IBM

ThinkPad® R40 Series
Service and Troubleshooting Guide

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> **Note**
>
> Before using this information and the product it supports, be sure to read the general information under
> Appendix A, "Important safety instructions", on page 47, Appendix B, "Wireless related information", on
> page 53, Appendix C, "Warranty information", on page 55, and Appendix D, "Notices", on page 69.

⚠ **סכנה**

- כדי למנוע סכנת התחשמלות, יש לחבר ולנתק כבלים בדרך הנכונה בזמן התקנה, העברה או פתיחת המכסים של מוצר זה או היחידות המחוברות אליו. יש לחבר את כבל החשמל לשקע מוארק כהלכה.

- אין להשאיר את בסיס המחשב במגע עם חלק כלשהו בגוף למשך זמן ארוך כשהמחשב פועל או כשהסוללה נטענת. המחשב מפזר כמות מסוימת של חום בזמן פעולתו הרגילה. החום הוא פועל יוצא של רמת הפעילות במערכת ורמת הטעינה של הסוללה. מגע ממושך עם הגוף, גם דרך ביגוד, עלול לגרום לאי נוחות, או בסופו של דבר לכווייה בעור.

- כדי לצמצם סכנת התחשמלות, אין להשתמש במחשב בתוך או בקרבת מים.

- כדי למנוע התחשמלות. אין להשתמש במחשב עם חיבור לכבל טלפון בזמן סערת ברקים. אין לחבר או לנתק את הכבל משקע הטלפון בקיר בזמן סערת ברקים.

- יש לאחסן את חומרי האריזה מחוץ להישג ידם של ילדים כדי למנוע סכנת חנק משקיות ניילון.

- מארז הסוללה מכיל כמות קטנה של חומרים מזיקים. קיימת סכנת התפוצצות אם מארז הסוללה מוחלף בדרך לא נכונה, נחשף לאש או למים, מקוצר או מפורק. יש להרחיק את מארז הסוללה מילדים ואין לשים אותו באשפה המפונה למזבלות.

- כדי לצמצם סכנת שריפה, יש להשתמש רק בכבל טלפון מס' AWG 26 או בכבל עבה יותר.

- נורת הפלואורסצנט במסך הגביש הנוזלי (LCD) מכילה כספית. אין לשים אותה באשפה המפונה למזבלות. טלטול או הפלה של המחשב עלולים לגרום למסך להישבר, ולנוזל הפנימי לבוא במגע עם עיניכם או ידיכם. יש לשטוף את האזורים הנגועים במים מיד. אם התסמינים נמשכים, יש לפנות לקבלת טיפול רפואי.

- אין לפרק את כונן האחסון האופטי, שכן פירוק יחידה זו עלול לגרום לחשיפה לקרינה מסוכנת.

- יש להמנע מחשיפה ישירה של העיניים לקרן הלייזר הכלולה בכוננים מסוימים.

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Important Notice for Users

Important Regulatory Notice for Users

The ThinkPad R40 computer complies with the radio frequency and safety standards of any country or region in which it has been approved for wireless use. You are requested to install and use your ThinkPad computer in strict accordance with the local RF regulations. Before you use the ThinkPad R40 computer, please find and read "Regulatory Notice for ThinkPad R40 Series," the notice that supplements this Service and Troubleshooting Guide. The notice is included in the package with this publication.

Information about hard disk capacity

Instead of providing a recovery CD or a Windows® CD with your computer, IBM® provides simpler methods of accomplishing the tasks typically associated with these CDs. The files and programs for these alternative methods are on your hard disk, which eliminates having to locate misplaced CDs and problems associated with using an incorrect CD version.

The complete backup of all the files and programs that IBM preinstalled on your computer resides in a hidden section, or partition, of the hard disk. Although hidden, the backups in the partition consume hard disk space. Therefore, when checking the capacity of your hard disk according to Windows® you might note that the total capacity of the disk appears to be smaller than anticipated. This discrepancy is explained by the contents of the hidden partition.

For more information about recovering your hard disk to the original preinstalled contents refer to your on-system help source, Access IBM. Press the blue Access IBM button or click the Access IBM icon on your desktop, and then browse the Learn section for various topics that cover backing up and recovering.

Finding information with Access IBM

The blue Access IBM button can help you in many situations when your computer is working normally; and even when it is not. At your desktop, press the Access IBM button to open Access IBM. Access IBM is your on-board computer help center that brings you informative illustrations and easy-to-follow instructions for getting started and staying productive. You can also use the Access IBM button to interrupt the startup sequence of your computer and start the Access IBM Predesktop Area. If Windows® does not start correctly, press the Access IBM button during the startup sequence of your computer and start the Access IBM Predesktop Area. Use this area to run diagnostics, restore your backups (assuming you have made backups using IBM Rapid Restore PC), restore to factory contents (ie, what was there when you received your computer), start a utility that enables you to change your startup sequence, and get essential system information, and start the IBM BIOS Setup Utility where you can check and change BIOS settings.

Press the Access IBM button to open the application that brings all of IBM's resources to you. On the next page, you will see the Welcome page of Access

IBM that explains what each part of Access IBM holds to help you.
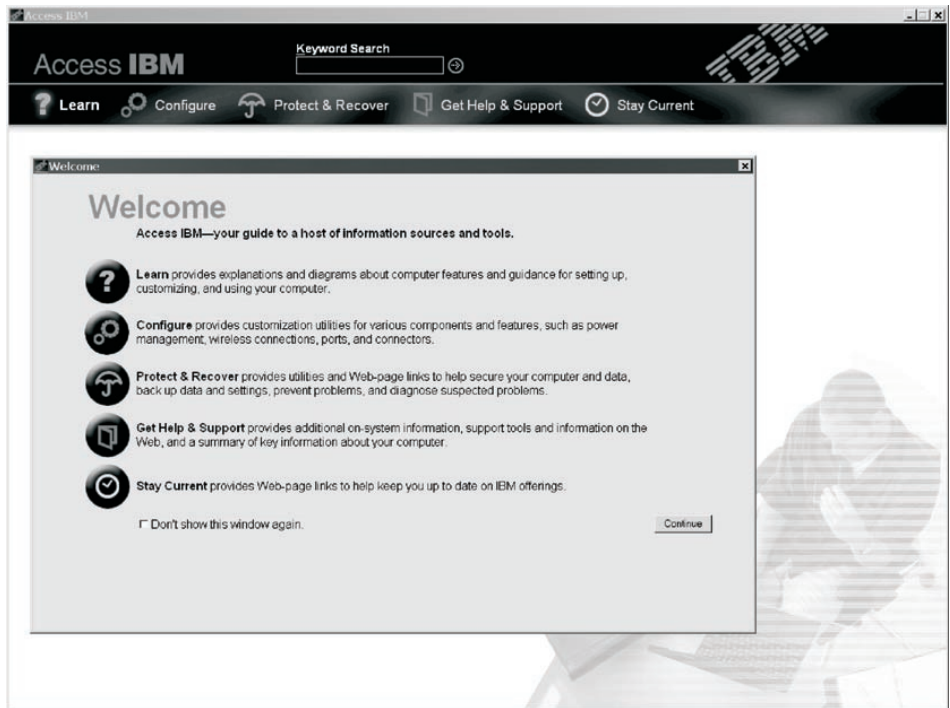
Some of the topics in your help system contain brief video clips that show you how to perform certain tasks, such as replacing your battery, inserting a PC Card, or upgrading your memory. Click play button to watch the video clip.
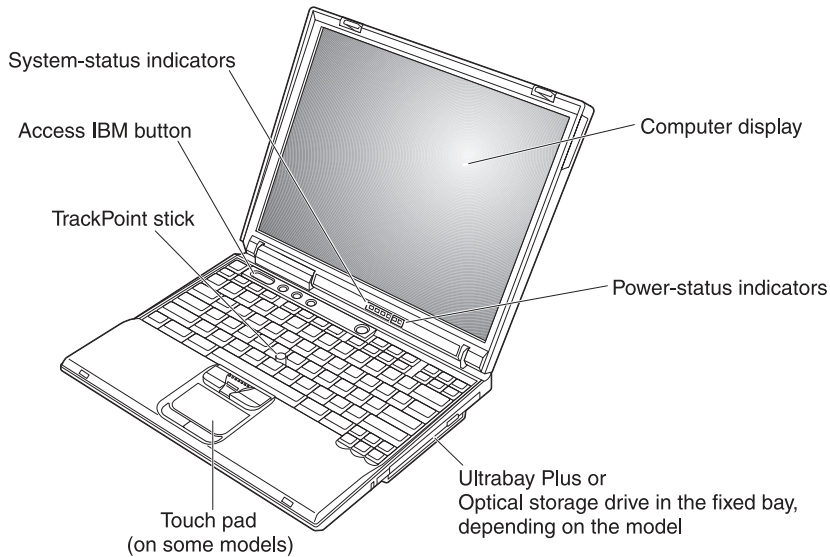
Contents

Chapter 1. Overview of your new ThinkPad computer

Your ThinkPad at a glance

Front view

System-status indicators

Access IBM button

TrackPoint stick

Computer display

Power-status indicators

Ultrabay Plus or
Optical storage drive in the fixed bay,
depending on the model

Touch pad
(on some models)

Rear view

Wireless antenna (on some models)

Security key hole
Power jack
Parallel connector
Monitor connector
Modem connector
Ethernet connector
USB connector
S-Video connector
(on some models)

Microphone jack
Stereo Headphone jack
USB connector
IEEE 1394 connector (on some models)
PC Card slot

Features

Processor
- Intel® Mobile Pentium® 4 Processor-M
- Intel® Mobile Celeron® Processor
- Intel® Pentium® M Processor

Memory
- Built-in: 128 MB, 256 MB or 512 MB, depending on the model
- Maximum: 1024 MB

Storage device
- 2.5-inch hard disk drive: 20 GB, 40 GB or 60 GB, depending on the model

Display

The color display uses TFT technology:
- Size: 13.3 inch, 14.1 inch, or 15.0 inch
- Resolution:
  - LCD: Up to 1400-by-1050, depending on the model
  - External monitor: Up to 2048-by-1536
- Brightness control

Keyboard
- 87-key, 88-key, or 92-key
- UltraNav™ (TrackPoint® and touch pad) or TrackPoint® only, depending on the model
- Fn key function
- Access IBM button
- Volume control buttons
- ThinkLight™ (on some models)
- Forward and Back keys

Diskette drive - available on selected models

To get the best performance from your diskette drives, use high-quality diskettes (such as IBM diskettes) that meet or exceed the following standards:

- 1-MB, 3.5-inch, unformatted diskette:
  - ANSI (American National Standards Institute) X3.137
  - ISO (International Standards Organization) 8860
  - ECMA (European Computer Manufacturers Association) 100
- 2-MB, 3.5-inch, unformatted diskette:
  - ANSI X3.171
  - ISO 9529
  - ECMA 125

External interface
- Parallel connector (IEEE 1284A)
- External-monitor connector
- PC Card slot (Type II, or Type III PC Card)
- Stereo Headphone jack
- Microphone jack
- S-Video out connector (on some models)
- 2 Universal Serial Bus (USB 2.0) connectors (on some models)
- 2 Universal Serial Bus (USB 1.1) connectors (on some models)
- Infrared port (on some models)
- RJ11 telephone connector (available if the modem feature is installed)
- RJ45 Ethernet connector
- Ultrabay™ Plus or Optical storage drive in the fixed bay, depending on the model
- Port Replicate connector (on some models)
- IEEE 1394 port (on some models)
- Integrated Bluetooth feature (on some models)
- Integrated Microphone
- Integrated wireless LAN (IEEE 802.11b) feature (on some models)
- Integrated wireless LAN (IEEE 802.11a/b) feature (on some models)

Specifications

Size

With a 13.3 or 14.1–inch display:
- Width: 313 mm (12.3 in.)
- Depth: 254 mm (10.0 in.)
- Height: 38.8 mm (1.53 in.)

With a 15.0–inch display:
- Width: 329 mm (13.0 in.)
- Depth: 267.5 mm (10.5 in.)
- Height: 40.5 mm (1.59 in.)

Environment
- Maximum altitude without pressurization: 3048 m (10,000 ft)
- Temperature
  - At altitudes up to 2438 m (8000 ft)
    - Operating with no diskette: 5° to 35°C (41° to 95°F)
    - Operating with a diskette: 10° to 35°C (50° to 95°F)
    - Not operating: 5° to 43°C (41° to 110°F)
  - At altitudes above 2438 m (8000 ft)
    - Maximum operating temperature, 31.3°C (88° F)

  Note: When you charge the battery pack, its temperature must be at least 10°C (50°F).
- Relative humidity:
  - Operating with no diskette in the drive: 8% to 95%
  - Operating with a diskette in the drive: 8% to 80%

Heat output
- 72 W (246 Btu/hr) maximum

Power source (ac adapter)
- Sine-wave input at 50 to 60 Hz
- Input rating of the ac adapter: 100-240 V ac, 50 to 60 Hz

Battery pack (depending on the model)
- 8 cell Lithium-ion (Li-Ion) battery pack
  - Nominal voltage: 14.4 V dc
  - Capacity: 4.0 AH

Specifications

- 6 cell Lithium-ion (Li-Ion) battery pack
  - Nominal voltage: 14.4 V dc
  - Capacity: 2.0 AH

Caring for your ThinkPad computer

Though your computer is designed to function reliably in normal work environments, you need to use common sense in handling it. By following these important tips, you will get the most use and enjoyment out of your computer.

Important tips:

Be careful about where and how you work

- Do not leave the base of your computer in contact with your lap or any part of your body for an extended period when the computer is functioning or when the battery is charging. Your computer dissipates some heat during normal operation. This heat is a function of the level of system activity and battery charge level. Extended contact with your body, even through clothing, could cause discomfort or, eventually, a skin burn.
- Place liquids away from your computer to avoid spills, and keep your computer away from water (to avoid the danger of electrical shock).
- Store packing materials safely out of the reach of children to prevent the risk of suffocation from plastic bags.
- Keep your computer away from magnets, activated cellular phones, electrical appliances, or speakers (within 13cm/5 in).
- Avoid subjecting your computer to extreme temperatures (below 5°C/41°F or above 35°C/95°F).

Be gentle with your computer

- Avoid placing any objects (including paper) between the display and the keyboard or the palm rest.
- Do not drop, bump, scratch, twist, hit, vibrate, push or place heavy objects on your computer, display, or external devices.
- Your computer display is designed to be opened and used at an angle slightly greater than 90 degrees. Do not open the display beyond 180 degrees, as this might damage the computer hinge.

Carry your computer properly

- Before moving your computer, be sure to remove any media, turn off attached devices, and disconnect cords and cables.
- Be sure your computer is in standby or hibernation mode, or turned off, before moving it. This will prevent damage to the hard disk drive and data loss.
- When picking up your open computer, hold it by the bottom. Do not pick up or hold your computer by the display.

- Use a quality carrying case that provides adequate cushion and protection. Do not pack your computer in a tightly packed suitcase or bag.

Handle storage media and drives properly
- Avoid inserting diskettes at an angle and attaching multiple or loose diskette labels, as these can lodge in the drive.
- If your computer comes with a CD, DVD, or CD-RW/DVD drive, do not touch the surface of a disc or the lens on the tray.
- Wait until you hear the CD or DVD click into the center pivot of the CD, DVD, or CD-RW/DVD drive before closing the tray.
- When installing your hard disk, diskette, CD, DVD, or CD-RW/DVD drive, follow the instructions shipped with your hardware, and apply pressure only where needed on the device. See Access IBM, your on-board help system, for information on replacing your hard disk drive (open Access IBM by pressing the Access IBM button.).

Take care in setting passwords
- Remember your passwords. If you forget a supervisor or hard disk password, IBM will not reset it, and you might have to replace your system board or hard disk drive.

Other important tips
- Your computer modem might use only an analog telephone network, or public-switched telephone network (PSTN). Do not connect the modem to a PBX (private branch exchange) or any other digital telephone extension line because this could damage your modem. Analog phone lines are often used in homes, while digital phone lines are often used in hotels or office buildings. If you are not sure which kind of phone line you are using, contact your telephone company.
- Your computer might have both an Ethernet connector and a modem connector. If so, be sure to connect your communication cable to the correct one, so your connector is not damaged. See Access IBM, your on-board help system, for information on the location of these connectors (press the Access IBM button to open Access IBM).
- Register your ThinkPad products with IBM (refer to the Web page: **www.ibm.com/pc/register**). This can help authorities return your computer to you if it is lost or stolen. Registering your computer also enables IBM to notify you about possible technical information and upgrades.
- Only an authorized IBM ThinkPad repair technician should disassemble and repair your computer.
- Do not modify or tape the latches to keep the display open or closed.
- Take care not to turn your computer over while the ac adapter is plugged in. This could break the adapter plug.

- Turn off your computer if you are replacing a device in a device bay, or else verify that the device is warm-or hot-swappable.
- If you exchange drives in your computer, reinstall the plastic bezel faces (if supplied).
- Store your external and removable hard disk, diskette, CD, DVD, and CD-RW/DVD drives in the appropriate containers or packaging when they are not being used.

Cleaning your computer

Occasionally clean your computer as follows:

- Use a soft cloth moistened with non-alkaline detergent to wipe the exterior of the computer.
- Avoid spraying cleaner directly on the display or the keyboard.
- Gently wipe the display with a soft, dry cloth. If you see a scratch-like mark on your display, it might be a stain transferred from the keyboard or the TrackPoint stick when the cover was pressed from the outside. Wipe or dust the stain gently with a soft, dry cloth. If the stain remains, moisten a soft, lint-free cloth with water that does not contain impurities, wring out as much of the water as you can, and then wipe the display again. Be sure to dry the display before closing it.

Caring for your ThinkPad computer

Chapter 2. Solving computer problems

Diagnosing problems

If you have a problem with your computer, you can test it by using PC-Doctor® for Windows®. To run PC-Doctor for Windows, do as follows:

1. Click **Start**.
2. Move the cursor to **All Programs** (in Windows other than Windows® XP, **Programs**) and then to **PC-Doctor for Windows**.
3. Click **PC-Doctor**.
4. Choose one of test, from either the **Device Categories** or the **Test Scripts**.

Attention

Running any tests may take up to several minutes or longer. Make sure you have time to run the entire test; do not interrupt the test while it is running.

The **System Test** of the **Test Scripts** runs some tests of critical hardware components, but it does not run all of the diagnostic tests in PC-Doctor for Windows. If PC-Doctor for Windows reports that all of the tests in the **System Test** have been run and that it has found no problems, consider running more of the tests in PC-Doctor for Windows.

If you are preparing to contact IBM for support, be sure to print the test log so that you can rapidly provide information to the help technician.

Troubleshooting

If you do not find your problem here, refer to Access IBM, your on-board help system. Open Access IBM by pressing the Access IBM button. The following section only describes problems that might prevent you from accessing this help system.

Error messages

Notes:

1. In the charts, x can be any character.
2. The version of PC-Doctor referred to here is PC-Doctor for Windows.

Message	Solution
0175: Bad CRC1, stop POST task	The EEPROM checksum is not correct (block #6). Have the computer serviced.
0176: System Security - The System has been tampered with.	This message is displayed if you remove the Security Chip and reinstall it, or install a new one. To clear the error, enter the IBM BIOS Setup Utility. If this does not solve the problem, have the computer serviced.
0177: Bad SVP data, stop POST task.	Checksum of the supervisor password in the EEPROM is not correct. The system board should be replaced. Have the computer serviced.
0182: Bad CRC2. Enter BIOS Setup and load Setup defaults.	Checksum of the CRC2 setting in the EEPROM is not correct. Go to IBM BIOS Setup Utility. Press F9 and then Enter to load the default setting. Press F10 and then Enter to restart the system.
0185: Bad startup sequence settings. Enter BIOS Setup and load Setup defaults.	Checksum of the startup sequence setting in the EEPROM is not correct. Go to IBM BIOS Setup Utility. Press F9 and then Enter to load the default setting. Press F10 and then Enter to restart the system.
0187: EAIA data access error	The access to EEPROM is failed. Have the computer serviced.
0188: Invalid RFID serialization information area.	The EEPROM checksum is not correct (block # 0 and 1). The system board should be replaced, and the box serial number needs to be reinstalled. Have the computer serviced.
0189: Invalid RFID configuration information area	The EEPROM checksum is not correct (block # 4 and 5). The system board should be replaced, and the UUID needs to be reinstalled. Have the computer serviced.
0190: Critical low-battery error	The computer turned off because the battery is low. Connect the ac adapter to the computer and charge the battery, or replace the battery with a fully charged one.
0199: System Security - IBM Security password retry count exceeded.	This message is displayed if you enter a wrong supervisor password more than three times. Confirm the supervisor password and try again. To clear the error, enter the IBM BIOS Setup Utility.

Message	Solution
01C8: More than one modem devices are found. Remove one of them. Press <Esc> to continue.	Remove either a Modem Mini-PCI Card or a Modem Daughter Card, otherwise press Esc to ignore the warning message. If it does not solve this problem, have the computer serviced.
01C9: More than one Ethernet devices are found. Remove one of them. Press <Esc> to continue.	Your ThinkPad computer has a built-in Ethernet feature, and you cannot add another such feature by installing an Ethernet device such as a Mini-PCI Ethernet Card or an Ethernet Daughter Card. If this error message is displayed, remove the Ethernet device that you installed. Otherwise press Esc to ignore the warning message. If this does not solve the problem, have the computer serviced.
0200: Hard disk error	The hard disk is not working. Make sure that the hard disk drive is attached firmly. Run the IBM BIOS Setup Utility; then make sure the hard disk drive is not disabled in the Startup menu.
021*x:* Keyboard error	Make sure that there are no objects placed on the keyboard, or if you have one, the external keyboard. Turn off the computer, and turn off all attached devices. Turn on the computer first; then turn on the attached devices.

If you still see the same error code, do the following:

If an external keyboard is connected, do the following:

- Turn off the computer and disconnect the external keyboard; then turn on the computer. Make sure that the built-in keyboard operates correctly. If it does, have the external keyboard serviced.
- Make sure that the external keyboard is connected to the correct connector.

Test the computer by using PC-Doctor.

- If the computer stops during the test, have the computer serviced. |
0230: Shadow RAM error	The shadow RAM failed. Test your computer's memory with PC-Doctor. If you added a memory module just before turning the computer on, reinstall it. Then test the memory with PC-Doctor.
0231: System RAM error	The system RAM failed. Test your computer's memory with PC-Doctor. If you added a memory module just before turning the computer on, reinstall it. Then test the memory with PC-Doctor.
0232: Extended RAM error	The extended RAM failed. Test your computer's memory with PC-Doctor. If you have increased memory just before turning the computer on, reinstall it. Then test the memory with PC-Doctor.
0250: System battery error	The backup battery, which is used to preserve the configuration information, such as the date and time, while the computer is turned off, is depleted. Replace the battery and run IBM BIOS Setup Utility to verify the configuration. If you still have a problem, have the computer serviced.

Message	Solution
0251: System CMOS checksum bad	The system CMOS might have been corrupted by an application program. The computer uses the default settings. Run IBM BIOS Setup Utility to reconfigure the settings. If you still see the same error code, have the computer serviced.
0260: System timer error	Have the computer serviced.
0270: Real time clock error	Have the computer serviced.
0271: Date and time error	Neither the date nor the time is set in the computer. Set the date and time, using the IBM BIOS Setup Utility.
0280: Previous boot incomplete	Your computer was previously unable to complete the boot process. Turn the computer off; then turn it on to start the IBM BIOS Setup Utility. Verify the configuration and then restart the computer either by choosing the **Exit Saving Changes** option under the **Restart** item or by pressing F10. If you still see the same error code, have the computer serviced.
02D0: System cache error	The cache is disabled. Have the computer serviced.
02F4: EISA CMOS not writable	Have the computer serviced.
02F5: DMA test failed	Have the computer serviced.
02F6: Software NMI failed	Have the computer serviced.
02F7: Fail-safe timer NMI failed	Have the computer serviced.
1802: Unauthorized network card is plugged in - Power off and remove the miniPCI network card.	The Mini-PCI network card is not supported on this computer. Remove it.
The power-on password prompt	A power-on password or a supervisor password is set. Type the password and press Enter to use the computer. If the power-on password is not accepted, a supervisor password might have been set. Type the supervisor password and press Enter. If you still see the same error message, have the computer serviced.
The hard disk password prompt	A hard disk password is set. Type the password and press Enter to use the computer. If you still see the same error message, have the computer serviced.

Message	Solution
Hibernation error	The system configuration changed between the time your computer entered hibernation mode and the time it left this mode, and your computer cannot resume normal operation. • Restore the system configuration to what it was before your computer entered hibernation mode. • If the memory size has been changed, re-create the hibernation file.
Operating system not found.	Verify the following: • The hard disk drive is correctly installed. • A startable diskette is in the diskette drive If you still see the same error message, check the boot sequence, using the IBM BIOS Setup Utility.
Fan error	The cooling fan has failed. Have the computer serviced.

EMM386 Not Installed — Unable to Set Page Frame Base Address.	Edit C:\CONFIG.SYS and change a line from
	`device=C:\WINDOWS\EMM386.EXE RAM`
	
	to
	`device=C:\WINDOWS\EMM386.EXE NOEMS`
	
	and save this file.

CardBus Configuration Error —Device Disabled	Go to the IBM BIOS Setup Utility. Press F9 and then Enter to load the default setting. Press F10 and then Enter to restart the system.
Thermal sensing error	The thermal sensor is not functioning correctly. Have the computer serviced.

Errors without messages

Problem: When I turn on the machine, nothing appears on the screen and the machine does not beep while starting up.

Note: If you are not sure whether you heard any beeps, turn off the computer; then turn it on again, and listen again. If you are using an external monitor, refer to"Computer screen problems" on page 24

Solution: If a power-on password is set, press any key to display the power-on password prompt, and then type the correct password and press Enter.

If the power-on password prompt does not appear, the brightness level might be set to minimum brightness. Adjust the brightness level by pressing the Fn+Home.

If the screen still remains blank, make sure that:

- The battery is installed correctly.
- The ac adapter is connected to the computer and the power cord is plugged into a working electrical outlet.
- The computer power is on. (Turn on the power switch again for confirmation.)

If these items are properly set, and the screen remains blank, have the computer serviced.

Problem: When I turn on the machine, nothing appears on the screen, but I hear two or more beeps.

Solution: Make sure that the memory card is installed correctly. If it is, but the screen is still blank, and you hear five beeps, have the computer serviced.

If you hear 4 cycles of 4 beeps each, the Security Chip has a problem. Have the computer serviced.

Problem: When I turn on the machine, only a white cursor appears on a blank screen.

Solution: Reinstall your operating system, and turn on the computer. If you still see only the cursor on the screen, have the computer serviced.

Problem: My screen goes blank while the computer is on.

Solution: Your screen saver or power management may be enabled. Touch the TrackPoint or the touch pad, or press a key to exit the screen saver, or press the power switch to resume from standby or hibernation.

Problem: The DOS full-screen looks smaller.

Solution: If you use a DOS application that supports only 640x480 resolution (VGA mode), the screen image might look slightly distorted or appear smaller than the display size. This is to maintain compatibility with other DOS applications. To expand the screen image to the same size as the actual screen, start the ThinkPad Configuration Program and click **LCD**; then select the **Screen expansion** function. (The image might still look slightly distorted.)

Note: If your computer has a screen expansion function, you can use the Fn+F8 keys to expand the screen image. But you can not use this function in Windows® 2000 environment.

A password problem

Problem: I forgot my password.

Solution: If you forgot your power-on password, you must take your computer to an IBM authorized servicer or marketing representative to have the password canceled.

If you forgot your hard disk password, IBM will not reset your password or recover data from the hard disk. You must take your computer to an IBM authorized servicer or an IBM marketing representative to have the hard disk drive replaced. Proof of purchase is required, and a fee will be charged for parts and service.

If you forgot your supervisor password, IBM will not reset your password. You must take your computer to an IBM authorized servicer or IBM marketing representative to have the system board replaced. Proof of purchase is required, and a fee will be charged for parts and service.

A power switch problem

Problem: The system does not respond, and you cannot turn off the computer.

Solution: Turn off the computer by pressing and holding the power switch for 4 seconds or more. If the computer is still not reset, remove the ac adapter and the battery.

Keyboard problems

Problem: The cursor does not move after the computer returns from one of the power management modes.

Solution: Make sure you followed the instructions correctly when you installed Windows with the Advanced Power Management (APM) option.

Note: The APM option is supported in Windows® 98, and Windows NT®.

Note: Some models support Windows® XP only.

Problem: Some or all of the keys on the keyboard do not work.

Solution: If the problem occurred immediately after the computer returned from standby mode, enter the power-on password if any is set.

If an external keyboard is connected, the numeric keypad on your computer does not work. Use the numeric keypad on the external keyboard.

If an external numeric keypad or a mouse is connected:

1. Turn off the computer.
2. Remove the external numeric keypad or the mouse.
3. Turn on the computer and try using the keyboard again.

If the keyboard problem is resolved, carefully reconnect the external numeric keypad, external keyboard, or mouse, making sure that you have seated the connectors properly.

If any keys on the keyboard still do not work, have the external numeric keypad, external keyboard, or mouse serviced.

Problem: A number appears when you type a letter.

Solution: The numeric lock function is on. To disable it, press and hold Shift; then press NumLk.

Problem: Some or all of the keys on the external numeric keypad do not work.

Solution: Make sure that the external numeric keypad is correctly connected to the computer.

Problem: Some or all of the keys on the external keyboard do not work.

Solution: If you are using ThinkPad Port Replicator, Port Replicator II or MiniDock, make sure that the keyboard cable is correctly connected to the keyboard connector.

If the connection is correct, disconnect the cable and make sure that the built-in keyboard operates properly. If the built-in keyboard works, there is a problem with the external keyboard. Try using a different external keyboard.

Note: Some models does not support Mini Dock, Port Replicator, and Port Replicator II.

UltraNav™ problems

Problem: The cursor drifts when the computer is turned on or after it resumes normal operation.

Solution: The cursor might drift when you are not using the TrackPoint during normal operation. This is a normal characteristic of the TrackPoint and is not a defect. It will cease in several seconds, if you wait without touching TrackPoint. Cursor drifting might occur for several seconds under the following conditions:

- When the computer is turned on.
- When the computer resumes normal operation.
- When the TrackPoint is pressed for a long time.
- When the temperature changes.

Problem: The PS/2® Port mouse or the PS/2 pointing device does not work.

Solution: Make sure that the TrackPoint and the touch pad are set to Automatic in the ThinkPad Configuration Program. Then detach the PS/2® Port mouse or the PS/2® pointing device, and try using the TrackPoint and the touch pad. If the TrackPoint and the touch pad work, the error might be due to the PS/2® Port mouse or the PS/2® pointing device.

Note: Some models have the TrackPoint only, without a touch pad and its buttons.

Make sure that the cable for the PS/2® Port mouse or the PS/2® pointing device is securely connected to ThinkPad Port Replicator, Port Replicator II or MiniDock.

Note: For more information, see the manual supplied with the mouse. Some models does not support Mini Dock, Port Replicator, and Port Replicator II.

Problem: The mouse buttons do not work.

Solution: If your ThinkPad computer has the TrackPoint only, this problem may occur.

Change the mouse driver to **Standard PS/2® Port Mouse**, and then reinstall **IBM PS/2 TrackPoint**. Drivers are provided in the C:\IBMTOOLS\DRIVERS directory on your hard disk drive. If your hard disk drive does not contain device drivers, refer to the ThinkPad Web site. For access to this Web site, open Access IBM by pressing the Access IBM button.

Standby or hibernation problems

Problem: The computer enters standby mode unexpectedly.

Solution: If the processor reaches a temperature that is too high, the computer automatically enters standby mode to allow the computer to cool and to protect the processor and other internal components. Also, check the settings for standby mode, using Battery MaxiMiser.

Problem: The computer enters standby mode immediately after Power-on self-test (POST) (the standby indicator light turns on).

Solution: Make sure that:

- The battery is charged.
- The operating temperature is within the acceptable range. Refer to "Specifications" on page 5.

If these items are correct, have the computer serviced.

Problem: The `critical low-battery error` message is displayed, and the computer immediately turns off.

Solution: The battery power is getting low. Connect the ac adapter to the computer, or replace the battery with a fully charged one.

Problem: When you take action to return from standby mode, the computer display remains blank.

Solution: Check whether an external monitor was disconnected while the computer was in standby mode. Do not disconnect the external monitor while the computer is in standby mode or hibernation mode. If no external monitor is attached when the computer resumes, the computer display remains blank and output is not displayed. This restriction does not depend on the resolution value. Press Fn+F7 to bring up the computer display.

Problem: The computer does not return from standby mode, or the standby indicator stays on and the computer does not work.

Solution: If the system does not return from standby mode, it may have entered standby or hibernation mode automatically because the battery is depleted. Check the standby indicator.

- If the standby indicator is on, your computer is in standby mode. Connect the ac adapter to the computer; then press Fn.
- If the standby indicator is off, your computer is in hibernation mode or power-off state. Connect the ac adapter to the computer; then press power button to resume operation.

If the system still does not return from standby mode, your system may stop responding and you cannot turn off the computer. In this case, you need to reset the computer. If you have not saved your data, it may be lost. To reset the computer, press and hold the power button for 4 seconds or more. If the system is still not reset, remove the ac adapter and the battery.

Problem: Your computer does not enter standby or hibernation mode.

Solution: Check whether any option has been selected that would disable your computer from entering standby or hibernation mode.

Problem: The computer does not enter standby mode as set by the timer under Windows® 98 or Windows NT®.

Note: Some models support Windows® XP only.

Solution:

For Windows 98:
The generic CD-ROM or DVD-ROM driver for Windows® 98 accesses the internal CD-ROM or DVD-ROM drive every 3 seconds to see whether a CD-ROM is inserted there. This prevents your computer from entering standby mode even after a timeout. To enable the computer to enter standby mode, do the following:

1. Click **Start**.
2. Move the cursor to **Settings** and **Control Panel**.
3. Click **Control Panel**, and then double-click **System**.
4. Click the **Device Manager** tab.
5. Click the **+** mark of **CD-ROM**.
6. Double-click the name of the CD-ROM or DVD-ROM.
7. Click the **Settings** tab.
8. Clear the **Auto insert notification** check box.

Windows 98 no longer detects the insertion of a CD-ROM or a DVD-ROM automatically.

For Windows NT:
If you enable the CD-ROM AutoRun feature, the timer cannot trigger the computer to enter standby mode. To enable the timer, disable the AutoRun feature by editing the configuration information in the registry as follows:

```
HKEY_LOCAL_MACHINE\SYSTEM\
CurrentControlSet\Services\Cdrom\
Autorun: 0x1 > Autorun: 0
```

Problem: The Fn+F12 key combination does not cause the computer to enter hibernation mode.

Solution: The computer cannot enter hibernation mode:
- If you are using one of the IBM communication PC Cards. To enter hibernation mode, stop the communication program, and then remove the PC Card or disable the PC Card slot, using the Control Panel.
- If the hibernation utility is not installed in Windows 98 or Windows NT. To install the hibernation utility, refer to "Installing device drivers" in the Access IBM, your on-board help system.

Note: Some models support Windows® XP only.

- If the hibernation mode is not enabled. To enable it, do as follows:

For Windows 98:

1. Start the ThinkPad Configuration Program.
2. Click **Power Management**.
3. Click the **Hibernation** tab.
4. Click the **Enable hibernation** button.
5. Click the **Create Now** button.

For Windows NT:

Note: You must format your hard disk with the FAT format system to use hibernation mode in Windows NT. If you format your hard disk with NTFS, the default format in Windows NT, you cannot use hibernation mode.

1. Start the ThinkPad Configuration Program.
2. Click **Power Management**.
3. Click **Suspend/Resume Options**.
4. Click **Enable Hibernation**.
5. Click **OK**.

For Windows® XP or Windows® 2000:

1. Start the ThinkPad Configuration Program.
2. Click **Power Management**.
3. Click the **Hibernate** tab.
4. Select the hibernate support checkbox.
5. Click OK.

Note: You can enter hibernation mode by pressing Fn+F12 only if the PM driver for Windows® 2000 or Windows® XP has been installed.

Problem: Under Windows® XP, the Fn+F3 key combination does not make the computer screen go blank.

Solution: Windows® XP enables multiple users to log on to the system at the same time. If you are the first user to have logged on to your computer, you can use the Fn+F3 key combination. Otherwise the combination will not work on your computer.

Computer screen problems

Problem: The screen is blank.

Solution:
- If the standby status indicator is on (in green), press Fn to resume from the standby mode.
- If you are using the ac adapter, or using the battery, and the battery status indicator is on (in green), press Fn+Home to make the screen brighter.
- If you attach an external monitor to your computer, press Fn+F7 to switch the screen output location.
- If the problem persists, do the "Solution" in the problem below.

Problem: The screen is unreadable or distorted.

Solution: Make sure that:
- The display device driver is installed correctly.
- The display resolution and color depth are correctly set.
- The monitor type is correct.

To check these settings, do as follows:

For Windows® 2000 and Windows® 98:
1. Double-click **Display** in the Control Panel. The Display Properties window opens.
2. Click the **Settings** tab.
3. Check if the color depth and resolution are correctly set.
4. Click **Advanced**.
5. Click the **Adapter** tab.
6. Make sure "ATI Mobility RADEON" or "ATI Mobility RADEON 7500" is shown in the adapter information window.
7. Click the **Monitor** tab.
8. Make sure the Monitor type is correct.

For Windows® XP:
1. Click **Start**.
2. Click **Control Panel**.
3. Click **Appearance and Themes** in the Pick a category section.
4. Click **Display** in the Pick a Control Panel icon section.
5. Click the **Settings** tab.
6. Check whether the color depth and resolution are correctly set.

7. Click **Advanced**.
8. Click the **Adapter** tab.
9. Make sure "ATI Mobility RADEON", "ATI Mobility RADEON 7500", or "ATI RADEON IGP 330M" is shown in the adapter information window.
10. Click the **Monitor** tab.
11. Make sure the Monitor type is correct.

Note: Some models support Windows® XP only.

For Windows NT:
1. Double-click **Display** in the Control Panel. The Display Properties window opens.
2. Click the **Settings** tab.
3. Check if the color depth and resolution are correctly set.
4. Click **Display Type**.
5. Make sure "ATI Mobility RADEON" or "ATI Mobility RADEON 7500" is shown in the Display Type window.

Problem: Incorrect characters appear on the screen.

Solution: Did you install the operating system or application program correctly? If they are installed and configured correctly, have the computer serviced.

Problem: The screen stays on even after you turn off your computer.

Solution: Press and hold the power switch for 4 seconds or more to turn off your computer; then turn it on again.

Problem: Missing, discolored, or bright dots appear on the screen every time you turn on your computer.

Solution: This is an intrinsic characteristic of the TFT technology. Your computer's display contains multiple thin-film transistors (TFTs). A small number of missing, discolored, or bright dots on the screen might exist all the time.

Problem: A message, "Unable to create overlay window," appears when you try to start DVD playback.
or
You get poor or no playback while running video playback, DVD playback, or game applications.

Solution: Do either of the following:

- If you are using 32-bit color mode, change the color depth to 16-bit mode.
- If you are using a desktop size of 1280×1024 or larger, reduce the desktop size and the color depth.

Battery problems

Problem: The battery cannot be fully charged by the power-off method in the standard charge time for your computer.

Solution: The battery might be over-discharged. Do the following:
1. Turn off the computer.
2. Make sure that the over-discharged battery is in the computer.
3. Connect the ac adapter to the computer and let it charge.

If the battery cannot be fully charged in 24 hours, use a new battery.

If the optional Quick Charger is available, use it to charge the over-discharged battery.

Problem: Your computer shuts down before the battery status indicator shows empty, *-or-* Your computer operates after the battery status indicator shows empty.

Solution: Discharge and recharge the battery.

Problem: The operating time for a fully charged battery is short.

Solution: Discharge and recharge the battery. If your battery's operating time is still short, use a new battery.

Problem: The computer does not operate with a fully charged battery.

Solution: The surge protector in the battery might be active. Turn off the computer for one minute to reset the protector; then turn on the computer again.

Problem: The battery does not charge.

Solution: You cannot charge the battery when it is too hot. If the battery feels hot, remove it from the computer and allow it to cool to room temperature. After it cools, reinstall it and recharge the battery. If it still cannot be charged, have it serviced.

Hard disk drive problems

Problem: The hard disk drive makes a rattling noise intermittently.

Solution: The rattling noise might be heard when:
- The hard disk drive starts accessing the data or when it stops.
- You are carrying the hard disk drive.
- You are carrying your computer.

This is a normal characteristic of a hard disk drive and is not a defect.

Problem: The hard disk drive does not work.

Solution: In the startup menu in IBM BIOS Setup Utility, make sure that there is no exclamation point ! to the left of the hard disk drive or its child node. If there is such a mark, the hard disk drive is disabled. Clear the mark to enable the drive by pressing the Insert key.

Startup problems

Problem: The Microsoft® Windows® operating system will not start.

Solution: Use the Access IBM Predesktop Area to help solve or identify your problem.

Starting the Access IBM Predesktop is easy. If the Windows operating system does not start correctly, the Access IBM Predesktop Area will start automatically. If, for some reason the Access IBM Predesktop Area does not open automatically, do the following:
1. Turn off your PC, and then turn it back on again.
2. Watch the screen carefully while your PC starts. When the following prompt is displayed, press the blue Access IBM button to open the Access IBM Predesktop Area: "To interrupt normal startup, press the blue Access IBM button." The Access IBM Predesktop Area opens to the Utilities page.

A window such as this will appear:
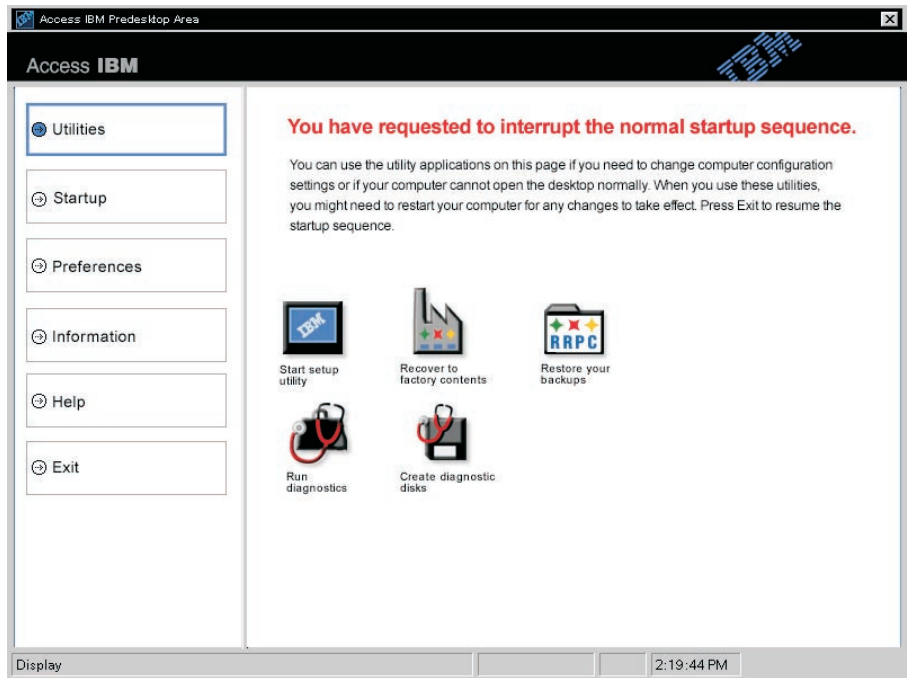
3. After the Access IBM Predesktop Area opens to the Utilities page, you can select from the following icons:

- **Start setup utility** opens the IBM BIOS Setup Utiltiy program.
- **Recover to factory contents** erases all files on primary partition--the C drive--and installs the software contents present when your PC was manufactured. Call the IBM HelpCenter for help and information before using this recovery method. (See the telephone numbers in this publication under "Calling IBM" on page 43
- **Restore your backups** restores backups you have made with IBM Rapid Restore PC, if backups have been made.
- **Run diagnostics** starts diagnostics tests to help determine whether there are problems with your PC and what might be causing them.
- **Create diagnostic disks** helps you create special disks used during diagnostic tests.

In the left panel of the Access IBM Predesktop Area, you can click the following to open other pages or exit the utility:

Startup enables you to change the order of devices in which the PC searches for the operating system during startup. In some situations, you might need

to start the operating system from a CD drive rather than the hard disk. You specify those kinds of changes on this page.

Preferences presents various options, depending on your model and accessories, you can set for the Access IBM Predesktop Area.

Information gathers essential information about your PC that you can provide to call center technicians, if necessary.

Help provides information about the various pages in Access IBM Predesktop area.

Exit closes the Access IBM Predesktop Area and resumes the startup sequence that was interrupted.

Other problems

Problem: The computer locks or does not accept any input.

Solution: Your computer might lock when it enters standby mode during a communication operation. Disable the standby timer when you are working on the network.

To turn off the computer, press and hold the power switch for 4 seconds or more.

Problem: The computer does not turn off with the power switch.

Solution: If the standby indicator is on and you are working under battery power, change your power source to ac power and push Fn key to resume normal operation, then shut down the computer.

If you still have a problem, press and hold the power switch for 4 seconds or more; this forces the computer to turn off.

Problem: The computer does not start from a device you want, such as a diskette drive.

Solution: Refer to the Startup menu of the IBM BIOS Setup Utility. Make sure that the startup sequence in the IBM BIOS Setup Utility is set so that the computer starts from the device you want.

Also make sure that the device from which the computer starts is enabled by checking that there is no ! mark preceding the device name. If there is such a mark, clear the mark to enable the device by pressing the Insert key.

Problem: The computer does not respond.

Solution: IRQs for the PCI are all set as 11. The computer does not respond because it cannot share the IRQ with other devices. Refer to the IBM BIOS Setup Utility.

Problem: Playback of DVD is not smooth in Windows® 2000.

Solution: If you select the Maximum Battery mode for the Intel SpeedStep™ technology, this problem may occur. This mode is designed to achieve maximum battery life by switching the processor speed between the regular low speed and half of that speed, depending on how much the processor is used. If the use increases, Intel SpeedStep switches the processor speed to the lower speed. Operation in this mode can severely degrade the performance of the processor, and thus cause the playback of a DVD to be jerky.

To avoid or reduce this problem, you can choose the following mode of operation, as follows:

- **Maximum Performance:** Keeps the processor speed high at all times.

To choose a mode, do the following:
1. Start the ThinkPad Configuration Program.
2. Click **Power Management**.
3. Click the **Intel SpeedStep technology** tab.
4. From the list, select the mode you want.
5. Click **OK**.

Problem: The computer cannot play a CD, or the sound quality of a CD is not good.

Solution: Be sure that the disk meets the standards for your country. Usually, a disk that meets the local standards is marked with a CD logo on the label. If you use a disc that does not meet these standards, we cannot guarantee that it will play, or that, if it does play, the sound quality will be good.

Problem: You may receive "Unsafe Removal of Device" message that mentions the USB 1.x device when you resume from suspend or hibernation on Windows® 2000.

Solution: You can safely close this box. It is a USB 2.0 driver issue on Windows® 2000. Microsoft Knowledge Base number Q328580 and Q323754 under the "More Information" section explain this in more detail. Visit the Microsoft Knowledge Base Homepage at **http://support.microsoft.com/**, type the number of knowledge base number in the search field, and click the search button.

Starting IBM BIOS Setup Utility

Your computer provides a program, called IBM BIOS Setup Utility, that enables you to select various setup parameters.
- **Config:** Set the configuration of your computer.
- **Date/Time:** Set the date and time.
- **Security:** Set security features.
- **Startup:** Set the startup device.
- **Restart:** Restart the system.

Note: You can set many of these parameters more easily by using the ThinkPad Configuration Program. For more information on this Program, refer to the on-board help.

To start IBM BIOS Setup Utility, do as follows:
1. To protect yourself against accidental loss of data, refer to "Backing up your system registry and configuration" in Access IBM. Open Access IBM by pressing the Access IBM button. Backing up your registry saves your computer's current configuration.
2. Remove any diskette from the diskette drive, and then turn off the computer.
3. Turn on the computer; then, while the "To interrupt normal startup, press the blue Access IBM button" message is displayed at the lower-left of the screen, press the Access IBM button.
   The Access IBM Predesktop Area appears on the screen. (If you have deleted the service partition of the hard disk drive, or replaced the hard disk drive itself, the Access IBM does not appears. Refer to the "Note" below.) Next, double-click the "Start setup utility" icon.

   If you have set a supervisor password, the "IBM BIOS Setup Utility" menu appears after you enter the password. You can start the utility by pressing Enter instead of entering the supervisor password; however, you cannot change the parameters that are protected by the supervisor password. For more information, refer to the on-board help.

   Note: If the "Startup Interrupt Menu" appears instead of the "Access IBM Predesktop Area", press F1 key to enter the "IBM BIOS Setup Utility".
4. Using the cursor keys, move to an item you want to change. When the item you want is highlighted, press Enter. A submenu is displayed.
5. Change the items you wish to change. To change the value of an item, use the F5 or F6 key. If the item has a submenu, you can display it by pressing Enter.
6. Press F3 or Esc to exit from the submenu.

   If you are in a nested submenu, press Esc repeatedly until you reach the IBM BIOS Setup Utility menu.

Note: If you need to restore the settings to their original state as of the time of purchase, press the F9 key to load the default settings. You can also select an option in the Restart submenu to load the default settings or discard the changes.

7. Select **Restart**; then press Enter. Move the cursor to the option you want for restarting your computer; then press Enter. Your computer restarts.

Recovering pre-installed software

If your hard disk drive data is damaged or accidentally erased, you can restore the software that was shipped with your computer. This software includes your pre-installed operating system, applications, and device drivers.

You can restore your pre-installed software using the Product Recovery program.

The Product Recovery program is in a section of your hard disk drive that is not displayed by Windows Explorer.

Note: The recovery process might take up to 2 hours.

Attention

All of the files on the primary hard disk partition (usually drive C) will be lost in the recovery process. Be sure to back up copies of the files you have saved on your drive C before you begin.

Note: You might need to use a diskette drive in the recovery process. Use a drive that is compatible with your computer.

To use the Product Recovery program to restore your pre-installed software, do the following:

1. Create a Recovery Repair diskette, according to the procedure below.
2. If possible, save all your files to media other than your hard disk.
3. Turn off your computer.
4. Turn on your computer. At the prompt, press the Access IBM button. (The prompt "To interrupt normal startup, press the blue Access IBM button" appears for only a few seconds. You must press the Access IBM button quickly.) The Access IBM Predesktop Area appears on the screen. Next, double-click the "Recover to factory contents" icon. The Product Recovery program main menu opens.
5. Select the recovery options you want, and then follow the instructions on the screen.
6. When the Product Recovery program finishes, your computer will restart and begin the configuration process.

Upgrading the hard disk drive

You can increase the storage capacity of your computer by replacing the hard disk drive with one of greater capacity. You can purchase a new hard disk drive from your IBM reseller or IBM marketing representative.

Note: Replace the hard disk drive only if you upgrade it or have it repaired. The connectors and bay of the hard disk drive were not designed for frequent changes, or drive swapping. The Access ThinkPad Predesktop Area and the Product Recovery program is not contained in the optional hard disk drive.
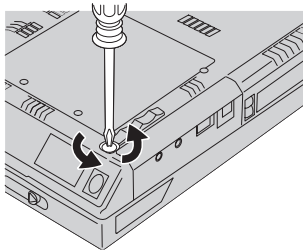

Attention
Handling a hard disk drive

- Do not drop the drive or subject it to physical shocks. Put the drive on a material, such as soft cloth, that absorbs the physical shock.
- Do not apply pressure to the cover of the drive.
- Do not touch the connector.

The drive is very sensitive. Incorrect handling can cause damage and permanent loss of data on the hard disk. Before removing the hard disk drive, make a backup copy of all the information on the hard disk, and then turn the computer off. Never remove the drive while the system is operating, in standby mode, or in hibernation mode.


To replace the hard disk drive, do the following:

1. **Turn off the computer**; then disconnect the ac adapter and all cables from the computer.
2. Close the computer display, and turn the computer over.
3. Remove the battery.
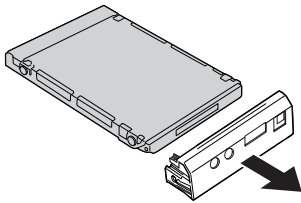4. Remove the screw that secures the hard disk drive.

5. Open the computer display; then stand the computer on its side and remove the hard disk drive by pulling the cover away from the computer.
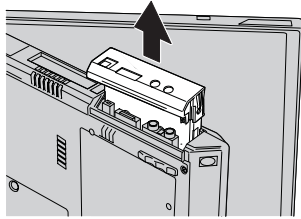
6. Detach the cover from the hard disk drive.

7. Attach the cover to a new hard disk drive.

8. Insert the hard disk drive and its cover into the hard disk drive bay; then firmly install them.
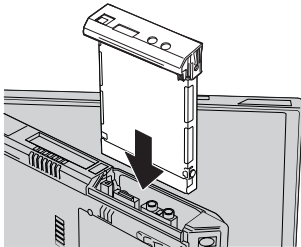
9. Turn the computer over so that its bottom side is up. Reinstall the screw.

   Note: You can replace the screw with a security screw to prevent the hard disk drive from being removed easily. The security screw may not be included in your ship group. You can, however, purchase screw directly from NABS at **www.nabsnet.com**

10. Reinstall the battery.

11. Turn the computer over again. Connect the ac adapter and the cables to the computer.

Replacing the battery

1. **Turn off the computer, or enter hibernation mode.** Then disconnect the ac adapter and all cables from the computer.

   Note: If you are using a PC Card, the computer might not be able to enter hibernation mode. If this happens, turn off the computer.

2. Close the computer display, and turn the computer over.

3. Slide the battery latch to unlock it **1** ; then remove the battery **2** .

   Note: The first position of the battery latch is for releasing the lock of the battery.
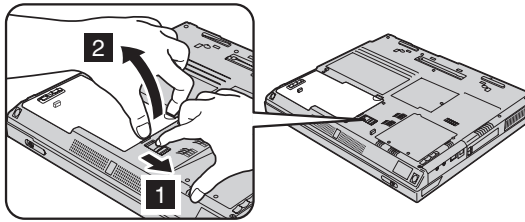
4. Align the side of a fully charged spare battery with the side of the battery space in the computer **1** ; then gently push the battery into the space **2** .
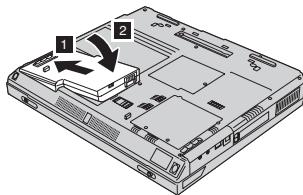
5. Slide the battery latch to lock it.
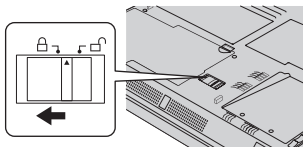
6. Turn the computer over again. Connect the ac adapter and the cables to the computer.

Install a memory module

To install the DIMM, do the following:

1. **Turn off the computer;** then disconnect the ac adapter and all cables from the computer.
2. Close the computer display, and turn it over.
3. Remove the battery.
4. Loosen the screw on the memory slot cover; then remove the cover.
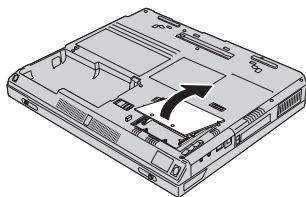
If the SO-DIMM is already in the memory slot, remove it to make room for the new one by pressing out on the latches on both edges of the socket at the same time. Be sure to save it for future use.
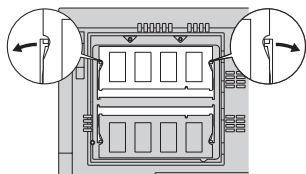
5. Find the notch on the side of the SO-DIMM.

   Attention: To avoid damaging the SO-DIMM, do not touch its contact edge.

6. With the notched end of the SO-DIMM toward the right side of the socket, insert the SO-DIMM into the socket at an angle of about 20 degrees **1**; then press it firmly **2**.
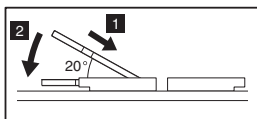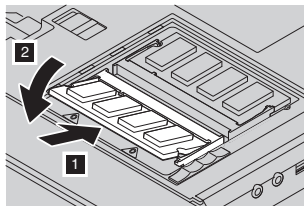
7. Pivot the SO-DIMM until it snaps into place.
   Make sure that the card is firmly fixed in the slot and does not move
   easily.

8. Replace the memory slot cover over the memory slot, aligning the back
   side of the cover first; then tighten the screw.

   Attention: When you have added or upgraded a memory card, do not
   use your computer until you have closed the memory slot cover. Never
   use the computer with the cover open.

9. Put the battery pack in place and turn the computer over again.

To make sure that the SO-DIMM is installed correctly, do as follows:

1. Turn the computer on.

2. While the "To interrupt normal startup, press the blue Access IBM button"
   message is displayed at the lower-left area of the screen, press the Access
   IBM button.. The Access IBM Predesktop Area appears on the screen. (If
   you have deleted the service partition of the hard disk drive, or replaced
   the hard disk drive itself, the Access IBM does not appear. Refer to the
   "Note" below.) Next, double-click the "Start setup utility" icon. The IBM
   BIOS Setup Utility screen appears. The "Installed memory" item shows the
   total amount of memory installed in your computer. For example, if you
   install a 256 MB SO-DIMM into a computer whose built-in memory is 256
   MB, the quantity shown in "Installed memory" should be 512 MB.

   Note: If the "Startup Interrupt Menu" appears instead of the "Access IBM
   Predesktop Area", press F1 key to enter the "IBM BIOS Setup
   Utility".
   Some models use 16MB in a main memory as video memory. So,
   "Installed memory" shows 16MB less.

Install a memory module

Chapter 3. Getting help and service from IBM

Getting help and service

If you need help, service, technical assistance, or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your computer, and whom to call for service should it be necessary.

Information about your IBM computer and preinstalled software, if any, is available in the documentation that comes with your computer. That documentation includes printed books, online books, README files, and help files. In addition, information about IBM products is available on the World Wide Web and through the IBM Automated Fax System.

For technical assistance with the installation of, or questions related to, Service Packs for your preinstalled Microsoft Windows product, refer to the Microsoft Product Support Services Web site at **support.microsoft.com/directory/**, or you can contact the IBM HelpCenter®. Some fees might apply.

Getting help on the Web

On the World Wide Web, the IBM Web site has up-to-date information about IBM Personal Computer products and support. The address for the IBM Personal Computing home page is **www.ibm.com/pc**

IBM provides an extensive Web site dedicated to mobile computing and to ThinkPad computers at **www.ibm.com/pc/support**

Research this Web site to learn how to solve problems, find new ways to use your computer, and learn about options that can make working with your ThinkPad computer even easier.

If you select **Profile** from the support page, you can create a customized support page that is specific to your hardware, complete with Frequently Asked Questions, Parts Information, Technical Hints and Tips, and Downloadable Files. In addition, you can choose to receive e-mail notifications whenever new information becomes available about your registered products.

You also can order publications through the IBM Publications Ordering System at **www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi**

Getting help by fax

If you have a touch-tone telephone and access to a fax machine, in the U.S. and Canada you can receive by fax marketing and technical information on many topics, including hardware, operating systems, and local area networks (LANs).

You can call the IBM Automated Fax System 24 hours a day, 7 days a week. Follow the recorded instructions, and the requested information will be sent to your fax machine. In the U.S. and Canada, to access the IBM Automated Fax System, call 1-800-426-3395.

Calling IBM

If you have tried to correct the problem yourself and still need help, during the warranty period, you can get help and information by telephone through the IBM PC HelpCenter. The following services are available during the warranty period:

- Problem determination - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- IBM hardware repair - If the problem is determined to be caused by IBM hardware under warranty, trained service personnel are available to provide the applicable level of service.
- Engineering change management - Occasionally, there might be changes that are required after a product has been sold. IBM or your reseller, if authorized by IBM, will make selected Engineering Changes (ECs) available that apply to your hardware.

The following items are not covered:

- Replacement or use of non-IBM parts or nonwarranted IBM parts

   Note: All warranted parts contain a 7-character identification in the format IBM FRU XXXXXXX
- Identification of software problem sources
- Configuration of BIOS as part of an installation or upgrade
- Changes, modifications, or upgrades to device drivers
- Installation and maintenance of network operating systems (NOS)
- Installation and maintenance of application programs

Refer to your IBM hardware warranty for a full explanation of IBM warranty terms. Be sure to retain your proof of purchase to obtain warranty service.

If possible, be near your computer when you make your call in case the technical assistance representative needs to help you resolve a computer problem. Please ensure that you have downloaded the most current drivers and system updates, run diagnostics, and recorded information before you call. When calling for technical assistance, please have the following information available:

- Machine Type and Model
- Serial numbers of your computer, monitor, and other components, or your proof of purchase
- Description of the problem
- Exact wording of any error messages
- Hardware and software configuration information for your system

Telephone numbers

Note: Telephone numbers are subject to change without notice. For the latest list of IBM HelpCenter telephone numbers and hours of operation, visit the Support Web site at **www.ibm.com/pc/support**

Country or region	Language	Telephone Number
Argentina	Spanish	0800-666-0011
Australia	English	1300-130-426
Austria	German	01-24592-5901
Bolivia	Spanish	0800-0189
Belgium	Dutch	02-210 9820
	French	02-210 9800
Brazil	Portuguese	55-11-3889-8986
Canada	English/ French	1-800-565-3344

in Toronto only call 416-383-3344 |
Chile	Spanish	800-224-488
China	Mandarin	800-810-1818
Colombia	Spanish	980-912-3021
Denmark	Danish	45 20 82 00
Ecuador	Spanish	1-800-426911 (option #4)
Finland	Finnish	09-459 69 60
France	French	02 38 55 74 50
Germany	German	07032-1549 201

Country or region	Language	Telephone Number
Hong Kong	Cantonese	2825-7799
Ireland	English	01-815 9200
Italy	Italian	02-7031-6101
Japan	Japanese	*1
Luxembourg	French	298-977 5063
Mexico	Spanish	001-866-434-2080
Netherlands	Dutch	020-514 5770
New Zealand	English	0800-446-149
Norway	Norwegian	66 81 11 00
Peru	Spanish	0-800-50-866
Portugal	Portuguese	21-791 51 47
Russia	Russian	095-940-2000
Spain	Spanish	91-662 49 16
Sweden	Swedish	08-477 4420
Switzerland	German/ French/ Italian	0583-33-09-00
Taiwan	Mandarin	886-2-2725-9799
United Kingdom	English	0-1475-555 055
United States	English	1-800-772-2227
Uruguay	Spanish	000-411-005-6649
Venezuela	Spanish	0-800-100-2011

*1   If you purchased your ThinkPad computer in Japan, the telephone number of the IBM Help Center is given to you as soon as you finish registering the computer. For detailed information, visit the Web site at www.ibm.com/jp/pc/ibmjreg

Getting help around the world

If you travel with your computer or relocate it to a country where your ThinkPad machine type is sold and serviced by IBM or by IBM autorized servicers who are authorized to perform warranty service, International Warranty Service is available for your computer.

Service methods and procedures vary by country, and some services might not be available in all countries. International Warranty Service is delivered through the method of service (such as depot, carry-in, or on-site service) that is provided in the servicing country. Service centers in certain countries might not be able to service all models of a particular machine type. In some countries, fees and restrictions might apply at the time of service.

To determine whether your computer is eligible for International Warranty Service and to view a list of the countries where service is available, go to http://www.ibm.com/pc/support/, and click **Warranty Lookup**. Eligible IBM computers are identified by their four-digit machine types. For more information about International Warranty Service, see Service Announcement 601-034 at http://www.ibm.com/. Click **Support & downloads**, click **Announcement letters**, and click **Announcements search**. In the **Search by letter number only** field, type 601-034, and click **Search**.

Appendix A. Important safety instructions

⚠ **סכנה**

זרם חשמלי מכבלי חשמל, טלפון ותקשורת הוא מסוכן. כדי למנוע סכנת התחשמלות,
יש לחבר ולנתק כבלים כמוצג להלן בזמן התקנה, העברה או פתיחת המכסים של מוצר
זה או היחידות המחוברות אליו. אם כבל חשמל בעל 3 גידים מסופק עם מוצר זה, יש
לחבר אותו לשקע מוארק כהלכה.

כדי לחבר	כדי לנתקT
כבו הכל.	**כבו** הכל.
תחילה, חברו את כל הכבלים אל היחידות.	תחילה, נתקו את כבל החשמל מהשקע.
חברו את כבלי התקשורת אל השקעים	נתקו את כבלי התקשורת מהשקעים.
חברו את כבל החשמל לשקע חשמל.	נתקו את כל הכבלים מהיחידות.
הדליקו את היחידה.	
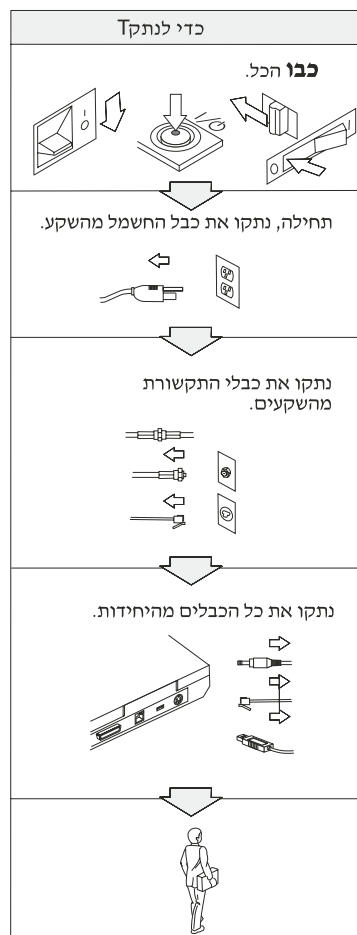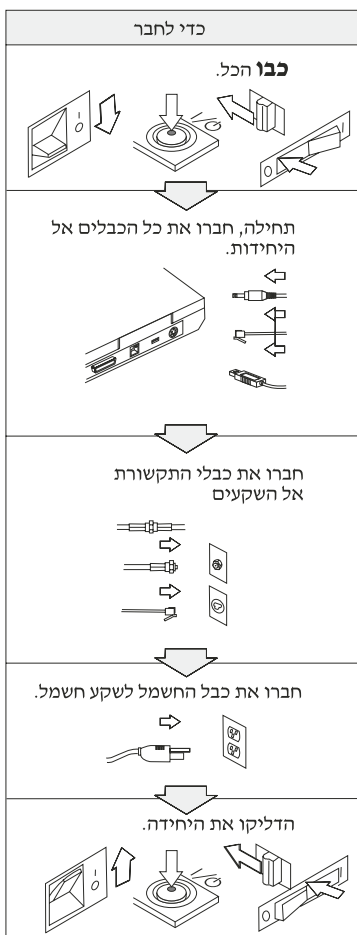
 סכנה

כדי למנוע סכנת שריפה יש לנקוט תמיד אמצעי זהירות בסיסיים לשמירה על הבטיחות, כולל האמצעים שלהלן:

- אין להשתמש במחשב בתוך או ליד מים.
- בזמן סערת ברקים:
- אין להשתמש במחשב עם חיבור לכבל טלפון.
- אין לחבר או לנתק את הכבל משקע הטלפון הטלפון שבקיר.

 סכנה

קיימת סכנת התפוצצות אם הסוללה הנטענת מוחלפת בדרך לא נכונה. מארז הסוללה מכיל כמות קטנה של חומרים מזיקים. כדי למנוע פציעה אפשרית:

- יש להחליף את הסוללה רק בסוללה מהסוג המומלץ על ידי יבמ.
- יש להרחיק את מארז הסוללה מאש.
- אין לחשוף אותו למים או לגשם.
- אין לפרק את מארז הסוללה.
- אין לקצר את הסוללה.
- יש להרחיק את הסוללה מילדים.

אין לשים את מארז הסוללה באשפה המפונה למזבלות. יש לסלק את הסוללה בהתאם לתקנות ולחוקים המקומיים ובהתאם לתקני הבטיחות של החברה.

 סכנה

אם סוללת הגיבוי אינה מוחלפת כהלכה, קיימת סכנת התפוצצות.

סוללת הליתיום מכילה ליתיום והיא עלולה להתפוצץ בעקבות טיפול או סילוק לא נכון.

יש להחליף את הסוללה רק בסוללה מאותו סוג.

כדי למנוע סכנת פציעה או מוות, אסור (1) להשליך או לטבול את הסוללה במים, (2) לאפשר לה להתחמם לטמפרטורה גבוהה מ-100 מעלות צלזיוס או (3) לנסות לתקן או לפרק אותה. יש לסלק את הסוללה כנדרש על ידי התקנות והחוקים המקומיים ונוהלי החברה.

⚠️ DANGER Backup battery safety notice

DANGER: Do not recharge, open, or expose to heat above 100°C

DANGER: Ne pas recharger, ouvr ir ou exposer à plus de 100°C

VORSICHT!: Batterie nicht laden oder öffnen, vor Hitze über 100°C schützen

PELIGRO!: No recargar, abrir o exponer a calor sobre 100°C

ATTENZIONE: Non ricaricare, aprire o esporre oltre 100°C

FARLIG: Må ikke genoplades, åbnes eller udsættes for temperaturer over 100°C

GEVAAR!: Niet her laden, openen of blootstellen aan temperaturen boven 100°C

VAARA: Älä lataa paristoa uudelleen, avaa sitä tai kuumenna sitä yli 100°C

FARE: Må ikke opplades, åpnes eller utsettes for varme over 100°C

PERIGO: Não recarregue, abra ou exponha a temperaturas superiores a 100°C

FARA: Batteriet får ej laddas, öppnas eller utsättas för värme över 100°C

סכנה : אין לטעון מחדש, לפתוח או לחשוף לחום העולה על 100 מעלות צלזיוס.

PERIGO: Não recarregue, não abra e não exponha a uma temperatura superior a 100°C

סכנה ⚠️

יש לפעול לפי ההוראות שלהלן בזמן התקנה או שינוי תצורה של אופציית המיני PCI.

כדי למנוע סכנת התחשמלות, יש ולנתק את כל הכבלים ואת מתאם החשמל בזמן התקנה של אופציית המיני PCI או פתיחת המכסים של המערכת או היחידות המחוברות אליה. זרם חשמלי מכבלי חשמל, טלפון ותקשורת הוא מסוכן.

זהירות:

לאחר הוספה או שידרוג של כרטיס מיני PCI או כרטיס זכרון, אין להשתמש במחשב אלא לאחר סגירת המכסה. לעולם אין להשתמש במחשב כשהמכסה פתוח.

זהירות:

נורת הפלואורוסצנט במסך הגביש הנוזלי (LCD) מכילה כספית. אין לשים אותה באשפה המפונה למזבלות. יש לסלק את הסוללה כנדרש על ידי התקנות והחוקים המקומיים.

זהירות:

מסך הגביש הנוזלי (LCD) עשוי מזכוכית, וטלטול או הפלה של המחשב עלולים לגרום למסך להישבר. אם המסך נשבר והנוזל הפנימי בא במגע עם עיניכם או ידיכם, שטפו את האזורים הנגועים במים מיד במשך 15 דקות לפחות. אם התסמינים נמשכים אחרי השטיפה, יש לפנות לקבלת טיפול רפואי.

:זהירות

<div dir="rtl">

השתמש רק בכבל טלפון מס׳ AWG 26 או בכבל עבה יותר.

</div>

Modem safety information

<div dir="rtl">

כדי לצמצם סכנת שריפה, התחשמלות או פציעה בזמן השימוש בציוד טלפון, יש לנקוט תמיד באמצעי זהירות בסיסיים לשמירה על הבטיחות, כגון :

אין להתקין חיווט טלפון בזמן סערת ברקים לעולם.

אין להתקין מחבר טלפון ירוק באתרים רטובים אלא אם המחבר מיועד במיוחד לאתרים רטובים לעולם.

אין לגעת בחוטי טלפון לא מבודדים או בקצותיהם, אלא אם קו הטלפון נותק מהקודת החיבור ברשת לעולם.

יש לפעול בזהירות בזמן התקנה או שינוי של קווי טלפון.

יש להמנע משימוש בטלפון (מלבד טלפון אלחוטי) בזמן סערת ברקים. קיימת סכנה מסוימת של התחשמלות כתוצאה מפגיעת ברק.

אין להשתמש בטלפון כדי לדווח על דליפת גז בקרבת תברת הדליפה.

</div>

Laser compliance statement

כונן (יחידת) אחסון אופטי, כגון כונן CD-ROM או CD-RW או DVD-ROM
ו-SuperDisk שניתן להתקין אותם במחשב ThinkPad של יבמ הוא מוצר לייזר.
מדבקת הסיווג של הכונן (המוצגת להלן) נמצאת על פני השטח של הכונן :

CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
APPAREIL A LASER DE CLASSE 1
KLASS 1 LASER APPARAT

הכונן מאושר כעומד בדרישות עבור מוצרי לייזר מסיווג I בארצות הברית, לפי
תקנות DHHS 21 CFR.

בארצות אחרות, הכונן מאושר כעומד בדרישות של תקן IEC825 ותקן EN60825
עבור מוצרי לייזר מסיווג I.

⚠ **סכנה**

**אין לפתוח את כונן האחסון האופטי ; אין התאמות שהמשתמש יכול לבצע או חלקים
שאפשר לבצע להם טיפול שירות.**

**השימוש בבקרות, התאמות, או ביצוע נהלים מלבד אלה המצוינים עלול לגרום לחשיפה
לקרינה מסוכנת.**

מכשירי לייזר מסיווג I אינם נחשבים למסוכנים. העיצוב של מערכת הלייזר וכונן האחסון
האופטי מבטיחים שלא תהיה חשיפה לקרינת לייזר מעל לרמה של סיווג I במהלך פעולה
רגילה, תחזוקה על ידי המשתמש או טיפולי שירות.

כוננים מסוימים מכילים דיודת לייזר משולבת מסיווג A3. שימו לב לאזהרה זו :

⚠ **סכנה**

**מכשיר זה פולט קרינת לייזר נראית ובלתי נראית כאשר הוא פתוח. יש להמנע מחשיפה ישירה
של העיניים. אין להביט לתוך הקרן או להתבונן בה ישירות באמצעות מכשירים אופטיים.**

יש לשמור הוראות אלה.

Appendix B. Wireless related information

Wireless Interoperability

Wireless LAN Mini-PCI Adapter is designed to be interoperable with any wireless LAN product that is based on Direct Sequence Spread Spectrum (DSSS) radio technology, and is compliant to:

- The IEEE 802.11b Standard on Wireless LANs, as defined and approved by the Institute of Electrical and Electronics Engineers.

  Note: The IEEE 802.11a is also supported (by 802.11a/b combo card).
- The Wireless Fidelity (WiFi) certification as defined by the WECA (Wireless Ethernet Compatibility Alliance).

IBM Integrated Bluetooth with 56K Modem is designed to be interoperable with any Bluetooth product that is compliant to Bluetooth Specification 1.1 as defined by the Bluetooth SIG. Following profiles are supported by IBM Bluetooth Daughter Card with IBM Integrated Bluetooth II Software:

- Generic Access
- Service Discovery
- Serial Port
- Dial-up Networking
- FAX
- LAN Access Using PPP
- Personal Area Network
- Generic Object Exchange
- Generic Object Push
- File Transfer
- Synchronization
- Audio Gateway
- Headset
- Printer

Usage environment and your Health

Wireless LAN Mini-PCI Adapter and Bluetooth Daughter Card emit radio frequency electromagnetic energy like other radio devices. However, the level of energy emitted is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.

Because Wireless LAN Mini-PCI Adapter and Bluetooth Daughter Card operate within the guidelines found in radio frequency safety standards and recommendations, IBM believes the integrated wireless cards are safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situation or environment, the use of Wireless LAN Mini-PCI Adapter or Bluetooth Daughter Card may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

- Using the integrated wireless cards on board of airplanes, or in hospitals
- In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organization (e.g. airport or hospital), you are encouraged to ask for authorization to use Wireless LAN Mini-PCI Adapter or Bluetooth Daughter Card prior to turning on the ThinkPad R40 computer.

Appendix C. Warranty information

This appendix contains warranty information for your ThinkPad, warranty period, 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 or the machine type.

Machine type 2681 and 2684

Country or region	Warranty period
All	Parts - 1 year, labor - 1 year Battery pack - 1 year

Machine type 2682 and 2683

Country or region	Warranty period
All	Parts - 3 years, labor - 3 years Battery pack - 1 year

Machine type 2685

Country or region	Warranty period
All	Parts - 3 months, labor - 3 months Battery pack - 3 months

Machine type 2722

Country or region	Warranty period
All	Parts - 1 year, labor - 1 year Battery pack - 1 year

Machine type 2723 and 2724

Country or region	Warranty period
All	Parts - 3 years, labor - 3 years Battery pack - 1 year

Warranty service and support

With the original purchase of an IBM ThinkPad, you have access to extensive support. During the IBM Machine warranty period, you may call IBM or your reseller for problem-determination assistance under the terms of the IBM Statement of Limited Warranty.

The following services are available during the warranty period:

- **Problem determination** - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- **IBM hardware repair** - If the problem is determined to be caused by IBM hardware under warranty, trained service personnel are available to provide the applicable level of service, either on-site or at an IBM service center as determined by IBM.
- **Engineering Change management** - Occasionally, there might be changes that are required after a product has been shipped from IBM. In those instances, IBM will make Engineering Changes (ECs) available that apply to your hardware.

The following items are not covered under warranty service:

- Replacement or use of non-IBM parts. All IBM parts contain a 7-character identification in the format IBM FRU XXXXXXX.
- Identification of non-IBM software problem sources.
- Installation of customer replaceable units (CRUs).
- Installation and configuration of machine code or licensed internal code that is designated as customer installable.

If you do not register your computer with IBM, you might be required to present proof of purchase to obtain warranty service.

Before you call for service

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the publications that are provided with your computer and software.

Most computers, operating systems, and application programs come with information that contains troubleshooting procedures and explanations of

error messages and error codes. The information that comes with your computer also describes the diagnostic tests that you can perform.

If you suspect a software problem, refer to the information for the operating system or application program.

Calling for service

Please have the following information ready:
- Machine type, model, and serial number
- Description of the problem
- Exact wording of any error messages
- Hardware and software configuration information

To find the telephone number for the HelpCenter nearest you, see "Telephone numbers" in Chapter 3, "Getting help and service from IBM", on page 41

IBM Statement of Limited Warranty Z125-4753–06 08/2000

This warranty statement consists of two parts: Part 1 and Part 2. Be sure to read Part 1 and the country-unique terms in Part 2 that apply to your country or region.

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

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 D. Notices

This publication was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other 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.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

> IBM Director of Licensing
> IBM Corporation
> North Castle Drive
> Armonk, NY 10504-1785
> U.S.A.

Processing date data

This IBM hardware product and IBM software products that might be packaged with it have been designed, when used in accordance with their associated documentation, to process date data correctly within and between the 20th and 21st centuries, provided all other products (for example, software, hardware, and firmware) used with these products properly exchange accurate date data with them.

IBM cannot take responsibility for the date data processing capabilities of non-IBM products, even if those products are preinstalled or otherwise distributed by IBM. You should contact the vendors responsible for those products directly to determine the capabilities of their products and update them if needed. This IBM hardware product cannot prevent errors that might occur if software, upgrades, or peripheral devices you use or exchange data with do not process date data correctly.

The foregoing is a Year 2000 Readiness Disclosure.

References to the Web site addresses

Any references in this publication to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product, and use of those Web sites is at your own risk.

Electronic emission notices

Federal Communications Commission (FCC) Statement
ThinkPad R40, machine type 2681, 2682, 2683, or 2684

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
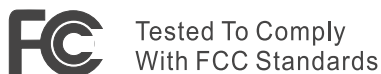
FOR HOME OR OFFICE USE

Industry Canada Class B Emission Compliance Statement
This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada
Cet appareil numérique de la classe B est conform à la norme NMB-003 du Canada.

European Community Directive Conformance Statement
This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electro-magnetic compatibility. IBM cannot 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 satisfies the Class B limits of EN 55022.

Telecommunication notices

Federal Communications Commission (FCC) and Telephone Company Requirements (Part 68 of the FCC Rules)

1. The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent, and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual.

   In order to program this information into your computer, you should be sure to follow the installation instructions for your fax software package.

2. The built-in modem is built into the ThinkPad computer. It complies with Part 68 of the FCC Rules. A label is affixed to the bottom of the computer that contains, among other things, the FCC registration number, USOC,

and Ringer Equivalency Number (REN) for this equipment. If these numbers are requested, look at the label and provide this information to your telephone company.

3. The REN is useful to determine the quantity of devices you may connect to your telephone line and still have those devices ring when your number is called. In most, but not all, areas, the sum of the RENs of all devices should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN (REN:0.7), you should call your local telephone company to determine the maximum REN for your calling area.

4. If the built-in modem causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But, if advance notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.

5. Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be given advance notice so as to give you an opportunity to maintain uninterrupted service.

6. If you experience trouble with this built-in modem, contact your IBM Authorized Seller, or the IBM Corporation, 500 Columbus Avenue, Thornwood, NY 10594, 1-800-772-2227, for repair/warranty information. The telephone company may ask you to disconnect this equipment from the network until the problem has been corrected, or until you are sure the equipment is not malfunctioning.

7. No customer repairs are possible to the modem. If you experience trouble with this equipment, contact your Authorized Seller or the IBM Corporation for information.

8. The modem may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs. Contact your state public utility commission or corporation commission for information.

9. When ordering network interface (NI) service from the Local Exchange Carrier, specify service arrangement USOC RJ11C.

Fax Branding

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send any message unless such message clearly contains in a margin at the top of or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. (The telephone number provided may not be a 900 number or any other number for which charges exceed local or long-distance transmission charges.)

Industry Canada requirements

Notice

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications networks protective, operational, and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of communication. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs of alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The **Ringer Equivalent Number** (REN:0.3) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Number of all the devices does not exceed 5.

Avis

L'étiquette du ministère de l'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme à certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. Dans certains cas, les fils intérieurs de l'entreprise utilisés pour un service individuel à ligne unique peuvent être prolongés au moyen d'un dispositif homologué de raccordement (cordon prolongateur téléphonique interne). L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empechent pas la dégradation du service dans certaines situations. Actuellement, les entreprises de télécommunication ne permettent pas que l'on raccorde leur matériel à des jacks d'abonné, sauf dans les cas précis prévus par les tarifs paticuliers de ces entreprises.

Les réparations de matériel homologué doivent être effectuées par un centre d'entretien canadien autorisé désigné par le fournisseur. La compagnie de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement
L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à électricien, selon le cas.

L'indice de charge (IC) assigné à chaque dispositif terminal indique (REN:0.3), pour éviter toute surcharge, le pourcentage de la charge totale qui peut être raccordée à un circuit téléphonique bouclé utilisé par ce dispositif. La terminaison du circuit bouclé peut être constituée de n'importe quelle combinaison de dispositifs, pourvu que la somme des indices de charge de l'ensemble des dispositifs ne dépasse pas 5.

Notice for Australia

The following notice applies when using the telephony functions:

WARNING: FOR SAFETY REASONS, ONLY CONNECT EQUIPMENT WITH A TELECOMMUNICATIONS COMPLIANCE LABEL. THIS INCLUDES CUSTOMER EQUIPMENT PREVIOUSLY LABELLED PERMITTED OR CERTIFIED.

Notice for New Zealand

For the modem with approval number PTC 211/01/081

- The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

- Functional tests

  This equipment is not capable, under all operating conditions, of correct operation at the higher speeds for which it is designed. Telecom will accept no responsibility should difficulties arise in such circumstances.

- Fail safe requirements

  Under power failure conditions this appliance may not operate. Please ensure that a separate telephone, not dependent on local power, is available.

- Automatic re-attempts to the same number

  Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's Specifications:

  - There shall be no more than 10 call attempts to the same number within any 30 minute period for any single manual call initiation, and,
  - The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.

- For automatic calls to different numbers

  Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. In order to operate within the limits for compliance with Telecom's specifications, the associated equipment shall be set to ensure that automatic calls to different numbers are spaced such that there is not less than 5 seconds between the end of one call attempt and the beginning of another.

- For automatic call set-up

  This equipment shall not be set up to make automatic calls to Telecom's 111 Emergency Service.

- Call answering

  Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. In order to operate within the limits of compliance with Telecom's

specifications, the associated equipment shall be set to ensure that calls are answered between 3 and 30 seconds of receipt of ringing.

- For correct operation, the total of the RN's of all devices connected to a single line at any time should not exceed 5.

For modem with approval number PTC 211/01/134
The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with the minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment is not capable under all operating conditions of correct operation at the higher speed which it is designed. 33.6 kbit/s and 56 kbit/s connections are likely to be restricted to lower bit rates when connected to some PSTN implementations. Telecom will accept no responsibility should difficulties arise in such circumstances.

This equipment shall not be used in any manner which could constitute a nuisance to other Telecom customers.

Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this modem. The associated equipment shall be set to operate within the following limits for compliance with Telecom's specification:-

1. For automatically initiated calls to the same number
   a. There shall be no more than 10 call attempts to the same number within any 30 minute period for a single manual call initiation, and
   b. The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.
2. For automatically initiated calls to different numbers
   The equipment shall go on-hook for a period of not less than 5 seconds between the end of one attempt and the beginning of the next attempt.
3. Auto-answering incoming calls
   Incoming calls shall be answered between 3 and 30 seconds of receipt of ringing.

Notice for European Union countries

Hereby Ambit declares that this "J07M058" modem is in conformity with the essential requirements and other relevant provisions of Directive 1999/5/EC.

AMBIT®

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Declaration of Conformity

We,

AMBIT MICROSYSTEMS CORPORATION.
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Contact Person: Mr. Allen Lai
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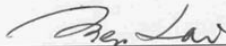
Herewith declare that the product:

Equipment : 56K Internal Modem Module
Model : J07M058

Is in conformity with the provisions of the following EC directive(s)
meets the requirements of the council of the European communities relating to and.

Reference NO.	Title
1999/5/EC	Radio & Telecommunications Terminal Equipment Dircetive (R&TTE)
73/23/EEC	Low Voltage Directive (LVD)
89/336/EEC	Electromagnetic Compatibility (EMC-Directive)

and that standards and/or technical specifications referenced above have been applied.

Allen Lai
R&D Supervisor
Ambit Microsystems Corporation
Date: July, 31, 2001

Product notice requirements

The following notice applies to machines equipped with both a DVD and a TV-out function:

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation and is intended for home and other limited viewing use only, unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Environmental notices for Japan

Collecting and recycling a disused ThinkPad computer

If you are a company employee and need to dispose of a ThinkPad computer that is the property of the company, you must do so in accordance with the Waste Disposal Law. The computer is categorized as industrial waste containing iron, glass, plastics, and other materials. It should be properly disposed of by an industrial waste disposal contractor certified by a local government.

For details, visit the IBM Web site at www.ibm.com/jp/pc/recycle/pc

If you use a ThinkPad computer at home and need to dispose of it, you must comply with local ordinances and regulations.

Disposing of a ThinkPad computer component containing heavy metal

The printed circuit board of a ThinkPad computer contains heavy metal. (Soldering with lead is used on the printed circuit board.) To properly dispose of the disused printed circuit board, follow the instructions in Collecting and recycling a disused ThinkPad computer.

Disposing of a disused lithium battery

A button-shaped lithium battery is installed on the system board of your ThinkPad computer to back up the main battery.
If you want to replace it with a new one, contact your place of purchase or ask for a repair service provided by IBM. If you have replaced it by yourself and want to dispose of the disused lithium battery, insulate it with vinyl tape, contact your place of purchase, and follow the instructions. You can also see the instructions at www.ibm.com/jp/pc/recycle/battery

If you use a ThinkPad computer at home and need to dispose of a lithium battery, you must comply with local ordinances and regulations.

Handling a disused ThinkPad battery pack

Your ThinkPad computer has a lithium ion battery pack or a nickel metal hydride battery pack. If you are a company ThinkPad computer user and need to dispose of a battery pack, contact the proper person in IBM sales, service, or marketing, and follow that person's instructions. You can also see the instructions at www.ibm.com/jp/pc/recycle/battery

If you use a ThinkPad computer at home and need to dispose of a battery pack, you must comply with local ordinances and regulations.

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ThinkLight	UltraNav

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