

# Lenovo Desktop Important Product Information Guide

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# Contents

<b>Important safety information .....</b>	<b>1</b>
Conditions that require immediate action .....	2
General safety guidelines .....	3
Electrical current safety information .....	10
Lithium battery notice.....	11
Modem safety information.....	11
Laser compliance statement .....	12
Power supply statement .....	12
Power cord notice.....	13
Products with television tuner options installed.....	14
Data safety.....	15
Cleaning and maintenance.....	16
Using headphones or earphones .....	16
Plastic bag notice .....	17
Tip-over hazard prevention notice .....	17
Additional safety information .....	18
Important safety information for service technicians .....	21
<b>Using the computer hardware .....</b>	<b>32</b>
Basic connector instructions .....	32
5.1 Audio configuration instructions .....	33
7.1 Audio configuration instructions .....	34
<b>Touch screen instructions .....</b>	<b>36</b>
Touch screen calibration .....	36

Using touch screen .....	36
<b>Troubleshooting and confirming setup.....</b>	<b>38</b>
Solving problems .....	38
Troubleshooting display problems .....	38
Troubleshooting audio problems .....	39
Troubleshooting software problems.....	40
Troubleshooting problems with optical drives and hard disks .....	40
Special considerations for troubleshooting Windows.....	41
Windows help system.....	42
BIOS setup utility .....	42
Performing daily maintenance tasks .....	43
<b>Service and support information .....</b>	<b>44</b>
Downloading publications .....	44
<b>Lenovo limited warranty.....</b>	<b>45</b>
Part 1 – General terms .....	45
Part 2 – Country-specific terms.....	49
Part 3 – Warranty service information .....	53
<b>Notices.....</b>	<b>55</b>
Declaration.....	55
Electronic emissions notices .....	56
Regulatory information .....	60
Compliance information .....	60
China RoHS.....	60
Taiwan RoHS .....	61
Turkish statement of compliance.....	62
Ukraine RoHS statement.....	62
India RoHS statement.....	62

Waste electrical and electronic equipment (WEEE) notices .....	63
Eurasian compliance mark .....	66
Energy Star Statement .....	66
Enabling ErP compliance mode .....	67
Export Classification Notice.....	68
<b>Legal notices .....</b>	<b>69</b>
Trademarks.....	69

# Important safety information

**NOTE:**

Please read important safety information first.

This information can help you safely use your desktop or notebook personal computer. Follow and retain all information included with your computer. The information in this document does not alter the terms of your purchase agreement or the Lenovo™ Limited Warranty. For more information, refer to “Lenovo Limited Warranty.”

Customer safety is important. Our products are developed to be safe and effective. However, personal computers are electronic devices. Power cords, power adapters, and other features can create potential safety risks that can result in physical injury or property damage, especially if misused. To reduce these risks, follow the instructions included with your product, observe all warnings on the product and in the operating instructions, and review the information included in this document carefully. By carefully following the information contained in this document and provided with your product, you can help protect yourself from hazards and create a safer computer work environment.

**NOTE:**

This information includes references to power adapters and batteries. In addition to notebook computers, some products (such as speakers and monitors) ship with external power adapters. If you have such a product, this information applies to your product. In addition, computer products contain a coin-sized internal battery that provides power to the system clock even when the computer is unplugged, so the battery safety information applies to all computer products.

# Conditions that require immediate action

Products can become damaged due to misuse or neglect. Some product damage is serious enough that the product should not be used again until it has been inspected and, if necessary, repaired by an authorized servicer.

As with any electronic device, pay close attention to the product when it is turned on.

On very rare occasions, you might notice an odor or see a puff of smoke or sparks vent from your product, or you might hear sounds like popping, cracking, or hissing. This might just mean that an internal electronic component has failed in a safe and controlled manner. However, they might indicate a potential safety issue. Do not take risks or attempt to diagnose the situation yourself. Contact the Customer Support Center for further guidance.

Frequently inspect your computer and its components for damage, wear, or signs of danger. If you have any question about the condition of a component, do not use the product. Contact the Customer Support Center or the product manufacturer for instructions on how to inspect the product and have it repaired if necessary.

In the unlikely event that you notice any of the following, or if you have any safety concerns with your product, stop using the product and unplug it from the power source and telecommunication lines until you can speak to the Customer Support Center for further guidance.

- Power cords, plugs, power adapters, extension cords, surge protectors, or power supplies that are cracked, broken, or damaged.
- Signs of overheating, smoke, sparks, or fire.
- Damage to a battery (such as cracks, dents, or creases), discharge from a battery, or a buildup of foreign substances on the battery.
- A cracking, hissing, or popping sound, or strong odor that comes from the product.
- Signs that liquid has been spilled or an object has fallen onto the computer product, the power cord, or power adapter.
- The computer product, power cord, or power adapter has been exposed to water.
- The product has been dropped or damaged in any way.
- The product does not operate normally when you follow the operating instructions.

**NOTE:**

If you notice any of the above with a product (such as an extension cord) that is not manufactured for or by Lenovo, stop using that product until you can contact the product manufacturer for further instructions, or until you get a suitable replacement.

# General safety guidelines

Always observe the following precautions to reduce the risk of injury and property damage.

## ■ Service and upgrades

Do not attempt to service a product yourself unless instructed to do so by the Customer Support Center or your documentation. Only use a service provider who is approved to repair your particular product.

**NOTE:**

Some computer parts can be upgraded or replaced by the customer. Upgrades typically are referred to as options. Replacement parts approved for customer installation are referred to as Customer Replaceable Units, or CRUs. Lenovo provides documentation with instructions when it is appropriate for customers to install options or replace CRUs. You must closely follow all instructions when installing or replacing parts. The Off state of a power indicator does not necessarily mean that voltage levels inside a product are zero. Before you remove the covers from a product equipped with an ac power cord, always make sure that the power is turned off and that the product is unplugged from any power source. If you have any questions or concerns, contact the Customer Support Center.



After replacing a CRU, reinstall all protective covers, including the computer cover, before connecting power and operating the computer. This action is important to help prevent unexpected electrical shock and help ensure the containment of an unexpected fire that could happen under extremely rare conditions.

Although there are no moving parts in your computer after the power cord has been disconnected, the following warnings are required for your safety.



**CAUTION:**

Hazardous moving parts. Keep fingers and other body parts away.





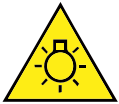
**CAUTION:**

Avoid contact with hot components inside the computer. During operation, some components become hot enough to burn the skin. Before you open the computer cover, turn off the computer, disconnect power, and wait ten minutes for the components to cool down.

■ **Hazardous energy statement**



Disconnect all power cords from electrical outlets before removing the computer cover or any part that has the above label attached.



**CAUTION:**

Bright Light, possible skin or eye damage. Disconnect power before servicing.



**CAUTION:**

Infrared Light, possible skin or eye damage. Disconnect power before servicing.



**CAUTION:**

When replacing CRUs, be cautious of sharp edges or corners that might cause injury. If you suffer an injury, seek medical care immediately.

## ■ Static electricity prevention

Static electricity, although harmless to you, can seriously damage computer components and options. Improper handling of static-sensitive parts can cause damage to the part. When you unpack an option or CRU, do not open the static-protective package containing the part until the instructions direct you to install it.

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.
- When 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.

## ■ Power cords and power adapters

Use only the power cords and power adapters supplied by the product manufacturer.

The power cords must be safety approved. For Germany, it must be H05VV-F, 3G, 0.75 mm<sup>2</sup>, or better. For other countries, the suitable types must be used accordingly.

Never wrap a power cord around a power adapter or other object. Doing so can stress the cord in ways that can cause the cord to fray, crack, or crimp. This can present a safety hazard.

Always route power cords so that they will not be walked on, tripped over, or pinched by objects.

Protect power cords and power adapters from liquids. For instance, do not leave your power cord or power adapter near sinks, tubs, toilets, or on floors that are cleaned with liquid cleansers. Liquids can cause a short circuit, particularly if the power cord or power adapter has been stressed by misuse. Liquids also can cause gradual corrosion of power cord terminals and/or the connector terminals on a power adapter, which can eventually result in overheating.

Always connect power cords and signal cables in the correct order and ensure that all power cord connectors are securely and completely plugged into receptacles. Do not use any power adapter that shows corrosion at the ac input pins or shows signs of overheating (such as deformed plastic) at the ac input or anywhere on the power adapter.

Do not use any power cords where the electrical contacts on either end show signs of corrosion or overheating or where the power cord appears to have been damaged in any way.



## ■ Voltage selection switch

Some computers are equipped with a voltage selection switch located near the power cord connection point on the computer. If your computer has a voltage selection switch, ensure that you set the switch to match the voltage available at your electrical outlet. Setting the voltage selection switch incorrectly can cause permanent damage to the computer.

In some extreme cases, choosing the wrong voltage range could potentially cause explosion or fire.

If your computer does not have a voltage selection switch, your computer is designed to operate only at the voltage provided in the country or region where the computer was originally purchased.

If you relocate your computer to another country, be aware of the following:

- If your computer does not have a voltage selection switch, do not connect the computer to an electrical outlet until you have verified that the voltage provided is the same as it was in the country or region where the computer was originally purchased.
- If your computer has a voltage selection switch, do not connect the computer to an electrical outlet until you have verified that the voltage selection switch is set to match the voltage provided in that country or region.

If you are not sure of the voltage provided at your electrical outlet, contact your local electric company or refer to official Web sites or other literature for travelers to the country or region where you are located.

## ■ Extension cords and related devices

Ensure that extension cords, surge protectors, uninterruptible power supplies, and power strips that you use are rated to handle the electrical requirements of the product. Never overload these devices. If power strips are used, the load should not exceed the power strip input rating. Consult an electrician for more information if you have questions about power loads, power requirements, and input ratings.

## ■ Plugs and outlets

If a receptacle (power outlet) that you intend to use with your computer equipment appears to be damaged or corroded, do not use the outlet until it is replaced by a qualified electrician.

Do not bend or modify the plug. If the plug is damaged, contact the manufacturer to obtain a replacement.

Do not share an electrical outlet with other home or commercial appliances that draw large amounts of electricity; otherwise, unstable voltage might damage your computer, data, or attached devices.

Some products are equipped with a three-pronged plug. This plug fits only into a grounded electrical outlet. This is a safety feature. Do not attempt to circumvent this safety feature by trying to insert the plug into a non-grounded outlet. If you cannot insert the plug into the outlet, contact an electrician for an approved outlet adapter or to replace the outlet with one that enables this safety feature. Never overload an electrical outlet. The overall system load should not exceed 80% of the branch circuit rating. Consult an electrician for more information if you have questions about power loads and branch circuit ratings. Be sure that the power outlet you are using is properly wired, easily accessible, and located close to the equipment. Do not fully extend power cords in a way that will stress the cords.

Be sure that the power outlet provides the correct voltage and current for the product you are installing.

Carefully connect and disconnect the equipment from the electrical outlet.

## ■ External devices

Do not connect or disconnect any external device cables other than USB and 1394 cables while the computer power is on; otherwise, you might damage your computer. To avoid possible damage to attached devices, wait at least five seconds after the computer is shut down to disconnect external devices.

## ■ Batteries

All personal computers manufactured by Lenovo contain a non-rechargeable coin cell battery to provide power to the system clock. In addition, many mobile products, such as notebook computers, utilize a rechargeable battery pack to provide system power when in portable mode. Batteries supplied by Lenovo for use with your product have been tested for compatibility and should only be replaced with approved parts.

Never attempt to open or service any battery. Do not crush, puncture, or incinerate batteries or short circuit the metal contacts. Do not expose the battery to water or other liquids. Do not put it in fire or hot oven. Do not leave it in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable

liquid or gas. Do not leave it in an extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas. Only recharge the battery pack strictly according to the instructions included in the product documentation.

Battery abuse or mishandling can cause the battery to overheat, which can cause gasses or flame to “vent” from the battery pack or coin cell. If your battery is damaged, or if you notice any discharge from your battery or buildup of foreign materials on the battery leads, stop using the battery and obtain a replacement from the battery manufacturer.

Batteries can degrade when they are left unused for long periods of time. For some rechargeable batteries (particularly lithium ion batteries), leaving a battery unused in a discharged state could increase the risk of a battery short circuit. This could shorten the life of the battery and can also pose a safety hazard. Do not let rechargeable lithium ion batteries completely discharge or store these batteries in a discharged state.



## ■ Heat and product ventilation

Computers, ac adapters, and many accessories can generate heat when turned on and when batteries are charging. Always follow these basic precautions:

- Do not leave your computer, ac adapter, or accessories in contact with your lap or any part of your body for an extended period when the products are functioning or when the battery is charging. Your computer, ac adapter, and many accessories produce some heat during normal operation. Extended contact with the body could cause discomfort or, potentially, a skin burn.
- Do not charge the battery or operate your computer, ac adapter, or accessories near flammable materials or in explosive environments.
- Ventilation slots, fans, and heat sinks are provided with the product for safety, comfort, and reliable operation. These features might inadvertently become blocked by placing the product on a bed, sofa, carpet, or other flexible surface. Never block, cover, or disable these features.

Inspect your desktop computer for dust accumulation at least once every three months. Before inspecting your computer, turn off the power and unplug the computer's power cord from the electrical outlet; then remove any dust from vents and perforations in the bezel. If you notice external dust accumulation, examine and remove dust from the inside of the computer including heat sink inlet fins, power supply vents, and fans. Always turn off and unplug the computer before opening the cover. If possible, avoid operating your computer within 2 feet of high-traffic areas. If you must operate your computer in or near a high-traffic area, inspect and if necessary clean your computer more frequently.

For your safety and to maintain optimum computer performance, always follow these basic precautions with your desktop computer:

- Keep the cover closed whenever the computer is plugged in.
- Regularly inspect the outside of the computer for dust accumulation.
- Remove dust from vents and any perforations in the bezel. More frequent cleanings might be required for computers in dusty or high-traffic areas.
- Do not restrict or block any ventilation openings.
- Do not store or operate your computer inside furniture, as this might increase the risk of overheating.
- Airflow temperatures into the computer should not exceed 35°C (95°F).
- Do not use non-desktop air filtration devices.

## ■ Operating environment

The optimal environment in which to use your computer is 10°C-35°C (50°F-95°F) with humidity ranging between 35% and 80%. If your computer is stored or transported in temperatures less than 10°C (50°F), allow the cold computer to rise slowly to an optimal operating temperature of 10°C-35°C (50°F-95°F) before use. This process could take two hours in extreme conditions. Failure to allow your computer to rise to an optimal operating temperature before use could result in irreparable damage to your computer. If possible, place your computer in a well-ventilated and dry area without direct exposure to sunlight.

Keep electrical appliances such as electric fans, radios, high-powered speakers, air conditioners, and microwave ovens away from your computer because the strong magnetic fields generated by these appliances can damage the monitor and data on the hard disk drive.

Do not place any beverages on top of or beside the computer or other attached devices. If liquid is spilled on or in the computer or an attached device, a short circuit or other damage might occur.

Do not eat or smoke over your keyboard. Particles that fall into your keyboard can cause damage.

# Electrical current safety information



**DANGER:**

Electrical current from power, telephone, and communication cables is hazardous.

**To avoid shock hazards:**

- Do not use your computer during a lightning storm.
- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect all power cords to properly wired and grounded electrical outlets.
- Any equipment to which this product will be attached must also be connected to properly wired and grounded power outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications cables, network cables, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.

<b>To connect:</b>	<b>To disconnect:</b>
1. Turn everything OFF.	1. Turn everything OFF.
2. Attach all cables to devices.	2. Remove power cords from outlets.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlets.	4. Remove all cables from devices.
5. Turn device ON.	

# Lithium battery notice



**DANGER:**

Danger of explosion if battery is incorrectly replaced.

When replacing the lithium coin-cell battery, use only the same type or equivalent type that is recommended by the manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of. Swallowing the lithium coin-cell battery will cause choking or severe internal burns in just two hours and might even result in death. Keep batteries away from children. If the lithium coin-cell battery is swallowed or placed inside any part of the body, seek medical care immediately.

**Do not:**

- Throw or immerse into water
- Heat to more than 100°C (212°F)
- Repair or disassemble

Dispose of the battery as required by local ordinances or regulations.

The following statement applies to users in the state of California, U.S.A.

Perchlorate material: Special handling may apply. See [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate).

## Modem safety information

**CAUTION:**

To reduce the risk of fire, use only No. 26 AWG or larger (for example, No. 24 AWG) telecommunication line cord listed by Underwriters Laboratories (UL) or certified by the Canadian Standards Association (CSA).

To reduce the risk of fire, electrical shock, or injury when using telephone equipment, always follow basic safety precautions, such as:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.



- Avoid using a telephone (other than a cordless type) during an electrical storm. There is a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.

## Laser compliance statement



### CAUTION:

When laser products (such as CD-ROMs, DVD drives, fiber optic devices, or transmitters) are installed, note the following:

- **Do not remove the covers.** Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of controls, adjustments, or performance of procedures other than those specified herein might result in hazardous radiation exposure.



### DANGER:

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

## Power supply statement

Never remove the cover on a power supply or any part that has the following label attached.



Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

# Power cord notice

**NOTE:****Power cord and adapter**

The power cord and adapter provided with this product are intended to be used with this product only. Do not use them with any other products.

For your safety, Lenovo provides a power cord with a grounded attachment plug to use with this product. To avoid electrical shock, always use the power cord and plug with a properly grounded outlet.

Power cords provided by Lenovo in the United States and Canada are listed by Underwriter's Laboratories (UL) and certified by the Canadian Standards Association (CSA).

For units intended to be operated at 115 volts: Use a UL-listed and CSA-certified cord set consisting of a minimum 18 AWG, Type SVT or SJT, three-conductor cord, a maximum of 15 feet in length and a parallel blade, grounding-type attachment plug rated 10 amperes, 125 volts.

For units intended to be operated at 230 volts (U.S. use): Use a UL-listed and CSA-certified cord set consisting of a minimum 18 AWG, Type SVT or SJT, three-conductor cord, a maximum of 15 feet in length and a tandem blade, grounding-type attachment plug rated 10 amperes, 250 volts.

For units intended to be operated at 230 volts (outside the U.S.): Use a cord set with a grounding-type attachment plug. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed.

Power cords provided by Lenovo for a specific country or region are usually available only in that country or region.

For units intended to be operated in Germany: The power cords must be safety approved. For Germany, it must be H05VV-F, 3G, 0.75 mm<sup>2</sup>, or better. For other countries, the suitable types must be used accordingly.

For units intended to be operated in Denmark: Use a cord set with a grounding-type attachment plug. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed.

For units intended to be operated in Norway, Sweden, Finland: Use a cord set with a two-prong attachment plug. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed.

If you intend to use your PC in a country or region that is different from your ordering location, please purchase an additional Lenovo power cord for the country or region where the PC will be used. Refer to the power cord guide provided in our Web site, <http://support.lenovo.com>, for details. Some countries and regions support multiple voltages, so make sure you order the appropriate power cord for the intended voltage.

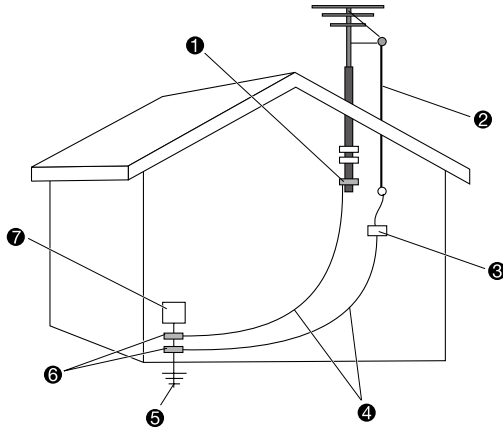
# Products with television tuner options installed

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.

## ■ 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.

## ■ Example of antenna grounding



- ❶ Ground clamp
- ❷ Antenna lead-in wire
- ❸ Antenna discharge unit (NEC Section 810-20)
- ❹ Grounding conductors (NEC Section 810-21)
- ❺ Power service grounding electrode system (NEC Article 250, Part H)
- ❻ Ground clamps
- ❼ Electronic service equipment

## ■ Special note for users in Norway

“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplek utstyr – og er tilkoplek et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet.”

## ■ Special note for users in Sweden

“Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”

The following notice applies to all countries and regions:

### **ATTENTION:**

#### **Outdoor antenna grounding**

If an outside antenna or cable system is connected to the equipment, be sure the antenna or cable system is grounded so 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 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.

## 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.

# Cleaning and maintenance

Keep your computer and workspace clean. Shut down the computer and then disconnect the power cord before cleaning the computer. Do not spray any liquid detergent directly on the computer or use any detergent containing flammable material to clean the computer. Spray the detergent on a soft cloth and then wipe the computer surfaces.



## Using headphones or earphones

If your computer has both a headphone connector and an audio-out connector, always use the headphone connector for headphones (also called headsets) or earphones. Excessive sound pressure from earphones and headphones can cause hearing loss. Adjustment of the equalizer to maximum increases the earphone and headphone output voltage and the sound pressure level. Therefore, to protect your hearing, adjust the equalizer to an appropriate level.

Excessive use of headphones or earphones for a long period of time at high volume can be dangerous if the output of the headphones or earphone connectors do not comply with specifications of EN 50332-2. The headphone output connector of your computer complies with EN 50332-2 Sub clause 7. This specification limits the computer's maximum wide band true RMS output voltage to 150 mV. To help protect against hearing loss, ensure that the headphones or earphones you use also comply with EN 50332-2 (Clause 7 limits) for a wide band characteristic voltage of 75 mV. Using headphones that do not comply with EN 50332-2 can be dangerous due to excessive sound pressure levels.

If your Lenovo computer came with headphones or earphones in the package, as a set, the combination of the headphones or earphones and the computer already complies with the specifications of EN 50332-1. If different headphones or earphones are used, ensure that they comply with EN 50332-1. (Clause 6.5 Limitation Values). Using headphones that do not comply with EN 50332-1 can be dangerous due to excessive sound pressure levels.

# Plastic bag notice

**DANGER:**

Plastic bags can be dangerous. Keep plastic bags away from babies and children to avoid danger of suffocation.

# Tip-over hazard prevention notice

The computer may cause harm to children if it is not located in an appropriate place. Follow the tips below to protect children from harm caused by the computer tipping over:

- Place the computers or monitors on sturdy furniture with a low base or furniture that has been anchored. Push the computers or monitors as far from the edge of the furniture as possible.
- Keep remote controls, toys, and other items that might attract children away from the computers or monitors.
- Keep the computer or monitor cables out the reach of the children.
- Supervise children in rooms where these safety tips have not been followed.

**CAUTION:**

Some parts of your product may be made of glass. This glass could break if the product is dropped on a hard surface or receives a substantial impact. If glass breaks, do not touch it or attempt to remove it. Stop using your product until the glass is replaced by trained service personnel.

# Additional safety information

## ■ Remote control

**CAUTION:**

Do not use rechargeable batteries in this device.

## ■ Liquid crystal display (LCD) notice

**DANGER:**

To avoid shock hazards:

- Do not remove the covers.
- Do not operate this product unless the stand is attached.
- Do not connect or disconnect this product during an electrical storm.
- The power cord plug must be connected to a properly wired and grounded power outlet.
- Any equipment to which this product will be attached must also be connected to properly wired and grounded power outlets.
- To isolate the monitor from the electrical supply, you must remove the plug from the power outlet. The power outlet should be easily accessible.

**Handling:**

- If your monitor weighs more than 18 kg (39.68 lb), we recommend that it be moved or lifted by two people.

**Product disposal (TFT monitors):**

- The fluorescent lamp in the liquid crystal display contains mercury; dispose according to local, state, or federal laws.

**Battery warnings:**

- Risk of explosion if battery is replaced by an incorrect type.
- Dispose of used batteries according to the instructions.

## ■ Your additional responsibilities

### Setting up the working environment

Select a dry and clean workplace with sufficient sunlight and excellent ventilation. Provide the computer equipment with a power socket with a grounded cable that meets your requirements.



Set the monitor and screen to be even with or slightly lower than your line of sight

Adjust the elevation of the monitor to a comfortable angle of view

Keep your wrists in a comfortable and relaxed position

Keep your forearms level with the desktop

Place your feet firmly on the floor

1. To avoid unexpected failure, ensure that the computer is operating within the scope of environmental specifications as defined below.

#### Adaptability index for product operating environment

Adaptability for power supply	220V $\pm$ 22V, 50Hz $\pm$ 1Hz (China desktops only)
	90V - 264V, 50/60Hz (Adaptive voltage positioning)
	90V - 264V, 50Hz $\pm$ 1Hz (With voltage selection switch)
Operating temperature	10°C - 35°C
Relative humidity for operation	35% - 80%
Storage & transportation temperature	-40°C - 55°C
	-20°C - 55°C (AIO)
Relative humidity for storage & transportation	20% - 93% (40°C)
Atmospheric pressure	86 kPa - 106 kPa



**WARNING:**

Powering on the computer after it has been moved from a low-temperature environment can cause irreversible damage. Leave the computer for 2 hours or longer to come up to operating temperature before starting it.

2. Select appropriate desks and chairs for operating the product. Adjust the height of furniture so that your forearms are parallel with the floor when operating the keyboard and mouse, your eyes are level with the monitor, your thighs are parallel to the floor and your feet can be placed firmly on the floor. You may also choose backrest-adjustable seats to enhance your comfort.

**WARNING:**

Using a keyboard with incorrect posture for extended periods of time may cause physical injury.

3. Avoid looking at the screen and holding the same posture for extended periods of time. We recommend changing posture frequently and looking away from the screen occasionally in order to stay relaxed and reduce eye strain. Take a short break at regular intervals (e.g. every hour) to reduce physical fatigue.

**WARNING:**

Looking at the screen for extended periods may cause eye strain or damage.

4. Avoid having sunlight or other bright light falling on the computer, especially if it would cause reflections on the screen and affect visibility. If the computer is next to a window, ensure the monitor is adequately shaded when the computer is in use.
5. The computer and monitor will emit heat while the computer is operating. The computer and monitor are equipped with cooling vents. Blocking these vents may result in system failure or damage. Ensure the computer is placed in a well-ventilated location and that the vents are not blocked. We recommend that there is a space of at least 5 cm between the computer, monitor and any other objects.

**WARNING:**

If the computer is provided with a dustproof shield, it must be removed when the computer is running or at any time before the power supply to the computer is completely switched off. Leaving the dustproof shield on will prevent heat escaping and block ventilation.

6. Keep the computer away from objects or environments which cause electromagnetic interference (EMI) such as magnets, working mobile phones and electrical appliances.

# Important safety information for service technicians

This section provides the safety information that trained service technicians must be familiar with.

## ■ General safety

Follow these rules to ensure general safety:

- Observe good housekeeping in the area of the machines during and after maintenance.
- When lifting any heavy object:
  1. Ensure you can stand safely without slipping.
  2. Distribute the weight of the object equally between your feet.
  3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
  4. Lift by standing or by pushing up with your leg muscles; this action removes the strain from the muscles in your back.

**Attention:**

Do not attempt to lift any objects that weigh more than 16 kg (35 lb) or objects that you think are too heavy for you.

- Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.
- Before you start the machine, ensure that other service representatives and the customer's personnel are not in a hazardous position.
- Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.
- Keep your tool case away from walk areas so that other people will not trip over it.
- Do not wear loose clothing that can be trapped in the moving parts of a machine. Ensure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.
- Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, approximately 8 centimeters (3 inches) from the end.
- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.

**Remember:** Metal objects are good electrical conductors.

- Wear safety glasses when you are: hammering, drilling, soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.
- After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.
- Reinstall all covers correctly before returning the machine to the customer.

**CAUTION:**



Keep fingers and other parts of your body away from hazardous, moving parts. If you suffer an injury, seek medical care immediately.

**CAUTION:**



Avoid contact with hot components inside the computer. During operation, some components become hot enough to burn the skin. Before you open the computer cover, turn off the computer, disconnect power, and wait ten minutes for the components to cool.

**CAUTION:**



After replacing a CRU, reinstall all protective covers, including the computer cover, before connecting power and operating the computer. This action is important to help prevent unexpected electrical shock and help ensure the containment of an unexpected fire that could happen under extremely rare conditions.

**CAUTION:**



When replacing CRUs, be cautious of sharp edges or corners that might cause injury. If you suffer an injury, seek medical care immediately.

## ■ Electrical safety



### CAUTION:

Electrical current from power, telephone, and communication cables can be hazardous. To avoid personal injury or equipment damage, disconnect the attached power cords, telecommunication systems, networks, and modems before you open the computer covers, unless instructed otherwise in the installation and configuration procedures.

Observe the following rules when working on electrical equipment.

**Important:** Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents. Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do not use this type of mat to protect yourself from electrical shock.

- Find the room emergency power-off (EPO) switch, disconnecting switch, or electrical outlet. If an electrical accident occurs, you can then operate the switch or unplug the power cord quickly.
- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
- Disconnect all power before:
  - Performing a mechanical inspection
  - Working near power supplies
  - Removing or installing Field Replaceable Units (FRUs)
- Before you start to work on the machine, unplug the power cord. If you cannot unplug it, power off the wall box that supplies power to the machine and lock the wall box in the off position.
- If you need to work on a machine that has exposed electrical circuits, observe the following precautions:
  - Ensure that another person, familiar with the power-off controls, is near you.  
**Remember:** Another person must be there to switch off the power, if necessary.
  - Use only one hand when working with powered-on electrical equipment; keep the other hand in your pocket or behind your back.  
**Remember:** There must be a complete circuit to cause electrical shock. By observing the above rule, you may prevent a current from passing through your body.
  - When using a tester, set the controls correctly and use the approved probe leads and accessories for that tester.
  - Stand on suitable rubber mats (obtained locally, if necessary) to insulate you from

grounds such as metal floor strips and machine frames.

- Observe the special safety precautions when you work with very high voltages; these instructions are in the safety sections of maintenance information. Use extreme care when measuring high voltages.
- Regularly inspect and maintain your electrical hand tools for safe operational condition.
- Do not use worn or broken tools and testers.
- *Never assume* that power has been disconnected from a circuit. First, check that it has been powered-off.
- Always look carefully for possible hazards in your work area. Examples of these hazards are moist floors, nongrounded power extension cables, power surges, and missing safety grounds.
- Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive; such touching can cause personal injury and machine damage.
- Do not service the following parts with the power on when they are removed from their normal operating places in a machine:
  - Power supply units
  - Pumps
  - Blowers and fans
  - Motor generatorsand similar units. (This practice ensures correct grounding of the units.)
- If an electrical accident occurs:
  - Use caution; do not become a victim yourself.
  - Switch off power.
  - Send another person to get medical aid.

## ■ Safety inspection guide

The intent of this inspection guide is to assist you in identifying potentially unsafe conditions on these products. Each machine, as it was designed and built, had required safety items installed to protect users and service personnel from injury. This guide addresses only those items. However, good judgment should be used to identify potential safety hazards due to attachment of features or options not covered by this inspection guide.

If any unsafe conditions are present, you must determine how serious the apparent hazard could be and whether you can continue without first correcting the problem.

Consider these conditions and the safety hazards they present:

- Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock).
- Explosive hazards, such as a damaged CRT face or bulging capacitor
- Mechanical hazards, such as loose or missing hardware

The guide consists of a series of steps presented in a checklist. Begin the checks with the power off, and the power cord disconnected.

Checklist:

1. Check exterior covers for damage (loose, broken, or sharp edges).
2. Power-off the computer. Disconnect the power cord.
3. Check the power cord for:
  - a. A third-wire ground connector in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and frame ground.
  - b. The power cord should be the appropriate type as specified in the parts listings.
  - c. Insulation must not be frayed or worn.
4. Remove the cover.
5. Check for any obvious alterations. Use good judgment as to the safety of any alterations.
6. Check inside the unit for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.
7. Check for worn, frayed, or pinched cables.
8. Check that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.

## ■ Handling electrostatic discharge-sensitive devices

Any computer part containing transistors or integrated circuits (ICs) should be considered sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. To protect against ESD damage, equalize the charge between objects. Then, the machine, the part, the work mat, and the person handling the part are all at the same charge.

### Notes:

1. Use product-specific ESD procedures when they exceed the requirements noted here.
2. Make sure that the ESD protective devices you use have been certified (ISO 9000) as fully effective.

When handling ESD-sensitive parts:

- Keep the parts in protective packages until they are inserted into the product.
- Avoid contact with other people while handling the part.
- Wear a grounded wrist strap against your skin to eliminate static on your body.
- Prevent the part from touching your clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.
- Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
- Select a grounding system, such as those listed below, to provide protection that

meets the specific service requirement.

**Note:** The use of a grounding system is desirable but not required to protect against ESD damage.

- Attach the ESD ground clip to any frame ground, ground braid, or green-wire ground.
- Use an ESD common ground or reference point when working on a double-insulated or battery-operated system. You can use coax or connector-outside shells on these systems.
- Use the round ground-prong of the ac plug on ac-operated computers.

## ■ Grounding requirements

Electrical grounding of the computer is required for operator safety and correct system function. Proper grounding of the electrical outlet can be verified by a certified electrician.

## ■ Safety notices (multi-lingual translations)

The caution and danger safety notices in this section are provided in the following languages:

- English
- Arabic
- Brazilian/Portuguese
- Chinese (simplified)
- Chinese (traditional)
- French
- German
- Hebrew
- Italian
- Korean
- Spanish

English



**CAUTION**

**Use safe practices when lifting.**



≥ 18 kg (37 lb)



≥ 32 kg (70.5 lb)



≥ 55 kg (121.2 lb)



**CAUTION**

**The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.**





≥55 kg (121.2 lb)



≥32 kg (70.5 lb)

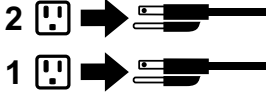


≥18 kg (37 lb)



تنبيه :

يجب استخدام ممارسات آمنة عند الرفع



تنبيه :  
لا يقرم زر التحكم في التشغيل الموجود على الجهاز والمفتاح الكهربائي الموجود على لوحة التحكم بايقاف التيار الكهربائي المار بالجهاز. قد يكون للجهاز أكثر من سلك كهربائي واحد. لايقاف التيار الكهربائي المار بالجهاز، تأكد من فصل جميع أسلاك الكهرباء من مصدر الكهرباء.



### CUIDADO

Utilize procedimentos de segurança para levantar equipamentos.



≥18 kg (37 lb)



≥32 kg (70,5 lb)

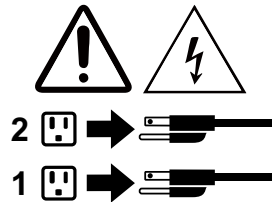


≥55 kg (121,2 lb)



### CUIDADO

O botão de controle de alimentação do dispositivo e o botão para ligar/desligar da fonte de alimentação não desligam a corrente elétrica fornecida ao dispositivo. O dispositivo também pode ter mais de um cabo de alimentação. Para remover toda a corrente elétrica do dispositivo, assegure que todos os cabos de alimentação estejam desconectados da fonte de alimentação.







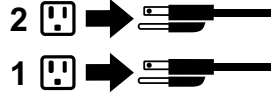
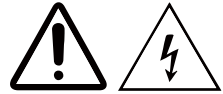
警告：  
抬起时请采取安全措施。



≥18 千克 (37 磅) ≥32 千克 (70.5 磅) ≥55 千克 (121.2 磅)



警告：  
设备上的电源控制按钮和电源上的电源开关不会切断供给该设备的电流。该设备还可能有多条电源线。要切断该设备的所有电流,请确保所有电源线都与电源断开连接。



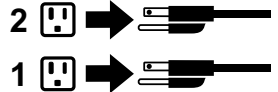
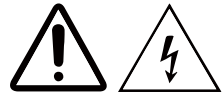
警告：  
搬運時請注意安全。



≥18 公斤 (37 磅) ≥32 公斤 (70.5 磅) ≥55 公斤 (121.2 磅)



警告：  
裝置上的電源控制按鈕及電源供應器上的電源開關，無法關閉裝置所產生的電流。該裝置可能有多條電源線。若要除去裝置流出的所有電流，請確認已切斷所有電源線的電源。



French



**ATTENTION**

**Soulevez la machine avec précaution.**



≥ 18 kg (37 lb)



≥ 32 kg (70,5 lb)



≥ 55 kg (121,2 lb)



**ATTENTION**

L'interrupteur de contrôle d'alimentation de l'unité et l'interrupteur dubloc d'alimentation ne coupent pas le courant électrique alimentant l'unité. En outre, le système peut être équipé de plusieurs cordons d'alimentation. Pour mettre l'unité hors tension, vous devez déconnecter tous les cordons de la source d'alimentation.



German



**ACHTUNG**

**Arbeitsschutzrichtlinien beim Anheben der Maschine beachten.**



≥ 18 kg (37 lb)



≥ 32 kg (70,5 lb)



≥ 55 kg (121,2 lb)



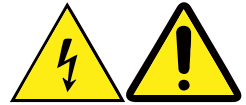
**ACHTUNG**

Mit dem Netzschalter an der Einheit und am Netzteil wird die Stromversorgung für die Einheit nicht unterbrochen. Die Einheit kann auch mit mehreren Netzkabeln ausgestattet sein. Um die Stromversorgung für die Einheit vollständig zu unterbrechen, müssen alle zum Gerät führenden Netzkabel vom Netz getrennt werden.

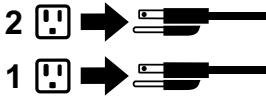
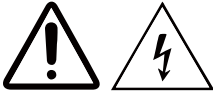




זהירות:  
השתמשו בהליכים הנאותים בעת  $\leq 18$  ק"ג (37 ליב')  $\leq 32$  ק"ג (70,5 ליב')  $\leq 55$  ק"ג (121,2 ליב')



זהירות:



לחצן ההפעלה של ההתקן ומתג ההפעלה של ספק החשמל אינם מפסיקים את זרם החשמל המסופק להתקן. בנוסף, ההתקן עשוי לכלול יותר מכבל חשמל אחד. כדי לסלק את כל הזרם החשמלי מההתקן, ודאו שכל כבלי החשמל מנותקים ממקור החשמל.



**ATTENZIONE**  
Prestare attenzione nel sollevare l'apparecchiatura.



$\geq 18$  kg (37 lb)



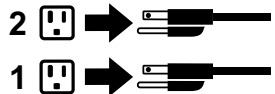
$\geq 32$  kg (70,5 lb)



$\geq 55$  kg (121,2 lb)



**ATTENZIONE**  
Il pulsante di controllo dell'alimentazione presente sull'unità e l'interruttore dell'alimentatore non disattivano l'alimentazione corrente fornita all'unità. E' possibile che l'unità disponga di più cavi di alimentazione. Per disattivare l'alimentazione dall'unità, accertarsi che tutti i cavi di alimentazione siano scollegati dalla fonte di alimentazione.





**주의:**  
제품을 들어 올릴 때 안전 규제를  
따르십시오.



≥ 18 kg (37 lb)



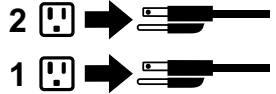
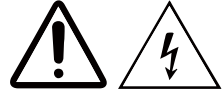
≥ 32 kg (70.5 lb)



≥ 55 kg (121.2 lb)



**주의:**  
장치의 전원 제어 버튼 및 전원 공급 장치의 전원 스위치를 사용하여  
장치에 공급되는 전기를 차단하지 마십시오. 장치는 둘 이상의 코드를  
가지고 있을 수 있습니다. 장치에서 모든 전원을 차단하려면 콘센트에서  
코드가 모두 분리되어 있는지 확인하십시오.



**PRECAUCIÓN**  
Adopte procedimientos seguros  
al levantar el equipo.



≥ 18 kg (37 lb)



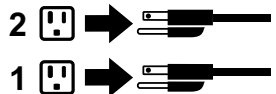
≥ 32 kg (70,5 lb)



≥ 55 kg (121,2 lb)



**PRECAUCIÓN**  
El botón de control de alimentación del dispositivo y el  
interruptor de alimentación de la fuente de  
alimentación no desconectan la corriente eléctrica  
suministrada al dispositivo. Además, el dispositivo  
podría tener más de un cable de alimentación. Para  
suprimir toda la corriente eléctrica del dispositivo,  
asegúrese de que todos los cables de alimentación  
estén desconectados de la toma de corriente.



# Using the computer hardware

**NOTE:**

The descriptions in this chapter might be different from what you see on your computer, depending on the computer model and configuration.

## Basic connector instructions

**NOTE:**

Your computer may not have all of the connectors described in this section.

Connector	Description
Microphone	Use this connector to attach a microphone to your computer when you want to record sound or if you use speech-recognition software.
Headphone	Use this connector to attach headphones to your computer when you want to listen to music or other sounds without disturbing anyone.
Audio line-in connector	Used to receive audio signals from an external audio device, such as a stereo system. When you attach an external audio device, a cable is connected between the audio line-out connector of the device and the audio line-in connector of the computer.
Audio line-out connector	Used to send audio signals from the computer to external devices, such as powered stereo speakers (speakers with built-in amplifiers), headphones, multimedia keyboards, or the audio line-in connector on a stereo system or other external recording device.
USB connector	Use this connector to attach a device that requires a USB connection.
Ethernet connector	Use this connector to attach the computer to an Ethernet-type local area network.

Connector	Description
VGA connector	Used to attach a VGA monitor or other devices that use a VGA monitor connector.
DVI connector	Used to attach a DVI monitor or other devices that use a DVI monitor connector.
HDMI connector	Connects to the HDMI connector on your display or TV.
DisplayPort connector	Used to attach a high-performance monitor, a direct-drive monitor, or other devices that use a DisplayPort connector.
TV-Tuner connector	Only supported on systems with an optional TV tuner card.

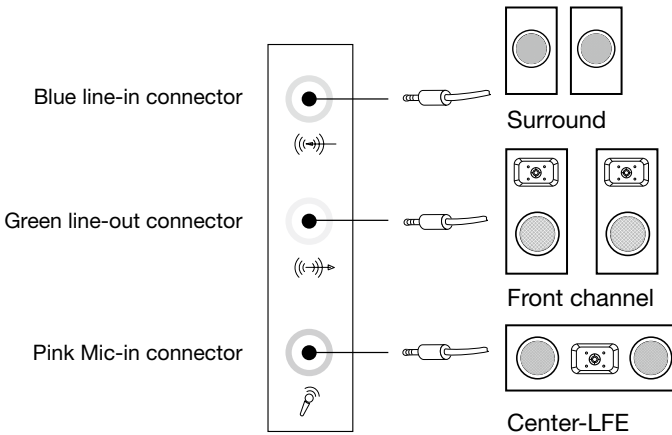
**NOTE:**

If your computer is equipped with a wireless keyboard or mouse, follow the installation instructions for those devices.

## 5.1 Audio configuration instructions

This model of computer supports the transformation of stereo sound into 5.1 surround sound.

Use the following guides when connecting to the 5.1 surround audio device:



To configure the system, do the following:

1. Right click the speaker icon in the taskbar, then select the **Sounds** option to open a pop-up dialog box for configuring options.
2. Select a playback device from the **Playback** tab, then click the **Configure** button to configure it.
3. In the **Speaker setup** dialog box, select **5.1 Surround** in the **Audio channels** field, then proceed with the speaker setup by following the prompts.

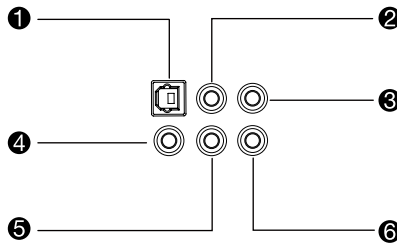
4. 5.1 surround sound can be used once this configuration procedure is complete.

**NOTE:**

If the audio configuration interfaces above are different from those on your computer, you may use the above steps as a reference. To configure the 5.1 surround sound audio device system in your actual audio configuration interface, read the electronic Help information for further assistance.

## 7.1 Audio configuration instructions

Use the following illustration when connecting a 7.1 surround sound audio system.



- ❶ S/PDIF out connector (output)
- ❷ Surround out connector (output)
- ❸ Center / Low frequency output connector (output)
- ❹ Microphone input Connector (input)
- ❺ Audio line-out Connector (output)
- ❻ Audio line-in Connector (input/output)

**NOTE:**

For more detailed settings, from **Control Panel**, select **Hardware and Sound** → **Lenovo HD Audio Manager**. Follow the instructions to configure advanced settings.

To configure sound, please do the following:

1. Right click the speaker icon in the taskbar, then select the **Sounds** option to open a pop-up dialog box for configuring options.
2. Select a playback device from the **Playback** tab, then click the **Configure** button to configure it.
3. In the **Speaker setup** dialog box, select **7.1 Surround** in the **Audio channels** field, then proceed with the speaker setup by following the prompts.
4. 7.1 surround sound can be used once this configuration procedure is complete.

**NOTE:**

If the audio configuration interfaces above are different from those on your computer, you may use the above steps as a reference. To configure the 7.1 surround sound audio device system in your actual audio configuration interface, read the electronic Help information for further assistance.



# Touch screen instructions

**ATTENTION:**

Touch screens are only available on some models.

The monitor is touch-sensitive thanks to its touch-sensitive screen. A touch screen is an input device just like a mouse or a keyboard, and the user's fingers transmit position information via the touch screen to the computer. With this technology, you only need to touch the pictures or words on the computer display lightly with your finger, and the computer will react.

## Touch screen calibration

Prior to first use or whenever the touch screen reacts in a different place where you are touching it, start the calibration program. The procedure is as follows:

- Enter **Tablet PC Setting** into the search box on the taskbar, then click **Calibrate** to start the program.
- To perform calibration, use your finger or a touch pen with a diameter of over 9 mm to touch each of the calibration points shown in sequence.

## Using touch screen

**NOTE:**

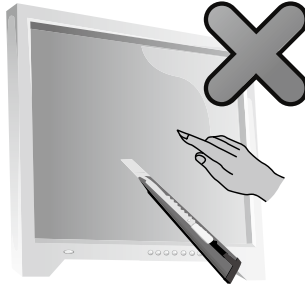
Refer to **Get Started** to learn more about how to use the touch screen. Enter **Get Started** into the search box on the taskbar, then select **Touch and keyboard** for additional information.

### ■ Other touch screen settings

- Enter **Pen and Touch** into the search box on the taskbar.
- Select the touch actions you want to adjust. Click on **Settings** to adjust the **Speed** and **Spatial tolerance** parameters to match the user's natural way of double-tapping. Double-tap the graphic in the lower right-hand corner of the window to test the settings.

## ■ Precautions when using the touch screen

1. When using the touch screen, be careful not to tear the surface with any sharp objects.



2. To ensure normal use of the touch screen, ensure that both the screen surface and your fingers are clean and dry.
3. To ensure precise positioning on the touch screen, avoid handling or touching the glass frame when you are touching the screen.
4. Turn the computer off for safety before cleaning the screen and frame with a soft cotton cloth. Do not wipe it with a wet cloth as this may leave a water mark and affect touch operation.
5. Do not place or drop anything on the four corners or frame of the screen. This could separate the screen from the frame and prevent the screen sensing properly. Please avoid leaving water and dust in the gap between the casing and glass when you are cleaning the frame.
6. Avoid using the touch screen in dusty environments or hot or humid conditions. Any abrupt temperature change may cause condensation on the inside surface of the glass screen. This condensation will disappear after a short time and does not affect normal use.
7. Do not spray any liquid or cleaner directly onto the touch screen.
8. Do not use solvents or industrial alcohol-based cleaners.
9. Avoid using the computer in strong sunlight, which will affect the function of the touch screen.
10. Recognition of touch gestures can be influenced by the following:
  - Touching the correct place on the screen.
  - The speed of movement.
  - The time interval from when the screen was last touched.
11. The touch screen also does not function during the startup process, in Hibernate mode and in Sleep mode or Safe mode.
12. Do not touch the screen with your finger or any other objects during the computer startup or wake up process.

# Troubleshooting and confirming setup

## Solving problems

### Follow these tips when troubleshooting your computer:

- If you added or removed a part before the problem started, review the installation procedures to ensure that the part is correctly installed.
- If a peripheral device does not work, ensure that the device is properly connected.
- If an error message appears on the screen, write down the exact message. This message may help support personnel diagnose and fix the problem(s).
- If an error message occurs in a program, see the Help document of that program.

## Troubleshooting display problems

**Problem:** Blank screen or no image is displayed on the monitor.

### Troubleshooting and problem resolution:

- 1 Check to see if the monitor has been turned on; if not, press the Power button.
2. Check to see if the monitor power cord is loose; if so, plug the power cord securely into the monitor.
3. Check to see if the signal cable to the monitor is securely connected to the connector on the computer graphics card; if not, shut down the computer then connect the signal cable of the monitor securely to the connector on the computer graphics card.

**Problem:** You need to change the display property settings.

**Setting display background and icon properties:**

1. Right-click the desktop anywhere except over an icon, then select **Personalize** from the pop-up menu.
2. From here, select the appropriate options to:
  - Change the desktop background
  - Select a screen saver
  - Select Windows color options for borders and taskbar
  - Select a theme
3. Right-click the desktop anywhere except over an icon, then select **Display settings** from the pop-up menu to change the appearance.

**Problem:** Ripple on screen.

**Troubleshooting and problem resolution:**

1. Check to see if any of the following devices are located less than one meter from the computer: refrigerators, electric fans, electric dryers, UPS systems, regulators, fluorescent lamps or other computers that may be generating magnetic interference.
2. Move any interfering devices away from the computer.
3. If the problem persists, contact Lenovo Service.

## Troubleshooting audio problems

**Problem:** No sound from the integrated speakers.

**Troubleshooting and problem resolution:**

- Adjust the Windows volume control: select the speaker icon from the taskbar. Ensure that the volume is turned up and the sound is not muted. Adjust the volume, bass, or treble controls to eliminate distortion.
- Reinstall the audio driver.
- Disconnect any headphones from the headphone connector: sound from the speakers is automatically disabled when headphones are connected to the computer's side-panel headphone connector.

**Problem:** No sound from headphones.

**Troubleshooting and problem resolution:**

- Check the headphone cable connection: ensure that the headphone cable is securely inserted into the headphone connector.
- Adjust the Windows volume control: select the speaker icon from the taskbar. Ensure that the volume is turned up and the sound is not muted.

# Troubleshooting software problems

**Problem:** You are unable to exit a running program normally.

**Troubleshooting and problem resolution:**

1. Press the **Ctrl**, **Alt** and **Delete** keys at the same time, then select the **Task Manager** option from the Windows logon screen.
2. Select the problem program, then click the **End Task** button.

**Problem:** You need to install or uninstall a program.

**Problem resolution:**

**During installation** never abort the install process by powering the system off or through other drastic means. This can cause system program problems or even failure during system initialization.

**During the uninstall process**, never directly delete the files or folders. This is harmful to the operating system, and might cause a system-wide malfunction. Use the following procedure to properly uninstall programs:

1. Back up all documents and system settings related to the program before removing it.
2. If the program has its own uninstaller, run it directly to uninstall the program.
3. If the program does not have its own uninstaller, use the search box on the taskbar to open the **Control Panel**.
4. From the **Control Panel**, choose **Programs** → **Programs and Features**.
5. Find the program in the **Programs and Features** dialog box and then select **Uninstall/Change**.
6. Follow the prompts displayed to uninstall the software.

# Troubleshooting problems with optical drives and hard disks

**Problem:** The optical drive is unable to read a CD/DVD.

**Troubleshooting and problem resolution:**

1. Check to see if there is an optical drive icon in the resource manager of the operating system. If not, restart your computer. If there is still no icon, contact Lenovo Service. Otherwise, continue with the next step of this procedure.
2. Confirm that the CD/DVD has been properly placed in the drive. If not, reload the CD or DVD. Otherwise, continue with the next step of this procedure.
3. Check the specifications that came with your computer to confirm that this optical drive is capable of reading this type of CD or DVD.

4. If the CD/DVD cannot be read, replace it with a known good CD/DVD such as one that was shipped with the computer.
5. If the known good CD cannot be read, visually check the operating side of the CD/DVD for defects.

**Problem:** The capacity of the hard disk, as indicated by the system, is less than the nominal capacity.

**Troubleshooting and problem resolution:** For computers equipped with the OneKey Recovery feature, the system recovery feature needs to occupy some hard disk space. This may account for the apparent hard disk capacity deficit.

**Further technical explanation:** The nominal capacity of the hard disk is expressed in the decimal system as 1000 bytes. But the actual hard disk capacity is expressed in the binary system as 1024 bytes (For example, the nominal capacity 1G is 1000M, while the actual capacity 1G is 1024M).

The capacity of the hard disk shown in Windows can be calculated according to the calculations in the following example:

The nominal capacity of the hard disk is 40G, while its actual capacity should be:  
 $40\text{G} \times 1000 \times 1000 \times 1000 / (1024 \times 1024 \times 1024) = 37\text{G}$ .

The capacity of the hard disk shown in the system can be obtained by subtracting the service partition:  
 $3\text{G} \times 1000 \times 1000 \times 1000 / (1024 \times 1024 \times 1024) = 2.79\text{G}$ .

The capacity of the hard disk as calculated using this method may be slightly different from the actual capacity due to the rounding of totals.

## Special considerations for troubleshooting Windows

Record the following information as it may be useful later when troubleshooting system problems:

The drivers for this computer model only support the Windows 10 system.

**Problem:** The operating system fails to start up.

**Troubleshooting and problem resolution:**

If the computer is installed with an Optane memory:

- Ensure that the Optane memory is not removed.
- Check the Optane memory using the diagnostic tool that is preinstalled in your computer, to ensure it is not damaged.

# Windows help system

The Windows help system provides you with detailed information about using the Windows operating system.

To access the Windows help system, do the following:

Open the Start menu and then click or tap **Get Started** to get more details.

You also can enter **Get Started** or what you're looking for in the search box on the taskbar. You'll get suggestions and answers to your questions about Windows and the best search results available from your PC and the Internet.

To perform system recovery after a serious error in Windows 10, click or tap the Start button and select **Settings** → **Update & security** → **Recovery**. Then, follow the instructions on the screen for system recovery.

## ATTENTION:

The Windows operating system is provided by Microsoft Corporation. Please use it in accordance with the END USER LICENSE AGREEMENT (EULA) between you and Microsoft. For any question related to the operating system, please contact Microsoft directly.

# BIOS setup utility

## What is the BIOS setup utility?

The BIOS setup utility is ROM-based software. It communicates basic computer information and provides options for setting boot devices, security, hardware mode, and other preferences.

## How can I start the BIOS setup utility?

To start the BIOS setup utility:

1. Shut down the computer.
2. Turn the computer on and repeatedly press and release the **F1** key to start the Setup Utility program.

## How can I change the boot mode?

There are two boot modes: UEFI and Legacy. To change the boot mode, start the BIOS setup utility and select **Startup** → **Boot Priority**, then set boot mode to UEFI or Legacy support on the boot menu.

### When do I need to change the boot mode?

The default boot mode for your computer is the UEFI mode. If you need to install a legacy Windows operating system (any operating system before Windows 8.1) on your computer, you must change the boot mode to Legacy support. The legacy Windows operating system cannot be installed if you don't change the boot mode.

## Performing daily maintenance tasks

### Cleaning the computer components

Because many of the computer components consist of sophisticated integrated circuit boards, it is very important to periodically clean the computer to prevent dust buildup. The cleaning supplies you need to clean the components include: a vacuum cleaner, a soft cotton cloth, pure water (preferably purified or distilled water) and cotton swabs.

**ATTENTION:**

Before you clean your computer, disconnect the computer from the electrical outlet. Clean your computer with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may contain flammable substances.

**NOTE:**

To avoid damaging the computer or display, do not spray cleaning solution directly onto the display. Only use products specifically designed for cleaning displays, and follow the instructions included with the product.

### The following are general methods for cleaning the components:

- You can use a soft cloth to remove dust on the surface of the computer, the monitor, the printer, the speakers and the mouse.
- You can use a vacuum cleaner to clean in otherwise inaccessible corners.
- To clean the keyboard thoroughly, shut down the computer and scrub it gently with a wet cloth. Do not use the keyboard until it is dry.

### Do not do any of the following:

- Allow water to enter the computer.
- Use a heavily dampened cloth.
- Spray water directly onto the surface of the monitor or inside the computer.

LCD monitor should be cleaned daily. Use a dry cloth to brush dust from the monitor and keyboard every day. Keep all surfaces clean and free of grease stains.



# Service and support information

The following information describes the technical support that is available for your product, during the warranty period or throughout the life of your product. Refer to the Lenovo Limited Warranty for a full explanation of Lenovo warranty terms. See “Lenovo Limited Warranty” later in this document for details.

## ■ Online technical support

Online technical support is available during the lifetime of a product at:  
<http://www.lenovo.com/support>

## ■ Telephone technical support

Where applicable, you can get help and information from the Customer Support Center by telephone. Before contacting a Lenovo technical support representative, please have the following information available:

- model and serial number
- the exact wording of any error message
- a description of the problem

Your technical support representative might want to walk you through the problem while you are at your computer during the call.

To obtain the most up-to-date telephone list for the Customer Support Center, go to:  
<http://www.lenovo.com/support/phone>

## Downloading publications

Electronic versions of your computer publications are available from the Lenovo Support Web site. To download the publications for your computer, go to <http://www.lenovo.com/UserManuals> and follow the instructions on the screen.

# Lenovo limited warranty

This Lenovo Limited Warranty consists of the following parts:

**Part 1 – General terms**

**Part 2 – Country-specific terms**

**Part 3 – Warranty service information**

The terms of **Part 2** replace or modify terms of **Part 1** as specified for a particular country.

## Part 1 – General terms

This Lenovo Limited Warranty applies only to Lenovo hardware products you purchased for your own use and not for resale.

This Lenovo Limited Warranty is available in other languages at [http://www.lenovo.com/warranty/lw\\_02](http://www.lenovo.com/warranty/lw_02).

### ■ What this warranty covers

Lenovo warrants that each Lenovo 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 as shown on your sales receipt or invoice or as may be otherwise specified by Lenovo. The warranty period and type of warranty service that apply to your product are as specified in “**Part 3 - Warranty Service Information**” below. This warranty only applies to products in the country or region of purchase.

**THIS WARRANTY IS YOUR EXCLUSIVE WARRANTY AND REPLACES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. AS SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF EXPRESS OR IMPLIED WARRANTIES, THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES APPLY ONLY TO THE EXTENT AND FOR SUCH DURATION AS REQUIRED BY LAW AND ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. AS SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON THE DURATION OF AN IMPLIED WARRANTY, THE**

## **ABOVE LIMITATION ON DURATION MAY NOT APPLY TO YOU.**

### **■ 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 a Lenovo approved Service Provider. A list of approved Service Providers and their telephone numbers is available at: <http://support.lenovo.com>.

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 information specific to your location.

### **■ Customer responsibilities for warranty service**

Before warranty service is provided, you must take the following steps:

- Follow the service request procedures specified by the Service Provider
- Backup or secure all programs and data contained in the product
- Provide the Service Provider with all system keys or passwords
- Provide the Service Provider with sufficient, free, and safe access to your facilities to perform service
- Remove all data, including confidential information, proprietary information and personal information, from the product or, if you are unable to remove any such information, modify the information to prevent its access by another party or so that it is not personal data under applicable law. The Service Provider shall not be responsible for the loss or disclosure of any data, including confidential information, proprietary information, or personal information, on a product returned or accessed for warranty service
- Remove all features, parts, options, alterations, and attachments not covered by the warranty
- Ensure that the product or part is free of any legal restrictions that prevent its replacement
- If you are not the owner of a product or part, obtain authorization from the owner for the Service Provider to provide warranty service

### **■ What your Service Provider will do to correct problems**

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

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

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

If your problem cannot be resolved over the telephone, through the application of software updates or the installation of a CRU, the Service Provider will arrange for service under the type of warranty service designated for the product under “**Part 3 - Warranty Service Information**” below.

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

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

## ■ Replacement products and parts

When 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.

## ■ Use of personal contact information

If you obtain service under this warranty, you authorize Lenovo to store, use and process information about your warranty service and your contact information, including name, phone numbers, address, and e-mail address. Lenovo may use this information to perform service under this warranty. We may contact you to inquire about your satisfaction with our warranty service or to notify you about any product recalls or safety issues. In accomplishing these purposes, you authorize Lenovo to transfer your information to any country where we do business and to provide it to entities acting on our behalf. We may also disclose it where required by law. Lenovo’s privacy policy is available at <http://www.lenovo.com>.

## ■ 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 by a product
- Any software programs, whether provided with the product or installed subsequently
- Failure or damage resulting from misuse, abuse, accident, modification, unsuitable

physical or operating environment, natural disasters, power surges, improper maintenance, or use not in accordance with product information materials

- 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
- Any technical or other support, such as assistance with “how-to” questions and those regarding product set-up and installation
- Products or parts with an altered identification label or from which the identification label has been removed

## ■ Limitation of liability

Lenovo is responsible for loss or damage to your product only while it is in the Service Provider's possession or in transit, if the Service Provider is responsible for the transportation.

Neither Lenovo nor the Service Provider is responsible for loss or disclosure of any data, including confidential information, proprietary information, or personal information, contained in a product.

**UNDER NO CIRCUMSTANCES, AND NOTWITHSTANDING THE FAILURE OF ESSENTIAL PURPOSE OF ANY REMEDY SET FORTH HEREIN, SHALL LENOVO, ITS AFFILIATES, SUPPLIERS, RESELLERS, OR SERVICE PROVIDERS BE LIABLE FOR ANY OF THE FOLLOWING EVEN IF INFORMED OF THEIR POSSIBILITY AND REGARDLESS OF WHETHER THE CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY OR OTHER THEORY OF LIABILITY: 1) THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES; 2) LOSS, DAMAGE OR DISCLOSURE OF YOUR DATA; 3) SPECIAL, INCIDENTAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, BUSINESS REVENUE, GOODWILL OR ANTICIPATED SAVINGS. IN NO CASE SHALL THE TOTAL LIABILITY OF LENOVO, ITS AFFILIATES, SUPPLIERS, RESELLERS OR SERVICE PROVIDERS FOR DAMAGES FROM ANY CAUSE EXCEED THE AMOUNT OF ACTUAL DIRECT DAMAGES, NOT TO EXCEED THE AMOUNT PAID FOR THE PRODUCT.**

**THE FOREGOING LIMITATIONS DO NOT APPLY TO DAMAGES FOR BODILY INJURY (INCLUDING DEATH), DAMAGE TO REAL PROPERTY OR DAMAGE TO TANGIBLE PERSONAL PROPERTY FOR WHICH LENOVO IS LIABLE UNDER LAW.**

**AS SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

## ■ Your other rights

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS ACCORDING TO THE APPLICABLE LAWS OF YOUR STATE OR JURISDICTION. YOU MAY ALSO HAVE OTHER RIGHTS UNDER A WRITTEN AGREEMENT WITH LENOVO. NOTHING IN THIS WARRANTY AFFECTS STATUTORY RIGHTS, INCLUDING RIGHTS OF CONSUMERS UNDER LAWS OR REGULATIONS GOVERNING THE SALE OF CONSUMER GOODS THAT CANNOT BE WAIVED OR LIMITED BY CONTRACT.**

## Part 2 – Country-specific terms

### Australia

“Lenovo” means Lenovo (Australia & New Zealand) Pty Limited ABN 70 112 394 411. Address: Level 10, North Tower, 1-5 Railway Street, Chatswood, NSW, 2067. Telephone: +61 2 8003 8200. Email: lensyd\_au@lenovo.com

*The following replaces the same section in Part 1:*

#### **What this Warranty Covers:**

Lenovo warrants that each hardware product that you purchase is free from defects in materials and workmanship under normal use and conditions during the warranty period. If the product fails due to a covered defect during the warranty period, Lenovo will provide you a remedy under this Limited Warranty. 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 set forth below in **Part 3 - Warranty Service Information**.

**THE BENEFITS GIVEN BY THIS WARRANTY ARE IN ADDITION TO YOUR RIGHTS AND REMEDIES AT LAW, INCLUDING THOSE UNDER THE AUSTRALIAN CONSUMER LAW.**

*The following replaces the same section in Part 1:*

#### **Replacement Products and Parts:**

When 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. Products and parts presented for

repair may be replaced by refurbished products or parts of the same type rather than being repaired. Refurbished parts may be used to repair the product; and repair of the product may result in loss of data, if the product is capable of retaining user-generated data.

*The following is added to the same section in Part 1:*

## **Use of personal contact information**

Lenovo will not be able to perform our service under this warranty if you refuse to provide your information or do not wish us to transfer your information to our agent or contractor. You have the right to access your personal contact information and request correction of any errors in it pursuant to the Privacy Act 1988 by contacting Lenovo.

*The following replaces the same section in Part 1:*

## **Limitation of liability**

Lenovo is responsible for loss or damage to your product only while it is in the Service Provider's possession or in transit, if the Service Provider is responsible for the transportation.

Neither Lenovo nor the Service Provider is responsible for loss or disclosure of any data, including confidential information, proprietary information, or personal information, contained in a product.

**TO THE EXTENT PERMITTED BY LAW, UNDER NO CIRCUMSTANCES AND NOTWITHSTANDING THE FAILURE OF ESSENTIAL PURPOSE OF ANY REMEDY SET FORTH HEREIN, SHALL LENOVO, ITS AFFILIATES, SUPPLIERS, RESELLERS, OR SERVICE PROVIDERS BE LIABLE FOR ANY OF THE FOLLOWING EVEN IF INFORMED OF THEIR POSSIBILITY AND REGARDLESS OF WHETHER THE CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY OR OTHER THEORY OF LIABILITY: 1) THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES; 2) LOSS, DAMAGE OR DISCLOSURE OF YOUR DATA; 3) SPECIAL, INCIDENTAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, BUSINESS REVENUE, GOODWILL OR ANTICIPATED SAVINGS. IN NO CASE SHALL THE TOTAL LIABILITY OF LENOVO, ITS AFFILIATES, SUPPLIERS, RESELLERS OR SERVICE PROVIDERS FOR DAMAGES FROM ANY CAUSE EXCEED THE AMOUNT OF ACTUAL DIRECT DAMAGES, NOT TO EXCEED THE AMOUNT PAID FOR THE PRODUCT. THE FOREGOING LIMITATIONS DO NOT APPLY TO DAMAGES FOR BODILY INJURY (INCLUDING DEATH), DAMAGE TO REAL PROPERTY OR DAMAGE TO TANGIBLE PERSONAL PROPERTY FOR WHICH LENOVO IS LIABLE UNDER LAW.**

*The following replaces the same section in Part 1:*

## **Your other rights**

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU ALSO HAVE OTHER RIGHTS AT LAW, INCLUDING UNDER THE AUSTRALIAN CONSUMER LAW. NOTHING IN THIS WARRANTY AFFECTS STATUTORY RIGHTS OR RIGHTS AT LAW, INCLUDING RIGHTS THAT CANNOT BE WAIVED OR LIMITED BY CONTRACT.**

For example, our products come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the products repaired or replaced if the products fail to be of acceptable quality and the failure does not amount to a major failure.

## **New Zealand**

*The following is added to the same section in Part 1:*

### **Use of personal contact information**

Lenovo will not be able to perform our service under this warranty if you refuse to provide your information or do not wish us to transfer your information to our agent or contractor. You have the right to access your personal information and request correction of any errors in it pursuant to the Privacy Act 1993 by contacting Lenovo (Australia & New Zealand) Pty Limited ABN 70 112 394 411. Address: Level 10, North Tower, 1-5 Railway Street, Chatswood, NSW, 2067. Telephone: 61 2 8003 8200. Email: lensyd\_au@lenovo.com

## **Bangladesh, Cambodia, India, Indonesia, Nepal, Philippines, Vietnam and Sri Lanka**

*The following is added to Part 1:*

### **Dispute resolution**

Disputes arising out of or in connection with this warranty shall be finally settled by arbitration held in Singapore. 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. The English language version of this warranty prevails over any other language version in such proceedings.

## **European Economic Area (EEA)**

*The following is added to Part 1:*

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.

## **Russia**

*The following is added to Part 1:*

### **Product service life**

The product service life is four (4) years from the original date of purchase.

# Part 3 - Warranty service information

**Important:** Please visit <http://support.lenovo.com> for product related drivers, documents and updates. For specific warranty information related to your product - please visit: <http://support.lenovo.com/us/en/warrantylookup>

If required, the 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.

## ■ Types of warranty service

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

Under CRU Service, the Service Provider will ship CRUs to you at its cost 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”. “Optional-service CRUs” are CRUs that may require some technical skill and tools. Installation of Selfservice 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 a Service Provider or Lenovo under which Self-service CRUs would be installed for you. You may find a list of CRUs and their designation in the publication that was shipped with your product or at <http://www.lenovo.com/CRUs>. The requirement to return a defective CRU, if any, will be specified in the instructions 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) you may be charged for the replacement CRU if the Service Provider does not receive the defective CRU from you within thirty (30) days of your receipt of the replacement CRU.

### 2. On-site Service

Under On-Site Service, a 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 product. Some repairs may need to be completed at a service center. If so, the Service Provider will send the product to the service center at its expense.

### 3. Courier or Depot Service

Under Courier or Depot Service, your product will be repaired or exchanged at a designated service center, with shipping at the expense of the Service Provider. You are responsible for disconnecting the product and packing it in a shipping container provided to 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. The service center will

return the product to you at its expense.

#### **4. Customer Carry-In Service**

Under Customer Carry-In Service, your product will be repaired or exchanged after you deliver it to a designated service center at your risk and expense. After the product has been repaired or exchanged, it will be made available to you for collection. If you fail to collect the product, the Service Provider may dispose of the product as it sees fit, with no liability to you.

#### **5. Mail-In Service**

Under Mail-In Service, your product will be repaired or exchanged at a designated service center after you deliver it at your risk and expense. After the product has been repaired or exchanged, it will be returned to you at Lenovo's risk and expense, unless the Service Provider specifies otherwise.

#### **6. Customer Two-Way Mail-In Service**

Under Customer Two-Way Mail-In Service, your product will be repaired or exchanged after you deliver it to a designated service center at your risk and expense. After the product has been repaired or exchanged, it will be made available to you for return shipping at your risk and expense. If you fail to arrange return shipment, the Service Provider may dispose of the product as it sees fit, with no liability to you.

#### **7. 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 in which you received the replacement product and return it to Lenovo. Transportation charges, both ways, shall be at Lenovo's expense. If you fail to use the carton in which the replacement product was received, you may be responsible for any damage to the failed product occurring 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.

# Notices

## Declaration

Thank you for using Lenovo products.

Carefully read all documents shipped with your computer before you install and use the product for the first time. Lenovo is not responsible for any loss except when caused by installation and operations performed by Lenovo professional service personnel. You are responsible if you fail to operate the product according to instructions and requirements in the manuals included with your computer, or operate the product inappropriately.

This manual could include technical inaccuracies or typographical errors. Changes are made periodically to the information herein; these changes will be incorporated in new editions of the publication. To provide better service, Lenovo reserves the right to improve and/or modify the products and software programs described in the manuals included with your computer, and the content of the manual, at any time without additional notice.

The manuals included with your computer are provided to help you use Lenovo's products appropriately. For the configuration of the product, refer to the related contract (if any) or product packing list, or consult the distributor for the product sales.

The content of the manuals included with your computer is protected by copyright laws and rules. None of the manuals included with your computer may be reproduced or transcribed by any means or translated into any language without prior written permission of Lenovo.

The software interface and function and hardware configuration described in the manuals included with your computer might not match exactly the actual configuration of the computer that you purchase. You are welcome to contact us about the manuals included with your computer. For the latest information or any questions or comments, contact or visit the Lenovo Web site:

Service Web site: <http://support.lenovo.com>

# Electronic emissions notices

This device has been tested and found to comply with the limits for a Class B digital device.

## **Federal Communications Commission (FCC) Declaration of Conformity**

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 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.

Lenovo is not responsible for any radio or television interference caused by using other than 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 27560  
U.S.A.  
Telephone: (919) 294-5900



## ■ Industry Canada Class B emission compliance statement

CAN ICES-3(B)/NMB-3(B)

## ■ Mexico regulatory notice

**Advertencia:** En Mexico la operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

## ■ European Union conformity

EU Contact: Lenovo, Einsteinova 21, 851 01 Bratislava, Slovakia



**Models without a radio device:** This product is in conformity with the protection requirements of EU Council EMC Directive 2014/30/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility.

This product has been tested and found to comply with the limits for Class B equipment according to European Standards harmonized in the Directives in compliance. The Class B requirements for equipment are intended to offer adequate protection to broadcast services within residential environments.

**Radio Equipment Directive Statement:** This product is in conformity with all the requirements and essential norms that apply to EU Council Radio Equipment Directive 2014/53/EU on the approximation of the laws of the Member States relating to radio equipment. The full text of the system EU declaration of conformity and the EU wireless module declarations are available at following Internet addresses:

Desktop/ All-In-Ones: <http://www.lenovo.com/eu-doc-desktops>

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.

## ■ 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 2014/30/EU (früher 2004/108/EC) zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der Klasse B der Norm gemäß Richtlinie.

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 Betriebsmitteln**

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 2014/30/EU (früher 2004/108/EWG) in der Bundesrepublik Deutschland.

#### **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 EU Richtlinie 2014/30/EU (früher 2004/108/EC), 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 55032 Klasse B.**

## ■ Korean compliance statement

무선설비 전파 혼신 (사용주파수 2400~2483.5,  
5725~5825 무선제품해당)

해당 무선설비가 전파혼신 가능성이 있으므로 인명안전과 관련된  
서비스는 할 수 없음

## ■ Japanese VCCI Class B statement

この装置は、クラスB機器です。この装置は、住宅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。  
VCCI-B

## ■ Japanese statement of compliance for products less than or equal to 20 A 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

電源	バッテリー	メインバッテリー	※16	4セルリチウムイオンバッテリー(固定式)			
		セカンドバッテリー	※16	なし			
		使用時間(JEITA2.0)	※16	約 9.1 時間	約 9.8 時間	約 7.5 時間	約 8.2 時間
		充電時間(パワーオフ時)	※16	約 3 時間(パワーオフ)			
	ACアダプター	定格電圧	※15	AC 100-240V(50/60Hz)			
質量			本体:約 180g コード:約 60g				

※15 日本国内では AC100V 電源でご使用下さい(AC コードは 100V 用が付属します)。

## ■ Keyboard and mouse compliance statement for Taiwan

本產品隨貨附已取得經濟部標準檢驗局認可之PS/2或USB的鍵盤  
與滑鼠一組

## ■ Lenovo product service information for Taiwan

進口商 / 委製商 : 荷蘭商聯想股份有限公司台灣分公司  
進口商地址 : 台北市中山區北安路 780 號 7 樓  
進口商電話 : 0800-000-702 (代表號)



# Regulatory information

Computer models equipped with wireless communications comply with the radio frequency and safety standards of any country or region in which it has been approved for wireless use.

Be sure to read the *Regulatory Notice* for your country or region before using the wireless devices contained in your computer. To obtain a PDF version of the *Regulatory Notice*, go to: [www.lenovo.com/UserManuals](http://www.lenovo.com/UserManuals).

# Compliance information

The latest electronic compliance and environmental information is available from the Lenovo Web sites.

To view compliance information go to: <http://www.lenovo.com/compliance>

To download environmental information go to: <http://www.lenovo.com/ecodeclaration>

# China RoHS

产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板组件*	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
光驱	×	○	○	○	○	○
内存	×	○	○	○	○	○
电脑 I/O 附件	×	○	○	○	○	○
电源	×	○	○	○	○	○
键盘	×	○	○	○	○	○
鼠标	×	○	○	○	○	○
机箱/附件	×	○	○	○	○	○
电池	×	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。  
 ○：表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。  
 ×：表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。  
 注：表中标记“×”的部件，皆因全球技术发展水平限制而无法实现有害物质的替代。

印刷电路板组件\*：包括印刷电路板及其零部件、电容和连接器  
 根据型号的不同，可能不会含有以上的所有部件，请以实际购买机型为准



在中华人民共和国境内销售的电子信息产品必须标识此标志，标志内的数字代表在正常使用状态下的产品的环保使用期限

# Taiwan RoHS

## 台灣RoHS – 一體機

單元	限用物質及其化學符號					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr <sup>+6</sup> )	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
印刷電路板組件	—	○	○	○	○	○
硬碟	—	○	○	○	○	○
光碟機	—	○	○	○	○	○
記憶體	—	○	○	○	○	○
電腦I/O配件	—	○	○	○	○	○
電源供應器	—	○	○	○	○	○
鍵盤	—	○	○	○	○	○
滑鼠	—	○	○	○	○	○
機殼	—	○	○	○	○	○
螢幕	—	○	○	○	○	○
配件 (電源線)	—	○	○	○	○	○
散熱模組	—	○	○	○	○	○

備考1. “超出0.1 wt %”及“超出0.01 wt %”係指限用物質之百分比含量超出百分比含量基準值。

備考2. “○”係指該項限用物質之百分比含量未超出百分比含量基準值。

備考3. “—”係指該項限用物質為排除項目。

## 台灣RoHS – 個人電腦

單元	限用物質及其化學符號					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr <sup>+6</sup> )	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
印刷電路板組件	—	○	○	○	○	○
硬碟	—	○	○	○	○	○
光碟機	—	○	○	○	○	○
記憶體	—	○	○	○	○	○
電源供應器	—	○	○	○	○	○
鍵盤	—	○	○	○	○	○
滑鼠	—	○	○	○	○	○
機殼	—	○	○	○	○	○
配件 (電源線)	—	○	○	○	○	○
散熱模組	—	○	○	○	○	○

備考1. “超出0.1 wt %”及“超出0.01 wt %”係指限用物質之百分比含量超出百分比含量基準值。

備考2. “○”係指該項限用物質之百分比含量未超出百分比含量基準值。

備考3. “—”係指該項限用物質為排除項目。

# Turkish statement of compliance

The Lenovo product meets the requirements of the Republic of Turkey Directive on the Restriction of the Use of Certain Hazardous Substances in Waste Electrical and Electronic Equipment (WEEE).

## **Türkiye AEEE Yönetmeliğine Uygunluk Beyanı**

Bu Lenovo ürünü, T.C. Çevre ve Orman Bakanlığı'nın "Atık Elektrik ve Elektronik Eşyalarda Bazı Zararlı Maddelerin Kullanımının Sınırlandırılmasına Dair Yönetmelik (AEEE)" direktiflerine uygundur.

AEEE Yönetmeliğine Uygundur.

# Ukraine RoHS statement

Цим підтверджуємо, що продукція Леново відповідає вимогам нормативних актів України, які обмежують вміст небезпечних речовин.

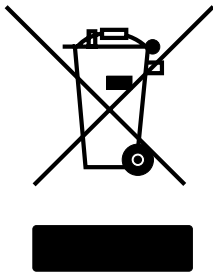
# India RoHS statement

RoHS compliant as per E-Waste (Management) Rules.

# Waste electrical and electronic equipment (WEEE) notices

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.lenovo.com/lenovo/environment/recycling>

## ■ Important WEEE Information



The WEEE marking on Lenovo products applies to countries with WEEE and e-waste regulations (for example, the European WEEE Directive, India E-Waste Management & Handling Rules). Appliances are labeled in accordance with local regulations concerning waste electrical and electronic equipment (WEEE). These regulations determine the framework for the return and recycling of used appliances as applicable within each geography. This label is applied to various products to indicate that the product is not to be thrown away, but rather put in the established collection systems for reclaiming these end of life products.

Users of electrical and electronic equipment (EEE) with the WEEE marking must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to them for the return, recycle, and recovery of WEEE and to minimize any potential effects of EEE on the environment and human health due to the presence of hazardous substances.

Lenovo electrical and electronic equipment (EEE) may contain parts and components, which at end-of-life might qualify as hazardous waste.

EEE and waste electrical and electronic equipment (WEEE) can be delivered free of charge to the place of sale or any distributor that sells electrical and electronic equipment of the same nature and function as the used EEE or WEEE.

For additional WEEE information go to: <http://www.lenovo.com/recycling>

## ■ WEEE information for Hungary

Lenovo, as a producer, bears the cost incurred in connection with the fulfillment of Lenovo's obligations under Hungary Law No. 197/2014 (VIII.1.) subsections (1)-(5) of section 12.

## ■ Japanese recycling statement

### **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. Lenovo Japan provides a PC Collecting and Recycling Services for the collection, reuse, and recycling of disused computers and monitors in accordance with the Law for Promotion of Effective Utilization of Resources. Recycling and disposal information for Japan is available at following URL: [http://www3.lenovo.com/jp/ja/services\\_warranty/recycle/personal/](http://www3.lenovo.com/jp/ja/services_warranty/recycle/personal/)

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. Recycling and disposal information for Japan is available at following URL: [http://www3.lenovo.com/jp/ja/services\\_warranty/recycle/personal/](http://www3.lenovo.com/jp/ja/services_warranty/recycle/personal/)

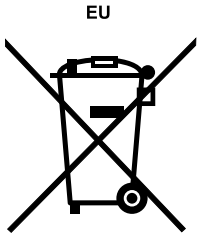
### **Disposing of a Lenovo computer component**

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

### **Disposing of disused lithium batteries from Lenovo computers**

A coin-cell lithium battery is installed on the system board of your Lenovo computer to provide power to the computer clock while the computer is off or disconnected from the main power source. If you want to replace it with a new one, contact your place of purchase or ask for a repair service provided by Lenovo. 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 their instructions. If you use a Lenovo computer at home and need to dispose of a lithium battery, you must comply with local ordinances and regulations.

## ■ Battery recycling information for the European Union



**Notice:** This mark applies only to countries within the European Union (EU).

Batteries or packaging for batteries are labeled in accordance with European Directive 2006/66/EC concerning batteries and accumulators and waste batteries and accumulators. The Directive determines the framework for the return and recycling of used batteries and accumulators as applicable throughout the European Union. This label is applied to various batteries to indicate that the battery is not to be thrown away, but rather reclaimed upon end of life per this Directive.

In accordance with the European Directive 2006/66/EC, batteries and accumulators are labeled to indicate that they are to be collected separately and recycled at end of life. The label on the battery may also include a chemical symbol for the metal concerned in the battery (Pb for lead, Hg for mercury, and Cd for cadmium). Users of batteries and accumulators must not dispose of batteries and accumulators as unsorted municipal waste, but use the collection framework available to customers for the return, recycling, and treatment of batteries and accumulators. Customer participation is important to minimize any potential effects of batteries and accumulators on the environment and human health due to the potential presence of hazardous substances.

Before placing electrical and electronic equipment (EEE) in the waste collection stream or in waste collection facilities, the end user of equipment containing batteries and/or accumulators must remove those batteries and accumulators for separate collection.

### **Disposing of lithium batteries and battery packs from Lenovo products**

A coin-cell type lithium battery might be installed inside your Lenovo product. You can find details about the battery in the product documentation. If the battery needs to be replaced, contact your place of purchase or contact Lenovo for service. If you need to dispose of a lithium battery, insulate it with vinyl tape, contact your place of purchase or a waste-disposal operator, and follow their instructions.

### **Disposing of battery packs from Lenovo products**

Your Lenovo device might contain a lithium-ion battery pack or a nickel metal hydride battery pack. You can find details on the battery pack in the product documentation. If you need to dispose of a battery pack, insulate it with vinyl tape, contact Lenovo sales, service, or your place of purchase, or a waste-disposal operator, and follow their instructions. You also can refer to the instructions provided in the manuals for your product.

For proper collection and treatment, go to: <http://www.lenovo.com/lenovo/environment>

## ■ Recycling information for Brazil

### Declarações de Reciclagem no Brasil

#### Descarte de um Produto Lenovo Fora de Uso

Equipamentos elétricos e eletrônicos não devem ser descartados em lixo comum, mas enviados à pontos de coleta, autorizados pelo fabricante do produto para que sejam encaminhados e processados por empresas especializadas no manuseio de resíduos industriais, devidamente certificadas pelos órgãos ambientais, de acordo com a legislação local.

A Lenovo possui um canal específico para auxiliá-lo no descarte desses produtos. Caso você possua um produto Lenovo em situação de descarte, ligue para o nosso SAC ou encaminhe um e-mail para: [reciclar@lenovo.com](mailto:reciclar@lenovo.com), informando o modelo, número de série e cidade, a fim de enviarmos as instruções para o correto descarte do seu produto Lenovo.

## Eurasian compliance mark

Единый знак обращения на рынке стран Таможенного союза



## Energy Star Statement



ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy aimed at saving money and protecting the environment through energy efficient products and practices.

Lenovo is proud to offer our customers products with an ENERGY STAR compliant designation. The following machine types have been designed and tested to conform to the ENERGY STAR program requirement for computers at the time of manufacture. For more information about ENERGY STAR ratings for Lenovo computers, go to <http://www.lenovo.com>.

By using ENERGY STAR compliant products and taking advantage of the power management features of your computer, you reduce the consumption of electricity. Reduced electrical consumption contributes to potential financial savings, a cleaner

environment, and the reduction of greenhouse gas emissions.

For more information about ENERGY STAR, go to: <http://www.energystar.gov>.

Lenovo encourages you to make efficient use of energy an integral part of your day-to-day operations. To help in this endeavor, Lenovo has preset the following power management features to take effect when your computer has been inactive for a specified duration:

ENERGY STAR power management features, by operating system.

**Microsoft Windows Vista, Windows 7, Windows 8, Windows 8.1 and Windows 10**

Power plan: Balanced

- Turn off the display: After 10 minutes
- Put the computer to sleep: After 25 minutes
- Advanced power settings:
  - Turn off hard disk drives: After 20 minutes
  - Hibernate: Never

To awaken your computer from a Sleep or System Standby mode, press any key on your keyboard. For more information about these settings, refer to your Windows Help and Support information system.

## Enabling ErP compliance mode

You can enable the energy-related products directive (ErP) compliance mode through the Power menu in the Setup Utility program. This mode reduces electricity consumption when your computer is in standby mode or turned off.

To enable ErP compliance mode in the Setup Utility program, do the following:

1. Turn the computer on and repeatedly press and release the **F1** key to start **Setup Utility**.
2. From the **Setup Utility** main menu, select **Power** → **Enhanced Power Saving Mode** and press **Enter**.
3. Select **Enabled** and press **Enter**.
4. Press **F10** to save changes and exit **Setup Utility**. Press **Enter** when prompted to confirm.

**NOTE:**

When ErP compliance mode is enabled, you only can wake up your computer by pressing the power switch.

In the Windows 8, 8.1 or Windows 10 operating systems, you also need to disable the Fast Startup function to meet the off mode requirement of ErP compliance.



To disable the Fast Startup function, do the following:

**Windows 8 & 8.1:**

1. Select **Apps** → **Control Panel** from the Search charm.

**Windows 10:**

1. Enter **Control Panel** into the search box on the taskbar.
2. From the **Control Panel**, choose **All Control Panel Items** → **Power Options**.
3. Select **Choose what the power buttons do** from the pop-up dialog box.
4. Choose the **Change settings that are currently unavailable** option, and uncheck the **Turn on fast startup** option from the **Shutdown settings** list.

Additional information as required by EU Regulation 617/2013 implementing Directive 2009/125/EC with regard to ecodesign requirements for computers and computer servers can be found here: [www.lenovo.com/ecodeclaration](http://www.lenovo.com/ecodeclaration).

## Export Classification Notice

This product is subject to the United States Export Administration regulations (EAR) and has an Export Classification Control Number (ECCN) of 5A992.c. It can be re-exported except to any of the embargoed countries in the EAR E1 country list.

# Legal notices

## Trademarks

Lenovo, the Lenovo logo, and ideacentre are trademarks of Lenovo in the United States, other countries, or both.

Windows is a trademark of the Microsoft group of companies.

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