U S E R ' S M A N U A L

T60H563

MiniPCI WLAN/Bluetooth Combo Module

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Section One: Introduction

AMBIT MINIPCI 3B WLAN/Bluetooth Combo Module complied with IEEE 802.11b 11Mbps Standard. The WLAN/Bluetooth application is implemented via a Intersil Prism 2.5 RF circuit. This RF circuit is developed for Wireless LAN application complied with IEEE 802.11b 11Mbps standard in ISM band. It can be used to provide a variety of low-cost wireless network interfaces to build your wireless connection via simply SMT procedure to speed the time to market. Three Intersil's chips are implemented including ISL3984, ISL3685, HFA3783. With Bluetooth technology, the Bluetooth part can achieve internet connection rates up to 721 kbits/s. The Notebook communicate with Bluetooth by MiniPCI Interface Reserve pin. The WLAN/Bluetooth combo card mechanical complies with MINIPCI 3B from factor.

1.1 Features

1.1.1 WLAN Hardware Specification

Form Factor & Bus Interface	MiniPCI Type IIIB, compliant to MiniPCI 1.0
Wireless LAN Compliance	IEEE 802.11b
Radio Technology	Direct Sequence Spread Spectrum
Operating Frequency	2.4 ~ 2.4835GHz ISM band
Modulation Schemes	DQPSK, DBPSK and CCK
Channel Numbers	IEEE 802.11b compliant 1 ~ 11 channels for United States
WLAN Data Rate	11Mbps with fall back rates of 5.5, 2, and 1Mbps
Spreading	11-chip Barker Sequence
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power	Typ. 15 dBm **(ERP)**
Receiver Sensitivity	Typ. –82 dBm for 11Mbps @ 8% PER Typ. –85 dBm for 1Mbps @ 8% PER
Antenna Type	Integrated diversity switch with Hirose compliant connectors(U-FL) for connecting dual diversity antennas

1.1.2 Bluetooth Hardware Specifications

Bluetooth Module Chip Set	CSR BlueCore 02

Supply Voltage	2.7V to 3.3V
Power Features	Host wake-up on the module Detach the module from host
Frequency Range	2.400-2.497 GHz
Antenna Load	50 Ohm
Receive Sensitivity	–80 dBm@0.1% BER
Maximum Receiver Signal	-20 dBm
TX Power (ERP)	4 dBm maximum (class 2 and class 3)
RF Power Control Step Size	2 dB
Range	10 meters at 0 dBm TX power (class 2)
Radio	Compliant with Bluetooth standard version 1.1
Pico Net	1 master to 7 slaves
Operating Channels	79 channels of 1 MHz BW
Security	Full support of Bluetooth security provisions including hardware support for full length 128 bit encryption keys.
Host Interface (USB)	USB specification 1.1 compliant

1.1.3 Software Specification

OS	- Supports Windows 98SE, ME, 2000, XP
Configuration	- User interface for configuration and status monitoring
WLAN Standard Compliance	- 802.11b,- 802.1X for Windows XP
Bluetooth Standard	- Bluetooth Specification 1.1
Site Survey	- Auto scan to find APs nearby and show signal strength for each channel (for WLAN only)

1.2 Package Contents

Make sure you have received the following items in your package:

One Mini-PCI Type IIIB WLAN/Bluetooth Module
One Phone Cable (Bluetooth)
User Manual

Section Two: Bluetooth Installation

The following steps provide instructions for installing Bluetooth.

1. Make sure your MiniPCI WLAN/BT Combo card already insert into the slot.
2. Insert the connector of Antenna cable into the antenna connector of MiniPCI Module .

The antenna connector assembly need to be performed by well trained engineer to cause antenna connector mismatch then degrade Bluetooth connection performance. Please find your vendor to help this connector assembly.

2.1 Driver Installation

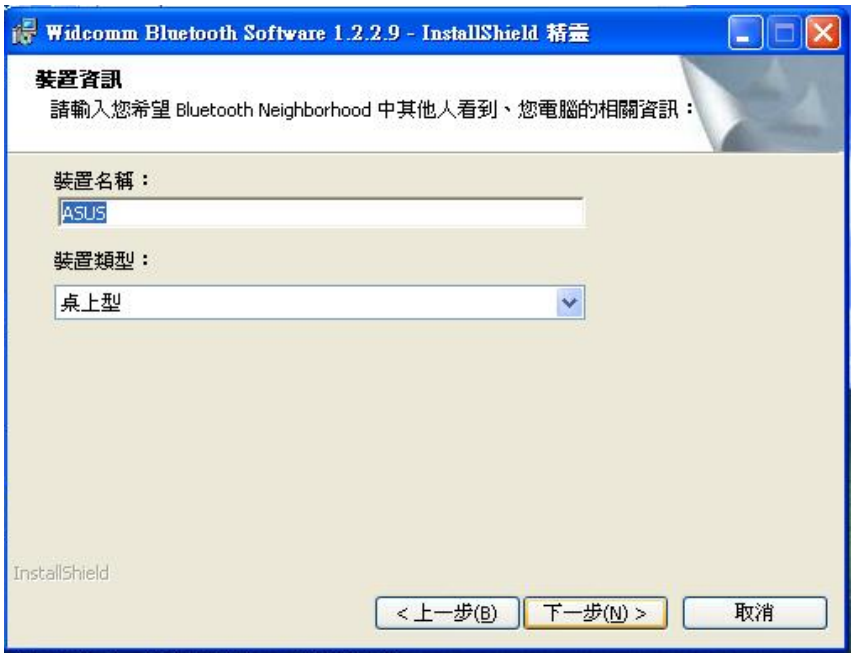
Your Bluetooth is using the Plug and Play (PnP) capabilities of you computer. PnP is a set of specifications that define the ability for the computer hardware and operating system to automatically configure all compliant devices that are installed, relieving the user of the need to determine which addresses and interrupts to user for each device.

Proceed to the following section.

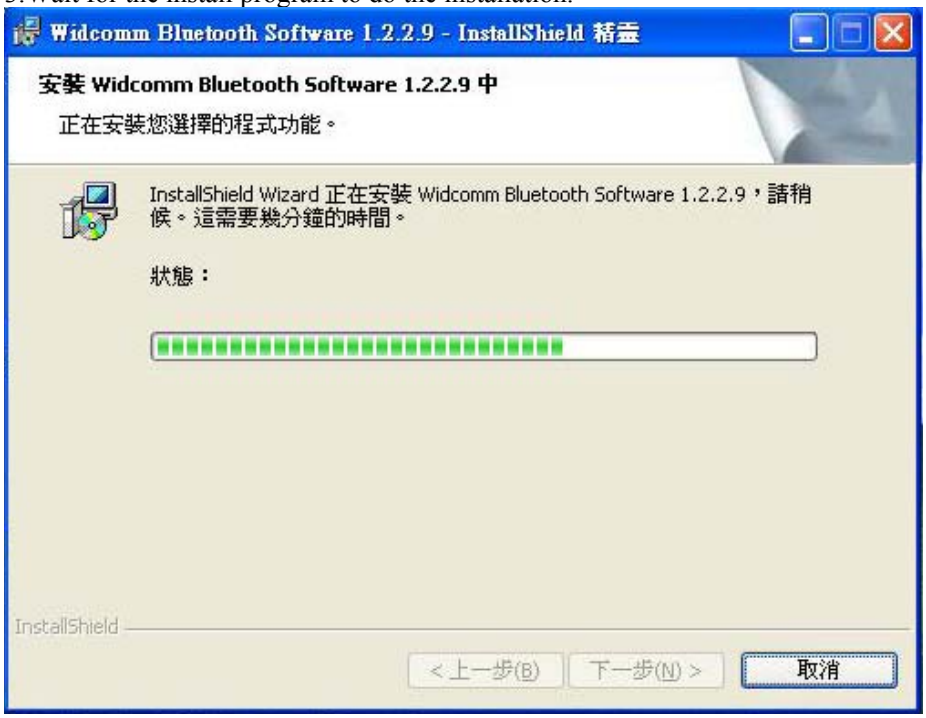
Install Bluetooth (Windows 98/2K/ME/XP)

1Execute the program 'Setup.exe' in the CD. Windows displays the dialog as below. Press '**Next**' button to continue.

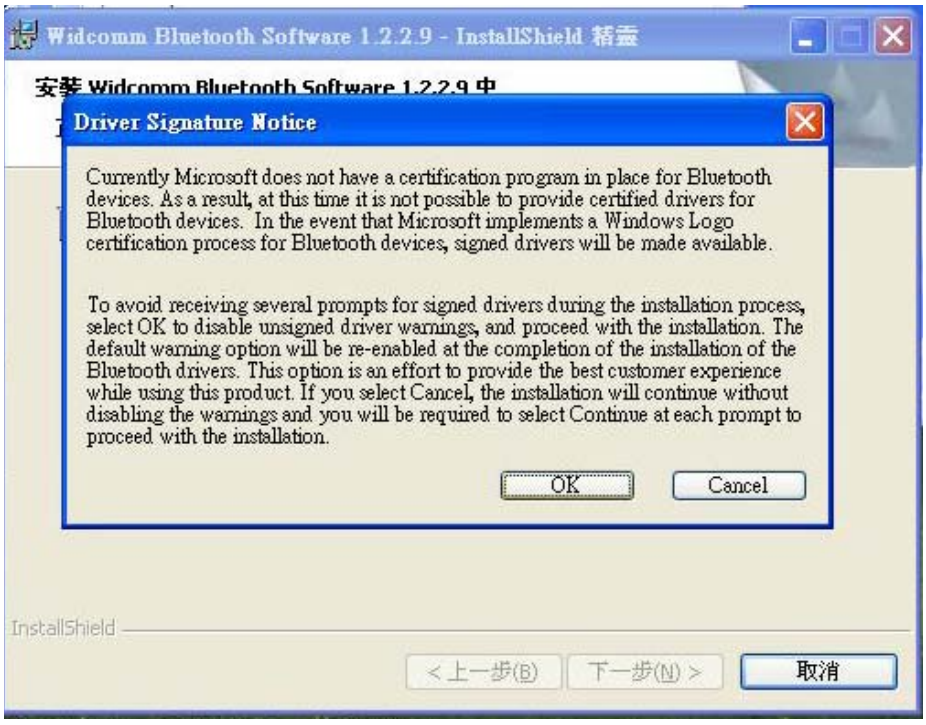
2.Select the " Device name " and "Device Type" that you want to Install.



3.Wait for the install program to do the installation.



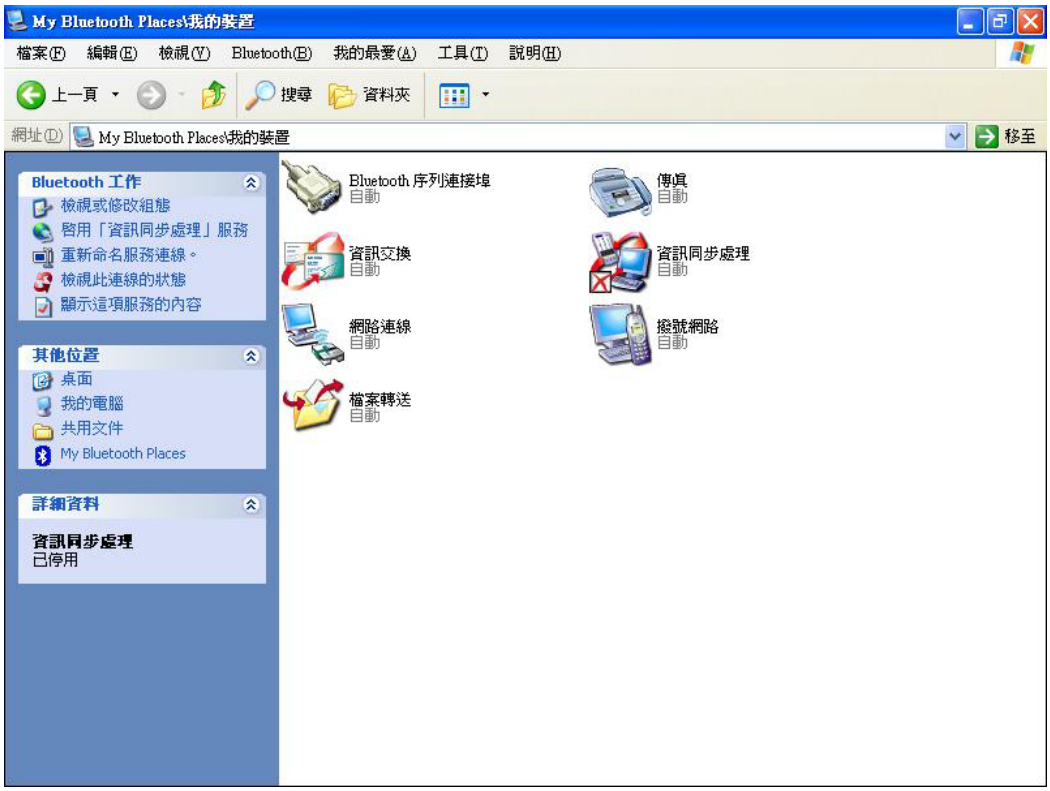
4. Select “ OK” to avoid Microsoft Digital Signature message



5.Congratulations! Bluetooth has been installed successfully.

Please click '**Finish**' to go to the next step.

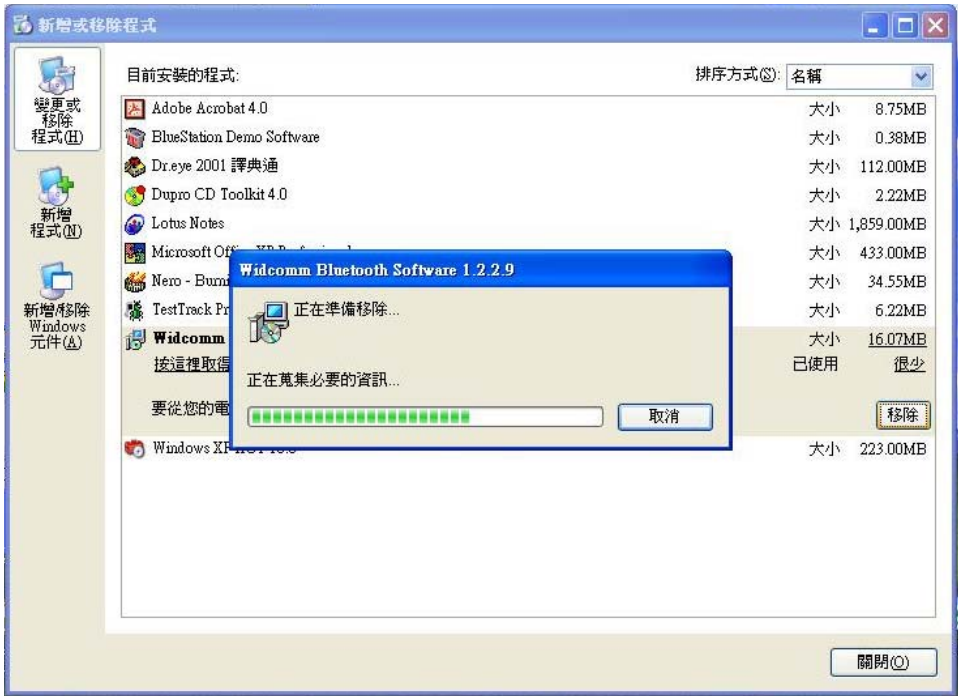
6.Select the Application that you want to use.


My Bluetooth Places\我的裝置
檔案(F) 編輯(E) 檢視(V) Bluetooth(B) 我的最愛(A) 工具(T) 說明(H)
上一頁 搜尋 資料夾
網址(D) My Bluetooth Places\我的裝置
移至
Bluetooth 工作
檢視或修改組態
啓用「資訊同步處理」服務
重新命名服務連線。
檢視此連線的狀態
顯示這項服務的內容
其他位置
桌面
我的電腦
共用文件
My Bluetooth Places
詳細資料
資訊同步處理
已停用
Bluetooth 序列連接埠
自動
傳真
自動
資訊交換
自動
資訊同步處理
自動
網路連線
自動
撥號網路
自動
檔案轉送
自動

Uninstall Bluetooth (Windows 98/2K/ME/XP)

One can remove the Bluetooth via the 'Add/Remove Programs' in the 'Control Panel'. Select '**Bluetooth**' and click 'Add/Remove' button, the dialog as below displays.

2.Wait for the un-installation to do its work.



3.Then Complete the un-Installation.

Section Three: Wireless Lan Installation

3-1 System Requirements

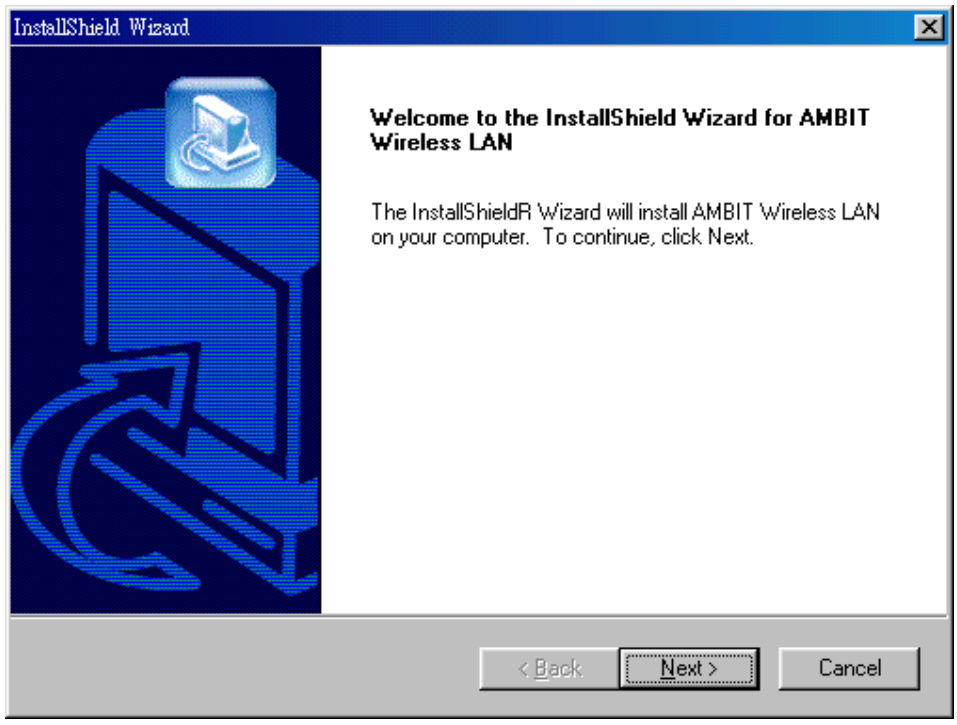
In order to install Wireless LAN and use the Wireless LAN/Bluetooth combo card in your notebook computer. Your notebook system must meet the following requirements:

- A Mini-PCI Type III Slot that already insert in WLAN/BT Combo module
- Windows 98SE,2K,ME,XP Support

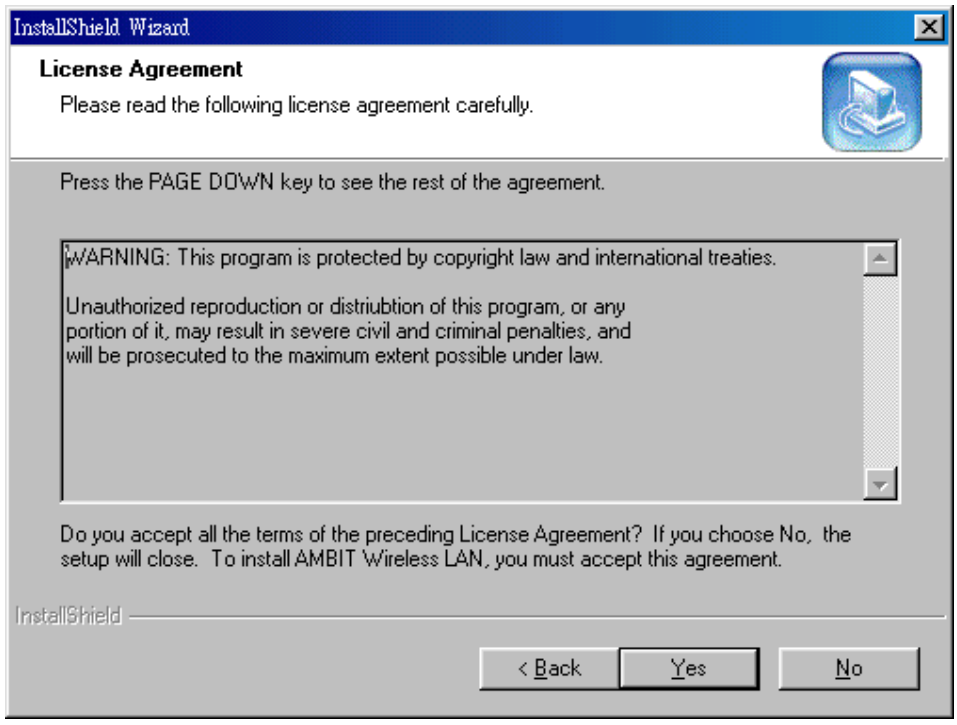
3-2 Installation and Uninstall Process

Install Wireless LAN (Windows 98/2K/ME/XP)

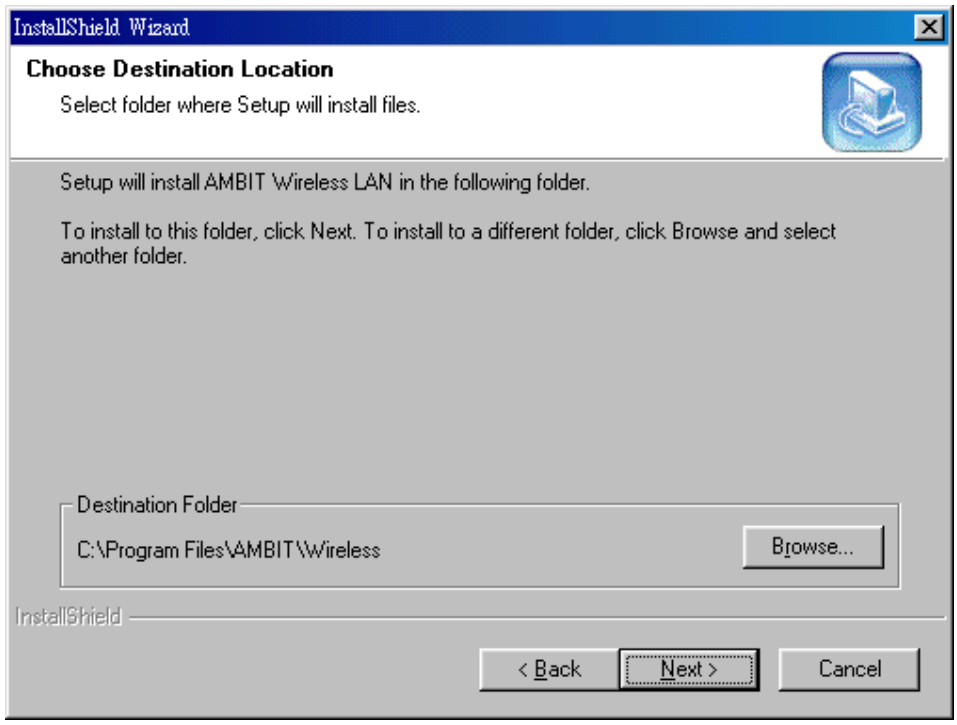
1. Execute the program 'Setup.exe' in the CD. Windows displays the dialog as below. Press '**Next**' button to continue.



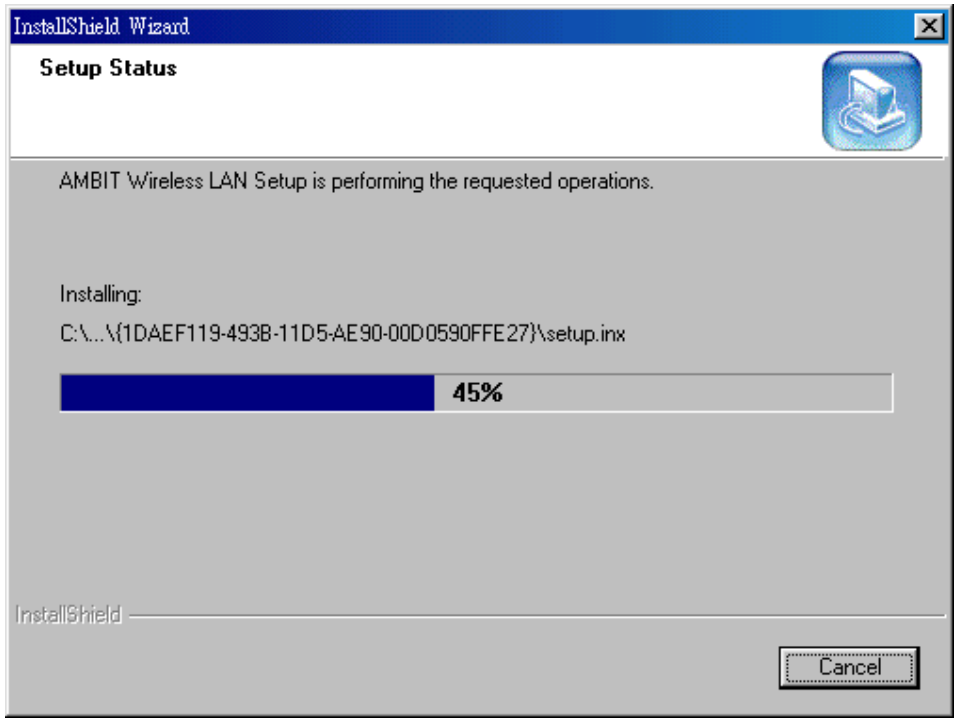
2. It displays a License Agreement dialog. Press '**Next**' to continue.



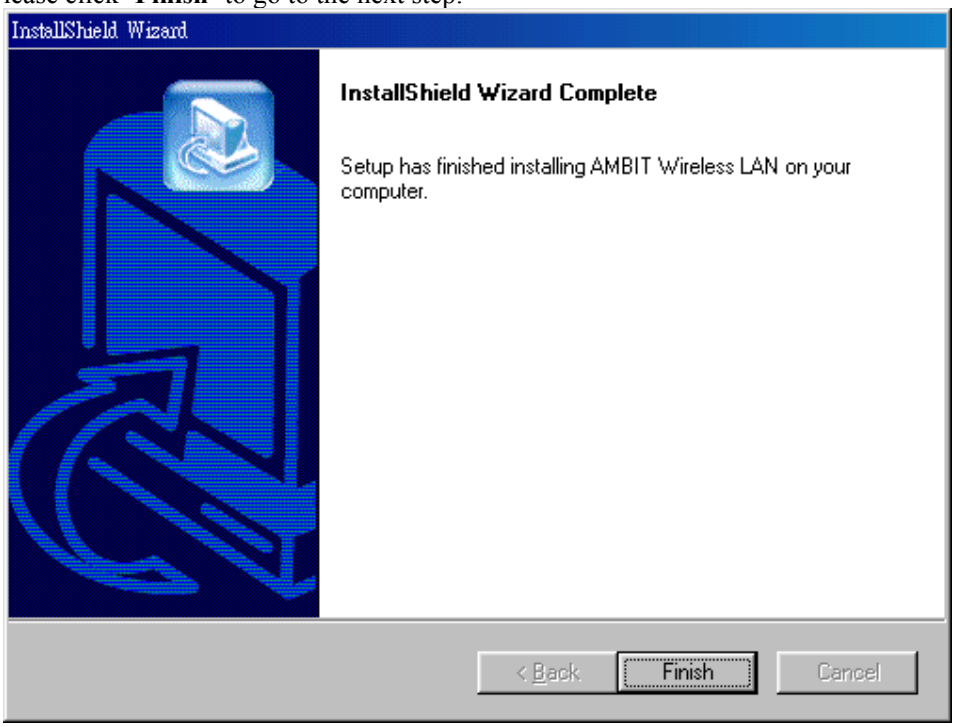
3. Select the destination folder that you want to place the files.



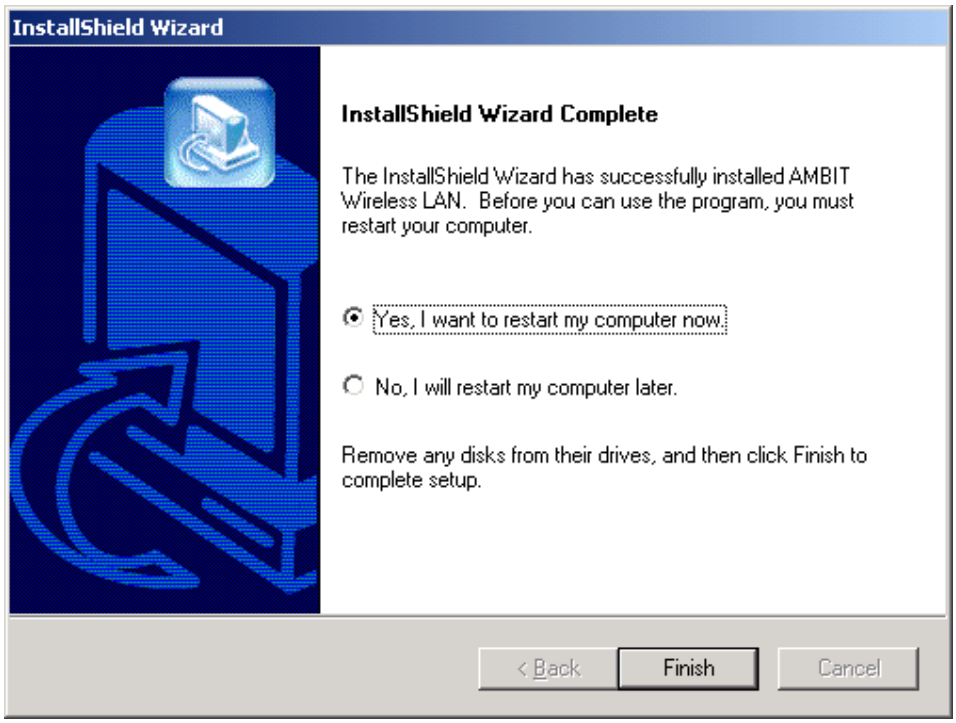
4. Wait for the install program to do the installation.



5. Congratulations! Wireless LAN has been installed successfully.
Please click '**Finish**' to go to the next step.

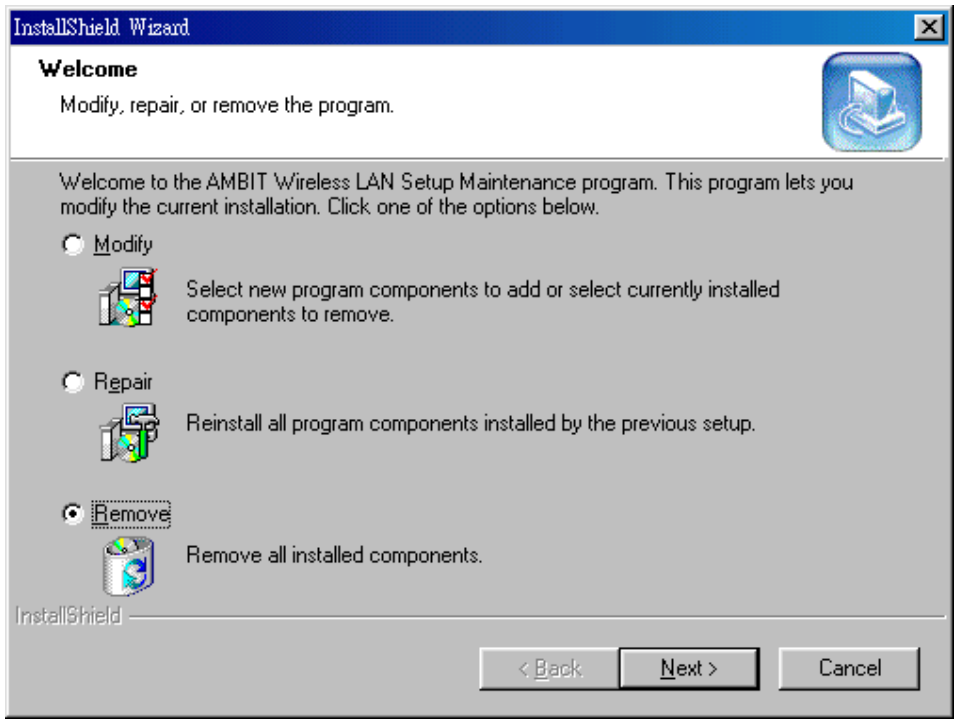


6. Please remove any disks from any drives before your click '**Finish**'. Then click '**Finish**' to complete setup.



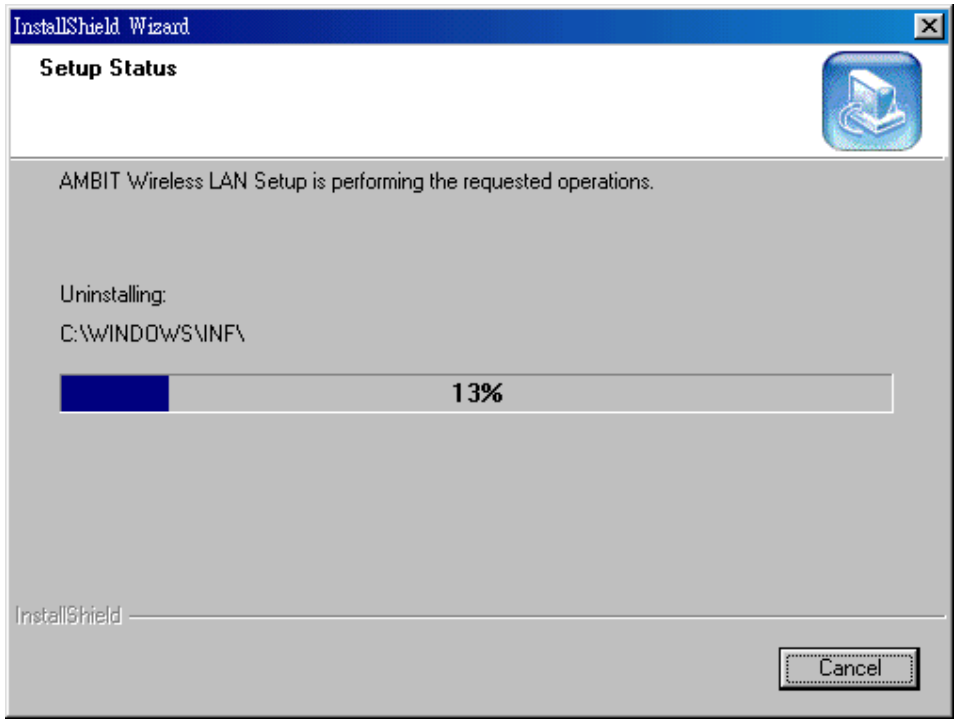
Uninstall Wireless LAN (Windows 98/2K/ME/XP)

1. One can remove the AMBIT Wireless LAN via the 'Add/Remove Programs' in the 'Control Panel'. Select 'AMBIT Wireless LAN' and click 'Add/Remove' button, the dialog as below displays.

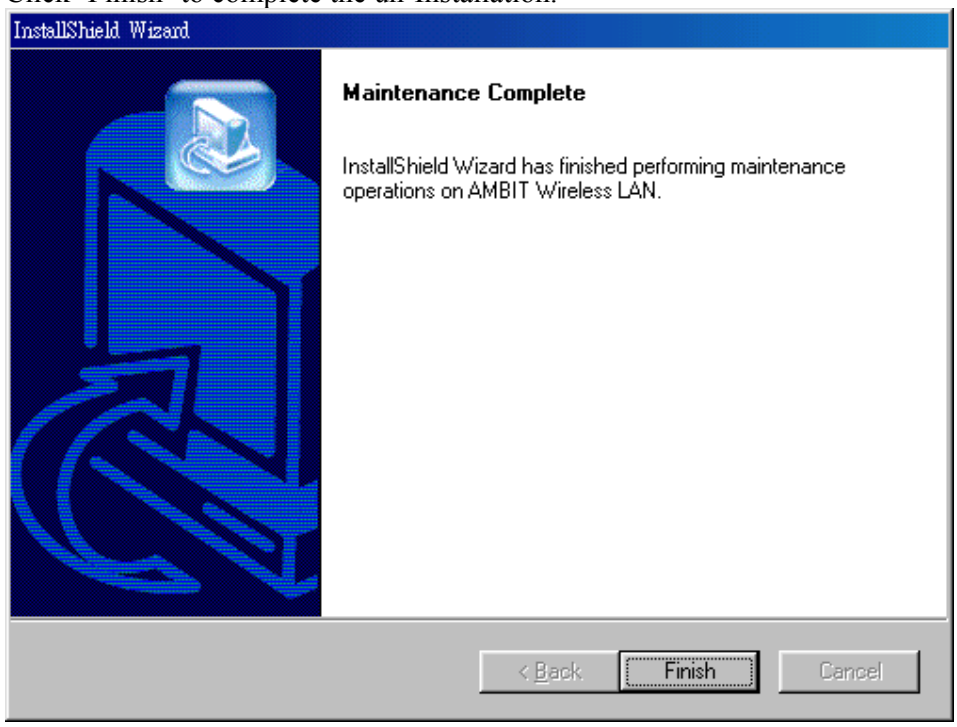


2. Select ‘Remove’ and then click the ‘Next’ button to perform the un-installation. Click ‘OK’ button if you really want to remove the AMBIT Wireless LAN.

3. Wait for the un-installation to do its work.



4. Click 'Finish' to complete the un-Installation.



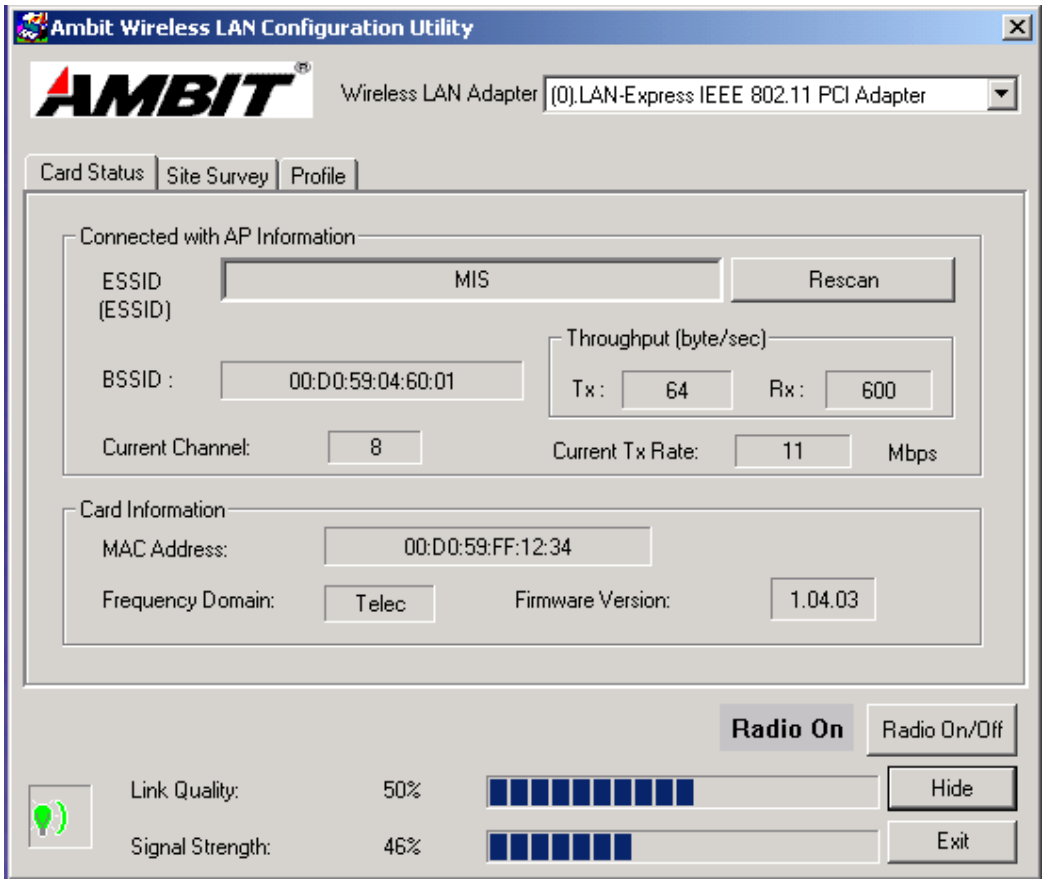
Section 4 Wireless Utility and Configuration

The following sections describe the Wireless Network Configuration Utility. This utility provides quick access and friendly interface to configure the card setup.

4-1 Windows 98/ME/2000 Wireless Utility

After installation is completed, a Wireless LAN Utility icon will appear in Desktop screen. Click it, then you will see the screen below. If you cannot find the icon, you can select “Start” ->”Program”->”Wireless LAN Configuration Utility” Icon.

Card Status

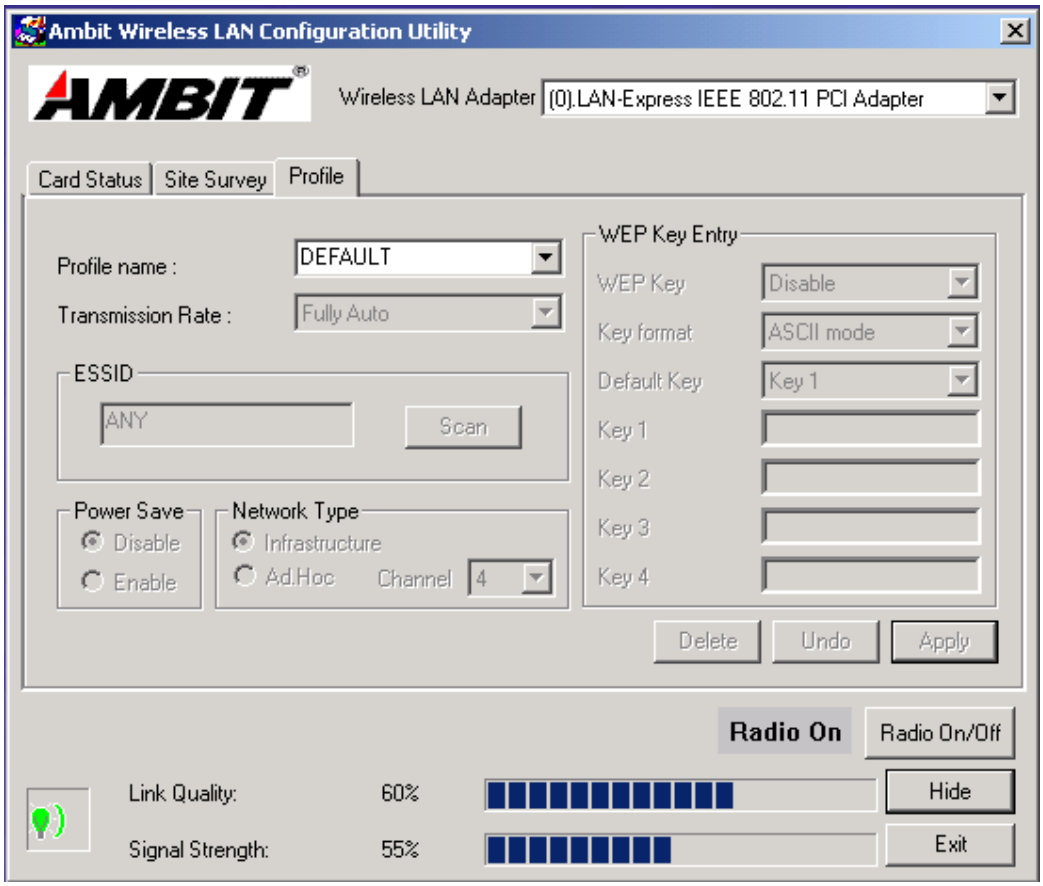


You can see the AP information that your card connected. In this page you also can find Firmware Version , MAC Address and Frequency Domain.

ESSID: An acronym for Extended Service Set Identifier, ESSID is the unique name shared among all clients and Access Points in a wireless network. The ESSID must be

identical for all clients or Access Points participating in the same network. The ESSID is case sensitive and must not exceed 32 characters. Press 'Rescan' it will scan the specific ESSID that your profile set. If your profile set the ESSID to be ANY, then while you press 'Rescan', it will scan AP in the nearby area and choose the stronger one. From Link Quality and Signal Strength, you can tell the wireless transmission quality.

Profile



There are two network types:

Ad-Hoc: This mode is used for a simple peer-to-peer network. It offers file sharing between wireless clients without a wireless Access Point (AP).

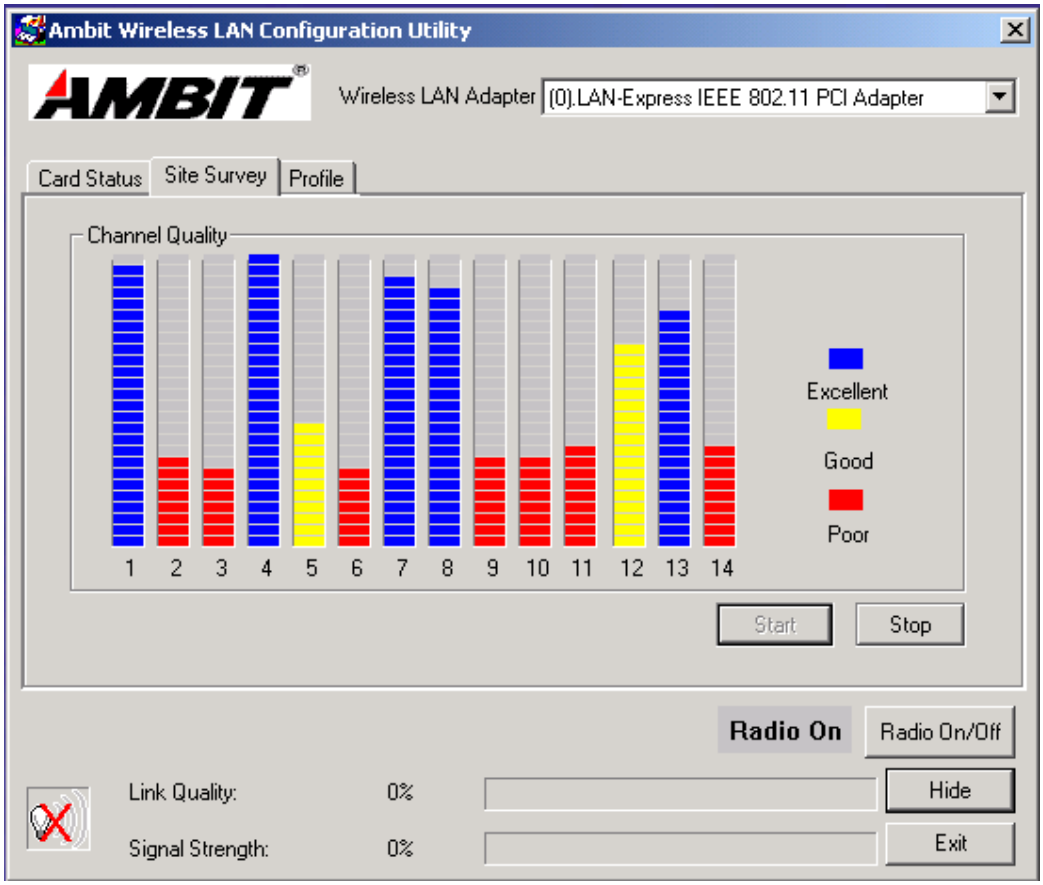
Infrastructure: This mode allows a wireless LAN to be integrated into an existing wired network through an AP. Infrastructure type networks also permit roaming between Access Points while maintaining connection to all network resources. Infrastructure mode provides additional features, such as WEP security, power saving and extended range.

ESSID: You can either choose specific AP or connect to any AP in the nearby area.

Power Save: enable it, so it will be triggered when your computer system is inactive.
WEP Key: Wired Equivalent Privacy, WEP is an encryption scheme used to protect your wireless data communications. WEP uses a combination of 40-bit keys,128-bit keys to provide data encryption for your wireless network. AP and wireless card should use the same WEP key in order to communication.
KEY Format: You can choose to enter ASCII Characters (0~9, a~z, A~Z) or Hexadecimal number (0~9, a~f, A~F)
Default Key: The current KEY you choose**.**
KEY1~4: If you choose 40-bit keys, then you must enter 5 ASCII Characters or 10 Hexadecimal numbers. If you choose 128-bit keys, then you must enter 13 ASCII Characters or 26 Hexadecimal numbers.

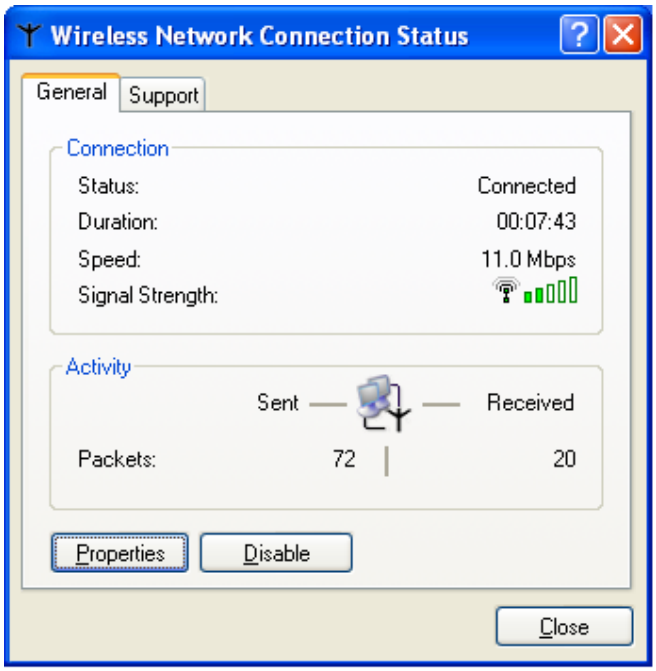
Site Survey

Use the Site Survey Tool. You can identify each channel transmission quality.



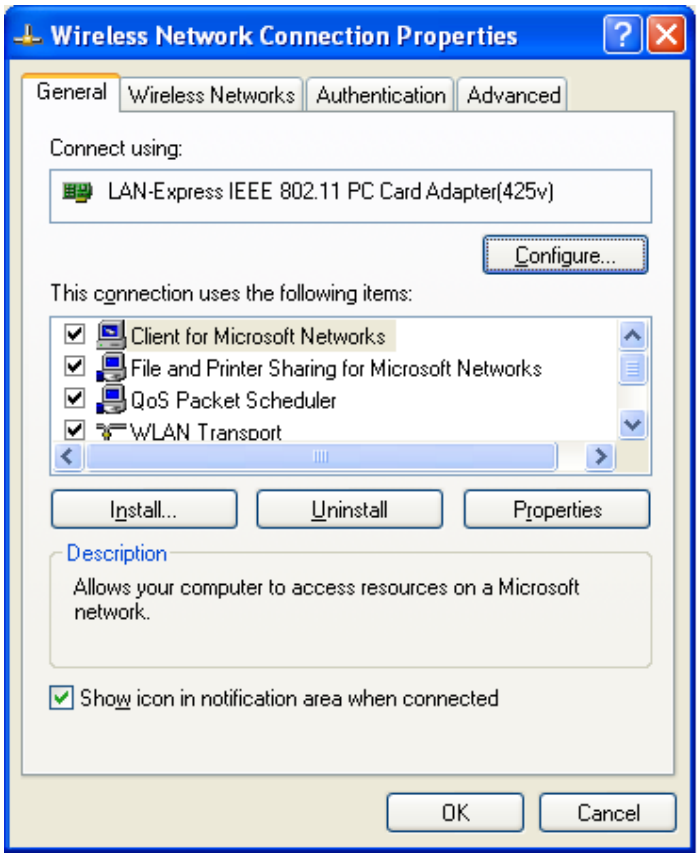
4-2 Windows XP Wireless Utility

1. To configure the wireless card setting, you can select Start\Settings\Network Connection in the Windows XP. Choose the wireless network connection, then you will see below screen. From this screen, you can see wireless connection status and wireless signal level.

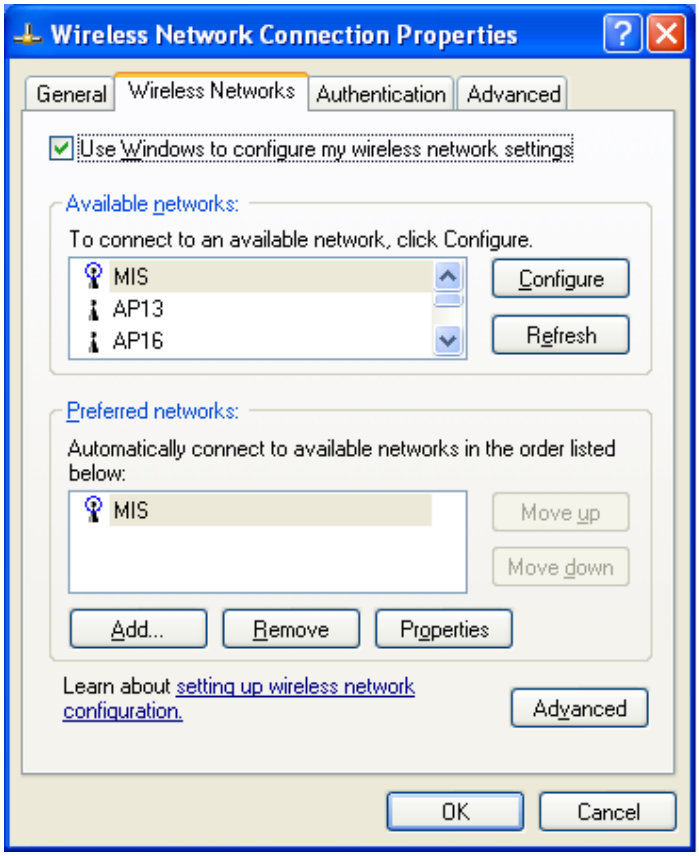


2. Select 'Properties' in the above screen. The following windows will show up.

In ‘General’ page, Wireless LAN card information and networking protocol have been displayed. Extra networking protocol can be installed in this page.



3. Select Wireless Networks page, you can see available wireless networks in your nearby area. You can add your preferred wireless Access Point to your list, so your wireless card will search for specific wireless networks.



Configure

To connect to an existing access point (infrastructure) network, under Available networks, click the network name, and then click 'Configure' to setup wireless security and data encryption.

Reflesh

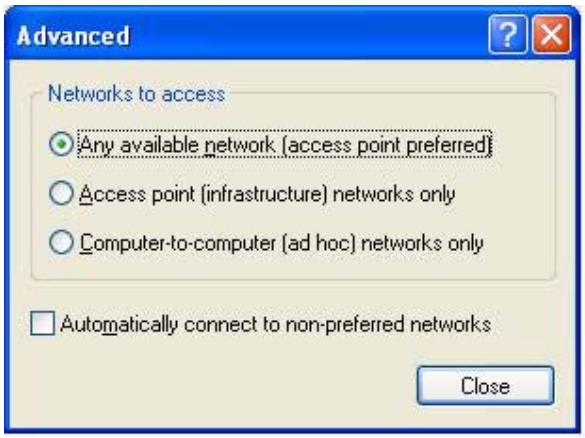
To update the list of available networks that are within range of your computer, click Refresh.

Add

To connect to an access point (infrastructure) network that you know is available but that does not appear under Available networks, under Preferred networks, click Add. In Wireless Network Properties, specify the network name (Service Set Identifier).

Remove

To remove a wireless network from the list of preferred networks.



Advanced

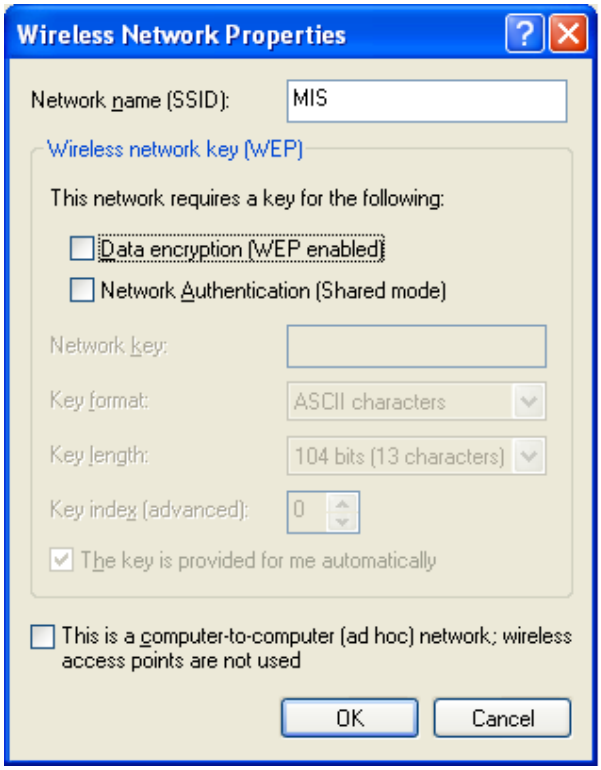
*If your network are configuring to a computer-to-computer (ad hoc) network, select 'Computer-to-computer (ad hoc) network only'.

*If you want to connect to a computer-to-computer and access point (infrastructure) networks are within range of your computer, click 'Access point (infrastructure)network only'.

*If you want to connect to a computer-to-computer (ad hoc) network and both computer-to-computer and access point (infrastructure) networks are within range of your computer, click 'Any available network (access point preferred)'.

To automatically connect to available networks that do not appear in the Preferred networks list, click Advanced, and then select the Automatically connect to non-preferred networks check box.

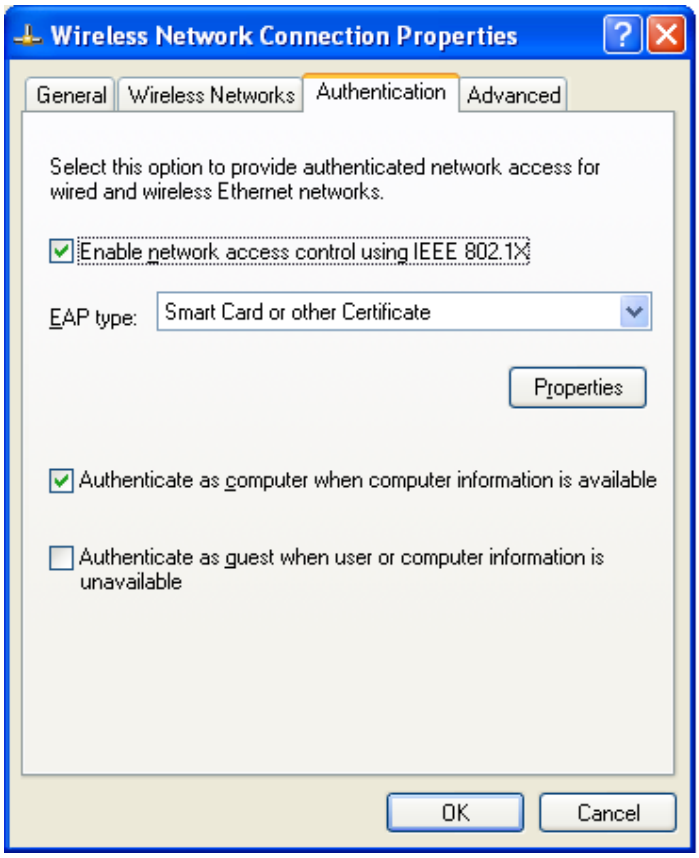
Define your network name (SSID) in the following windows, so your can join a specific wireless network. Check AP has WEP on or not. You wireless network will need to have same WEP setting with AP in order to communicate. If your wireless network don't have any AP, check the **'This is computer-to computer (ad-hoc) network; wireless access points are not used'**



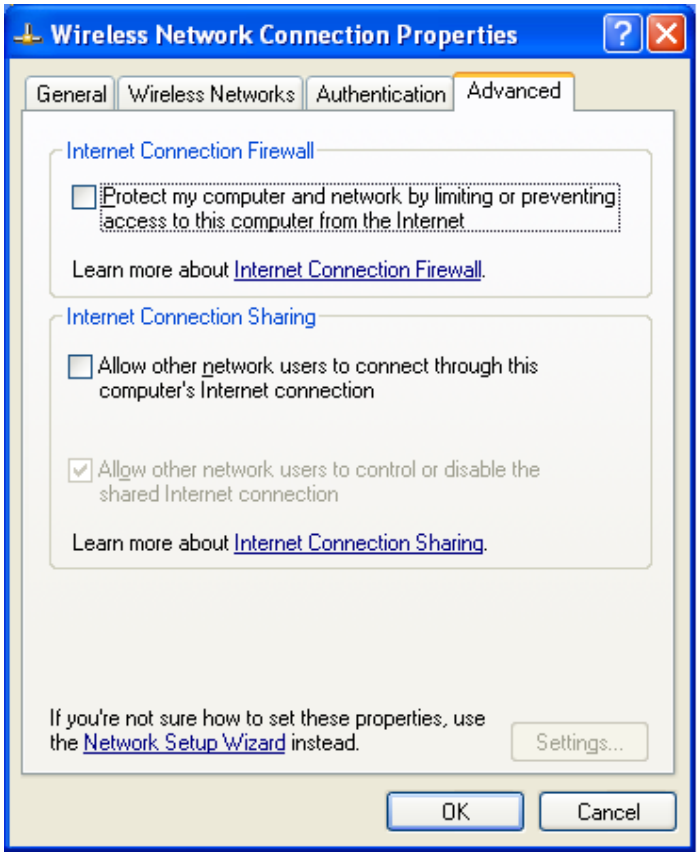
This window provides authentication via 802.1X. 802.1X, an IEEE standard that provides an authentication framework for 802-based LANs. 802.1X takes advantage of an existing authentication protocol known as the Extensible Authentication Protocol. 802.1x, giving someone secure, encrypted, wireless access on a Microsoft network will be as easy as setting a flag on the users domain account.

What does this mean for the Home Network user?

802.1x will ensure that if and when you make the change over to Wireless Ethernet, your neighbor will not be able to access your wireless LAN!



The ‘Advanced’ window offers Firewall and Internet Connection Sharing functions. Depends on your networking environment, you can select below functions.



Appendix A Glossary

Access Point - An internetworking device that seamlessly connects wired and wireless networks together.

Ad-Hoc - Ad-Hoc is a peer- to-peer wireless network without Access Point. A group of wireless clients consistent an independent wireless LAN.

Backbone - The core infrastructure of a network, the portion of the network that transports information from one central location to another central location. The information is then off-loaded onto a local system.

BSS - Stands for "Basic Service Set." An Access Point associated with several wireless stations.

ESS - Stands for "Extended Service Set." More than one BSS can be configured as an Extended Service Set. An ESS is basically a roaming domain.

Ethernet - A popular local area data communications network, originally developed by Xerox Corp., which accepts transmission from computers and terminals. Ethernet operates on 10/100 Mbps transmission rate over shielded coaxial cable or over shielded twisted pair telephone wire.

Infrastructure - An integrated wireless and wired LAN is called an Infrastructure configuration.

MINI-PCI TYPE III - Personal Computer Memory Card International Association, which develops standards for PC cards, formerly known as MINI-PCI TYPE III cards, are available in three "types" which are about the same length and width as credit cards, but range in thickness from 3.3 mm (Type I) to 5.0 mm (Type II) to 10.5 mm (Type III). These cards can be used for many functions, including memory storage, as landline Bluetooths and as wireless LAN.

Roaming - A function that allows one to travel with a mobile end system (wireless LAN mobile station, for example) through the territory of a domain (an ESS, for example) while continuously connecting to the infrastructure.

Throughput TX RX

Link Quality

Signal Strength

Channel Quality