

Belkin Wireless USB Network Adapter

User Manual

Macintosh OS 9.x Version

P73851-B

F5D6050 ver. 2

Introduction

Thank You for purchasing the Belkin Wireless 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 manual completely to be sure that you are getting the most out of your Wireless USB Network Adapter.

Features

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

- ?? 2.4GHz ISM (Industrial, Science, and Medical) band operation
- ?? Wireless interface compliance with the IEEE 802.11b standard
- ?? USB Interface, for plug-and-play installation and convenience
- ?? 64 or 128-bit Wireless (WEP) Encryption
- ?? Wireless access to networked resources
- ?? Support for both Infrastructure and Ad-Hoc (peer to peer) networking modes
- ?? Data rate of up to 11Mbps
 - o Supports 11, 5.5, 2 or 1Mbps rates (Auto Rollback)
- ?? Easy installation and use
- ?? External antennas
- ?? LED link Indicator

Applications and Advantages

- ?? **Wireless roaming with a laptop around the home or office**
Offers the freedom of networking? without cables.
- ?? **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 1.1
Power Consumption:	300mA (Max)
Certification:	FCC Class B, CE Mark, C-Tick
Operating Temperature:	32 - 131 degrees F (0 - 55 degrees C)
Storage Temperature:	-13 - 158 degrees F (-25 - 70 degrees C)
Typical Operating Range:	Indoor: 160' (50m) @ 11Mbps, 260' (80m) @ 5.5 Mbps or lower Outdoor: 490' (150m) @ 11Mbps, up 1800' (550m) @ 5.5 Mbps or lower

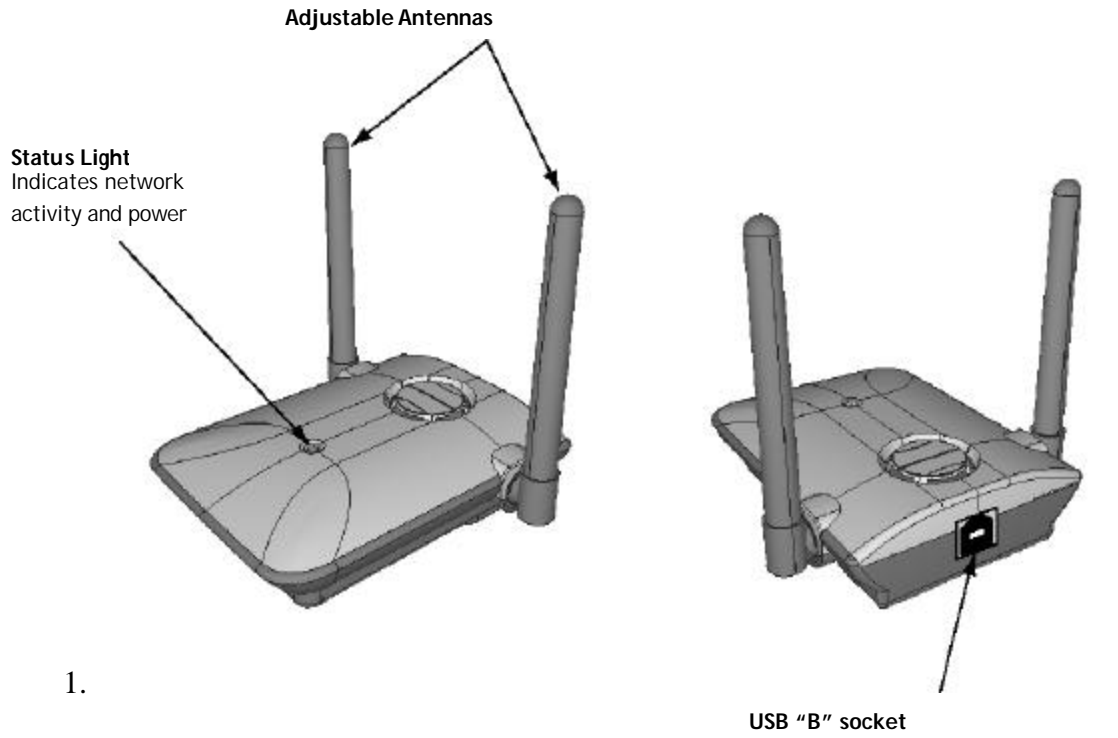
System Requirements

- ?? Power Mac G3 or G4 with one available USB Port
- ?? Mac OS 9.x, 10.1, 10.2

Package Contents

- ?? Belkin Wireless USB Network Adapter
- ?? USB Cable
- ?? Quick Installation Guide
- ?? Installation Software CD
- ?? User Manual

Knowing your Belkin Wireless USB Network Adapter



Placing the Belkin Wireless USB Network Adapter

A six-foot USB cable is provided with the Adapter to allow you to place it as high as possible. The best location 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 Adapter

Installing your Adapter is done in three easy steps.

1. Install the software FIRST. If you connect your adapter to your PC before you install the software, it will not work until you install the software.
2. Connect the Adapter to your MAC.
3. Configure the Adapter and MAC TCP/IP Settings

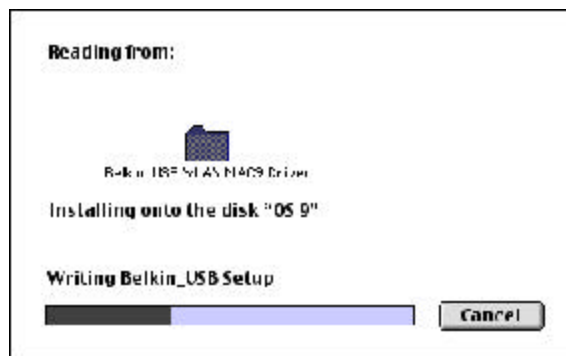
NOTE: INSTALL THE SOFTWARE FIRST BEFORE YOU CONNECT THE ADAPTER TO YOUR COMPUTER

Step 1: Software and Driver Installation (Mac OS 9.x)

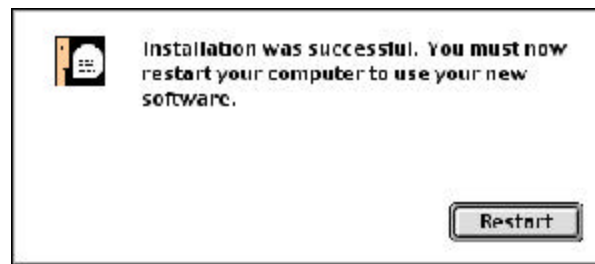
1. Insert the CD into your CD-ROM drive.
2. Double-click on the file "Belkin_F5D6050Mac9v100b4.sit".
3. Open the folder created on your desktop and double-click on the Installer.
4. The Installer will start. Select Easy Install. Click Install.



5. The installer will start. Click Continue to automatically quit all other running applications. The installer will continue.



6. After the software installation is finished, the message will appear "Installation was successful. You must now restart your computer to use your new software". Click Restart. While the computer is rebooting, plug the USB cable into the adapter and connect it to an available USB port on your PC or USB hub.

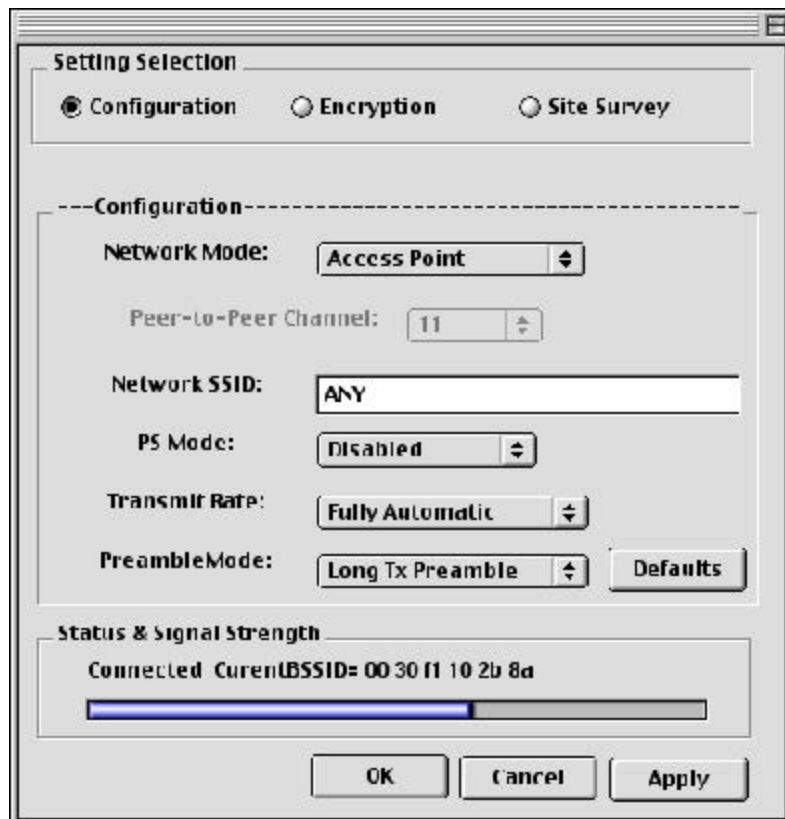


Step 2: Connect the Adapter to you MAC

1. While the computer is rebooting, plug the USB cable into the adapter and connect it to an available USB port on your PC or USB hub.

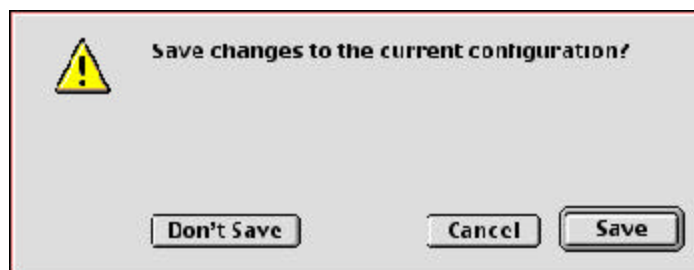
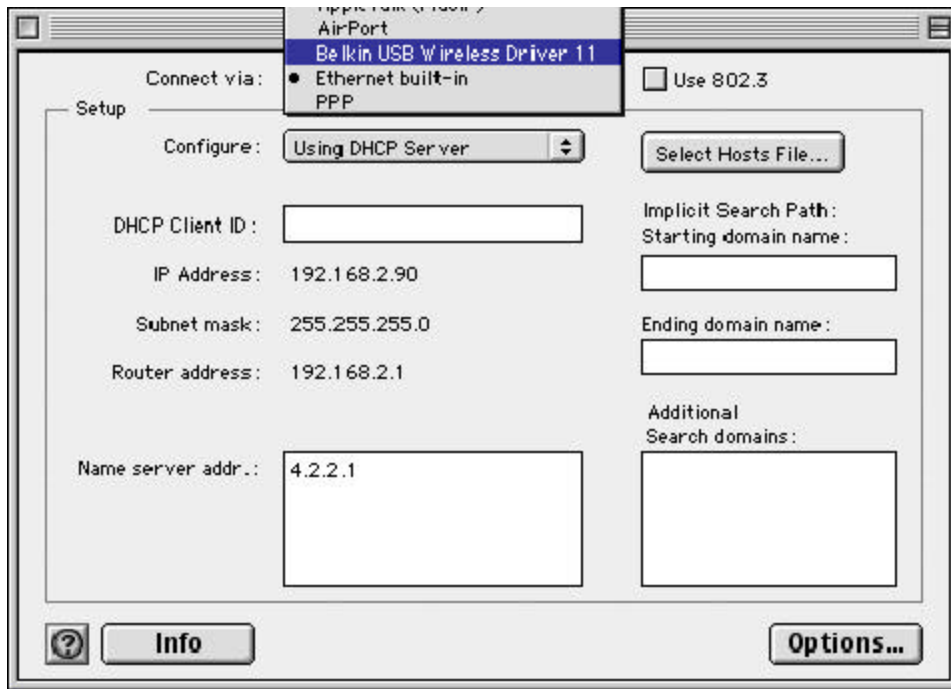
Step 3: Configure the Adapter and MAC TCP/IP Settings

1. After rebooting the computer, the adapter will be installed. Now click on the Apple Menu. Click on Control Panel and select Belkin USB_Setup. The Belkin Wireless USB Adapter Manager will start. If you get an error stating "No Wireless Card Found" then make sure you have plugged the USB Wireless adapter into an onboard USB controller or a self powered USB Hub.



NOTE: 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 on your wireless router or access point before the adapter can successfully connect to your wireless network. For information about configuring your Adapter, see the next section in this manual.

2. Click on the Apple Menu and select Control Panel. In the Control Panel select the TCP/IP Control Panel. In the Connect Via drop down list select "Belkin USB Wireless Driver 11". Configure your TCP/IP Settings to match your network. Please contact your system administrator for these settings. Click on the close box and then click on Save.

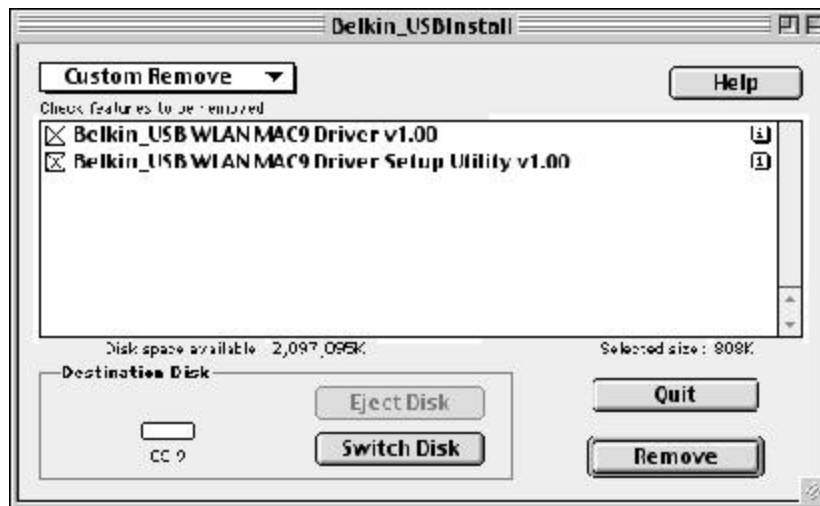


Connecting to your wireless network

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 your wireless network is using encryption, you will need to set the encryption settings of your Adapter to match that of your wireless network. For information about configuring your Adapter, see the next section in this manual.

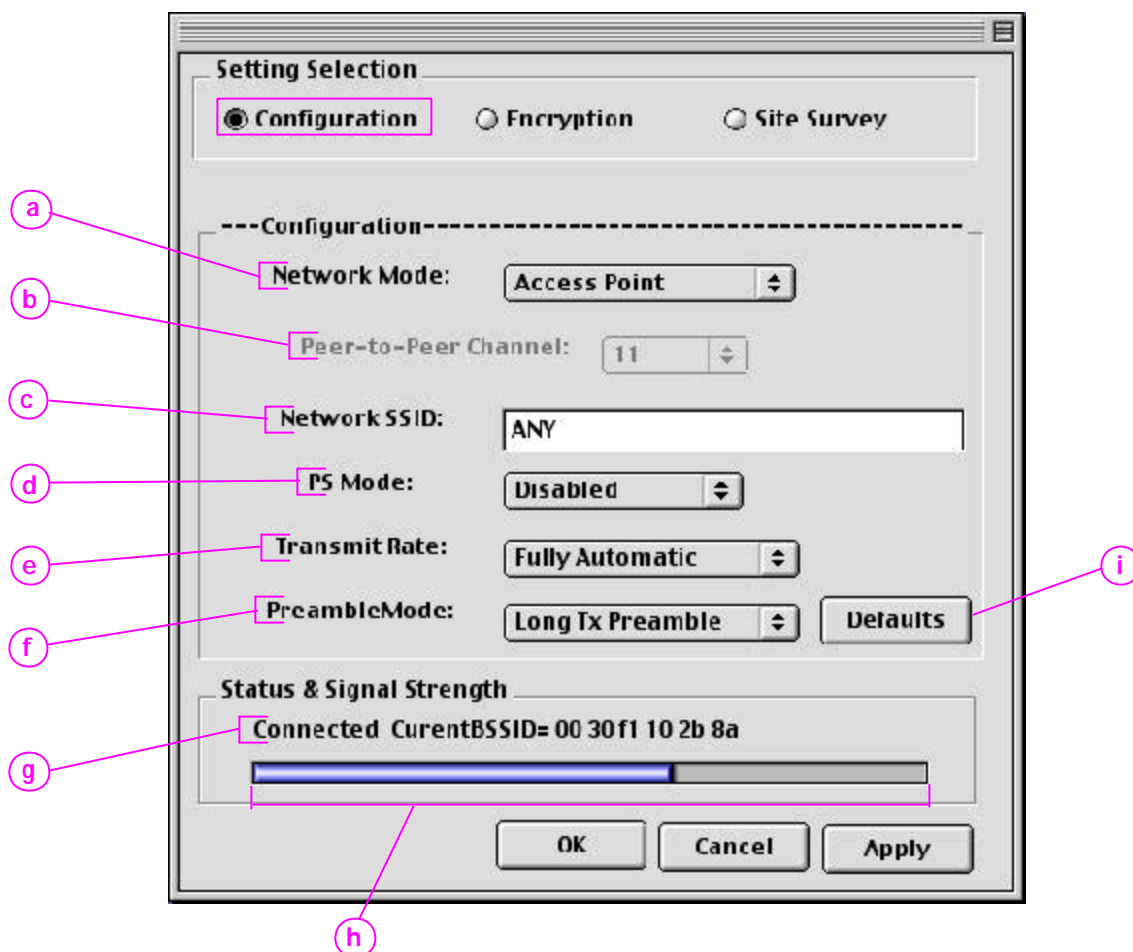
Uninstalling the Software and Drivers

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 Installer. Select Customer Remove from the dropdown list. Check the Belkin_USB WLAN MAC9 Driver v1.00 and the Belkin_USB WLAN MAC9 Driver Setup Utility v1.00. Click Remove.



Using the Belkin Wireless LAN Monitor Utility

To run the Belkin Wireless LAN Monitor Utility, click on the Apple Menu. Click on Control Panel and select Belkin USB_Setup. When you launch the Wireless LAN Monitor Utility (the Utility), you will be presented with the screen below.



The Configuration Screen

(a) Network Mode

Shows the current wireless mode the Adapter is operating in. There are two operating modes: **Access Point** and **Peer-to-Peer**. Access Point is the most common mode to operate in and is the factory default setting. Use Access Point mode when connecting your PC to a Wireless Access Point or to a Wireless Router. Peer-to-Peer mode is used to connect two or more computers together without the use of an Access Point or Wireless Router. To change the mode, click the up/down arrow next to the network mode field. Select the mode you wish to use, then click “Apply”.

(b) Channel

Shows the current channel the Adapter is operating on. When operating in Access Point mode, the channel is set automatically by the Access Point or Wireless Router that the Adapter is connected to. You cannot change the channels in Access Point mode. In Peer-to-Peer mode, the channel can be set manually. For more information about operating in Peer-to-Peer mode, see **Operating in Peer-to-Peer mode**.

(c) Network SSID

The Network SSID is the wireless network name. This field shows the current SSID with which the Adapter is associated. The default (factory) setting is “ANY” which will cause the Adapter to automatically look for any

wireless network in the area. To connect to a specific wireless network, you can manually enter the SSID of the known wireless network. Note that the SSID is case-sensitive, so, capital letters do make a difference. To change the SSID, click in the Network SSID field, type the SSID you want, then click “Apply”.

(d) PS Mode (Power Save)

Enabling Power Save will help reduce battery consumption on a laptop by turning the Adapter OFF after each data set is sent or received to or from the network. Enabling this mode will decrease performance of the Adapter, but may greatly enhance your battery life. Use this feature only if necessary.

(e) Transmit Rate

Displays the current rate of data transmission. There are four Transmit rates possible:

Fixed 11Mbps - Always transmit and receive at 11Mbps data rate regardless of signal quality

Fixed 5.5Mbps - Always transmit and receive at 5.5Mbps data rate regardless of signal quality

Auto 1Mbps or 2Mbps - Auto transmit and receive at 1Mbps or 2Mbps data rate regardless of signal quality

Auto - Adjust speed according to signal strength. This mode is the recommended setting. It will decrease the amount of transmit and receive errors by reducing the speed of transmission in favor of receiving error free data. Note that data being sent at Fixed 11Mbps with low signal quality will not necessarily get the data to the computer faster. This is because when errors occur, the data must be re-sent. When the signal quality is low, the chances for errors to occur at high speeds are greatly increased. Sending the data at lower speeds when the signal quality is poor, will reduce the chances of errors, and thus data will get to the computer in the shortest possible time.

(f) Preamble Mode

The preamble is a signal used to synchronize the timing between the wireless network Adapter and the Access Point. Some older wireless equipment may not be able to work if this setting is too short. Leaving this setting to “Auto” is the most effective way to ensure the Adapter will connect to any wireless network available.

(g) Status

Displays the BSSID (in hexadecimal) of the access point with which the Adapter is associated. If you are connected to a network, the word “Associated” followed by a series of number (the MAC address of the Access Point) will be displayed.

(h) Signal Strength

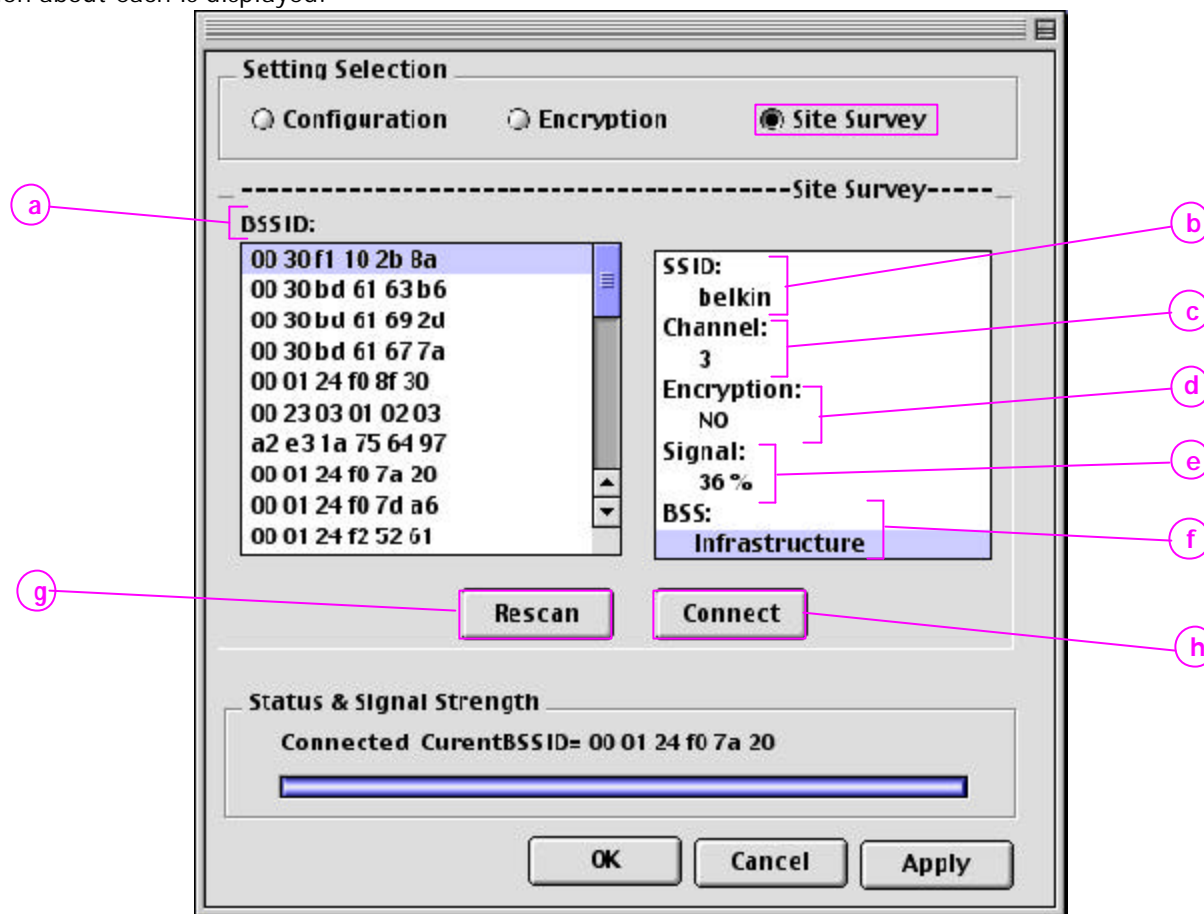
Displays the strength of the wireless signal from 0 to 100%. The closer to 100% the better the signal strength is. The closer you are to a wireless Router or Access Point the stronger the signal should be.

(i) Defaults

Clicking this button will set all values back to default.

The Site Survey Screen

Clicking on the Site Survey radio button will display a list of all available access points in your area. The following information about each is displayed:

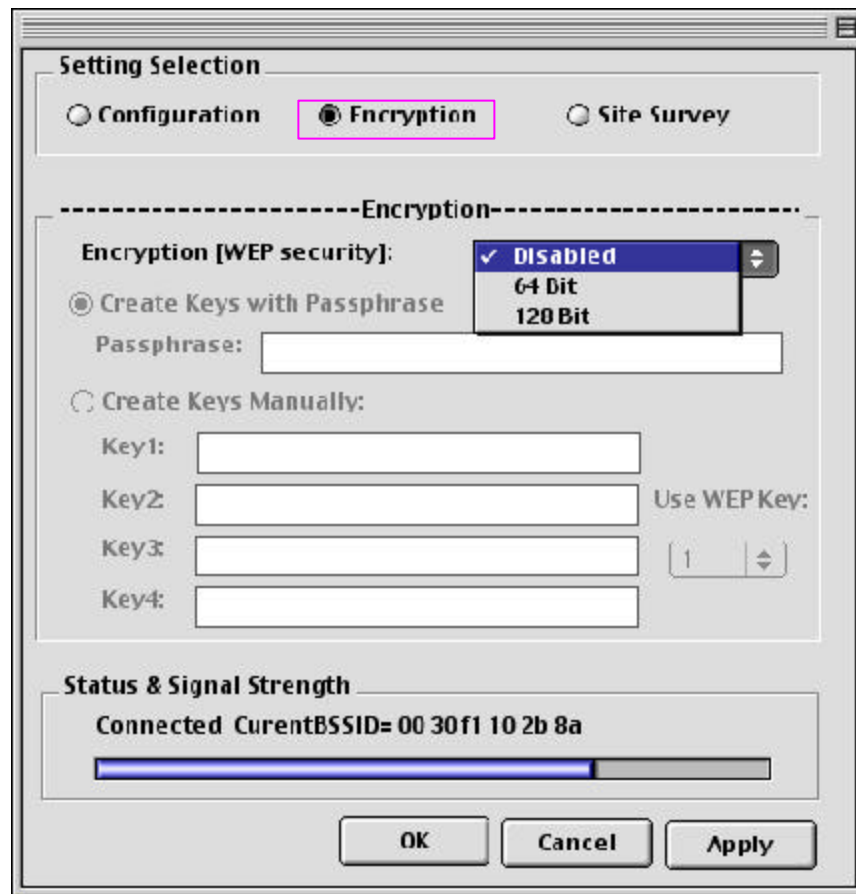


- (a) **BSSID** - The MAC address of the access point
- (b) **SSID** - The Service Set Identifier (wireless network name) of the access point.
- (c) **Channel number** - The current operating channel of the access point
- (d) **Encryption** - Will display "No" when encryption is disabled, 64-bit when 64-bit encryption is enabled and 128-bit when 128-bit encryption is enabled.
- (e) **Signal Strength** - The signal strength of the related access point. This is a "snap-shot" of the signal strength at the time of the site survey. Pressing the "Rescan" (g) button may get a different result.
- (f) **BSS** - Displays the mode that the access point is operating in: Infrastructure or AD-Hoc
- (g) **Rescan** - Rescans for available wireless access point and wireless routers.
- (h) **Connect** - Double click on a BSSID (a) and click Connect (h) to select an available wireless access point or wireless router.

TIP-> Double-clicking on the BSSID and clicking Connect (h) of an access point will make the Adapter join that particular network. To check the area for more access points, click "ReScan".

The Encryption Tab

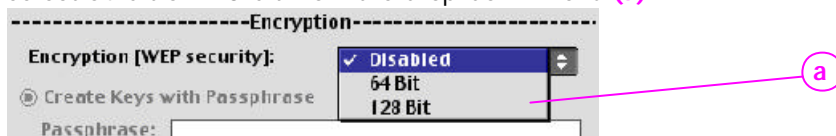
The encryption tab is used to set up the wireless encryption settings.



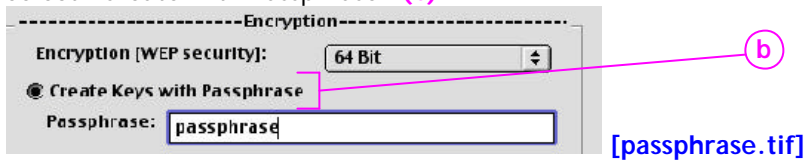
There are two ways to set up the encryption settings of your Adapter. **Create with Passphrase** or **Manual Entry**. Select 64-bit from the drop-down menu. You will notice when using 64-bit encryption there are four keys labeled "Key 1" through "Key 4". Only one key can be used at a time. For ease of use, the software can generate keys using a "Passphrase" that you enter. This passphrase can be easily distributed to other wireless equipped computer users in your network. For instance, creating a key using the passphrase "Passphrase" generates four keys in 64-bit encryption mode and one key in 128-bit encryption mode. In this scenario, a user of a laptop needs only to enter the passphrase and the key number into their computer's wireless management software to be able to communicate while using encryption. All computers on the network must use the same encryption rate, passphrase and key. The passphrase can be changed as often as desired.

Setting 64-Bit or 128-bit Encryption using a Passphrase (Easiest)

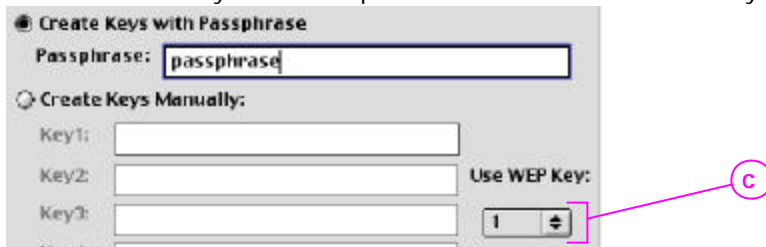
1. Select 64-bit or 128-bit from the drop-down menu (a).



2. Select "Create with Passphrase" (b).



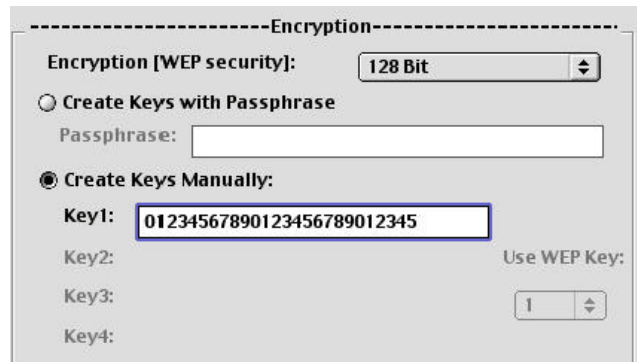
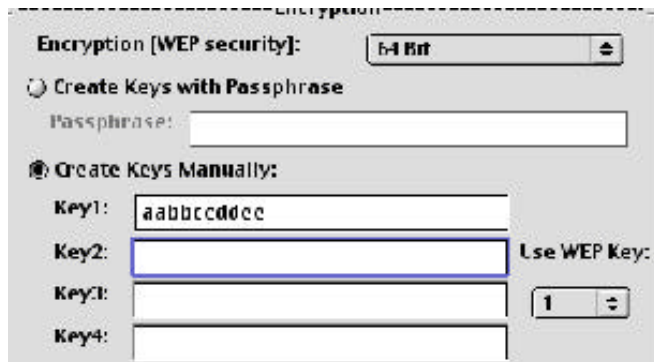
3. Enter a Passphrase and click "Apply". Clicking "Apply" will generate four keys if you choose 64-bit or 1 key if you choose 128-bit.
4. You can now select which 64-bit key you want to use from the "Use WEP Key" (c) drop-down menu. Leave this set to "1" unless you have a specific reason to use another key. Click "Apply" for the changes to be saved.



Encryption is now enabled. Each wireless equipped computer (client) that needs to communicate on the wireless network must be set to the same encryption settings (rate, passphrase and key).

Setting 64-Bit or 128-bit Manually using a Hexidecimal key (Advanced)

1. Select 64-bit or 128-bit from the drop-down menu.
2. Select "Create Keys Manually" then enter one to four 10 digit hexadecimal keys for 64-bit encryption or one 26 digit hexadecimal key for 128-bit encryption. Hexadecimal values consist of number 0-9 and letter a-f.



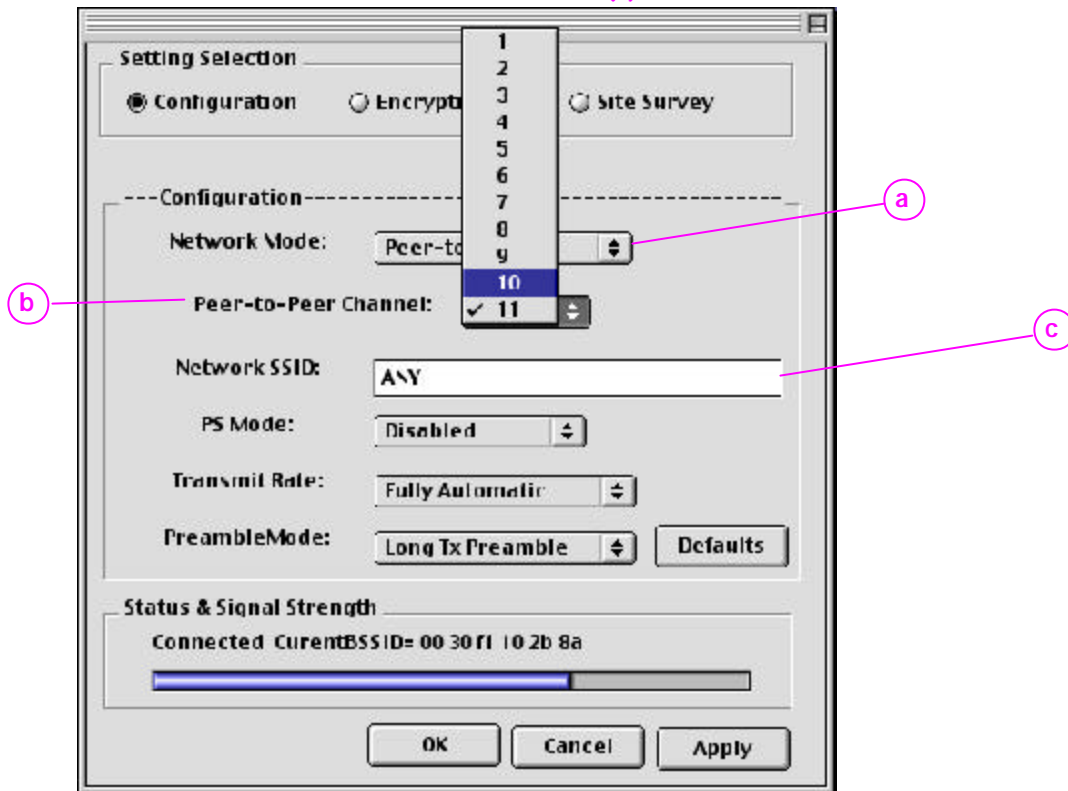
3. If using 64-bit Encryption, select the key you want to use.
4. Click "Apply"

Encryption is now enabled. Each wireless equipped computer (client) that needs to communicate on the wireless network must be set to the same encryption settings (rate, passphrase and key).

Operating in Ad-Hoc/Peer-to-Peer Mode

Ad-Hoc mode is a peer-to-peer mode (computer-to-computer). To set two or more computers to communicate directly with each other, follow these steps.

1. Select "Peer-to-Peer" from the Mode box. (a)



2. Enter the channel you want to use in the "Channel" box. (b) You can choose any one of the available channels you wish.
3. In the Network SSID field (c), type in the name you want to use to identify the Peer-to-Peer network. You can name this anything you want.
4. Using these same settings, set the rest of the computers on your Peer-to-Peer network to the same settings. When you have completed setup of the Peer-to-Peer network, computers will network together normally as if wired together through a hub or switch.

Technical Support

You can find technical support information at www.networking.belkin.com or www.belkin.com through the tech support area. If you want to contact technical support by phone, please call 800-223-5546. Technical support is available 24 hours a day, 7 days a week.

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