NETGEAR®

802.11a Wireless CardBus Adapter
54 Mbps HA501

Installation Guide

Introduction

Thank you for purchasing the NETGEAR HA501 802.11a Wireless CardBus Adapter. This wireless adapter enables you to network various PC's together without physically laying any wire and delivers high-speed wireless performance – up to 54 Mbps, 72 Mbps in turbo mode. It provides small business networks with reliable, standards-based 802.11a LAN connectivity that is protected with industry-standard security. NETGEAR's 802.11a solution is interference-free and coexists with 802.11b and Bluetooth™ devices. It works with Windows® 98, Me, NT 4.0, 2000, and XP operating systems.

This installation guide shows you how to install the adapter and the software for the adapter, and configure it to create a wireless network. Setup is easy—follow the instructions in this guide and your system will be up and running quickly.

If you have problems, there is a troubleshooting section on page 17 to help you. Or you can get more detailed troubleshooting information from the reference guide on the *HA501 Resource* CD-ROM. NETGEAR also offers free support 24 hours a day, 7 days a week on the Web (www.NETGEAR.com), by e-mail (support@NETGEAR.com), and by phone (see the provided support information card for phone numbers).

Installation Overview

Estimated setup time: 10 to 15 minutes

1. Determine the configuration of your wireless network.
2. Install the wireless adapter.
3. Install the wireless configuration utility for the adapter.
4. Configure the adapter.
5. Test the connection.

Note: Users of SystemSoft's CardWizard must install NT 4.0 with Service pack 6 in order for the HA501 Wireless Adapter to function properly.

For more detailed information about installation, troubleshooting, and configuration procedures, see the reference guide on the *HA501 Resource* CD-ROM.

1 Determine the Network Configuration

To set up the wireless adapter, you need to determine the network setting of your wireless network.

Are you running the wireless network in ad-hoc mode or infrastructure mode?

There are two modes of configuring your wireless adapter: ad-hoc mode or infrastructure mode. In an ad-hoc wireless network, there is no access point. Each node communicates with any other node directly. (A node is a network connection point. For example, a PC in a LAN is a node.)

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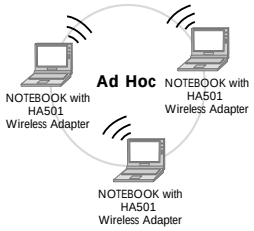
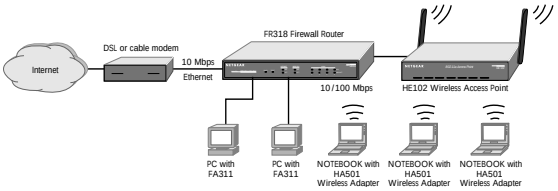


In the infrastructure mode, the wireless access point bridges between the wired LAN and wireless network. Connecting multiple access points via a wired Ethernet backbone can further extend the wireless network coverage. As a mobile computing device moves out of the range of one access point, it moves into the range of another. As a result, wireless clients can freely roam from one Access Point domain to another and still maintain a seamless network connection.

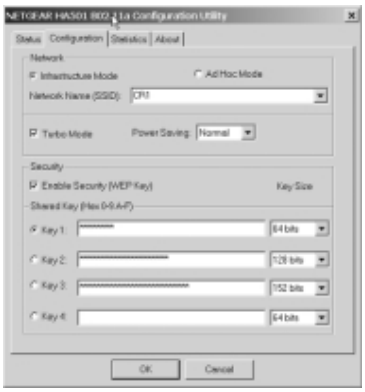


If you are running a wireless network in infrastructure mode, please set up the access point (such as the NETGEAR HE102 802.11a Wireless Access Point) first, before you set up this wireless adapter.

Ad-hoc mode or infrastructure mode: _____

Note: Twenty-four bits in the encryption key are factory preset and not modifiable. A 64-bit encryption key can be represented by ten (10) hexadecimal digits. For a 128-bit encryption key, twenty-six (26) hexadecimal digits need to be provided. For a 152-bit encryption key, thirty-two (32) hexadecimal digits need to be provided.

Note: Hexadecimal digits are the first ten numbers of the decimal system (0, 1, 2, 3, 4, 5, 6, 7, 8, and 9) and the letters A, B, C, D, E, and F. Your choice of characters is arbitrary. You might use, for example, a phone number. (Do not use an obvious one, such as your office phone number). The table below shows you some examples of encryption settings.



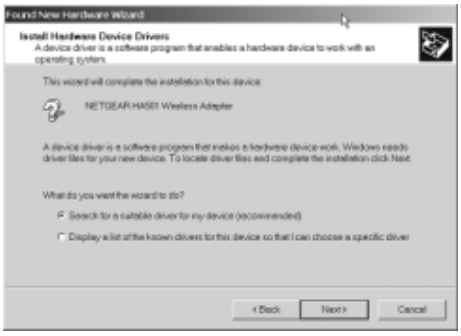
Shared Key (1 of 4): _____

Key Size (64, 128, or 152 bits): _____

Key Value (Hex 0-9 A-F): _____

Installation Instructions for Windows 2000

1. If you have chosen to install the card with the PC turned off, turn the power on now. The new hardware is found. Click “Next”.
2. Insert the HA501 Resource CD-ROM into your CD-ROM drive.
3. In the next window, select "Search for a suitable driver for my device (recommended),” and then click “Next.”



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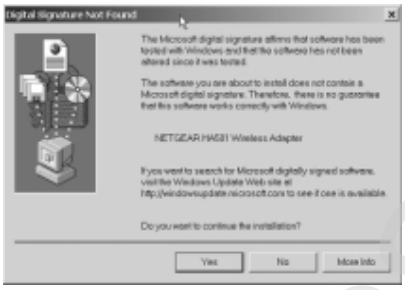
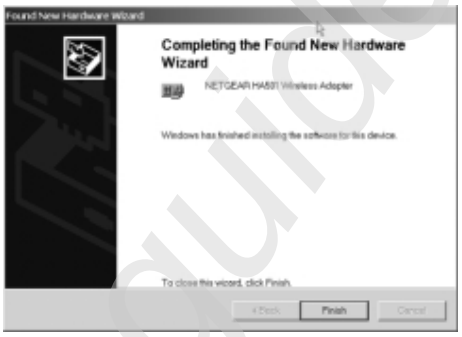
6. Click "Yes" when asked if you still want to install the driver when it is not digitally signed.



7. Click "Finish" at the final Found New Hardware wizard window.



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3 Install the Wireless Configuration Utility

A wireless LAN configuration utility is provided to give you information on your wireless network, such as signal quality, and to allow you to modify the various configurable parameters of the PC Card.

Install the wireless LAN utility

1. Insert the HA501 Resource CD-ROM in the CD-ROM drive. From the Windows 2000 desktop, open “My Computer”. Double-click the CD-ROM drive letter to look into the contents of the CD-ROM.
2. Double-click the SETUP application icon to start the installation procedure. The InstallShields Wizard opens. Click “Next” to continue.
3. Click “Yes” in the software license agreement window to accept the agreement.
4. Click “Next” to go past the Product Information window.
5. Click “Finish” when the program indicates that the installation is complete.

System Tray application

Note: The SysTray (System Tray) resides on one end of the taskbar in the Microsoft Windows desktop. It displays interface icons for memory-resident applications that execute in the background continuously, such as the clock, speaker volume, and virus detection.

The wireless LAN configuration utility installation for the HA501 Wireless Adapter adds a configuration and status reporting utility icon in the SysTray. Once you have completed the utility installation, the Windows 2000 SysTray should show the icon in different colors.

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4 Configure Wireless Parameters for the Adapter

Double-click the wireless SysTray icon to activate the wireless adapter configuration utility for the HA501 Wireless Adapter. The wireless utility program also can show the status of the adapter card and the signal strength connection to the access point.

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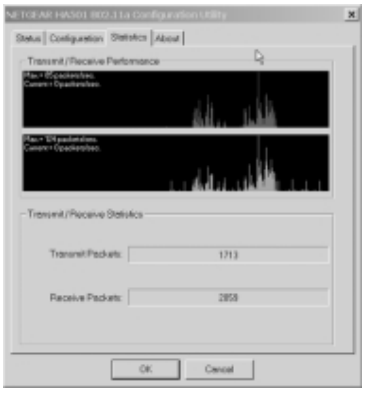
The Statistics folder tab allows you to view the packet transmit and receive status.



Note: Users of Windows 98 or Me must reboot after making any configuration changes in the HA501 Configuration Utility.

Note: Users of Windows XP will have increased configuration capability if they use the HA501 802.11a Configuration Utility instead of using Windows XP to configure the wireless network settings. The Zero Configuration feature can be disabled in the Wireless Network Connection Properties window by uncheck the “Use windows to configure my wireless network settings” default setting.

Troubleshooting

Problem	Cause	Solution
No lights are lit on the wireless adapter	The wireless card driver is not inserted into the CardBus PC card slot properly or the proper wireless HA501 adapter driver is not loaded.	• Remove and reinsert the wireless adapter. • Check the device manager in Windows to see if the adapter card is properly recognized in the Windows operating system. Reload the driver if necessary. • Try to install the driver in different CardBus PC card slot on your Windows NT system if it's available
The two LED's are blinking alternately	The wireless adapter is not associated to any access point properly. You may not have configured the wireless parameters of the wireless nodes to be the same as the access point.	• The access point may not be powered on. • The access point and the PC card are not configured with the same wireless parameters. Check into the SSID and WEP, Turbo mode option encryption settings. • The access point may be out of range. Try moving the system closer to the access point or readjusting the antenna on the access point. You may also move the access point to a higher location for better signal reception by the wireless adapter.
I am associated and access point, but I cannot see the other computers on the Ethernet side of the network	This could be a physical layer problem or a network configuration problem.	• Check to make sure that the access point is physically connected to the Ethernet network. • Make sure that the IP addresses and the Windows networking parameters are all configured correctly.

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Statement of Conditions

In the interest of improving internal design, operational function, and/or reliability, NETGEAR reserves the right to make changes to the products described in this document without notice.

NETGEAR does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice

Netgear Inc., 4500 Great America Parkway, Santa Clara, CA 95054, (408) 907-8000, declares under our sole responsibility, that this device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

NETGEAR Model HA501 Wireless PC Card

Tested to Comply
with FCC Standards

FOR HOME OR OFFICE USE

Note: 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 and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does 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 to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna,
- Increase the separation between the equipment and receiver,
- Connect the equipment into 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.

Radio Frequency Interference Requirements

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and /or damage this device.