22Mbps Wireless Network PC Card User Manual

Model:GL242201-MT

version 2.1

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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: 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.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
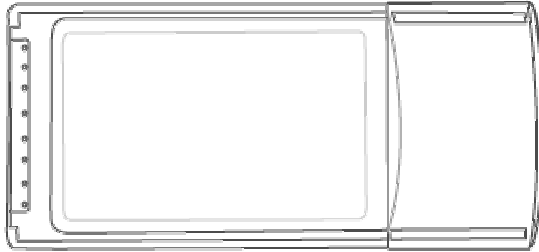
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Table of Contents:

INTRODUCTION

The 22Mbps Wireless PC Card delivers enhanced IEEE 802.11b high performance for up to 22Mbps, which is double of that offered by most of the current wireless products in the market.

The 22Mbps high data rate is made possible by the latest advanced TI wireless technology, which incorporates the new PBCC modulation method. Unlike the ordinary CCK modulation, not only the new PBCC modulation method offers double data rate for up to 22Mbps, but also it gives 20% more distance coverage.

The 22Mbps Wireless PC Card is fully compatible with other 11Mbps wireless devices.   The simple step-by-step installation allows you to have the wireless network setup in no time.   The comprehensive configuration utility makes the setting control for the PC Card easier than ever.

The 22Mbps Wireless PC Card is an ideal wireless device that truly makes the idea of "wireless" come true. Please take a moment to read through this manual and get acquainted with this cutting-edge product.

Product Features

➢ Fully compatible with IEEE 802.11b standard for wireless.
➢ Interoperatable with existing IEEE 802.11b standard devices.
➢ Supports new data modulation PBCC technology from Text Instrument, which enables high data with double speed of up to 22Mbps.
➢ 20% more transmitting and receiving coverage supported by PBCC modulation.
➢ Supports auto data rate fallback under noisy environment or longer distance.
➢ Enhanced security on WEP encryption from 64, 128 to the maximum of 256 bits.
➢ Supports SiteSurvey function with profile.
➢ Supports Roaming function to allow you to roam between different AP coverage areas.
➢ Easy setup and installation with Install Wizard..

System Requirements

- Windows 95, 98, 98SE, Millennium Edition (ME), 2000 and XP computers
- PC with Pentium III 600MHz system or above is recommended
- Equipped with at least one PC Cardbus socket or PC Cardbus adapter.
- One CD-ROM drive

GETTING STARTED

## Getting To Know The 22Mbps Wireless Network PC Card

WIRELESS NETWORK PC Card'S LEDs

➢ Power LED
   ON when the unit is powered up
➢ WLAN LED
   ON indicates WLAN connection; blink indicates wireless activity

Setting Up The Wireless Network

There two wireless network topologies that you can setup your wireless card with. One is called "**Ad-Hoc**", and the other is "**Infrastructure**".   On an Ad-Hoc network, two or more computers each has at least one wireless network client device such as wireless PC Card installed, establish point-to-point data communication with each other. While on an Infrastructure network, every wireless station communicates through Access Points.

Setting Up Ad-Hoc Network

Wireless Desktop Station

Wireless Notebook Station

Wireless Notebook Station

The   idea of
Ad-   Hoc
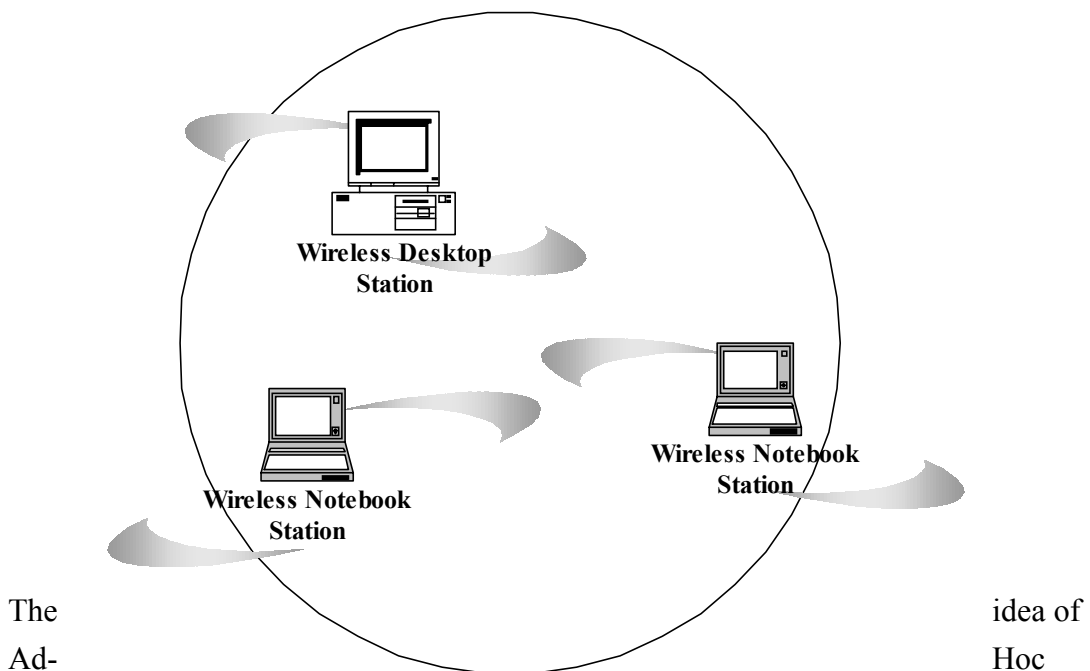
Network is rather simple. All the wireless station are set to use the same BSS ID and channel to establish communication linkage with each other to form a point-to-point network for data transmission and reception.

Setting Up Infrastructure Network
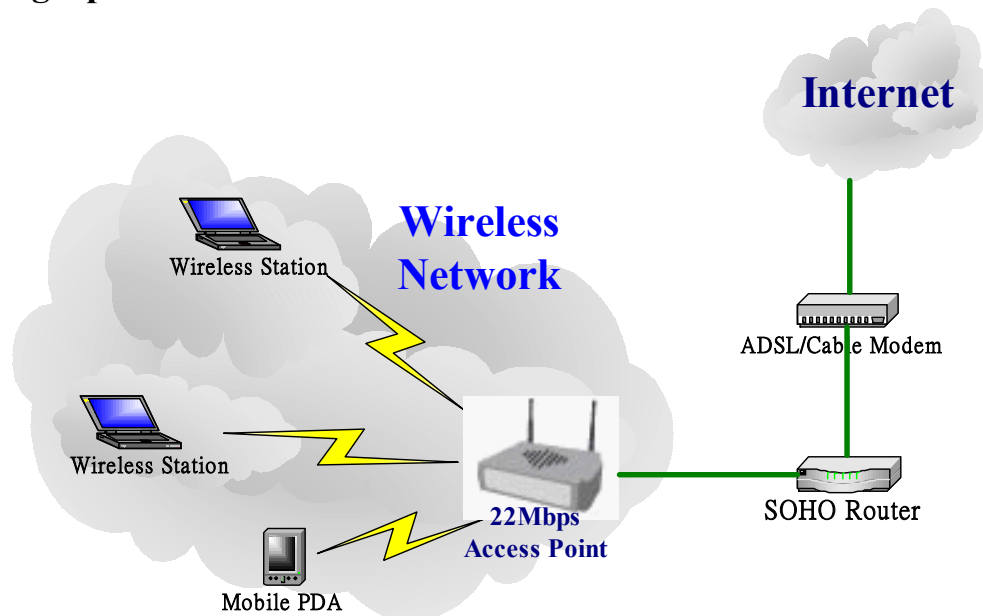
In order to setup an Infrastructure of a wireless network such as the example shown above, you will need the following:

1. A broadband Internet connection.
2. ADSL or Cable modem provided by your ISP as part of the broadband connection installation.
3. A Router that connects to the ADSL/Cable modem for internet connection sharing.
4. An Access Point to connect with the Router to form a wireless infrastructure network.
5. Wireless clients equipped with wireless networking devices such as wireless PC Card for wireless connection.

In this case, all the wireless clients and Access Point operate under the same channel with the same ESSID. The wireless clients are all connected to the Access Point for data transmission.

Installing Your 22Mbps Wireless Network PC Card

1 *Installing Utility Program*

Make sure that the 22Mbps Wireless Network PC Card is **NOT** inserted into the Cardbus slot.

Turn on the computer. Insert the software CD into the CD-ROM Drive.

Please note that the installation screens in this quick guide are captured from WindowsXP. The other Windows systems will have similar screen for the installation procedure.
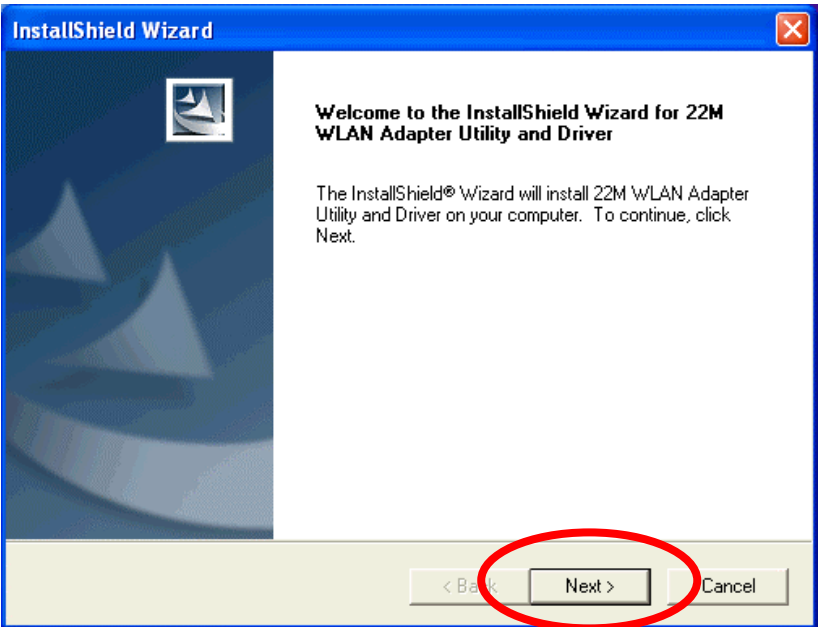
Click on the "**PC Card/PCI Card**" option on the left selection menu.

Click on "**Install**" button
to start Utility
installation.

InstallShield Wizard
starts. Click "**Next**" to
continue.

Click "**Next**" to install the
program files in the
default folder.
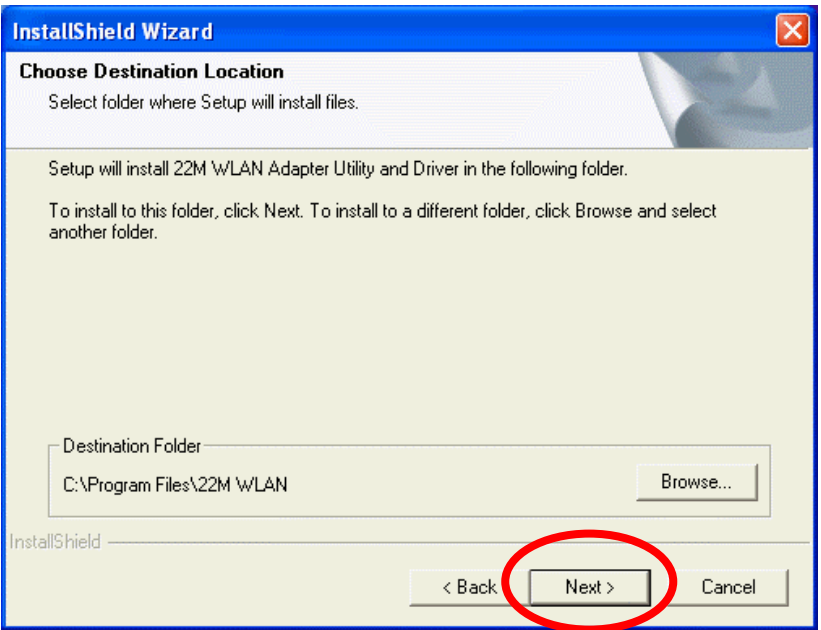
Select the second option,
and click "**Finish**" to
complete the installation.
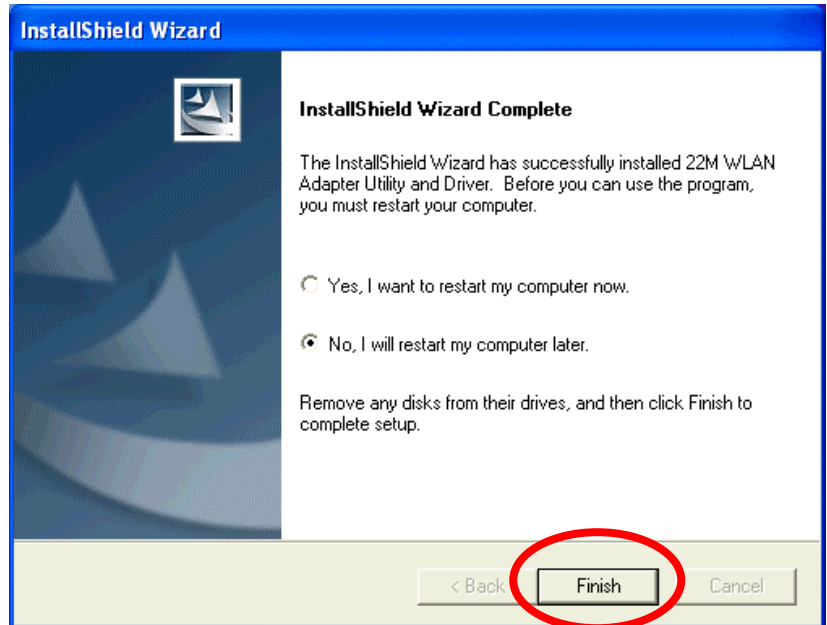
- Turn off your computer
- Insert the 22Mbps Wireless Network PC Card into the CardBus slot in your notebook
- Turn on your computer
- Continue with **Driver Installation.**

2 *Installation of Driver Files*

Select the second option
and click "**Next**" to
continue.

Select first option then click on the checkbox click "**Browse**" button to specify the driver file folder.

Found New Hardware Wizard

Please choose your search and installation options.

⦿ Search for the best driver in these locations.

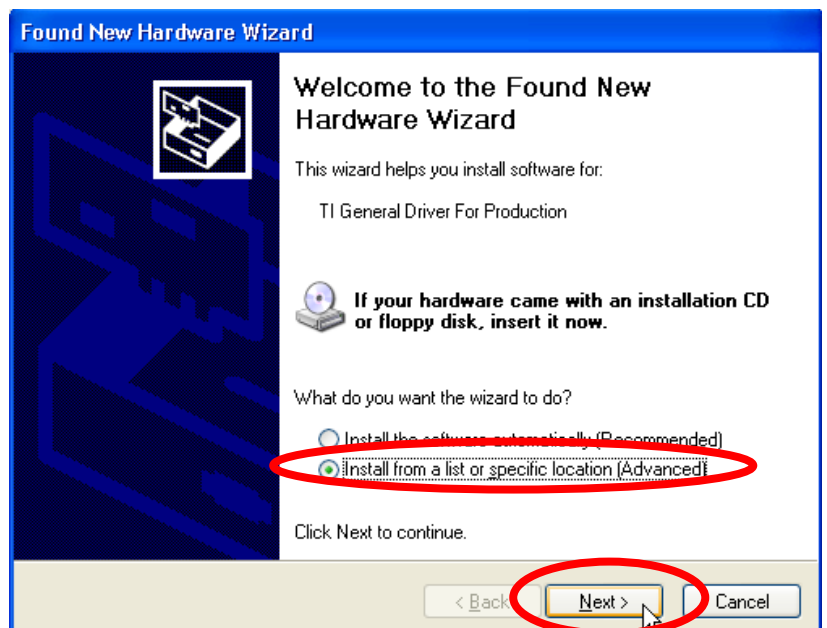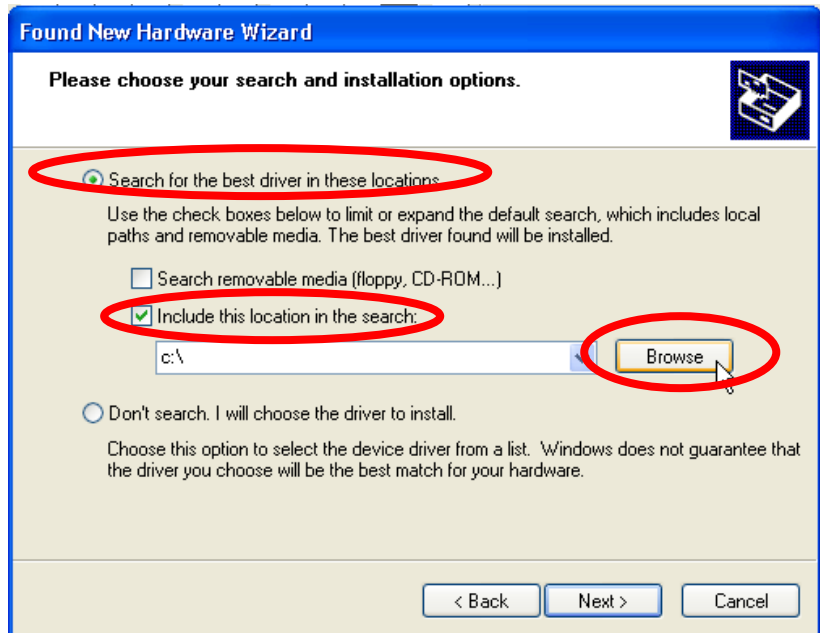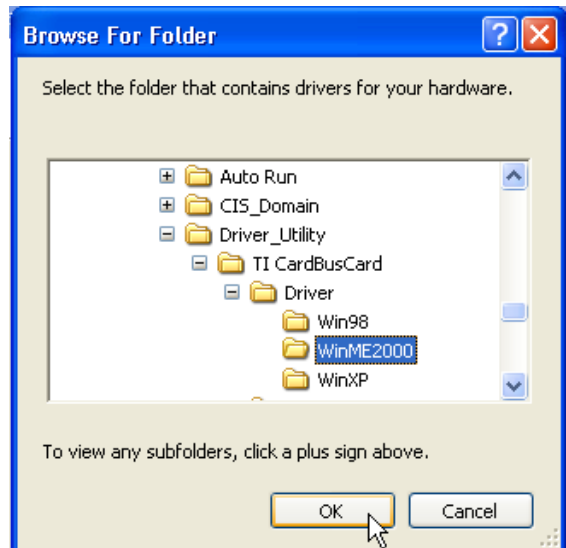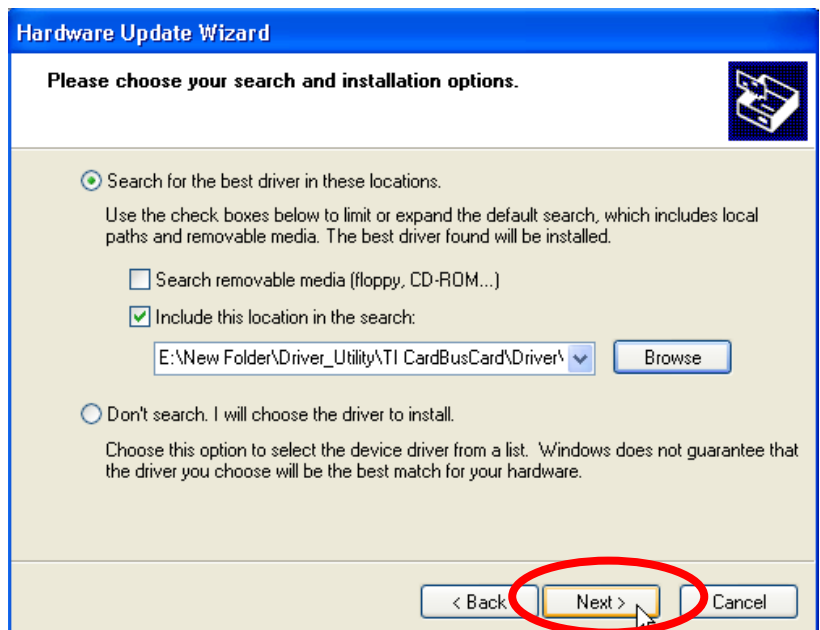Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.

☐ Search removable media (floppy, CD-ROM...)

☑ Include this location in the search:

c:\   Browse

○ Don't search. I will choose the driver to install.

Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.

< Back   Next >   Cancel

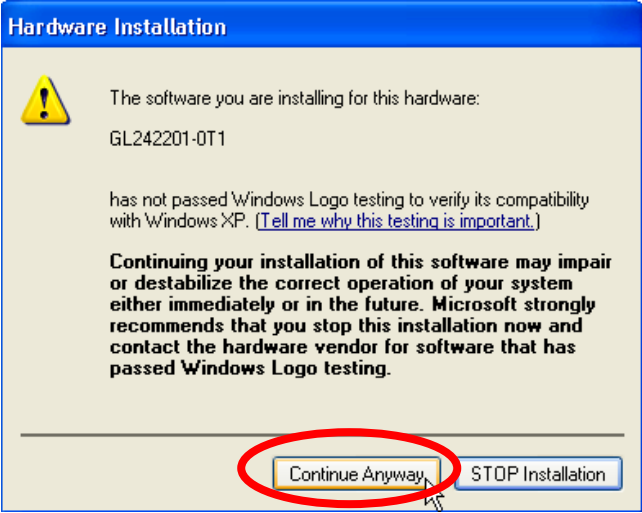
Go to D:\Driver\WinXP
Click "**OK**"

Please note that letter "**D:**" represents the CD-ROM driver letter, and select folder "Win98" when installing under Windows 98 O/S or WinME2000 for Windows ME or 2000 O/S.

Browse For Folder

Select the folder that contains drivers for your hardware.

```
⊞ 📁 Auto Run
⊞ 📁 CIS_Domain
⊟ 📁 Driver_Utility
    ⊟ 📁 TI CardBusCard
        ⊟ 📁 Driver
            📁 Win98
            📁 WinME2000
            📁 WinXP
```

To view any subfolders, click a plus sign above.

OK   Cancel

Click "**Next**" to continue

Hardware Update Wizard

Please choose your search and installation options.

⦿ Search for the best driver in these locations.

Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.

☐ Search removable media (floppy, CD-ROM...)

☑ Include this location in the search:

E:\New Folder\Driver_Utility\TI CardBusCard\Driver\   Browse

○ Don't search. I will choose the driver to install.

Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.

< Back   Next >   Cancel

Click "**Continue Anyway**" to continue

Hardware Installation

⚠ The software you are installing for this hardware:

GL242201-0T1

has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.

[Continue Anyway]   [STOP Installation]

Click "**Finish**" to complete new hardware installation.

Found New Hardware Wizard

Completing the Found New Hardware Wizard

The wizard has finished installing the software for:

22M WLAN Adapter

Click Finish to close the wizard.

< Back   [Finish]   Cancel

After successful installation, an utility program icon will appear on your desktop screen.

Simply, double-click the icon to launch the utility.

22M WLAN Adapter Utility

Wireless LAN Monitor/Configuration Utility

Link Info.

Configuration

Security

SiteSurvey

About

Status   Associated BSSID=00-03-2F-04-25-86

SSID   FAE

Tx Rate   22 PBCC   Mbps

Channel   10   [Radio Off]

Link Quality/Signal Strength

Link Quality   97%   Signal Strength   100%

Data Rate

Transmit   0 Kbps   Receive   0 Kbps

10000
1000
100
10
0

13
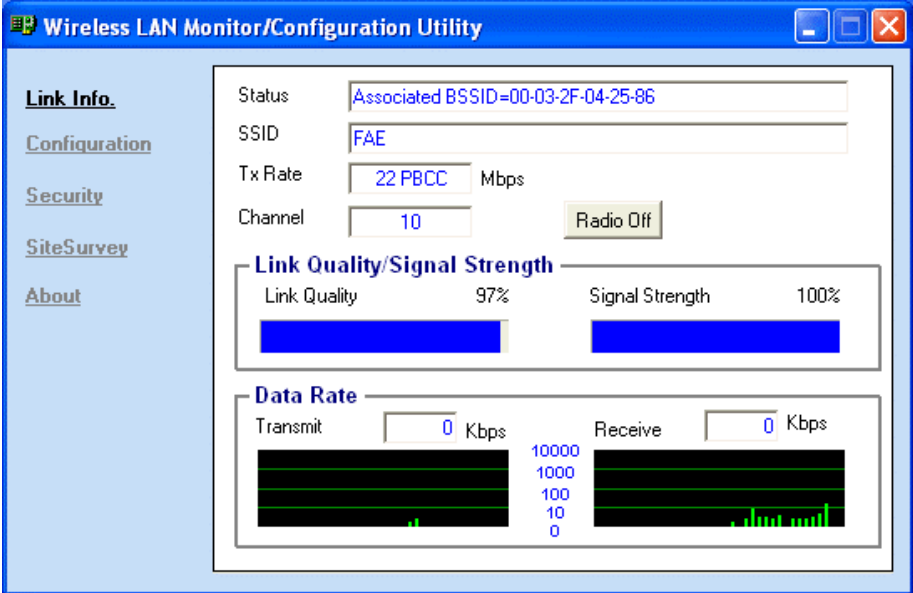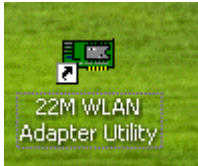
CONFIGURING YOUR WIRELESS NETWORK PC Card

Link Info. Page

This is the default page when the utility starts up.

Status: Shows the BSSID associated, which can be used to identify the wireless network.

SSID: Shows current SSID, which must be the same for the wireless client and AP in order for communication to be established.

**TxRate:** Shows the current data rate used for transmitting.

Channel: Shows the current channel for communication.

Radio Off button: When clicked, you disable the radio signal, and cut-off the wireless connection.

Link Quality: Shows the link quality of the 22Mbps wireless PC Card with the Access Point when operating under Infrastructure mode.

Signal Strength: Shows the wireless signal strength of the connection between the 22mpbs wireless PC Card with the Access Point.

Data Rate: Shows the statistics of data transfer, and the calculation is based on the number of packets transmitted and received.
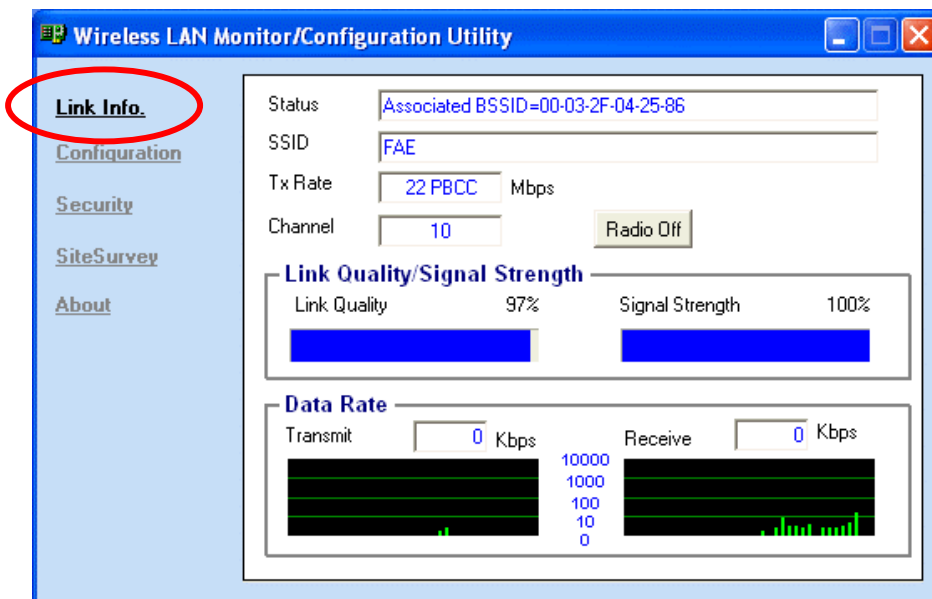
Configuration Page

This is the page where you can change the basic settings of the Access Point with the minimum amount of effort to adjust a secure wireless network.
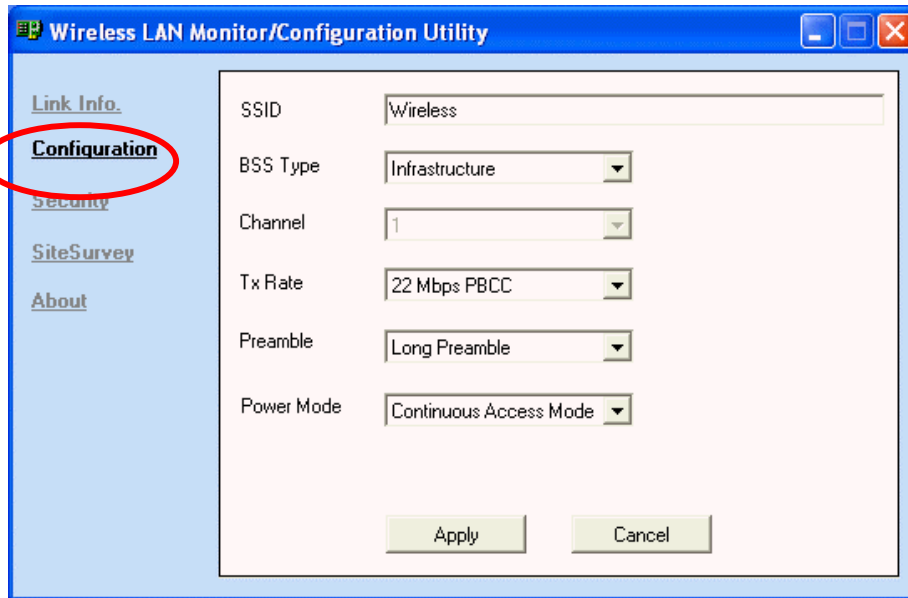
SSID: Service Set Identifier, which is a unique name shared among all clients and nodes in a wireless network. The SSID must be identical for each clients and nodes in the wireless network.

BSS Type: There are two types available for selection

- Infrastructure – to establish wireless communication with LAN and other wireless clients through the use the Access Points.
- Ad-Hoc – to establish point-to-point wireless communication directly with other wireless client devices such as wireless network PC Card.

Channel: The value of channel that AP will operate in. You can select the channel range of 1 to 11 for North America (FCC) domain, 1 to 13 for European (ETSI) domain and 1 to 14 for Japanese domain.

**Tx Rate:** Select the data rate for data transmission.

Preamble: Select **Long** or **Short** Preamble type. Preamble is a sequence of bits transmitted at 1Mbps that allows the PHY circuitry to reach steady-state demodulation and synchronization of bit clock and frame start. Two different preambles and headers are defined: the mandatory supported Long Preamble and header, which interoperates with the 1 Mbit/s and 2 Mbit/s DSSS specification (as described in IEEE Std 802.11), and an optional Short Preamble and header (as described in IEEE Std 802.11b). At the receiver, the Preamble and header are

processed to aid in demodulation and delivery of the PSDU. The Short Preamble and header may be used to minimize overhead and, thus, maximize the network data throughput. However, the Short Preamble is supported only from the IEEE 802.11b (High-Rate) standard and not from the original IEEE 802.11. That means that stations using Short-Preamble cannot communicate with stations implementing the original version of the protocol.

Power Mode: There are 3 modes to choose from

- Continuous Access Mode (default) – the PC Card is constantly operating with full power and it consumes the most power
- Maximum Power Save – the PC Card consumes the least power and only operates when there is wireless network activity.
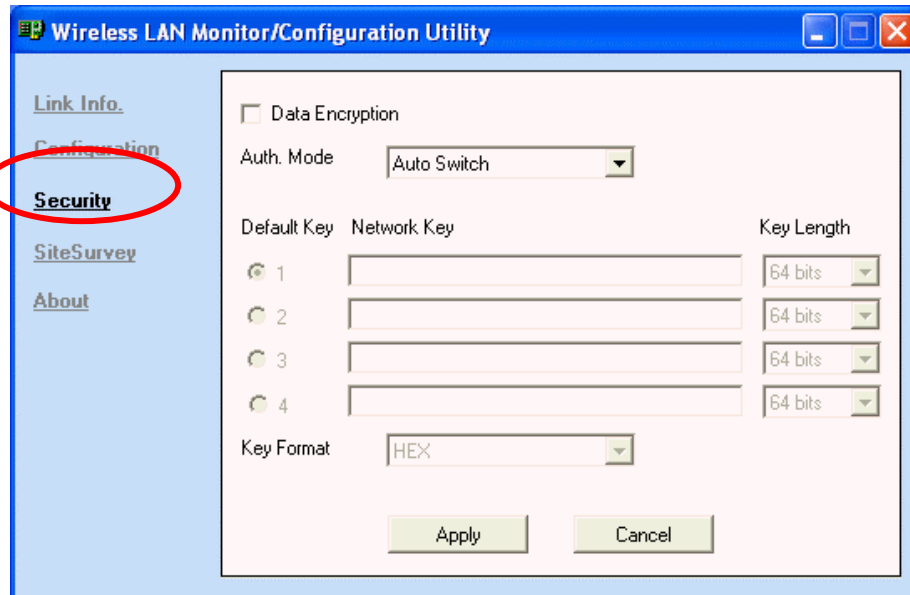- Power Save – the PC Card consumes the moderate level of power.

For the changes made to any of the items above to be effective, click "**Apply**".   The screen will be changed back to **Link Info.** Page
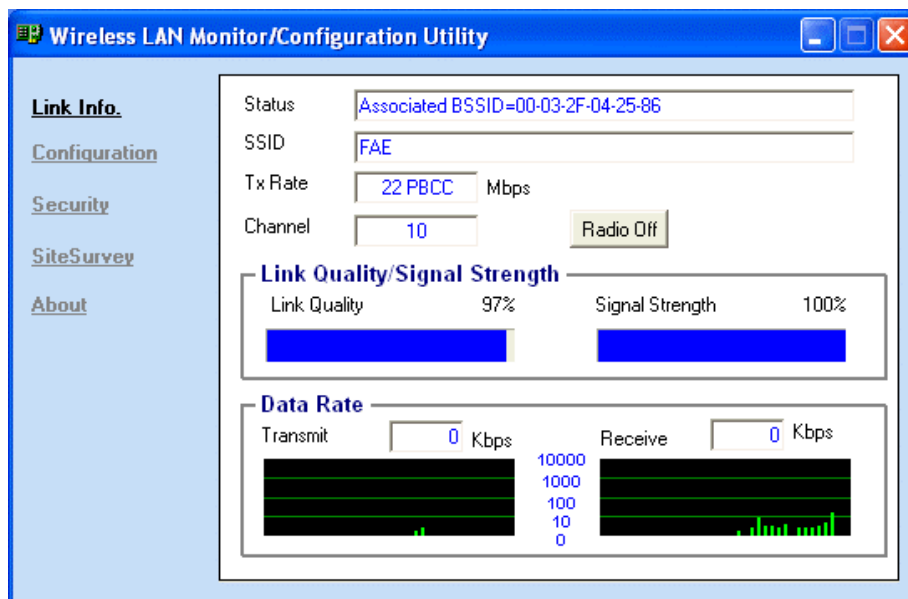
Security Page

This is the page where you configure Security settings of your 22Mbps wireless PC Card.

Data Encryption: Click the box to enable Data Encryption feature.

Aut. Mode: There are three modes available to choose from.

- **Open Authentication** – the sender and receiver do not share secret Key for communication. Instead, each party generates its own key-pairs and ask the other party to accept it. The key is regenerated when the connection is established every time.

- **Shared Authentication** – the sender and receiver shares the common key for data communication, and the key is used for extended length of time.

- **Auto** – depend on the communication to establish, and automatically use the proper authentication mode.

The following will only be activated to allow for configuration when **Data Encryption** is enabled.

**Default Key:** select one of the 4 keys to use.

Network Key: enter values to these fields, either in HEX or ASCII formats. You only have to enter the key that you will use

Key Length: select 64, 128 or 256 bits as the length of the keys

Key Format: ASCII or **HEX** (Please refer to Appendix G: Glossary for details about these two formats).

SiteSurvey Page

This page allows to utilize the SiteSurvey function to scan for the available wireless network (wireless clients and Access Points) and select one to establish wireless communication.
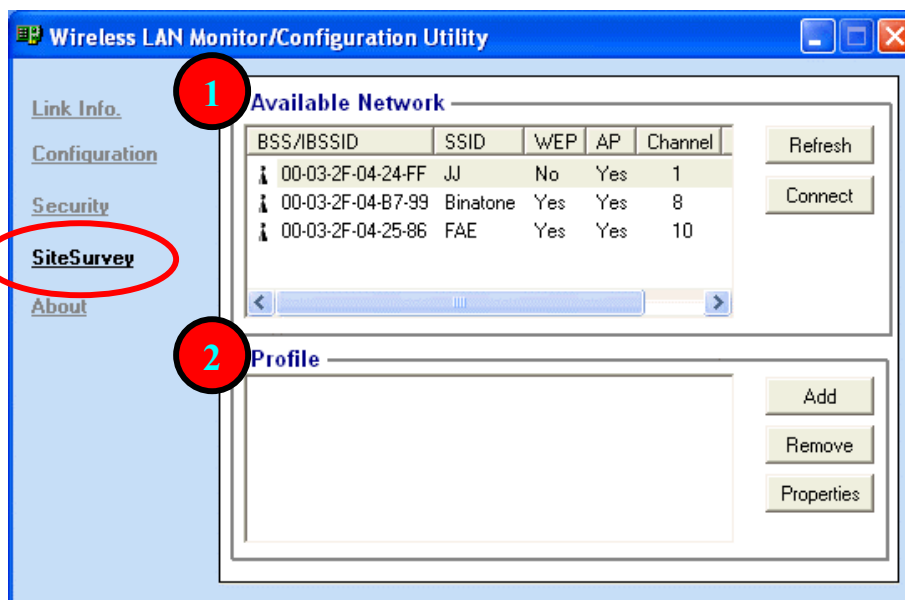
1 Available Network – displays the wireless networks (wireless clients and Access Points) that are in your signal range. Select any one of them and establish communication by simply mouse **double-click** or a single click on the "**Connect**" button.

Click "**Refresh**" button to start scanning for available network again.

2 Profile – You can create and manage the created profiles for Home, offices or public areas.

By double-clicking on one of the created profile, the setting will adapt to the configuration such as SSID, channel, and WEP settings saved by that particular profile.

Click to select any one of the profiles, and you can

Click on "**Remove**" button to remove the profile, or

Click on "**Properties**" button to view and change its settings. The Properties is very similar to that of adding profile.

Click "**Add**" to add a profile, and the following screen would appear.

All the detail information about each settings and configuration item are described in previous Configuration and Security Page sessions. Please refer to those two sessions for more information.

When you finish enter the setting for this profile, click "**OK**" to add a new profile.

About Page

This page displays some information about the 22mpbs PC Card utility, which includes the version numbers for Driver, Firmware and Utility.

When there is new version of software available for upgrade, you will be able to identify by version numbers.