

User's Guide

11Mbps Wireless LAN USB Adapter

Version 1.0

INFORMATION TO USER

Federal Communications Commission Statement

This product has been tested and complies with the specifications 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. The antenna used for this transmitter must be installed to provide a separation distance of least 20 centimeters from all persons and must operate in conjunction with other antenna or transmitters. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to 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 is found 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 or device.
- Connect the equipment to an outlet other than receiver's.
- Consult a dealer or an experienced radio/TV technician for assistance

Notice: The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any change or modification not expressly approved by the party responsible could void the user's authority to operate the device.

Regulatory

The wireless LAN PC Card must be installed and used in strict accordance with the manufacturer's instructions. This device complies with the following radio frequency and safety standards.

USA - Federal Communications Commission (FCC)

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference that may cause undesired operation.

Europe - R&TTE Directive

This device complies with the specifications listed below:

- ETS 300-826 General EMC requirements for Radio equipment.
- ETS 300-328 Technical requirements for Radio equipment.
- EN60950 Safety requirements for Radio equipment.

EU Countries not intended for use

The ETSI version of this device is intended for home and office use in Austria, Belgium, Denmark, Finland, France (with Frequency channel restrictions), Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom.

The ETSI version of this device is also authorized for use in EFTA member states Iceland, Liechtenstein, Norway and Switzerland.

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Chapter 1: Introduction

The 11Mbps Wireless LAN USB Card

The 11Mbps Wireless LAN USB Card now has a new , higher-powered antenna that provides a greater range than ever. The increased sensitivity helps filter out interference and noise to keep your signal clear. Improved error correction in the chipset keeps you operating at higher transmission rates for longer distances. And since you only need USB ports, you're free to use your other ports for additional accessories.

Plug-and-Play device, Windows 98/ME/2000 will automatically recognize the USB wireless LAN adapter and initiate the installation process. Upon successful installation, the USB wireless LAN adapter will communicate seamlessly with other wireless home and office networking products.

Using radio frequency (RF) technology, WLANs transmit and receive data over the air, minimizing the need for wired connections. Thus, WLANs combine data connectivity with user mobility, and through simplified configuration, enable movable LANs. This wireless networking solution has been designed for both large and small businesses, and it is scalable so that you can easily add more users and new network features as your business grows.

This manual will assist you in the installing WLAN USB adapter.

Feature

- ◆ IEEE 802.11b Direct Sequence high rate compatible.
- ◆ High data rate 11/5.5/2/1 Mbps.
- ◆ Auto Rate fallback
- ◆ IPX, NetBEUI, TCP/IP protocols supported.
- ◆ Wired Equivalent Privacy Algorithm (WEP) (40 bits/128 bits)
- ◆ 802.11 Power save in infrastructure mode.
- ◆ Passive/Active scan. Long/Short preamble.
- ◆ RTS/CTS handshake.
- ◆ Beacon and Probe response generation in an IBSS.
- ◆ Plug-N-Play and easy setup

Hardware Description

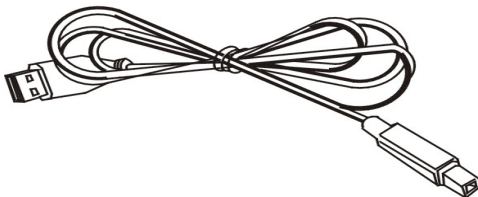
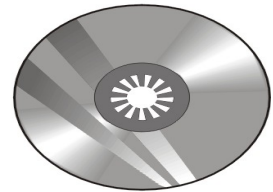
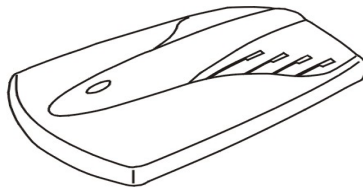
The Wireless LAN USB adapter supports an 11 Mbps half-duplex connection to Ethernet networks. This adapter is fully compliant with 2.4 DSSS wireless networking as defined in IEEE 802.11b. It can be installed in any notebook and desktop with a USB port. Support is currently provided for Windows 98/ME/2000/XP.

LED Indicator:

The Wireless LAN USB adapter includes an LED indicator, as described in the following table.

Status	Description
ON	Power ON (Green light)
Flashing	Adapter is receiving or transmitting data via a wireless connection (Red light)

Package Contents



- ◆ One 11Mbps Wireless LAN USB adapter.
- ◆ One USB Cable.
- ◆ One setup Utility CD-ROM(User Guide on CD).
- ◆ Quick Installation Guide.

System Requirements

- ◆ An available USB port.
- ◆ USB 1.1(12 Mbps) and USB 2.0(480 Mbps) ports ready.
- ◆ Operating System: Windows 98, ME, NT, 2000, or XP.
- ◆ 2M bytes free disk space for utility and driver installation.

Chapter 2: Network Configuration and Planning

Wireless LAN Basic

The adapter supports legacy Ethernet LAN network configuration options as defined by the IEEE 802.11b standards committee.

The adapter can be configured as:

- ◆ Ad-Hoc for departmental or SOHO LANs.
- ◆ Infrastructure for enterprise LANs.
- ◆ LAN-Interconnection for point-to-point link as campus backbone.

Network Topology

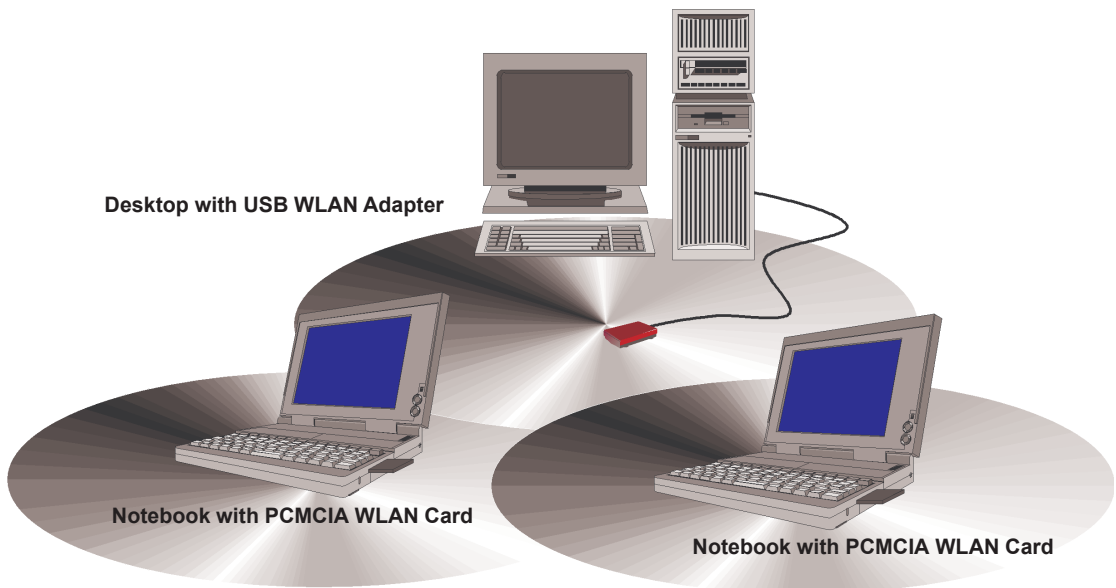


Fig 2-1 Ad-Hoc Wireless LAN

An Ad-Hoc wireless LAN is a group of computers, each equipped with one WLAN adapter, connected as an independent wireless LAN. Computers in a specific Ad-Hoc wireless LAN must be configured to share the same radio channel.

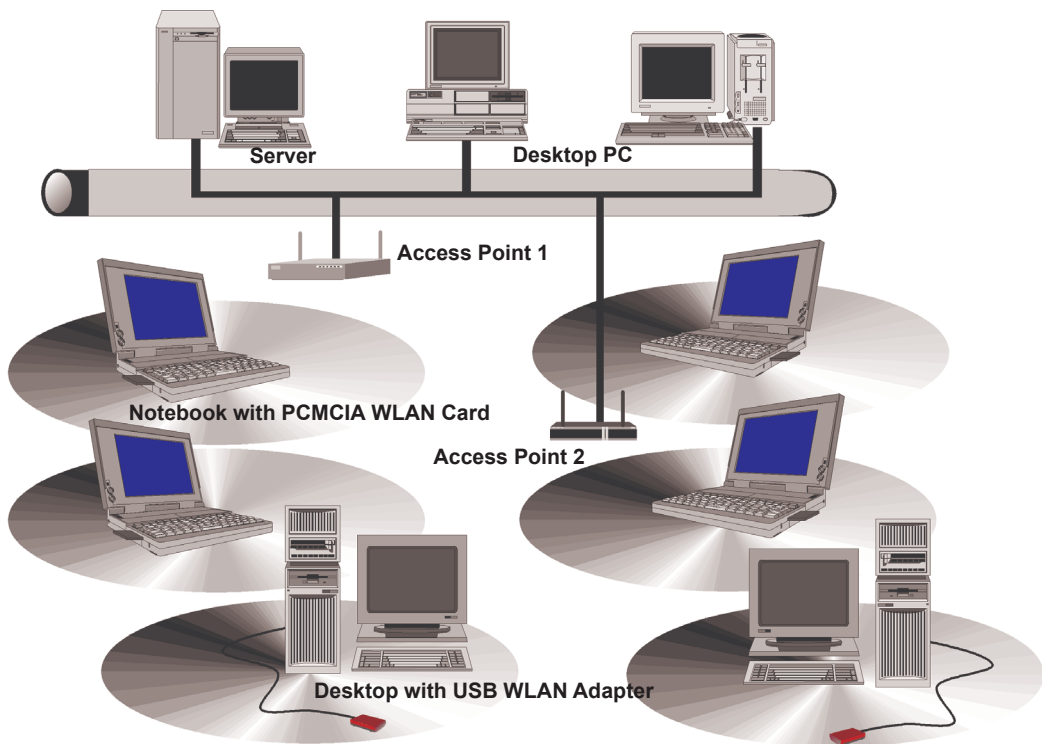


Fig 2-2 Infrastructure Wireless LAN

The adapter provides access to a wired LAN for wireless workstations. An integrated wireless and wired LAN is called an infrastructure configuration. A group of adapter PC users and an Access Point compose a Basic Service Set (BSS). Each adapter PC in a BSS can talk to any computer in the wired LAN infrastructure via the Access Point.

An infrastructure configuration extends the accessibility of a adapter equipped PC to a wired LAN, and doubles the effective wireless transmission range for 2 adapter PCs. Since the Access Point is able to forward data within its BSS, the effective transmission range in an infrastructure LAN is double.

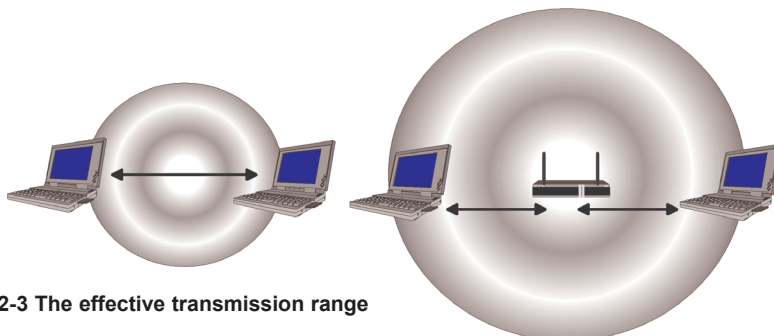


Fig 2-3 The effective transmission range

The use of a unique ID in a BSS is essential. All adapter equipped PCs configured without roaming options in independent BSS must be configured with a BSS ID corresponding to the Access Point used in the BSS. Check your Access Point for its BSS ID or use the Access Point Browser Utility program to determine the BSS ID

The infrastructure wireless LAN configuration is appropriate for enterprise-scale wireless access to a central database, or as a wireless application for mobile users.

Roaming

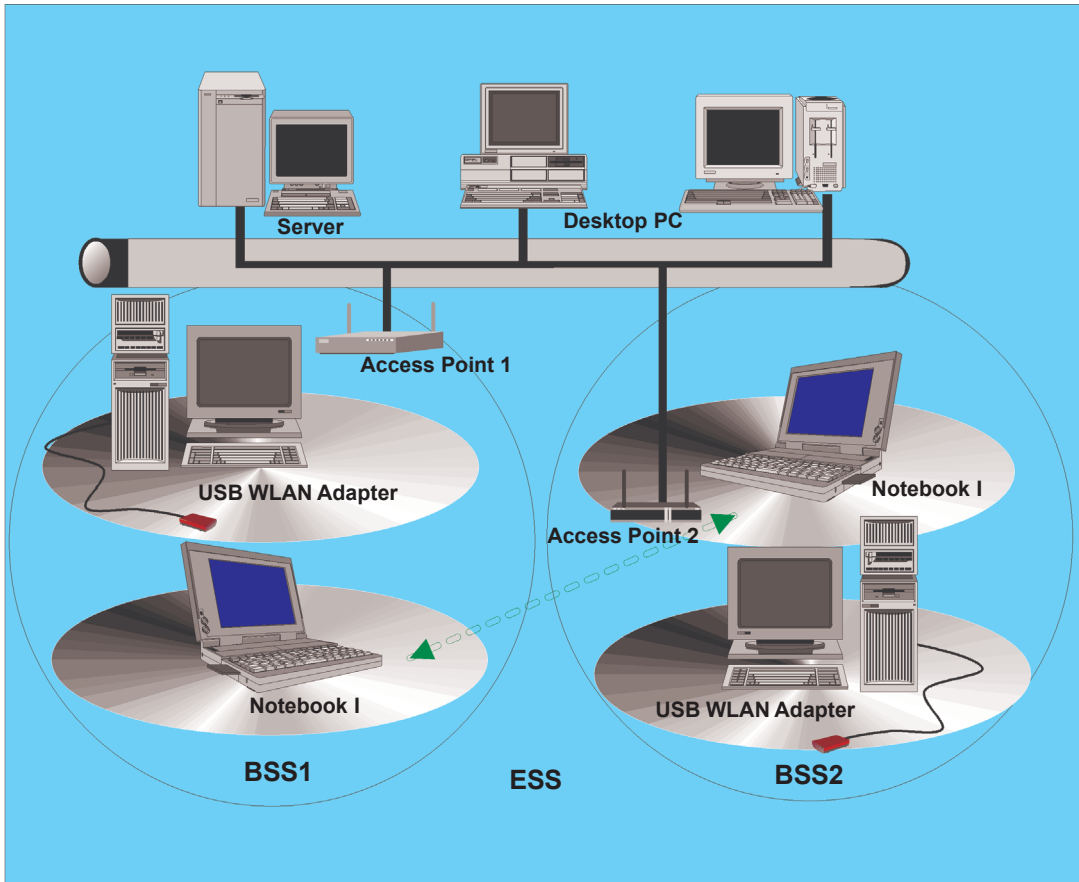


Fig 2-4 Roaming in an Extended Service Set (ESS)

Infrastructure mode also supports roaming capabilities for mobile users. More than one BSS can be configured as an Extended Service Set (ESS). The continuous network allows users to roam freely within an ESS. All adapter PCs and Access Point within one ESS must be configured with the same ESS ID.

Before enabling an ESS with roaming capability, it is recommended to select a feasible radio channel and optimum Access Point position. Proper Access Point positioning combined with a clear radio signal will greatly enhance performance.

Chapter 3: Installing the Drivers and Configuration Utility for Windows 98, ME, NT, 2000

Inserting the adapter

To insert the wireless LAN USB adapter into a notebook or desktop computer, do the following:

1. Select an available USB port on the notebook or desktop PC.
2. Carefully insert the USB adapter cable's Type-A plug (ie., the flat plug) into the USB port and press until it is firmly seated in the port.
3. Insert the other end of the cable into the USB adapter.

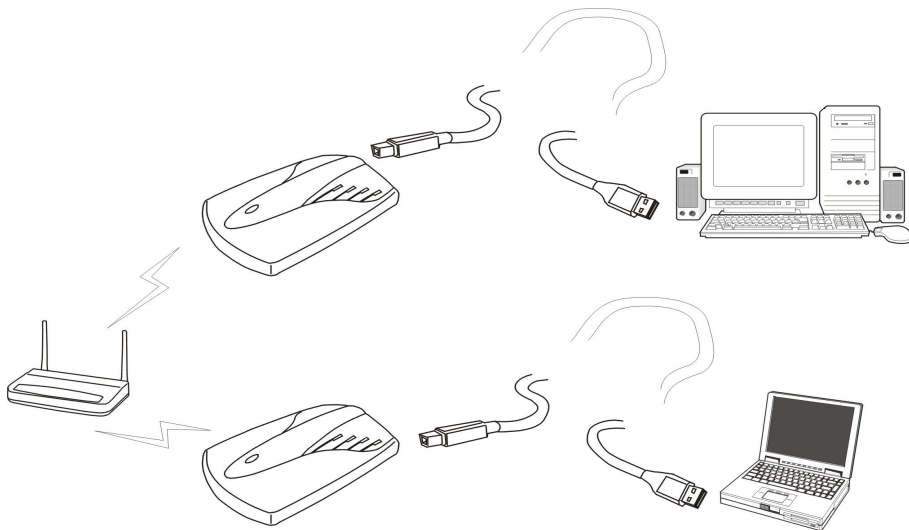


Fig 3-1 USB adapter installation

Running the Auto Driver/Utility Installation

After properly inserting the Network Adapter into your notebook, will show find new hardware the screen shown in Fig 3-2. Please select *automatic search for a better driver* click Next. The driver will automatic install. When driver install completed. then install utility (Configuration Tools).

Before installing your card, insert the Setup Utility CD into your CD-ROM driver. Unless you have deactivated the autorun feature of Windows, the screen shown in Fig 3-3 should appear automatically.



Fig 3-2 Add New Hardware

If this screen doesn't appear automatically, you can access the installation by clicking the **Start** button and choosing **Run**. In the drop-down box provided type **D:\Setup.exe** (where D: is the letter of your CD-ROM drive). Alternately, double-click My Computer and double-click the **Setup.exe** icon in the folder that appears.

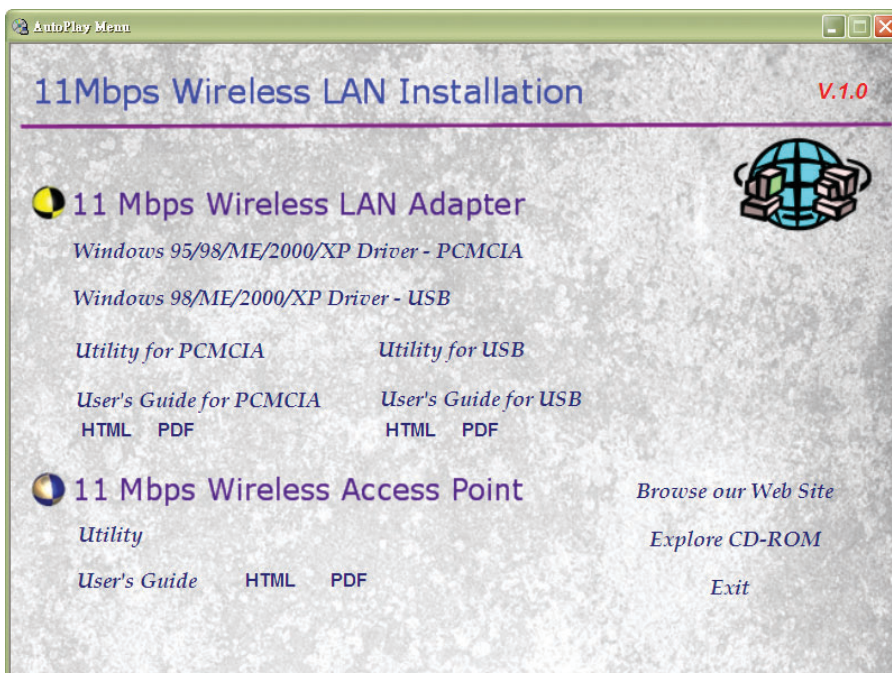


Fig 3-3 Autorun feature of Windows

In Installation screen that you can select 11 Mbps Wireless LAN PC Card **Utility**, should now be highlighted. Click the **Utility** button. A screen similar to that shown in Fig 3-4 should appear, indicating that Windows is preparing the installation.

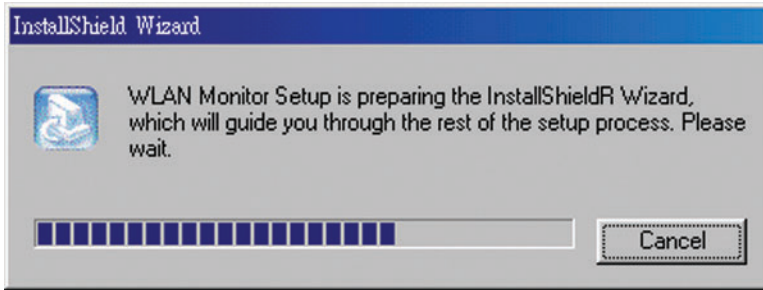



Fig 3-4 InstallShield running

If, for whatever reason, you need to abort or terminate the installation, press the **Cancel** button at any time during the installation. Otherwise the installation will continue automatically.

 **NOTE:** If you stop the installation before it has finished, you will have to run the complete installation again before installing your hardware.

The screen in Fig 3-5 will appear next, indicating that Windows is ready to continue the installation. Click the NEXT button.

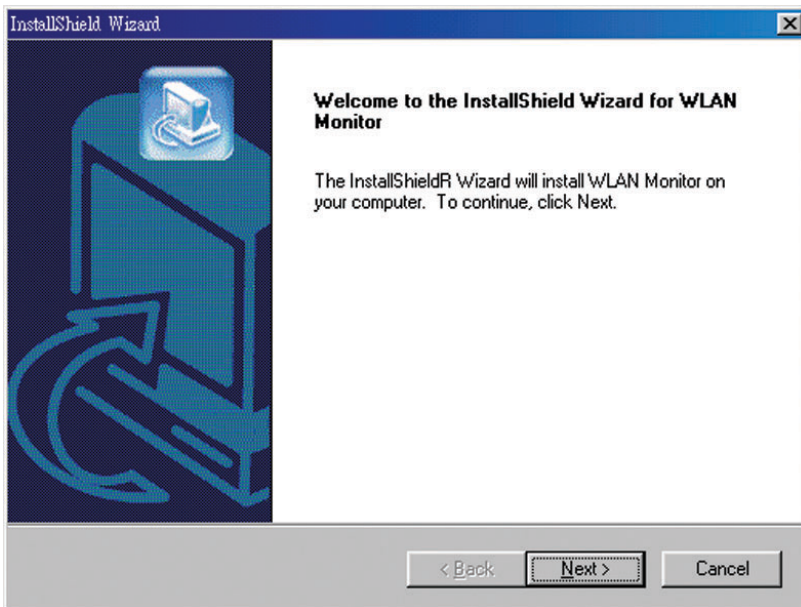


Fig 3-5

The screen in Fig 3-6 will appear next, requesting the folder into which the Configuration Utility will be installed. To install the configuration Utility in the default directory (recommended), click **Next** button. If you prefer to install the Utility in another directory, click **Browse** button, and locate the preferred directory. Then click the **Next** button.

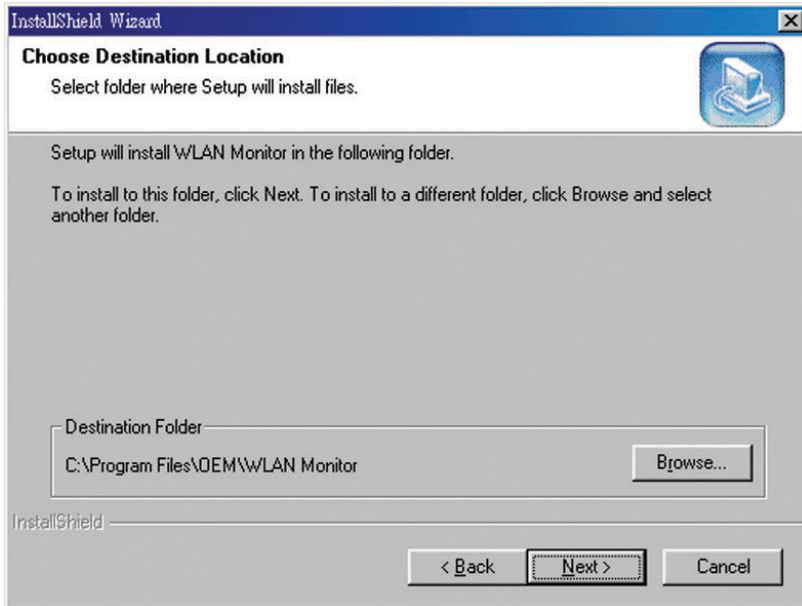


Fig 3-6

After Windows has finished copying the necessary files, a screen similar to that shown in Fig-3-7 will appear. Configuration Utility please see **Chapter 4**

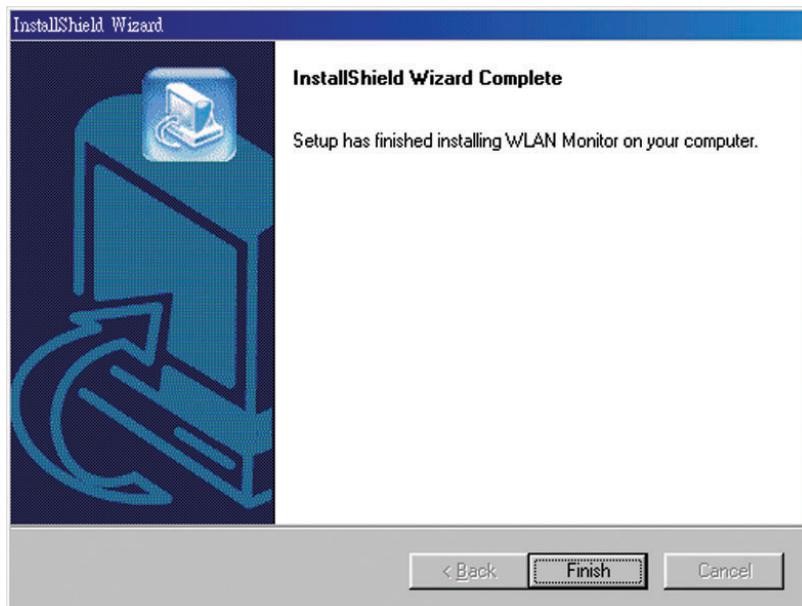


Fig 3-7

Chapter 4: Configuration Utility

The **Configuration Utility** is provided to allow you further customization of the WLAN PC Card and your wireless network.

Using the configuration Utility

After the Configuration Utility has been installed, an icon will be placed in the system tray (next to the clock button of your screen) when the WLAN PC Card is inserted, as shown in Fig 4-1.



Fig 4-1

The utility is divided into six parts: **Status, Statistics, Site Survey, Encryption, Advanced, and Info**. *You should change all your configuration settings for your WLAN PC Card using this utility and not with the Network Properties section in your Control Panel.*

Status

The Status screen (Shown in Fig 4-2) provides information about the current link between the Network PC Card and Wireless Access Point.

When in Infrastructure Mode, **Status** will display the connection statistics for the network segment that you are on.

The **Channel** field shows to what channel the WLAN PC Card is set.

The **SSID** field shows the current SSID set for the wireless network. This SSID can be modified at you click **Change** button.

The **Tx Rate** field shows the transfer rate in megabits per second.

The **Int. Roaming** field shows to use this feature to allow your adapter to retrieve country information from the access point and behave according to that country's regulations.

The **Radio** field shows on / off radio signal

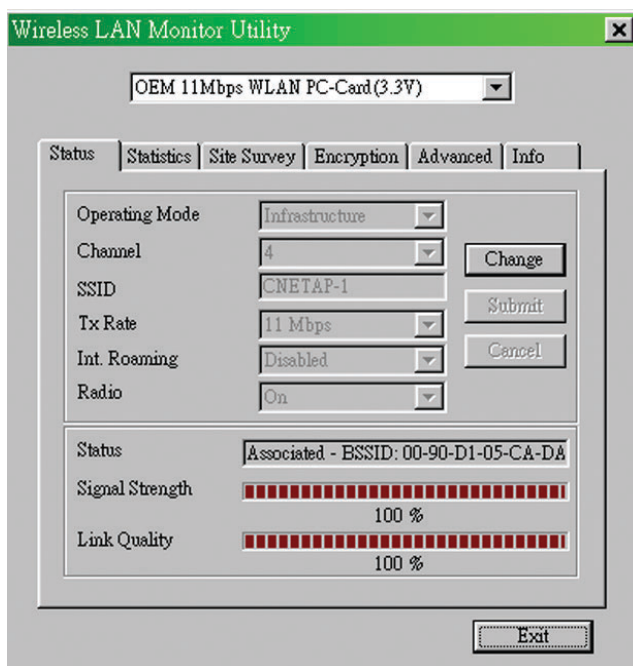



Fig 4-2

 **NOTE:** When in Ad-Hoc mode, Signal Strength and Link Quality indicators will not be available.

The **Signal Strength** field will display a bar indicating the percentage, between 0 and 100 percent, of the strength of the signal. The higher the percentage, the stronger the signal.

The **Link Quality** field will display a bar indicating the percentage, between 0 and 100 percent, of the quality of the link. The higher the percentage, the better the link.

The **Change** button, allows you to customize the setting for the WLAN PC Card and your wireless network.

The Operating Mode setting determines the architecture of your wireless network select **Ad-Hoc** or **Infrastructure** Mode depending on your network type. The **Ad-Hoc** mode is used for simple peer-to-peer network and allows the sharing of local resources only between Network PC Card without needing a Wireless Access Point. The Infrastructure mode allows a wireless network to be integrated into an existed, wired network through an Access Point. Infrastructure networks permit roaming between Access Points while maintaining a connection to all network resources.

An acronym for Service Set Identifier, SSID is the unique name shared among all points in a wireless network. The SSID must be identical for all points in the network. *It is case sensitive and must not exceed 32 characters.*

The Tx Rate field shows the current transfer rate for the Network PC Card. To optimize performance and range, the Tx Rate should be set to Auto, which will automatically adjust the transfer speed for best performance and longest range.

The Channel setting specifies the channel used in wireless communication and should be set to the same channel as the other points in the wireless network. The setting can only be adjusted in Ad-Hoc mode.

Statistics

The Statistics screen (Shown in Fig 4-3) provides information about the Tx / Rx Data, Management, rejected Packets.

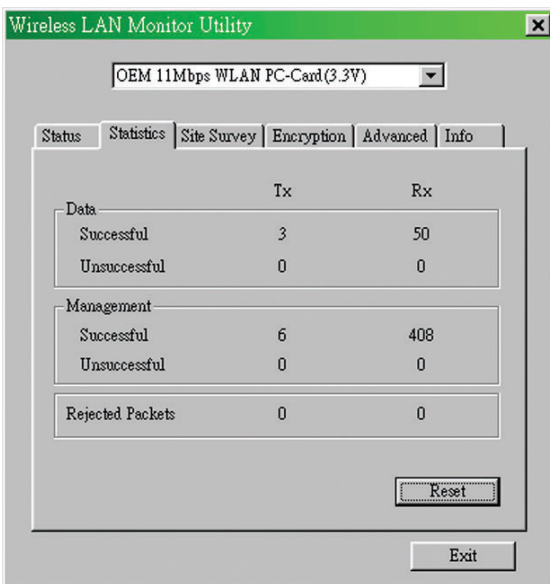


Fig 4-3

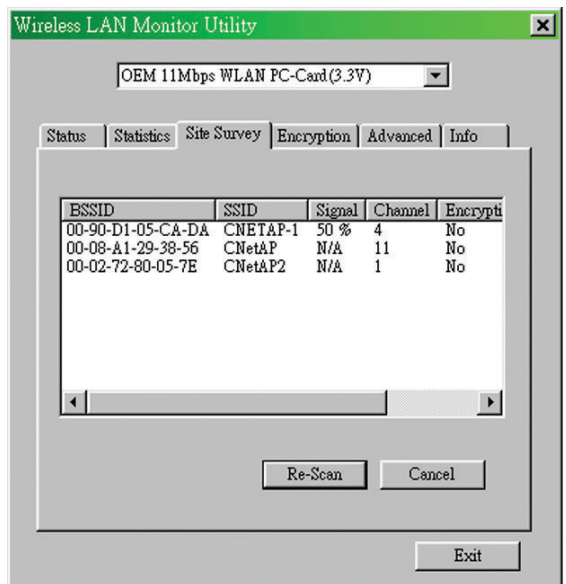


Fig 4-4

Site Survey

The Site Survey screen shows the available access point and their features. Click on the desired access point. Then double click BSSID to connect or Re-Scan to search for more access points. (Shown in Fig 4-4)