



GN-WLMR101

IEEE 802.11b Cardbus Wireless LAN Card

User's Manual

http://www.gigabyte.com.tw

Rev. 1.0 First Edition

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Chapter 1. Product Overview

1-1. Introduction to The Wireless LAN Card

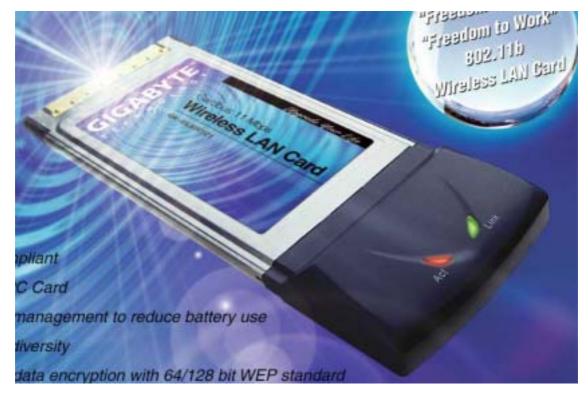
This wireless Local Area Network (LAN) card is composed of the IEEE 802.11b MAC with CARDBUS interface, Baseband, radio components, and two built-in antennas. This product adopts the direct sequence spread spectrum (DSSS) technology using the DBPSK, DQPSK, and CCK modulations to provide a very stable 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.

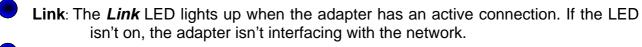
1-3. Physical Dimensions/Packaging



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



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.

GNWLMR1-01	Network Adapter
Install Wireless LAN Drive	er
Visit Gigabyte Web Site	
Browse the CD	
Exit	

Step 3: Click "Install Wireless LAN Driver".

heck Setup Information		
If you want to review or change	begin the file-transfer operation. any of the settings, click Back, gs, click Next to begin copying files.	
Current Settings:		
Setup Type: Win2K		-
×		2
IShield		

Step 4: Click "Next".

Install	×
Please insert your Wireless Lan (Now will begin to setup	ard !
OK	

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

Digital Signature Not Fou	nd 🔀
	The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested. The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows. GIGABYTE GN-WLMR101 Wireless LAN CardBus NIC If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available. Do you want to continue the installation?
	Yes No More Info

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

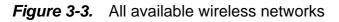


If this is your first time to use this card, you must start our utility and try to connect to any available wireless networks. You can open it by double-clicking on this icon, the following window will pop up.

Figure 3-2. Search for available wireless networks

wireless network, sele		e list, and ther	I CIICK CONNECC.	
Available wireless Netv Wait for getting a		less network(s	;)	5
This wireless network r access the network, ty)
Network key: Confirm network key:				
	dia and a second second	ting to a petw	ork, click Advan	ted.

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



1000	ys-11g		
	ESTWEPS		
🕻 Cisc	D		-
	ne network, t	use of a netwo v, then click Co	 , 10
Confirm I	network key:		

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

	linksys-11g 💌 - ×
Config Advance Config	Available Wireless Network(s) To connect to an available network, click Configure. I linksys-11g I NDTESTWEPS Cisco Refresh
Status Statistics About Exit	Available Profile(s) Double click to edit selected profile. Inksys-11g Add Remove Set Default
100 CA 20 (100 C)	Strength

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

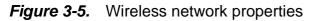
Signal Quality: It shows the quality of communication between the wireless LAN card and the associated network (In Figure 3-4, it mean linksys-11g).

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.



Wireless network properties
Network Name(SSID): linksys-11g
Wireless network key(WEP)
This network requires a key for the following:
Data encryption(WEP enabled)
Network Authentication(Shared mode)
Network key:
Confirm network key:
Key index (advanced):
 Enable IEEE 802.1× authentication for this network This is a computer-to-computer(ad hoc) network; wireless access points are not used.
OK Cancel

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.

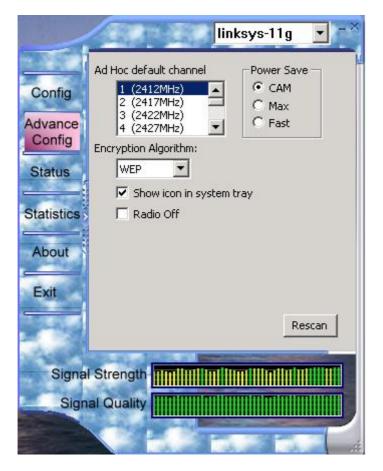
<u>3-1-2 Available Profiles:</u>

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

		nksys-11g 🔽 - 🏾	
Config	Manufacturer NDIS Driver Version Using Short Radio Headers	= Realtek = 5.128.0307.2003 = Yes	
Advance	WEP Status Authentication Type Channel Set MAC Address	= Disabled = Open = MKK1 = 00:20:ED:49:BC:07	
Config Status	1 Mbps Data Rate 2 Mbps Data Rate 5.5 Mbps Data Rate	= Basic = Basic = Basic	
Statistics	11 Mbps Data Rate Channel (Frequency)	= Basic = 1 (2412 MHz)	
About	Status SSID Network Type	= Associated = linksys-11g = Infrastructure	
Exit	Power Save Mode Associated AP MAC Associated AP IP	= CAM = 00:06:25:B5:8D:B6 =	
_	Up Time (hh:mm:ss)	= 0:09:56	
Signa	Signal Strength		
Sign	al Quality		

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

-	Counter Name	Value
-	TxOK	253
Config	Tx Error	0
Coning	Tx Retry	14
	Tx Beacon OK	0
Advance	Tx Beacon Error	
Config	RxOK	425
-	Rx Packet Count	9345
Status	Rx Retry	762
otatus	Rx CRC Error(0-500)	4962
	Rx CRC Error(500-1000)	2
Statistics	Rx CRC Error(>1000)	0
Statistics	Rx ICV Error	0
About		
Exit		
		Reset
Signa	Strength	
and the second second	The second se	
Sign	nal Quality	
Station of the local division of the local d		

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 ENVIRO	ONMENTAL 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."