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GIGA-BYTE TECHNOLOGY

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GN-WLMR101

IEEE 802.11b Cardbus Wireless LAN Card

User's Manual

http://www.gigabyte.com.tw

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Chapter 1. Product Overview

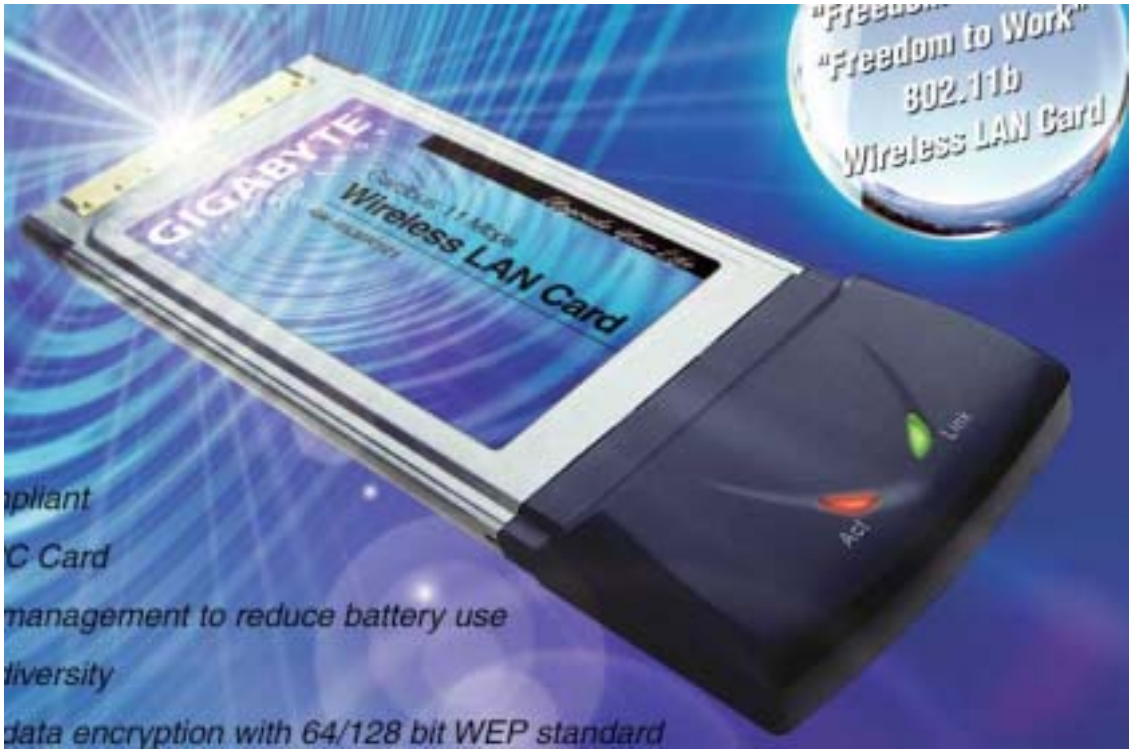
1-1. Introduction to The Wireless LAN Card

This wireless Local Area Network (LAN) card is composed of the IEEE 802.11b MAC with CARDBUS interface, Baseband, radio components, and two built-in antennas. This product adopts the direct sequence spread spectrum (DSSS) technology using the DBPSK, DQPSK, and CCK modulations to provide a very stable wireless communication quality and an excellent signal receiver capability.
This product features the compact size, low power consumption, and power management functions, and provides a high-speed wireless data communication. Therefore, this product is ideally suitable for being integrated into the personal mobile and handheld platform.

1-2. Features

- Conforms to IEEE 802.11b specification.
- Transmits data rate up to the maximum speed of 11Mbps.
- Dynamically scales the data rate to 11, 5.5, 2, and 1Mbps.
- Automatic power management to reduce battery consumption.
- Built-in diversity antenna.
- Supports 64-bit /128-bit WEP encryption.
- Driver supports Windows 98SE/Me and Windows2000/XP.

1-3. Physical Dimensions/Packaging



Dimensions: 118mm * 54mm * 5mm

This wireless LAN card conforms to the PC card Type II standard. There are two LED-indicating lights to indicate Act/Link status.

1-4. LED Indicating Light

- **Link**: The ***Link*** LED lights up when the adapter has an active connection. If the LED isn't on, the adapter isn't interfacing with the network.
- **Act:** Blinking of the ***Act*** LED indicates that both transmit and receive activity is occurring.

1-5. System Requirements

1-5-1. Supported Platform

IBM PC/AT compatible computer

1-5-2. Supported Operation System

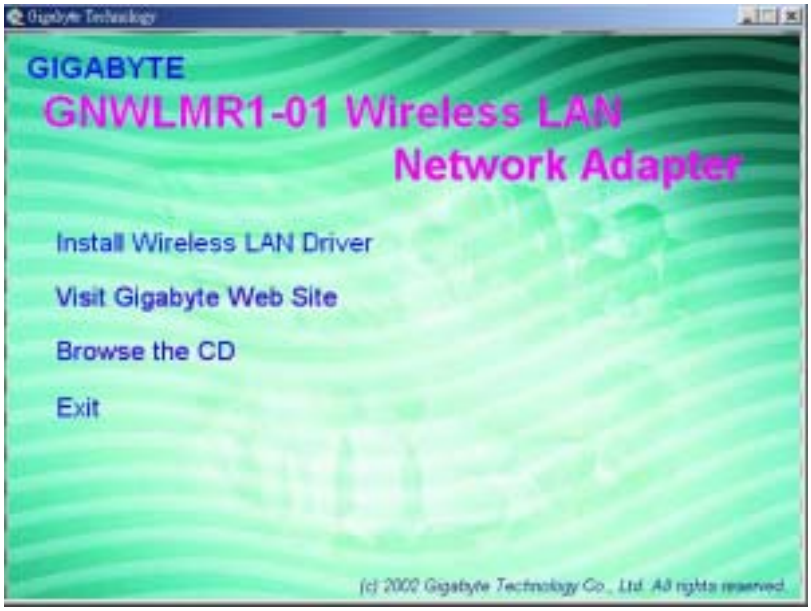
Windows 98SE/Me
Windows 2000/XP

Chapter 2. Installing the Wireless LAN Card

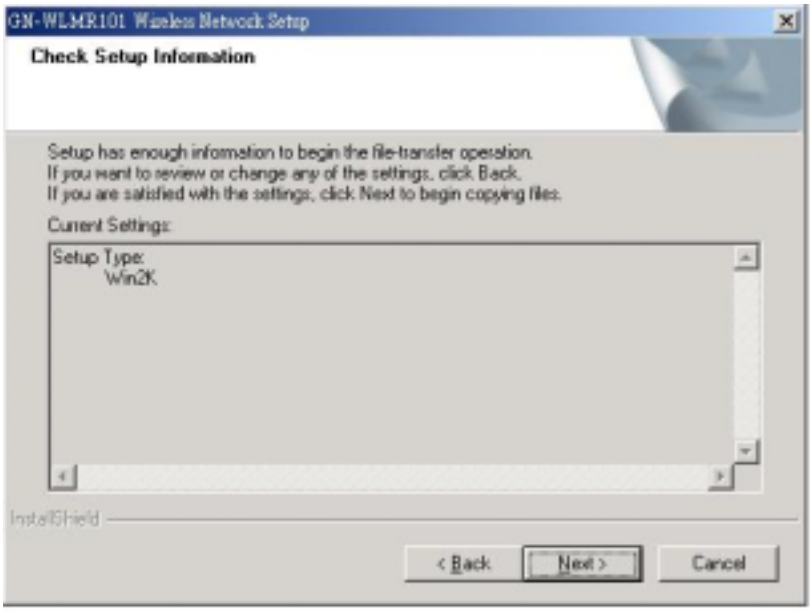
2-1. Installing The Driver & Utility

Step 1: Please make sure that you don't plug your card yet.

Step 2: Insert our setup CD into your CDROM drive, the following window will pop up.

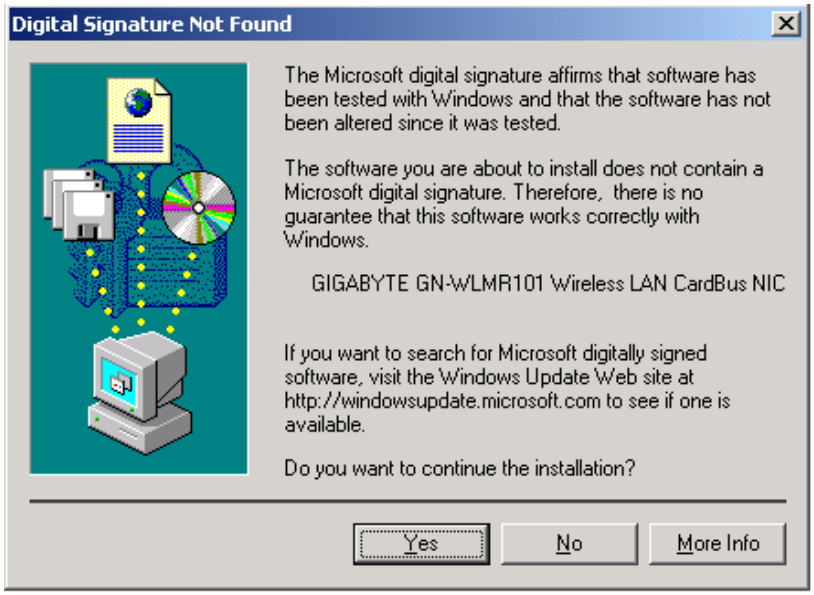


Step 3: Click "**Install Wireless LAN Driver**".



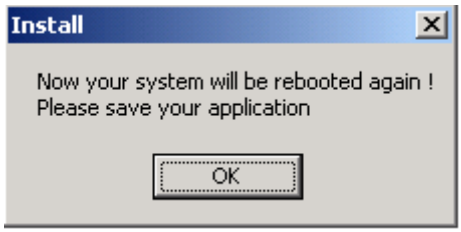
Step 4: Click "**Next**".

Step 5: Insert your wireless LAN card, wait a moment, and then the following window will pop up.



Step 6: Click "**Yes**".

Step 7: Click "**OK**".



Step 8: Click "**OK**", and then your installation is ok.

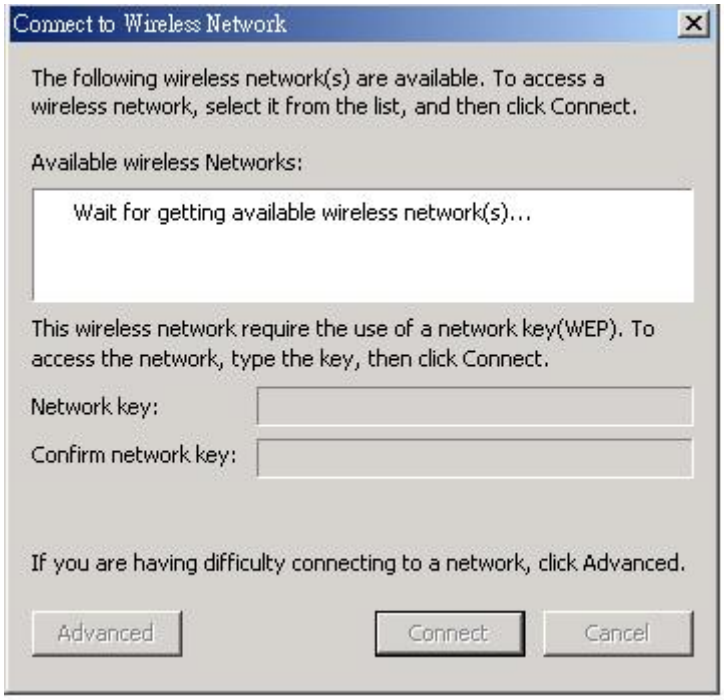
Chapter 3. Using The Utility

The Configuration & Monitor Utility is a powerful application that helps you to configure the card and monitor the statistics of the communication. Unlike the standard method of configuring the card via the operating system utilities (e.g. Control Panel), this application permits the dynamic modification of the configuration parameters while the card is operating. It also offers some more configuration options. It appears as an icon on the system tray of Windows every time the card is running (*see* ***Figure 3-1***).

Figure 3-1. The icon of the Configuration & Monitor Utility

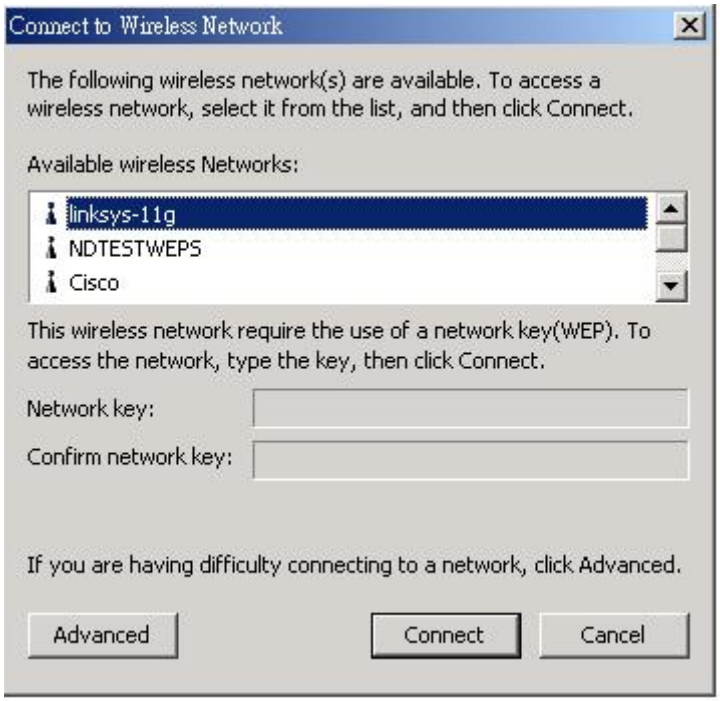
If this is your first time to use this card, you must start our utility and try to connect to any available wireless networks. You can open it by double-clicking on this icon, the following window will pop up.

Figure 3-2. Search for available wireless networks



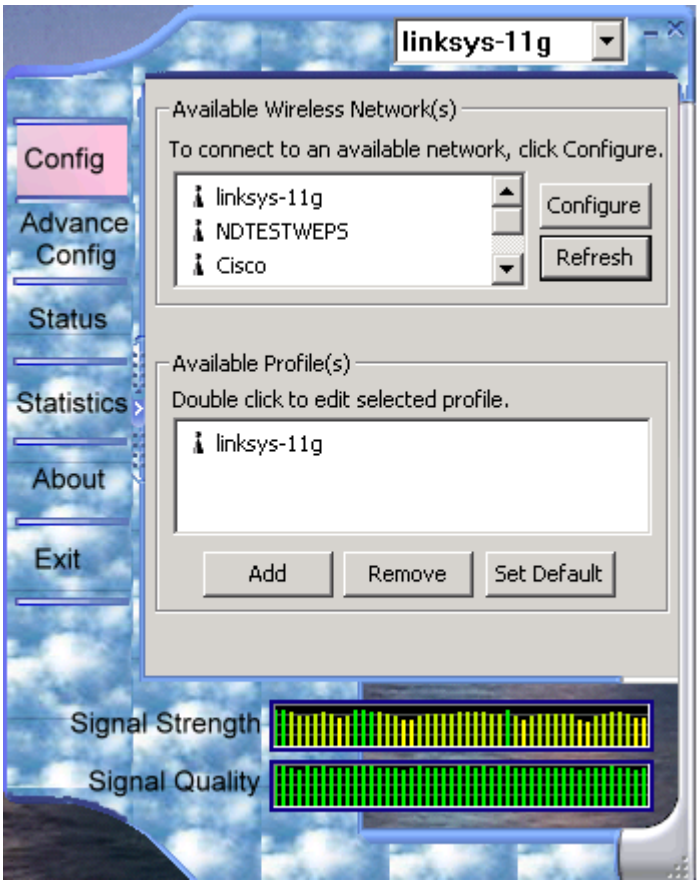
After this card finds all available wireless networks, the following window will pop up.

Figure 3-3. All available wireless networks



You can choose any available network and click "**Connect**" to join it. If this network had built a security mechanism, you must to enter a correct security key (eg. WEP) before click "**Connect**".
If you don't know which network to join, or you want to configure and monitor your network, you can click "**Advanced**" to go into the following window.

Figure 3-4. Configuration



Signal Strength: It shows the received signal strength from the detected wireless device.

Signal Quality: It shows the quality of communication between the wireless LAN card and the associated network (In Figure 3-4, it mean linksys-11g).

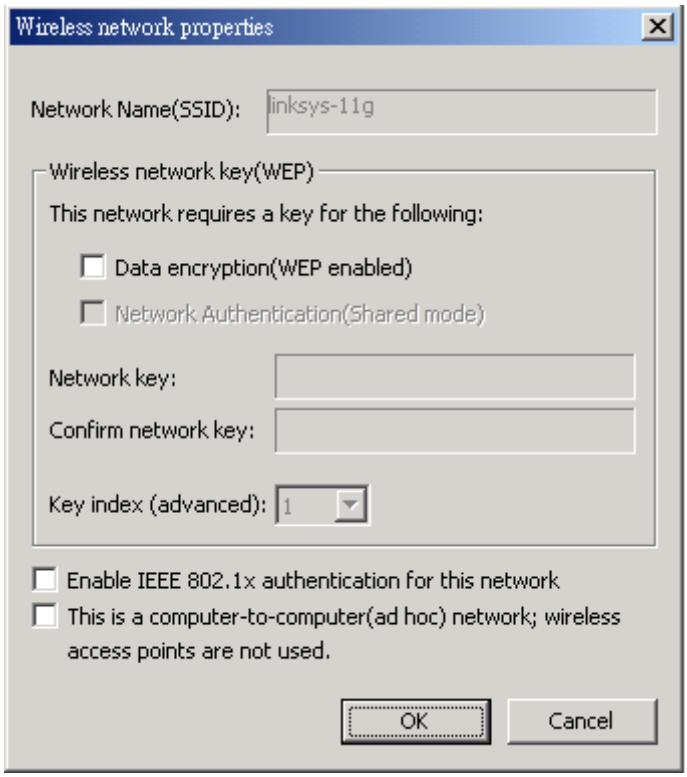
3-1. Configuration

The "**Config**" Tab contains several fields where operating parameters of the driver can be viewed or changed.

3-1-1 Available Wireless Networks:

In this field, you can see all available wireless networks. In order to change the configuration parameters, select a wireless network and then click the "**Configure**" button, the following window will pop up. Make your changes and then click "**OK**" in order to save your changes.

Figure 3-5. Wireless network properties



SSID: Network name.

WEP:
To prevent unauthorized user to access the data on wireless stations, the WLAN Card offers a secure data encryption, known as WEP (Wired Equivalent Privacy). When you select this item, the target 802.11 device must has the same encryption keys and be configured to use encryption in order to communicate with each other. To configure your WEP encryption, please click "***Data encryption*** " and enter a network key.

- For 64-bit encryption, enter 10 digitals by Hex.
- For 128-bit encryption, enter 26 digitals.

Click "**OK**" to save these settings.

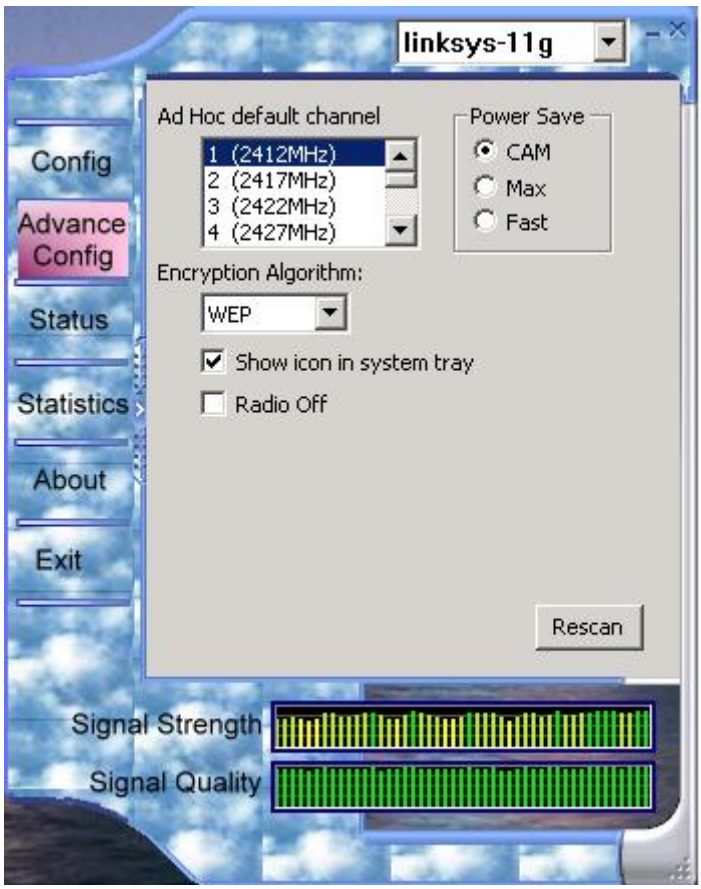
3-1-2 Available Profiles:

In this field, you can click "**Add**" to add a available network into your available profiles. You also can click "**Remove**" to delete this profile or click "**Set Default**" to set a default associated network. Every time this card is active, it will automatically try to connect to this default network.

3-2. Advance Configuration

The "**Advance Config**" Tab contains several fields where operating parameters of the driver can be viewed or changed. See figure 3- 6.

Figure 3-6. Advance configuration



3-2-1 Ad Hoc default channel:

In this field, You can select a communication channel.

3-2-2 Power Save:

CAM (Constantly Awake Mode): CAM is the normal mode for desktop PC or other machines where power consumption is not an issue. It keeps the radio powered up all the time, so that there is little latency for responding to messages.

MAX (Max Power Savings Mode): If power consumption is a major concern for your machine, you can select this to save power.

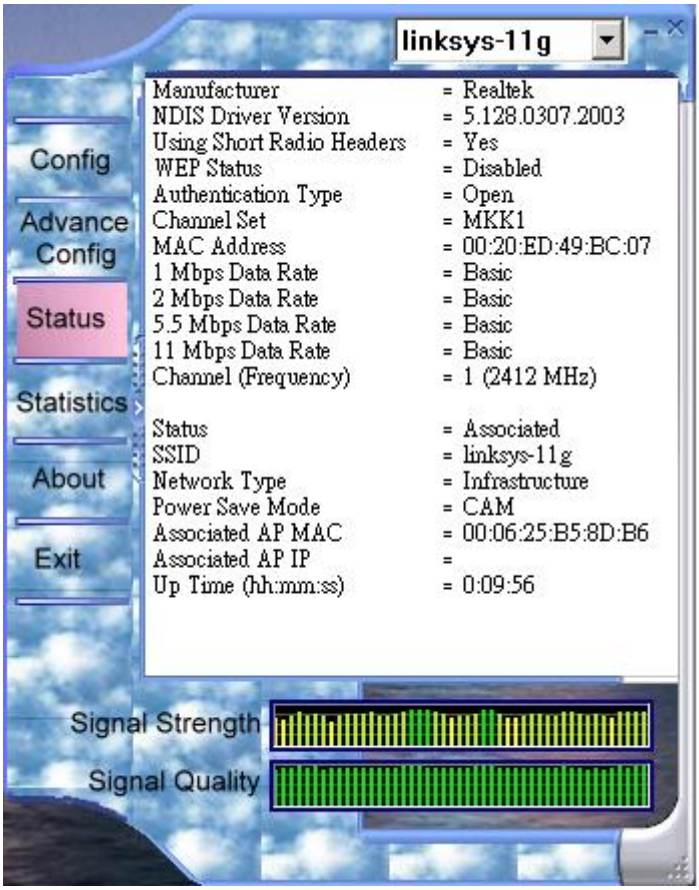
Fast (Power Save mode): Fast mode switches between **Power Saving** and **CAM** based on network traffic. When receiving a large number of packets, this mode will temporarily

switch to **CAM** mode. Once these packets are retrieved, it switches back to **Power Saving** status.

3-3. Status

The "**Status**" tab shows you the information and status of the card. See figure 3-7.

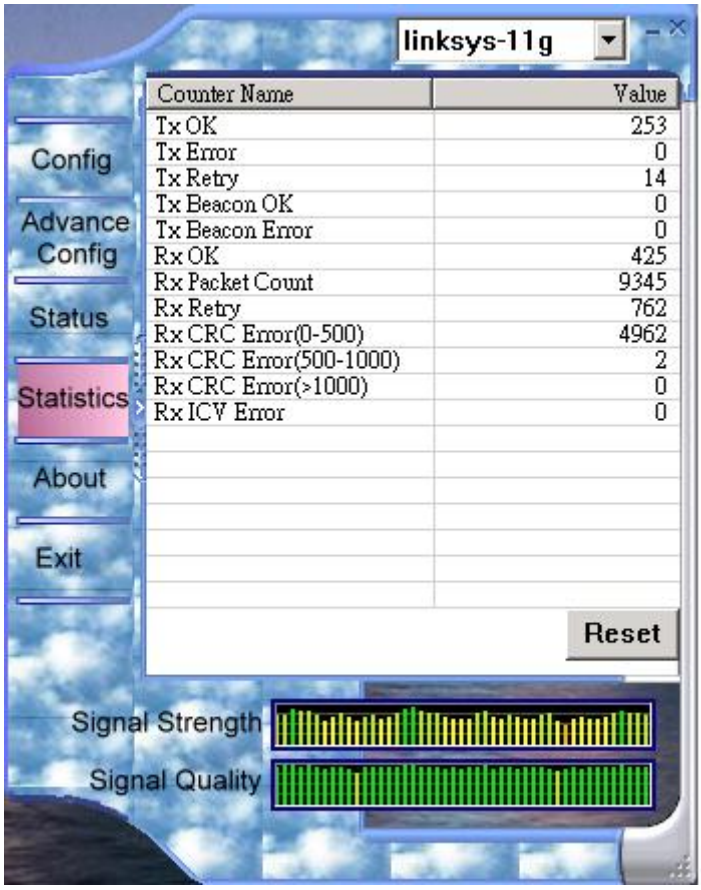
Figure 3-7. The information and status of the card



3-4. Statistics

This tab shows you the available statistic information. See figure 3-8.

Figure 3-8 The statistic information of packets sent and received by the card



3-5. About

This tab shows you the software driver's version. See the following window.

Chapter 4. Specification

SYSTEM		
Standards	IEEE 802.11/802.11b	
MAC/BBP Chip	RTL8180	
Host Interface	CARDBUS	
Modulation	1Mbps: DBPSK; 2Mbps: DQPSK; 5.5 and 11 Mbps: CCK	
Data Rates	1, 2, 5.5, 11 Mbps	
Operating Voltages	3.3V	
Typical power consumption	Transmit 290mA; receive 170mA; Sleep 23mA	
Operating Range	Open space: 100 - 300m; Indoor: 30 - 100m	
RF CHARACTERISTICS		
Frequency Band	2.400 ~ 2.4835 GHz (subject to local regulation)	
Radio Technology	DSSS (Direct Sequence Spread Spectrum)	
Number of Channel	11 Channels (US, Canada)	4 channels (France)
	14 Channels (Japan)	13 Channels (Most European countries, ETSI)
Output power	20 dBm @ nominal temperature	
Receive Sensitivity	minimum - 81dBm @ 11 Mbps; typical – 84dBm @ 11 Mbps	
Antenna	Two internal antenna supporting diversity	
REGULATOORY and ENVIRONMENTAL COMPLIANCE		
EMC certification	FCC part 15 (USA)	
	CE (Europe)	
Temperature Range	Operating: 0 ~ 55 deg C, Storage: -20 ~ 65 deg C	
Humidity	Max. 90% Non-condensing	
SOFTWARE/FEATURES		
Platforms	Windows 98SE, ME, 2000 and XP	
Roaming	Full mobility and seamless roaming	
Security	64 and 128 bit WEP	
Management Utility	Link Configuration for network join and statistics	
PHYSICAL SPECIFICATION		
Dimensions	118mm x 54mm x 5mm	
Weight	39 g	
Packaging	Generic, Gigabyte, private labeling optional	
LED indicator	Two LEDs indicating Activity/Link	

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: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) 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. End users must follow the specific operating instructions for satisfying RF exposure compliance.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
This device complies with FCC RF Exposure limits set forth for an uncontrolled environment, under 47 CFR 2.1093 paragraph (d)(2). End-users must be provided with specific operating instructions for satisfying RF exposure compliance."