

Instant Wireless® Series

Wireless-G Access Point



Use this guide to install: WAP54G

User Guide

 **LINKSYS®**

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SAFETY AND REGULATORY NOTICES

FCC STATEMENT

The Instant Wireless Wireless-G Access Point has been tested and found to comply with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

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 according to 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 is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

FCC Caution: Any change or modification to the product not expressly approved by Linksys could void the user's authority to operate the device.

FCC Caution: Operation within the 5150 to 5250GHz band is restricted to indoor use only.

FCC RF Radiation Exposure Statement

To comply with the FCC and ANSI C95.1 RF exposure limits, the antenna(s) for this device must comply with the following:

- Access points with 2.4 GHz or 5 GHz integrated antenna must operate with a separation distance of at least 20 cm from all persons using the cable provided and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users must be provided with specific operations for satisfying RF exposure compliance.

Note: Dual antennas used for diversity operation are not considered co-located.

Canadian Department of Communications Industry Canada (IC) Notice

This Class B digital apparatus complies with Canadian ICES-003 and RSS-210.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 et CNR-210 du Canada.

"To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing."

" Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d'émission) est installé à l'extérieur, il doit faire l'objet d'une licence. "

EC DECLARATION OF CONFORMITY (EUROPE)

Linksys Group declares that the Instant Wireless® Series products included in the Instant Wireless® Series conform to the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC, EMC directive 89/336/EEC, and Low Voltage directive 73/23/EEC:

For 54 Mbps, 5 GHz access points with 40 mW radios, the following standards were applied:

- ETS 301 489-1, 301 489-17 General EMC requirements for Radio equipment.
- EN 609 50 Safety
- ETS 301-893 Technical requirements for Radio equipment.

Caution: The frequencies used by 802.11a wireless LAN devices are not yet harmonized within the European community, 802.11a products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. Contact local Authority for procedure to follow.

Caution: This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation. Contact local Authority for procedure to follow.

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Note: Combinations of power levels and antennas resulting in a radiated power level of above 100 mW equivalent isotropic radiated power (EIRP) are considered as not compliant with the above mentioned directive and are not allowed for use within the European community and countries that have adopted the European R&TTE directive 1999/5/EC and/or the CEPT recommendation Rec 70.03.

For more details on legal combinations of power levels and antennas, contact Linksys Corporate Compliance.

- Linksys Group vakuuttaa täten että Instant Wireless Wireless-G Access Point tyyppinen laite on direktiivin 1999/5/EY, direktiivin 89/336/EEC ja direktiivin 73/23/EEC oleellisten vaatimusten ja sitä koskevien näiden direktiivien muiden ehtojen mukainen.
- Linksys Group déclare que la Instant Wireless Wireless-G Access Point est conforme aux conditions essentielles et aux dispositions relatives à la directive 1999/5/EC, la directive 89/336/EEC, et à la directive 73/23/EEC.
- Belgique B L'utilisation en extérieur est autorisé sur le canal 11 (2462 MHz), 12 (2467 MHz), et 13 (2472 MHz). Dans le cas d'une utilisation privée, à l'extérieur d'un bâtiment, au-dessus d'un espace public, aucun enregistrement n'est nécessaire pour une distance de moins de 300m. Pour une distance supérieure à 300m un enregistrement auprès de l'IBPT est requise. Pour une utilisation publique à l'extérieur de bâtiments, une licence de l'IBPT est requise. Pour les enregistrements et licences, veuillez contacter l'IBPT.
- France F:
2.4 GHz Bande : les canaux 10, 11, 12, 13 (2457, 2462, 2467, et 2472 MHz respectivement) sont complètement libres d'utilisation en France (en utilisation intérieur). Pour ce qui est des autres canaux, ils peuvent être soumis à autorisation selon le département. L'utilisation en extérieur est soumis à autorisation préalable et très restreint.
5 GHz Bande: Conformément aux décisions de la CEPT, l'utilisation des fréquences de la bande 5150 MHz - 5350 MHz est autorisée à l'intérieur des bâtiments avec une puissance maximale de 200 mW, et interdite en extérieur. La bande 5470 MHz - 5725 MHz n'est pas ouverte aujourd'hui.
Vous pouvez contacter l'Autorité de Régulation des Télécommunications (<http://www.art-telecom.fr>) pour de plus amples renseignements.
2.4 GHz Band: only channels 10, 11, 12, 13 (2457, 2462, 2467, and 2472 MHz respectively) may be used freely in France for indoor use. License required for outdoor installations.
5 GHz Band: frequencies in the 5150 MHz - 5350 MHz band may be used indoor with maximum power of 200 mW. Their use is forbidden outdoors. The 5470 MHz - 5725 MHz band is not currently open.
Please contact ART (<http://www.art-telecom.fr>) for procedure to follow.
- Deutschland D: Anmeldung im Outdoor-Bereich notwendig, aber nicht genehmigungspflichtig. Bitte mit Händler die Vorgehensweise abstimmen.
- Germany D: License required for outdoor installations. Check with reseller for procedure to follow.
- Italia I: E' necessaria la concessione ministeriale anche per l'uso interno. Verificare con i rivenditori la procedura da seguire. L'uso per installazione in esterni non e' permessa.
- Italy I: License required for indoor use. Use with outdoor installations not allowed.
- The Netherlands NL License required for outdoor installations. Check with reseller for procedure to follow.
- Nederlands NL Licentie verplicht voor gebruik met buitenantennes. Neem contact op met verkoper voor juiste procedure.

Chapter 1: Introduction

The Instant Wireless Wireless-G Access Point

Wireless-G is the upcoming 54Mbps wireless networking standard that's almost five times faster than the widely deployed Wireless-B (802.11b) products found in homes, businesses, and public wireless hotspots around the country — but since they share the same 2.4GHz radio band, Wireless-G devices can also work with existing 11Mbps Wireless-B equipment.

The Linksys Wireless-G Access Point lets you connect Wireless-G or Wireless-B devices to the network. Since both standards are built in, you can protect your investment in existing 802.11b infrastructure, and migrate your network clients to the new screaming fast Wireless-G standard as your needs grow.

To protect your data and privacy, the Wireless-G Access Point can encrypt all wireless transmissions. The MAC Address filter lets you decide exactly who has access to your wireless network. Configuration is a snap with the web browser-based configuration utility.

Future-proof your wireless network with the Linksys Wireless-G Access Point. You'll enjoy Wireless-B connectivity today, and be prepared for a high-speed Wireless-G tomorrow.

Features

- Set up a high-speed Wireless-G (draft 802.11g) network in your home or office
- Data rates up to 54Mbps -- 5 times faster than Wireless-B (802.11b)
- Also interoperates with Wireless-B networks (at 11Mbps)
- Advanced wireless security with 128-bit WEP encryption and MAC filtering
- Free Technical Support—24 Hours a Day, 7 Days a Week, Toll-Free U.S. Calls
- 1-Year Limited Warranty

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Chapter 2: Planning Your Wireless Network

Network Topology

A wireless LAN is a group of computers, each equipped with one Instant Wireless Series adapter. Computers in a wireless LAN must be configured to share the same radio channel.

The Instant Wireless Series adapters provide access to a wired LAN for wireless workstations. An integrated wireless and wired LAN is called an infrastructure configuration. A group of Instant Wireless Series adapter users and an Instant Wireless Wireless-G Access Point compose a Basic Service Set (BSS). Each Instant Wireless Series adapter PC in a BSS can talk to any computer in a wired LAN infrastructure via the Wireless-G Access Point.

An infrastructure configuration extends the accessibility of an Instant Wireless Series adapter PC to a wired LAN, and doubles the effective wireless transmission range for two Instant Wireless Series adapter PCs. Since the Wireless-G Access Point is able to forward data within its BSS, the effective transmission range in an infrastructure LAN is doubled.

Roaming

Infrastructure mode also supports roaming capabilities for mobile users. More than one BSS can be configured as an Extended Service Set (ESS). This continuous network allows users to roam freely within an ESS. All PCs equipped with an Instant Wireless Series adapter within one ESS must be configured with the same ESS ID and use the same radio channel.

Before enabling an ESS with roaming capability, choosing a feasible radio channel and optimum Wireless-G Access Point position is recommended. Proper Access Point positioning combined with a clear radio signal will greatly enhance performance.

Chapter 3: Getting to Know the Wireless-G Access Point

The Wireless-G Access Point's Back Panel

The Access Point's ports, where a network cable is connected, are located on the Access Point's back panel.



Figure 3-1

- Reset Button** There are two ways to Reset the Access Point's factory defaults. Either press the Reset Button using a small, pointed object like a ball-point pen, for approximately ten seconds, or restore the defaults from the password tab in the Access Point's Web-Based Utility.
- LAN** This **LAN** (Local Area Network) port connects to Ethernet network devices, such as a hub, switch, or router.
- Power** The **Power** port is where you will connect the power adapter.



Important: Resetting the Access Point will erase all of your settings (WEP Encryption, Wireless and LAN settings, etc.) and replace them with the factory defaults. Do not reset the Access Point if you want to retain these settings

The Wireless-G Access Point's Front Panel



Figure 3-2

Power	<i>Green.</i> The Power LED lights up when the Access Point is powered on.
Diag	<i>Red.</i> The Diag LED indicates the Access Point's self-diagnosis mode during boot-up and restart. It will turn off upon completing the diagnosis. If this LED stays on for an abnormally long period of time, refer to the Troubleshooting Appendix.
WLAN Act	<i>Green.</i> If the WLAN's Act LED is flickering, the Access Point is actively sending or receiving data to or from one of the devices on the network.
WLAN Link	<i>Green.</i> The WLAN's Link LED lights whenever there is a successful wireless connection.
LAN Act/Link	<i>Green.</i> The LAN's LINK LED serves two purposes. If the LED is continuously lit, the Access Point is successfully connected to a device through the LAN port. If the LED is flickering, it is an indication of any network activity.
LAN Full/Col	<i>Green.</i> The LAN's Full/Col LED also serves two purposes. When this LED is continuously lit, the connection made through the corresponding port is running in Full Duplex mode. A flickering LED indicates that the connection is experiencing collisions. Infrequent collisions are normal. If this LED blinks too often, there may be a problem with your connection. Refer to the Troubleshooting Appendix if you think there is a problem.
LAN 100	<i>Orange.</i> The LAN's 100 LED indicates when a successful 100Mbps connection is made through the LAN port.

Chapter 4: Connecting the Wireless-G Access Point

1. **Locate an optimum location for the Access Point.** The best place for the Access Point is usually at the center of your wireless network, with line of sight to all of your mobile stations.
2. **Fix the direction of the antenna.** Try to place it in a position which can best cover your wireless network. Normally, the higher you place the antenna, the better the performance will be. The antenna's position enhances the receiving sensitivity.
3. **Connect a standard Ethernet network cable to the Access Point.** Then, connect the other end of the Ethernet cable to a switch or hub. The Access Point will then be connected to your 10/100 Network.
4. **Connect the AC Power Adapter to the Access Point's Power port and plug the other end into an electrical outlet.** Only use the power adapter supplied with the Access Point. Use of a different adapter may result in product damage.

Now that the hardware installation is complete, proceed to **Chapter 5: Setting Up the Wireless-G Access Point** for directions on how to set up the Access Point.



Note: In order for all other wireless devices to communicate with the Access Point, those devices must be operating in **Infrastructure Mode**. If any wireless devices are configured in **Ad Hoc Mode**, they *will not* be recognized by the Access Point.

Chapter 5: Setting Up the Wireless-G Access Point



Have You: Connected the Access Point to a hub, switch or router on your wired network as shown in Chapter 4: Connecting the Wireless-G Access Point? The Access Point can only be set up through your wired network.

Now that you've connected the Access Point to your wired network, you are ready to begin setting it up. This Setup Wizard will take you through all the steps necessary to configure the Access Point.



Note: While the Access Point has been designed to work correctly right out of the box, setting it up on a wireless computer will require you to use the Linksys default settings. These settings can then be changed with the Setup Wizard or Web-based Browser Utility.

1. Insert the Setup Wizard CD into your PC's CD-ROM drive. Your PC must be on your wired network to set up the Access Point.
2. The Setup Wizard should run automatically, and the screen in Figure 5-1 should appear on your monitor. If it does not, start the Setup Wizard manually by clicking the **Start** button, selecting **Run**, and typing **d:\setup.exe** (where "D" is your PC's CD-ROM drive). Click the **Setup** button to continue this Setup Wizard. Clicking the **User Guide** button opened this User Guide. To exit this Setup Wizard, click the **Exit** button.



Figure 5-1

3. The following screen, shown in Figure 5-2, displays how the Access Point is configured in this Setup Wizard. Optimally, you should perform this setup through a PC on your wired network. Click the **Next** button to continue or **Exit** to exit the Setup Wizard.

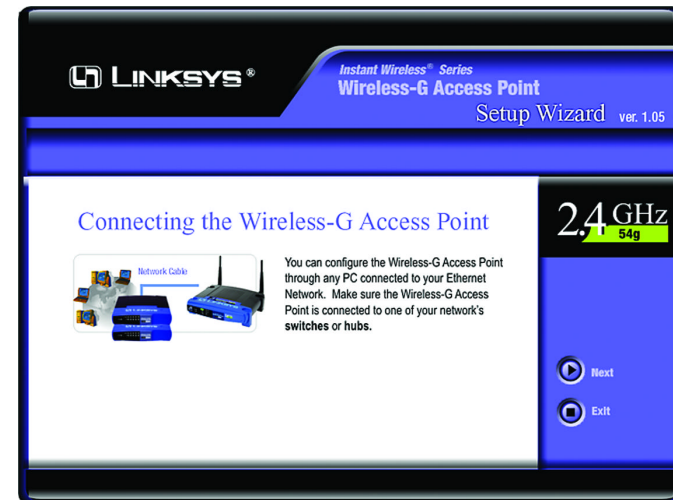


Figure 5-2