

Using the Belkin Wireless LAN Utility

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(f) Client IP Address

Shows the IP address of the computer. The IP address is obtained automatically by default. You may set the IP address manually through Windows Networking Properties.

(g) Network Connection Type

Shows the current wireless mode the Card is operating in. There are two operating modes: Infrastructure and Ad-Hoc. Infrastructure is the most common mode to operate in. Infrastructure mode is used when connecting your PC to a wireless router or a wireless access point. Ad-Hoc mode is used to connect two or more computers together without the use of a wireless router or an access point.

(h) Radio State

Shows whether the radio of your wireless client is enabled or disabled.

(i) Signal

Displays the wireless signal strength in decibels (dBm). The decibel scale is negative, so smaller absolute values correspond to stronger signals (i.e. -20 dBm is stronger than -80 dBm). The signal to noise ratio (SNR) is the difference between the signal and the noise (e.g. if the noise is -80 dBm and the signal is -20 dBm, the SNR is 60 dB); the larger the SNR, the better. In general, connections should have an SNR greater than 20 dBm, or the user may experience poor reliability and/or performance. If the signal is less than -50 dBm, the user should consider repositioning their workstation or Access Point, rotating the Access Point's antennas, or Limiting their Transmission Rate (described on page _ of the troubleshooting section of the manual), to ensure a reliable wireless connection.

(j) Noise

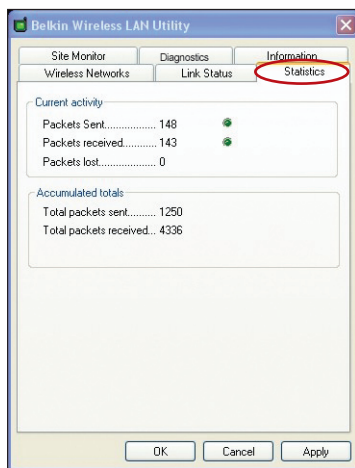
Displays the intensity of the external noise, on this wireless channel, in decibels (dBm). If the noise is greater than -70 dBm, the user should consider changing the wireless channel used, in their Access Point, to ensure a reliable wireless connection.

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Monitoring Data Transfer

Click on the “Statistics” tab.

The Statistics tab shows you how much data has been sent and received and if any errors occurred. This screen is mostly for diagnostics. Note that the number of data packets lost is recorded. A large number of lost data packets may indicate that there is a problem or interference in your area. (See the Troubleshooting section for tips on how to improve performance.)

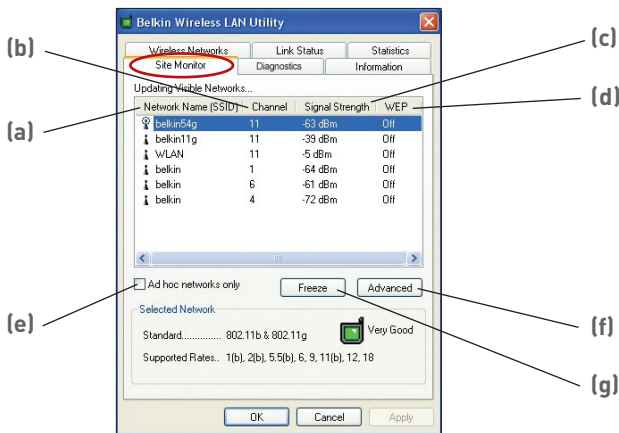


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Finding Available Networks in your Area

Click on the “Site Monitor” tab.

Clicking on the “Site Monitor” tab will display a list of all available wireless routers or access points in your area.



(a) Network Name (SSID)

The network name of the wireless router or access point.

(b) Channel

The current operating channel of the wireless router or access point.

(c) Signal Strength

The signal strength of the related wireless router or access point.

(d) WEP (Encryption)

Will display “Off” when encryption is disabled, “64-bit” when 64-bit encryption is enabled, and “128-bit” when 128-bit encryption is enabled.

(e) Ad-Hoc Networks Only

Check this box to display available Ad-Hoc networks only. An Ad-Hoc network is a computer-to-computer network.

(f) Advanced

Displays additional information about the selected network.

(g) Freeze

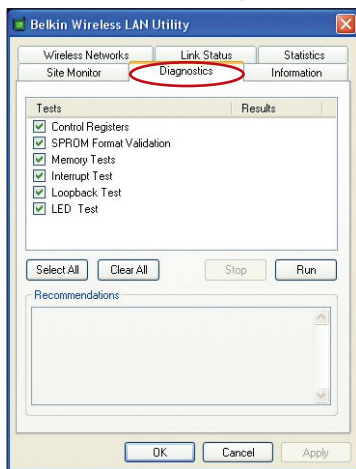
Takes a “snapshot” of the signal strength at the time of the site survey. Click again to unfreeze.

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Performing Diagnostic Tests on your Connection

Click on the “Diagnostics” tab.

This page allows you to perform several diagnostic tests that are available for your Belkin Wireless G Desktop Network Card.



Control Registers

This test verifies the read and write capabilities of the network controller registers by writing various values to the registers and verifying the result. The device driver uses these registers to perform network functions such as sending and receiving information. If the test fails, the network adapter may not work properly.

SPROM Format Version

This test verifies the content of the SPROM by reading a portion of the SPROM and computing the checksum. The test fails if the computed checksum is different than the checksum stored in the SPROM.

Memory Tests

This tests verifies that the network controller internal memory is functioning properly. The test writes patterned values to the memory and reading back the results. The test fails if an erroneous value is read back. The network controller will not function without its internal memory.

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Interrupt Test

This test verifies that the NDIS driver is able to receive interrupts from the network controller.

Loopback Test

This test verifies that the NDIS driver is able to send packets and receive packets from the network controller.

LED Test

This test verifies that your 802.11g wireless networking hardware is functioning correctly.

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

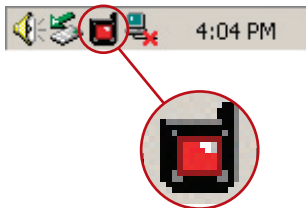
If this is **NOT** the case, make sure:

- The Router power cord is plugged in
- All cables are connected between the router and the modem
- All the modem's LEDs are functioning correctly. If not, see your modem's user manual.
- Reboot the User Manual
- Reboot the Modem

If you continue to have issues, please contact Belkin Technical Support.

If you are not using a Belkin Wireless Router, consult that router 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 wireless card, the tray icon should look like this (the icon may be red or green):



3. The exact window that opens will vary depending on the model of wireless card 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 (125HSM) Router, “Belkin54g” is the default name.

If you are using a Belkin 802.11g (54g) 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 router, please consult your router manufacturers user manual for the default name.

The name of your wireless network appears in “Available Networks”

If the correct network name is listed in the “Available Networks” list, please follow the steps below to connect wirelessly:

1. Click on the correct network name in the “Available Networks” list.
2. If the network has security (encryption) enabled, you will need to enter the network key. Click “Connect”. For more information regarding security, see the page entitled: “Securing your Wi-Fi Network” on pg.19 of the user manual.
3. Within a few seconds, the tray icon in the lower right-hand corner of your screen should turn green, 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.

Troubleshooting

The name of your wireless network DOES NOT appear in the list of “Available Networks”

If the correct network name is not list Check the SSID 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 Card to connect to the Wireless Router or Access Point.

Note: To check the SSID settings or look for an available network, double-click the Signal Indicator icon to bring up the “Wireless Networks” screen. Click “Add” if you do not see the network you are trying to connect to and type in the SSID. For more information about setting up a SSID please reference your router manufacture’s user manual.

If issues persist even at close range, 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 that the Installation CD has been placed in to start the installation. Then, double-click on the folder named “Files”. Next, double-click on the icon named “Setup.exe”.



Power LED does not come ON; Card is not working

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

Verify that the Card is plugged firmly into the PCI 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 PCI Card 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 Card 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 network name (SSID) settings in your wireless network properties.

Check the SSID 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 Card to connect to the Wireless Router or Access Point.

Note: To check the SSID settings or look for an available network, double-click the Signal Indicator icon to bring up the “Wireless Networks” screen. Click “Add” if you do not see the network you are trying to connect to and type in the SSID. For more information about setting up a SSID please reference your router manufactures 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 there is a mismatch between the Encryption key settings in your computer and Wireless Router or Access Point.

Check the WEP key settings to see if they match. The key is case-sensitive and the spelling on each computer and Wireless Router or Access Point must be exactly the same in order for the Adapter to connect to the router. For more information about encryption please see “Securing your Wi-Fi Network” on page 19 of this manual.

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

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Troubleshooting

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 feet from The Wireless Router (or Access Point). 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.

Signal strength is poor

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 feet from Wireless Router or Access Point.

Changing the wireless channel - Depending on local wireless traffic and interference, switching the wireless channel of your network can improve performance and reliability. The default channel the router is shipped with is channel 11, you may choose from several other channels depending on your region; see your router manual for instructions on how to choose other channels.

Limiting the wireless transmit rate - Limiting the wireless transmit rate can help improve the maximum wireless range, and connection stability. Most wireless cards have the ability

to limit the transmission rate. To change this property, go to the Windows Control Panel, open the Network Connections and double-click on your wireless card's connection. In the properties dialog, select the configure button on the General tab (Windows 98 users will have to select the wireless card in the list box and then click properties), then choose the advanced tab and select the Rate property. Wireless client cards are usually set to automatically adjust the wireless transmit rate for you, but doing so can cause periodic disconnects when the wireless signal is too weak; as a rule, slower transmission rates are more stable. Experiment with different connection rates until you find the best one for your environment; note that all available transmission rates should be acceptable for browsing the Internet. For more assistance, see your wireless card's literature.

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

Why are there two wireless utilities in my system tray? Which one do we 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 card.

Wireless PCI Card is not Detected by Operating System

- The Wireless PCI Card is not recognized by your desktop computer
- The “New Hardware” Wizard does not appear when booting up the computer
- Receive Microsoft Error Code: 10
- Receive Microsoft Error Code: 0

If the “New Hardware Wizard” does not appear, or you receive any of the above error codes, please attempt the following troubleshooting steps:

1. Remove the screws behind your computer case that secures the computer cover and remove cover.
2. Touch any metal part of the case to discharge static electricity, which could damage your product or your computer.
3. Remove the Wireless PCI card.
4. Locate a different empty PCI expansion slot. It is usually white in color.
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 connections in the way, try to pick the PCI slot that has the fewest obstructions to the correct the positioning of the antenna.
6. Remove the metal port cover from the back of the computer 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 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. Now that the Card is installed, you can reconnect the power cord, and turn it back on.
11. The computer should now properly recognize the card.

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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 or 125Mbps* in High-Speed Mode. 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

*When operating in High-Speed Mode, this Wi-Fi device may achieve an actual throughput of up to or greater than 34.1 Mbps, which is the equivalent throughput of a system following 802.11g protocol and operating at a signaling rate of 125 Mbps. Actual throughput will vary depending on environmental, operational and other factors.

Information

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

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,
F5D7001

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.

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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 (8 inches) during normal operation.

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.

Information

"Belkin declare that F5D7001 is limited in CH1~CH11 by specified firmware controlled in USA."

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

INFORMATION TO USER:

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE

to operate the equipment.

IC Statement

To prevent radio interference to the licenced service, this device is intended to be operated indoors and away from windows to provide maximum shielding.

Equipment (or its transmit antenna) that is installed outdoors is subject to licensing

"This device has been designed to operate with an antenna having a maximum gain of 0 dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms."

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Information

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.

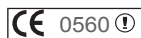
Canada-Industry Canada (IC)

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 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
- 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 0560 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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BELKIN®

High-Speed Mode Wireless G Desktop Network Card



belkin.com

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