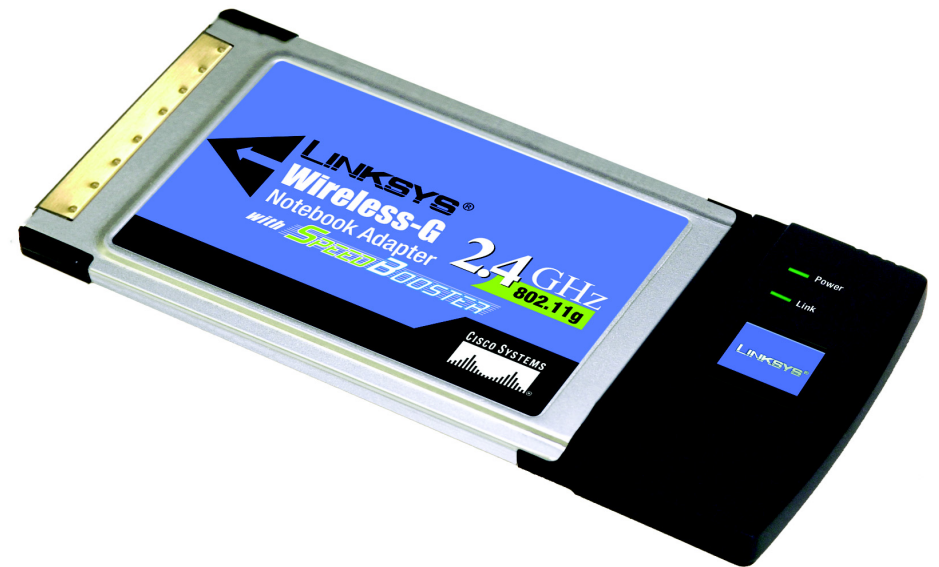


# LINKSYS®

A Division of Cisco Systems, Inc.



2.4GHz  
802.11g

## Wireless-G

### Notebook Adapter with SpeedBooster

## User Guide

WIRELESS

Model No. WPC54GS v2.0

CISCO SYSTEMS



## Copyright and Trademarks

Specifications are subject to change without notice. Linksys is a registered trademark or trademark of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. Copyright © 2004 Cisco Systems, Inc. All rights reserved. Other brands and product names are trademarks or registered trademarks of their respective holders.

## This User Guide

The User Guide to the Wireless-G Notebook Adapter with SpeedBooster has been designed to make understanding networking easier than ever. Look for the following items when reading this guide:



This checkmark means there is a note of interest and is something you should pay special attention to while using the Adapter.



This exclamation point means there is a caution or warning and is something that could damage your property or the Adapter.



This question mark provides you with a reminder about something you might need to do while using the Adapter.

In addition to these symbols, there are definitions for technical terms that are presented like this:

***word: definition.***

Also, each figure (diagram, screenshot, or other image) is provided with a figure number and description, like this:

**Figure 0-1: Sample Figure Description**

Figure numbers and descriptions can also be found in the "List of Figures" section in the "Table of Contents".

# Table of Contents

<b>Chapter 1: Introduction</b>	<b>1</b>
Welcome	1
What's in this Guide?	2
<b>Chapter 2: Planning your Wireless Network</b>	<b>4</b>
Network Topology	4
Roaming	4
Network Layout	5
<b>Chapter 3: Getting to Know the Wireless-G Notebook Adapter</b>	<b>6</b>
The LED Indicators	6
<b>Chapter 4: Software Installation and Configuration</b>	<b>7</b>
The Installation Procedure	8
<b>Chapter 5: Hardware Installation</b>	<b>12</b>
Connecting the Adapter	12
<b>Chapter 6: Using the Wireless Network Monitor</b>	<b>13</b>
Accessing the WLAN Monitor	13
Link Information	13
Site Survey	16
Profiles	17
Creating a New Profile	18
<b>Appendix A: Troubleshooting</b>	<b>30</b>
Common Problems and Solutions	30
Frequently Asked Questions	31
<b>Appendix B: Wireless Security</b>	<b>34</b>
Security Precautions	34
Security Threats Facing Wireless Networks	34
<b>Appendix C: Windows Help</b>	<b>37</b>
<b>Appendix D: Glossary</b>	<b>38</b>
<b>Appendix E: Specifications</b>	<b>45</b>
<b>Appendix F: Warranty Information</b>	<b>46</b>
<b>Appendix G: Regulatory Information</b>	<b>47</b>
<b>Appendix H: Contact Information</b>	<b>49</b>

# List of Figures

Figure 3-1: Front Panel	6
Figure 4-1: The Setup Wizard's Welcome Screen	7
Figure 4-2: The Setup Wizard's License Agreement	8
Figure 4-3: The Setup Wizard's Wireless Mode Screen	8
Figure 4-4: The Setup Wizard's Ad-Hoc Mode Screen	9
Figure 4-5: The Setup Wizard's WEP Screen	9
Figure 4-6: The Setup Wizard's WPA-PSK Screen	10
Figure 4-7: The Setup Wizard's Check Settings Screen	10
Figure 4-8: The Setup Wizard's Congratulations Screen	11
Figure 5-1: How the Adapter installs into your notebook	12
Figure 6-1: Link Information	13
Figure 6-2: More Information-Network Settings	14
Figure 6-3: More Information-Network Statistics	15
Figure 6-4: Site Survey	16
Figure 6-5: Profiles	17
Figure 6-6: Importing a Profile	17
Figure 6-7: Exporting a Profile	17
Figure 6-8: Creating a New Profile	18
Figure 6-9: Enter Profile Name	18
Figure 6-10: Wireless Mode for New Profile	19
Figure 6-11: Ad-Hoc Mode Settings	19
Figure 6-12: Network Settings	20
Figure 6-13: Wireless Security for New Profile	21
Figure 6-14: WEP Setting for New Profile	21
Figure 6-15: WPA-PSK Settings	22
Figure 6-16: TKIP Settings	22
Figure 6-17: WPA RADIUS Settings	23
Figure 6-18: Encryption Type	23
Figure 6-19: EAP-TLS Authentication	24
Figure 6-20: EAP-TTLS Authentication	24

Figure 6-21: EAP-MD5 Authentication	25
Figure 6-22: EAP-PEAP Authentication	25
Figure 6-23: EAP-LEAP Authentication	25
Figure 6-24: RADIUS Settings	26
Figure 6-25: EAP-TLS Authentication	26
Figure 6-26: EAP-TTLS Authentication	27
Figure 6-27: EAP-MD5 Authentication	27
Figure 6-28: EAP-PEAP Authentication	28
Figure 6-29: LEAP Authentication	28
Figure 6-30: TKIP Settings	29
Figure 6-31: EAP-TLS Authentication	29

# Chapter 1: Introduction

## Welcome

Thank you for choosing the Wireless-G Notebook Adapter with SpeedBooster. With this Adapter, your wireless networking experience will be faster and easier than ever.

Like all wireless products, the Adapter allows for greater range and mobility within your wireless network. This adapter communicates over the 54Mbps 802.11g wireless standard, which is almost five times faster than 802.11b. But since they share the same 2.4GHz radio band, the Adapter can also communicate with the widely used 11Mbps 802.11b standard.

PCs equipped with wireless cards and adapters can communicate without cumbersome cables. By sharing the same wireless settings, within their transmission radius, they form a wireless network.

The included Setup Wizard will walk you through configuring the adapter to your network's settings, step by step. Then just slide it into your notebook's PC Card slot and enjoy network access with your notebook computer, while retaining true mobility.

Once you're connected, you can keep in touch with your e-mail, access the Internet, and share files and other resources such as printers and network storage with other computers on the network. At home, you can surf the web or use instant messaging to chat with friends while sitting out on the patio. Your wireless connection is protected by up to 128-bit WEP encryption.

You'll also be able to connect with any of the growing number of public wireless hotspots springing up in coffee shops, airport lounges, hotels and convention centers. And as those hotspots upgrade to the new high-speed Wireless-G standard, you'll be ready to take advantage of the increased speeds.

Get connected to current-standard 802.11b networks today, and be prepared for the future with the Wireless-G Notebook Adapter with SpeedBooster from Linksys.

**network:** a series of computers or devices connected for the purpose of data sharing, storage, and/or transmission between users.

**adapter:** a device that adds network functionality to your PC.

**802.11b:** an IEEE wireless networking standard that specifies a maximum data transfer rate of 11Mbps and an operating frequency of 2.4GHz.

**802.11g** an IEEE wireless networking standard that specifies a maximum data transfer rate of 54Mbps and an operating frequency of 2.4GHz.

## What's in this Guide?

This user guide covers the steps for setting up and using the Wireless-G Notebook Adapter with SpeedBooster.

- **Chapter 1: Introduction**  
This chapter describes the Adapter's applications and this User Guide.
- **Chapter 2: Planning Your Wireless Network**  
This chapter discusses a few of the basics about wireless networking.
- **Chapter 3: Getting to Know the Wireless-G Notebook Adapter**  
This chapter describes the physical features of the Adapter.
- **Chapter 4: Software Installation and Configuration**  
This chapter instructs you on how to install the Adapter's Setup Wizard and Configure the Adapter
- **Chapter 5: Hardware Installation**  
This chapter shows you how to connect the Adapter to your PC.
- **Chapter 6: Using the WLAN Monitor**  
This chapter show you how to use the Adapter's WLAN Monitor.
- **Appendix A: Troubleshooting**  
This appendix describes some problems and solutions, as well as frequently asked questions, regarding installation and use of the Adapter.
- **Appendix B: Wireless Security**  
This appendix discusses security issues regarding wireless networking and measures you can take to help protect your wireless network.
- **Appendix C: Windows Help**  
This appendix describes how you can use Windows Help for instructions about networking, such as installing the TCP/IP protocol.
- **Appendix D: Glossary**  
This appendix gives a brief glossary of terms frequently used in networking.
- **Appendix E: Specifications**  
This appendix provides the Adapter's technical specifications.
- **Appendix F: Warranty Information**  
This appendix supplies the Adapter's warranty information.

## Wireless-G Notebook Adapter with SpeedBooster

- **Appendix G: Regulatory Information**  
This appendix supplies the Adapter's regulatory information.
- **Appendix H: Contact Information**  
This appendix provides contact information for a variety of Linksys resources, including Technical Support.



# Chapter 2: Planning your Wireless Network

## Network Topology

A wireless network is a group of computers, each equipped with one wireless adapter. Computers in a wireless network must be configured to share the same radio channel. Several PCs equipped with wireless cards or adapters can communicate with one another to form an ad-hoc network.

Linksys wireless adapters also provide users access to a wired network when using an access point or wireless router. An integrated wireless and wired network is called an infrastructure network. Each wireless PC in an infrastructure network can talk to any computer in a wired network infrastructure via the access point or wireless router.

An infrastructure configuration extends the accessibility of a wireless PC to a wired network, and can double the effective wireless transmission range for two wireless adapter PCs. Since an access point is able to forward data within a network, the effective transmission range in an infrastructure network can be doubled.

## Roaming

Infrastructure mode also supports roaming capabilities for mobile users. Roaming means that you can move your wireless PC within your network and the access points will pick up the wireless PC's signal, providing that they both share the same channel and SSID.

Before enabling you consider roaming, choose a feasible radio channel and optimum access point position. Proper access point positioning combined with a clear radio signal will greatly enhance performance.

**topology:** the physical layout of a network.

**ad-hoc:** a group of wireless devices communicating directly with each other (peer-to-peer) without the use of an access point.

**infrastructure:** a wireless network that is bridged to a wired network via an access point.

**roaming:** the ability to take a wireless device from one access point's range to another without losing the connection.

**ssid:** your wireless network's name.