LINKSYS®

A Division of Cisco Systems, Inc.

2.4GHz 802.11g

Wireless-G

PCI Adapter with SRX

User Guide

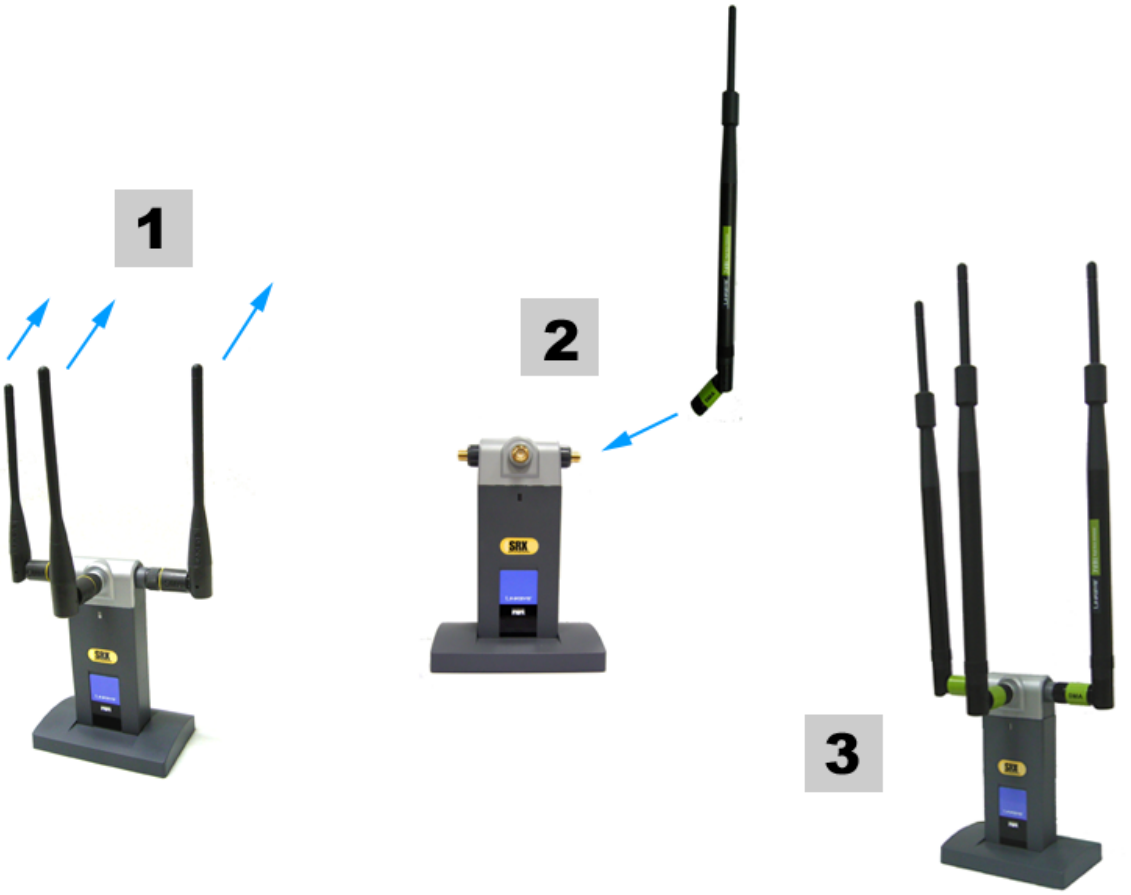
WIRELESS

Model No. **WMP54GX**

CISCO SYSTEMS

Also Available:

Linksys High Gain Antenna for SMA Connectors (HGA7S)



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How to Use This User Guide

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

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

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

This question mark provides you with a reminder about something you might need to do while using the Wireless-G PCI 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”.

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Chapter 1: Introduction

Welcome

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

How does the Adapter do this? Like all wireless products, the Adapter allows for greater range and mobility within your wireless network, whether it's using the Wireless-G (802.11g) or Wireless-B (802.11b) standard.

But what does all of this mean?

Networks are useful tools for sharing computer resources. You can access one printer from different computers and access data located on another computer's hard drive. Networks are even used for playing multiplayer video games. So, networks are not only useful in homes and offices, they can also be fun.

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 walks you through configuring the Adapter to your wireless network settings, step by step. Use the instructions in this Guide to help you set up and connect the Adapter using the Setup Wizard. These instructions should be all you need to get the most out of the Adapter.

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

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

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

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 User Guide?

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

• 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 PCI Adapter with SRX

This chapter describes the physical features of the Adapter.

• Chapter 4: Setting Up and Connecting the Wireless-G PCI Adapter with SRX

This chapter shows you how to set up and connect the Adapter.

MIMO

The Wireless-G PCI Adapter with SRX combines smart antenna technology with standards-based Wireless-G (802.11g) networking. By overlaying the signals of two Wireless-G compatible radios, the "Multiple In, Multiple Out" (MIMO) technology effectively achieve greater throughput. Unlike ordinary wireless networking technologies that are confused by signal reflections, MIMO actually uses these reflections to increase the range and reduce "dead spots" in the wireless coverage area.

- Chapter 5: Using the Wireless Network Monitor
  This chapter explains how to use the Adapter's Wireless Network 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: Using Windows XP Wireless Zero Configuration
  This chapter instructs you on how to use Window XP Wireless Zero Configuration.

- Appendix C: Wireless Security
  This appendix discusses security issues regarding wireless networking and measures you can take to help protect your wireless network.

- Appendix D: Windows Help
  This appendix describes how you can use Windows Help for instructions about networking, such as installing the TCP/IP protocol.

- Appendix E: Glossary
  This appendix gives a brief glossary of terms frequently used in networking.

- Appendix F: Specifications
  This appendix provides the Adapter's technical specifications.

- Appendix G: Warranty Information
  This appendix supplies the Adapter's warranty information.

- Appendix H: Regulatory Information
  This appendix supplies the Adapter's regulatory information.

- Appendix I: 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 you consider enabling 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.*

***access point**: a device that allows wireless-equipped computers and other devices to communicate with a wired network. Also used to expand the range of a wireless network*

***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.*

Network Layout

Linksys wireless access points and wireless routers have been designed for use with 802.11b and 802.11g products. Products using the 802.11g and 802.11b standards can communicate with each other.

Access points and wireless routers are compatible with 802.11b and 802.11g adapters, such as the notebook adapters for your laptop computers, PCI adapters for your desktop PCs, and USB adapters for when you want to enjoy USB connectivity. Wireless products will also communicate with a wireless print server.

When you wish to connect your wired network with your wireless network, network ports on access points and wireless routers can be connected to any of Linksys's switches or routers.

With these, and many other, Linksys products, your networking options are limitless. Go to the Linksys website at www.linksys.com for more information about wireless products.

***switch**: a data switch that connects computing devices to host computers, allowing a large number of devices to share a limited number of ports*

***router**: a networking device that connects multiple networks together*

Chapter 3: Getting to Know the Wireless-G Notebook Adapter with SRX

Overview

The Adapter has two parts, the antenna stand and PCI card.

The LED Indicator

The Adapter's LED on the Adapter's antenna stand displays information about the wireless connection.

(Activity) *Green*. The LED lights up when the Adapter has an active wireless connection. It flashes when the Adapter is transmitting or receiving data.

The Cable Connectors

The Adapter's connectors attach the antenna stand's cables to the PCI card part of the Adapter.

ANT. The ANT. connectors are connection points for the stand's antenna cables.

ACT. The ACT. connector is a connection point for the stand's activity cable, which activates the LED on the antenna stand.

Figure 3-1: Adapter's LED

Figure 3-2: Adapter's Connectors