

The logo for Actiontec, featuring the brand name in a white, cursive-style font with a registered trademark symbol, set against a dark blue oval background with a silver border.

*Actiontec*<sup>®</sup>

**54 Mbps**

# **Wireless PC Card**

**Model #: 802CTG**

## **User Manual**

*Solutions for the Digital Life™*

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# Introduction

# 1

Thank you for purchasing the *Actiontec* 54 Mbps Wireless PC Card. The PC Card provides a single PC card solution for connecting to version “b” (11 Mbps 802.11b) and version “g” (54 Mbps 802.11g) wireless networks. This easy-to-use product is perfect for the home office or small business. If you want to take your computing to the next level, the *Actiontec* 54 Mbps Wireless PC Card is sure to be one of the keys to your success.



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## Package Contents

- *Actiontec* 54 Mbps Wireless PC Card
- Installation CD (includes user manual)
- Start Here guide

## Minimum System Requirements

A laptop computer with the following:

- CD-ROM drive, available Type II 32-bit CardBus slot, and at least 500 kb of free disk space
- Microsoft Windows 98 Second Edition (SE), Millennium Edition (Me), 2000, or XP
- TCP/IP network protocol installed
- 200 MHz (or faster) processor
- 64 Mb of RAM

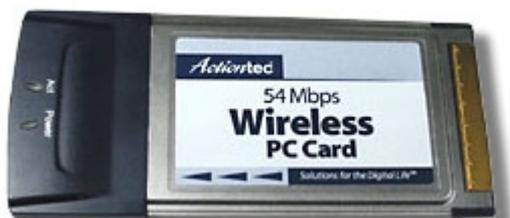
### Features

- IEEE 802.11b and 802.11g standards conformity
- 11 and 54 Mbps wireless network compatibility
- 64-, 128-, and 256-bit WEP wireless security support (256-bit WEP supported only with 256-bit WEP compatible access points and wireless gateways/routers)
- WEP, WPA, WPA\_PSK, and 802.1x support
- 32-bit CardBus performance
- PC Card hot swapability with Plug-and-Play connectivity support

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### Getting to Know the PC Card

This section contains a quick description of the PC Card's external features.



#### ***Activity Light***

The Activity light displays the PC Card's current send/receive status. When the Activity light blinks green, data is being sent or received via the PC Card.

#### ***Power Light***

The Power light displays the PC Card's current power status. If the Power light glows steadily orange, the PC Card has power supplied to it. If the Power light remains off after the operating system of the computer has rebooted after setting up the PC Card, the drivers are not loaded or installed.

## **Technical Support**

*Actiontec* Electronics prides itself on making durable, high-quality, high-performance products. If you need assistance, the *Actiontec* Technical Support Department is available all day every day to provide professional support.

### ***Actiontec Electronics, Inc.***

760 N. Mary Avenue  
Sunnyvale, CA 94085

### ***Technical Support***

Phone: (USA) 1-888-436-0657  
(UK) 0845-65-80411

E-mail: [http://support.actiontec.com/email\\_support/support\\_form.php](http://support.actiontec.com/email_support/support_form.php)

Internet: [www.actiontec.com/support](http://www.actiontec.com/support)

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# Setting Up the PC Card

# 2

The instructions that follow in this chapter parallel the steps contained in the *Actiontec Connection 1-2-3*<sup>®</sup> setup utility, which provides a visual, step-by-step guide to setting up the PC Card. It is recommended the user run *Connection 1-2-3* first, before attempting any other procedures.

To set up the PC Card, the drivers must be loaded, the PC Card inserted into the PCMCIA slot of the computer, and then the PC Card configured. Also, make sure there is an available wireless signal (through an access point or another computer) to which the PC Card can connect.

1. Insert the Installation CD in the CD-ROM drive of the laptop computer. *Connection 1-2-3* starts automatically. Temporary files and drivers for the PC Card are loaded onto the hard drive, then the first *Connection 1-2-3* screen appears. Read the onscreen instructions, then click **Next**.

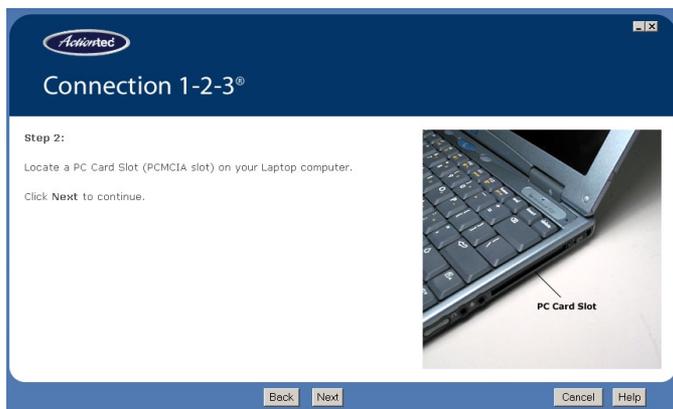


**Note:** If *Connection 1-2-3* does not start automatically, click **Start** from the desktop, then select **Run**. Type **d:\c123.exe** (with “d” representing the drive letter of the computer’s CD-ROM drive) in the “Open” text box, and click **OK**.

2. Get the PC Card from the Quick Start Kit, then click **Next**.



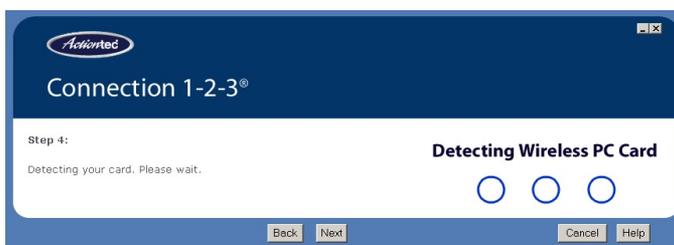
3. Find the PCMCIA (PC Card) slot on the computer. This slot is usually located on the left or right side of the computer. Click **Next**.



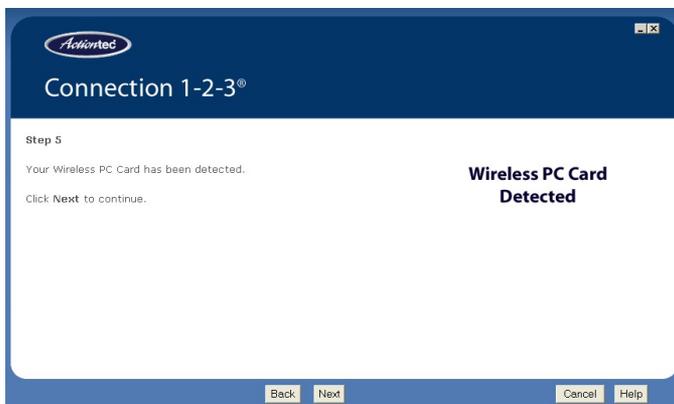
4. Insert the PC Card in the PCMCIA slot. Make sure the Card's label is facing up, and the gold-plated end is inserted first. Click **Next**.



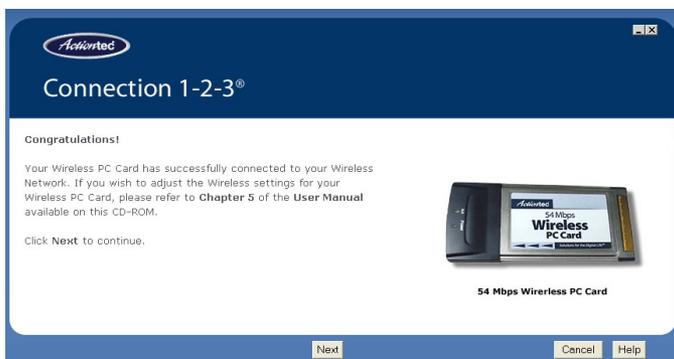
5. Connection 1-2-3 detects the PC Card.



- The PC Card is detected. Click **Next**.



- The PC Card connects to the closest available wireless network. Read the onscreen instructions, then click **Next**.



**Note:** If more than one access point is nearby, the PC Card may connect to an access point other than the one the user expects. See Chapter 3, "Using the Wireless Configuration Utility," on page 11 to learn how to connect to particular access point.

8. Click **Finish**, then reboot the computer.



The PC Card is installed, configured, connected to a wireless network, and ready for use.

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# Using the Wireless Configuration Utility

# 3

To monitor the wireless network to which the PC Card is connected, as well as check or adjust wireless network settings, use the Wireless Configuration Utility. This utility offers the ability to check wireless network signal strength, connect to a wireless network using an encryption scheme, and many other options.

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## Opening the Utility Window

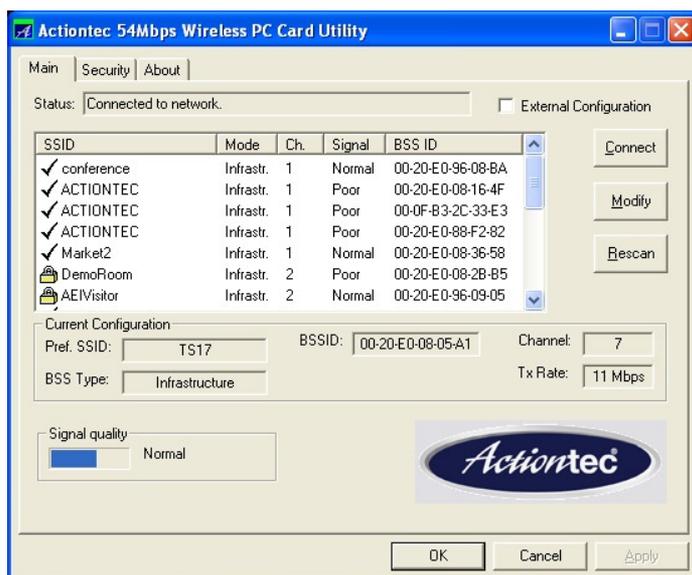
To open the Utility, go to the right-hand corner of the desktop. In the System Tray (where the clock is located), double-click on the *Actiontec* Wireless Configuration Utility icon (shown in the red circle, below)



The Wireless Configuration window appears on the desktop.

## Using the Wireless Configuration Utility

After double-clicking on the Wireless Configuration icon, the “Actiontec 54Mbps Wireless PC Card Utility” window appears.



There are three tabs at the top of the window: **Main**, **Security**, and **About**. To select a particular tab, click on it. To close the window, click the “x” in the upper right corner of the window, or click **Cancel**.

### Main

The Main tab (shown in the figure above) gives an overview of the current wireless connection. Within this tab, the user can connect to another available wireless network, scan for additional wireless networks, and modify the settings for the currently selected network.

### Status

The Status text box, at the top of the Main tab, displays the state of the wireless connection. It can contain one of the following entries:

Driver not loaded - If this entry appears in the Status text box, the PC Card is not inserted in the laptop, or the driver is not installed.

Not connected to network - If this entry appears in the Status text box, the PC Card is not connected to the selected wireless network.

Connecting to network - If this entry appears in the Status text box, the PC Card is in the process of connecting to a wireless network.

Connected to network - If this entry appears in the Status text box, the PC Card is connected to a wireless network.

Scanning network - If this entry appears in the Status text box, the PC Card is scanning for available wireless networks.

### **External Configuration**

Activating this option (by clicking in the check box) turns off the Wireless Configuration Utility. Activate this option if configuring the PC Card with another configuration utility, such as Windows XP's built-in Zero Configuration Utility.

 **Note:** The Zero Configuration Utility is available in Windows XP only, and is automatically disabled when the Wireless Configuration Utility is running. Activating External Configuration causes the Zero Configuration Utility to start up.

### **Available Networks**

The list box in the Main tab displays the available wireless networks. For each wireless network, the following attributes are displayed:

SSID - The name of the wireless network access point or base station. This name may not be unique. One of three icons is displayed next to the SSID: a **check mark**, which indicates the network is available to join; a **lock**, which indicates the network is running behind some type of wireless encryption; and a **Do Not Enter** sign (a red circle with a white bar), which indicates a hidden network not broadcasting its SSID (all hidden networks have listed SSIDs of "Hidden Network").

Mode - One of two connection types: **Infrastructure**, for connecting to access points, or **Ad Hoc**, for connecting to another wirelessly-enabled computer.

Channel - The channel number on which the wireless network is broadcasting.

Signal - The quality or strength of the wireless signal; this can be **Best**, **Good**, **Normal**, **Poor**, or **Bad**, in descending order of quality.

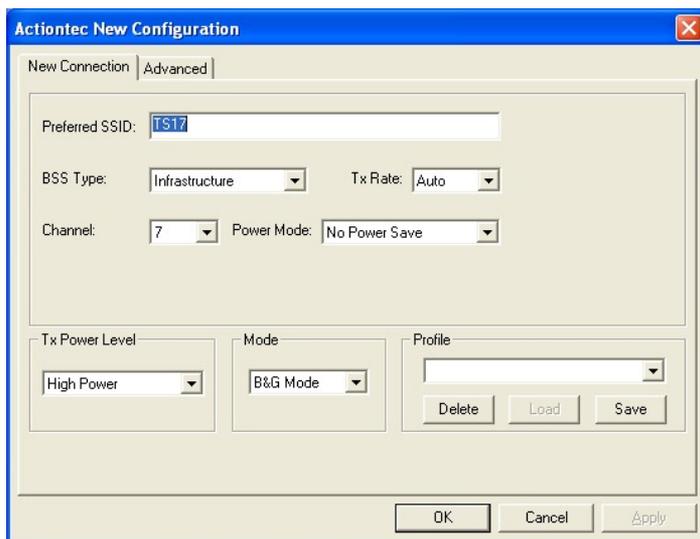
BSS ID - The unique ID of the access point or base station.

### Connect

Clicking this button causes the PC Card to attempt to connect to the wireless network selected in the Available Networks list box. If a WEP key has not already been defined, the WEP Configuration window will appear, prompting the user to enter the proper WEP keys (see “WEP Configuration” on page 19 for more information).

### Modify

Clicking this button causes the “New Configuration” window to appear.

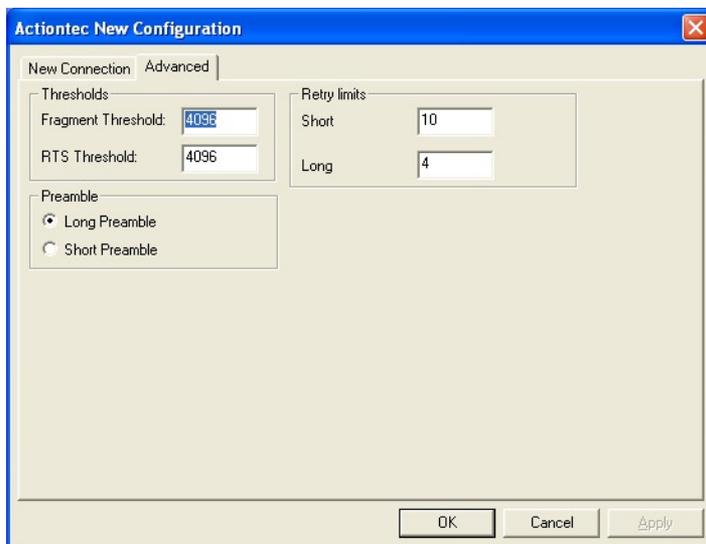


Here, the user can modify the settings of the currently selected wireless network. The window has two tabs: **New Connection** and **Advanced**.

New Connection - In this tab, the connection's basic settings can be modified. The tab's options are as follows:

- In the **Preferred SSID** text box, enter the name of the network (up to 32 characters in length).
- There are two choices in the **BSS Type** list box (revealed by clicking on the down arrow next to the text box): “Infrastructure” and “Ad Hoc.” Select Infrastructure to connect to an access point or wireless gateway/router. Select “Ad Hoc” to connect directly to another computer in peer-to-peer mode (without going through an access point).
- In the **Tx Rate** text box, select the preferred rate of transmission (revealed by clicking on the down arrow next to the text box). These values depend on the values entered in the “BSS Type” and “Mode” text boxes. It is recommended to leave the default values intact.
- In the **Channel** list box (revealed by clicking on the down arrow next to the text box), select the preferred channel. It is recommended to leave the default value intact.
- There are two choices in the **Power Mode** list box (revealed by clicking on the down arrow next to the text box): “No Power Save,” which disables any power saving while using the PC Card, and “Max Power Save,” which turns off the PC Card's receiver and transmitter when not in use. It is recommended to leave the default values intact.
- In the **Tx Power Level** list box (revealed by clicking on the down arrow next to the text box), select the preferred packet transmission power level: “Low Power” (6% of full power), “Medium-Low Power” (12%), “Medium Power” (25%), “Medium-High Power” (50%), or “High Power” (100%). It is recommended to leave the default values intact.
- In the **Mode** list box (revealed by clicking on the down arrow next to the text box), select the preferred 802.11 operating mode, depending on the type of network being connected to: “B-Only Mode,” “B-Plus Mode,” “B&G Mode,” and “G-Only Mode.” It is recommended to leave the default values intact.
- In the **Profile** list box (revealed by clicking on the down arrow next to the text box), select the preferred profile. A profile is a set of saved connection settings. To save a profile, enter a profile name in the list box and click **Save**. To load an existing profile, select a profile name from the list box and click **Load**. To delete an existing profile, select it, then click **Delete**.

Advanced - In this tab, the connection's advanced settings can be modified. The tab's options are as follows:



- There are two options in the Threshold section: “Fragment Threshold,” which sets the maximum fragment length (in bytes) to any even number between 256 and 4096; and “RTS Threshold,” which sets the maximum packet length for sending an RTS frame (in bytes) to a value greater than zero. It is recommended to leave the default values intact.
- There are two options in the **Preamble** section: “Long Preamble” or “Short Preamble.” It is recommended to leave the default values intact.
- There are two options in the **Retry Limits** section: “Short,” which limits the number of retries for frames without an RTS frame; and “Long,” which limits the number of retries for frames with an RTS frame. It is recommended to leave the default values intact.

### *Current Configuration*

This section of the Main tab contains information about the current wireless connection, including **SSID**, **BSS Type** (Infrastructure or Ad Hoc), **BSSID**, **Channel**, and **Tx Rate** (the preferred transfer rate, which may be different from the actual transfer rate). These values will change when switching to a different wireless network.

### *Signal Quality*

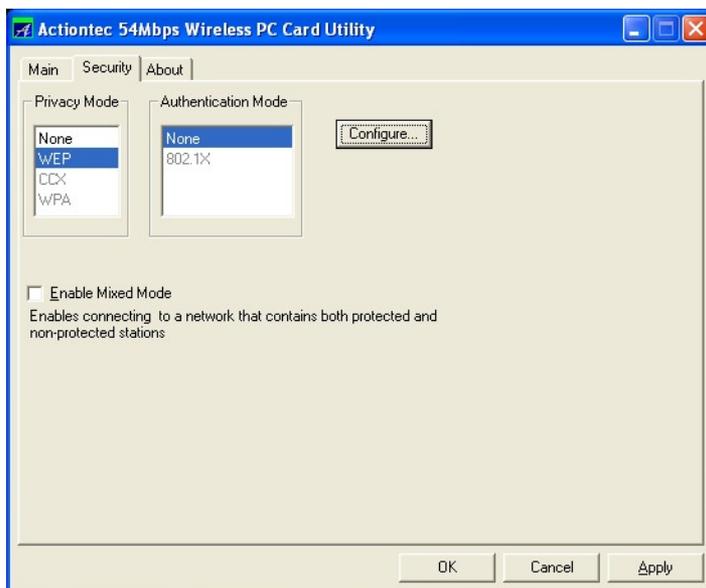
This section of the Main tab contains information about the signal quality of the current wireless connection. The blue bar graph offers a graphical representation of the signal quality. Also included is a signal quality level (represented by **Best**, **Good**, **Normal**, **Poor**, or **Bad**).

### *Tx Rate*

This value display the actual connection rate of the current wireless connection, in Mbps.

## Security

Selecting **Security** in the Wireless Utility window displays the “Security” tab.



In this tab, the PC Card’s mode of security can be configured.

### ***Privacy Mode***

Select the security mode from this list box. Selecting **None** provides no security; **WEP** provides Wired Equivalent Privacy security; and **WPA** provides Wi-Fi Protected Access security.

### ***Authentication Mode***

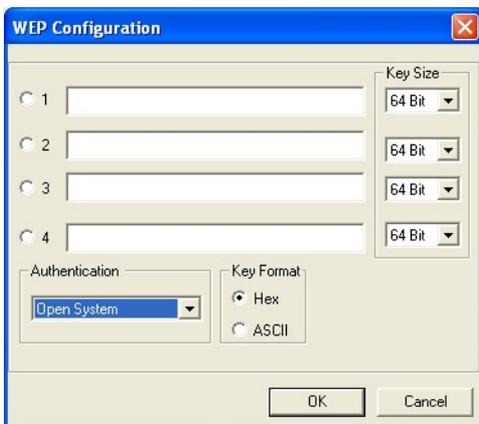
Select the authentication mode from this list box. Selecting None provides no authentication, or allows the authentication to be handled by legacy security schemes (such as WEP keys).

### Enable Mixed Mode

When Privacy Mode is set to None or WEP (and, if WEP is selected, the Authentication Mode is set to None), the “Enable Mixed Mode” check box can be accessed. Click in the appropriate check box to activate and allow the PC Card to connect to both protected and non-protected access points or base stations.

### WEP Configuration

If WEP is selected in the Privacy Mode list box, and None is selected in the Authentication Mode list box, the “WEP Configuration” window appears.



To configure a WEP key:

1. For each key being defined, select a key size from the “Key Size” list box (either **64-bit**, **128-bit**, or **256-bit**).

**64-bit WEP** - A 64-bit WEP key comprises five hexadecimal digit pairs. A hexadecimal digit consists of an alphanumeric character ranging from 0-9 or A-F. An example of a 64-bit WEP key is: 4E-A3-3D-68-72.

**128-bit WEP** - A 128-bit WEP comprises 13 hexadecimal pairs. A hexadecimal digit consists of alphanumeric characters ranging from 0-9 or A-F. An example of a 128-bit WEP key is: 3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-B1.

**256-bit WEP** - A 256-bit WEP key comprises 29 hexadecimal pairs. A hexadecimal digit consists of alphanumeric characters ranging from 0-9 or A-F. An example of a 256-bit WEP key is: 3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-B1-3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-32-7B-AA-B1.

2. Type the appropriate WEP key in the text box.
3. Select an authentication type from the “Authentication” list box (**Open System**, **Shared Key**, or **Auto Switch**).
4. In the “Key Format” section, select the key’s character type (**64-bit**, **128-bit**, or **256-bit**).
5. Select the key to use by clicking in the appropriate circle (**1**, **2**, **3**, or **4**). This encryption key matches the key used in the device being connected to, such as an access point or wireless gateway/router.
6. Click **OK**.

### 802.1x Configuration

If WEP or WPA is selected in the Privacy Mode list box, and 802.1x is selected in the Authentication Mode list box, the “802.1x Configuration” window appears.

The screenshot shows the "802.1X Configuration" dialog box. It has a title bar with the text "802.1X Configuration" and a close button. The dialog is divided into several sections:

- Protocol:** A list box containing "EAP-TLS" (selected) and "MSCHAP V2 over PEAP".
- Password:** Two radio buttons: "prompt for password" (unselected) and "use the following user name and password" (selected). Below these are text boxes for "Login Name:" and "Password:", and an "Unmask" checkbox (unselected).
- Personal Certificate:** A text box containing "Certificate Not Found". Below it are "View..." and "Browse..." buttons.
- Server Certificate:** A checkbox labeled "Validate" which is checked.

At the bottom of the dialog are "OK" and "Cancel" buttons.

**Protocol** - Select an authentication protocol from this section.

**Password** - if “EAP-TLS” was not selected in the Protocol section, the “Password” section is active. Enter a login name and password in the appropriate text boxes, or request that the driver prompt for them when connecting to a wireless network.

**Personal Certificate** - If “EAP-TLS” was selected in the Protocol section, the “Personal Certificate” section is active. Select a personal certificate for authenticating the PC Card from here.

**Server Certificate** - If “EAP-TLS” or “MSCHAP V2 over PEAP” was selected in the Protocol section, the “Server Certificate” section is active. Clicking in the “Validate” check box requires the server certificate be validated.

### PSK Configuration

If WPA is selected in the Privacy Mode list box, and None is selected in the Authentication Mode list box, the “PSK Configuration” window appears.



To set up a PSK (Pre-Shared Key):

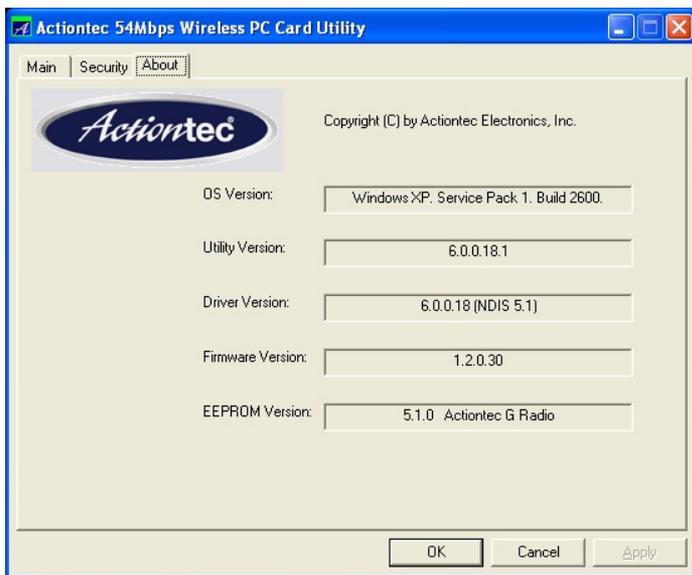
1. In the “Passphrase” text box, enter the key being shared with wireless network connection. It will appear in the text box as a series of asterisks. To view the passphrase, click in the “Unmask” check box.

 **Note:** The passphrase key should be composed of alphanumeric characters only, and be between 8 to 63 characters long.

2. Click OK.

## About

Selecting **About** in the Wireless LAN Utility window displays the “About” tab.



This tab displays the version numbers for the PC Card’s operating system, utility, driver, firmware, and EEPROM.

# 4

## Troubleshooting and FAQs

This chapter describes some common problems that may be encountered when using the PC Card, and ways to resolve the problems. Also included is a list of frequently asked questions.

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### Troubleshooting

#### *My computer doesn't recognize the PC Card.*

First, make sure the PC Card is properly inserted into a Type II 32-bit CardBus slot. If the PC Card is still not recognized, the computer may have a driver installed for another PC Card. Remove the old driver and remove any incomplete installation files from the *Actiontec* driver and utility in the Control Panel. Restart the computer and rerun Connection 1-2-3 from the Installation CD.

#### *The PC Card doesn't work properly after the Configuration Utility is installed.*

First, make sure the PC Card is properly inserted into a 32-bit CardBus slot. If the PC Card is still not recognized, go to the Device Manager and verify the PC Card appears as a network node. If a yellow exclamation point appears, there are conflicting resources, or the drivers may not have been properly installed. Make sure the computer has a free IRQ, and the Configuration Utility has been installed properly. As a last resort, uninstall the Configuration Utility, then reinstall it.

#### *Base stations cannot associate with the PC Card in Ad Hoc mode.*

In the "Preferred SSID" text box of the "New Connections" window (see page 15), make sure the SSID is the same as the SSID of the other computers trying to join the Ad Hoc network, and the data transmitting and receiving streams are using the same encryption scheme between the PC Card and the other computers. Also, make sure the static IP address of the other computers are different (for example, one computer might have a static IP address of 168.190.0.10, while another computer has a static IP address of 168.190.0.11).

 **Note:** To share files between the two computers, they must have the same Workgroup name, and file/folder sharing must be enabled.

### ***The PC Card is not connecting to the Internet in Infrastructure mode.***

First, make sure the PC Card is connected to an access point or wireless gateway/router. If WEP security is enabled, the PC Card must have the same WEP keys entered as the access point or wireless gateway/router. Also, make sure the TCP/IP properties of the computer in which the PC Card is inserted are configured properly. Finally, go to the Control Panel of the computer and select “Network” or “Network and Dial-Up Connections.” Right-click on the wireless connection corresponding to the PC Card and select “Properties.” When the “Connection Properties” window appears, highlight “Internet Protocol(TCP/IP)” from the list box and click “Properties.” When the “Internet Protocol (TCP/IP)” window appears, click in the “Obtain an IP address automatically” circle to activate. Reboot the computer.

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## Frequently Asked Questions

### ***How far can I be from an access point and maintain a connection?***

The access point’s range depends on the environment. Indoor range is approximately 91 meters (300 ft.) or more; outdoor range can reach up to 533 meters (1750 ft.).

### ***How fast is the wireless network?***

The rated speed of the wireless network under optimal conditions is 54 Mbps. This speed does vary, depending on distance from the access point and the amount of attenuation (physical barriers such as walls, glass, etc.) the wireless signal must go through.

### ***I lost the installation CD for my PC Card. How can I get a new one?***

New CDs can be purchased for \$6.95 each by calling our Technical Support Department at 1-888-436-0657.

### ***My PC Card seems to be installed correctly and it says that it is getting a link, but I can't access the internet. What should I do?***

First, disable any network adapters installed on your computer. If these adapters were installed prior to the PC Card, they may be preventing an Internet connection. If using Windows XP, right-click on **My Network Places**, then click **Properties** in the next window to ensure no network bridges are installed on the computer. These can also prevent Internet connections.

### ***When I plug the PC Card into my PCMCIA slot, nothing happens or it detects and goes away. What should I do?***

The PC Card slot must support 32-bit Type II PC CardBus (check with the computer manufacturer to confirm). If so, try shutting off the computer and restarting with the PC Card already plugged into the PC Card slot.

### ***Can I use an 802.11g PC Card to connect to an 802.11b access point?***

Yes, an 802.11g PC Card can connect to an 802.11b access point.

### ***Will cordless phones interfere with the PC Card?***

The 802.11g PC Cards use 2.4 GHz frequency. If your cordless phone uses this frequency, problems may occur. Different cordless phones use different frequencies, and generally include a label stating which frequency they use. If problems with interference caused by your cordless phone occur, try changing the channel of your wireless network. This can sometimes clear up interference issues. Any wireless device using the 2.4 GHz frequency can cause wireless interference.

### ***Can a wireless signal pass through floors, walls, and glass?***

The effect of the physical environment can have varying effects on signal strength and quality. The denser an object (a concrete wall compared to a plaster wall, for example), the greater the interference will be. Concrete or metal-reinforced structures cause a higher degree of wireless signal loss than those made of wood, plaster, or glass.

### ***What is WEP?***

Wireless Encryption Protocol (WEP) is the standard encryption mode for 802.11g communications.

### ***How do I make a HEX-based WEP key?***

64-bit WEP - Composed of 10 alphanumeric characters (0-9, A-F).

Example: 843A29A562

128-bit WEP - Composed of 26 alphanumeric characters (0-9, A-F).

Example: 3C29F2536BEF3276D32E364A2C

256-bit WEP - Composed of 58 alphanumeric characters (0-9, A-F).

Example: 3C29565489452869256FB585976135675236DD4A55E9C6546374851613

### ***After installing the PC Card I can't use XP's Wireless Zero Configuration to connect to any access points. What should I do?***

The PC Card uses its own utility (which includes a site survey) for configuration, and turns off the Wireless Zero Configuration utility. To use XP's utility instead of Actiontec's, activate "External Configuration" in the Main tab of the Wireless Configuration Utility (see page 13).

### ***How do I enable WEP in XP using the Wireless Zero Configuration Utility?***

First, make sure the PC Card is correctly installed in the computer. Then, in the system tray (in the lower right hand side of the desktop, next to the clock), right-click on the appropriate connection icon and select **View Available Wireless Networks**. When the "Connect to Wireless Network" window appears, click **Advanced**. The "Wireless Network Connection Properties" window appears. Select a wireless network, then click **Configure**. When the "Wireless Network Properties" window appears, make sure the correct SSID or network name is entered in the "Network Name (SSID)" text box. Then, activate "Data Encryption" by clicking in the appropriate check box. If the text boxes below remain grayed out, make sure the check box next to "The key is provided for me automatically" is unchecked (not active). Select a "Key format" and "Key length" from the appropriate list boxes, then enter the WEP key in the "Network key" text box. If connecting to an ad hoc network, click in the "This is a computer-to-computer" (ad hoc) network..." check box to activate. Click **OK**.

### ***What is the difference between 40-bit and 64-bit encryption?***

There really is no difference between the two. They are different terminologies used throughout the industry for the same level of encryption.

# Specifications



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## General

### Model Number

802CTG (54 Mbps Wireless PC Card)

### Standards

IEEE 802.11b/g (Wireless)

### Certification

FCC

CE (available for products purchased in Europe)

### Frequency Band

2.4 - 2.4835 GHz

### Interface

Type II 32-bit CardBus

### Data Rate

**802.11b:** up to 11 Mbps

**802.11g:** up to 54 Mbps

### Data Encryption

64-, 128-, and 256-bit WEP compatible

WPA

WPA\_PSK

802.1x

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## Wireless Operating Range

### Indoors

Up to 91 M (300 ft.)

### Outdoors

Up to 533 M (1750 ft.)

## LED Indicators

Power, Activity

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## Environmental

### Operating Temperature

0° C to 55° C (32° F to 131° F)

### Storage Temperature

-20° C to 70° C (-4° F to 158° F)

### Operating Humidity

0% to 70% (non-condensing)

### Storage Humidity

5% to 95% (non-condensing)



*Note:* Specifications are subject to change without notice.

# Glossary

## **Access Point**

A device that allows wireless clients to connect to one another. An access point can also act as a bridge between wireless clients and a “wired” network, such as an Ethernet network. Wireless clients can be moved anywhere within the coverage area of the access point and remain connected to the network. If connected to an Ethernet network, the access point monitors Ethernet traffic and forwards appropriate Ethernet messages to the wireless network, while also monitoring wireless traffic and forwarding wireless client messages to the Ethernet network.

## **ATM (Asynchronous Transfer Mode)**

A networking technology based on transferring data in fixed-size packets.

## **Client**

A desktop or mobile computer connected to a network.

## **DHCP (Dynamic Host Configuration Protocol)**

A protocol designed to automatically assign an IP address to every computer on the network.

## **DNS (Domain Name System) Server Address**

Allows Internet host computers to have a domain name and one or more IP addresses. A DNS server keeps a database of host computers and their respective domain names and IP addresses so that when a user enters a domain name into a Web browser, the user is sent to the proper IP address. The DNS server address used by computers on the home network corresponds to the location of the DNS server the ISP has assigned.

## **DSL (Digital Subscriber Line) Modem**

A modem that uses existing phone lines to transmit data at high speeds.

## **Encryption**

A method to provide wireless data transmissions a level of security.

## **ESSID (Extended Service Set Identifier)**

A unique identifier for a wireless network. Also known as “SSID.”

## **Ethernet Network**

A standard wired networking configuration using cables and hubs.

## **Firewall**

A method preventing users outside the network from accessing and/or damaging files or computers on the network.

## **Gateway**

A central device that manages the data traffic of the network, as well as data traffic to and from the Internet.

## **IP (Internet Protocol) Address**

A series of four numbers separated by periods identifying a unique Internet computer host.

## **ISP Gateway Address**

An IP address for the Internet router. This address is only required when using a cable or DSL modem.

## **ISP (Internet Service Provider)**

A business that allows individuals or businesses to connect to the Internet.

## **LAN (Local Area Network)**

A group of computers and devices connected together in a relatively small area (such as a house or an office). A home network is considered a LAN.

## **MAC (Media Access Control) Address**

The unique hardware address of a device connected to a network.

## **NAT (Network Address Translation)**

A method allowing all of the computers on a home network to use one IP address, enabling access to the Internet from any computer on the home network without having to purchase more IP addresses from the ISP.

## **PC Card**

An adapter that inserts in the PCMCIA slot of a computer, enabling the communication with a device.

### **PPPoE (Point-To-Point Protocol over Ethernet)/ PPPoA (Point-To-Point Protocol over ATM)**

Methods of secure data transmission.

### **Router**

A central device that manages the data traffic of the network.

### **Subnet Mask**

A set of four numbers configured like an IP address used to create IP address numbers used only within a particular network.

### **SSID**

See “ESSID.”

### **TCP/IP (Transmission Control Protocol/Internet Protocol)**

The standard protocol for data transmission over the Internet.

### **WAN (Wide Area Network)**

A network that connects computers located in separate areas, (i.e., different buildings, cities, countries). The Internet is a WAN.

### **WECA (Wireless Ethernet Compatibility Alliance)**

An industry group that certifies cross-vender interoperability and compatibility of IEEE 802.11b wireless networking products and promotes the standard for enterprise, small business, and home environments.

### **WEP (Wired Equivalent Privacy)**

A security protocol for WLANs defined in the 802.11b standard designed to provide the same level of security as a wired LAN.

### **WLAN (Wireless Local Area Network)**

A group of computers and other devices connected wirelessly in a small area.

### **Wi-Fi (Wireless Fidelity)**

A generic term for any kind of wireless network.

### **WPA (Wi-Fi Protected Access)**

An improved version of WEP using better encryption and authentication, designed to work with existing WEP-enabled products.

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# Notices

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## Regulatory Compliance Notices

### Class B Equipment

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 implementing one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio or television technician for help.

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## Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by *Actiontec Electronics, Inc.*, may void the user's authority to operate the equipment.

Declaration of conformity for products marked with the FCC logo – United States only.

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 unwanted operation.

 **Note:** To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For questions regarding your product or the FCC declaration, contact:

*Actiontec Electronics, Inc.*  
760 North Mary Ave.  
Sunnyvale, CA 94085  
United States  
Tel: (408) 752-7700  
Fax: (408) 541-9005

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Return the product to:  
(In the United States)  
*Actiontec Electronics, Inc.*  
760 North Mary Avenue  
Sunnyvale, CA 94085

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## Limited Warranty

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