802.11g WLAN Mini PCI

AV802G

Quick Start Guide

Version 1.0

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Statement of Conditions

We may make improvements or changes in the product described in this documentation at any time. The information regarding to the product in this manual are subject to change without notice.

We assume no responsibility for errors contained herein or for direct, indirect, special, incidental, or consequential damages with the furnishing, performance, or use of this manual or equipment supplied with it, even if the suppliers have been advised of the possibility of such damages.

Electronic Emission Notices

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.

(2)This device must accept any interference received, including interference that may cause undesired operation.

FCC INFORMATION

The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:

The 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 instruction, may cause harmful interference to radio communication. 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 overcome the interference by one or more 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.

The equipment is for home or office use.

IMPORTANT NOTE

FCC RF Radiation Exposure Statement: This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the antenna and your body and must not be co-located or operating in conjunction with any other antenna or transmitter.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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R&TTE Compliance Statement
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This equipment complies with all the requirements of the Directive 1999/5/EC of the European parliament and the council of 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity(R&TTE).

The R&TTE Directive repeals and replaces in the directive 98/13/EEC. As of April 8, 2000.

Canada IC Compliance Statement

Low Power License-Exempt Radio communication Devices (RSS-210)

1. *   **Warning Note:** Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired *operation of the device.*

2. **Operation in 2.4GHz band:** To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Exposure of Humans to RF Fields for module built-in mobile Radios Equipment (RSS-102)

1. Mobile radios that are not body worn (e.g. mounted on vehicles or placed on desks, shelves, etc.) and operated such that humans are normally separated from their radiating element by **at least 20 cm** are not subject to SAR tests, but must have an RF evaluation by the certification applicant, based on the calculated or measured field strength value. SAR evaluation can be used if so desired in lieu of a RF evaluation of field strength limits.

2. Exposures produced by such radios shall not exceed the exposure limits specified in Health Canada's Safety Code 6. Health Canada's address is :775 Brookfield Road, Ottawa, Ontario Canada K1A 1C1; Tel: (613) 954-6699 / Fax:(613) 941-1734 ;
e-mail: alice_mackinnon@hc-sc.gc.ca.

Table of Contents

List of Figures

INTRODUCTION

Being five times faster than the speed of 802.11b network standard devices, the innovative 802.11g standard lets the wireless network become incredibly easier and faster (up to 54Mbps) than ever. Your 802.11g WLAN Mini PCI   surely will bring you into such a high-speed network sphere. This document describes how to install your 802.11g WLAN Mini PCI , which aims to let your computer quickly and seamlessly communicate with 802.11 networks. WLAN is local area networking without wires, which uses radio frequencies to transmit and receive data between PCs or other network devices. Additionally, wireless LAN is able to configure either independent networks, which is also known as peer-to-peer or ad-hoc network, or infrastructure networks. The former is suitable for small or temporary peer-to-peer configurations, and the later is offering fully distributed data connectivity via micro cells and roaming.

To obtain most benefits your 802.11g WLAN Mini PCI   brings, please read this manual carefully before using it.

1.1 Features

With 802.11g WLAN Mini PCI , you can:
- □   establish a wireless connection without the hassles and cost of cabling
- □   operate Ad-Hoc or Infrastructure mode
- □   utilize up to 128-bit WEP encryption
- □   enjoy high-speed data transfer rate up to 54 Mbps
- □   employ automatic data rate switching which offers maximum reliability, throughput and connectivity
- □   possess the network's range up to 100 meters indoor and 400 meters outdoor
- □   monitor and configure the network via the supplied friendly-interfaced application – **WLAN 54Mbps Configuration Tool**

1.2 System Requirements

To properly operate your Card, your computer should meet the following minimum requirements:
- □   Microsoft Windows 98/98 Second Edition/Me/2000 or Windows XP
- □   Minimum 5 Mbytes free disk space for installing the driver and the utility program
- □   32 MB RAM or above
- □   A CD-ROM drive
- □   300 MHz processor or higher
- □   Mini-PCI interface

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INSTALLATION

It's free and easy for you to install your 802.11g WLAN Mini PCI and the attached software – **WLAN 54Mbps Configuration Tool**. Simply with a few clicks of the mouse, you will succeed the installation.

2.1 Installation Procedures

To have the 802.11g WLAN Mini PCI operated appropriately, please read and go along with the step-by-step instructions below carefully. Here we take the installation on Windows XP operating system as the standard flow. The flow might be slightly different while installing it on different version of Windows, and these differences have been highlighted under the corresponding steps.

Confirm the Hardware Connection

  a) Right-click **My Computer** desktop icon and choose **Properties** from the opened menu.
  b) In the **System Properties** dialog box, select the **Hardware Device** tab, and then click the **Device Manager** button.
  c) In the opened window, expand the **Other devices** item, if there is an unknown **Network Controller** displayed, the hardware has been built inside your computer system and you may go along with the steps below now. If the device has not been displayed, please contact your distributor.
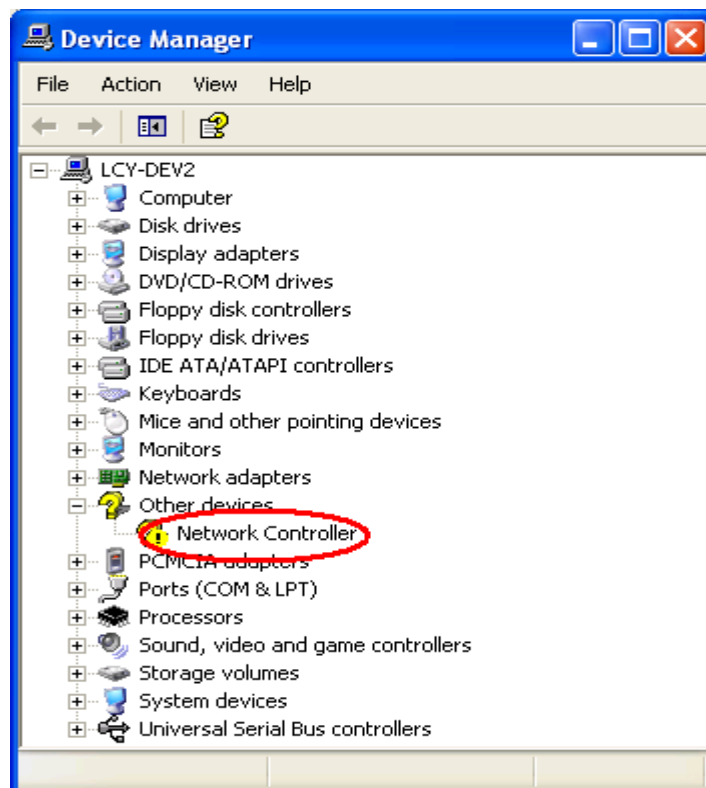
Figure 2.1-1: The **Device Manager** Screen Before Installation

Installation Procedures

a) Once your system detects the device, the **Found New Hardware Wizard** dialog box shall appear. Choose **Cancel** to proceed.

Figure 2.1-2: The **Found New Hardware Wizard** Dialog Box

b) Insert the supplied Setup CD to your CD-ROM drive, and the Setup Wizard will run automatically. If it does not, please manually execute **Autorun.exe** in the CD's directory.

c) From the prompted start-up screen, choose **Install Driver** to begin the installation.

Figure 2.1-3: The Start-up Screen

3

d) Click **Next** in the **Welcome to the InstallShield Wizard** window to proceed. The system will start to copy the drivers found.
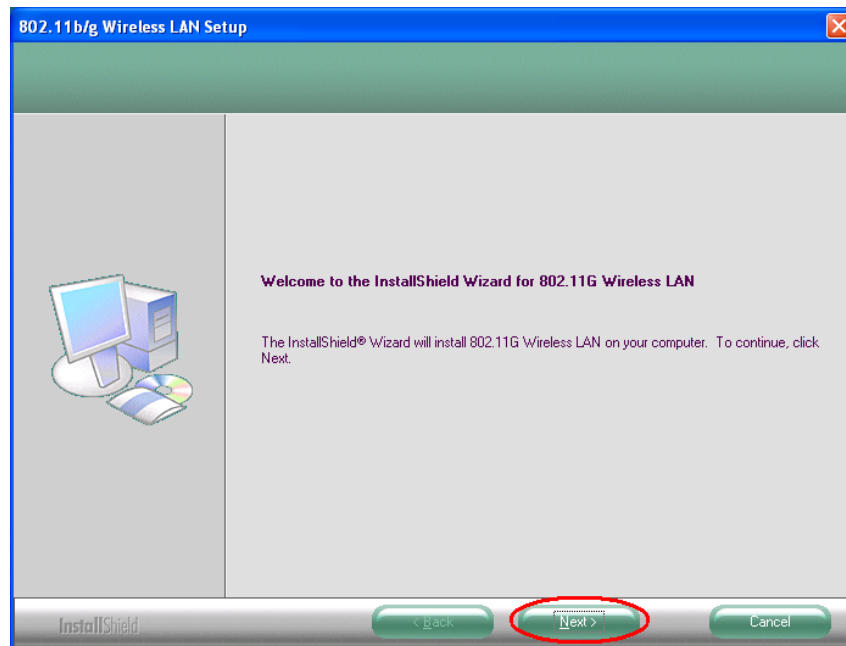

Figure 2.1-4: The **Welcome to the InstallShield Wizard** Window

e) Windows may notify you with message box below that the driver **has not passed Windows Logo testing**. Because the Card has been tested to work with Windows XP, please choose **Continue Anyway** to ignore it.
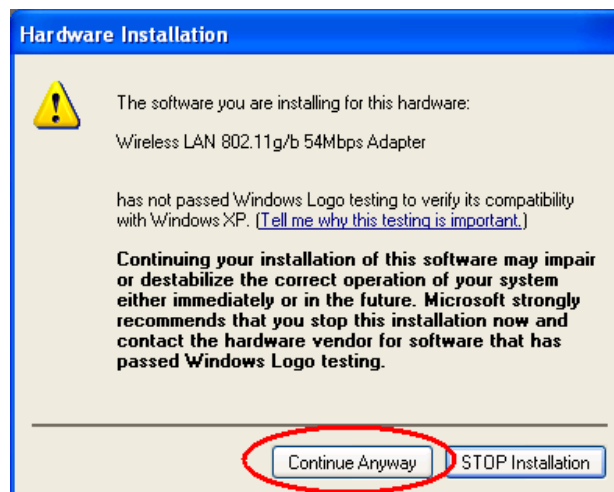

Figure 2.1-5: The Windows XP System Compatibility Testing Warning Message

f) On the **Install Finished** screen, click **Finish** to complete the installation. Note that when you are running Win98/98SE/ME, the computer will restart automatically after clicking **Finish**.

Note: It is necessary for Win98/98se/ME users to restart the computer for completing the installation.
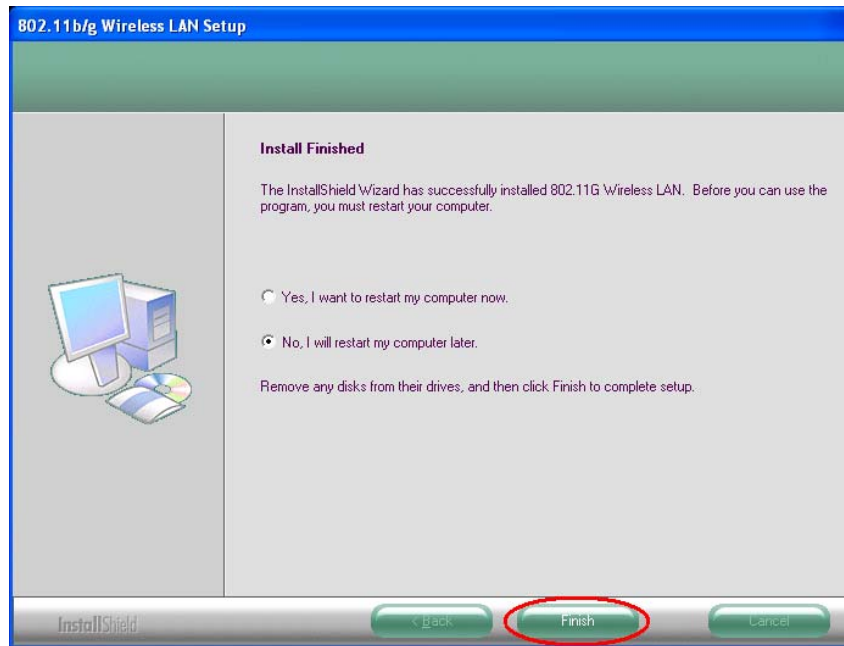
4

Figure 2.1-6: The **Install Finished** Screen

Note: For Win 98 users, the system may ask for Windows 98 CD-ROM after rebooting. Please replace the supplied CD with the required one and click **OK** to proceed. Then please follow the on-screen instructions to complete the installation.
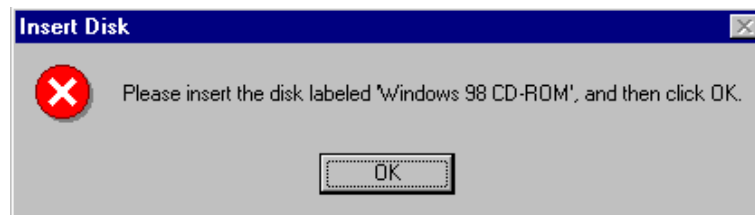

Figure 2.1-7: The **Insert Disk** Message Box in Windows 98 System

Now you shall find the **WLAN 54Mbps Configuration Tool** tray icon, , appeared in the system tray. The installation is entirely finished at this moment.

Double-click the icon is able to launch the application and open the **WLAN 54Mbps Wireless Settings** dialog box, in which you may freely arrange your network connection afterwards.

2.2 Installation Notes - Windows XP

If your system is running Windows XP, you shall find three tabs displayed in the **WLAN 54Mbps Wireless Settings** configuration interface after you've followed the instructions above and successfully installed the drivers and utility. However, normally, the dialog box should be consisted of six tabs. This is because Windows XP has its built-in configuration tool – **Wireless Zero Configuration** to assist you in wireless   networking activities. It is recommended to

utilize the attached **WLAN 54Mbps Configuration Tool** to enjoy more benefits it will bring.

Thus, to employ your **WLAN 54Mbps Configuration Tool** under Windows XP, please proceed to the following procedures to change the default settings of **Wireless Zero Configuration** to enable **WLAN 54Mbps Configuration Tool**.
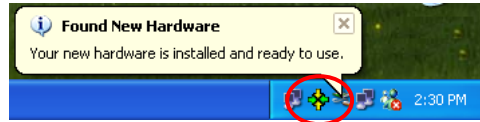

Figure 2.2-1: The **WLAN 54Mbps Configuration Tool** Tray Icon

a) Double-click the **Network Connections** icon at the task bar to open the **Wireless Network Connection Status** dialog box, and then select **Properties**.
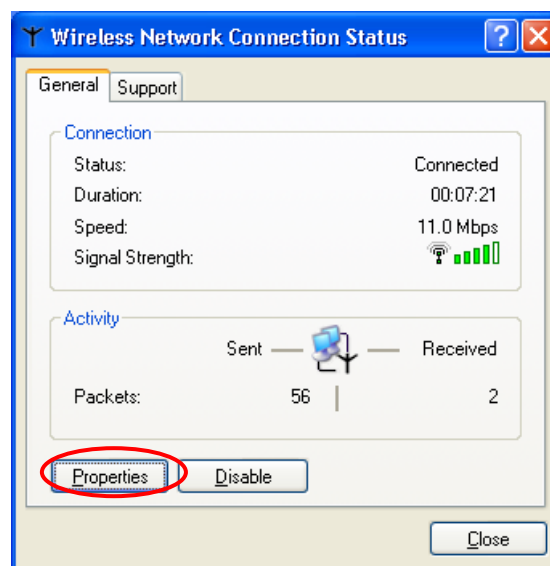

Figure 2.2-2: The **Wireless Network Connection Status** Dialog Box

b) Open the **Wireless Networks** menu, and remove the tick from the **Use Windows to configure my wireless network settings** checkbox.
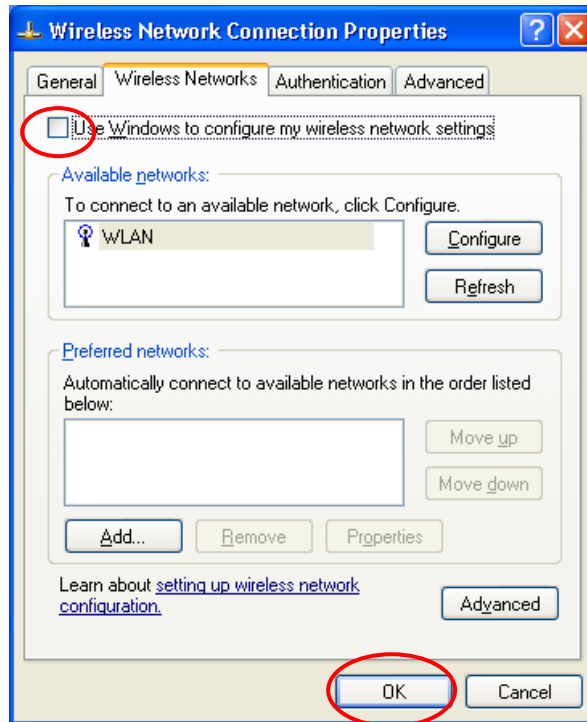
Figure 2.2-3: The **Wireless Network Connection Properties** Dialog Box

c) Click **OK**. Now, you have successfully disabled the **Wireless Zero Configuration**.

To monitor and configure the network via **WLAN 54Mbps Configuration Tool**, double-click its tray icon, and you shall find six tabs contained in the popped up configuration interface this time.

2.3 Verifying a Successful Installation

To confirm that the 802.11g WLAN Mini PCI   is properly installed, please follow the procedures below:

1. Right-click **My Computer** desktop icon and choose **Properties** from the opened menu.
2. In the **System Properties** dialog box, select the **Hardware Device** tab, and then click the **Device Manager** button.
3. In the opened window, expand **Network adapters** to find the Adapter – **Wireless LAN 802.11g/b 54Mbps Adapter**. Right-click over the item and choose **Properties**.
4. Select the **General** tab from opened dialog box, find the descriptions under the **Device Status** pane to check if the Card is working properly. However, if there's an error message such as a red or yellow question mark attached aside, please uninstall the Card, restart your system, and go through the installation procedures again.

The following picture indicates a successful installation of 802.11g WLAN Mini PCI .
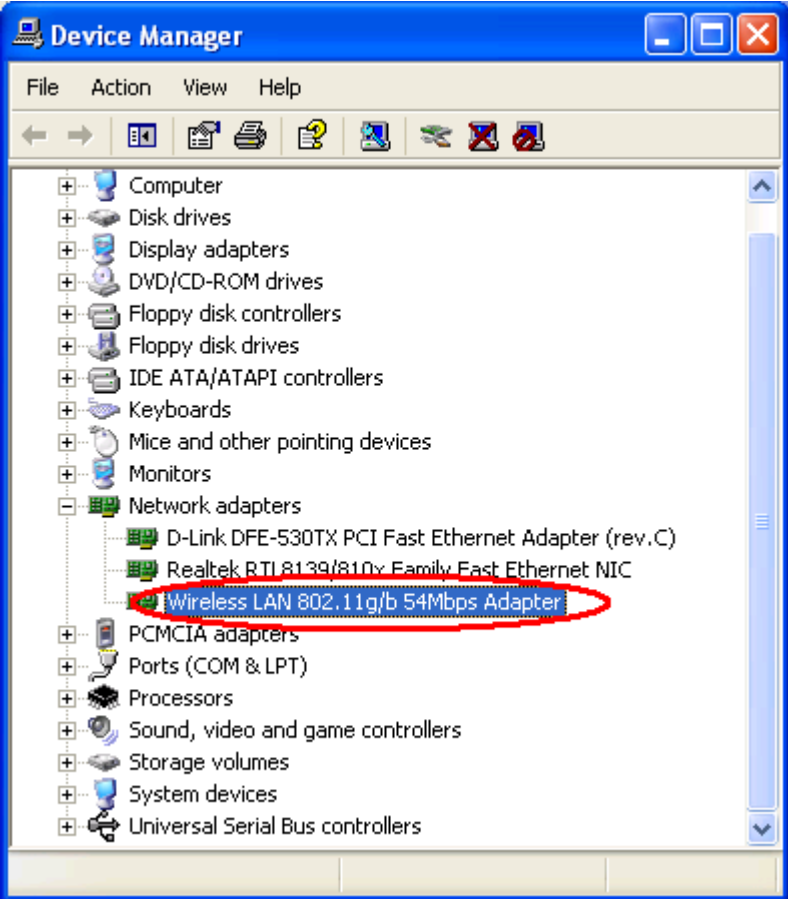

Figure 2.3-1: The **Device Manager** Dialog Box

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APPENDIX A: TROUBLESHOOTING

This section provides solutions to problems that you might encounter during the installation and operation of your 802.11g WLAN Mini PCI . Please refer to the desired topics below and read the description to solve your problems.

The 802.11g WLAN Mini PCI   Does Not Work Properly

If this happens, follow the guidelines below.

Right-click the **My Computer** desktop icon and choose **Properties** to open the **System Properties** dialog box. If you are under Windows 98/Me, choose the **Device Manager** tab, or if you are running Windows 2000/XP, click the **Hardware** tab, and then choose the **Device Manager** button. In the opened window, find your Mini PCI Card to see if the installation is successful. If you see a yellow exclamation mark beside the item, please heading to following steps to reinstall the drivers:

1. Uninstall the software and hardware drivers from your PC. (Please refer to the **Uninstall WLAN 54Mbps Configuration Tool and the Card's Driver** section for details)
2. Restart your computer and repeat the installation procedures as indicated in section 2.1 of this manual.
3. When finished, open the **Device Manager** window again to verify if the installation is approved. The yellow exclamation mark shall be removed this time.

Disable the 802.11g WLAN Mini PCI

Supposed you do not need the 802.11g WLAN Mini PCI   to establish the wireless connectivity for any reason, click **Disable Radio** on the **Status** tab of the **WLAN 54Mbps Wireless Settings** dialog box. Thus, be sure that you have closed all network applications before disable the device.

Uninstall WLAN 54Mbps Configuration Tool and the Card's Driver

Prior to starting uninstalling, please make sure that the utility is closed. To remove the **WLAN 54Mbps Configuration Tool** and the Card's driver, please check the following introductions for details.

1. Execute the uninstall command by selecting **WLAN 54Mbps Uninstall** from the submenu of **WLAN 54Mbps TOOLS** in the **Program** menu provoked by clicking **Start** button on the task bar.
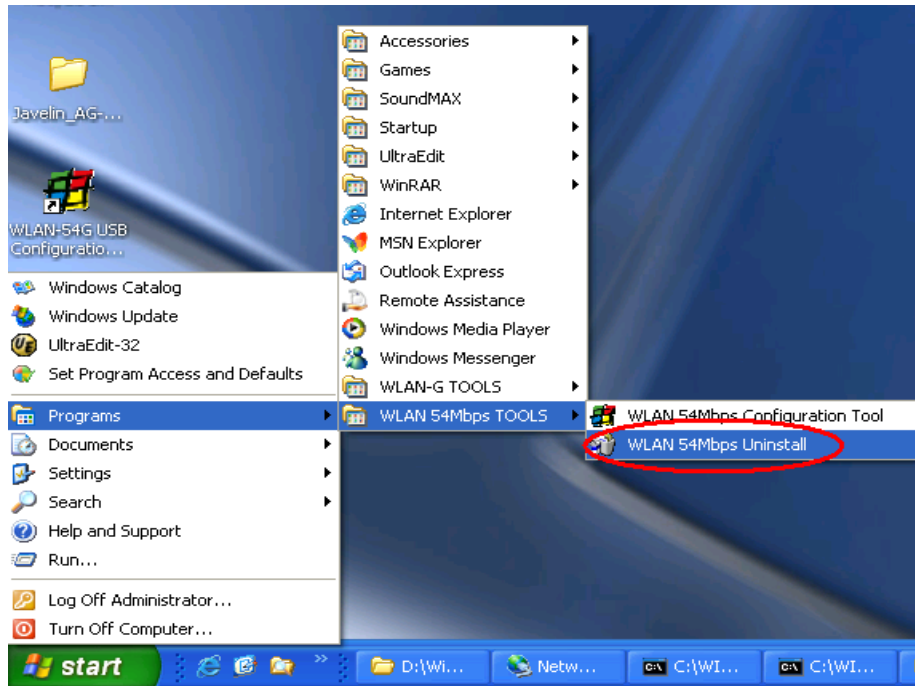
Figure 5-1: The **WLAN 54Mbps Configuration Tool** Uninstall Command

2. Choose **OK** when the following message box appears to proceed.
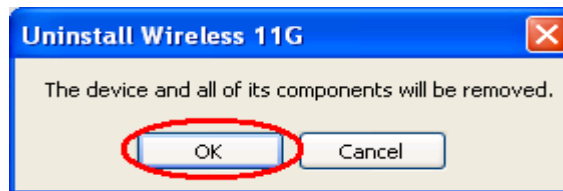

Figure 5-2 The **WLAN 54Mbps Configuration Tool** Removal Warning Message

3. Click **Finish** in the **Uninstall Finished** dialog box to complete the removal. Note that if you are running Win98/98SE/ME, the computer will restart automatically after clicking **Finish**.
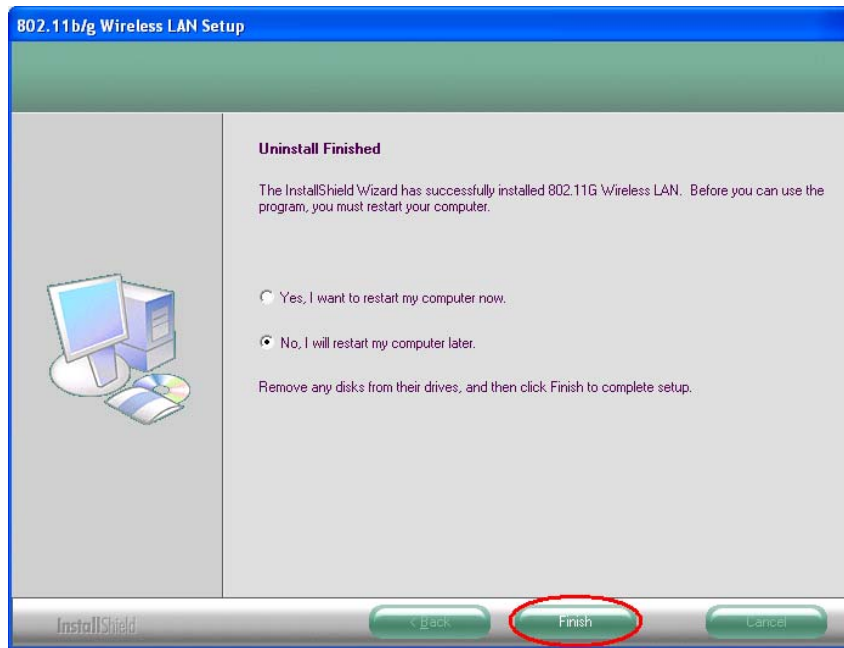
Figure 5-3 The **Uninstall Finished** Screen

APPENDIX B: SPECIFICATIONS

Product Name	802.11g WLAN Mini PCI
Host Interface	Mini-PCI
Standards	IEEE 802.11, IEEE 802.11b, IEEE 802.11g
Frequency Band	2.4G ISM-band (subject to local regulations)
Subject to local regulations	USA /Canada/Taiwan: 2400~2483.5MHz(Ch1~Ch11) Europe (ETSI 300 328): 2400~2483.5MHz(Ch1~Ch13) Japan: ARIB STD-T66: 2400~2483.5MHz(Ch1~C13) ARIB STB-33: 2471~2497MHz(Ch14)
Current Drain	Power save mode=22mA, Standby mode=7mA, Transmit mode=460mA, Receive mode=410mA
Spreading	DSSS (11b), OFDM (11g)
Data Rate	1Mpbs, 2Mbps, 5.5Mbps, 6Mbps, 9Mbps, 11Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Transmit Power	802.11b$\geq$17dBm 802.11g 6/9Mbps$\geq$17dBm 12/18Mbps$\geq$15dBm 24Mbps$\geq$14dBm 36Mbps$\geq$14dBm 48Mbps$\geq$12dBm 54Mbps$\geq$12dBm
Receive Sensitivity	802.11b 8% FER@1Mbps$\leq$-91dBm 8% FER@2Mbps$\leq$-88dBm 8% FER@5.5Mbps$\leq$-85dBm 8% FER@11Mbps$\leq$-83dBm 802.11g 10% PER@6Mbps$\leq$-88dBm 10% PER@9Mbps$\leq$-87dBm 10% PER@12Mbps$\leq$-84dBm 10% PER@18Mbps$\leq$-82dBm 10% PER@24Mbps$\leq$-79dBm 10% PER@36Mbps$\leq$-75dBm 10% PER@48Mbps$\leq$-69dBm 10% PER@54Mbps$\leq$-68dBm

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Modulation	CCK (11b), BPSK, QPSK, 16-QAM, 64-QAM (11g)
Security	64/128 bit WEP Encryption 802.1x, WPA (Windows XP SP1 and Windows 2000 SP4 only)
Internal Antenna Type	Dual Antenna Diversity Switching
Media Access Control	RF activity
Supplied Driver	CSMA/CA with ACK
Warranty	1 year
Temperature Range	0~65°C (Operating)
Humidity	Max. 95% Non-condensing
Operating Range	Open Space: up to 400meters; Indoor: up to 100meters The transmission speed varies in the surrounding environment.
CIS	Customer Defined