

# **IEEE 802.11b WLAN PC Card**

## **User's Guide**

# **Regulatory Information**

## **Federal Communication Commission Interference Statement**

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 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.

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## **CAUTION STATEMENT**

### **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 5cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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## 1. Introduction

Thank you for purchasing our IEEE802.11b WLAN PCMCIA Card. It will be interoperable among IEEE 802.11b standard compliant products from other manufacturers and allows you to build a wireless LAN. Besides, you can use your PC to connect with an access point wirelessly to share the wired network resource. After install IEEE802.11b WLAN PCMCIA Card, you can:

- a. Share your Internet access by using just *one* connection
- b. Share printers and other peripheral devices
- c. Share data and image files between networked PCs
- d. Play multi-player games

IEEE802.11b WLAN can wirelessly transmit and receive data, minimizing the need for wired connections, at a speed of up to eleven megabit per second. With IEEE802.11b WLAN you can locate your PC wherever you want without wires and cables.

IEEE802.11b WLAN provide LAN users with great mobility, which are not available under wired network, for real-time information access at anywhere within a reasonable distance.

The IEEE802.11b WLAN configuration is easy to change from peer-to-peer networks, suitable for a small number of users, to full infrastructure networks of thousands of users that allow roaming around a broad area.

Please read this manual to get familiar with the IEEE802.11b WLAN. This manual contains detailed instructions in operation of this product. Please keep this manual for future reference.

## Kit Contents

The IEEE802.11b WLAN PC Card kit includes the following items:

- a. A PCMCIA Card
- b. A CD including: IEEE802.11b WLAN Utility & Driver software, Acrobat Reader3.0 and user manual PDF file.
- c. The User' s Manual (this document)
- d. Quick Start Guide

To use friendly, click the Start Menu, choose Programs → IEEE802.11b WLAN Utility, and click User Manual for real time instructions after IEEE802.11b WLAN Driver & Utility installation completed.

## **2. Installation**

### **2.1 Overview**

In this chapter we will cover how to install the IEEE802.11b WLAN PCMCIA Card.

To establish your wireless network connection, the following steps should be executed.

1. Install the software using the installation CD
2. Install the wireless LAN card.
3. Install the required network protocols to communicate with your network. Most likely, you will need the TCP/IP protocol.

The product is designed to operate in Windows 98SE, Windows Me, Windows NT4.0 with Service Pack 3 or later and Windows 2000. And the installation procedure is about the same. Please follow up the installation wizard that provided by your system to install the software. The example here is based on Window 98SE.

## 2.2 Install the IEEE802.11b WLAN Utility/Driver



*Please install the IEEE802.11b WLAN Utility/Driver first before inserting the IEEE802.11b WLAN PCMCIA Card.*

Insert IEEE802.11b WLAN Installation CD

Welcome (Click "Yes")

Software License Agreement (Click "Yes")

Choose IEEE802.11 WLAN Adapter (Click "Next")

Use Default Destination Folder to Store Driver and Utility                      Click Browse to Set Up the Destination by Yourself

Select the Program Folder for IEEE802.11b WLAN Utility (click "Next")

Set Up Shortcut to Desktop (Click "Yes")

Set up Acrobat Reader for User Manual PDF File

Acrobat Existed Already                      No Acrobat in Your System

Set Up the Network Protocols                      ← Follow the Instructions Prompted Step by Step to Install Acrobat Reader

Network Protocol Set Already                      Network Protocol NOT set yet

No                      Yes

Add the Necessary Protocols by Clicking "Add" (Then Click "Yes")

Select "Yes, I want to restart my computer" (Recommended) and then Click "Finish"

### **Additional Note for Windows NT4.0**

The installation procedure under Windows NT4.0 will be a little different from Windows 98 shown below. It will be change after step10 refer to the installation of Windows 98.

1. Click “ OK “ and system will auto-select I/O address and IRQ and remind you to choose the unused I/O address and IRQ from Windows NT Diagnosis to prevent system resource conflict.
2. If the Ndis 3.0 packet driver has already existed in your system, the setup message will be prompted as follows, just click “ OK “ .
3. A prompt of networking setting will appear as follows. It' s the same as Windows 98 operating system.
4. The Network properties page will appear automatically in the screen if you click “ Yes “ in the last step. You should choose “ AWLAN 11 Mb IEEE802.11b Adapter “ in the Network Adapter of upper menu and add necessary protocols, then click OK.
5. The Microsoft TCP/IP setting page will be prompted. You can use DHCP or manual set the IP address. The related Microsoft Networking setting is like Windows 98.
6. Click “ Yes “ and insert IEEE802.11b WLAN PC card before system reboot.

### **Additional Note for Windows 2000 to install Packet Protocol**

You should add Packet Protocol under Windows 2000If the Packet Protocol doesn' t exist in your system. The installation procedure will be a little different from Windows 98. A message will be prompted to guide you to auto-install Packet Protocol. Follow the on–screen instructions as listed below to complete the IEEE802.11b WLAN Utility and driver installation.

1. Please insert 802.11b adapter (refer to section 2.3) .If the adapter installation completed, click on “ Yes “ .
2. If your wireless adapter installed successfully, you will enter “ Packet Protocol Auto Installation “ frame, click on “ OK “ and system will auto-install Packet Protocol.
3. If Packet Protocol installed successfully, you have to reboot your system and the IEEE802.11b Utility/driver installation under Windows 2000 is complete.
4. If the Packet Protocol installation has failed, a message will be prompted as follows. Click “ OK “ to continue next step.
5. System will give you an on-screen instruction as follows to install the Packet Protocol. Remember and follow the procedure to complete the Packet Protocol installation and then click “ OK “ .



## 2.3 Install the PCMCIA card



*The IEEE802.11b WLAN driver and utilities are included on the accompanying installation CD. Please follow the installation procedures in Section 2.2. (Your PCMCIA card will not work properly if the driver and utilities are not installed correctly.)*



*Make sure that there is an empty PCMCIA slot for IEEE802.11b WLAN PC card. Install the IEEE802.11b WLAN Utility/Driver first before inserting the PCMCIA card.*

1. Insert the PCMCIA Card and then the system will automatically start.



*If you're asked to insert a " Windows 98 CD-ROM " during the installation, insert your " Windows 98 CD-ROM " and click " Yes " . Once the setup task is completed, the " Microsoft Internet Explorer " should start up. Please close it.*

2. When the PCMCIA card setup task is completed, you can start up the IEEE 802.11b WLAN Utility. To start up the utility, please refer to the chapter 2.4 " Utility Start up Configuration " .

### CAUTION STATEMENT

#### FCC Raditation 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 5cm between the radiator & your body.


This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## 2.4 Utility Startup Configuration

IEEE802.11b WLAN PCMCIA Adapter/Card has its own management software. Users can control all functions provided by the application named IEEE802.11b WLAN Utility. The Utility icon will appear in the working bar by clicking the IEEE802.11b WLAN Utility shortcut on your desktop.

The definition of the color of the Utility icon is as follows:

 Connected (Green)       Low quality (Yellow)       Disconnected (Red)

 To open IEEE802.11b Utility, double click the icon in the working bar.

### 2.4.1 Set Basic Parameters

#### 2.4.1.1 Basic Setting for Infrastructure Mode

If you want to connect with Access Point, use IEEE802.11b Utility window and follow the steps as follows:

Select “ Config” →Select “ Infrastructure” →Select the Right “ SSID” →Click “ Apply”


- ◆ **SSID** is the group name that will be shared by every member of your wireless network.
- Channel: If the Mode is Infrastructure, this parameter will not be active.

#### 2.4.1.2 Basic Setting for 802.11Ad Hoc Mode

Besides “ Infrastructure” mode, you may set up a local network with several IEEE802.11b compliant stations following the steps bellows:

Select “ Config” →Select “ 802.11 Ad Hoc” →Insert the SSID You Prefer for your 802.11 Wireless LAN.

- ◆ Every member of your wireless peer-to-peer network will share SSID. Every member of your peer-to-peer network must have the same SSID, which should be case sensitivity.

 If you are unable to connect with other brand of IEEE 802.11b device on 802.11 Ad Hoc mode, please try Ad Hoc mode. The next section will show the basic setting of Ad Hoc mode.

#### 2.4.1.3 Basic Setting for Ad Hoc Mode

If you have more stations and just want to set them as local network, you can also select Ad Hoc mode on your WLAN Utility. The procedure is as follows.

Select “ Config” →Select “ Ad Hoc” →Select the correct channel

## 2.4.2 Advanced Settings

Please note that the advanced parameters of this IEEE802.11b PCMCIA card can be specified only when it is connected to an existing network.



*Click “ Advanced “ and then the following advanced setting about your IEEE802.11b WLAN will be displayed.*

### 2.4.2.1 Configuration

It displays the configuration items that you can change: Transmission Rate, Power Saving Mode, and WEP Required Mode.

### 2.4.2.2 Wired Equivalent Privacy

The Wired Equivalent Privacy enables you to define the encryption keys that your IEEE802.11b PCMCIA should use to:

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

You may desire an additional measure of security in your wireless network, which can be achieved by using the Wired Equivalent Privacy (WEP).



*If you would like to enable WEP, the system will prompt a message to suggest that you contact with your network administrator.*

#### **! Caution:**

WEP needs to be the same for all IEEE802.11b stations.

Follow the steps below to set your WEP:

- (1) Select the data privacy algorithm you want (64 or 128 bit WEP type)
- (2) Type Pass phrase
- (3) Click “ Generate “ to generate automatically the corresponding WEP key. If select 64 bit WEP type, 4 sets of WEP key will be generated; if select 128 bit WEP type, only a set WEP key will be generated.
- (4) Choose one key (under 64 bit WEP type)
- (5) Click “ Write “ and then press “ OK “ . WEP encrypts each frame transmitted from the radio, using one of the keys entered from this panel.
- (6) If you select “ Manual “ , you can type the 64bit WEP key manually. Especially note that all the blanks of WEP key have to be filled by manual typing. Click on “ Clear “ you can clean away all the settings of Encryption.

### 2.4.2.3 Country

Every country has different legal frequency range. Please choose proper country setting. Under the infrastructure mode, the setting value will be determined by the Access Point and can't be set by users.

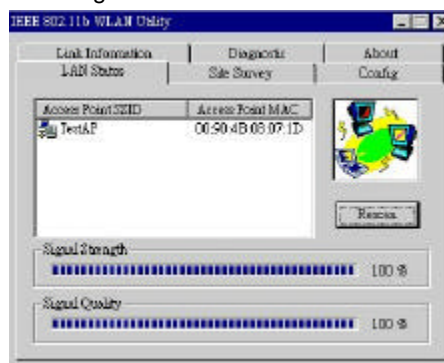
## 2.5 How to use your card

### 2.5.1 Wireless LAN Neighborhood

If you want to know the connecting status in Infrastructure Mode or Ad Hoc Mode, choose Wireless LAN Neighborhood in IEEE802.11b Utility window.

#### 1. Infrastructure Mode:

- The SSID and MAC of the Access Point, which your computer connects to, will appear in the screen if you choose the Infrastructure Mode. (Please refer to 2.4.1.1 to set your Infrastructure mode.)
- Double click the Access Point SSID (under the Infrastructure Mode) to access to the Microsoft Network Neighborhood folder to find other on-line computers.
- You can see the status of the Link Quality and Signal Strength under the Wireless LAN Neighborhood.



#### 2. 802.11 Ad Hoc Mode / Ad Hoc Mode:

- The Station Name and MAC Address of your station will appear if you choose the 802.11Ad Hoc Mode (or Ad Hoc mode).
- Double click your Station Name will display the content of your computer or double click Network Neighbors to access to the Microsoft Network Neighborhood folder to find other on-line computers.
- Click "Rescan" if you cannot find any other station.



- Clicking “ More “ will spread the following information about your network:

### 2.5.1.1 Link Information

You may check the link information, showed as the pic below, in this dialog box.



### 2.5.1.2 About

Show you the details, the MAC address and the version information, of each S/W.



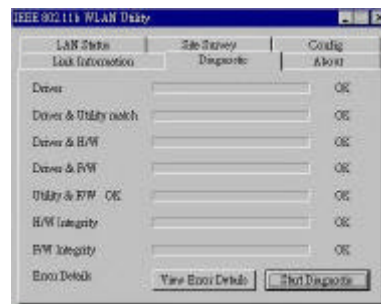
### 2.5.1.3 Site Survey

In this dialog box, you may get all the information of each Access Point within the communication range of your PC Card.



### 2.5.1.4 Diagnostic

To check if there are any errors of your PC Card, you may enter this dialog box and click the “ Start Diagnostic “ button. If there are any errors, please click the “ View Error Details “ and print it out to present to your dealer/ distributor.



## 2.5.2 Remove your PCMCIA Card

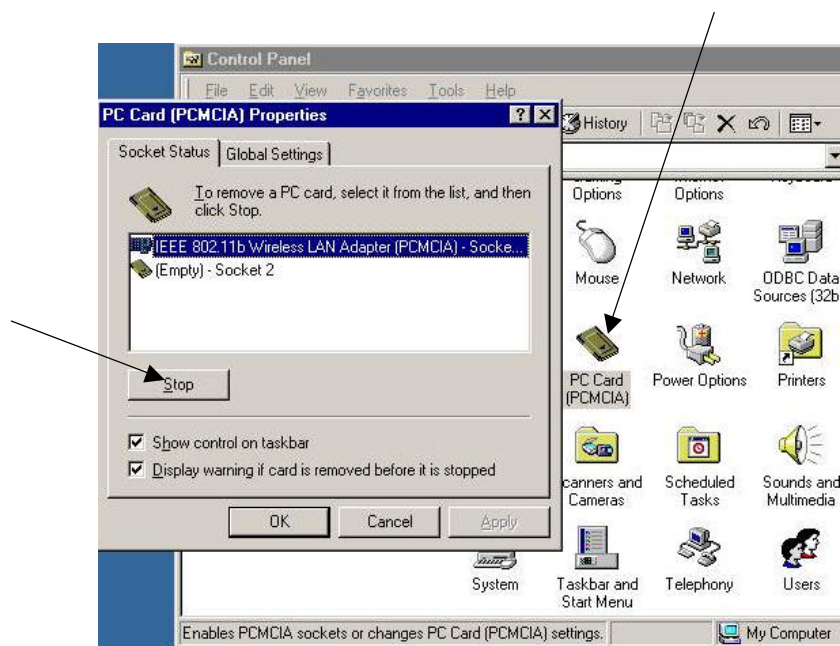
If you do not need the wireless connectivity of your IEEE802.11b PCMCIA Card, you can follow the procedures mentioned below to remove the PC Card from its slot.

### ! Caution:

- When removing the IEEE802.11b PCMCIA 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 PC Card prior to removing the card from the PC Card slot, or the system may be hurt seriously.

To stop using the IEEE802.11b PCMCIA Card:

7. Double click "My Computer" to find "Control Panel".
8. Double click the "Control Panel" and then the "PC Card"
9. Select IEEE802.11b PC Card and click "Stop" icon.
10. Wait a few seconds until the operating system displays a pop-up message to indicate you can safely remove the PC Card.



### 2.5.3 Uninstall the IEEE802.11b WLAN Utility / Driver

1. First you should remove the IEEE802.11b WLAN PC card. To safely remove your PC card, we suggest you should follow the procedure below.  
Start Menu→ Settings→ Control Panel →PC Card (PCMCIA) icon→PC Card (PCMCIA) Properties → IEEE802.11b Wireless LAN Adapter →Stop

#### Additional Note for Windows Me

If you use Windows Me operating system, you may double click the “ Unplug or Eject Hardware “ icon at the lower right side of the screen to enter the picture as follows. You may choose the IEEE802.11b Wireless LAN Adapter from Hardware devices list and then click “ Stop “ button to remove this device. The procedure is like on Windows98 operating system.

2. To exit the IEEE802.11b WLAN Utility, you should click the right bottom on the Utility icon in the working bar and select “ Exit “ .
3. To uninstall the IEEE802.11b WLAN Utility and Driver, you can move to Start → Programs → IEEE802.11b WLAN Utility, and click “ IEEE802.11b Un-Installation “ .
4. You will be asked if you want to uninstall the IEEE802.11b WLAN Utility and all of its components. Click “ Yes “ to start to uninstall or click “ No “ to exit.
5. Now the un-installation is completed. Please click “ Finish “ .

#### Additional Note for Windows 2000

The following items should be noted:

1. Please don't remove your PC card unless the IEEE802.11b WLAN un-installation is completed.
2. Make sure to exit the IEEE802.11b WLAN Utility before uninstalling.
3. If you are sure to uninstall the IEEE802.11b WLAN Utility and Driver, the system will give you a prompt as below to execute “ Device Manager “ to remove the IEEE802.11b WLAN adapter, and then click “ OK “ .
4. System will give you a prompt as below while waiting for “ Device Manager “ . Follow the instruction to uninstall IEEE802.11b WLAN adapter.