

## Chapter 6. Safety, Use, and Care Information

- Place liquids away from your computer to avoid spills, and keep your computer away from water (to avoid the danger of electrical shock).
- Do not eat or smoke over your keyboard. Particles that fall into your keyboard can cause damage.
- 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 13 cm or 5 in).
- Avoid subjecting your computer to extreme temperatures (below 5°C/41°F or above 35°C/95°F).
- Some appliances, such as certain portable desktop fans or air purifiers, can produce negative ions. If a computer is close to such an appliance, and is exposed for an extended time to air containing negative ions, it may become electrostatically charged. Such a charge may be discharged through your hands when you touch the keyboard or other parts of the computer, or through connectors on I/O devices connected to it. Even though this kind of electrostatic discharge (ESD) is the opposite of a discharge from your body or clothing to the computer, it poses the same risk of a computer malfunction.

Your computer is designed and manufactured to minimize any effects of electrostatic charge. An electrostatic charge above a certain limit, however, can increase the risk of ESD. Therefore, when using the computer close to an appliance that can produce negative ions, give special attention to the following:

- Avoid directly exposing your computer to the air from an appliance that can produce negative ions.
- Keep your computer and peripherals as far as possible from such an appliance.

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- Wherever possible, ground your computer to facilitate safe electrostatic discharge.

❖ **Note:**

Not all such appliances cause a significant electrostatic charge.

When you handle options or CRUs, or perform any work inside the computer, take the following precautions to avoid static-electricity damage:

- Limit your movement. Movement can cause static electricity to build up around you.
- Always handle components carefully. Handle adapters, memory modules, and other circuit boards by the edges. Never touch exposed circuitry.
- Prevent others from touching components.
- When you install a static-sensitive option or CRU, touch the static-protective package containing the part to a metal expansion-slot cover or other unpainted metal surface on the computer for at least two seconds. This reduces static electricity in the package and your body.
- Whenever possible, remove the static-sensitive part from the static-protective packaging and install the part without setting it down. When this is not possible, place the static-protective packaging on a smooth, level surface and place the part on it.
- Do not place the part on the computer cover or other metal surface.

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### ■ Be gentle with your computer

- Avoid placing any objects (including paper) between the display and the keyboard or under the keyboard.
- Do not drop, bump, scratch, twist, hit, vibrate, push, or place heavy objects on your computer, display, or external devices.
- Avoid turning the display beyond 135°.

### ■ 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 sleep 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.

### ■ For outdoor use

- Backup your critical data before you take your computer outdoors.
- Ensure that the battery is full.
- Be sure to turn off the power and close the LCD well.
- Do not leave anything between the closed LCD and the keyboard.

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- When you leave the computer in your car, place it on the back seat to avoid being insulated.
- Carry the AC adapter and power cord with the computer.

### ■ Handle storage media and drives properly

- If your computer comes with an optical 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 an optical drive before closing the tray.
- When installing your hard disk, follow the instructions shipped with your hardware, and apply pressure only where needed on the device.

### ■ Data safety

- Do not delete unknown files or change the name of files or directories that were not created by you; otherwise, your computer software might fail to work.
- Be aware that accessing network resources can leave your computer vulnerable to computer viruses, hackers, spyware, and other malicious activities that might damage your computer, software, or data.
- It is your responsibility to ensure that you have adequate protection in the form of firewalls, antivirus software, and anti-spyware software and keep this software up to date.

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### ■ Take care in setting passwords

- Remember your passwords. If you forget a supervisor or hard disk password, Lenovo authorized service providers will not reset it, and you might have to replace your system board or hard disk drive.

### ■ Other important tips

- 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.
- Register your Lenovo products with Lenovo (refer to the Web page: <http://consumersupport.lenovo.com>). This can help authorities return your computer to you if it is lost or stolen. Registering your computer also enables Lenovo to notify you about possible technical information and upgrades.
- Only an authorized Lenovo 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, or else verify that the device is warm- or hot-swappable.
- Before you install any of the following devices, touch a metal table or a grounded metal object. This action reduces any static electricity from your body. The static electricity could damage the device.

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- ExpressCard
- Memory Card, such as SD Card, Memory Stick, MultiMediaCard, xD-Picture Card, and Memory Stick Pro card.
- Memory module
- When transferring data to or from a Flash Media Card, such as an SD card, do not put your computer in sleep or hibernation mode before the data transfer is complete. To do so might cause damage to your data.

### ■ Cleaning the cover of your computer

Occasionally clean your computer as follows:

- 1 Prepare a mixture of a gentle kitchen-use detergent (one that does not contain abrasive powder or strong chemicals such as acid or alkaline). Use 5 parts water to 1 part detergent.
- 2 Absorb the diluted detergent into a sponge.
- 3 Squeeze excess liquid from the sponge.
- 4 Wipe the cover with the sponge, using a circular motion and taking care not to let any excess liquid drip.
- 5 Wipe the surface to remove the detergent.
- 6 Rinse the sponge with clean running water.
- 7 Wipe the cover with the clean sponge.
- 8 Wipe the surface again with a dry, soft lint-free cloth.

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- 9 Wait for the surface to dry completely and remove any cloth fibers from the computer surface.

❖ **Note:**

Shut down the computer and then disconnect the power cord before cleaning the computer.

### ■ Cleaning your computer keyboard

- 1 Absorb some isopropyl rubbing alcohol on a soft, dust-free cloth.
- 2 Wipe each keytop surface with the cloth. Wipe the keys one by one; if you wipe several keys at a time, the cloth may hook onto an adjacent key and possibly damage it. Make sure that no liquid drips onto or between the keys.
- 3 Allow to dry.
- 4 To remove any crumbs and dust from beneath the keys, you can use a camera blower with a brush or cool air from a hair drier.

❖ **Note:**

Avoid spraying cleaner directly on the display or the keyboard.

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### ■ Cleaning your computer display

- ① Gently wipe the display with a dry, soft lint-free cloth. If you see a scratchlike mark on your display, it might be a stain transferred from the keyboard when the cover was pressed from the outside.
- ② Wipe or dust the stain gently with a soft, dry cloth.
- ③ If the stain remains, moisten a soft, lint-free cloth with water or a 50-50 mixture of isopropyl alcohol and water that does not contain impurities.
- ④ Wring out as much of the liquid as you can.
- ⑤ Wipe the display again; do not let any liquid drip into the computer.
- ⑥ Be sure to dry the display before closing it.

### ■ Accessibility and comfort

As your computer enables you to work in so many places, it is important that you remain attentive to good posture, good lighting, and proper seating. By keeping these considerations in mind, you can improve performance and achieve greater comfort. Lenovo is committed to providing the latest information and technology to our customers with disabilities.

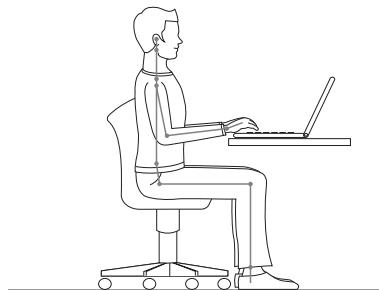
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### ■ Ergonomic information

Working in the virtual office may mean adapting to frequent changes in your environment. Following some simple rules will make things easier and bring you the maximum benefits of your computer. Keeping in mind such basics as good lighting and proper seating, for example, can help you improve your performance and achieve greater comfort.

❖ **Note:**

This example shows someone in a conventional setting. Even if you work in a casual, less conventional setting, many of the tips in this section still apply. Develop good habits, and they will serve you well.



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**General Posture:** Below are some general recommendations for assuming a healthy working posture. It is best to periodically make minor modifications in your working posture to deter the onset of discomfort caused by long periods of working in the same position. Frequent, short breaks from your work will also help to prevent any minor discomfort associated with your working posture.

**Display:** Position the display to maintain a comfortable viewing distance of 510-760 mm (20-30 inches). Avoid glare or reflections on the display from overhead lighting or outside sources of light. Keep the display screen clean and set the brightness to levels that enable you to see the screen clearly. Press **Fn + up/down arrow** to adjust display brightness.

**Head Position:** Keep your head and neck in a comfortable and neutral (vertical, or upright) position.

**Chair:** Use a chair that gives you good back support and seat height adjustment. Use chair adjustments to best suit your desired posture.

**Arm and Hand Position:** If available, utilize chair arm rests or an area on your working surface to provide weight support for your arms. Keep your forearms, wrists, and hands in a relaxed and neutral (horizontal) position. Type with a soft touch without pounding the keys.

**Leg Position:** Keep your thighs parallel to the floor and your feet flat on the floor or on a footrest.

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### ■ What if you are traveling?

It may not be possible to observe the best ergonomic practices when you are using your computer while on the move or in a casual setting. Regardless of the setting, try to observe as many of the tips as possible. Sitting properly and using adequate lighting, for example, will help you maintain desirable levels of comfort and performance.

### ■ Questions about vision?

Your computer's visual display screen is designed to meet the highest standards and to provide you with clear, crisp images and large, bright displays that are easy to see, yet easy on the eyes. Of course, any concentrated and sustained visual activity can be tiring. If you have questions on eye fatigue or visual discomfort, consult a vision care specialist for advice.

## ■ Maintenance

An important part of owning your computer is maintenance. With proper care, you can avoid common problems. The following sections provide information that can help you to keep your computer running smoothly.

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### ■ General tips for maintenance

- ① Check the capacity of your hard disk drive from time to time. If the hard disk drive gets too full, Windows® will slow down and might produce errors.
- ② Empty your recycle bin on a regular basis.
- ③ Use Diskeeper Lite or the Microsoft Disk Defragmenter on your hard disk drive on a regular basis to improve data seek and read time.

- To free up disk space, uninstall unused application programs.

❖ **Note:**

You might also want to look for application program duplication or overlapping versions.

- Clean out your Inbox, Sent, and Trash folders from your e-mail client program.
- At least once a week, make a point to back up your data. If critical data is present, it is a good idea to perform a daily backup. Lenovo has many backup options available for your computer. CD-RW drives and CD-RW/DVD drives are available for most computers and are easily installed.
- Use or schedule System Restore to take a system snapshot periodically.

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### ◆ Note:

Always take a system snapshot before installing new drivers, updating software, or installing new software.

- Update device drivers and BIOS when needed.
- Profile your machine at <http://consumersupport.lenovo.com> to keep up to date with current drivers and revisions.
- Keep up to date on device drivers on other non-Lenovo hardware. You might want to read the device driver information release notes prior to updating for compatibility or known issues.
- Keep a log book. Entries might include major hardware or software changes, driver updates, minor issues you have experienced and how you resolved them.
- If you ever need to run a recovery operation on your computer to return the contents of the hard disk to the factory-installed state, the following tips might help along the way:
  - Remove all external devices such as the printer, keyboard, and so on.
  - Make sure that the battery is charged and that you have the AC adapter connected.
  - Boot into the BIOS and load the default settings.
  - Turn off the computer and start the recovery process.
  - If your computer uses discs as the recovery media, do not remove the disc from the drive until you are prompted to do so.

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- If required, you can find your country's Customer Support Center at the following Web address: <http://consumersupport.lenovo.com>. When calling the Customer Support Center, please make sure you have your machine type, model, and serial number available and the computer is in front of you. Also, if the machine is producing error codes, it is helpful to have the error screen on or the message written down.

Device drivers are programs that contain instructions for the operating system about how to operate or "drive" a certain piece of hardware. Each hardware component on your computer has its own specific driver. If you add a new component, the operating system needs to be instructed on how to operate that piece of hardware. After you install the driver, the operating system can recognize the hardware component and understand how to use it.

**❖ Note:**

Due to the fact that drivers are programs, like any other file on your computer, they are susceptible to corruption and might not perform properly if corruption occurs.

## Appendix A. Lenovo Limited Warranty

This Lenovo Limited Warranty applies only to Lenovo branded hardware products you purchased for your own use and not for resale. This Lenovo Limited Warranty is available in other languages at [www.lenovo.com/warranty](http://www.lenovo.com/warranty).

### ■ What this warranty covers

Lenovo warrants that each hardware product that you purchase is free from defects in materials and workmanship under normal use during the warranty period. The warranty period for the product starts on the original date of purchase specified on your sales receipt or invoice unless Lenovo informs you otherwise in writing. The warranty period and type of warranty service that apply to your product are designated below under the section titled "Warranty Information."

**THIS WARRANTY IS YOUR EXCLUSIVE WARRANTY AND REPLACES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES APPLY ONLY TO THE EXTENT REQUIRED BY LAW AND ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD. SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION ON DURATION MAY NOT APPLY TO YOU.**

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### ■ How to obtain warranty service

If the product does not function as warranted during the warranty period, you may obtain warranty service by contacting Lenovo or an approved service provider. Each of them is referred to as a "Service Provider." A list of Service Providers and their telephone numbers is available at [www.lenovo.com/support/phone](http://www.lenovo.com/support/phone).

Warranty service may not be available in all locations and may differ from location to location. Charges may apply outside a Service Provider's normal service area. Contact a local Service Provider for location-specific information.

### ■ What your service provider will do to correct problems

When you contact a Service Provider, you must follow the problem determination and resolution procedures specified.

Your Service Provider will attempt to diagnose and resolve your problem over the telephone, e-mail or through remote assistance. Your Service Provider may direct you to download and install designated software updates.

Some problems can be resolved with a replacement part that you can install yourself called a "Customer Replaceable Unit" or "CRU." If so, your Service Provider will ship the CRU to you for you to install.

If your problem cannot be resolved over the telephone or remotely, through your application of software updates or the installation of a CRU by you,

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your Service Provider will arrange for service under the type of warranty service designated for the product under the section titled "**Warranty Information.**"

If your Service Provider determines that it is unable to repair your product, your Service Provider will replace it with one that is at least functionally equivalent.

If your Service Provider determines that it is unable to either repair or replace your product, your sole remedy is to return the product to your place of purchase or to Lenovo for a refund of your purchase price.

### ■ **Replacement of a product or part**

When the warranty service involves the replacement of a product or part, the replaced product or part becomes Lenovo's property and the replacement product or part becomes your property. Only unaltered Lenovo products and parts are eligible for replacement. The replacement product or part provided by Lenovo may not be new, but it will be in good working order and at least functionally equivalent to the original product or part. The replacement product or part shall be warranted for the balance of the period remaining on the original product.

Before your Service Provider replaces a product or part, you agree to:

1. remove all features, parts, options, alterations, and attachments not under warranty service;
2. ensure that the product or part is free of any legal obligations or restrictions that prevent its replacement; and

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3. obtain authorization from the owner to have your Service Provider service a product or part if you do not own it.

### ■ Your additional responsibilities

Where applicable, before service is provided, you agree to:

1. follow the service request procedures that your Service Provider specifies;
2. backup or secure all programs and data contained in the product;
3. provide your Service Provider with all system keys or passwords and sufficient, free, and safe access to your facilities to perform service; and
4. ensure that all information about identified or identifiable individuals ("Personal Data") is deleted from the product or that, with respect to any Personal Data that you did not delete, you are in compliance with all applicable laws.

### ■ Use of personal information

If you obtain service under this warranty, Lenovo will store, use and process information about your warranty service and your contact information, including name, phone numbers, address, and e-mail address. Lenovo will use this information to perform service under this warranty and to improve our business relationship with you. We may contact you to inquire about your satisfaction regarding our warranty service or to notify you about any product recalls or safety issues. In accomplishing these purposes, we may transfer your information to any country where we do business and may provide it to entities acting on our behalf. We may also disclose it where required by law.

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### ■ What this warranty does not cover

This warranty does not cover the following:

- uninterrupted or error-free operation of a product;
- loss of, or damage to, your data;
- any software programs, whether provided with the product or installed subsequently;
- failure or damage resulting from misuse, accident, modification, unsuitable physical or operating environment, natural disasters, power surges, or improper maintenance by you;
- damage caused by a non-authorized service provider;
- failure of, or damage caused by, any third party products, including those that Lenovo may provide or integrate into the Lenovo product at your request; and
- any technical or other support, such as assistance with "how-to" questions and those regarding product set-up and installation.

This warranty is voided by removal or alteration of identification labels on the product or its parts.

### ■ Limitation of liability

Lenovo is responsible for loss or damage to your product only while it is: 1) in your Service Provider's possession; or 2) in transit in those cases where the Service Provider is responsible for the transportation.

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Neither Lenovo nor your Service Provider is responsible for any of your data including confidential, proprietary, or personal data contained in a product. You should remove and/or backup all such information from the product prior to its service or return.

Circumstances may arise where, because of a default on Lenovo's part or other liability, you may be entitled to recover damages from Lenovo. In each such instance, regardless of the basis of your claim against Lenovo (including breach, negligence, misrepresentation, or other contract or tort claim), except and to the extent that liability cannot be waived or limited by applicable laws, Lenovo shall not be liable for more than the amount of actual direct damages suffered by you, up to the amount you paid for the product. This limit does not apply to damages for bodily injury (including death) and damage to real property or tangible personal property for which Lenovo is liable under law.

This limit also applies to Lenovo's suppliers, resellers, and your Service Provider. It is the maximum amount for which Lenovo, its suppliers, resellers, and your Service Provider are collectively responsible.

**UNDER NO CIRCUMSTANCES SHALL LENOVO, ITS SUPPLIERS, RESELLERS, OR SERVICE PROVIDERS BE LIABLE FOR ANY OF THE FOLLOWING EVEN IF INFORMED OF THEIR POSSIBILITY: 1) THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES; 2) LOSS OR DAMAGE TO YOUR DATA; OR 3) SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, BUSINESS REVENUE, GOODWILL OR ANTICIPATED SAVINGS. AS SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR**

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**CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

### ■ Dispute resolution

If you acquired the product in **Cambodia, Indonesia, Philippines, Vietnam or Sri Lanka**, disputes arising out of or in connection with this warranty shall be finally settled by arbitration held in Singapore and this warranty shall be governed, construed and enforced in accordance with the laws of Singapore, without regard to conflict of laws. If you acquired the product in **India**, disputes arising out of or in connection with this warranty shall be finally settled by arbitration held in Bangalore, India. Arbitration in Singapore shall be held in accordance with the Arbitration Rules of Singapore International Arbitration Center ("SIAC Rules") then in effect. Arbitration in India shall be held in accordance with the laws of India then in effect. The arbitration award shall be final and binding on the parties without appeal. Any award shall be in writing and set forth the findings of fact and the conclusions of law. All arbitration proceedings, including all documents presented in such proceedings, shall be conducted in the English language, and the English language version of this warranty prevails over any other language version in such proceedings.

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### ■ Other rights

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR JURISDICTION TO JURISDICTION. YOU MAY ALSO HAVE OTHER RIGHTS UNDER APPLICABLE LAW OR WRITTEN AGREEMENT WITH LENOVO. NOTHING IN THIS WARRANTY AFFECTS STATUTORY RIGHTS, INCLUDING RIGHTS OF CONSUMERS UNDER NATIONAL LEGISLATION GOVERNING THE SALE OF CONSUMER GOODS THAT CANNOT BE WAIVED OR LIMITED BY CONTRACT.

### ■ European Economic Area (EEA)

Customers in the EEA may contact Lenovo at the following address: EMEA Service Organisation, Lenovo (International) B.V., Floor 2, Einsteinova 21, 851 01, Bratislava, Slovakia. Service under this warranty for Lenovo hardware products purchased in EEA countries may be obtained in any EEA country in which the product has been announced and made available by Lenovo.

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### ■ Warranty information

Product or Machine Type	Country or Region of Purchase	Warranty Period	Type of Warranty Service
Notebook: 20016, 4185	Taiwan	Parts and Labor - 1 year Battery pack - 1 year	3, 4
	India, China (Hong Kong S.A.R.), China (Macau S.A.R.)		1, 4
	United States of America, Canada		1, 3
	Indonesia, Malaysia, Singapore, Thailand, Philippines, Vietnam, South Africa, Australia, New Zealand, France, Mexico		1, 3 or 4
	Russia, Ukraine, the Republic of Kazakhstan		4
	Poland, Turkey		1, 3 or 4

If required, your Service Provider will provide repair or exchange service depending on the type of warranty service specified for your product and the available service. Scheduling of service will depend upon the time of your call, parts availability, and other factors.

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A warranty period of three (3) years on parts and one (1) year on labor means that Lenovo will provide warranty service without charge for:

- a. parts and labor during the first year of the warranty period (or a longer period as required by law); and
- b. parts only, on an exchange basis, in the second and third years of the warranty period. Your Service Provider will charge you for any labor provided in performance of the repair or replacement in the second and third years of the warranty period.

### ■ Types of warranty service

#### ① Customer Replaceable Unit (“CRU”) Service

Under CRU Service, your Service Provider will ship CRUs to you for installation by you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. CRUs that are easily installed by you are called Self-service CRUs, while Optional-service CRUs may require some technical skill and tools. Installation of Self-service CRUs is your responsibility. You may request that a Service Provider install Optional-service CRUs under one of the other types of warranty service designated for your product. An optional service offering may be available for purchase from Lenovo to have Lenovo install Self-service CRUs for you. You may find a list of CRUs and their designation in the publication that ships with your product or at [www.lenovo.com/CRUs](http://www.lenovo.com/CRUs). The requirement to return a defective CRU, if any, will be specified in the materials shipped with a replacement CRU. When return is required: 1) return instructions, a prepaid return shipping label, and a container will be included with the replacement CRU; and 2)

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you may be charged for the replacement CRU if your Service Provider does not receive the defective CRU within thirty (30) days of your receipt of the replacement.

### ② On-site Service

Under On-Site Service, your Service Provider will either repair or exchange the product at your location. You must provide a suitable working area to allow disassembly and reassembly of the Lenovo product. For some products, certain repairs may require your Service Provider to send the product to a designated service center.

### ③ Courier or Depot Service

Under Courier or Depot Service, your product will be repaired or exchanged at a designated service center, with shipping arranged by your Service Provider. You are responsible for disconnecting the product. A shipping container will be provided to you for you to return your product to a designated service center. A courier will pick up your product and deliver it to the designated service center. Following its repair or exchange, the service center will arrange the return delivery of the product to you.

### ④ Customer Carry-In or Mail-In Service

Under Customer Carry-In or Mail-In Service, your product will be repaired or exchanged at a designated service center, with delivery or shipping arranged by you. You are responsible to deliver or mail, as your Service Provider specifies, (prepaid by you unless specified otherwise) the product, suitably packaged to a designated location. After the product has been repaired or exchanged, it will be made available for your collection. Failure to collect the product may result in your Service Provider disposing of the

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product as it sees fit. For Mail-in Service, the product will be returned to you at Lenovo's expense, unless your Service Provider specifies otherwise.

### 5 Product Exchange Service

Under Product Exchange Service, Lenovo will ship a replacement product to your location. You are responsible for its installation and verification of its operation. The replacement product becomes your property in exchange for the failed product, which becomes the property of Lenovo. You must pack the failed product in the shipping carton used to ship the replacement product and return it to Lenovo. Transportation charges, both ways, are paid by Lenovo. Failure to use the carton in which the replacement product was received may result in your responsibility for damage to the failed product during shipment. You may be charged for the replacement product if Lenovo does not receive the failed product within thirty (30) days of your receipt of the replacement product.

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### Lenovo warranty service telephone numbers

#### Warranty Service Telephone Numbers

The phone numbers provided below are correct as of the time of printing and are subject to change without notice. For the latest warranty service contact telephone number in a country please contact Lenovo, or your reseller in your country.

▪ Singapore	800 6012 047
▪ Malaysia	1800 18 2388
▪ Thailand	1800 06 0087
▪ Indonesia	001 803 0601 2003
▪ Philippines	1800 111 00724
▪ Vietnam	1800 1528
▪ India Toll free	1800 113324
	Alternate No. 011-26388288
	SMS 9900173324
▪ P.R.China	400-810-8888
▪ Hong Kong	(852) 2516-3919
▪ Taiwan	(886) 0800-000-702
▪ Macau	0800-689
▪ United States	1-877-453-6686
▪ Canada	1-877-453-6686
▪ Mexico	1-800-92536686
▪ France	0826-536-686

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▪ South Africa	0861-536-686
▪ Australia	1300 557 073
▪ New Zealand	0800 446 833
▪ Russia Toll free	8-800-700-7888
	Alternate No. +7-(495) 662-7888
▪ Ukraine	+38 044 458-38-70
▪ the Republic of Kazakhstan	+7 (727) 2971150 +7 (727) 2971160
▪ Poland	0800-702-062
▪ Turkey	Refer to <a href="http://consumersupport.lenovo.com/tr">http://consumersupport.lenovo.com/tr</a>

Additionally, you can find support information, and updates, including service phone numbers for unlisted countries on the Lenovo Web site located at: <http://consumersupport.lenovo.com>.

## Appendix B. Customer Replaceable Units (CRUs)

Customer Replaceable Units (CRUs) are computer parts that can be upgraded or replaced by the customer. There are two types of CRUs: *internal* and *external*. External CRUs are easy to install, whereas internal CRUs require some technical skills and in some cases might require tools such as a screwdriver. However, both internal and external CRUs are safe for removal by the customer.

Customers are responsible for replacing all external CRUs. Internal CRUs can be removed and installed by customers or by a Lenovo service technician during the warranty period.

Your computer contains the following types of external CRUs:

- **External CRUs (pluggable):** These CRUs unplug from the computer. Examples of these types of CRUs include the AC adapter and power cord.
- **External CRUs with latches:** These CRUs include a latch to help you remove and replace the part. Examples of these types of CRUs include the notebook main battery, an optical drive, a hard-disk drive, and an extended battery.

Your computer contains the following types of internal CRUs:

- **Internal CRUs (located behind an access panel):** These CRUs are isolated parts within the computer that are concealed by an access panel that is typically secured by either one or two screws. Once the access panel is removed, only the specific CRU is visible. Examples of these types of CRUs include memory modules and hard disk drives.
- **Internal CRUs (located within the product):** These CRUs are accessible only by opening the computer's outer case. Examples of these CRUs include PCI Express Mini Cards and the integrated keyboard.

## Appendix C. Specifications

### ■ Specifications

<b>Size</b>	▪ Approximate 390 mm × 260 mm × 26 mm
<b>Environment</b>	<ul style="list-style-type: none"><li>▪ Temperature<ul style="list-style-type: none"><li>– Operating with no optical disc in the drive: 5°C to 35°C (41°F to 95°F)</li><li>– Operating with an optical disc in the drive: 10°C to 35°C (50°F to 95°F)</li><li>– Storage: -20°C to 60°C (-4°F to 140°F)</li></ul></li><li>▪ Relative humidity:<ul style="list-style-type: none"><li>– Operating with no optical disc in the drive: 8% to 95%</li><li>– Operating with an optical disc in the drive: 8% to 80%</li></ul></li></ul>
	<b>◆ Note:</b> When you charge the battery pack, its temperature must be at least 10°C (50°F).

## Appendix C. Specifications

### Power source (AC adapter)

- Input rating of the AC adapter: 100-240 V ac, 50 to 60 Hz
- 65 W (with integrated graphics card)/90 W (with discrete graphics card)

❖ **Note:**

For models with discrete graphics card, the supplied 90 W AC adapter with the unit is recommended. Otherwise, it will cause AC adapter overheating or machine malfunction.

### Battery pack

- Lithium-ion (Li-Ion) battery pack
  - Nominal voltage: 11.1 V dc
  - Capacity: 42 Wh

## Appendix D. Notices

### ■ Notices

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## Appendix D. Notices

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Any references in this publication to non-Lenovo 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 Lenovo product, and use of those Web sites is at your own risk.

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through

## Appendix D. Notices

extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

The software interface and hardware configuration described in all the manuals included with your computer may not match the actual configuration of the computer you purchased.

### ■ Export classification notice

This product is subject to the United States Export Administration Regulations (EAR) and has an Export Classification Control Number (ECCN) of 4A994.b. It can be re-exported except to any of the embargoed countries in the EAR E1 country list.

### ■ Television output notice

The following notice applies to models that have the factory-installed television-output feature.

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

## Appendix D. Notices

### ■ Wireless related information

#### ■ Wireless interoperability

Wireless LAN PCI Express Mini Card is designed to be interoperable with any wireless LAN product that is based on Direct Sequence Spread Spectrum (DSSS), Complementary Code Keying (CCK), and/or Orthogonal Frequency Division Multiplexing (OFDM) radio technology, and is compliant to:

- The IEEE 802.11a/b/g/n Standard on Wireless LANs, as defined and approved by the Institute of Electrical and Electronics Engineers.
- The Wireless Fidelity (WiFi) certification as defined by the Wi-Fi Alliance.

*Bluetooth* Daughter Card is designed to be interoperable with any *Bluetooth* product that is compliant to *Bluetooth* Specification 2.0 + EDR as defined by the *Bluetooth* SIG. Following profiles are supported by *Bluetooth* Daughter Card:

- 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

## Appendix D. Notices

- Synchronization
- Audio Gateway
- Headset
- Printer
- Human Interface Devices (Keyboard/Mouse)
- Basic Image
- Handsfree
- AV

### ■ Usage environment and your health

Wireless LAN PCI Express Mini Card 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.

Due to the fact that wireless LAN PCI Express Mini Card and *Bluetooth* Daughter Card operate within the guidelines found in radio frequency safety standards and recommendations, Lenovo 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 PCI Express Mini Card 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:

## Appendix D. Notices

- 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 PCI Express Mini Card or *Bluetooth* Daughter Card prior to turning on the computer.

## Appendix D. Notices

### ■ TV tuner information

#### ■ Products with television tuner options installed

The notice below applies to products containing television (TV) tuner devices that connect to external antennas or to cable/CATV systems, or both, and that are intended to be installed in North America. Users and installers in other countries should follow local codes and ordinances when installing appliances that connect to external antennas and cable/CATV systems. If local codes are not applicable, it is recommended that users/installers follow guidelines similar to those that follow.

The TV tuner should connect to TNV-1 circuit only.

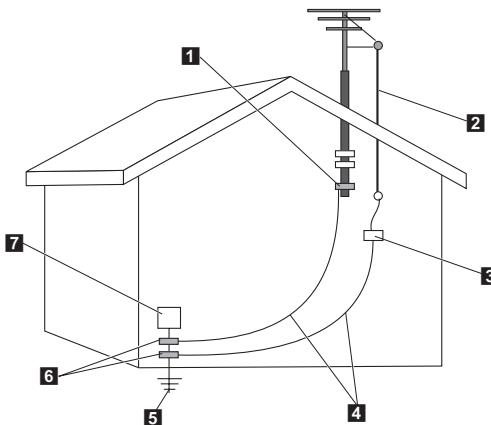
When install the coaxial cable to the TV tuner should make sure its metal shield is reliable connected to protective earthing system of the building.

#### ■ Note to CATV system installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the National Electrical Code (NEC) that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close as possible to the point of cable entry as practical.

## Appendix D. Notices

### ■ Example of antenna grounding



<b>1</b>	Ground clamp	<b>5</b>	Power service grounding electrode system (NEC Article 250, Part H)
<b>2</b>	Antenna lead-in wire	<b>6</b>	Ground clamps
<b>3</b>	Antenna discharge unit (NEC Section 810-20)	<b>7</b>	Electronic service equipment
<b>4</b>	Grounding conductors (NEC Section 810-21)		

## Appendix D. Notices

The following notice applies to all countries and regions:

**\* Danger:**

▪ **Outdoor antenna grounding**

If an outside antenna or cable system is connected to the equipment, be sure the antenna or cable system is grounded as to provide some protection against voltage surges and built-up static charges.

▪ **Lightning**

For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video product due to lightning and power line surges.

▪ **Power lines**

An outside antenna system should not be located in the vicinity of overhead power lines or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them may be fatal.

## Appendix D. Notices

### ■ Electronic emissions notices

The following information refers to Lenovo IdeaPad Y650, machine type 20016 4185.

#### ■ Federal Communications Commission (FCC) Statement

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 guaranteed the 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 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 Lenovo authorized dealers. Lenovo is not responsible for any radio or television interference caused by using other than

## Appendix D. Notices

recommended cables or 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:

Lenovo (United States) Incorporated  
1009 Think Place - Building One  
Morrisville, NC 27650  
U.S.A.  
Telephone: (919) 294-5900



### ■ 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 conforme à la norme NMB-003 du Canada.

## Appendix D. Notices

### ■ German Class B Compliance Statement

Deutschsprachiger EU Hinweis:

#### **Hinweis für Geräte der Klasse B EU-Richtlinie zur Elektromagnetischen Verträglichkeit**

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG (früher 89/336/EWG) zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse B ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der Lenovo empfohlene Kabel angeschlossen werden. Lenovo übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der Lenovo verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der Lenovo gesteckt/eingebaut werden.

#### **Deutschland:**

#### **Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Betriebsmittein**

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln" EMVG (früher "Gesetz über die elektromagnetische Verträglichkeit von Geräten"). Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG (früher 89/336/EWG) in der Bundesrepublik Deutschland.

## Appendix D. Notices

**Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln, EMVG vom 20. Juli 2007 (früher Gesetz über die elektromagnetische Verträglichkeit von Geräten), bzw. der EMV EG Richtlinie 2004/108/EC (früher 89/336/EWG), für Geräte der Klasse B.**

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen. Verantwortlich für die Konformitätserklärung nach Paragraf 5 des EMVG ist die Lenovo (Deutschland) GmbH, Gropiusplatz 10, D-70563 Stuttgart.

Informationen in Hinsicht EMVG Paragraf 4 Abs. (1) 4:  
**Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse B.**

## Appendix D. Notices

### ■ European Union Compliance Statement Class B Compliance

#### European Union - Compliance to the Electromagnetic Compatibility Directive

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. Lenovo cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the installation of option cards from other manufacturers.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Properly shielded and grounded cables and connectors must be used in order to reduce the potential for causing interference to radio and TV communications and to other electrical or electronic equipment. Such cables and connectors are available from Lenovo authorized dealers. Lenovo cannot accept responsibility for any interference caused by using other than recommended cables and connectors.

## Appendix D. Notices

### ■ Japanese VCCI Class B Statement

この装置は、情報処理装置等電波障害自主規制協議会（V C C I）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って、正しい取り扱いをして下さい。

### ■ Japan Compliance Statement for Power line Harmonics

A statement of compliance to the IEC 61000-3-2 harmonics standard is required for all products connecting to the power mains and rated less than 20A per phase.

日本の定格電流が 20A/相 以下の機器に対する高調波電流規制

高調波電流規格 JIS C 61000-3-2 適合品

### ■ Korea Class B

이 기기는 가정용으로 전자파적합등록을 한 기기로서 주거 지역에서는 물론 모든 지역에서 사용할 수 있습니다.

## Appendix D. Notices

### ■ WEEE and recycling statements

#### ■ General recycling statement

Lenovo encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. Lenovo offers a variety of programs and services to assist equipment owners in recycling their IT products. Information on product recycling offerings can be found on Lenovo's Internet site at  
<http://www.pc.ibm.com/ww/lenovo/about/environment>

## Appendix D. Notices

### EU WEEE Statements

The Waste Electrical and Electronic Equipment (WEEE) mark applies only to countries within the European Union (EU) and Norway. Appliances are labeled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.

Users of electrical and electronic equipment (EEE) with the WEEE marking per Annex IV of the WEEE Directive must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to them for the return, recycle, recovery of WEEE and minimize any potential effects of EEE on the environment and human health due to the presence of hazardous substances. For additional WEEE information go to:  
<http://consumersupport.lenovo.com>.

## Appendix D. Notices

### ■ Japan Recycling Statements

#### ■ Collecting and Recycling a Disused Lenovo Computer or Monitor

If you are a company employee and need to dispose of a Lenovo computer or monitor that is the property of the company, you must do so in accordance with the Law for Promotion of Effective Utilization of Resources. Computers and monitors are categorized as industrial waste and should be properly disposed of by an industrial waste disposal contractor certified by a local government. In accordance with the Law for Promotion of Effective Utilization of Resources, Lenovo Japan provides, through its PC Collecting and Recycling Services, for the collecting, reuse, and recycling of disused computers and monitors. For details, visit the Lenovo Web site at

[www.ibm.com/jp/pc/service/recycle/pcrecycle](http://www.ibm.com/jp/pc/service/recycle/pcrecycle)  
<http://www.ibm.com/jp/pc/service/recycle/pcrecycle>

Pursuant to the Law for Promotion of Effective Utilization of Resources, the collecting and recycling of home-used computers and monitors by the manufacturer was begun on October 1, 2003. This service is provided free of charge for home-used computers sold after October 1, 2003. For details, visit the Lenovo Web site at

[www.ibm.com/jp/pc/service/recycle/personal](http://www.ibm.com/jp/pc/service/recycle/personal)  
<http://www.ibm.com/jp/pc/service/recycle/personal>

## Appendix D. Notices

### ■ Disposing of a Lenovo Computer Components

Some Lenovo computer products sold in Japan may have components that contain heavy metals or other environmental sensitive substances. To properly dispose of disused components, such as a printed circuit board or drive, use the methods described above for collecting and recycling a disused computer or monitor.

### ■ Disposing a Disused Battery Pack from Lenovo Notebook Computers

Your Lenovo notebook computer has a lithium ion battery pack or a nickel metal hydride battery pack. If you are a company employee who uses a Lenovo notebook computer and need to dispose of a battery pack, contact the proper person in Lenovo sales, service, or marketing, and follow that person's instructions. You also can refer to the instructions at  
[www.ibm.com/jp/pc/environment/recycle/battery](http://www.ibm.com/jp/pc/environment/recycle/battery)  
<http://www.ibm.com/jp/pc/environment/recycle/battery>

If you use a Lenovo notebook computer at home and need to dispose of a battery pack, you must comply with local ordinances and regulations. You also can refer to the instructions at  
[www.ibm.com/jp/pc/environment/recycle/battery](http://www.ibm.com/jp/pc/environment/recycle/battery)  
<http://www.ibm.com/jp/pc/environment/recycle/battery>

## Appendix D. Notices

### ■ Notice for Users in the U.S.A.

#### California Perchlorate Information:

Products containing CR (manganese dioxide) lithium coin cell batteries may contain perchlorate.

Perchlorate Material — special handling may apply.

See <http://www.dtsc.ca.gov/hazardouswaste/perchlorate>.

### ■ Notice on deleting data from your hard disk

As computers spread into every corner of life, they process more and more information. The data on your computer, some of it sensitive, is stored on a storage device called the hard disk. Before you dispose of, sell, or hand over your computer, you need to delete that data.

Handing your computer over to someone else without deleting the loaded software, such as operating systems and application software, may even violate License Agreements. You are advised to check the terms and conditions of those Agreements.

Deleting the data from the hard disk is not easy.

There are methods that seem to delete the data:

- Move the data to the recycle bin, and then choose the Empty recycle bin command.
- Use the Delete command.
- Format your hard disk, using the software for initializing it.

## Appendix D. Notices

- Using the preinstalled recovery program, bring the hard disk back to factory-ship state.

These operations, however, only change the file allocation of the data; they do not delete the data itself. In other words, the data retrieval processing is disabled under an operating system such as Windows. The data is still there, even though it seems to be lost. Thus, it is sometimes possible to read the data by use of special software for data recovery. There is a risk that people of bad faith may read and misuse the critical data on hard disks for unexpected purposes.

To prevent the leakage of data, it becomes very important that you take responsibility for deleting all the data from the hard disk when you dispose of, sell, or hand over your computer. You can destroy the data physically by smashing the hard disk with a hammer, or magnetically by means of strong magnetic power, thus making the data unreadable. But we recommend that you make use of the software (payware) or service (pay service) specifically developed for the purpose.

## Appendix D. Notices

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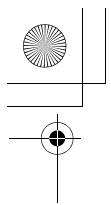
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