apply in your country.

### 1.3 CP 1515 Features

The CP 1515 is a wireless network card that fits into any standard PC Card Type II slot.

The CP 1515 has two LED indicators and two integrated antennas. Optionally you can use the CP 1515 in combination with different types of external antennas, which can provide a performance increase.

**Figure 4 The PC Card CP 1515**



- a. Integrated Antennas
- b. Radio LED
  - Off - No wireless activity
  - Blinking - Sensing/transmitting wireless data
- c. Power ON/OFF LED
  - Solid Green - standard operational mode
  - Blinking Green - Power Management mode
- d. Connector for optional External Antenna.

The SIMATIC NET Industrial Wireless LAN CP 1515 PC Card is:

- Fully compatible with any other wireless LAN system based on Direct Sequence Spread Spectrum (DSSS) radio technology that complies with the “IEEE 802.11 standard on wireless LANs (Revision B):”

The CP 1515 supports the following wireless LAN features:

- Automatic Transmit Rate Select mechanism in the transmit range of 11, 5.5, 2 and 1 Mbit/s.
- Automatic Frequency Channel Selection (2.4 GHz) allowing roaming over multiple channels.
- Card Power Management.
- Wireless Data encryption

## 2 Installation for Windows

### 2.1 Introduction

The installation of your PC Card CP 1515 for Windows consists of the following steps:

1. [Install the CP 1515 Manager software \(page 21\)](#).
2. [Insert your PC Card CP 1515 \(page 24\)](#).
3. [Install Drivers \(page 25\)](#).
4. [Set Wireless LAN Properties \(page 28\)](#).
5. [Finish the Installation \(page 33\)](#).



#### **NOTE:**

If you intend to use the CP 1515 in the RLM, please refer to the documentation that was shipped with the device. Alternatively you can download these documents from

**<http://www.siemens.com/mobic>**.

## 2.1.1 Install the CP 1515 Manager software

The CP 1515 Manager program is a software tool that you can use to check the quality of your network connection.

**NOTE:**

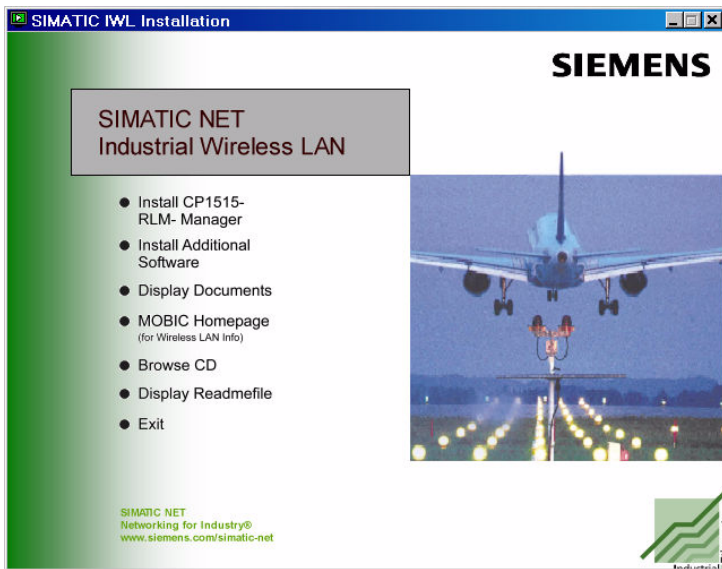
It is not mandatory to install the CP 1515 Manager program in order to establish a network connection, but it provides you with more options to:

- View/change the settings of your network connection.
- Monitor your network connection.

To install the CP 1515 Manager software, proceed as follows:

1. Insert the software CD-ROM that came with your PC Card kit into your computer.
2. Follow the instructions on your screen.

Figure 5 Startup Screen SIMATIC NET IWL Software CD-ROM





### NOTE:

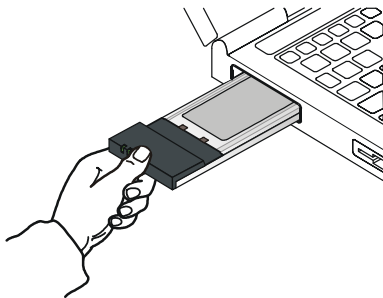
If the CD-ROM does not start automatically:

1. Click the Windows **Start** button
2. Select **Run**
3. Browse to the CD-ROM
4. Double click the file “Setup.exe”

### 2.2 Insert your PC Card CP 1515

1. Unpack your PC Card kit and verify that all items are present, as described in chapter "1.1 Kit Contents" (page 13).  
If any of the items described appear to be damaged or missing, please contact your supplier.
2. Insert the CP 1515 into the PC Card slot of your computer as pictured in [Figure 6](#).

**Figure 6** Inserting the PC Card CP 1515 into your Computer





## 2.3 Install Drivers

### 2.3.1 Before You Start the Installation

Before you start the installation, you are advised to keep the Windows CD-ROM or software diskettes close at hand. If your computer came with a factory-installed Windows operating system, these files will be stored on your computer's hard disk, in the form of cabinet (\*.cab) files.

### 2.3.2 What You Need to Know

Installing a PC Card requires the same level of expertise that you would need to install a standard Ethernet network adapter card. It is assumed that you have a working knowledge of standard Windows operations and of installing network adapter cards. Refer to the Windows Help when necessary (on the Windows task bar, press the **Start** button and select **Help**).

### 2.3.3 Driver Installation for Windows

Most Microsoft Windows operating systems support “Plug & Play” for PC Cards. Once you insert the PC Card into your computer, these operating systems will automatically:

- Detect the card, and enable the driver, or
- Start the **Add New Hardware** wizard and prompt you to install the driver, when the operating system cannot find the required driver.

This would typically occur when inserting the SIMATIC NET PC Card into your computer for the very first time.

When Windows starts the **Add New Hardware** wizard:

1. Follow the instructions on your screen.
2. When you are prompted to locate the driver installation files, insert the Siemens CD-ROM and navigate to the root directory of this.

When finished installing the drivers, Windows automatically opens the **Add/Edit Configuration Profile** window.

3. Continue with chapter ["2.4 Set Windows Network Properties"](#) (page 27).



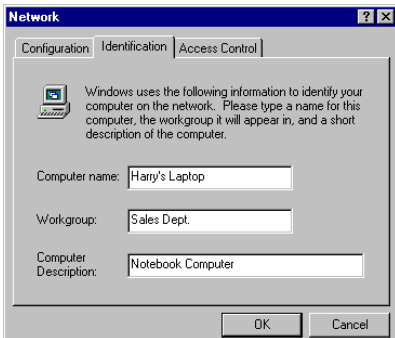
#### **NOTE:**

If your computer does not detect the new hardware you can consult chapter ["B Troubleshooting"](#) (page 57).

## 2.4 Set Windows Network Properties

If this is the very first time that Networking support is installed onto your computer, the Windows operating system will prompt you to enter a computer and workgroup name. These names will be used to identify your computer on the Microsoft Network Neighborhood.

**Figure 7 Windows Network Identification Properties**



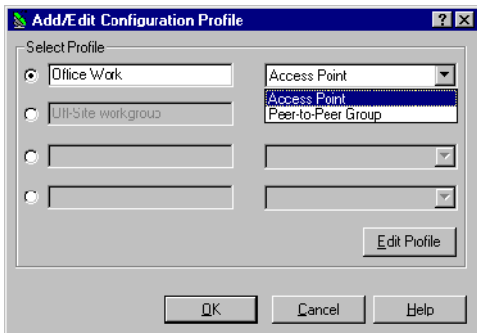
1. In the **Computer Name** field, enter a unique name for your computer.
2. In the **Workgroup** field, enter the name of your workgroup.
3. (Optional) Provide a description of the computer in the **Computer Description** field.

For more information about setting your Windows Network Properties, consult your Windows documentation or the Windows on-line help information.

### 2.5 Set Wireless LAN Properties

After installing the drivers, Windows will open the Add/Edit Configuration Profile window for your PC Card as pictured in [Figure 8](#).

**Figure 8 Add/Edit Configuration Profile window**



## 2.5.1 Configuration Profile

The Add/Edit Configuration Profile window enables you to specify one or more network connection profiles.

For example you can set up profiles for:

- Access Point, to connect to an Enterprise Network via Radio Link Module (RLM)
- Peer-to-Peer Group, workgroups without Access Point (RLM).

For more information about the different types of network, refer to chapter ["1.2 Network Options" \(page 14\)](#).

To connect your computer to a wireless network you will need to:

1. Assign a name to the network profile
2. Use the pull-down menu on the right to select how you wish to connect to the wireless network:
3. Click the **Edit Profile** button to view/modify the parameters for the selected profile.

For first-time installations, you are advised to setup a single profile using only the Basic Settings.



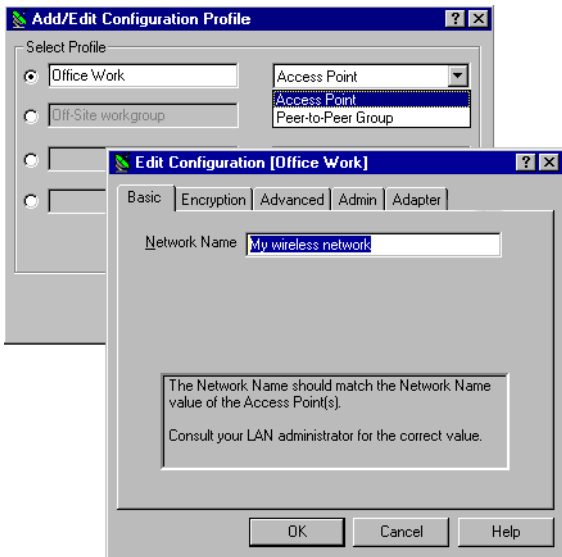
### NOTE:

The number and type of parameters you need to specify may differ according to the selected connection type.

For information about the various options press the **F1** key or click the **Help** button.

## Set Wireless LAN Properties

Figure 9 Edit Configuration window



### 2.5.2 Basic Settings

To connect to a wireless network, all you need to specify is:

- A valid **Network Name**.
- (Optional) a valid **Encryption key**.

### 2.5.3 Network Name

The Network Name is a case-sensitive string of alphanumeric characters in the range of "a" to "z," "A" to "Z" and "0" to "9." It connects you to the wireless LAN, like a cable would connect a wired computer to an Ethernet LAN.

Valid values are subject to the type of network to which you wish to connect your computer:

- To connect to a Peer-to-Peer workgroup, enter the name as agreed upon by the workgroup participants.

If you wish to start a workgroup yourself, enter a name with a maximum of 32 alphanumeric characters, and share that value with your workgroup participants.

- To connect to a network that includes Access Point RLM devices, enter the value as defined by your LAN Administrator.

This value should have a maximum of 32 alphanumeric characters.

Alternatively you may choose to enter the value "ANY" (all character upper-case) to connect to any IEEE 802.11 compliant wireless network in the vicinity of your computer.

Proceed with the Encryption Key settings, or click **OK** to confirm and return to the Add/Edit Configuration Profile window.

### 2.5.4 Encryption Key

To enhance the security of your wireless communications, you can also choose to enable wireless data encryption.

The encryption options differ according to the selected configuration profile, see chapter "[2.5.1 Configuration Profile](#)" (page 29).



#### **CAUTION:**

**To allow communication, all wireless devices should use identical encryption settings. As the encryption key is case-sensitive, make sure you enter it with care.**

- When connecting to a Peer-to-Peer workgroup, enter the key as agreed upon by the workgroup participants.
- When connecting to a corporate LAN via the Access Point profile, the encryption tab allows you to enter up to four different keys in either alphanumeric or hexadecimal format.

Enter the values as defined by your LAN Administrator.



#### **NOTE:**

The keys should be entered in exactly the same order as in the Access Point RLM.



## 2.6 Finish the Installation

When you have finished the “Set Wireless LAN Properties”, click the **OK** button to close the Add/Edit Configuration window and to proceed with the installation process. Windows will finish building the driver configuration database and copy some files to your computer’s hard disk.

- If the Windows operating system prompts you to identify the location of the Windows files, specify the drive and directory of the Windows Installation CD-ROM or diskettes.

When you had a PC Card installed on your computer before, most of these files are already available on your hard disk drive. If you do not have the Windows CD-ROM available, you may try replacing the proposed path in the Copy Files From dialog box with:

“C:\Windows\System” or “C:\Windows\”

- If the Windows operating system prompts you to identify the location of driver files (typically file names starting with the characters w\*.\*) specify the drive and the root directory of the CD-ROM.

If you downloaded the files from the Internet, point to the disk drive or directory where you saved files.

When Windows has finished copying files, it will prompt you to restart your computer. Click **OK** button to complete the installation.

### 2.6.1 After Restarting Your Computer

After you have restarted your computer, the Windows operating system will:

1. Detect the PC Card (you can hear the two-tone sound of the PC Card Socket Controller).
2. Load the driver
3. Display a dialog box requesting you to enter a Windows user name and password.

The password you enter here will be the one used to login to the Windows Network Neighborhood.

Write down this password and keep it in a safe place.

### 2.6.2 Verifying installation

To verify if the installation of the drivers was completed successfully:

- Check if the Windows task bar displays the PC Card icon.



- Check the LEDs on your PC Card.
  - A steady green Power LED indicates the PC Card is active.
  - A flickering green Radio LED indicates wireless activity.

For other LED behavior see "[B Troubleshooting](#)" (page 57).

- (Optional) To check the quality of the network connection, start the CP 1515 Manager program as described in chapter "[3 Working with SIMATIC NET IWL and Windows](#)" (page 35) .

# 3 Working with SIMATIC NET IWL and Windows

## 3.1 Introduction

This chapter provides general information on how to:

- [Use your PC Card CP 1515 \(page 36\)](#)
- [View Other Wireless Computers \(page 39\)](#)
- [View Wireless Link Quality \(page 41\)](#)
- [View/Modify PC Card CP 1515 Settings \(page 43\)](#)

# 3.2 Use your PC Card CP 1515

## 3.2.1 Radio Antennas

The built-in radio and antennas of your CP 1515 perform best in an open environment with as few obstacles as possible.

To achieve the maximum range for wireless communications do not cover the card with objects such as books or thick stacks of paper.

## 3.2.2 Removing the PC Card CP 1515

If you do not need the wireless connectivity of your CP 1515, you can remove the card from its slot as pictured in [Figure 10 Remove the PC Card](#).



### **CAUTION:**

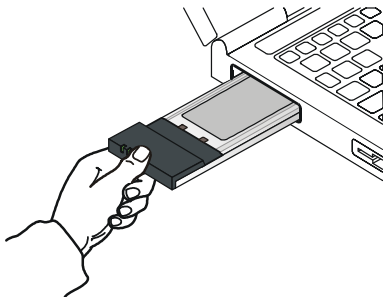
**When removing the PC Card you will lose your connection to the network. Prior to removing the PC Card, make sure you have closed all files and network applications (such as e-mail).**

You are advised to always disable the CP 1515 **prior** to removing the card from the PC Card slot. This will allow the Windows operating system to:

- Log off from the network server
- Disable the driver

- Disconnect power to the PC Card slot (which will extend battery life for mobile computers).

### Figure 10 Remove the PC Card



To stop using the PC Card:

1. Click once on the PC Card icon on the right side of the Windows task bar.
2. Select the option **Stop I-Gate PC Card**.
3. Wait a few seconds until the operating systems displays a pop-up message to indicate you can safely remove the PC Card.

Alternatively, you can disable the PC Card via the PC Card icon on the Control Panel.

### 3.2.3 Maintenance of your PC Card CP 1515

If you are not using the SIMATIC NET IWL CP 1515 for wireless communications, extend its life by storing it inside the transparent plastic bag that was shipped with the product.

To clean the PC Card, gently wipe it with a soft (damp) cloth.



**CAUTION:**

**To avoid damage to the PC Card do not use abrasive materials, or rinse the card with liquids.**

### 3.3 View Other Wireless Computers

When multiple SIMATIC NET Industrial Wireless LAN stations are up-and-running in your wireless network, you can use the procedure described below to display the other computers:


1. Start Windows Explorer.
2. Scroll down the list of files and folders to look for the item **Network Neighborhood**.
3. Double-click the **Network Neighborhood** item to display all stations in your Microsoft Networking Group.
4. To display other workgroups in the network environment, double-click the **Entire Network** icon.

If you cannot find other (SIMATIC NET) wireless networked computers, verify whether the other wireless computers are:

- Powered up and logged on to the network.
- Configured to operate with identical Microsoft Network settings concerning:
  - Networking Protocol.
  - Wireless Network Name
  - Workgroup Name

## View Other Wireless Computers

To view or modify the **Station Name** or **Workgroup** of your computer, proceed as follows:

1. Click the  **Start** button from the Windows task bar.
2. Click on **Settings**, and then on **Control Panel**.
3. In the Control Panel window, double-click the **Network** icon.
4. In the Network Settings window, select the **Identification** tab.

You can verify and change the **Station Name** or **Workgroup** parameters.



### NOTE:

You have to restart your computer before changes to the Network Settings will be effected.

To verify the radio connection with other stations refer to [View Wireless Link Quality \(page 41\)](#).



## 3.4 Using the CP 1515 Manager

If you installed the SIMATIC NET CP 1515 Manager as described in chapter ["2.1.1 Install the CP 1515 Manager software" \(page 21\)](#), you can use the CP 1515 Manager to:

- Verify the quality of your wireless connection to the network.
- View/Modify the configuration settings of your wireless PC Card.

The CP 1515 Manager will start automatically every time you power up your computer.

The CP 1515 Manager icon is displayed in the "System Tray" of your Windows task bar at the right-side on the bottom of your screen, indicating that the CP 1515 Manager program is running.



- Click the icon once with your **left** mouse button to retrieve a more detailed status overview.
- Click the icon once with your **right** mouse button to display a menu with more options.







### 3.4.1 View Wireless Link Quality

You can use the CP 1515 Manager icon on the Windows task bar to verify the link quality of your network connection.

An overview of all possible icons is given in [Table 1 CP 1515 Manager Icon](#). When the CP 1515 Manager icon is not indicating excellent or good radio connection, act as described in this table.


## Using the CP 1515 Manager

**Table 1 CP 1515 Manager Icon**

<b>Icon</b>	<b>Description</b>	<b>Color</b>
	Excellent radio connection	Green
	Good radio connection	Green
	Marginal radio connection: The radio signal is weak. Move closer to the Access Point RLM.	Yellow
	Poor radio connection: The radio signal is very weak. Save your files and move closer to the Access Point RLM.	Red
	No radio connection because: <ul style="list-style-type: none"><li>• Looking for initial connection, or</li><li>• You have moved out of range of the network.</li></ul>	Red
	Peer-to-Peer network connection	Blank

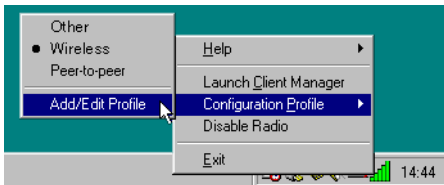
## 3.4.2 View/Modify PC Card CP 1515 Settings

If you would like to view or modify parameters, for example because you would like to connect to another network or type of network, proceed as follows:

1. Right-click on the CP 1515 Manager  icon on the Windows task bar.
2. From the menu, select **Configuration Profile** (see [Figure 11 Edit Wireless Configuration Settings](#)) and select:
  - **Add/Edit Profile** to add a new profile or to modify an existing profile.
  - **One of the existing profiles** (if present) to select a profile without viewing or modifying the settings.


After selecting another profile, the PC Card will use the selected profile to connect to the wireless network.

**Figure 11 Edit Wireless Configuration Settings**




## Using the CP 1515 Manager

If your CP 1515 Manager icon is not visible, you have to start the CP 1515 Manager program again:

1. Click the  **Start** button from the Windows task bar.
2. Select Programs, and then select Siemens I-Gate
3. Next select Client Manager to start the CP 1515 Manager program.

Alternatively you can change the PC Card configuration via the Control Panel:

1. Click the  **Start** button from the Windows task bar.
2. Click on **Settings**, and then on **Control Panel**.
3. In the Control Panel window, double-click the **Wireless Network** icon.
4. (Optional) Change the parameters you would like to modify, and click
  - the **OK** button to confirm your changes, or
  - the **Cancel** button to ignore your modifications.

# 4 Advanced Settings

## 4.1 Introduction

Although your PC Card will work fine in most network environment with the basic settings as described on [Installation for Windows \(page 20\)](#), you may wish to explore the advanced parameters options as displayed on the Configuration window for your adapter.

The advanced parameters are only available in the configuration profile “Access Point” that connects to an RLM.

Consult your LAN Administrator for information about whether these parameters apply to your situation.

For more information consult your LAN Administrator. You can also refer to the help file and the “Industrial Ethernet Wireless LAN RLM Manager, CP 1515 Manager.”

# 4.2 Encryption Parameters Tab

The encryption tab enables you to define the encryption keys that your PC Card CP 1515 should use to:

- Decrypt wireless messages received via its wireless interface.
- Encrypt data that will be transmitted via the wireless interface.



### CAUTION:

**Encryption needs to be the same for all stations.**

**Figure 12 Setup Encryption Parameters**

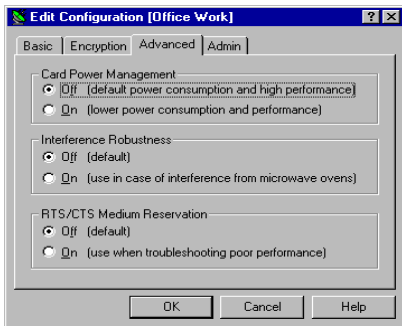


You can identify up to 4 different key values to decrypt wireless data, and select one of these keys to encrypt wireless data transmissions. For more information consult your LAN Administrator. You can also refer to the helpfile and “Industrial Ethernet Wireless LAN RLM Manager, CP 1515 Manager.”

## 4.3 Advanced Parameters Tab

This tab of the Edit Configuration window allows you to adjust a number of parameters related to the performance of your wireless adapter.

**Figure 13 Setup Advanced Parameters**

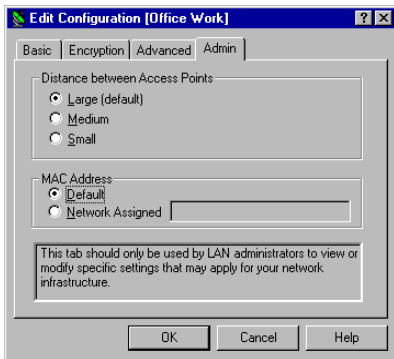


- Card Power Management allows you to extend the battery life of (mobile) wireless devices.
- Interference Robustness allows you to remedy slow performance related to in-band interference from devices like microwave ovens.
- RTS/CTS Medium Reservation controls the deferral behavior of wireless devices. This option may improve reliability of the network when:
  - many wireless stations operate in an environment with relatively few access points, and
  - network performance is poor network due to excessive frame collisions at the access points.

### 4.4 Admin Parameters Tab

The Admin parameters tab allows LAN Administrators to ensure that your adapter settings match specific settings that apply to the entire network.

**Figure 14 Setup Admin Parameters**



- Distance between Access Points allows you to control network performance in relation to the number of access points in your network.
- MAC Address allows you to assign a local MAC address to your adapter in case your network operating system requires local addressing.



# A Card Specifications

## A.1 Physical Specifications

<b>Form Factor</b>	PC Card Type-II Extended	
<b>Dimensions</b>	(LxWxH)	117.8 x 53.95 x 8.7 mm
<b>Weight</b>	45 gram (PC Card)	
<b>Temperature &amp; Humidity (non condensing)</b>		
<b>Operation</b>	0° to 55° C	maximum humidity 95%
<b>Transit</b>	-20° to 70° C	humidity 15 to 95%
<b>Storage</b>	-10° to 60° C	humidity 10 to 90%

Although the PC Card may still operate in the range of -20° to 70°C, operation outside the range of 0° to 55° C may no longer be according to specifications.

### A.2 Electrical Characteristics

<b>Doze Mode</b>	10 mA
<b>Receive Mode</b>	180 mA
<b>Transmit Mode</b>	280 mA
<b>Power Supply</b>	5 V

## A.3 Networking Characteristics

<b>Compatibility</b>	<ul style="list-style-type: none"> <li>• IEEE 802.11 Standard for Wireless LANS (DSSS).</li> </ul>	
<b>Host Operating System</b>	Microsoft Windows <sup>®</sup> NT v4.0 SP6a or higher: <ul style="list-style-type: none"> <li>• NDIS4 Miniport Driver</li> </ul> Microsoft Windows <sup>®</sup> 98/ME and 2000: <ul style="list-style-type: none"> <li>• NDIS5 Miniport Driver</li> </ul> Windows CE <ul style="list-style-type: none"> <li>• Windows CE 3.0</li> </ul>	
<b>Media Access Protocol</b>	CSMA/CA (Collision Avoidance) with Acknowledgment (ACK)	
<b>Data Rate</b>	• High	11 MBit/s
	• Medium	5.5 MBit/s
	• Standard	2 MBit/s
	• Low	1 MBit/s
	The cards use an automatic Transmit Rate Select mechanism.	

### A.4 Regulatory Information

Wireless communication is often subject to local radio regulations. Although wireless networking products have been designed for operation in the license-free 2.4 GHz band, local radio regulations may impose a number of limitations to the use of wireless communication equipment.



**NOTE:**

Refer to the manual “Industrial Ethernet Wireless LAN, Basics” for more regulatory information that may apply in your country.

## A.5 Radio Characteristics

<b>R-F Frequency Band</b>	<b>2.4 GHz</b> (2400-2500 MHz)
Supported sub-channels	1      2412
	2      2417
	3      2422
	4      2427
	5      2432
	6      2437
	7      2442
	8      2447
	9      2452
	10     2457 (default)
	11     2462
Modulation Technique	Direct Sequence Spread Spectrum CCK 11 & 5.5 MBit/s, DQPSK for 2 MBit/s and DBPSK for 1 MBit/s
Spreading	11-chip Barker Sequence
Bit Error Rate (BER)	Better than $10^{-5}$
Nominal Output Power	15 dBm
Encryption	128Bit/RC4 encryption

## Radio Characteristics

<b>Range/Transmit Rate</b>	<b>11 MBit/s</b>	<b>5.5 MBit/s</b>	<b>2 MBit/s</b>	<b>1 MBit/s</b>
Open Office	160 m (525 ft.)	270 m (885 ft.)	400 m (1300 ft.)	550 m (1750 ft.)
Semi-Open Office	50 m (165 ft.)	70 m (230 ft.)	90 m (300 ft.)	115 m (375 ft.)
Closed Office	25 m (80 ft.)	35 m (115 ft.)	40 m (130 ft.)	50 m (165 ft.)
Receiver Sensitivity	-83 dBm	-87 dBm	-91 dBm	-94 dBm
Delay Spread (FER of <1%)	65 ns	225 ns	400 ns	500 ns

The range of the wireless signal is related to the Transmit Rate of the wireless communication. Communications at lower Transmit Rate will travel larger distances.

**i**

### **NOTE:**

The range values listed above are typical, not guaranteed distances. These values may provide a rule of thumb and may vary according to the actual radio conditions at the location where the wireless devices will be installed.

The range of your wireless devices can be affected when the antennas are placed near metal surfaces and solid high-density materials.

Range is also impacted due to “obstacles” in the signal path of the radio that may either absorb or reflect the radio signal.

The listed ranges are typical values when used indoors in “office environments” that can be described as follows:

- In Open Office environments, antennas can “see” each other, i.e. there are no physical obstructions between them.
- In Semi-open Office environments, work space is divided by shoulder-height, hollow wall elements; antennas are at desktop level.
- In Closed Office environments, work space is separated by floor-to-ceiling brick walls.

## A.5.1 Radio Channels

<b>Frequency Range</b>	<b>2400-2500 MHz</b>			
<b>Channel ID</b>	<b>FCC-Worldcard</b>	<b>ETSI</b>	<b>France</b>	<b>Japan</b>
1	2412	2412	-	2412
2	2417	2417	-	2417
3	2422	2422	-	2422
4	2427	2427	-	2427
5	2432	2432	-	2432
6	2437	2437	-	2437
7	2442	2442	-	2442
8	2447	2447	-	2447
9	2452	2452	-	2452
10 (default)	2457	2457	2457	2457
11	2462	2462	2462	2462
12	-	2467	2467	2467
13	-	2472	2472	2472
14	-	-	-	2484

## Radio Characteristics

When installing PC Cards CP 1515 the channel configuration is managed as follows:

- Wireless clients that operate in an RLM-based Wireless LAN (Infrastructure Network) will automatically start operation at the channel identified by the RLM. When roaming between different RLM devices the station can dynamically switch to another channel if required.
- Wireless clients that operate in an “Peer-to-Peer” mode will default to channel 10.
- AccessPoint RLM devices will use the factory-set default channel, unless the LAN Administrator selected a different channel.



# B Troubleshooting

## B.1 LED Activity

If you encounter difficulty using and/or installing your PC Card CP 1515 product, the error may be related to various causes:

- Out-of range situation, which prevents the PC Card CP 1515 from establishing a wireless connection with the network.
- Configuration mismatch, which prevents the PC Card CP 1515 from establishing a wireless connection with the (correct) network.
- Absence of, or conflict of the CP 1515 Driver.
- A problem or conflict with the PC Card slot which prevents the PC Card CP 1515 from powering on.
- A conflict of the hardware with another device.

The starting point to troubleshoot problems with your wireless network is looking at the LED activity of the CP 1515.

[Table 2 LED Activity](#) provides an overview of the various modes of operation and the associated LED activity. It also includes a number of troubleshooting hints, that may help you solve the problem.

## LED Activity

**Table 2 LED Activity**

<b>Power LED</b>	<b>Radio LED</b>	<b>Description/Action</b>
Continuous Green	Blinking	Standard operational mode. <ul style="list-style-type: none"><li>• Card is powered on.</li><li>• Sensing/transmitting wireless data.</li></ul>
	Off	<ul style="list-style-type: none"><li>• Card is powered on.</li><li>• No wireless activity.</li></ul> No action is required.
Flicker	Flicker	Power Management mode: <ul style="list-style-type: none"><li>• Card is powered on, but set to power saving mode, to conserve battery life.</li><li>• Flashes indicates that the card wakes up at regular intervals to verify if there is wireless data addressed to your computer.</li></ul>

Power LED	Radio LED	Description/Action
Both LEDs blink once every 10 seconds		<p>The PC Card works fine, but did not yet succeed establishing a wireless connection with the wireless Infrastructure.</p> <p>Actions:</p> <ul style="list-style-type: none"> <li>• Contact the LAN Administrator to verify the Network Name assigned to the wireless infrastructure.</li> <li>• Contact the LAN Administrator to verify the correct value(s) of the encryption keys.</li> <li>• Contact the LAN Administrator to verify whether the network infrastructure has been set to deny "ANY" as valid Network Name (Closed Network).</li> <li>• Change the configuration of your PC Card to enter the correct Network Name</li> <li>• If there are no Access Points (RLM) devices available, change the configuration of your PC Card to run in "Peer-to-Peer" mode.</li> </ul>

## LED Activity

Power LED	Radio LED	Description/Action
Off	Off	<p>Card is not powered on, so it can not transmit/receive data.</p> <p>The cause may either be:</p> <ul style="list-style-type: none"><li>• No Driver loaded/installed</li><li>• Card - Driver mismatch which prevented the driver from loading</li><li>• Device conflict which prevented the driver from loading</li></ul> <p>Actions:</p> <ul style="list-style-type: none"><li>• Verify if a driver has been installed, if not install the driver.</li><li>• View/Modify the device settings of the PC Card to determine/resolve the occurrence of a conflict with another device</li><li>• Verify the versions of the driver, and the embedded software in the PC Card (also referred to as Station firmware).</li><li>• Check <b><a href="http://www.siemens.com/mobic">http://www.siemens.com/mobic</a></b> to download and install the latest embedded software and driver.</li></ul>

## B.1.1 Can Not Connect To The Network

If your PC Card seems to be working fine, but you are not able to connect to the network, this error might be due to a configuration mismatch.

For example if both LEDs of your PC Card blink once every ten seconds, the problem is likely to be caused by a configuration mismatch of:

- Network Name
- Encryption Key

The SIMATIC NET IWL Network Name is case-sensitive.

## B.1.2 LEDs Work But Can't Connect to Network

If you can not connect to the network while the LEDs indicate that the network is working properly (Power LED is on, Radio LED blinks) your problems might be caused by:

- Incorrect TCP/IP settings for your wireless network adapter (Changing TCP/IP Settings).
- Your Windows operating system requires an update with a Microsoft Service Pack.

### B.1.3 Changing TCP/IP Settings

Consult your LAN Administrator for the values of your TCP/IP settings.

To change the TCP/IP Settings:

1. On the Windows task bar click the **Start** button
2. Select **Settings** and then select **Control Panel**.
3. On the Control Panel window, double click on the **Network** icon to view the **Network Properties**.
  - If this protocol is not yet installed, click the **Add** button and select the **TCP/IP** protocol from the list. Refer to the Windows Help for more information.
  - If this protocol is installed, select this protocol and click the **Properties** button. Check if the parameters resemble the settings provided by your LAN Administrator. Make Changes if necessary, and click **OK** when you're done.
4. When prompted, restart your computer.

### B.1.3.1 Static IP Addressing for Peer-to-Peer networks

In networks with Static IP addressing, the network administrator manually assigns an IP address to each computer. Once a Static IP address is assigned, a computer uses the same IP address every time it reboots and logs on to the network, unless you manually change the IP address in the **Network Properties** dialog box. Networks using Static IP addresses are easy to set up and do not require additional network management software.

A Peer-to-Peer network environment is best suited for **Static IP addressing**, because of its simplicity.

Peer-to-Peer networks are also not likely to have a DHCP server already set up on the network.

Configure TCP/IP Settings for Static IP Addressing



#### NOTE:

This IP configuration should only be applied to wireless networks that do not have a DHCP server installed.

1. Right-click **Network Neighborhood** on your desktop.
2. Select **Properties** from the pop-up menu to display the **Network Properties** dialog box.
3. Select the **Configuration** tab, and click **TCP/IP I-Gate PC Card**.
4. Click **Properties** to display the **TCP/IP Properties** dialog box. Make sure the **Specify an IP address** option is selected.

# B.2 Windows Operating Systems

## B.2.1 Generic Problems

### B.2.1.1 Windows does not detect my new card

- Windows NT operating systems v4.0 do not support “Plug & Play;” you will need to manually introduce the PC Card CP 1515 to your operating system (see [Installation for Windows NT \(page 88\)](#)).
- In some occasions, Windows 98 do not detect a new card either. This may be the case in one of the following situations:
  - The laptop computer into which you wish to install the PC Card CP 1515 is a brand-new “out-of-the-box” computer, where the Windows 98 operating system was already factory-installed (see [Enabling the PC Card Controller \(page 65\)](#)).
  - A previous installation of the PC Card CP 1515 was aborted before it was finished.



## B.2.1.2 Enabling the PC Card Controller

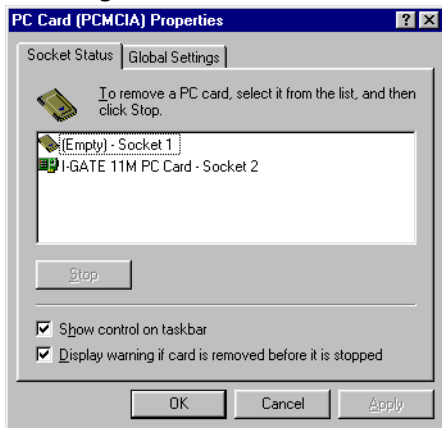
On some computers, a number of options like PC Card & Socket Services have been disabled by default to save on disk and memory space. In order to use such options you must first finalize the Windows 98 installation in order to enable such options.

If a Windows 98 computer does not detect your PC Card CP 1515, proceed as described below, to enable the PC Card socket interface, or to verify that it has been enabled, proceed as follows:

1. Click the **Start** button on the Windows Taskbar.
2. Click on **Settings**, then **Control Panel**.
3. In the Control Panel window, double-click the **PC Card** icon to open the PC Card Properties window (see [Figure 15](#)).
4. In the PC Card Properties window, double-click one of the PC Card Sockets. If the PC Card socket interface was not yet enabled, the Windows operating system will display a message that it is finalizing the PC Card Socket installation.
5. Click the **OK** button to confirm and close the PC Card Properties window.



## Figure 15 Enabling the PC Card Controller



## B.2.2 Hardware Conflict

When installing adapter cards or peripheral devices on a computer you may occasionally run into hardware conflict that may:

- prevent your PC Card CP 1515 from working properly, or
- disturb operation of other devices after the installation of the wireless drivers.

Such problems are most of the times caused when multiple devices installed onto your computer are using identical values for I/O Base Address and/or Interrupt Request (IRQ).

The factory-set values of your PC Card CP 1515 have been set to use the following defaults:

**Table 3 Default strapping of the SIMATIC NET IWL Hardware**

<b>Device</b>	<b>Resource</b>	<b>Default Value</b>
PC Card CP 1515	I/O Port	0400-0437
	IRQ	10

Unlike the Windows 98/ME/2000 operating systems, Windows NT is not able to check automatically whether the proposed values are already used by another device.

To avoid or troubleshoot hardware conflicts with another device, you are advised to use the Windows NT Diagnostic program, to determine whether the default I/O port and IRQ for your PC Card CP 1515 are available, and if not to select an alternative value.



### NOTE:

Sometimes it may be pretty difficult to determine where a device conflict is located. As a rule of thumb, you can use the following troubleshooting hint:

- When the conflict is related to an conflicting I/O Base setting, in most cases the PC Card CP 1515 will not work at all: i.e. you will not see any LED activity.
- If the problem is related to a conflicting IRQ value, LEDs may flicker, but you can not connect to the network.  
In a number of cases you may be able to verify that the PC Card succeeded in establishing a radio connection with a RLM device, but fails to really connecting to the network operating system.

## B.2.2.1 Running Windows NT Diagnostics

When installing the PC Card CP 1515, the Windows NT operating system will prompt you to confirm or modify the factory-set device values for your PC Card.

### Starting Windows NT Diagnostics

1. Click the **Start** button on the Windows NT Taskbar.
2. Click on **Programs**, and then **Administrative Tools**.
3. From the list of **Administrative Tools**, click the item **Windows NT Diagnostics**.



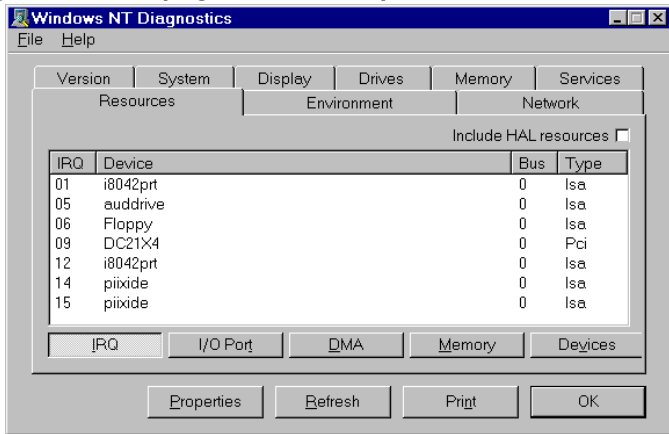
Windows NT  
Diagnostics

## Verifying IRQ Settings

To display the IRQ values that are already in use by other devices installed on your computer:

1. Click the **Resources** tab in the Windows NT Diagnostics window. This will display the window pictured in [Figure 16](#).

**Figure 16 Verifying IRQ Availability**



2. Click the **IRQ** button to display the Interrupt Request (IRQ) vectors currently in use by other devices in your computer.

The default IRQ value for PC Card CP 1515 is 10. Is the value 10 already listed?

- If **No**, you can use the default. Write down IRQ 10 and proceed with the next step.
  - If **Yes**, this means that another device is already using the IRQ, i.e. you will need to select another value for your PC Card .
3. See whether one of the following values is available (i.e. not listed in the Windows NT Diagnostics window):  
03, 04, 05, 07, 09, **10**, 11, 12, 15.
  4. Select one non-listed value and write it down before you proceed with the following topic.

### Verifying I/O Port Settings

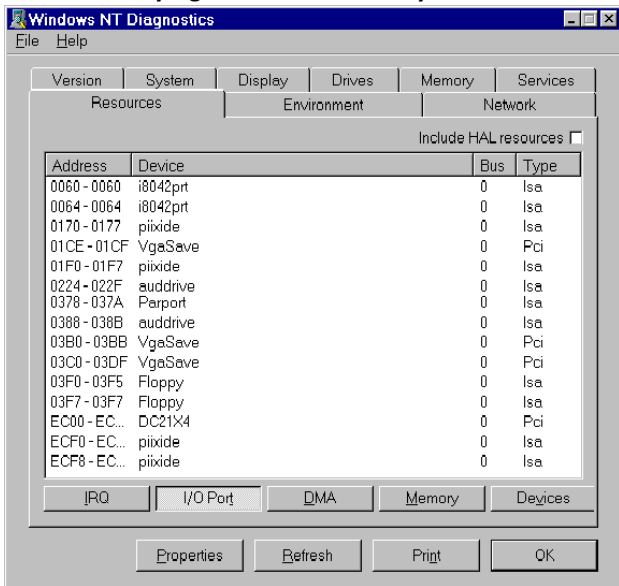
To display the values of I/O Ports that are already in use by other devices installed on your computer, proceed as follows:

1. On the **Resources** tab of the Windows NT Diagnostics program, click the button **I/O Port**. This will display the window pictured in [Figure 17](#).

The default I/O Port value for PC Card is 0400.

- If **No**, you can use the default. Write down I/O Port 0400 and proceed with the next step.
- If **Yes**, this means that another device is already using this port address, i.e. you will need to select another value for your PC Card CP 1515.

## Figure 17 Verifying I/O Port Availability





If the default SIMATIC NET IWL I/O Port has already been assigned to another device, select an alternative I/O Port value from the range listed below:

0200	0300	0400	0500	0600	0700
-	-	0440	0540	0640	0740
0280	0380	0480	0580	0680	0780
-	-	04C0	05C0	06C0	07C0

The default setting is 0400.

2. Verify that the alternative value is available (i.e. not listed in the Windows NT Diagnostics window).
3. Write down the alternative I/O Port value and close the Windows NT Diagnostics Program. Having finished these steps, you should now have a note that identifies the following (alternative) values:
  - IRQ value
  - I/O Port Address

You can use these values to install the SIMATIC NET IWL Miniport Driver as described later in this chapter.

## B.2.2.2 Despite NT Diagnostics, still facing problems

The Windows NT Diagnostics program is not “bullet-proof.” Occasionally you may run into a hardware conflicts despite the fact that the Windows NT Diagnostics program displayed resources as being available to your PC Card CP 1515.

This may be the case when your computer has one or more devices and/or peripherals installed which claimed an I/O Base Address and/or IRQ value without notifying the Windows NT operating system: Your Windows NT Diagnostics program will not be able to display these values, simply because it “doesn’t know.”

If this is the case, a value you perceived as being available to your PC Card, had already claimed by a conflicting device resulting in:

- A PC Card CP 1515 that does not work, and/or
- A conflicting device that does not work properly.

It will depend on your preferences and the configuration options supported by each of the conflicting devices to determine which device settings should be changed to allow flawless operation.

In most situations the SIMATIC NET IWL Miniport driver will prove most flexible to select alternative settings for I/O Base Address or IRQ values. However since the conflicting device apparently did not communicate its System

Resource claims to Windows NT, you may need to try multiple values before the problem will be resolved.

- Consult the documentation that came with your computer and/or the conflicting device to find out which values are used by the conflicting device that have not been listed in the Windows NT Diagnostics.



### **CAUTION:**

**To isolate the problem, you are advised to change only one parameter at a time. For example: first try to resolve a possible conflict with the I/O Base Address. If that does not work, try to resolve a possible IRQ conflict.**

### **B.2.2.3 PC Card CP 1515 Conflict**

When your PC Card installation has completed successfully, but it does not become operational, it is possible that there is an I/O Port conflict. The Windows Resource Manager may not have been able to detect the conflict, allowing the installation to complete successfully, but not allowing the PC Card CP 1515 to operate properly because another device has been assigned the specified port.

The default I/O Base address used by your PC Card CP 1515 is 0400.

You are advised to try different I/O Port values, as described in chapter [Verifying I/O Port Settings \(page 71\)](#).

**Table 4 Default Configuration Settings**

<b>Description</b>	<b>Default Value</b>
Station Name	(none)
Connect to Network Type	IEEE 802.11 Infrastructure - Connect via access points - Peer-to-Peer (Ad-Hoc) disabled
SIMATIC NET IWL Network Name	(none)
MAC Address	(none: use Universal MAC Address) <sub>(1)</sub>
Distance between APs	High Distance
Transmit Rate High	Auto Rate Select
RTS/CTS Medium Reservation	OFF
Card Power Management:	OFF
- Receive All Multicasts	Enabled
- Maximum Sleep Duration 100	100
Encryption	OFF

(1) The Universal MAC Address of your PC Card CP 1515 is printed on a label on the backside of the card.

### B.2.3 Upgrading the SIMATIC NET IWL Miniport Driver

Upgrading the SIMATIC NET IWL Miniport Driver installed may be required in one of the following situations:

- You would like to use new features that have become available for your PC Card CP 1515.
- You installed a newer version of the CP 1515 Manager tool.
- Your CP 1515 Manager “Card Diagnostics” reported a Driver/Firmware mismatch.



#### **CAUTION:**

**Upgrading the SIMATIC NET IWL Miniport Driver should only be done by a skilled LAN Administrator or support engineer that has a working knowledge of Windows operating system.**

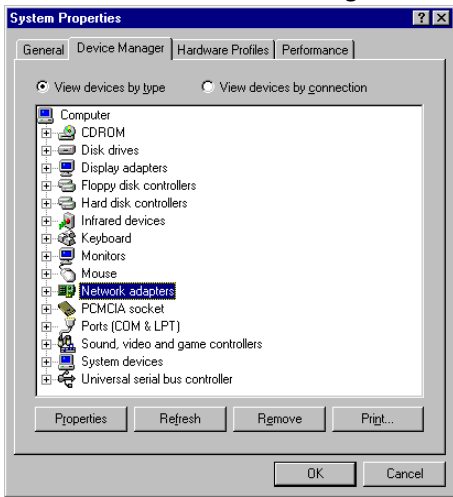
Windows systems feature an “update driver” function that allows you to easily replace the current driver with a more recent version.

## B.2.3.1 Upgrading the driver for Windows 98/ME/2000

1. On the Windows Taskbar, click the **Start** button.
2. Click on **Settings**, and then click **Control Panel**.
3. In the Control Panel window, double-click the **System** icon.
4. In the System Properties window, select the tab **Device Manager**.



**Figure 18 The Windows 98 Device Manager tab**



5. In the top section of the **Device Manager** tab, select the option **View devices by type** as pictured in [Figure 18](#).
6. In the list of computer devices, double-click **Network Adapters**.
7. Select the item **I-GATE 11M PC Card** and click the **Properties** button.
8. In the PC Card Properties window, select the **Driver** tab to display the window pictured in [Figure 19](#).

**Figure 19 Windows 98 Update Driver Window**



## Windows Operating Systems

- To display information about the currently installed driver, click the **Driver File Details** button.
  - To upgrade your current driver to a newer version click the **Update Driver** button and follow the instructions displayed on your screen.
9. Restart your computer to finish the driver upgrade procedure and to have the new driver loaded by the operating system.
  10. (Optional) Upgrade the CP 1515 Manager program.

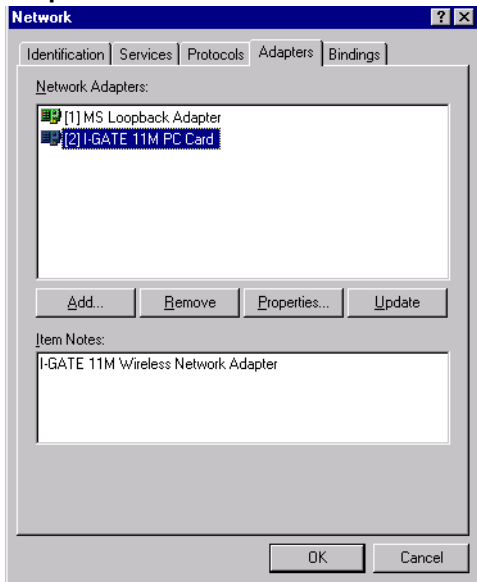
### B.2.3.2 Upgrading the driver for Windows NT

1. On the Windows Taskbar, click the **Start** button.
2. Click on **Settings**, then click **Control Panel**.
3. In the Control Panel window, double-click the **Network Neighborhood** icon.
4. Select the **Adapters** tab to display the window as pictured in [Figure 20](#).
5. Select the **I-GATE 11M Adapter** and click **Update**.
6. Follow the instructions as they appear on your screen.





Figure 20 Update Driver in Windows NT



# C Further Support

## C.1 Who to contact

If you have technical questions about using the described product and your problem is not dealt with in the documentation or in the integrated help system, please contact your Siemens representative or dealer.

You will find the addresses:

- in our catalog IK PI or CA01
- on the Web (<http://www.siemens.com/simatic-net>)

## C.2 Automation and Drives, Service & Support

Service & Support from A&D is available round the clock worldwide.

The languages spoken are German and English.

French, Italian, and Spanish are also spoken on the authorization hotline.

**Figure 21 Service and Support**



## Automation and Drives, Service & Support

<b>Technical Support</b>	<b>Authorization Hotline</b>
<b>Europe and Africa</b> (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	<b>Europe and Africa</b> (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
<b>America</b> (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	
<b>Asia and Australia</b> (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	

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

### C.3 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 order the following, for which a charge is made:

- Software products
- Sample application programs

These are charged to the SIMATIC CARD.

Internet address:

<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 "SIMATIC Customer Support Knowledge Base" CD.

## C.4 Training for SIMANTIC 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>

## C.5 Certification

The products of SIMATIC NET are manufactured and marketed using a quality management system complying with DIN ISO 9001 and certified by DQS (certificate registration no. 2613). The DQS certificate is recognized in all IQNet countries (Reg. No. 2613).

# D Installation for Windows NT

## D.1 Introduction

Unlike most versions of MS-Windows, Windows NT 4.0 does not support “Plug & Play” and “Hot Swapping” of PC Cards:

- In order to start the driver installation for your PC Card, you will need to “introduce” the card to the operating system.
- To insert or remove PC Cards, Windows NT machines typically require you to restart the computer in order to recognize the card and load the drivers.

The Windows NT operating system also identifies user profiles (accounts) that are associated with dedicated levels of authority (privileges) like the ones listed below:

- Users - are allowed to change the visual appearance of the Windows NT desktop and user-defined preferences.
- Power Users - can create “User Accounts” or “User Groups”
- Administrators - can manage and control the overall configuration of the workstation.



**i****NOTE:**

To install (or uninstall) the PC Card in a Windows NT environment, you will need to login as the “Administrator,” or ensure that your login profile provides the same level of privileges.

The privilege settings for each user (account) are set in the Microsoft Windows NT “User Manager” program. Please consult the documentation that was shipped with your Microsoft Windows NT operating system or station for more information.

Before installation and startup, read the file readme.rtf on the SIMATIC NET IWL CD-ROM. It includes latest update information, additional installation instructions, limitations to the current version of the product, and suggestions to solve known issues or problems.

# D.2 Installing the SIMATIC NET IWL Driver

## D.2.1 Overview

1. [Start Installation \(page 90\)](#)
2. [Enable PCMCIA Services \(page 91\)](#)
3. [Enable Network Support \(page 93\)](#) for the workstation.

## D.2.2 Start Installation

To install the PC Card on a computer running Windows NT 4.0, proceed as follows:

1. Insert the PC Card into your computer.
2. Power up your computer.
3. Continue with Enabling PCMCIA Services.



### **NOTE:**

To be able to perform the steps as described on the following pages, you will need:

- Windows NT V4.0 Service Pack 6a or higher
- The privileges of the Windows NT station administrator.

To verify these settings:

- During start-up, check the blue start-up screen to verify which NT Service Pack is installed on the computer.

- From the Start menu, use the option **Shut Down, Log Off xxxxx to close all windows** and log on as **Administrator**.

If the computer is running with Service Pack lower than v6a, you can install Service Pack v6a from the SIMATIC NET IWL CD-ROM or download it from the Microsoft web site (<http://www.microsoft.com>) prior to installing the PC Card.

### D.2.3 Enable PCMCIA Services

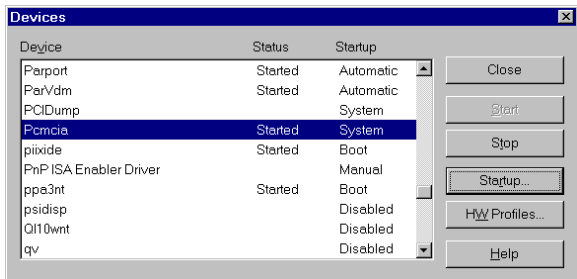
To allow the Windows NT operating system to detect PC Cards in the computer's PC Card slot, you must enable the PC Card Socket controller, identified as the PCMCIA device.

1. Click the **Start** button, then select **Settings** and then click **Control Panel**.
2. Double-click the **Devices** icon.
3. Scroll down the list of devices and select the item **PCMCIA**.



Devices


**Figure 22 Enable the PCMCIA service for Windows NT**



4. Click the button **Startup** on the right side of the **Devices** window, and set the Startup type for the item PCMCIA to **Boot**.
5. Click **OK** to confirm and return to the Devices window.
6. Click **Close** to return to the Control Panel.

## D.2.4 Enable Network Support

To introduce your SIMATIC NET IWL network adapter card to the Windows NT operating system, you will need to enable Network support for your SIMATIC NET IWL wireless station.

1. From the Windows NT Taskbar, click the  **Start** button.
2. Click on **Settings**, then **Control Panel**.
3. In the Control Panel window, double-click the **Network** icon to open the Network Settings window.
  - If no network has been installed yet, you will be prompted to install it now.  
Click **Yes** to install Windows NT Networking, and follow the instructions as they appear on your screen.
  - If networking support was already installed, you will see a window with multiple tabs.
4. Select the tab **Adapters**, and click the **Add** button.
5. When prompted to select a driver, select "Driver from disk provided by hardware manufacturer" and navigate to the root directory of your SIMATIC NET IWL CD-ROM.
6. Follow the instructions on your screen and restart your computer when prompted to do so.
7. Configure your PC Card as described in [2.5 Set Wireless LAN Properties](#).

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