LINKSYS®

A Division of Cisco Systems, Inc.

2.4GHz 802.11g **Wireless-G**

WIRELESS **Range Expander**

User Guide

CISCO SYSTEMS

Model No. **WRE54G ver. 2**

Chapter 1: Introduction

Welcome

WRE54G Wireless-G Range Expander is a standard WLAN repeater device. It can repeat and extend wireless signal coverage on Linksys wireless AP/router.

Features

- Supports 64 / 128 bit WEP encryption in 802.11b/802.11g wireless LAN.
- Wireless operation provides data rate at 11, 5.5, 2, and 1Mbps with auto fallback for 802.11b WLAN card and also provide rate at 6, 9, 12, 18, 24, 36, 48, and 54Mbps for 802.11g WLAN card.
- Configurable through your networked PC's Web browser
- Configurable through Setup Wizard
- Backup and restore configuration
- Support auto-configuration and infrastructure operation modes. Under auto-configuration operation mode, WRE54G will detect and connect to the Linksys wireless AP/Router with strongest signal in the environment. Infrastructure operation mode allows user configure the WRE54G via setup wizard.
- Password protected configuration or management sessions for web access
- Built-in HTTP Server for setup and management via any browser easily
- Support 64/128 bit WEP encryption.

Chapter 2: Planning your Wireless Network

The Repeater's Functions

Simply put, the Wireless-G Range Expander can increase the coverage area of an ESS.

Network Topology

A wireless local area network (WLAN) is exactly like a regular local area network (LAN), except that each computer in the WLAN uses a wireless device to connect to the network. Computers in a WLAN share the same frequency channel and SSID, which is an identification name for wireless devices.

Ad-Hoc versus Infrastructure Mode

Unlike wired networks, wireless networks have two different modes in which they may be set up: infrastructure and ad-hoc. An infrastructure configuration is a WLAN and wired LAN communicating to each other through an access point. An ad-hoc configuration is wireless-equipped computers communicating directly with each other. Choosing between these two modes depends on whether or not the wireless network needs to share data or peripherals with a wired network or not. If the computers on the wireless network need to be accessed by a wired network or need to share a peripheral, such as a printer, with the wired network computers, the wireless network should be set up in infrastructure mode.

The basis of infrastructure mode centers around an access point, which serves as the main point of communications in a wireless network. Access points transmit data to PCs equipped with wireless network cards, which can roam within a certain radial range of the access point. Multiple access points can be arranged to work in succession to extend the roaming range.

If the wireless network is relatively small and needs to share resources only with the other computers on the wireless network, then the ad-hoc mode can be used. Ad-hoc mode allows computers equipped with wireless transmitters and receivers to communicate directly with each other, eliminating the need for an access point. The drawback of this mode is that, in Ad-Hoc mode, wireless-equipped computers are not able to communicate with computers on a wired network. And, of course, communication between the wireless-equipped computers is limited by the distance and interference directly between them.

Chapter 3: Getting to Know the Wireless-G Range Expander

The Side Panel

Auto configuration port is where you will connect the power adapter.

Reset Button You can use an object, such as a stretched paper clip, to press the Reset button and then release the button to reset the device to its factory-default settings.

The Top Panel

The LEDs on the top panel of the Wireless-G Range Expander indicate the information about power and network activity.

Power Blue. The **Power** LED lights up when the Wireless-G Range Expander is powered on.

Link Blue. The **Link** LED lights whenever there is a successful wireless connection.

Chapter 4: Connecting the Wireless-G Range Expander

The Setup Wizard will take you through all the steps necessary to configure the Wireless-G Range Expander. Before you start it, your notebook or desktop computer must already be part of a wireless network.

1. Power on your Access Point and make sure cables are properly connected.

2. In order to configure the Wireless-G Range Expander you mush already be connected to a wireless Access Point.

3. Power on your Wireless-G Range Expander by connecting your Wireless-G Range Expander to a power outlet.

4. Once the Wireless-G Range Expander is powered on, you can access it in your wireless network.

5. Insert the Setup Wizard CD into the CD-ROM driver of your PC or notebook that has already be part of a wireless network.

6. The screen should appear on your monitor. If it does not, this means the auto-run is not functioning. Start the auto-run manually by clicking the Start button, selecting Run, and typing D:\setup.exe (if "D" is your CD-ROM drive). Click the Setup button to run the Setup Wizard.

7. Click the Next button to continue or Exit to exit the Setup Wizard.

8. The next screen to appear will display a list of the access points on your network, along with the status information for each access point. If there is only one access point on your network, it will be the only one displayed. If there are more than one displayed, select the Access Point you want to connect to. Once you have connected to an Access Point, the

Setup Wizard will search for all of the Wireless-G Range Expanders on your network.

9. Click the Yes button to continue or No to exit the Setup Wizard.

10. The Security screen shows the WEP key. If you would like to use Wired Equivalent Privacy (WEP) encryption for your wireless network., enter the required information on the screen.

- **WEP**. In order to utilize WEP encryption, select the WEP setting from the pull-down menu, 64-bit (10 hex digits) or 128-bit (26 hex digits). If you do not wish to utilize WEP encryption, make sure Disabled is selected. The Access Point's WEP encryption is unique to Linksys and may conflict with other vendors' WEP encryption.

- **Passphrase**. Instead of manually entering WEP keys, you can enter a Passphrase. This Passphrase is used to generate one or more WEP keys. It is case-sensitive and should not be longer than 16 alphanumeric characters. (The Passphrase function is compatible with Linksys wireless products only. If you want to communicate with non-Linksys wireless products, you will need to enter your WEP keys manually on the non-Linksys wireless products.)

11. If you entered a passphrase, then the Key 1 field will display the automatically generated WEP key. If you did not enter a passphrase, then enter a WEP key in the Key 1 field. Each device in your wireless network must use the same WEP key for the network to function properly.

- **Key 1**. WEP keys enable you to create an encryption scheme for wireless LAN transmissions. If the WEP key hasn't been automatically generated, then manually enter a set of values. (Do not leave the field blank, and do not enter all zeroes. These are not valid key values.) If you are using 64-bit WEP encryption, then each key must consist of exactly 10 hexadecimal characters. If you are using 128-bit WEP encryption, then each key must consist of exactly 26 hexadecimal characters. Valid hexadecimal characters are "0"-"9" and "A"-"F".

12. Next button to continue or Back to return to the previous page.

13. Select the Wireless-G Range Expander you want to configure. Click Yes to configure the

Network Address Settings of the Wireless-G Range Expander. If you do not want to continue, click No.

14. You can manually set IP configuration. Enter an IP Address, Subnet Mask, Gateway, and Expander Name appropriate for your network. If you are unsure of these settings, you can skip this selection by just clicking on Next.

15. Click the Next button to continue or Back to return to the previous page.

16. The next screen will allow you to review your settings. If these settings are correct, click the Yes button to save these settings. If there are any problems with the settings, click the No button to exit the Setup Wizard.

17. Congratulations! At this point, the configuration performed with the Setup Wizard is complete. Click the Exit button to exit the Setup Wizard.

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Package Contents

- One Wireless-G Range Expander
- One AC Power Adapter
- One Setup Wizard CD with User Guide
- One Quick Installation
- One registration card

2.4GHz
802.11g

Wireless-G
Range Expander
Quick Installation

Wireless

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Using the Auto configuration button

IMPORTANT: The Auto configuration button is only used in networks without WEP Security enabled. You should always have WEP Security enabled. For greater security, install the Range Expander with the Setup Wizard, as shown on the opposite side.

A Locate an optimum location for the Range Expander. The best placement is usually at the edge of your wireless network.

B Fix the direction of the antenna. Try to place it in a position that will best cover your wireless network. Normally, the higher you place the Range Expander's antenna, the better the performance will be. The antenna's position enhances the receiving sensitivity.

C Connect the appropriate power plate and connect it to a power outlet. You should always plug your networking gear into a surge protector.

D Press the **Auto configuration** button. It will then automatically detect your wireless network and configure itself with those settings.

IMPORTANT: If you install the Range Expander into your network with the Auto configuration button, you should go into the Web Utility (as described in the User Guide) and enable WEP encryption.

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