

**TOSHIBA**  
Leading Innovation >>>

# User's Manual

**Satellite S50-C/S50t-C/P50-C/  
P50t-C**

**Satellite L50W-C/P50W-C**

**Series**

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# Chapter 1

## TOSHIBA Legal, Regulatory, and Safety

This chapter states the Legal, regulatory, and safety information applicable to TOSHIBA computers.

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#### ***FCC notice "Declaration of Conformity Information"***

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



*Only peripherals complying with the FCC class B limits might be attached to this equipment. Operation with non-compliant peripherals or peripherals not recommended by TOSHIBA is likely to result in interference to radio and TV reception. Shielded cables must be used between the external devices and the computer's Universal Serial Bus (USB 2.0 and 3.0) ports, HDMI port and Headphone/Microphone combo jack. Changes or modifications made to this equipment, not expressly approved by TOSHIBA or parties authorized by TOSHIBA could void the user's authority to operate the equipment.*

### **FCC conditions**

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

### **Contact**

**Address:** TOSHIBA America Information Systems, Inc.  
9740 Irvine Boulevard  
Irvine, California 92618-1697

**Telephone:** (949) 583-3000



*This information is only applicable for the countries/regions where it is required.*

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This product is carrying the CE-Mark in accordance with the related European Directives. Responsible for CE-Marking is TOSHIBA EUROPE GMBH, Hammfelddamm 8, 41460 Neuss, Germany. The complete and official EU Declaration of Conformity can be found on TOSHIBA's web site <http://epps.toshiba-teg.com> on the Internet.

### **CE compliance**

This product is labeled with the CE Mark in accordance with the applicable European Directives, notably RoHS Directive 2011/65/EU, Radio

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Equipment and Telecommunications Terminal Directive 1999/5/EC, Ecodesign Directive 2009/125/EC (ErP) and the related implementing measures.

This product and the original options are designed to observe the related EMC (Electromagnetic Compatibility) and safety standards. However, TOSHIBA cannot guarantee that this product still observes these EMC standards if options or cables not produced by TOSHIBA are connected or implemented. In this case the persons who have connected/implemented those options/cables have to provide assurance that the system (PC plus options/cables) still fulfils the required standards. To avoid general EMC problems, the following guidance should be noted:

- Only CE marked options should be connected/implemented
- Only best shielded cables should be connected

### ***Working environment***

This product was designed to fulfil the EMC (Electromagnetic Compatibility) requirements to be observed for so-called "Residential, commercial and light industry environments". TOSHIBA do not approve the use of this product in working environments other than the above mentioned "Residential, commercial and light industry environments".

For example, the following environments are not approved:

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- Medical Environments
- Automotive Environments
- Aircraft Environments

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- Interference with other devices or machines in the near surrounding area.
- Malfunction of, or data loss from, this product caused by disturbances generated by other devices or machines in the near surrounding area.

Therefore TOSHIBA strongly recommend that the electromagnetic compatibility of this product should be suitably tested in all non-approved working environments before use. In the case of automobiles or aircraft, the manufacturer or airline respectively should be asked for permission before use of this product.

Furthermore, for general safety reasons, the use of this product in environments with explosive atmospheres is not permitted.

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VCCI-B

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This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

## Following information is only valid for EU-member States:

### *Disposal of products*



The crossed out wheeled dust bin symbol indicates that products must be collected and disposed of separately from household waste. Integrated batteries and accumulators can be disposed of with the product. They will be separated at the recycling centres.

The black bar indicates that the product was placed on the market after August 13, 2005.

By participating in the separate collection of products and batteries, you will help to assure the proper disposal of products and batteries and thus help to prevent potential negative consequences for the environment and human health.

For more detailed information about the collection and recycling programmes available in your country, please visit our website

( [www.toshiba.eu/recycling](http://www.toshiba.eu/recycling) ) or contact your local council office or the retail outlet where you purchased the product.

## **Disposal of batteries and/or accumulators**



Pb, Hg, Cd

The crossed out wheeled dust bin symbol indicates that batteries and/or accumulators must be collected and disposed of separately from household waste.

If the battery or accumulator contains more than the specified values of lead (Pb), mercury (Hg), and/or cadmium (Cd) defined in the European Battery Directive, then the chemical symbols for lead (Pb), mercury (Hg) and/or cadmium (Cd) will appear below the crossed out wheeled dust bin symbol.

By participating in the separate collection of batteries, you will help to assure the proper disposal of products and batteries and thus help to prevent potential negative consequences for the environment and human health. To achieve this you should take any battery and/or accumulator to your local recycling site, or to a retail outlet or facility that offers to collect these devices for environmentally friendly disposal, ensuring that the terminal contacts are covered by non-conductive tape.

For more detailed information about the collection and recycling programmes available in your country, please visit our website

( [www.toshiba.eu/recycling](http://www.toshiba.eu/recycling) ) or contact your local council office or the retail outlet where you purchased the product.



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The European Union (EU) chemical regulation, REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), entered into force on 1 June 2007, with phased deadlines to 2018.

Toshiba will meet all REACH requirements and is committed to provide our customers with information about the presence in our articles of substances included on the candidate list according to REACH regulation.

Please consult the following website

[www.toshiba.eu/reach](http://www.toshiba.eu/reach) for information about the presence in our articles of substances included on the candidate list according to REACH in a concentration above 0.1 % weight by weight.

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- The number of possible pixel failures of your display is defined according to ISO 9241-307 standards. If the number of pixel failures is less than this standard, they will not be counted as defect or failure.
- Battery is a consumption product, since the battery time depends on the usage of your computer. If the battery can not be charged at all, then it is a defect or failure. The changes in battery time is not a defect or failure.

## Following information is only for India:



The use of this symbol indicates that this product may not be treated as household waste.

By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

For more detailed information about recycling of this product, please visit our website

( <http://www.toshiba-india.com> ) or contact call center (1800-200-8674).



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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

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2006-Jan-27

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There are two mailing lists related to FreeType:

- [freetype@nongnu.org](mailto:freetype@nongnu.org)

Discusses general use and applications of FreeType, as well as future and wanted additions to the library and distribution. If you are looking for support, start in this list if you haven't found anything to help you in the documentation.

- [freetype-devel@nongnu.org](mailto:freetype-devel@nongnu.org)

Discusses bugs, as well as engine internals, design issues, specific licenses, porting, etc.

Our home page can be found at

<http://www.freetype.org>

## **ENERGY STAR® Program**



Your Computer model may be ENERGY STAR® compliant. If the model you purchased is compliant, it uses the ENERGY STAR logo and the following information applies.

TOSHIBA is a partner in the ENERGY STAR Program and has designed this computer to meet the latest ENERGY STAR guidelines for energy efficiency. Your computer ships with the power management options preset to a configuration that will provide the most stable operating environment and optimum system performance for both AC power and battery modes.

To conserve energy, your computer is set to enter the low-power Sleep Mode which shuts down the system and display within 15 minutes of inactivity in AC power mode.

TOSHIBA recommends that you leave this and other energy saving features active, so that your computer will operate at its maximum energy efficiency. You can wake the computer from Sleep Mode by pressing the power button.

Your ENERGY STAR certified computer should be set by default to enter a low-power "sleep mode" after a period of inactivity. Simply touching the mouse or keyboard "wakes" the computer in seconds. These sleep features can save you up to \$23 per year (200 kWh per year in electricity) and prevent up to 300 pounds of greenhouse gas emissions annually. To learn how to adjust or activate these sleep settings on your computer, please go to:

[www.energystar.gov/sleepinstructions](http://www.energystar.gov/sleepinstructions)

To activate sleep settings organization-wide quickly and easily through network tools, please go to

[www.energystar.gov/powermanagement](http://www.energystar.gov/powermanagement)

## **Disposing of the computer and the computer's batteries**

The computer's battery is not user-accessible. Contact an authorized TOSHIBA service provider for details regarding how to dispose of the computer and the batteries.

## **General Precautions**

TOSHIBA computers are designed to optimize safety, minimize strain, and withstand the rigors of portability. However, certain precautions should be

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observed to further reduce the risk of personal injury or damage to the computer.

Be certain to read the following general precautions and to note the cautions included in the text of the manual.

## Provide adequate ventilation

Always make sure that your computer and AC adaptor have adequate ventilation and are protected from overheating when the power is turned on or when an AC adaptor is connected to a power outlet (even if your computer is in Sleep Mode). In this condition, observe the following:

- Never cover your computer or AC adaptor with any object.
- Never place your computer or AC adaptor near a heat source, such as an electric blanket or heater.
- Never cover or block the air vents including those at the base of the computer.
- Always operate your computer on a hard flat surface. Using your computer on a carpet or other soft material can block the vents.
- Always provide sufficient space around the computer.

Overheating your computer or AC adaptor could cause system failure, computer or AC adaptor damage or a fire, possibly resulting in serious injury.

## Creating a computer-friendly environment

Place the computer on a flat surface that is large enough for the computer and any other items you are using, such as a printer.

Leave enough space around the computer and other equipment to provide adequate ventilation. Otherwise, they might overheat.

To keep your computer in prime operating condition, protect your work area from:

- Dust, moisture, and direct sunlight.
- Equipment that generates a strong electromagnetic field, such as stereo speakers (other than speakers that are connected to the computer) or speakerphones.
- Rapid changes in temperature or humidity and sources of temperature change such as air conditioner vents or heaters.
- Extreme heat, cold, or humidity.
- Liquids and corrosive chemicals.

## Stress injury

Carefully read the *Instruction Manual for Safety and Comfort*. It contains information on the prevention of stress injuries to your hands and wrists that can be caused by extensive keyboard use. It also includes information on work space design, posture, and lighting that can help reduce physical stress.

## Heat injury

- Avoid prolonged physical contact with the computer. If the computer is used for long periods, its surface can become very warm. While the temperature will not feel hot to the touch, if you maintain physical contact with the computer for a long time, for example if you rest the computer on your lap or if you keep your hands on the palm rest, your skin might suffer a low-heat injury.
- If the computer has been used for a long time, avoid direct contact with the metal plate supporting the various interface ports as this can become hot.
- The surface of the AC adaptor can become hot when in use but this condition does not indicate a malfunction. If you need to transport the AC adaptor, disconnect it and let it cool before moving it.
- Do not lay the AC adaptor on a material that is sensitive to heat as the material could become damaged.

## Pressure or impact damage

Do not apply heavy pressure to the computer or subject it to any form of strong impact as this can damage the computer's components or otherwise cause it to malfunction.

## Cleaning the computer

To help ensure long, trouble-free operation, keep the computer free of dust and dirt, and use care with all liquids around it.

- Be careful not to spill liquids into the computer. If the computer does get wet, turn the power off immediately and let the computer dry completely. In these circumstances, you should get the computer inspected by an authorized service provider in order to assess the scope of any damage.
- Clean the plastics of the computer using a cloth slightly dampened with water.
- You can clean the display screen by spraying a small amount of glass cleaner onto a soft, clean cloth and then wiping the screen gently with the cloth.



*Never spray cleaner directly onto the computer or let liquid run into any part of it. Never use harsh or caustic chemical products to clean the computer.*

## Moving the computer

While the computer is designed for flexible day-to-day usage, you should exercise a few simple precautions when moving it in order to help ensure trouble-free operation.

- Make sure all disk/disc activity has ended before moving the computer.
- Turn off (shut down) the computer.
- Disconnect the AC adaptor and all peripherals before moving the computer.
- Close the display panel.
- Do not pick up the computer by its display panel.
- Before carrying your computer, shut it down, disconnect the AC adaptor and allow it to cool down. A failure to follow this instruction might result in minor heat injury.
- Do not expose the computer to rapid temperature changes (for example, in a situation where you carry the computer from a cold environment to a warm room). Do not turn on the power until condensation disappears.
- Be careful not to subject the computer to impact or shock. A failure to follow this instruction could result in damage to computer, computer failure, or loss of data.
- Never transport your computer with any cards installed. This might damage either the computer and/or the card resulting in computer failure.
- Always use a suitable carry case when transporting the computer.
- When carrying your computer, be sure to hold it securely so that it does not fall or hit anything.
- Do not carry your computer by holding any of its protruding elements.

## Mobile phones

Be aware that the use of mobile phones can interfere with the audio system. The operation of the computer will not be impaired in any way, but it is recommended that a minimum distance of 30 cm is maintained between the computer and a mobile phone that is in use.

## Instruction Manual for Safety and Comfort

All important information on the safe and proper use of this computer is described in the enclosed Instruction Manual for Safety and Comfort. Be sure to read it before using the computer.

## Safety Icons

Safety icons are used in this manual to bring important information to your attention. Each type of message is identified as follows.



*Indicates a potentially hazardous situation, which could result in death or serious injury, if you do not follow instructions.*



*A caution informs you that improper use of equipment or failure to follow instructions might cause data loss, equipment damage, or might result in minor or moderate injury.*



*Please read. A note is a hint or advice that helps you make best use of your equipment.*

# Chapter 2

## Getting Started

This chapter provides an equipment checklist, and basic information to start using your computer.



*If you use an operating system that was not pre-installed by TOSHIBA, some of the features described in this manual might not function properly.*

### Equipment checklist

Carefully unpack your computer, taking care to save the box and packaging materials for future use.

#### Hardware

Check to make sure that you have all the following items:

- TOSHIBA Portable Personal Computer
- AC adaptor and power cord (2-pin plug or 3-pin plug)

#### Documentation

- User Information Guide
- Instruction Manual for Safety and Comfort

If any of the items are missing or damaged, contact your dealer immediately.

### Conventions

This manual uses the following formats to describe, identify, and highlight terms and operating procedures.

<b>HDD or Hard disk drive</b>	Some models are equipped with a "Solid-State Drive (SSD)" instead of a hard disk drive. In this manual, the word "HDD" or "Hard disk drive" also refers to the SSD unless otherwise stated.
<b>Click</b>	<ul style="list-style-type: none"><li>■ Tap the Touch Pad or click the left Touch Pad control button once.</li><li>■ Left-click the mouse once.</li><li>■ Tap the touch screen once (only for touch screen models).</li></ul>

---

<b>Right-click</b>	<ul style="list-style-type: none"> <li>■ Click the right Touch Pad control button once.</li> <li>■ Right-click the mouse once.</li> <li>■ Press and hold on the touch screen (only for touch screen models).</li> </ul>
<b>Double-click</b>	<ul style="list-style-type: none"> <li>■ Tap the Touch Pad or click the left Touch Pad control button twice.</li> <li>■ Left-click the mouse twice.</li> <li>■ Tap the touch screen twice (only for touch screen models).</li> </ul>
<b>Charm</b>	By swiping in from the right edge (only for touch screen models) or pointing the mouse pointer to the lower-right (or upper-right) corner of your screen, you can find a list of charms: <b>Search</b> , <b>Share</b> , <b>Start</b> , <b>Devices</b> , and <b>Settings</b> .
<b>Desktop</b>	Click the <b>Desktop</b> tile from the Start screen to access the desktop.
<b>Start screen</b>	<p>You can go back to the Start screen from an app or the desktop by the following ways:</p> <ul style="list-style-type: none"> <li>■ Click the <b>Start</b> charm.</li> <li>■ Move the mouse pointer all the way into the lower-left corner of the screen and then click the <b>Start</b> button (  ).</li> <li>■ Use the Windows® logo key (  ) on your keyboard.</li> <li>■ Press the Windows® button (  ) on your computer (if provided).</li> </ul> <p>For detailed information, refer to the Windows Help and Support.</p>
<b>Apps view</b>	<p>You can find all of your apps including desktop programs in the Apps view.</p> <p>To get to the Apps view:</p> <ul style="list-style-type: none"> <li>■ Move the mouse pointer and then click the  icon in the lower-left corner of the screen.</li> <li>■ Slide up from the middle of the Start screen (only for touch screen models).</li> </ul>

---

## Short Name

Short Name is defined as follows in this manual.

Model Name	Short Name
Satellite S50-C/S50t-C/P50-C/P50t-C	S50-C

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Model Name	Short Name
Satellite L50W-C/P50W-C	L50W-C

## Using your computer for the first time



*Be sure to read the enclosed Instruction Manual for Safety and Comfort for information on the safe and proper use of this computer. It is intended to help you be more comfortable and productive while using a notebook computer. By following the recommendations in it, you can reduce your chance of developing a painful or disabling injury to your hand, arms, shoulders, or neck.*

This section provides basic information to start using your computer. It covers the following topics:

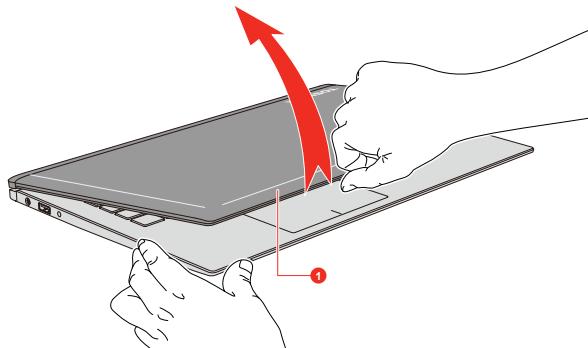
- Opening the display
- Connecting the AC adaptor
- Turning on the power
- Initial setup
  
- Use a virus-check program and make sure that it is updated regularly.
- Never format storage media without checking its content - formatting destroys all stored data.
- It is a good idea to back up the internal Hard Disk Drive or other main storage device to external media periodically. General storage media is not durable or stable over long periods of time and under certain conditions might result in data loss.
- Before you install a device or application, save any data in memory to the Hard Disk Drive or other storage media. Failure to do so might result in data loss.

### Opening the display (S50-C)

The display panel can be opened to a wide range of angles for optimal viewing.

While holding down the palm rest with one hand so that the main body of the computer is not raised, slowly lift the display panel. It allows the angle of the display panel to be adjusted to provide optimum clarity.

Figure 2-1 Opening the display panel (S50-C)



1. Display panel

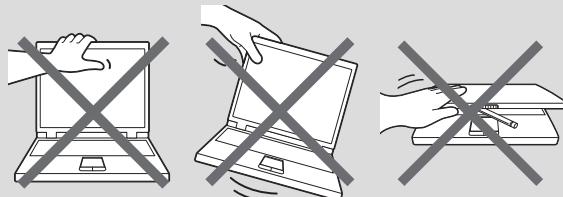
Product appearance depends on the model you purchased.



*Open and close the display panel with reasonable care. Opening it vigorously or slamming it shut might damage the computer.*



- Be careful not to open the display panel too far as this could put stress on the display panel's hinges and cause damage.
- Do not press or push on the display panel.
- Do not lift the computer by the display panel.
- Do not close the display panel with pens or any other objects left in between the display panel and the keyboard.
- When opening or closing the display panel, place one hand on the palm rest to hold the computer in place and use the other hand to slowly open or close the display panel (Do not use excessive force when opening or closing the display panel).



## Opening the display (L50W-C)

The display panel can be opened to any angle up to 360 degrees which offers you the flexibility and versatility to operate your computer in one of the following defined modes.

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*Figure 2-2 Opening the display panel to any angel (L50W-C)*



Laptop mode



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Flat mode



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Stand mode



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Tent mode



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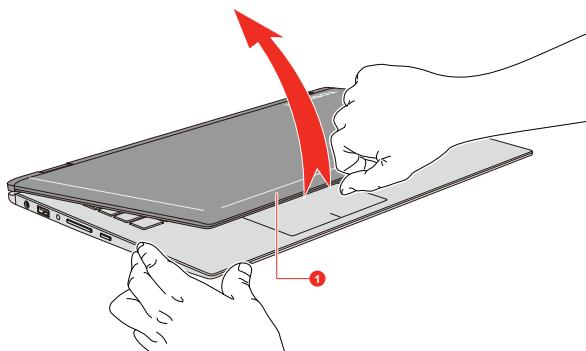
Tablet mode



*Keyboard and Touch Pad are temporarily disabled when you operate the computer in stand, tent or tablet mode.*

To open the display panel, slowly lift it with one hand holding the center of the display panel (as shown in the following figure) and the other hand holding the palm rest down so that the main body of the computer is not raised.

*Figure 2-3 Opening the display panel (L50W-C)*



1. Display panel

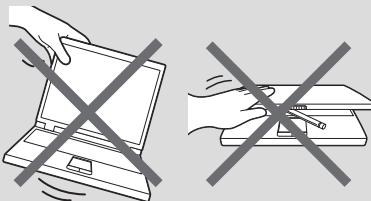


*Open and close the display panel with reasonable care. Opening it vigorously or slamming it shut might damage the computer.*



■ *It is suggested that you hold the center of the display panel while rotating the display panel.*

- *Do not lift the computer by the display panel.*
- *Do not close the computer with pens or any other objects left in between the display panel and the keyboard.*
- *When opening or closing the display panel, place one hand on the palm rest to hold the computer in place and use the other hand to slowly open or close the display panel (Do not use excessive force when opening or closing the display panel).*



## Connecting the AC adaptor

Attach the AC adaptor when you want to charge the battery or operate from AC power. The battery pack must be charged before you can operate from battery power.

The AC adaptor can automatically adjust to any voltage ranging from 100 volts to 240 volts and to a frequency of either 50 hertz or 60 hertz, enabling you to use this computer in almost any country/region. The adaptor converts AC power to DC power and reduces the voltage supplied to this computer.



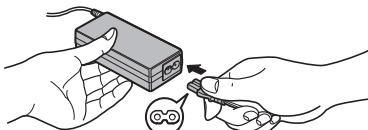
- *Always use the TOSHIBA AC adaptor that was included with your computer, or use AC adaptors specified by TOSHIBA to avoid any risk of fire or other damage to the computer. Use of an incompatible AC adaptor could cause fire or damage to the computer possibly resulting in serious injury. TOSHIBA assumes no liability for any damage caused by use of an incompatible adaptor.*
- *Never plug the AC adaptor into a power source that does not correspond to both the voltage and the frequency specified on the regulatory label of the unit. Failure to do so could result in a fire or electric shock, possibly resulting in serious injury.*
- *Always use or purchase power cables that comply with the legal voltage and frequency specifications and requirements in the country of use. Failure to do so could result in a fire or electric shock, possibly resulting in serious injury.*
- *The supplied power cord conforms to safety rules and regulations in the region the computer is bought and should not be used outside this region. For use in other regions, buy power cords that conform to safety rules and regulations in the particular region.*

- *Do not use a 3-pin to 2-pin conversion plug.*
- *When you connect the AC adaptor to the computer, always follow the steps in the exact order as described in this User's Manual. Connecting the power cable to a live electrical outlet should be the last step otherwise the adaptor DC output plug could hold an electrical charge and cause an electrical shock or minor bodily injury when touched. As a general safety precaution, avoid touching any metal parts.*
- *Never place your computer or AC adaptor on a wooden surface, furniture, or any other surface that could be marred by exposure to heat since the computer base and the surface of the AC adaptor increase in temperature during normal use.*
- *Always place your computer or AC adaptor on a flat and hard surface that is resistant to heat damage.*

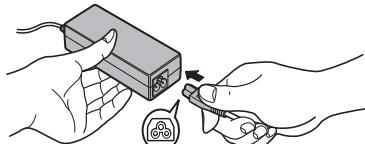
*Refer to the enclosed Instruction Manual for Safety and Comfort for detailed precautions and handling instructions.*

1. Connect the power cord to the AC adaptor.

*Figure 2-4 Connecting the power cord to the AC adaptor (2-pin plug)*



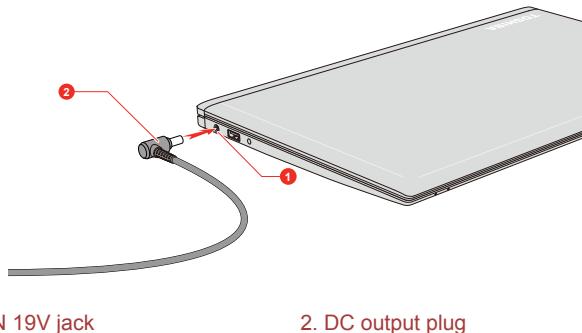
*Figure 2-5 Connecting the power cord to the AC adaptor (3-pin plug)*



*Either a 2-pin or 3-pin adaptor/cord is included with the computer depending on the model.*

2. Connect the DC output plug of the AC adaptor to the DC IN 19V jack on your computer.

*Figure 2-6 Connecting the DC output plug to the computer*



1. DC IN 19V jack

2. DC output plug

Product appearance depends on the model you purchased.

3. Plug the power cord into a live wall outlet. The **DC IN/Battery** indicator glows.

## Turning on the power

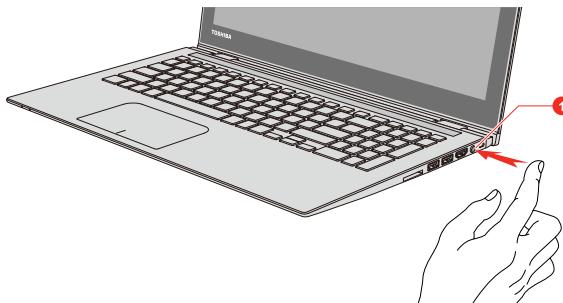
This section describes how to turn on the power. The **Power** indicator indicates the status. Refer to the *Power Condition Descriptions* section for more information.



- After you turn on the power for the first time, do not turn it off until you have set up the operating system.
- Volume cannot be adjusted during Windows Setup.

1. Open the display panel.
2. Press the power button.

*Figure 2-7 Turning on the power*



1. Power button

Product appearance depends on the model you purchased.

## Initial setup

The Windows Startup Screen is the first screen displayed when you turn on the power. To install the operating system properly, follow the on-screen instructions on each screen.



*When it is displayed, be sure to read the **License Terms** carefully.*

## Getting to know Windows

For detailed information on what is new and how to operate Windows, refer to the Windows Help and Support.

### Start screen

The Start screen is the launching pad for everything you can do in the Windows operating system, providing new and easy ways to access everything from your favorite apps and websites to your contacts and other important information.

From the Start screen, you can start typing to search for what you want. From there, you can easily switch between results for apps, files, and more.

### Windows Taskbar

Point to the bottom edge to show the Windows Taskbar on the Start screen. (If you've moved the Windows Taskbar to another edge, point there.)

You can see all of your recently used apps on the Windows Taskbar.

### Power Options icon

The Start screen provides you a convenient way to enter the Shut Down/Sleep/Hibernation Mode. You can just click the power icon ( ⊖ ) on the upper right of the Start screen and then select the mode you want.

### Charms

Use the Windows charms to start apps, find documents, set up system components, and perform most other computing tasks.

By pointing the mouse pointer to the upper or lower right corner of your screen, you can find a list of charms: **Search**, **Share**, **Start**, **Devices**, and **Settings**.

---

	<b>Search</b>	This charm allows you to search your computer (apps, settings, and files), the web, or within an app. You can also find the <b>Search</b> icon on the upper right of the Start screen.
	<b>Share</b>	This charm allows you to share items (links, photos, and more).
	<b>Start</b>	This charm takes you to the Start screen or, if already on the Start screen, returns you to your last app.
	<b>Devices</b>	This charm allows you to manage your hardware.
	<b>Settings</b>	This charm allows you to access your computer settings (volume, brightness, connecting to the internet, and more).

---

## Tiles

Tiles can be accessed and launched from the Start screen.

Typical Start screen tiles are the Desktop tile and Mail tile, as well as tiles representing all other applications downloaded to your system.

## Windows Store

Although many applications are pre-installed or built-in to your computer, you can also download many other applications at the click of your mouse.

In the Windows Store, you can search for and browse thousands of apps, all grouped into easy to find categories.

## Sign-in options

Windows offers a number of sign-in options including **Password** () , **PIN** () and **Picture password** () authentication to prevent from unauthorized access. If you have multiple sign-in methods set for a user account, you can select an option on the Windows login screen by clicking sign-in options. Password authentication is the default sign-in option.

## Turning off the power

The power can be turned off in one of the following modes, either Shut Down Mode, Sleep Mode or Hibernation Mode.

## Shut Down Mode

When you turn off the power in Shut Down Mode, no data will be saved and the computer will boot to the main screen of the operating system the next time it is turned on.

1. If you have entered data, either save it to the Hard Disk Drive or to other storage media.
2. Make sure all disk/disc activity has stopped before removing the disk/disc.



- *If you turn off the power while a disk (disc) is being accessed, you might lose data or damage the disk.*
- *Never turn off the power while an application is running. Failure to do so can cause data loss.*
- *Never turn off the power, disconnect an external storage device, or remove storage media during data read/write. Failure to do so can cause data loss.*

3. Click the power icon ( ) on the Start screen and then select **Shut down**.
4. Turn off any peripheral devices connected to your computer.



*Do not turn the computer or peripheral devices back on immediately. Wait a short period to avoid any potential damage.*

## Restarting the computer

Certain conditions require that you reset the computer, for example if:

- You change certain computer settings.

To restart the computer, there are several ways this can be achieved:

- Click the power icon ( ) on the Start screen and then select **Restart**.
- In the **Settings** charm, click **Power** and then select **Restart**.
- Press **CTRL**, **ALT**, and **DEL** simultaneously (once) to display the menu window, and then select **Restart** by clicking the power icon ( ) in the lower-right corner.

## Sleep Mode

If you have to interrupt your work, you are able to turn off the power without exiting from your software by placing the computer into Sleep Mode. In this mode, data is maintained in the main memory of the computer. When you turn on the power again, you can continue working right where you left off.



*When you have to turn off your computer aboard an aircraft or in places where electronic devices are regulated or controlled, always shut down the*

*computer. This includes turning off any wireless communication functionalities, and canceling settings that reactivate the computer automatically, such as a timer recording function. Failure to shut down the computer in this way could allow the operating system to reactivate and run pre-programmed tasks or preserve unsaved data, which could interfere with aviation or other systems, possibly causing serious injury.*



- *Before entering Sleep Mode, be sure to save your data.*
- *To prevent data loss, do not switch to Sleep Mode while transferring data to external media, such as USB devices, memory media, or other external memory devices.*



- *When the AC adaptor is connected, the computer will go into Sleep Mode according to the settings in the Power Options (to access it, click **Control Panel -> System and Security -> Power Options** under **Windows System** group in the Apps view).*
- *To restore the operation of the computer from Sleep Mode, press and hold the power button or any key on the keyboard for a short amount of time. Note that keyboard keys can only be used if the Wake-up on Keyboard option is enabled within the TOSHIBA System Settings.*
- *If the computer enters Sleep Mode while a network application is active, the application might not be restored when the computer is next turned on and the system returns from Sleep Mode.*
- *To prevent the computer from automatically entering Sleep Mode, disable Sleep Mode within the Power Options.*
- *To use the Hybrid Sleep function, configure it in the Power Options.*

### ***Benefits of Sleep Mode***

The Sleep Mode feature provides the following benefits:

- Restores the previous working environment more rapidly than the Hibernation Mode feature.
- Saves power by shutting down the system when the computer receives no input or hardware access for the time period set by the System Sleep Mode feature.
- Allows the use of the panel power off feature.

### ***Executing Sleep Mode***

You can enter Sleep Mode in one of following ways:

- Click the power icon ( ) on the Start screen and then select **Sleep**.
- In the **Settings** charm, click **Power** and then select **Sleep**.
- Close the display panel. Note that this feature must be enabled within the Power Options.

- 
- Press the power button. Note that this feature must be enabled within the Power Options.

When you turn the power back on, you can continue where you left off when you shut down the computer.



- When the computer is in Sleep Mode, the Power indicator blinks white.
- If you are operating the computer on battery power, you can lengthen the overall operating time by turning it off into Hibernation Mode. Sleep Mode consumes more power while the computer is off.

### Sleep Mode limitations

Sleep Mode will not function under the following conditions:

- Power is turned back on immediately after shutting down.
- Memory circuits are exposed to static electricity or electrical noise.

## Hibernation Mode

The Hibernation Mode feature saves the contents of memory to the Hard Disk Drive when the computer is turned off so that, the next time it is turned on, the previous state is restored. Note that the Hibernation Mode feature does not save the status of any peripheral devices connected to the computer.



- Save your data. While entering Hibernation Mode, the computer saves the contents of memory to the Hard Disk Drive. However, for safety sake, it is best to save your data manually.
- Data will be lost if you disconnect the AC adaptor before the save is completed.
- To prevent data loss, do not switch to Hibernation Mode while transferring data to external media, such as USB devices, memory media, or other external memory devices.

### Benefits of Hibernation Mode

The Hibernation Mode feature provides the following benefits:

- Saves data to the Hard Disk Drive when the computer automatically shuts down because of a low battery condition.
- You can return to your previous working environment immediately when you turn on the computer.
- Saves power by shutting down the system when the computer receives no input or hardware access for the time period set by the System Hibernate feature.
- Allows the use of the panel power off feature.

## **Starting Hibernation Mode**

To enter Hibernation Mode, click the power icon (  ) on the Start screen and then select **Hibernate**.



*To show **Hibernate** in Power menu, set up according to the following steps:*

- 1. Click Control Panel -> System and Security -> Power Options under Windows System group in the Apps view.**
- 2. Click Choose what the power button does or Choose what closing the lid does.**
- 3. Click Change settings that are currently unavailable.**
- 4. Select the **Hibernate** check box from Shutdown settings.**
- 5. Click the Save changes button.**

## **Automatic Hibernation Mode**

The computer can be configured to enter Hibernation Mode automatically when you press the power button or close the lid. To define these settings, do the following:

- 1. Click Power Options and then click Choose what the power button does or Choose what closing the lid does.**
- 2. Enable the desired Hibernation Mode settings for When I press the power button and When I close the lid.**
- 3. Click the Save changes button.**

## **Data save in Hibernation Mode**

When you turn off the power in Hibernation Mode, the computer takes a moment to save the current data in memory to the Hard Disk Drive.

After you turn off the computer, and the content of memory has been saved to the Hard Disk Drive, turn off the power to any peripheral devices.



*Do not turn the computer or devices back on immediately. Wait a moment to let all capacitors fully discharge.*

# Chapter 3

## The Grand Tour

This chapter identifies the various components of the computer. It is recommended that you become familiar with each before you operate the computer.

### Legal Footnote (Non-applicable Icons)

For more information regarding Non-applicable Icons, refer to the [Legal Footnotes](#) section.



*Handle your computer carefully to avoid scratching or damaging the surface.*

Short Name is defined as follows in this manual.

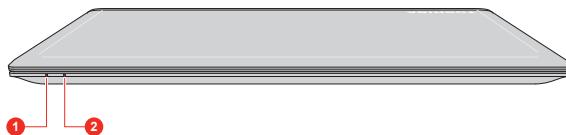
Model Name	Short Name
Satellite S50-C/S50t-C/P50-C/P50t-C	S50-C
Satellite L50W-C/P50W-C	L50W-C

## The Grand Tour for S50-C

### Front with the display closed (S50-C)

The following figure shows the front of the computer with the display panel in the closed position.

*Figure 3-1 Front of the computer with display panel closed (S50-C)*



1. DC IN/Battery indicator

2. Wireless communication indicator

Product appearance depends on the model you purchased.



#### DC IN/Battery indicator

The **DC IN/Battery** indicator shows the condition of the DC IN and the battery charge status. White indicates the battery is fully charged while the power is being correctly supplied from the AC power adaptor.

Refer to the [Power Condition Descriptions](#) section for more information on this feature.



#### Wireless communication indicator

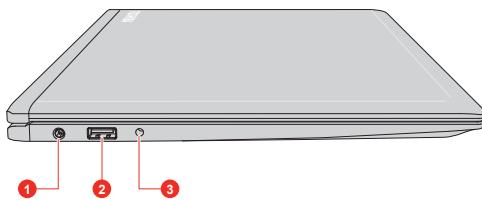
The **Wireless communication** indicator glows amber when the Bluetooth or Wireless LAN functions are turned on.

Only some models are equipped with Bluetooth and Wireless LAN functions.

## Left side (S50-C)

The following figure shows the left side of the computer.

*Figure 3-2 The left side of the computer (S50-C)*



1. DC IN 19V jack
2. Universal Serial Bus (USB 2.0) port
3. Headphone/Microphone combo jack

Product appearance depends on the model you purchased.



#### DC IN 19V jack

The AC adaptor connects to this jack in order to power the computer and charge its internal batteries. Note that you must only use the model of AC adaptor supplied with the computer at the time of purchase. Using the wrong AC adaptor can damage the computer.



#### Universal Serial Bus (USB 2.0) port

One Universal Serial Bus port, which complies to the USB 2.0 standard, is provided on the left side of the computer.

The USB 2.0 port is not compatible with USB 3.0 devices.



- Note that it is not possible to confirm the operation of all functions of all USB devices that are available. Some functions associated with a specific device might not operate properly.
- Before removing a USB device from the USB port of your computer, click the **Safely Remove Hardware and Eject Media** icon on the Windows Taskbar, and then select the USB device that you want to remove.



*Keep foreign metal objects, such as screws, staples, and paper clips, out of the USB port. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*



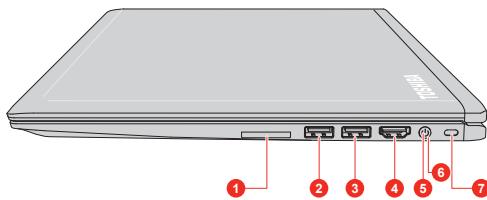
**Headphone/  
Microphone combo  
jack**

A 3.5 mm mini headphone/microphone combo jack enables connection of a monaural microphone or a stereo headphone.

## Right side (S50-C)

The following figure shows the right side of the computer.

*Figure 3-3 The right side of the computer (S50-C)*



1. Memory media slot
2. Universal Serial Bus (USB 3.0) port
3. Universal Serial Bus (USB 3.0) port
4. HDMI out port
5. Power button
6. Power indicator
7. Security lock slot

Product appearance depends on the model you purchased.



**Memory media slot**

This slot lets you insert an SD™/SDHC™/SDXC™ memory card, miniSD™/microSD™ Card and MultiMediaCard™. Refer to the [Memory media](#) section for more information.



*Keep foreign metal objects, such as screws, staples, and paper clips, out of the Memory media slot. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*

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	<b>Universal Serial Bus (USB 3.0) ports</b>	Two Universal Serial Bus ports, which comply to the USB 3.0 standard, are provided on the right side of the computer.  The USB 3.0 port is compliant with USB 3.0 standard and backward compatible with USB 2.0 devices.  The port with the icon (⚡) has Sleep and Charge function.
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*USB 3.0 port(s) might work as USB 2.0 port(s) when operating in USB Legacy Emulation mode.*

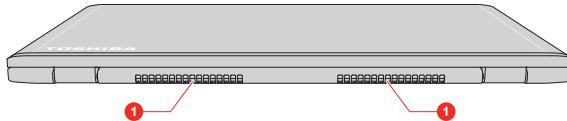
	<b>HDMI out port</b>	HDMI out port can connect with Type A connector HDMI cable.
	<b>Power button</b>	Press this button to power on/off the computer.
	<b>Power indicator</b>	The <b>Power</b> indicator glows white when the computer is turned on. However, if you turn off the computer into Sleep Mode, this indicator blinks white.
	<b>Security lock slot</b>	A security cable can be attached to this slot and then connected to a desk or other large object in order to deter theft of the computer.

---

## Back (S50-C)

The following figure shows the back of the computer.

*Figure 3-4 The back of the computer (S50-C)*



1. Cooling vents

Product appearance depends on the model you purchased.

---

<b>Cooling vents</b>	The cooling vents help the processor to avoid overheating.
----------------------	--

---



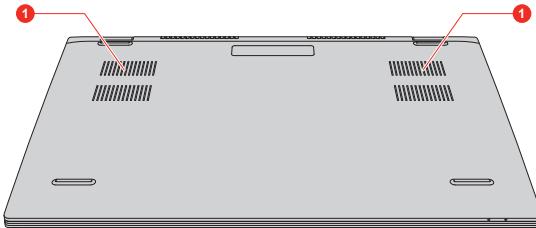
*Do not block the cooling vents. Keep foreign metal objects, such as screws, staples, and paper clips, out of the cooling vents. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*

*Carefully clean the dust on the surface of the cooling vents using a soft cloth.*

## Underside (S50-C)

The following figures show the underside of the computer. Ensure that the display is closed before the computer is turned over to avoid causing any damage.

*Figure 3-5 The underside of the computer (S50-C)*



1. Cooling vents

Product appearance depends on the model you purchased.

### Cooling vents

The cooling vents help the processor to avoid overheating.

## Front with the display open (S50-C)

This section shows the computer with the display panel open. In order to open the display, lift up the display panel and position it at a comfortable viewing angle for you.

Figure 3-6 The front of the computer with the display panel open (S50-C)

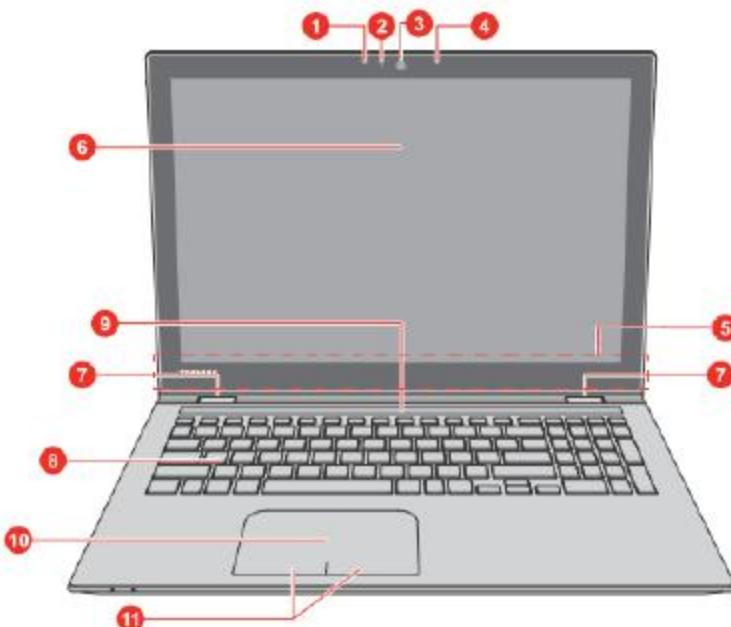


Figure 3-7 Top side of the touch screen model (S50-C)



- |   |                               |
|---|-------------------------------|
| 1. Microphone                                     | 7. Display hinges             |
| 2. Web Camera LED                                 | 8. Keyboard                   |
| 3. Web Camera                                     | 9. Stereo speakers            |
| 4. Microphone*                                    | 10. Touch Pad                 |
| 5. Wireless communication antennas<br>(not shown) | 11. Touch Pad control buttons |
| 6. Display screen                                 |                               |

\* Provided with some models.

Product appearance depends on the model you purchased.

#### Microphone

The built-in microphone allows you to import and record sounds for your application. Refer to the [Sound System and Video mode](#) section for more information.

#### Web Camera LED

The Web Camera LED glows when the Web Camera is operating.

#### Web Camera

**Web Camera** is a device that allows you to record video or take photographs with your computer. You can use it for video chatting or video conferences using a communication tool.



- *Do not point the web camera directly at the sun.*
- *Do not touch or press strongly on the web camera lens. Failure to do so might reduce image quality. Use an eyeglass cleaner (cleaner cloth) or other soft cloth to clean the lens if it becomes dirty.*

---

<b>Wireless communication antennas</b>	Depending on the configuration of your computer, one or all of the following antennas are built-in: <ul style="list-style-type: none"><li>■ Wireless LAN</li><li>■ Wireless LAN/Bluetooth</li></ul>
--	---

**Legal Footnote (Wireless LAN)**

For more information regarding Wireless LAN, refer to the [Legal Footnotes](#) section.

---

<b>Display screen</b>	39.6 cm (15.6") LCD screen, configured with the following resolution: <ul style="list-style-type: none"><li>■ HD, 1366 horizontal x 768 vertical pixels</li><li>■ FHD, 1920 horizontal x 1080 vertical pixels</li></ul> <p>Be aware that, when the computer is operating on the AC adaptor, the image displayed on the internal screen is somewhat brighter than when it operates on battery power. This difference in brightness levels is intended to save power when operating on batteries.</p>
-----------------------	---

**Legal Footnote (LCD)**

For more information regarding LCD, refer to the [Legal Footnotes](#) section.

---

<b>Display hinges</b>	The display hinges allow the display panel to be positioned at a variety of easy-to-view angles.
<b>Keyboard</b>	The keyboard contains character keys, control keys, function keys, and special Windows keys, providing all the functionality of a full-size keyboard. Refer to the <a href="#">The Keyboard</a> section for details.
<b>Stereo speakers</b>	The speakers emit sound generated by your software as well as audio alarms, such as low battery condition, generated by the system.
<b>Touch Pad</b>	The Touch Pad located in the palm rest is used to control the movement of the on-screen pointer. To use the Touch Pad, simply touch and move your fingertip across it in the direction you want the on-screen pointer to go.

---

<b>Touch Pad control buttons</b>	The two buttons below the Touch Pad are used like the buttons on a standard mouse. Press the left button to select a menu item or to manipulate text or graphics designated by the pointer, and press the right button to display a menu or other function depending on the software you are using.
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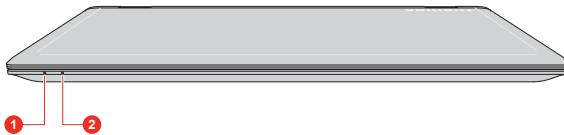
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## The Grand Tour for L50W-C

### Front with the display closed (L50W-C)

The following figure shows the front of the computer with the display panel in the closed position.

*Figure 3-8 Front of the computer with display panel closed (L50W-C)*



1. DC IN/Battery indicator

2. Wireless communication indicator

Product appearance depends on the model you purchased.



#### DC IN/Battery indicator

The **DC IN/Battery** indicator shows the condition of the DC IN and the battery charge status. White indicates the battery is fully charged while the power is being correctly supplied from the AC power adaptor.

Refer to the *Power Condition Descriptions* section for more information on this feature.



#### Wireless communication indicator

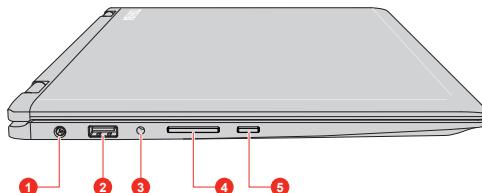
The **Wireless communication** indicator glows amber when the Bluetooth or Wireless LAN functions are turned on.

Only some models are equipped with Bluetooth and Wireless LAN functions.

### Left side (L50W-C)

The following figure shows the left side of the computer.

Figure 3-9 The left side of the computer (L50W-C)



1. DC IN 19V jack
2. Universal Serial Bus (USB 2.0 or 3.0) port
3. Headphone/Microphone combo jack
4. Volume up/down button
5. Windows button

Product appearance depends on the model you purchased.



#### DC IN 19V jack

The AC adaptor connects to this jack in order to power the computer and charge its internal batteries. Note that you must only use the model of AC adaptor supplied with the computer at the time of purchase. Using the wrong AC adaptor can damage the computer.



#### Universal Serial Bus (USB 2.0 or 3.0) port

One Universal Serial Bus port, which complies to the USB 2.0 or 3.0 standard, is provided on the left side of the computer.

The USB port type might vary depending on the model you purchased. The port with blue color is USB 3.0 port.



- *USB 3.0 port(s) might work as USB 2.0 port(s) when operating in USB Legacy Emulation mode.*
- *Note that it is not possible to confirm the operation of all functions of all USB devices that are available. Some functions associated with a specific device might not operate properly.*
- *Before removing a USB device from the USB port of your computer, click the **Safely Remove Hardware and Eject Media** icon on the Windows Taskbar, and then select the USB device that you want to remove.*



*Keep foreign metal objects, such as screws, staples, and paper clips, out of the USB port. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*

---

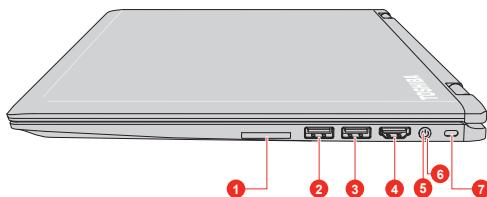
	<b>Headphone/ Microphone combo jack</b>	A 3.5 mm mini headphone/microphone combo jack enables connection of a monaural microphone or a stereo headphone.
	<b>Volume up/down button</b>	Press the button to increase or decrease the volume.
	<b>Windows button</b>	Press this button to open the Start screen.

---

## Right side (L50W-C)

The following figure shows the right side of the computer.

*Figure 3-10 The right side of the computer (L50W-C)*



- 1. Memory media slot
- 2. Universal Serial Bus (USB 3.0) port
- 3. Universal Serial Bus (USB 3.0) port
- 4. HDMI out port
- 5. Power button
- 6. Power indicator
- 7. Security lock slot

Product appearance depends on the model you purchased.




---

<b>Memory media slot</b>	This slot lets you insert an SD™/SDHC™/SDXC™ memory card, miniSD™/microSD™ Card and MultiMediaCard™. Refer to the <a href="#">Memory media</a> section for more information.
--------------------------	--

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*Keep foreign metal objects, such as screws, staples, and paper clips, out of the Memory media slot. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*




---

<b>Universal Serial Bus (USB 3.0) ports</b>	Two Universal Serial Bus ports, which comply to the USB 3.0 standard, are provided on the right side of the computer.  The USB 3.0 port is compliant with USB 3.0 standard and backward compatible with USB 2.0 devices.  The port with the icon (⚡) has Sleep and Charge function.
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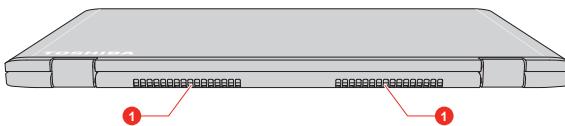
*USB 3.0 port(s) might work as USB 2.0 port(s) when operating in USB Legacy Emulation mode.*

	<b>HDMI</b>	<b>HDMI out port</b>	HDMI out port can connect with Type A connector HDMI cable.
		<b>Power button</b>	Press this button to power on/off the computer.
		<b>Power indicator</b>	The <b>Power</b> indicator glows white when the computer is turned on. However, if you turn off the computer into Sleep Mode, this indicator blinks white.
		<b>Security lock slot</b>	A security cable can be attached to this slot and then connected to a desk or other large object in order to deter theft of the computer.

## Back (L50W-C)

The following figure shows the back of the computer.

*Figure 3-11 The back of the computer (L50W-C)*



1. Cooling vents

Product appearance depends on the model you purchased.



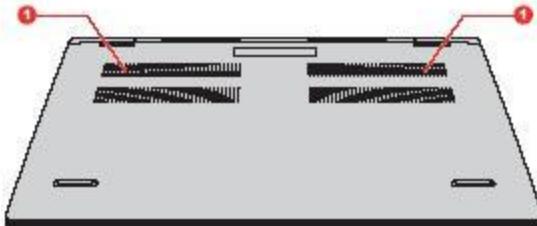
*Do not block the cooling vents. Keep foreign metal objects, such as screws, staples, and paper clips, out of the cooling vents. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*

*Carefully clean the dust on the surface of the cooling vents using a soft cloth.*

## Underside (L50W-C)

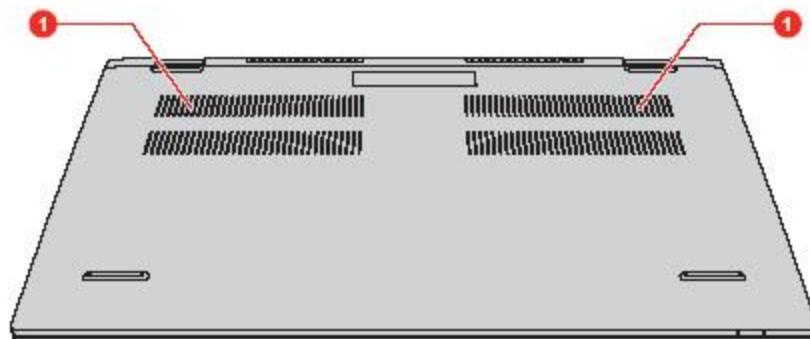
The following figures show the underside of the computer. Ensure that the display is closed before the computer is turned over to avoid causing any damage.

*Figure 3-12 The underside of the computer (L50W-C)*



1. Cooling vents

*Figure 3-12 The underside of the computer (L50W-C)*



1. Cooling vents

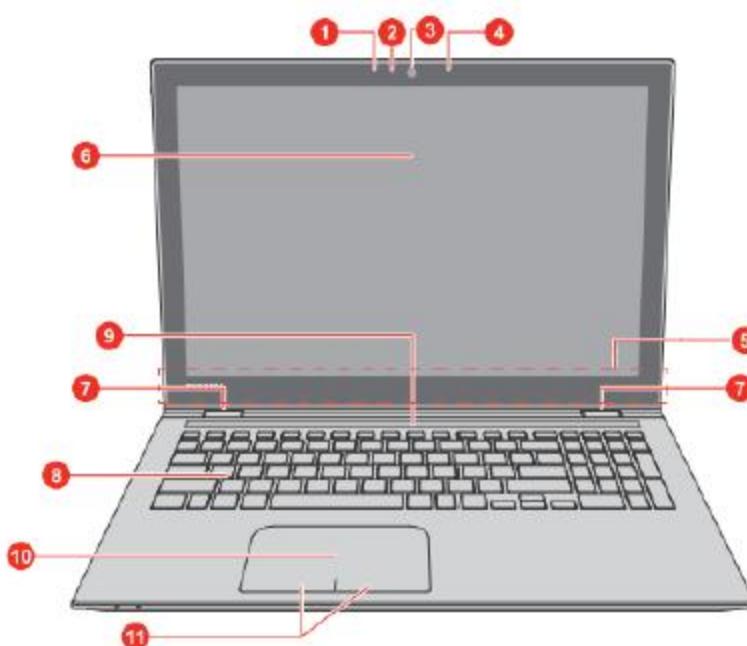
#### Cooling vents

The cooling vents help the processor to avoid overheating.

### Front with the display open (L50W-C)

This section shows the computer with the display panel open. In order to open the display, lift up the display panel and position it at a comfortable viewing angle for you.

*Figure 3-13 The front of the computer with the display panel open (L50W-C)*



1. Microphone

2. Web Camera LED

3. Web Camera

4. Microphone\*

7. Display hinges

8. Keyboard

9. Stereo speakers

10. Touch Pad

---

<b>Microphone</b>	The built-in microphone allows you to import and record sounds for your application. Refer to the <a href="#">Sound System and Video mode</a> section for more information.
<b>Web Camera LED</b>	The Web Camera LED glows when the Web Camera is operating.
<b>Web Camera</b>	<b>Web Camera</b> is a device that allows you to record video or take photographs with your computer. You can use it for video chatting or video conferences using a communication tool.



- *Do not point the web camera directly at the sun.*
- *Do not touch or press strongly on the web camera lens. Failure to do so might reduce image quality. Use an eyeglass cleaner (cleaner cloth) or other soft cloth to clean the lens if it becomes dirty.*

---

<b>Wireless communication antennas</b>	Depending on the configuration of your computer, one or all of the following antennas are built-in: <ul style="list-style-type: none"><li>■ Wireless LAN</li><li>■ Wireless LAN/Bluetooth</li></ul>
--	---

#### Legal Footnote (Wireless LAN)

For more information regarding Wireless LAN, refer to the [Legal Footnotes](#) section.

---

<b>Display screen</b>	39.6 cm (15.6") LCD screen, configured with the following resolution: <ul style="list-style-type: none"><li>■ HD, 1366 horizontal x 768 vertical pixels</li><li>■ FHD, 1920 horizontal x 1080 vertical pixels</li><li>■ UHD, 3840 horizontal x 2160 vertical pixels</li></ul> <p>Be aware that, when the computer is operating on the AC adaptor, the image displayed on the internal screen is somewhat brighter than when it operates on battery power. This difference in brightness levels is intended to save power when operating on batteries.</p>
-----------------------	---

#### Legal Footnote (LCD)

For more information regarding LCD, refer to the [Legal Footnotes](#) section.

---

<b>Display hinges</b>	The display hinges allow the display panel to be positioned at a variety of easy-to-view angles.
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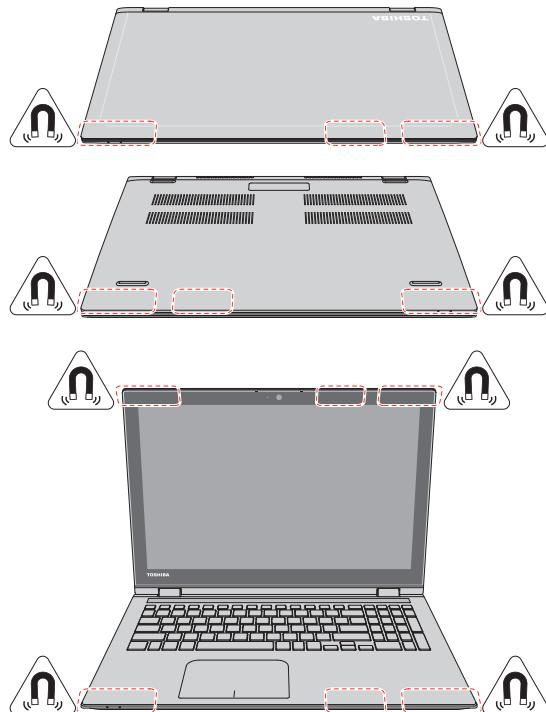
<b>Keyboard</b>	The keyboard contains character keys, control keys, function keys, and special Windows keys, providing all the functionality of a full-size keyboard. Refer to the <a href="#">The Keyboard</a> section for details.
<b>Stereo speakers</b>	The speakers emit sound generated by your software as well as audio alarms, such as low battery condition, generated by the system.
<b>Touch Pad</b>	The Touch Pad located in the palm rest is used to control the movement of the on-screen pointer. To use the Touch Pad, simply touch and move your fingertip across it in the direction you want the on-screen pointer to go.
<b>Touch Pad control buttons</b>	The two buttons below the Touch Pad are used like the buttons on a standard mouse. Press the left button to select a menu item or to manipulate text or graphics designated by the pointer, and press the right button to display a menu or other function depending on the software you are using.

---

## Magnets location (L50W-C)

Please read the following information before using the computer.

Figure 3-14 Magnets location (L50W-C)



*The computer contains magnets that might interfere with pacemakers, defibrillators, or other medical devices. If you wear a pacemaker, keep at least 5 inches (approximately 13 cm) of separation between your medical device and the computer. If you suspect that the computer is interfering with your medical device, discontinue use and consult your physician for information related to your specific device.*



*The circled areas in the preceding illustrations show the location of magnets. Do not place any products utilizing magnetic materials or magnetic data stored devices (for example, credit cards, compass) in close proximity to the computer as it might damage the magnetic products.*

## Internal Hardware Components

This section describes the internal hardware components of your computer.

The actual specifications might vary depending on the model you purchased.

---

## Battery pack

This computer includes a battery pack inside. However, do not attempt to dismount or replace it by yourself. Contact an authorized TOSHIBA service provider, if necessary.

The rechargeable lithium-ion battery pack provides power to the computer when the AC adaptor is not connected.

For more detailed information on the use and operation of the battery pack, refer to the [Battery](#) section.

---

### Legal Footnote (Battery Life)

For more information regarding Battery Life, refer to the [Legal Footnotes](#) section.

---

## CPU

The processor type varies depending on model.

To check which type of processor is included in your model, open the TOSHIBA PC Health Monitor utility by clicking **PC Health Monitor** under **TOSHIBA** group in the Apps view, and then click **PC Information**.

---

### Legal Footnote (CPU)

For more information regarding CPU, refer to the [Legal Footnotes](#) section.

---

## Hard Disk Drive or Solid-State Drive

The capacity of the hard disk drive varies depending on the model.

To check which type of HDD/SSD is included in your model, open the TOSHIBA PC Health Monitor utility by clicking **PC Health Monitor** under **TOSHIBA** group in the Apps view, and then click **PC Information**.

Note that part of the hard disk overall capacity is reserved as administration space.

---



- *In this manual, the word "HDD" or "Hard disk drive" also refers to the SSD unless otherwise stated.*
- *SSD is a large-capacity storage device which uses Solid-State Memory in place of a magnetic disk of the hard disk.*



*Under certain unusual conditions of prolonged non-use and/or exposure to high temperatures, the SSD might be vulnerable to data retention errors.*

#### Legal Footnote (Hard Disk Drive (HDD) Capacity)

For more information regarding Hard Disk Drive (HDD) Capacity, refer to the [Legal Footnotes](#) section.

#### Video RAM

The memory in the graphics adaptor of the computer, used to store the image displayed on a bitmap display.

The amount of Video RAM available depends on the system memory of the computer.

Click **Control Panel -> Appearance and Personalization -> Display -> Adjust resolution** under **Windows System** group in the Apps view.

The amount of Video RAM can be verified by clicking the **Advanced settings** button in the Screen Resolution window.

#### Memory module

The memory module is installed in the computer.

#### Legal Footnote (Memory (Main System))

For more information regarding Memory (Main System), refer to the [Legal Footnotes](#) section.

#### Graphics Processing Unit

Graphics processing unit (GPU) performance might vary depending on product model, design configuration, applications, power management settings and features utilized. GPU performance is only optimized when operating in AC power mode and might decrease considerably when operating in battery power mode.

#### Legal Footnote (Graphics Processing Unit (GPU))

For more information regarding Graphics Processing Unit (GPU), refer to the [Legal Footnotes](#) section.

## Intel® Display Power Saving Technology

Intel GPU models might include the Display Power Saving Technology feature that can save the power consumption of the computer by optimizing picture contrast on the internal LCD.

This feature can be used if the computer is:

- running under battery mode
- using the internal LCD display only

The Display Power Saving Technology feature is enabled as the factory default. If you want to turn off this feature, change it in the settings accordingly in the Intel® HD Graphics Control Panel/Intel® Graphics and Media Control Panel.

You can access this control panel in the following way:

1. Right-click on the desktop and click **Graphics Properties...**
2. Click **Power** and then select **On battery** from the drop-down menu under **Power** in the upper-left corner.
3. Click **Disable** under **Display Power Saving Technology**.
4. Click **Apply**.

If you want to enable this feature, click **Enable** under **Display Power Saving Technology**.

In Intel® Graphics and Media Control Panel:

1. Click **Power**.
2. Select **On battery** from the drop-down menu in **Power Source**.
3. Clear the **Display Power Saving Technology** check box.
4. Click **OK**.

If you want to enable this feature, select the **Display Power Saving Technology** check box.

## Power Condition Descriptions

The computer operating capability and battery charge status are affected by different power conditions, including whether an AC adaptor is connected and what the charge level is.

### DC IN/Battery indicator

Check the **DC IN/Battery** indicator to determine the status of the battery pack and the power status with the AC adaptor connected. The following indicator conditions should be noted:

<b>Flashing amber</b>	The battery charge is low. The AC adaptor must be connected to recharge the battery.
<b>Amber</b>	Indicates that the AC adaptor is connected and the battery is charging.
<b>White</b>	Indicates that the AC adaptor is connected and the battery is fully charged.
<b>No light</b>	Under any other conditions, the indicator does not light.



*If the battery pack becomes too hot while it is being charged, the charge stops and the **DC IN/Battery** indicator goes out. When the temperature of*

---

*the battery pack falls to a normal range, charging will resume. This process occurs regardless of whether the computer's power is on or off.*

## Power indicator

Check the **Power** indicator to determine the power status of the computer. The following indicator conditions should be noted:

<b>White</b>	Indicates that power is being supplied to the computer and the computer is turned on.
<b>Flashing white</b>	Indicates that the computer is in Sleep Mode and that there is sufficient power available (AC adaptor or battery) to maintain this condition.
<b>No light</b>	Under any other conditions, the indicator does not light.

# Chapter 4

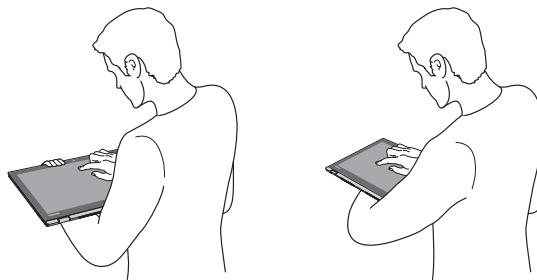
## Operating Basics

This chapter describes the basic operations of your computer, and highlights the precautions that must be taken when using it.

### Operating in Tablet Mode (L50W-C)

When operating the computer in tablet mode, observe the following instructions.

*Figure 4-1 Operating the computer in tablet mode (L50W-C)*

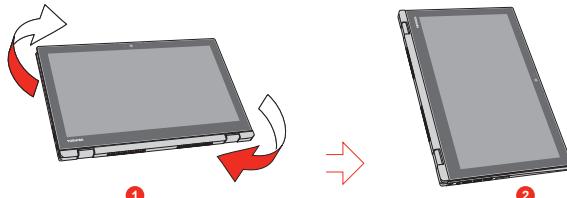


- Remove all external peripheral devices and their connection cables from the computer before carrying.
- Hold the computer firmly on your forearm.
- Remove the AC adaptor from the computer when using it held in your forearm.
- Do not use the computer while walking or driving a car.
- Do not drop the computer or apply excessive impact to it. Do not leave the computer in a car or similar environment where it is exposed to direct sunlight.

### Changing the screen orientation (L50W-C)

When operating the computer in tent, stand, or tablet mode, you can change the screen orientation by rotating the computer sideways. The screen orientation automatically changes according to the rotation angle detected.

Figure 4-2 Rotating the computer sideways (L50W-C)



1. Landscape mode

2. Portrait mode

To manually disable the automatic screen orientation, do the following:

1. In the **Settings** charm, click **Screen**.
2. Click and appears indicating that the automatic screen orientation is currently disabled.

When operating the computer in laptop and flat mode, however, the automatic screen orientation is locked, and stays in **Landscape mode**.



- *Avoid having direct contact with the other edges of the hand held device while the wireless device is turned on and transmitting. Only factories installed wireless transmitter can be used with this hand held device to satisfy RF exposure compliance.*
- *In the Portrait mode, some drivers/utilities might not perform install and uninstall operation. If it occurs, switch to the Landscape mode to proceed.*

## Using the Touch Screen

Some models are equipped with a touch screen.

You can use your finger to manipulate icons, buttons, menu items, the onscreen keyboard, and other items on the touch screen.



### Tap

Simply tap your finger once on the touch screen to activate an item, such as an app.



### Press and hold

Press your finger down and leave it there for a few seconds. This shows information to help you learn more about an item or opens a menu specific to what you are doing.

**Pinch or stretch**

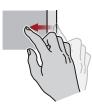
Touch the screen or an item with two or more fingers, and then move the fingers toward each other (pinch) or away from each other (stretch). This shows different levels of information or visually zooms in or out.

**Rotate**

Put two or more fingers on an item and then turn your hand to rotate things in the direction you turn your hand. Only some items can be rotated.

**Slide**

Drag your finger on the touch screen to move through what is on the screen.

**Swipe**

Quickly move your finger in from the edge of the screen, without pausing when you first touch it.

Swipe from the left edge: shows your recently opened apps, and so on.

Swipe from the right edge: opens or closes the charms (Search, Share, Start, Devices, Settings).

Swipe from the top edge: opens or closes the app command bar.

For details and more advanced touch screen gestures to interact with Windows operating system, refer to Help and Support.



- *Do not press or push with excess force on the touch screen.*
- *Do not apply excess force when cleaning the touch screen.*
- *Never touch the screen with a sharp object such as a ball-point pen which might scratch or damage the surface.*
- *Do not use a protecting sheet for the touch screen as it might decrease its sensitivity to gestures.*
- *Do not touch the screen with gloves, wet hands, or the tip of your fingernails as it might decrease the sensitivity.*
- *The touch screen might not work correctly if part of the surface is slightly wet, or covered with an object.*

## Using the Touch Pad

The Touch Pad located in the palm rest might support the following gestures:

**Tap**

Tap once on the Touch Pad to activate an item, such as an app.

**Two-Finger Tap**

Tap once on the Touch Pad with two fingers together to display a menu or other function depending on the software you are using. (Similar to right-click)

**Pinch or stretch**

Place two or more fingers down on the Touch Pad and move them toward each other (pinch) or away from each other (stretch). This shows different levels of information or visually zooms in or out.

**Two-Finger Scroll**

Place two fingers down and slide them vertically or horizontally from anywhere on the Touch Pad. This allows you to operate the scroll bars of a window.

**Swipe**

Quickly move your finger in from the edge of the Touch Pad, without pausing when you first touch it.

Swipe from the left edge: shows your recently opened apps.

Swipe from the right edge: opens or closes the charms (Search, Share, Start, Devices, Settings).

Swipe from the top edge: opens or closes the app command bar.



*Do not put items on the Touch Pad surface to prevent abnormal action.*



*Some of the Touch Pad operations described in this section are only supported in certain applications.*

## The Keyboard

The number of keys available on your keyboard depends on which country/region your computer is configured for, with keyboards being available for numerous languages.

There are different types of keys, specifically typewriter keys, function keys, soft keys, Windows special keys, and the keypad overlay.



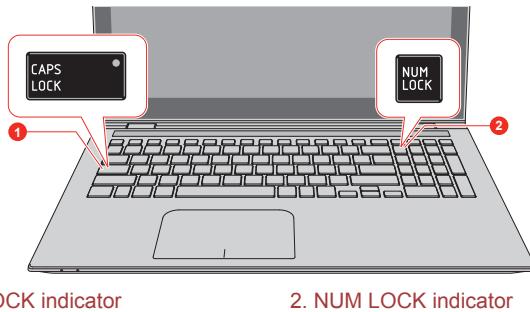
Never remove the key caps on your keyboard. Failure to do so could damage the parts under the key caps.

## Keyboard indicator

The following figure shows the position of the **CAPS LOCK** indicator and **NUM LOCK** indicator which show the following conditions:

- When the **CAPS LOCK** indicator glows, the keyboard produces capitals when any letter is typed.
- When the **NUM LOCK** indicator glows, the ten key allows you to enter numbers.

Figure 4-3 Keypad indicators



1. CAPS LOCK indicator

2. NUM LOCK indicator

Product appearance depends on the model you purchased.

### CAPS LOCK

This indicator glows green when letter keys are locked into their uppercase format.

### NUM LOCK

When the NUM LOCK indicator glows, you can use the number keys on the keyboard for number entry.

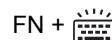
## Function Key

The function keys (F1 ~ F12) are the 12 keys at the top of your keyboard.



You can configure the function keys' mode as "Special function mode" or "Standard F1-F12 mode" by clicking **System Settings -> Keyboard** under **TOSHIBA** group in the Apps view.

"Special function mode" allows you to use special functions without pressing the **FN** key.

<b>Special function mode</b>	<b>Standard F1-F12 mode</b>	<b>Function</b>
F1	FN + F1	Launches the help file supplied with the software.
F2	FN + F2	Decreases the brightness of the display panel in individual steps.
F3	FN + F3	Increases the brightness of the display panel in individual steps.
F4	FN + F4	Changes the active display device. To use a simultaneous mode, you must set the resolution of the internal display panel to match the resolution of the external display device.
F5	FN + F5	Enables or disables the Touch Pad. This function is supported with some models.
F6	FN + F6	Moves media backward.
F7	FN + F7	Plays or pauses media playback.
F8	FN + F8	Moves media forward.
F9	FN + F9	Decreases the computer's volume.
F10	FN + F10	Increases the computer's volume.
F11	FN + F11	Turns the sound on or off.
F12	FN + F12	Turns the Airplane mode on or off.
FN + 1	FN + 1	Reduces the icon size on the desktop or the font sizes within one of the supported application windows.
FN + 2	FN + 2	Enlarges the icon size on the desktop or the font sizes within one of the supported application windows.
FN + Space	FN + Space	Changes the display resolution.
FN + 	FN + 	Turns the keyboard backlight on or off. This function is supported with some models.



*Some functions show the toast notification at the edges of the screen.*

*Those toast notifications are disabled by default. You can enable them in the TOSHIBA Function Key application.*

*To access it, click **Function Key** under **TOSHIBA** group in the Apps view.*

## Windows special keys

The keyboard provides two keys that have special functions in Windows, the Windows® logo key activates the **Start screen** while the application key has the same function as the secondary (right) mouse button.



This key activates the Windows **Start screen**.



This key has the same function as the secondary (right) mouse button.

## Generating ASCII characters

Not all ASCII characters can be generated using normal keyboard operation, but you can generate these characters using their specific ASCII codes.

1. Hold down the **ALT** key.
2. Using the numeric keypad, type the ASCII code of the character you require.
3. Release **ALT**. The ASCII character appears on the display screen.

## Battery

This section explains battery types, use, recharging methods and handling.

### Battery pack

When the AC adaptor is not connected, the main power source of the computer is this lithium ion battery pack, also referred to in this manual as the main battery.

#### **Real-Time Clock (RTC) function**

The Real-Time Clock (RTC) function is supported. The main battery provides power for the internal real-time clock and calendar function and also maintains the system configuration while the computer is turned off. If the RTC lasting time completely runs out, the system will lose this information and the real-time clock and calendar will stop working.

You can change the Real-Time Clock settings in the BIOS setup utility. Refer to [Troubleshooting](#) for further information.

## Care and use of the battery pack

This section provides the important safety precautions in order to handle your battery pack properly.

Refer to the enclosed **Instruction Manual for Safety and Comfort** for detailed precautions and handling instructions.



*Charge the battery pack only in an ambient temperature from 5 through 35 degrees Celsius. Otherwise, the electrolyte solution might leak, battery pack performance might deteriorate, and the battery life might be shortened.*

## Charging the batteries

When the power in the battery pack becomes low, the **DC IN/Battery** indicator flashes amber to indicate that only a few minutes of battery power remain. If you continue to use the computer while the **DC IN/Battery** indicator flashes, the computer enters Hibernation Mode so that you do not lose any data, and automatically turn itself off.

You must recharge a battery pack when it becomes discharged.

### Procedures

To recharge a battery pack, connect the AC adaptor to the DC IN 19V jack and plug the other end into a working outlet. The **DC IN/Battery** indicator glows amber while the battery is being charged.

### Charging Time

The following table shows the approximate time required to charge an exhausted battery fully.

Battery type	Power off	Power on
Battery pack (45 Wh, 3 cell)	about 3.5 hours	about 4 hours



*Be aware that the charging time when the computer is on is affected by ambient temperature, the temperature of the computer and how you are using the computer. If you make heavy use of external devices for example, the battery might scarcely charge at all during operation.*

### Battery charging notice

The battery might not begin charging immediately under the following conditions:

- The battery is extremely hot or cold (if the battery is extremely hot, it might not charge at all). To ensure the battery charges to its full capacity, charge it at room temperature of between 5°C to 35°C (41–95°F).
- The battery is nearly completely discharged. In this instance, leave the AC adaptor connected for a few minutes and the battery should begin charging.

The **DC IN/Battery** indicator might show a rapid decrease in battery operating time when you try to charge a battery under the following conditions:

- The battery has not been used for a long time.
- The battery has completely discharged and been left in the computer for a long time.

In such cases, do the following:

1. Fully discharge the battery by leaving it in the computer with the power on until the system automatically turns itself off.
2. Connect the AC adaptor to the DC IN 19V jack of the computer, and to a wall outlet that is supplying power.
3. Charge the battery until the **DC IN/Battery** indicator glows white.

Repeat these steps two or three times until the battery recovers normal capacity.

## Monitoring battery capacity

Remaining battery power can be monitored using the following methods.

- Clicking the battery icon on the Windows Taskbar
- Via the Battery Status in the Windows Mobility Center window
- *Wait several seconds to monitor the remaining operating time because the computer needs time to check the remaining capacity of the battery pack and then calculate the remaining operating time, based on this together with the current power consumption.*
- *Be aware that the actual remaining operating time might differ slightly from the calculated time.*
- *With repeated discharges and recharges, the battery capacity will gradually decrease. In view of this, it is noted that an often used, older battery will not operate for as long as a new battery even when both are fully charged.*

## Maximizing battery operating time

The usefulness of a battery depends on how long it can supply power on a single charge, while how long the charge lasts in a battery depends on:

- Processor speed
- Screen brightness

- System Sleep Mode
- System Hibernation Mode
- Display power off period
- How often and for how long you use the Hard Disk Drive and external disk drives, for example, optical disc
- How much charge the battery contained to begin with
- How you use optional devices, such as a USB device, to which the battery supplies power
- Whether you enable Sleep Mode, which can conserve battery power if you are frequently turning the computer off and on
- Where you store your programs and data
- Whether you close the display panel when you are not using the keyboard - closing the display saves power.
- The environmental temperature - operating time decreases at low temperatures.

## Batteries exhausted time

When you turn off the power of your computer with batteries fully charged, the batteries exhaust within the following approximate period.

Battery type	Sleep Mode	Shut Down Mode
Battery pack (45 Wh, 3 cell)	about 2.5 days	about 98 days

## Extending battery life

To maximize the life of your battery packs, do the following at least once a month.

1. Turn off the computer's power.
2. Disconnect the AC adaptor and turn on the computer's power. If it does not turn on then go to Step 4.
3. Operate the computer on battery power for five minutes. If you find that the battery pack has at least five minutes of operating time, continue operating until the battery pack is fully discharged. However, if the **DC IN/Battery** indicator flashes or there is some other warning to indicate a low battery condition, go to Step 4.
4. Connect the AC adaptor to the DC IN 19V jack of the computer, and to a wall outlet that is supplying power. The **DC IN/Battery** indicator glows amber to indicate that the battery pack is being charged. However, if **DC IN/Battery** indicator does not glow, this indicates that power is not being supplied. Check the connections for the AC adaptor and the power cord.

- 
5. Charge the battery pack until the **DC IN/Battery** indicator glows white.

## Memory media

The computer is equipped with a memory media slot that can accommodate some kinds of memory media with various memory capacities so that you can easily transfer data from devices, such as digital cameras and Personal Digital Assistants.



*Keep foreign objects out of the memory media slot. Never allow metal objects, such as screws, staples and paper clips, to enter the computer or Keyboard. Foreign metal objects can create a short circuit, which can cause computer damage and fire, possibly resulting in serious injury.*

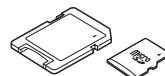


- An adaptor is required to use miniSD/microSD Card.
- Not all memory media have been tested and verified to work correctly. Therefore, it is not possible to guarantee that all memory media can operate properly.

Figure 4-4 Examples of memory media



Secure Digital (SD) Card



microSD card adaptor and  
microSD card



MultiMediaCard (MMC)

### Points to note about the memory media card

SD/SDHC/SDXC memory cards comply with SDMI (Secure Digital Music Initiative), which is a technology adopted to prevent unlawful copy or playback of digital music. For this reason, you cannot copy or play back protected material on another computer or other device, and you cannot reproduce any copyrighted material except for your personal enjoyment.

The following is a simple explanation for distinguishing SD memory cards from SDHC memory cards and SDXC memory cards.

- SD, SDHC and SDXC memory cards appear the same externally. However, the logo on memory cards is different, so pay careful attention to the logo when purchasing.



- The SD memory card logo is (SD).
  - The SDHC memory card logo is (SDHC).
  - The SDXC memory card logo is (SDXC).
- 
- The maximum capacity of SD memory cards is 2 GB. The maximum capacity of SDHC memory cards is 32 GB. The maximum capacity of SDXC memory cards is 128 GB.

## Memory media format

New media cards are formatted according to specific standards. If you wish to reformat a media card, be sure to do so with a device that uses media cards.

### ***Formatting a memory media card***

Memory media cards are sold already formatted in conformity to specific standards. If you reformat a memory card, be sure to reformat it with a device such as digital camera or digital audio player that uses the memory cards, not with the format command provided within Windows.



*To format all areas of the memory card, including the protected area, you must obtain an appropriate application that applies the copy protection system.*

## Media care

Observe the following precautions when handling the card.

- Do not twist or bend cards.
- Do not expose cards to liquids or store in humid areas or lay media close to containers of liquid.
- Do not touch the metal part of a card or expose it to liquids or let it get dirty.
- After using card, return it to its case.
- The card is designed so that it can be inserted only one way. Do not try to force the card into the slot.
- Set the write-protect switch to the lock position, if you do not want to record data.
- Memory cards have a limited lifespan, so it is important to back up important data.
- Do not write to a card if the battery power is low. Low power could affect writing accuracy.
- Do not remove a card while read/write is in progress.



For more details on using memory cards, see manuals accompanying the cards.

### About the write-protect feature

Memory media cards have a write-protect function.

- SD Card (SD memory card, SDHC memory card and SDXC memory card)



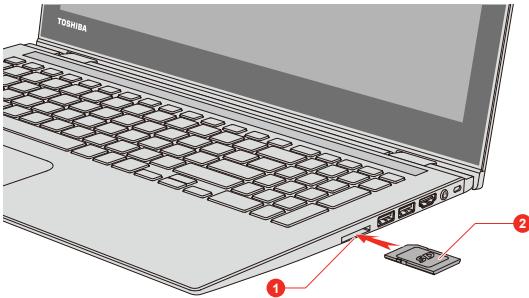
*Set the write-protect switch to the lock position, if you do not want to record data.*

## Inserting memory media

The following instructions apply to all types of supported media devices. To insert memory media, do the following:

1. Turn the memory media so that the contacts (metal areas) face down.
2. Insert the memory media into the memory media slot on the computer.
3. Press the memory media gently until it clicks into place.

*Figure 4-5 Inserting memory media*



1. Memory media slot

2. Memory media

Product appearance depends on the model you purchased.



- Make sure that the memory media is oriented properly before you insert it. If you insert the media in wrong direction, you might not be able to remove it.
- When inserting the memory media, do not touch the metal contacts. You could expose the storage area to static electricity, which can destroy data.
- Do not turn off the computer or switch to Sleep Mode or Hibernation Mode while files are being copied. Failure to do so might cause data loss.

## Removing memory media

The following instructions apply to all types of supported media devices. To remove memory media, do the following:

1. Click the **Safely Remove Hardware and Eject Media** icon on the Windows Taskbar.
2. Select **memory media**.
3. Push the memory media until you hear a click to partially release it.
4. Grasp the media and pull it out of the slot.



- *If you remove the memory media or turn off the power while the computer is accessing the memory media, you might lose data or damage the media.*
- *Do not remove the memory media while the computer is in Sleep or Hibernation Mode. The computer could become unstable or data in the memory media could be lost.*
- *Do not remove only the miniSD/microSD Card while leaving the adaptor in the memory media slot.*

## External Display

Your computer video capabilities can be enhanced with additional displays. External displays allow you to share your desktop or extend the desktop area.

### Connecting an external display

Your computer comes with a built-in display, but you can also connect other external displays via available ports on the computer.



*As the port operation of all external display devices have not been confirmed, some devices might not function properly.*

#### **The HDMI out port**

HDMI (High-Definition Multimedia Interface) port digitally transfers both video and audio data without reducing the quality. HDMI-compatible external display devices including televisions can be connected via the HDMI port.

Some models can support ultra high definition (3840 x 2160 pixels) display on compatible external display devices via HDMI output port. To use this function, you must purchase an HDMI cable (corresponding to 3840x2160 pixels or higher).

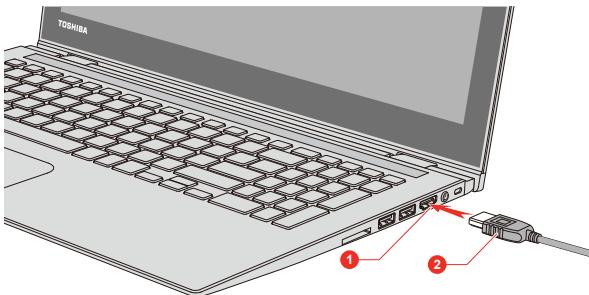
To connect an HDMI-compatible display device, do the following:



To connect a device to the HDMI out port, you must purchase a suitable HDMI cable.

1. Plug one end of the HDMI cable into the HDMI in port of the HDMI display device.
2. Plug the other end of the HDMI cable into the HDMI out port on your computer.
3. Turn the HDMI display device's power on.

Figure 4-6 Connecting the HDMI out port



1. HDMI out port

2. HDMI cable

Product appearance depends on the model you purchased.



*Do not plug/unplug an HDMI device under the following conditions:*

- The system is starting up.
- The system is shutting down.

*When you connect a television or external monitor to the HDMI port, the display output device is set to HDMI.*

*When you unplug the HDMI cable and replug it, wait at least 5 seconds before you replug the HDMI cable again.*

*When you change the display output device, the playback device may not switch automatically. In this case, in order to set the playback device to the same device as the display output device, please adjust the playback device manually by the following steps:*

1. Click **Control Panel -> Hardware and Sound -> Sound** under **Windows System** group in the Apps view.
2. In the **Playback** tab, select the playback device which you want to switch to.
3. To use the internal speakers on your computer, select **Speakers**. To use the television or the external monitor that you have connected to the computer, select a different playback device.
4. Click the **Set Default** button.

- 
5. Click **OK** to close the **Sound** dialog.

### **Settings for display video on HDMI**

To view video on the HDMI display device, be sure to configure the following settings otherwise you might find that nothing is displayed.



*Be sure to use the function key to select the display device before starting to play video. Do not change the display device while playing video.*

*Do not change the display device under the following conditions.*

- While data is being read or written
- While communication is being carried out

### **Selecting HD Format**

To select the display mode, do the following:

1. Click **Control Panel** -> **Appearance and Personalization** -> **Display** -> **Change display settings** -> **Advanced settings** -> **List All Modes** under **Windows System** group in the Apps view.
2. Select one of the modes at **List All Modes**.

## **Wireless display**

Your computer might support Wireless display, a wireless technology which utilizes Wi-Fi to allow the computer to be connected to external displays including TVs as extended screens wirelessly. With Wireless display, documents, streamed/local media contents, or other online contents can be shared wirelessly with others.

To use Wireless display, either one of the following devices is required:

- A compatible external display with built-in support for Wireless display.
- An external display with HDMI port and a Wireless display adaptor.

The Wireless display adaptor is a device that connects to the external display via HDMI port and can receive Wi-Fi signals from your computer.

To connect to an external display wirelessly, do the following:

1. In the **Settings** charm, click **Change PC settings** -> **PC and devices** -> **Devices**.
2. Click **Add a device**. Your computer starts searching for the Wireless display device.
3. After the Wireless display device is searched, follow the on-screen instructions to finish connection.

After the connection is established, the name of the Wireless display device will appear under **Projectors**.

To disconnect the Wireless display device, click the Wireless display device name and then click **Remove device**.

## Changing the display settings

After one or more external displays are connected, the operating system can automatically detect, identify, and set up the display settings.

You can also manually manage how the external displays work and change the display settings by pressing **P** while holding down the **Windows** (  ) key. If you disconnect the external display before you turn off the computer's power, be sure to switch to the internal display.

## Security lock

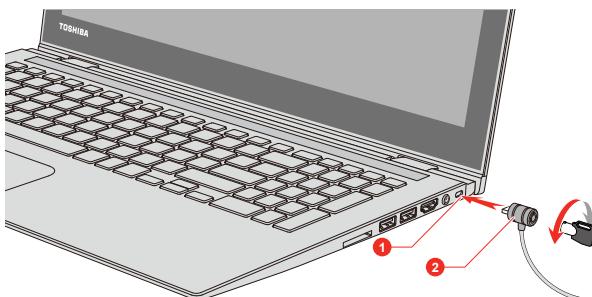
A security lock enables you to anchor your computer to a desk or other heavy object in order to help prevent unauthorized removal or theft. The computer has a security lock slot on its right side into which you can attach one end of the security cable, while the other end attaches to a desk or similar object. The methods used for attaching security cables differ from product to product. Refer to the instructions for the product you are using for more information.

## Connecting the security lock

In order to connect a security cable to the computer, do the following:

1. Turn the computer so its right side faces you.
2. Align the security cable with the lock slot and secure it in place.

*Figure 4-7 Security lock*



1. Security lock slot

2. Security lock

Product appearance depends on the model you purchased.

## Optional TOSHIBA Accessories

To make your computer even more powerful and convenient to use, you can add a number of options and accessories. For reference, the following

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list details some of the items that are available from your reseller or TOSHIBA dealer:

**Universal AC Adaptor** If you frequently use your computer at more than one site, it might be convenient to purchase an additional AC adaptor to be kept at each site in order to remove the need to carry the adaptor with you always.

---

## Sound System and Video mode

This section describes some of the audio control functions.

### Volume Mixer

The Volume Mixer utility lets you control the audio volume for playback of devices and applications under Windows.

- To launch the Volume Mixer utility, right-click on the speaker icon on the Windows Taskbar, and then select **Open Volume Mixer** from the sub menu.
- To adjust the volume level of speakers or headphones, move the **Speakers** slider.
- To adjust the volume level of an application that you are using, move the slider for the corresponding application.

### Microphone Level

To change the microphone recording level, do the following:

1. Right-click on the speaker icon on the Windows Taskbar, and select **Recording devices** from the sub menu.
2. Select **Microphone**, and click **Properties**.
3. On the **Levels** tab, move the **Microphone** slider to increase or decrease the microphone volume level.

If you feel the microphone volume level is inadequate, move the **Microphone Boost** slider to a higher level.

### Audio Enhancements

To apply the sound effects for your current speaker, do the following.

1. Right-click on the **Speakers** icon on the Windows Taskbar, and then select **Playback devices** from the sub menu.
2. Select **Speakers**, and click **Properties**.
3. On the **Enhancements** tab, select the sound effects you would like, and click **Apply**.

## **SmartAudio**

Your computer contains SmartAudio, a powerful program that allows you to configure your audio software to enhance and personalize your listening experience.

### ***Starting SmartAudio Application***

To launch the SmartAudio, click **Control Panel -> Hardware and Sound -> SmartAudio** under **Windows System** group in the Apps view.

### ***Headphone/Microphone selection***

To change the type of headphone or microphone, do the following:

1. Plug a headphone or microphone into the headphone/microphone combo jack.
2. Click the **Jack Configuration** icon in the SmartAudio main screen.
3. Select one from the device list for the device you plugged into.

### ***Opening SmartAudio Help***

Clicking "?" in the top-right corner of the SmartAudio window can open the **Help** file in your selected language, or in English if your selected language is not supported.

## **DTS Sound**

DTS Sound™ utilizes advanced patented techniques to retrieve audio cues buried in the original source material and deliver immersive surround sound complete with deep, rich bass and crystal clear dialog.

DTS Sound is provided with some models. It provides the following features:

- Immersive surround sound with bass and dialog enhancement
- Broad sweet spot with elevated sound image
- Improved volume output delivering maximum volume without creating clipping or distortion
- Dialog enhancement for clear and intelligible vocals
- Bass enhancement for rich, low frequency production
- High frequency definition for crisp details

To access the utility, click **DTS Sound** under **DTS, Inc** in the Apps view.

U.S. patents apply to this product. See

<http://patents.dts.com>

Manufactured under license from DTS Licensing Limited.

## **Video mode**

Video mode settings are configured via the **Screen Resolution** dialog.

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To open the **Screen Resolution** dialog, click **Control Panel -> Appearance and Personalization -> Display -> Change display settings** under **Windows System** group in the Apps view.



*If you are running some applications (for example a 3D application or video playback), you might see some disturbance, flickering, or frame dropping on your screen.*

*If that occurs, adjust the resolution of display, lowering it until the screen is displayed properly.*

# Chapter 5

## Utilities and Advanced Usage

This chapter describes the utilities and special features of this computer, and the advanced usage of some utilities.

### Utilities and Applications

This section describes the pre-installed utilities that come with the computer and details how to start them. For further information on their operation, refer to online manual, help files, or README.TXT file (if applicable) of each utility.

<b>TOSHIBA Desktop Assist</b>	TOSHIBA Desktop Assist is a graphical user interface that provides access to specific tools and TOSHIBA utilities and applications that make the use and configuration of the computer easier.  To access this utility, click <b>Desktop Assist</b> on the desktop.
<b>TOSHIBA Display Utility</b>	TOSHIBA Display Utility includes Desktop Text Size utility and Split Screen utility. Desktop Text Size allows you to make the text size bigger or smaller on the desktop according to your usage and favorite. You can change the text size on the display and on the title bar of windows by changing the scaling of the text size. When the scaling is smaller, more information appears on the display simultaneously but the text size becomes smaller. When the scaling is larger, less information appears on the display simultaneously but the text size becomes larger. You can install Split Screen utility by yourself. Split Screen utility enables you to create multiple display zones on a screen and to fit the active windows to within those zones.  To access this utility, click <b>Display Utility</b> under <b>TOSHIBA</b> group in the Apps view.  For details on this utility, see the help file.
<b>TOSHIBA Password Utility</b>	This utility allows you to set a password in order to restrict access to the computer.  To access this utility, click <b>Password Utility</b> under <b>TOSHIBA</b> group in the Apps view.

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<b>TOSHIBA System Settings</b>	This utility allows you to customize your hardware settings according to the way you work with the computer and the peripherals you use.  To access this utility, click <b>System Settings</b> under <b>TOSHIBA</b> group in the Apps view.
<b>TOSHIBA Setup Utility</b>	TOSHIBA Setup Utility is a BIOS setup utility that provides you a menu-based user interface so that you can easily view and change BIOS settings.  For more information, please refer to the <a href="#"><i>TOSHIBA Setup Utility</i></a> section.
<b>TOSHIBA eco Utility</b>	This computer is equipped with "eco mode". This mode slightly lowers performance of some devices to reduce electric power consumption. You can realize measurable power savings by using it continuously.  TOSHIBA eco Utility helps control the power consumption of your computer. Various information can help you understand your degree of contribution to the environment.  Furthermore, this utility contains Peak shift function that can help reduce power usage during periods of peak demand by shifting some power consumption to periods when demand is lower.  The utility also supports "eco charge mode". The battery will not be fully charged in this mode, thus extending the life cycle of the battery.  It is recommended using the computer with AC adaptor connected as the battery operating time is comparatively short in this mode.  Depending on the usage situation, the life cycle of battery might not be extended properly.  To access this utility, click <b>eco Utility</b> under <b>TOSHIBA</b> group in the Apps view.  For details on TOSHIBA eco utility, see the help file.
<b>TOSHIBA Media Player by sMedio TrueLink+</b>	This software is a multimedia player which can be used to play back video, music, and photo. TOSHIBA Media Player can play back contents on a local library/home network/OneDrive. To access it, click the <b>Media Player</b> icon on the Start screen. For details, refer to the Online help.

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**CyberLink MediaStory** CyberLink MediaStory helps you to manage and share your multimedia content quickly. Your photos and videos are organized by event, date in a calendar, geographical places, and by people's faces. You can easily create a polished slideshow or video of your digital life utilizing your photos and videos.

This utility is only provided with some models.

To access it, click **CyberLink MediaStory** in the Apps view.

For details on how to use CyberLink MediaStory, check out the tutorials by clicking **Preferences** (  ) in the main window and then clicking **Tutorials**.



*Do not change the display device while running CyberLink MediaStory.*

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**TOSHIBA Function Key**

This utility allows you to perform some features by pressing a specified key or combined with the FN key.

To set up this utility, click **Function Key** under **TOSHIBA** group in the Apps view.

For details, refer to the [Function Key](#) section.

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**TOSHIBA Service Station**

This application allows your computer to automatically search for TOSHIBA software updates or other alerts from TOSHIBA that are specific to your computer system and its programs. When enabled, this application periodically transmits to our servers a limited amount of system information, which will be treated in strict accordance with the rules and regulations as well as applicable data protection law.

To access this utility, click **Service Station** under **TOSHIBA** group in the Apps view.

<b>TOSHIBA PC Health Monitor</b>	The TOSHIBA PC Health Monitor application proactively monitors a number of system functions such as power consumption, battery health, and system cooling, informing you of significant system conditions. This application recognizes the system and individual component serial numbers and tracks specific activities related to their usage.  To access this utility, click <b>PC Health Monitor</b> under <b>TOSHIBA</b> group in the Apps view.  For details on TOSHIBA PC Health Monitor, see the help file.
<b>TOSHIBA Audio Enhancement</b>	TOSHIBA Audio Enhancement provides you the function of audio source filtering, earphone audio enhancement, or speaker audio enhancement. To change the settings, click <b>Audio Enhancement</b> under <b>TOSHIBA</b> group in the Apps view.
<b>Trusted Platform Module (TPM)</b>	The TPM (Trusted Platform Module) is a security encryption device for the HDD/SSD. Trusted Platform Module is provided with some models. To operate the TPM function, use an applicable utility.
<b>Chroma Tune for TOSHIBA</b>	Chroma Tune for TOSHIBA is a utility that allows color setting of your computer. This utility is only provided with some models. To access this utility, click <b>Chroma Tune for TOSHIBA</b> in the Apps view. For details on Chroma Tune for TOSHIBA, see the User Manual of the utility.



*You might not have all the software listed in this section depending on the model you purchased.*

*To access the setup files of the drivers/utilities, click **Applications and Drivers** in the Apps view.*

*Windows Store apps are not included in the setup files above but can be downloaded from Windows Store.*

## Special features

The following features are either unique to TOSHIBA computers or are advanced features which make the computer more convenient to use.

Access each function using the following procedures.

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\*<sup>1</sup> To access the Power Options, click **Control Panel -> System and Security -> Power Options** under **Windows System** group in the Apps view.

<b>Display automatic power off</b> <sup>*1</sup>	This feature automatically cuts off power to the computer's display panel when there is no keyboard input for a specified time, with power being restored the next time a key is pressed. This can be specified in the Power Options.
<b>HDD automatic power off</b> <sup>*1</sup>	This feature automatically cuts off power to the hard disk drive when it is not accessed for a specified time, with power being restored when the hard disk drive is next accessed. This can be specified in the Power Options.
<b>System automatic Sleep/Hibernation Mode</b> <sup>*1</sup>	This feature automatically shuts down the system into either Sleep Mode or Hibernation Mode when there is no input or hardware access for a specified time. This can be specified in the Power Options.
<b>Power on password</b>	Two levels of password security, supervisor and user, are available to prevent unauthorized access to your computer.
<b>Intelligent power supply</b> <sup>*1</sup>	A microprocessor in the computer's intelligent power supply detects the battery charge, automatically calculates the remaining battery capacity, and protects electronic components from abnormal conditions such as a voltage overload from the AC adaptor. This can be specified in the Power Options.
<b>Battery save mode</b> <sup>*1</sup>	This feature lets you configure the computer in order to save battery power. This can be specified in the Power Options.
<b>Panel power on/off</b> <sup>*1</sup>	This feature automatically turns power to the computer off when the display panel is closed, and turns it back on when the display panel is opened. This can be specified in the Power Options.
<b>Low battery automatic Hibernation Mode</b> <sup>*1</sup>	When battery power is exhausted to the point that computer operation cannot be continued, the system automatically enters Hibernation Mode and shuts itself down. This can be specified in the Power Options.

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<b>Sleep Mode</b>	If you have to interrupt your work, you can use this feature to allow you to turn off power to the computer without exiting from your software. Data is maintained in the computer's main memory so that when you next turn on the power, you can continue working right where you left off.
<b>Hibernation Mode</b>	This feature lets you turn off the power to the computer without exiting from your software. The contents of main memory are automatically saved to the Hard Disk Drive so that when you next turn on the power again, you can continue working right where you left off. You must enable the Hibernation Mode before using this feature. Refer to the <i>Starting Hibernation Mode</i> section for more details.
<b>USB Wakeup function</b>	This function restores the computer from Sleep Mode depending on the external devices connected to the USB ports.  For example, if a mouse or USB keyboard is connected to a USB port, clicking the mouse button or pressing the keyboard will wakeup the computer.
<b>Heat dispersal <sup>*1</sup></b>	To protect against overheating, the processor is equipped with an internal temperature sensor which lowers the processing speed if the computer's internal temperature rises to a certain level.  When the processor's temperature falls within normal range, the processor operation returns to its standard speed.  If the processor's temperature reaches an unacceptably high level with either setting, the computer automatically shuts down to prevent any damage. In this instance, all unsaved data in memory will be lost.

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## TOSHIBA Password Utility

The TOSHIBA Password Utility provides two levels of password security: User and Supervisor.



*Passwords set by the TOSHIBA Password Utility function are different from the Windows password.*

## User Password

To start the utility, click the following items under **TOSHIBA** group in the Apps view:

### **Password Utility -> User Password**

User authentication might be required to validate user rights when using TOSHIBA Password Utility to delete or change passwords, and so on.

- **Set** (button)

Click this button to register a password. After a password is set, you are prompted to enter it when you start the computer.



- *After you set the password, a dialog box appears asking whether you want to save it to other media. If you forget the password, you can open the password file on another computer. Be sure to keep the media in a safe place.*
- *When entering the character string to register the password, enter from the keyboard character by character and do not enter as ASCII code or copy-and-paste the character string. In addition, ensure that the registered password is correct by outputting the character string to the password file.*
- *When entering a password, do not enter any characters (for example "!" or "#") produced by pressing the **SHIFT** or **ALT** keys.*

- **Delete** (button)

Click this button to delete a registered password. Before you can delete a password, you must first enter the current password correctly.

- **Change** (button)

Click this button to change a registered password. Before you can change a password, you must first enter the current password correctly.

- **Owner String** (text box)

You can use this box to associate text with the password. After you enter text, click **Apply** or **OK**. When the computer is started, this text is displayed together with the prompt asking you to enter a password.



*For models equipped with HDD, you can use BIOS Setup to set, change, or delete the HDD Password or HDD Master Password.*

*Refer to the **TOSHIBA Setup Utility** section for further information.*



- If you forget your HDD User Password, TOSHIBA will NOT be able to assist you, and your HDD will be rendered COMPLETELY and PERMANENTLY INOPERABLE. TOSHIBA will NOT be held responsible for any loss of any data, any loss of use or access to your HDD, or for any other losses to you or any other person or organization that result from the loss of access to your HDD. If you cannot accept this risk, do not register the HDD User Password.
- When saving the HDD User Password shut down or restart the computer. If the computer is not shut down or restarted, the saved data might not be correctly reflected. For more information on shutting down or restarting the computer, refer to [Turning on the power](#).

## Supervisor Password

If you set a Supervisor Password, some functions might be restricted when a user logs on with the User Password. To set a Supervisor Password:

Click **Password Utility -> Supervisor Password** under **TOSHIBA** group in the Apps view.

This utility lets you do the following:

- Register or delete the Supervisor Password.
- Specify restrictions for general users.

## Starting the computer using a password

If you have already registered a user password, there is one way to start the computer:

- Enter the password manually.



*The password is necessary only if the computer was shut down in Hibernation mode or boot mode. It is not needed in Sleep mode and Restart.*

To enter a password manually, do the following:

1. Turn on the power as described in the [Getting Started](#) section. The following message appears in the screen:

**Enter Password [ ]**



*At this point, the function keys do not work. They will function after you enter the password.*

2. Enter the Password.

- 
3. Press **ENTER**.



*If you enter the password incorrectly three times in a row, or if you do not enter the password within 1 minute, the computer shuts off. In this case, some features that can power on the computer automatically (Wake-up on LAN, Task Scheduler, etc) might not work. You must turn the computer back on to retry password entry.*

## TOSHIBA System Settings

TOSHIBA System Settings is the TOSHIBA configuration management tool available through the Windows operating system.

To run TOSHIBA System Settings, click **System Settings** under **TOSHIBA** group in the Apps view.

The TOSHIBA System Settings window contains a number of tabs to allow specific functions of the computer to be configured.

In addition there are also three buttons: OK, Cancel and Apply.

<b>OK</b>	Accepts your changes and closes the TOSHIBA System Settings window.
<b>Cancel</b>	Closes the window without accepting your changes.
<b>Apply</b>	Accepts all your changes without closing the TOSHIBA System Settings window.



*Some options shown in gray are possible to confirm their status.*

TOSHIBA System Settings screen might have the following tabs:

- General—Allows you to view the current BIOS version or change certain settings back to their default values
- Display—Allows you to select the internal LCD and/or external monitor when the computer boots up
- Boot Options—Allows you to change the sequence in which your computer searches the drives for the operating system
- Keyboard—Allows you to access the wake-on keyboard function, or to configure the function keys
- USB—Allows you to set conditions for USB
- SATA—Allows you to set conditions for SATA
- LAN—Allows you to set conditions for LAN



*The settings or options explained here might vary depending on the model you purchased.*

*After you changed the settings, a dialog box might appear to prompt you that the changes will take effect after the computer is restarted. Make sure to restart your computer immediately to apply these changes.*

## TOSHIBA Media Player by sMedio TrueLink+

Be aware of the following limitations when you use the TOSHIBA Media Player by sMedio TrueLink+:

### Notes on use

TOSHIBA Media Player by sMedio TrueLink+ is a multimedia player which can be used to play back video, music, and photo.

This software is only provided with some models.

- It is recommended that the AC adaptor is connected while TOSHIBA Media Player is running. Power saving features might interfere with smooth playback. When TOSHIBA Media Player is used with a battery power, set the Power Options to "Balance".
- The screen saver is disabled while TOSHIBA Media Player is playing a video file or slideshows of photos.
- The computer will not enter Sleep and Hibernation mode automatically, while TOSHIBA Media Player is running.
- The display automatic power off function is disabled while TOSHIBA Media Player is playing a video file or slideshows of photos.
- The Resolution+ function was specially adjusted for the internal monitor. Hence, turn OFF Resolution+ when viewing on external monitor.
- The Resolution+ feature for video playback is supported only on some models. Resolution+ can only be enabled for video/photo playback if **Enhance Video/Photo Quality** is displayed. Resolution+ can be enabled only for photo playback if **Enhance Photo Quality** is displayed.
- The "Save with Resolution+ On" feature saves pictures with Resolution+ On regardless of the current Resolution+ setting (On/Off/Demo). Since the picture is saved in a size appropriate for posting to SNS (largest edge of width/height is 2048 pixels), the saved picture might look different than when browsing the original picture with Resolution+ On.
- Playback of video/music/slideshow can be controlled using the media buttons on the preview window which is invoked when the mouse cursor is moved over the TOSHIBA Media Player icon on the Windows Taskbar.

Video/Slideshow playback can only be controlled when the application is in the foreground.

Music playback can be controlled even when the application is in the background.

- Playback of high bit rate content might cause frame dropping, audio skipping or decrease in computer performance.  
The above problems could be remedied by turning Resolution+ off.
- Tap/click the Refresh button on app commands to refresh the content displayed on Library Screen. It will not be refreshed automatically.
- If sleep, hibernation, shutdown, or reboot operation is in process during uploading the files to OneDrive, the operation will not be properly completed.
- This app does not support to play back content protected by DRM. If you try to play DRM protected content with Resolution+ On state, this app might be closed.
- Photos uploaded to OneDrive are limited to a maximum resolution of 2048 x 2048 pixels. Any photo over that resolution will be scaled proportionally to a maximum size of 2048 x 2048 pixels.
- This app does not support DMS.
- The playback of some media files might not be normal by this player. This might also happen when using Windows Media Player and Video app.
- User Interface and operational procedures might differ depending on the application version. Refer to the **Help** of **TOSHIBA Media Player by sMedio TrueLink+** for details.

## Opening TOSHIBA Media Player by sMedio TrueLink+ Manual

The features and operations about TOSHIBA Media Player are explained in the TOSHIBA Media Player Manual.

Use the following procedure to open TOSHIBA Media Player Online help:  
When TOSHIBA Media Player is running, click **Help** of the Settings charm.

## TOSHIBA PC Health Monitor

The TOSHIBA PC Health Monitor application proactively monitors a number of system functions such as power consumption, battery health (for models with battery), and the system cooling, informing you of significant system conditions. This application recognizes the system and individual component serial numbers, and tracks specific activities related to the computer and their usage.

The collected information includes device operation time and number of actuations or status changes (that is: number of power button and **FN** key combination uses, AC adaptor, battery (for models with battery), LCD, fan (for models with fan), HDD/SSD, sound volume, wireless communication functionalities and USB information), date of initial system use, and also computer and device usage (that is: power settings, battery temperature and recharging (for models with battery), CPU, memory, backlight illumination time, and temperatures for various devices). The collected information is not limited to the examples specified here. The stored data

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uses a very small portion of the total hard disk capacity, approximately 10 MB or less per year.

This information is used to identify and provide a notification of system conditions which might affect the performance of your TOSHIBA computer. It might also be used to help diagnose problems should the computer require service by TOSHIBA or TOSHIBA authorized service providers. Additionally, TOSHIBA might also use this information for quality assurance analysis.

Subject to the use restrictions above, the data on the internal storage drive logged might be transferred to entities located outside of your country or region of residence (for example, European Union). Those countries might or might not have the same data protection laws or data protection levels as required by your home country or region.

You can disable the TOSHIBA PC Health Monitor at any time by uninstalling the software via **Uninstall a program** in the **Control Panel**. Doing so will automatically delete all collected information from the internal storage drive.

The TOSHIBA PC Health Monitor software does not extend or modify TOSHIBA obligations under its standard limited warranty in any way. TOSHIBA standard limited warranty terms and limitations apply.

## Starting the TOSHIBA PC Health Monitor

The TOSHIBA PC Health Monitor can be opened by clicking **PC Health Monitor** under **TOSHIBA** group in the Apps view.

The TOSHIBA PC Health Monitor main screen is displayed.

This utility might be disabled by default on your computer. You can enable it by clicking **Please click here to enable TOSHIBA PC Health Monitor**. The "PC Health Monitor Software Notice & Acceptance" screen is displayed. Carefully read the information displayed. Selecting **ACCEPT** and clicking **OK** enables the program. By enabling the TOSHIBA PC Health Monitor software, you agree with these terms and conditions and to the use and sharing of the collected information. Once the program is enabled, the TOSHIBA PC Health Monitor screen is displayed, and the program begins monitoring system functions and collecting information.



*A message is displayed if any changes which might interfere with the operation of the program are detected. Follow the instructions displayed on-screen in the message.*

## TOSHIBA Setup Utility

TOSHIBA Setup Utility is a BIOS setup utility that provides you a menu-based user interface so that you can easily view and change BIOS settings.

To enter the BIOS setup utility, do the following:

1. Save your work.
2. Click the power icon (  ) on the Start screen and then select **Restart**.
3. Hold down the **F2** key and then release this key one second after the computer is power on.

The BIOS setup utility can also be launched by button combination (**L50W-C** models only):

1. Save your work.
2. Click the power icon (  ) on the Start screen and then select **Shutdown**.
3. While holding down the **Volume down** button, press the **Power** button to turn on the power. Release the **Volume down** button after TOSHIBA Setup Utility is loaded.



*Make sure that fast startup is disabled in the Power Options by the following steps:*

1. Click **Control Panel -> System and Security -> Power Options** under **Windows System** group in the Apps view.
2. Click **Choose what the power button does** or **Choose what closing the lid does**.
3. Click **Change settings that are currently unavailable**.
4. Deselect the **Turn on fast startup** check box from **Shutdown settings**.
5. Click the **Save changes** button.

To save the changes and exit the utility, press the **F10** key and proceed by selecting **Yes** or select **Exit -> Exit Saving Changes -> Yes**. The computer will restart immediately.

## Navigating the utility (**L50W-C**)

TOSHIBA Setup Utility can be navigated through the touch screen.

Some buttons on the computer are also designated to execute the corresponding key function on the keyboard. Details are described as follows:

Button	Key	Function
Windows	Enter key	Proceed or confirm operation
Volume up	Up arrow key	Select the previous item
Volume down	Down arrow key	Select the next item

# System Recovery

There is a hidden partition allocated on the Hard Disk Drive for the System Recovery Options in the event of a problem.

You can also create recovery media and restore the system.

The following items are described in this section:

- Creating Recovery Media
- Restoring the pre-installed software from your created Recovery Media
- Restoring the pre-installed software from the Recovery Hard Disk Drive

## Creating Recovery Media

This section describes how to create Recovery Media.



- *Be sure to connect the AC adaptor when you create Recovery Media.*
- *Be sure to close all other software programs except the Recovery Media Creator.*
- *Do not run software such as screen savers which can put a heavy load on the CPU.*
- *Operate the computer at full power.*
- *Do not use power-saving features.*
- *Do not write to the media when the virus check software is running. Wait for it to finish, then disable virus detection programs including any software that checks files automatically in the background.*
- *Do not use utilities, including those intended to enhance Hard Disk Drive access speed. They might cause unstable operation and damage data.*
- *Do not shut down/log off or Sleep/Hibernate while writing or rewriting the media.*
- *Set the computer on a level surface and avoid places subjected to vibrations such as airplanes, trains, or cars.*
- *Do not use on an unstable surface such as a stand.*

A recovery image of the software on your computer is stored on the Hard Disk Drive, and can be copied to either disc media or USB Flash Memory by using the following steps:

1. Select either blank disc or USB Flash Memory.

The application allows you to choose from a variety of different media onto which the recovery image can be copied including disc media and USB Flash Memory.



- Some of the disc media might not be compatible with the optical disc drive connected to your computer. You should therefore verify that the optical disc drive supports the blank media you have chosen before proceeding.
  - USB Flash Memory will be formatted and all the data in the USB Flash Memory will be lost when proceeding.
2. Turn on your computer and allow it to load the Windows operating system from the Hard Disk Drive as normal.
  3. Insert the first blank disc into the external optical disc drive tray, or insert the USB Flash Memory into one available USB port.
  4. Click **Recovery Media Creator** under **TOSHIBA** group in the Apps view.
  5. After Recovery Media Creator starts, select the type of media and the title you wish to copy, and then click the **Create** button.

## Restoring the pre-installed software from your created Recovery Media

If the pre-installed files are damaged, you are able to use the Recovery Media you have created to restore the computer to the state it was in when you originally received it. To perform this restoration, do the following:



*Make sure that the AC adaptor is connected during the restoring process.*



- When you reinstall the Windows operating system, the hard disk will be reformatted and all data will be lost.
- Make sure to use the default Boot Mode option in the BIOS setup utility before restoring.

1. Launch the BIOS setup utility.

*Please refer to the [TOSHIBA Setup Utility](#) section for further information.*

3. In the BIOS setup screen, select **Advanced -> System Configuration -> Boot Mode**.

**Note:** Please skip the following contents if you cannot find the Boot Mode option in your system.

4. Select **UEFI Boot (Default)**.

*If you set the Boot Mode as **CSM Boot**, the recovery media created by Recovery Media Creator will NOT be able to restore.*

*If you create a recovery image using advanced recovery tools from Control Panel, also make sure to use the default Boot Mode option (**UEFI Boot**) in the BIOS setup utility before restoring.*

1. Load the Recovery Media into the external optical disc drive or insert the recovery USB Flash Memory into one available USB port.
2. Click the power icon (↻) on the Start screen and then select **Restart**.
3. Hold down the **F12** key and then release this key one second after the computer is power on.
4. Use the up and down cursor key to select the appropriate option from the menu according to your actual recovery media.
5. A menu is displayed from which you should follow the on-screen instructions.



- *For some models, Office will no longer be present after the recovery completes. To enable users to reinstall Office, do the following:*
  - *If you have a product key for an Office 365 product, you can enter the key at*  
*<https://officesetup.getmicrosoftkey.com/>*  
*You can also go directly to your Office Account at*  
*<https://office.microsoft.com/MyAccount.aspx> to install.*
  - *If you have a product key for Office Home and Student, Office Home and Business or Office Professional, you can go to <https://downloadoffice.getmicrosoftkey.com/> to install.*



*If you have previously chosen to remove the recovery partition and are trying to create "Recovery Media", the following message appears: "The Recovery Media Creator can not be launched because there is no recovery partition."*

*When there is no recovery partition, the Recovery Media Creator cannot make Recovery Media.*

*However, if you have already created a "Recovery Media", you can use it to restore the recovery partition.*

*If you have not created "Recovery Media", contact TOSHIBA support for assistance.*

## Restoring the pre-installed software from the Recovery Hard Disk Drive

A portion of the total Hard Disk Drive space is configured as a hidden recovery partition. This partition stores files which can be used to restore pre-installed software in the event of a problem.

If you set up your Hard Disk Drive again later, do not change, delete, or add partitions in a manner other than specified in the manual, otherwise you might find that space for the required software is not available.

In addition, if you use a third-party partitioning program to reconfigure the partitions on your Hard Disk Drive, you might find that it becomes impossible to set up your computer.



*Make sure that the AC adaptor is connected during the restoring process.*



*When you reinstall the Windows operating system, the hard disk will be reformatted and all data will be lost.*

1. Click the power icon (  ) on the Start screen and then select **Restart**.
2. Hold down **0** (zero) key and then release this key one second after the computer is power on. Choose **Yes** if you want to continue.
3. Select **Troubleshoot**.
4. Select **Reset your PC**.
5. Follow the on-screen instructions to finish the recovery.

You can also perform the restoration through PC settings in the operating system:

1. Click the **Settings** charm and click **Change PC settings**.
2. Click **Update and recovery** under PC settings and then click **Recovery**.
3. Click **Get started** under **Remove everything and reinstall Windows**.
4. Follow the on-screen instructions to finish the recovery.

# Chapter 6

## Troubleshooting

TOSHIBA has designed this computer for durability, however, should problems occur you are able to use the procedures detailed in this chapter to help determine the cause.

You should become familiar with this chapter as knowing what might go wrong can help prevent problems from occurring in the first place.

### Problem-solving process

If you observe the following guidelines, resolving problems will be much easier.

- Stop immediately when you recognize a problem exists as taking further action might result in data loss or damage, or you might destroy valuable problem-related information that can help solve the problem.
- Observe what is happening. Write down what the system is doing and what actions you performed immediately before the problem occurred. Make a screenshot of the current display.

Also be aware that the questions and procedures described in this chapter are meant only as a guide, they are not definitive problem-solving techniques. In reality many problems can be solved simply, but a few might require help from TOSHIBA Support. If you find you need to consult others, be prepared to describe the problem in as much detail as possible.

### Preliminary checklist

You should always consider the simplest solution first. The items detailed in this checklist are easy to fix and yet can cause what appears to be a serious problem:

- Make sure that you turn on all peripheral devices before you turn on the computer. This includes your printer and any other external device you are using.
- Before you attach an external device you should first turn off the computer, then when you turn the computer back on it recognizes the new device.
- Make sure that all optional accessories are configured properly in the computer's setup program and that all required driver software has been loaded (refer to the documentation included with the optional accessories for further information on its installation and configuration).

- Check all cables to ensure that they are correctly and firmly attached to the computer - loose cables can cause signal errors.
- Inspect all connecting cables for loose wires and all connectors for loose pins.
- Check that your disc media is correctly loaded

Always try to make detailed notes of your observations and keep them in a permanent error log - this helps you to describe your problems to TOSHIBA Support. In addition, if a problem recurs, the log you have made helps to identify the problem faster.

## Analyzing the problem

Sometimes the computer gives you clues that can help you identify why it is malfunctioning. In view of this, keep the following questions in mind:

- Which part of the computer is not operating properly - keyboard, Hard Disk Drive, display panel, Touch Pad, Touch Pad control buttons - as each device produces different symptoms.
- Check the options within the operating system to ensure that its configuration is set properly.
- What appears on the display? Does it display any messages or random characters? Make a screenshot of the current display and, if possible, look up the messages in the documentation included with the computer, software, or operating system.
- Check that all connecting cables are correctly and firmly attached as loose cables can cause erroneous or intermittent signals.
- Do any indicators light, if so, which ones, what color are they and do they stay on or blink? Write down what you see.
- Do you hear any beeps, if so how many, are they long or short and are they high pitched or low pitched? In addition, is the computer making any unusual noises? Write down what you hear.

Record your observations so you can describe them in detail to TOSHIBA Support.

<b>Software</b>	<p>The problems might be caused by your software or disk. If you cannot load a software package, the media might be damaged or the program might be corrupted. In these instances, try loading another copy of the software if possible.</p> <p>If an error message appears while you are using a software package, you should refer to the documentation supplied with it as this usually includes a problem-solving section or a summary of error messages.</p> <p>Next, check any error messages against the operating system documentation.</p>
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## **Hardware**

If you cannot find a software problem, you should then check the setup and configuration of your hardware. First run through the items in the preliminary checklist as described previously then, if you still cannot correct the problem, try to identify the source. The next section provides checklists for individual components and peripherals.



*Before using a peripheral device or application software that is not an authorized TOSHIBA part or product, make sure that the device or software can be used with your computer. Use of incompatible devices might cause injury or might damage your computer.*

## **If something goes wrong**

### ***Your computer does not respond to the keyboard commands***

If an error occurs and the computer does not respond to your keyboard commands, do the following:

Press the power button and hold it down for five seconds. Once the computer has turned itself off, wait 10–15 seconds before turning on the power again by pressing the power button.

### ***Your program stops responding***

If you are working with a program that suddenly freezes all operations, chances are the program has stopped responding. You can exit the failed program without shutting down the operating system or closing other programs.

To close a program that has stopped responding:

1. Press **CTRL**, **ALT**, and **DEL** simultaneously (once), then click **Task Manager**. The Windows Task Manager window appears.
2. Select the program you want to close, then click **End Task**. Closing the failed program should allow you to continue working. If it does not, continue with the next step.
3. Close the remaining programs one by one by selecting the program name, then **End Task**. Closing all programs should allow you to continue working. If it does not, power off your computer and then restart it.

### ***The computer does not start***

Make sure that you attached the AC adaptor and power cord/cable properly.

If you are using the AC adaptor, check that the wall outlet is working by plugging in another device, such as a lamp.

Verify that the computer is on by looking at the **Power** indicator. If the indicator is glowing, the computer is on. Also, try turning the computer off and then on.

If you are using an AC adaptor, verify that the computer is receiving power from the external power source by looking at the **DC IN/Battery** indicator. If the indicator is glowing, the computer is connected to a live external power source.

### ***The computer does not load advanced options during startup***

By holding down one of the following keys or buttons during startup, your computer can load the following advanced options.

Advanced option	Key	Button (L50W-C)
BIOS utility	<b>F2</b>	<b>Volume down</b>
Boot menu	<b>F12</b>	<b>Volume up</b>
Recovery options	<b>0 (zero)</b>	-

If your computer starts to load the Operating System instead of desired advanced options, do the following:



*Make sure that fast startup is disabled in the Power Options by the following steps:*

1. Click **Control Panel -> System and Security -> Power Options under Windows System group** in the Apps view.
2. Click **Choose what the power button does** or **Choose what closing the lid does**.
3. Click **Change settings that are currently unavailable**.
4. Deselect the **Turn on fast startup** check box from **Shutdown settings**.
5. Click the **Save changes** button.

1. Click the power icon ( ) on the Start screen and then select **Shut down**.
2. While holding down the corresponding key or button, press the **Power** button to turn on the power.
3. Follow the on-screen instructions to proceed.

## **Hardware and system checklist**

This section discusses problems caused by your computer's hardware or attached peripherals. Basic problems might occur in the following areas:

- Power
- Keyboard
- Internal display panel
- Hard Disk Drive
- Memory Media Card
- Pointing Device
- USB device
- Sound system
- External monitor
- Wireless LAN
- Bluetooth

## Power

When the computer is not plugged into an AC power outlet, the battery pack is the primary power source. Your computer also has Real-Time Clock (RTC) function. All of the power resources are interrelated with anyone having the ability to produce apparent power problems.

### ***Overheating power down***

If the processor's temperature reaches an unacceptably high level with either setting, the computer automatically shuts down to prevent any damage. In this instance, all unsaved data in memory is lost.

Problem	Procedure
Computer shuts down automatically.	Leave the computer off until it reaches room temperature. If the computer has reached room temperature and it still does not start, or if it starts but shuts down quickly, contact TOSHIBA Support.

### ***AC power***

If you have trouble turning on the computer with the AC adaptor connected, check the status of the DC IN/Battery indicator. Refer to the [Power Condition Descriptions](#) section for further information.

Problem	Procedure
AC adaptor does not power the computer	<p>Check the connections to make sure that the power cord/adaptor is firmly connected to the computer and a working power outlet.</p> <p>Check the condition of the cord and terminals. If the cord is frayed or damaged it should be replaced, while if the terminals are soiled, they should be cleaned with a clean cotton cloth.</p> <p>If the AC adaptor still does not power the computer, you should contact TOSHIBA Support.</p>

## **Battery**

If you suspect a problem with the battery, check the status of the **DC IN/ Battery** indicator.

<b>Problem</b>	<b>Procedure</b>
Battery does not power the computer	The battery might be discharged. Connect the AC adaptor to recharge the battery.
Battery does not charge when the AC adaptor is attached.	If the battery is completely discharged, it will not begin charging immediately. In these instances, wait a few minutes before trying again. If the battery still does not charge, check that the power outlet the AC adaptor is connected to is supplying power. This can be tested by plugging another appliance into it.
Battery does not power the computer as long as expected	If you frequently recharge a partially charged battery, the battery might not charge to its full potential. In these instances, you should fully discharge the battery and then attempt to charge it again.  Check the <b>Power saver</b> option under <b>Choose or customize a power plan</b> in the <b>Power Options</b> .

## **Real-Time Clock**

<b>Problem</b>	<b>Procedure</b>
The BIOS setting and system date/time are lost.	The lasting time of the Real-Time Clock (RTC) has run out. You must set the date and time in the BIOS setup utility by using the following steps: <ol style="list-style-type: none"><li>1. Launch the BIOS setup utility. Refer to the <a href="#">TOSHIBA Setup Utility</a> section for further information.</li><li>2. Set the date in the <b>System Date</b> field.</li><li>3. Set the time in the <b>System Time</b> field.</li><li>4. Follow the on-screen instructions to proceed.</li><li>5. Select <b>Yes</b> - the BIOS setup utility will end and the computer will restart.</li></ol>

## **Keyboard**

Keyboard problems can be caused by the setup and configuration of the computer. Refer to the [The Keyboard](#) section for further information.

Problem	Procedure
Output to screen is garbled	<p>Refer to your software documentation to ensure that it is not remapping the keyboard in any way (remapping involves changing or reassigning the function of each key).</p> <p>If you are still unable to use the keyboard, you should contact TOSHIBA Support.</p>

## Internal display panel

Apparent problems of the computer's display panel might be related to setup and configuration of the computer.

Problem	Procedure
No display	Press the function keys to adjust the display priority, and to make sure that it is not set for output to an external monitor.
Markings appear on the computer's display panel.	These marks might have come from contact with the keyboard and Touch Pad while the display panel has been closed. Try to remove the marks by gently wiping the display panel with a clean dry cloth or, if this fails, with a good quality LCD screen cleaner. In this latter instance, you should always follow the instructions with the screen cleaner and always ensure that you let the display panel dry properly before closing it.

## Hard Disk Drive

Problem	Procedure
Computer does not boot from Hard Disk Drive	<p>Check to see whether there is a disc in the external optical disc drive - if so remove it and try to start the computer again.</p> <p>If this has no effect, check the <b>Boot Priority Options</b> setting within the TOSHIBA System Settings.</p>

<b>Problem</b>	<b>Procedure</b>
Slow performance	<p>The files on the Hard Disk Drive might be fragmented. In this instance, you should run the disk Defragmentation utility to check the condition of your files and the Hard Disk Drive. Refer to the operating system's documentation or online Help File for further information on operating and using the Defragmentation utility.</p> <p>As a last resort, you should reformat the Hard Disk Drive and then reload the operating system and all other files and data. If you are still unable to resolve the problem, contact TOSHIBA Support.</p>

## Memory Media Card

For further information, refer to [Operating Basics](#).

<b>Problem</b>	<b>Procedure</b>
Memory media card error occurs	<p>Remove the memory media card from the computer and then reinsert it in order to ensure that it is firmly connected.</p> <p>If the problem persists, then you should refer to the documentation supplied with your memory media card for further information.</p>
You cannot write to a memory media card	<p>Remove the memory media card from the computer and check to ensure that it is not write protected.</p>
You cannot read a file	<p>Check to ensure that the required file is actually on the memory media card that is inserted into the computer.</p> <p>If you are still unable to resolve the problem, contact TOSHIBA Support.</p>

## Pointing device

If you are using a USB mouse, you should also refer to both the [USB mouse](#) section and the documentation supplied with your mouse.

## **Touch Pad**

<b>Problem</b>	<b>Procedure</b>
The Touch Pad does not work.	<p>Check the Device Select settings.</p> <p>Click <b>Control Panel -&gt; Hardware and Sound -&gt; Mouse</b> under <b>Windows System</b> group in the Apps view.</p>
On-screen pointer does not respond to pointing device operation	<p>In this instance, the system might be busy. Try moving the mouse again after waiting a short while.</p>
Double-tapping (Touch Pad) does not work	<p>In this instance, you should initially try changing the double-click speed setting within the Mouse Control utility.</p> <ol style="list-style-type: none"><li>1. To access this utility, click <b>Control Panel -&gt; Hardware and Sound -&gt; Mouse</b> under <b>Windows System</b> group in the Apps view.</li><li>2. Within the Mouse Properties window, click the <b>Buttons</b> tab.</li><li>3. Set the double-click speed as required and click <b>OK</b>.</li></ol>
The on-screen pointer moves too fast or too slow	<p>In this instance, you should initially try changing the speed setting within the Mouse Control utility.</p> <ol style="list-style-type: none"><li>1. To access this utility, click <b>Control Panel -&gt; Hardware and Sound -&gt; Mouse</b> under <b>Windows System</b> group in the Apps view.</li><li>2. Within the Mouse Properties window, click the <b>Pointer Options</b> tab.</li><li>3. Set the pointer speed as required and click <b>OK</b>.</li></ol>
The reaction of Touch Pad is either too sensitive or not sensitive enough.	<p>Adjust the touch Sensitivity.</p> <p>To access it, click <b>Control Panel -&gt; Hardware and Sound -&gt; Mouse</b> under <b>Windows System</b> group in the Apps view.</p> <p>If you are still unable to resolve the problem, contact TOSHIBA Support.</p>

## **USB mouse**

<b>Problem</b>	<b>Procedure</b>
On-screen pointer does not respond to mouse operation	<p>In this instance, the system might be busy. Try moving the mouse again after waiting a short while.</p> <p>Remove the mouse from the computer and then reconnect it to a free USB port in order to ensure that it is firmly attached.</p>
Double-clicking does not work	<p>In this instance, you should initially try changing the double-click speed setting within the Mouse Control utility.</p> <ol style="list-style-type: none"><li>1. To access this utility, click <b>Control Panel -&gt; Hardware and Sound -&gt; Mouse</b> under <b>Windows System</b> group in the Apps view.</li><li>2. Within the Mouse Properties window, click the <b>Buttons</b> tab.</li><li>3. Set the double-click speed as required and click <b>OK</b>.</li></ol>
The on-screen pointer moves too fast or too slow	<p>In this instance, you should initially try changing the speed setting within the Mouse Control utility.</p> <ol style="list-style-type: none"><li>1. To access this utility, click <b>Control Panel -&gt; Hardware and Sound -&gt; Mouse</b> under <b>Windows System</b> group in the Apps view.</li><li>2. Within the Mouse Properties window, click the <b>Pointer Options</b> tab.</li><li>3. Set the pointer speed as required and click <b>OK</b>.</li></ol>
The on-screen pointer moves erratically	<p>The elements of the mouse responsible for detecting movement might be dirty. Refer to the documentation supplied with the mouse for instructions on how to clean it.</p> <p>If you are still unable to resolve the problem, contact TOSHIBA Support.</p>

## **USB device**

In addition to the information in this section, also refer to the documentation supplied with your USB device.

<b>Problem</b>	<b>Procedure</b>
USB device does not work	<p>Remove the USB device from the computer and then reconnect it to a free port in order to ensure that it is firmly attached.</p> <p>Ensure that any required USB device drivers are properly installed. To achieve this, you should refer to both the device documentation and the operating system documentation.</p>

## Sound system

In addition to the information in this section, also refer to the documentation supplied with your audio device.

<b>Problem</b>	<b>Procedure</b>
No sound is heard	<p>Press the function keys to increase or decrease volume.</p> <p>Check the software volume settings.</p> <p>Check to see if Mute is turned to Off</p> <p>Check to make sure that the headphone connection is secure.</p> <p>Check within the Windows Device Manager application to ensure that the sound device is enabled and that the device is properly working.</p>
Annoying sound is heard	<p>In this instance, you might be experiencing feedback from either the internal microphone or an external microphone connected to the computer. Refer to <a href="#">Sound System and Video mode</a> for further information.</p> <p>Volume cannot be adjusted during Windows start up or shut down.</p> <p>If you are still unable to resolve the problem, contact TOSHIBA Support.</p>

## External monitor

Also refer to [Operating Basics](#), and to the documentation supplied with your monitor for further information.

Problem	Procedure
Monitor does not turn on	After confirming that the monitor's power switch is on, check the connections to make sure that the power cord/adaptor is firmly connected to the monitor and to a working power outlet.
No display	<p>Try adjusting the contrast and brightness controls on the external monitor.</p> <p>Press the function key in order to change the display priority and ensure that it is not set for the internal display only.</p> <p>Check to see if the external monitor is connected.</p> <p>When the external monitor is set as the primary display device in extended desktop mode, it does not display when the computer wakes up from Sleep Mode if the external monitor has been disconnected while in Sleep Mode.</p> <p>To keep this from happening, do not disconnect the external monitor while the computer is in Sleep or Hibernation Mode.</p> <p>Remember to turn off the computer before disconnecting the external monitor.</p> <p>When the display panel and an external monitor are set to clone mode and they are turned off by the timer, the display panel or the external monitor might not display when turned on again.</p> <p>If this occurs, press the function key to reset the display panel and external monitor to clone mode.</p>
Display error occurs	<p>Check that the cable connecting the external monitor to the computer is firmly attached.</p> <p>If you are still unable to resolve the problem, contact TOSHIBA Support.</p>

## Wireless LAN

Problem	Procedure
Cannot access Wireless LAN	<p>Make sure that the wireless communication function of the computer is on.</p> <p>If problems persist, contact your LAN administrator.</p>

## Bluetooth

Problem	Procedure
Cannot access Bluetooth device	Check to ensure that the wireless communication function of the computer is on.
	Check to ensure that the Bluetooth Manager application is running on the computer and that power to the external Bluetooth device is turned on.
	Check to ensure that no optional Bluetooth Adaptor is installed in the computer. The built-in Bluetooth hardware cannot operate simultaneously with another Bluetooth controller.
	If you are still unable to resolve the problem, contact TOSHIBA Support.

## TOSHIBA support

If you require any additional help using your computer or if you are having problems operating the computer, you might need to contact TOSHIBA for additional technical assistance.

### Before you call

Some problems you experience might be related to software or the operating system so it is important that you investigate other sources of assistance first. Before contacting TOSHIBA, try the following:

- Review troubleshooting sections in the documentation supplied with your software and/or peripheral devices.
- If a problem occurs when you are running software applications, consult the software documentation for troubleshooting suggestions and consider calling the software company's technical support department for assistance.
- Consult the reseller or dealer from where you purchased your computer and/or software - they are your best resource for current information and support.

### TOSHIBA technical support

If you are still unable to solve the problem and suspect that it is hardware-related, visit TOSHIBA technical support website

<http://www.toshiba.co.jp/worldwide/>

# Chapter 7

## Appendix Specifications

This section summarizes the technical specifications of the computer.

### Physical Dimensions

The following physical dimensions do not include parts that extend beyond the main body. The physical dimensions might vary depending on the model you purchased.

<b>Size</b>	<ul style="list-style-type: none"><li>■ Approximately 379.5 (w) x 244.9 (d) x 19.4/20.1 (h) millimeters</li><li>■ Approximately 379.5 (w) x 244.9 (d) x 20.1/22.7 (h) millimeters</li></ul>
(not including parts that extend beyond the main body).	

### Environmental Requirements

Conditions	Ambient temperature	Relative humidity
<b>Operating</b>	5°C (41°F) to 35°C (95°F)	20% to 80% (noncondensing)
<b>Non-operating</b>	-20°C (-4°F) to 60°C (140°F)	10% to 90% (noncondensing)
<b>Wet-bulb temperature</b> 29°C maximum		
Conditions	Altitude (from sea level)	
<b>Operating</b>	-60 to 3,000 meters	
<b>Non-operating</b>	-60 to 10,000 meters maximum	

### Power Requirements

<b>AC adaptor</b>	100-240V AC
	50 Hz or 60 Hz (cycles per second)

## AC Power Cord and Connectors

The AC input plug of the power cord must be compatible with the various international AC power outlets and the cord must meet the standards for the country/region in which it is used. All cords must meet the following specifications:

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**Wire size:** Minimum 0.75 mm<sup>2</sup>

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**Current rating:** Minimum 2.5 amperes

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## Certification agencies

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**China:** CQC

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**U.S. and Canada:** UL listed and CSA certified  
No. 18 AWG, Type SVT or SPT-2

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**Australia:** AS

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**Japan:** DENANHO

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**Europe:**

<b>Austria:</b>	OVE	<b>Italy:</b>	IMQ
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<b>Belgium:</b>	CEBEC	<b>The Netherlands:</b>	KEMA
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<b>Denmark:</b>	DEMKO	<b>Norway:</b>	NEMKO
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<b>Finland:</b>	FIMKO	<b>Sweden:</b>	SEMKO
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<b>France:</b>	LCIE	<b>Switzerland:</b>	SEV
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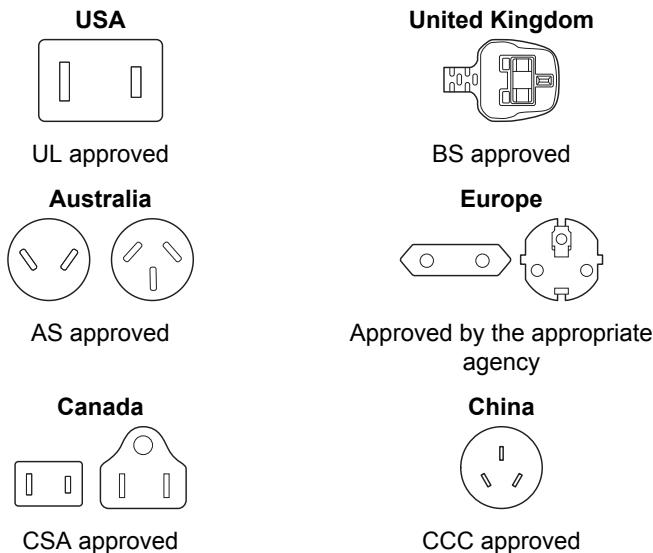
<b>Germany:</b>	VDE	<b>United Kingdom:</b>	BSI
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In Europe, two conductors power cord must be VDE type, H05VVH2-F or H03VVH2-F and for three conductors power cord must be VDE type, H05VV-F.

For the United States and Canada, two-pin plug configuration must be a 2-15P (250 V) or 1-15P (125 V) and three-pin plug configuration must be 6-15P (250 V) or 5-15P (125 V) as designated in the U.S. National Electrical code handbook and the Canadian Electrical Code Part II.

The following illustrations show the plug shapes for the U.S.A. and Canada, the United Kingdom, Australia, Europe, and China.



## Information for Wireless Devices

### Wireless Technology Interoperability

The Wireless LAN is compatible with other LAN systems Direct Sequence Spread Spectrum (DSSS) /Orthogonal Frequency Division Multiplexing (OFDM) radio technology, and is compliant to:

- The IEEE 802.11 Standard on Wireless LANs (Revision a/b/g/n, b/g/n or Revision a/b/g/n/ac), as defined and approved by the Institute of Electrical and Electronics Engineers.

Bluetooth® Modules are designed to be interoperable with any product with Bluetooth wireless technology that is based on Frequency Hopping Spread Spectrum (FHSS) radio technology, and is compliant to:

- Bluetooth Specification (depending on the model you purchased), as defined and approved by the Bluetooth Special Interest Group.
- Logo certification with Bluetooth wireless technology as defined by the Bluetooth Special interest Group.

This Bluetooth product is not compatible with devices using Bluetooth Version 1.0B specifications.



*The wireless devices have not completed verification of connection and operation with all devices which are using the Wireless LAN or Bluetooth radio technology.*

*Bluetooth and Wireless LAN devices operate within the same radio frequency range and might interfere with one another. If you use Bluetooth and Wireless LAN devices simultaneously, you might occasionally experience a less than optimal network performance or even lose your network connection.*

*If you experience any such problem, immediately turn off either one of your Bluetooth or Wireless LAN.*

*If you have any questions about using Wireless LAN or Bluetooth Module, visit*

*<http://www.pc.support.global.toshiba.com>*

*In Europe, visit*

*<http://www.toshiba-europe.com/computers/tnt/bluetooth.htm>*

## **Wireless Devices and your health**

Wireless products, like other radio devices, emit radio frequency electromagnetic energy. The level of energy emitted by Wireless products however is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.

Because Wireless products operate within the guidelines found in radio frequency safety standards and recommendations, TOSHIBA believes Wireless products are safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situations or environments, the use of Wireless products may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

- Using the Wireless products equipment on board of airplanes, or
- In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organization or environment (e.g. airports), you are encouraged to ask for authorization to use the Wireless device prior to turning on the equipment.

## **Wireless LAN Technology**

The wireless communication function of the computer supports some wireless communication devices.

Only some models are equipped with both Wireless LAN and Bluetooth functions.



- *Do not use the Wireless LAN (Wi-Fi) or Bluetooth functionalities near a microwave oven or in areas subject to radio interference or magnetic fields. Interference from a microwave oven or other source can disrupt Wi-Fi or Bluetooth operation.*
- *Turn off all wireless functionalities when near a person who might have a cardiac pacemaker implant or other medical electric device. Radio waves might affect pacemaker or medical device operation, possibly resulting in serious injury. Follow the instruction for your medical device when using any wireless functionality.*
- *Always turn off wireless functionality if the computer is near automatic control equipment or appliances such as automatic doors or fire detectors. Radio waves can cause malfunction of such equipment, possibly resulting in serious injury.*
- *It might not be possible to make a network connection to a specified network name using the ad hoc network function. If this occurs, the new network (\*) has to be configured for all computers connected to the same network in order to re-enable network connections.*  
\* Make sure to use new network name.

## **Security**

- TOSHIBA strongly recommends that you enable encryption functionality, otherwise your computer is open to illegal access by an outsider using a wireless connection. If this occurs, the outsider might illegally access your system, eavesdrop, or cause the loss or destruction of stored data.
- TOSHIBA is not liable for the loss of data due to eavesdropping or illegal access through the wireless LAN and the damage thereof.

## **Card Specifications**

<b>Compatibility</b>	■ IEEE 802.11 Standard for Wireless LANs
<b>Network Operating System</b>	■ Microsoft Windows Networking
<b>Media Access Protocol</b>	■ CSMA/CA (Collision Avoidance) with Acknowledgment (ACK)

## **Radio Characteristics**

Radio Characteristics of Wireless LAN module might vary according to:

- Country/region where the product was purchased
- Type of product

Wireless communication is often subject to local radio regulations. Although Wireless LAN wireless networking products have been designed for operation in the license-free 2.4 GHz and 5 GHz band, local radio

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regulations might impose a number of limitations to the use of wireless communication equipment.

- |                        |  |
|------------------------|--|
| <b>Radio Frequency</b> | ■ Band 5 GHz (5150-5850 MHz) (Revision a and n)<br>■ Band 2.4 GHz (2400-2483.5 MHz) (Revision b/g and n) |
|------------------------|--|
- 

The range of the wireless signal is related to the transmit rate of the wireless communication. Communications at lower transmit range might travel larger distances.

- The range of your wireless devices can be affected when the antennas are placed near metal surfaces and solid high-density materials.
- Range is also impacted due to "obstacles" in the signal path of the radio that might either absorb or reflect the radio signal.

### ***Radio Frequency Interference Requirements***

This device is restricted to indoor use due to its operation in the 5.15 to 5.25GHz frequency range.

High-power radars are allocated as primary users (i.e. priority users) of the bands 5.25 to 5.35GHz and 5.65 to 5.85GHz and that these radars could cause interference and/or damage to LE-LAN devices.

## **Bluetooth wireless technology**

Some computers in this series have Bluetooth wireless communication function which eliminates the need for cables between electronic devices such as computers, printers, and mobile phones. When it is enabled, Bluetooth provides the wireless personal area network environment which is safe and trustworthy, that is quick and easy.

You cannot use the built-in Bluetooth functions of the computer and an external Bluetooth adaptor simultaneously. For reference, Bluetooth wireless technology has the following features:

### ***Security***

Two advanced security mechanisms ensure a high level of security:

- Authentication prevents access to critical data and makes it impossible to falsify the origin of a message.
- Encryption prevents eavesdropping and maintains link privacy.

### ***Worldwide operation***

The Bluetooth radio transmitter and receiver operate in the 2.4 GHz band, which is license-free and compatible with radio systems in most countries in the world.

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## **Radio links**

You can easily establish links between two or more devices, with these links being maintained even if the devices are not within a line-of-sight of each other.

## **Radio Regulatory Information**

The Wireless device must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. This product complies with the following radio frequency and safety standards.

### **Europe**

#### ***Restrictions for Use of 2400.0-2483.5MHz Frequencies in Europe***

<b>France:</b>	Outdoor use limited to 10mW e.i.r.p. within the band 2454-2483.5MHz	Military Radiolocation use. Refarming of the 2.4GHz band has been ongoing in recent years to allow current relaxed regulation Full implementation planned 2012.
<b>Italy:</b>	-	For private use, a general authorization is required if WAS/ RLAN's are used outside own premises. For public use, a general authorization is required.
<b>Luxembourg:</b>	Implemented	General authorization required for network and service supply.
<b>Norway:</b>	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Alesund.
<b>Russian Federation:</b>	-	Only for indoor applications.

#### ***Restrictions for Use of 5150-5350MHz Frequencies in Europe***

<b>Italy:</b>	-	For private use, a general authorization is required if WAS/ RLAN's are used outside own premises.
<b>Luxembourg:</b>	Implemented	General authorization required for network and service supply.

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<b>Russian Federation:</b>	Limited	e.i.r.p 100mW. Permitted to use only for indoor applications, closed industrial and warehouse areas, and on board aircraft.
		<ol style="list-style-type: none"> <li>1. Permitted to use for local networks of aircraft crew service communications on board aircraft in area of the airport and at all stages of flight.</li> <li>2. Permitted to use for public wireless access local networks on board aircraft during a flight at the altitude not less than 3000m.</li> </ol>

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***Restrictions for Use of 5470-5725MHz Frequencies in Europe***

<b>Italy:</b>	-	For private use, a general authorization is required if WAS/RLAN's are used outside own premises.
<b>Luxembourg:</b>	Implemented	General authorization required for network and service supply
<b>Russian Federation:</b>	Limited	e.i.r.p 100mW. Permitted to use only for indoor applications, closed industrial and warehouse areas, and on board aircraft. <ol style="list-style-type: none"> <li>1. Permitted to use for local networks of aircraft crew service communications on board aircraft in area of the airport and at all stages of flight.</li> <li>2. Permitted to use for public wireless access local networks on board aircraft during a flight at the altitude not less than 3000m.</li> </ol>

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To remain in conformance with European spectrum usage laws for Wireless LAN operation, the above 2.4GHz and 5GHz channel limitations apply for outdoor usage. The user should use the wireless LAN utility to

check the current channel of operation. If operation is occurring outside of the allowable frequencies for outdoor use, as listed above, the user must contact the applicable national spectrum regulator to request a license for outdoor operation.

### ***Canada - Industry Canada (IC)***

This device complies with RSS-210 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Les dispositifs fonctionnant dans la bande 5.15-5.25GHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

Les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5.25-5.35GHz et 5.65-5.85GHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met.

### ***USA-Federal Communications Commission (FCC)***

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Refer to the FCC information section for the detailed information.



*The radiated output power of the Wireless device is far below the FCC radio frequency exposure limits. Nevertheless, the Wireless device shall be used in such a manner that the potential for human contact during normal operation is minimized.*

*The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website  
[www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)*

## **Taiwan**

<b>Article 12</b>	Without permission granted by the NCC, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to an approved low power radio frequency devices.
<b>Article 14</b>	<p>The low power radio-frequency devices shall not influence aircraft security and interfere legal communications;</p> <p>If found, the user shall cease operating immediately until no interference is achieved.</p> <p>The said legal communications means radio communications is operated in compliance with the Telecommunications Act.</p> <p>The low power radio-frequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices.</p>

## ***Using this equipment in Japan***

In Japan, the frequency bandwidth of 2,400MHz to 2,483.5MHz for second generation low-power data communication systems such as this equipment overlaps that of mobile object identification systems (premises radio station and specified low-power radio station).

### ***1. Important notice***

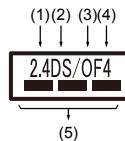
The frequency bandwidth of this equipment may operate within the same range as industrial devices, scientific devices, medical devices, microwave ovens, licensed radio stations and non-licensed specified low-power radio stations for mobile object identification systems (RFID) used in factory production lines (Other Radio Stations).

1. Before using this equipment, ensure that it does not interfere with any of the equipment listed above.

2. If this equipment causes RF interference to other radio stations, promptly change the frequency being used, change the location of use, or turn off the source of emissions.
3. Contact an authorized TOSHIBA service provider if you have problems with interference caused by this product to Other Radio Stations.

## ***2. Indication for Wireless LAN***

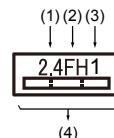
The indication shown below appears on this equipment.



1. 2.4: This equipment uses a frequency of 2.4GHz.
2. DS: This equipment uses DS-SS modulation.
3. OF: This equipment uses OFDM modulation.
4. 4: The interference range of this equipment is less than 40m.
5. ■■■■: This equipment uses a frequency bandwidth from 2,400MHz to 2,483.5MHz. It is possible to avoid the band of mobile object identification systems.

## ***3. Indication for Bluetooth***

The indication shown below appears on this equipment.



1. 2.4: This equipment uses a frequency of 2.4 GHz.
2. FH: This equipment uses FH-SS modulation.
3. 1: The interference range of this equipment is less than 10m.
4. ■■■: This equipment uses a frequency bandwidth from 2,400 MHz to 2,483.5 MHz. It is impossible to avoid the band of mobile object identification systems.

## ***4. About the JEITA***

5GHz Wireless LAN supports W52/W53/W56 Channel.

IEEE802.11b/g/n
IEEE802.11a/n
W52   W53   W56

## Device Authorization

This device obtains the Technical Regulation Conformity Certification and it belongs to the device class of radio equipment of low-power data communication system radio station stipulated in the Telecommunications Business Law of Japan.

- Intel® Centrino® Wireless-AC 7265 Wireless LAN and Bluetooth  
The Name of the radio equipment: 7265NGW  
DSP Research, Inc.  
Approval Number: D140017003
  - Intel® Centrino® Wireless-AC 3160 Wireless LAN and Bluetooth  
The Name of the radio equipment: 3160NGW  
DSP Research, Inc.  
Approval Number: D130092003
  - Intel® Centrino® Wireless-AC 3160 Wireless LAN and Bluetooth  
The Name of the radio equipment: 3160NGW  
DSP Research, Inc.  
Approval Number: D130092003
  - Broadcom BCM43142 Wireless Network Adapter b/g/n and Bluetooth  
The Name of the radio equipment: BCM943142Y  
Telefication B.V. Ltd.  
Approval Number: D135106201
  - Realtek® RTL8723BE 802.11n Wireless LAN and bluetooth  
The Name of the radio equipment: RTL8723BE  
Telefication B.V. Ltd.  
Approval Number: D135042201
- The following restrictions apply:
- Do not disassemble or modify the device.
  - Do not install the embedded wireless module into other device.

## Radio approvals for wireless devices

This equipment is approved to the radio standard by the countries/regions in the following table.



*If you use this equipment in the countries/regions which are not listed in the following table, contact TOSHIBA Support.*

As of March 2015

Austria	Belgium	Bulgaria	Canada
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Cyprus	Czech Rep	Denmark	Estonia
Finland	France	Germany	Greece
Hong Kong	Hungary	Iceland	India
Indonesia	Ireland	Italy	Japan
Korea	Latvia	Liechtenstein	Lithuania
Luxemburg	Malta	Monaco	Netherlands
Norway	Philippines	Poland	Portugal
Romania	Slovak Republic	Slovenia	Spain
Sweden	Switzerland	UK	USA

## Information about Intel AMT

Your computer might support Intel® Active Management Technology (AMT) depending on the model you purchased.

Using built-in platform capabilities and popular third-party management and security applications, Intel AMT allows IT to better discover, heal, and protect their networked computing assets.

Consult with your system administrator about configurations of the AMT function before connecting to a network.

## Disable the AMT function

Intel AMT function is enabled by default, and in a situation where no system administrator presents, it is strongly recommended that you turn off the AMT function before connecting to a network.

**If the AMT function is NOT turned off, there is a danger that the management of AMT function will be abused by other parties which possibly lead to the leak of sensitive and/or proprietary information, data loss, HDD erasure, or file overwritten.**

First, you must do the following in the BIOS setup utility:

1. Turn on the computer while pressing the **F2** key.
2. On the BIOS setup utility screen, change AMT Setup Prompt to **Enabled**.
3. Press the **F10** key, and press **Y** key to save the settings.

When the computer restarts, the message “Press < Ctrl - P > to enter Intel(R) ME Setup” appears. Press **CTRL + P** to enter the MEBx Setup.

To disable the AMT function, do the following:

1. Select **MEBx Login**, and enter the default password “admin” in the password field.

- Enter a new password. Password must comply with the following requirements concerning character types and length:  
Must be between 8 and 32 characters long.  
Must contain at least one number (“0”, “1-9”).  
Must contain a mix of lower-case (“a”, “b”, “z”, etc.) and upper-case (“A”, “B”, “Z”, etc.) letter.  
Must contain at least one special character of the following: ` ~ ! @ \$ % ^ & \* ( ) - = + [ ] ; ' < . > / ?  
Underscore (“\_”) is considered the same as Roman alphabet characters, and is not counted as a special character.



*Key input is based on the US keyboard layout. The following table shows examples of the special characters in US keyboard layout.*

Special character you want to input	Corresponding number key (SHIFT key + a number key)
!	1
@	2
#	3
\$	4
%	5
^	6
&	7
*	8
(	9
)	0

- Select **Intel(R) AMT Configuration**, and press the **Enter** key.
- Select **Manageability Features Selection**, and press the **Enter** key.
- Select **Disabled**, and press the **Enter** key.
- Press the **Y** key, and press the **ESC** key.
- Select **MEBx Exit**, and press **Y** key.
- When the computer restarts, go to BIOS setup utility.  
On the BIOS setup utility screen, change **AMT Setup Prompt** to **Disabled**.
- Press the **F10** key to save the settings, and press the **Y** key.



- When using the computer with the AC adaptor connected and the AMT function set to enabled, power might still be supplied to the system memory even when the computer power is turned off, or the computer is in Sleep Mode or Hibernation Mode.
- When connecting the AC adaptor, the computer is powered and can be turned on. If the power is automatically turned off after approximately 5 to 7 seconds, it is because the RTC lasting time runs out, and the settings of AMT function have been cleared. This is normal and not an error. If it occurs, the settings of AMT function must be reconfigured.
- If there is a problem when you start the computer, or initialize the Management Engine (ME) firmware after the RTC lasting time runs out, the system will automatically reset itself during setup. This is the function of AMT configurations and is not an error.
- Enabling the AMT function might cause the network LAN Enable/Disable items to be no longer changeable in BIOS setup utility. Consult with your system administrator about details.
- AMT function cannot be operated using a USB-LAN adaptor.



The useable system memory for models equipped with the AMT function is 16 - 64 MB, less than that of models not equipped with the AMT function. The amount of the difference depends on the amount of memory installed.

## Notes for system administrators

- Intel AMT is enabled by default in the Management Engine (ME) firmware.
- Both the security of management console and the network management must be thoroughly implemented through management of AMT function. Otherwise administrator privileges might be abused by other parties which possibly lead to the leak of sensitive and/or proprietary information, data loss, HDD erasure, or file overwritten.
- The following functions are not supported:
  - RPAT (Remote PC Assist Technology)
  - Remote BIOS update

## Legal Footnotes

### Non-applicable Icons

Certain computer chassis are designed to accommodate all possible configurations for an entire product series. Therefore, be aware that your selected model might not have all the features and specifications corresponding to all of the icons or switches shown on the computer chassis.

## CPU

Central Processing Unit (CPU) Performance Legal Footnotes.

CPU performance in your computer product might vary from specifications under the following conditions:

- use of certain external peripheral products
- use of battery power instead of AC power
- use of certain multimedia, computer generated graphics or video applications
- use of standard telephone lines or low speed network connections
- use of complex modeling software, such as high end computer aided design applications
- use of several applications or functionalities simultaneously
- use of computer in areas with low air pressure (high altitude >1,000 meters or >3,280 feet above sea level)
- use of computer at temperatures outside the range of 5°C to 30°C (41–86°F) or >25°C (77°F) at high altitude (all temperature references are approximate and might vary depending on the specific computer model - contact TOSHIBA support for details).

CPU performance might also vary from specifications due to design configuration.

Under some conditions, your computer product might automatically shutdown. This is a normal protective feature designed to reduce the risk of lost data or damage to the product when used outside recommended conditions. To avoid risk of lost data, always make back-up copies of data by periodically storing it on an external storage medium. For optimum performance, use your computer product only under recommended conditions. Read additional restrictions in your product documentation. Contact TOSHIBA technical service and support, refer to [TOSHIBA support](#) section for more information.

### ***64-Bit Computing***

Certain 32-bit device drivers and/or applications might not be compatible with a 64-bit CPU/operating system and therefore might not function properly.

## **Memory (Main System)**

Part of the main system memory might be used by the graphics system for graphics performance and therefore reduce the amount of main system memory available for other computing activities. The amount of main system memory allocated to support graphics might vary depending on the graphics system, applications utilized, system memory size, and other factors.

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If your computer is configured with more than 3 GB memory, the memory might be displayed as approximately 3 GB only (depending on the hardware specifications of the computer).

This is correct because the operating system usually displays the available memory instead of the physical memory (RAM) built into the computer.

Various system components (like the video adapter's GPU and PCI devices like Wireless LAN, and so on) require their own memory space. Since a 32-bit operating system cannot address more than 4 GB of memory, these system resources overlap the physical memory. It is a technical limitation that the overlapped memory is not available to the operating system. Even though some tools might display the actual physical memory built into your computer, the memory available to the operating system is still approximately 3 GB only.

Computers configured with a 64-bit operating system can address 4 GB or more of system memory.

## Battery Life

Battery life might vary considerably depending on product model, configuration, applications, power management settings, and features utilized, as well as the natural performance variations produced by the design of individual components. Published battery life numbers are achieved on select models and configurations tested by TOSHIBA at the time of publication. Recharge time varies depending on usage. Battery might not charge while computer is consuming full power.

After going through many charge and discharge cycles, the battery loses its ability to perform at maximum capacity and needs to be replaced. This is a normal phenomenon for all batteries. To purchase a new battery pack, see the accessories information that is shipped with your computer.

## Hard Disk Drive (HDD) Capacity

1 Gigabyte (GB) means  $10^9 = 1,000,000,000$  bytes using powers of 10. The computer operating system, however, reports storage capacity using powers of 2 for the definition of 1 GB =  $2^{30} = 1,073,741,824$  bytes, and therefore shows less storage capacity. Available storage capacity will also be less if the product includes one or more pre-installed operating systems, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity might vary.

## LCD

Over a period of time, and depending on the usage of the computer, the brightness of the LCD screen will deteriorate. This is an intrinsic characteristic of LCD technology.

Maximum brightness is only available when operating in AC power mode. Screen dims when the computer is operated on battery power and you might not be able to increase the brightness of the screen.

## **Graphics Processing Unit (GPU)**

Graphics processing unit (GPU) performance might vary depending on product model, design configuration, applications, power management settings and features utilized. GPU performance is only optimized when operating in AC power mode and might decrease considerably when operating in battery power mode.

Total Available Graphics Memory is the total of, as applicable, Dedicated Video Memory, System Video Memory and Shared System Memory. Shared System Memory varies depending on system memory size and other factors.

## **Wireless LAN**

The transmission speed over the wireless LAN and the distance over which wireless LAN can reach might vary depending on surrounding electromagnetic environment, obstacles, access point design and configuration, and client design and software/hardware configurations.

The actual transmission speed is lower than the theoretical maximum speed.

## **Copy Protection**

Applicable copy protection standards included in certain media might prevent or limit recording or viewing of the media.

## **Glossary**

The terms in this glossary cover topics related to this manual. Alternate naming is included for reference.

### Abbreviations

<b>AC:</b>	Alternating Current
<b>AMT:</b>	Intel Active Management Technology
<b>ASCII:</b>	American Standard Code for Information Interchange
<b>BIOS:</b>	Basic Input/output System
<b>BD-ROM:</b>	Blu-ray Disc Read-only Memory
<b>bps:</b>	bits per second
<b>CD:</b>	Compact Disc
<b>CD-ROM:</b>	Compact Disc Read-only Memory
<b>CD-RW:</b>	Compact Disc-rewritable
<b>CMOS:</b>	Complementary Metal-oxide Semiconductor
<b>CPU:</b>	Central Processing Unit

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<b>DC:</b>	Direct Current
<b>DDR:</b>	Double Data Rate
<b>DIMM:</b>	Dual Inline Memory Module
<b>DVD:</b>	Digital Versatile Disc
<b>DVD-R:</b>	Digital Versatile Disc-recordable
<b>DVD-RAM:</b>	Digital Versatile Disc-random Access Memory
<b>DVD-R DL:</b>	Digital Versatile Disc Recordable Dual Layer
<b>DVD-ROM:</b>	Digital Versatile Disc-read Only Memory
<b>DVD-RW:</b>	Digital Versatile Disc-rewritable
<b>DVD+R DL:</b>	Digital Versatile Disc Recordable Double Layer
<b>FAT:</b>	File Allocation Table
<b>FCC:</b>	Federal Communications Commission
<b>FHD:</b>	Full High Definition
<b>GB:</b>	gigabyte
<b>GBps:</b>	gigabytes per second
<b>HD:</b>	High Definition
<b>HD+:</b>	High Definition Plus
<b>HDD:</b>	Hard Disk Drive
<b>HDMI:</b>	High-definition Multimedia Interface
<b>HDMI CEC:</b>	High-definition Multimedia Interface Consumer Electronics Control
<b>HTML:</b>	Hypertext Markup Language
<b>IEEE:</b>	Institute of Electrical and Electronics Engineers
<b>I/O:</b>	Input/Output
<b>IRQ:</b>	interrupt request
<b>ISP:</b>	Internet Service Provider
<b>KB:</b>	kilobyte
<b>LAN:</b>	Local Area Network
<b>LCD:</b>	Liquid Crystal Display
<b>LED:</b>	Light Emitting Diode
<b>MB:</b>	megabyte
<b>MBps:</b>	megabytes per second
<b>MMC:</b>	MultiMediaCard
<b>OCR:</b>	Optical Character Recognition (Reader)
<b>PC:</b>	Personal Computer

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<b>PCI:</b>	Peripheral Component Interconnect
<b>PCMCIA:</b>	Personal Computer Memory Card International Association
<b>RAM:</b>	Random Access Memory
<b>RGB:</b>	Red, Green, and Blue
<b>RFI:</b>	Radio Frequency Interference
<b>ROM:</b>	Read-Only Memory
<b>RTC:</b>	Real-Time Clock
<b>S/P DIF:</b>	Sony/philips Digital Interface Format
<b>SD:</b>	Secure Digital
<b>SDHC:</b>	Secure Digital High Capacity
<b>SDXC:</b>	Secure Digital Extended Capacity
<b>SDRAM:</b>	Synchronous Dynamic Random Access Memory
<b>SSD:</b>	Solid-State Drive
<b>TFT:</b>	Thin-film Transistor
<b>URL:</b>	Uniform Resource Locator
<b>USB:</b>	Universal Serial Bus
<b>WAN:</b>	Wide Area Network
<b>WQHD:</b>	Wide Quad High Definition
<b>www:</b>	World Wide Web

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