# Your Installation Guide to

# LevelOne

# WPC-0100

# 11Mbps Wireless PCMCIA Adapter

**Version: 2.0**

# Table of Contents


**1. Welcome ..... 3**

1.1 Kit Contents ..... 4

1.2 Main Features of LevelOne 11Mbps Wireless PCMCIA Adapter ..... 5

1.3 Wireless Networking Scenarios ..... 6

1.4 Advantages for Using a Wireless Network ..... 8

**2. Quick Start Guide ..... 9**

**3. Step-by-Step Installation Guide ..... 12**

3.1 Over View ..... 12

3.2 Install the IEEE802.11b WPC Utility / Driver ..... 13

3.3 Install the PCMCIA Card ..... 20

3.4 Utility Start-up Configuration ..... 21

3.4.1 Set Basic Parameters ..... 22

3.4.2 Advanced Settings ..... 26

**4 Using Your LevelOne 11Mbps Wireless PCMCIA Adapter and Utility ..... 30**

4.1 Using Your LevelOne 11Mbps Wireless PCMCIA Adapter ..... 30

4.1.1 Radio Antenna ..... 30

4.1.2 Maintaining Your PC Card ..... 30

4.1.3 Disconnect the Wireless Communications ..... 31

4.2 Using the Utility ..... 36

4.2.1 LAN Status ..... 36

4.2.2 Link Information ..... 38

4.2.3 Site Survey ..... 38

4.2.4 Diagnostic ..... 39

4.2.5 About ..... 39

**5. Networking Applications ..... 40**

5.1 File Sharing in Microsoft Windows 98SE ..... 40

5.2 Printer Sharing in Windows 98SE ..... 43

5.3 Using the shared folder ..... 45

5.4 Using the shared network printer ..... 46

**6. Specifications ..... 47**

6.1 Physical Specifications ..... 47

6.2 Networking Compliant Standards ..... 47

6.3 Available Channels in Each Country/ Area ..... 48

6.4 OPERATING SPECIFICATIONS....49
**7. Troubleshooting....51**
7.1 CHECK THE VARIOUS PROPERTIES OF THE CARD....51
7.2 MICROSOFT NETWORKING CHECKLIST....54
7.3 OTHERS....57
**FCC Class B Radio Frequency....59**

# 1. Welcome

Thank you for purchasing the LevelOne 11Mbps Wireless PCMCIA Adapter, the easiest way to wireless networking.

As our product is interoperable with other IEEE802.11b compliant products (even if they are made by other manufacturers), it offers you great flexibility and freedom to build your own ideal wireless LAN.

You can connect your PC/notebook to an access point wirelessly to share a “connected” environment, such as your local area network.

This User’s Guide introduces to you the common configurations of LevelOne 11Mbps Wireless PCMCIA Adapter and leads you through the installation step by step.

Please read this manual to become familiar with this LevelOne 11Mbps Wireless PCMCIA Adapter and its applications. This manual contains detailed instructions in the operation of this product.  Please keep this manual for future reference.

## 1.1 Kit Contents

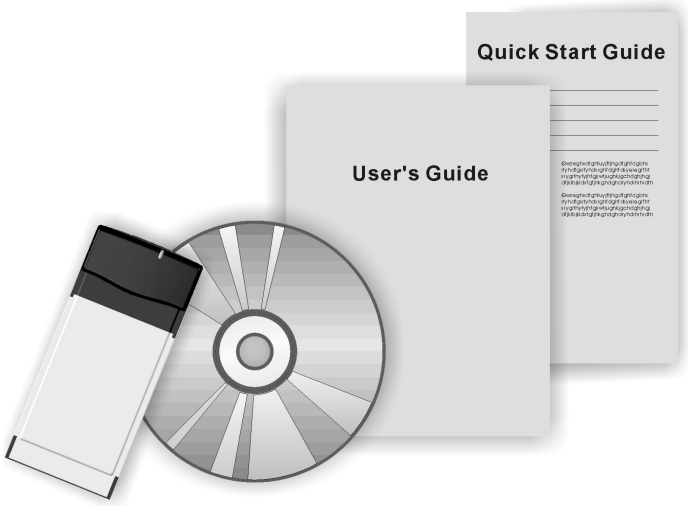
The LevelOne  WPC-0100 11Mbps Wireless PCMCIA Adapter package includes the following items:

A. 1 LevelOne  WPC-0100 11Mbps Wireless PCMCIA Card

B. 1 CD including: IEEE802.11b WPC Utility & Driver software, Acrobat Reader and user manual PDF file.

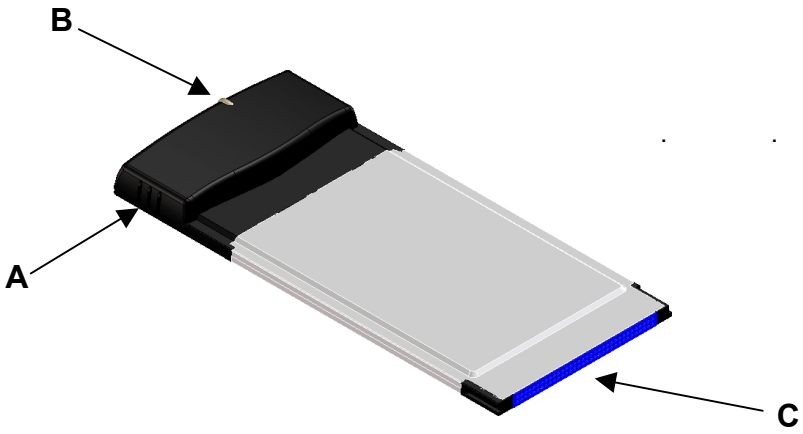
C. 1 User's Manual (the document you are reading)

D. 1 Quick Start Guide




If any of the items mentioned above are damaged or missing, please contact your distributor.

## 1.2 Main Features of LevelOne 11Mbps Wireless PCMCIA Adapter




A. Built-in Antenna

B. Connection Status LED

- Off: No wireless activity
- On: Working in Infrastructure mode or Ad-Hoc Mode.
- Blinking: Sensing/executing wireless communication

C. PCMCIA Interface

PCMCIA Card features:

A. High-speed wireless connection, up to 11 Mbps

B. IEEE802.11b (DSSS) standard for 2.4 GHz Wireless LAN

C. Full mobility and seamless cell-to-cell roaming

D. Automatic scale back at per packet level

PCMCIA Card supports:

A. Advanced power management

B. Supports Windows 98SE/2000/Me, NT, XP

## 1.3 Wireless Networking Scenarios

As our LevelOne 11Mbps Wireless PCMCIA Adapter is interoperable and compatible with other IEEE 802.11b compliant products from other manufacturers, it offers you the most freedom to establish your ideal wireless network. After installing the LevelOne 11Mbps Wireless PCMCIA Adapter, you can connect your computer to:

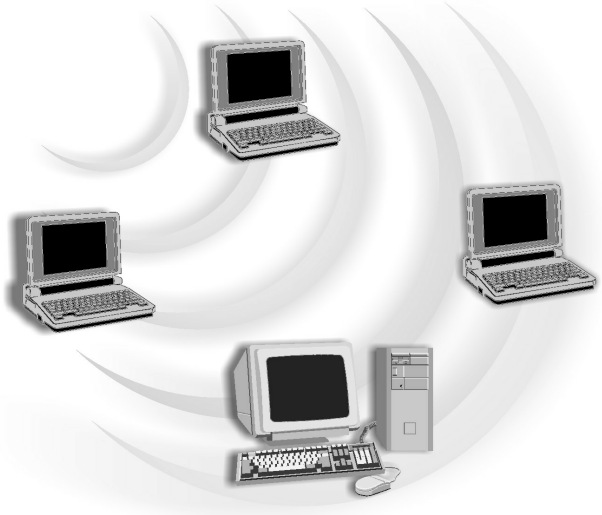
A. A Peer-to-Peer Work roup of IEEE802.11b compliant wireless devices.

B. A LAN (Local Area Network) constructed by Access Point(s) or other IEEE802.11b compliant systems.

Share your Internet access by using just one connection, share printers and other peripheral devices, share data and image files between networked PCs and use other network enabled sharing resources.

### A. Peer-to-Peer Networking:

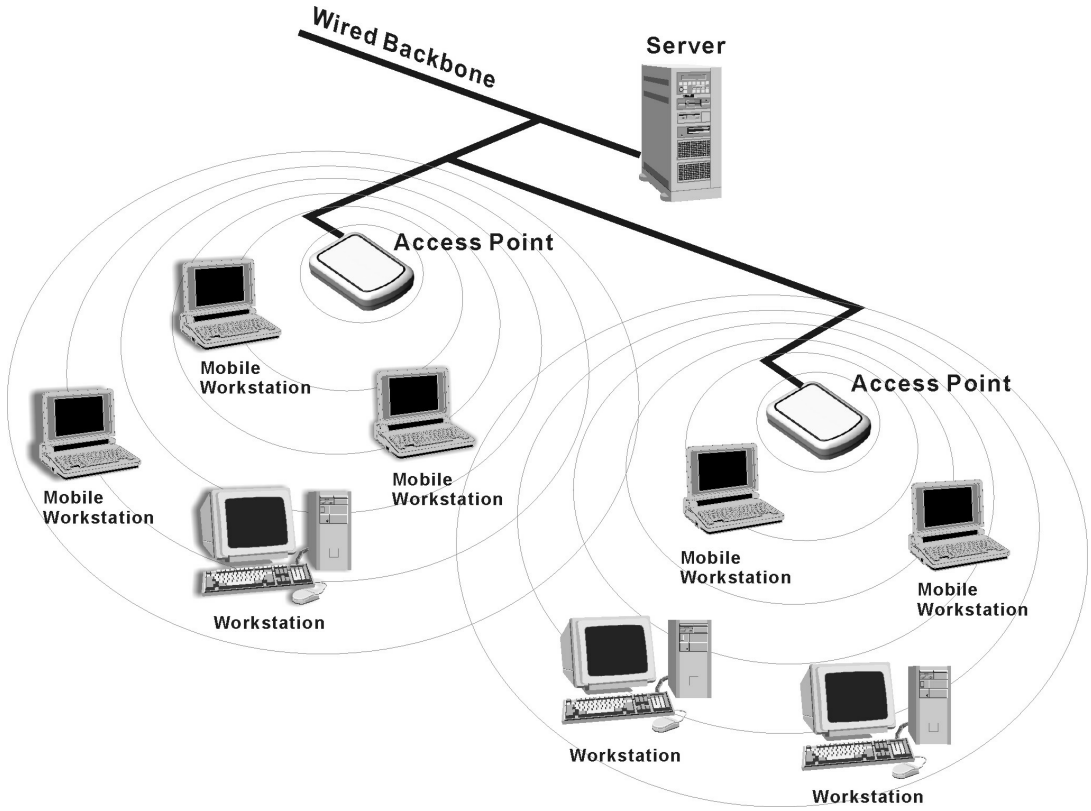
An Ad-Hoc Network can be easily set up with some PCs and our LevelOne 11Mbps Wireless PCMCIA Adapter(s) or our other WLAN devices. This network topology is suitable for trade shows, point of sales, home or small office environment and alike.



## B. Local Area Networking:

With some IEEE802.11b 11Mbps Wireless PCMCIA Adapter(s) and Access Points, it is easy to construct a LAN with access to the Internet for enterprise use.

The LevelOne WPC-0100 11 Mbps Wireless PCMCIA Adapter and Access Point will automatically work at the most suitable frequency when the Access Point is set within the proper range of the WPC card.



## 1.4 Advantages for Using a Wireless Network

The LevelOne 11Mbps Wireless PCMCIA Adapter can wirelessly transmit and receive data, minimizing the need for wired connections, at a speed of up to 11 megabit per second.

It enables LAN users to locate their PC/notebook with access to real-time information anywhere in their organization without wires and cables.

The configuration of the LevelOne 11Mbps Wireless PCMCIA Adapter is easy to switch between peer-to-peer networks and full infrastructure networks. It is, therefore, suitable both to a small number of users in a closed environment and to a broad area with great many users in a large office complex.

The advantages to adapting a wireless network are as follows:

- *No Placement restrictions*: PCMCIA Card provides access to network services without wires; therefore, it gives you more freedom to organize your living and working space.
- *Lower Cost*: In some areas where it is hard or expensive to create a wired network, such as old buildings and classrooms, wireless networking can be your solution.
- *Flexible Workgroups and Lower Cost*: For workspaces that are frequently reconfigured for temporarily use such as demo for exhibitions, wireless networking is easy to set up.
- *Networked Conference Rooms*: Users can access the network as they move from meeting room to meeting room.
- *Ad Hoc Networking*: On site consulting and small workgroups may increase productivity with quick network setup and collaboration software.
- *Branch office Networking*: With an Access Point to bridge between the LAN and Internet, wireless networking provides an easy to install, use and maintain network for a remote or sales office.
- *Campus-Wide Network Mobility:* The roaming capabilities allow enterprise to set up easy to use wireless networks that cover the entire campus transparently.

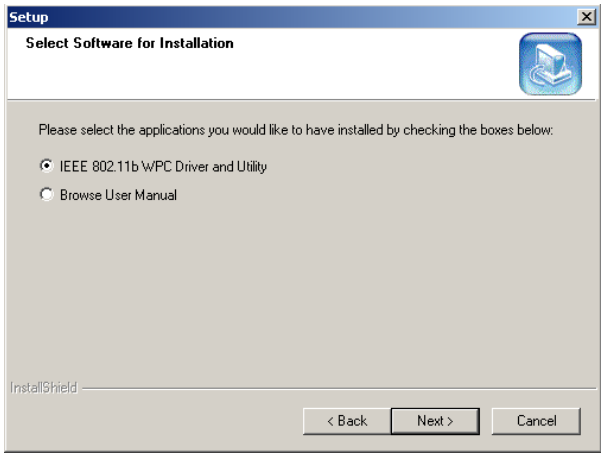
# 2. Quick Start Guide

If you are familiar with computer networking, this Quick Start Guide is the fastest way for you to establish your wireless network.

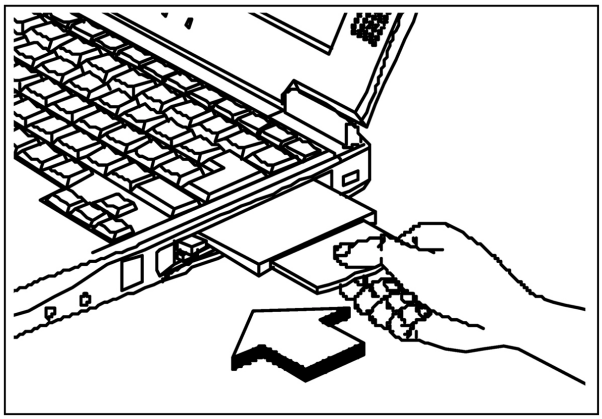
If you need more information than this Quick Start Guide can provide you, the next chapter, Step-by-Step Installation Guide, will run you through the necessary steps.

1.


Insert the CD provided into your CD ROM drive and it will automatically start the setup program.

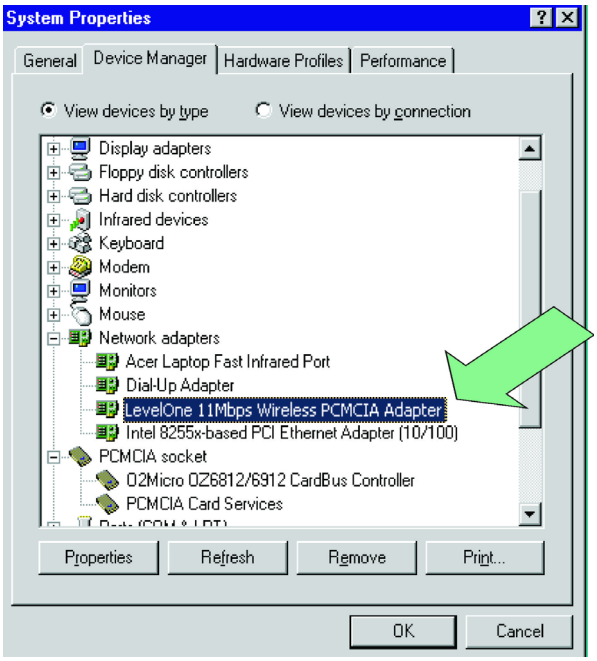
2. 


Follow the installation wizard to complete the software installation process; restart your notebook when the process is finished.

3. 

Insert the IEEE802.11b WLAN PC Card into the PCMCIA slot of your notebook after restarting the notebook.

4.

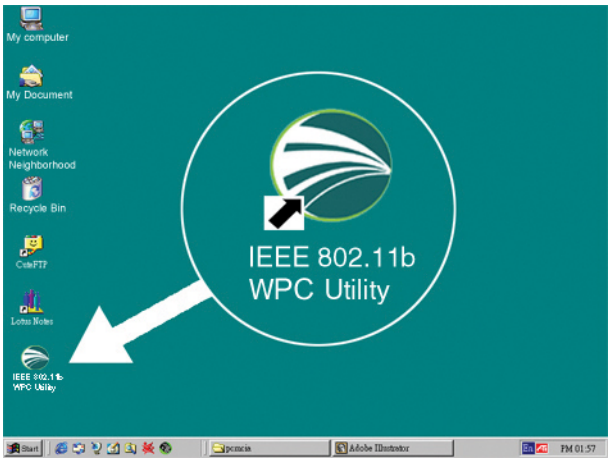



The operating system will detect the LevelOne 11 Mbps Wireless PCMCIA Adapter and install the proper drivers automatically.

You may check the status by the following procedures:

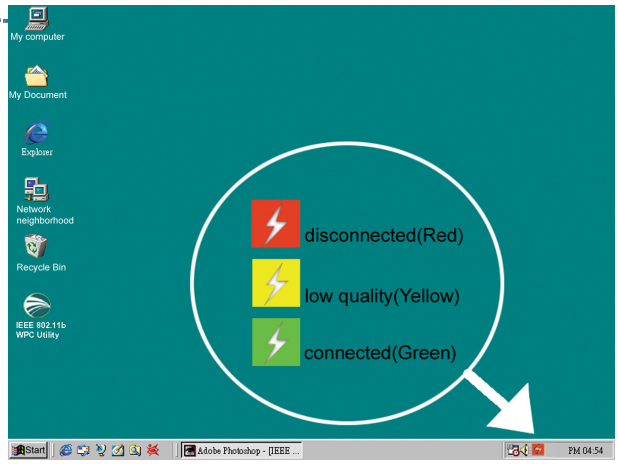
My Computer→Control Panel→System→Device Manager→Network Adapters

5.

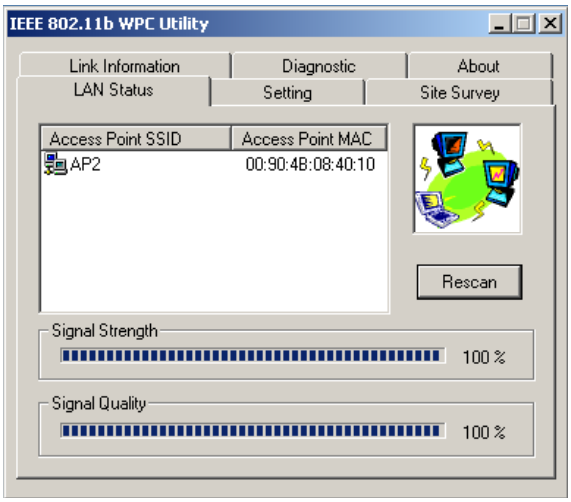



Double click the IEEE802.11b WPC Utility icon on the desktop after the installation, and you will find a small icon in the toolbar at the bottom of the

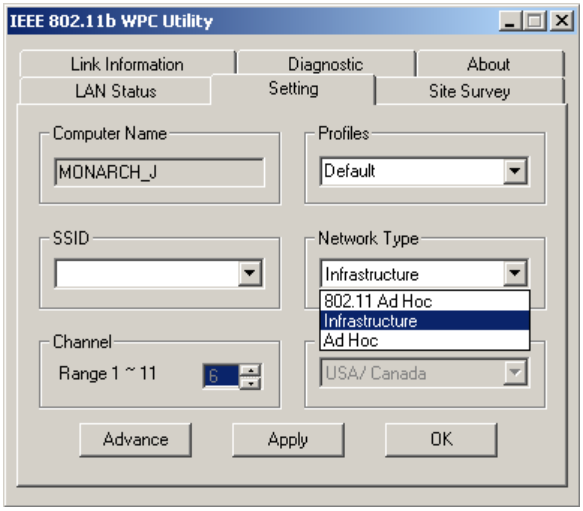
6.




This icon indicates the communication status: if it is green, it means well connected— please go on to step 8; if it is red, it means connection failed— please go on to step 7.

7. 


Double click the status icon and then click “LAN Status” tab. Please push the “rescan” button and then return to the main screen. If the status turns green, then go on to step 8. If it remains red, please repeat the installation process from step 1.

8. 


Double click the status icon and then select the “Setting” tab. Please choose “Infrastructure” mode and type a name in the SSID column (This SSID should be the same as the network ID of your Access point). Or, if you would like to connect with other stations without an Access Point, please select “802.11 Ad Hoc” mode or “Ad-Hoc” mode (we recommend “802.11 Ad Hoc” for compatibility with all IEEE802.11 protocol compliant products).

9.


Click “Apply” and enjoy surfing the Internet.

# 3. Step-by-Step Installation Guide

## 3.1 Over View

This chapter introduces you to a step-by-step process in installing your LevelOne 11Mbps Wireless PCMCIA Adapter and its driver.

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

A. Install the software by using the installation CD. (See 3.2)

B. Install (insert) the wireless LAN card. (See 3.3)

C. Set basic parameters. (See 3.4)

D. Install the required network protocols to communicate with your network—mainly, the TCP/IP protocol and NetBEUI Protocol.

As this product is designed to run under Microsoft Windows compatible operation systems*, it is recommended that people who are familiar with the installation procedures for network operating systems under Microsoft Windows operate the installation process.

*Compatible Microsoft Windows operation systems include Windows 98SE, Windows Me, Windows NT4.0 with Service Pack 3 or later and Windows 2000.

## 3.2 Install the IEEE802.11b WPC Utility / Driver

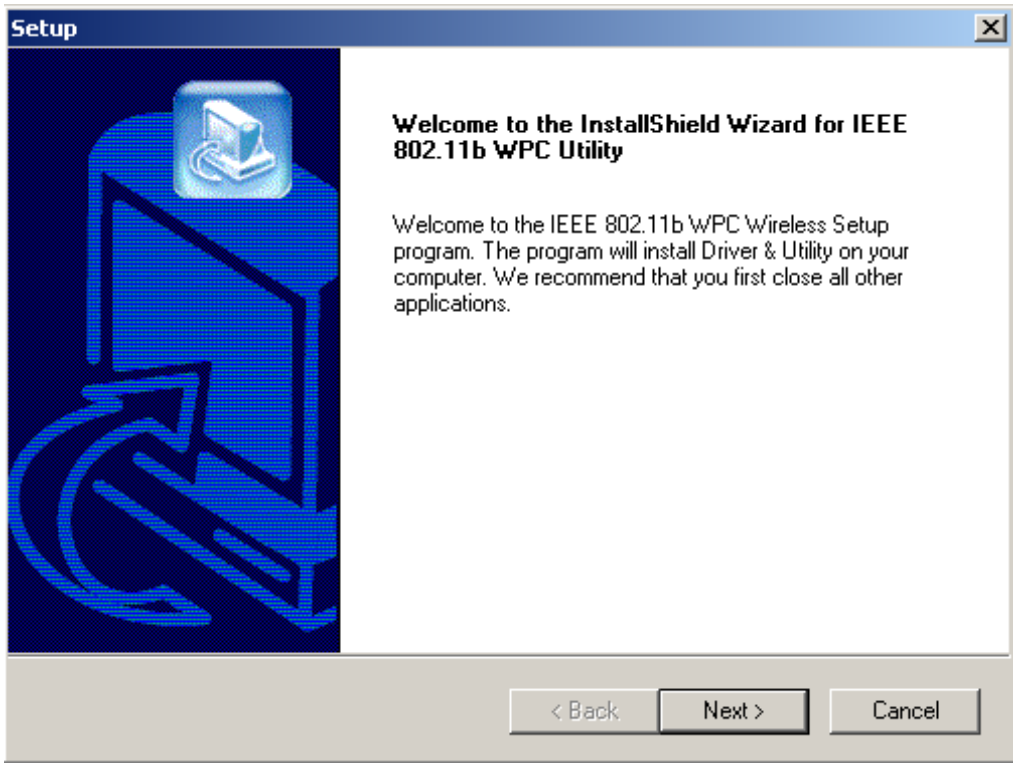
*Please install the IEEE802.11b WPC Utility/Driver first before inserting the LevelOne WPC-0100 11Mbps Wireless PCMCIA Adapter.*

Insert the IEEE802.11b WPC installation CD into your CD-ROM drive. The setup program will then automatically start. You can select the following applications you want to install.

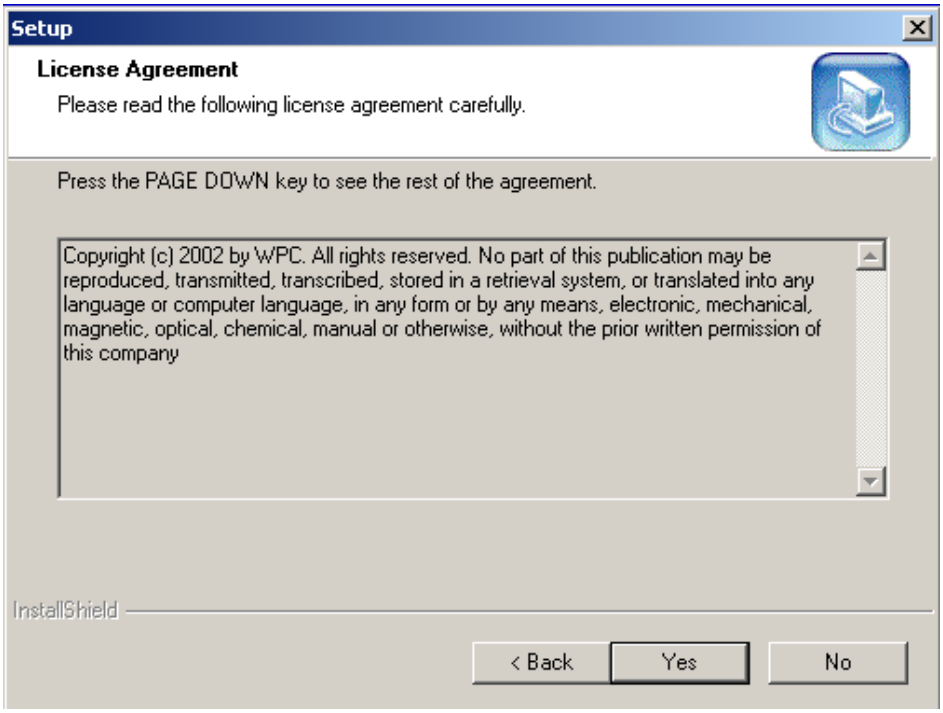
A. Install IEEE802.11b Driver and Utility

B. Browse User Manual

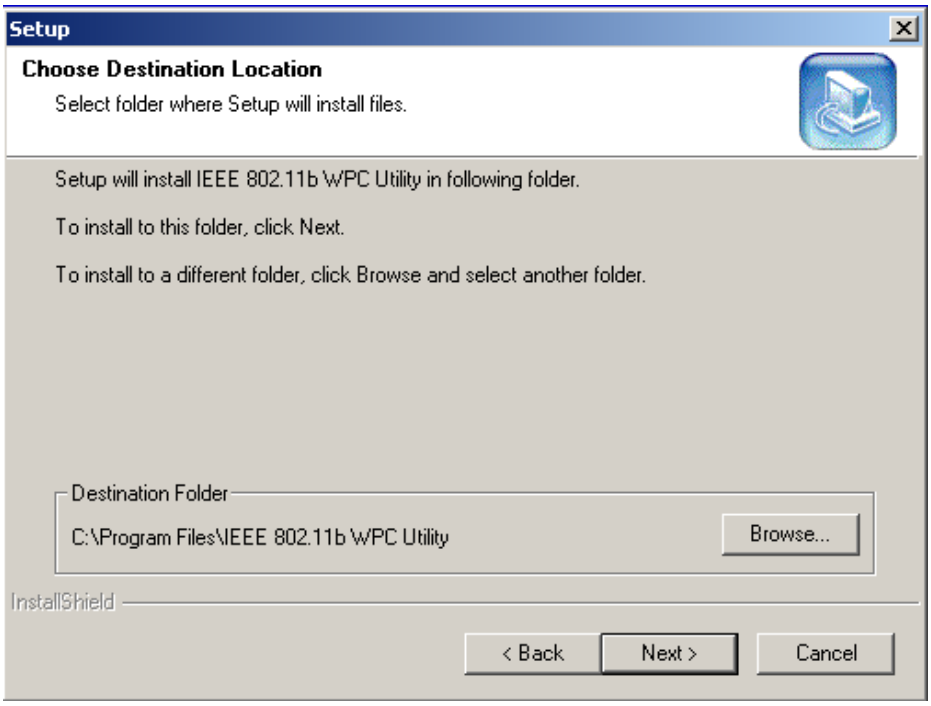
1. When the “Welcome” screen appears click on ”Next”.



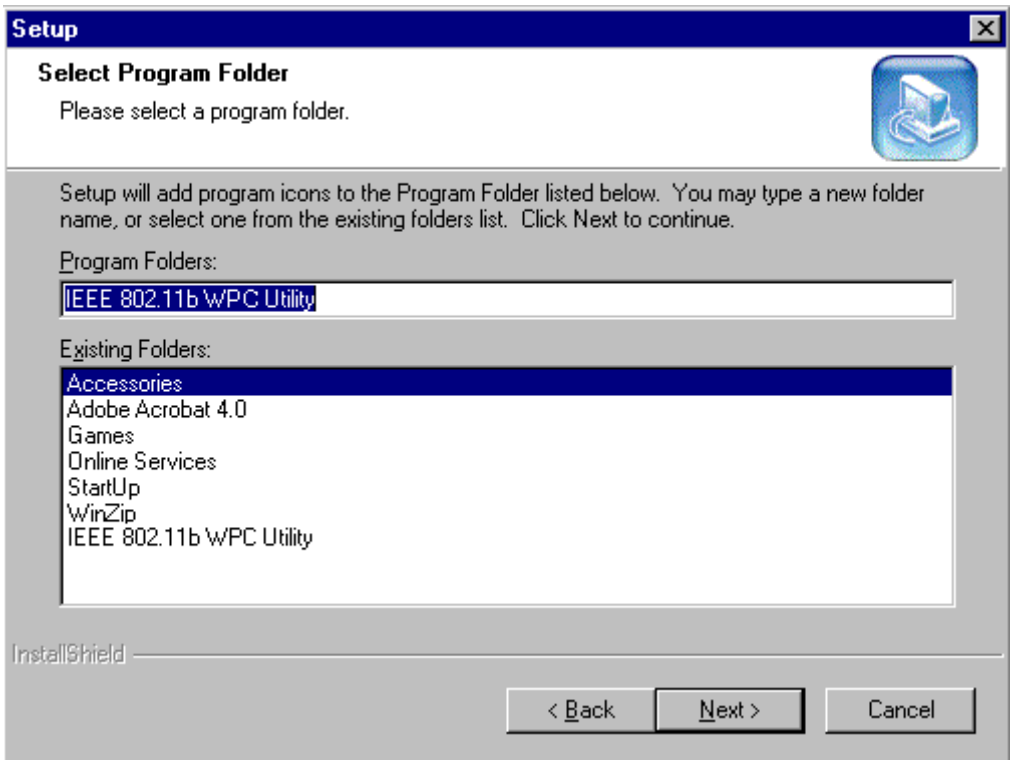
2. Please carefully read the “Software License Agreement“. If you accept the contract, click “Yes“ to move to the next screen. If not, click “No“ to exit.



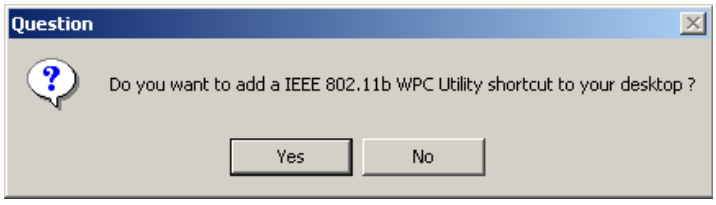

3. The default destination folder is displayed in the setup dialog box. To change the default folder you can click “Browse” to set the destination folder. Click “Next” to go to the next screen.



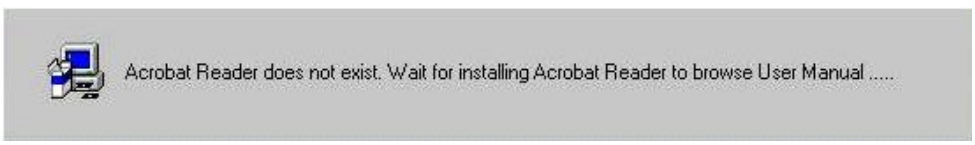
4. Select the Program Folder for IEEE802.11b WPC Utility and click “Next”.



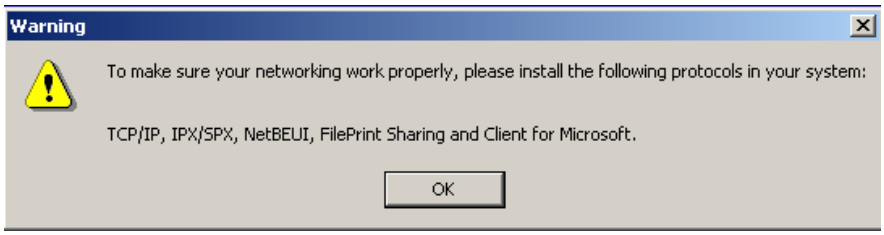

5. You will be asked if you want to add an IEEE802.11b WPC Utility shortcut to your desktop. Click “Yes”.



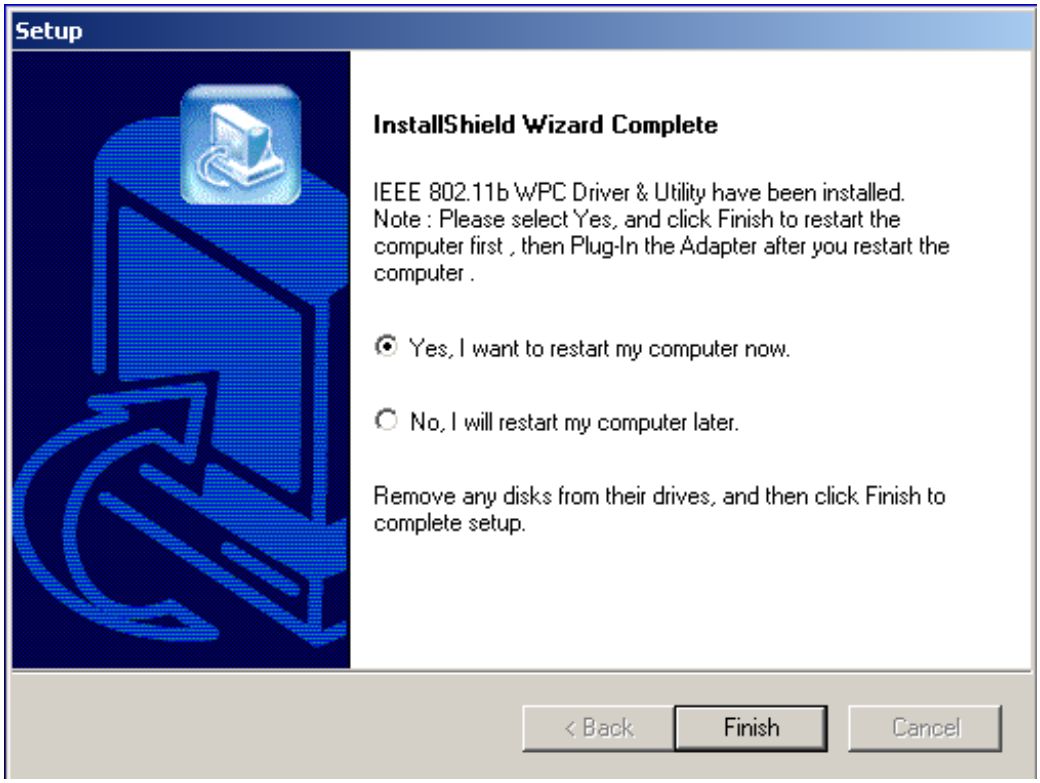

6. The user manual is published in Portable Document Format (PDF). If Acrobat Reader does not exist in your system, the following message will appear. Please follow the instructions to complete the Acrobat Reader 4.05 installation.



7. Once the Acrobat Reader installation has been completed, the following page will appear reminding you to install the Microsoft network protocols for your IEEE802.11b WLAN to work properly.




8. The Driver and Help files will be copied to the system. Wait for the setup program to finish the IEEE802.11b WPC Utility and Driver installation. Then select “Yes” and click “Finish“ to complete the installation. It is recommended you close other applications before rebooting your system.

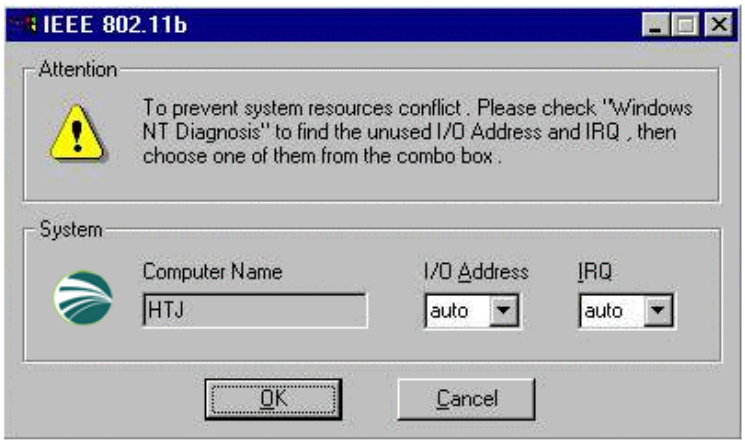



9. You have finished installing the software portion of the LevelOne 11Mbps Wireless PCMCIA Adapter, please refer to Section 3.3 and follow the rest of those installations to complete the entire installation process.

## Additional Note for Windows NT4.0

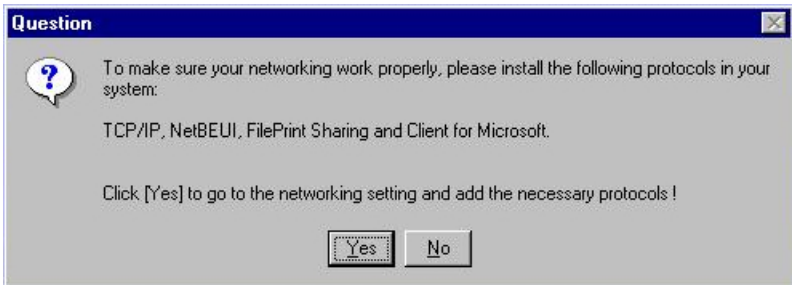
The installation procedure under Windows NT4.0 will be slightly different from the previous Windows 98SE installation shown.

1. Click “OK” and system will auto-select the I/O address and the IRQ, and remind you to choose the unused I/O address and IRQ from Windows NT Diagnosis to prevent system resource conflict.

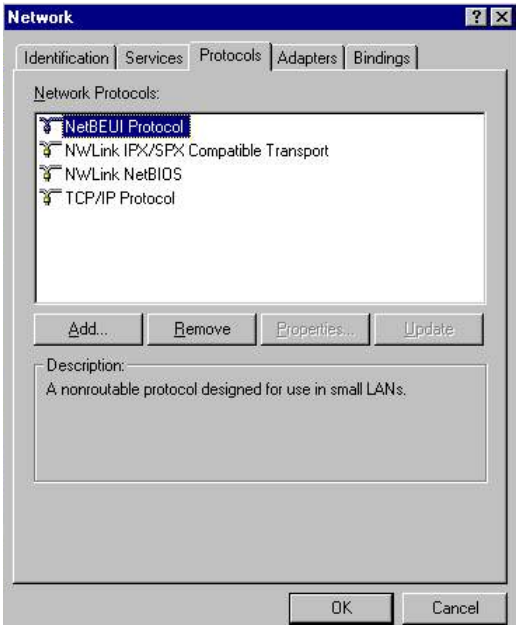



2. If the Ndis 3.0 packet driver already exists in your system, the setup message will be prompted as follows, just click “OK”.

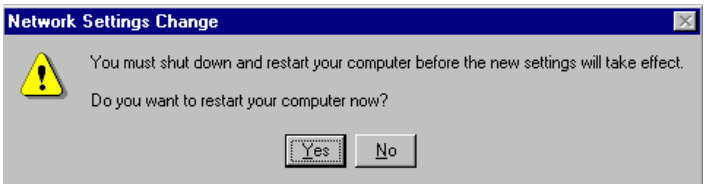
3. A prompt of networking setting will appear as follows. It's the same as Windows 98SE operating system. Click "Yes" if you need to install "Microsoft Network Protocols". Refer to Section 7.2 "Microsoft Network Checklist" for more details.



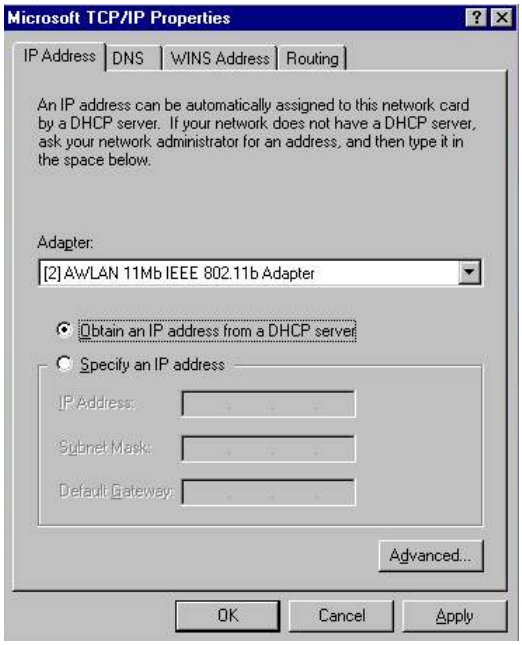

4. The Network properties page will appear automatically on the screen if you click "Yes" in the last step and add the necessary protocols, then click "OK".



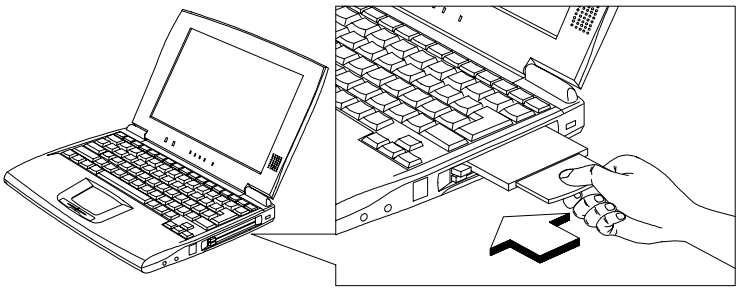

5. The Microsoft TCP/IP setting page will be prompted next. You can use DHCP or manually set the IP address. The related Microsoft Networking setting is like Windows 98SE.



6. Click “Yes” and insert the LevelOne 11Mbps Wireless PCMCIA Adapter before system reboot.



## 3.3 Install the PCMCIA Card



1. The IEEE802.11b WPC driver and utilities are included on the accompanying installation CD. Please follow the installation procedures in Section 3.2 “Install the IEEE802.11b WPC Utility/Driver”. (Your PCMCIA card will not work properly if the driver and utilities are not installed correctly.)

2. Make sure that there is an empty PCMCIA slot for the LevelOne 11Mbps Wireless PCMCIA Adapter. Insert the PC Card and then the system will automatically start.

If you are asked to insert the “Windows 98SE CD-ROM” during the installation, insert your “Windows 98SE CD-ROM” and click “Yes”. Once the setup task is completed, the “Microsoft Internet Explorer” should start up. Please close it.

3. When the PCMCIA card setup task is completed, you need to start the IEEE 802.11b WPC Utility. To start the utility, please refer to the Section 3.4 “Utility Start-up Configuration”.

## 3.4 Utility Start-up Configuration

LevelOne 11Mbps Wireless PCMCIA Adapter has its own management software. Users can control all of the PC Card's function by using the application named IEEE802.11b WPC Utility.

The Utility icon will appear in the working bar by clicking the IEEE802.11b WPC 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 shortcut on the desktop.*

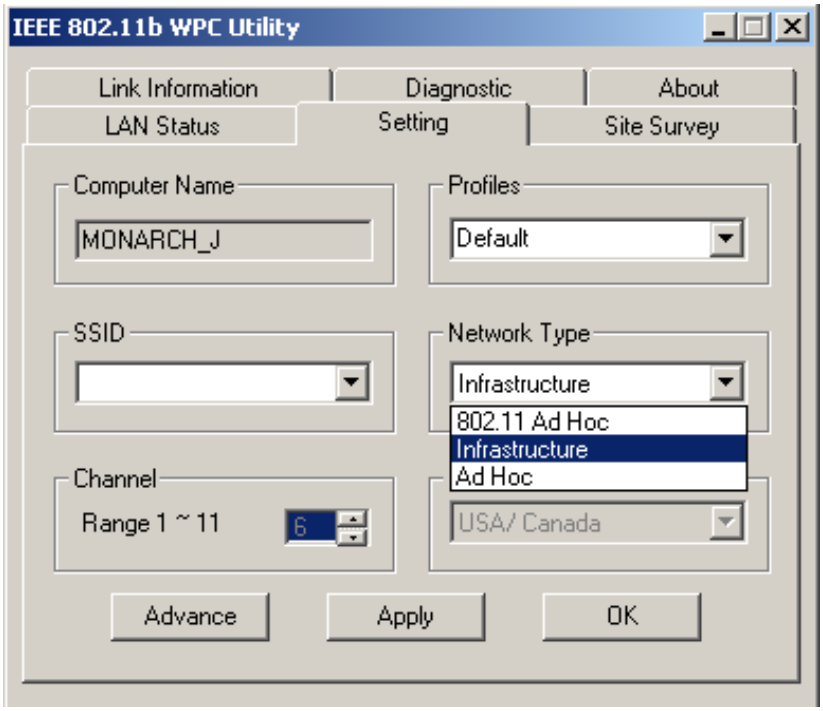
### 3.4.1 Set Basic Parameters

#### 1. Basic Setting for Infrastructure Mode

If you want to connect with an Access Point, please follow the process below:

1. Select the “Setting” tab
2. Select the Network Type as ”Infrastructure”
3. Select the correct SSID
4. Press the “Apply” button.

- **SSID** is the group name that will be shared by every member of your wireless network .You will only be able to connect with an Access Point (AP), which has the same SSID. Note that the SSID will be case sensitivity.
- **Channel:** If the Mode is Infrastructure, this parameter will not be active.



## 2 Basic Setting for 802.11Ad Hoc Mode/Ad Hoc Mode

If you have more computers and only want to place them in a local area network, or you want to communicate directly without using an Access point or any connection to a wired network, then you can select the “802.11 Ad Hoc” Mode or “Ad Hoc” mode on your WPC Utility.

“802.11 Ad Hoc” is the official standard set by IEEE Organization whereas “Ad Hoc” is a pre-standard. Therefore we recommend you to select the “802.11 Ad Hoc” mode.

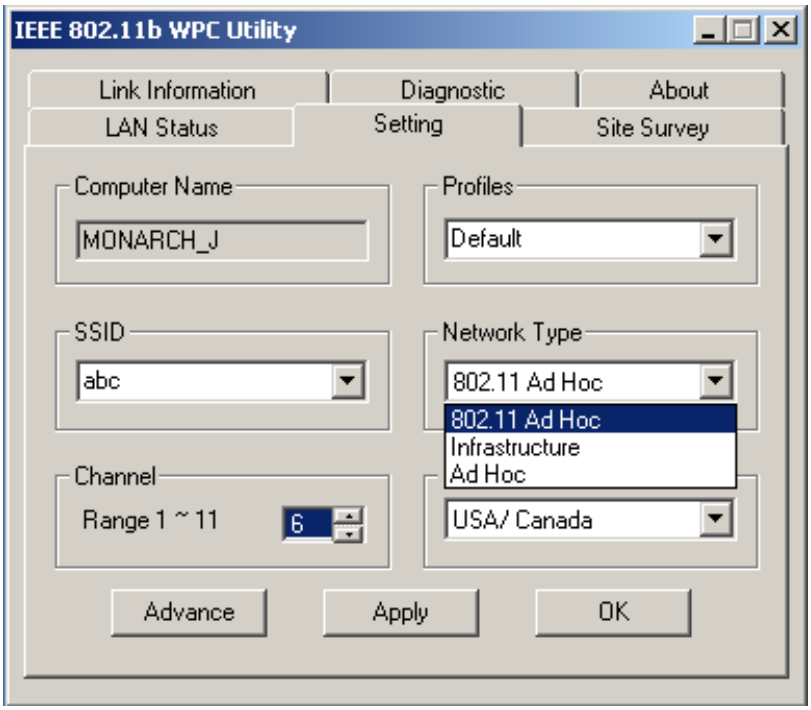
Please note that “802.11 Ad Hoc” mode and “Ad Hoc” mode are not compatible. If you select the “802.11 Ad Hoc” mode, then all computers of your workgroup should be set as the “802.11 Ad Hoc”—vice versa with the “Ad Hoc” mode.

## A. 802.11 Ad Hoc

Please follow the procedures below to set the “802.11 Ad Hoc”:

1. Select the “Setting” tab.
2. Select the Network Type as “802.11 Ad Hoc”.
3. Type in the SSID, which you want to use in your 802.11 wireless LAN.
4. Press the “Apply” button.

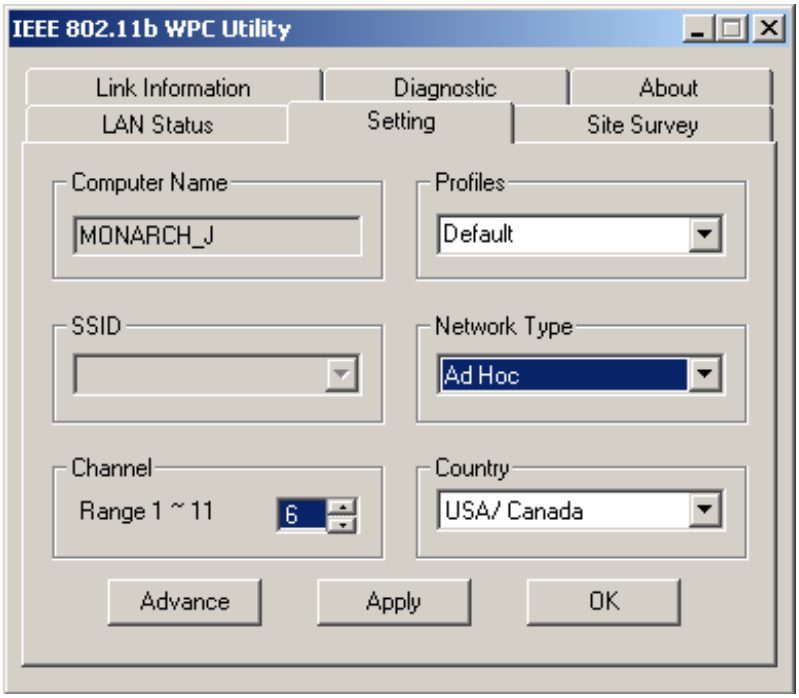
- Every member of your peer-to-peer network must set to the same SSID, which should be case sensitive.



## B. Ad Hoc Mode

Please follow the procedures below to set the “Ad Hoc” Mode:

1. Select the “Setting” tab.
2. Select the Network Type as ”Ad Hoc”.
3. Select the correct channel. (The channel of all computers in one workgroup must be the same.)
4. Press the “Apply” button.




- **Channel** shows radio channel numbers used for networking. Channel number must be the same between stations so computers can communicate in the same local LAN. It can be changed only under the Ad Hoc Mode. Please refer to the following table.

| Country | Channel Range |
|---|---|
| USA/Canada | 1~11 |
| Most of Europe/Australia | 1~13 |
| France | 10~13 |
| Japan | 1~14 |

### 3.4.2 Advanced Settings

Click the “Advance” button in the Setting page and then the following advanced setting for your LevelOne 11Mbps Wireless PCMCIA Adapter will appear.

Regarding the transmission rate, there are four options:

A. Fully Auto (Default)

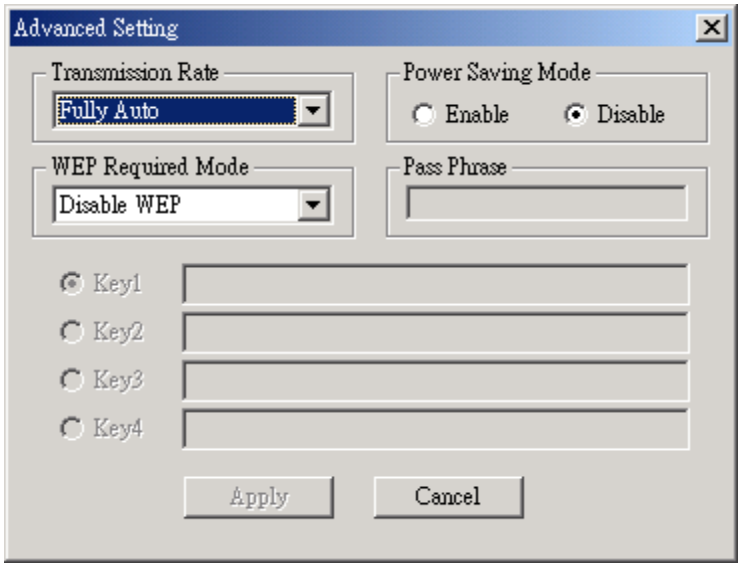
B. Fixed 11Mbps

C. Fixed 5.5Mbps

D. Auto 1 or 2 Mbps

You may select and change transmission rate by clicking the pull-down button.

If you enable the “Power Saving” mode, the PC card can work with low power consumption but the throughput may slow down.



## 1. Encryption Function

You may enhance the security of your network by enabling the “Encryption” function. The WEP Required Mode enables you to define the encryption keys that your IEEE802.11b PCMCIA should use.

! Caution:

If you wish to enable the “Encryption” function, you must enable this function for all computers of your network, and the WEP key needs to be the same for all IEEE802.11b stations.

Follow the steps below to set your WEP Required Mode:

(1) Select one mode by clicking the pull-down button in the WEP Required Mode frame. Set the WEP key in your PC card by selecting one of the following modes:

A. Auto Generate 64 bits

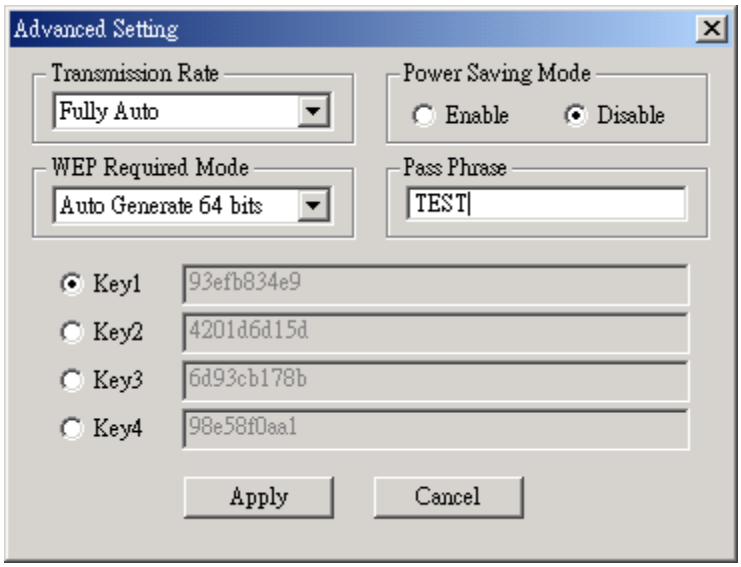
B. Auto Generate 128 bits

C. Manual Generate 64 bits

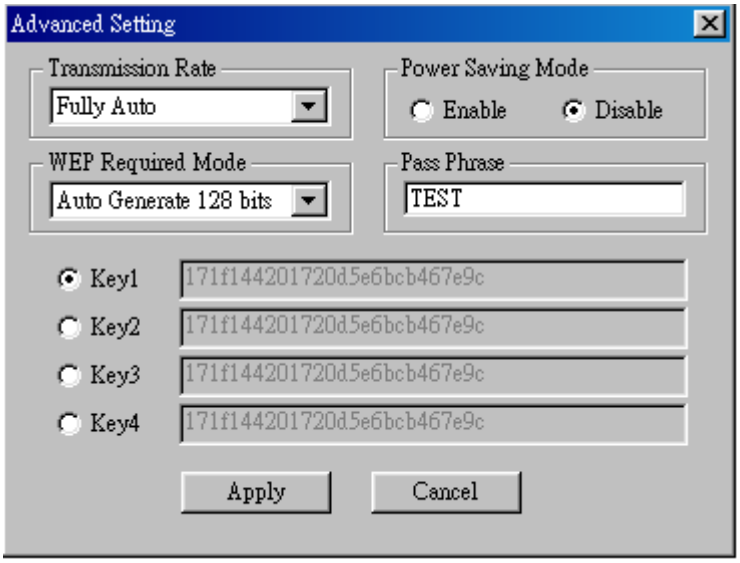
D. Manual Generate 128 bits

(2) If you select “Auto Generate 64 bits” or “Auto Generate 128 bits” mode, type “Pass” and the WEP key will be automatically generated in Key1 box.

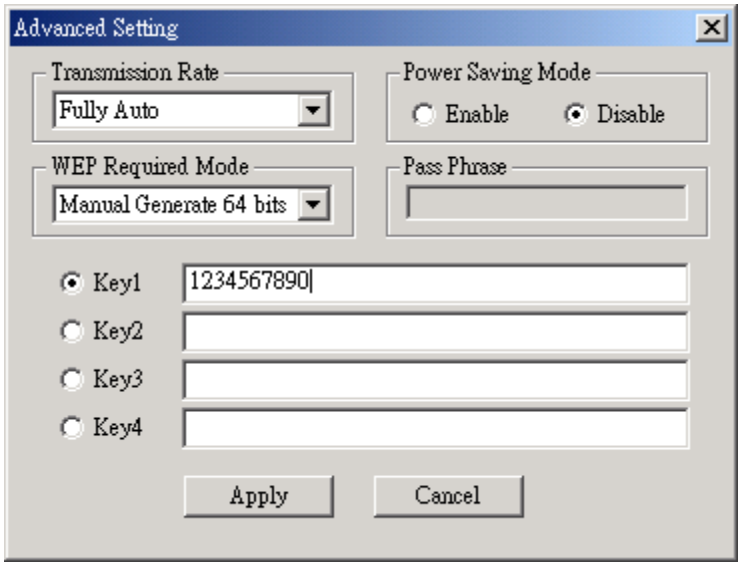
a. Auto Generate 64 bits



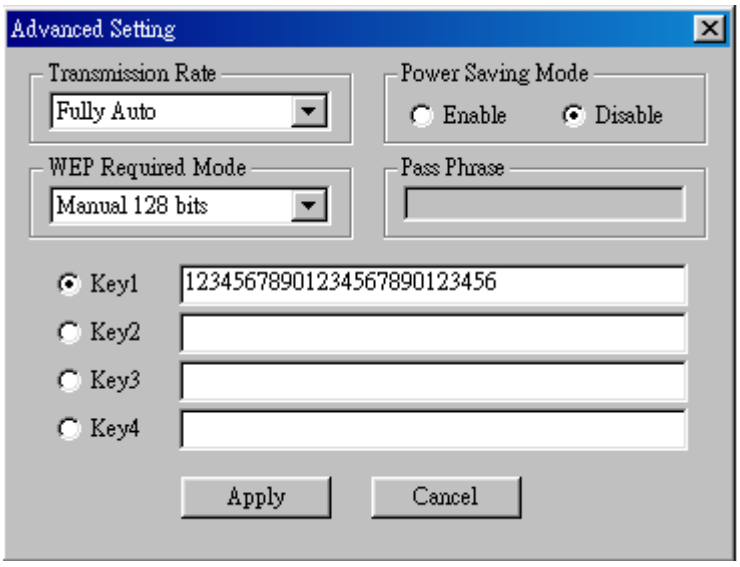

. b. Auto Generate 128 bits



(3) If you select “Manual Generate 64 bits” mode, you can type 10 alphanumeric characters (within the range 0~9 and a~f) as the WEP key manually into any key box.




(4) If you select “Manual Generate 128 bits” mode, you can type 26 alphanumeric characters (within the range 0~9 and a~f) as the WEP key manually into the key1~key4 boxes.




(5) Press the “Apply” button after you finish the above setting.

# 4 Using Your LevelOne 11Mbps Wireless PCMCIA Adapter and Utility

## 4.1 Using Your LevelOne 11Mbps Wireless PCMCIA Adapter

### 4.1.1 Radio Antenna

The embedded radio antenna of your LevelOne 11Mbps Wireless PCMCIA Adapter performs 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.

### 4.1.2 Maintaining Your PC Card

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.

### 4.1.3 Disconnect the Wireless Communications

### 1. Remove Your PC Card

If you do not need the wireless connectivity of your LevelOne WPC-0100 11 Mbps Wireless PCMCIA Adapter, you can follow the procedures mentioned below to remove the PC Card from its slot.

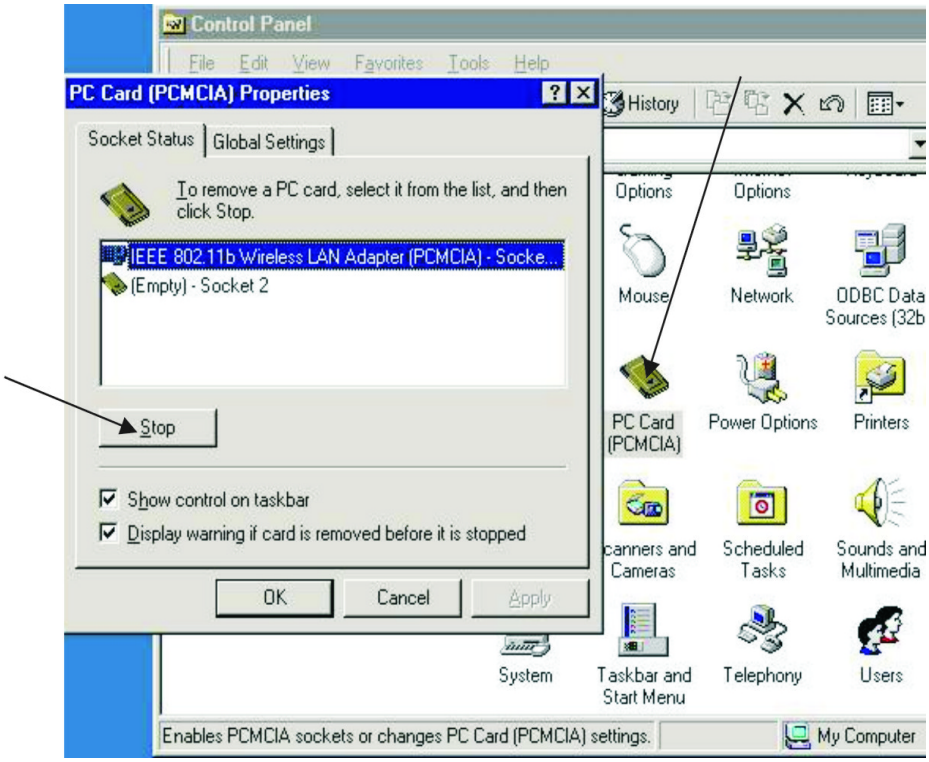
**! CAUTION:**

- When removing the LevelOne WPC-0100 11 Mbps Wireless PCMCIA Adapter, 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 LevelOne WPC-0100 11 Mbps Wireless PCMCIA Adapter:

1. Double click the “My Computer” icon.
2. Double click the “Control Panel” icon and then select the “PC Card” icon.
3. Select the “IEEE802.11b Wireless LAN Adapter (PCMCIA) Socke…” and click “Stop” icon.

4. Wait for a few seconds until the operating system displays a pop-up message to indicate you can safely remove the PC Card.

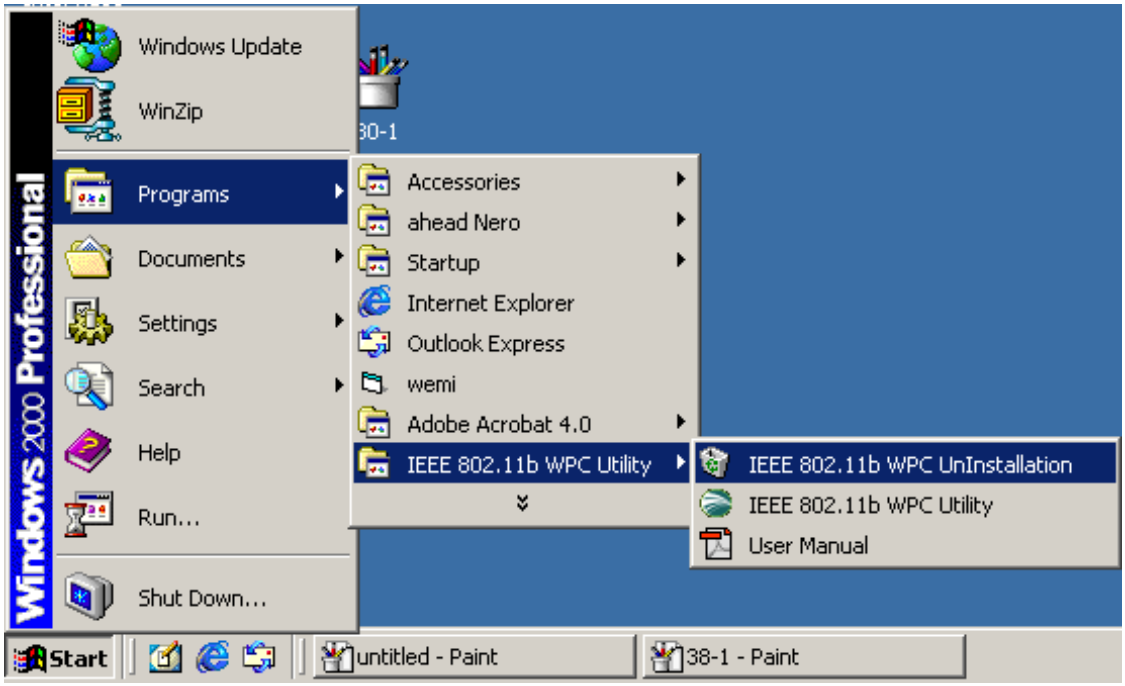


## 2 Uninstall the IEEE802.11b WPC Utility / Driver

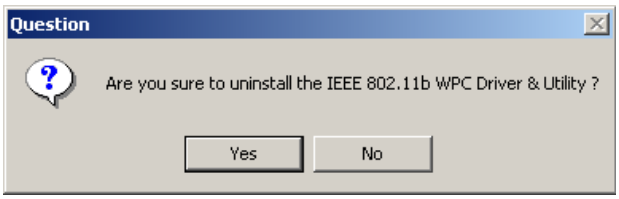
1. To exit the IEEE802.11b WPC Utility, right click on the Utility icon in the task bar and select “Exit”.

2. Click on the “Start Manu” and select the items in sequence as follows:

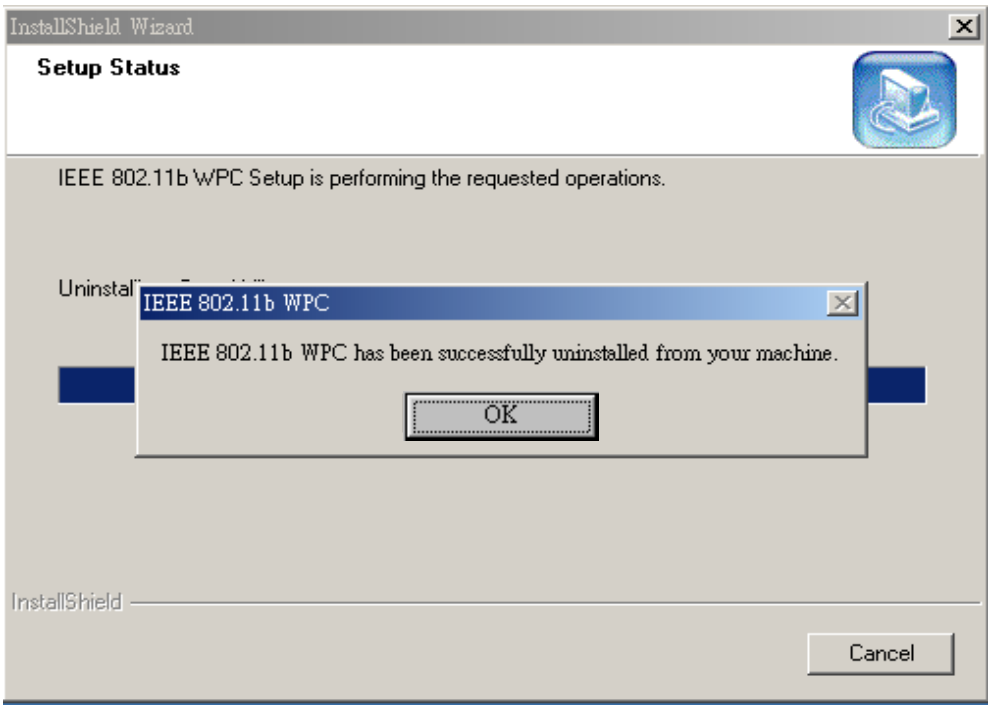
   Program→IEEE 802.11b WPC Utility→IEEE 802.11b WPC Uninstallation



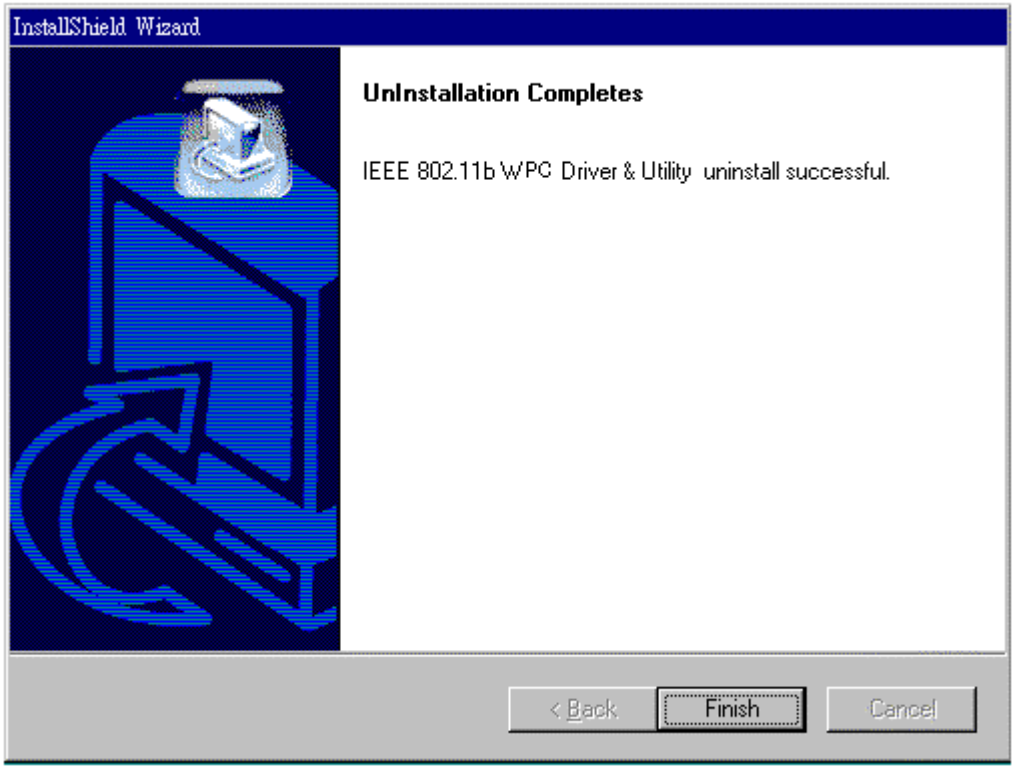

3. You will be asked if you want to uninstall the IEEE802.11b WPC Utility and all of its components. Click “Yes“ to start to uninstall or click “No“ to exit.



4. Click “OK”.



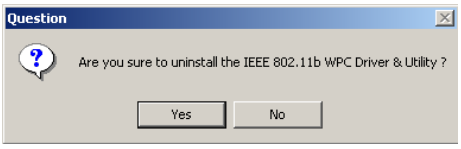

5. Now the uninstallation is completed. Please click “Finish“.



## Additional Note for Windows 2000

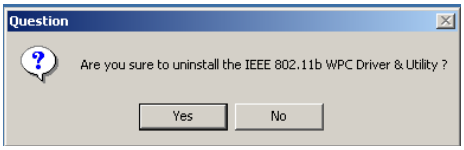
## The following items should be noted:

1. Please do not remove your PC card unless the IEEE802.11b WPC un-installation is completed.

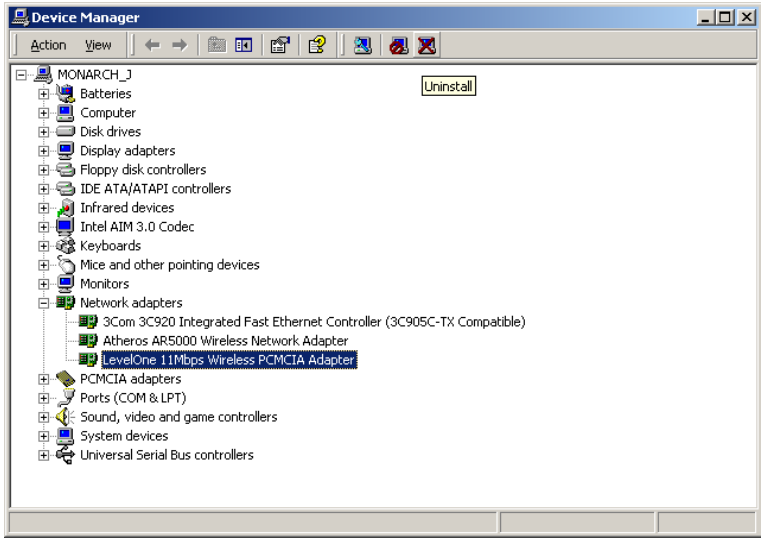



2. Make sure to exit the IEEE802.11b WPC Utility before uninstalling.

3. To uninstall the IEEE802.11b WPC Utility and Driver, the system will prompt you to execute the “Device Manager” to remove the LevelOne WPC-0100 11Mbps Wireless PCMCIA Adapter, and then click “OK”.




4. The system will give you a prompt as below while waiting for the “Device Manager”. Follow the instruction to uninstall “LevelOne 11 Mbps Wireless PCMCIA Adapter”.



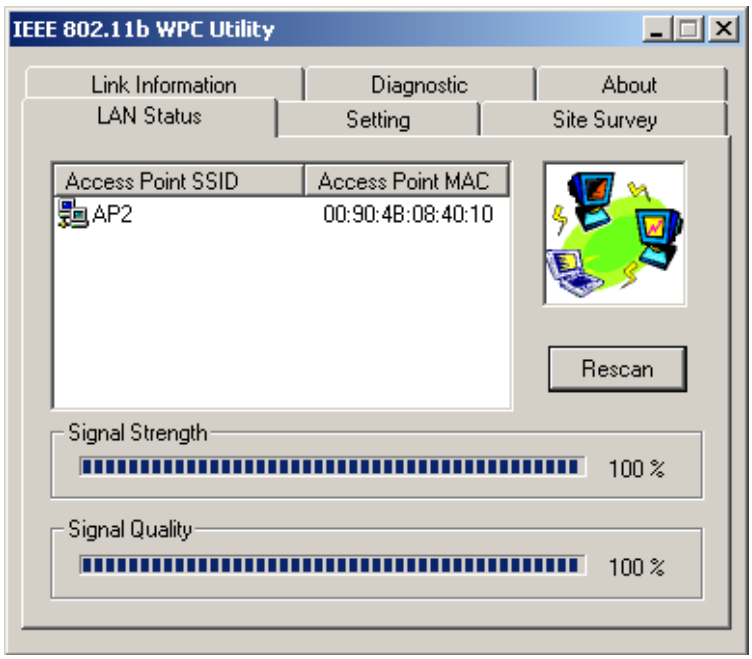
## 4.2 Using the Utility

### 4.2.1 LAN Status

If you want to know the connecting status in Infrastructure Mode or 802.11Ad Hoc Mode, choose LAN Status tab in IEEE802.11b WPC Utility window.

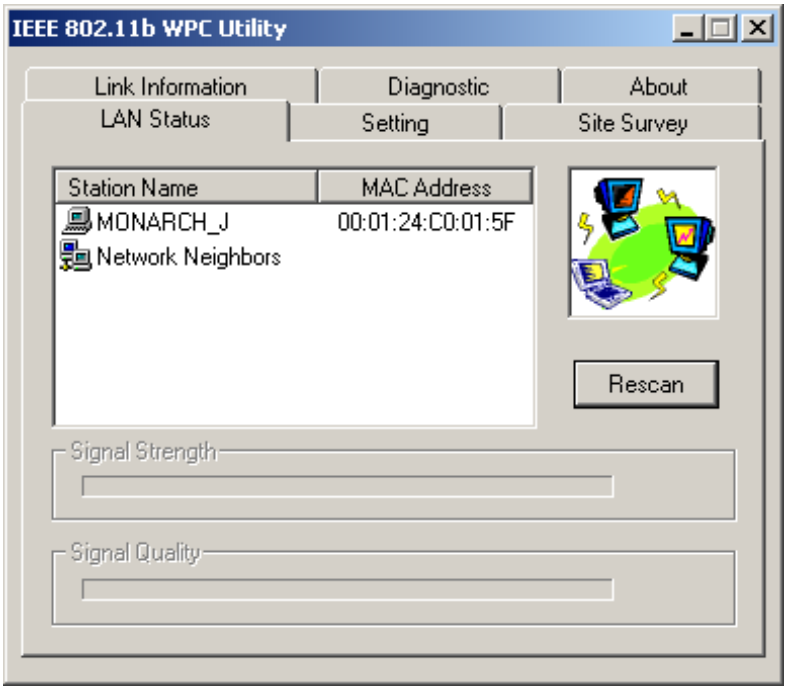
1. Infrastructure Mode:

   - The SSID and MAC of the Access Point, which your computer connects to, will appear in the screen if you choose the Infrastructure Mode.
   - 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 LAN Status page.



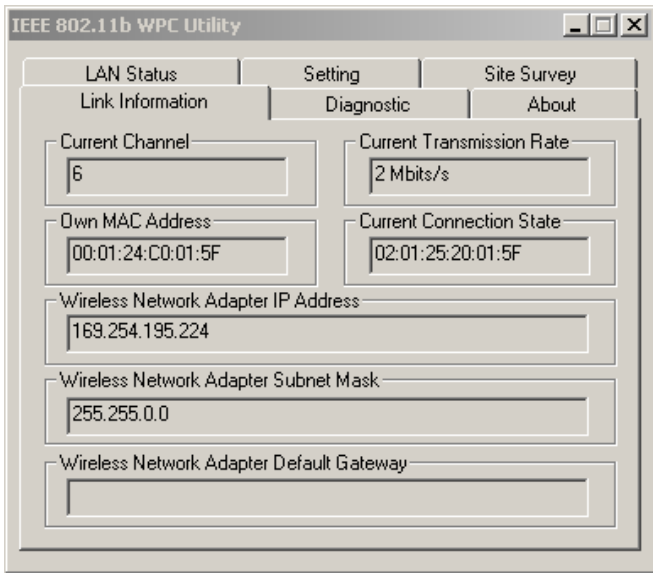
2. 802.11 Ad Hoc Mode / Ad Hoc Mode:

- 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 the right name to 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 computer.



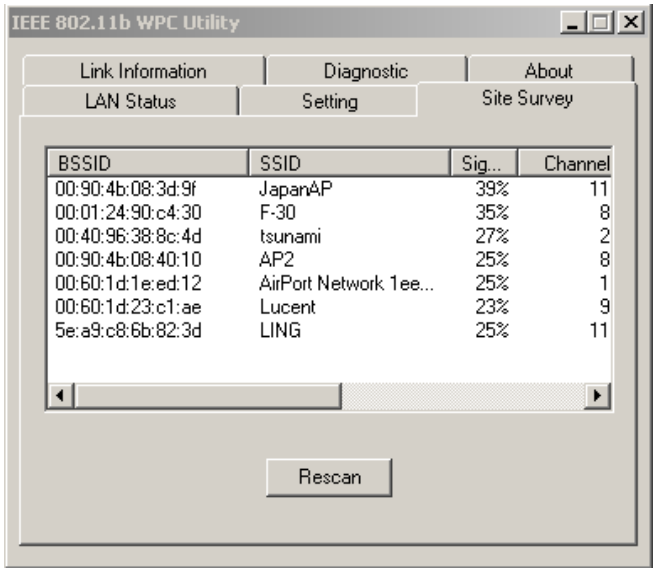
### 4.2.2 Link Information

The link information, showed as the picture below, includes the Current Channel, Current Transmission Rate, Own MAC Address, Current Connection State, Wireless Network Adapter IP Address, Wireless Network Adapter Subnet Mask, and Wireless Network Adapter Default Gateway.



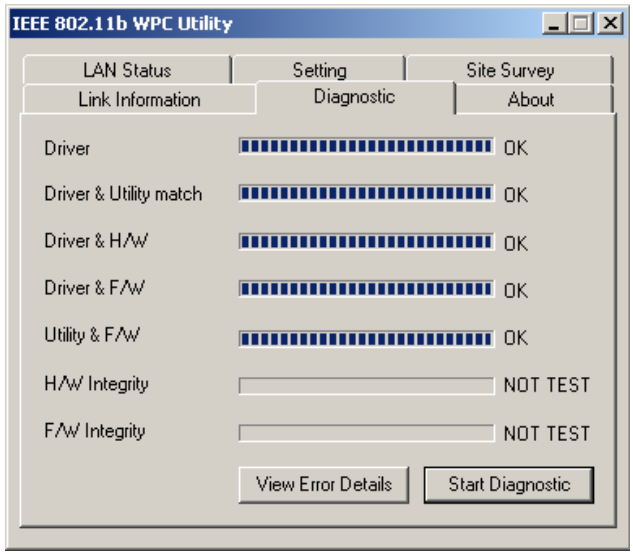

### 4.2.3 Site Survey

In this dialog box, you may get all the information of each Access Point within the communication range of your PC Card. You may choose a preferred one to connect to according to the information (Connecting to the Access Point with the strongest signal is recommended.)



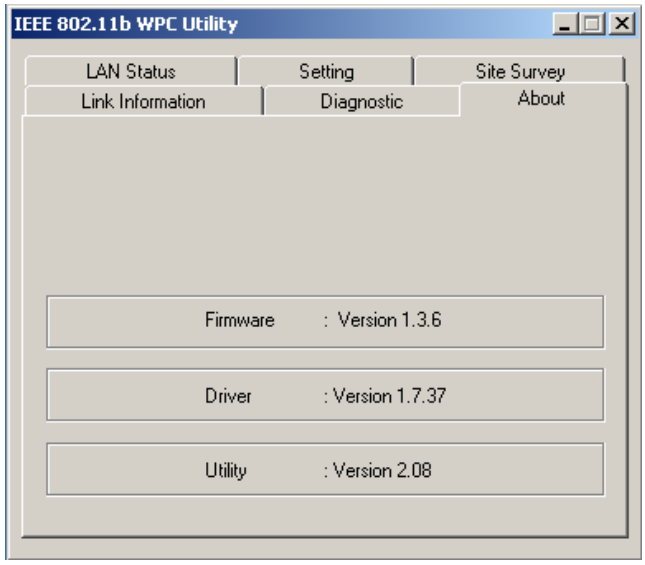
### 4.2.4 Diagnostic

To check if there are any errors in the hardware, firmware, and software 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.




### 4.2.5 About

From this dialog box, you can get the details such as the version information of each Software component.



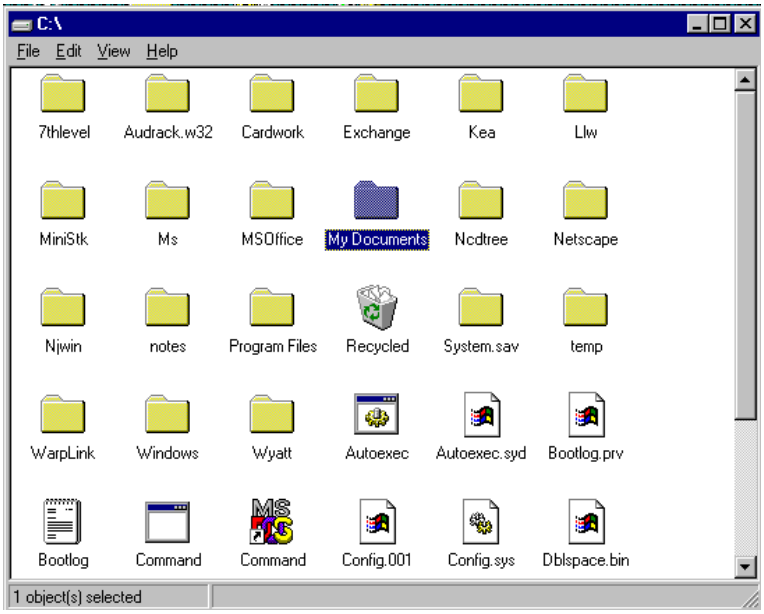
# 5. Networking Applications

To enable the sharing of your Internet access, you should set your connection mode to “Infrastructure” (please refer to the chapter 3.4.1 “Setting”). When the procedure is completed, an access point will appear on the “LAN Status” of IEEE802.11b WPC Utility. Double click it to enter the Network Neighborhood folder. This folder contains the links to all computers in your workgroup on the entire network.

## 5.1 File Sharing in Microsoft Windows 98SE

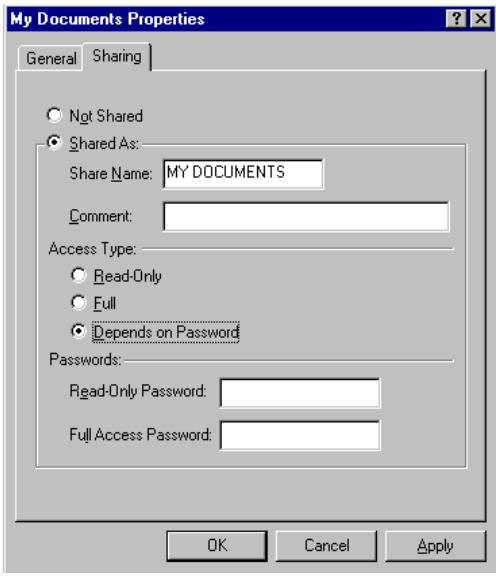
IEEE802.11b WLAN allows the sharing of files between computers that are logged onto the same wireless network. Follow the procedures below to share your “My Documents” directory:

1. First, locate the folder “My Documents“ and right click it.



2. Select “Sharing“ from the available options.

3. Select “Shared As” to allow your folder to be shared. You can also select and define the level of access you want for your folder.



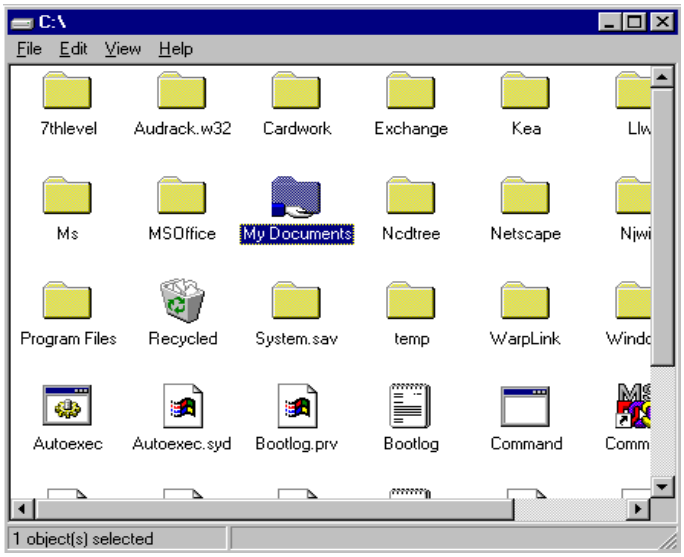

- If “Read-Only” is selected, the other users in the wireless network can only copy files from your folder. Copying files into your folder is not allowed.

- If “Full” is selected, the other users in the wireless network have full access to your folder. They can copy to and from your folder as well as modify files.

- You can also set the option to “Depends on Password” wherein the user in the wireless network can access to your folder through a set password. The set password will determine if the user can only read your folder or has full access to your folder.

4. Click “Apply“ or “OK“ to activate the options that you have set.

   Now you can see the folder “My Documents“ with a little hand under it. The folder is now open for file sharing.

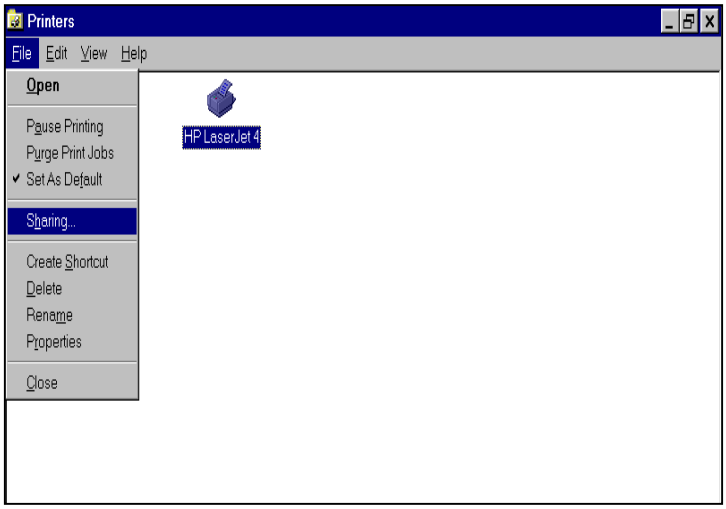



Sharing files in the IEEE802.11b Wireless LAN will be like sharing files on a wired LAN.

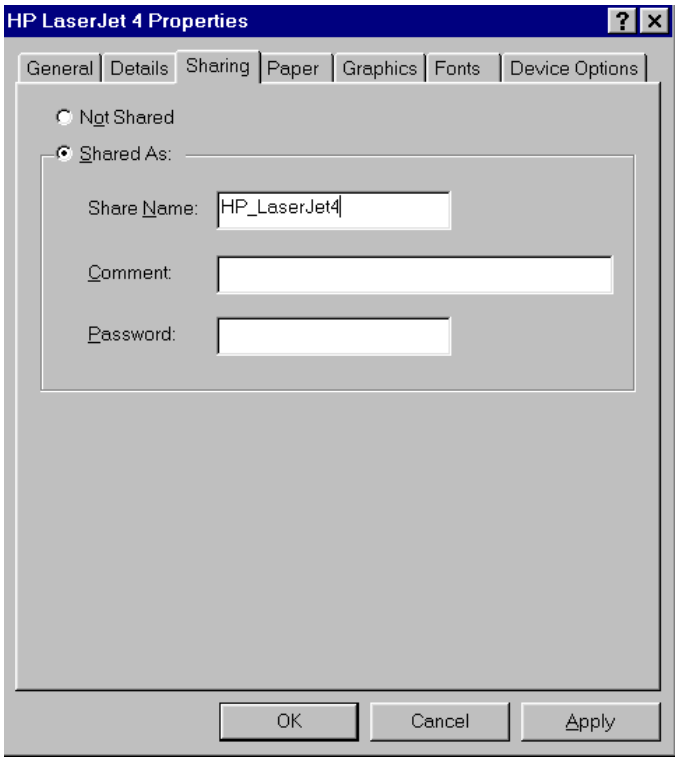
## 5.2 Printer Sharing in Windows 98SE

In order for a printer to be shared across the network, it has to be set as the network printer.  Follow the instructions below to set a printer as a network printer:

1. Click the “Start“ button, point to the “Settings“, and then click “Printers“.
2. In the Printers window, click the printer you want to share.
3. Click “Sharing…“ on the “File“ menu.



4. Click the Sharing tab, then click " Shared As " , and if necessary, enter a password.



## 5.3 Using the shared folder

1. Double click the “Network Neighborhood“ icon, and then double click the computer where the shared folder is located.
2. Double click the folder you want to connect to.
3. You may want to assign a drive letter for the shared folder that you connect to.
4. In the “Network Neighborhood“, double click on the computer where the shared folder is located.
5. Click on the folder you want to connect, and click “File“ menu, and then click “Map Network Drive“.
6. Select an available drive, and then click OK.
7. Type in a password if required.

## 5.4 Using the shared network printer

1. In the “Network Neighborhood“, locate and double click the computer where the printer you want to use is located.
2. Double click the printer icon in the window.
3. To set up the printer, follow the instructions on the screen.
4. After you have set up a network printer, you can use it as if it were attached to your computer.
5. If a password is required, the Windows will prompt you, and you need to enter the password that had been assigned to this shared printer.

Whenever printing a document through the network, be sure to select the printer that is set as the network printer.

# 6. Specifications

## 6.1 Physical Specifications

| | |
|---|---|
| Dimensions | (L x W x H) 110 X 54 x 6mm |
| Weight | 39g |
| Host Interface | PCMCIA PC Card Type II |
| Antenna | Internal diversity Antenna Supporting |
| Status Indicator | LED (Indicates RF/Link Activity) |

## 6.2 Networking Compliant Standards

| | |
|---|---|
| Standard | LevelOne 11Mbps Wireless PCMCIA Adapter |
| Host Systems | Windows98SE/2000/Me/XP/NT |
| Media Access Protocol | CSMA/CA with ACK |
| Network Protocol | TCP/ IP, IPX, NetBEUI |

## 6.3 Available Channels in Each Country/ Area

### Radio Channel Selection Table

| | Regulatory domains | | | | |
|---|---|---|---|---|---|
| Channel_ID | U.S.A. | Canada | Most of Europe | France | Japan |
| 1 | X | X | X | — | X |
| 2 | X | X | X | — | X |
| 3 | X | X | X | — | X |
| 4 | X | X | X | — | X |
| 5 | X | X | X | — | X |
| 6 | X | X | X | — | X |
| 7 | X | X | X | — | X |
| 8 | X | X | X | — | X |
| 9 | X | X | X | — | X |
| 10 | X | X | X | X | X |
| 11 | X | X | X | X | X |
| 12 | — | — | X | X | X |
| 13 | — | — | X | X | X |
| 14 | — | — | — | — | X |

X = Yes — = No

## 6.4 Operating Specifications

| | |
|---|---|
| Frequency Band | 2.400 ~ 2.4835GHz (subject to local regulations) |
| Number of Channel: | USA and Canada: 11 (1~11)<br>France: 4 (10~13)<br>Most European countries: 13 (1~13)<br>Japan: 1~13 or 14 |
| Operating Voltage: | 3.3 V ~ 5V |
| Spreading: | DSSS (Direct Sequence Spread Spectrum) |
| Data rate: | 11Mbps, 5.5Mbps, 2Mbps, 1Mbps |
| Transmit Power: | Transmit power: 15 dBm min. (typical)<br>Nominal Temp Range: 17 dBm max.<br>Extended Temp Range: 13 dBm min. |
| Receive Sensitivity: | **Nominal Temp Range:**<br>1 Mbps: 10-5 BER @ -90 dBm, minimum<br>5.5 Mbps 10-5 BER @ -87 dBm, minimum<br>11 Mbps 10-5 BER @ -84 dBm, minimum<br>**Extended Temp Range:**<br>1 Mbps 10-5 BER @ -84 dBm, minimum<br>5.5 Mbps 10-5 BER @ -81 dBm, minimum<br>11 Mbps 10-5 BER @ -78 dBm, minimum |

| | |
|---|---|
| Modulation: | 11 Mbps and 5.5 Mbps: CCK;<br>2Mbps: DQPSK;<br>1Mbps: DBPSK |
| Security: | 64-bit/ 128-bit WEP Encryption |
| Temperature Range: | 0 ~ 60°C (Operating), -20 ~ 75°C (Storing) |
| Humidity: | Max. 95% Non-condensing |
| Operating Range: | Open Space: 200 – 400m;<br>Indoor: 35m - 100m |
| Roaming: | Full mobility and seamless roaming from cell to cell and across access points (subject to access point) |
| Management Utility: | Link configuration for network participation and diagnostics |
| EMC certification: | FCC part 15 class in US;<br>ETSI 300.328, ETSI 300.826 and EN60950 in Europe<br>TELEC/JATE in Japan |

# 7. Troubleshooting

If you encounter some problems installing the LevelOne 11Mbps Wireless PCMCIA Adapter or you want to confirm whether your card is installed properly or not, refer to the procedure below after you have installed the card.

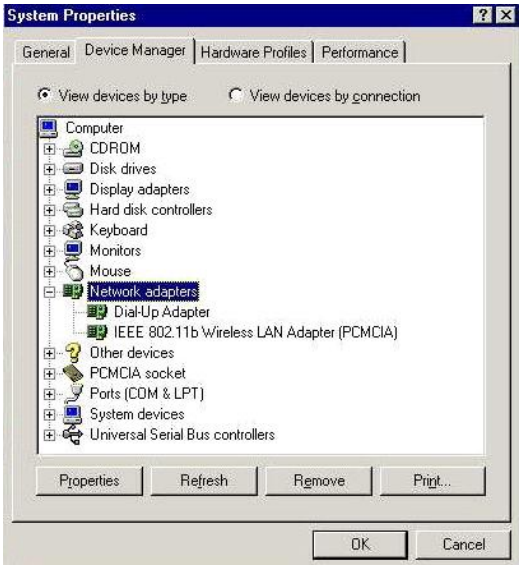
## 7.1 Check the Various Properties of the Card

To verify if your PC Card has been set into the PCMCIA slot properly, you can follow the procedures below.

Click on the “Control Panel” icon and then on the “PC Card”. Check the Socket Status of PC Card Properties whether there is a PCMCIA card in one of the sockets or not. If you find the LevelOne 11Mbps Wireless PCMCIA Adapter (PCMCIA) in one of the sockets, it means a card is detected.

To verify if the driver has been set in your computer properly, you can follow the procedures below.

Right click the “My Computer” icon and then select “Properties”. You will enter your system properties. Select the Device Manager tab and click on the Network Adapter. You will find the LevelOne 11Mbps Wireless PCMCIA Adapter if it is installed successfully.



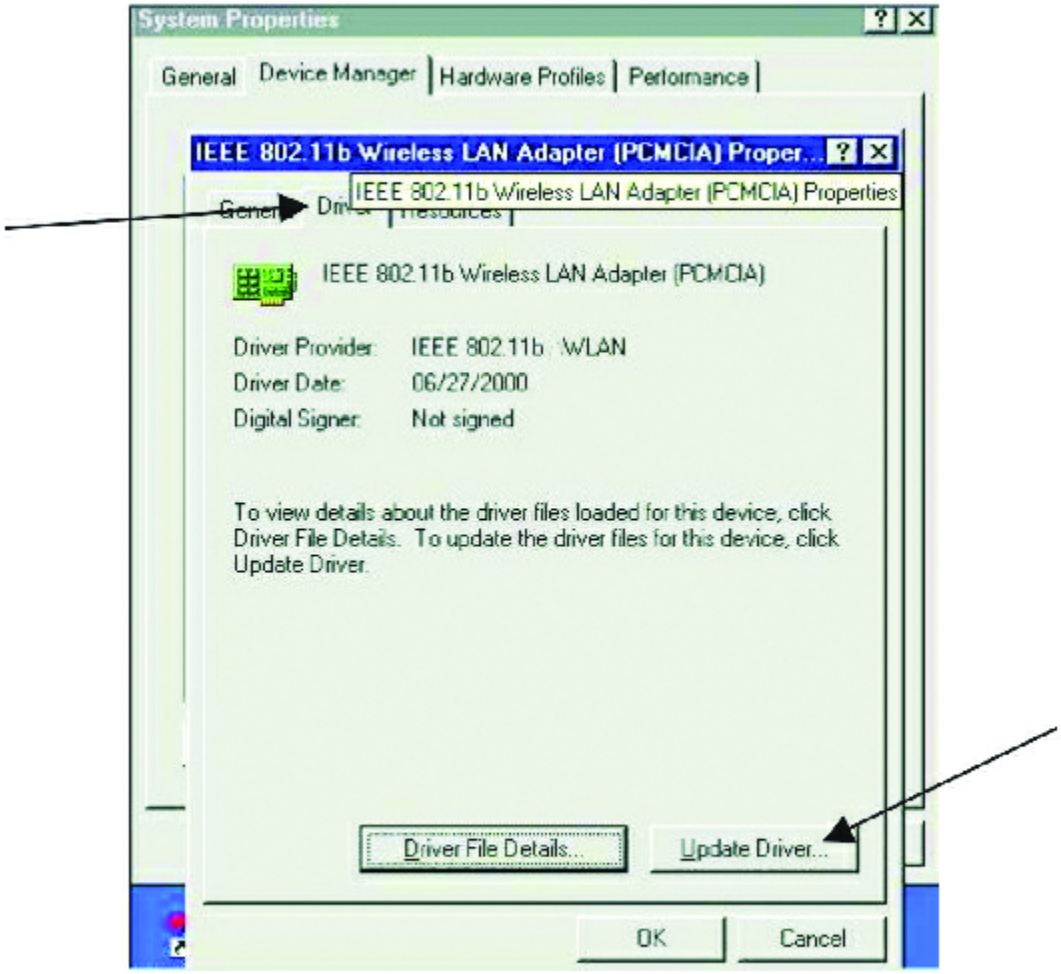

- If there are Question-mark (?) or Exclamation-mark (!) in yellow on your IEEE802.11b Wireless LAN Adapter in the previous picture (PC Card Properties & System Properties), please make sure you have inserted the right PC Card and the proper driver and utility have been installed. If you are not sure, follow the procedure below to reinstall (update) the driver.

    1. Enter “System Properties” and click on the “Device Manager” tab.

    2. Click on “Network Adapter” and select the IEEE802.11b Wireless LAN Adapter.

    3. Click on the “Driver” tab of the IEEE802.11b Wireless LAN Adapter properties, and then click on “ Update Driver” button.

4. Follow the Update Device Driver Wizard to complete the driver installation.



## 7.2 Microsoft Networking Checklist

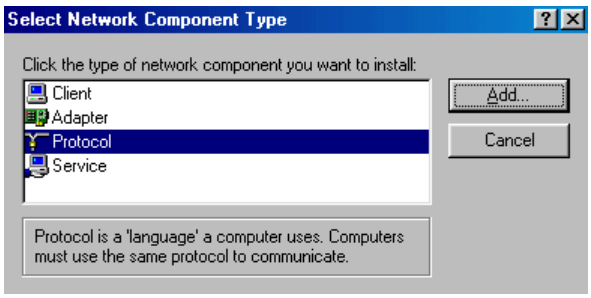
In order for the IEEE802.11b WPC to run properly, some network items must be presented in the Microsoft “Network Neighborhood” setup. To check and activate the network setup, right click the “Network Neighborhood” and select “Properties” with your mouse. The following items should be presented in the network setup:

1. IEEE802.11b Wireless LAN Adapter (PCMCIA)
2. IPX/SPX-compatible Protocol→IEEE802.11b Wireless LAN Adapter (PCMCIA)
3. NetBEUI→ IEEE802.11b Wireless LAN Adapter (PCMCIA)
4. TCP/IP → IEEE802.11b Wireless LAN Adapter (PCMCIA)
5. File and printer sharing for Microsoft Networks
6. Client for Microsoft Networks

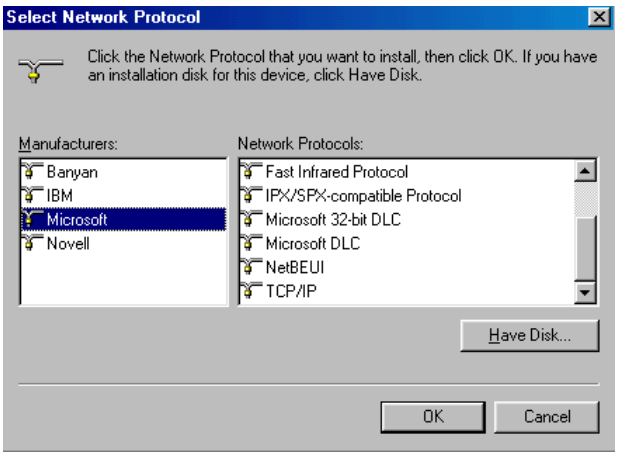
If any of these items are missing, please follow the instructions below to install them properly:

### 1. Set up the Network Protocols:

i. Click the “Add” button and select “Protocol” on Network “Setting Configuration“.



ii. Click “Add” and then choose the network protocol. Select “Microsoft” as the manufacturer and “NetBEUI”, “TCP/IP”, and “IPX/SPX-compatible” for the network protocols. Then click “OK”.

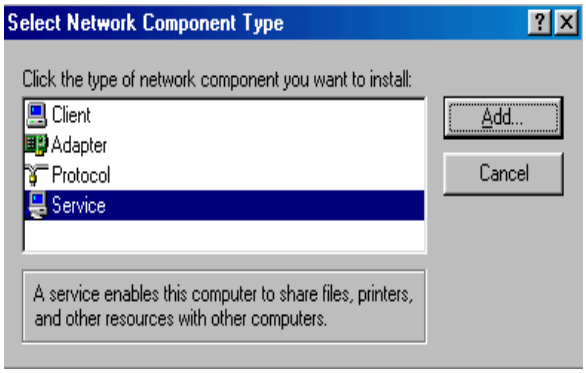



iii. Now your network protocol should be set. Please check if your network needs any special requirements to operate in your office environment.

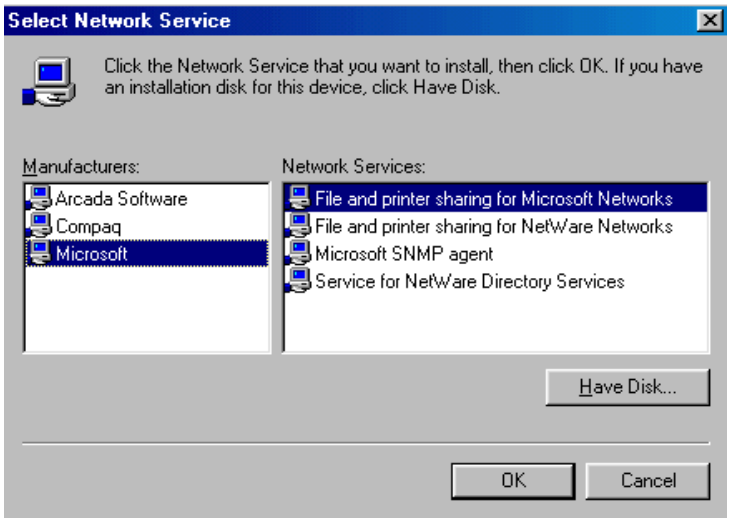
Note: If you are following the Step-by-Step Installation Guide, please refer back to Chapter 2 Step 8 **AND DO NOT REBOOT THE SYSTEM UNTIL YOU ARE FINISHED WITH Step 9.**

## 2. Network Service for Microsoft Networking:

i. Click “Add” and select “Service”.



ii. Select “Microsoft” as the manufacturer and choose “File and printer sharing for Microsoft Networks” for network service;




iii. Click “OK“ to set the network service.

## 7.3 Others

### 1. Wired Equivalent Privacy (WEP)

If you enable the WEP function, which is the same as the Access Point (AP) in your LevelOne 11Mbps Wireless PCMCIA Adapter, but still cannot connect with the AP. It may be that the key generated by your PC card is different from the key generated by the AP even if the same Pass phrase is used between your PC card and AP. Please follow the steps below to set WEP manually.

1. Check the WEP type and WEP key setting from the AP.
2. Select “Manual” under the WEP Advanced Settings.
3. Type a set of WEP key generated from the AP into the key1 blank of your Encryption frame, other space you can type anything you like, but make sure all the blanks (Key1~Key4) will be filled.
4. Remember to press the “Write“ button and “OK“ to finish the WEP setting.

### Additional Note for Windows 98 earlier edition

If your system is running Windows 98 first edition, you may use one of the following ways to make IEEE 802.11b WPC Utility work properly.

1. Copy and replace the file “MFC42.dll from CD Drive of “windows\system” of Windows 98SE directory.
2. Upgrade your system and Internet Explorer by downloading files from the Microsoft web site.

## Additional Note for Windows 2000

1. IEEE802.11b WPC Utility error message

- If the IEEE802.11b WPC Utility and Driver installation was completed, but the following error message appears, you should check if your LevelOne 11Mbps Wireless PCMCIA Adapter was inserted successfully and packet protocol installed was correctly. (See Section 3.2 " Install the IEEE802.11b WPC Utility/Driver"—Additional note for windows 2000 to install packet protocol, in the User Guide for details.)

2. Uninstall failed

- If you cannot uninstall IEEE802.11b WPC Utility and Driver successfully. Please follow the procedure below to reinstall the Utility and Driver.
-

(1) Find the file AWLAN.isu and delete it from the Programs files\ IEEE802.11bWPC Utility folder.

(2) Reboot your system

(3) Reinstall IEEE802.11b WPC Utility and Driver.

(4) Uninstall again.

# FCC Class B Radio Frequency Interference Statement

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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:

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

**Notice 1:**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Notice 2:**

Shielded interface cables, if any, must be used in order to comply with the emission limits.

**Notice 3:**

This device complies with part 15 of the FCC Rules. The operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

***CAUTION: To comply with FCC RF exposure compliance requirements, a separate distance of at least 2.5cm must be maintained between the antenna of this device and all people.***