



GN-WLMM101

IEEE 802.11b PCMCIA 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 LAN (Local Area Network) card is composed of the IEEE 802.11b MAC, Baseband, and radio components, PCMCIA interface, and two built-in antennas. 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.

Our product features the compact size, low power consumption, and power management functions, and provides a high-speed wireless data communication. Therefore, our 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 polarized antenna.
- Supports 64-bit /128-bit WEP encryption.
- Driver supports Windows 98/98SE/Me and Windows2000/XP.

1-3. System Requirement

1-3-1. Supported Platform

IBM PC/AT compatible computer

1-3-2. Supported Operation System

Windows 98/98SE/Me
Windows 2000/XP

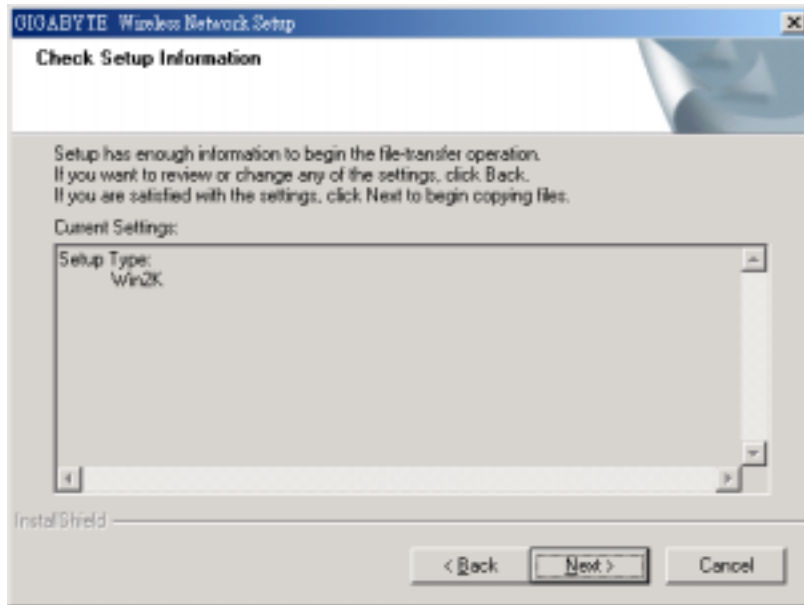
Chapter 2. Installing the Wireless LAN Card

2-1. Installing The Driver & Utility (Applicable to any supported OS)

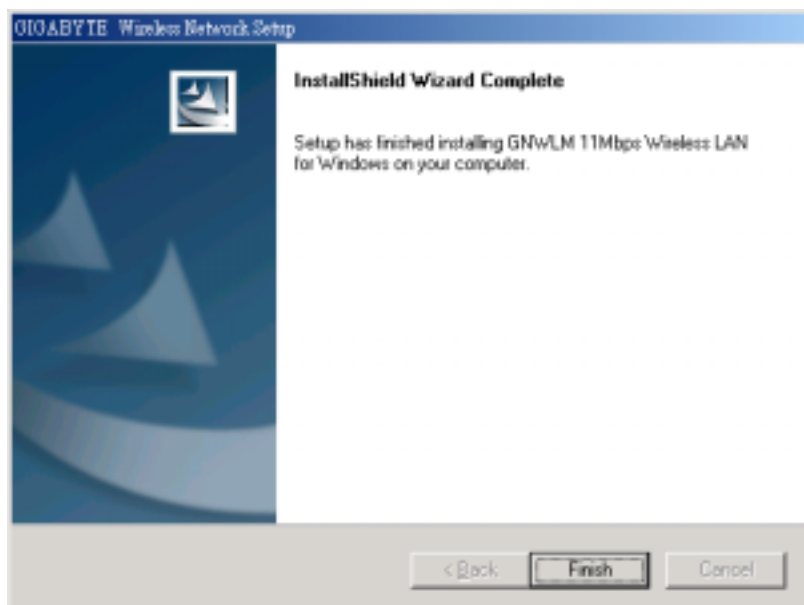
Step 1: Insert our setup CD into your CDROM drive.

Step 2: Execute the setup.exe on our CD.

Step 3: Choose “ **Application and PCMCIA drivers**”.



Step 4: Press “Next”.



Step 5: Press “**Finish**”, 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 Fast-VNET 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.

ATMEL offers the Configuration & Monitor Utility for Windows 95/98/Me/2000, and Windows NT 4.0.

Note: Please keep in mind that the Configuration & Monitor Utility can be used to change the above configuration parameters when the cards are active. When the cards are not in use, please use the Control Panel method.

3-1 How to Install the Configuration & Monitor Utility

The Configuration & Monitor Utility is installed simultaneously with the Drivers when you run the program “**setup.exe**” which you will find in your installation CD and follow the instructions as they appear on the screen (see **chapter 2**). Upon completion of the installation, only for the first time, you can locate the application under **Start -> Programs -> ATMEL 802.11 Wireless LAN -> Configuration & Monitor Utility**.

3-2 Using the Configuration & Monitor Utility

The Configuration & Monitor Utility appears as an icon on the system tray of Windows every time the card is running (see **Figure 3-1**). You can open it by double-clicking on this icon. While the station is in infrastructure mode and not associated to an Access Point, the color of the icon is red. As soon as the station associates itself to an Access Point (see page 3-4 “*Site Survey*”), the icon color automatically turns to blue. In Ad-Hoc mode the color is always blue, except when the card is resetting and Initializing where it turns to red during the reset and initialization procedure.

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



When the application is opened the following options (tabs) are available:

-  Monitor
-  Statistics
-  Site Survey
-  Encryption
-  Advanced
-  Version

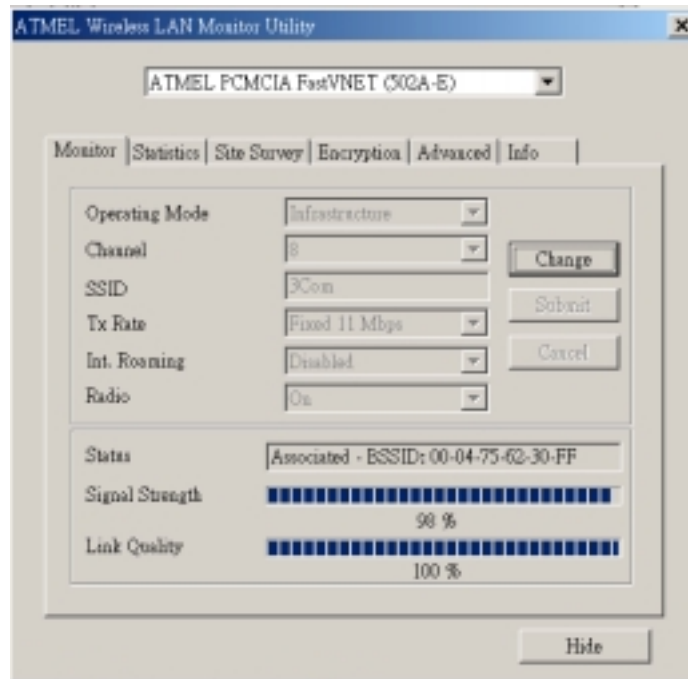
Note: Please Note that at the very top of the Monitor and Configuration Utility of the application (Figure 3-2), you can either select ATMEL PCMCIA FastVNET (3.3V) or ATMEL USB FastVNET or ATMEL PCI card when available.

Monitor:

A typical screen of the application in Infrastructure mode is shown in Figure 3-2. The configuration parameters are shown at the top of the screen (Operation Mode, Channel,

SSID, TxRate, Power Management Mode and MAC Address of the PCMCIA card). In the middle of the screen there is information about the status of the communication (the BSSID of the Access Point to which the card is associated, Signal Strength, and Link Quality). In order to change the configuration parameters press the **“Change”** button, make your changes and then press **“Submit”** in order to save your changes.

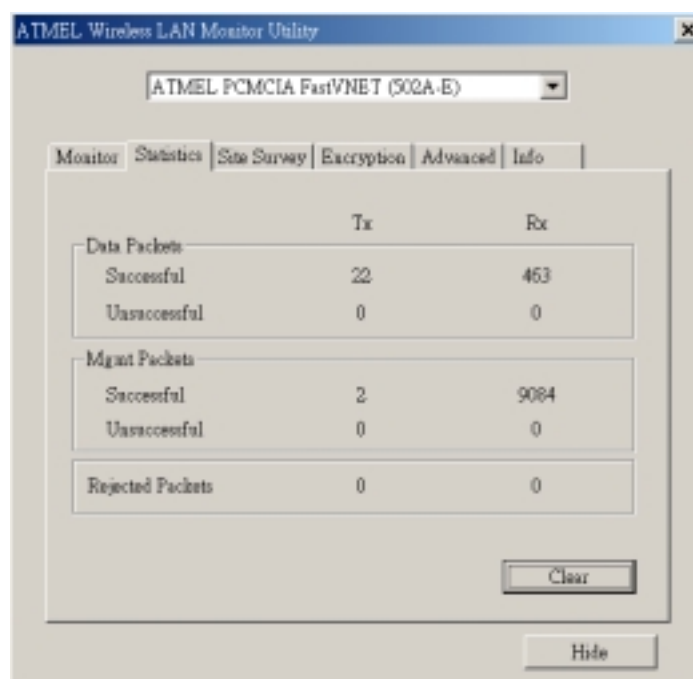
Figure 3-2. A typical screen of the Monitor Utility in Infrastructure mode.



Statistics:

This option shows you to view the available statistic information (Data packets, Management Packets and Rejected packets). In order to renew or update this list of statistics, press the **“Clear”** button. In order to exit press the **“Exit”** button at the bottom of the screen.

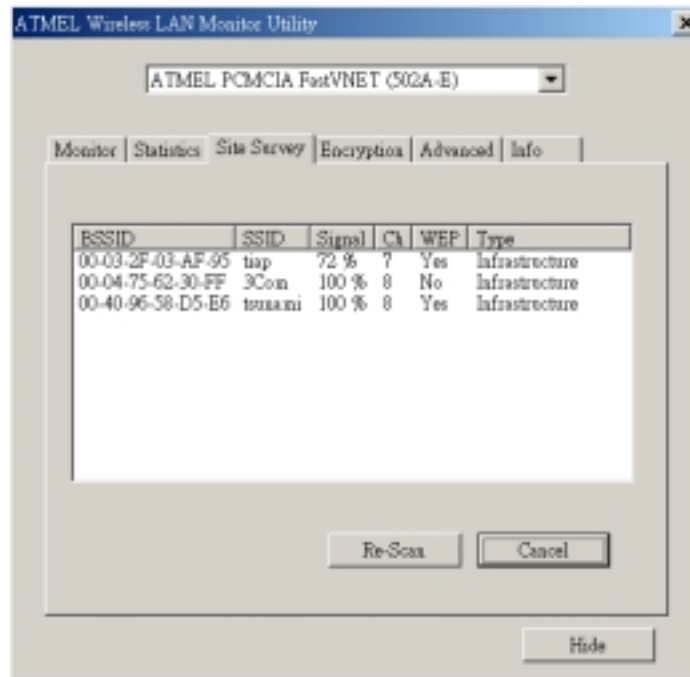
Figure 3-3. Statistic information available



Site Survey:

By choosing the *Site Survey* option in any of the two modes, you can scan all the channels in order to find all the Access Points or Ad-Hoc networks within the range of your card. In Figure 3-4, the card can see two Access Points and one Ad-Hoc network. The list includes information about the BSSID and SSID of the Access Point(s), the signal strength, the channel where the Access Point(s) operates, and whether or not WEP encryption is used. In order to update this list, press the “**Re-Scan**” button. If you want to associate with any of the Access Point(s) listed, double click on your choice (on the BSSID field), and the system will take you back to the *Monitor* tab showing you the parameters of the connection newly established.

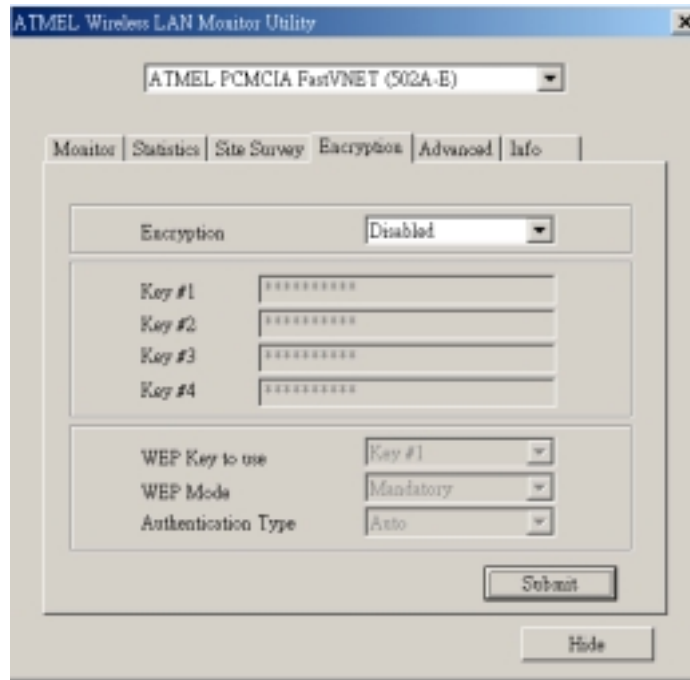
Figure 3-4. Site Survey Option



Encryption:

By choosing this option in any of the two modes, you can set four different WEP keys and specify which one of them to use. First, either enable or disable encryption from the appropriate “**Encryption**” field (see Figure 3-5 below). If you decide to use encryption, you can choose any of the available WEP keys (1 to 4). You also have the option to select the WEP mode (Mandatory/Optional). If you select “**Mandatory**”, then not only WEP will be used, but also any other station needs to use WEP encryption in order to establish a communication with your station. This requirement is in line with the IEEE 802.11b standard. If, on the other hand, you choose “**Optional**”, then your station can communicate with every other station regardless if they use WEP or not. Please keep in mind that the WEP keys must be in HEX format. Finally, 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, press the “**Submit**” button at the bottom of the screen.

Figure 3-5. Encryption

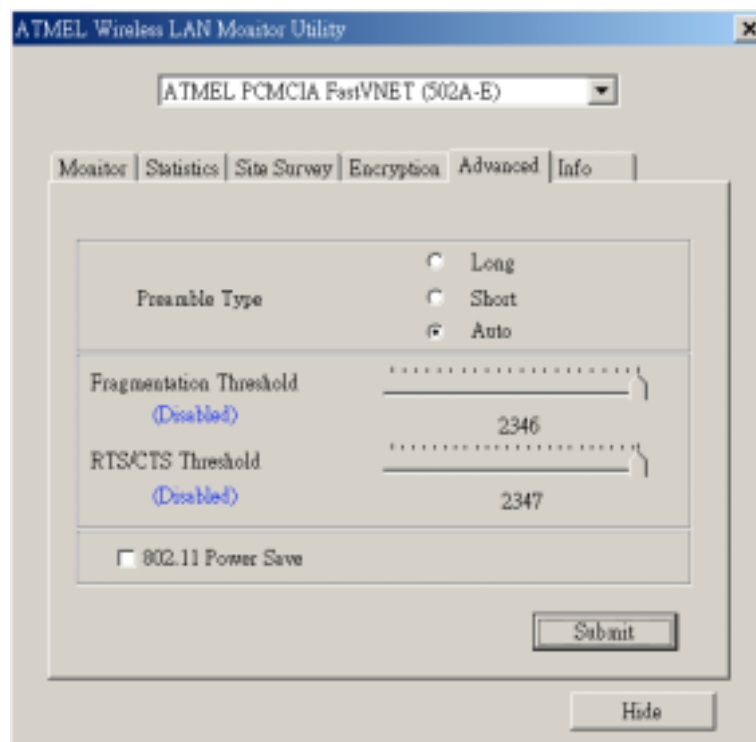


Advanced:

By Choosing the *Advanced* option in any of the two modes, you can change advanced configuration settings, such as the Preamble Type, Fragmentation Threshold, and RTS/CTS Threshold (*Figure 3-6*). *Figure 3-5* shows the default configuration for the advanced settings. The PCMCIA card has an auto-detection feature therefore when selecting “**Auto**” for the preamble type it automatically selects the Preamble Type depending on the Access Point Preamble type

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 3-6. Advanced Settings



Chapter 4. Specification

4-1. System		
Standards	IEEE 802.11b compliant, Wi-Fi compatible	
Host Interface	PCMCIA PC Card Type II	
Modulation	1Mbps: DBPSK; 2Mbps: DQPSK; 5.5 and 11 Mbps: CCK	
Transmission Rate	1, 2, 5.5, 11 Mbps	
Operating Voltage	3.3V/5V	
Operating Range	Open space: 100 - 300m; Indoor: 30 - 100m	
4-2. RF Performance		
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)
Minimum Output Power	14dBm @ Nominal Temp Range	
Receive Sensitivity	Typical: - 81dBm @ 11 Mbps data rate, 8% PER	
Antenna	Two built-in polarized antennas	
4-3. Safety Regulation and Operating Environment		
EMC certification	FCC Part 15 (USA)	
	CE (Europe)	
Temperature Range	Operating: 0 ~ 55 deg C, Storing : -20 ~ 65 deg C	
Humidity	Max. 95% Non-condensing	
4-4. Software Support		
Driver	Windows 95/98/Me; Windows 2000/XP	
Roaming	Supports roaming.	
Network Protocol	TCP/IP, IPX, NetBEUI	
Security	64 bit WEP (128 bit WEP optional)	
Management Utility	Monitors the network situation.	
4-5. Mechanical		
Dimensions	118.4 x 54 x 6 mm	
Weight	TBD	
Packaging	Packaging specially used by Gigabyte.	
LED indicator	Power on/Link/Received signal strength	

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.