# Gincom Wireless LAN

*USB Adapter*


# Users manual


Version 1.0.3

October 2003

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# Federal Communications Commission (FCC)

The **Wireless LAN Adapter** (FCC ID: RGWGWM2UBA) has been tested to the FCC exposure requirements (Specific Absorption Rate.). 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 received, including interference that may cause undesired operations.

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/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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the 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.

**Caution**

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

This EUT is incompliance with SAR for general population /uncontrolled exposure limits in ANSI/IEEE C95.1-1999 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C

# Wireless LAN Basics

Wireless LAN (Local Area Networks) systems offer a great number of advantages over a traditional, wired system. Wireless LANs (WLANs) are more flexible, easier to setup and manage and often more cost effective than their wired equivalence. 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. With wireless LANs, users can access shared information without looking for a place to plug in and network managers can set up or augment networks without installing or moving wires. Wireless LANs offer the following productivity, convenience and cost advantages over traditional wired networks:

**Mobility**

Wireless LAN systems can provide LAN users with access to real-time information anywhere in their organization. This mobility supports productivity and service opportunities not possible with wired networks.

**Installation Speed and Simplicity**

Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

**Installation Flexibility**

Wireless technology allows the network to go where wires cannot go.

**Reduced Cost-of-Ownership**

While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long-term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

**Scalability**

Wireless LAN systems can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to- peer to full infrastructure networks, also allow roaming over a broad area.

# About Wireless LAN USB Adapter

The Wireless LAN USB Stick is an IEEE 802.11b compliant wireless USB adapter that connects to USB ports on desktop or notebook computers. Its maximum 11 Mbps data rate, which gives Ethernet equivalent speed, is an ideal in the corporate or home environment. Users enjoy the wireless mobility within the coverage area. What's more, the Wireless LAN USB adapter supports IEEE 802.1x authentication methods for enhanced security that protects the network from intruders.

## *Ad-Hoc Application*

An ad-hoc network consists of two or more computers communicating with one another through the wireless network. No access points (APs) or existing wired networks are needed.
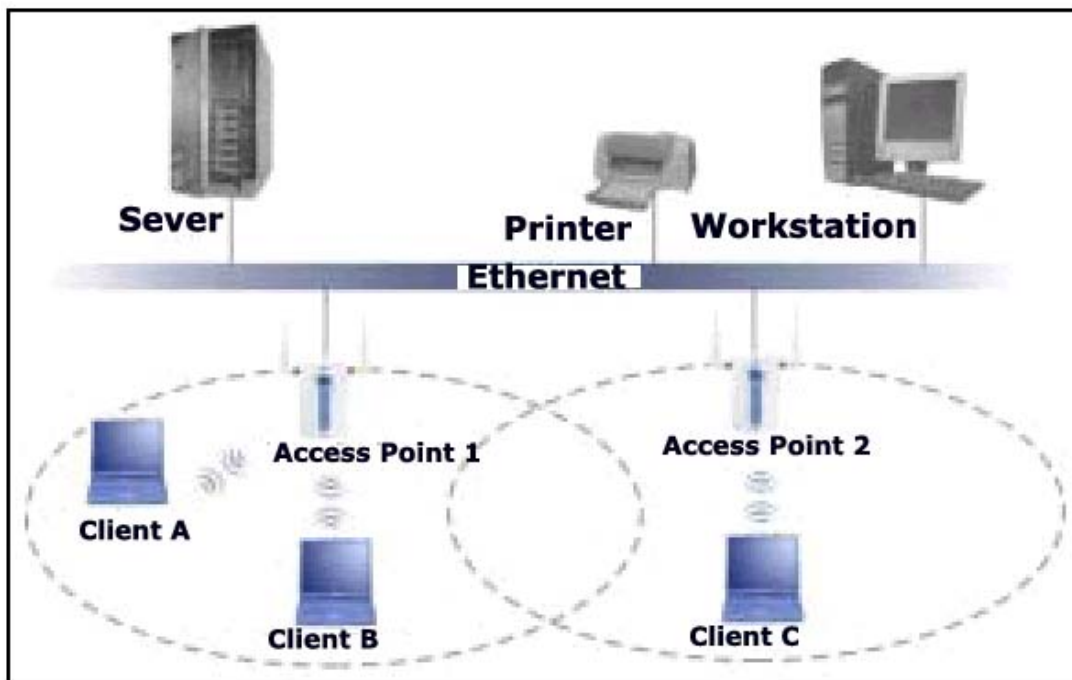
## *Infrastructure Application*

When wireless clients wish to access and share resources on the wired network, they should use infrastructure mode. Wireless clients may move or roam from one coverage area to another seamlessly without network interruption.



**Ad-hoc Network Example**

**Infrastructure Network Example**

## Installation Overview

**1.** Installation Requirements

**2.** Hardware Installation

**3.** Driver Installation

**4.** Disable Windows XP Wireless Configuration Tool

**5.** Configuration Utility

**6.** Troubleshooting

# 1. Installation Requirements

Before installation, make sure you have the following requirements.

- At least 32 MB RAM (64 MB recommended)
- A minimum of 20 MB available hard disk space
- CD-ROM drive
- USB port (version 1.1 compatible)
- Windows 98 SE/Me/2000/XP
- Windows 98 SE users may need the Windows 98/98 SE CD

# 2. Hardware Installation

Follow the steps below to install the Wireless LAN USB Stick in computer.

**1.** Save your work and close all applications.

**2.** Locate an available USB port on the computer.

**3.** Remove the protective cap to expose the USB connector.
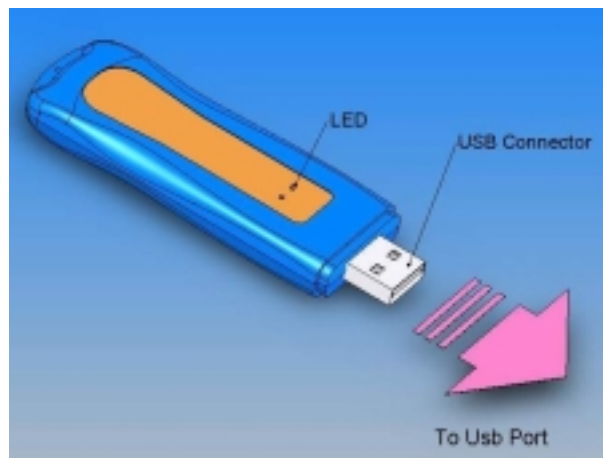
**4.** Insert the 11M Wireless LAN USB

Stick to the USB port on thecomputer.

**Never bend, force or twist the Wireless LAN USB Stick into the USB slot.**



**When the USB connector of the Wireless LAN USB Stick is properly inserted into the computer USB port, the LED blinks slowly.**

**Front Panel LED**

The following table describes the LED on the front panel of the Wireless LAN USB Stick.

| COLOR | STATUS | DESCRIPTION |
|---|---|---|
| Green | On | The Wireless LAN USB Stick has a successful connection to an access point |
| | Blink (fast) | The Wireless LAN USB Stick is sending or receiving data. |
| | Blink (slow) | The Wireless LAN USB Stick is ready but not connected to an access point. |

# 3. **Driver installation**

**For Windows 2000**

Before you proceed with the installation,please notice following descriptions.

Note1: The following installation was operated under Windows 2000. ( proce dures will be the same for Windows 98SE/Me/XP.)

Note2: After running the driver package, the Notebook(or PC)with Win98/Me OS shall be restarted, for Win2000 or WinXP OS the Notebook(or PC) doesn't need be restarted.

Note3: Please do not insert USB Stick adapter into USB port of your computer until Application setup has been completed.
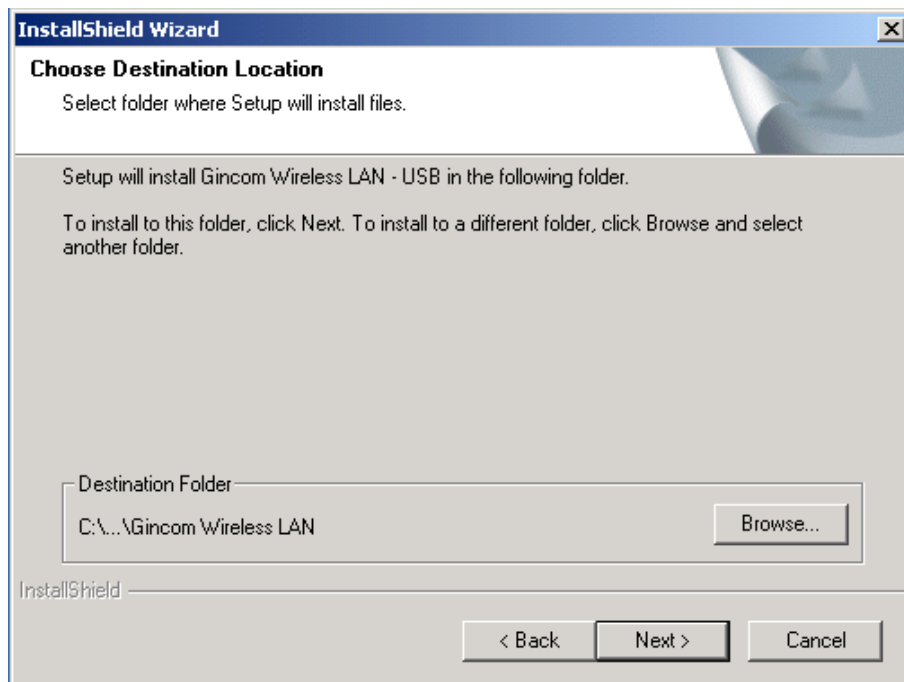
**Install the Driver and Utility**

1. Insert the CD into the CD-ROM device and execute the "WS1U3515_ WHQL_ GC_3813.exe" program. The Install Shield Wizard box will appear, click "Next to continue.
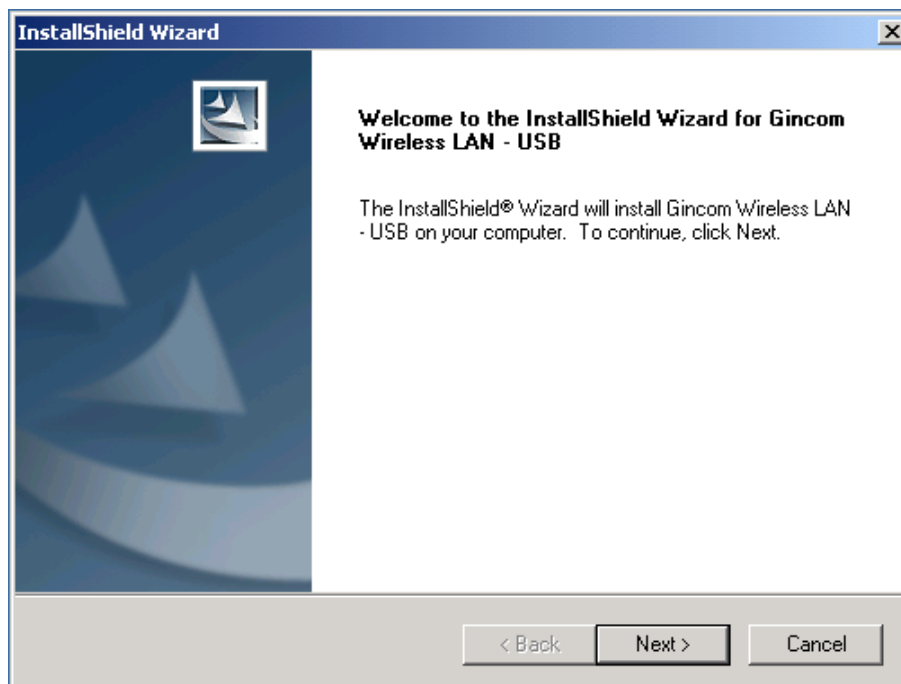
2. Choose install folder.



3. Insert the Gincom WLAN adapter into the USB port of your computer, the system will automatically find the device and search for its software.

4. when you complete the Utility installation, a new icon will be displayed in the taskbar at the system bar.

# 4. Disable Windows XP Wireless Configuration Tool

Windows XP includes a basic configuration tool for wireless devices.

**DO NOT use the configuration tool together with the WLAN USB adapter Utility program. Always use the WLAN USB adapter Utility program to configure the USB adapter.**

**1.** Double-click the network icon for wireless connection in the system tray.

**2.** When a **Connect to Wireless Network** window displays, click **Advanced**….

**3.** In the **Wireless Network Connection Properties** window, make sure the **Use Windows to configure my wireless network settings** check box is **not** selected. Click **OK**.

# 5. Configuration Utility

WLAN USB adapter uses the Configuration Utility as the management software. All functions controlled by user are provided by this application. Usually this application starts automatically, or click icon from Start Menu to start the Utility application. Clicking on the utility icon will start the configuration Utility.



Double click the icon shows above. The screen will be display. User can navigate by clicking more setting. "X" button will minimize window. Below description explains the use and meanings of the various screen messages.
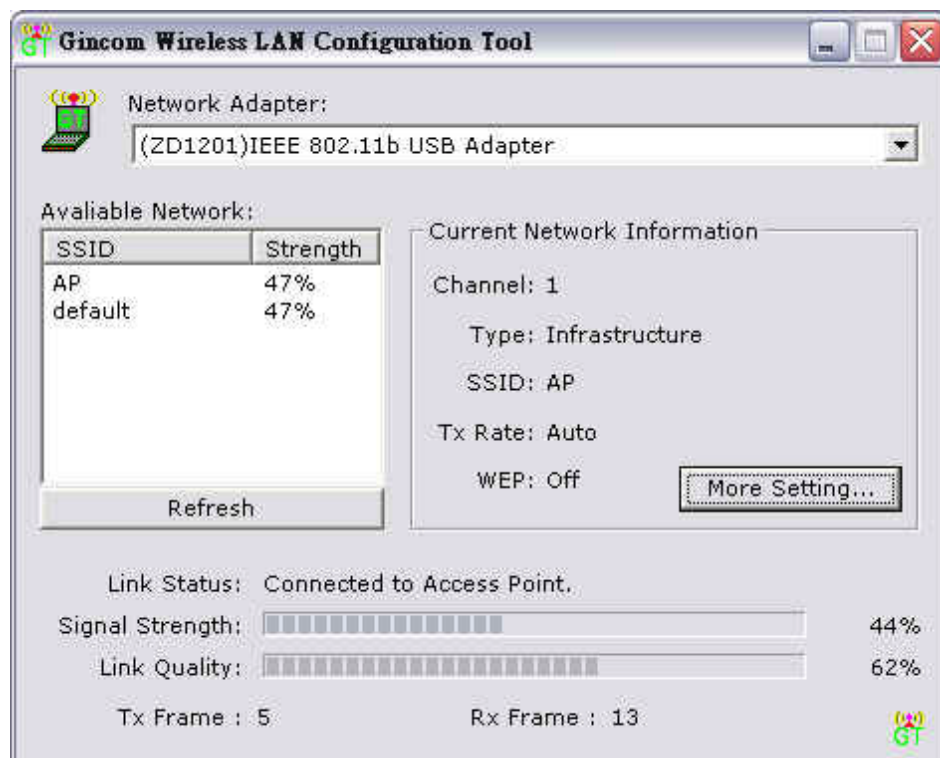
## Available Network

This screen shows all Access Points or Adapters nearby. Click "Refresh" button to search the SSID and the Strength information of all the wireless devices nearby. If you want to connect to any device on the list, double-click the item on the list, and the stick will connect to the selected device automatically.

**Current Network information**

This sheet shows the status of the network you choice.

**Signal Strength**

The Signal Strength bar graph is only active when the node is in Infrastructure Mode. The bar graph displays normalized signal strength as reported by the radio, averaged over all frames over 100 bytes long that are received from the Access Point. This indicator helps to find the proper position of the wireless device for quality network operation.

**Signal quality**

The Signal quality bar graph is only active when the node is in Infrastructure Mode. The bar graph displays normalized signal quality as reported by the radio, averaged over all frames over 100 bytes long that are received from the Access Point.

**General Connection Setting Table**

Select the More Setting icon to access the Configuration menu, the screen will display.

**Channel**

     This field displays the radio channel the WLAN adapter us currently using. When communicating in Ad-hoc mode, you must specify a channel on which communications be used. This field is grayed in infrastructure mode.

**TxRate**

     This field specifies the rate at which the radio in your WLAN stick transmits and receives data. You can set it to 1Mbps, 2Mbps, 5.5Mbps, 11Mbps and Auto, when Auto is enabled, the adapter will choice the most suitable transmission rate automatically.

**SSID**

     The SSID(Service Set Identity) is a unique name shared among all wireless devices in a wireless network. Wireless devices must have the same SSID to communicate with each other. The default value is "any", which will scan and connect the best performance Access Point nearby.

**Network Type**

The WLAN adapter can operate in on of two modes, infrastructure and Ad-hoc.To connect to a wired network within a coverage area using Access Points (APs), set the WLAN Adapter's operation mode to **Infrastructur**e. An AP acts as a bridge between the wireless stations and the wired network. In case you do not wish to connect to a wired network, but prefer to set up a small independent wireless workgroup without an AP, use the **Ad-hoc (IBSS)** (Independent Basic Service Set) mode.

**Ad-hoc**

Ad-hoc mode does not required an AP or a wired network. Two or more wireless clients communicate directly to each other. An ad-hoc network may sometimes be referred to as an Independent Basic Service Set (IBSS).

**Infrastructure**

When a number of wireless clients are connected using a single AP, you have a Basic Service Set (BSS).

A series of overlapping BSS and a network medium, such as an Ethernet forms an Extended Service Set (ESS) or infrastructure network. All communication is done through the AP, which relays data packets to other wireless clients or devices connected to the wired network. Wireless clients can then access resource, such as the printer, on the wired network.
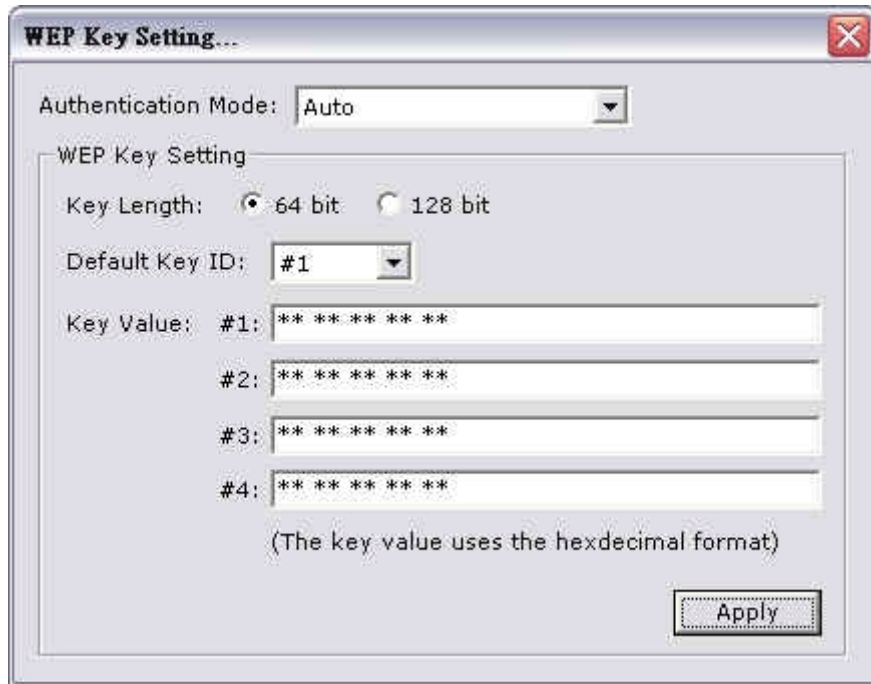
**Pseudo IBSS**

This mode is for manufacture testing.

**Encryption Setting table**

"WEP key setting" allow you to enhance the security of a network. WEP (Wired Equivalent Privacy) encryption scrambles the data transmitted between the WLAN Adapter and the AP or other wireless stations to keep network communications private. It encrypts unicast and multicast communications in a network. Both the wireless clients and the access points must use the same WEP key for data encryption and decryption. Your WLAN Adapter allows you to configure up to four 64-bit or 128-bit WEP keys but only one key can be enabled at any one time.

**Authentication Mode**

This setting has to be consistent with the wireless devices, which the adapter intends to connect.

**Open System**

No authentication is needed among the wireless devices.

**Share Key**

Only wireless devices using a shared key(WEP key Identified) are allowed to connect to each other.

**Auto**

Auto switch the authentication algorithm depending on the wireless devices, which the adapter is connecting.

**Key length**

You may select the 64 bit or 128 bit to encrypt transmitted data.

**Default Key ID**

Select one of the keys as the encryption key.

**Key value**

**Select 64 bit.**

Enter either ten hexadecimal digits in the range of "A-F", "a-f" and "0-9" (e.g.123456789A) for HEX value.
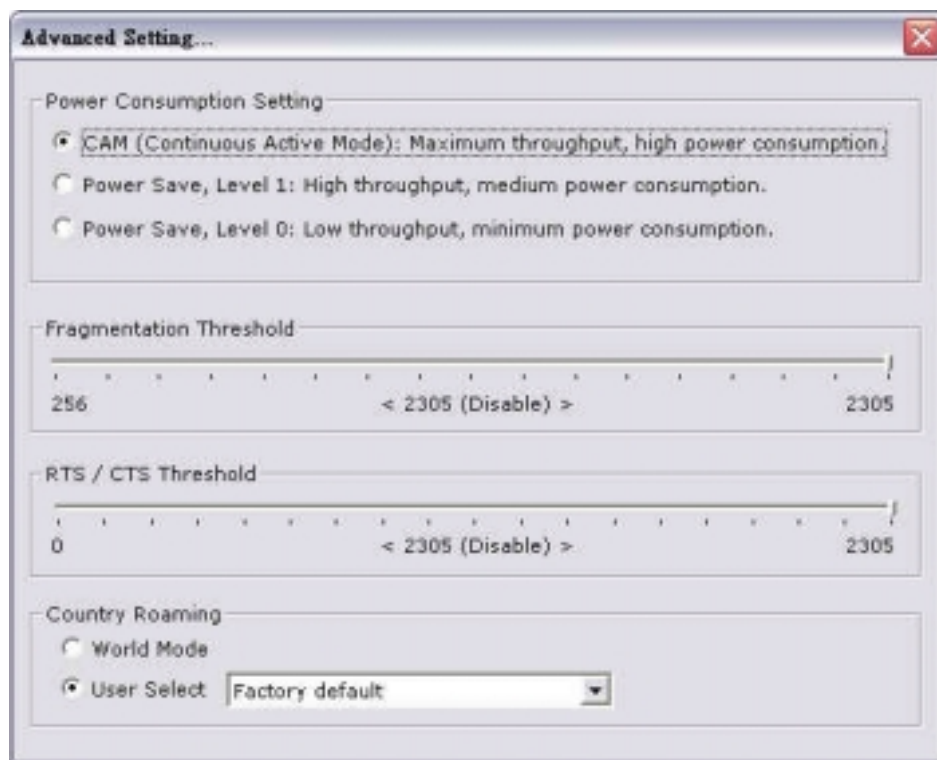
**Select 128bit**

Enter either 26 hexadecimal digits in the range of "A-F", "a-f" and "0-9"(for example, 011AC2334DE5BB779899FFAACC) for HEX value.

**Profile table**

A profile is a named set of operating parameters for your WLAN adapter. The profile field lets you set values for all parameters by selecting a defined profile previously.

**Advanced setting**

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**Power consumption setting**

Power saving mode allows your computer to use reduced power during idle time.

**Fragmentation Threshold**

The threshold (number of bytes) for the fragmentation boundary for directed messages. It is the maximum data fragment size that can be sent. Move the slider to set the fragmentation threshold.

**RTS/CTS Threshold**

Data with its frame size larger than this value will perform the RTS/CTS handshake. Setting this attribute to be larger than the maximum MSDU (MAC service data unit) size turns off the RTS/CTS handshake. Setting this attribute to zero turns on the RTS/CTS handshake. Move the slider to set the RTS/CTS threshold.

**Information**

About tab shows the product version including the detail of Driver, Application and firmware version. Users must use this version number when reporting their problems to technical support.

# 6. Troubleshooting

**Problems Starting the WLAN Utility Program**

**1.** Make sure the WLAN Adapter is properly inserted and the LED(s) is on.

**2.** Use the **Device Manager** to check for possible hardware conflicts. Click **Start**, **Settings**, **Control Panel**, **System**, **Hardware** and **Device Manager**.
Verify the status of the WLAN Adapter under **Network Adapter**. (Steps may vary depending on the version of Windows).

**3.** Install the WLAN Adapter in another computer.

**4.** If the error persists, you may have a hardware problem. In this case, you should contact your local vendor.

**Problems Communicating With Other Computers**

A. **Infrastructure**

Make sure that the AP and the associated computers are turned on and working properly.

Make sure the WLAN Adapter computer and the associated AP use the same SSID.

Make sure that the computer and the AP share the same security option and key. Verify the settings in the "WEP key setting" screen.

B. **Ad-Hoc (IBSS)**

Verify that the peer computer(s) is turned on.

Make sure the WLAN Adapter computer and the peer computer(s) are using the same SSID and channel.

Make sure that the computer and the peer computer(s) share the same security option and key.

Change the wireless clients to use another radio channel if interference is high.

**Problem with the Link Status**

**Link quality**

Move your computer closer to the AP or the peer computer(s) within the

transmission range.

There is too much radio interference (for example microwave) around your wireless network. Relocate or reduce the radio interference.

**Signal Strength**

Move your computer closer to the AP or peer computer(s) within the transmission range.

There is too much radio interference (for example microwave) around your wireless network. Relocate or reduce the radio interference.