

ThinkPad

User Guide

ThinkPad S230u

Notes: Before using this information and the product it supports, be sure to read and understand the following:

- *Safety, Warranty, and Setup Guide*
- *Regulatory Notice*
- "Important safety information" on page iv
- Appendix D "Notices" on page 121

The *Safety, Warranty, and Setup Guide* and the *Regulatory Notice* have been uploaded to the Web site. To refer to them, go to <http://www.lenovo.com/ThinkPadUserGuides> and click **User Guides & Manuals**, then follow the instructions on the screen.

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Contents

Read this first	iii	Using audio features	30
Important safety information	iv	Using the integrated camera	31
Conditions that require immediate action	v	Using a media card	31
Safety guidelines	v	Inserting a media card	32
		Removing a media card	32
Chapter 1. Product overview	1	Chapter 3. You and your computer	33
Locating computer controls, connectors, and indicators.	1	Accessibility and comfort	33
Front view.	1	Ergonomic information.	33
Right-side view.	3	Comfort	34
Left-side view	4	Accessibility information	34
Bottom view.	6	Traveling with your computer	35
Status indicators	6	Travel tips.	35
Locating important product information	8	Travel accessories	35
Machine type and model label.	8	Chapter 4. Security	37
FCC ID and IC Certification number label	9	Attaching a mechanical lock	37
Features	9	Using passwords.	37
Specifications	10	Passwords and sleep mode.	37
Operating environment	11	Typing passwords	37
Lenovo programs	11	Power-on password.	38
		Hard disk passwords	38
Chapter 2. Using your computer	13	Supervisor password	40
Registering your computer	13	Hard disk security	42
Frequently asked questions	13	Setting the security chip	43
Tablet mode.	14	Notice on deleting data from your hard disk drive or solid-state drive	44
Using tablet mode	14	Using firewalls	44
Using the multi-touch screen	17	Protecting data against viruses	44
Using the tablet buttons	19		
Special keys and buttons	19	Chapter 5. Recovery overview	47
Using the UltraNav pointing device.	21	Chapter 6. Replacing devices	49
Using the TrackPoint pointing device	22	Static electricity prevention.	49
Using the touch pad.	23	Disabling the built-in battery	49
Disabling the UltraNav pointing device	23	Replacing the SIM card	49
Adding the UltraNav icon to the Windows notification area	24	Replacing the hard disk drive or solid-state drive	51
Power management	24	Replacing the keyboard	53
Using the battery power	24	Replacing a Mini PCI ExpressCard for wireless LAN connection	57
Using the ac power	25	Installing or replacing the wireless WAN card.	60
Managing the power plans	26	Chapter 7. Advanced configuration.	65
Power-saving modes	26	Installing a new operating system	65
Connecting to the network	26	Installing the Windows 8 operating system	65
Ethernet connections	27	Installing device drivers	66
Wireless connections	27	ThinkPad Setup	66
Presentations and Multimedia.	28	Main menu	66
Changing the display settings	28		
Using an external display.	29		
Using a projector	30		

Config menu	67
Date/Time menu	71
Security menu	71
Startup menu	75
Restart menu	77
Updating your system UEFI BIOS	77
Using system management	77
System management	78
Setting management features	78

Chapter 8. Preventing problems 81

General tips for preventing problems	81
Making sure device drivers are current	82
Taking care of your computer	83
Cleaning the cover of your computer	84

Chapter 9. Troubleshooting computer problems 87

Diagnosing problems	87
Troubleshooting	87
Computer stops responding	87
Spills on the keyboard	88
Error messages	88
Errors without messages	90
Beep errors	91
Memory module problems	91
Networking problems	92
Problems with the keyboard and other pointing devices	94
Problems with the display and multimedia devices	95
Battery and power problems	99
Problems with drives and other storage devices	102
A software problem	103
Problems with ports and connectors	104

Chapter 10. Getting support 105

Before you contact Lenovo	105
Getting help and service	105
Using diagnostic programs	106
Lenovo Support Web site	106
Calling Lenovo	106
Finding ThinkPad options	107
Purchasing additional services	107

Appendix A. Regulatory

information 109

Wireless related information	109
Location of the UltraConnect wireless antennas	110
Locating wireless regulatory notices	111
Export classification notice	111
Electronic emission notices	111
Federal Communications Commission Declaration of Conformity	111
Industry Canada Class B emission compliance statement	111
European Union - Compliance to the Electromagnetic Compatibility Directive	112
German Class B compliance statement	112
Korea Class B compliance statement	112
Japan VCCI Class B compliance statement	113
Japan compliance statement for products which connect to the power mains with rated current less than or equal to 20 A per phase	113
Lenovo product service information for Taiwan	113

Appendix B. WEEE and recycling

statements 115

Important WEEE information	115
Japan recycling statements	115
Recycling information for Brazil	116
Battery recycling information for the European Union	116
Battery recycling information for Taiwan	117
Battery recycling information for the United States and Canada	117

Appendix C. ENERGY STAR model

information 119

Appendix D. Notices 121

Trademarks	122
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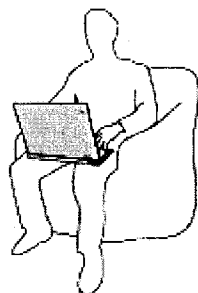
Appendix E. Restriction of Hazardous Substances Directive (RoHS) 123

China RoHS	123
Turkish RoHS	123
Ukraine RoHS	123
India RoHS	124

Read this first

Be sure to follow the important tips given here to get the most use and enjoyment out of your computer. Failure to do so might lead to discomfort or injury, or cause your computer to fail.

Protect yourself from the heat that your computer generates.



When your computer is turned on or the battery is charging, the base, the palm rest, and some other parts may become hot. The temperature they reach depends on the amount of system activity and the level of charge in the battery.

Extended contact with your body, even through clothing, could cause discomfort or even a skin burn.

- Avoid keeping your hands, your lap, or any other part of your body in contact with a hot section of the computer for any extended time.
- Periodically take hands from using the keyboard by lifting your hands from the palm rest.

Protect yourself from the heat generated by the ac power adapter.



When the ac power adapter is connected to an electrical outlet and your computer, it generates heat.

Extended contact with your body, even through clothing, may cause a skin burn.

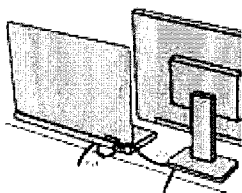
- Do not place the ac power adapter in contact with any part of your body while it is in use.
- Never use it to warm your body.

Prevent your computer from getting wet.



To avoid spills and the danger of electrical shock, keep liquids away from your computer.

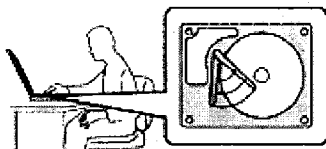
Protect the cables from being damaged.



Applying strong force to cables may damage or break them.

Route communication lines, or the cables of an ac power adapter, a mouse, a keyboard, a printer, or any other electronic device, so that they cannot be walked on, tripped over, pinched by your computer or other objects, or in any way subjected to treatment that could interfere with the operation of your computer.

Protect your computer and data when moving it.



Before moving a computer equipped with a hard disk drive, do one of the following, and ensure that the power button is off or is blinking:

- Turn it off.
- Put it in sleep mode.

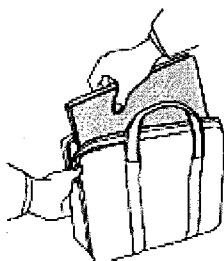
This will help to prevent damage to the computer, and possible loss of data.

Handle your computer gently.



Do not drop, bump, scratch, twist, hit, vibrate, push, or place heavy objects on your computer, display, or external devices.

Carry your computer carefully.



- Use a quality carrying case that provides adequate cushioning and protection.
- Do not pack your computer in a tightly packed suitcase or bag.
- Before putting your computer in a carrying case, ensure that it is off, in sleep mode. Do not put a computer in a carrying case while it is turned on.

Important safety information

Note: Read the important safety information first.

This information can help you safely use your notebook 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, see “Warranty Information” in the *Safety, Warranty, and Setup Guide* that comes with your computer.

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. These conditions might merely mean that an internal electronic component has failed in a safe and controlled manner. Or, they might indicate a potential safety issue. However, do not take risks or attempt to diagnose the situation yourself. Contact the Customer Support Center for further guidance. For a list of Service and Support phone numbers, see the following Web site:
<http://www.lenovo.com/support/phone>

Frequently inspect your computer and its components for damage or 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 conditions, 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 these conditions 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.

Safety guidelines

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

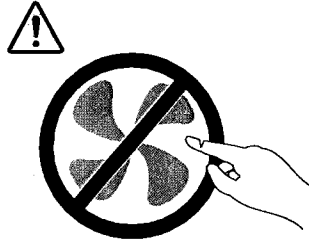
Service and upgrades

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 a power cord, always ensure

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.

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:



Before replacing any CRUs, turn off the computer and wait three to five minutes to let the computer cool before opening the cover.

Power cords and power adapters



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

The power cords shall be safety approved. For Germany, it shall be H05VV-F, 3G, 0.75 mm², or better. For other countries, the suitable types shall 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 pins 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.

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 defeat this safety feature by trying to insert it 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 percent 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.

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.

External devices

CAUTION:

Do not connect or disconnect any external device cables other than USB cable 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.

General battery notice



Personal computers manufactured by Lenovo contain a 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. Only recharge the battery pack strictly according to 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 you notice any signs of bulging, leakage or corrosion on the exterior of the product, this may be the result of an internal battery fault. If this occurs, stop using the product immediately and please contact the Lenovo Support team for further instructions. Factory replacement of the batteries may be required.

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, which 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.

Built-in rechargeable battery notice



Do not attempt to replace the internal rechargeable lithium ion batteries. Contact Lenovo Support for factory replacement.

Lithium coin cell battery notice



Danger of explosion if battery is incorrectly replaced.

When replacing the lithium coin cell battery, use only the same or an equivalent type that is recommended by the manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

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.

California Perchlorate Information:

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

Perchlorate Material - special handling may apply, See
www.dtsc.ca.gov/hazardouswaste/perchlorate

Heat and product ventilation



Computers, ac power adapters, and many accessories can generate heat when turned on and when batteries are charging. Notebook computers can generate a significant amount of heat due to their compact size. Always follow these basic precautions:

- When your computer is turned on or the battery is charging, the base, the palm rest, and some other parts may become hot. Avoid keeping your hands, your lap, or any other part of your body in contact with a hot section of the computer for any extended length of time. When you use the keyboard, avoid keeping your palms on the palm rest for a prolonged period of time. Your computer generates some heat during normal operation. The amount of heat depends on the amount of system activity and the battery charge level. Extended contact with your body, even through clothing, could cause discomfort or even a skin burn. Periodically take breaks from using the keyboard by lifting your hands from the palm rest; and be careful not to use the keyboard for any extended length of time.
- Do not operate your computer or charge the battery near flammable materials or in explosive environments.
- Ventilation slots, fans and/or 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.
- When the ac power adapter is connected to an electrical outlet and your computer, it generates heat. Do not place the adapter in contact with any part of your body while using it. Never use the ac power adapter to warm your body. Extended contact with your body, even through clothing, may cause a skin burn.

For your safety, always follow these basic precautions with your 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 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).

Electrical current safety information



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

To avoid a shock hazard:

- **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 a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **Whenever 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 all attached cables and disable batteries before opening any accessible device covers unless instructed otherwise in the installation and configuration procedures.**
- **Do not use your computer until all internal parts enclosures are fastened into place. Never use the computer when internal parts and circuits are exposed.**



Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.

To connect:

1. **Turn everything OFF.**
2. **First, attach all cables to devices.**
3. **Attach signal cables to connectors.**
4. **Attach power cords to outlets.**
5. **Turn devices ON.**

To disconnect:

1. **Turn everything OFF.**
2. **First, remove power cords from outlets.**
3. **Remove signal cables from connectors.**
4. **Remove all cables from devices.**

The power cord must be disconnected from the wall outlet or receptacle before installing all other electrical cables connected to the computer.

The power cord may be reconnected to the wall outlet or receptacle only after all other electrical cables have been connected to the computer.

Liquid crystal display (LCD) notice

CAUTION:

The liquid crystal display (LCD) is made of glass, and rough handling or dropping the computer can cause the LCD to break. If the LCD breaks and the internal fluid gets into your eyes or on your hands, immediately wash the affected areas with water for at least 15 minutes; if any symptoms are present after washing, get medical care.

Note: For products with mercury-containing fluorescent lamps (for example, non-LED), the fluorescent lamp in the liquid crystal display (LCD) contains mercury; dispose of according to local, state, or federal laws.

Using headphones or earphones

CAUTION:

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 headphone 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.

Additional safety information



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

Notice for tablet personal computer users

Safety notice for users in Australia



Do not connect phone line while using tablet mode.

Notice for users in the U.S.A.

Many personal computer products and accessories contain cords, cables or wires, such as power cords or cords to connect the accessory to a personal computer. If this product has such a cord, cable or wire, then the following warning applies:

WARNING: Handling the cord on this product or cords associated with accessories sold with this product will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. ***Wash hands after handling.***

Save these instructions.

Chapter 1. Product overview

This chapter provides information about the locations of connectors, locations of important product labels, computer features, specifications, operating environment, and the preinstalled Lenovo programs.

This chapter contains the following topics:

- “Locating computer controls, connectors, and indicators” on page 1
- “Locating important product information” on page 8
- “Features” on page 9
- “Specifications” on page 10
- “Operating environment” on page 11
- “Lenovo programs” on page 11

Locating computer controls, connectors, and indicators

This section introduces the computer hardware features to give you the basic information you will need to start using the computer.

Front view

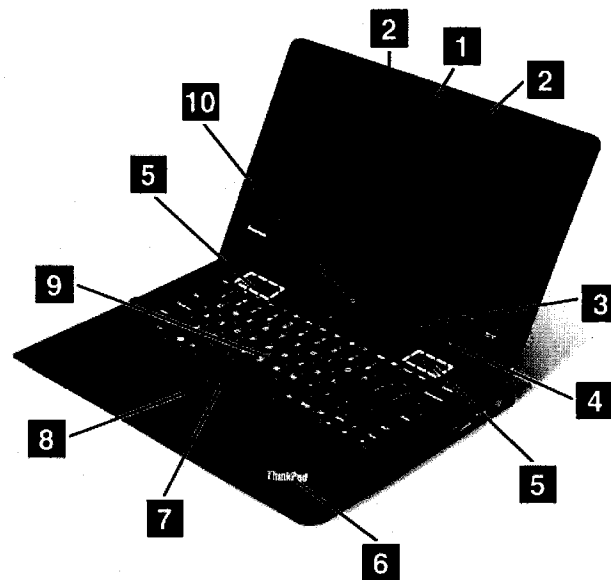


Figure 1. ThinkPad S230u front view

1 Integrated camera	6 System status indicator (illuminated ThinkPad® logo)
2 Built-in microphones	7 TrackPoint® buttons
3 Ambient light sensor	8 Touch pad
4 Volume control buttons	9 TrackPoint pointing stick
5 Built-in stereo speakers	10 Windows® button

1 Integrated camera

Use the camera to take pictures or hold a video conference. For details, see “Using the integrated camera” on page 31.

2 Built-in microphones

The built-in microphones capture sound and voice when used with an application program capable of handling audio.

3 Ambient light sensor

The ambient light sensor detects the surrounding light conditions. Then the computer adjusts the screen brightness accordingly.

4 Volume control buttons

The volume control buttons enable you to adjust the volume while you are using your computer in the tablet mode.

5 Built-in stereo speakers

Your computer is equipped with a pair of built-in stereo speakers.

6 System status indicator (illuminated ThinkPad logo)

The illuminated ThinkPad logo on the palm rest functions as a system status indicator. Your computer has several status indicators. For the detailed information about the location and meaning of each indicator, see “System status indicators” on page 6.

UltraNav® pointing device

7 TrackPoint button

8 Touch pad

9 TrackPoint pointing stick

The keyboard contains the Lenovo unique UltraNav pointing device. Pointing, selecting, and dragging are integral process that you can perform without moving your fingers from a typing position. For more information, see “Using the UltraNav pointing device” on page 21.

10 Windows button

Press the Windows button to switch between the current workspace and the Start screen.

Right-side view

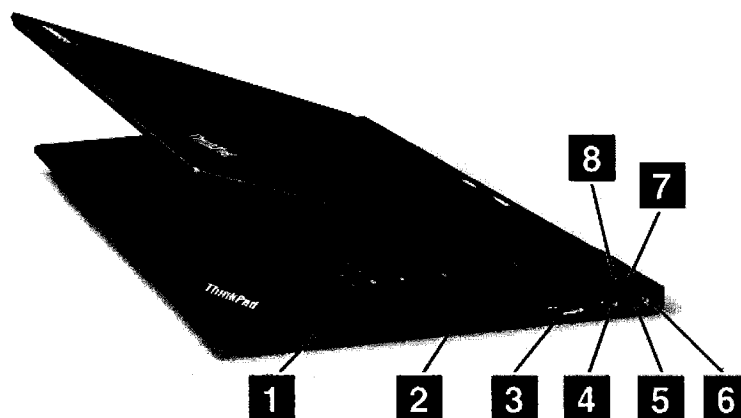


Figure 2. ThinkPad S230u right-side view

Note: Your computer keyboard might look different from the illustration above.

1 Hard disk or solid-state drive bay	5 Power status indicator
2 Fan louvers	6 ac power connector
3 USB 3.0 connector	7 Power button
4 Mini DisplayPort connector	8 Screen rotation lock button

1 Hard disk or solid-state drive bay

Depending on models, your computer might have a large-capacity, customer-upgradable hard disk drive that can meet a variety of storage demands.

Some models are equipped with a solid-state drive for data storage, making your computer lighter, smaller, and faster.

2 Fan louvers

The internal fan and louvers enable air to circulate in the computer and cool the central processor.

Note: To avoid impeding the airflow, do not place any obstacle in front of the fan.

3 USB 3.0 connector

The USB 3.0 connector is used for connecting devices compatible with a USB interface, such as a USB printer or a digital camera.

Attention: When you attach a USB cable to the connector, ensure that the USB mark is facing upward. Otherwise the connector might be damaged.

4 Mini DisplayPort connector

Use the mini DisplayPort connector to connect your computer to a compatible projector, external monitor, or high-definition television.

5 Power status indicator

The power status indicator shows the status of ac power.

6 ac power connector

Connect the ac power adapter to the ac power connector to provide ac power to the computer and charge the battery.

7 Power button

Use the power button to turn on the computer. To turn off the computer, do the following:

1. Move the cursor to the top-right or bottom-right corner of the screen to display the charms.
2. Click **Settings** → **Power** → **Shut down**.

If your computer stops responding and you cannot turn it off, press and hold the power button for four seconds or more. If the computer still is not responding, detach the ac power adapter to reset the computer.

You also can program the power button so that by pressing the power button you can shut down the computer or put it into sleep or hibernation mode. To define the power button, click the battery status icon in the Windows notification area, and then click **More power options** → **Choose what the power buttons do**.

8 Screen rotation lock button

Use the screen rotation lock button to lock the screen rotation function.

Left-side view

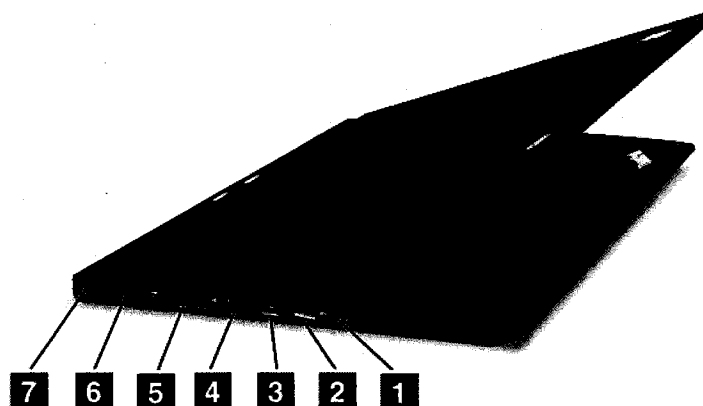


Figure 3. ThinkPad S230u left-side view

Note: Your computer keyboard might look different from the illustration above.

1 Combo audio jack	5 Media card reader slot
2 USB 3.0 connector	6 Subscriber Identification Module (SIM) card slot
3 Mini HDMI connector	7 Security keyhole
4 Ethernet connector	

1 Combo audio jack

To listen to the sound from your computer, you can connect a headphone or a headset that has a 3.5 mm 4-pole plug to the combo audio jack.

Notes:

- If you are using a headset with a function switch, for example, a headset for a mobile digital device, do not press this switch while using the headset. If you press it, the headset microphone will be disabled, and the integrated microphones on the computer will be enabled instead.
- The combo audio jack does not support a conventional microphone. For more information, see “Using audio features” on page 30.

2 USB 3.0 connector

The USB 3.0 connector is used for connecting devices compatible with a USB interface, such as a USB printer or a digital camera.

Attention: When you attach a USB cable to the connector, ensure that the USB mark is facing upward. Otherwise the connector might be damaged.

3 Mini HDMI connector

Your computer comes with a mini high-definition multimedia interface (HDMI) connector, a digital audio and video interface that can connect a compatible digital audio device or video monitor, such as a high-definition television.

4 Ethernet connector

Connect your computer to a LAN with the Ethernet connector.



To avoid the risk of electrical shock, do not connect the telephone cable to the Ethernet connector. You can only connect an Ethernet cable to this connector.

Two indicators, to the bottom-right and left of the connector, show the status of the network connection. When your computer connects to a LAN and a session with the network is available, the bottom yellow indicator is steady green. While data is being transmitted, the bottom-right indicator blinks green.

5 Media card reader slot

Depending on the model, your computer might have a media card reader slot. For more information about the supported cards, see “Using a media card” on page 31.

6 Subscriber Identification Module (SIM) card slot

If your computer has the wireless WAN feature, it might require a SIM card to establish wireless WAN connections. Depending on the country of delivery, the SIM card might be already installed in the SIM card slot.

7 Security keyhole

Purchase a security cable lock that fits this keyhole to lock your computer to a stationary object to protect your computer from theft.

Bottom view

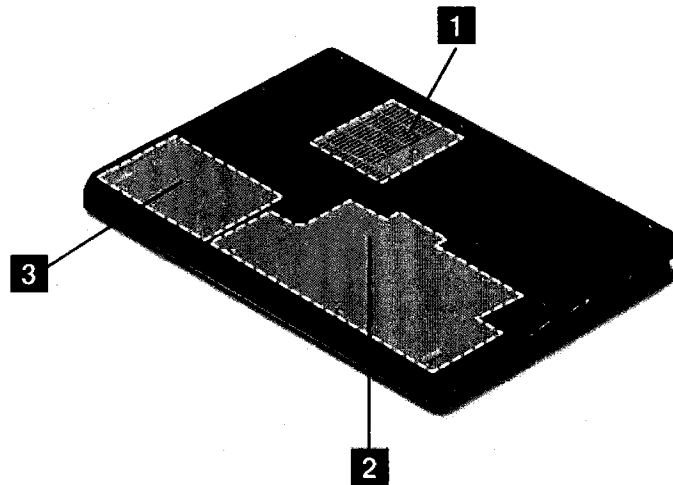


Figure 4. ThinkPad S230u bottom view

Note: Your computer bottom view might look slightly different from the illustration above.

1 Fan louvers	3 Hard disk drive or solid-state drive
2 Integrated battery	

1 Fan louvers

The internal fan and louvers enable air to circulate in the computer and cool the central processor.

Note: To avoid impeding airflow, do not place any obstacle in front of the fan.

2 Integrated battery

Use your computer with the battery power whenever ac power is unavailable.

3 Hard disk drive or solid-state drive

Depending on models, your computer might have a large-capacity, customer-upgradable hard disk drive that can meet a variety of storage demands.

Some models are equipped with a solid-state drive for data storage, making your computer lighter, smaller, and faster.

Note: The hidden service partition is the reason why there is less free space than expected on your hard disk drive or solid-state drive. This reduction is more noticeable on the solid-state drive because of its smaller capacity.

Status indicators

The status indicators show the current status of your computer.

System status indicators

The illuminated dot in the ThinkPad logo on the outer lid of your computer and on the palm rest works as a system status indicator.



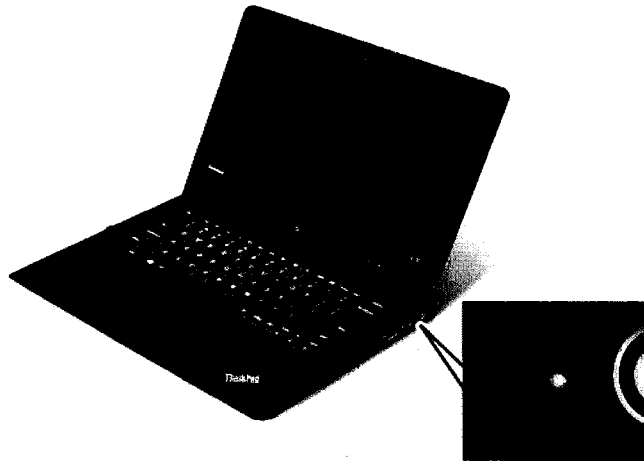
Note: Your computer keyboard might look different from the illustration above.

The meaning of the indicator is as follows:

- **Red:** The computer is on (in normal mode).
- **Fast blinking red:** The computer is turning off.
- **Slow blinking red:** The computer is in sleep mode.
- **Off:** The computer is off.

Power status indicator

Your computer has an indicator that shows the status of ac power.



Note: Your computer keyboard might look different from the illustration above.

The meaning of the indicator is as follows:

- **Green:** The ac power adapter is connected.
- **Off:** The ac power adapter is not connected.

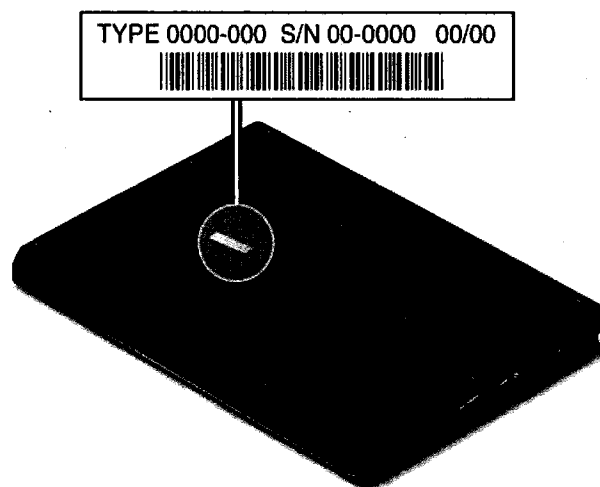
Locating important product information

This section provides information to help you locate your machine type and model label, FCC ID and IC Certification label, and the Windows Certificate of Authenticity (COA) label.

Machine type and model label

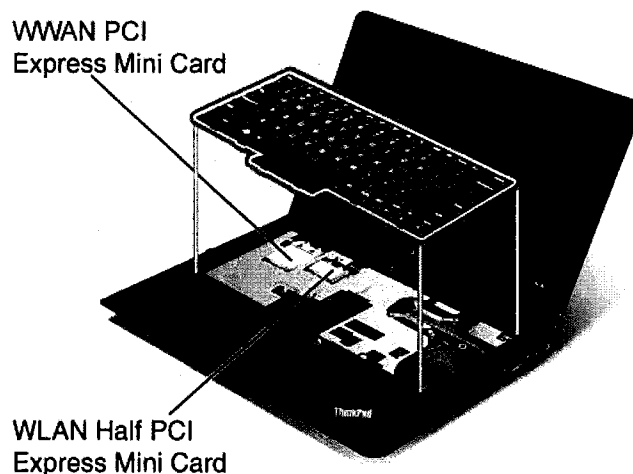
The machine type and model label identifies your computer. When you contact Lenovo for help, the machine type and model information helps support technicians to identify your computer and provide faster service.

You can find the machine type and model of your computer on the label as shown below:



FCC ID and IC Certification number label

There is no FCC ID or IC Certification number for the PCI Express Mini Card shown on the enclosure of your computer. The FCC ID and IC Certification number label is affixed on the card installed in the PCI Express Mini Card slot of your computer.



If you need to remove the Wireless LAN card for repair or replacement, follow the procedure in “Replacing a Mini PCI ExpressCard for wireless LAN connection” on page 57. If you have purchased a wireless WAN enabled computer, the wireless WAN PCI Express Mini Card is preinstalled at the factory. If you need to remove this card for repair or replacement, follow the procedure in “Installing or replacing the wireless WAN card” on page 60.

Note: Only Lenovo authorized wireless LAN or wireless WAN cards are allowed to be used in your computer. If you install an unauthorized PCI Express Mini Card that is not approved for use in your computer, the computer will not start, but will only display an error message and emit audible beeps.

Features

This topic lists the features of your computer.

Tablet features

- Multi-touch screen
- Volume control buttons
- Screen rotation lock button
- Windows button

Processor

To view the system properties of your computer, go to your desktop and move the cursor to the top-right or bottom-right corner of the screen to display the charms. Then, click **Settings → PC info**.

Memory

Double data rate 3 synchronous dynamic random access memory modules (DDR3 SDRAM)

Storage device

2.5-inch (7 mm height) hard disk drive or solid-state drive

Display

The color display uses the Thin Film Transistor (TFT) technology.

- Size: 12.5 inches (317.50 mm)
- Resolution:
 - LCD: 1366 x 768
 - External monitor: up to 2560 x 1600
- Brightness control
- Integrated camera
- Built-in microphones

Keyboard

- 6-row keyboard
- UltraNav pointing device (TrackPoint pointing device and multi-touch touch pad)
- Fn key

Interface

- Mini HDMI port
- Mini DisplayPort connector (on some models)
- Combo audio jack
- USB 3.0 connectors
- RJ45 Ethernet connector
- 4-in-1 media card reader
- SIM card slot

Wireless features

- Integrated wireless LAN
- Integrated wireless WAN (on some models)

Specifications

This section lists the physical specifications for your computer.

Size

- Width: 12.32 inches (313 mm)
- Depth: 9.37 inches (238 mm)
- Height: 0.80 inch (20.4 mm)

Heat output

65 W (222 Btu/hr) maximum or 90 W (307 Btu/hr) maximum, depending on the model

Power source (ac power adapter)

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

Battery pack

Integrated lithium-ion (Li-Ion) battery pack

Battery life

For the percentage of the remaining battery power, refer to the battery status icon in the Windows notification area.

Operating environment

This section provides information about your computer operating environment.

Environment:

- Maximum altitude without pressurization: 3048 m (10 000 ft)
- Temperature
 - At altitudes up to 2438 m (8000 ft)
 - Operating: 5.0°C to 35.0°C (41°F to 95°F)
 - Storage: 5.0°C to 43.0°C (41°F to 109°F)
 - At altitudes above 2438 m (8000 ft)
 - Maximum temperature when operating under the unpressurized condition: 31.3°C (88°F)
- **Note:** When you charge the battery pack, its temperature must be at least 10°C (50°F).
- Relative humidity:
 - Operating: 8% to 80%
 - Storage: 5% to 95%

If possible, place your computer in a well-ventilated and dry area without direct exposure to sunshine.

Keep electrical appliances such as an electric fan, radio, air conditioner, and microwave oven 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.

Lenovo programs

Your computer comes with Lenovo programs to help you work more easily and securely.

Note: To learn more about the programs and other computing solutions offered by Lenovo, go to <http://www.lenovo.com/support>.

To access Lenovo programs, press the Windows key to go to the Start screen. Click a Lenovo program to launch it. If you cannot find the program you need, move the cursor to the bottom-right corner of the screen to bring up the charms. Then click the **Search** charm to search for the desired program.

Your computer might be preinstalled with the following Lenovo programs.

Active Protection System™

The Active Protection System program protects your hard disk drive when the shock sensor inside your computer detects a condition that could damage the drive, such as system tilt, excessive vibration, or shock. The hard disk drive is less vulnerable to damage when it is not operating. This is because when the hard disk drive is not operating, the system stops it from spinning, and might also move the read and write heads of the drive to areas that do not contain data. As soon as the shock sensor senses that the environment is stable again (minimal change in system tilt, vibration, or shock), it turns the hard disk drive on.

Fingerprint Software

If your computer comes with a fingerprint reader, the Fingerprint Software program enables you to enroll your fingerprint and associate it with your Windows password. As a result, the fingerprint authentication can replace your password and enable simple and secure user access.

Lenovo Cloud Storage

The Lenovo Cloud Storage program enables you to upload and store your local files to a remote Lenovo server. You can view and download the stored files at any time.

Lenovo Companion

Through the Lenovo Companion program, you can get the information about the accessories for your computer, view blogs and articles about your computer, and check for recommended programs.

Lenovo Settings

Use the Lenovo Settings program to enhance your computing experience by turning your computer into a portable hotspot, configuring camera and audio settings, optimizing your power settings, and creating and managing multiple network profiles.

Lenovo Mobile Access

The Lenovo Mobile Access program enables you to manage your mobile broadband connection. You can create an account, add money to the account, and purchase mobile broadband sessions using your account.

Lenovo Solution Center

The Lenovo Solution Center program enables you to troubleshoot and resolve computer problems. It combines diagnostic tests, system information collection, security status, and support information, along with hints and tips for maximum system performance.

Lenovo Support

The Lenovo Support program enables you to register your computer with Lenovo, check the computer health condition and the battery status, download and view user manuals for your computer, get the warranty information of your computer, and explore help and support information.

Password Manager

The Password Manager program automatically captures and fills in authentication information for Windows programs and Web sites.

System Update

The System Update program helps you keep the software on your computer up-to-date by downloading and installing software update packages (Lenovo programs, device drivers, UEFI BIOS updates, and other third party applications).

Note: Depending on your computer model, some of the programs might not be available. Lenovo programs vary by geographic locations and are subject to update.

Chapter 2. Using your computer

This chapter provides information on using some of the computer components.

This chapter contains the following topics:

- “Registering your computer” on page 13
- “Frequently asked questions” on page 13
- “Tablet mode” on page 14
- “Special keys and buttons” on page 19
- “Using the UltraNav pointing device” on page 21
- “Power management” on page 24
- “Connecting to the network” on page 26
- “Using an external display” on page 29
- “Presentations and Multimedia” on page 28
- “Using a projector” on page 30
- “Using audio features” on page 30
- “Using the integrated camera” on page 31
- “Using a media card” on page 31

Registering your computer

When you register your computer, information is entered into a database, which enables Lenovo to contact you in case of a recall or other severe problem. After you registered your computer with Lenovo, you will also receive quicker service when you call Lenovo for help. In addition, some locations offer extended privileges and services to registered users.

To register your computer with Lenovo, do one of the following:

- Connect your computer to the Internet. Launch the preinstalled Lenovo Support program. Then click **Registration** and follow the instructions on the screen to register your computer.
- Go to <http://www.lenovo.com/register>, and follow the instructions on the screen to register your computer.

Frequently asked questions

The following are a few tips that will help you optimize the use of your computer.

To ensure that you receive the best performance from your computer, go to the following Web page to find information such as aids for troubleshooting and answers to frequently asked questions:
<http://www.lenovo.com/support/faq>

Can I get my user guide in another language?

- To download the user guide in another language, go to: <http://www.lenovo.com/support>. Then follow the instructions on the screen.

How to use the battery power more effectively?

- To conserve the power of your computer, see “Power-saving modes” on page 26.

- To achieve the best balance between performance and power saving, see “Managing the power plans” on page 26.

Concerned about security or need to securely dispose of data stored on your hard disk drive or solid-state drive?

- Study Chapter 4 “Security” on page 37 to find out how you can protect your computer from theft and unauthorized use.
- Use the Password Manager program to protect the data stored on your computer.
- Before you dispose of the data on the hard disk drive or solid-state drive, be sure to read “Notice on deleting data from your hard disk drive or solid-state drive” on page 44.

Is getting connected in different locations a challenge?

- To troubleshoot a wireless networking issue, go to <http://www.lenovo.com/support/faq>.
- To learn more about using the wireless features of your computer, refer to “Wireless connections” on page 27.
- To travel more confidently, be sure to check the tips in “Traveling with your computer” on page 35.
- Press F8 to enable or disable the wireless features.

Need to give presentations or attach an external monitor often?

- Ensure that you follow the procedure for “Using an external display” on page 29.
- With the Extend desktop function, you can display output on both the computer display and an external monitor.

Need to attach or replace a device?

- See Chapter 6 “Replacing devices” on page 49 for more information about replacing the devices of your computer.

You have been using your computer for some time already, and it is getting slower?

- Follow “General tips for preventing problems” on page 81.
- You can diagnose problems yourself by using the preinstalled diagnostic software.
- Check for recovery solutions in Chapter 5 “Recovery overview” on page 47.

Print the following sections and keep them with your computer in case you are unable to access this online user guide when necessary.

- “Installing a new operating system” on page 65
- “Computer stops responding” on page 87
- “Power problems” on page 100

Tablet mode

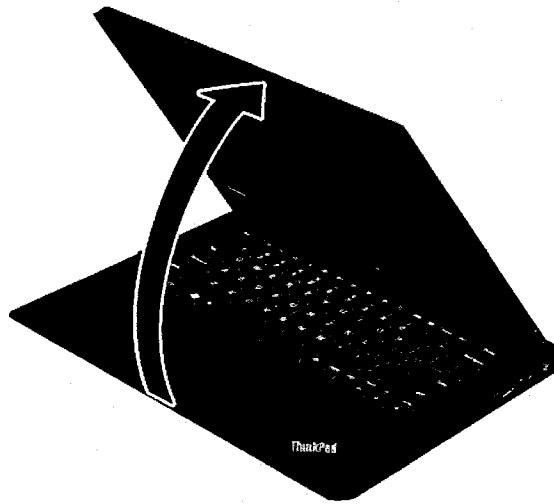
Your computer can be used in tablet mode. This section introduces how to use your notebook computer in tablet mode.

Using tablet mode

In tablet mode, you can use your computer in a creative and intuitive way by folding down the computer display to turn your computer into a tablet.

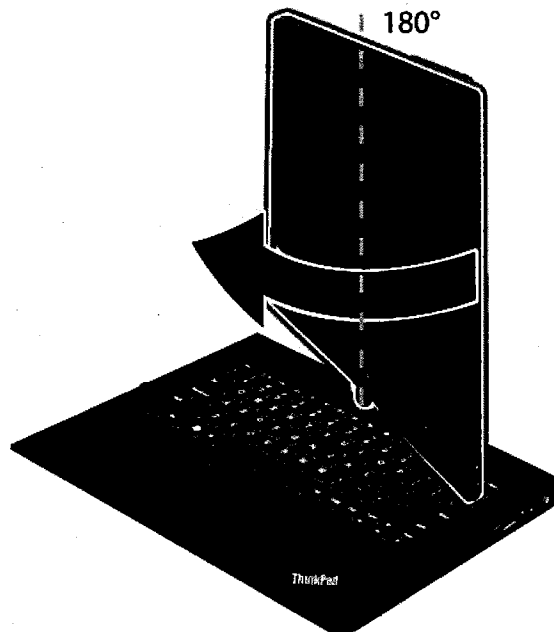
To use your computer in tablet mode, do the following:

1. Open the computer display slowly, holding the upper left and right sides of the computer display with both hands. Your computer is now in **notebook mode**.



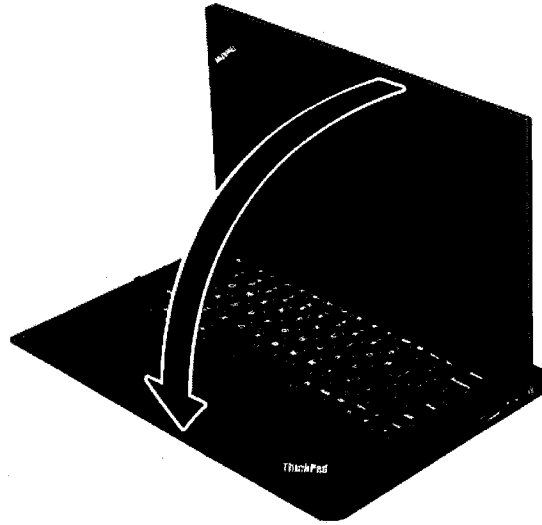
2. Open the computer display by at least 45 degrees, preferably by 90 degrees. Grasp the center of one side of the computer display with one hand while holding the keyboard bezel with the other hand; then rotate the display slowly clockwise until the back of the display is facing the keyboard. Your computer is now in **picture frame mode**.

Note: While rotating the display, do not press the upper edge of either side of the display.



3. Close the computer display slowly, holding the upper left and right sides with both hands.

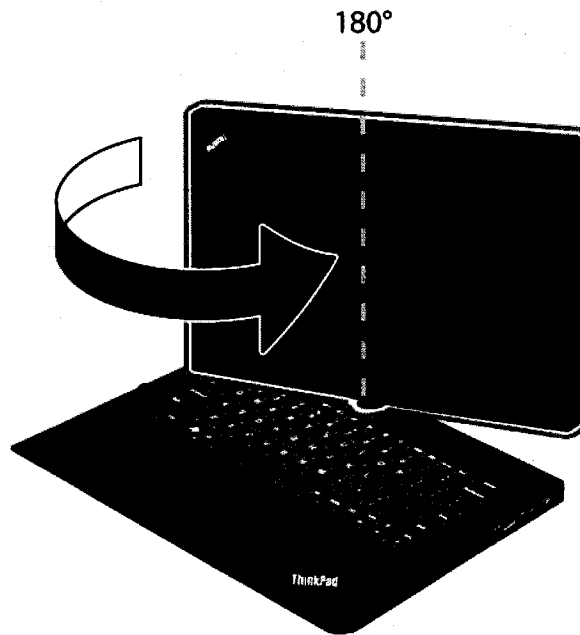
Note: Make sure that the display is rotated at 180 degrees, so that the back of the display faces the keyboard.



4. Your computer is now in **tablet mode**.

To switch your computer from tablet mode to notebook mode, do the following:

1. Open the display by at least 45 degrees, preferably by 90 degrees.
2. Rotate the display slowly counter-clockwise until the front of the display is facing the keyboard.



Your computer is now in **notebook mode**.

Tips on using your computer in tablet mode

- To close the computer display, first make sure that the display either faces the keyboard or is positioned at 180 degrees to the keyboard, so that the back of the display faces the keyboard.
- Do not pick up or hold the computer by the display only.
- Do not hit, vibrate, or bump the computer display.

- To allow free ventilation, do not place any obstacle, such as a thick-piled carpet or a soft cushion, in front of the fan.
- When you use the computer in picture frame mode, hold the display with one hand and use the Tablet Digitizer Pen.
- If you hold the computer with one hand while using it in tablet mode, do not expose it to excessive vibration, shock, or rotation.
- When using computer outdoors, protect against exposure to rain or moisture.
- If you put your computer in a carrying case, put it into notebook mode and close the display.

Using the multi-touch screen

This topic provides instructions on how to use the multi-touch screen.

Tap

Tap once on an item to select or open it. This operation is similar to a click on a mouse.

Press and hold

Press and hold an item to display information about it, or to open the context menu. This operation is similar to a right-click on a mouse.

Zoom in or zoom out

Move your fingers closer together on the screen to zoom in, or move two fingers apart on the screen to zoom out.

Rotate

Put two or more fingers on an item and then rotate your fingers. This operation enables you to rotate the item. Only some items can be rotated.

Slide to scroll

Move your finger on the screen to scroll through items such as Web pages, photos, and lists. This operation is similar to the scrolling operation on a mouse.

Slide to rearrange

Drag an item in the direction opposite to how you would scroll. For example, if you would scroll left or right, drag the item up or down. After you have moved the item to a desired location, release it.

Swipe to select

Swipe an item a short distance in a direction opposite to how the page scrolls to select the item. A quick and short movement works best. This operation enables you to select an item such as a photo, a program tile, or the text.

Swipe from edge

Swipe in with your finger starting from an edge of the screen.

- Swiping in from the right edge of your screen to display the charms.
- Swiping in from the left edge of your screen to achieve any of the following:
 - Display an open program.
 - Snap a program. Swipe in from the left edge of your screen, and drag the program until a border is displayed. Then, move the program to a desired position.

- Display a list of recently opened programs. Swipe in from the left edge of your screen without lifting your finger, and then drag the program back to the left edge. Then a list of recently opened programs is displayed.
- Close a program. Swipe in from the left edge of your screen, and drag the program to the bottom of your screen.
- Swiping in from the top edge of your screen to achieve any of the following
 - Display the menu commands, such as **Save**, **Edit**, and **Delete**.
 - Close a program. Swipe in from the top edge of your screen, and drag the program to the bottom of your screen.
- Swiping in from the bottom edge of your screen to display the menu commands, such as **Save**, **Edit**, and **Delete**.

Tips on using the multi-touch screen

- The multi-touch screen is a glass panel covered with a plastic film. For input you can use any finger. Do not apply pressure or place any metallic object on the screen. Otherwise, the screen might be damaged or malfunction.
- Before you put your computer in a carrying case, put it into notebook mode and close the display. Do not put your computer in a carrying case when it is in tablet mode.
- Regularly calibrate the accuracy of the finger input to avoid a discrepancy.

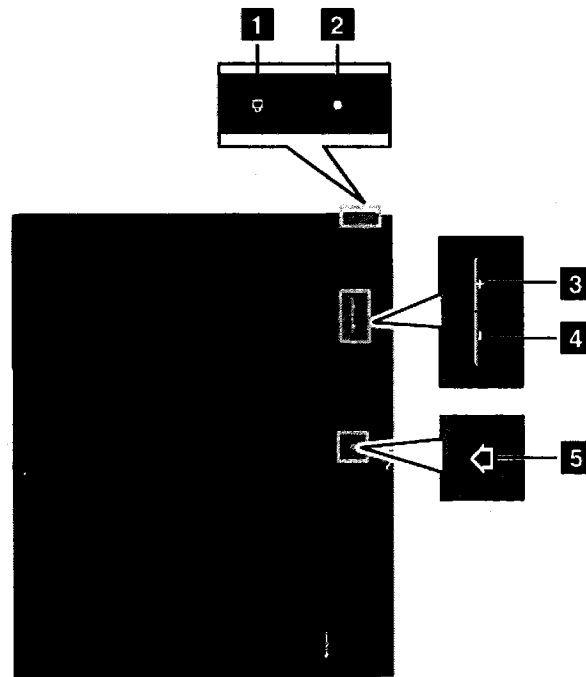
Cleaning the multi-touch screen

To clean the multi-touch screen, do the following:

1. To remove fingerprints or dust from the multi-touch screen, use a dry, soft, lint-free cloth or a piece of absorbent cotton. Do not apply solvents to the cloth.
2. Gently wipe foreign particles and dust from the multi-touch screen with one side of the cloth.
3. Wipe smudges or fingerprints with the other side of the cloth, or with a clean cloth.
4. After using the cloth, wash it with a neutral detergent.

Using the tablet buttons

On the display bezel near the screen is a row of buttons with which you can control your computer in tablet mode, without the use of the keyboard.

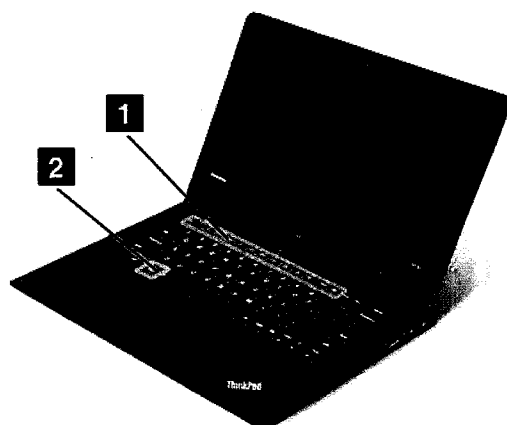


- 1 Screen Rotation button:** Press it to lock the screen rotation function.
- 2 Power button:** Press it to turn on the computer.
- 3 Speaker volume up button:** Press it to increase the speaker volume.
- 4 Speaker volume down button:** Press it to decrease the speaker volume.
- 5 Windows button:** Press it to switch between the current workspace and the Start screen.

Special keys and buttons

Your computer has several special keys and buttons to help you work more easily and effectively.

The following figure shows the locations of the special keys and buttons on your computer.



1 Function keys

Volume and mute keys

- **F1:** Mutes or unmutes the speakers.

If you mute the sound and turn off your computer, the sound will remain muted when you turn on your computer again. To turn on the sound, press F2 or F3.

- **F2:** Decreases the speaker volume.
- **F3:** Increases the speaker volume.
- **F4:** Mutes or unmutes the microphones.

Display management keys

- **F5:** The computer display becomes dimmer.
- **F6:** The computer display becomes brighter.

You can temporarily change the computer display brightness by pressing these two keys. To change the default brightness level, right-click the battery status icon in the Windows notification area, then click **Adjust screen brightness** and make changes as desired.

- **F7:** Switches the display output location between the computer display and an external monitor.

Other functions

- **F8:** Enables or disables the Airplane mode.

The Airplane mode disables the wireless features of your computer to comply with airline regulations. When you press this key, a list of wireless connections is displayed. You can quickly turn on or turn off all the wireless network connections.

- **F9:** Opens the **Settings** charm.
- **F10:** Opens the **Search** charm.
- **F11:** Press this key to view the programs that you have opened.
- **F12:** Press this key to view all programs.
- **Fn Lock (Esc):** Opens the ThinkPad Keyboards Properties window where you can toggle the F1-F12 key functionality.
- **Fn+B:** Has the same function as the Break key.

- **Fn+P:** Has the same function as the Pause key.
- **Fn+S:** Has the same function as the SysRq key.
- **Fn+K:** Has the same function as the ScrLK key.

You can toggle the ThinkPad F1-F12 key functionality to use the keys in default mode or in legacy mode. In default mode, you can initiate the special functions illustrated on each key by pressing the corresponding key directly. In legacy mode, to initiate the special functions illustrated on each key, press and hold the Fn key and then press the desired function key, then release both keys.

To toggle the F1-F12 key functionality in the Windows environment, do the following:

1. Open the ThinkPad Keyboard Properties window by pressing the Fn lock key.
2. Configure the settings following the instructions on the screen.

To toggle the F1-F12 key functionality through the ThinkPad Setup program, do the following:

1. Start the computer. When the ThinkPad logo screen is displayed, press F1. The ThinkPad Setup program main menu opens.
2. Select **Config → Keyboard/Mouse → Change to F1-F12 keys**.
3. Configure the settings following the instructions on the screen.
4. Save changes and exit.

2 Windows key

Press this key to switch between the current workspace and the Start screen.

For information about using the Windows key with other keys, refer to the help information system of the Windows operating system.

Using the UltraNav pointing device

Your computer comes with the UltraNav pointing device. The UltraNav pointing device consists of the TrackPoint pointing device and the touch pad, each of which is itself a pointing device with both basic and extended functions. You can configure both devices by choosing the settings you prefer.

- Set both the TrackPoint pointing device and the touch pad as pointing devices.
- Set the TrackPoint pointing device as the main pointing device and the touch pad for scrolling, tap zones, and slow-motion pointer functions only.
- Set the TrackPoint pointing device as the main pointing device, and disable the touch pad.
- Set the touch pad as the main pointing device, and disable the TrackPoint pointing device.

Changing the UltraNav pointing device settings

To change the UltraNav pointing device settings, do the following:

1. Move the cursor to the top-right or bottom-right corner of the screen to display the charms. Click **Settings → Control Panel**.
2. Click **Hardware and Sound → Mouse → UltraNav**.
3. Change the settings as you desire.

You also can change the UltraNav pointing device settings by clicking the **UltraNav** icon in the Windows notification area. To display the **UltraNav** icon in the Windows notification area, see “Adding the UltraNav icon to the Windows notification area” on page 24.