## Wireless Network Adapter

# **User's Manual**

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## Contents of Package:

- Wireless network Cardbus/PCI adapter
- Manual, Drivers and Utility on CD
- Quick Installation Guide

If any of the above items are missing, please contact your reseller.

### Before you begin

You must have at least the following:

- A laptop computer/desktop PC with an available 32-bit Cardbus/PCI slot
- At least a 300MHz processor and 32MB of memory
- Windows 98SE, ME, 2000, XP
- A CD-ROM Drive
- Cardbus/PCI controller properly installed and working in the laptop computer
- An 802.11g or 802.11b Access Point (for infrastructure Mode) or another 802.11g or 802.11b wireless adapter (for Ad-Hoc; Peer-to-Peer networking mode.)

### Chapter 1 Introduction

#### 1.1 Welcome

The Wireless Network Adapter is a powerful 32-bit Cardbus/PCI Adapter that installs quickly and easily into PCs. The Adapter can be used in Ad-Hoc mode to connect directly with other cards for peer-to-peer file sharing or in Infrastructure mode to connect with a wireless access point or router for access to the Internet in your office or home network.

The Wireless Cardbus/PCI Adapter connects you with 802.11g networks at up to an incredible 54Mbps! And for added versatility, it can also interoperate with all the up to 11Mbps 802.11b products found in homes, businesses, and public wireless hotspots around the country. And in either mode, your wireless communications are protected by industrial-strength WPA, so your data stays secure.

#### **1.2 About This Guide**

This User Manual contains information on how to install and configure your Wireless Broadband Router to get your network started accessing the Internet. It will guide you through the correct configuration steps to get your device up and running.

Note and Caution in this manual are highlighted with graphics as below to indicate important information.



Contains related information that corresponds to a topic.



Represents essential steps, actions, or messages that should not be ignored.

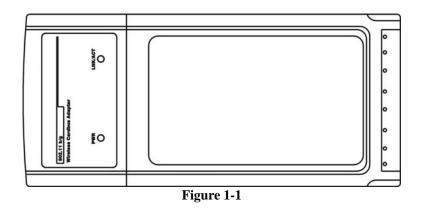
#### **1.3 Copyright statement**

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, whether electronic, mechanical, photocopying, recording, or otherwise without the prior writing of the publisher.

### Chapter 2 Hardware Description

The wireless Cardbus/PCI Adapter supports up to 54 Mbps connections. This card is fully compliant with the specifications defined in IEEE802.11g standard. It is designed to complement PCI Local Bus computers and supports Windows 98SE/Me/2000/XP.

#### 2.1 Cardbus adapter

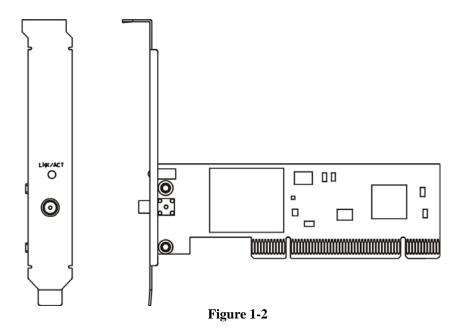


#### LEDs

The two status LED indicators of the Cardbus wireless adapter are described in the following figure and table.

LED	Status	Description
PWR	ON (Green)	Indicates the Adapter is ready
Lnk/Act	ON (Green)	Indicates a valid connection
	Flashing	Indicates the the Adapter is transmitting
		or receiving data.

#### 2.2 PCI adapter



#### LEDs

The Wireless PCI Adapter includes a status LED indicators, as described in the following table.LEDStatusDescription

		<b>-</b>
Lnk/Act	ON (Green)	Indicates a valid connection
	Flashing	Indicates the the Adapter is transmitting

or receiving data.

### **Chapter 3 Hardware Installation**

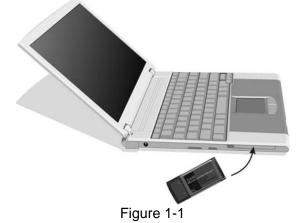
#### 3.1 Before you begin

You must have at least the following:

- ✓ A laptop computer/desktop PC with an available 32-bit Cardbus/PCI slot
- ✓ At least a 300MHz processor and 32MB of memory
- ✓ Cardbus/PCI controller properly installed and working in the computer
- ✓ A CD-ROM Drive
- ✓ An 802.11g or 802.11b Access Point (for infrastructure Mode) or another 802.11g or 802.11b wireless adapter (for Ad-Hoc; Peer-to-Peer networking mode.)

#### 3.2 Cardbus Adapter:

- Power on your notebook, let the operating system boot up completely, and log in as needed.
- Hold the dapter with the LOGO facing up and insert it into a Cardbus slot. After a short delay, the Found New Hardware Wizard displays.



#### 3.3 PCI Adapter:

- Turn off your desktop PC.
- Open your PC case and locate an available PCI on the motherboard.
- Slide the PCI Adapter into the PCI slot. Make sure that all of its pins are touching the slot's contacts. You may have to apply a bit of pressure to slide the adapter

all the way in. after the adapter is firmly in place, secure its fastening tab to your PC's chassis with a mounting screw. Then close your PC.

- Attach the external antenna to the adapter's antenna port.
- Power on your desktop PC.

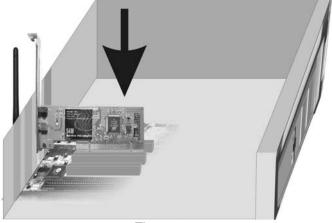


Figure 1-2 You have now completed the hardware installation for the Adapter.

### **Chapter 4 Install Driver**

#### 4.1 Windows 98SE, Me and 2000

Please follow the steps below to install driver:

1. Windows will automatically detect the Adapter. The screen in Figure 2-1 should appear. Then click the **Next** button.



#### Figure 2-1

2. Click the radio button **Search for suitable driver for my device(recommended).** Then click the **Next** button.

Found New Hardware Wizard
Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:         Image: Device of the controller         A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.         Image: What do you want the wizard to do?         Image: Search for a suitable driver for my device (recommended)         Image: Display a list of the known drivers for this device so that I can choose a specific driver
< <u>B</u> ack <u>N</u> ext > Cancel



Insert the Driver and Utility CD-ROM into the CD-ROM drive.
 Choose the CD-ROM drives, Then click the Next button.

bse the CD-ROM drives, Then click the Next button.
Found New Hardware Wizard
Locate Driver Files Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
E thernet Controller
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
Floppy disk drives
CD-ROM drives
Specify a location
Microsoft Windows Update
< <u>B</u> ack <u>N</u> ext > Cancel
Figure 2-3

5. Windows find the adapter drivers, then click the **Next** button.

Found New Hardware Wizard
Driver Files Search Results The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
Windows found a driver for this device. To install the driver Windows found, click Next.
g:\driver\winxp_2k\netmw125.inf
< <u>B</u> ack Cancel
Ei ot

Figure 2-4-

6. click the **Finish** button, You have now completed the driver installation for the adapter.



Figure 2-5

#### 4.2 Windows XP

Please follow the steps below to install your adapter driver:

1. Windows XP will automatically detect the Adapter. The screen in Figure 2-6 should appear. Click the radio button next **install from a list or specific location (Advanced).** Then click the **Next** button.

Found New Hardware Wizard				
	Welcome to the Found New Hardware Wizard			
	This wizard helps you install software for:			
	Ethernet Controller			
	If your hardware came with an installation CD or floppy disk, insert it now.			
	What do you want the wizard to do?			
	<ul> <li>Install the software automatically (Recommended)</li> <li>Install from a list or specific location (Advanced)</li> </ul>			
	Click Next to continue.			
	< Back Next > Cancel			

#### Figure 2-6

- 2. Insert the Driver and Utility CD-ROM into the CD-ROM drive.
- 3. Choose Search removable media (floppy, CD-ROM...), then click the Next button.

Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM)
Include this location in the search:
H:\ Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< <u>B</u> ack <u>N</u> ext > Cancel

Figure 2-7 4. Windows find the driver from the CD-ROM, then click the **Next** button.

Found New Hardware Wizard
Please select the best match for your hardware from the list below.
802.11g/b Wireless LAN Client Adapter
Description Version Manufacturer Location
802.11g/b Wireless LAN Client Adapter 3.2.3.2 Customer h:\driver\win
This driver is not digitally signed! <u>Tell me why driver signing is important</u>
< <u>₿</u> ack <u>N</u> ext > Cancel

Figure 2-8

5. Then click **Finish.** You have now completed the driver installation for the adapter.



Figure 2-9

## **Chapter 5 Install Driver Install Utility**

- 1. insert the **Driver and Utility CD-ROM** into the CD-ROM drive.
- The Wizard should run automatically, and Figure 3-1 should appear. If it dose not, click the Start button and choose Run. In the field that appears, enter D:\autorun.exe (if "D" is the letter of your CD-ROM drive).



Figure 3-1

3. Click Install Utility on the Wireless Client Configuration Utility screen.

覺 Wireless Client Configuration Utility		×
Destination Location		ø
Setup will install Wireless Client Configuration I	Utility in the following folder	:
To install into a different folder, click Browse, a	and select another folder.	
You can choose not to install Wireless Client C Setup.	Configuration Utility by click	ing Cancel to exit
Destination Folder		
C:\Program Files		Browse
Wise Installation Wizard?	< <u>B</u> ack	Cancel

Figure 3-2

4. Follow the Install Shield Wizard steps, and click **Finish** when done.

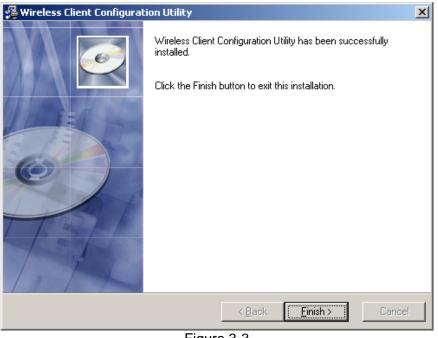


Figure 3-3

## **Chapter 5 Configuration your wireless**

## adapter

1. After install the Utility **Wireless Client Configuration Utility** icon will appear in your system desktop. Double-click the icon (see Figure 4-1)



Figure 4-1 2. The Wireless Client Configuration Utility screen (Figure 4-2) will appear.

Vireless Client Confi	guration Utility		_ <b>_</b> _×
Advanced Network Status	Auto Link Profile Manager	Admin   Site Survey	About Statistics
Select Profile-		Signal Strength	
Link Information Status: Network SSID: Network Type: Network BSSID: Security: Link Speed:	n  No Connection	-Internet Protocol DHCP Option: IP Address: Subnet Mask: Default Gateway:	(TCP/IP)
		erformance	
Curren 6.3 Kbps 3.2 Kbps 0 bps	it Tx Rate:	Current Ro 9.9 Kbps 5.0 Kbps 0 bps	« Rate:
🗆 Radio Off [/	4lt+F2]	<u>0</u> K	<u>C</u> ancel
	Figu	ire 4-2	

3. Click the **Site Survey** tab, then click the **Refresh** button to search for available wireless networks (Figure 4-3)

Advanced       Auto Link       Admin       About         Network Status       Profile Manager       Site Survey       Statistics         Networks Filter       Image: Display 802.11g Access Points       Image: Display 802.11g Access Points         Display 802.11a       Access Points       Image: Display 802.11b Access Points         Network SSID       MAC Address       Sec       WMM CH. Si Ne         Image: Network SSID       MAC Address       Sec       WIMM CH. Si Ne         Image: Network SSID       MAC Address       Sec       VIMM CH. Si Ne         Image: Network SSID       MAC Address       Sec       VIMM CH. Si Ne         Image: Network SSID       MAC Address       Sec       VIMM CH. Si Ne         Image: Network SSID       MAC Address       Sec       VIMM CH. Si Ne         Image: Network SSID       MAC Address       Sec       VIMM CH. Si Ne         Image: Network SSID       Image: Network SSID       Image: Network SSID       Image: Network SSID         Image: Network SSID       MAC Address       Sec       VIMM CH. Si Ne         Image: Network SSID       Image: Network SSID       Image: Network SSID       Image: Network SSID         Image: Network SSID       Image: Network SSID       Image: Network SSID	/ireless Client Configuration Ut	tility				_ 🗆
✓ Display Peer-To-Feer stations       ✓ Display 802.11g Access Points         ✓ Display 802.11a Access Points       ✓ Display 802.11b Access Points         Network SSID       MAC Address       Sec       WMM         ✓ Wireless AP-Router       00-E0-4C-81       Enable       N         ✓ Wireless AP-Router       00-E0-4C-81       Enable       N       N				vey		
Wireless AP-Router         OO-EO-4C-81         Enable         N         10         75%         In   <	✓ Display Peer-To-Peer	_	• •	Ť		
	Network SSID	MAC Address	Sec	YMM	сн.	Si Ne
	♥g₩ireless AP-Router	00-E0-4C-81	Enable	N	10	75% In
	L					
□ Radio Off (Alt+F2) <u>O</u> K <u>C</u> ancel		<u>F</u> ilter			<u>A</u>	ssociate
Figure 4-3				<u></u>		<u>-</u>

4. To connect to one of the networks on the list, select the wireless network, and click **Associate** button.

## **Chapter 6 Using the Wireless Client**

## **Configuration Utility**

Use the *Wireless Client Configuration Utility* to check the link information, search for available wireless networks, or create profiles that hold different configuration settings. You can double-click the icon on your system desktop start it. Another way to start the *Configuration Utility* is to click on *Start>Programs>Wireless Client Configuration Utility>WirelessCfg.* 

If you are using Windows XP, you can use either the Zero Configuration Utility or the *Wireless Client Configuration* 

### 6.1 Network Status

Advanced	Auto Link	Admin	About
letwork Status	Profile Manager	Site Survey	Statistics
-Select Profile Wireless AP-Ro		Signal Strength-	
-Link Informatio Status:		Internet Protocol	• g . (TCP/IP)
Network SSID: Network Type:	Wireless AP-Router Infrastructure	Subnet Mask:	192, 168, 1, 22 255, 255, 255, 0
Network BSSID: Security:	00 E0 4C 81 86 D1 WEP	Default Gateway: 🛛	192. 168. 2. 10
Link Speed:	54 Mbps Channel 10	(2.457 GHz)	
Curre	nt Tx Rate: O bps	Current	Rx Rate: O bps
9.3 Kbps 4.7 Kbps 0 bps 0 bps			
🗆 Radio Off (	Alt+F2 )	<u>0</u> K	<u>C</u> ancel

The Network Status tab displays signal strength and link information, Internet Protocol (TCP/IP).

1. Link Information

- **Status:** The status of the wireless network connection.
- Network SSID: The unique name of the wireless network.
- **Network Type:** The mode of the wireless network currently in use.
- Network BSSID: The MAC address of the wireless network's access point.
- **Security:** The status of the encryption security feature.
- Link Speed: The data transfer rate of the current connection.
- **Channel:** The channel to which the wireless network devices are set.
- 2. Internet Protocol (TCP/IP)
  - **DHCP Option:** The status of the DHCP client.
  - **IP Address:** The IP Address of the Adapter.
  - Subnet Mask: The Subnet Mask of the Adapter.
  - **Default Gateway:** The Default Gateway address of the Adapter.

### 6.2 Site Survey

The *Site Survey* tab (Figure 6-2), displays a list of infrastructure and ad-hoc networks available for connection.

Wireless Client Configuration (	Jtility				_ 🗆 🗙
Advanced Auto Network Status Prof	Link Tile Manager	Admin Site Sur	1.00	oout Statistic	s
Networks Filter Display Peer-To-Peer Display 802.11a Acce		Display 802 Display 802			
Network SSID	MAC Address	Se	c WMM	CH.	Si
♥g₩ireless AP-Router	00-E0-4C-81-8	6-D1 En	able N	10	80%
•					
	<u>F</u> ilter	<u>R</u> ef	fresh	<u>A</u> ssoci	ate
🗖 Radio Off (Alt+F2)		<u>(</u>	<u>o</u> ĸ	<u>C</u> an	cel

Figure 6-2

The section of the window displays the Available Networks. Highlight the network to which you wish to connect. Click on the *Associate* button.

onfigure Network	×
Security	
Authentication Mode: Open System 💌 Encryption Method: WEP	
-WEP Key Setting-	
<ul> <li>Select Key 1 as Transmit Key</li> <li>Key 2 is not set</li> </ul>	
C Key 3 is not set C Key 4 is not set	
Configure WEP Keys	
<u> </u>	cel

Figure 6-3

Choose the Authorization modes and Encryption modes in the drop-down box. If the wireless network uses a **Passphrase**, enter the **Passphrase** in the **Passphrase** field. If the wireless network uses a **WEP** key, enter the **WEP** key in the Key field.

Click the **OK** button to complete the network connection and return to the *Site Survey* screen, or click the **Cancel** button the cancel the network connection and return to the *Site Survey* screen.

## 6.3 Admin

The Admin tab screen (Figure 6-4) lets you import or export profiles.

Wireless Client Configur	ation Utility			
Network Status Advanced	Profile Manager Auto Link	Site Survey Admin	Statistics About	
Click ⟨Import Pi to import the pi	ofiles> button and sei ofile.		n which you want Import Profiles	
Click (Export Profiles) button and select the file where you want to save the profiles. All profiles shown in (Profile Manager) page will be saved to the selected source.				
Export Profiles       Radio Off (Alt+F2)       OK   Cancel				

Figure 6-4

#### **Export Profile**

To save the profile(s) in a different location, click the **Export Profile** button. On the screen that appear (Figure 6-5), direct Windows to the appropriate folder and click the **OK** button.

? ×
_
<u> </u>

Figure 6-5

#### **Import profile**

Click the **Import Profile** button to import a profile that has been saved in another location. From the screen that appears (shown in Figure 6-6), select the appropriate file, and click the **Open** button.

Open		?×
Look in: [	My Documents 💽 🕝 🤌 📴 🖬 🗸	
付 My Music		
💾 My Picture	S	
		_
File <u>n</u> ame:		
Files of <u>type</u> :	cfg Files (*.cfg)	el
	Copen as read-only	
	Figure 6-6	11.

## 6.4 Profile Manager

Wireless Client Configura	ation Utility			_ 🗆 🗙
Advanced Network Status	Auto Link Profile Manag	Admin er Site Sur Profile Setting- Network Info Se Profile Name: Network SSID: Network Type: Wireless Mode:		tistics
<u>Apply Prof</u>	ile			]
Move <u>Up</u> Mo	ve <u>D</u> own	D <u>e</u> lete <u>C</u>	reate	Save
Radio Off (Alt+	F2 )		<u>o</u> k	<u>C</u> ancel

Figure 6-7 On the Profile Manager tab, shown in Figure 6-7, click the Create button to create a new profile.

Network Info		×
Please enter the network	information:	
Profile Name:	Wireless AP-Router	
Network SSID:	Wireless AP-Router	
Network Type:	Infrastructure 💌	
Wireless Mode:	Auto	
-		
	< <u>B</u> ack <u>N</u> ext> (	Cancel

#### Figure 6-8

When the *Network Info* screen appears (Figure 6-8), enter a name for the new profile. Enter the Network SSID. Choose the **Infrastructure Mode** in the Network Type drop-down box if you want your wireless computers to communicate with computers on your wired network via a wireless access point. Choose the **Ad-Hoc** Mode in the Network Type drop-down box if you want multiple wireless computers to communicate directly with each other. Click the Next button to continue or the Back button to return to the previous screen.

#### Ad-Hoc Mode

If you choose **Ad-Hoc Mode**, select the Wireless Mode from the drop-down menu. Then, select the correct operating channel for your network form the **Prefer Channel** drop-down menu. Click the **Next** button.

Network Info		×
Please enter the network	information:	
Profile Name:	Wireless AP-Router	
Network SSID: Network Type:	Wireless AP-Router	
When starting AdHoc n		
	102.11g 💌 wuto Select 💌	
	< <u>B</u> ack <u>N</u> ext> C	Cancel

Figure 6-9

#### Infrastructure Mode

If you choose Infrastructure Mode, click the Next button.

Authentication Mode: Open System	-
Encryption Method: Security Off	<b>•</b>
WEP Key Setting	
C Key 1 is not set	
C Key 2 is not set	
C Key 3 is not set	
C Key 4 is not set	
Configure WEP Keys	
<u> </u>	]

#### Figure 6-10

The *Security* screen (Figure 6-10) will appear. Choose the **Authentication Mode** and **Encryption Method** from the drop-down menu. To use WEP encryption (recommended to increase network security), select 64 bits or 128 bits WEP from the drop-down menu, and enter either a Passphrase or WEP key. Then click **Next** button.

Protocol	X
Please enter the wireless setting	S:
Do not change settings (	Keep original settings)
Power Save Mode: Preamble (802.11b): Transmit Rate: Fragment Threshold: RTS/CTS Threshold:	Continuous Access
	<u>⊡eset</u> < <u>B</u> ack <u>N</u> ext > Cancel

Figure 6-11

The *Protocol* screen will appear. Select **Do not change settings**, then, click **Next** button.

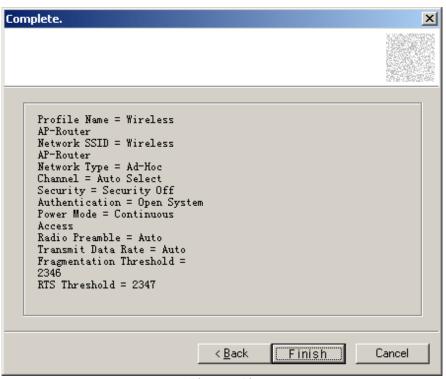


Figure 6-12

The *Complete* Screen will appear. Click **Finish** button. **You have successfully created a connection profile.** 

## **Chapter 7 Troubleshooting**

This chapter provides solutions to problems that may occur during the installation and operation of the Wireless Cardbus/PCI Adapter. Read the descriptions below to solve your problems.

#### 1. The Wireless Cardbus/PCI Adapter does not work properly.

- Reinsert the Wireless Cardbus/PCI Adapter into your PC's PCI slot/Cardbus slot.
- Right click on My Computer and select Properties. Select the device manager and click on the Network Adapter. You will find the Adapter if it is installed successfully. If you see the yellow exclamation mark, the resources are conflicting. You will see the status of the Adapter. If there is a yellow question mark, please check the following:
- Make sure that your PC has a free IRQ (Interrupt ReQuest, a hardware interrupt on a PC.)
- Make sure that you have inserted the right adapter and installed the proper driver. If the Adapter does not function after attempting the above steps, remove the adapter and do the following:
- Uninstall the driver software from your PC.
- Restart your PC and repeat the hardware and software installation as specified in this User Guide.

- 2. I cannot communicate with the other computers linked via Ethernet in the Infrastructure configuration.
  - Make sure that the PC to which the Adapter is associated is powered on.
  - Make sure that your Adapter is configured on the same channel and with the same security options as with the other computers in the Infrastructure configuration.
- **3.** What should I do when the computer with the Adapter installed is unable to connect to the wireless network and/or the Internet?
  - Check that the LED indicators for the broadband modem are indicating normal activity. If not, there may be a problem with the broadband connection.
  - Check that the LED indicators on the wireless router are functioning properly. If not, check that the AC power and Ethernet cables are firmly connected.
  - Check that the IP address, subnet mask, gateway, and DNS settings are correctly entered for the network.
  - In Infrastructure mode, make sure the same Service Set Identifier (SSID) is specified on the settings for the wireless clients and access points.
  - In Ad-Hoc mode, both wireless clients will need to have the same SSID. Please note that it might be necessary to set up one client to establish a BSS (Basic Service Set) and wait briefly before setting up other clients. This prevents several clients from trying to establish a BSS at the same time, which can result in multiple singular BSSs being established, rather than a single BSS with multiple clients associated to it.
  - Check that the **Network Connection** for the wireless client is configured properly.
  - If Security is enabled, make sure that the correct encryption keys are entered on both the Adapter and the access point.

## **APPENDIX A Specifications**

Standards: IEEE 802.11g, IEEE 802.11b Modulation: 802.11b: CCK (11 Mbps), DQPSK (2 Mbps), DBPSK (1 Mbps); 802.11g: OFDM Channels: 11 Channels (USA) 13 Channels (Europe) 14 Channels (Japan) Network Protocol: TCP/IP, IPX, NDIS 4, NDIS 5, NDIS 5.1, NetBEUI Interface: Cardbus/PCI Transmit Power: 15 dBm Sensitivity: -80 dBm LED: PWR, LNK/ACT WEP Key Bits: 64-Bit and 128-Bit **Dimensions:** Cardbus: 118.3×5×54.5mm 120×40mm (Non-Bracket) PCI: Unit Weight: Cardbus: 55g PCI: 50g Cardbus: 3.3V Power: PCI: 5V

Certifications: FCC CE Operating Temp.: 0°C to 40°C Storage Temp.: -20°C to 70° C Operating Humidity: 10% to 85%, Non-Condensing Storage Humidity: 5% to 90%, Non-Condensing