



IBM 11a Wireless LAN CardBus Adapter

User's Guide

OPTIONS
by IBM

Notice

Before using this publication and the product it supports, read the warranty information in Appendix B, "Warranty information" on page B-1, and regulatory notices in Appendix C, "Notices" on page C-1.

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Contents

Safety	v
About this book	1-1
Registering your option	1-1
Introducing wireless networking	2-1
Networking infrastructure	2-1
Identifying a WLAN	2-1
Product overview and installation	3-1
Product overview	3-1
Installing the IBM 11a Wireless LAN CardBus Adapter	3-1
Manually installing the Wireless CardBus Adapter	3-3
Uninstalling the Adapter.	3-4
Using the adapter	3-4
Installing and using the Intel Wireless LAN Manager Utility.	3-5
Uninstalling the Intel Wireless LAN Manager Utility	3-5
Configuring the adapter	4-1
Starting the Intel Wireless LAN Manager Utility	4-1
Setting types.	4-1
Connecting to the network using an access point	4-2
Connecting to a peer-to-peer network	4-3
Using Wired Equivalent Privacy (WEP) encryption	4-4
Using wireless profiles	4-5
Using passwords	4-6
Displaying the adapter properties from the Control Panel.	4-8
Appendix A. Specifications	A-1
Appendix B. Warranty information	B-1
Warranty period	B-1
Service and support	B-1
IBM Statement of Limited Warranty Z125-4753-06 8/2000.	B-3
Appendix C. Notices	C-1
Trademarks	C-2
Electronic emission notices	C-2
Wireless notices	C-4

Safety

Observe the following safety notices when working with the adapter.

Attention:

- Do not touch or move the antenna while the unit is transmitting or receiving.
- Do not hold any component containing a radio such that the antenna is very close to or touching any exposed parts of the body, especially the face or eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; otherwise the radio may be damaged.
- Use in specific environments:
 - The use of wireless devices in hazardous locations is limited to the constraints posed by the safety directors of such environments
 - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
 - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital
- Observe antenna distances in the following situations:
 - In order to comply with FCC radio frequency exposure limits, dipole antennas should be located at a minimum distance of 7.9 inches (20 cm) or more from the body of all persons.
 - High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 12 inches (30 cm) or more from the body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements
- Explosive Device Proximity Warning
- Antenna Warning
- Use on Air Craft Warning
- Other wireless devices

Attention

Do not operate your wireless network device near unshielded blasting caps or in an explosive environment unless the device has been modified to be especially qualified for such use.

Attention

In order to comply with radio frequency exposure limits established in the ANSI C95.1 standards, it is recommended when using the PC adapter the the adapter's antenna be positioned more than 2 inches (5 cm) from your body or nearby persons during extended periods of transmitting or operating time. If the antenna is positioned less than 2 inches (5 cm) from the user, it is recommended that the user limit exposure time

Attention

Do not attempt to operate this device with a modified or damaged antenna.

Attention

To comply with FCC rules for RF exposure, maintain a minimum separation distance of 20 cm (8 inches) between the associated Access Point radiating elements and nearby persons.

Attention

This card is intended for use with UL 60950/EN60950/IEC60950 (or other NRTL) listed ITE computers that contain operator accessible PC card slots.

Other wireless devices

Read and understand the safety and regulatory documentation supplied with wireless Ethernet adapters or other devices in the wireless network.

About this book

This manual contains instructions for installing and using the IBM® 11a Wireless LAN CardBus Adapter. This manual is divided into the following parts:

Part I: Installation and user's guide

This section provides a product description, installation, troubleshooting, and operating instructions in the following languages:

- English
- Japanese

Part 2: Appendixes

This section contains technical specifications, warranty information, and legal notices.

Registering your option

Thank you for purchasing OPTIONS by IBM. Please take a few moments to register your product and provide us with information that will help IBM to better serve you in the future. Your feedback is valuable to us in developing better products and services that are important to you, as well as in developing better ways to communicate with you. Register your option on the IBM Web site at

<http://www.ibm.com/pc/register>

IBM will send you information and updates on your registered product unless you indicate on the Web site questionnaire that you do not want to receive further information.

Introducing wireless networking

This section of the *User's Guide* contains information on the fundamentals of wireless local area networks (WLANs).

Networking infrastructure

There are two types of wireless networks: a network of access points, and a network of peer-to-peer devices. The following sections contain information on these two types of networks.

Using access points

In infrastructure mode, wireless clients send and receive information through access points. When a wireless client communicates with another, it transmits to the access point in the LAN. The access point receives the information and rebroadcasts it to another wireless device.

Access points are strategically located within an area to provide optimal coverage for wireless clients. A large WLAN uses multiple access points to provide coverage over a wide area. Access points can connect to a LAN through a wired Ethernet connection. Access points send and receive information from the LAN through this wired connection

Using peer-to-peer mode without access points

In peer-to-peer mode, also called *Ad Hoc* mode, wireless clients send and receive information to other wireless clients without using an access point. In contrast to infrastructure mode, this type of WLAN only contains wireless clients. You can use peer-to-peer mode to network computers in a home or small office, or to set up a temporary wireless network for a meeting.

Identifying a WLAN

All adapters and access points in a WLAN use a Network Name, or Service Set Identifier (SSID) to identify the WLAN. The SSID indicates what WLAN you are using.

Product overview and installation

This chapter contains information on the features and installation of the IBM 11a Wireless LAN CardBus Adapter.

Product overview

Adapter features include:

- IEEE 802.11a specification compatibility. This open architecture requires that IBM 11a Wireless LAN CardBus Adapters communicate with other wireless devices that comply with the IEEE 802.11a standard.
- Up to 54 Megabits per second (Mbps) data rate for high-capacity, fast operation
- Driver support for
 - Microsoft Windows 2000 Professional
 - Microsoft® Windows® XP
- 128, 64, and 0 bit Wired Equivalent Privacy (WEP) data security and VPN compatibility.
- Operation in 5 GHz UNII spectrum prevents interference from cordless phones, microwaves, or Bluetooth® or 802.11b devices.
- 802.1x authentication for Microsoft Windows XP operating system

The adapter can only be installed in a PC Card slot in a suitably equipped computer. The adapter contains a built-in radio antenna that protrudes when inserted into the slot.

The IBM 11a Wireless LAN CardBus Adapter allows Personal Computer Memory Card International Association (PCMCIA) 3.3-volt Type II PC Card slot-equipped computers to configure, connect to and establish a wireless network.

Installing the IBM 11a Wireless LAN CardBus Adapter

Note: To verify if newer versions of this installation software are available, visit the IBM Web Site at <http://www.ibm.com/pc/support> for the latest software and documentation.

You can perform an install in one of two ways:

- Automatic install
- Manual install

Automatically installing the wireless cardbus adapter

The automatic installation process includes installing the device drivers for your operating system and the Intel Wireless LAN Manager Utility. To perform an automatic installation, do the following from the computer desktop:

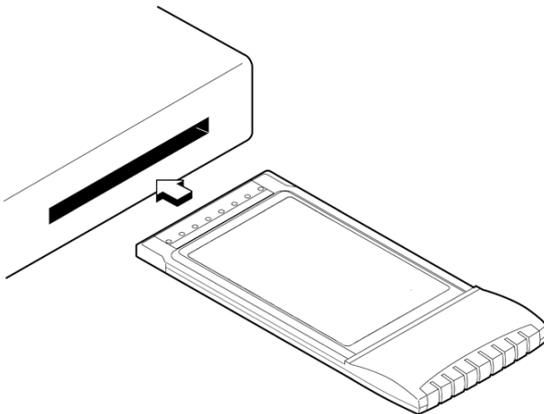
1. Insert the Installation CD into the CD-ROM drive.
2. Click **Start →Run** .
3. In the Open field, type `d:\setup\setup.exe /s /f1setup.iss`, where `d:` is the CD-ROM drive.
4. Following the instructions on the screen.
5. Insert the PC Card into the PC Card slot on your computer as shown in the illustrations below.
6. Restart the computer after the installation completes.

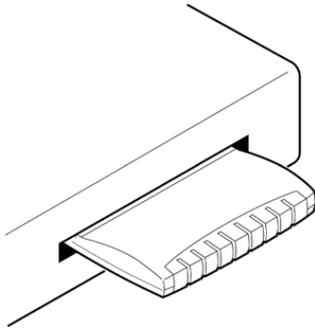
Note: After restarting your computer you will be required to configure your adapter. See Chapter “Configuring the adapter” on page 4-1 for more detailed information about configuring the adapter.

Manually installing the wireless cardbus adapter

To install the IBM 11a Wireless LAN CardBus Adapter, do the following:

1. Turn on the computer and wait for the operating system to start.
2. Insert the IBM 11a Wireless LAN CardBus Adapter into the PC Card slot on your computer as shown in the following illustrations.





3. Follow the instruction in “Manually installing the Wireless CardBus Adapter” for your operation system:

Manually installing the Wireless CardBus Adapter

This section contains instructions for manually installing the device drivers for Microsoft Windows 2000 Professional, and Microsoft Windows XP.

Microsoft Windows 2000 Professional

To install the IBM 11a Wireless LAN CardBus Adapter, do the following:

1. Click **Next** in the Found New Hardware Wizard window.
2. Verify that **Search for a suitable driver for my device (recommended)** is selected.
3. Insert the Installation CD into your CD-ROM drive.
4. Select the CD-ROM drive and click **Next**.
5. Click **Next** after the device driver is located.
6. In the Adapter Properties window, click **OK** to use the default profile and continue with the installation.

Note: You can customize the adapter configuration after the Intel Wireless LAN Manager Utility is installed. If you wish to configure the adapter at this point, Click the **Settings** tab and type in an SSID for your wireless network. Set up security and other parameters if required. See Chapter “Configuring the adapter” on page 4-1 for more detailed information about configuring the adapter.

7. Click **Finish** in the Add New Hardware window.
8. Continue with “Installing and using the Intel Wireless LAN Manager Utility” on page 3-5.

Microsoft Windows XP

To install the IBM 11a Wireless LAN CardBus Adapter, do the following:

1. From the Found New Hardware Wizard window, insert the Installation CD into your CD-ROM drive. The files are copied to your hard disk drive. If a Windows logo testing window opens, click **Continue Anyway**.
2. In the Adapter Properties window, click **OK** to use the default profile and continue with the installation.

Note: You can customize the adapter configuration after the Intel Wireless LAN Manager Utility is installed. If you wish to configure the adapter at this point, Click the **Settings** tab and type an SSID for your wireless network. Set up security and other parameters if required. Refer to the Configuration section for additional information about configuring the adapter

3. Click **Finish** in the Add New Hardware dialog box.
4. Continue with “Installing and using the Intel Wireless LAN Manager Utility” on page 3-5.

Uninstalling the Adapter

Refer to the heading for your operating system for instructions to uninstall the adapter and drivers.

Windows 2000 Professional and Windows XP

To uninstall the adapter, do the following:

1. From the computer desktop, right-click the **My Computer** icon and select **Manage**.
2. Select **Device Manager** from the list on the left.
3. Expand the Network Adapters item in the right side of the dialog box.
4. Right-click **Intel/PRO Wireless 5000 LAN CardBus Adapter** and select **Uninstall**.

Using the adapter

When the adapter is associated with an access point or other computer, the LED indicator on the adapter flashes steadily. When the adapter is sending or receiving information, the light flashes quickly. See the following table for more information on the LED indicator.

LED	Function
Green	ON - the adapter is connected to another wireless device
	OFF - the adapter is not connected to another wireless device
Yellow	Fast blink - data is being transmitted and received
	Slow blink - no data is being transferred

To see if the adapter is installed correctly, try navigating to a popular Web Site such as www.ibm.com. If the browser reports an error, try any of the troubleshooting tips below.

- If you do not have an Internet connection, try pinging a device on the network. If you are unfamiliar with how to ping devices, contact your network administrator.
- With the exception of a wired network connection, the IBM 11a Wireless LAN CardBus Adapter is similar to a mobile-wired adapter. In addition to standard troubleshooting techniques for wired network adapters, try the following:
 - Be certain the Network Name (SSID) of all access points and adapters match.
 - If you are using WEP encryption, both the adapter and the access point must have the same level of encryption enabled and use the same encryption key. Also, the four possible key entries selected must be the same.

Installing and using the Intel Wireless LAN Manager Utility

To install the utility, do the following:

1. From the desktop, click **Start → Run**.
2. In the Open: field, type `d:\setup\setup.exe`, where `d` is the CD-ROM drive.
3. To start the Intel Wireless LAN Manager Utility, use one of the following methods:
 - Click **Start → Programs → Intel Wireless LAN → Wireless LAN Manager Utility**.
 - Double-click the green icon in the system tray.



4. Follow the on-screen installation instructions.
5. Restart the computer.

Uninstalling the Intel Wireless LAN Manager Utility

To remove the utility, do the following:

1. From the computer desktop, click **Start → Settings → Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Find **Intel Wireless LAN Manager Utility**.
4. Click **Install/Uninstall** or **Change/Remove**.

Configuring the adapter

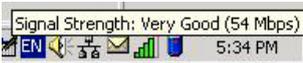
This chapter contains information on how to configure your adapter if you do not wish to use the factory default profile.

You must install the Intel Wireless LAN Manager Utility on your computer before using the procedures in this chapter. See “Installing and using the Intel Wireless LAN Manager Utility” on page 3-5.

Starting the Intel Wireless LAN Manager Utility

To start the Utility from your computer desktop, use one of the following methods:

- Click **Start** → **Programs** → **Intel Wireless LAN** → **Wireless LAN Manager Utility**.
- From the **System Tray**, right-click on the **Signal Quality** icon (shown below) to display the menu, and select **Open Intel Wireless LAN Manager Utility**.



- From the **System Tray**, double-click on the **Signal Quality** icon.



To display the **Wireless LAN Manager Utility Signal Strength** icon in the System Tray, select **Show the Signal Strength icon in the tool** on the Main page of the Utility.

Click **F1** or the **Help** button on any of the utility windows for more information about configuring wireless network settings.

Setting types

With the Intel Wireless LAN Manager Utility, you can change two types of network settings:

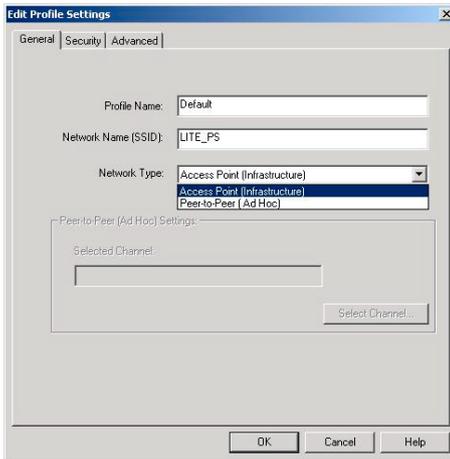
- **Mobile unit settings.** These are settings for your mobile computer. You can configure your computer to communicate with either an access point or other wireless-enabled devices in a peer-to-peer network.
- **Security settings.** These settings protect data so that it cannot be intercepted by a third party.

Connecting to the network using an access point

A wireless infrastructure network consists of one or more access points and one or more computers with wireless adapters installed. Each access point can have a wired connection to the Local Area Network (LAN). Computers with an installed wireless adapter communicate with and through the LAN using an access point.

Using the Intel Wireless LAN Manager (WLM) Utility:

1. Double-click the **WLM Signal Strength** icon in the System Tray. This is typically located in the lower right corner on your computer screen.
2. Select the **Default** profile, then click **New** from the Main page
3. Select **Access Point (Infrastructure)** in the Network Type field.



4. Type in the Network Name (SSID).

Note: The WLM utility obtains the SSID of the closest access point if the SSID field is left empty.

5. Type in the new profile name in the Profile Name field.

Use the Network Name (SSID) assigned to the access points in the wireless LAN (WLAN). The wireless adapter scans the access point and uses the channel selected by the access point. You cannot change the channel.

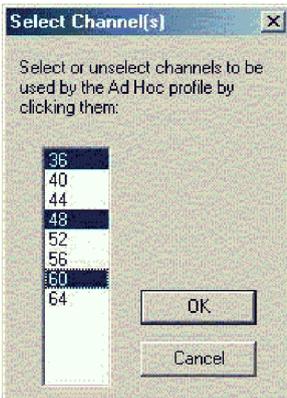
Connecting to a peer-to-peer network

A peer-to-peer wireless network is a simple network of wireless computers that communicate directly with each other without using an access point.

To connect to a peer-to-peer network

1. Double-click the **WLM Signal Strength** icon in the System Tray. This is typically located in the lower right corner on your computer screen
2. Select the **Default** profile, then click **New** from the Main page.
3. Select **Peer-to-Peer (Ad Hoc)** in the Network Type field.
4. Click **Select Channel(s)**.
5. Select a channel, and click **OK**.

Note: If no channel is selected, the Intel Wireless LAN Manager Utility will search for an available channel to use.



The following table shows available channels.

U.S. and Canada	Japan
36	34
40	38
44	42
48	46
52	
56	
60	
64	

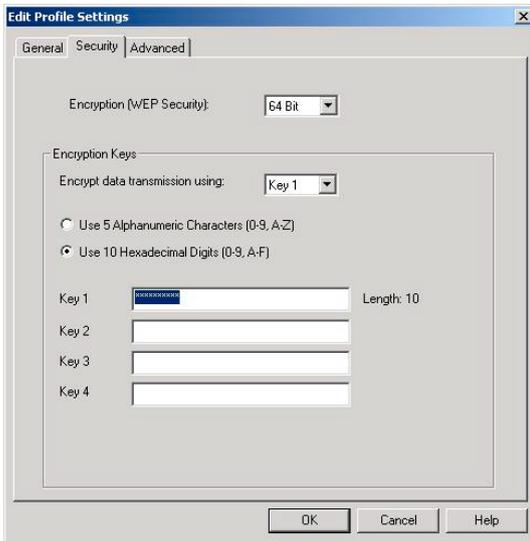
6. Type a Network Name (SSID).

7. Type in a Profile name.
8. Click **OK** to save the profile settings and return to the Main page.
9. Click **Apply** to activate the new profile for the Profile List.

The Network Name (SSID) and Channel Number must be the same for all the computers in a peer-to-peer network.

Using Wired Equivalent Privacy (WEP) encryption

You can prevent unauthorized reception of your wireless data using the IEEE 802.11 Wired Equivalent Privacy (WEP) encryption. The specification includes two levels of security, using a 64-bit key or a 128-bit key. For better security, use a 128-bit key. If you use encryption, all wireless devices on your WLAN must use the same encryption settings.



Setting 64-bit encryption

To use 64-bit encryption, do the following:

1. Double-click the **WLM Signal Strength** icon in the System Tray.
2. Select a profile from the Profile List, then click **Edit** from the Main page
3. Click the **Security** tab.
4. Select **64 Bit** in the Encryption (WEP Security) field.
5. Use one of four keys. In the WEP Key (1 - 4) field, select a key (**Key 1**) in the Encrypt data transmission using field. All devices, including access points and adapters, must use the same key

6. Choose how you want to enter the key.
 - Enter them manually. To do this, select **HEX** in the WEP Key Format field. Enter numbers 0-9 and letters A-F in the WEP Key fields provided. All devices, including access points and adapters, must use the same numbers and letters
 - Use alphanumeric characters. To do this, **Select Use 5 Alphanumeric Characters** in the WEP Key Format field. Enter numbers 0-9 and letters A-Z in the WEP Key Fields provided. All devices including gateways, access points, and adapters must use the same numbers and letters.
7. Click **OK** to save the profile settings and return to the Main page.

Setting 128-bit encryption

To use 128-bit encryption, do the following:

1. Double-click the **WLM Signal Strength** icon in the System Tray.
2. Select a profile from the Profile List, then click **Edit** from the Main page
3. Click the **Security** tab.
4. Select **128 Bit** in the Encryption (WEP Security) field.
5. Use one of four keys. In the WEP Key (1 - 4) field, select a key (**Key 1**) in the Encrypt data transmission using field. All devices, including access points and adapters, must use the same key
6. Choose how you want to enter the key. You can enter the key in one of two ways:
 - Enter them manually. To do this, select **HEX** in the WEP Key Format field. Enter numbers 0-9 and letters A-F in the WEP Key fields provided. All devices, including access points and adapters, must use the same numbers and letters
 - Use alphanumeric characters. To do this, **Select Use 13 Alphanumeric Characters** in the WEP Key Format field. Enter numbers 0-9 and letters A-Z in the WEP Key Fields provided. All devices including gateways, access points, and adapters must use the same numbers and letters.
7. Click **OK** to save the profile settings and return to the Main page.

Using wireless profiles

A profile is a saved group of network settings. If you are moving from one wireless network to another, it is convenient to save the network settings for each wireless network as a profile. When you move from one network to another, you can easily select the profile for the appropriate network. Settings include but are not limited to the network name (SSID), channel, security settings, and TCP/IP settings.

Using an existing profile

To use an existing profile, do the following:

1. From the WLM main page, select a profile in the Profile List.
2. Click the **Apply** button. This is the default profile used when the WLM utility is next started.

Creating a new profile

To create a new profile, do the following:

1. Click the **New** button on the Main page. The General page displays.
2. Configure the profile contents from the General, Security and Advanced pages.

Editing a profile

To edit an existing profile, do the following:

1. On the Main page, click the **Edit** button.
2. Configure the profile contents from the General, Security and Advanced pages.

Renaming a profile

To rename a profile, do the following:

1. From the Main page, select a profile from the Profile List.
2. Click the **Edit** button
3. Enter the new profile name in the Profile Name field in the General page and click **OK**. The renamed profile is displayed in the Profile List.

Saving a profile

After selecting the profile settings in the General, Security and Advanced pages, press the **OK** button in any of these pages to save the settings. The profile is listed in the Profile List on the Main page.

Deleting a profile

To delete a profile, select a profile from the Profile List and click the **Delete** button.

Note: Neither an active profile nor the last profile in the Profile List can be deleted.

Using passwords

This section contains information on how to use passwords.

Setting a profile password

By default, a profile is not protected, but if required a profile can be password protected. The Advanced page Password button allows you to assign, remove, and modify a profile password.

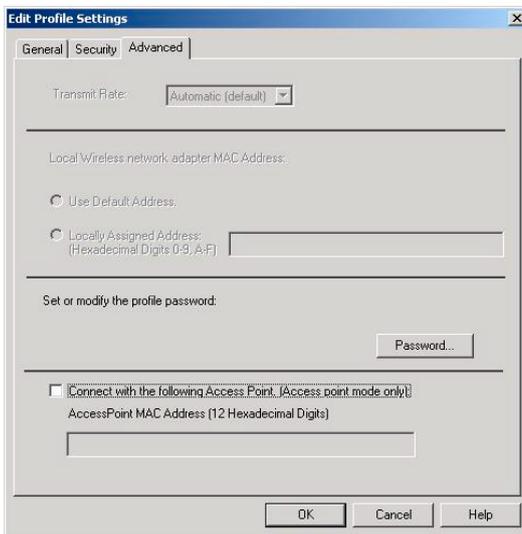
Assigning a profile password

To assign a profile password, do the following:

1. Double-click the **WLM Signal Strength** icon in the System Tray. This is typically located in the lower right corner on your computer screen.
2. Select a profile from the Profile List, then click **Edit** from the Main page

Note: When a profile is password protected, a profile password dialog displays before the profile contents can be edited.

3. Select the **Advanced** tab



4. Click the **Password** button.
5. Enter the current password in the Password field. If a password has not been assigned to a profile, leave this field blank.
6. Enter a new password in the *New Password* field.
7. Re-enter the new password in the *Confirm Password* field
8. Click **OK** to close the password dialog box.
9. Click **OK** on the Advanced page to save the profile password. The Main page displays

Zero configuration for Microsoft Windows XP

The Microsoft Windows XP Zero Config feature provides a built-in wireless configuration utility. This feature can be enabled and disabled. If Zero Config is enabled and the WLM utility is loaded, the profile settings made in Windows XP will override the WLM utility and the profiles in WLM are disabled. However, the WLM Main page screen will display the current status and signal strength information.

By default, the Windows XP Zero Configuration option is enabled. To disable Zero Config, do the following:

1. Click **Start**.
2. Click **Control Panel**.
3. Double-click **Network Connections**.
4. In the LAN or High-Speed Internet window, select the **Wireless Connection** that is linked with the **Intel PRO/Wireless 5000 LAN CardBus Adapter**.
5. Using the right mouse button, select **Properties**.
6. Click the **Wireless Network** tab.
7. Uncheck **Use Windows to configure my wireless network settings**.
8. Click **OK**. The **Intel Wireless LAN Manager Utility** is now operating.

Displaying the adapter properties from the Control Panel

After you install the device driver for the IBM 11a Wireless LAN CardBus Adapter, you can display the adapter property pages using the **Networking** icon in the Windows Control Panel.

Displaying the adapter property in Microsoft Windows 2000 Professional and Windows XP

To display the adapter properties, do the following:

1. Double-click **My Computer**, then double-click **Control Panel**.
2. Double-click the **Network** icon.
3. Right-click the **Local Area Connection** for the wireless adapter, then click **Properties**.

Appendix A. Specifications

The following table lists the specifications of the IBM 11a Wireless LAN CardBus Adapter.

Model	IBM 11a Wireless LAN CardBus Adapter	
Physical specifications	Form Factor	CardBus Type II Extended
	Dimensions	2.2" x 4.4" x 0.19" (54 mm x 112 mm x 5 mm) 1" (25 mm) on extended portion
	Weight	1.5 oz (43 g)
	Connector Interface	68-pin CardBus
	Power	3.3 v
General Specifications		
Frequency and modulation	Frequency band	<ul style="list-style-type: none"> • U.S. and Canada - 5.15 GHz to 5.35 GHz • Japan - 5.15 GHz to 5.25 GHz
	Modulation	BPSK, QPSK, 16 QAM, 64 QAM
	Wireless Medium	Orthogonal Frequency Division Multiplexing (OFDM) 5 GHz UNII
	Channels	8 Non-overlapping (4 non-overlapping in Japan)
Network	WLAN Standard	IEEE 802.11a
	Architecture	Infrastructure, Ad Hoc (peer-to-peer)
	Roaming	<ul style="list-style-type: none"> • 802.11a compliant for seamless roaming between access points • International roaming (802.11d)
	Software	Intel Wireless LAN Manager software
	Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
Security	Encryption	64-bit and 128-bit WEP
	802.1x, Radius: enhanced wireless LAN encryption and authentication security	Microsoft Windows XP only

Power	Output	50 mW to 200 mW, depending on frequency channel
	Transmit	450-480 mA
	Receive	420-440 mA
	Idle	420 mA
	Standby	30 mA
	Voltage	3.3 v
Operating Temperature	CardBus Adapter	0 to 65° Celsius
Humidity	CardBus Adapter	10 to 90% non-condensing
Compatibility	OS	Microsoft Windows 2000 Professional, and Windows XP
	WHQL	Yes
Regulatory and Safety	Safety	UL, C-UL
	United States	FCC Part 15.247 and 15.249
	Canada	Industry Canada RSS - 210
	Japan	VCCL, JATE, Telec

Appendix B. Warranty information

This section contains the warranty period for your product, information about obtaining warranty service and support, and the IBM Statement of Limited Warranty.

Warranty period

Contact your place of purchase for warranty service information. Some IBM Machines are eligible for on-site warranty service depending on the country or region where service is performed.

Machine - IBM 11a Wireless LAN CardBus Adapter

Warranty period - One year

Service and support

The following information describes the technical support that is available for your product, during the warranty period or throughout the life of the product. Refer to your IBM Statement of Limited Warranty for a full explanation of IBM warranty terms.

Warranty information on the World Wide Web

The IBM Machine Warranties Web site at http://www.ibm.com/servers/support/machine_warranties/ contains a worldwide overview of the IBM Limited Warranty for IBM Machines, a glossary of terms used in the Statement of Limited Warranty, Frequently Asked Questions (FAQ), and links to Product Support Web pages. The IBM Statement of Limited Warranty is available from this Web site in 29 languages in Portable Document Format (PDF).

Online technical support

Online technical support is available during the life of your product through the Personal Computing Support Web site at <http://www.ibm.com/pc/support/>.

During the warranty period, assistance for replacement or exchange of defective components is available. In addition, if your IBM option is installed in an IBM computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Telephone technical support

Installation and configuration support through the IBM HelpCenter[®] will be withdrawn or made available for a fee, at IBM's discretion, 90 days after the option has been withdrawn from marketing. Additional support offerings, including step-by-step installation assistance, are available for a nominal fee.

To assist the technical support representative, have available as much of the following information as possible:

- Option name
- Option number
- Proof of purchase
- Computer manufacturer, model, serial number (if IBM), and manual
- Exact wording of the error message (if any)
- Description of the problem
- Hardware and software configuration information for your system

If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

For the support telephone number and support hours by country, refer to the following table. If the number for your country or region is not listed, contact your IBM reseller or IBM marketing representative. Response time may vary depending on the number and nature of the calls received.

Support 24 hours a day, 7 days a week	
Canada (Toronto only)	416-383-3344
Canada (all other)	1-800-565-3344
U.S.A. and Puerto Rico	1-800-772-2227
All other countries and regions	Go to http://www.ibm.com/pc/support/ , and click Support Phone List .

IBM Statement of Limited Warranty Z125-4753-06 8/2000

Part 1 - General Terms

This Statement of Limited Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 replace or modify those of Part 1. The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Limited Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

The IBM Warranty for Machines: IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications ("Specifications"). The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation unless IBM or your reseller informs you otherwise.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded.

Extent of Warranty: The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty: IBM does not warrant uninterrupted or error-free operation of a Machine. Any technical or other support provided for a Machine under warranty, such as assistance via telephone with “how-to” questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service: To obtain warranty service for a Machine, contact IBM or your reseller. If you do not register your Machine with IBM, you may be required to present proof of purchase.

During the warranty period, IBM or your reseller, if approved by IBM to provide warranty service, provides without charge certain types of repair and exchange service to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. At its discretion, IBM or your reseller will 1) either repair or exchange the failing Machine and 2) provide the service either at your location or a service center. IBM or your reseller will also manage and install selected engineering changes that apply to the Machine.

Some parts of IBM Machines are designated as Customer Replaceable Units (called “CRUs”), e.g., keyboards, memory, or hard disk drives. IBM ships CRUs to you for replacement by you. You must return all defective CRUs to IBM within 30 days of your receipt of the replacement CRU. You are responsible for downloading designated Machine Code and Licensed Internal Code updates from an IBM Internet Web site or from other electronic media, and following the instructions that IBM provides.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;

2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided:
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides;
 - b. secure all programs, data, and funds contained in a Machine;
 - c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations; and
 - d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Limitation of Liability: Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), except for any liability that cannot be waived or limited by applicable laws, IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the charges (if recurring, 12 months' charges apply) for the Machine that is subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES, LOST PROFITS OR LOST SAVINGS, EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Governing Law

Governing Law: Both you and IBM consent to the application of the laws of the country in which you acquired the Machine to govern, interpret, and enforce all of your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

Part 2 - Country-unique Terms

AMERICAS

BRAZIL

Governing Law: *The following is added after the first sentence:* Any litigation arising from this Agreement will be settled exclusively by the court of Rio de Janeiro.

NORTH AMERICA

Warranty Service: *The following is added to this Section:* To obtain warranty service from IBM in Canada or the United States, call 1-800-IBM-SERV (426-7378).

CANADA

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws in the Province of Ontario.

UNITED STATES

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws of the State of New York.

ASIA PACIFIC

AUSTRALIA

The IBM Warranty for Machines: *The following paragraph is added to this Section:* The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other similar legislation and are only limited to the extent permitted by the applicable legislation.

Limitation of Liability: *The following is added to this Section:* Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974 or other similar legislation, IBM's liability is limited to the repair or replacement

of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

Governing Law: *The following replaces “laws of the country in which you acquired the Machine” in the first sentence: laws of the State or Territory.*

CAMBODIA, LAOS, AND VIETNAM

Governing Law: *The following replaces “laws of the country in which you acquired the Machine” in the first sentence: laws of the State of New York.*

The following is added to this Section: Disputes and differences arising out of or in connection with this Agreement shall be finally settled by arbitration which shall be held in Singapore in accordance with the rules of the International Chamber of Commerce (ICC). The arbitrator or arbitrators designated in conformity with those rules shall have the power to rule on their own competence and on the validity of the Agreement to submit to arbitration. The arbitration award shall be final and binding for the parties without appeal and the arbitral award shall be in writing and set forth the findings of fact and the conclusions of law.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator.

The two arbitrators appointed by the parties shall appoint a third arbitrator before proceeding upon the reference. The third arbitrator shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the ICC. Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.

If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

The English language version of this Agreement prevails over any other language version.

HONG KONG AND MACAU

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence: laws of Hong Kong Special Administrative Region.*

INDIA

Limitation of Liability: *The following replaces items 1 and 2 of this Section:*

1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence;
2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Limited Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

JAPAN

Governing Law: *The following sentence is added to this Section: Any doubts concerning this Agreement will be initially resolved between us in good faith and in accordance with the principle of mutual trust.*

NEW ZEALAND

The IBM Warranty for Machines: *The following paragraph is added to this Section:*

The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

Limitation of Liability: *The following is added to this Section: Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.*

PEOPLE'S REPUBLIC OF CHINA (PRC)

Governing Law: *The following replaces this Section: Both you and IBM consent to the application of the laws of the State of New York (except when local law requires otherwise) to govern, interpret, and enforce all your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.*

Any disputes arising from or in connection with this Agreement will first be resolved by friendly negotiations, failing which either of us has the right to

submit the dispute to the China International Economic and Trade Arbitration Commission in Beijing, the PRC, for arbitration in accordance with its arbitration rules in force at the time. The arbitration tribunal will consist of three arbitrators. The language to be used therein will be English and Chinese. An arbitral award will be final and binding on all the parties, and will be enforceable under the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (1958).

The arbitration fee will be borne by the losing party unless otherwise determined by the arbitral award.

During the course of arbitration, this Agreement will continue to be performed except for the part which the parties are disputing and which is undergoing arbitration.

EUROPE, MIDDLE EAST, AFRICA (EMEA)

THE FOLLOWING TERMS APPLY TO ALL EMEA COUNTRIES: The terms of this Statement of Limited Warranty apply to Machines purchased from IBM or an IBM reseller.

Warranty Service: If you purchase an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM. If you purchase an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchase an IBM Machine in a Middle Eastern or African country, you may obtain warranty service for that Machine from the IBM entity within the country of purchase, if that IBM entity provides warranty service in that country, or from an IBM reseller, approved by IBM to perform warranty service on that Machine in that country. Warranty service in Africa is available within 50 kilometers of an IBM authorized service provider. You are responsible for transportation costs for Machines located outside 50 kilometers of an IBM authorized service provider.

Governing Law: The applicable laws that govern, interpret and enforce rights, duties, and obligations of each of us arising from, or relating in any manner to,

the subject matter of this Statement, without regard to conflict of laws principles, as well as Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided, except that in 1) Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Hungary, Former Yugoslav Republic of Macedonia, Romania, Slovakia, Slovenia, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan, the laws of Austria apply; 2) Estonia, Latvia, and Lithuania, the laws of Finland apply; 3) Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Djibouti, Democratic Republic of Congo, Equatorial Guinea, France, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Mali, Mauritania, Morocco, Niger, Senegal, Togo, and Tunisia, this Agreement will be construed and the legal relations between the parties will be determined in accordance with the French laws and all disputes arising out of this Agreement or related to its violation or execution, including summary proceedings, will be settled exclusively by the Commercial Court of Paris; 4) Angola, Bahrain, Botswana, Burundi, Egypt, Eritrea, Ethiopia, Ghana, Jordan, Kenya, Kuwait, Liberia, Malawi, Malta, Mozambique, Nigeria, Oman, Pakistan, Qatar, Rwanda, Sao Tome, Saudi Arabia, Sierra Leone, Somalia, Tanzania, Uganda, United Arab Emirates, United Kingdom, West Bank/Gaza, Yemen, Zambia, and Zimbabwe, this Agreement will be governed by English Law and disputes relating to it will be submitted to the exclusive jurisdiction of the English courts; and 5) in Greece, Israel, Italy, Portugal, and Spain any legal claim arising out of this Statement will be brought before, and finally settled by, the competent court of Athens, Tel Aviv, Milan, Lisbon, and Madrid, respectively.

THE FOLLOWING TERMS APPLY TO THE COUNTRY SPECIFIED:

AUSTRIA AND GERMANY

The IBM Warranty for Machines: *The following replaces the first sentence of the first paragraph of this Section:* The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section:

The minimum warranty period for Machines is six months. In case IBM or your reseller is unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

Extent of Warranty: *The second paragraph does not apply.*

Warranty Service: *The following is added to this Section:* During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

Limitation of Liability: *The following paragraph is added to this Section:* The limitations and exclusions specified in the Statement of Limited Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

The following sentence is added to the end of item 2: IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

EGYPT

Limitation of Liability: *The following replaces item 2 in this Section:* as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

Applicability of suppliers and resellers (unchanged).

FRANCE

Limitation of Liability: *The following replaces the second sentence of the first paragraph of this Section:* In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: (items 1 and 2 unchanged).

IRELAND

Extent of Warranty: *The following is added to this Section:* Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

Limitation of Liability: *The following replaces items one and two of the first paragraph of this Section:* 1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and 2. the amount of any other actual direct damages, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

ITALY

Limitation of Liability: *The following replaces the second sentence in the first paragraph: In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than: 1. (unchanged) 2. as to any other actual damage arising in all situations involving nonperformance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim. Applicability of suppliers and resellers (unchanged).*

The following replaces the third paragraph of this Section: Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: (items 1 and 2 unchanged) 3) indirect damages, even if IBM or your reseller is informed of their possibility.

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND

Limitation of Liability: *The following is added to this Section: IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.*

UNITED KINGDOM

Limitation of Liability: *The following replaces items 1 and 2 of the first paragraph of this Section:*

1. death or personal injury or physical damage to your real property solely caused by IBM's negligence;
2. the amount of any other actual direct damages or loss, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim;

The following item is added to this paragraph: 3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

Appendix C. Notices

IBM may not offer the products, services, or features discussed in this document in all countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

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*IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
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Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

IBM

HelpCenter

Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation in the United States, other countries, or both.

ActionMedia, LANDesk, MMX, Pentium, and ProShare are trademarks of Intel Corporation in the United States, other countries, or both.

Other company, product, or service names may be the trademarks or service marks of others.

Electronic emission notices

IBM 11a Wireless LAN CardBus Adapter

Federal Communications Commission (FCC) statement

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 an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device 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.

Responsible party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504
Telephone: 1-919-543-2193

 Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

Industry Canada Class B emission compliance statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformité a la réglementation d'Industrie Canada

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Japanese VCCI statement

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づきクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

Japanese statement of compliance for products less than or equal to 20 A per phase

高調波ガイドライン適合品

Wireless notices

IBM 11a Wireless LAN CardBus Adapter

The IBM 11a Wireless LAN CardBus Adapter must be installed and used in strict accordance with the following instructions. This product complies with the following radio frequency and safety standards.

U.S.A. - Federal Communications Commission (FCC)

This device 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 operations.

The FCC, with its action in ET Docket 96-8, has adopted a safety standard for human exposure to RF electromagnetic energy emitted by FCC-certified equipment. This product meets the uncontrolled environmental limits found in OTE-65 and ANSI C95.1, 1991. Proper operation of this radio device according to the instructions in this publication will result in user exposure substantially below the FCC recommended limits.

The IBM 11a Wireless LAN CardBus Adapter is a mobile device that uses radio transmissions to operate. Please keep it at least 20 cm (8 inches) from any persons during operation. This adapter has passed all necessary tests, and FCC applications are pending to classify the product as a portable device that can be operated in close proximity to the human body. The adapter is a wireless device with an integrated antenna. To comply with the FCC and ANSI C95.1 RF exposure limits, when using such a wireless device inserted into a mobile computer, it is recommended that the antenna should not be positioned closer than 20 cm (8 inches) from your body or nearby persons. It is recommended that the user limit exposure time if the antenna is positioned closer than 20 cm (8 inches). 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 requirements

This device is restricted to indoor use when used over its full frequency bandwidth capabilities (5.15 to 5.25GHz) 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. The product can be used outdoors only if the frequency range is limited to 5.26 to 5.35 GHz. In addition, it should be noted that 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 to this device. See the Online User's Guide for information on specifying the radio frequency to be used.

Interference statement

An improper installation or unauthorized use may cause harmful interference to radio communications. Also, any tampering with the internal antenna will void the FCC Certification and your warranty. Refer to the "Electronic emission notices" on page C-2 for more detail.

Canada - Industry Canada (IC)

Low Power License-Exempt Radio Communication Devices (RSS-210)

Operation is subject to the Following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation.

Permis d'émission à faible puissance - Ces des appareils de communications radio (CNR-210)

Le fonctionnement de ce type d'appareil est soumis aux deux conditions suivantes: (1) Cet appareil peut perturber les communications radio, et (2) cet appareil doit supporter toute perturbation, y compris les perturbations qui pourraient provoquer un dysfonctionnement.

Radio frequency requirements

This device is restricted to indoor use when used over its full frequency bandwidth capabilities (5.15 to 5.25GHz) due to its operation in the 5.15 to 5.25 GHz frequency range. Industry Canada 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. The product can be used outdoors only if the frequency range is limited to 5.26 to 5.35 GHz. In addition, it should be noted that 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 to this device. See the Online User's Guide for information on specifying the radio frequency to be used.

Exigences en matière de fréquences radio

Cet équipement est destiné à un usage en intérieur lorsqu'il est utilisé sur toute sa largeur de bande (5,15 à 5,25 GHz), son fonctionnement se situant dans la plage de fréquences 5,15 à 5,25 GHz. Industrie Canada exige l'utilisation de cet équipement en intérieur pour une plage de fréquences comprises entre 5,15 et 5,25 GHz afin de réduire les risques d'interférences nuisibles avec les systèmes de satellites mobiles partageant les mêmes canaux. Cet équipement ne peut être utilisé en extérieur que si la plage de fréquences associée est limitée entre 5,26 et 5,35 GHz. En outre, il convient de noter que les bandes allant de 5,25 à 5,35 GHz et de 5,65 à 5,85 GHz sont allouées en priorité aux radars haute puissance. Ces stations de radar peuvent provoquer des interférences avec cet équipement et/ou l'endommager. Pour plus de détails sur la fréquence radio à utiliser, reportez-vous au guide d'utilisation en ligne.

Japanese regulatory notices

TELEC

This equipment has been certified to conform with the technical regulations of the specified radio equipment under the radio law of Japan. If you open the case to modify the circuit, you may be punished by law. This equipment is for indoor use only under the Radio Wave law.

JATE

Refer to the JATE approval number on the equipment.

JATE approval number: D02-0012JP

Radio Frequency devices

IBM Radio frequency (RF) products are designed to be compliant with the rules and regulations in the locations where they are sold and are locally labeled as required. The majority of IBM RF devices are type-approved and do not require the user to obtain license or authorization before using the equipment. However, any changes or modifications to IBM equipment not expressly approved by IBM could void the user's authority to operate the equipment. This equipment is allowed to be used only indoors.



Part Number: 22P7508



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(1P) P/N: 22P7508

