11Mbps High Speed Wireless PC Card



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Technical Support

The firmware version of this wireless PC Card is displayed on the utility main window. Users could download and upgrade the most recent software version from the supplier's web site or refer to the selling contact for the latest software information. If you have difficulty resolving the problem while installing or using the Access Point, please contact the supplier for support.

About This Manual

11Mbps Wireless PC Card User's Manual is first published on May, 2000. This revision is for 11Mbps PC Card Version 3.0.0, issued on June, 2001. The manual includes procedures for the setup of the 11Mbps Wireless LAN PCMCIA Adapter under Windows 98, Windows ME, Windows NT or Windows 2000. Take a moment to read through this manual and familiarize yourself with wireless technology

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Chapter 1 About 11Mbps Wireless PC Card

The 11Mbps IEEE 802.11b PC Card is a standard PCMCIA adapter that fits into any standard PCMCIA Type II slot in a notebook computer. Its 11Mbps data rate gives equivalent Ethernet speed to access corporate network or the Internet in a wireless environment. In addition, a detachable antenna version is specifically designed for system integrator application. When installed, 11Mbps Wireless PC Card is able to communicate with any 802.11 and 802.11b compliant products.

1-1 Features and Benefits

- 1. Supports 1, 2, 5.5 and 11 Mbps data rate.
- 2. Working range up to 800 ft. in an open environment.
- Seamless connectivity to wired Ethernet and PC network LAN's augments existing networks quickly and easily.
- 4. Direct Sequence Spread Spectrum (DSSS) technology provides robust, interference-resistant and secure wireless connection.
- 5. Wireless connection without the cost of cabling.
- Supports a wide range of LAN NOS (Win95/98/ME, NT, Win2000, NetWare client, DOS, Linux).
- 7. Support high security WEP encryption (40-bit and 128-bit).
- 8. Supports Plug and Play.
- 9. Easy installation.
- 10. Greater flexibility to locate or move networked PCs.

1-2 Applications

11Mbps Wireless PC Card offers a fast, reliable, cost-effective solution for wireless client access to the network in applications like these:

1. Remote access to corporate network information

E-mail, file transfer and terminal emulation.

2. Difficult-to-wire environments

Historical or old buildings, asbestos installations, and open area where wiring is difficult to deploy.

3. Frequently changing environments

Retailers, manufacturers and those who frequently rearrange the workplace and change location.

4. Temporary LANs for special projects or peak time

C1- Trade shows, exhibitions and construction sites where a temporary network will be practical. C2- Retailers, airline and shipping companies need additional workstations during peak period. C3- Auditors requiring workgroups at customer sites.

5. Access to database for mobile workers

Doctors, nurses, retailers, accessing their database while being mobile in the hospital, retail store or office campus.

6. SOHO (Small Office and Home Office) users

SOHO users need easy and quick installation of a small computer network.

7. High security connection

The secure wireless network can be installed quickly and provide flexibility. (Please refer to page 22 for encryption configuration.)

1-3 Product Kit

11Mbps Wireless PC Card comes with the following items. Please go through each item below. If any listed item is not included or found damaged, please contact your local dealer.

11Mbps Wireless PC Card

• 11Mbps Wireless LAN PC Card..... x1



•	11Mbps PC Card Software and Documentation CD or Floppy Diskette	x 1
•	11Mbps Wireless LAN PC Card User Manual	x 1

Chapter 2 Hardware Installation

This chapter describes the instructions that guide you through the proper hardware installation of your 11Mbps Wireless PC Card.

2-1 System Requirements

In order to use the 11Mbps Wireless PC Card, your computer must be equipped with the following:

- 1. A PCMCIA Type II slot, and a PCMCIA card and socket services compliant with revision 2.10 of the PCMCIA specification (or higher).
- 2. Windows 95/98/ME/NT/2000 (with a Windows installation CD-ROM, diskettes for use during installation)
- 3. Minimum 500 Kbytes free disk space for installing driver and utility program.

2-2 Hardware Installation for 11Mbps Wireless PC Card

To install the 11Mbps Wireless PC card, please do the following:

- 1. Find an available Type II or Type III PCMCIA slot in your notebook computer.
- 2. With the PCMCIA adapter's 68-pin connector facing the PCMCIA slot and its label facing up, slide the PCMCIA adapter completely into the PCMCIA slot.



Fig Insert the 11Mbps PC Card into the notebook.

NOTE: The PCMCIA slot allows "hot swap" of PCMCIA adapter. You may therefore insert or remove your 11Mbps Wireless PC Card from the slot whenever you like even when the power of your computer is on. However, you are advised to always disable the PC card prior to removing the card from the PC card slot. This will allow the Windows operating systems to log off from the network server. Disable the driver properly and disconnect the power to the PC card slot.

Chapter 3 Software Installation

This chapter describes the installation of the 11Mbps Wireless PC Card driver for the Windows 95/98/ME, Windows NT 3.51/4.0 and Windows 2000 operating systems. The installation procedures for Windows 95/98/ME refer to 3-1 Set up 11Mbps Wireless PC Card for Windows 95/98/ME; for Windows NT4.0 please see 3-2 Set up 11Mbps Wireless PC Card for Windows NT 3.51/4.0; for Windows 2000 please see 3-3 Set up 11Mbps Wireless PC Card for Windows 2000.

3-1 Set up 11Mbps Wireless PC Card for Windows 95 / 98/ ME

- 1. Insert the 11Mbps Wireless PC Card into a standard type II PCMCIA slot in your notebook.
- 2. Windows 95/98/ME will automatically detect the new hardware and prompt you to install the driver needed.



- 3. Select "Search for the best driver for your device" and click Next.
- 4.



Select the location where the corresponding driver is placed (either from "Floppy disk devices" or "Select a location"), then click Next.

Add New Hardware Wiz	ard
	Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search. Floppy disk drives CD-ROM drive Microsoft Windows Update Specify a location: C:\WINDOWS\SYSTEM
	< <u>B</u> ack Next> Cancel

5. Windows 95/98/ME will find "IEEE 802.11 Wireless LAN PC Card". Now click Next.



6. Set parameters for the 11Mbps Wireless PC Card. Please refer to Chapter 4-2 for the definition of each parameter.

The following properties must	be set to use this network
adapter. Click the setting you	want to change on the left, and
then select its value on the rig	ht.
Property:	Value:
AltRetry Authentication Algorithm Channel ESSID Fragmentation Threshold Network Type Power Save Mode Preamble Mode RTS Threshold Transmit Rate Use WEP	7

AltRetry: This parameter defines the number of times a packet will be resent if the initial transmission is unsuccessful. The maximum number of retry is 7.

Authentication Algorithm: The 11Mbps Wireless PC Card provides two types of authentication services: **WECA Compliant (always use)** and **Must be Shared with WEP**. The default value is **WECA Compliant (always use)**.

Preamble Mode: The Wireless LAN PCMCIA Card supports three preamble modes: Long Tx Preamble, Short Tx Preamble, and Auto. Long Tx headers ensure compatibility with older models of client adapters. Short Tx headers improve throughput performance. The default value is Long Tx Preamble.

For other parameters' definition and further configuration please go to *Chapter 4-2 Using the WLA Utility* on page 18.

7. Click **Finish** to complete the software installation.



8. Restart the computer.



9. Open Control Panel/System/Device Manager, and check Network Adapters to see if any error icon appears. If no, your 11Mbps Wireless PC Card is working well.

 View devices by type Computer 	C View devie	ces by <u>c</u> onnecti	'n
È			
 End General Properties End General Hard disk controllers 	ers :		
E ∰ Modem			
Honitors			
Network adapters			
EEE 802.11 Wi	reless LAN PC C		
⊕			
Properties Refre	esh R <u>e</u>	move	Pri <u>n</u> t

- 1. Login as Administrator.
- 2. From the desktop, select **Control Panel**, double-click **Network**, go to the **Adapters** tab, and then click the **Add** button.

etwork Identification Se	rvices Protocols	Adapters Bin	dings
Network Adapte	rs:	<u>_</u>	
Aq"	<u>R</u> emove	<u>Properties</u>	<u>U</u> pdate
Item Notes:			
		Close	Cancel

3. Windows NT will present a list of all its supported adapters. Select **OTHERS**, or click **Have Disk** to continue.

Select N	letwork Adapter	? ×
	Click the Network Adapter that matches your hardware, and ther click OK. If you have an installation disk for this component, clic Have Disk.	n k
<u>N</u> etwork	k Adapter:	
■2 30 a ■2 30 a ■2 30 a ■2 30 a ■2 30 a	om 3C508 ISA 16-bit Ethernet Adapter iom Etherlink II Adapter (also II/16 and II/16 TP) iom Etherlink III ISA/PCMCIA Adapter iom EtherLink III PCI Bus-Master Adapter (3C590) iom Etherlink16/EtherLink16 TP Adapter	
	Hav Disk.	
	OKCancel	

4. Windows NT will ask for the drive/path containing the 11Mbps Wireless PC Card Windows NT drivers. Insert the 11Mbsp PC Card Driver and Utility CD-ROM or diskette into the corresponding drive, and then type the location where it is placed.

Insert Di	sk	×
đ	Insert disk with software provided by the software or hardware manufacturer. If the files can be found at a different location, for example on another drive type a new path to the files below.	OK Cancel
	Dł	

5. Windows NT will attempt to locate an INF file in the specified path. If you have entered the path name correctly, Windows NT should copy the appropriate drivers to the Windows NT system.

elect	OEM O	ption			>
Choos	se a softv	vare support	ted by this hardwa	are manufacturer's o	lisk.
	802.11	Wireless LAI	N PC Card		
		<u>r</u> tan in the second se	Cancel	<u>H</u> elp	

Fig. Choose device model.

6. A 11Mbps Wireless PC Card setup dialog box will show up. Please select the "Default Channel", "Network Type" and "SSID" manually according to the setting in the following fig. Your 11Mbps Wireless PC Card will thereafter work on this configuration under Windows NT. Press OK to continue.

Interrupt Number	10 💌
IO Port Address	0x280
Channel	3
Fragmentation Threshold	2432
Network Type	Infrastructure
Power Save Mode	Disabled 💌
RTS Threshold	2432
ESSID	ANY
Transmit Rate	Fully Auto

7. Now, the drivers have been properly copied. Go to **Control Panel**, double-click **Network**, go to the **Adapters** tab, and then click the **Properties** button. Please specify each parameter required the network to work on, such as IP Address, Subnet Mask, and Default Gateway.

licrosoft TCP/IP Pro	perties	? ×
IP Address DNS	VINS Address Routing	1.4.670
An IP address can be by a DHCP server. If ask your network adr the space below.	e automatically assigned to th your network does not have ninistrator for an address, and	iis network card a DHCP server, d then type it in
Adapter:	alass LAN BC Card	
○ <u>O</u> btain an IP ar	ddress from a DHCP server	
IP Address:	192.168.0.1	
S <u>u</u> bnet Mask:	255 . 255 . 255 . 0	
Default <u>G</u> ateway:	192 . 168 . 0 . 254	
		Advanced
[OK Cancel	Apply

8. Click **OK** to finish the installation. Restart the Windows.



9. To ensure whether the 11Mbps Wireless PC Card works fine or not, go to **Control Panel**, double-click **Devices**, then verify whether the 11Mbps PC Card driver has started.

evices			
De <u>v</u> ice	Status	Startup	
v7vram		Disabled 🔺	Close
VgaSave	Started	System	
VgaStart		System	<u>S</u> tart
Wd33c93		Disabled	-
wd90c24a		Disabled	S <u>t</u> op
wdvga		Disabled	Charlen
weitekp9		Disabled	Stajtup
WINS Client(TCP/IP)	Started	Automatic	HW Profiles
WLAN11 Adapter Driver	Started	Automatic	
Xga		Disabled 💌	Help

3-3 Setup 11Mbps Wireless PC Card for Windows 2000

- 1. Insert the 11Mbps Wireless PC Card into a standard type II PCMCIA slot in your notebook.
- 2. Windows 2000 will automatically detect the new hardware and prompt you to install the driver needed.



- 3. Select "Search for a suitable driver for my device [recommended]" and click Next.
- 5.

nd 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:
_ IEEE_802.11_Wireless_LAN/PC_Card
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.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
O Display a list of the known drivers for this device so that I can choose a specific driver
<back next=""> Cancel</back>

Select the location where the corresponding driver is placed, then click Next.

Wher	river Files e do you want Windows to search for driver files?
Searc	h for driver files for the following hardware device:
P	_ IEEE_802.11_Wireless_LAN/PC_Card
The w any ol	izard searches for suitable drivers in its driver database on your computer and in the following optional search locations that you specify.
To sta insert	rt the search, click Next. If you are searching on a floppy disk or CD-ROM drive, the floppy disk or CD before clicking Next.
Optio	nal search locations:
Optio	nal search locations: Floppy disk drives
Optio C	nal search locations: Floppy disk drives CD-ROM drives
Optio	nal search locations: Floppy disk drives CD-ROM drives Specify a location
Optio	nal search locations: Floppy disk drives CD-ROM drives Specify a location Microsoft Windows Update

5. Windows 2000 will find "IEEE 802.11 Wireless LAN PC Card". Now click Next.

ound 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:							
IEEE 802.11 Wireless LAN PC Card (5V)							
Windows found a driver for this device. To install the driver Windows found, click Next.							
a:\wlan11k.inf							
< Back Next > Cancel							

7. Click **Finish** to complete the software installation.



8. Open Control Panel/System/Device Manager, and check Network Adapters to see if any error icon appears. If no, your 11Mbps Wireless PC Card is working well.



Chapter 4 Parameter Configuration

This chapter gives you assistance with detailed installation procedures of the WLU utility for setting the 11Mbps Wireless PC Card.

4-1 Installation of "WLU" utility

1. Insert the 11Mbps Wireless PC Card Software and Documentation CD or floppy diskette into the corresponding drive, and execute the **WLU**\setup.exe. Then Follow the on-screen instructions guiding you through the process of installation.

Choose Destination Loca	tion	×
	Setup will install 11Mbps Wireless LAN Uitility in the following directory. To install to this directory, click Next. To install to a different directory, click Browse and select anothe directory. You can choose not to install 11Mbps Wireless LAN Uitility by clicking Cancel to exit Setup.	16
InstallShield	Destination Directory E:\\11Mbps Wireless LAN Uitility Browse KBack Next > Cancel	

2. Click **Finish** to complete the installation. Proceed to the next section – **Using the WLA Utility** to configure your 11Mbps Wireless LAN PC Card.



4-2 Using the WLA Utility

The 11Mbps Wireless LAN PC Card is a ready-to-use device. Its default settings can set for the typical **Infrastructure Wireless LAN**. Simply install the PC Card onto your computer and it is ready to use. In special situations however, you may change to adjust configuration settings depending on how you would like to manage your wireless network. The WLA utility enables you to make configuration changes and perform user-level diagnostics on your 11Mbps Wireless PC Card in the Windows 95/98/ME/NT/2000 operating system environments. When you minimize the window, a system tray icon will be loaded in the toolbar. Clicking on the icon will open the configuration window again.

- 1. Click Start, point to Programs and run WLA Utility.
- 2. Main Menu appears.

formation			(m . 1)	
Wireless LAN Adapter:	s : IEEE 802.11 Wireless L	AN PC Card	(5V)	L
Firmware Version	0.8.0 Freque		icy Domain :	ARIB
MAC Address	s: 00:60:B3:66:38:70	:70 Current Channel : :E2 Current TxRate :		: 14 : 11Mbps
BSS connected with	n: 00:60:B3:F1:F4:E2			
ESS ID) ; WirelessLAN			
Configure the adapter	to operate on your wireless	network	Network C	onfiguration
Check the status of your wireless network			Diagnostic Tools	

A: Main Menu

When Main Menu shows up, the 11Mbps Wireless PC Card hardware information will display on the top of the screen in real time. You will see current adapter configuration information in terms of the MAC address, firmware version, frequency domain, BSS joined, current channel and ESS ID of the adapter that you installed in your desktop or notebook computers.

At the bottom of the Main Menu screen, it shows all main functions of the WLA utility:

- □ [Network Configuration] Allows you to change the configuration parameters of your currently installed 11Mbps Wireless PC Card for your wireless network environment.
- □ [Diagnostic Tools] The Site Survey, Link Quality Test and Access Points Browser help you assess the wireless network environment and performance of the RF links.
- □ [Firmware Upgrade] Allows you to upgrade firmware of the Wireless PC Card.