

BELKIN®

N Wireless Notebook Card

BELKIN®

www.belkin.com

Belkin Tech Support

US: 877-736-5771

800-223-5546 ext. 2263

310-898-1100 ext. 2263

UK: 0845 607 77 87

Australia: 1800 235 546

New Zealand: 0800 235 546

Singapore: 65 64857620

Europe: www.belkin.com/support

Belkin International, Inc.

501 West Walnut Street

Los Angeles, CA 90220-5221, USA

310-898-1100

310-898-1111 fax

Belkin Ltd.

Express Business Park, Shipton Way
Rushden, NN10 6GL, United Kingdom

+44 (0) 1933 35 2000

+44 (0) 1933 31 2000 fax

Belkin Ltd.

4 Pioneer Avenue

Tuggerah Business Park

Tuggerah, NSW 2259, Australia

+61 (0) 2 4350 4600

+61 (0) 2 4350 4700 fax

Belkin B.V.

Boeing Avenue 333

1119 PH Schiphol-Rijk, The Netherlands

+31 (0) 20 654 7300

+31 (0) 20 654 7349 fax

© 2007 Belkin International, Inc. All rights reserved. All trade names are registered trademarks of respective manufacturers listed. Windows and Windows Vista are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

P75448-A

BELKIN.

N Wireless Notebook Card



User Manual

F5D8013v4

Table of Contents

1 Introduction	1
Benefits of a Home Network	1
Advantages of a Wireless Network	1
Placement of your Wireless Networking Hardware for Optimal Performance	2
2 Overview	5
Product Features	5
Applications and Advantages	6
Product Specifications	6
System Requirements	7
Package Contents	7
3 Installing and Setting up the Card	8
A — Installation Process for Windows Vista	8
B — Installation Process for Windows Operating Systems other than Windows Vista	12
C — Configuration	15
4 Using the Belkin Wireless Networking Utility	16
Accessing the Belkin Wireless Networking Utility from the Windows System Tray	16
Network Status	17
Available Networks	17
Setting Wireless Network Profiles	19
Securing your Wi-Fi Network	19
Configuring your Card to use Security	23
5 Troubleshooting	36
6 Information	45

Introduction

Thank you for purchasing the Belkin N Wireless Notebook Card. Now you can take advantage of this great new technology and gain the freedom to network your home and office computers wirelessly. This Card allows you to connect a notebook computer to your network. 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”.

Benefits of a Home Network

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 email, and chat

Advantages of a 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 Wizards make 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 lets 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

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 farther 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 10 feet from the wireless router (or access point) in order to see if distance is the problem. If difficulties persist even at close range, please contact Belkin Technical Support.

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 Router (or Access Point)

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 Cards, Wireless Desktop Cards, and Wireless USB Adapters):

- Ensure that your wireless router's (or access point's) 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 wireless router (or access point) 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. Other 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 the wireless router (or access point) and your wireless-enabled computers.
- Unplug and remove the battery from any cordless phone that operates on the 2.4GHz band (check manufacturer’s 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 farthest channel from your wireless network as possible. For example, change the phone to channel 1 and move your wireless router (or access point) to channel 11. (Your channel selection will vary depending on your region.) See your phone’s user manual for detailed instructions.
- If necessary, consider switching to a 900MHz or 5GHz cordless phone.

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 Networking Utility to locate any other wireless networks, 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.

For more Belkin wireless networking products, use the detailed Site Survey and wireless channel information included in your User Manual.

5. Secure Connections, VPNs, and AOL

Secure connections 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 online banking websites
- Many commercial websites that 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 website.

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 in Windows, see the “Power Options” item in the Control Panel.

If you continue to have difficulty with Secure Connections, 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, we suggest the Belkin Wireless Range Extender/Access Point.

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

Product Features

The Card complies with the IEEE draft-802.11n specification to communicate with other draft-802.11n-compliant wireless devices at up to 300Mbps*. The Card is also compatible with 802.11g devices at 54Mbps as well as 802.11b products at 11Mbps. The Card operates on the same 2.4GHz frequency band as 802.11b/g Wi-Fi® products.

- 2.4GHz ISM (Industrial, Science, and Medical) band operation
- Integrated easy-to-use Wireless Networking Utility
- PCI interface, for operation in virtually any desktop computer
- WPA, WPA2, 64-bit WEP (Wired Equivalent Privacy), or 128-bit encryption
- Wireless access to networked resources
- Support for both Infrastructure and Ad-Hoc (peer-to-peer) networking modes
- Data rate of up to 54Mbps (802.11g), or 11Mbps (802.11b)
- Easy installation and use
- External antenna
- LED power and network link indicators

Applications and Advantages

- **Wireless roaming with a laptop around the home or office**
Offers the freedom of networking—without cables
- **Connection rates of up to 54Mbps**
Provides immediate wireless connectivity at home, work, and hotspot locations without compromising the use of existing 802.11b and 802.11g products
- **Compatibility with 802.11b products**
802.11g wireless LAN solutions are backward-compatible with existing Wi-Fi (IEEE 802.11b) products and with other products that display the 54g logo
- **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 construction 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:	32-bit CardBus
Operating Temperature:	32–140 degrees F (0–60 degrees C)
Storage Temperature:	-40–194 degrees F (-40–90 degrees C)
Humidity:	Max. 95% (non-condensing)
Typical Operating Range:	Up to 1,200 ft. (365.8m)**

***NOTE:** The standard transmission rate—300Mbps—is the physical data rate. Actual data throughput will be lower.

**Wireless performance may vary depending on the networking environment.



(a) Power LED

Lights up when the Card is powered up

(b) Link/Activity LED

Lights up when the Card is connected; flashes when wireless activity is detected

(c) Card Connector

Part of the Card that fits into your computer's CardBus slot

System Requirements

- PC-compatible computer with one available 32-bit, CardBus slot
- Windows® 2000, XP with SP2, or Vista™*** (clients are not Mac OS compatible)
- Minimum 64MB of RAM
- CD-ROM drive
- Internet browser

Package Contents

- N Wireless Notebook Card
- Quick Installation Guide
- Installation Software and User Manual on CD-ROM

Installing and Setting up the Card

A. Installation Process for Windows Vista

*****NOTE:** For information on updated drivers, please visit the Belkin website at www.belkin.com/support.

IMPORTANT: INSTALL THE SOFTWARE BEFORE INSERTING THE CARD.

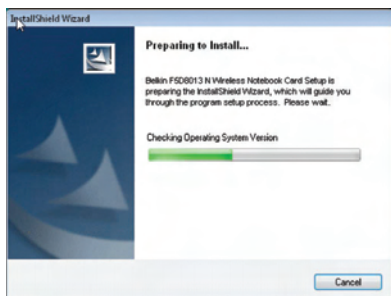
A.1 Insert the Installation Software CD into your CD-ROM drive.

A.2 Click “Next” to begin the installation process.

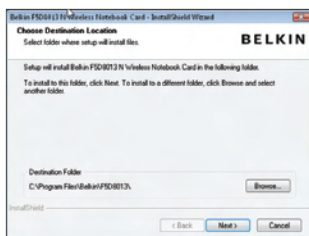


Note: If the Belkin Wireless Card Installer screen does not appear within 20 seconds, access your CD-ROM by double-clicking on the “My Computer” icon; then, double-click on the CD-ROM drive into which the installation CD has been placed. If the Installer does not start automatically, double-click on the icon named “Setup.exe”.

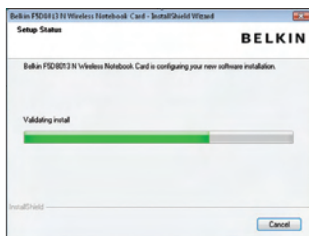
A.3 The InstallShield Wizard starts installation process.



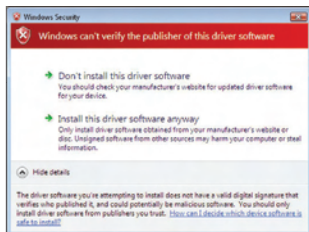
Installing and Setting up the Card



- A.4** Select a destination folder for the software installation by clicking “Browse”; or, simply click “Next” to select a default location.



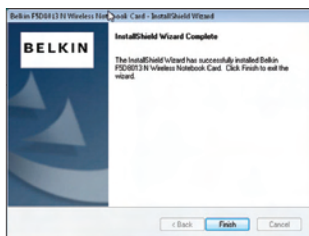
- A.5** A Setup Status screen will let you know where you are in the setup process.



- A.6** A window may appear a second time showing the message, “Windows can’t verify the publisher of this driver software”. This DOES NOT indicate a problem. Our software has been fully tested and is compatible with this operating system.



- A.7** When prompted, turn off your computer and plug in your Card. Your installation is now complete.

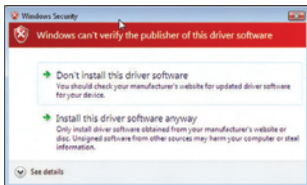


- A.8** When the installation completes, click on “Finish”.

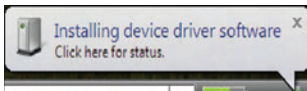
Installing and Setting up the Card



A.9 The Found New Hardware Wizard might appear within 3–15 seconds. If it does, continue to follow the prompts. Select “Locate and install the driver software” to continue.



A.10 You might see a screen similar to the one pictured below. This DOES NOT mean there is a problem. Our software has been fully tested and is compatible with this operating system. Select “Install this driver software anyway” and follow the on-screen instructions.



Next, a screen appears indicating that hardware installation is taking place; then, another indicates that the process is complete.

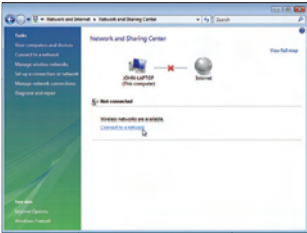


A.11 To connect to the Internet, open the Network and Sharing Center by first opening the Control Panel from the “Start” menu.

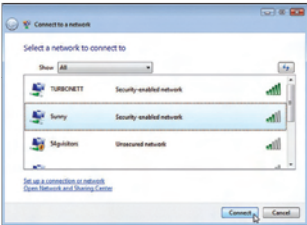


A.12 In the Control Panel, click on “View network status and tasks”.

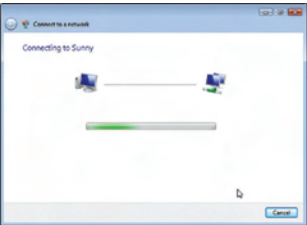
Installing and Setting up the Card



A.13 In the Network and Sharing Center, click on “Connect to a network”.



A.14 In the next screen, select an available wireless network and click “Connect”.

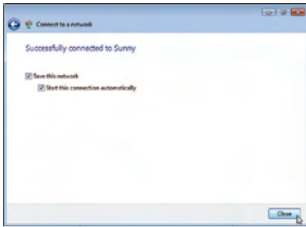


A.15 Your Card will attempt to connect to the selected network.



A.16 Depending on the security settings of your wireless network, you may be prompted to enter a network security key or a passphrase. Click “Connect” after you have done so.

Installing and Setting up the Card



A.17 After connecting to the network, you can choose to save this network and connect automatically when your Card is in range.

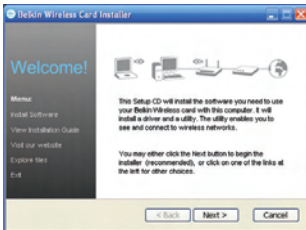


A.18 The Network and Sharing Center now indicates the network connection that you have just made. The links on the left of the window allow you to configure your network connections.

B. Installation Process for Windows Operating Systems other than Windows Vista

IMPORTANT: INSTALL THE SOFTWARE BEFORE INSERTING THE CARD.

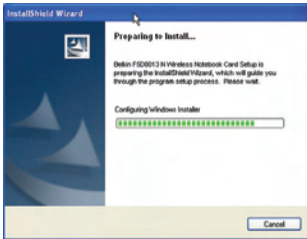
B.1 Insert the Installation Software CD into your CD-ROM drive.



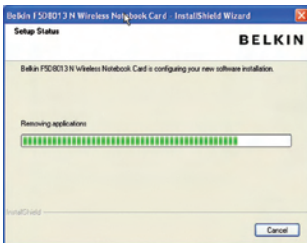
B.2 The Belkin Wireless Card Installer screen will automatically appear within up to 20 seconds. Click “Install Software” or “Next” to start the installation.

Note: If the Belkin Wireless Card Installer screen does not appear within 20 seconds, access your CD-ROM by double-clicking on the “My Computer” icon; then, double-click on the CD-ROM drive into which the installation CD has been placed. Then, double-click on the icon named “Setup.exe”.

Installing and Setting up the Card



B.3 The InstallShield Wizard starts the installation process.

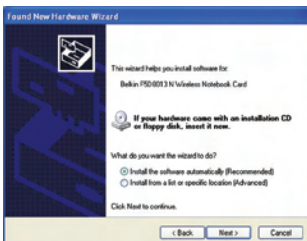


B.4 Select a destination folder for the software installation by clicking “Browse”; or, simply click “Next” to select a default location.

B.5 A Setup Status screen lets you know where you are in the setup process.



B.6 After the software installation is finished, a prompt will instruct you to insert the Card into your computer’s CardBus slot.



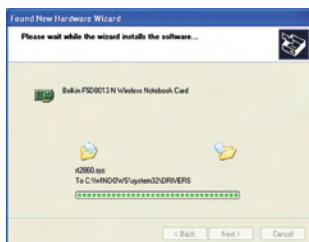
B.7 The Found New Hardware Wizard might appear in 3–15 seconds. If it does, select “Install the software automatically” and click “Next” to install the hardware.

B.8 If the Found New Hardware Wizard does not appear, click “Finish”.

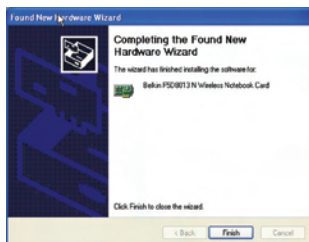
Installing and Setting up the Card



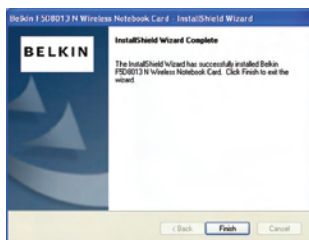
B.9 You might see a screen similar to this one. This DOES NOT mean there is a problem. Our software has been fully tested and is compatible with this operating system. Select “Continue Anyway” and follow the on-screen instructions.



B.10 The Wizard will now install your software.



B.11 The installation is now complete. Click “Finish” to close the “Found New Hardware Wizard”.



B.12 Click “Finish” again to exit the InstallShield Wizard.

B.13 Depending on which operating system you are using, you might be required to reboot your computer for the changes to take effect. Save your data and close all other applications. Then, reboot.