

Intel® PRO/Wireless 5000 LAN Products

Quick Installation Guide

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Intel® PRO/Wireless 5000 LAN Products

User Documentation

In addition to this Quick Installation Guide, Intel provides extensive online documentation for the PRO/Wireless 5000 LAN product line on the Intel CD-ROM in HTML format.

Note: The Intel CD-ROM may contain documentation for other Intel products in addition to the PRO/Wireless 5000 LAN Products. Please disregard the documentation for other products.

All documentation for the PRO/Wireless 5000 LAN Products is accessible by clicking a button on the autorun menu screen displayed when the Intel CD-ROM is inserted into the computer (if this screen does not appear, run autorun.exe from the root directory of the Intel CD-ROM). Disregard any documentation on the CD-ROM that is not accessible through this autorun menu screen.

Installing the Access Point

Package Contents

- Intel® PRO/Wireless 5000 LAN Access Point (model WSAP5000)
- Mounting hardware
- Power supply and power cord
- CD-ROM containing software and online documentation
- Quick Installation Guide (this manual)

Installation Options and Requirements

- **(Recommended)** To set up and configure the access point, use a wired client workstation connected to the access point directly or connected to the wired LAN to which the access point is connected. Initial setup and configuration must be done over a wired connection, but subsequent changes can be made over a wireless connection.
- **(Optional)** Use DHCP server support for automatic assignment of an IP address to the access point over the wired network. You can configure the access point to use DHCP to get its IP address. See Using DHCP on page 8.

Connect and Power Up the Access Point

Connect the Access Point to the Wired Network

- Plug an RJ-45 Category 5 Ethernet cable into the RJ-45 connector on the access point and into a 10/100 Ethernet wall connector or hub.

Connect the Access Point to an AC Power Source

- Plug the power adapter into a wall outlet.
- Plug the power adapter cable into the socket on the bottom of the access point.

LED Indicators

Once the access point is connected to a wired network and is powered on, check the LED indicators to verify that the unit is functioning correctly. If the access point fails to initialize, restart it by disconnecting and reconnecting power.

- The "Ready" LED at the bottom of the row of LEDs should be lit.
- If the access point is connected to a LAN through an Ethernet cable, the "Wired Link" LED should be lit (green for 10 Mbps, orange for 100 Mbps) and the "Wired network activity" LED should be blinking.
- If the access point is communicating with a wireless adapter, the "Wireless radio activity" LED should be flashing.

Viewed top to bottom, the LED indicators on the access point have the following functions.

Wired link	Green for 10 Mbps wired network speed, orange for 100 Mbps.
Wired network activity	Yellow blinking shows activity.
Wireless radio association	Green will be ON if a client is associated to the access point and OFF if not.
Wireless radio activity	Yellow flashes steadily if no adapter associated, and more rapidly when transferring data.
Wireless radio association	Future use.
Wireless radio activity	Future use.
Ready	Green. This indicator will stay illuminated after the access point has completed the initialization sequence.

Configuring the Access Point for the First Time

1. Set up a portable or desktop computer as a configuration workstation from which to view the browser-based Configuration Management System used to configure the access point.
2. Connect the configuration workstation to the access point either directly (using a crossover RJ-45 cable) or through a hub or switch (using a standard RJ-45 cable).
3. The configuration workstation must be running Microsoft Windows® XP, 2000, Me, or 98, and one of the following web browsers: Microsoft Internet Explorer version 5.50 or Netscape Navigator version 4.78 or 5.x
4. Set up the configuration workstation initially with an IP address compatible with the **default IP address** and **default subnet** of the access point. For example, based on the access point default IP address 192.0.2.1 and default subnet 255.255.0.0, the client workstation could be set to 192.0.2.2, 192.0.2.3, or a similar address not in use by another device.
5. Once the workstation has been configured as just described, type the default access point IP address as a URL in the browser address field: **http://192.0.2.1**.
6. To access the Express Setup pages, type a user name and a password. The default for both is: **Intel**. The password is case-sensitive: capital "I," lower case "ntel."
7. Use Express Setup to configure the access point with a **new IP address, subnet, and other settings** suitable for the network to which it will be permanently connected (see table on page 7).
8. Click Apply first, then click Restart AP. After the access point has restarted, connect it to the required network.
9. Once the access point has been configured and connected to the network, the configuration interface can be viewed from any workstation on the same network segment or subnet. Open a compatible browser and type the actual IP address of the access point as a URL in the address field.

Note: To view configuration, function or option changes on the browser pages, turn off the browser's caching function.

- For Netscape, from the menu bar select Edit, Properties, Advanced, Cache, the select Document in cache is compared to document on network: Every time.
- For Internet Explorer, from the menu bar select View, Internet Options, Temporary Internet files, Settings, then select Check for newer versions of stored pages: Every visit to the page.

Settings for First Time Configuration (Express Setup)

For complete coverage of access point settings see the access point Help file or the online User's Guide.

Setting	Description
Default IP Address	The default IP address is 192.0.2.1. An IP address is not dynamically assigned to the access point under its default configuration. Use the default address initially, then change it to a valid address for the network to which the access point will be connected. For dynamic address assignment, see the section Using DHCP.
System Name	User-defined name for the access point. Any combination of letters and numbers from 1 to 32 characters. Default is the model number of the access point.
Default Subnet Mask	The default Subnet Mask is 255.255.0.0 if DHCP usage is Disabled or DHCP service is not available. Change this to a valid subnet mask for the network to which the access point will be connected.
Default Gateway	There is no default gateway initially configured. Use a valid gateway address for the network to which the access point will be connected. If no valid gateway is defined on your network, use the default gateway 0.0.0.0. For gateway assignment via DHCP, see the section Using DHCP.
DHCP	The Dynamic Host Configuration Protocol (DHCP) dynamically assigns IP addresses on a network with a DHCP server. DHCP default setting for the PRO/Wireless 5000 LAN Access Point is Disabled . To change this to Enabled and install the access point on a network using DHCP support, see Using DHCP.
Help URL	Location of the Help files accessible by clicking the Help button on a screen in the access point Configuration Management System. See the online User's Guide for information.
SSID 11A	Service Set Identifier (also called Network Name, Network ID, ESSID) identifies the network to which the access point is connected. All access points and client workstations on the same wireless LAN must have the same SSID, which can be any combination of letters and numbers up to 32 characters. Default for Intel PRO/Wireless 5000 LAN devices is " 101 ." The default SSID is intended only for preliminary setups and connections; it should usually be changed to a descriptive name for the wireless LAN network in question.

Using DHCP (Optional)

The Intel PRO/Wireless 5000 LAN Access Point can be configured to use DHCP to get its IP address, subnet mask, and default gateway:

1. Access the Express Setup page in the browser-based Configuration Management System as described in Steps 1-6 under Configuring the Access Point for the First Time on page 6.
2. Change the DHCP setting from Disabled to Enabled on the Express Setup page or the Configuration page. Save the new settings by clicking Apply, then click Restart AP. After the restart, connect the access point to the network to which it will be permanently connected.
3. The next time the access point is restarted after DHCP has been enabled, it will attempt to get its IP address, subnet mask, and default gateway from the DHCP server. If no server is available, the access point will use the Default IP Address and Default Subnet Mask settings.
4. When the access point used DHCP to obtain its IP address, you will have to determine the IP address before you can access the configuration pages. There are several strategies you can use for this, based on the MAC address assigned to the access point:
 - Before connecting the "DHCP Enabled" access point to a DHCP network, ask your network administrator to reserve an IP address, based on the MAC address for the access point, in the DHCP "lease table." This will allow the DHCP server to recognize the access point when it is connected to the network and assign it a known IP address based on the MAC address.
 - You can also connect a "DHCP Enabled" access point to a DHCP network immediately, without reserving the MAC address before connection. In this case an address will be assigned automatically, but you will have to request the address from your network administrator, who will obtain it from the DHCP "lease table."
 - You can also use the Intel Access Point Administration Tool AP Discovery to find the access point and display its IP address. See the online User's Guide for details.

Restore Factory Defaults

The access point has a Reset button that can be used to perform a hardware reset or to restore the access point's factory default settings.

The Reset button is located in a **pinhole** on the bottom of the access point. Insert the end of an unbent paper clip into the hole and apply pressure as follows:

- Press and release the Reset button quickly to perform a hardware reset.
- Press and hold the Reset button until the "Ready" LED flashes quickly 3 times. This will restore all access point parameters to factory default settings, including default user name, password, and IP address.

Access Point Factory Default Settings

System name	WSAP5000 (or the model number of your access point)
IP address	192.0.2.1
Subnet mask	255.255.0.0
Default gateway	None
User	Intel (case sensitive)
Password	Intel (case sensitive)
SSID 11A	101
WEP 11A	Disabled

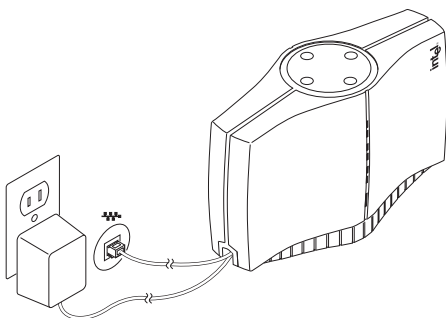
Setting Up a Wireless LAN

For detailed information on site survey, setup, positioning, and testing of access points on your wireless LAN, see the online User's Guides on the Intel CD-ROM. On the autorun menu screen (which displays when you load the CD-ROM or run autorun.exe from the CD-ROM), select "Access Point Manuals," "Main Contents," and "Administrator's Guide."

Mount the Access Point

Position each Access point using the following guidelines and illustrations. For best throughput and range, install the Access Point as high as practical.

Desktop or Table Top Location



Set the access point on a flat surface such as a table or desk. If the access point is positioned on a desk or table, the antenna should be on top (as shown above).

WARNING!!

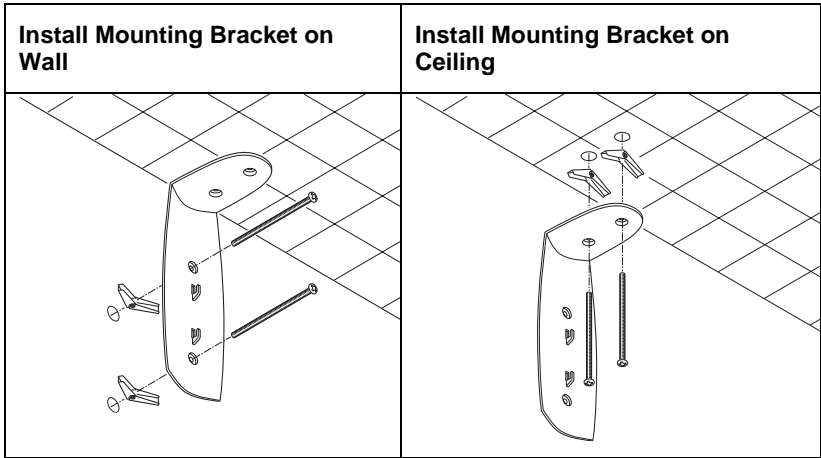
To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended for the Accesspoint, or a PCI Adapter card, installed in a desktop computer, that the antenna for this device be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or radio transmitter. Installers and end-users must follow the installation instructions provided in this user guide.

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.

Wall or Ceiling Mounted Location

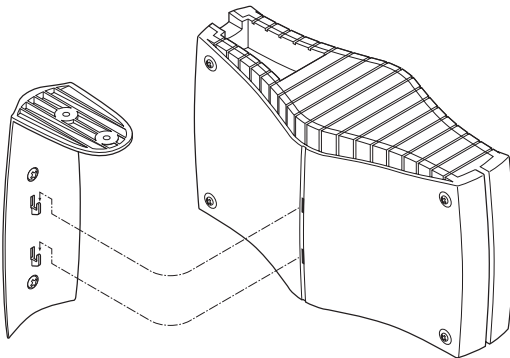
To install the mounting bracket on a hollow wall or ceiling, use the bracket to position and drill holes for the toggle screws supplied, using a 3/8-inch drill bit. Insert the bolt through the holes in the bracket, then screw on the toggle piece. **Insert bolt and toggle through the hole.** The toggle will open on the other side of the hole. Turn the bolt until the bracket is secure.



Attach Access Point to Bracket

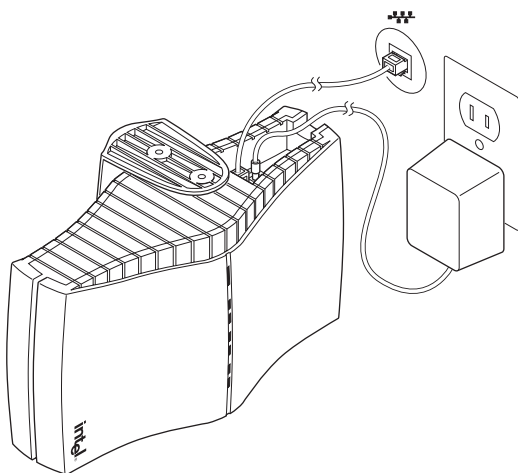
If the access point is attached to a ceiling or to a wall near the ceiling, it should be positioned with the antenna on the bottom (as shown below).

If the access point is mounted at a lower point on the wall, it should be positioned with the antenna on the top (see the illustration for Desk or Table Top location, page 9; the access point is designed so that it can be attached to the mounting bracket hooks in either orientation).



Connect Wall or Ceiling Mounted Access Point to Network and AC Power

Refer to Connect and Power Up the Access Point on page 5 for detailed instructions.



Installing the CardBus Adapter

Package Contents

- Intel® PRO/Wireless 5000 LAN CardBus Adapter (model WCB5000)
- CD-ROM containing software and user documentation
- Quick Installation Guide (this manual)

Hardware Installation

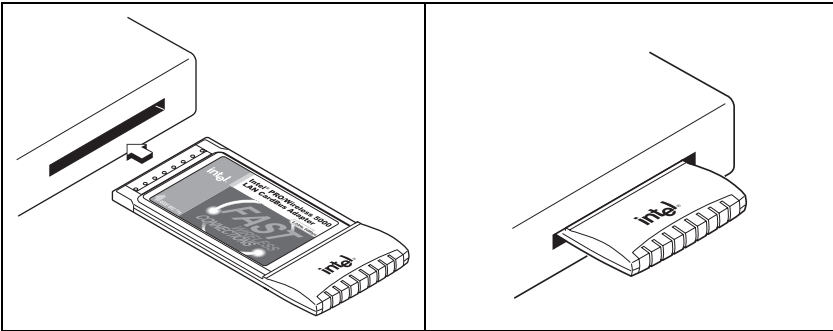
1. Turn on power to the computer and wait for Windows to load. (Windows 98SE, Me, 2000, or XP is required.)
2. Insert the CardBus Adapter into the CardBus PC Card slot on your computer, then proceed to **Step 3** to install drivers and software under the Windows operating system.

WARNING!!

To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended when using a wireless device with an integrated antenna, for the Cardbus inserted into a laptop computer that the antenna should not be positioned closer than 5 cm (two inches) from your body or nearby persons for extended periods of time while it is transmitting (or operating). If the antenna is positioned less than 5 cm (two inches) from the user, it is recommended that the user limit exposure time. The Device must not be co-located or operating in conjunction with any other antenna or radio transmitter. Installers and end-users must follow the installation instructions provided in this user guide.

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.



Windows® Installation (98SE, Me, 2000, XP)

3. Windows will detect the adapter. Follow the procedures below for your version of Windows, then continue with **Step 4**:

Windows 98SE

- The "Add New Hardware Wizard" dialog will appear. Click Next.
- Insert the Intel CD-ROM into your CD-ROM drive. If the PRO/Wireless LAN Products menu appears, leave it open.
- Click the New Hardware Wizard screen to make it active. Select "Search for the best driver for you device (Recommended)," and click Next, then select "CD-ROM drive" and click Next.
- The Adapter Properties screen will appear. On the Settings tab: (option a) click OK to install using a default profile or (option b) click Configure to set up a profile using configuration information obtained from your network administrator. On the My WLAN places dialog, click the New button to create a new profile. Type a configuration name and the SSID for your wireless network. Set up security and other parameters if required. Click OK twice, then Close.
- On the Add New Hardware Wizard screen, click Finish.
- When prompted to restart the computer, click No (restart manually after completing software installation). Proceed to **Step 4**.

Windows Me

- The "Add New Hardware Wizard" dialog will appear. DO NOT click Next. Verify that "Automatic search for a better driver (Recommended)" is checked.
- Insert the Intel CD-ROM into your CD-ROM drive. Windows will install the driver from the CD-ROM. If the PRO/Wireless LAN Products menu appears, leave it open.
- The Adapter Properties screen will appear. On the Settings tab: (option a) click OK to install using a default profile or (option b) click Configure to set up a profile using configuration information obtained from your network administrator. On the My WLAN places

dialog, click the New button to create a new profile. Type a configuration name and the SSID for your wireless network. Set up security and other parameters if. Click OK twice, then Close.

- Click Finish on the Add New Hardware Wizard screen when the driver installation is complete.
- When prompted to restart the computer, click No (restart manually after completing software installation). Proceed to **Step 4**.

Windows 2000

- The "*Add New Hardware Wizard*" dialog will appear. DO NOT click Next yet. Verify that "*Automatic search for a better driver (Recommended)*" is checked.
- Insert the Intel CD-ROM into your CD-ROM drive. Windows will install the driver from the CD-ROM. If the PRO/Wireless LAN Products menu appears, leave it open.
- The Adapter Properties screen will appear. On the Settings tab: (option a) click OK to install using a default profile or (option b) click Configure to set up a profile using configuration information obtained from your network administrator. On the My WLAN places dialog, click the New button to create a new profile. Type a configuration name and the SSID for your wireless network. Set up security and other parameters if required. Click OK twice, then Close.
- Click Finish on the Add New Hardware Wizard screen. Proceed to **Step 4**.

Windows XP

- The "*Found New Hardware Wizard*" dialog will appear.
 - Insert the Intel CD-ROM into your CD-ROM drive. The driver files will be copied to your hard drive. If the PRO/Wireless LAN Products menu appears, leave it open.
 - If a Windows Logo testing dialog appears, click "Continue Anyway."
 - The My WLAN Places screen will appear. You can (option a) click Next to install using a default profile or (option b) click Configure to set up a profile using configuration information obtained from your network administrator. On the My WLAN Places dialog, click the New button to create a new profile. Type a configuration name and the SSID for your wireless network. Set up security and other parameters if required. Click OK twice, click Close.
 - On the Found New Hardware Wizard screen, click Finish. Proceed to **Step 4**.
4. On the PRO/Wireless LAN Products menu screen, click Install Software (if the menu screen is not visible, remove and re-insert the Intel CD-ROM to display it, or run autorun.exe from the Intel CD-ROM).
 5. Click I Accept on the Software Agreement screen to continue.
 6. Select Yes when prompted to install or upgrade PROSet II LAN Software, then click Next.

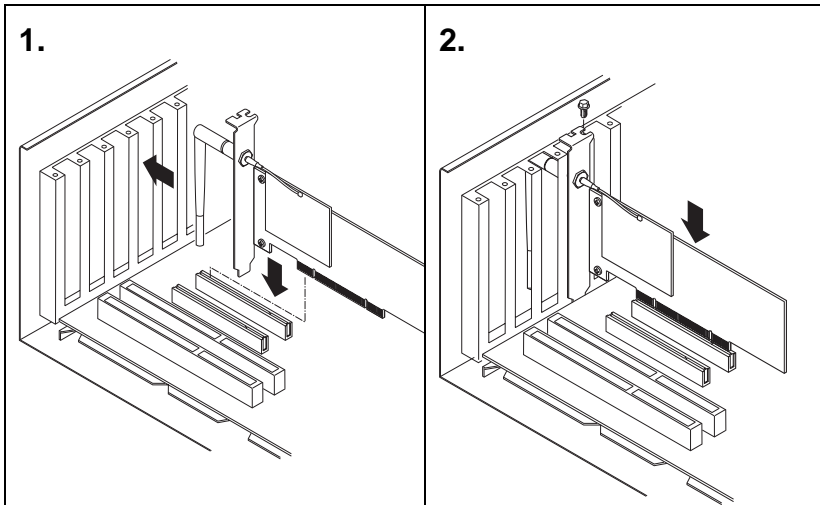
7. Select No (recommended) when asked if you want to install Access Point Administration Tools, then click Next. (If you are a network administrator, select Yes. See the Administrator's Guide in the online User's Guide for information on how to use the Administration Tools.)
8. After the software is installed on your computer, click Finish.
9. Restart the computer.

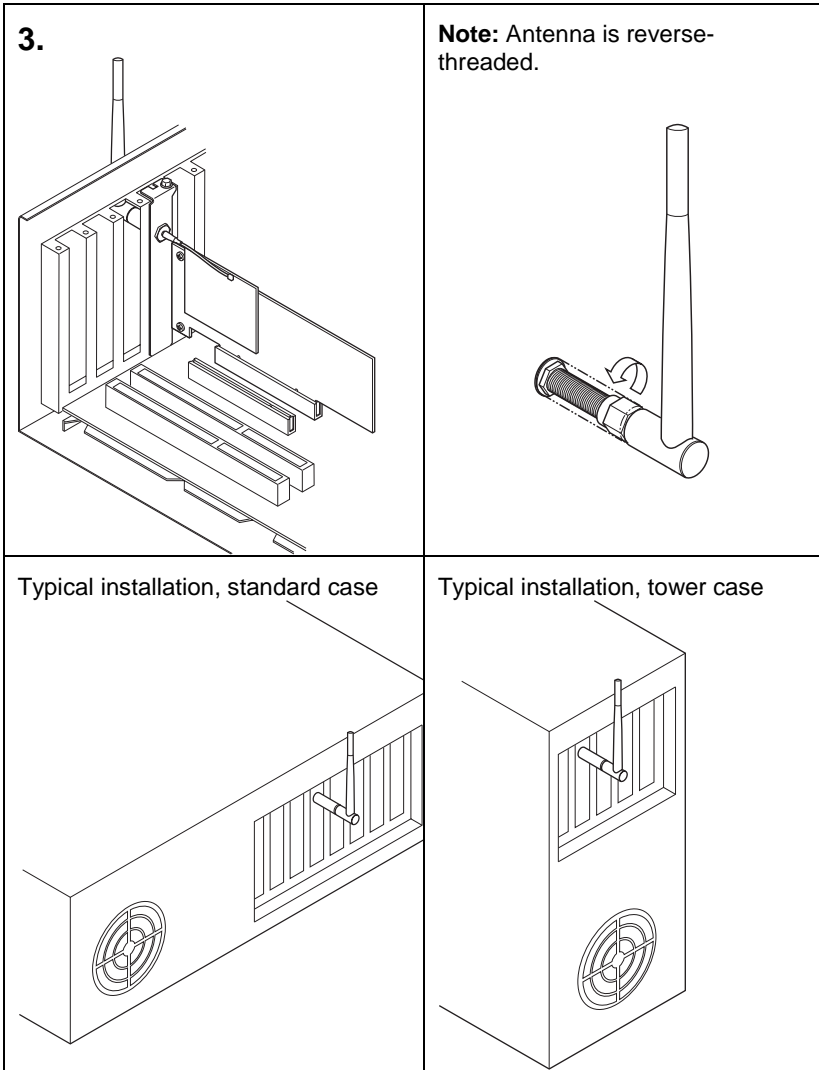
Installing the PCI Adapter

Package Contents

- Intel® PRO/Wireless 5000 LAN PCI Adapter (model WPCI5000)
- CD-ROM containing software and user documentation
- Quick Installation Guide (this manual)

Hardware Installation





Windows® Installation (98SE, Me, 2000, XP)

1. Install the PCI Adapter hardware according to the illustrations shown, then close and secure the computer case.
2. Turn on power to the computer and wait for Windows to load. (Windows 98SE, Me, 2000, or XP is required.)
3. Proceed to Windows® Installation, Step 3, on page 12.

Customer Support

Web and Internet Sites

- Support: <http://support.intel.com>
- Network Products: <http://www.intel.com/network>
- Corporate: <http://www.intel.com>

Customer Support Technicians

For the U.S. and Canada

If you are using this product in conjunction with Intel® PRO/Wireless 5000 LAN hardware in a business or office environment and want customer support, please call +1 916-377-7000 (7:00 – 17:00 M–F Pacific Time). You can also visit the Intel customer support web site (<http://support.intel.com>).

For Worldwide Access

Intel has technical support centers worldwide. Many of the centers are staffed by technicians who speak the local languages. For a list of all Intel support centers, the telephone numbers, and the times they are open, refer to the Customer Support Phone Numbers web site at

<http://www.intel.com/support/9089.htm>

Product Warranties

For details of product warranties, see the online manuals.

Regulatory and Safety Notices

All regulatory and safety notices are provided in the online manuals and on the web at <http://www.intel.com/support>.

Software License Agreement

Software included with this product is protected by a specific Software License Agreement, provided in the online manuals. By using this software you agree to the provisions in the Software License Agreement.

Register Online

Register online to receive technical support, product upgrade notices, information updates, and special offers. To register online, re-insert the Intel CD-ROM and click Online Registration on the menu.