CF Wireless LAN Card

PW250

User's Manual

Rev 0.3

Regulatory compliance

FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

About this manual

This User's Manual describes how to install and operate your CF Wireless LAN Card. Please read this manual before you install the product.

This manual includes the following topics:

- Product description and features.
- Software installation procedure.
- Hardware installation procedure.
- FAQ

Table of Contents

Regulatory compliance
About this manual

Chapter 1- Introduction ***5***
Features 5
What is Wireless LAN? 6
Wireless LAN Modes 6
Notes on Wireless LAN Configuration 7

Chapter 2 - Installation and Configuration of the CF Wireless Card for Windows ***8***
What You Will Need 8
Software and Driver Installation 8
Configuring the CF Wireless LAN Card 12
For Pocket PC users 12
For Handheld PC users 14

Chapter 3 – Set up TCP/IP ***17***
Set up TCP/IP for Pocket PC users 17
Set up TCP/IP for Handheld PC users 19

Chapter 4 – Hardware Installation ***20***
Package Contents 20
System Requirements for the Card 20
Install the CF Wireless Card 20
LED Indicator 21

Appendix A – FAQ ***22***

Appendix B – Specifications ***23***

Chapter 1 - Introduction

Thank you for purchasing the CF Wireless LAN Card. This high-speed CF Wireless LAN Card provides you with an innovative wireless networking solution. The Card is easy to set up and use. With this innovative wireless technology, you can share files and printers on the network—without inconvenient wires!

The Card is a network card with a rate of 1, 2, 5.5, and 11 Mbps operating in the ISM band using Direct Sequence Spread Spectrum (DSSS) transmission implementing the IEEE 802.11b standard. This card provides Device Driver which supports operation system Win CE. The device driver allows you to proceed installation in Win98, 2000, and ME environment of PC via Microsoft ActiveSync.

Features

The CF Wireless LAN Card offers compliance with the IEEE 802.11b specification. This feature allows them to communicate with other wireless devices that support the standard. Features of the card are:

- **Uses 2.4GHz frequency band, which complies with worldwide requirement**
- **Wireless interface following the IEEE 802.11b standard**
- **Using CF TypeII interface**
- **Enciphering/deciphering of wireless data by the implementation of the WEP algorithm**
- **Wire-free access to networked resources from anywhere for PDA**
- **Allows users move between Access Points without resetting their connection reconfiguration**
- **Delivers data rate up to 11 Mbps**
- **Supports 11, 5.5, 2, and 1 Mbps rates**
- **Provide CF Wireless LAN Card Configuration utility**
- **The Card uses build-in strip Antenna with LED indicating Link**
- **Supports most popular operating systems: Win CE**

What is Wireless LAN?

Wireless Local Area Network (WLAN) systems offer a great number of advantages over traditional wired systems. WLAN is flexible and easy to setup and manage. They are also more economical than wired LAN systems.

Using radio frequency (RF) technology, WLAN transmit and receive data through the air. WLAN combine data connectivity with user mobility. For example, users can roam from a conference room to their office without being disconnected from the LAN.

Using WLAN, users can conveniently access-shared information, and network administrators can configure and augment networks without installing or moving network cables.

WLAN technology provides users with many convenient and cost saving features:

- **Mobility:** WLAN provide LAN users with access to real-time information anywhere in their organization, providing service opportunities that are impossible with wired networks.
- **Ease of Installation:** Installing is easy for novice and expert users alike, eliminating the need to install network cables in walls and ceilings.
- **Scalability**: WLAN can be configured in a variety of topologies to adapt to specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users roaming over a broad area.

Wireless LAN Modes

Wireless LANs can be configured in one of two ways:

Ad-hoc Networking	Also known as a peer-to-peer network, an ad-hoc network is one that allows all workstations and computers in the network to act as servers to all other users on the network. Users on the network can share files, print to a shared printer, and access the Internet with a shared modem. However, with ad-hoc networking, users can only communicate with other wireless LAN computers that are in the wireless LAN workgroup, and are within range.
Infrastructure Networking	Infrastructure networking differs from ad-hoc networking in that it includes an access point. Unlike the ad-hoc structure where users on the LAN contend the shared bandwidth, on an infrastructure network the

	access point can manage the bandwidth to maximize bandwidth utilization. Additionally, the access point enables users on a wireless LAN to access an existing wired network, allowing wireless users to take advantage of the wired networks resources, such as Internet, email, file transfer, and printer sharing. Infrastructure networking has the following advantages over ad-hoc networking: • **Extended range:** each wireless LAN computer within the range of the access point can communicate with other wireless LAN computers within range of the access point. • **Roaming:** the access point enables a wireless LAN computer to move through a building and still be connected to the LAN. • **Wired to wireless LAN connectivity:** the access point bridges the gap between wireless LANs and their wired counterparts.

Notes on Wireless LAN Configuration

When configuring a wireless LAN (WLAN), be sure to note the following points:

- Optimize the performance of the WLAN by ensuring that the distance between access points is not too far. In most buildings, WLAN cards operate within a range of 100 ~ 300 feet, depending on the thickness and structure of the walls.
- Radio waves can pass through walls and glass but not metal. If there is interference in transmitting through a wall, it may be that the wall has reinforcing metal in its structure. Install another access point to circumvent this problem.
- Floors usually have metal girders and metal reinforcing struts that interfere with WLAN transmission.

This concludes the first chapter. The next chapter deals with the hardware installation of the Card.

Chapter2-Installation and Configuration of The CF Wireless Card for Windows

Use the procedures described in this chapter to install the Win CE driver and configuration Utility of the CF Wireless LAN Card under Windows 98, Millennium, and 2000 environment of PC.

Throughout this chapter it is assumed that you have a basic working knowledge of Windows and of how to install new network cards on them.

What You Will Need

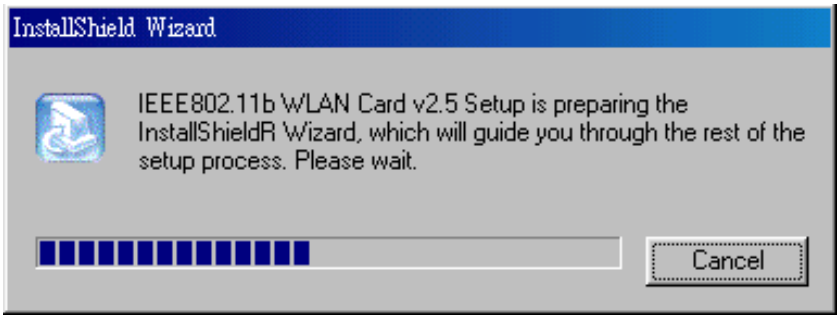
You will also need the Setup Utility CD provided with your package.
This Wireless CF Card Win CE Setup Utility will guide you through the Install and Uninstall Procedure under the Windows 98, 2000, and ME environment of PC.

Before you install the driver, You need to make sure that your PDA is synchronizing with your Desktop/Notebook PC.

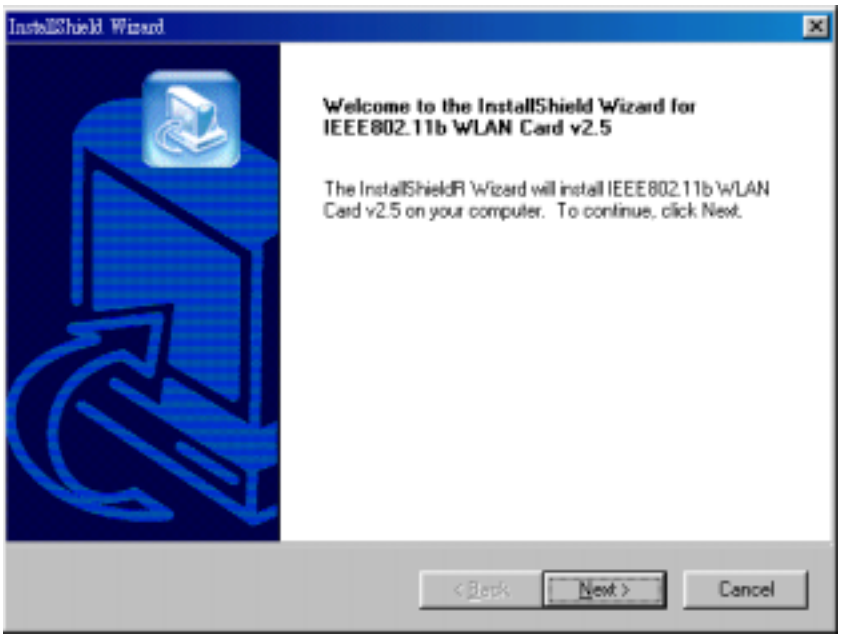
Running the Setup Utility CD in your Desktop/Notebook PC.

Software and Driver Installation

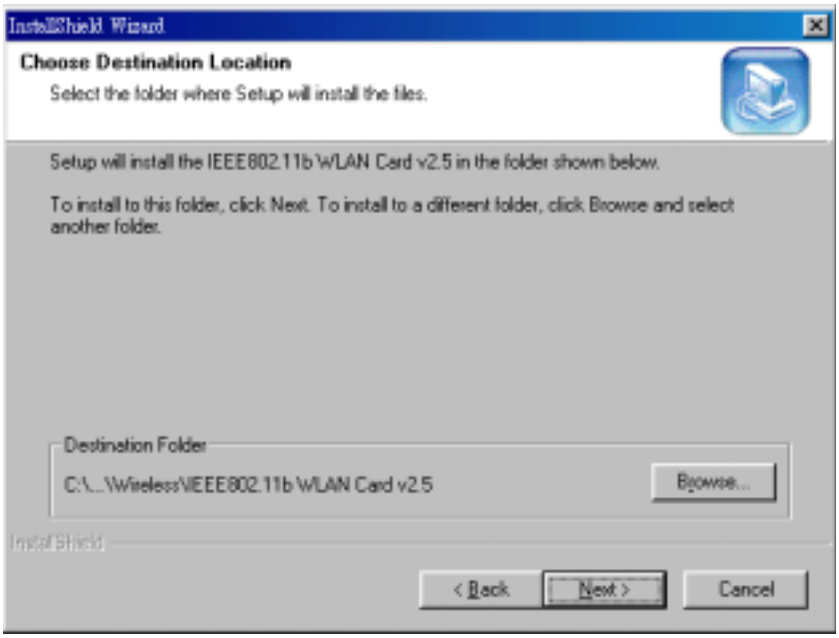
1. Insert the Driver/Utility CD into your CD-ROM Drive. Run the program **Setup**.**exe** under Win CE directory**.** The following screen appears.



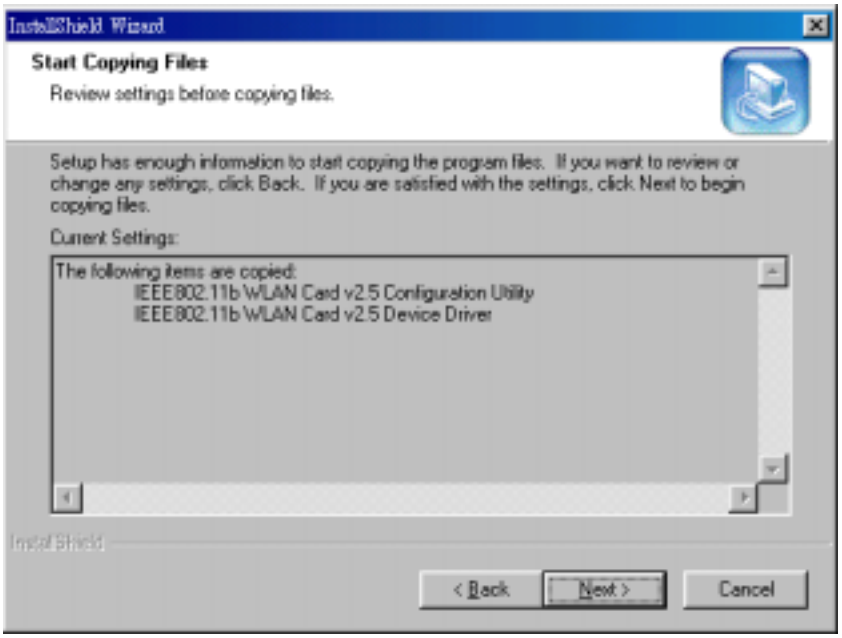
2. Once you see the following screen, click **Next** to continue.



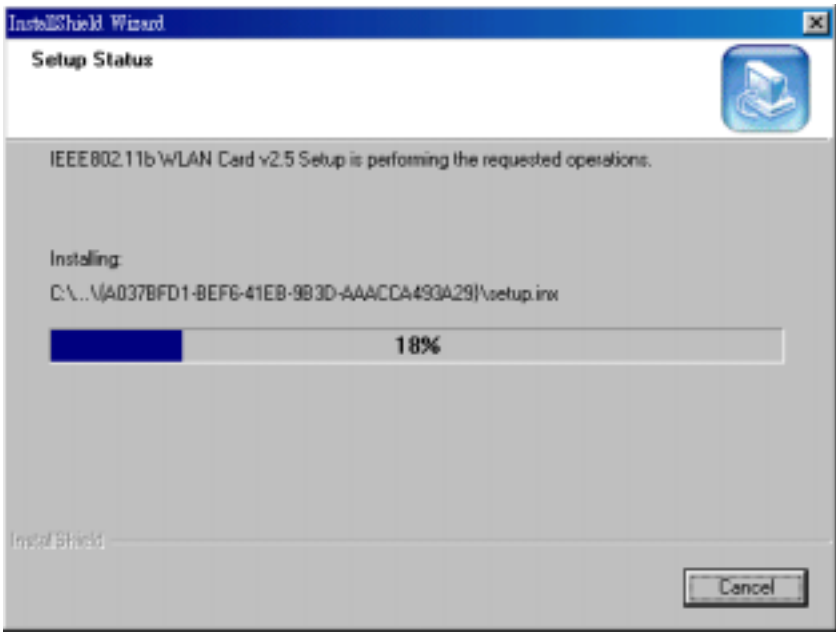
3. The InstallShield Wizard will automatically choose a folder where Setup will install files. Click **Browse** button to select an alternate destination or click **Next** to continue.



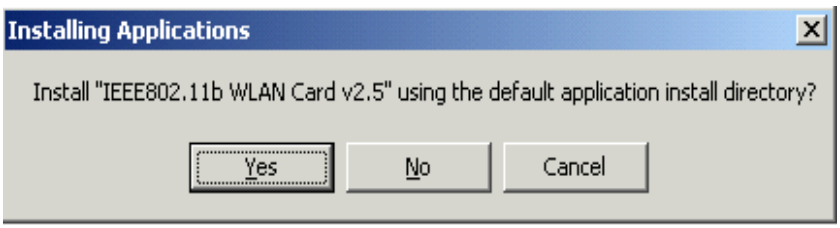
4. The Wizard will ask you to review your settings before starting to copy files. Select **Back** to review or change any settings, or select **Next** if you are satisfied with your settings.



5. The InstallShield Wizard will begin copying the files. The bar in the middle of the screen below shows the percentage of files copied.

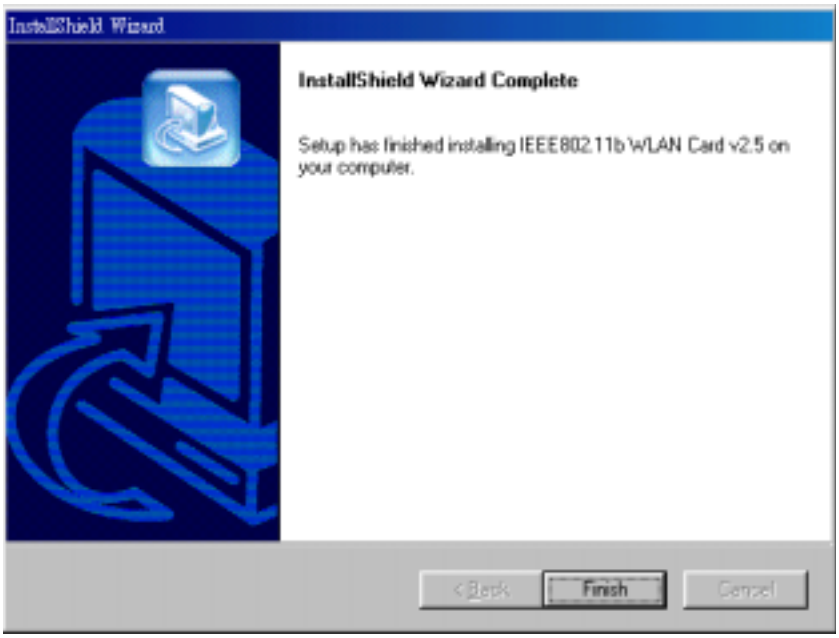


6. The InstallShield Wizard will ask if you will use the default application to install directory, click **Yes** to continue or **No** to change the directory.



7. The InstallShield Wizard will begin the application installation. After the application download is complete, the following screen appears. Click **OK** to continue and check your mobile device to see if additional steps are necessary to complete the installation.

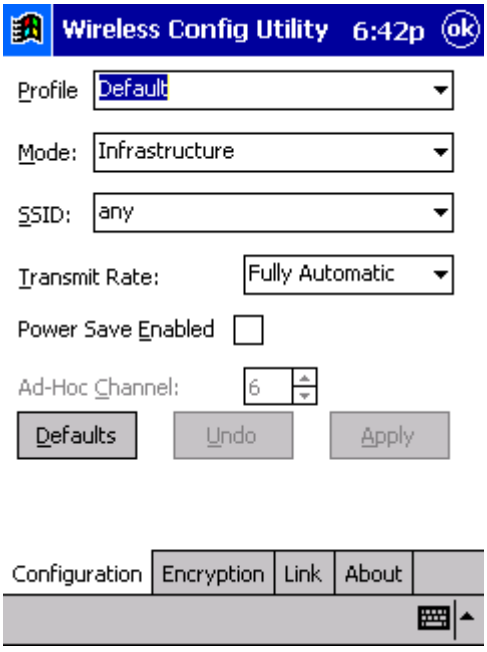
8. Once the Driver/Utility have been successfully installed, the following screen will appear. Click **Finish** to complete the installation.



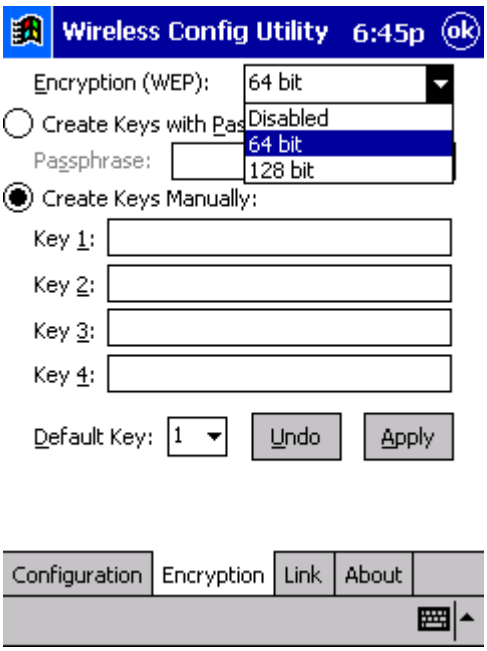
Configuring the CF Wireless LAN Card

For Pocket PC users

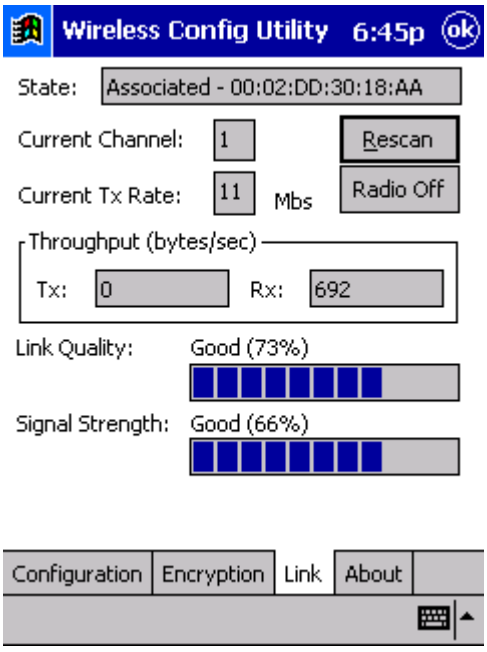
1. After installing the CF Wireless LAN Card Driver, the following Configuration Utility screen will appear automatically. The **profile** setting allows you to save configurations in different profiles for different working environments. The default profile will contain the initial configuration setting when you install the Card. Under the **Mode** drop-box, you may choose either Infrastructure or Ad-Hoc. The Infrastructure mode allows a wireless adapter to communicate with a wired network employing an Access Point, while the Ad-Hoc mode allows wireless-to-wireless, peer-to-peer communication. If you choose Infrastructure, the **SSID** should have the same name as the Access Point. If you choose **Ad-Hoc**, all clients should share the same **SSID** name. You may also select which **Transfer Rate** you wish to use: **1, 2, 5.5, 11Mbps** or **Auto Rate**. **Power Saving Mode** is only available under Infrastructure mode. You can select Enabled to allow your Card to go to sleep mode while the Card doesn't proceed the data transmission. Or select Disabled to make the Card never go to sleep mode. Click **Apply** to save the settings.



2. Click on the **Encryption** tab. Under the drop-box, you can choose to have WEP encryption **Disabled, 64-Bit, or 128-Bit.** Wired Equivalent Privacy (WEP) is an encryption scheme used to protect wireless data communication. The Disabled setting prevents the sharing of data with other computers on the WEP network. For data sharing to be enabled, select the level of encryption desired, either 64 or 128-bit .



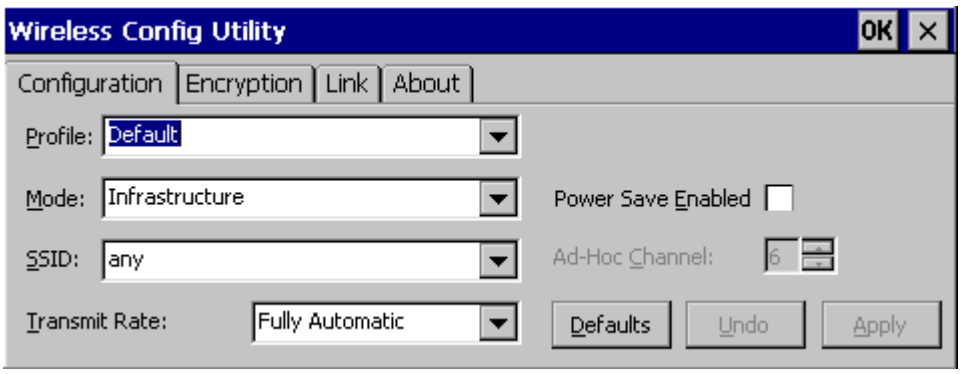
3. Click on the **Link** tab. This screen shows you the status of your current connection.



4. The **About** tab shows you copyright and version information about the driver, the configuration utility, and the firmware. Click **OK** to complete the configuration.

For Handheld PC users

1. After installing the CF Wireless LAN Card Driver, the following Configuration Utility screen will appear automatically. The **profile** setting allows you to save configurations in different profiles for different working environments. The default profile will contain the initial configuration setting when you install the Card. Under the **Mode** drop-box, you may choose either Infrastructure or Ad-Hoc. The Infrastructure mode allows a wireless adapter to communicate with a wired network employing an Access Point, while the Ad-Hoc mode allows wireless-to-wireless, peer-to-peer communication. If you choose Infrastructure, the **SSID** should have the same name as the Access Point. If you choose **Ad-Hoc**, all clients should share the same **SSID** name. You may also select which **Transfer Rate** you wish to use: **1, 2, 5.5, 11Mbps** or **Auto Rate**. **Power Saving Mode** is only available under Infrastructure mode. You can select Enabled to allow your Card to go to sleep mode while the Card doesn't proceed the data transmission. Or select Disabled to make the Card never go to sleep mode. Click **Apply** to save the settings.



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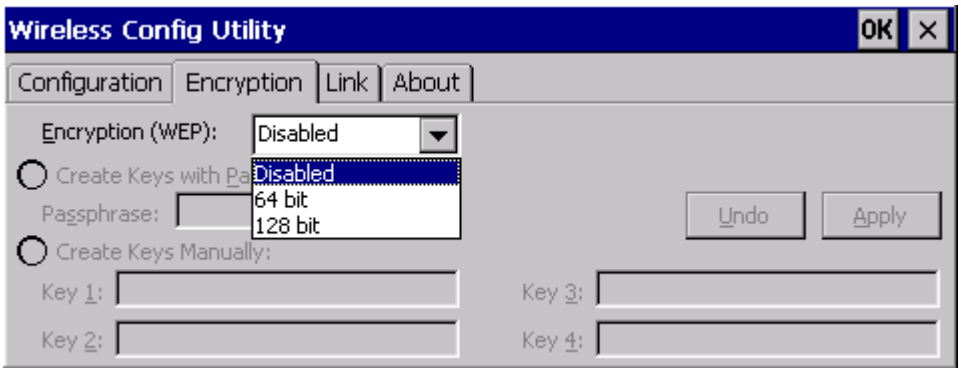
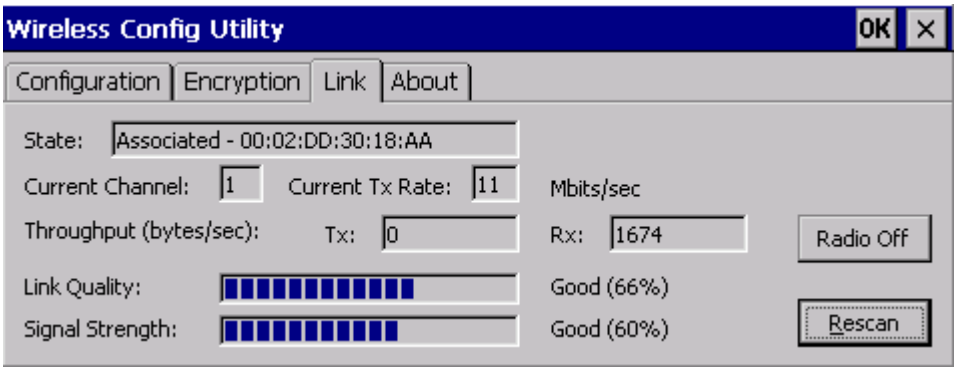
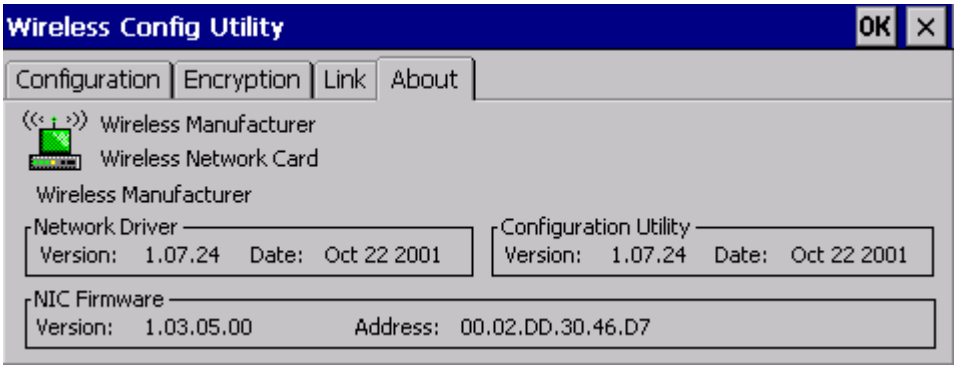


3. Click on the **Link** tab. This screen shows you the status of your current connection.



4. The **About** tab shows you copyright and version information about the driver, the configuration utility, and the firmware. Click **OK** to complete the configuration.

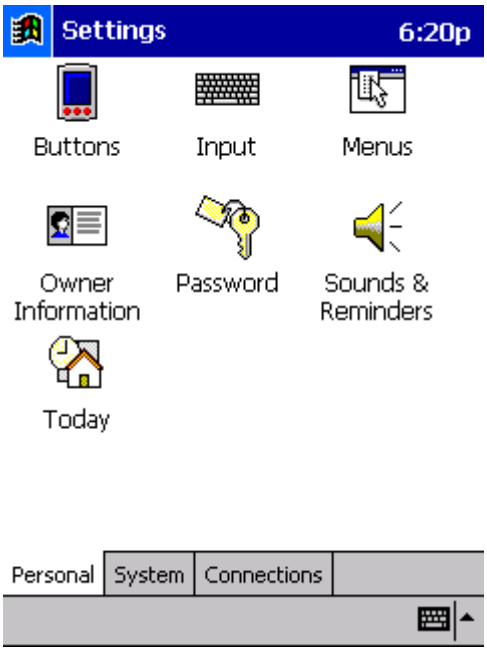

Wireless Config Utility
OK
Configuration
Encryption
Link
About
Wireless Manufacturer
Wireless Network Card
Wireless Manufacturer
Network Driver
Version: 1.07.24 Date: Oct 22 2001
Configuration Utility
Version: 1.07.24 Date: Oct 22 2001
NIC Firmware
Version: 1.03.05.00 Address: 00.02.DD.30.46.D7

Chapter 3 – Set up TCP/IP

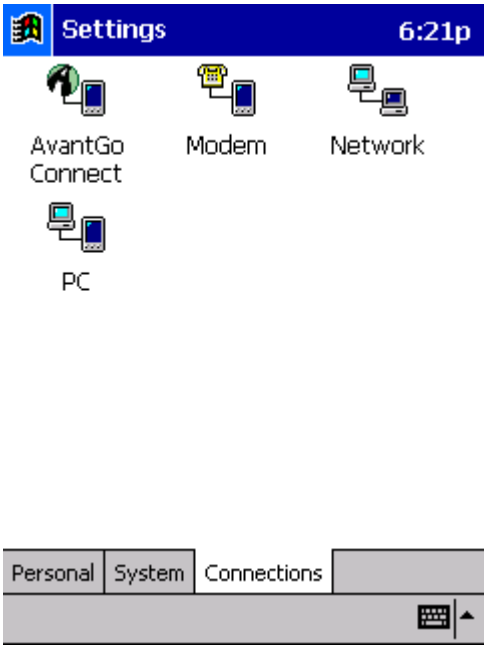
Follow the steps bellows to set up the TCP/IP of Pocket PC and Handheld PC.

Set up TCP/IP for Pocket PC

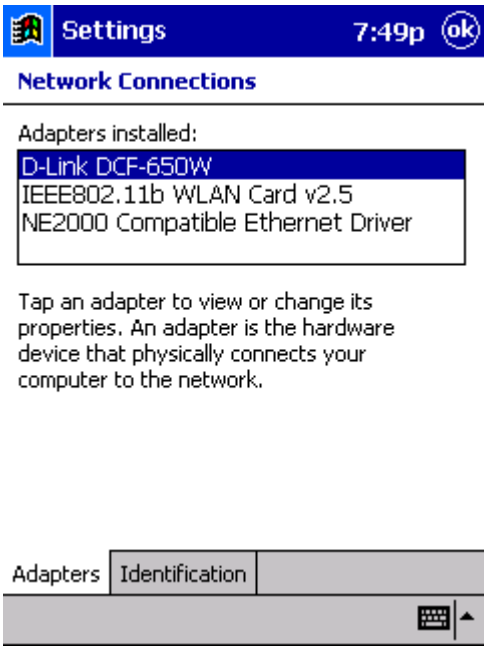
1. From the **Start** Menu, select **Settings**. From the Settings window, select the **Connections** tab to continue.



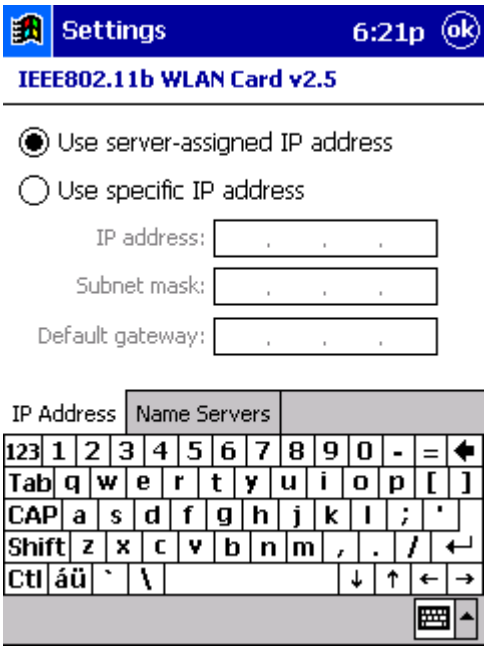
2. From the Connections, double-click on the **Network** icon.



3. Select **IEEE802.11b WLAN Card v2.5** to continue.

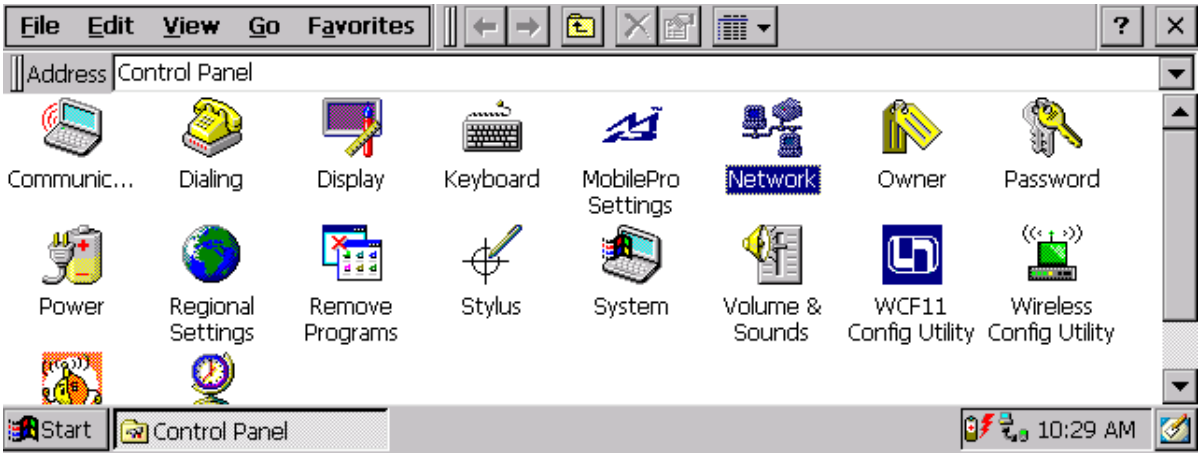


4. Please select a way to set the IP address, and then click **OK** to save the settings.

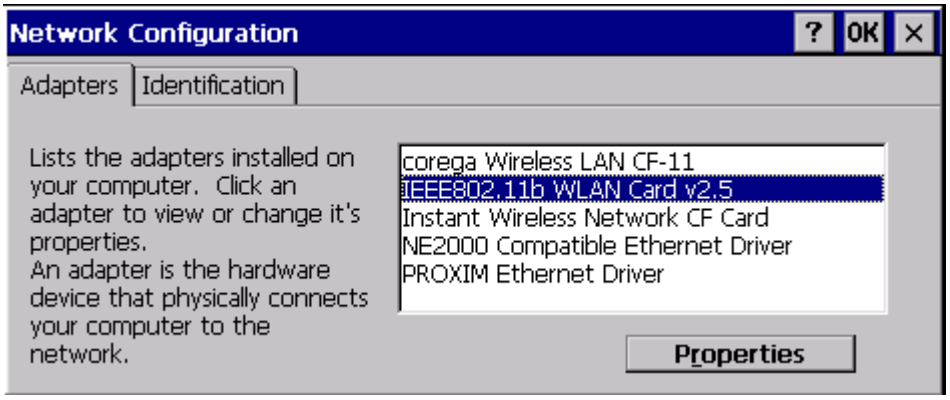


Set up TCP/IP for Handheld PC

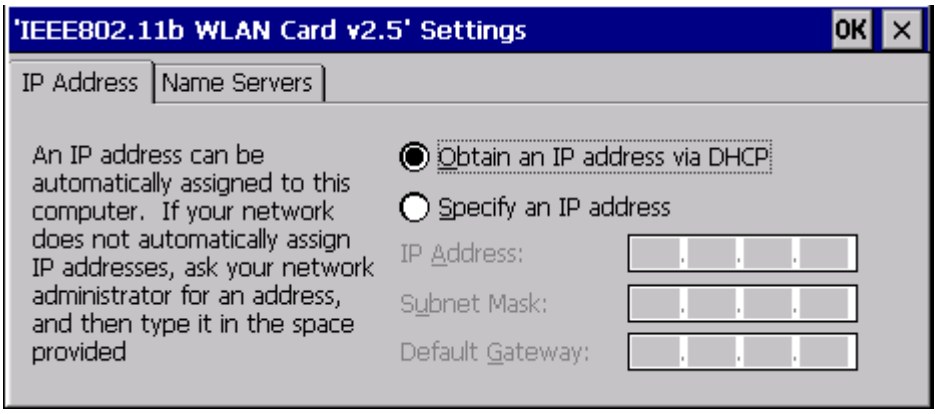
1. From the **Start** Menu, select **Settings** and bring up the **Control Panel**. From the Control Panel, double-click on the **Network** icon.



2. Select **IEEE802.11b WLAN Card v2.5** to continue.



3. Please select a way to set the IP address, and then click **OK** to save the settings.



Chapter 4 - Hardware Installation

This chapter covers connecting your CF Wireless LAN Card to CF interface of PDA.

Package Contents

Please make sure that items below are included on package.

- ✓ One CF Wireless LAN Card
- ✓ One Driver / Utility CD-ROM (this use's manual included)
- ✓ One Quick Installation Guide

System Requirements for the Card

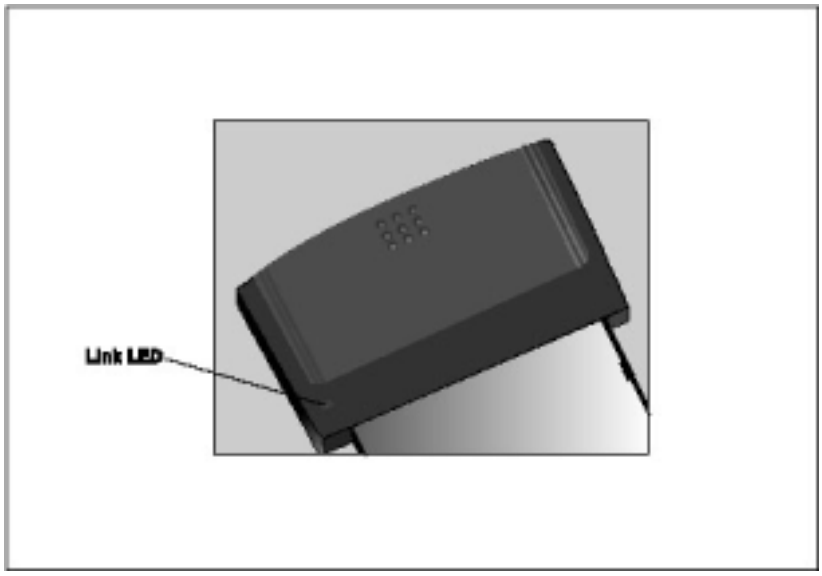
- Operating System: Win CE
- Desktop/Notebook PC with CD-ROM drive
- CF Type II interface of your PDA

Install the CF Wireless Card

NOTE: These instructions apply to most PDA with CF Type II interface.

Firmly insert the CF Modem card into the CompactFlash slot on top of your pocket PC with the 50-pin connector facing the CompactFlash slot. You will hear a click when firmly connected.

LED Indicator



The following table describes the meaning of LED indicators:

LED	MEANING
LINK	Indicates link status. The LED lights up while the wireless connection is linked. If the light is blinking, it is scanning the available network.

Appendix A – FAQ

1. What is IEEE 802.11 standard?

- The IEEE 802.11 is a wireless LAN industry standard, and the objective of IEEE 802.11 is to make sure that different manufactures' wireless LAN devices can communicate to each other.

2. What is WEP?

- As described in the IEEE 802.11 standard, WEP (Wired Equivalent Privacy) is a data privacy mechanism based on a 40 bit shared key algorithm.

3. In Ad-Hoc mode, my PDA cannot communicate with the others PCs on the network.

- First, make sure that the SSID is same as the others PC.
- Check that your CF card is configured on the same channel & WEP as the others PCs on the network.

4. In Infrastructure mode, my PDA cannot communicate with the others PCs on the network.

- First, make sure that the SSID is same as the AP.
- Check that your CF card is configured on the same WEP as the AP on the network.

Appendix B – Specifications

Standards:	IEEE 802.11b CF TypeII Interface
Channels:	11 Channels (US, Canada) 13 Channels (Europe) 14 Channels (Japan)
Antenna:	Build-in strip Antenna
Frequency:	2.4 to 2.4835GHz (Industrial Scientific Medical Band)
Data Rate:	up to 11Mbps
Operating Ranges:	Indoor: Up to 50M @ 11Mbps Up to 80M @ 5.5Mbps Outdoor: Up to 150M @ 11Mbps Up to 300M @ 5.5Mbps