

802.11a/b/g Wireless CardBus Adapter



User's Guide

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User's Guide

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Contents

Preface	v	Appendix B. Specifications	25
Registering your option	v	Appendix C. Troubleshooting	27
Installation guide	1	Appendix D. Service and Support	29
Product description	1	Online technical support	29
Installing the Wireless CardBus Adapter	1	Telephone technical support	29
Installing the Wireless CardBus Adapter in Windows XP Professional	1	Appendix E. IBM Statement of Limited Warranty - Z125-4753-07 - 11/2002	31
Installing the Wireless CardBus Adapter in Windows 2000	3	Part 2 - Country-unique Terms	34
Installing the Wireless CardBus Adapter in Windows NT	4	<u>Part 3 - Warranty Information</u>	43
Using the IBM Client Utility to set up your wireless network under Windows XP, Windows 2000, and Windows NT 4.0	9	Appendix F. Notices	47
Uninstalling the Wireless CardBus Adapter	19	Trademarks	48
Uninstalling the IBM Client Utility	19	Electronic emission notices	48
Appendix A. LED information	23	Federal Communications Commission (FCC) statement	48

Preface

In addition to this User's Guide, the option package includes the following:

- IBM® 802.11a/b/g Wireless CardBus Adapter
- *Installation and User's Guide CD* containing device drivers
- IBM 802.11a/b/g Wireless CardBus Adapter warranty and regulatory notices flyer
- Program License Agreement

As you examine these items, look for any physical damage. Retain your proof of purchase and packaging material in the event you need to return your CardBus Adapter.

Registering your option

Thank you for purchasing this IBM® product. 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 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.

Installation guide

This guide provides information on the IBM 802.11a/b/g Wireless CardBus Adapter.

Product description

The IBM 802.11a/b/g Wireless CardBus Adapter contained in this package has the following features:

- Conforms to IEEE 802.11a, 802.11b, and 802.11g (draft) standards.
- Up to 54 Mbps data rate for high-capacity, fast operation
- Driver support for:
 - Microsoft® Windows® 2000 Professional
 - Microsoft Windows XP
 - Microsoft Windows NT® 4.0 Workstation
- Advanced security features including AES, 128, 64, 0 bit Wired Equivalent Privacy (WEP), and 802.1x authentication.
- Interoperable with IEEE 802.11a- and 802.11b-compliant wireless devices.
- 32-bit CardBus performance.
- Supports PC Card hot-swapping with true plug and play connectivity.
- Lower power consumption.

Note: The Wi-Fi Alliance is scheduled to certify IEEE 802.11g in mid-2003. This may affect current 802.11g technology. If the certification affects the operation of the CardBus Adapter, IBM will upgrade it to ensure that you have the most current product available.

Installing the Wireless CardBus Adapter

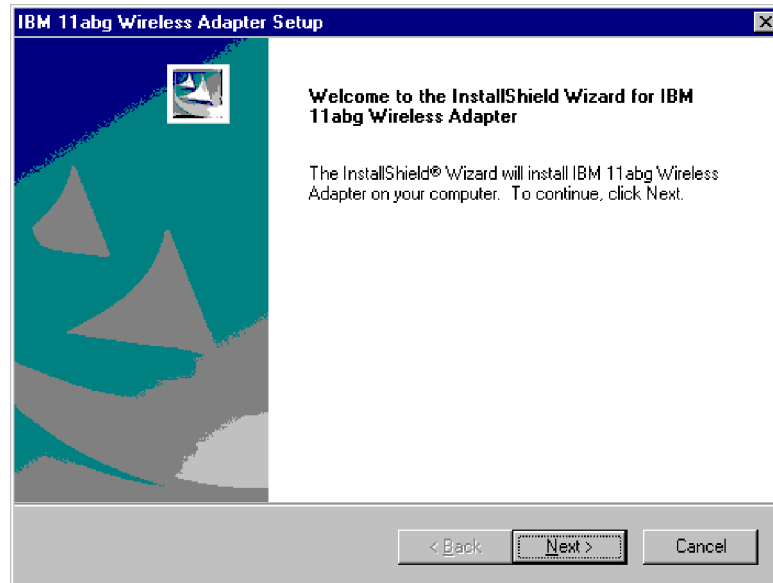
This section provides information on installing the 802.11a/b/g Wireless CardBus Adapter.

Installing the Wireless CardBus Adapter in Windows XP Professional

To install the cardbus adapter in Microsoft Windows XP Professional, do the following:

1. Make sure that the cardbus adapter is not inserted in the CardBus slot. If it is, eject it from the slot.
2. Insert the *Installation and User's Guide CD* into the computer CD-ROM drive. An IBM welcome window opens automatically.
3. Click **Software**.
4. Click **Install Device Drivers**. Continue with Step 5.
If the Welcome window does not open, do the following:
 - a. Click **Start → Run**.
 - b. Click **Browse** and navigate to your computer CD-ROM drive; then double-click the SETUP.EXE file on the *Installation and User's Guide CD*.

- c. Click **OK** and the Welcome window will appear, as shown below. Continue with Step 5.



5. Click **Next**.
6. Choose **Destination Location** and click **Next**.
Driver and Client Utility files are copied from the CD-ROM onto your computer hard disk drive. After setup has finished copying the files to where they belong on your system, a window opens notifying you that the installation is complete.
7. Click **Finish**.
8. Locate an available Type II or Type III PCMCIA CardBus slot on your computer.
9. Hold the CardBus Adapter so that its 68-pin connector is facing the computer PCMCIA CardBus slot and that its label is facing up.



10. Slide the CardBus Adapter completely into the PCMCIA CardBus slot. Windows XP will detect new hardware and install the Wireless CardBus Adapter automatically.

11. Continue with "Using the IBM Client Utility to set up your wireless network under Windows XP, Windows 2000, and Windows NT 4.0" on page 9.

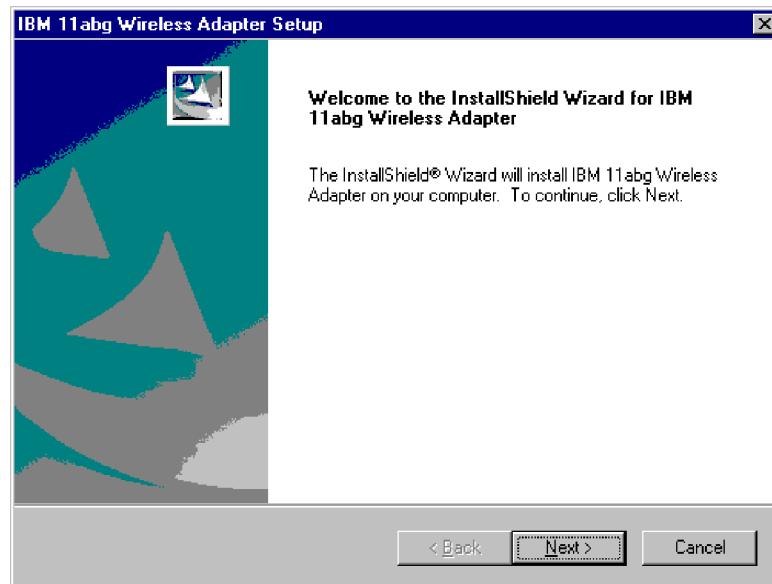
Installing the Wireless CardBus Adapter in Windows 2000

To install the adapter in Microsoft Windows 2000 Professional, do the following:

1. Make sure that the CardBus Adapter is not inserted in the CardBus slot. If it is, eject it from the slot.
2. Insert the *Installation and User's Guide CD* into the computer CD-ROM drive. An IBM welcome window opens automatically.
3. Click **Software**.
4. Click **Install Device Drivers**. Continue with Step 5.

If the Welcome window does not open, do the following:

- a. Click **Start → Run**.
- b. Click **Browse** and navigate to your computer CD-ROM drive; then double-click the SETUP.EXE file on the *Installation and User's Guide CD*.
- c. Click **OK** and the Welcome window will appear, as shown below. Continue with Step 5.



5. Click **Next**.
6. Choose **Destination Location** and click **Next**.
Driver and Client Utility files are copied from the CD-ROM onto your computer hard disk drive. After Setup has finished copying the files to where they belong on your system, a window opens notifying you that the installation is complete.
7. Click **Finish**.
8. Locate an available Type II or Type III PCMCIA CardBus slot on your computer.

9. Hold the CardBus Adapter so that its 68-pin connector is facing your computer PCMCIA CardBus slot and that its label is facing up.



10. Slide the CardBus Adapter completely into the PCMCIA CardBus slot. When the CardBus Adapter is properly inserted, Windows 2000 finds the new hardware and a beep will be emitted indicating that the installation is complete.
11. Continue with “Using the IBM Client Utility to set up your wireless network under Windows XP, Windows 2000, and Windows NT 4.0” on page 9.

Installing the Wireless CardBus Adapter in Windows NT

The Windows NT installation consists of two procedures:

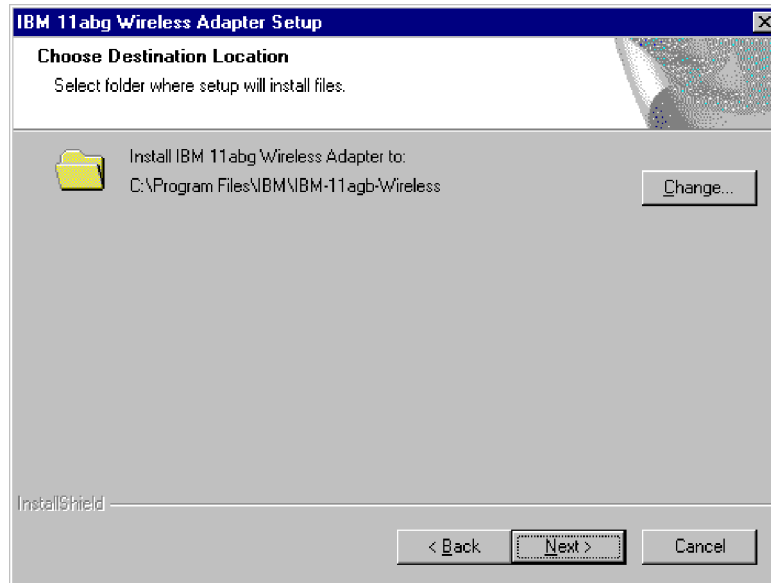
- Installing the Setup program
- Installing the Windows NT driver

Installing the setup program for Windows NT

To install the setup program for Windows NT, do the following:

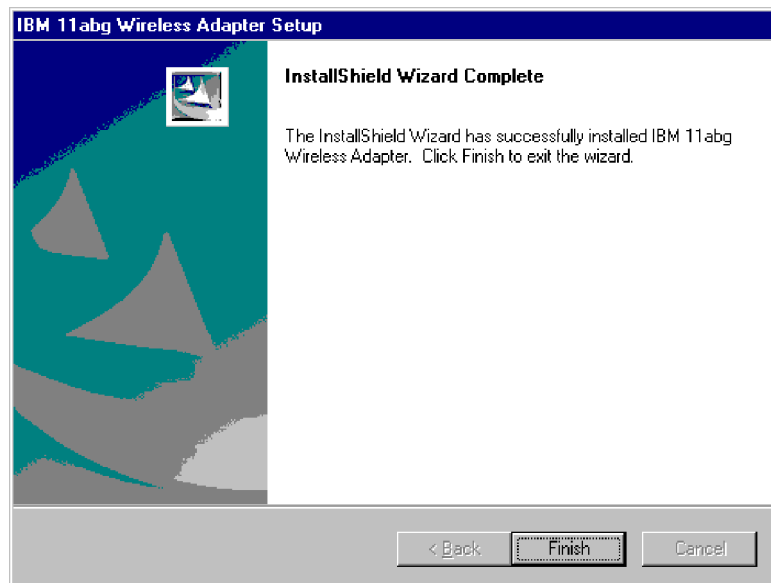
1. Make sure that the CardBus Adapter is not inserted in the CardBus slot. If it is, eject it from the slot.
2. Insert the *Installation and User's Guide CD* into the computer CD-ROM drive.
3. Click **Start → Run**.
4. Click **Browse** and navigate to your computer CD-ROM drive.
5. Double-click the SETUP.EXE file on the *Installation and User's Guide CD*.
6. Click **OK**. The InstallShield wizard starts and the Welcome window opens.

7. Click **Next**. The following window opens displaying the destination where setup will install the files.



If you do not want to accept the default location that is displayed, click **Change**, specify a new location, and then click **OK**.

8. Click **Next**. Setup installs the files to the destination that you specified. After all of the files have been copied, the following window opens.



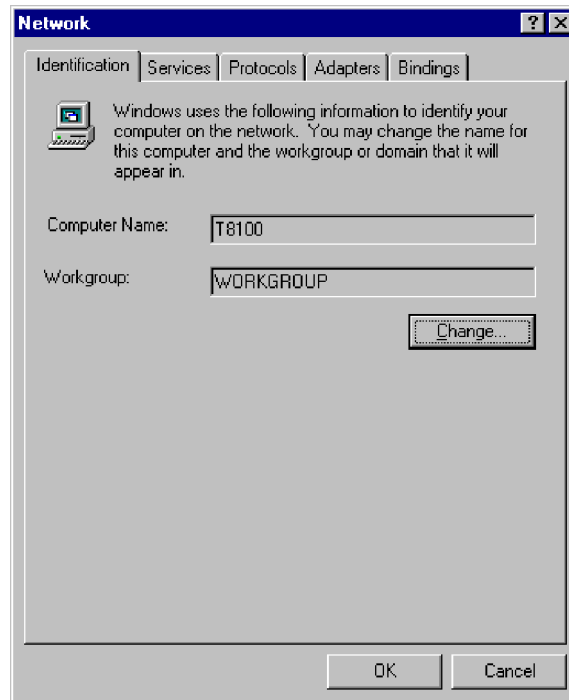
9. Click **Finish**.
10. Continue with "Installing the Windows NT 4.0 device driver (with networking installed)".

Installing the Windows NT 4.0 device driver (with networking installed)

To install the Windows NT 4.0 device driver, do the following:

1. Click **Start** → **Settings** → **Control Panel**.

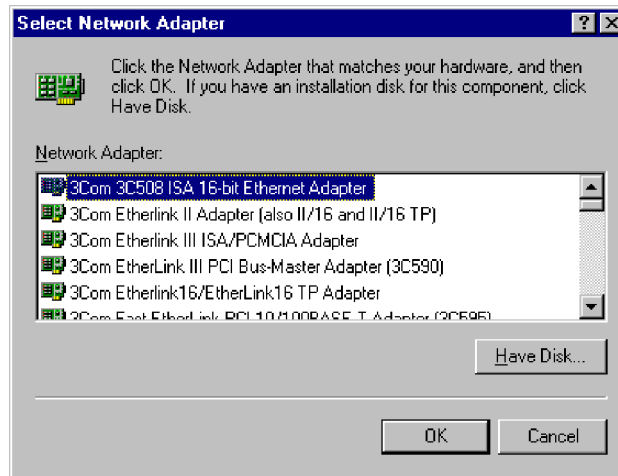
2. Double-click the **Network** icon. The Network window displays.



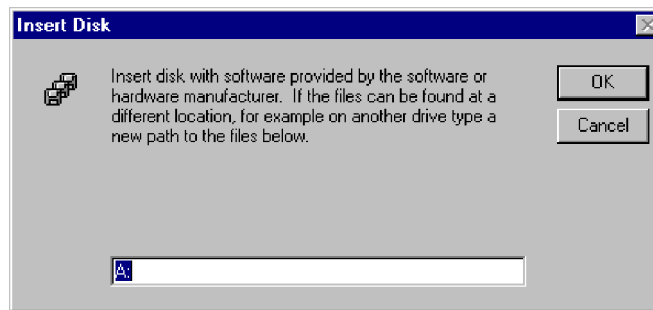
3. Click the **Adapters** tab. The window will display adapters currently installed on your computer.



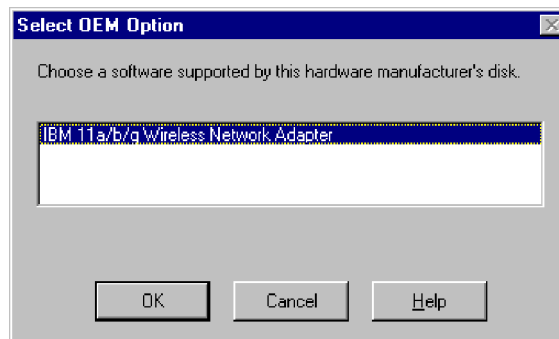
4. Click **Add**. The Select Network Adapter window opens.



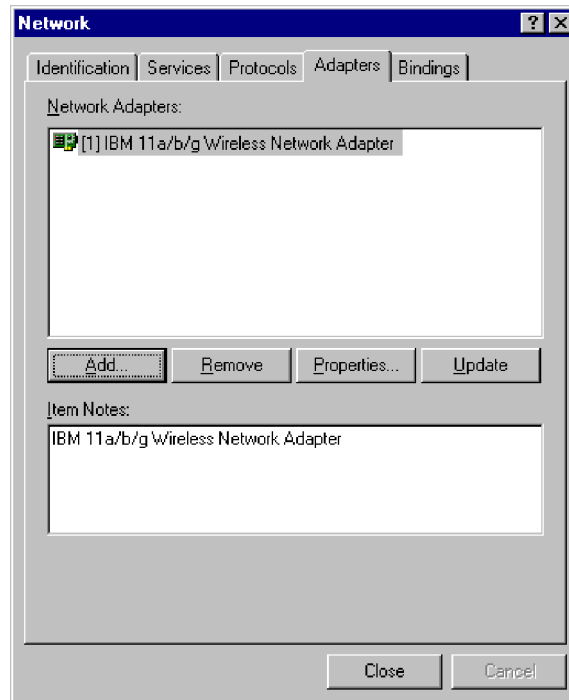
5. Click **Have Disk**. The Insert Disk window opens.



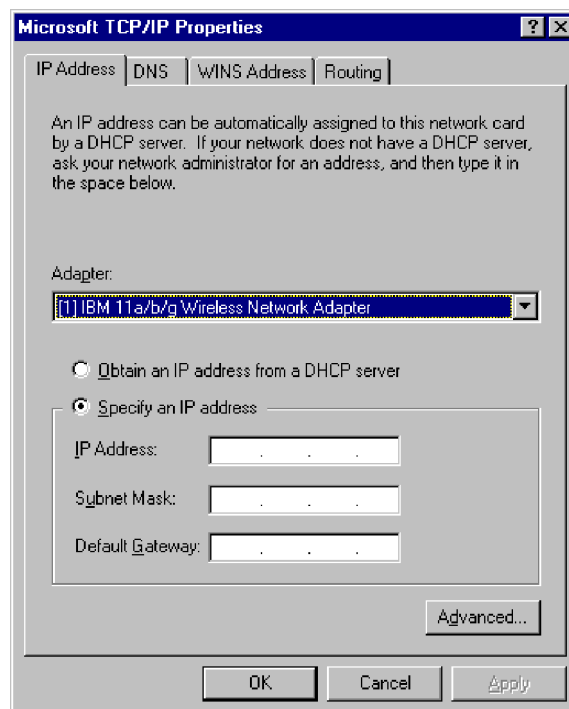
6. Replace the drive letter shown with the path where the NDIS device driver is located on the *Installation and User's Guide CD*. Specify D:\NDIS4 (where *D* is the letter of your CD-ROM drive). The Select OEM Option window opens, displaying the name of the device driver.



7. Click **OK** to copy the files to the computer hard disk drive. The Network window opens again displaying the name of the Wireless CardBus Adapter.



8. Click **Close**. The Microsoft TCP/IP Properties window opens, as shown below.



9. Assign an Internet Protocol (IP) address by selecting **Obtain an IP address from a DHCP server** or **Specify an IP address**. If you select **Specify an IP address**, type the IP address, subnet mask, and default gateway in the appropriate fields.
10. Complete any required information in the other tabs in the Microsoft TCP/IP window.

11. Click **OK**.
12. Click **Yes** to restart the computer.
13. After the computer restarts, hold the CardBus Adapter so that its 68-pin connector is facing the computer PCMCIA CardBus slot and that its label is facing up.



14. Slide the CardBus Adapter completely into the PCMCIA CardBus slot. When the CardBus Adapter is properly inserted, Windows NT finds the new hardware and a beep is emitted that indicates that installation is complete.

Continue with "Using the IBM Client Utility to set up your wireless network under Windows XP, Windows 2000, and Windows NT 4.0".

Enabling hot swap capability with Windows NT and CardWizard

To enable hot swap, do the following:

1. Click **Start** → **Programs** → **CardWizard for Windows NT**.
2. Select **AR5001-0000-0000** network card.
3. Click the **Wizard** box.
4. Click **Test**.
5. Click **OK** to begin test.
6. Click **OK**.
7. Click **Exit** to complete. You now have hot swap capability and can perform suspend/resume using the wireless CardBus adapter.

Using the IBM Client Utility to set up your wireless network under Windows XP, Windows 2000, and Windows NT 4.0

You can use the included IBM Client Utility to set up your wireless network under Windows XP, Windows 2000, and Windows NT 4.0.

Note: Before setting up the wireless network, be sure that

- you have installed the Setup program.
- the CardBus Adapter has been inserted into the computer CardBus slot.
- You have your wireless access points set up and configured.

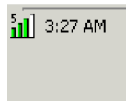
Software description

The IBM Client Utility enables you to:

- View status information
- Define, modify, and delete profiles
- View diagnostic information

Accessing the IBM Client Utility

When your CardBus Adapter is inserted into the computer CardBus slot, the IBM Client Utility device driver loads automatically and a device driver icon displays in your system tray, as shown below.



The device driver icon appears as a series of four vertical bars. These bars provide the following color coded indications of the received signal strength:

- Red indicates poor quality (<5 dB)
- Yellow indicates average quality (5 to 10 dB)
- Green indicates from good (10 dB) to excellent (20 dB) quality

If you hold your mouse pointer over the icon, the transmit and receive rates display, along with the name of the current configuration profile.



The IBM Client Utility icon also provides a right-click menu that lets you:

- Launch the IBM Client Utility.
- Access the IBM Client Utility online help facility.
- Enable or disable the radio-frequency signal.
- Add, edit, and select profiles.
- Exit the IBM Client Utility.

Launching the IBM Client Utility

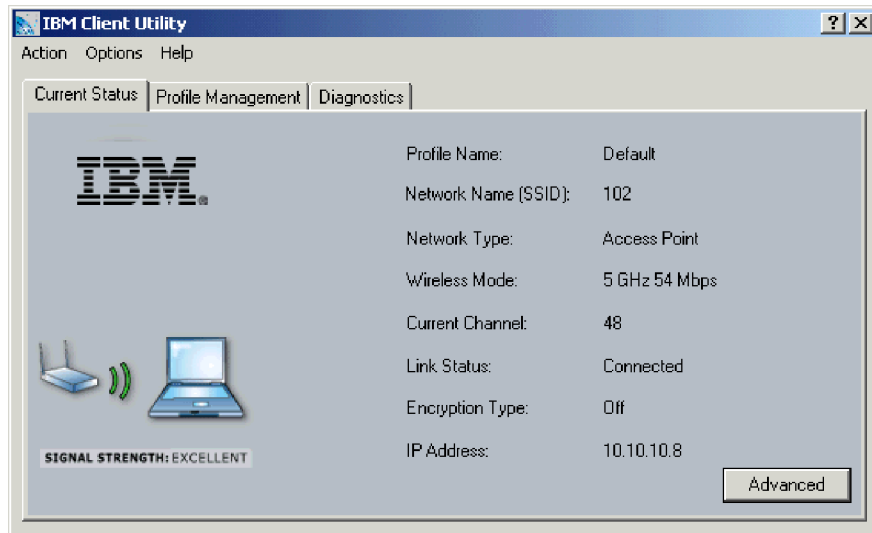
The IBM Client Utility provides a graphical way to:

- View the current status of your wireless network.
- Add, modify, remove, and activate profiles.
- View status and statistical information.

To launch the IBM Client Utility, do the following:

1. Move your mouse pointer over the **IBM Client Utility** icon in the system tray.

2. Press the right mouse button and click **Launch Client Utility**. The following window opens.



Understanding the IBM Client Utility menu commands

The IBM Client Utility window contains menus at the top and tabs below. You use these menus and tabs to perform various operations. You can use the menus to perform the following actions:

- The Action menu lets you enable or disable the radio frequency signal, display or remove the **IBM Client Utility** icon in your System Tray, and exit the IBM Client Utility.
- The Options menu lets you view and change display settings.
- The Help menu lets you access the online help facility, and display the build date and product version of the IBM Client Utility.

The IBM Client Utility window menus contains the following tabs:

- The **Current Status** tab is a read-only tab that shows general information about your wireless network.
- The **Profile Management** tab lets you add, edit, remove, and activate profiles.
- The **Diagnostics** tab is a read-only screen that displays transmit and receive statistics and device driver information.

Enabling or disabling the radio frequency signal

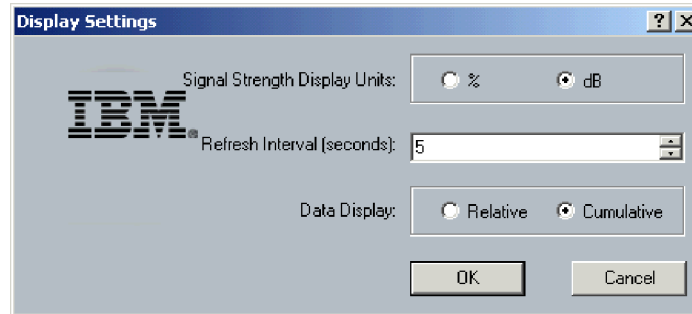
You can select **Disable Radio** in the Action menu to turn off the radio-frequency signal from the CardBus Adapter to the nearest access point so that all communication to and from your CardBus Adapter is stopped. To resume radio-frequency signals from the Cardbus Adapter, select **Enable Radio**.

Enabling or disabling the tray icon

Select **Disable Tray Icon** in the Action menu, to prevent the IBM Client Utility from displaying in your System Tray. If you disable the tray icon, you can access the IBM Client Utility by clicking the **Start** button in the Windows taskbar, pointing to **Programs**, pointing to **IBM 11abg Wireless**, and then clicking **Configuration Utility**. Click the **Enable Tray** icon to redisplay the icon in the system tray.

Viewing or changing display settings

To view or change the IBM Client Utility settings, click Display Settings in the Options menu to open the Display Settings window, as shown below.



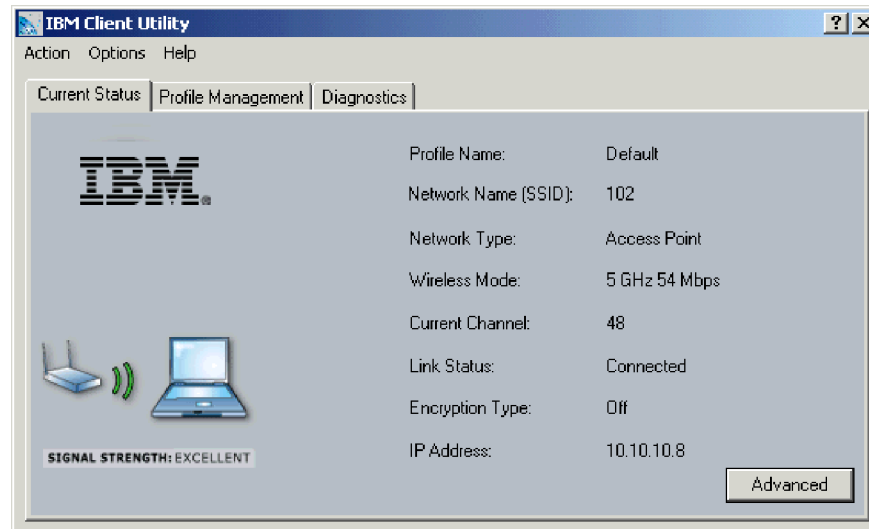
In the window, you have the following options:

- **Signal Strength Display Units** enables the signal strength to be displayed as a percentage or as decibels.
- **Refresh Interval** specifies the number of seconds that elapse before the display is updated (or “refreshed”). You can specify a refresh time from one to 30 seconds.
- **Data Display** enables statistical data to be shown relatively or cumulatively.
 - **Relative** displays the change (delta) in statistical data since the last update.
 - The **Current Status** tab has an **Advanced** button that you can click to view advanced status information

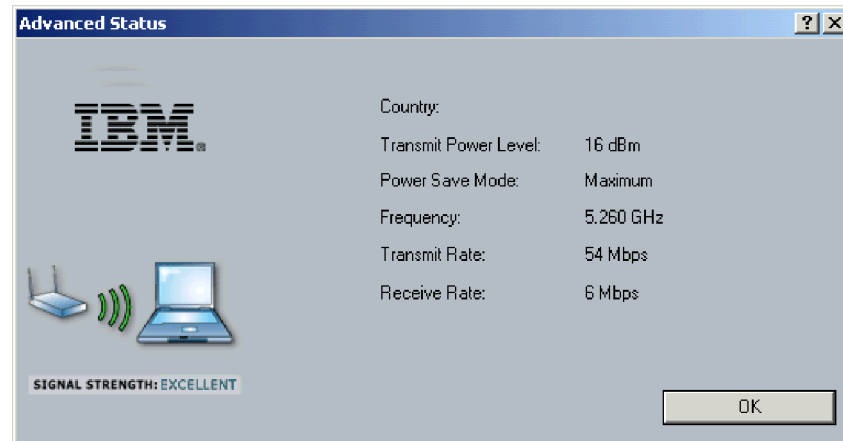
You must click **OK** after making your selections.

Viewing status information

The **Current Status** tab shows general information about the CardBus adapter. The following figure shows an example of this tab.



The **Current Status** tab has an **Advanced** button that you can click on to view advanced status information, as shown in the figure below.

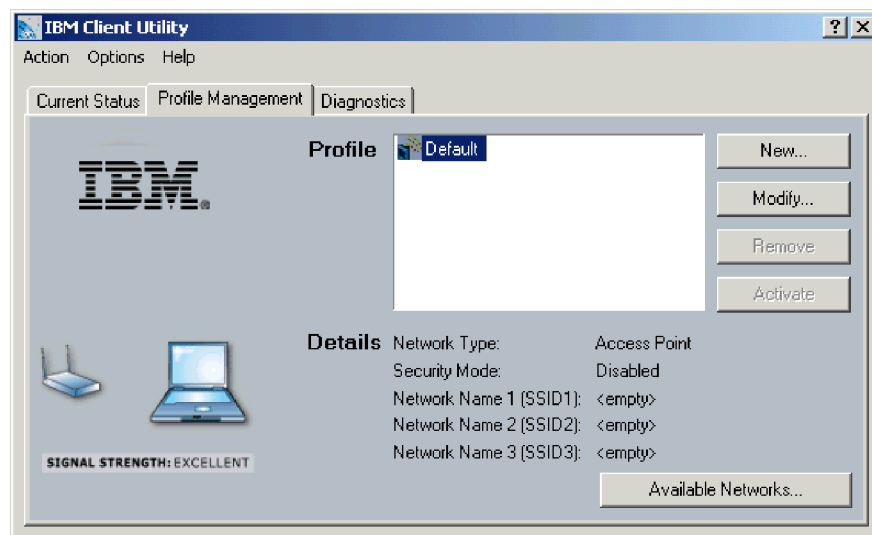


Working with profiles

A profile is a collection of configuration settings. A profile specifies the network type, security mode, and up to three network names. You can create profiles as you need them. After you create them, you can activate them, modify them to suit your requirements, and delete them when you no longer need them.

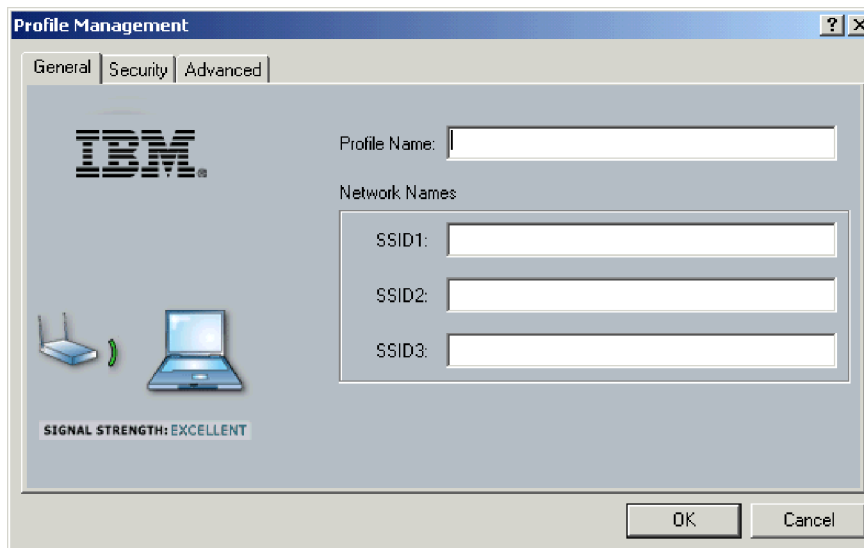
Creating a new configuration profile: To add a new configuration profile, do the following:

1. In the IBM Client Utility window, click the **Profile Management** tab to display existing profile. Initially, a profile titled Default will be displayed, as shown in the figure below.

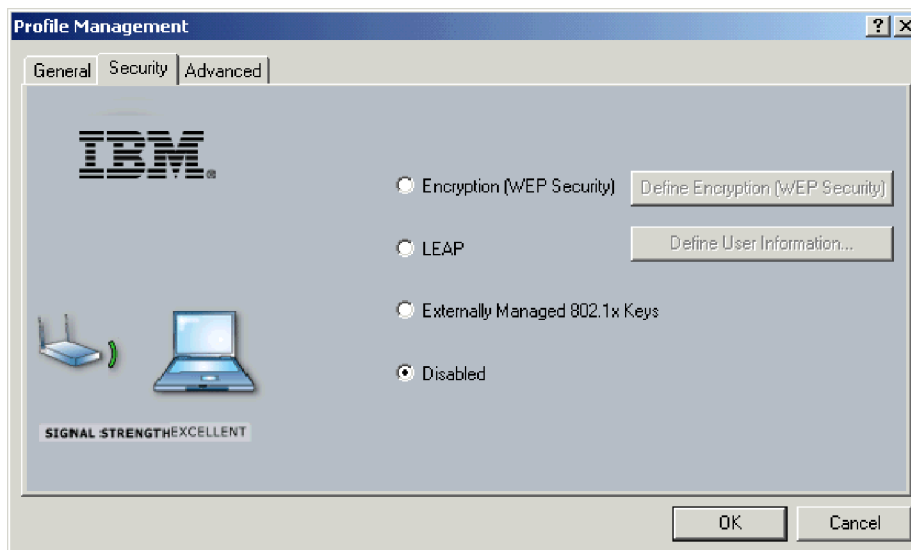


2. Click **New** to open the Profile Management window. This window has three tabs where you can enter information about the configuration profile you are

creating, as shown below.



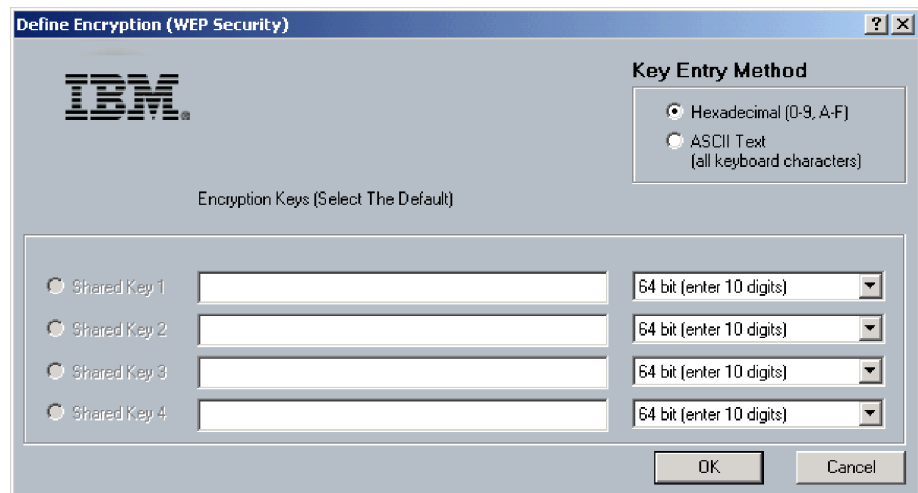
3. In the **General** tab, specify the following parameters:
 - **Profile Name:** Type a name for the profile you are creating.
 - **Network Names:** Specify up to three service set identifiers (SSIDs) for this configuration profile. To enable connection to any access point, leave all three fields empty.
4. Click the **Security** tab and the following screen is shown.



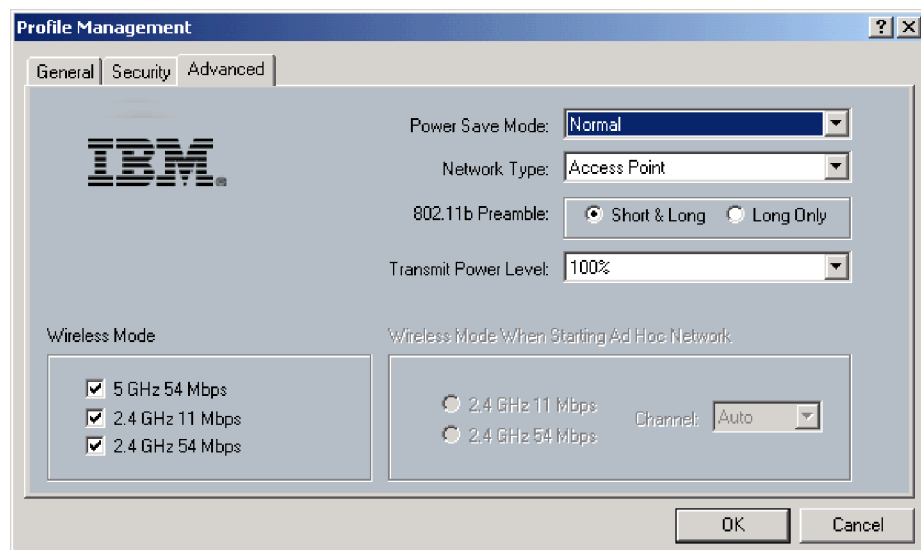
Click the appropriate selection:

- **Encryption (WEP Security):** Enables you to use pre-shared keys that are defined on both the access point and station. If you select this setting, click the **Define Encryption (WEP Security)** button to display the following

window. Type the encryption information and click **OK**.



- **Key Entry Method:** Enables you to select the entry method for an encryption key, using hexadecimal (0-9, A-F) or ASCII text (all keyboard characters).
 - **Encryption Keys:** Enables you to specify either a per-user or up to four shared keys as the default encryption key to be used.
 - **Shared Keys (1-4):** Defines a set of shared encryption keys for network configuration security. To enable security using a shared key, type at least one shared key value. After typing a value, click the radio button next to the appropriate shared key to select it as the default encryption key.
 - **Key Length:** Defines the length for each encryption key. Options include:
 - 64 bit (type 10 digits)
 - 128 bit (type 26 digits)
 - 152 bit (enter 32 digits)
 - **LEAP:** Enables you to use LEAP for dynamic security keys.
 - **Externally Managed 802.1x Keys:** Configures the station to use externally provided 802.1x authentication.
 - **Disabled:** Selects no security.
5. Click the **Advanced** tab and the following screen appears.



Specify the following parameters:

- **Power Save Mode:** Select the power-saving mode for the configuration profile you are creating. You can select **Maximum**, **Normal**, or **Off**.
- **Network Type:** Select the type of network for the configuration profile you are creating. You can select **Access Point** or **Ad Hoc**.

Note: If you click **Ad Hoc** and specified more than one SSID on the **General** tab, only the first SSID you entered on that tab will be used. Clicking **Ad Hoc** also enables the Wireless Mode When Starting Ad Hoc Network options. Clicking **Access Point** enables the Wireless Mode options.

- **802.11b Preamble:** Select the preamble setting in 802.11b. The default setting is **Short & Long**, which enables both short and long headers in the 802.11b frames. The **Long Only** setting overrides allowing short frames.
 - **Transmit Power Level:** Select the transmit power level for this configuration profile. You can select **100%**, **50%**, **25%**, **12.5%**, or **Lowest transmit power**.
 - **Wireless Mode:** Specifies the wireless operating mode in an access point network. You can select **5 GHz 54 Mbps**, **5 GHz 108 Mbps**, **2.4 GHz 11 Mbps**, or **2.4 GHz 54 Mbps**.
 - **Wireless Mode when Starting Ad Hoc Network:** You can select **5GHz 54 Mbps**, **5 GHz 108 Mbps**, **2.4 GHz 11 Mbps**, or **2.4 GHz 54 Mbps** to start an Ad Hoc network if no matching network name is found after scanning all available modes.
6. Click **OK**. The profile you created appears in the **Profile Management** tab. The Details area of the tab shows the profile parameters that you selected.
 7. To create additional new profiles, repeat steps 2 through 5.
 8. To activate a profile, click the profile in the **Profile Management** tab and click **Activate**.

Modifying a configuration profile

If you need to modify a configuration profile, do the following:

1. In the IBM Client Utility window, click the **Profile Management** tab to display all existing profiles.
2. Click the profile you want to modify.
3. Click **Modify** to open the Profile Management window and to display the selections shown for the profile you selected.
4. Change the settings as necessary. For more information, go to “Creating a New Configuration Profile.”
5. Click **OK** when you have finished modifying the profile.
6. To modify additional configuration profiles, repeat steps 2 through 5.

Deleting a configuration profile

If you no longer need a configuration profile, you can delete it.

Note: No warning message displays before you delete a profile. Therefore, be sure that you do not need the profile before you delete it.

To delete a configuration profile, do the following:

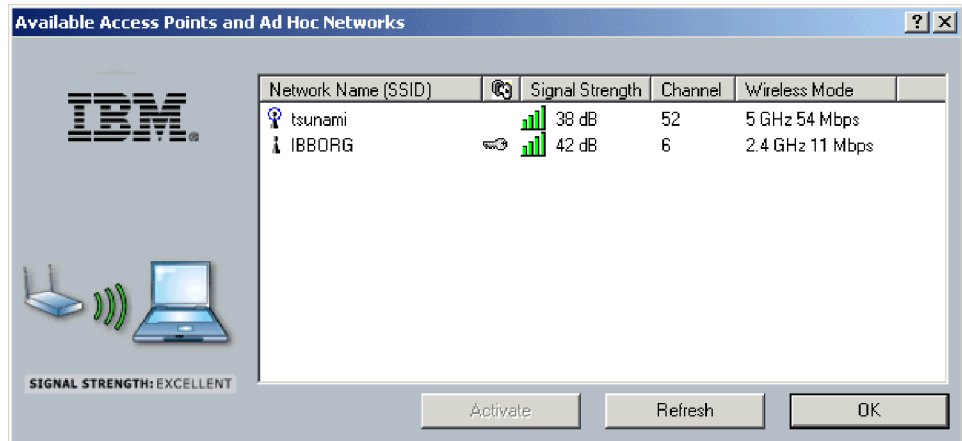
1. In the IBM Client Utility window, click the **Profile Management** tab to display all existing profiles.
2. Click the profile you want to delete.
3. Click **Delete** to delete the selected profile from the tab.
4. To delete additional configuration profiles, repeat steps 2 and 3.

Connecting to a different network

The **Profile Management** tab has an **Available Networks** button that enables you to view and connect to different networks.

To connect to a different network, do the following:

1. In the **Profile Management** tab, click a configuration profile.
2. Click **Available Networks** to open the Available Access Points and Ad Hoc Networks window.



This window displays the available access points and ad hoc network for the station. This includes the network names, security, signal strength, frequency, channel number, and wireless mode.

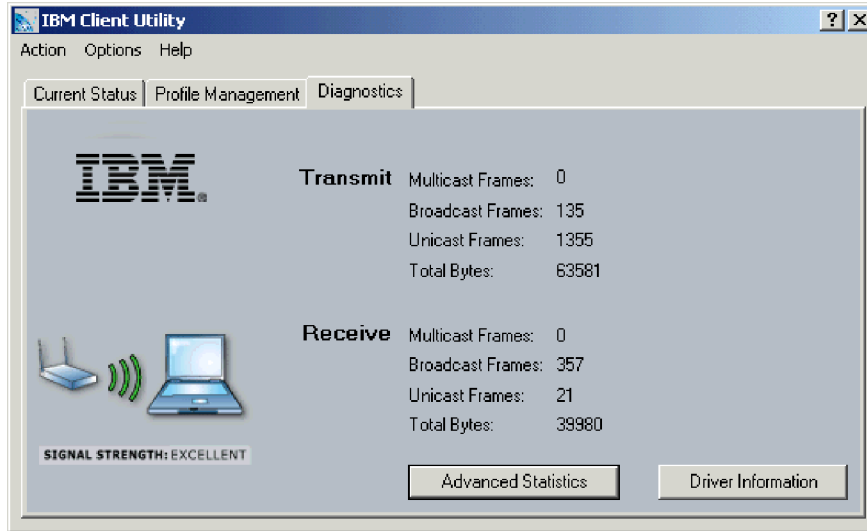
3. To connect to an available network, double-click the network in the window. If a configuration profile exists for that network, the Profile Management window opens and displays the settings for the network that you selected.

Note: The Profile Management window has a **Refresh** button that you can click to manually update the information shown.

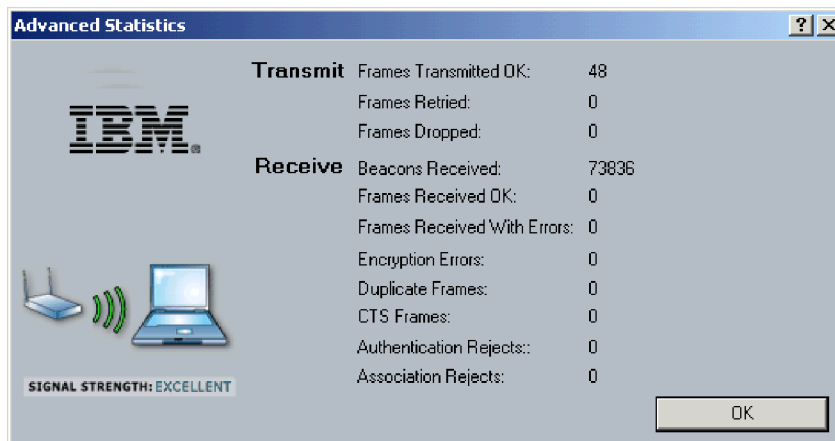
Viewing statistical information

The **Diagnostics** tab in the IBM Client Utility window is a read-only screen that shows the following receive and transmit diagnostics for frames received by or transmitted by the CardBus Adapter:

- Multicast frames transmitted and received
- Broadcast frames transmitted and received
- Unicast frames transmitted and received
- Total bytes transmitted and received



You can use the **Advanced Statistics** button on the **Diagnostics** tab to display the following window.

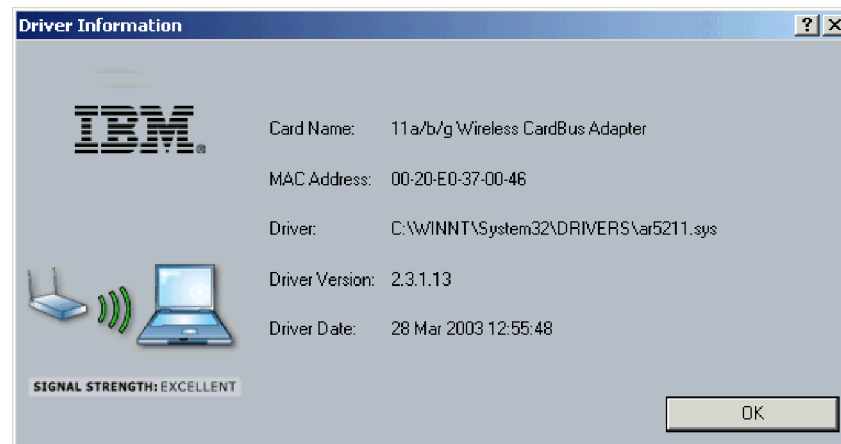


The window displays the following receive and transmit statistics:

- Frames transmitted and received satisfactorily
- Transmitted frames retried and dropped
- Beacons received
- Frames received with errors
- Encryption errors
- Duplicate frames received
- Clear-to-Send (CTS) frames received
- Authentication rejects: the number of access point authentication failures received by the CardBus Adapter
- Association rejects: the number of access point authentication rejects received by the CardBus Adapter

You can use the **Driver Information** button in the **Diagnostics** tab to display general information about the CardBus Adapter and the Network Driver Interface

Specification (NDIS) device driver, as shown below.



Uninstalling the Wireless CardBus Adapter

This section provides information on uninstalling the Wireless CardBus Adapter.

To uninstall the Wireless Cardbus Adapter in Windows XP Professional and Windows 2000, do the following:

1. Right-click **My Computer** and select **Manage**.
2. From the list on the left, select **Device Manager**.
3. Expand the Network Adapters item on the right side of the window.
4. Right-click **11a/b/g Wireless CardBus Adapter** and select **Uninstall**.

To uninstall the CardBus Adapter in Windows NT 4.0, do the following:

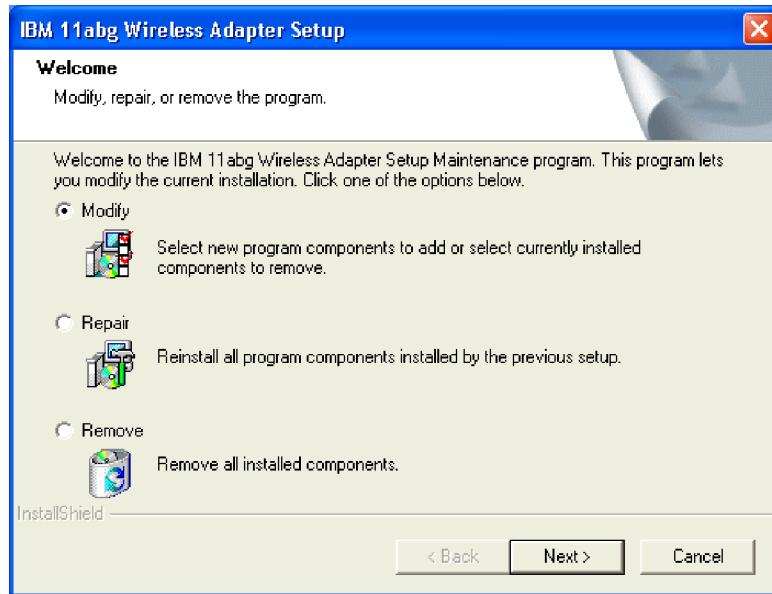
1. Click **Start** → **Settings** → **Control Panel**.
2. Double-click the **Network** icon to open the Network window.
3. Click the **Adapters** tab.
4. Click **11a/b/g Wireless CardBus Adapter** and select **Remove**.
5. When a message warns you that the selected component will be removed from your system permanently and asks if you want to continue, click **Yes** to uninstall the CardBus Adapter.

Uninstalling the IBM Client Utility

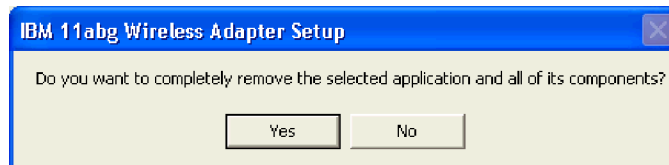
To remove the IBM Client Utility, do the following:

1. From the computer desktop, click **Start** → **Settings** → **Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Select **IBM 11abg Wireless Adapter**.
4. Click **Install/Uninstall** or **Change/Remove**.

If the following window opens, skip to step 6. If the window does not open, continue with step 5.

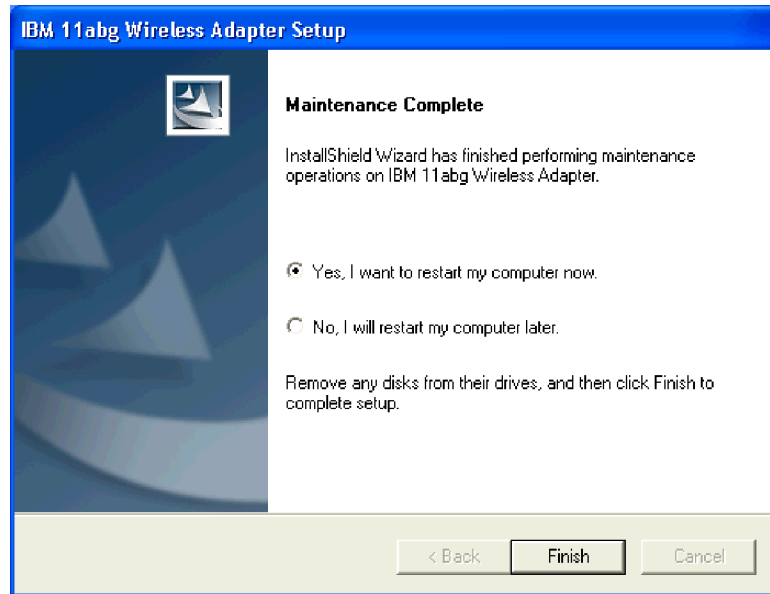


5. Click **Start** → **Run**. Navigate to the computer CD-ROM drive, double-click the **SETUP.EXE** file on the *Installation and User's Guide CD*, and click **OK**. The window shown above opens.
6. Select **Remove**.
7. Click **Next** to open the following window.



8. Click **Yes** to remove the Setup program and its components.

9. When the following window opens, remove any discs from their drives and click **Finish** to complete the uninstall process.



Appendix A. LED information

Your IBM 11a/b/g Wireless CardBus Adapter provides two Light Emitting Diodes (LEDs), a Power LED, and a Network LED. These LEDs indicate power and activity status of the CardBus Adapter.

Power LED	Network LED	Description
Slow blink	OFF	Power Save Mode: The CardBus Adapter enters this mode after power-up or reset.
ON	OFF	Awake Mode: The CardBus Adapter automatically enters this mode after exiting from power save mode. Changes from power save mode to this mode might not be visible on the LEDs if the software assumes control of the LED blinking by writing to the PCI configuration register.
Alternate blink	Alternate blink	CardBus Adapter is looking for a network association.
Slow blink	Slow blink	CardBus Adapter is associated with a network, but no activity is occurring.
Fast blink	Fast blink	CardBus Adapter is associated with a network and activity is occurring. Blink rate increases as activity increases on the network, over the air, or locally on the network device, based on the setting of the PCI configuration register.
OFF	OFF	Power is not being applied to the CardBus Adapter.

Appendix B. Specifications

The following table lists the specifications of the IBM 11a/b/g Wireless CardBus Adapter.

Model: IBM 11a/b/g Wireless CardBus Adapter		
<i>Physical specifications:</i>		
	Form Factor	CardBus Type II Extended
	Dimensions	2.2" x 4.7" x 0.51" (54 mm x 120 mm x 13 mm)
	Weight	1.5 oz. (43 g)
	Connector Interface	68-pin CardBus
	Power	3.3 v
<i>General specifications:</i>		
Frequency and modulation	Frequency band	<ul style="list-style-type: none"> 802.11a: 5.15 GHz to 5.85 GHz 802.11b and 802.11g: 2.412 GHz to 2.484 GHz
	Modulation	<ul style="list-style-type: none"> 802.11a and 802.11g: OFDM 802.11b: DBPSK, DQPSK, CCK
Network	WLAN Standard	IEEE 802.11a, IEEE802.11b, and 802.11g compatible
	Architecture	Infrastructure, Ad Hoc 802.11b
	Roaming	<ul style="list-style-type: none"> 802.11a, 802.11b, 802.11g compliant for seamless roaming between access points International roaming (802.11d and passive scanning)
	Software	IBM Client Utility software
Security	Encryption	<ul style="list-style-type: none"> 64-bit and 128-bit WEP 802.1x, Radius: enhanced wireless LAN encryption and authentication security AES
Power	Transmit Power	11dBm to 17dBm, depending on frequency channel
	Transmit	380-551 mA
	Receive	321-390 mA
	Voltage	3.3 v
Operating Temperature	CardBus Adapter	0 to 85° Celsius
Humidity	CardBus Adapter	10 to 90% non-condensing
Compatibility	OS	Windows 2000 Professional, Windows XP, Windows NT4
	WHQL	Yes

Regulatory and Safety	Safety	UL, C-UL
	United States	FCC Part 15.247 and 15.249
	Canada	Industry Canada RSS - 210
	Japan	VCCI, JATE, Telec

Appendix C. Troubleshooting

The following list provides general troubleshooting tips for the Wireless CardBus Adapter.

- **Your computer does not recognize the Wireless CardBus Adapter:**
 - Be sure the CardBus Adapter is properly inserted into a 32-bit CardBus slot.
- **The Wireless CardBus Adapter does not work properly after the Setup program is installed:**
 - Reinsert the CardBus Adapter into the slot. A beep should be heard if the adapter is properly inserted.
 - Go to the Device Manager and make sure the CardBus Adapter exists under the network adapters device node.
 - If you see a yellow exclamation, there are conflicting resources. In this case, be sure the computer has a free IRQ and be sure you have installed the proper driver. Uninstall the driver, restart the system, and repeat the driver installation steps if necessary.
- **Stations cannot associate in Ad Hoc mode:**
 - Be sure the same service set identifier (SSID) is specified for all stations that need to join the same Ad Hoc network.
 - Set up one station to establish a BSS and wait briefly before setting up other stations. This prevents several stations from trying to establish a BSS at the same time, which can result in multiple singular BSSs being established, rather than a single BSS with multiple stations associated to it.
- **The station cannot access the Internet in the Infrastructure configuration:**
 - Be sure the station is associated and joined with the access point.
 - If Wired Equivalent Privacy (WEP) security is enabled on the access point, the station must have the proper WEP keys specified.
 - Be sure TCP/IP properties are configured correctly.

Appendix D. 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.

Online technical support

Online technical support is available during the life of your product through the Personal Computing Support Web site at www-3.ibm.com/pc/support/site.wss/.

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.

Phone numbers are subject to change without notice. For the latest phone number list, go to www-3.ibm.com/pc/support/site.wss/ and click **Support Phone List**.

Country or Region	Telephone Number	Country or Region	Telephone Number
Argentina	0800-666-0011	Malaysia	03-7727-7800
Australia	1300-130-426	Mexico	001-866-434-2080
Austria	01-24592-5901	Netherlands	020-514-5770

Country or Region	Telephone Number	Country or Region	Telephone Number
Belgium	Dutch 02-210-9820 French 02-210-9800	New Zealand	0800-446-149
Bolivia	0800-0189	Norway	66 81 11 00
Brazil	55-11-3889-8986	Peru	0-800-50-866
Canada	1-800-565-3344 Toronto 416-383-3344	Philippines	632-995-2225
Chile	800-224-488	Portugal	21-791 51 47
China (PRC)	800-810-1818	Russia	095-940-2000
China (Hong Kong S.A.R.)	852-2825-7799	Singapore	1800-840-9911
Columbia	980-912-3021	Spain	91-662 49 16
Denmark	45 20 82 00	Sweden	08-477 4420
Ecuador	1-800-426911 (option #4)	Switzerland	058-333-09-00
Finland	09-459 69 60	Taiwan	886-2-2725-9799
France	02 38 55 74 50	Thailand	66-2-273-4000
Germany	07032-1549 201	Turkey	00-800-446-32-041
Indonesia	021-523-8535	United Kingdom	0-1475-555 055
Ireland	01-815-9202	United States	1-800-426-7378
Italy	02-7031-6101	Uruguay	000-411-005-6649
Japan	Consumer customers 0120-887-870 Business customers 0120-887-874	Venezuela	0-800-100-2011
Luxembourg	298-977 5063	Vietnam	848-8295-160

Appendix E. IBM Statement of Limited Warranty - Z125-4753-07 - 11/2002

Part 1 - General Terms

This Statement of Limited Warranty includes Part 1 - General Terms, Part 2 - Country-unique Terms, and Part 3 - Warranty Information. 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. 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. Nothing in this Statement of Limited Warranty affects any statutory rights of consumers that cannot be waived or limited by contract.

What this Warranty Covers

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications ("Specifications") which are available on request. The warranty period for the Machine starts on the original Date of Installation and is specified in Part 3 - Warranty Information. The date on your invoice or sales receipt is the Date of Installation unless IBM or your reseller informs you otherwise. 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. Unless IBM specifies otherwise, these warranties apply only in the country or region in which you purchased the Machine.

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. SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD. SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

What this Warranty Does not Cover

This warranty does not cover the following:

- any software programs, whether pre-loaded or shipped with the Machine, or installed subsequently;
- failure resulting from misuse (including but not limited to use of any Machine capacity or capability, other than that authorized by IBM in writing), accident, modification, unsuitable physical or operating environment, or improper maintenance by you;
- failure caused by a product for which IBM is not responsible; and

- any non-IBM products, including those that IBM may procure and provide with or integrate into an IBM Machine at your request.

The warranty is voided by removal or alteration of identification labels on the Machine or its parts.

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, is provided **WITHOUT WARRANTIES OF ANY KIND**.

How to Obtain Warranty Service

If the Machine does not function as warranted during the warranty period, contact IBM or your reseller to obtain warranty service. If you do not register the Machine with IBM, you may be required to present proof of purchase as evidence of your entitlement to warranty service.

What IBM Will Do to Correct Problems

When you call for service, you must follow the problem determination and resolution procedures that IBM specifies. A technician will attempt to make an initial diagnosis of your problem and help you resolve it over the telephone.

The type of warranty service applicable to your Machine is specified in Part 3 - Warranty Information.

You are responsible for downloading and installing designated Machine Code (microcode, basic input/output system code (called "BIOS"), utility programs, device drivers, and diagnostics delivered with an IBM Machine) and other software updates from an IBM Internet Web site or from other electronic media, and following the instructions that IBM provides.

If your problem can be resolved with a Customer Replaceable Unit ("CRU") (e.g., keyboard, mouse, speaker, memory, hard disk drive and other easily replaceable parts), IBM will ship these parts to you for replacement by you.

If the Machine does not function as warranted during the warranty period and your problem cannot be resolved over the telephone, through your application of Machine Code or software updates, or with a CRU, IBM or your reseller, if approved by IBM to provide warranty service, will either, at its discretion, 1) repair it to make it function as warranted, or 2) replace it with one that is at least functionally equivalent. If IBM is unable to do either, you may return the Machine to your place of purchase and your money will be refunded.

IBM or your reseller will also manage and install selected engineering changes that apply to the Machine.

Exchange of a Machine or Part

When the 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.

Your Additional Responsibilities

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. 1.ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. 2.obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. 3.where applicable, before service is provided:
 - a. a.follow the service request procedures that IBM or your reseller provides;
 - b. b.backup or secure all programs, data, and funds contained in the Machine;
 - c. IBM or your reseller with sufficient, free, and safe access to your facilities to permit IBM to fulfill its obligations; and
 - d. d.inform IBM or your reseller of changes in the Machine's location.
4. (a) ensure all information about identified or identifiable individuals (Personal Data) is deleted from the Machine (to the extent technically possible), (b) allow IBM, your reseller or an IBM supplier to process on your behalf any remaining Personal Data as IBM or your reseller considers necessary to fulfill its obligations under this Statement of Limited Warranty (which may include shipping the Machine for such processing to other IBM service locations around the world), and (c) ensure that such processing complies with any laws applicable to such Personal Data.

Limitation of Liability

IBM is responsible for loss of, or damage to, your Machine only 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 are responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM for any reason. You should remove all such information from the Machine prior to its return.

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. 1.damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. 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 ("LIC").

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, ITS SUPPLIERS OR RESELLERS LIABLE FOR ANY OF THE FOLLOWING EVEN IF INFORMED OF THEIR POSSIBILITY: 1) THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, DATA; 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; OR 4) LOST PROFITS, BUSINESS REVENUE, GOODWILL OR ANTICIPATED SAVINGS. SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

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 Statement of Limited Warranty, without regard to conflict of law principles.

THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR JURISDICTION TO JURISDICTION.

Jurisdiction

All of our rights, duties, and obligations are subject to the courts of the country in which you acquired the Machine.

Part 2 - Country-unique Terms

AMERICAS

ARGENTINA

Governing Law: *The following is added after the first sentence:*

Any litigation arising from this Statement of Limited Warranty will be settled exclusively by the Ordinary Commercial Court of the city of Buenos Aires.

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, RJ.

PERU

Limitation of Liability: *The following is added at the end of this section:*

In accordance with Article 1328 of the Peruvian Civil Code the limitations and exclusions specified in this section will not apply to damages caused by IBM's willful misconduct ("dolo") or gross negligence ("culpa inexcusable").

NORTH AMERICA

How to Obtain 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

Limitation of Liability: *The following replaces item 1 of this section:*

1. damages for bodily injury (including death) or physical harm to real property and tangible personal property caused by IBM's negligence; and

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

What this Warranty Covers: *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, United States of America.

CAMBODIA, INDONESIA, LAOS, AND VIETNAM

Arbitration: *The following is added under this heading:*

Disputes arising out of or in connection with this Statement of Limited Warranty shall be finally settled by arbitration which shall be held in Singapore in accordance with the Arbitration Rules of Singapore International Arbitration Center ("SIAC Rules") then in effect. The arbitration award shall be final and binding for the parties without appeal and shall be in writing and set forth the findings of fact and the conclusions of law.

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 who shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the SIAC.

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.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The English language version of this Statement of Limited Warranty prevails over any other language version.

HONG KONG S.A.R. OF CHINA AND MACAU S.A.R. OF CHINA

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 of China.

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; and
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, the charge paid by you for the individual Machine that is the subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code ("LIC").

Arbitration: *The following is added under this heading*

Disputes arising out of or in connection with this Statement of Limited Warranty shall be finally settled by arbitration which shall be held in Bangalore, India in accordance with the laws of India then in effect. The arbitration award shall be final and binding for the parties without appeal and shall be in writing and set forth the findings of fact and the conclusions of law.

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 who shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the Bar Council of India. 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.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The English language version of this Statement of Limited Warranty prevails over any other language version.

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.

MALASIA

Limitation of Liability: The word "SPECIAL" in item 3 of the fifth paragraph is deleted.

NEW ZEALAND

What this Warranty Covers: *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 "laws of the country in which you acquired the Machine" in the first sentence:*

laws of the State of New York, United States of America (except when local law requires otherwise).

PHILIPPINES

Limitation of Liability: *Item 3 in the fifth paragraph is replaced by the following:*

SPECIAL (INCLUDING NOMINAL AND EXEMPLARY DAMAGES), MORAL, INCIDENTAL, OR INDIRECT DAMAGES FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; OR

Arbitration: The following is added: under this heading

Disputes arising out of or in connection with this Statement of Limited Warranty shall be finally settled by arbitration which shall be held in Metro Manila, Philippines in accordance with the laws of the Philippines then in effect. The arbitration award shall be final and binding for the parties without appeal and shall be in writing and set forth the findings of fact and the conclusions of law. 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 who shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the Philippine Dispute Resolution Center, Inc.. 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.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The English language version of this Statement of Limited Warranty prevails over any other language version.

SINGAPORE

Limitation of Liability: *The words "SPECIAL" and "ECONOMIC" in item 3 in the fifth paragraph are deleted.*

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.

How to Obtain Warranty Service:

If you purchase a Machine in Austria, Belgium, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, Norway, Portugal, Spain, San Marino, Sweden, Switzerland, United Kingdom or Vatican State, 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, provided the Machine has been announced and made available by IBM in the country in which you wish to obtain service. If you purchased a Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kyrgyzstan, 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 a 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 approved service provider. You are responsible for transportation costs for Machines located outside 50 kilometers of an IBM approved service provider.

*Add the following paragraph in **Western Europe** (Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Monaco, Netherlands, Norway, Portugal, Spain, San Marino, Sweden, Switzerland, United Kingdom, Vatican State):*

The warranty for Machines acquired in Western Europe shall be valid and applicable in all Western Europe countries provided the Machines have been announced and made available in such countries.

Governing Law:

The phrase "the laws of the country in which you acquired the Machine" is replaced by:

1) "the laws of Austria" in **Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, FYR Macedonia, Moldova, Poland, Romania, Russia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, and FR Yugoslavia;** 2) "the laws of France" in **Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Republic, Djibouti, Democratic Republic of Congo, Equatorial Guinea, French Guiana, French Polynesia, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Madagascar, Mali, Mauritania, Mauritius, Mayotte, Morocco, New Caledonia, Niger, Reunion, Senegal, Seychelles, Togo, Tunisia, Vanuatu, and Wallis & Futuna;** 3) "the laws of Finland" in **Estonia, Latvia, and Lithuania;** 4) "the laws of England" in **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, the United Kingdom, West Bank/Gaza, Yemen, Zambia, and Zimbabwe;** and 5) "the laws of South Africa" in **South Africa, Namibia, Lesotho and Swaziland.**

Jurisdiction: *The following exceptions are added to this section:*

1) **In Austria** the choice of jurisdiction for all disputes arising out of this Statement of Limited Warranty and relating thereto, including its existence, will be the competent court of law in Vienna, Austria (Inner-City); 2) **in 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, West Bank/Gaza, Yemen, Zambia, and Zimbabwe** all disputes arising out of this Statement of Limited Warranty or related to its execution, including

summary proceedings, will be submitted to the exclusive jurisdiction of the English courts; 3) in **Belgium and Luxembourg**, all disputes arising out of this Statement of Limited Warranty or related to its interpretation or its execution, the law, and the courts of the capital city, of the country of your registered office and/or commercial site location only are competent; 4) in **France, Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Republic, Djibouti, Democratic Republic of Congo, Equatorial Guinea, French Guiana, French Polynesia, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Madagascar, Mali, Mauritania, Mauritius, Mayotte, Morocco, New Caledonia, Niger, Reunion, Senegal, Seychelles, Togo, Tunisia, Vanuatu, and Wallis & Futuna** all disputes arising out of this Statement of Limited Warranty or related to its violation or execution, including summary proceedings, will be settled exclusively by the Commercial Court of Paris; 5) in **Russia**, all disputes arising out of or in relation to the interpretation, the violation, the termination, the nullity of the execution of this Statement of Limited Warranty shall be settled by Arbitration Court of Moscow; 6) in **South Africa, Namibia, Lesotho and Swaziland**, both of us agree to submit all disputes relating to this Statement of Limited Warranty to the jurisdiction of the High Court in Johannesburg; 7) in **Turkey** all disputes arising out of or in connection with this Statement of Limited Warranty shall be resolved by the Istanbul Central (Sultanahmet) Courts and Execution Directorates of Istanbul, the Republic of Turkey; 8) in each of the following specified countries, any legal claim arising out of this Statement of Limited Warranty will be brought before, and settled exclusively by, the competent court of a) Athens for **Greece**, b) Tel Aviv-Jaffa for **Israel**, c) Milan for **Italy**, d) Lisbon for **Portugal**, and e) Madrid for **Spain**; and 9) in **the United Kingdom**, both of us agree to submit all disputes relating to this Statement of Limited Warranty to the jurisdiction of the English courts.

Arbitration: *The following is added under this heading:*

In Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, FYR Macedonia, Moldova, Poland, Romania, Russia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, and FR Yugoslavia all disputes arising out of this Statement of Limited Warranty or related to its violation, termination or nullity will be finally settled under the Rules of Arbitration and Conciliation of the International Arbitral Center of the Federal Economic Chamber in Vienna (Vienna Rules) by three arbitrators appointed in accordance with these rules. The arbitration will be held in Vienna, Austria, and the official language of the proceedings will be English. The decision of the arbitrators will be final and binding upon both parties. Therefore, pursuant to paragraph 598 (2) of the Austrian Code of Civil Procedure, the parties expressly waive the application of paragraph 595 (1) figure 7 of the Code. IBM may, however, institute proceedings in a competent court in the country of installation.

In Estonia, Latvia and Lithuania all disputes arising in connection with this Statement of Limited Warranty will be finally settled in arbitration that will be held in Helsinki, Finland in accordance with the arbitration laws of Finland then in effect. Each party will appoint one arbitrator. The arbitrators will then jointly appoint the chairman. If arbitrators cannot agree on the chairman, then the Central Chamber of Commerce in Helsinki will appoint the chairman.

EUROPEAN UNION (EU)

THE FOLLOWING TERMS APPLY TO ALL EU COUNTRIES:

Consumers have legal rights under applicable national legislation governing the

sale of consumer goods. Such rights are not affected by the warranties provided in this Statement of Limited Warranty.

How to Obtain Warranty Service: *The following is added to this section:*

To obtain warranty service from IBM in EU countries, see the telephone listing in Part 3 - Warranty Information.

You may contact IBM at the following address:

IBM Warranty & Service Quality Dept.

PO Box 30

Spango Valley

Greenock

Scotland PA16 0AH

**AUSTRIA, DENMARK, FINLAND, GREECE, ITALY, NETHERLANDS,
NORWAY, PORTUGAL, SPAIN, SWEDEN AND SWITZERLAND**

Limitation of Liability: *The following replaces the terms of this section in its entirety:*

Except as otherwise provided by mandatory law:

1. IBM's liability for any damages and losses that may arise as a consequence of the fulfillment of its obligations under or in connection with this Statement of Limited Warranty or due to any other cause related to this Statement of Limited Warranty is limited to the compensation of only those damages and losses proved and actually arising as an immediate and direct consequence of the non-fulfillment of such obligations (if IBM is at fault) or of such cause, for a maximum amount equal to the charges you paid for the Machine. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code ("LIC").

The above limitation shall not apply to damages for bodily injuries (including death) and damages to real property and tangible personal property for which IBM is legally liable.

2. **UNDER NO CIRCUMSTANCES IS IBM, ITS SUPPLIERS OR RESELLERS LIABLE FOR ANY OF THE FOLLOWING, EVEN IF INFORMED OF THEIR POSSIBILITY: 1) LOSS OF, OR DAMAGE TO, DATA; 2) INCIDENTAL OR INDIRECT DAMAGES, OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; 3) LOST PROFITS, EVEN IF THEY ARISE AS AN IMMEDIATE CONSEQUENCE OF THE EVENT THAT GENERATED THE DAMAGES; OR 4) LOSS OF BUSINESS, REVENUE, GOODWILL, OR ANTICIPATED SAVINGS.**

FRANCE AND BELGIUM

Limitation of Liability: *The following replaces the terms of this section in its entirety:*

Except as otherwise provided by mandatory law:

1. IBM's liability for any damages and losses that may arise as a consequence of the fulfillment of its obligations under or in connection with this Statement of Limited Warranty is limited to the compensation of only those damages and losses proved and actually arising as an immediate and direct consequence of the non-fulfillment of such obligations (if IBM is at fault), for a maximum amount equal to the charges you paid for the Machine that has caused the damages. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code ("LIC").

The above limitation shall not apply to damages for bodily injuries (including death) and damages to real property and tangible personal property for which IBM is legally liable.

2. **UNDER NO CIRCUMSTANCES IS IBM, ITS SUPPLIERS OR RESELLERS LIABLE FOR ANY OF THE FOLLOWING, EVEN IF INFORMED OF THEIR POSSIBILITY: 1) LOSS OF, OR DAMAGE TO, DATA; 2) INCIDENTAL OR INDIRECT DAMAGES, OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; 3) LOST PROFITS, EVEN IF THEY ARISE AS AN IMMEDIATE**

CONSEQUENCE OF THE EVENT THAT GENERATED THE DAMAGES;
OR 4) LOSS OF BUSINESS, REVENUE, GOODWILL, OR ANTICIPATED
SAVINGS.

THE FOLLOWING TERMS APPLY TO THE COUNTRY SPECIFIED:

AUSTRIA

What this Warranty Covers: *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 warranty period for Machines is 12 months from the date of delivery. The limitation period for consumers in action for breach of warranty is the statutory period as a minimum. 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.

The second paragraph does not apply.

What IBM Will Do to Correct Problems: *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 ("LIC").

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).

GERMANY

What this Warranty Covers: *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 twelve 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.

The second paragraph does not apply.

What IBM Will Do to Correct Problems: *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.

HUNGARY

Limitation of Liability: *The following is added at the end of this section:*

The limitation and exclusion specified herein shall not apply to liability for a breach of contract damaging life, physical well-being, or health that has been caused intentionally, by gross negligence, or by a criminal act.

The parties accept the limitations of liability as valid provisions and state that the Section 314.(2) of the Hungarian Civil Code applies as the acquisition price as well as other advantages arising out of the present Statement of Limited Warranty balance this limitation of liability.

IRELAND

What this Warranty Covers: *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 the terms of section in its entirety:*

For the purposes of this section, a "Default" means any act, statement, omission, or negligence on the part of IBM in connection with, or in relation to, the subject matter of this Statement of Limited Warranty in respect of which IBM is legally liable to you, whether in contract or tort. A number of Defaults which together result in, or contribute to, substantially the same loss or damage will be treated as one Default occurring on the date of occurrence of the last such Default. Circumstances may arise where, because of a Default, you are entitled to recover damages from IBM.

This section sets out the extent of IBM's liability and your sole remedy.

1. will accept unlimited liability for death or personal injury caused by the negligence of IBM.
2. Subject always to the **Items for Which IBM is Not Liable** below, IBM will accept unlimited liability for physical damage to your tangible property resulting from the negligence of IBM.
3. Except as provided in items 1 and 2 above, IBM's entire liability for actual damages for any one Default will not in any event exceed the greater of 1) EUR 125,000, or 2) 125% of the amount you paid for the Machine directly relating to the Default.

Items for Which IBM is Not Liable

Save with respect to any liability referred to in item 1 above, under no circumstances is IBM, its suppliers or resellers liable for any of the following, even if IBM or they were informed of the possibility of such losses:

1. loss of, or damage to, data;
2. special, indirect, or consequential loss; or

3. loss of profits, business, revenue, goodwill, or anticipated savings.

SLOVAKIA

Limitation of Liability: *The following is added to the end of the last paragraph:*

The limitations apply to the extent they are not prohibited under §§ 373-386 of the Slovak Commercial Code.

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 the terms of this section in its entirety:*

For the purposes of this section, a "Default" means any act, statement, omission, or negligence on the part of IBM in connection with, or in relation to, the subject matter of this Statement of Limited Warranty in respect of which IBM is legally liable to you, whether in contract or tort. A number of Defaults which together result in, or contribute to, substantially the same loss or damage will be treated as one Default.

Circumstances may arise where, because of a Default, you are entitled to recover damages from IBM.

This section sets out the extent of IBM's liability and your sole remedy.

1. IBM will accept unlimited liability for:
 - a. death or personal injury caused by the negligence of IBM; and
 - b. any breach of its obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982, or any statutory modification or re-enactment of either such Section.
2. IBM will accept unlimited liability, subject always to the Items for Which IBM is Not Liable below, for physical damage to your tangible property resulting from the negligence of IBM.
3. IBM's entire liability for actual damages for any one Default will not in any event, except as provided in items 1 and 2 above, exceed the greater of 1) Pounds Sterling 75,000, or 2) 125% of the total purchase price payable or the charges for the Machine directly relating to the Default.

These limits also apply to IBM's suppliers and resellers. They state the maximum for which IBM and such suppliers and resellers are collectively responsible.

Items for Which IBM is Not Liable

Save with respect to any liability referred to in item 1 above, under no circumstances is IBM or any of its suppliers or resellers liable for any of the following, even if IBM or they were informed of the possibility of such losses:

1. loss of, or damage to, data;
2. special, indirect, or consequential loss; or
3. loss of profits, business, revenue, goodwill, or anticipated savings.

Part 3 - Warranty Information

This Part 3 provides information regarding the warranty applicable to your Machine, including the warranty period and type of warranty service IBM provides.

Warranty Period

The warranty period may vary by country or region and is specified in the table below. NOTE: "Region" means either Hong Kong or Macau Special Administrative Region of China.

802.11a/b/g Wireless CardBus Adapter

Country or Region of Purchase	Warranty Period	Type of Warranty Service
Worldwide	1 year	4

A warranty period of 1 year on parts and 1 year on labor means that IBM provides warranty service without charge for parts and labor during the 1 year warranty period.

Types of Warranty Service

If required, IBM provides repair or exchange service depending on the type of warranty service specified for your Machine in the above table and as described below. Warranty service may be provided by your reseller if approved by IBM to perform warranty service. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations, additional charges may apply outside IBM's normal service area, contact your local IBM representative or your reseller for country and location specific information.

1. Customer Replaceable Unit ("CRU") Service

IBM will ship CRU parts to you for your replacement. If IBM instructs you to return the replaced CRU, you are responsible for returning it to IBM in accordance with IBM's instructions. If you do not return the defective CRU, if IBM so instructs, within 30 days of your receipt of the replacement CRU, IBM may charge you for the replacement.

2. On-site Service

IBM or your reseller will either repair or exchange the failing Machine at your location and verify its operation. You must provide suitable working area to allow disassembly and reassembly of the IBM Machine. The area must be clean, well lit and suitable for the purpose. **For some Machines, certain repairs may require sending the Machine to an IBM service center.**

3. Courier or Depot Service¹

You will disconnect the failing Machine for collection arranged by IBM. IBM will provide you with a shipping container for you to return your Machine to a designated service center. A courier will pick up your Machine and deliver it to the designated service center. Following its repair or exchange, IBM will arrange the return delivery of the Machine to your location. You are responsible for its installation and verification.

4. Customer Carry-In or Mail-In Service

1. This type of service is called ThinkPad® EasyServ or EasyServ in some countries.

You will deliver or mail as IBM specifies (prepaid unless IBM specifies otherwise) the failing Machine suitably packaged to a location IBM designates. After IBM has repaired or exchanged the Machine, IBM will make it available for your collection or, for Mail-in Service, IBM will return it to you at IBM's expense, unless IBM specifies otherwise. You are responsible for the subsequent installation and verification of the Machine.

The IBM Machine Warranty worldwide web site at http://www.ibm.com/servers/support/machine_warranties/ provides a worldwide overview of IBM's Limited Warranty for Machines, a Glossary of IBM definitions, Frequently Asked Questions (FAQs) and Support by Product (Machine) with links to Product Support pages. **The IBM Statement of Limited Warranty is also available on this site in 29 languages.**

To obtain warranty service contact IBM or your IBM reseller. In Canada or the United States, call 1-800-IBM-SERV (426-7378). For other countries, see the telephone numbers below.

Phone numbers are subject to change without notice. For the latest phone number list, go to www-3.ibm.com/pc/support/site.wss/ and click **Support Phone List**.

Country or Region	Telephone Number	Country or Region	Telephone Number
Argentina	0800-666-0011	Malaysia	03-7727-7800
Australia	1300-130-426	Mexico	001-866-434-2080
Austria	01-24592-5901	Netherlands	020-514-5770
Belgium	Dutch 02-210-9820 French 02-210-9800	New Zealand	0800-446-149
Bolivia	0800-0189	Norway	66 81 11 00
Brazil	55-11-3889-8986	Peru	0-800-50-866
Canada	1-800-565-3344 Toronto 416-383-3344	Philippines	632-995-2225
Chile	800-224-488	Portugal	21-791 51 47
China (PRC)	800-810-1818	Russia	095-940-2000
China (Hong Kong S.A.R.)	852-2825-7799	Singapore	1800-840-9911
Columbia	980-912-3021	Spain	91-662 49 16
Denmark	45 20 82 00	Sweden	08-477 4420
Ecuador	1-800-426911 (option #4)	Switzerland	058-333-09-00
Finland	09-459 69 60	Taiwan	886-2-2725-9799
France	02 38 55 74 50	Thailand	66-2-273-4000
Germany	07032-1549 201	Turkey	00-800-446-32-041
Indonesia	021-523-8535	United Kingdom	0-1475-555 055
Ireland	01-815-9202	United States	1-800-426-7378
Italy	02-7031-6101	Uruguay	000-411-005-6649

Country or Region	Telephone Number	Country or Region	Telephone Number
Japan	Consumer customers 0120-887-870 Business customers 0120-887-874	Venezuela	0-800-100-2011
Luxembourg	298-977 5063	Vietnam	848-8295-160

Appendix F. 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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Electronic emission notices

Machine - 802.11a/b/g Wireless 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

FC 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 conformite a la reglementation d'Industrie Canada

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

Deutsche EMV-Direktive (electromagnetische Verträglichkeit)

Zulassungbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336):

Dieses Gerät ist berechtigt in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen. Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die:

IBM Deutschland Informationssysteme GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024:1998 und EN 55022:1998 Klasse B.
--

EN 55022 Hinweis:

“Wird dieses Gerät in einer industriellen Umgebung betrieben (wie in EN 55022:B festgelegt), dann kann es dabei eventuell gestört werden. In solch einem Fall ist der Abstand bzw. die Abschirmung zu der industriellen Störquelle zu vergrößern.”

Anmerkung:

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

European Union - emission directive

This product is in conformity with the protection requirements of EU Council Directive 89/336/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM can not accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to European Standard EN 55022. The

limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Union Européenne - Directive Conformité électromagnétique

Ce produit est conforme aux exigences de protection de la Directive 89/336/EEC du Conseil de l'UE sur le rapprochement des lois des États membres en matière de compatibilité électromagnétique.

IBM ne peut accepter aucune responsabilité pour le manquement aux exigences de protection résultant d'une modification non recommandée du produit, y compris l'installation de cartes autres que les cartes IBM.

Ce produit a été testé et il satisfait les conditions de l'équipement informatique de Classe B en vertu de Standard européen EN 55022. Les conditions pour l'équipement de Classe B ont été définies en fonction d'un contexte résidentiel ordinaire afin de fournir une protection raisonnable contre l'interférence d'appareils de communication autorisés.

Unione Europea - Directiva EMC (Conformidad electromagnética)

Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 89/336/CEE en lo que a la legislatura de los Estados Miembros sobre compatibilidad electromagnética se refiere.

IBM no puede aceptar responsabilidad alguna si este producto deja de satisfacer dichos requisitos de protección como resultado de una modificación no recomendada del producto, incluyendo el ajuste de tarjetas de opción que no sean IBM.

Este producto ha sido probado y satisface los límites para Equipos Informáticos Clase B de conformidad con el Estándar Europeo EN 55022. Los límites para los equipos de Clase B se han establecido para entornos residenciales típicos a fin de proporcionar una protección razonable contra las interferencias con dispositivos de comunicación licenciados.

Union Europea - Normativa EMC

Questo prodotto è conforme alle normative di protezione ai sensi della Direttiva del Consiglio dell'Unione Europea 89/336/CEE sull'armonizzazione legislativa degli stati membri in materia di compatibilità elettromagnetica.

IBM non accetta responsabilità alcuna per la mancata conformità alle normative di protezione dovuta a modifiche non consigliate al prodotto, compresa l'installazione di schede e componenti di marca diversa da IBM.

Le prove effettuate sul presente prodotto hanno accertato che esso rientra nei limiti stabiliti per le apparecchiature di informatica Classe B ai sensi della Norma Europea EN 55022. I limiti delle apparecchiature della Classe B sono stati stabiliti al fine di fornire ragionevole protezione da interferenze mediante dispositivi di comunicazione in concessione in ambienti residenziali tipici.

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