BELKIN

BELKIN Wireless Desktop Network Card
F5D6001

150000014200E R01

wireless networking

table of contents

Introduction

Thank you for purchasing the Belkin Wireless Desktop Network Card (the Card). This high-speed Card provides you with an innovative wireless networking solution that is easy to set up and use. The Card transmits at a rate of 11, 5.5, 2 or 1Mbps to let you share files and printers on the network—without the hassle and inconvenience of connecting wires! Operating in the ISM band using Direct Sequence Spread Spectrum (DSSS) transmission, the Card implements the IEEE 802.11b standard and supports Windows© 98, 2000, Me, or XP operating systems.

Features

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

• 2.4GHz ISM (Industrial, Science, and Medial) band operation

• Includes an easy-to-use profile manager for storing multiple wireless network settings for work, school, home, etc.

• Wireless interface compliance with the IEEE 802.11b standard

• PCI interface, complies with PCI specification 2.1

• 64- or 128-bit Wired Equivalent Privacy (WEP) wireless encryption, for the same security and privacy levels available in a wired LAN

• Wireless access to networked resources

• Support for both Infrastructure and Ad-Hoc (Peer-to-Peer) networking modes

• Data rate of up to 11Mbps
  Supports 11, 5.5, 2 or 1Mbps rates (Auto-Rollback)

• Easy to install and use

• External detachable antenna

• LED link indicator
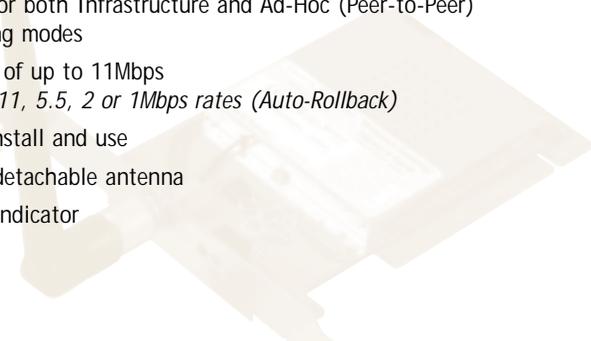
Product Specifications

Host Interface:	32-bit, PCI 2.x-compliant
Power Consumption:	300mA (Max.)
OS Support:	Windows 98, 2000, Me, or XP
Certification:	FCC Class B, CE Mark, C-Tick
Operating Temperature:	0˚ C to 55˚ C
Storage Temperature:	–25˚ C to 70˚ C
Typical Operating Range:	Indoor: 160' (50m) @11Mbps, 260' (80m) @5.5Mbps or lower
	Outdoor: 490' (150m) @11Mbps, 980' (300m) @ 5.5Mbps or lower

System Requirements

• PC with available PCI expansion slot

• PC running Windows 95, 98 SE, 2000, NT®, Me, or XP

• CD-ROM drive (for loading software)

Contents of Package

• Belkin Wireless Desktop Network Card

• External Antenna

• Software CD

• Quick Installation Guide

• User Manual

Knowing Your Belkin Wireless Desktop Network Card

Warning! Your Card is sensitive to static electricity. Handle the Card by the edges and avoid touching the PCI edge connector or any of the components on the green printed circuit board.

Antenna

Power

Link

PCI Edge
Connector
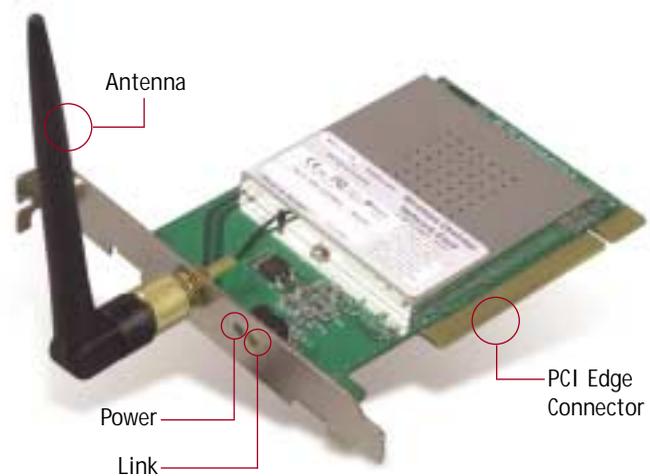
Power LED

Solid: Power is on
Off: Power is off

Link LED

Solid: Linked to the wireless network
Blinking: Scanning for a wireless network

Installing and Setting Up the Card

Installing your Card is done in three easy steps.

1. Install the software FIRST. If you install the Card inside of your PC before you install the software, it will not work until you install the software.

2. Install the Card inside of your PC.

3. Turn on your PC and let Windows operating system (OS) finish installing the Card.

> *NOTE: INSTALL THE SOFTWARE FIRST BEFORE YOU INSTALL THE CARD INTO YOUR PC*

Step 1: Software and Driver Installation

1. Insert the CD into your CD-ROM drive.

2. The "Wireless Desktop Network Card Setup Utility" screen should 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 "LAN_UTILITY.exe".

3. In the utility screen, drag your mouse over the "Install" button, then select "Click here" to start the software installation program.

4. The Wireless Desktop Network Card installer will automatically copy all of the needed files to your computer. When prompted, click "Finish" to complete the copy process.

5. Remove the CD from the CD-ROM drive and shut down your computer. *Note: Be sure to properly exit your Windows OS by clicking "Start" > "Shut Down".*

6. Follow the directions in Step 2 to install the Card inside of your computer.

Step 2: Installing the Card into Your PC for Windows 98, Me, 2000, and XP

1. POWER OFF THE COMPUTER AND DISCONNECT THE POWER CORD.

2. Remove the screws that secure the computer cover and remove the cover.

3. Touch any metal part of the case. This will discharge any static electricity that could damage your product or your computer.

4. Locate an empty PCI expansion slot.

5. Confirm that the Card will fit into the slot you have chosen. Keep in mind that the included antenna needs to be oriented with the top pointing up. If there are cables and other connectors in the way, try to pick the PCI slot that has the fewest obstructions to the correct positioning of the antenna.

6. Remove the port cover from the back of the PC that corresponds to the PCI slot you selected. If there is a screw, place it in a safe place as you will be using it to attach the Card to the computer chassis later.

7. Push the Card firmly into the PCI slot that you have chosen. Apply pressure as needed until the connector is fully seated.

8. Now secure the Card with the screw that you previously placed in a safe place.

9. Carefully screw the antenna onto the threaded connector on the Card. Turn the antenna until it is vertical and pointing up.

10. Replace the computer's cover.

11. Now that the Card is installed, you can replace the cover to your computer, reconnect all of the cables, and turn it back on. Proceed to Step 3.

Step 3: Finishing the Installation

1. Turn your computer on.

2. Depending on your operating system, Windows OS may detect the Card and launch the "Found New Hardware" wizard. Click "Next".

3. Your Windows OS may ask you where the drivers are located. Make no changes and click "Next".

4. If you are using Windows 2000 or XP, you will get a message telling you that the drivers are not "signed" by Microsoft. This does not mean there is a problem. Click "Continue".

5. Your Windows OS will find the correct driver files and complete the installation. Windows OS may tell you that the hardware is installed. Click "Finish" if asked to.

6. Windows OS may ask you to restart the computer. If it does, click "Yes" or "Restart".

7. When the computer restarts, an icon will appear in the bottom right-hand corner of your screen. See below:

Windows 98, Me, 2000   Windows XP

8. Installation is complete. Go to the next section called "Using the Card".

Uninstalling the Software and Drivers

If you need to remove the software and drivers for any reason, you can accomplish this easily 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.

Using the Card

Windows XP

If you are using Windows XP, there are two methods by which you can control your Card. Windows XP has built-in management for wireless networking products or you can use the management software (recommended). For information on how to use Windows XP to control your Card, consult the Windows XP "Help" files or the Microsoft website. We recommend that you use the software that Belkin provides to manage your Card. You will find the management software easy to use with more functionality. To use the Belkin software, follow these steps to configure Windows XP to let you use the Belkin software.

1. Open the Control Panel by clicking "Start", then "Control Panel".

2. In the Control Panel, click on "Network and Internet Connections".

3. In the next window, click on "Network Connections".
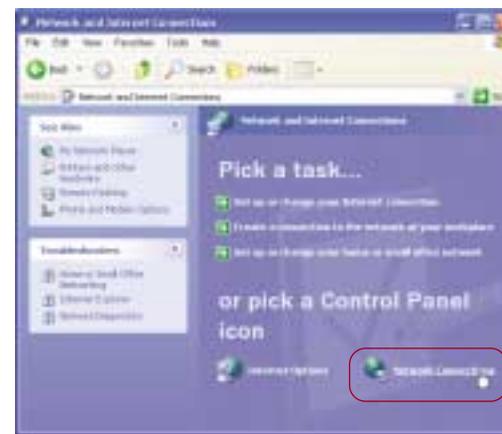
4. The "Network Connections" window will now be open. Double-click on the icon labeled "Wireless Network Connection (Belkin 11Mbps Wireless Desktop Network Card)".
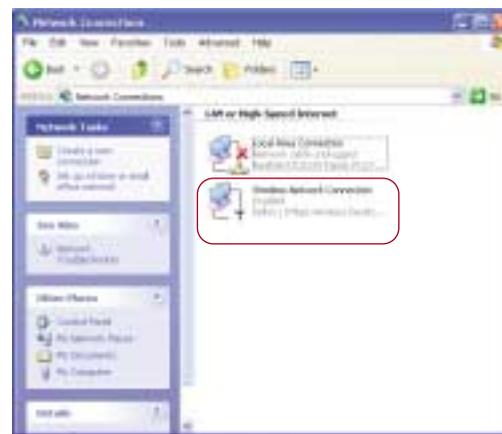
5. The "Wireless Network Connection Properties" window will appear. Click on the tab labeled "Wireless Networks".
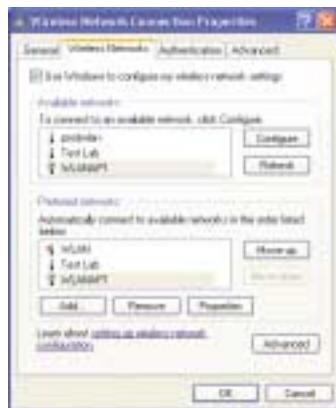
6. Remove the check mark next to "Use Windows to configure my wireless network settings".

7. Click "OK".

8. Windows XP is now configured to let the Belkin software control the Card. Follow the directions in the next section titled "Windows 98, Me, 2000" to operate the Card.

Windows 98, Me, 2000

The Card is equipped with a management utility that allows you to change the settings of the wireless Card, see the wireless signal strength, turn the Card's radio on or off, and much more. The Card also puts an indicator icon in the bottom right-hand corner of your computer (the system tray) that gives you a quick look at your wireless signal quality.

Green   or   : Excellent signal quality
Yellow   or   : Fair signal quality
Red   or   : Poor to no signal quality

To Open the Wireless Manager Utility Screen

To access the management utility, double-click on the   icon (Windows 98, Me, 2000) or   (Windows XP) in the bottom right-hand corner of your computer screen. The "Belkin Wireless LAN Utility" window will open. You will see the "Link Status" tab. There are four tabs that perform different functions.
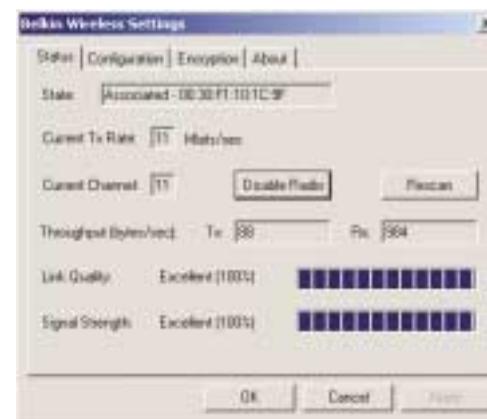
Link Status Tab

Channel Display

This displays the current channel that the wireless network is operating on. In a wireless network using a wireless router or an access point, the wireless router or access point determines the operating channel. In a computer-to-computer network, the channel is determined by you. For more information, see the "Operating Mode" section.

Tx Rate Display

This shows the current rate at which the Card will transmit and receive wireless data. For more information, see the "Transmit Rate" section.

Throughput Display

Transmit: This field shows the wireless transmission throughput in bytes-per-second.

Receive: This field shows the wireless receipt throughput in bytes-per-second.

Link Quality/Signal Strength Displays

Link Quality bar: Indicates the quality of the link between the Card and the wireless network. Signal Strength bar: Indicates the strength of the signal coming from the wireless network.

State Display

This field shows you if the Card is connected to a wireless network or if it is searching for a wireless network. There are two states:
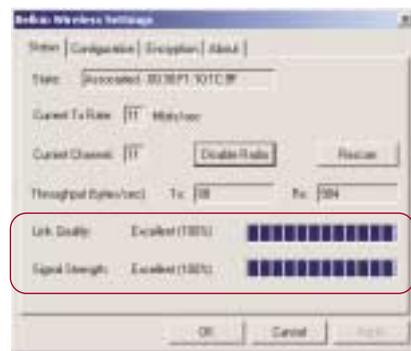
Associated: The Card is connected to a wireless network. The numbers following the word "Associated" refer to the MAC address of the wireless access point that the Card is connected to.

Scanning: The Card is searching for an available wireless network and will automatically scan for one. If the Card continues to scan without joining a network, this means that there are no available networks in your area, or there is another problem.

Disable Radio/Enable Radio Button

It is possible to completely turn off the Card's wireless transmitter (radio) by pressing the "Disable Radio" button. After pressing the button, it will change to read "Enable Radio". To enable the radio again, click the "Enable Radio" button.

Power Saving

The power saving mode will turn the card off when it is not in use. We recommend that you leave this option disabled. When enabled, there will be a short delay to turn the Card on before it can transmit and receive data. This delay can make your Internet connection appear to be slow.

Reconnect

If your Card loses the connection to the wireless network for any reason, simply click on the "Reconnect" button to scan for the wireless network and reconnect to it.

Configuration Tab

The "Configuration" tab allows you to set different profiles, network names, network types, and adjust the Transmit Rate.

Belkin Wireless LAN Utility

| Link Status | Configuration | Encryption | Site Monitor | About |

Profile Name: Default

Operating Mode: Access Point

Network Name: ANY

Peer-to-Peer Channel: 11

Transmit Rate: Fully Automatic

New   Delete   Defaults

OK   Cancel   Apply
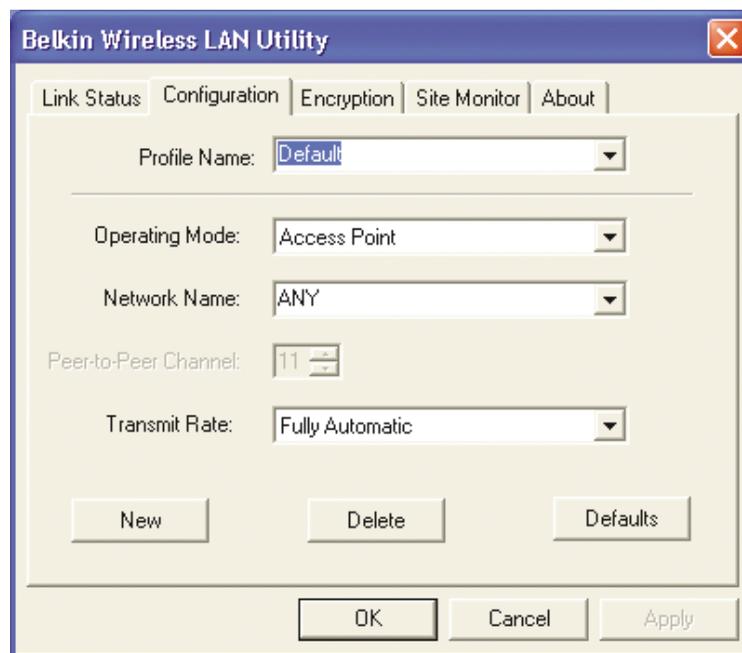
Using Profiles

The first thing you will notice is the "Profile Name" bar. Using profiles allows you to save configurations for different wireless networks. For instance, if you use your Card 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. The "default" profile will contain the initial configuration setting when you install the Card.

In Ad-Hoc mode, each wireless device will use the same SSID to create a small wireless network. For instance, if you want to connect a PDA to a PC, then both must have the same SSID such as "WLAN". In addition, the wireless channel must also be the same. See "Ad-Hoc Channel".

To Create a New Profile

1. Click the "New" button. The current entry will be highlighted. Type a new name such as "Work".

2. Click the "Apply" button to save the profile name.

3. Any changes you make to the wireless settings will now apply to this profile.

To Select a Profile

1. Click the down-facing arrow next to the "Profile Name" bar. A drop-down list of profiles will appear (see below). Note: If you have not saved any profiles, only the "Default" profile will appear as a selection.
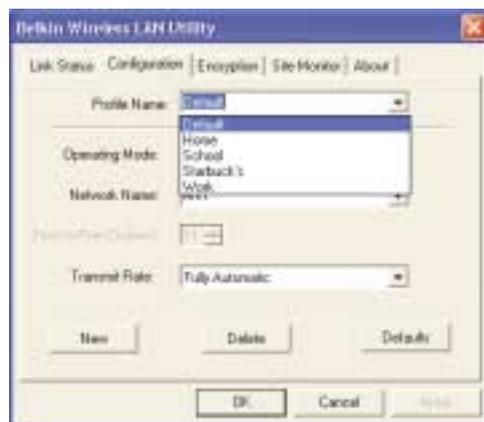
2. Select the profile you want to use by clicking on it.

3. Click "Apply" to save the change.

The settings for the profile you selected will now be in use.

To Delete a Profile

1. Select the profile you wish to delete.

2. Click the "Delete" button.

3. Click "Apply".

The profile is now deleted.

To Restore the Default (Factory) Settings

Click the "Defaults" button to restore the factory settings.

Network Name Box

The "Network Name" display lets you specify the name of the wireless network that you want to join. The default factory setting for the "Network Name" is "ANY". When "ANY" is entered into the network

name, the Card will search for the closest available wireless network and join it. If you know the specific network name, you can type it into the "Network Name" field to join that network.

To Enter a New Network Name

1. Click inside of the "Network Name" box.

2. Enter the name of the wireless network you wish to join.

Note: Type "ANY" to join the closest wireless network.

3. Click the "Apply" button to save the changes.
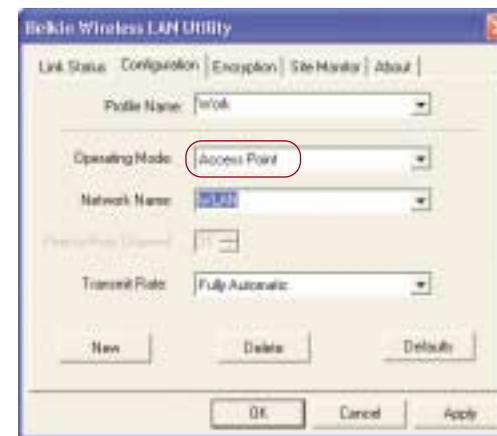
Operating Mode

There are two modes of wireless networking that exist. The first and most common mode is called "Access Point" or "Infrastructure". The second mode is called "Peer-to-Peer" or "Ad-Hoc".

Access Point Network Mode

Use this mode when you are connecting to a wireless network that uses an access point or wireless router.

Peer-to-Peer Mode

Use this mode when connecting directly to other wireless computers in a network that uses no access point or wireless router.

To Join an Access Point Wireless Network

If you want to join a wireless network that uses an access point or a wireless router:

1. Select "Access Point" in the "Operating Mode" box by clicking the down-facing arrow and highlighting your selection.

2. Type in the name of the network into the "Network Name" box or type "ANY" to join the closest wireless network. This is the default factory setting.

3. Click "Apply" to save the changes.

To Join or Create a Peer-to-Peer Wireless Network

If you want to join or create a computer-to-computer network, the "Network Name" and the "Peer-to-Peer Channel" boxes for each computer must be the same. Each computer must be configured to Peer-to-Peer operating mode.

1. On each computer, select "Peer-to-Peer" in the "Operating Mode" box by clicking the down-facing arrow and highlighting your selection.
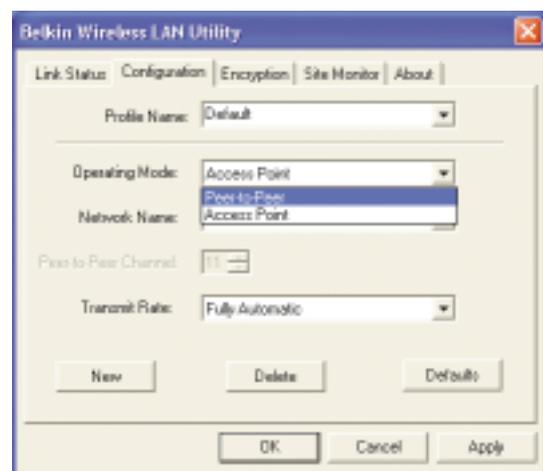
2. Type in the name of the network into the "Network Name" box. *Note: "ANY" does not work in Peer-to-Peer mode.* The Network Name can be anything you want it to be (for instance, "Home").

3. Select an operating channel by clicking on the up/down arrows next to "Peer-to-Peer Channel". Note: All computers must be on the same channel.

4. Click "Apply" to save the changes.

Transmit Rate

The 802.11b wireless Ethernet standard was engineered so it can operate at different data rates depending on the environment that it is working in. The maximum data rate is 11Mbps (11 megabits-per-second or 11 million bits-per-second). Under the best of circumstances, the data will be transferred at the highest rate. When excessive noise or other radio signals enter the air, or the wireless device is far enough away from the access point that the signal is weak, the chances that wireless data can be corrupted with data errors grows. Data errors result in a slow transfer of data (or connection) because the data has to be resent over and over until there are no errors. To combat this, in "Fully Automatic" mode, the data rate will automatically be rolled back to a slower rate to eliminate errors by giving the signal more time to reach its intended destination. The result is the fastest transmission possible. There are four possible data rates: 11Mbps, 5.5Mbps, 2Mbps, and 1Mbps. We recommend that you leave the Transmit Rate at "Fully Automatic" and let the Card do the job of transmitting the data at the fastest possible rate. If you set the Transmit Rate at a fixed setting, this will force data to be sent at that rate, but errors may occur causing the data to be resent. This could actually make the connection SLOWER.

Encryption

For security, the 802.11b standard incorporates a method of "scrambling" the data being sent over the air. This is called WEP (Wired Equivalent Privacy). There are two different levels of WEP: 64-bit encryption and 128-bit encryption. 64-bit encryption is powerful and secure; 128-bit encryption is very powerful and very secure. The reason that two levels, or rates, of encryption exist is because encryption will slow the data speed down. The higher the rate of encryption, the slower the data will be transmitted. 64-bit encryption will reduce data rates nearly 30–40 percent where 128-bit encryption will reduce data rates around 50–60 percent. The trade-off is higher security for slower performance. Keep in mind, however, only large file transfers or continuous streaming data are most affected by this. Normal browsing of the Internet, downloading files, and sending and retrieving e-mails is not affected.

How to Use Encryption

Encryption is fairly easy to understand. Encryption uses what are called "keys" to encode and decode, or "scramble" and "unscramble", data. Keys can be made by entering a passphrase (password) or can be entered manually into the system using an alphanumeric series or a series of two-digit numbers (called "hexadecimal"). In Infrastructure mode, where an access point or wireless router is being used, the access point or wireless router is programmed with an encryption key. For a wireless device to join the wireless network, the same encryption key must be programmed into the device. Your Card can be programmed with a key in either the passphrase (easy) manner or with alphanumeric or hexadecimal (advanced) entries.

To Create an Encryption Key Using a Passphrase—EASY FOR NOVICE USERS

1. Click the "Encryption" tab.

2. Select the rate of encryption you need to use from the drop-down menu.
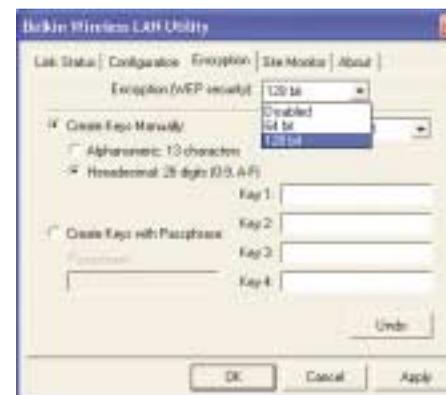
3. Select "Create Keys with Passphrase".

4. Type the network passphrase you need to use into the "Passphrase" box (for instance, "Passphrase").

5. Click "Apply" to save the passphrase.

To Create an Encryption Key Manually—FOR ADVANCED USERS ONLY

1. Click the "Encryption" tab.

2. Select the rate of encryption you need to use from the drop-down menu.

3. Select "Create Keys Manually".
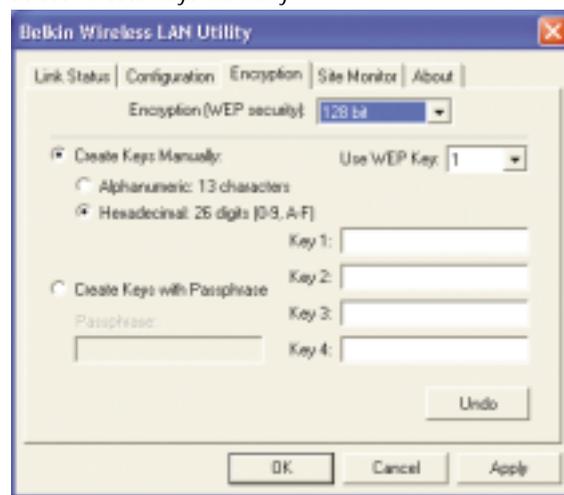
4. There are two methods of entering the key, alphanumeric or hexadecimal. If you want to enter an alphanumeric key, select "Alphanumeric:"; select "Hexadecimal:" to enter a hexadecimal key.

5. Depending on the rate of encryption you are using, follow the steps below:
   a. 64-bit: If you selected 64-bit encryption, then enter a 5-character alphanumeric key or a 10-digit hexadecimal key into "Key 1".
   b. 128-bit: If you selected 128-bit encryption, then enter a 13-character alphanumeric key or a 26-digit hexadecimal key into "Key 1".

Note: In many cases, this key should be provided to you by the network administrator.

6. Repeat these steps for keys 2–4 if needed.

7. Click "Apply" to save the key(s).

Site Monitor Tab

You can use the Site Monitor to view all available wireless networks within range of your computer. When you click on the "Site Monitor" tab, you will see a window showing you basic information about the wireless networks in your area.
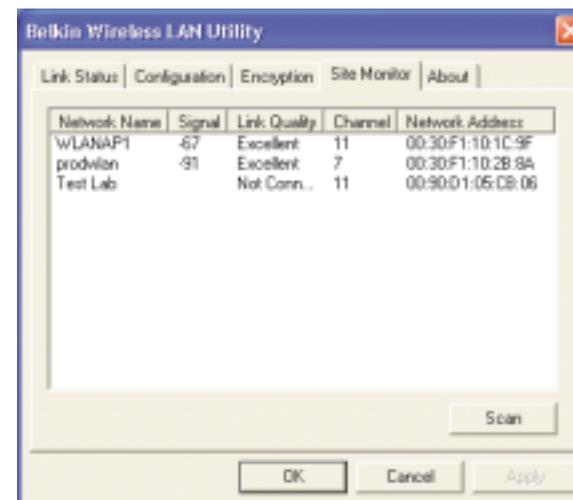
Network Name: displays the name of the wireless network.

Signal: indicates the strength of the signal expressed in dBm.

Link Quality: displays the link quality (Excellent, Fair, Poor, Not Connected).

Channel: displays the operating channel of the wireless network.

Network Address: displays the MAC address of the wireless network's access point.

Clicking on the "Scan" button will rescan the area for wireless networks.

To join a wireless network that you see in the Site Monitor, double-click on the name of the network that you want to join.

Wireless Networking Using 802.11b

To form a wireless network, two basic components are used. The first is a wireless adapter for a PC. This can be either a USB wireless adapter or a PCMCIA adapter. The adapter gives the PC wireless Ethernet capabilities. The second is a wireless access point, which can connect to a wired LAN and allow the wireless PCs to be able to access the wired LAN. A wireless access point can be a stand-alone component or it can be embedded into a cable/DSL router, thus forming a wireless gateway router. The use of each of these types of products is outlined later in this article.

Wireless networking is very similar to wired networking, except for a few basic concepts that one must grasp. There are two different ways to network computers using 802.11b. The first, and least used method is the "Ad-Hoc" method, also known as "Peer-to-Peer". The more commonly used method is called "Infrastructure" mode.

Peer-to-Peer (Ad-Hoc) Network

Ad-Hoc, or Peer-to-Peer, refers to a wireless configuration in which each computer communicates directly with another. An Ad-Hoc wireless network (LAN) consists of a group of computers, each equipped with a wireless adapter, connected directly via radio signals to form an independent wireless LAN. Computers in a specific Ad-Hoc wireless LAN must be configured to the same radio channel and network name to communicate with one another. More than one Ad-Hoc network can exist in the same space if it is configured to operate on a different channel. There are a varying number of channels depending on which part of the world you are operating in. The US has 11 channels, Europe has 13 channels, and Japan has 14 channels. The following diagram shows a typical Ad-Hoc wireless LAN configuration.

Notebook with Wireless
Notebook Network Card

Notebook with Wireless
Notebook Network Card

PC with Wireless Desktop
PCI Network Adapter
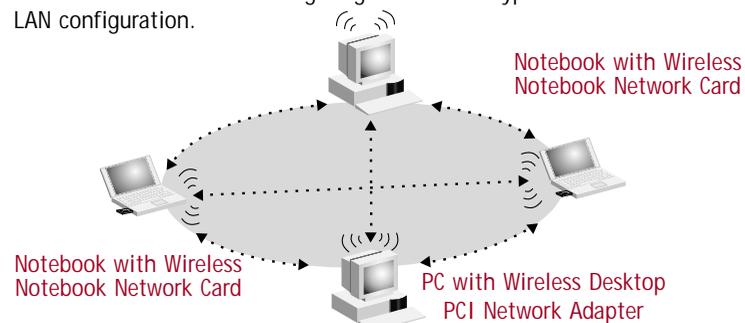
Infrastructure Network (Access Point)

The use of a wireless access point to connect a wireless LAN to a wired LAN is called Infrastructure mode. A wireless access point serves as a bridge between the wired and wireless network. Connecting the access point to any port on the wired network will give wireless access to all wireless-equipped computers within its coverage area. An access point is configured with a "Service Set Identifier (SSID)", a "name" given to the wireless network and used by the wireless-equipped computers to access the wireless network. Access points can also be configured to use encryption or they can grant access to computers with specific MAC addresses. They effectively double the distance that computers in the wireless LAN can be located from one another. This is because the unit serves as a central point for routing of all the wireless network traffic between the wireless-equipped computers. Wireless-equipped computers networked together in Infrastructure mode form a group called a "Basic Service Set (BSS)". Up to 64 individual computers can exist at a single time in a BSS. This is due to the ability of the wireless access point to handle no more than 64 clients. The diagram below illustrates how the wireless access point works to increase the covered area range of your wireless network.

Notebook with Wireless
Notebook Network Card

WAP

Basic Service
Set (BSS)

Notebook with Wireless
Notebook Network Card

PC with Wireless Desktop
PCI Network Adapter
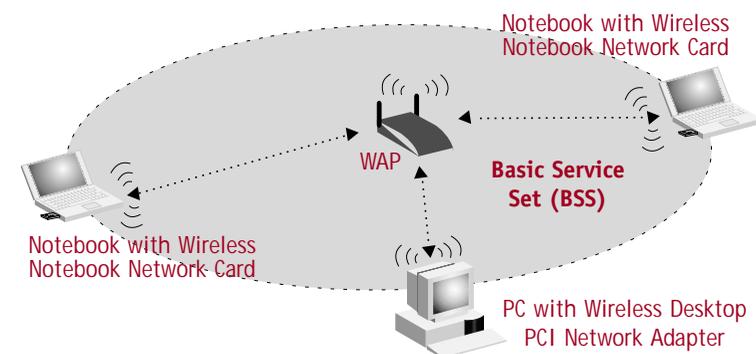
The diagram below illustrates how a wireless access point acts as a bridge between the wireless BSS and the wired network.
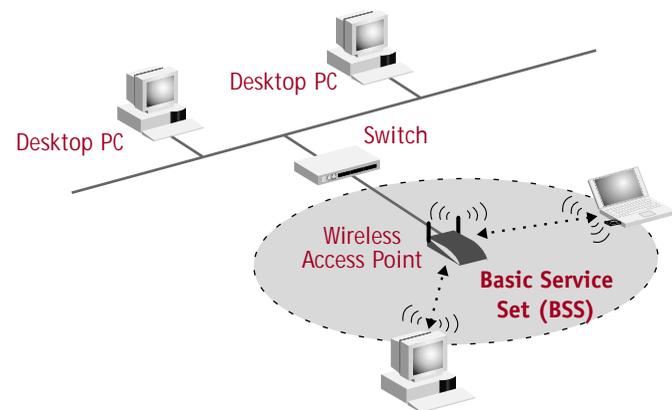
Roaming

More than one wireless access point can be used to increase the wireless coverage in a wireless LAN. The diagram below shows two wireless access points configured to extend coverage beyond that of a single unit. The overlapping area of each BSS is called an "Extended Service Set (ESS)". When a wireless computer enters the ESS, the computer evaluates the signal strength and link quality, then chooses the wireless access point with the best-quality signal and link. This activity is known as "roaming". To configure your wireless access points to allow roaming inside of the wireless network, each unit will be assigned the same Service Set Identifier (SSID). Strategically placing multiple units around an office or inside of the home can extend the wireless coverage to the entire premise. The illustration below shows two Basic Service Sets overlapping to form an Extended Service Set.
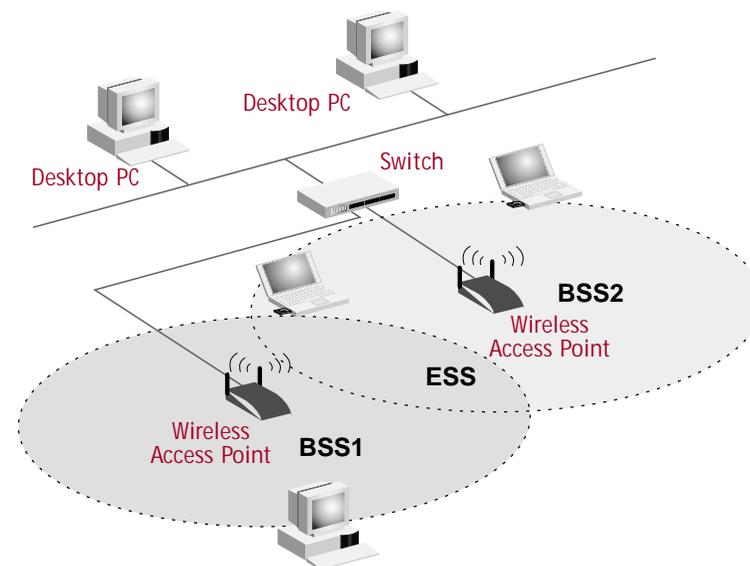
Access Point: An internetworking device that seamlessly connects wired and wireless networks.

Ad-Hoc: A group of computers, each with LAN adapters, connected as an independent wireless LAN.

Ad-Hoc Mode

Notebook with Wireless Notebook Network Card

Notebook with Wireless Notebook Network Card

PC with Wireless Desktop PCI Network Adapter
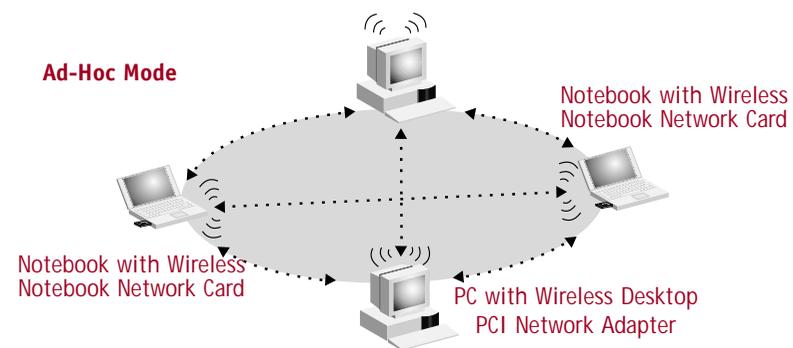
Backbone: The core infrastructure of a network. The portion of the network that transports information from one central location to another, where it is unloaded onto a local system.

Base Station: In mobile telecommunications, a base station is the central radio transmitter/receiver that maintains communications with the mobile radio/telephone sets within its range. In cellular and personal communications applications, each cell or micro-cell has its own base station; each base station in turn is interconnected with other cells or bases.

BSS: BSS stands for Basic Service Set. It is comprised of an access point and all the LAN PCs that are associated with it.

ESS: ESS (ESS-ID, SSID) stands for Extended Service Set. More than one BSS is configured to become an Extended Service Set. LAN mobile users can roam between different BSSes in an ESS (ESS-ID, SSID).

Ethernet: A popular local area data communications network, which accepts transmission from computers and terminals. Ethernet operates on a 10 or 100Mbps base band transmission rate, using an unshielded, twisted-pair cable.

Infrastructure: An integrated wireless and wired LAN is called an Infrastructure configuration.

Roaming: A wireless LAN mobile user moves around an ESS and maintains a continuous connection to the Infrastructure network.

Desktop PC

Desktop PC

Switch

Infrastructure Mode, BSS, and ESS

Wireless Access Point

BSS2

ESS

Wireless Access Point

BSS1
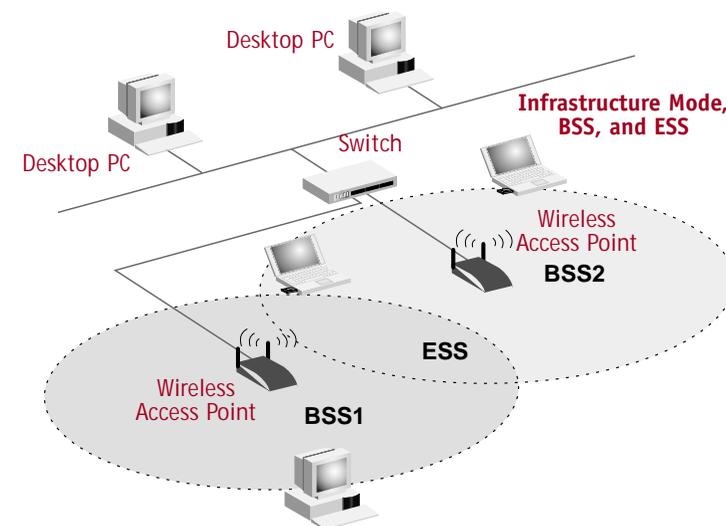
RTS Threshold: Transmitters contending for the medium may not be aware of each other. The RTS/CTS mechanism can solve this "hidden node problem". If the packet size is smaller than the preset RTS Threshold size, the RTS/CTS mechanism will NOT be enabled.

WEP: Wired Equivalent Privacy is based on the use of 64-bit or 128-bit keys and the popular RC4 encryption algorithm. Wireless devices without a valid WEP key will be excluded from network traffic.

DHCP: Dynamic Host Configuration Protocol. This protocol automatically configures the TCP/IP settings of every computer on your home network.

DNS Server Address: DNS stands for Domain Name System, which allows Internet host computers to have a domain name (such as belkin.com) and one or more IP addresses (such as 192.34.45.8). A DNS server keeps a database of host computers and their respective domain names and IP addresses, so that when a domain name is requested (as in typing "belkin.com" into your Internet browser), the user is sent to the proper IP address. The DNS server address used by the computers on your home network is the location of the DNS server your ISP has assigned.

DSL Modem: DSL stands for Digital Subscriber Line. A DSL modem uses your existing phone lines to transmit data at high speeds.

Ethernet: A standard for computer networks. Ethernet networks are connected by special cables and switches, and move data around at up to 100 million bits-per-second [? or, megabits-per-second (Mbps)].

IP Address: IP stands for Internet Protocol. An IP address consists of a series of four numbers, separated by periods, that identifies a single, unique Internet computer host. Example: 192.34.45.8.

ISP: Internet Service Provider. An ISP is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

ISP Gateway Address: (See ISP for definition.) The ISP Gateway Address is an IP address for the Internet router located at the ISP's office. This address is required only when using a cable or DSL modem.

LAN: Local Area Network. A LAN is a group of computers and devices connected together in a relatively small area (such as a house or an office). Your home network is considered a LAN.

MAC Address: MAC stands for Media Access Control. A MAC address is the hardware address of a device connected to a network. A MAC address is unique (different) for every device.

NAT: Network Address Translation. This process allows all of the computers on your home network to use one IP address. Using the NAT capability of the Belkin 4-Port Cable/DSL Gateway Router, you can access the Internet from any computer on your home network without having to purchase more IP addresses from your ISP.

PPPoE: Point-to-Point Protocol over Ethernet. Point-to-Point Protocol is a method of secure data transmission originally created for dial-up connections; PPPoE is for Ethernet connections.

SPI: Stateful Packet Inspection. SPI is the type of corporate-grade Internet security provided by your Belkin 4-Port Cable/DSL Gateway Router. Using SPI, the gateway acts as a "firewall," protecting your network from computer hackers.

Subnet Mask: A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of four numbers configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid IP address numbers recognized by the Internet, which must be assigned by InterNIC).

TCP/IP: Transmission Control Protocol/Internet Protocol. This is the standard protocol for data transmission over the Internet.

WAN: Wide Area Network. A WAN connects computers located in geographically separate areas.

FCC Statement

DECLARATION OF CONFORMITY WITH FCC RULES FOR ELECTROMAGNETIC COMPATIBILITY

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

F5D6001

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.

When connecting an external antenna to the device, the antenna shall be placed in such a manner to minimize the potential for human contact during normal operation. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8inches) during normal operation.

This transmitter must not be co-located or operating in conjunction with any oter 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:

• 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 Components 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 á la norme NMB-003 du Canada.

Europe-European Union Notice

Radio products with the CE 0560 or CE alert marking comply with the R&TTE Directive (1995/5/EC) issued by the Commission of the European Community.
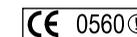
Compliance with this directive implies conformity to the following European Norms (in brackets are the equivalent international standards).

• EN 60950 (IEC60950) – Product Safety

• ETS 300 328 Technical requirement for radio equipment

• ETS 301 489 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 0560 or CE alert marking and may also carry the CE logo.

Belkin Components Limited Lifetime Product Warranty

Belkin Components 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.

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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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