

BELKIN®

Wireless G USB Network Adapter



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BELKIN®

Wireless G USB Network Adapter

Connect your desktop or notebook
computer to a **FAST** wireless network



User Manual



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Introduction

Thank you for purchasing the Belkin Wireless G USB Network Adapter (the Adapter). Now you can take advantage of this great new technology and gain the freedom you need around the home or office without using cables. The Wireless USB Network Adapter works like a conventional network adapter, but without the wires. The easy installation and setup will have you networking wirelessly in minutes. Please be sure to read through this User Manual completely, and pay special attention to the section entitled “Placement of your Wireless Networking Hardware for Optimal Performance” on page 2. By following our simple setup instructions your Belkin Home Network will allow you to:

- Share one high-speed Internet connection with all the computers in your home
- Share resources, such as files, and hard drives among all the connected computers in your home
- Share a single printer with the entire family
- Share documents, music, video, and digital pictures
- Store, retrieve, and copy files from one computer to another
- Simultaneously play games online, check Internet e-mail, and chat

Here are some of the advantages of setting up a Belkin Wireless Network:

- **Mobility** – you’ll no longer need a dedicated “computer room” – now you can work on a networked laptop or desktop computer anywhere within your wireless range
- **Easy installation** – Belkin Easy Installation Wizard makes setup simple
- **Flexibility** – set up and access printers, computers, and other networking devices from anywhere in your home
- **Easy Expansion** – the wide range of Belkin networking products let you expand your network to include devices such as printers and gaming consoles
- **No cabling required** – you can spare the expense and hassle of retrofitting Ethernet cabling throughout the home or office
- **Widespread industry acceptance** – choose from a wide range of interoperable networking products

Introduction

Placement of your Wireless Networking Hardware for Optimal Performance

Your wireless connection will be stronger the closer your computer is to your Wireless Router (or Access Point). Typical indoor operating range for your wireless devices is between 100 and 200 feet. In the same way, your wireless connection and performance will **degrade** somewhat as the distance between your Wireless Router (or Access Point) and connected devices **increases**. This may or may not be noticeable to you. As you move further from your Wireless Router or Access Point, connection speed may decrease. Factors that can weaken signals simply by getting in the way of your network's radio waves are metal appliances or obstructions, and walls.

If you have concerns about your network's performance that might be related to range or obstruction factors, try moving the computer to a position between five and ten feet from the Wireless Router, in order to see if distance is the problem. If difficulties persist even at close range, please contact Belkin Technical Support.

IMPORTANT FACTORS FOR PLACEMENT AND SETUP

Note: While some of the items listed below can affect network performance, they will not prohibit your wireless network from functioning; if you are concerned that your network is not operating at its maximum effectiveness, this checklist may help.

1. Placement of your Wireless Networking Hardware

Place your Wireless Router (or Access Point), the central connection point of your network, as close as possible to the center of your wireless network devices.

To achieve the best wireless network coverage for your "wireless clients" (i.e., computers enabled by Belkin Wireless Notebook Network Cards, Wireless Desktop Network Cards, and Wireless USB Adapters):

- Ensure that your Wireless Router (or Access Point) networking antennas are parallel to each other, and are positioned vertically (toward the ceiling). If your Wireless Router (or Access Point) itself is positioned vertically, point the antennas as much as possible in an upward direction.

- In multistory homes, place the Wireless Router (or Access Point) on a floor that is as close to the center of the home as possible. This may mean placing the Router on an upper floor.
- Try not to place the Wireless Router (or Access Point) near a cordless 2.4GHz phone.

2. Avoid Obstacles and Interference

Avoid placing your Wireless Router or Access Point near devices that may emit radio “noise”, such as microwave ovens. Dense objects that can inhibit Wireless communication can include:

- Refrigerators
- Washers and/or dryers
- Metal cabinets
- Large aquariums
- Metallic-based UV tinted windows

If your wireless signal seems weak in some spots, make sure that objects such as these are not blocking the signal’s path (between your computers and Wireless Router or Access Point)

3. Cordless Phone Placement

If the performance of your wireless network is impaired after attending to the above issues, and you have a cordless phone:

- Try moving cordless phones away from Wireless Routers (or Access Points) and your wireless-enabled computers
- Unplug and remove the battery from any cordless phone that operates on the 2.4GHz band (check manufacturers information). If this fixes the problem, your phone may be interfering.
- If your phone supports channel selection, change the channel on the phone to the furthest channel from your wireless network, as possible. For example, change the phone to channel 1 and move your Wireless Router to channel 11. See your phone’s user manual for detailed instructions.
- If necessary, consider switching to a 900MHz or 5GHz cordless phone.

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4. Choose the “quietest” channel for your wireless network

In locations where homes or offices are close together, such as apartment buildings or office complexes, there may be wireless networks nearby that can conflict with yours. Use the Site Survey capabilities of your Wireless LAN Utility to locate any other wireless networks (see page 16 of this manual), and move your Wireless Router (or Access Point) and computers to a channel as far away from other networks as possible.

Experiment with more than one of the available channels, in order to find the clearest connection and avoid interference from neighboring cordless phones or other wireless devices.

5. Secure connections, VPNs, and AOL

Secure connections are connections that typically require a user name and password, and are used where security is important. Secure connections include:

- Virtual Private Network (VPN) connections, often used to connect remotely to an office network
- The “Bring Your Own Access” program from America Online (AOL), which lets you use AOL through broadband provided by another cable or DSL service
- Most on-line banking websites
- Many commercial websites which require a user name and password to access your account

Secure connections can be interrupted by a computer’s power management setting, which causes it to “go to sleep.” The simplest solution to avoid this is to simply reconnect by re-running the VPN or AOL software, or by re-logging into the secure web site.

A second alternative is to change your computer’s power management settings so it does not go to sleep; however, this may not be appropriate for portable computers. To change your power management setting under Windows, see the “Power Options” item in the Control Panel.

Introduction

If you continue to have difficulty with Secure Connection, VPNs and AOL please review steps 1-4 above to be sure you have addressed these issues.

These guidelines should allow you to cover the maximum possible area with your Wireless Router. Should you need to cover an even wider area, please go to the networking product section on (www.belkin.com/networking) for more details on Belkin's Wireless Range Extender/Access Point.

For more information regarding our networking products, visit our website at www.belkin.com/networking or call our Technical Support.

Introduction

Features

The Adapter complies with the IEEE 802.11g standard in order to communicate with other 802.11g and 802.11b-compliant wireless devices.

- 2.4GHz ISM (Industrial, Science, and Medical) band operation
- Integrated, easy-to-use profile manager for storing multiple wireless network settings for work, school, home, or any other setup
- USB 2.0 interface, for Plug-and-Play installation and convenience in virtually any desktop or notebook computer
- WPA security (Windows XP only), 64-bit WEP or 128-bit Encryption
- Wireless access to networked resources
- Support for both infrastructure and ad-hoc (peer-to-peer) networking modes
- Packet transfer rate of up to 54Mbps
- Easy installation and use
- LED link/activity indicator
- Desktop stand allows you to position your Adapter for optimal wireless performance

Applications and Advantages

- **Wireless roaming with a laptop around the home or office**
Offers the freedom of networking—without cables.
- **Compatible with 802.11b**
802.11g wireless LAN solutions are backward-compatible with existing Wi-Fi (802.11b) products and with other 802.11g products.
- **Difficult-to-wire environments**
Enables networking in buildings with solid or finished walls, or open areas where wiring is difficult to install.
- **Frequently changing environments**
Adapts easily in offices or environments that frequently rearrange or change locations.

- **Temporary LANs for special projects or peak time**
Sets up temporary networks such as at trade shows, exhibitions, and constructions sites, which need networks on a short-term basis; also companies who need additional workstations for a peak activity period.
- **SOHO (Small Office/Home Office) networking needs**
Provides the easy and quick small network installation SOHO users need.

Product Specifications

Host Interface:	USB 2.0 This product is compatible with the USB 1.1 and USB 2.0 specification. To achieve maximum networking speeds (54Mbps), this device must be connected to a USB 2.0 host port on a PC. Connection of this device to a USB 1.1 host port will yield a maximum of 11Mbps networking speed.
Power Consumption:	500mA (max)
Certification:	FCC Class B, CE Mark, C-Tick
Operating Temperature:	32–131° F (0–55° C)
Storage Temperature:	-13–158° F (-25–70° C)
Typical Operating Range:	Up to 200*

*Distance and connection speeds will vary depending on your networking environment

System Requirements

- PC with one available USB port
- Windows® 98SE, 2000, Me, or XP

Package Contents

- Belkin Wireless USB Network Adapter with Desktop Stand
- Quick Installation Guide
- Installation Software CD
- User Manual

Knowing your Wireless USB Network Adapter



The cap can be stored on the opposite end of the USB connector.



The cap snaps over the USB connector for protection.

Installing and setting up the USB Network Adapter

Step 1 Install the Software

WARNING: Install the software before inserting the Adapter

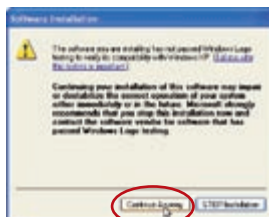
- 1.1 Insert the CD into your CD-ROM drive.
- 1.2 The Belkin Wireless USB Network Adapter Setup Utility screen will automatically appear. If it does not appear within 15–20 seconds, then select your CD-ROM drive and double-click on the folder named “Files”. Next double-click on the icon named “Start.exe”.



- 1.3 In the menu window, drag your mouse over the “Install” button then select “Click here” to start the software installation program.



- 1.4 The installer will start. Click “Next” to continue.



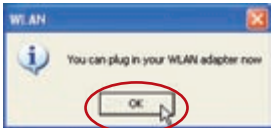
- 1.5 If you are using Windows 2000 or Windows XP, you will see a message similar to the one below. This **DOES NOT** mean there is a problem. Click “Continue Anyway”.

Installing and setting up the USB Network Adapter

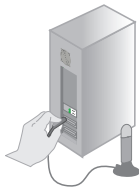


- 1.6** When the installer is done installing the software, you will see the following screen. Click “Finish”.

Step 2 | Connect the USB Adapter to your PC



- 2.1** After the software installation is finished, the message “You can plug in your WLAN adapter now” will appear. Plug the Adapter into an available USB port on your desktop or notebook computer.



For desktops:

or



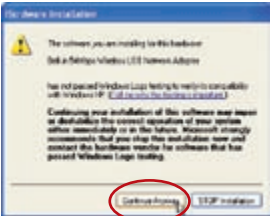
For notebooks:

Product Placement

The best location for your adapter is on top of your computer's monitor. Placing the Adapter on your desktop is acceptable, however, avoid placing the Adapter near metal objects such as a computer case or speakers. Any object that is metal has the ability to block the radio signals from the Adapter.

Installing and setting up the USB Network Adapter

Step 3 Let Windows Finish the Installation



3.1 After connecting your Adapter, Windows will detect that new hardware has been installed. Depending on your version of Windows, a window similar to the one pictured here will appear. Select the option “Install the software automatically (Recommended)” and click “Next”.

3.2 If you are using Windows 2000 or Windows XP, you will see a message similar to this one. This **DOES NOT** mean there is a problem. Click “Continue Anyway”.

3.3 If you are using Windows 98SE or Me, you will be asked to restart your computer. Select “Restart”. If you are using Windows 2000 or XP, you will see a window similar to this one. Click “Finish”.

3.4 When the installation is complete, the Belkin Wireless Monitor icon will appear on your desktop. To open the Monitor Utility, double-click on this icon.

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Uninstalling the Software and Drivers Adapter

- 3.5** A small icon in your system tray (bottom right corner of most screens) will appear. This is your shortcut to the Belkin Wireless Monitor. It also indicates the status of your connection:



Red: No connection to a wireless network



Blue: Connected to a wireless network.

If you already have a wireless router (or an access point) in your home or office, the Adapter will automatically attempt to connect to your wireless network. In most cases, the Adapter will be able to connect to your network automatically. If you are using encryption, you will have to set the encryption settings of your adapter to match that of your wireless router (or access point) before the Adapter can successfully connect to your wireless network. For information about configuring your Adapter, see the section in this manual called “Profile Tab: Creating a Profile” on page 17.

Uninstalling the Software and Drivers

If you need to remove the software and drivers for any reason, you can easily accomplish this in one of two ways. You can insert the software CD and click on the “Uninstall” option in the menu, or you can go to the Windows Control Panel and select the “Add/Remove Programs” option. The Belkin Wizard will walk you through the removal process.

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Using the Belkin Wireless LAN Monitor Utility

When you launch the Wireless LAN Monitor Utility (the Utility), you will be presented with the screen below. The following small icon will also be present in your system tray.

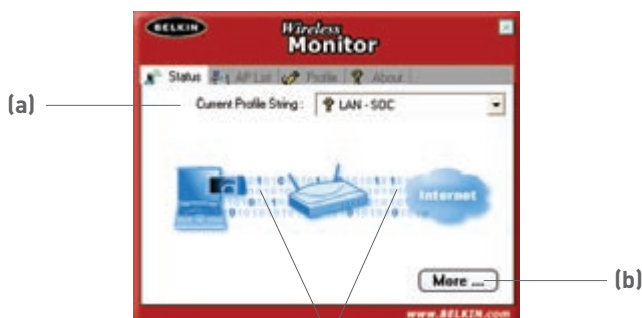


Double-clicking on the icon in the system tray will open the Wireless Monitor window.

USING THE BELKIN WIRELESS MONITOR UTILITY

Status Tab

When the utility is on your desktop, you can control your USB adapter through the utility. The first tab you will see is the “Status” tab. From this tab you can see your current connection status on the screen. The example below shows that there is a connection between the computer and the Wireless Router (or Access Point) by displaying 1’s and 0’s between the two. The diagram below also shows there is a connection between your computer, the Wireless Router (or Access Point), and the Internet by displaying 1’s and 0’s between the Wireless Router (or Access Point) and the Internet.



1's and 0's displayed here indicates a connection

If there is no connection between the computer and Wireless Router (or Access Point), an “X” will be displayed. This is the same for the Internet connection.

Using the Belkin Wireless LAN Monitor Utility

(a) Current Profile String

This indicates the name of the profile you are currently using, if any. If a question mark appears next to the text in this box, it indicates that there is no profile set up for the network you are currently connected to. The name of the network you are connected to will be displayed in this box if no profile for that network exists.

(b) More Button

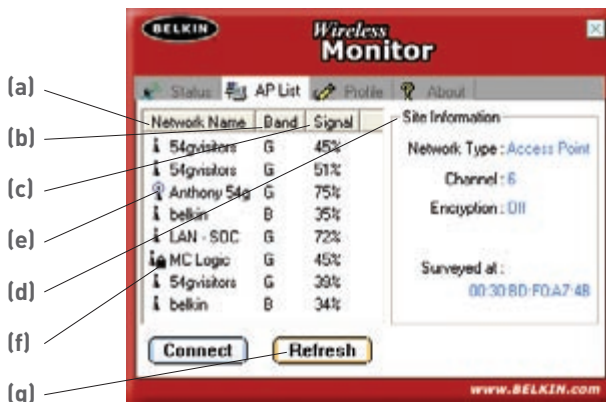
Press the “More” button to see detailed specifics about the network you are connected (below) to including the Signal Strength, Signal Link Quality, IP information, and the name of the wireless network you are connected to.



Using the Belkin Wireless LAN Monitor Utility

Access Point (AP) List Tab

To view a list of all available networks in your area, select the “AP List” tab. In the window, you will be presented with a list showing you the available networks.



(a) Network Name

This column shows you the name of the wireless network that is available. On the left side of the network name are small icons which tell you certain things about the network. A blue circle around the network icon **(e)** indicates that you are currently connected to this network. A small padlock **(f)** next to a network name indicates that this network is secured (either by WEP or WPA encryption). It is not possible to connect to a secured network without the proper network key.

(b) Band

This column shows you which band the network is operating on. “G” indicates that this is 802.11g based network. “B” indicates this is an 802.11b based network.

(c) Signal

This column indicates the signal strength of the wireless network. Typically, the stronger the signal strength, the closer the network is to your physical location. The lower the signal strength, the further away from the network you are.

Using the Belkin Wireless LAN Monitor Utility

(d) Site Information

When you highlight a network name in the AP list by clicking on it one time, the detailed information about that network will be available here. You will see what type of network it is (Access Point or Peer-to-Peer), what channel the network is operating on, status of encryption (security) On or Off, and below “Surveyed at:” you will see the MAC address of that wireless network.

How to connect to a wireless network in the Access Point (AP) list

There are two ways to connect to a network that appear in the AP list.

1. Highlight the network name by clicking on it one time, then click the “Connect” button on the bottom of the window.

or

2. Double click a network name that is in the AP list. This will connect you to the network automatically.

Note: if the network you are attempting to connect to is using encryption, you will be prompted to create a profile with the encryption settings.

How to update the Access Point (AP) list information

Pressing the “Refresh” (g) button will make the USB adapter scan the “air” for available wireless networks. The list will be updated.

Profile Tab: Creating a Profile

Using Profiles allows you to save configurations for different wireless networks. For instance, if you use your Adapter at your place of work and also at your home, your wireless network settings may be different for each location. Profiles let you store settings for each location and name them for easy identification. You can quickly change from one profile to another profile without having to remember the particular settings of a certain network.



Using the Belkin Wireless LAN Monitor Utility

Creating a new Profile

1. Click “Add” to open the new profile screen. Type in a name for the profile. The name can be anything you want. You should pick something easy to remember like “Work”, for your work network or “Home”, for your home network. Click “Next” to continue.



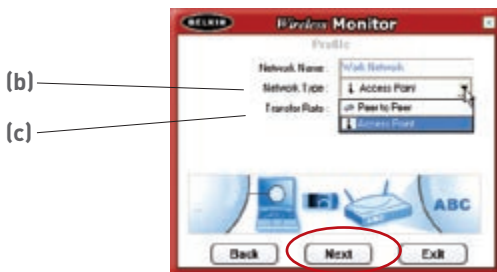
2. The next screen you will see allows you to type in the name of the network you will be connecting to, the type of network it is, and optionally you can set the data rate for that network.



- (a) In the “Network Name” box, type in the exact name of the network you will be connecting to. The “Network Name” is the same as the network SSID.

Using the Belkin Wireless LAN Monitor Utility

- (b) In the “Network Type” box, select the type of network you will be connecting to. Select “Access Point” if it is a network with a wireless router or access point (This is most common). Select “Peer-to-Peer” if this is a direct connection to another computer.
- (c) In the “Transfer Rate” box, it is suggested that you leave this on “Automatic” unless there is a specific need to change this setting.



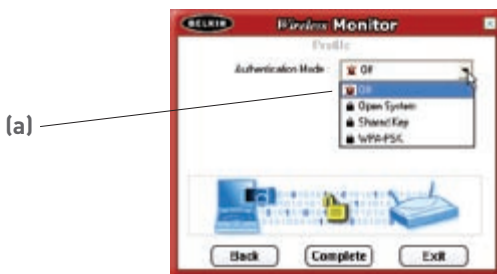
Click “Next” to continue.

3. The next screen allows you to input security encryption settings for the network. If the network is not encrypted, then leave the mode in “Off” and click “Complete”.

If the network is encrypted, you will need to have the network key and key type (open or shared). This information is available from the network administrator or is the same as your wireless router or access point.

TIP: Most networks with WEP use “Open System” key type. For more detailed information go to the section titled “Securing your Wireless Network” on page 26 of this manual.

- (a) Select the Authentication Mode from the drop-down menu.



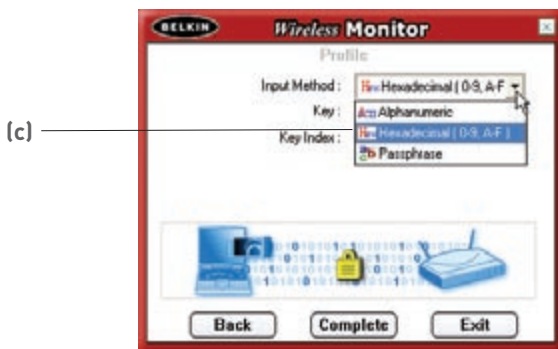
Using the Belkin Wireless LAN Monitor Utility

- (b) After selecting the Authentication Mode, select the encryption type your network uses from the Encryption drop-down menu. Please see the section of this manual titled “Securing your Wireless Network” on page 26 for information on which type of WEP encryption to use. Click “Next”.



- (c) The next screen allows you to select the key input method, either Alphanumeric, Hexadecimal or Passphrase. The method you choose will be determined by and should be the same as the method used by your wireless router or access point.

TIP: Most keys are Hexadecimal (consists of letters and numbers from 0-9 and A-F)



Using the Belkin Wireless LAN Monitor Utility

- (d) Enter the key in the “Key” box and select the key to use in the “Key Index” drop-down menu. This information should be provided by your network administrator.

TIP: Most keys use Key Index 1.



- (e) Click “Complete” to save the profile. To begin using your new profile, highlight the profile name by clicking on the name one time, then click “Connect”.



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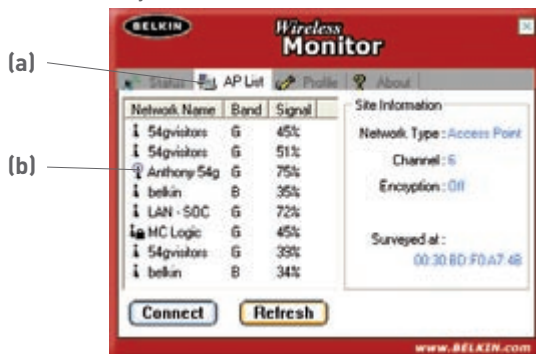
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section

Using the Belkin Wireless LAN Monitor Utility

How to find and connect to a wireless network

1. Open the Wireless Monitor window by double-clicking the icon in your system tray.
2. Click on the “AP List” tab **(a)**. This will display a list of all of the networks in your area.



3. Double-click on the network you want to connect to. A blue circle **(b)**  should appear around the network icon next to the name of the network you selected. This means you are connected to the network. If the network is using encryption security, you will be prompted to make a profile for that network in order to connect. See the section of this manual called “Profile Tab” on page 17 for information.

Using the Belkin Wireless LAN Monitor Utility

Windows XP Users

If you are using Windows XP, please read this section.

Windows XP integrates a wireless management utility referred to as Windows XP Wireless Zero Configuration service (WZC). The WZC can be used to control your Adapter or you can use the Belkin Wireless Network Monitor Utility. We suggest that you use the Belkin Utility to control your Card or Adapter. If you choose to use the WZC, directions for operation of the WZC are available in the Windows XP help file. When you first install the Card or Adapter, the Belkin Utility will be enabled. If you want to disable the Belkin Utility in order to use the WZC, follow the steps below to disable the Belkin Utility.

Disabling the Belkin Wireless Network Monitor Utility in Windows XP

1. Right-click on the system tray icon. 
2. In the menu, select "Enable Windows Zero Configuration (WZC)"



3. To enable the Belkin Utility, right-click on the system tray icon. 
4. In the menu, select "Disable Windows Zero Configuration (WZC)"

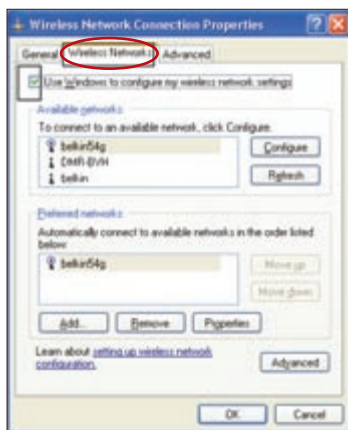


Using the Belkin Wireless LAN Monitor Utility

Setting Up Windows XP Wireless Network Utility to Use WPA-PSK

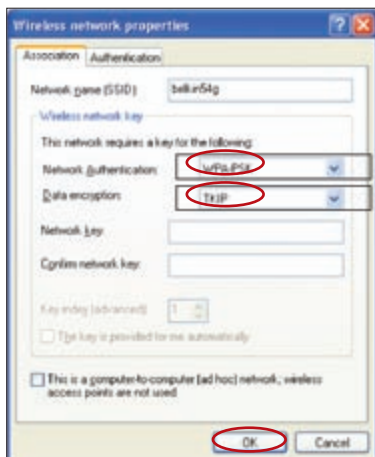
In order to use WPA-PSK, ensure that you are using “Windows Wireless Network Utility” by doing the following:

1. Right-click on “Wireless Network Connection” and select “Properties”.
2. Clicking on the “Wireless Networks” tab will display the following screen. Ensure the “Use Windows to configure my wireless network settings” check box is checked.



3. Clicking the “Configure” button will allow you to choose your Network Authentication type.

Using the Belkin Wireless LAN Monitor Utility



4. For home or small business users select “WPA-PSK” under “Network Authentication”.

Note: Select WPA if you are using this computer to connect to a corporate network that supports an authentication server such as a radius server, please consult your network administrator for further information.

5. Select “TKIP” or “AES” under “Data Encryption”. This setting will have to be identical to the wireless router that you set up.
6. Type in your encryption key in the “Network key” box.

Important: Enter your pre-shared key. This can be from 8 to 63 characters and can be letters, numbers, or symbols. This same key must be used on all of the clients that you set up.

7. Click “OK” to apply settings.

Setting up Windows XP WZC Utility to use WPA

Note: If you have not already, you must download the WPA update from Microsoft Windows Update to enable WPA support. This can be found at the Microsoft website by searching for the term “WPA Wireless”. Locate the update called KB826942, download it and update your operating system.

Securing your Wireless Network

Securing your Wireless Network

Here are a few different ways to maximize the security of your wireless network and protect your data from unwanted intrusions. This section is intended for the home, home office, and small office user. At the time of publication, three encryption methods are available.

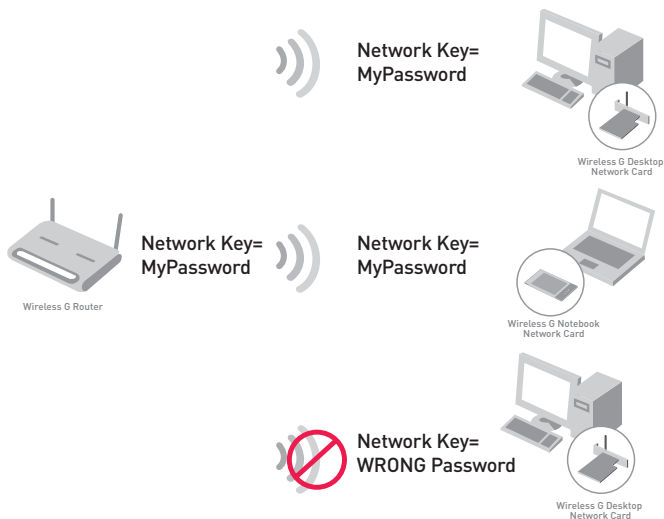
Encryption Methods:

Name	64-bit Wired Equivalent Privacy	128-bit Encryption	Wi-Fi Protected Access
Acronym	64-bit WEP	128-bit	WPA
Security	Good	Better	Best
Features	Static keys	Static keys	Dynamic key encryption and mutual authentication
	Encryption keys based on RC4 algorithm (typically 40-bit keys)	Added security over 64-bit WEP using a key length of 104 bits, plus 24 additional bits of system-generated data	TKIP (temporal key integrity protocol) added so that keys are rotated and encryption is strengthened

Securing your Wireless Network

Most wireless products ship with security turned off. So once you have your network working, you may need to activate WEP or WPA and make sure all your wireless devices are sharing the same network key.

The following diagram shows the effect of not having the correct network key throughout your network.



The Card cannot access the network because it uses a different network key than the one configured on the wireless router.

Setting Up your Belkin Wireless Router or Access Point to Use Security

To start using security, you need to first enable WEP or WPA for your wireless router (or access point). For Belkin Wireless Routers and Access Points, these security features can be configured by using the web-based interface. (See your wireless router or access point manual for directions on how to access the management interface.)

Securing your Wireless Network

WEP Setup

64-Bit WEP Encryption

1. Select “64-bit WEP” from the drop-down menu.
2. After selecting your WEP encryption mode, you can enter your key by typing in the hex key manually, or you can type in a passphrase in the “Passphrase” field and click “Generate” to create a key.

A hex (hexadecimal) key is a mixture of numbers and letters from A–F and 0–9. For 64-bit WEP, you need to enter 10 hex keys.

For instance:

AF0F4BC3D4 = 64-bit WEP Key

The screenshot shows a web interface for configuring wireless security. At the top, it says "Wireless > Security". Below that, "Security Mode" is set to "64bit WEP" in a dropdown menu. There are four key slots: "Key 1" is pre-filled with "AF", "0F", "4B", "C3", and "D4"; "Key 2", "Key 3", and "Key 4" are empty. Below the keys is the label "(hex digit pairs)". A "NOTE" states: "To automatically generate hex pairs using a PassPhrase, input it here". Below the note is a "PassPhrase" input field and a "generate" button. At the bottom are two buttons: "Clear Changes" and "Apply Changes". The "Apply Changes" button is circled in red.

3. Click “Apply Changes” to finish. Encryption in the wireless router or access point is now set. Each of your computers on your wireless network will now need to be configured with the same security settings.

WARNING: If you are using a wireless client to turn on the security settings in your wireless router or access point, you will temporarily lose your wireless connection until you activate security on your wireless client. Please record the key prior to applying changes in the wireless router or access point. If you don’t remember the hex-key, your client will be locked out of the wireless router or access point.

128-Bit WEP Encryption

1. Select “128-bit WEP” from the drop-down menu.
2. After selecting your WEP encryption mode, you can enter your key manually by typing in the hex key manually, or you can type in a passphrase in the “Passphrase” field and click “Generate” to create a key.

A hex (hexadecimal) key is a mixture of numbers and letters from A–F and 0–9. For 128-bit WEP, you need to enter 26 hex keys.

For instance:

C3030FAF0F4BB2C3D44BC3D4E7 = 128-bit WEP key

The screenshot shows a web interface for configuring wireless security. At the top, it says "Wireless > Security". Under "Security Mode", a dropdown menu is set to "128bitWEP". Below this, there is a grid of 13 input fields for hex digit pairs. The first row contains C3, 03, 0F, AF, 0F. The second row contains 4B, B2, C3, D4, 4B. The third row contains C3, D4, E7. To the right of the third row, it says "(13 hex digit pairs)". Below the grid, there is a note: "NOTE: To automatically generate hex pairs using a PassPhrase, input it here". Under the note, there is a "PassPhrase" input field and a "generate" button. At the bottom, there are two buttons: "Clear Changes" and "Apply Changes". The "Apply Changes" button is circled in red.

3. Click “Apply Changes” to finish. Encryption in the wireless router or access point is now set. Each of the computers on your wireless network will now need to be configured with the same security settings.

WARNING: If you are using a wireless client to turn on the security settings in your wireless router or access point, you will temporarily lose your wireless connection until you activate security on your wireless client.

Troubleshooting

I can't connect to the Internet wirelessly

If you are unable to connect to the Internet from a wireless computer, please check the following items:

1. Look at the lights on your Wireless Router. If you're using a Belkin Wireless Router, the lights should be as follows:
 - The "Power" light should be on.
 - The "Connected" light should be on, and not blinking.
 - The "WAN" light should be either on or blinking.

If your Belkin Router's lights have the above characteristics, go to number **2.** below.

If this is **NOT** the case, please try the following:

- Make sure your Router's power cord is plugged in.
- Make sure all cables are connected between the Router and modem.
- Are all the modems LEDs functioning? If not, see your modem's user manual.
- Try rebooting the Router.
- Try rebooting the modem.

If you are still having problems, please call Belkin Technical Support.

If you are not using a Belkin Wireless Router, consult that Wireless Routers manufacturers user guide.

2. Open your wireless utility software by clicking on the icon in the system tray at the bottom right-hand corner of the screen. If you're using a Belkin USB Adapter, the tray icon should look like this (the icon may be red, or blue): 

3. The exact window that opens will vary depending on the model of USB Adapter you have; however, any of the utilities should have a list of "Available Networks". Available networks are wireless networks you can connect to. If you are using a Belkin 802.11g Router, "Belkin54g" is the default name.

If you are using a Belkin 802.11b router, the default name should be "WLAN".

If using a non-Belkin Wireless router, please consult your router manufacturers user manual for the default name.

I can't connect to the Internet wirelessly (continued)

The name of your wireless network appears in AP List

If the correct network name is listed in the AP List, please follow the steps below to connect wirelessly:

1. Click on the correct network name in the AP list and then click "Connect".
2. If the network has security (encryption) enabled, you will need to enter the network key. For more information regarding security, see the page entitled: "Profile Tab: Creating a New Profile" pg. 17 of the user manual.
3. Within a few seconds, the tray icon in the lower right-hand corner of your screen should turn blue, indicating a successful connection to the network.

If you are still unable to access the Internet after connecting to the wireless network, please contact Belkin Technical Support

The name of your wireless network DOES NOT appear in AP List

If the correct network name is not listed under AP List in the wireless utility, please attempt the following troubleshooting steps:

1. If possible, temporarily move the computer five to ten feet away from router. Close the wireless utility, and re-open it. If the correct network name now appears under "Available Networks", you may have a range or interference problem. Please see the suggestions listed in the section of this manual titled "Placement of your Wireless Networking Hardware" page 2.
2. Using a computer that is connected to the Wireless Router (or Access Point) via a network cable (as opposed to wirelessly), ensure that "Broadcast SSID" is enabled. If using a Belkin Router, this setting is found on the "Channel and SSID" configuration page. For detailed instructions on accessing this page and changing settings, please see your Wireless Router or Access Point User Guide.

Troubleshooting

If you are still unable to access the Internet after completing these steps, please contact Belkin Technical Support.

Installation CD-ROM does not start Setup Utility

If the CD-ROM does not start the Setup Utility automatically, it could be that the computer is running other applications that are interfering with the CD drive.

If the Setup Utility screen does not appear within 15-20 seconds, open up your CD-ROM drive by double-clicking on the “My Computer” icon. Next, double-click on the CD-ROM drive and double-click on the folder named “Files”. Next, double-click on the icon named Start.exe.

Power LED does not come ON; Adapter is not working

If the LED indicators are not ON, the problem may be that the Adapter is not connected or installed properly.

Verify that the Adapter is plugged firmly into the USB slot of your computer. Check to see that the drivers for the Card have been installed. Right click on the “My Computer” icon on your desktop. Choose “Properties” and navigate to the “Device Manager” and see if your Adapter is listed without any errors. If an error is indicated contact Belkin Technical Support.

Link LED is blinking slowly; Cannot connect to a wireless network or the Internet

If your Adapter appears to be functioning properly, but you cannot connect to a network or you have a red wireless icon at the bottom of your screen, the problem may be that there is a mismatch between the settings in your wireless network properties.

Check the settings to see if they match. The SSID is case-sensitive and the spelling on each computer must be exactly the same in order for the Adapter to connect to the wireless router or access point.

Note: To check the Adapter settings or look for an available network, double-click the Signal Indicator icon to bring up the “Wireless Monitors” screen. Click the “AP List” if you do not see the network you are trying to connect to click the “refresh” button to scan the “air” for wireless networks.

For more information about setting up a SSID please reference your router's user manual.

If issues persist even at close range, please contact Belkin Technical Support.

Link LED is solid but cannot connect to the Internet

If you have a signal but can't get online or obtain an IP address, the problem may be that a mismatch between the Encryption key settings in your computer and router.

Check the WEP key settings to see if they match. The key is case-sensitive and the spelling on each computer and router must be exactly the same in order for the Adapter to connect to the router. For more information about encryption please see "Profile Tab: creating a Profile" on page 17 of this manual.

If issues persist even at close range, please contact please contact Belkin Technical Support

Data transfer is sometimes slow

Wireless Technology is radio-based, which means connectivity and the throughput performance between devices **decreases** when the distance between devices **increases**. Other factors that will cause signal degradation (metal is generally the worst culprit) are obstructions such as walls and metal appliances. As a result, the typical indoor range of your wireless devices will be between 100 to 200 feet. Note also that connection speed may decrease as you move further from the wireless router or access point.

In order to determine if wireless issues are related to range, we suggest temporarily moving the computer, if possible, to five to ten from Wireless Router. Please see the section titled "Placement of your Wireless Networking Hardware for Optimal Performance" on page 2 of this manual.

If issues persist even at close range, please contact please contact Belkin Technical Support

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Why are there two wireless utilities in my system tray? Which one do I use?

There are several features and advantages from using the Belkin wireless utility over the Windows XP Wireless Zero Configuration utility. We offer a site survey, detailed link information and adapter diagnosis, to name a few.

It's essential to know which utility is managing your adapter. We recommend using the Belkin wireless utility.

To use the Belkin wireless utility follow the steps below:

Step 1 Right-click on the network status icon in the system tray and select View Available Wireless Networks.

Step 2 Click on the Advanced button in the lower-left corner of the Available Wireless Networks window.

Step 3 From the Advanced tab uncheck Use Windows to configure my wireless network. Once the box is unchecked click OK to close the Window.

You are now using the Belkin wireless utility to configure the wireless adapter.

What's the difference between 802.11b, 802.11g and 802.11a?

Currently there are three levels of wireless networking standards, which transmit data at very different maximum speeds. Each is based on the designation 802.11(x), so named by the IEEE, the board that is responsible for certifying networking standards. 802.11b transmits information at 11Mbps; 802.11a and 802.11g work at 54Mbps. See the following chart for more detailed information.

Wireless Comparison

Wireless Technology	802.11b	802.11g	802.11a
Speed	11Mbps	54Mbps	54Mbps
Frequency	Common household devices such as cordless phones and microwave ovens may interfere with the unlicensed band - 2.4GHz	Common household devices such as cordless phones and microwave ovens may interfere with the unlicensed band - 2.4GHz	5GHz - uncrowded band
Compatibility	Compatible with 802.11g	Compatible with 802.11b	Incompatible with 802.11b or 802.11g
Range	Depends on interference - typically 100–200 ft. indoors	Depends on interference - typically 100–200 ft. indoors	Less interference - range is typically 50-100 feet
Adoption	Mature - widely adopted	Expected to continue to grow in popularity	Slow adoption for consumers - more popular in business environments
Price	Inexpensive	More expensive	Most expensive

Troubleshooting

Technical Support

You can find technical support information at **www.belkin.com** or **www.belkin.com/networking**. If you want to contact technical support by phone, please call:

US: 877-736-5771

Europe: 00 800 223 55 460

Australia: 1800 666 040

Information

Belkin declares that F5D7050 (FCC ID: K7SF5D7050A) is limited in CH1~CH11 by □ specified firmware controlled in U.S.A.

FCC Statement

DECLARATION OF CONFORMITY WITH FCC RULES FOR ELECTROMAGNETIC COMPATIBILITY

We, Belkin Corporation, of 501 West Walnut Street,
Compton, CA 90220, declare under our sole
responsibility that the product,

F5D7050

to which this declaration relates,
complies with 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.

Caution: Exposure to Radio Frequency Radiation.

The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such manner that the potential for human contact normal operation is minimized.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. 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. If not installed and used in accordance with the instructions, it may cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

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Information

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications to this device that are not expressly approved by Belkin Corporation may void the users authority to operate the equipment.

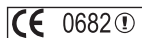
Canada-Industry Canada (IC)

The wireless radio of this device complies with RSS 139 & RSS 210 Industry Canada. This Class B digital complies with Canadian ICES-003.

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

Europe-European Union Notice

Radio products with the CE 0682 or CE alert marking comply with the R&TTE Directive (1995/5/EC) issued by the Commission of the European Community.



Compliance with this directive implies conformity to the following European Norms (in brackets are the equivalent international standards).

- EN 60950 (IEC60950) – Product Safety
- EN 300 328 Technical requirement for radio equipment
- ETS 300 826 General EMC requirements for radio equipment.



To determine the type of transmitter, check the identification label on your Belkin product.

Products with the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (72/23/EEC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards).

- EN 55022 (CISPR 22) – Electromagnetic Interference
- EN 55024 (IEC61000-4-2,3,4,5,6,8,11) – Electromagnetic Immunity
- EN 61000-3-2 (IEC610000-3-2) – Power Line Harmonics
- EN 61000-3-3 (IEC610000) – Power Line Flicker
- EN 60950 (IEC60950) – Product Safety



Products that contain the radio transmitter are labeled with CE 0682 or CE alert marking and may also carry the CE logo.

Belkin Corporation Limited Lifetime Product Warranty

Belkin Corporation warrants this product against defects in materials and workmanship for its lifetime. If a defect is discovered, Belkin will, at its option, repair or replace the product at no charge provided it is returned during the warranty period, with transportation charges prepaid, to the authorized Belkin dealer from whom you purchased the product. Proof of purchase may be required.

This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication; if the product has been modified without the written permission of Belkin; or if any Belkin serial number has been removed or defaced.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE IN LIEU OF ALL OTHERS, WHETHER ORAL OR WRITTEN, EXPRESSED OR IMPLIED. BELKIN SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

No Belkin dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

BELKIN IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO, LOST PROFITS, DOWNTIME, GOODWILL, DAMAGE TO OR REPROGRAMMING OR REPRODUCING ANY PROGRAM OR DATA STORED IN, OR USED WITH, BELKIN PRODUCTS.

Some states do not allow the exclusion or limitation of incidental or consequential damages or exclusions of implied warranties, so the above limitations of exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

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