

Thumb Size  
IEEE 802.11g Wireless LAN  
USB 2.0 Adapter

User's Guide

## **Regulatory notes and statements**

### **FCC Radio Frequency Exposure statement**

#### **FCC 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:**

##### **Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

We declare that the product is limited in CH1~CH11 by specified firmware controlled in the USA.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## **Export restrictions**

This product or software contains encryption code that may not be exported or transferred from the US of Canada without an approved US Department of Commerce export license.

## **Safety Information**

Your device contains a low power transmitter. When device is transmitted it sends out radio frequency (RF) signal.

**CAUTION:** To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

## **CE Mark Warning**

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

## **Protection requirements for health and safety – Article 3.1a**

Testing for electric safety according to EN 60950 has been conducted. These are considered relevant and sufficient.

## **Protection requirements for electromagnetic compatibility – Article 3.1b**

Testing for electromagnetic compatibility according to EN 301 489-1, EN 301 489-17 and EN 55024 has been conducted. These are considered relevant and sufficient.

## **Effective use of the radio spectrum – Article 3.2**

Testing for radio test suites according to EN 300 328 has been conducted. These are considered relevant and sufficient.

## **CE in which Countries where the product may be used freely:**

Germany, UK, Italy, Spain, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway and Iceland.

France: except the channel 10 through 13, law prohibits the use of other channels.



# ***TABLE OF CONTENT***

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Introduction.....	1
Overview of this User' s Guide.....	1
Unpacking and Setup.....	2
Unpacking.....	2
Setup.....	2
Hardware Installation.....	3
LED Indicator.....	3
Check the installation.....	3
Software Installation.....	4
Windows 98se/ME/2000/XP Utility and Driver Installation .....	4
Wireless Utility Setting.....	6
Technical Specifications .....	12

# ***INTRODUCTION***

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Congratulations on your purchase of this Thumb Size IEEE 802.11g Wireless LAN USB 2.0 Adapter.

This manual helps to get familiar with the Thumb Size IEEE 802.11g Wireless LAN USB 2.0 Adapter. This manual contains detailed instructions in operation of this product. Please keep this manual for future reference.

With a Wireless LAN (IEEE 802.11g) USB 2.0 Adapter, a desktop or laptop computer can communicate with another computer in a wireless way. Easy-to-use utilities are bundled with Wireless USB Adapter for configuration, monitoring, and diagnosis purposes.

The Thumb Size 802.11g Wireless LAN USB 2.0 Adapter can wirelessly transmit and receive data, minimizing the need for wired connections, at a speed of up to fifty-four megabit per second.

The Thumb Size 802.11g Wireless LAN USB 2.0 Adapter provides users with an access to real-time information anywhere in their organization. The mobility provides productivity and service, which are not available under wired networks. The Thumb Size 802.11g Wireless LAN USB 2.0 Adapter configuration is easy to change from peer-to-peer networks, suitable for a small number of users, to full infrastructure networks of thousands of users that allow roaming around a broad area.

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## **Overview of this User's Guide**

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**Introduction.** Describes the Thumb Size 802.11g Wireless LAN USB 2.0 Adapter and its features.

**Unpacking and Setup.** Helps you get started with the basic installation of the Thumb Size 802.11g Wireless LAN USB 2.0 Adapter.

**Hardware Installation.** Describes the LED indicators of the Adapter.

**Software Installation.** Tells how to setup the driver and the utility setting.

**Technical Specifications.** Lists the technical specifications of the Thumb Size 802.11g Wireless LAN USB 2.0 Adapter.

## ***UNPACKING AND SETUP***

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This chapter provides unpacking and setup information for the Thumb Size 802.11g Wireless LAN USB 2.0 Adapter.

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### **Unpacking**

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Open the box of the Thumb Size 802.11g Wireless LAN USB 2.0 Adapter and carefully unpack it. The box should contain the following items:

- ◆ One Thumb Size 802.11g Wireless LAN USB 2.0 Adapter
- ◆ One Driver & Utility CD-ROM

If any item is found missing or damaged, please contact your local reseller for replacement.

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### **Setup**

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The setup of the Thumb Size 802.11g Wireless LAN USB 2.0 Adapter can be performed using the following steps:

- ◆ Visually inspect the USB connector and make sure that it is fully plugged in to the system's USB port.
- ◆ Make sure that there is a well environment that there is no much intrusion to have a better connection.

# ***HARDWARE INSTALLATION***

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## **LED Indicator**

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### **LNK (LINK)**

The LNK indicator lights green when the Thumb Size 802.11g Wireless LAN USB Adapter is connected to a network successfully. Otherwise the LNK indicator blinks green while the Thumb Size 802.11g Wireless LAN USB Adapter is scanning the wireless device.

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### **Check the installation**

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The LED of the Thumb Size 802.11g Wireless LAN USB Adapter is clearly visible and the status of the network link can be seen instantly:

1. When connected to the USB port and the driver was installed, the LNK LED will start blinking, it means that the device is starting to scanning a 802.11g wireless device near the Thumb Size 802.11g Wireless LAN USB Adapter.
2. While the Thumb Size 802.11g Wireless LAN USB Adapter linked up to the Access Point or to other Wireless LAN station, the LNK LED will always light up.

## ***SOFTWARE INSTALLATION***

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This section will lead you to install the driver and utility of the Thumb Size 802.11g Wireless LAN USB Adapter.

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### **Windows 98se/ME/2000/XP Utility and Driver Installation**

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1. Insert the Wireless LAN USB 2.0 Adapter Driver & Utility CD-ROM into computer's CD-ROM Drive and it will automatically run a setup menu and install the driver and the utility, for Win98se, please reboot the system to install the driver to the system properly. In some specific setting on Windows system, you may need to proceed the software manually, go to your Windows Start menu and choose **Run**, type "D:\Utility\Setup.exe" in the dialog box (D:\ will depend on where your CD-ROM drive is located) and click **OK**.
2. If you need to install the driver manually, refer each Windows OS to the following CD-Rom directory path: D:\Drivers\<<Windows OS>\.

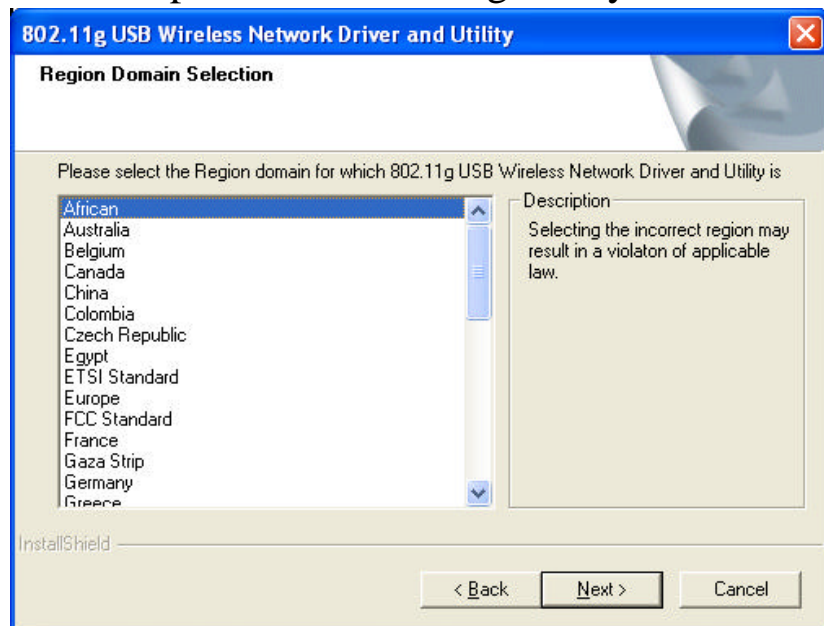
**Note:** (D:\ will depends on where the CD-ROM drive is located and <Windows OS> will depend on the Windows Operating System you are using).



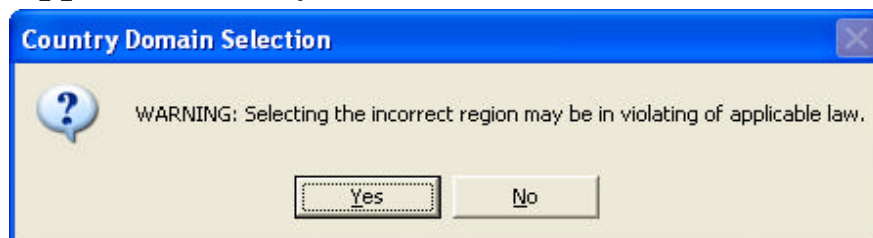
3. The Install Shield Wizard screen will appear. Click "**Next**" to continue.
4. The installation program will help you to setup the Wireless Utility.  
***Be noted that the Windows XP have its own Wireless Utility; you can either use the utility of Windows XP or the provided utility.***



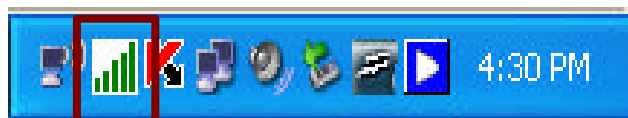
5. When start the utility installing, you will see the Wireless Configuration Utility Region domain Selector, select the Region domain where you are using this Wireless device, users are responsible for ensuring that the region domain configuration is in compliance with the regulatory standards of these countries.



**Warning:** *Be noted that selecting the incorrect region may result in a violation of applicable law; you will need to select the correct domain.*



6. You will see the icon on the Windows task bar when you finish the utility installation and plugged the Thumb Size 802.11g Wireless LAN USB Adapter.




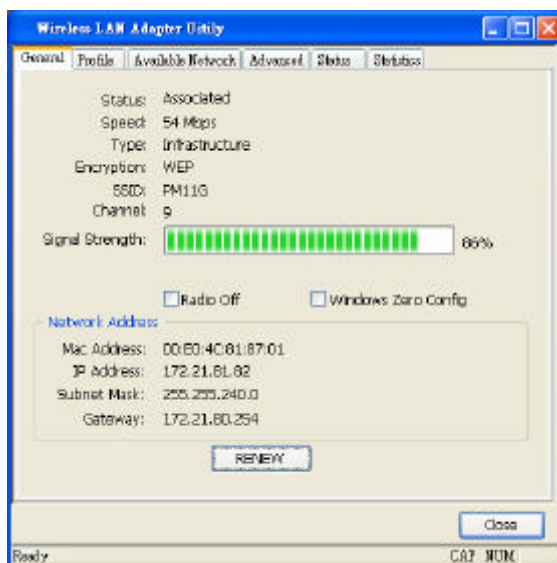
When the icon in the toolbar represents in green color, it is properly connected to the network and shown the linking quality.

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## Wireless Utility Setting

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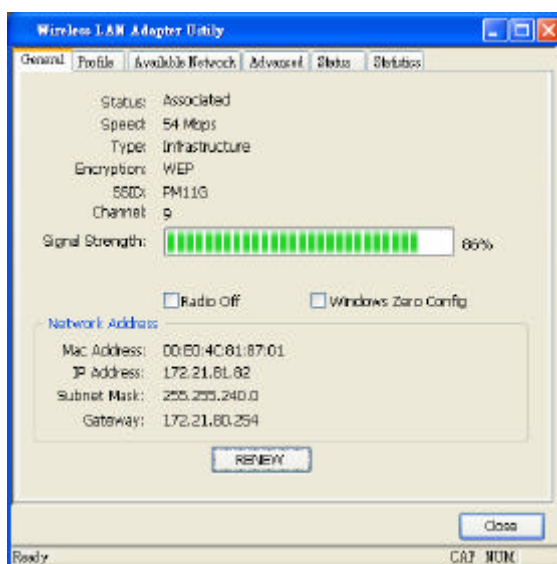
With the Wireless USB 2.0 Adapter utility, users can configure all the functions provided by the Wireless LAN Adapter Utility. Double-click the utility icon  that appears in the taskbar.



The Wireless LAN Adapter Utility includes six tabs: General, Profile, Available Network, Advanced, Status and Statistics.

### General

The General screen shows you the status of the Wireless Adapter, it shows that where the device is connected to, the connect Status, the connecting Speed, the network Type, the Encryption type, the SSID, the Signal Strength and the Network Address.



### Radio off:

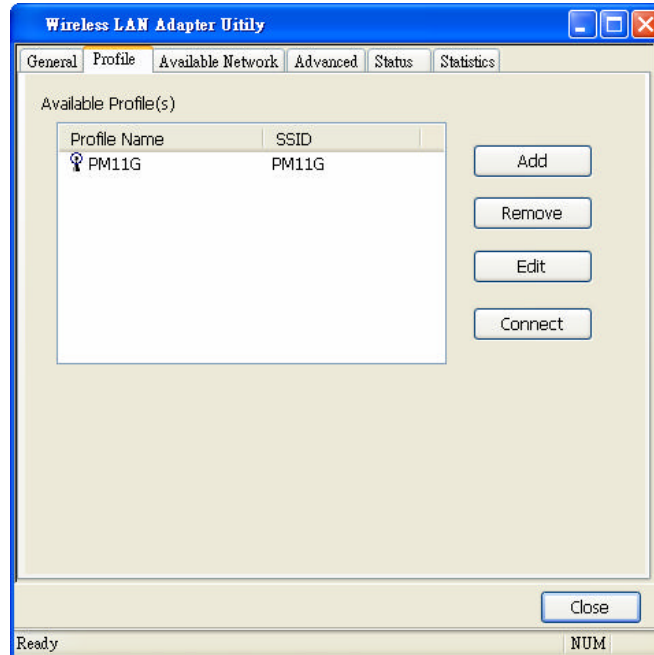
Checked the **Radio Off** to disable the USB Dongle Radio, the connection will be disconnect immediately.

## Windows Zero Config:

Checked the *Windows Zero Config* to using the Microsoft Windows XP embedded WLAN configuration utility “Windows Zero Config”.

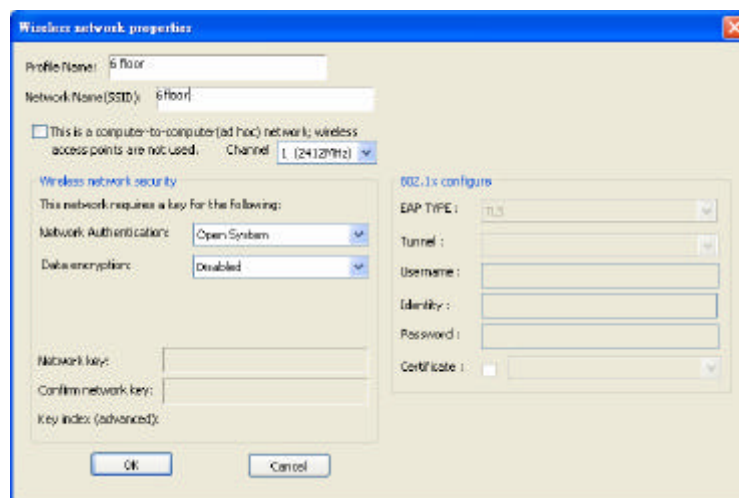
## Profile

The Profile section allows you to set values for all parameters by selecting a previously defined profile.



## Add Profile:

Click “Add” to create a new profile, set the related values such as Profile name, Network Name(SSID) or Security settings than click ”OK” to save the profile.



## Edit Profile:

Click “Edit” to modify existing profile, modify the settings than click ”OK” to save the profile.

## Remove Profile:

Choose a profile name in the “Available Profiles” and click “Remove” to remove the existing profile.

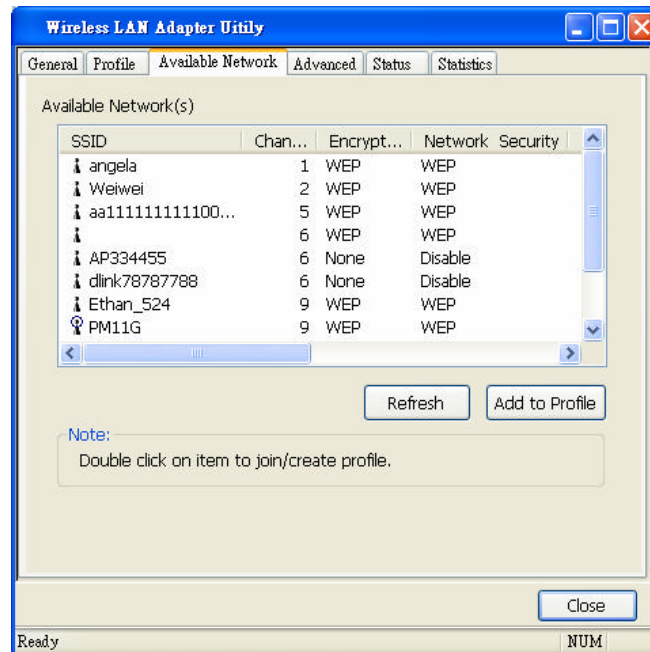
## Active Profile:

Choose a profile name in the “Available Profiles” and click “Connect” to activate the existing profile.

## Available Network

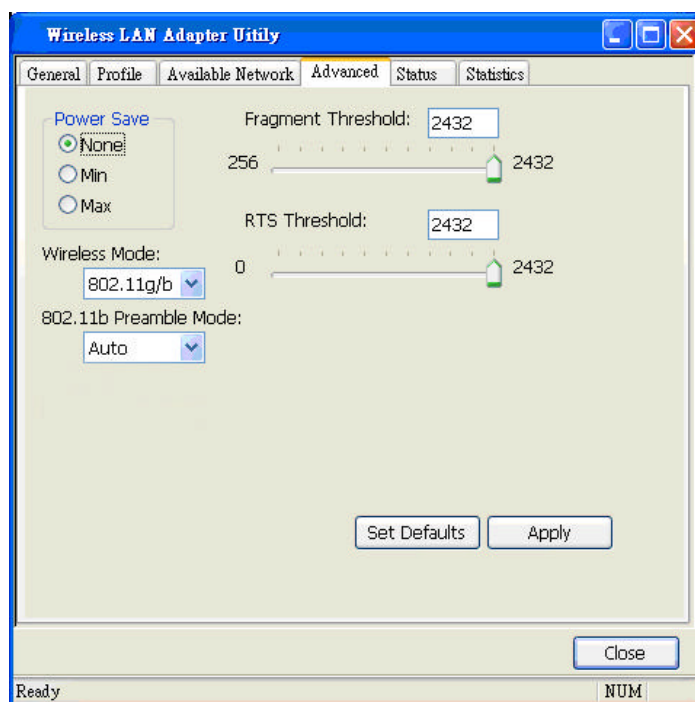
The screen shows all the Wireless LAN devices around your Wireless LAN USB Adapter. The information of the wireless devices includes the SSID, MAC Address, Channels, Signal, the Security type and the Network mode.

You can click the “Refresh” button to find the new wireless LAN devices, and double-click the device to choose the wireless station that you want to connect with.



## Advanced

The Advanced section let you to control the Wireless LAN USB Adapter to adjust with wireless devices in certain environment.



### ➤ Power Save:

To set your Wireless LAN USB Adapter as power saving mode for “None”, “Min” or “Max”.

### ➤ 802.11b Preamble mode:

The usage of the preamble is to limit the packet size of the data to transmit. It is recommended to choose the short preamble when the link quality is bad, it is to prevent the wasting time of resending a long packet that is lost. The Default is Auto which access short and long preamble.

### ➤ Fragment Threshold:

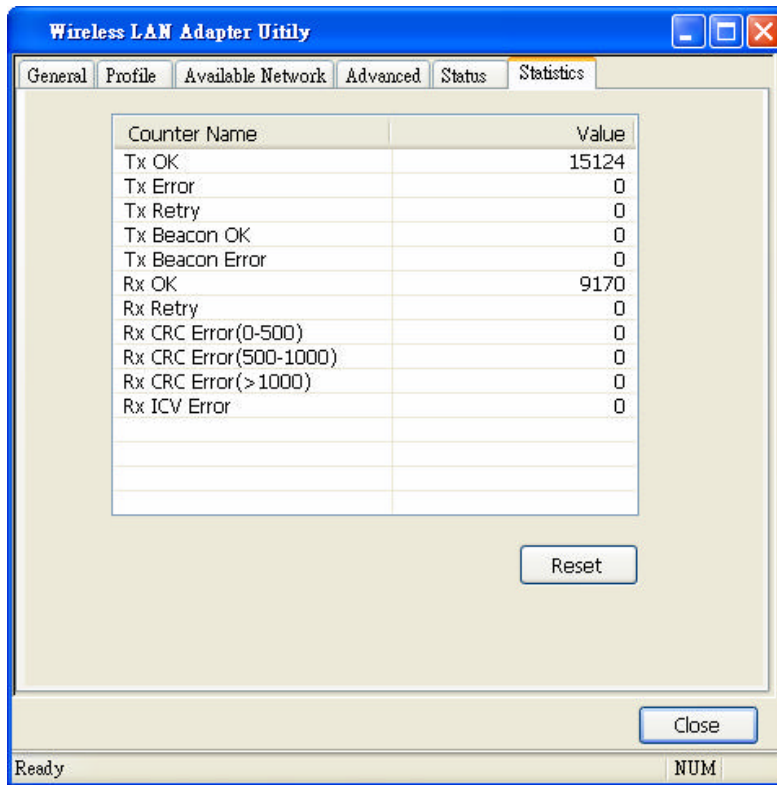
Fragmentation Threshold is a way of transmitting the packets that will be fragmented. Choose a setting within a range of 256 to 2432 bytes. It is recommended to fragment the packet when the link quality is bad, it is to prevent the wasting time of resending a long packet that is lost.

### ➤ RTS Threshold:

The RTS Threshold is a station initiates the process by sending a RTS frame, the other ends receives the RTS and responds with a CTS frame, the station must receive a CTS frame before sending the data frame. This is to prevent the collisions by each station. Choose a setting within a range of 256 to 2432 bytes. It is recommended limiting a long packet to prevent each station waiting too long to transmit a data.

## Statistics

The Statistics section shows the real-time transmit and receive packets of the Wireless LAN USB Adapter.

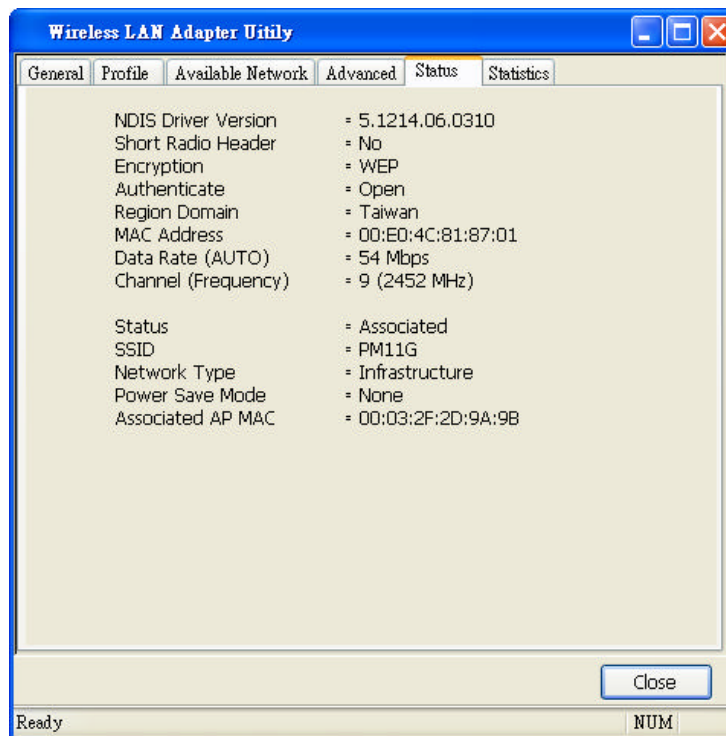


The screenshot shows the 'Wireless LAN Adapter Utility' window with the 'Statistics' tab selected. The window contains a table with two columns: 'Counter Name' and 'Value'. The table lists various network statistics, including Tx OK (15124), Tx Error (0), Tx Retry (0), Tx Beacon OK (0), Tx Beacon Error (0), Rx OK (9170), Rx Retry (0), Rx CRC Error(0-500) (0), Rx CRC Error(500-1000) (0), Rx CRC Error(>1000) (0), and Rx ICV Error (0). Below the table is a 'Reset' button. At the bottom right of the window is a 'Close' button. The status bar at the bottom left shows 'Ready' and the bottom right shows 'NUM'.

Counter Name	Value
Tx OK	15124
Tx Error	0
Tx Retry	0
Tx Beacon OK	0
Tx Beacon Error	0
Rx OK	9170
Rx Retry	0
Rx CRC Error(0-500)	0
Rx CRC Error(500-1000)	0
Rx CRC Error(>1000)	0
Rx ICV Error	0

## Status

The Status section shows you the detail information of the Wireless Adapter, it shows Driver Version, Encryption mode, Authenticate type, Region Domain, MAC Address, Data Rate, Channel, Linking status, SSID, Network type, and Power Save Mode.



## ***TECHNICAL SPECIFICATIONS***

<b>General</b>	
Standards	IEEE 802.11g, USB 2.0, 1.1, 1.0
Radio Technology	IEEE 802.11b, DSSS IEEE 802.11g, OFDM
Data Transfer Rate	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54Mbps (auto sense) <b>*When plug the WLAN USB Dongle into the USB 1.1/1.0 port, the WLAN USB Dongle supports 802.11b mode only</b>
Receiver Sensitivity	54Mbps: Typical -72dBm @ 10% PER (Packet Error Rate) 11Mbps: Typical -83dBm @ 8% PER (Packet Error Rate) 1Mbps: Typical -94dBm @ 8% PER (Packet Error Rate)
Frequency Range	2412 MHz – 2462 MHz (FCC) 2412 MHz – 2472 MHz (ETSI) 2400 MHz – 2497 MHz (Japan)
Modulation Schemes	BPSK/QPSK/CCK/OFDM
Channels	1 ~ 11 channels (FCC) 1 ~ 13 channels (ETSI) 1 ~ 14 channels (Japan)
Media Access Protocol	CSMA/CA with ACK
Security	64/128bits WEP, WPA, WPA2, WPA-PSK, WPA2-PSK (WPA2 and WPA2-PSK only support in Windows 2000 and XP)
Diagnostic LED	LNK (Link status)
Antenna	Internal printed antenna
<b>Physical and Environmental</b>	
Driver Support	Windows 98se, Windows 2000, Windows ME, Windows XP
Continuous Current Consumption	280mA typ. for receive mode, 410mA typ. for transmit mode
Temperature	Operating: 0° ~ 40° C, Storage: -10° ~ 70° C
Humidity	10% ~ 95% RH, no condensation
Dimensions	77 x 26 x 12 mm (W x H x D)
Certifications	FCC Part 15.247 for US, ETS 300 328 for Europe,