E-Series

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# Product overview

## E900/E1200/E1500/E2500/E3200

### Back view



USB port (E3200 only)

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Power indicator

Power port
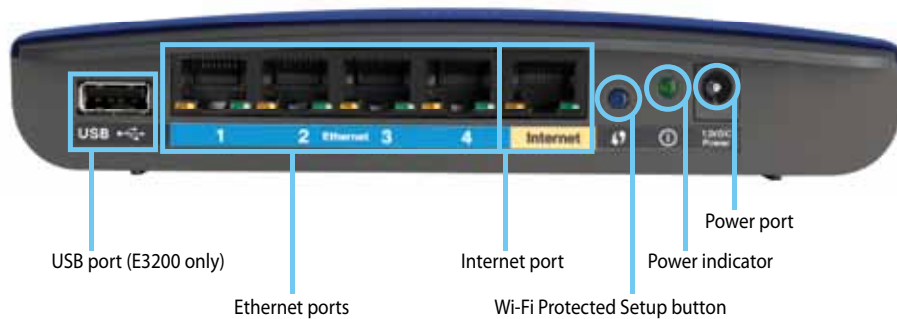
**Your router's appearance may vary**

- **USB port (E3200 only)**—To easily share disk storage with other users on your network or on the Internet, connect a USB drive to this port.

- **Ethernet ports**—Connect Ethernet cables (also called network cables) to these Fast Ethernet (10/100, for E900, E1200, and E1500) or Gigabit (10/100/1000, for E2500 and E3200) ports, color coded blue, and to other wired Ethernet network devices on your network.

- **Internet port**—Connect an Ethernet cable (also called a network or Internet cable) to this port, color coded yellow, and to your modem.

  **Wi-Fi Protected Setup™ button**—Press this button to easily configure wireless security on Wi-Fi Protected Setup-enabled network devices. For more information, see "Wireless Security" on page 8.

- **Power indicator**—Stays on steadily while power is connected and following a successful Wi-Fi Protected Setup connection. Flashes slowly during bootup, during firmware upgrades, and during a Wi-Fi Protected Setup connection. Flashes quickly when there is a Wi-Fi Protected Setup error.

- **Power**—Connect the included AC power adapter to this port.

  **CAUTION**
  Use only the adapter that came with your router.

- **Power button**—Press **|** (on) to turn on the router.

### Bottom view



**Your router's appearance may vary**

- **Reset button**—Press and hold this button for 5-10 seconds (until the port lights flash at the same time) to reset the router to its factory defaults. You can also restore the defaults using the browser-based utility.

# E4200

## Top view



Indicator light

- **Indicator light**—Stays on steadily while power is connected and following a successful Wi-Fi Protected Setup connection. Pulses slowly during bootup, during firmware upgrades, and during a Wi-Fi Protected Setup connection. Flashes quickly when there is a Wi-Fi Protected Setup error.

## Back view



Ethernet ports                     Internet port                          Power port

Wi-Fi Protected Setup button          Reset button

USB port

- **Ethernet ports**—Connect Ethernet cables (also called network cables) to these Gigabit (10/100/1000) ports, color coded blue, and to other wired Ethernet network devices on your network.

- **Internet port**—Connect an Ethernet cable (also called a network or Internet cable) to this port, color coded yellow, and to your modem.

- **Wi-Fi Protected Setup™ button**—Press this button to easily configure wireless security on Wi-Fi Protected Setup-enabled network devices. For more information, see "Wireless Security" on page 8.

- **USB port**—To easily share disk storage with other users on your network or on the Internet, connect a USB drive to this port. .

- **Reset button**—Press and hold this button for 5-10 seconds (until the port lights flash at the same time) to reset the router to its factory defaults. You can also restore the defaults using the browser-based utility.
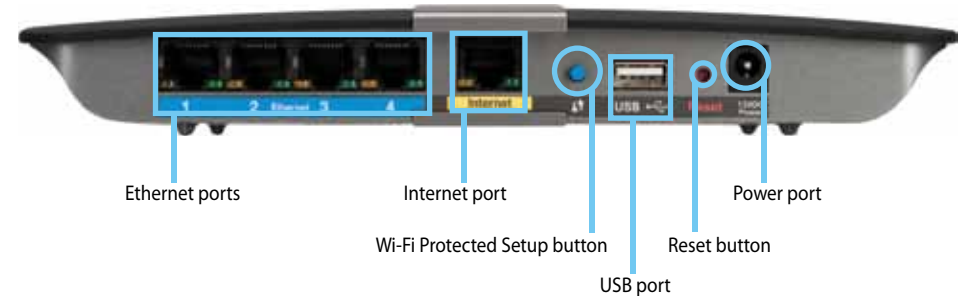
- **Power**—Connect the included AC power adapter to this port.

  **CAUTION**
  Use only the adapter that came with your router.

- **Power button**—Press **|** (on) to turn on the router.

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# Setting Up Your E-Series Router

## Where to find more help

In addition to this User Guide, you can find help at these locations:

- **Linksys.com/support** (documentation, downloads, FAQs, technical support, live chat, forums)
- Cisco Connect help (run **Cisco Connect**, then click **Learn More** where available)
- Browser-based utility context-sensitive help (open the utility, then click **Help** in the right-side column.)

## How to set up your router

The easiest and fastest way to set up your router is to run the Cisco Connect setup software.

## How to start Cisco Connect

When you run the setup CD, Cisco Connect (your router's setup software) is automatically installed onto your computer. You can then use Cisco Connect to easily manage your router.

> **NOTE:**
> If you lose your setup CD, you can download the software from **Linksys.com/support**.

**To start Cisco Connect for the first time:**

1. Insert the CD into your CD or DVD drive.
2. Click **Set up your Linksys Router**.

    If you do not see this:

    - For Windows, click **Start**, **Computer**, then double-click the **CD** drive and the **Setup** icon.
    - For Mac, double-click the **CD** icon on your desktop, then double-click the **Setup** icon.

3. Follow the on-screen instructions to complete your router setup.

## Use Cisco Connect to manage your router

After your router has been set up and Cisco Connect has been installed, you can use Cisco Connect to easily manage many of your router's settings such as:

- Connect devices to your network
- Test your Internet connection speed
- Configure parental controls
- Set up guest access
- Change your router's name and password

## How to manually set up your router

After setting up the router with the setup software (located on the CD), the router will be ready for use. If you would like to change its advanced settings, or if the software does not run, use the router's browser-based utility.You can access the utility with a web browser on a computer connected to the router. For more information on using the utility, see "How to open the browser-based utility" on page 4.

# Advanced Configuration

## How to open the browser-based utility

To access some advanced settings, you need to open the browser-based utility.
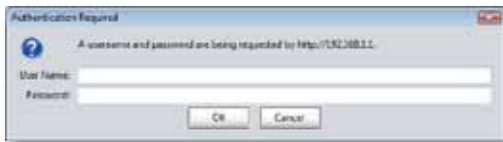
**To open the browser-based utility:**

1. Run Cisco Connect, click **Change** under *Router settings*, click **Advanced settings**, then click **OK**.

    – or –

    Open a web browser on a computer connected to your network, then go to **192.168.1.1**.

    The router prompts you for a user name and password.



2. Enter the user name and password, then click **OK**. The utility's main menu opens.

    > **TIPS**
    > If you  set up your router without using Cisco Connect, your router's default username  and password is **admin**.
    >
    > If you used Cisco Connect to set up your router, you can see your router's user name and password by running Cisco Connect, then clicking **Router settings**.

# Setup > Basic Setup

The first screen that appears is the *Basic Setup* screen. This allows you to change the router's general settings.



## Language

**Select your language**  To use a different language, select one from the drop-down menu. The language of the browser-based utility will change five seconds after you select another language.

## Internet Setup

The *Internet Setup* section configures the router to your Internet connection. Most of this information can be obtained through your Internet Service Provider (ISP).

### Internet Connection Type

Select the type of Internet connection your ISP provides from the drop-down menu. The available types are:

- Automatic Configuration - DHCP
- Static IP
- PPPoE
- PPTP
- L2TP
- Telstra Cable

### Automatic Configuration - DHCP

The default Internet Connection Type is **Automatic Configuration - DHCP** (Dynamic Host Configuration Protocol). Keep the default only if your ISP supports DHCP or if you connect using a dynamic IP address. (This option usually applies to cable connections.)

### Static IP

If you are required to use a fixed IP address to connect to the Internet, select **Static IP**.

### PPPoE

If you have a DSL connection, check whether your ISP uses Point-to-Point Protocol over Ethernet (PPPoE). If so, select PPPoE.

**PPTP**

Point-to-Point Tunneling Protocol (PPTP) is a service that generally applies to connections in Europe. If your PPTP connection supports DHCP or a dynamic IP address, then select **Obtain an IP Address Automatically**. If you are required to use a fixed IP address to connect to the Internet, then select **Specify an IP Address** and configure the options below.

**L2TP**

Layer 2 Tunneling Protocol (L2TP) is a service that generally applies to connections in Israel.

**Telstra Cable**

Telstra Cable is a service that generally applies to connections in Australia.

**Connect on Demand or Keep Alive**

The Connect on Demand and Keep Alive options let you choose whether the router connects to the Internet only as needed (useful if your ISP charges for connect time), or if the router should always be connected. Select the appropriate option.

# Wireless > Basic Wireless Settings

The basic settings for wireless networking are set on this screen.

> **NOTE**
> After you set up the wireless network(s), set up the wireless security settings.

## Wireless Settings



**Network Mode**  Select the wireless standards your network will support.

- **Mixed**  If you have Wireless-N (2.4 GHz), Wireless-G, and Wireless-B devices in your network, keep the default, **Mixed**.

- **Wireless-B/G Only**  If you have both Wireless-B and Wireless-G (2.4 GHz) devices in your network, select **Wireless-B/G Only**.

- **Wireless-B Only**  If you have only Wireless-B devices, select **Wireless-B Only**.

- **Wireless-G Only**  If you have only Wireless-G devices, select **Wireless-G Only**.

- **Wireless-N Only**  If you have only Wireless-N (2.4 GHz) devices, select **Wireless-N Only**.

- **Disabled**  If you have no Wireless-B, Wireless-G, and Wireless-N (2.4 GHz) devices in your network, select **Disabled**.

> **NOTE**
> If you have a dual-band router, you can select Mixed, Wireless-A Only, Wireless-N Only, or Disabled for the 5 GHz band.
>
> If you are not sure which mode to use, keep the default, **Mixed**.

**Network Name (SSID)** The Service Set Identifier (SSID) is the network name shared by all devices in a wireless network. It is case-sensitive and must not exceed 32 keyboard characters. The default is **Cisco** followed by the last 5 digits of the router's serial number, which is found on the bottom of the router. If you used the setup software for installation, then the default Network Name is changed to an easy-to-remember name.

> **NOTE**
> If you restore the router's factory default settings (by pressing the Reset button or using the *Administration > Factory Defaults* screen), the Network Name will return to its default value. Change the Network Name back to its original name, or you will have to reconnect all devices on your wireless network to the new network name.

**Channel Width** For best performance in a network using Wireless-B, Wireless-G and Wireless-N (2.4 GHz) devices, select **Auto (20 MHz or 40 MHz)**. For a channel width of 20 MHz, keep the default, **20 MHz only**.

**Channel** Select the channel from the drop-down list for Wireless-B, Wireless-G, and Wireless-N (2.4 GHz) networking. If you are not sure which channel to select, then keep the default, **Auto**.

**SSID Broadcast** When wireless clients survey the local area for wireless networks to associate with, they will detect the SSID broadcast by the router. To broadcast the router's SSID, keep the default, **Enabled**. If you do not want to broadcast the router's SSID, then select **Disabled**.

# Wireless Security

## Wireless > Wireless Security

The wireless security settings configure the security of your wireless network(s). The router supports the following wireless security options: WPA2/WPA Mixed Mode, WPA2 Personal, WPA Personal, WPA2/WPA Enterprise Mixed Mode, WPA2 Enterprise, WPA Enterprise, WEP, and RADIUS. (WPA stands for Wi-Fi Protected Access. WEP stands for Wireless Equivalent Privacy. RADIUS stands for Remote Authentication Dial-In User Service.)

### Personal options

| Security Option | Strength |
|---|---|
| WPA2 Personal | Strongest |
| WPA2/WPA Mixed Mode | WPA2: Strongest WPA: Strong |
| WPA Personal | Strong |
| WEP | Basic |

### Office options

The office options are available for networks that use a RADIUS server for authentication. The office options are stronger than the personal options because WPA2 or WPA provides encryption while RADIUS provides authentication.

| Security Option | Strength |
|---|---|
| WPA2 Enterprise | Strongest |
| WPA2/WPA Enterprise Mixed Mode | WPA2: Strongest WPA: Strong |
| WPA Enterprise | Strong |
| RADIUS | Basic |

## Option settings

### WPA2/WPA Mixed Mode, WPA2 Personal, WPA Personal

**NOTES**

If you select WPA2/WPA Mixed Mode as your Security Mode, each device in your wireless network MUST use WPA2/WPA and the same passphrase.

If you select WPA2 Personal as your Security Mode, each device in your wireless network MUST use WPA2 Personal and the same passphrase.

If you select WPA Personal as your Security Mode, each device in your wireless network MUST use WPA Personal and the same passphrase.



**Passphrase**  Enter a passphrase of 8-63 characters. The default is **password**. If you used the setup software for installation, then the default is changed to a unique passphrase, which you can find by running Cisco Connect, then clicking **Router settings**.

## WPA2/WPA Enterprise Mixed Mode, WPA2 Enterprise, WPA Enterprise

These option is used in coordination with a RADIUS server. (These should only be used when a RADIUS server is connected to the router.)

> **NOTES**
> If you select WPA2/WPA Enterprise Mixed Mode as your Security Mode, each device in your wireless network MUST use WPA2/WPA Enterprise and the same shared key.
>
> If you select WPA2 Enterprise as your Security Mode, each device in your wireless network MUST use WPA2 Enterprise and the same shared key.
>
> If you select WPA Enterprise as your Security Mode, each device in your wireless network MUST use WPA Enterprise and the same shared key.

**RADIUS Server**  Enter the IP address of the RADIUS server.

**RADIUS Port**   Enter the port number of the RADIUS server. The default is **1812**.

**Shared Key**  Enter the key shared between the router and the server.

## WEP

WEP is a basic encryption method, which is not as secure as WPA.

> **NOTE:**
> If you select WEP as your Security Mode, each device in your wireless network MUST use WEP and the same encryption and shared key.

**Encryption**  Select a level of WEP encryption, **(40/64-bit 10 hex digits)** or **104/128-bit (26 hex digits)**. The default is **40/64-bit (10 hex digits)**.

**Passphrase**  Enter a passphrase to automatically generate WEP keys. Then click **Generate**.

**Key 1-4**  If you did not enter a passphrase, enter the WEP key(s) manually.

**TX Key**  Select a default TX (Transmit) Key to use. The default is **1**.

## RADIUS

This option features WEP used in coordination with a RADIUS server. (This should only be used when a RADIUS server is connected to the router.)

> **NOTE:**
> If you select RADIUS as your Security Mode, each device in your wireless network MUST use RADIUS and the same encryption and shared key.



**RADIUS Server**  Enter the IP address of the RADIUS server.

**RADIUS Port**  Enter the port number of the RADIUS server. The default is **1812**.

**Shared Secret**  Enter the key shared between the router and the server.

**Encryption**  Select a level of WEP encryption, **(40/64-bit 10 hex digits)** or **104/128-bit (26 hex digits)**. The default is **40/64-bit (10 hex digits)**.

**Passphrase**  Enter a passphrase to automatically generate WEP keys. Then click **Generate**.

**Key 1-4**  If you did not enter a passphrase, enter the WEP key(s) manually.

**TX Key**  Select a default TX (Transmit) Key to use. The default is **1**.

## Disabled

If you choose to disable wireless security, you will be informed that wireless security is disabled when you first attempt to access the Internet. You will given the option to enable wireless security, or confirm that you understand the risks but still wish to proceed without wireless security.

# Troubleshooting

This chapter can help you solve common setup issues and connect to the Internet. Your router's CD includes Cisco Connect, the router setup software that makes it easy to connect network devices, change router settings, control guest access, enable parental controls, and connect to the Internet. Cisco Connect is also installed onto your computer during setup. If Cisco Connect is prevented from completing the setup, this chapter will guide you through finding solutions.

You can find more help from our award-winning customer support at **linksys.com/support**.

## How to run Cisco Connect after setup

When you run the setup CD, Cisco Connect is automatically installed onto your computer. You can then use Cisco Connect to easily manage your network.

**To start Cisco Connect on a Windows computer:**

1. Click **Start**, **All Programs**, then click **Cisco Connect**.
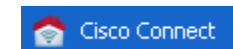
The *Cisco Connect* main menu opens.

**To start Cisco Connect on a Mac OS X computer:**

1. Open **Finder** and click **Applications** in the left panel.

2. Double-click the **Cisco Connect** icon.

The *Cisco Connect* main menu opens.

# Your router was not successfully set up



**If Cisco Connect did not complete the setup, you can try the following:**

• Press and hold the **Reset** button on your router with a paperclip or pin for 10-15 seconds, then run the **Setup** program again on the router's CD.



**Your router's appearance may vary**

• Temporarily disable your computer's firewall (see the security software's instructions for help), then run the **Setup** program again on the router's CD.

• If you have another computer, use that computer to run the **Setup** program again on the router's CD.

## Get Windows XP Service Pack 3 message

On Windows XP computers, Cisco Connect requires Service Pack 3 in order to work. If you receive a "Get Windows Service Pack 3" message when setting up your router for the first time, follow these troubleshooting steps.
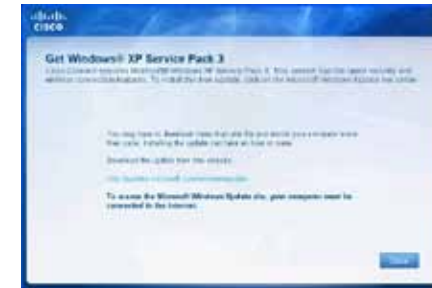


If the currently installed Service Pack is older than version 3, you need to download and install Service Pack 3.

> **TIP**
> To temporarily connect to the Internet and download the required Service Pack, you can use the included Ethernet cable to connect your computer directly to your modem.

**To install Service Pack 3:**

1. Click the link in the Cisco Connect error message or connect to the Microsoft Update website (**update.microsoft.com/windowsupdate**).

2. Follow the instructions on the website or contact Microsoft if you need further help.

3. After downloading and installing Service Pack 3, run the **Setup** program on your router's CD.

## *Your Internet cable is not plugged in* **message**

If you get a "Your Internet cable is not plugged in" message when trying to set up your router, follow these troubleshooting steps.



**To fix the problem:**

1. Make sure that an Ethernet or Internet cable (or a cable like the one supplied with your router) is securely connected to the yellow **Internet** port on the back of the router and to the appropriate port on your modem. This port on the modem is usually labeled **Ethernet**, but may be named **Internet** or **WAN**.



*Back view of router*



*Back view of cable modem*



*Back view of DSL modem*

2. Make sure that your modem is connected to power and is turned on. If it has a power switch, make sure that it is set to the **ON** or **I** position.

3. If your Internet service is cable, verify that the cable modem's **CABLE** port is connected to the coaxial cable provided by your ISP.

   *Or*, if your Internet service is DSL, make sure that the DSL phone line is connected to the modem's **DSL** port.

4. If your computer was previously connected to your modem with a USB cable, disconnect the USB cable.

5. Return to the Cisco Connect window and click **Next** to try again. If the window has already been closed, run the **Setup** program again on the router's CD.



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## Cannot access your router **message**

If you cannot access your router because your computer is not connected to your network, follow these troubleshooting steps.



To access your router, you must be connected to your own network. If you currently have wireless Internet access, the problem may be that you have accidentally connected to a different wireless network.

**To fix the problem on Windows computers:**

1. On your Windows desktop, right-click the wireless icon in the system tray.



2. Click **View Available Wireless Networks**. A list of available networks appears.
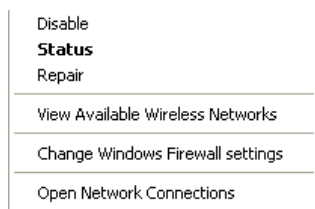


3. Click your own network name, then click **Connect**. In the example below, the computer was connected to another wireless network named *JimsRouter*. The name of the Linksys E-Series network, *BronzeEagle* in this example, is shown selected.



4. If you are prompted to enter a network key, type your password (Security Key) into the **Network key** and **Confirm network key** fields, then click **Connect**.
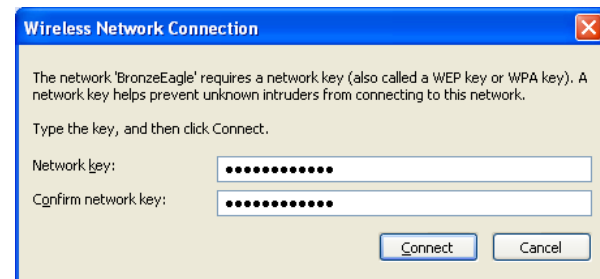


Your computer connects to the network, and you should now be able to access the router.

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**To fix the problem on Mac computers:**

1. In the menu bar across the top of the screen, click the **AirPort** icon. A list of wireless networks appears. Cisco Connect has automatically assigned your network a name.

   In the example below, the computer was connected to another wireless network named *JimsRouter*. The name of the Linksys E-Series network, *BronzeEagle* in this example, is shown selected.
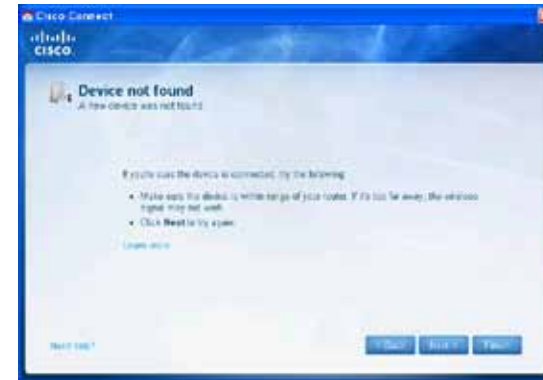
2. Click the wireless network name of your Linksys E-Series router (*BronzeEagle* in the example).

3. Type your wireless network password (Security Key) into the **Password** field, then click **OK**.

## *Device not found* **message**

If you get a "Device not found" message when trying to connect a network device (such as an iPhone, iPod, or smartphone), follow these troubleshooting steps.

**TIP**
For a stronger signal during initial setup, move your wireless devices near your router. Long distances make it harder for the router to detect the devices.

**To fix the problem:**

1. Run Cisco Connect.

2. Click **Computers and devices**. The *Computers and other devices* window appears.

3. Click **Other Wireless devices**.



4. Enable your wireless network device's Wi-Fi connection, then search for your wireless network name. See your device documentation for help.

> **NOTE**
> Your wireless device must support WPA/WPA2.

5. On the wireless network device, select the network name of your router and enter the password (Security Key).

6. In Cisco Connect, click **Next**.



**Example**: On your Smartphone or other wireless device, locate the Wi-Fi menu and search for available wireless networks. In this example, using the network information provided by Cisco Connect shown in the previous screen, click **BronzeEagle**.



*Android*                          *iPhone*

7. Enter the password (Security Key) provided by Cisco Connect. In this example, the security key is **B6eM9UkCjz**.

> **NOTE**
> The password is case sensitive. Make sure that you enter letters in the correct case.

8. When your wireless device is successfully connected to your wireless network, enter a name for the device in Cisco Connect, then click **Finish**.

# Specifications

## Linksys E900

| | |
|---|---|
| Model Name | Linksys E900 |
| Description | Wireless-N Router |
| Model Number | E900 |
| Standards | 802.11n, 802.11g, 802.11b, 802.3u |
| Ports | Power, Internet, and Ethernet (1-4) |
| Buttons | Reset, Wi-Fi Protected Setup™ |
| LEDs | Power/Wi-Fi Protected Setup, Internet, Ethernet (1-4) |
| Cabling Type | CAT 5e |
| Transmitted Power | 802.11n (20 MHz):<br>15.0 ± 1.5dBm @ CH6, MCS 0~4, MCS 8~12<br>13.5 ± 1.5dBm @ CH6, MCS 5~7, MCS 13~15 |
| | 802.11n (40 MHz):<br>14.0 ± 1.5dBm @ CH6, MCS 0~4, MCS 8~12<br>13.5 ± 1.5dBm @ CH6, MCS 5~7, MCS 13~15 |
| | 802.11g:<br>14.5 ± 1.5dBm @ CH6, all rates |
| | 802.11b:<br>16.5 ± 1.5dBm @ CH6, all rates |
| Antenna Gain | ≤2.0 dBi, ≤4.0 dBi (2 antennas) |
| UPnP | Supported |
| Wireless Security | Wi-Fi Protected Access™ 2 (WPA2), WEP, wireless MAC filtering |
| Security Key Bits | Up to 128-bit encryption |

## Environmental

| | |
|---|---|
| Dimensions | 188.7 × 151.7 × 31.2 mm (7.43" × 5.97" × 1.23") |
| Unit Weight | 202.0g (7.13 oz.) |
| Power | 12V, 0.5A |
| Certifications | FCC, UL/cUL, ICES-003, RSS210, CE, Wi-Fi (IEEE 802.11b/g/n), WPA2™, WMM®, Wi-Fi Protected Setup, Windows 7 |
| Operating Temp. | 0 to 40°C (32 to 104°F) |
| Storage Temp. | -20 to 60°C (-4 to 140°F) |
| Operating Humidity | 10 to 80% non-condensing |
| Storage Humidity | 5 to 90% non-condensing |

**NOTES**

For regulatory, warranty, and safety information, see the CD that came with your router or go to **Linksys.com/support**.

Specifications are subject to change without notice.

Maximum performance derived from IEEE Standard 802.11 specifications. Actual performance can vary, including lower wireless network capacity, data throughput rate, range and coverage. Performance depends on many factors, conditions and variables, including distance from the access point, volume of network traffic, building materials and construction, operating system used, mix of wireless products used, interference and other adverse conditions.

# Linksys E1200

| | |
|---|---|
| Model Name | Linksys E1200 |
| Description | Wireless-N Router |
| Model Number | E1200 |
| Standards | 802.11n, 802.11g, 802.11b, 802.3u |
| Ports | Power, Internet, and Ethernet (1-4) |
| Buttons | Reset, Wi-Fi Protected Setup™ |
| LEDs | Power/Wi-Fi Protected Setup, Internet, Ethernet (1-4) |
| Cabling Type | CAT 5e |
| Transmitted Power | 802.11n (20 MHz):<br>15.0 ± 1.5dBm @ CH6, MCS 0~4, MCS 8~12<br>13.5 ± 1.5dBm @ CH6, MCS 5~7, MCS 13~15<br><br>802.11n (40 MHz):<br>14.0 ± 1.5dBm @ CH6, MCS 0~4, MCS 8~12<br>13.5 ± 1.5dBm @ CH6, MCS 5~7, MCS 13~15<br><br>802.11g:<br>14.5 ± 1.5dBm @ CH6, all rates<br><br>802.11b:<br>16.5 ± 1.5dBm @ CH6, all rates |
| Antenna Gain | **V1**: ≤2.5 dBi, ≤4.0 dBi (2 antennas)<br>**V2**: ≤2.0 dBi, ≤4.0 dBi (2 antennas) |
| UPnP | Supported |
| Wireless Security | Wi-Fi Protected Access™ 2 (WPA2), WEP, wireless MAC filtering |
| Security Key Bits | Up to 128-bit encryption |

## Environmental

| | |
|---|---|
| Dimensions | 188.7 × 151.7 × 31.2 mm (7.43" × 5.97" × 1.23") |
| Unit Weight | **V1**: 252.7g (8.91 oz.)<br>**V2**: 202.0g (7.13 oz.) |
| Power | 12V, 0.5A |
| Certifications | FCC, UL/cUL, ICES-003, RSS210, CE, Wi-Fi (IEEE 802.11b/g/n), WPA2™, WMM®, Wi-Fi Protected Setup, Windows 7 |
| Operating Temp. | 0 to 40°C (32 to 104°F) |
| Storage Temp. | -20 to 60°C (-4 to 140°F) |
| Operating Humidity | 10 to 80% non-condensing |
| Storage Humidity | 5 to 90% non-condensing |

**NOTES**

For regulatory, warranty, and safety information, see the CD that came with your router or go to **Linksys.com/support**.

Specifications are subject to change without notice.

Maximum performance derived from IEEE Standard 802.11 specifications. Actual performance can vary, including lower wireless network capacity, data throughput rate, range and coverage. Performance depends on many factors, conditions and variables, including distance from the access point, volume of network traffic, building materials and construction, operating system used, mix of wireless products used, interference and other adverse conditions.