

PCI Adapter

AT-WCP200G



User's Guide

FOR WINDOWS 98/ME/XP/2000

VERSION 1.10

PN 613-50607-00 Rev A



Simply connecting the  world

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Regulatory Notes and Statements

Wireless LAN, Health and Authorization For Use

Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far much less than the electromagnetic energy emissions from wireless devices like for example mobile phones. Wireless LAN devices are safe for use frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

- On board of airplanes, or
- In an explosive environment, or
- In case the interference risk to other devices or services is perceived or identified as harmful

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/ Disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, of the substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

USA-FCC (Federal Communications Commission) Statement

This device complies with Part 15 of FCC Rules.

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 this device.

**FCC Radio
Frequency
Exposure
Statement**

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65 and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices.

The radiated output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized.

When nearby persons has to be kept to ensure RF exposure compliance, in order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm.

**FCC
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. If not installed and used in accordance with the instructions, it 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 and correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the equipment and the receiver.
3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

**Export
restrictions**

This product or software contains encryption code that may not be exported or transferred from the US of Canada without an approved US Department of Commerce export license.

Safety Information

Your device contains a low power transmitter. When device is transmitted it sends out radio frequency (RF) signal.

**Caution**

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

**CE Mark
Warning**

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Protection Requirements for Health and Safety - Article 3.1a

Testing for electric safety according to EN60950 has been conducted. These are considered relevant and sufficient.

Protection Requirements for Health and Safety - Article 3.1b

Testing for electromagnetic compatibility according to EN301 489-1, EN301 489-17 and EN55024 has been conducted. These are considered relevant and sufficient.

Effective Use of the Radio Spectrum - Article 3.2

Testing for radio test suites according to EN300 328-2 has been conducted. These are considered relevant and sufficient.

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Preface

This user's guide contains instructions on how to use and install an Allied Telesyn AT-WCP200G Wireless PCI Adapter.

How This Guide is Organized

This guide contains the following sections:

Introduction, describes the AT-WCP200G adapter.

Unpacking and Setup, helps you get started with the basic installation of the AT-WCP200G adapter.

Hardware Installation, describes the LEDs of the adapter.

Software Installation, provides instructions on how to install the driver and utility programs.

Technical Specifications, lists the technical (general, physical and environmental) specifications of the AT-WCP200G adapter.

Regulatory Domains, lists the IEEE 802.11g channels.

Document Conventions

This guide uses several conventions that you should become familiar with before you begin to install the product.

Note

Notes provide additional information.

**Warning**

Warnings inform you that performing or omitting a specific action may result in bodily injury.

**Caution**

Cautions inform you that performing or omitting a specific action may result in equipment damage or loss of data.

Where to Find Related Guides

The Allied Telesyn web site at www.alliedtelesyn.com offers you an easy way to access the most recent documentation, software updates, and technical information for all of our products. The documents provided on our web site are available as PDF files.

Contacting Allied Telesyn

This section provides Allied Telesyn contact information for technical support as well as sales or corporate information.

Online Support

You can request technical support online by accessing the Allied Telesyn Knowledge Base from the following web site at **www.kb.alliedtelesyn.com**. You can use the Knowledge Base to submit questions to our technical support staff and review answers to previously asked questions.

E-mail and Telephone Support

For Technical Support via e-mail or telephone, refer to the "Support & Services" section of the Allied Telesyn web site at **www.alliedtelesyn.com**.

Returning Products

Products for return or repair must first be assigned a Return Materials Authorization (RMA) number. A product sent to Allied Telesyn without a RMA number will be returned to the sender at the sender's expense.

To obtain a RMA number, contact Allied Telesyn's Technical Support at our web site at **www.alliedtelesyn.com**

For Sales or Corporate Information

You can contact Allied Telesyn for sales or corporate information at our web site at **www.alliedtelesyn.com**. To find the contact information for your country, select "Contact Us" then "Worldwide Contacts".

Obtaining Management Software Updates

New releases of management software for our managed products can be downloaded from either of the following Internet sites:

- Allied Telesyn web site: **www.alliedtelesyn.com**
- Allied Telesyn FTP server: **ftp://ftp.alliedtelesyn.com**

If you would prefer to download new software from the Allied Telesyn FTP server from your workstation's command prompt, you will need FTP client software and you will be asked to log in to the server. Enter 'anonymous' as the user name and your e-mail address for the password.

Tell Us What You Think

If you have any comments or suggestions on how we might improve this or other Allied Telesyn documents, please fill out the General Enquiry Form online. This form can be accessed by selecting "Contact Us" from **www.alliedtelesyn.com**.

Allied Telesyn AT-WCP200G PCI Adapter

Introduction

Congratulations on your purchase of this IEEE 802.11g AT-WCP200G Wireless PCI Adapter. This manual helps to get familiar with the AT-WCP200G adapter. This manual contains detailed instructions in operation of this product. Please keep this manual for future reference.

With a AT-WCP200G adapter, a desktop computer or a station can communicate with another computer wirelessly. Easy-to use utilities are bundled with Wireless PCI Adapter for configuration, monitoring, and diagnosis purposes.

AT-WCP200G adapter can wirelessly transmit and receive data, minimizing the need for wired connections. With an AT-WCP200G adapter, you can locate your desktop or station wherever you want without wires and cables.

AT-WCP200G adapter provides users with an access to real-time information anywhere in their organization. The mobility provides productivity and service, which are not available under wired networks. The AT-WCP200G adapter configuration is easy to change from peer-to-peer networks, suitable for a small number of users, to full infrastructure networks of thousands of users that allow roaming around a broad area.

Unpacking and Setup

This section provides unpacking and setup information for the AT-WCP200G adapter.

Unpacking Open the box of the AT-WCP200G adapter and carefully unpack it. The box should contain the following items:

- One AT-WCP200G PCI Adapter
- One CD-ROM
- This user's guide

If any item is found missing or damaged, please contact your local reseller for replacement.

Hardware Installation

LED LNK/ACT (Link/Activity)

The LNK LED is green when the AT-WCP200G adapter is connected to a network successfully. Otherwise the LNK LED blinks continuously while the AT-WCP200G adapter is scanning the wireless devices or transmitting data.

Checking the Installation

1. Shut-down the computer by unplugging the power cord and remove the chassis cover.
2. Insert the contact edge of the AT-WCP200G adapter into the connector or any available PCI Bus Master Expansion slot.
3. Gently insert the card firmly into the PCI slot. Make sure the card is securely seated.
4. Secure the card to the chassis with the bracket screw.
5. Replace the PC's cover.
6. Turn the computer ON.

Refer to the next section to install the AT-WCP200G driver and WIRELESS LAN utility.

Software Installation

Installing the AT-WCP200G Driver

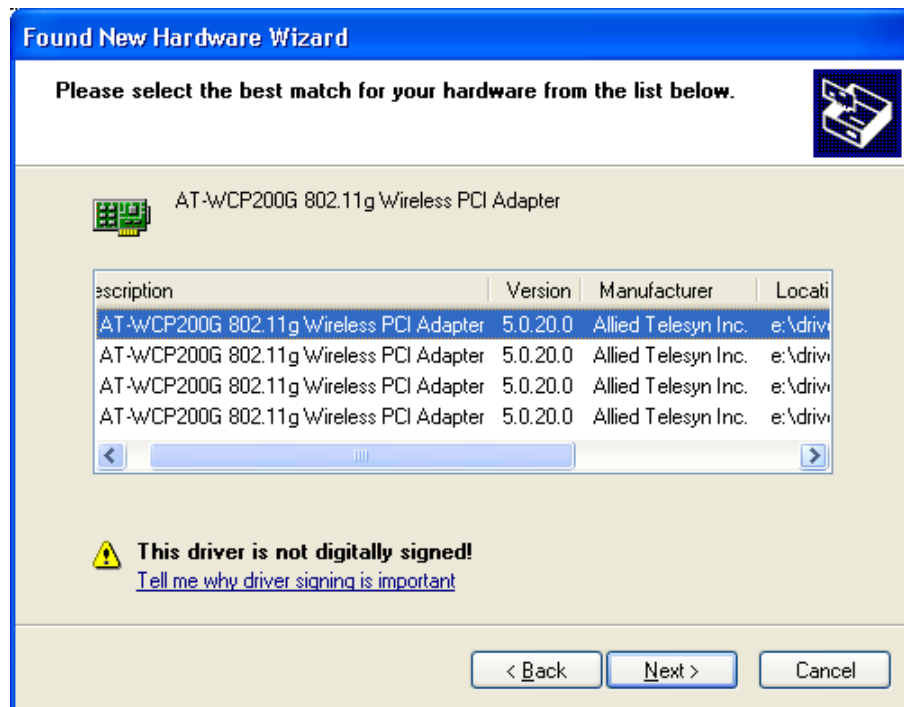
For Windows 98/ME/2000/XP

1. Verify that the AT-WCP200G adapter is securely inserted into the PCI slot and the WIRELESS LAN CD is in the CD-ROM drive. The operating system will detect the AT-WCP200G adapter and the following window will appear.



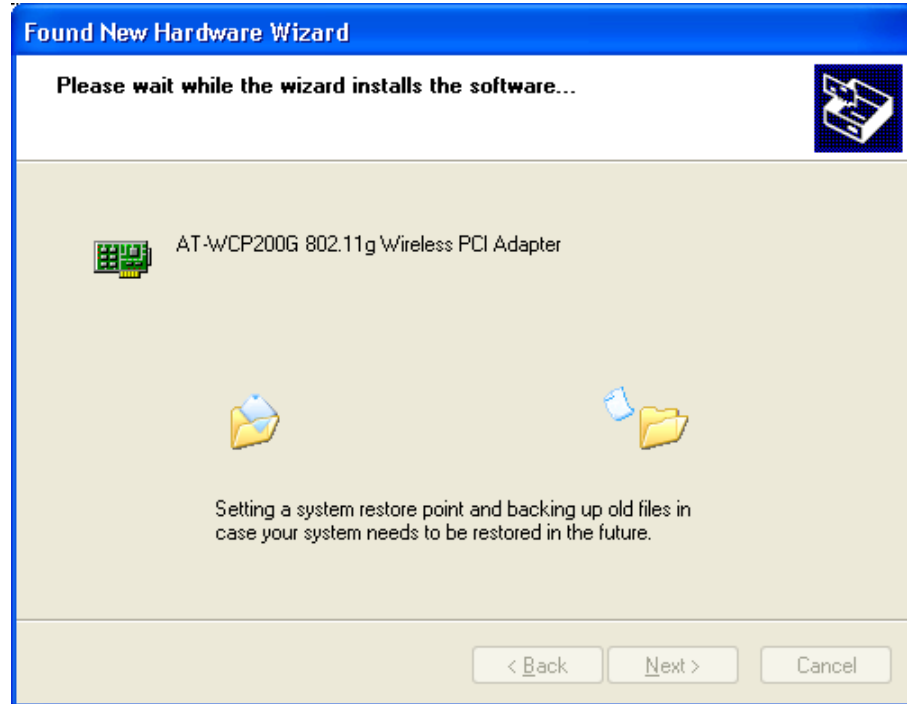
2. Select **Install the software automatically (Recommended)** and then **Next**.

The installation process will scan the CD and prompt you to select the appropriate driver for the operating system. For example, select \driver\AT-WCP200G\Windows XP for an XP operating system.



3. Select **Next**.

The following screen will be displayed.



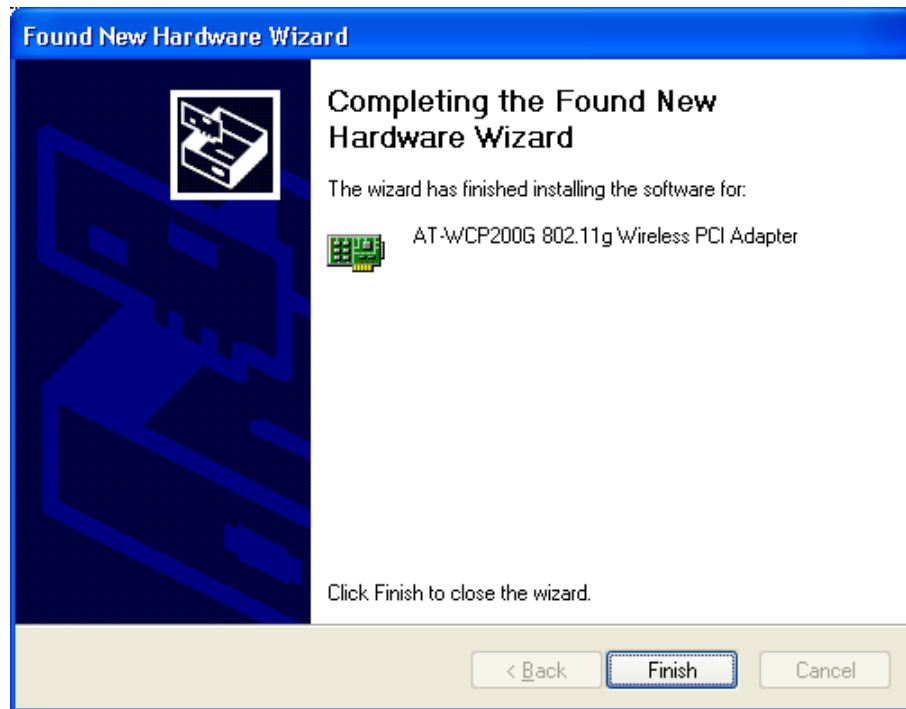
The AT-WCP200G drivers are not Microsoft WHQL certified, therefore the below message will appear.



This is a generic Windows message indicating that the inserted device has not completed the WHQL certification tests.

4. Select **Continued Anyway**.

The following screen is displayed.



5. Select **Finish** to complete the AT-WCP200G driver Installation.

The AT-WCP200 driver is now installed.

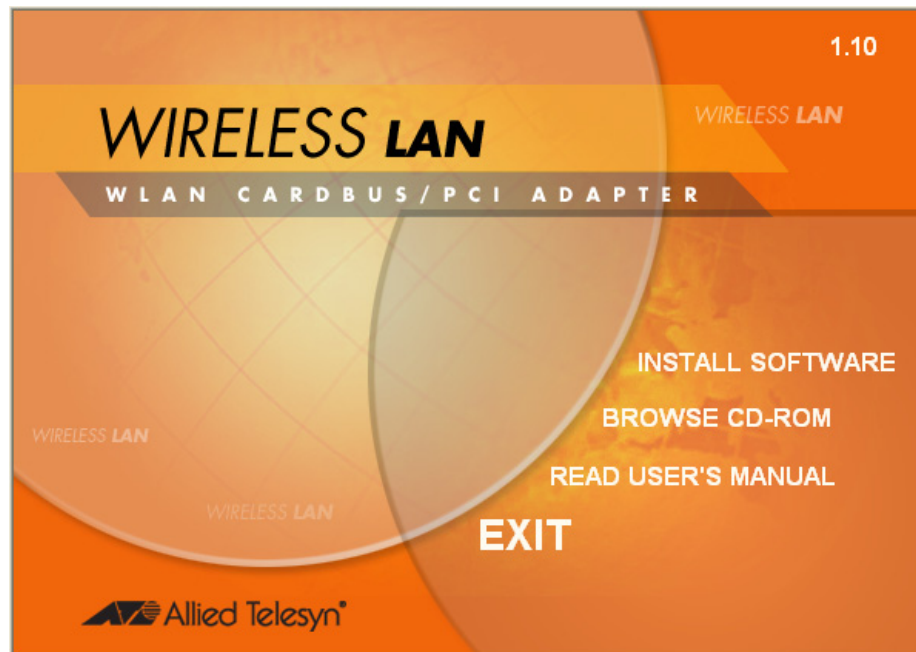
Installing the WIRELESS LAN Utility

For Windows 98/ME/2000/XP

This section provides the instructions on how to install and use the WIRELESS LAN utility.

1. Insert the WIRELESS LAN CD into the CD-ROM Drive.

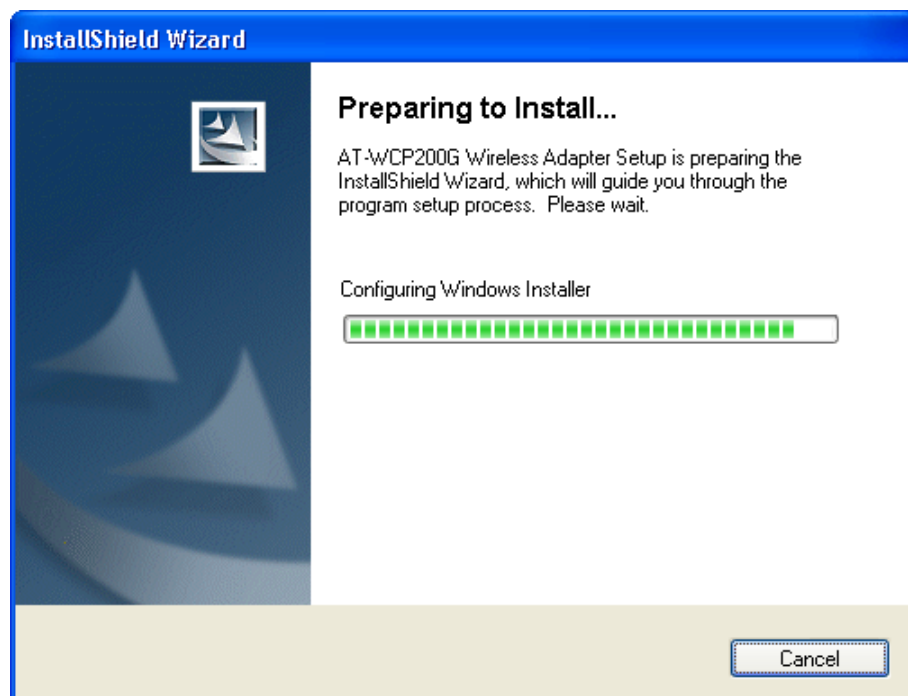
The WIRELESS LAN Main Menu, as shown below is displayed. If this menu is not displayed, double-click on the My Computer icon, then double-click on the CD-ROM Drive.



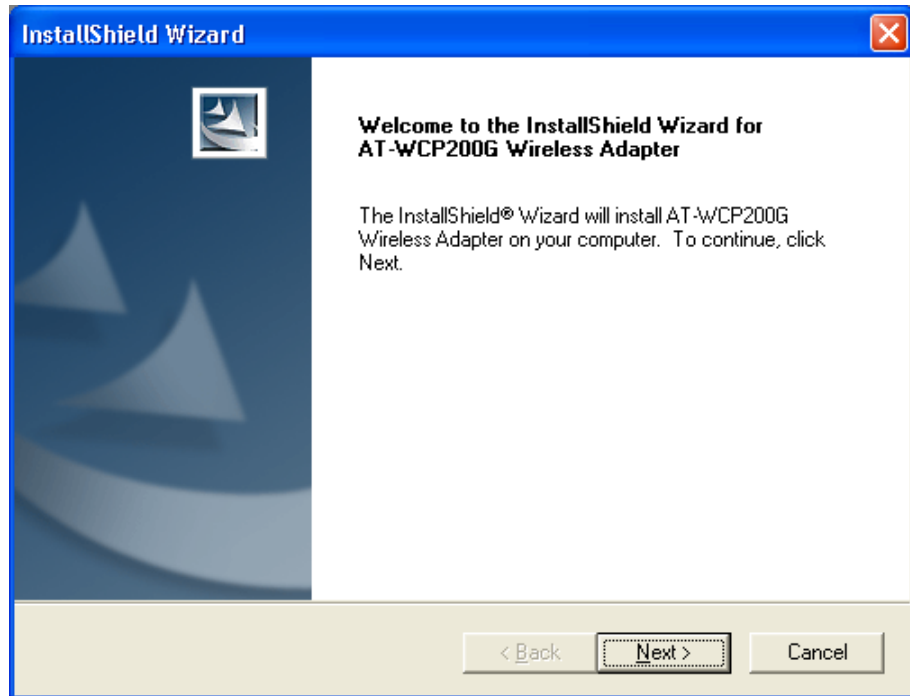
2. Select **Install Software**. The menu below is displayed.



3. Select **AT-WCP200G Wireless PCI Adapter**. The following InstallShield Wizard screen is displayed.

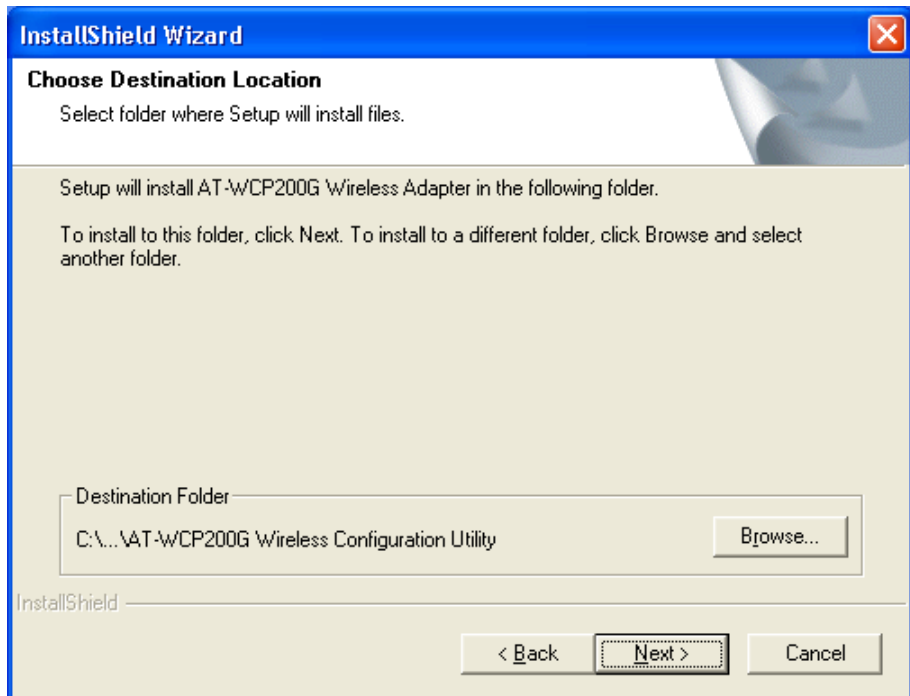


After the InstallShield Wizard is done preparing the installation, the following screen is displayed.



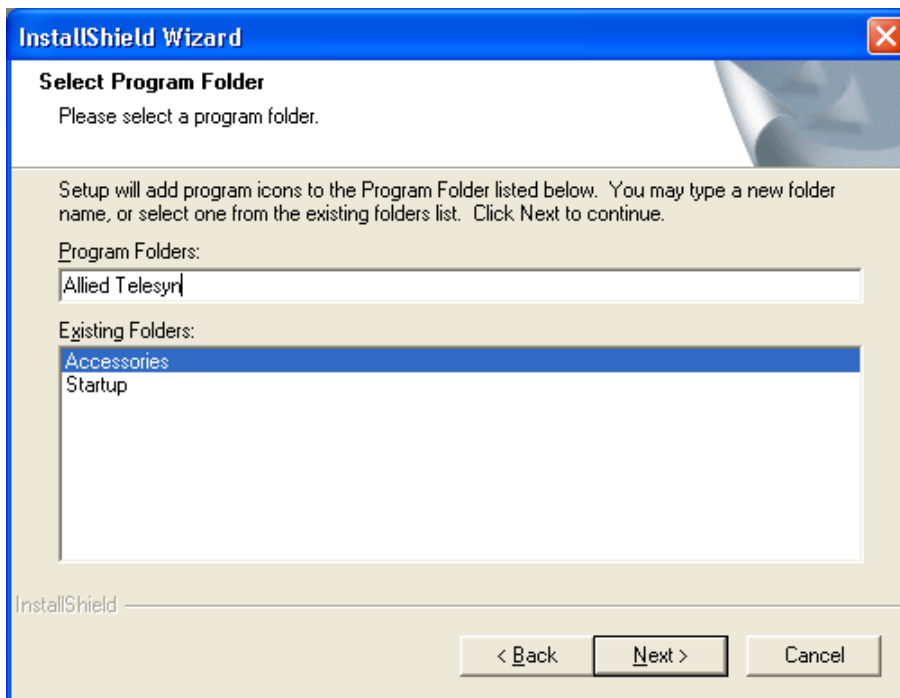
4. Select **Next**. The installation program will help you to setup the Wireless PCI utility.

The following screen is displayed.

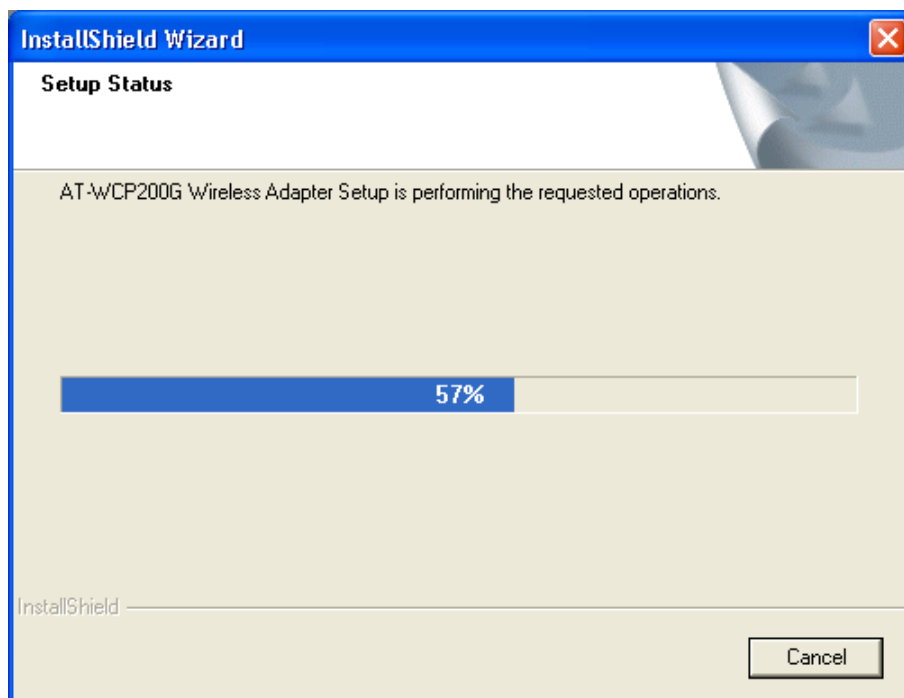


5. To accept the default destination folder, select **Next**. Otherwise select **Browse** to change location and then select **Next**.

- In the Program Folders field, type in a new folder name or select an existing folder from the list and then select **Next**.

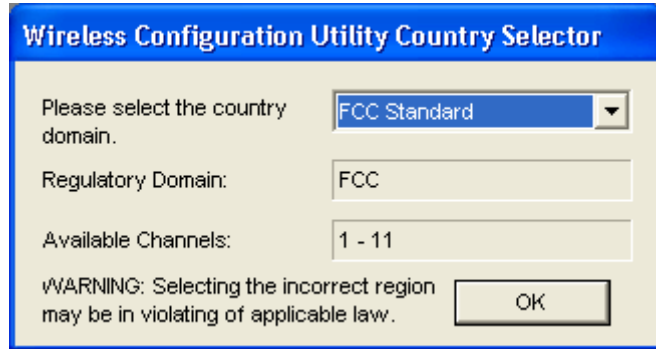


The following screen is displayed.



When the Setup Status is complete, the screen shown below is displayed.

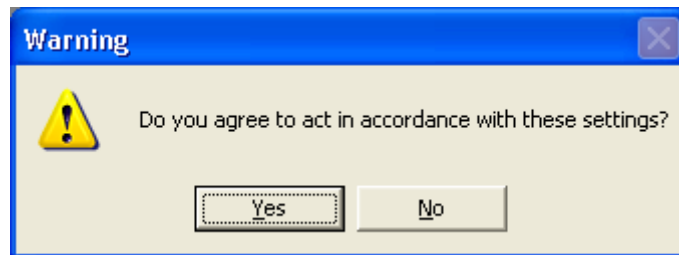
7. Select the country domain from the pull-down menu and then **OK**.



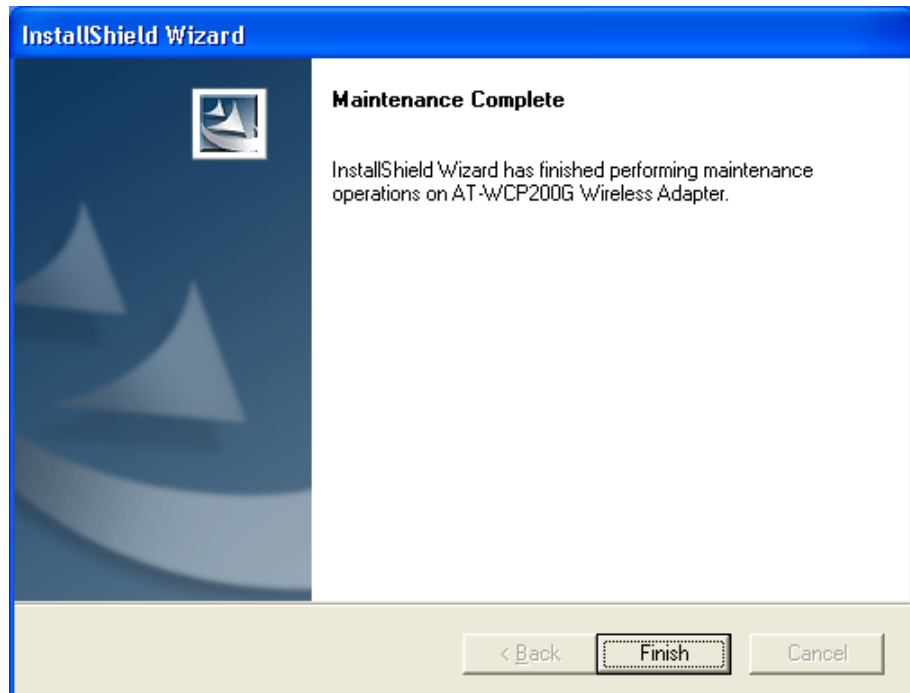
Warning

Selecting the incorrect region may result in a violation of application laws. Make sure you select the correct domain.

8. Select **Yes** from the following warning prompt.



The following screen is displayed.



9. Select **Finish** to complete installation.

The WIRELESS LAN utility is now installed.

10. When the WIRELESS LAN utility is launched, an icon is placed in the System Tray, as shown below. To open the utility, right-click the icon and select **Open**.



WIRELESS LAN Utility Icon

Wireless Utility Setting

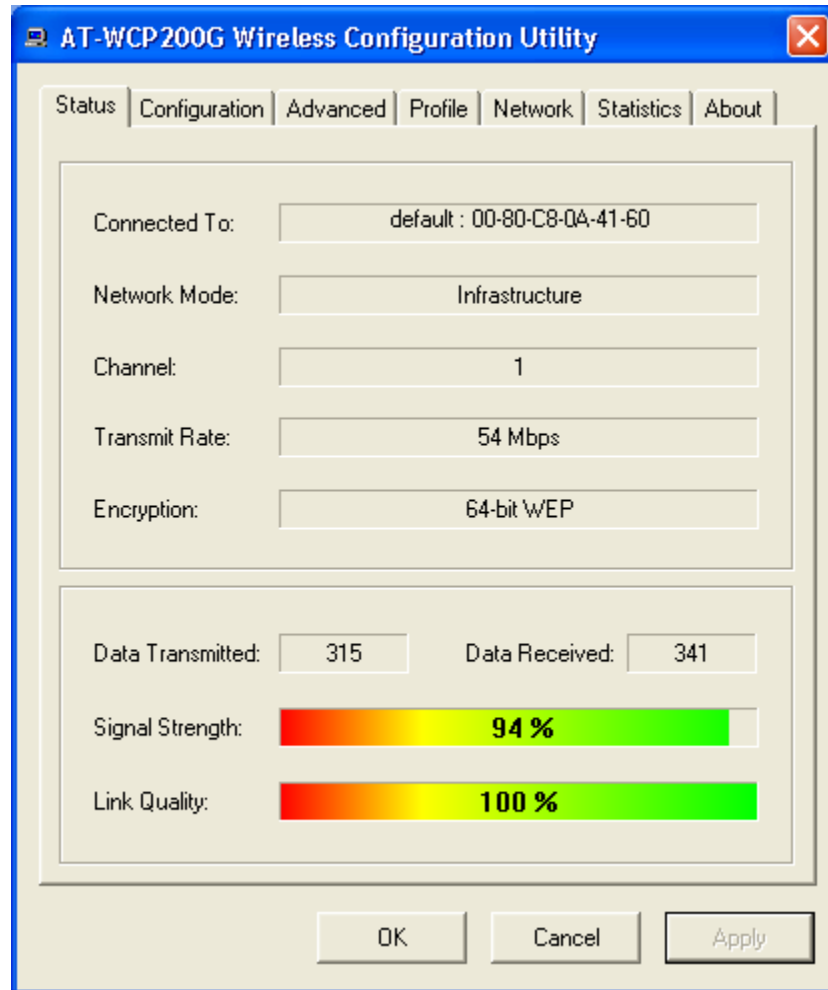
With the AT-WCP200G adapter utility, users can configure all the functions provided by the Wireless Monitor Utility. Double-click the utility icon that appears in the task bar.

The Wireless Monitor Utility includes the following tabs:

- Status
- Configuration
- Advanced
- Profile
- Network
- Statistics
- About

Status Tab

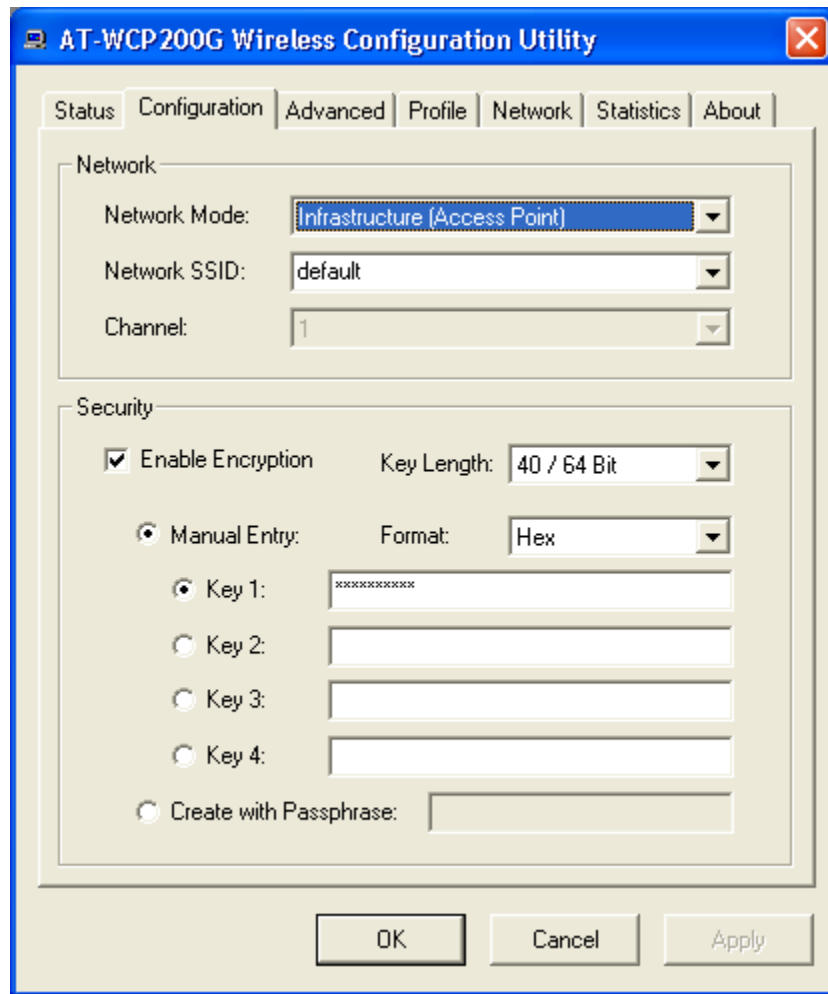
The Status tab shows the status of the AT-WCP200G adapter. It shows where the device is connected, Network mode, Channel, Transmit Rate, and Encryption Mode.



The other dialog box shows the Data Transmitted and Data Received. The two signal lines show the Signal Strength and the Link Quality of the device.

Configuration Tab

The Configuration tab allows you to configure Network and Security.



Under Network you can configure:

Network Mode

Set Network Mode to “Infrastructure” when connecting to an access point or set to “Ad-Hoc” if you have several stations and want to set them as local network.

Network SSID

The SSID differentiates one Wireless LAN group name from another. All access points and all devices attempting to connect to a specific Wireless LAN group name must use the same SSID. A device will not be permitted to join the BSS unless it can provide the unique SSID.

If the SSID parameter is "ANY," it will detect the strongest signal of the wireless station.

Channel

It shows radio channel numbers that are used for Wireless LAN networking.

The channel number can be set only under the Ad-Hoc operation mode. In Ad-Hoc mode, each station must have the same channel numbers and SSID.

In Infrastructure mode, the AT-WCP200G adapter will automatically detect the channel number of the access point.

Under Security you can set:

Network Encryption

This function is used to protect wireless communication from eavesdropping. A secondary function of encryption is to prevent unauthorized access to a wireless network, and it can be achieved by using the Encryption function.

Check the Enable Encryption box to activate the security of the PCI Adapter.

Key 1 - 4:

You can type the key that you want to use from Key 1 to Key 4. The key that you type will be the encryption between the station that you are connected with.

If you select 64-bit in Hex format, you must type 10 values in the following range (0 - F, hexadecimal), or 64-bit in ASCII format, you must type 5 values in the following range (0 - 9, A - Z, and a - z Alphanumeric).

If you select 128-bit in Hex format, you must type 26 values (0 - F, hexadecimal), or 128-bit in ASCII format, you must type 13 values in the following range (0 - 9, A - Z and a - z Alphanumeric).

If you select 256-bit in Hex format, you must type 58 values (0 - F, hexadecimal), or 256-bit in ASCII format, you must type 29 values in the following range (0 - 9, A - Z and a - z Alphanumeric).

Be sure that the PCI Adapter and the wireless station is set in the same key.

Create with Passphrase

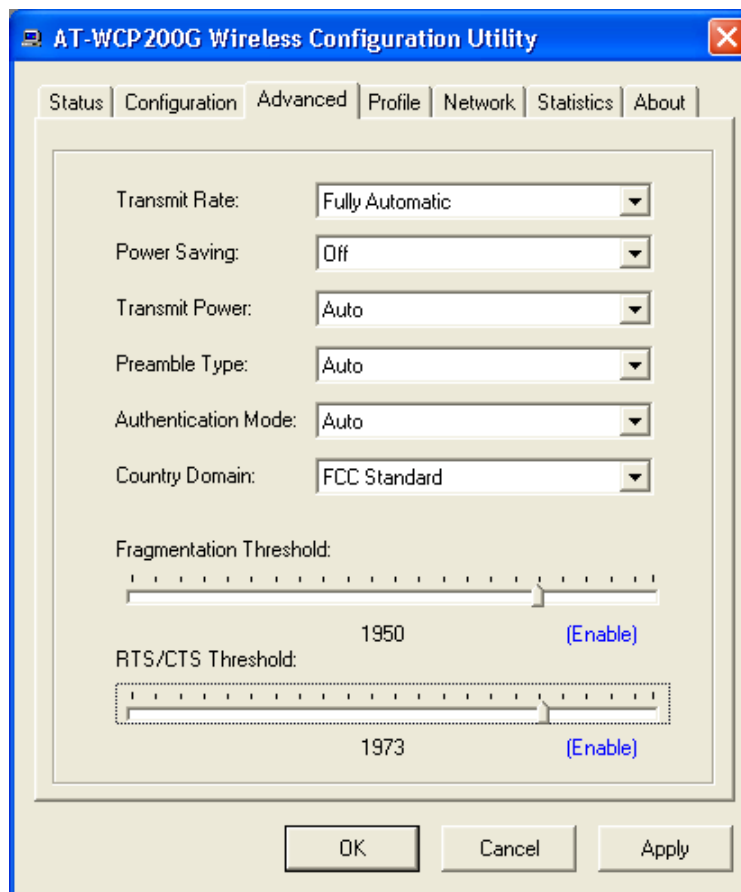
The Passphrase helps you create a group of WEP key in the Key Setting. If you input a phrase in the Create with Passphrase field, the group of key setting will be changed.

Note

After all the settings are completed, select **Apply** to save the setting.

Advanced Tab

The Advanced tab allows you to control the AT-WCP200G adapter to adjust with wireless devices in certain environment.



❑ **Transmit Rate**

You can choose one of the transmission rates as follows, 54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 22 Mbps, 18 Mbps, 12 Mbps, 11 Mbps, 9 Mbps, 6 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps, Fully Automatic, and Turbo Mode.

In some specific wireless devices, the transmit rate can define up to 72 Mbps for 802.11g, select the Turbo Mode function to enhance the transfer rate of the wireless connection.

The Fully Automatic and Turbo Mode will automatically detect the suitable linking transfer rate and auto fall back when the signal is not strong enough to transmit data.

Power Saving

Select between OFF, Normal, or Maximum.

Transmit Power

By selecting the Transmit Power, you can select the Radio Frequency output power from Minimum, 12.5%, 25%, 50%, 100%, or Auto.

Preamble Type

The usage of the preamble is to limit the packet size of the data to transmit. It is recommended to choose the short preamble when the link quality is bad. This is to prevent wasting time re-sending a lost long packet. The Default is Auto which access short and long preamble.

Authentication Mode

Open System - with the same WEP key between the stations, the stations does not need to be authenticated.

Shared Key - with the same WEP key between the stations in this Authentication algorithm, this type will use packets with encryption by transferring a challenge text which will be acknowledge by both side of the stations. In order to choose which authentication algorithm will be used, you must know which one the station supports this algorithm first.

Fragmentation Threshold

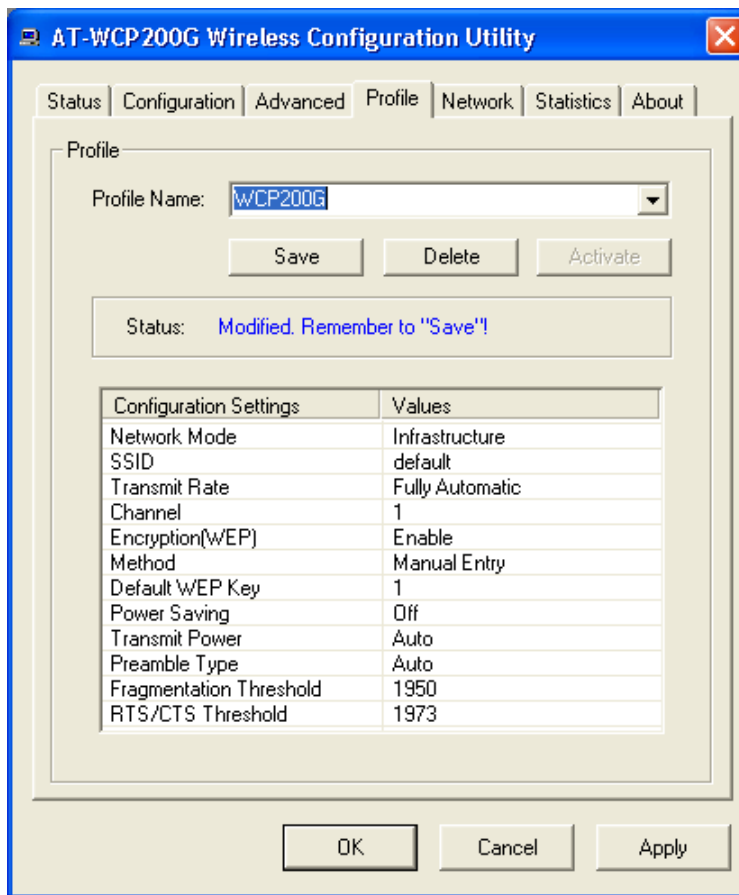
Fragmentation Threshold is a way of transmitting the packets that will be fragmented. Choose a setting within a range of 256 to 2432. It is recommended to fragment the packet when the link quality is bad, it is to prevent the wasting time of re-sending a long packet that is lost.

RTS/CTS Threshold

The RTS/CTS Threshold is a station initiates the process by sending a RTS frame, the other ends receives the RTS and responds with a CTS frame, the station must receive a CTS frame before sending the data frame. This is to prevent the collisions by each station. Choose a setting within a range of 256 to 2432. It is recommended limiting a long packet to prevent each station waiting too long to transmit a data.

Profile Tab

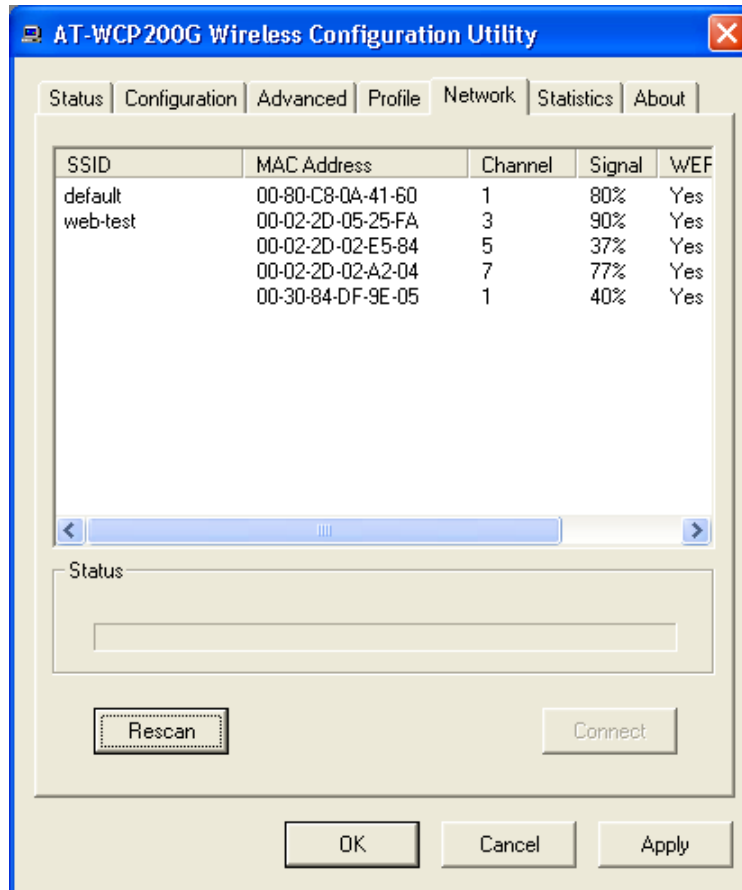
The Profile tab allows you to set values for all parameters by selecting a previously defined profile. Type a name in the Profile Name field to create a profile, select **Save** and then **Apply** when a profile is done. You can select **Delete** if the profile is no longer used. To activate another profile, choose a profile name in the Profile Name field and select **Activate**.



Network Tab

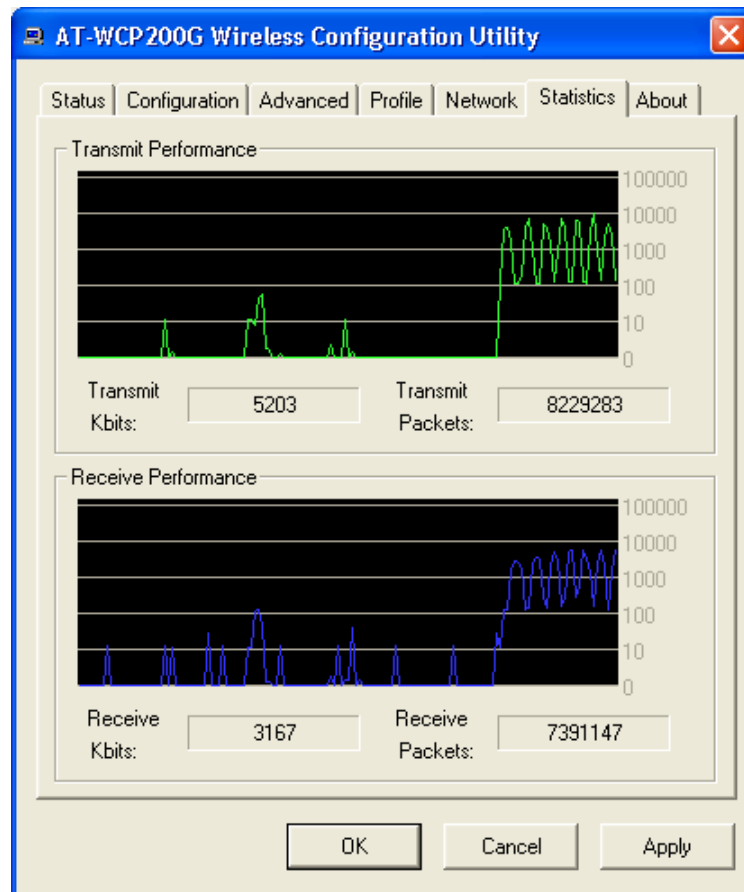
The Network tab shows all the wireless devices around your AT-WCP200G adapter. The information of the wireless devices includes SSID, MAC Address, Channels, Signal, WEP type, and Network Mode.

You can select the Rescan button to find the new wireless devices, and double-click the device to choose the wireless station that you want to connected to.



Statistic Tab

The Statistic tab shows the real-time transmit and receive packets of the PCI adapter.



About Tab

The About tab shows the Device Name, Regulatory Domain, Driver Version, Firmware Version, MAC Address, and Utility Version.



Technical Specifications

General	
Radio Technology	IEEE 802.11b Direct Sequence Spread Spectrum (DSSS) IEEE 802.11g Orthogonal Frequency Division Multiplexing (OFDM)
Interface	PCI Type II specification 32bit data bus
Data Transfer Rate	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps (auto sense)
Receiver Sensitivity	54Mbps: Typical -72dBm @ 8% PER (Packet Error Rate) 11Mbps: Typical -85dBm @ 8% PER (Packet Error Rate)
Transmit Rate	802.11g: 13 dBm typically 802.11b: 17 dBm typically
Frequency Range	2400 ~ 2497 MHz ISM band (channels 1 ~ 14)
Modulation Schemes	DBPSK/DQPSK/CCK/OFDM
Channels	1-11 channels (FCC), 1-13 channels (ETSI), 1-14 channels (MCK-Japan), 10-13 channels (France), 3-9 channels (Israel)
Media Access Protocol	CSMA/CA with ACK
Security	64/128/256-bits WEP Encryption, WPA
Diagnostic LED	PWR (Power) and LNK (Link status)
Antenna	Integrated Microstrip dual diversity antennas
Physical and Environmental	
Driver Support	Windows 98, Windows 2000, Windows ME, Windows XP

Continuous Current Consumption	480 mA typical for receive mode, 650 mA typical for transmit mode
Temperature	Operating: 0°~ 40° C, Storage: -25°~ 70° C
Humidity	10% ~ 95% RH, no condensation
Dimensions	118 mm x 54 mm x 7 mm (W x H x D)
Certifications	FCC Part 15.247 for US, ETS 300 328 for Europe

Regulatory Domains

This appendix lists the IEEE 802.11g channels supported by the world's regulatory domains.

Channel Identifier	802.11b Frequency	Regulatory Domains				
		FCC (North America)	ETSI (Europe)	France	Israel	MKK (Japan)
1	2412	X	X			X
2	2417	X	X			X
3	2422	X	X		X	X
4	2427	X	X		X	X
5	2432	X	X		X	X
6	2437	X	X		X	X
7	2442	X	X		X	X
8	2447	X	X		X	X
9	2452	X	X		X	X
10	2457	X	X	X		X
11	2462	X	X	X		X
12	2467		X	X		X
13	2472		X	X		X
14	2484					X

