GIGABYTE
T E C H N O L O G Y

GN-WBZB-M

IEEE 802.11b USB WLAN Card

User's Manual

http://www.gigabyte.com.tw

Rev. 1.0 First Edition

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, 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 equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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

Contents

Chapter 1. Product Overview

1-1. Introduction to The Wireless LAN Card

This wireless LAN (Local Area Network) card is composed of the IEEE 802.11b MAC, Baseband, and radio components, USB 1.1 interface, and one external antenna. This product adopts the direct sequence spread spectrum (DSSS) technology and the DBPSK, DQPSK, and CCK modulation mode 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 MotherBoard.

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.
- ■ Host Interface USB 1.1.
- ■ One external antenna.
- ■ Supports 64-bit /128-bit WEP encryption.
- ■ Driver supports Windows 98SE/Me/2000/XP.

1-3. Physical Dimensions/Packaging

Dimensions: 122mm* 48mm* 22mm

Before the installation procedures, please ensure the components are not damaged during the shipping. The shipment of the GN-WBZB-M includes:

One GN-WBZB-M Wireless LAN Card
One Antenna
One Connect Cable
One Installation CD (including User's Guide and Driver)
One User Guide

Please contact your local distributor or authorized reseller immediately for any missing or damaged components. If you require returning the damaged product, you must pack it in the original packing material or the warranty will be voided.

1-4. LED Indicating Lights

This wireless LAN card conforms to the USB standard. There are two LED-indicating lights. One indicates Power status. One indicates Link status.

Power: This LED is continuously on while the card is powered on.

Link:

Blinking Slow	The card is scanning the network.
Continuously On	The card is successfully connected to a network.
Blinking Quickly	The data is being transmitted/received

1-5. System Requirements

1-5-1. Supported Platform:

IBM PC/AT compatible computer

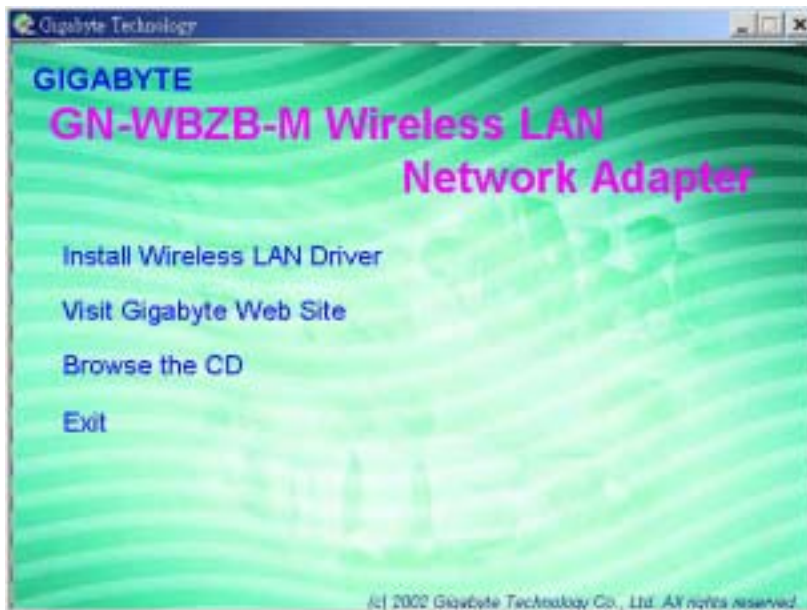### 1-5-2. Supported Operation System:

Windows 98SE/Me/2000/XP

Chapter 2. Installing the Wireless LAN Card

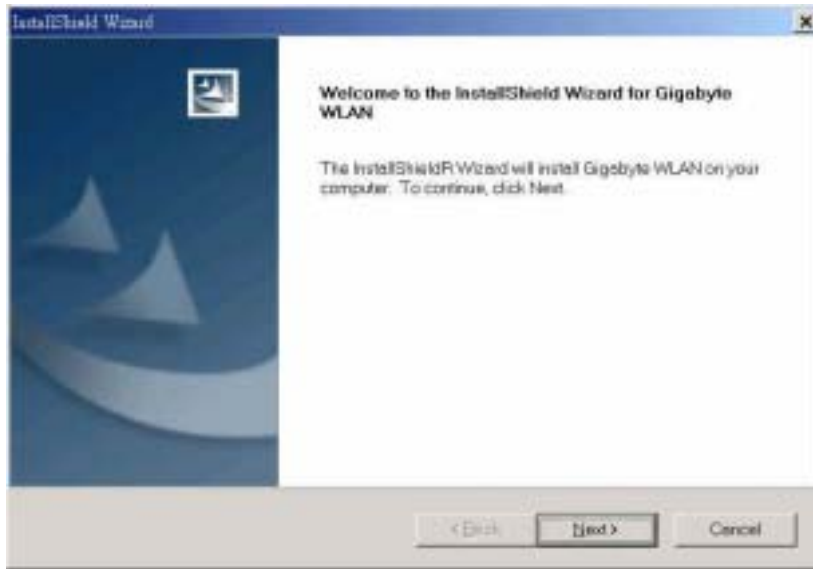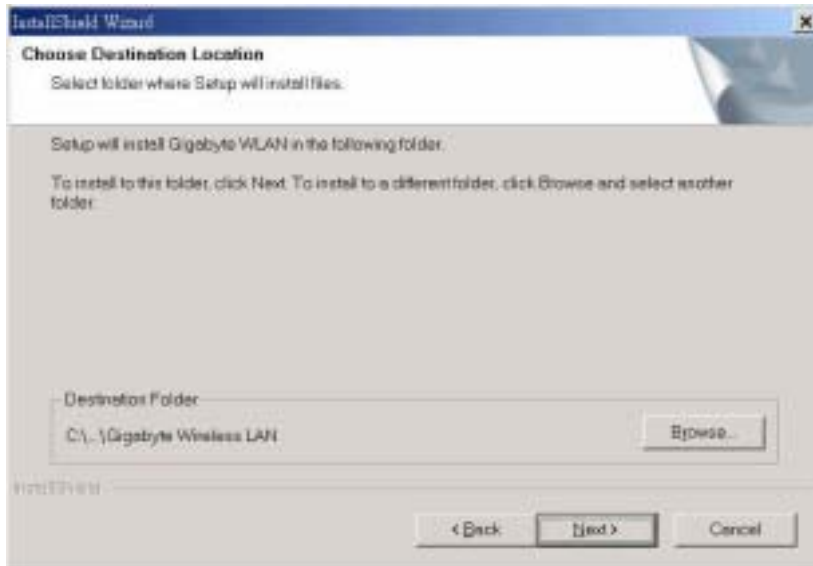## 2-1. Installing The Driver & Utility for PC

Step 1: Click "**Cancel**".

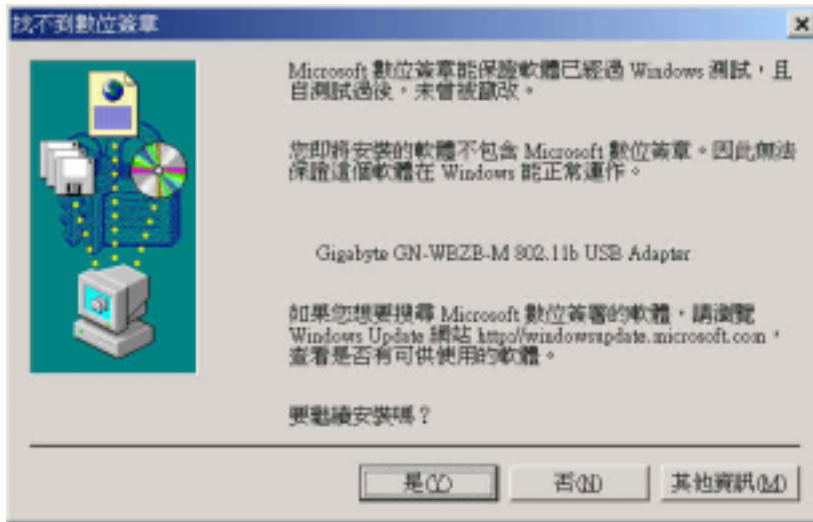**Step 2**: Insert our setup CD into your CDROM drive, the following window will pop up

Step 3: Click "**Next**".

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

Step 5: Click "Yes", and then your installation is ok. Reboot you computer

Step 6: Click "YES".

4

Chapter 3. Using The Utility on PC

The Configuration & Monitor Utility is a powerful application that helps you to configure the card and monitor the statistics of the communication link. 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 Windows system tray whenever the card is running (*see **Figure 3-1***). The icon can tell you the received signal strength by four small green lights. You can open it by double-clicking on this icon.

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

3-1. Info

The Info tab shows you the current Link States of the Wireless LAN Card and the Reachable Assess Points and the Wireless LAN Card**(*see** *Figure 3-2***)**.

Figure 3-2. Current link states of the wireless LAN card

Link State:
> There are three states of a Wireless LAN Card:
> 1. *Connected to Access Point*: The wireless LAN card is now connecting to an Access Point.
> 2. *Connected to Ad Hoct:* The wireless LAN card is now connecting to a Peer-to-Peer network.
> 3. *Connecting:* The wireless LAN card is now searching for an Access Point or wireless LAN card with the same network name, or SSID for the connection.

Other items in the table are the detailed information about the link state, which are available only when the wireless LAN card is connected to an access point or other wireless LAN card.
SSID: Network name.

Channel: The current channel used by the wireless LAN card.

TxRate: The current transmission rate used by the wireless LAN card.

AP Signal: It shows the signal quality and signal intensity of the currently connected base station.

Signal Quality: It is only available in Access Point/Station mode, which represents the quality of communication between the Wireless LAN Card and Access Point.

Reachable Access Points / Stations:
This item will show you all of the 802.11 Access Points or Wireless LAN Cards in your wireless environment. The icon in the front of every item represents an Access Point or a Wireless LAN Card.   You can add a network easily by clicking on the desired SSID.

Strength: It shows the signal quality and signal intensity of the currently connected base station.

Refresh( ): After this button is clicked, the wireless LAN card will rescan the wireless environment and show you all the updated reachable Access Points and Stations.

Connect( ): After this button is clicked, the wireless LAN card will connect the wireless environment reachable Access Points or wireless LAN card.
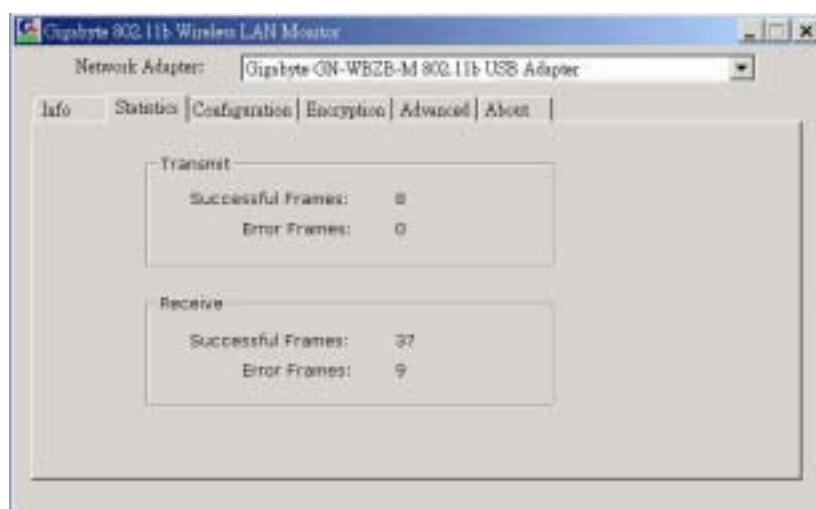
3-2.   Statistics

The "**Statistics**" tab shows you the number of packets sent and received by the card(*see Figure 3-3*).
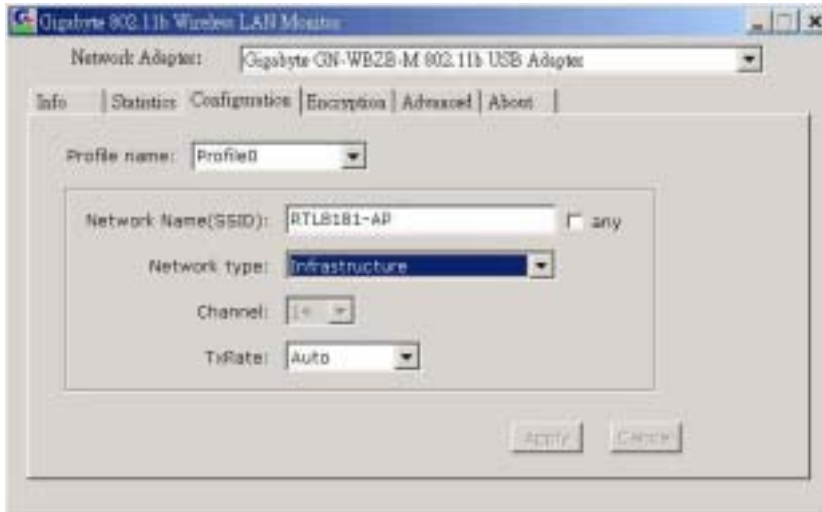
Figure 3-3.   The statistic number of packets sent and received by the card

3-3. Configuration

The Configuration Tab contains several fields where operating parameters of the driver can be viewed or changed. Changes to any of the parameters in this panel can be applied to the driver without resetting the wireless LAN card(*see* ***Figure 3-4***).

Figure 3-4. Configuration

Cancel
Press this button to restore the default value in each field of the panel. The "Apply Changes" button should be pressed before the default values are saved to the driver and registry.

Profile
You can save various wireless settings for different environments.

Network Name
It is also known as SSID and is the unique name shared among all access points (base station) or stations (wireless LAN card) in the wireless network. The SSID must be identical for all points in the network for sharing information and communication. It is case sensitive and must not exceed 32 characters.

Network Type
This field allows you to select the network type from a list of supported Network "Modes". The modes displayed have two values: "Peer-to-Peer" and "Access Point".

Peer-to-Peer(Ad Hoc)
This is the 802.11 peer-to-peer mode of operation. All communications are done from Client to Client without using the base station. Peer-to-Peer networking uses the same SSID for establishing the wireless connection.

Base Station (Infrastructure)
This mode of operation requires the presence of an 802.11 Base Station. All communications are done via the Base Station, which relay packets to other wireless Clients in the BSS as well as the nodes on a connected network such as Ethernet.

Peer-to-Peer channel
This specifies the channel used in wireless communication and should be set to the same channel as the other points in the wireless network. This setting can only be adjusted in

Peer-to-Peer mode.

TX Rate: The transmission rate for transmitting data packets at the user end. You may set the transmission rate to 1Mb, 2 Mb, 5.5 Mb, 11 Mb, or Fully Automatic.

3-4. Encryption

To prevent unauthorized user to access the data on wireless stations, the Wireless LAN Card offers a highly secure data encryption, known as WEP (Wired Equivalent Privacy). If you require high security in transmission, go to the **Encryption** tab and set it up as follows(*see **Figure 3-5***).

Figure 3-5. Encryption

> ➢ Pull down the **Encryption** menu and select either **64bit** or **128bit** encryption method.
> ➢ Specify the encryption keys.   There are two methods to set the WEP password, as described below:

From the WEP encryption item, pull down the menu and it will list three options:

Disable – Allows the communication between the wireless LAN card and Access Point without data encryption.

64 Bit –Allows wireless LAN card to encrypt data with the 64-Bit encryption algorithm.

128 Bit –Allows wireless LAN card to encrypt data with the 28-Bit encryption algorithm.

The **Encryption** tab enables you to identify up to 4 different encryption passwords and select one of them to encrypt your transmission data.   The password of your choice may either be:

For 64-bit encryption:
■   Five alphanumeric characters in the range of "a-z", "A-Z" and "0-9" (e.g. MyKey)
■   10 hexadecimal values in the range of "0-F" (e.g. 11AA22BB33).

For 128-bit encryption:
■   13 alphanumeric characters in the range of "a-z", "A-Z" and "0-9" (e.g.

WEPencryption).

■ 26 hexadecimal values in the range of "0-F" (e.g. 11AA22BB33123456789ABCDEFF).

you have the option to select whether *Open System*, *Shared Key, or Auto* authentication will be used. In order to take effect the changes you wish to make, click the "**Apply**" button at the bottom of the screen.

3-5. Advanced

By Choosing the *Advanced* option in any of the two modes, you can change advanced configuration settings, such as the Fragmentation Threshold, and RTS/CTS Threshold (*Figure 3-6*). *Figure 3-6* shows the default configuration for the advanced settings.
Note: In order to enable the Fragmentation and the RTS/CTS Threshold parameters move the slide bar with your mouse and then use the right and left arrow keys of your keyboard in order to select an exact number.

Figure 3-5. Advanced settings
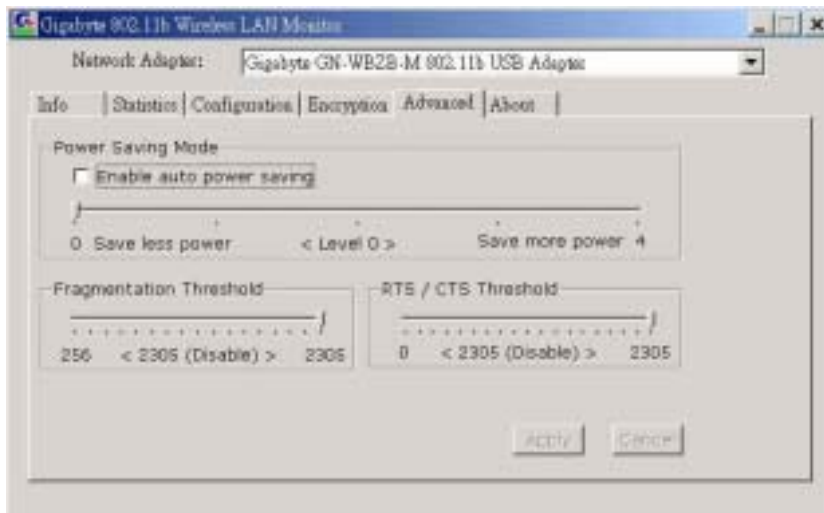
3-6. About

By choosing this option, you can view basic information about the utility like the Driver, Firmware and Application Version and this adapter's MAC address(*see **Figure 3-7***).

Figure 3-7. Version information and MAC address

The "About" tab shows the detail of information on the version of the product such as the version of Driver, Configuration Utility, and the version of wireless LAN card's firmware. Users must use this version number when reporting their problems to the technical support.

Chapter 4. Specification

System	
Standards	IEEE 802.11b compliant
Host Interface	USB 1.1
Modulation	1Mbps: DBPSK; 2Mbps: DQPSK; 5.5 and 11 Mbps: CCK
Data Rate	1, 2, 5.5, 11 Mbps
Operating Voltage	5V
Power	Tx 320mA; Rx 230 mA; Sleep 50 mA
Operating Range	Open space: 100 - 300m; Indoor: 30 - 100m
RF	
Frequency Band	2.400 ~ 2.4840 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	15 dBm@ Nominal Temp Range
Receive Sensitivity	- 80dBm @ 11 Mbps date rate, 8% PER
Antenna	One external antenna
Regulatory and Environmental Compliance	
EMC certification	FCC part 15 (USA) — DGT (Taiwan) CE (Europe) — TELEC (Japan)
Temperature Range	Operating: 0 ~ 50 degree C, Storage: -20 ~ 65 degree C
Humidity	Max. 90% Non-condensing
Software	
Driver	Windows 98SE/ME/2000/XP
Roaming	Full mobility and seamless roaming
Security	64 and 128 bit WEP
Management Utility	Link Configuration for network join and statistics.
Mechanical	
Dimensions	122mm * 48mm * 22mm
Weight	61± 1 g
Packaging	Generic, Gigabyte, private labeling optional
LED indicator	Two LEDs indicating Link/Act status