User’s Manual

Toshiba M750

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TOSHIBA

Leading Innovation

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TOSHIBA PORTÉGÉ M750 Portable Personal Computer User's Manual

First edition August 2008

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This manual has been validated and reviewed for accuracy. The instructions and descriptions it contains are accurate for the TOSHIBA PORTÉGÉ M750 Portable Personal Computer at the time of this manual's production. However, succeeding computers and manuals are subject to change without notice. TOSHIBA assumes no liability for damages incurred directly or indirectly from errors, omissions or discrepancies between the computer and the manual.

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xD-Picture Card is a trademark of FUJIFILM Corporation.

Other trademarks and registered trademarks not listed above may be used in this manual.

EU Conformity Statement

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 labelled with the CE Mark in accordance with the related European Directives, notably Electromagnetic Compatibility Directive 89/336/EEC for the notebook and the electronic accessories including the supplied power adapter, the Radio Equipment and Telecommunications Terminal Equipment Directive 1999/5/EC in case of implemented telecommunication accessories and the Low Voltage Directive 73/23/EEC for the supplied power adapter.

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:

- Industrial Environments (e.g. environments where a mains voltage of 380 V three-phase is used)
- Medical Environments
- Automotive Environments
- Aircraft Environments

Any consequences resulting from the use of this product in working environments that are not approved are not the responsibility of TOSHIBA.

The consequences of the use of this product in non-approved working environments may be:

- 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.

Modem warning notice

This information is applicable to models equipped with a built-in modem.

Conformity Statement

The equipment has been approved to [Commission Decision "CTR21"] for pan-European single terminal connection to the Public Switched Telephone Network (PSTN).

However, due to differences between the individual PSTNs provided in different countries/regions the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems, you should contact your equipment supplier in the first instance.

Network Compatibility Statement

This product is designed to work with, and is compatible with the following networks. It has been tested to and found to conform with the additional requirements conditional in EG 201 121.

Germany	ATAAB AN005,AN006,AN007,AN009,AN010 and DE03,04,05,08,09,12,14,17
Greece	ATAAB AN005,AN006 and GR01,02,03,04
Portugal	ATAAB AN001,005,006,007,011 and P03,04,08,10
Spain	ATAAB AN005,007,012, and ES01
Switzerland	ATAAB AN002
All other countries/regions	ATAAB AN003,004

Specific switch settings or software setup are required for each network, please refer to the relevant sections of the user guide for more details.

The hookflash (timed break register recall) function is subject to separate national type approvals. It has not been tested for conformity to national type regulations, and no guarantee of successful operation of that specific function on specific national networks can be given.

Following information is only 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 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 (*http://eu.computers.toshiba-europe.com*) or contact your local city office or the shop where you purchased the product.

Disposal of batteries and/or accumulators

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 Battery Directive (2006/66/EC), 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 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.

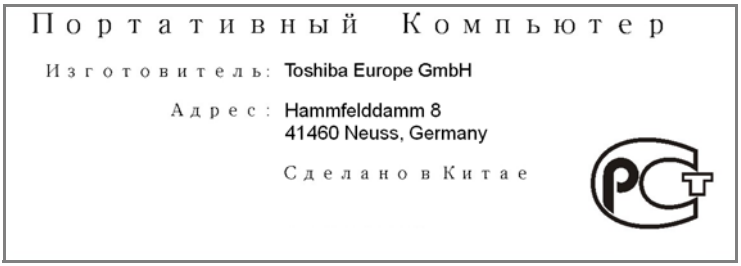
For more detailed information about the collection and recycling programmes available in your country, please visit our website (*http://eu.computers.toshiba-europe.com*) or contact your local city office or the shop where you purchased the product.

The symbols may not stick depending on the country and region where you purchased.

Disposing of the computer and the computer's batteries

- Discard this computer in accordance with applicable laws and regulations. For further information, contact your local government.
- This computer contains rechargeable batteries. After repeated use, the batteries will finally lose their ability to hold a charge and you will need to replace them. Under certain applicable laws and regulation, it may be illegal to dispose of old batteries by placing them in the trash.
- Please be kind to our shared environment. Check with your local government authority for details regarding where to recycle old batteries or how to dispose of them properly.

GOST



ENERGY STAR® Program

Your computer model may be Energy Star® qualified. If the model you purchased is qualified, it is labeled with the ENERGY STAR logo on the computer and the following information applies.

TOSHIBA is a partner in the Environmental Protection Agency's (EPA) 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.

Products that earn the ENERGY STAR® prevent greenhouse gas emissions by meeting strict energy efficiency guidelines set by the US EPA and the EU Commission. According to the EPA, a computer meeting the new ENERGY STAR® specifications will use between 20% and 50% less energy depending on how it is used.

Visit *http://www.eu-energystar.org* or *http://www.energystar.gov* for more information regarding the ENERGY STAR Program.

Visit *http://www.energystar.gov* or *http://www.energystar.gov/powermanagement* for more information regarding the ENERGY STAR Program.

Description on Laser specification

The optical disc drive such as DVD Super Multi (Double Layer) Drive Kit II that is used in this computer is equipped with laser. The classification label with the following sentence is affixed to the surface of the drive.

CLASS 1 LASER PRODUCT

LASER KLASSE 1

LUOKAN 1 LASERLAITE

APPAREIL A LASER DE CLASSE 1

KLASS 1 LASER APPARAT

The drive with the above label is certified by the manufacturer that the drive complies with the requirement for laser product on the date of manufacturing pursuant to article 21 of Code of Federal Regulations by the United States of America, Department of Health & Human Services, Food and Drug Administration.

In other countries, the drive is certified to comply with the requirement pursuant to IEC 60825-1 and EN 60825-1 on class 1 laser product.

This computer is equipped with the optical disc drive in the following list according to the model.

Manufacturer	Type
Panasonic	UJ862

Preface

Congratulations on your purchase of the PORTÉGÉ M750 series computer. This powerful notebook computer provides excellent expansion capability, includes multimedia functionality, and is designed to provide years of reliable, high-performance computing.

This manual tells how to set up and begin using your PORTÉGÉ M750 computer. It also provides detailed information on configuring your computer, basic operations and care, using optional devices and troubleshooting.

If you are a new user of computers or if you're new to portable computing, first read over Chapter 3, *Hardware, Utilities and Options*, to familiarize yourself with the computer's features, components and devices. Then read Chapter 1, *Getting Started* for step-by-step instructions on setting up your computer.

If you are an experienced computer user, please continue reading the preface to learn how this manual is organized, then become acquainted with this manual by browsing through its pages. Be sure to read the *Special features* section in Chapter 3, *Hardware, Utilities and Options* to learn about features that are uncommon or unique to this computer, as well as the section on Chapter 7, *HW Setup*, to understand how to setup and configure these features.

Read Chapter 3, *Hardware, Utilities and Options* if connecting optional products or external devices.

Conventions

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

Abbreviations

On first appearance, and whenever necessary for clarity, abbreviations are enclosed in parentheses following their definition. For example: Read Only Memory (ROM). Acronyms are also defined in the Glossary.

Icons

Icons identify ports, dials, and other parts of your computer. The indicator panel also uses icons to identify the components it is providing information on.

Keys

The keyboard keys are used in the text to describe many computer operations. A distinctive typeface identifies the key top symbols as they appear on the keyboard. For example, **ENTER** identifies the ENTER key.

Key operation

Some operations require you to simultaneously use two or more keys. We identify such operations by the key top symbols separated by a plus sign (+). For example, **CTRL** + **C** means you must hold down **CRTL** and at the same time press **C**. If three keys are used, hold down the first two and at the same time press the third.

ABC	When procedures require an action such as clicking an icon or entering text, the icon's name or the text you are to type in is represented in the typeface you see to the left.

Display

ABC	Names of windows or icons or text generated by the computer that appear on its display screen are presented in the type face you see to the left.

Messages

Messages are used in this manual to bring important information to your attention. Each type of message is identified as shown below.

Pay attention! A caution informs you that improper use of equipment or failure to follow instructions may cause data loss or damage your equipment.

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

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

Terminology

This term is defined in this document as follows:

Start	The word "**Start**" refers to the " " button in Microsoft® Windows Vista®.
HDD or Hard disk drive	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.

General Precautions

TOSHIBA computers are designed to optimize safety, minimize strain and withstand the rigors of portability. However, certain precautions should be observed to further reduce the risk of personal injury or damage to the computer.

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

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 may 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. *Instruction Manual for Safety and Comfort* 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, you should 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.

PC Card overheating

Some PC Cards can become hot during prolonged use which may result in errors or instability in the operation of the device in question. In addition, you should also be careful when you remove a PC Card that has been used for a long time.

Mobile phones

Please 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 30cm 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.

Chapter 1

Getting Started

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

Some of the features described in this manual may not function properly if you use an operating system that was not pre-installed by TOSHIBA.

Equipment checklist

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

Hardware

Check to make sure you have all the following items:

- PORTÉGÉ M750 Portable Personal Computer
- AC adaptor and power cord (2-pin plug or 3-pin plug)
- Tablet PC Pen (Is included with some models)
- Reserve Pen (Is included with some models)
- Ultra Slim Bay Case (Is provided with some models)

- *For some models, Tablet PC Pen is included together with spare pen tips and a tip removal tool in a small case coming with the product.*
- *For some models, Reserve Pen is included in a small case coming with the product.*

Documentation

- PORTÉGÉ M750 User's Manual
- PORTÉGÉ M750 Quickstart
- Instruction Manual for Safety and Comfort
- Warranty information

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

Software

The following Windows® operating system and utility software are pre-installed.

- Microsoft Windows Vista
- TOSHIBA Value Added Package
- Recovery Disc Creator
- TOSHIBA DVD Player
- TOSHIBA SD Memory Utilities
- TOSHIBA SD Memory Boot Utility
- CD/DVD Drive Acoustic Silencer
- TOSHIBA Assist
- TOSHIBA ConfigFree™
- TOSHIBA HDD Protection
- TOSHIBA Disc Creator
- TOSHIBA Face Recognition (Is preinstalled in some models)
- TOSHIBA PC Health Monitor
- TOSHIBA USB Sleep and Charge Utility
- TOSHIBA Tablet PC Extension
- TOSHIBA Tablet Access Code Logon Utility
- Presto! BizCard 5
- Fingerprint Utility
- Windows Mobility Center
- Online Manual

Getting Started

- *All users should be sure to read the section Starting up 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 may 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:

- About the Tablet mode
- Connecting the AC adaptor
- Opening the display
- Turning on the power
- Starting up for the first time
- Turning off the power
- Restarting the computer
- System Recovery Options and Restoring the preinstalled Software

- *Use a virus-check program and make sure it is updated regularly.*
- *Never format storage media without checking its content - formatting destroys all stored data.*
- *It is a good idea to periodically back up the internal hard disk drive or other main storage device to external media. General storage media is not durable or stable over long periods of time and under certain conditions may 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 may result in the loss of data.*

About the Tablet mode

Your computer can be used in two ways, as an ordinary laptop PC and as a Tablet PC. You can use the computer as Tablet PC, operated with the supplied Tablet PC Pen, by turning the display panel through 180 degrees and closing it. This manual calls the use as an ordinary laptop PC “Laptop mode”, and the use as a Tablet PC “Tablet mode”. Refer to *Changing to the Tablet mode* section in Chapter 4, *Operating Basics*, for details on changing the mode.

Connecting the AC adaptor

Attach the AC adaptor when you need to charge the battery or you want to operate from AC power. It is also the fastest way to get started, because the battery pack will need to be charged before you can operate from battery power.

The AC adaptor can be connected to any power source supplying from 100 to 240 volts and 50 or 60 hertz. For details on using the AC adaptor to charge the battery pack, refer to Chapter 6, *Power and Power-Up Modes*.

- *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 product is bought and should not be used outside this region. For use in other regions, please 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 the 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 AC adaptor's surface 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.

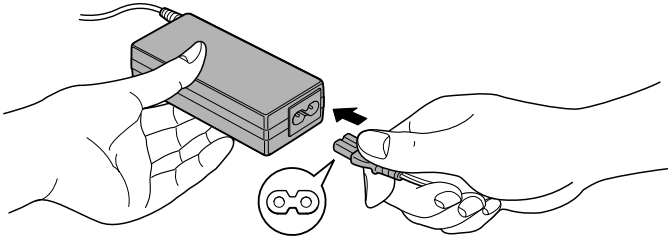


Figure 1-1 Connecting the power cord to the AC adaptor (2-pin plug)

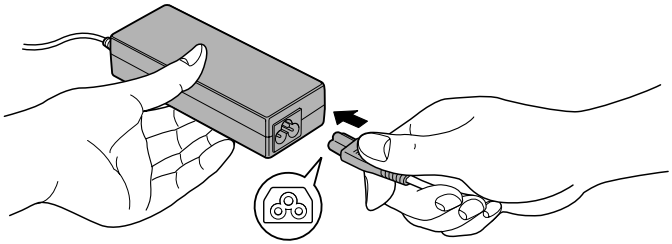


Figure 1-2 Connecting the power cord to the AC adaptor (3-pin plug)

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

2. Connect the AC adaptor's DC output plug to the DC IN 15V jack on the back of the computer.

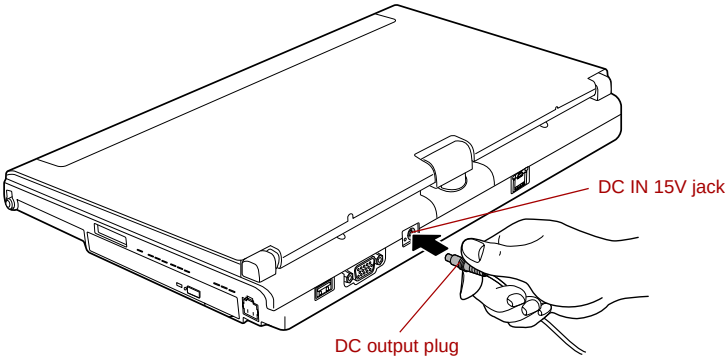


Figure 1-3 Connecting the DC output plug to the computer

3. Plug the power cord into a live wall outlet - the **Battery** and **DC IN** indicators on the front of the computer should glow.

Opening the display

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 - this will allow the angle of the display panel to be adjusted to provide optimum clarity.

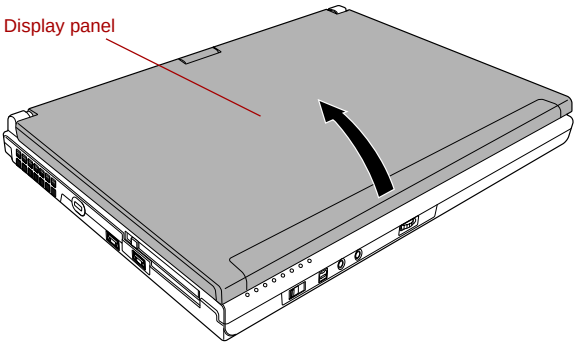
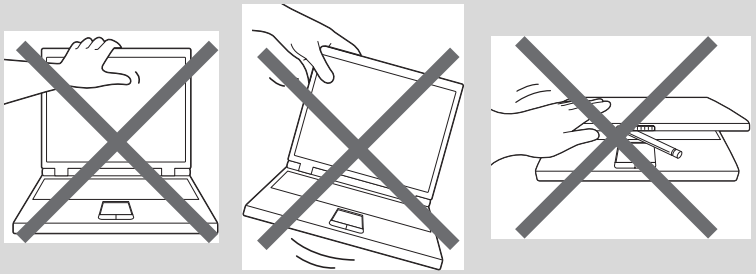


Figure 1-4 Opening the display panel

Use reasonable care when opening and closing the display panel. Opening it vigorously or slamming it shut could 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).*



Turning on the power

This section describes how to turn on the power - the **Power** indicator will then indicate the status. Please refer to the *Monitoring of power condition* section in Chapter 6, *Power and Power-Up Modes*, 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. Please refer to the section Starting up for the first time for more information.*
- *Volume cannot be adjusted during Windows Setup.*

1. Open the display panel.
2. Slide the Power Button Lock Switch to the right.
3. Press and hold the computer's power button for two or three seconds.

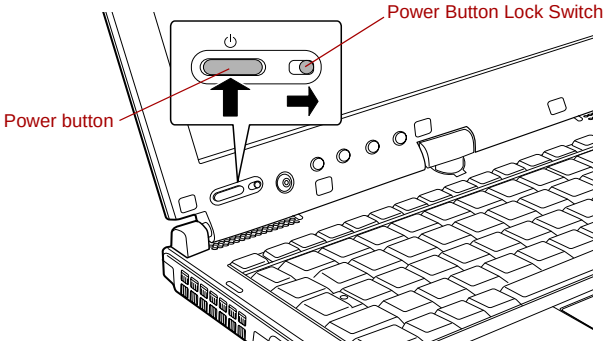


Figure 1-5 Turning on the power

Starting up for the first time

The Microsoft Windows Vista® Startup Screen will be the first screen displayed when you turn on the power. Follow the on-screen instructions on each screen in order to properly install the operating system.

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

Turning off the power

The power can be turned off in one of three modes, either Shut Down (Boot) Mode, Hibernation Mode or Sleep Mode.

Shut Down Mode (Boot Mode)

When you turn off the power in Shut Down Mode no data will be saved and the computer will boot to the operating system's main screen 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 CD/DVD or floppy diskette.

- *Make sure the* **Hard Disk Drive** *and* **Ultra Slim Bay's module** *indicator is off. If you turn off the power while a disk (disc) is being accessed, you may lose data or damage the disk.*
- *Never turn off the power while an application is running. Doing so could cause loss of data.*
- *Never turn off the power, disconnect an external storage device or remove storage media during data read/write. Doing so can cause data loss.*

3. Click **Start**.
4. Click the arrow button ( ) located in the power management buttons ( ) and select **Shut Down** from the menu.
5. 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.

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 computer's main memory so that 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 completely shut down the computer. This includes turning off any wireless communication switches or devices, and canceling settings that reactivate the computer automatically, such as a timer recording function. Failure to completely 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.*
- *Do not install or remove a memory module while the computer is in Sleep Mode. The computer or the memory module could be damaged.*
- *Do not remove the battery pack while the computer is in Sleep Mode (unless the computer is connected to an AC power source). Data in memory could be lost.*

- *When the AC adaptor is connected, the computer will go into Sleep Mode according to the settings in the Power Options (to access it,* **Start** *->* **Control Panel** *->* **System and Maintenance** *->* **Power Options***).*
- *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. Please note that keyboard keys can only be used if the Wake-up on Keyboard option is enabled within the HW Setup utility.*
- *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 access it,* **Start** *->* **Control Panel** *->* **System and Maintenance** *->* **Power Options***). However, please be aware that this configuration will nullify the computer's Energy Star compliance.*
- *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 does 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 also enable Sleep Mode by pressing **FN** + **F3** *- please refer to Chapter 5, The Keyboard, for further details.*

You can enter Sleep Mode in one of four ways:

- Click **Start** then click the power button ( ) located in the power management buttons ( ).
  Please note that this feature must be enabled within the Power Options (to access it, click **Start** -> **Control Panel** -> **System and Maintenance** -> **Power Options**).
- Click **Start** then click the arrow button ( ) and select `Sleep` from the menu.

- Close the display panel. Please note that this feature must be enabled within the Power Options (to access it, click **Start** -> **Control Panel** -> **System and Maintenance** -> **Power Options**).
- Press the power button. Please note that this feature must be enabled within the Power Options (to access it, click **Start** -> **Control Panel** -> **System and Maintenance** -> **Power Options**).

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

- *When the computer is in Sleep Mode, the* **Power** *indicator will blink orange.*
- *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 will consume 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. Please 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 remove the battery or disconnect the AC adaptor before the save is completed. Wait for the* **Hard Disk Drive** *indicator to go out.*
- *Do not install or remove a memory module while the computer is in Hibernation Mode. Data will be lost.*

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

You can also enable Hibernation Mode by pressing **FN** + **F4** *- please refer to Chapter 5,* The Keyboard*, for further details.*

To enter Hibernation Mode, follow the steps below.

1. Click **Start**.
2. Click the arrow button ( ) in the power management buttons ( ) and select **Hibernate** from the menu.

Automatic Hibernation Mode

The computer can be configured to enter Hibernation Mode automatically when you press the power button or close the lid. In order to define these settings, you can follow the steps as described below:

1. Click **Start** and click the **Control Panel**.
2. Click **System and Maintenance** and click **Power Options**.
3. Click **Choose what the power button does** or **Choose what closing the lid does**.
4. Enable the desired Hibernation Mode settings for **When I press the power button** and **When I close the lid**.
5. Click the **Save changes** button.

Data save in Hibernation Mode

When you turn off the power in Hibernation Mode, the computer will take a moment to save the current data in memory to the hard disk drive. During this time, the **Hard Disk Drive** indicator will glow.

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.

Restarting the computer

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

- You change certain computer settings.
- An error occurs and the computer does not respond to your keyboard commands.

If you need to restart the computer, there are three ways this can be achieved:

- Click **Start** then click the arrow button ( ) in the power management buttons ( ) and select **Restart** from the menu.
- Press **CTRL**, **ALT** and **DEL** simultaneously (once) to display the menu window, then select **Restart** from the **Shut down options**.

- Press the power button and hold it down for five seconds. Once the computer has turned itself off, wait between ten and fifteen seconds before turning the power on again by pressing the power button.

System Recovery Options and Restoring the pre-installed Software

About 1.5GB hidden partition is allocated on the hard disk drive for the System Recovery Options.

This partition stores files which can be used to repair the system in the event of a problem.

The System Recovery Options feature will be unusable if this partition is deleted.

System Recovery Options

The System Recovery Options feature is installed on the hard disk when shipped from the factory. The System Recovery Options menu includes tools to repair startup problems, run diagnostics or restore the system.

See the **Windows Help and Support** content for more information about **Startup Repair**.

The System Recovery Options can also be run manually to repair problems.

The procedure is as follows. Follow the instructions shown on the on-screen menu.

1. Turn off the computer.
2. Turn on the computer and when the TOSHIBA screen appears repeatedly press the **F8** key.
3. The **Advanced Boot Options** menu will be displayed.
   Use the arrow keys to select **Repair Your Computer** and press **ENTER**.
4. Follow the on-screen instructions.

The Windows Vista® CompletePC Backup feature can be used on Windows Vista® Business Edition and Ultimate Edition.

Restoring the pre-installed Software

Depending on the model you purchased, different ways for restoring the pre-installed software are offered:

- Creating optical Recovery Discs
- Restoring the pre-installed software from your created Recovery Discs.
- Restoring the pre-installed software from the Recovery hard disk drive.

Creating Optical Recovery Discs

This section describes how to create Recovery Discs.

- *Be sure to connect the AC adaptor when you create Recovery Discs.*
- *Be sure to close all other software programs except the Recovery Disc 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 disc 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 may cause unstable operation and damage data.*
- *Do not shut down/log off or Sleep/Hibernate while writing or rewriting the disc.*
- *Set the computer on a level surface and avoid places subjected to vibrations such as airplanes, trains or cars.*
- *Do not place your computer on unstable tables or any other unstable surfaces.*

A recovery image of the software on your computer is stored on the hard disk drive, and can be copied to DVD media by using the following steps:

1. Have a blank DVD media ready.
2. The application will allow you to choose from a variety of different media onto which the recovery image can be copied including DVD-R, DVD-RW, DVD+R, DVD+RW.

Please note that some of the above media may not be compatible with the optical disc drive installed into your computer. You should therefore verify the optical disc drive supports the blank media you have chosen before proceeding.

3. Turn on your computer and allow it to load the Windows Vista® operating system from the hard disk drive as normal.
4. Insert the first blank media into the optical disc drive tray.
5. Double click the **Recovery Disc Creator** icon on the Windows Vista® desktop, or select the application from **Start** Menu.

6. After Recovery Disc Creator starts, select the type of media and the title you wish to copy, and then click the **Create** button.
7. Follow the on-screen instructions.

Your Recovery Discs will be created.

Restoring the pre-installed software from your created Recovery Discs

Please set your BIOS to default before you recover your computer to the factory state!

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

When the sound mute feature has been activated by pressing the **FN** + **ESC** *key, be sure to disable this to allow sounds to be heard before starting the restore process. Please refer to Chapter 5,* The Keyboard*, for further details.*

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

1. Load the Recovery Discs into the optical disc drive and turn off the computer's power.
2. While holding down **F12** key on the keyboard, turn on your computer - when the **TOSHIBA** logo screen appears, release the **F12** key.
3. Use the cursors key to select the CD-ROM icon from the menu. Please refer to the *Boot Priority* section in Chapter 7, *HW Setup*, for further information.
4. A menu will be displayed from which you should follow the on-screen instructions.

Restoring the pre-installed software from the Recovery hard disk drive

Please set your BIOS to default before you recover your computer to the factory state!

On your Data drive you may find a folder "HDDRecovery". This folder stores files which can be used to recover your system to the originally installed factory state.

If you subsequently set up your hard disk drive again, do not change, delete or add partitions in a manner other than specified in the manual, otherwise you may 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 may find that it becomes impossible to setup your computer.

When the sound mute feature has been activated by pressing the **FN** + **ESC** *key, be sure to disable this to allow sounds to be heard before starting the restore process. Please refer to Chapter 5,* The Keyboard*, for further details.*

Be sure to connect the AC adaptor, otherwise you may run out of battery during the recovery process.

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

1. Turn off the computer.
2. Turn on the computer and when the TOSHIBA screen appears repeatedly press the **F8** key.
3. The **Advanced Boot Options** menu will be displayed. Use the arrow keys to select **Repair Your Computer** and press **ENTER**.
4. Select your preferred keyboard layout and press **Next**.
5. To access the recovery process please log on as an enabled user with sufficent rights.
6. Click TOSHIBA HDD Recovery on the System Recovery Options screen.
7. Follow the on-screen instructions on the TOSHIBA HDD Recovery dialog.

The computer will be restored to its factory state.

Chapter 2

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, please refer to Appendix H, *Legal Footnotes*.

Front with the display closed

The following figure shows the computer's front with its display panel in the closed position.

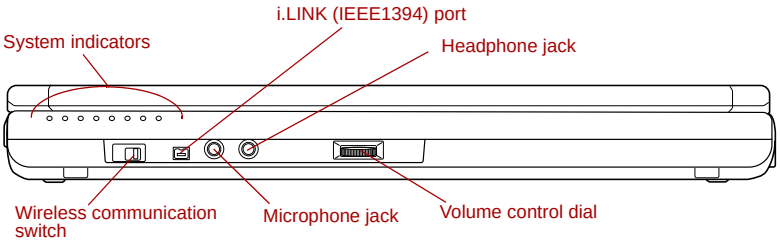


Figure 2-1 Front of the computer with display panel closed

System indicators	These LED indicators allow you to monitor the status of various computer functions and are described in more detail within the *System indicators* section.
Wireless communication switch	Slide this switch to the left to turn off Wireless LAN, Bluetooth and Wireless WAN functions. Slide it to the right to turn on the functions. Only some models are equipped with Bluetooth, Wireless LAN and Wireless WAN functions.

Off On

- *Turn Wi-Fi®, Bluetooth and Wireless WAN functionalities off when near a person who may have a cardiac pacemaker implant or other medical electric device. Radio waves may affect pacemaker or medical device operation, possibly resulting in serious injury. Follow the instruction of your medical device when using any Wi-Fi or Bluetooth or Wireless WAN functionality.*
- *Always turn off Wi-Fi or Bluetooth or Wireless WAN 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.*
- *Do not use the 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.*

i.LINK (IEEE1394) port	This port allows you to connect an external device, such as a digital video camera for high-speed data transfer.
Microphone jack	A 3.5 mm mini microphone jack enables connection of a three-conductor mini jack for monaural microphone input.
Headphone jack	A 3.5 mm mini headphone jack enables connection of stereo headphones.
Volume control dial	Use this dial to adjust the volume of the internal stereo speakers and optional external stereo headphones (if connected). Move the Volume control dial to the right to increase the volume and to the left to decrease the volume.

Left side

The following figure shows the computer's left side.

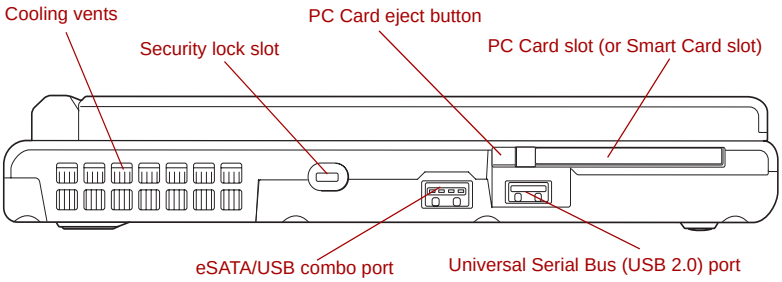


Figure 2-2 The left side of the computer

The computer is equipped with either a PC Card slot or a Smart Card slot.

Cooling vents	The cooling vents help keep the processor from 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.

Security lock slot	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.
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 hand side of the computer.
eSATA/USB combo port	One eSATA/USB combo port, which complies to the USB 2.0 standard, is provided on the left side of the computer. This port has eSATA (External Serial ATA) function. The ports with the icon ( ) have *USB Sleep and Charge* function.

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

Please note that it is not possible to confirm the operation of all functions of all USB devices that are available. In view of this it may be noted that some functions associated with a specific device might not operate properly.

PC Card eject button	This button is used to remove a PC Card from the computer.
PC Card slot	This slot can accommodate a single Type II, 16-bit or 32-bit (CardBus) PC Card device. Some models are equipped with a PC Card slot.

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

Smart Card slot	This slot can accommodate a single Smart Card device. Some models are equipped with a Smart Card slot.

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

Right side

The following figure shows the computer's right side.

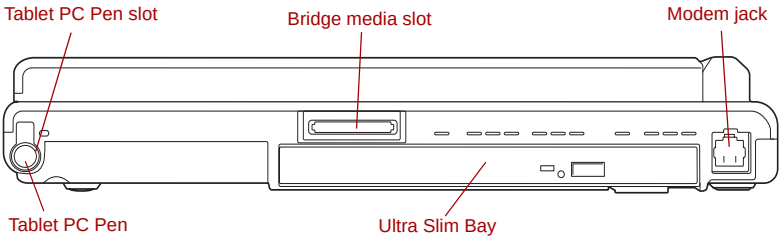


Figure 2-3 The right side of the computer

Tablet PC Pen slot	The Tablet PC Pen slot provides storage for the Tablet PC Pen.
Tablet PC Pen	The Tablet PC Pen is stored on the right side of the computer and enables direct data entry through the display screen. Some models are equipped with a Tablet PC Pen. Refer to the *Using the Tablet PC Pen and Reserve Pen* section in Chapter 4, *Operating Basics*.

Bridge media slot	This slot lets you insert an SD/SDHC memory card, miniSD/microSD Card, Memory Stick (PRO/PRO Duo), xD picture card and MultiMediaCard. Refer to the *Optional devices* section in Chapter 3, *Hardware, Utilities and Options*.

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

Ultra Slim Bay	A DVD Super Multi (Double Layer) Drive Kit II or Ultra Slim Bay HDD Adaptor II can be installed in the Ultra Slim Bay, which supports Serial ATA (SATA) interface.
Modem jack	The modem jack allows you to attach a modular cable in order to connect the internal modem directly to a telephone line. Some models are equipped with a built-in modem.

- *Connection to any communication line other than an analog phone line could cause a computer system failure.*
  - *Connect the built-in modem only to ordinary analog phone lines.*
  - *Never connect the built-in modem to a digital line (ISDN).*
  - *Never connect the built-in modem to the digital connector on a public telephone or to a digital private branch exchange (PBX).*
  - *Never connect the built-in modem to a key telephone system for residences or offices.*
- *Never operate your computer on AC power during a thunderstorm. If you see lightning or hear thunder, immediately turn off the computer. An electric surge caused by the storm, may result in a system failure, loss of data or hardware damage.*

Back side

The following figure shows the computer's back side.

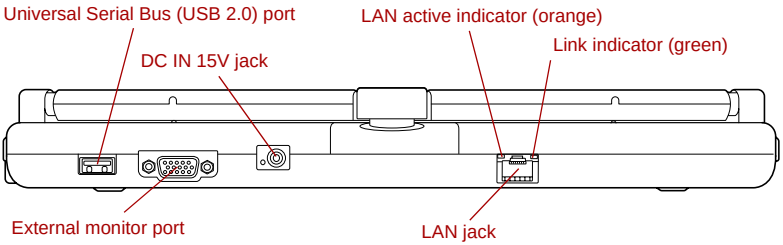


Figure 2-4 The back side of the computer

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

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

Please note that it is not possible to confirm the operation of all functions of all USB devices that are available. In view of this it may be noted that some functions associated with a specific device might not operate properly.

External monitor port	This port allows you to connect an external monitor to the computer.
DC IN 15V jack	The AC adaptor connects to this jack in order to power the computer and charge its internal batteries. Please note that you should only use the model of AC adaptor supplied with the computer at the time of purchase - using the wrong AC adaptor can cause damage to the computer.
LAN jack	This jack lets you connect to a LAN. The adaptor has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T), Fast Ethernet LAN (100 megabits per second, 100BASE-TX) and Gigabit Ethernet LAN (1000 megabits per second, 1000BASE-T). Refer to Chapter 4, *Operating Basics*, for details.

- *Do not connect any cable other than a LAN cable to the LAN jack. It could cause damage or malfunction.*
- *Do not connect the LAN cable to a power supply. It could cause damage or malfunction.*

Link indicator (green)	This indicator glows green when the computer is connected to a LAN and the LAN is functioning properly.
LAN active indicator (orange)	This indicator glows orange when data is being exchanged between the computer and the LAN.

Underside

The following figure shows the underside of the computer. You should ensure that the display is closed before the computer is turned over to avoid causing any damage.

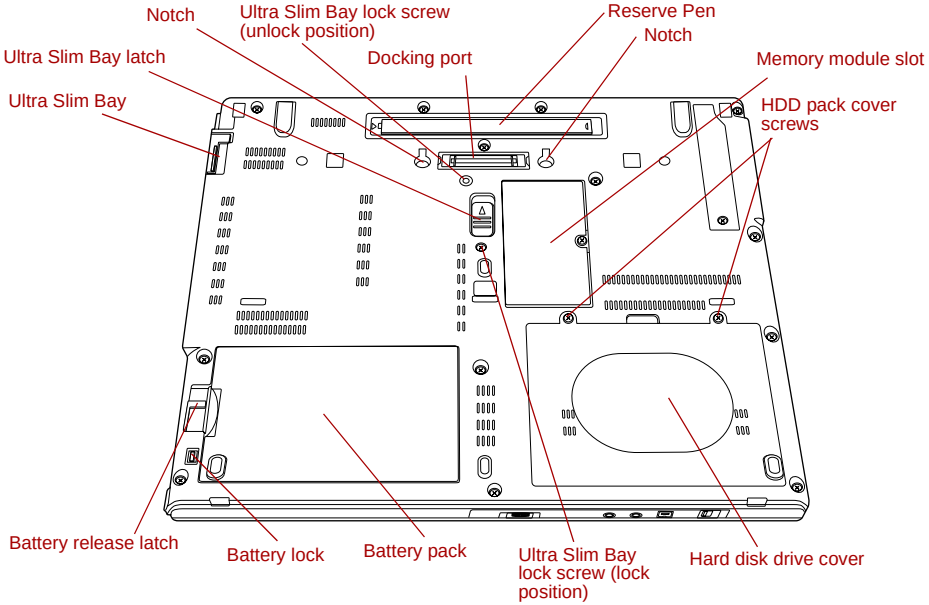


Figure 2-5 The underside of the computer

Notches	Notches on the computer engage hooks on the TOSHIBA Express Port Replicator to ensure a secure connection.

Docking port

This port enables connection of an optional TOSHIBA Express Port Replicator or a Slice Expansion Battery described in Chapter 3, *Hardware, Utilities and Options*.

- *Only the TOSHIBA Express Port Replicator can be used with this computer. Do not attempt to use any other Port Replicator.*
- *Keep foreign objects out of the docking port. A pin or similar object can damage the computer's circuitry. A plastic shutter protects the connector.*

Memory module slot

The slot B memory module is located here. The memory module slot allows for the installation, replacement and removal of additional memory module.

Refer to the *Additional memory module* section in Chapter 3, *Hardware, Utilities and Options*.

HDD pack cover screws

The HDD pack cover screws are the screws that hold the hard disk drive cover in place.

Hard disk drive cover

A Hard disk drive pack is contained under the Hard disk drive cover. It can be removed and reinstalled. For more information on how to remove or reinstall the Hard disk drive pack, please refer to the *HDD Kit (Serial-ATA)* section in Chapter 3, *Hardware, Utilities and Options*.

Battery release latch

Slide and hold this latch into its 'Unlock' position in order to release the battery pack ready for removal. For more detailed information on removing the battery pack please refer to Chapter 6, *Power and Power-Up Modes*.

Battery lock

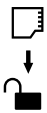
Slide the battery lock to release the battery pack for removal.

Battery pack

The 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 please refer to Chapter 6, *Power and Power-Up Modes*.

Ultra Slim Bay

Refer to the *Right side* section in this chapter for details.



Ultra Slim Bay latch

Slide the latch to release or secure the Ultra Slim Bay latch.

Be sure to lock the Ultra Slim Bay latch before you transport or carry the computer.

Ultra Slim Bay lock screw (lock position)	Lock position is used to lock the Ultra Slim Bay Latch. The Ultra Slim Bay Latch is locked by securing the Ultra Slim Bay Lock screw into the lock position.
Ultra Slim Bay lock screw (unlock position)	Unlock position is used for changing the Ultra Slim Bay. To unlock the Ultra Slim Bay latch, please move the Ultra Slim Bay Lock screw to unlock position. For more information on how to remove or insert, please refer to the *Changing Ultra Slim Bay modules* in Chapter 4.
Reserve Pen	Reserve Pen is contained in the Reserve Pen case of Underside. Reserve Pen enables data entry directly through display screen. Some models are equipped with a Reserve Pen. Refer to the *Using the Tablet PC Pen and Reserve Pen* section in Chapter 4, *Operating Basics*.

Front with the display open

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

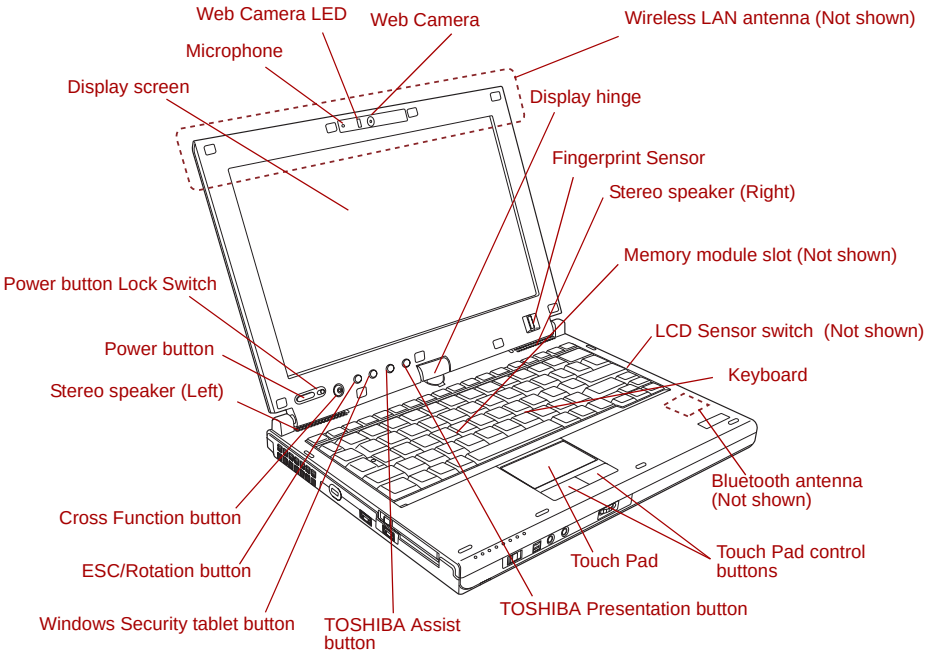


Figure 2-6 The front of the computer with the display panel open

Web Camera

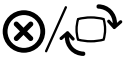
Web Camera is a device that allows you to record video or take photographs with your computer. You can use it for video chatting or video conferences using a communication tool such as **Windows Live Messenger**. It also has reading business card function. **Camera Assistant Software** will help you to add various video effects to your video or photograph.

Enables the transmission of video and use of video chat via the internet using specialized applications.

The effective pixel count for this web camera is 1.3 million.

Some models are equipped with a Web Camera.

Please refer to the *Web Camera* section in Chapter 4, *Operating Basics*.

Web Camera LED	The Web Camera LED glows when the Web Camera is operating.
Display screen	Please be aware that, when the computer is operating on the AC adaptor, the image displayed on the internal screen will be somewhat brighter than when it operates on battery power. This difference in brightness levels is intended to save power when operating on batteries. For more information on the computer's display, please refer to the *Display Controller and Video mode* section in Appendix B.
Power button	Press this button to turn the computer's power on and off.
Power Button Lock Switch	This switch locks the Power button in order to prevent them from being accidentally pressed. Slide the switch to the left to lock the Power button.
Cross Function button	This button function will automatically open the Windows Mobility Center window.
 **ESC/Rotation button**	This button functions the same as the **ESC** key when tapped, or changes the orientation of the screen when pressed for more than a second.
Windows Security tablet button	This button functions the same as the **Ctrl** + **Alt** + **Del** keys to show Menu window.
TOSHIBA Assist button	Press this button to launch the program automatically. When power-off, Sleep Mode and Hibernation Mode, press this button to start the computer and launch the program.
TOSHIBA Presentation button	The TOSHIBA Presentation button has the same functionality as the Connect display button in the Mobility Center. Pressing this button when an external display is connected will open the Windows Vista TMM (Transient Multimon Manager) screen.
Display hinge	The display hinge allows the display panel to be position at a variety of easy-to-view angles. Rotate the computer on this fulcrum point when switching between Tablet and Laptop modes.

Fingerprint Sensor	This sensor enables you to enroll and recognize a fingerprint. Some models are equipped with a Fingerprint Sensor. For detailed information on Fingerprint Sensor, refer to Chapter 4, *Using the Fingerprint Sensor*.
Stereo speakers	The speakers emit sound generated by your software as well as audio alarms, such as low battery condition, generated by the system.
Keyboard	The internal keyboard provides the embedded numeric overlay keys, dedicated cursor control overlay keys, and Keys. The keyboard is compatible with the IBM® enhanced keyboard. Refer to Chapter 5, *The Keyboard*, for details.
Touch Pad	The Touch Pad mouse control device located in the center of the palm rest is used to control the movement of the on-screen pointer. For more information, please refer to the *Using the Touch Pad* section in Chapter 4, *Operating Basics*.
Touch Pad control buttons	The control buttons located below the Touch Pad allow you to select menu items or manipulate text and graphics as designated by the on-screen pointer.
Microphone	A built-in microphone allows you to import and record sounds for your application - please refer to the *Sound System* section in Chapter 4, *Operating Basics* for more information.
LCD Sensor switch	This switch senses when the display panel is either closed or opened and activates the Panel Power Off/On feature as appropriate. For example, when you close the display panel the computer enters Hibernation Mode and shuts itself down and then, when you next open the display, the computer will automatically start up and return you to the application you were previously working on. You can specify within the Power Options. To access it, click **Start** -> **Control Panel** -> **System and Maintenance** -> **Power Options**.

Do not put any magnetic objects close to this switch as they may cause the computer to automatically enter Hibernation Mode and shut down even if the Panel Power Off feature is disabled.

Memory module slot	The slot A memory module is located here. The memory module slot allows for the installation and replacement of an additional memory module. Refer to the *Additional memory module* section in Chapter 3, *Hardware, Utilities and Options*.

Indicators

This section explains indicator functions.

System indicators

The LED system indicators for specific computer operations glow when those operations are in progress.

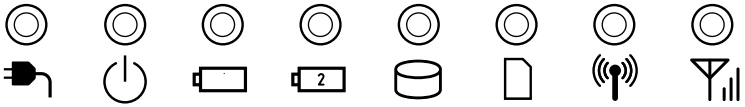


Figure 2-7 System indicators

DC IN	The **DC IN** indicator normally glows green when power is being correctly supplied from the AC power adaptor. However, If the output voltage from the adaptor is abnormal, or if the computer's power supply malfunctions, this indicator will flash orange.
Power	The **Power** indicator normally glows green when the computer is turned on. However, if you turn the computer off into Sleep Mode, this indicator will flash orange - approximately one second on, two seconds off - both while the system is shutting down and while it remains turned off.
Battery	The **Battery** indicator shows the condition of the battery's charge - green indicates the battery is fully charged, orange indicates the battery is charging, and flashing orange indicates a low battery condition. Please refer to Chapter 6, *Power and Power-Up Modes* for more information on this feature.

2nd battery	The **2nd battery** indicator shows the condition of the Slice Expansion Battery's charge - green indicates the Slice Expansion Battery is fully charged, orange indicates the Slice Expansion Battery is charging, and flashing orange indicates a low battery condition. Please refer to Chapter 6, *Power and Power-Up Modes* for more information on this feature.
Hard Disk Drive/ Optical Disc Drive	The **Hard Disk Drive/Optical Disc Drive** indicator glows green whenever the computer is accessing the built-in hard disk drive, optical disc drive or eSATA device.
Bridge media slot	The **Bridge media slot** indicator glows green when the computer is accessing the Bridge media slot.
Wireless communication	The **Wireless communication** indicator blinks orange when the Bluetooth, Wireless LAN and Wireless WAN functions are turned on. Only some models are equipped with Bluetooth, Wireless LAN and Wireless WAN functions.
Wireless WAN	The Wireless WAN indicator glows or blinks blue when the Wireless WAN function is on. The indicator will glow or blink in order to indicate the connection status of the Wireless WAN function. A Wireless WAN card must be installed to use this function. Some models are equipped with a Wireless WAN card.

Keyboard indicators

The following figures show the positions of the **CAPS LOCK** indicator and the keypad overlay indicators which show the following conditions:

- When the **CAPS LOCK** indicator glows, the keyboard will produce capitals when any letter is typed.
- When the **Arrow Mode** indicator glows, the keypad overlay allows you to use cursor functions.
- When the **Numeric Mode** indicator glows, the keypad overlay allows you to enter numbers.

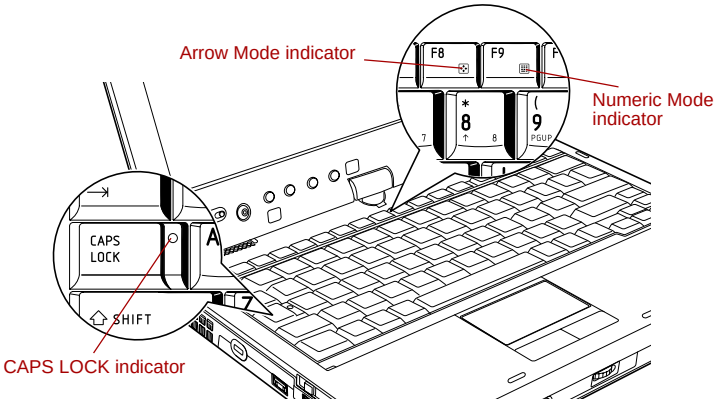


Figure 2-8 Keyboard indicators

CAPS LOCK	This indicator glows green when letter keys are locked into their uppercase format.
Arrow Mode	When the **Arrow Mode** indicator lights green, you can use the gray labeled keys on the keypad overlay as cursor keys. Please refer to the *Keypad overlay* section in Chapter 5, *The Keyboard* for more information.
Numeric Mode	When the **Numeric Mode** indicator lights green, you can use the gray labeled keys on the keypad overlay for number entry. Please refer to the *Keypad overlay* section in Chapter 5, *The Keyboard* for more information.

Optical disc drive

The computer is configured with a DVD Super Multi (Double Layer) Drive Kit II. An SATA interface controller is used for CD/DVD-ROM operation. When the computer is accessing a CD/DVD, an indicator on the drive glows.

For information on loading and unloading discs refer to the *Using optical disc drives* section in Chapter 4, *Operating Basics*.

Region codes for DVD drives and media

DVD Super Multi (Double Layer) Drives Kit II and their associated media are manufactured according to the specifications of six marketing regions. When you purchase DVD-Video, make sure it matches your drive, otherwise it will not play properly.

Code	Region
1	Canada, United States
2	Japan, Europe, South Africa, Middle East
3	Southeast Asia, East Asia
4	Australia, New Zealand, Pacific Islands, Central America, South America, Caribbean
5	Russia, Indian Subcontinent, Africa, North Korea, Mongolia
6	China

Writable discs

This section describes the types of writable CD/DVD discs. Check the specifications of your drive to see the types of discs it can write. Use TOSHIBA Disc Creator to write compact discs. Refer to Chapter 4, *Operating Basics*.

CDs

- CD-R discs can be written only once. The recorded data cannot be erased or changed.
- CD-RW discs including multi speed CD-RW discs, high-speed CD-RW discs and ultra-speed CD-RW discs can be recorded more than once.

DVDs

- DVD-R, DVD+R, DVD-R (Dual Layer) and DVD+R (Double Layer) discs can be written only once. The recorded data cannot be erased or changed.
- DVD-RW, DVD+RW and DVD-RAM discs can be recorded more than once.

Formats

The drive supports the following formats: CD-ROM, DVD-ROM, DVD-Video, CD-DA, CD-Text, Photo CD™ (single/multi-session), CD-ROM Mode 1, Mode 2, CD-ROM XA Mode 2 (Form1, Form2), Enhanced CD (CD-EXTRA), Addressing Method 2, CD-R, CD-RW, DVD-R, DVD-R DL, DVD-RW, DVD+R, DVD+R DL, DVD+RW and DVD-RAM.

Some types and formats of DVD-R DL and DVD+R DL discs may be unreadable.

Speeds

The full-size DVD Super Multi (Double Layer) Drive Kit II module lets you record data to rewritable CD/DVDs as well as run either 12 cm (4.72") or 8cm (3.15") CD/DVDs without using an adaptor.

The read speed is slower at the center of a disc and faster at the outer edge.

DVD read	8 speed (maximum)
DVD-R write	8 speed (maximum)
DVD-R (Dual Layer) write	4 speed (maximum)
DVD-RW write	6 speed (maximum)
DVD+R write	8 speed (maximum)
DVD+R (Double Layer) write	4 speed (maximum)
DVD+RW write	8 speed (maximum)
DVD-RAM write	5 speed (maximum)
CD read	24 speed (maximum)
CD-R write	24 speed (maximum)
CD-RW write	4 speed (maximum)
CD-RW (High-Speed) write	10 speed (maximum)
CD-RW (Ultra-Speed) write	16 speed (maximum)

AC adaptor

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

To recharge the battery, simply connect the AC adaptor to a power source and to the computer. Please refer to Chapter 6, *Power and Power-Up Modes* for further information.

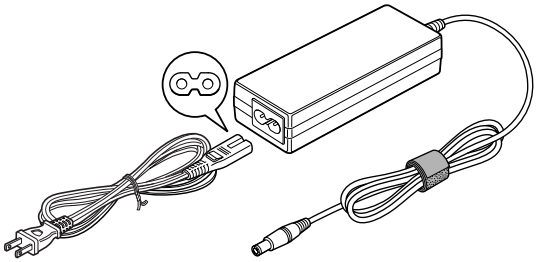


Figure 2-9 The AC adaptor (2-pin plug)

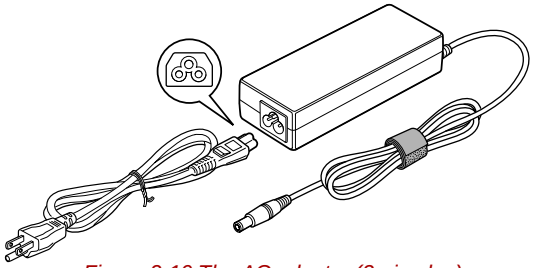


Figure 2-10 The AC adaptor (3-pin plug)

- *Depending on the model in question, either a 2-pin or 3-pin adaptor/ power lead will be bundled with the computer.*
- *Do not use a 3-pin to 2-pin conversion plug.*
- *The supplied power cord conforms to safety rules and regulations in the region the product is bought and should not be used outside of this region. In order to use the adaptor/computer in other regions, you should please buy a power cord that conforms to the safety rules and regulations in that particular region.*

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.

Chapter 3

Hardware, Utilities and Options

Hardware

This section describes the hardware of your computer.

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

Processor

CPU	The computer is equipped with one of the following Intel® processors. ■ Intel® Core™ 2 Duo Processor, which incorporates a 2MB level2 cache memory and also supports Enhanced Intel SpeedStep® Technology. ■ Intel® Core™ 2 Duo Processor, which incorporates a 3MB level2 cache memory and also supports Enhanced Intel SpeedStep® Technology. ■ Intel® Core™ 2 Duo Processor, which incorporates a 6MB level2 cache memory and also supports Enhanced Intel SpeedStep® Technology.

Some models in this series use Intel® Centrino® 2 processor technology which is based on three separate components, the Intel® Core™ 2 Duo processor, Intel® Wi-Fi Link 5300AGN -OR- 5100AGN and the Intel® GM/PM45 Express Chipset.

Legal Footnote (CPU)

For more information on the CPU, please refer to Appendix H, Legal Footnotes.

Memory

Module slot	512MB, 1,024MB, 2,048MB or 4,096MB memory modules (DDR2-800) can be installed in the computer's two memory slots for a maximum of 8,192MB system memory. This computer can be equipped with memory modules of a maximum size of 8,192MB. The actual amount of useable system memory will be less than the installed memory modules.

If your computer is configured with two 2 GB memory modules or more, the memory might be displayed as approximately 3 GB only (depending on the computer's hardware specifications). 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, etc.) 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 will still be approximately 3 GB only.

Video RAM	The amount of Video RAM available is dependent on the computer's system memory. **Start** -> **Control Panel** -> **Appearance and Personalization** -> **Personalization** -> **Display Settings**. The amount of Video RAM can be verified by clicking the **Advanced Settings...** button in the Display Settings window.

Legal Footnote (Memory (Main System))

For more information regarding Memory (Main System), please refer to Appendix H, Legal Footnotes.

Power

Battery pack	The computer is powered by one rechargeable lithium-ion battery pack.
Slice Expansion Battery	This battery pack increases your computer's operating time when main battery pack is also installed.

Legal Footnote (Battery Life)

For more information regarding Battery Life, please refer to Appendix H, Legal Footnotes.

RTC battery	The internal RTC battery backs up the Real Time Clock (RTC) and calendar.
AC adaptor	The AC adaptor provides power to the system and recharges the batteries when they are low. It comes with a detachable power cord which will either have a 2-pin or 3-pin plug enclosure. As the AC adaptor is universal, it can receive a range of AC voltages from 100 to 240 volts, however you should note that the output current varies among different models. Using the wrong adaptor can damage your computer. Refer to the *AC adaptor* section in Chapter 2, *The Grand Tour*.

Disks

Hard Disk Drive or Solid State Drive	This computer is equipped with one of the following Hard Disk Drive (HDD) types. The capacity of each hard disk drive model is different. Some models are equipped with a Solid State Drive (SSD) instead of a hard disk drive. ■ HDD ■■ 80GB ■■ 120GB ■■ 160GB ■■ 200GB ■■ 250GB ■ SSD ■■ 64GB ■■ 128GB Please note that part of the hard disk or Solid state drive's 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 media 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 may be vulnerable to data retention errors.

Legal Footnote (Hard Disk Drive (HDD) Capacity)

For more information regarding Hard Disk Drive (HDD) Capacity, please refer to Appendix H, Legal Footnotes.

Optical disc drive

Drive	The following optical disc drive is pre-installed in this computer: ■ DVD Super Multi (Double Layer) Drive Kit II

2.6GB and 5.2GB DVD-RAM media cannot be read from or written to.

Display

The computer's internal display panel supports high-resolution video graphics and can be set to a wide range of viewing angles for maximum comfort and readability.

Display panel	12.1" TFT LCD screen with LED backlight, 16 million colors, with a resolution of 1280 horizontal x 800 vertical pixels WXGA. The function of the display screen varies from model to model. ■ Digitizer screen model: Operations on the display screen can be done by using the Tablet PC Pen which comes with the computer. ■ Digitizer and touch screen model: Operations on the display screen can be done by a finger or using the Tablet PC Pen which comes with the computer.

Legal Footnote (LCD)

For more information regarding the LCD, please refer to Appendix H, Legal Footnotes.

Graphics controller	The graphics controller maximizes display performance. Refer to Appendix B, *Display Controller and Video mode*, for more information.

Legal Footnote (Graphics Processor Unit ("GPU"))

For more information regarding the Graphics Processor Unit ("GPU"), please refer to Appendix H, Legal Footnotes.

Sound

Sound system	The integrated sound system provides support for the computer's internal speakers and microphone, as well as allowing an external microphone and headphones to be connected via the appropriate jacks.

Multimedia

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 such as **Windows Live Messenger**. **Camera Assistant Software** will help you to add various video effects to your video or photograph. It also has business card reader function. Your computer has been preinstalled with **Presto! BizCard 5** software for use with the computer's web camera feature. Please refer to the *Web Camera* section in Chapter 4, *Operating Basics*.

Communications

Modem	Some models are equipped with the integrated modem. The integrated modem provides capability for data and fax communications that support the V.90 (V.92) standards and includes a modem jack for connection to the telephone line. Please note that both the V.90 and V.92 standards are only supported in the USA, Canada, United Kingdom, France, Germany and Australia - only the V.90 standard is supported in other regions. You should also be aware that the speed of data and fax transfer will depend on the analog telephone line conditions.
LAN	The computer has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T), Fast Ethernet LAN (100 megabits per second, 100BASE-TX) and Gigabit Ethernet LAN (1000 megabits per second, 1000BASE-T).

Bluetooth	Some computers in this series offer Bluetooth wireless communication functionality 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.
Wireless LAN	Some computers in this series are equipped with a Wireless LAN module that is compatible with other LAN systems based on Direct Sequence Spread Spectrum/Orthogonal Frequency Division Multiplexing radio technology that complies with the IEEE 802.11 Standard.

Legal Footnote (Wireless LAN)

For more information regarding Wireless LAN, please refer to Appendix H, Legal Footnotes.

Wireless WAN	Some computers in this series are equipped with a Wireless WAN card. This card supports HSPA and provides faster communications than previous Wireless WAN cards.

Ultra Slim Bay

Ultra Slim Bay Modules	Ultra Slim Bay is a single-drive bay that accommodates an optical disc drive and secondary hard disk drive.

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.

*1 To access the Power Options, click **Start** -> **Control Panel** -> **System and Maintenance** -> **Power Options**.

TOSHIBA Assist button	Press this button to launch the program automatically. When power-off, Sleep Mode and Hibernation Mode, press this button to start the computer and launch the program.
TOSHIBA Presentation button	The TOSHIBA Presentation button has the same functionality as the Connect display button in the Mobility Center. Pressing this button when an external display is connected will open the Windows Vista TMM (Transient Multimon Manager) screen.
Hot keys	Hot keys are specific key combinations that let you quickly change the system configuration directly from the keyboard without running a system program.
Display automatic power off *1	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.
HDD automatic power off *1	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.
System automatic Sleep/Hibernation Mode *1	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.
Keypad overlay	A ten-key numeric keypad is integrated into the keyboard. Please refer to the *Keypad overlay* section in Chapter 5, *The Keyboard*, for information on using this feature.
Power on password	Two levels of password security, supervisor and user, are available to prevent unauthorized access to your computer.

Instant security	A specific hot key function automatically locks the system providing data security.
Intelligent power supply *1	A microprocessor in the computer's intelligent power supply detects the battery's 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.
Battery save mode *1	This feature lets you configure the computer in order to save battery power. This can be specified in the Power Options.
Panel power on/off *1	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.
Low battery automatic Hibernation Mode *1	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.
Heat dispersal *1	To protect against overheating, the processor has an internal temperature sensor so that, if the computer's internal temperature rises to a certain level, the cooling fan is turned on or the processing speed is lowered. This can be specified in the Power Options.
TOSHIBA HDD Protection	This feature uses the acceleration sensor built in the computer to detect vibration and shocks, and automatically moves the hard disk drive's read/write head to a safe position in order to reduce the risk of damage that could be caused by head-to-disk contact. Refer to the *Using the Hard Disk Drive (HDD) Protection* section in Chapter 4, *Operating Basics*, for more details.

- *The TOSHIBA HDD Protection function does not guarantee that the hard disk drive will not be damaged.*
- *TOSHIBA HDD Protection cannot be used in models that are equipped with SSD.*

Optical Drive Auto Lock	This function automatically locks the optical disc drive eject button if the computer detects any vibration or other shocks while running on the battery. This function prevents the disc tray from opening even if the eject button is pushed unexpectedly. For information on using this feature, please refer to the *Optical Drive Auto Lock* section in Chapter 4, *Operating Basics*.
Hibernation Mode	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 the power on again, you can continue working right where you left off. Refer to the *Turning off the power* section in Chapter 1, *Getting Started*, for more details.
Sleep Mode	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.
USB Sleep and Charge function	This feature allows you to charge USB-compatible external devices such as mobile phones or portable digital music players via the USB port when your computer is in Sleep Mode, Hibernation Mode or in the shutdown state. This function is worked by the USB Sleep and Charge Utility. For more information, please refer to the *Using the TOSHIBA USB Sleep and Charge Utility* section in Chapter 4, *Operating Basics*.

Legal Footnote (USB Sleep and Charge)

For more information regarding USB Sleep and Charge, please refer to Appendix H, Legal Footnotes.

USB Wakeup function	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, moving the mouse/ keyboard will wake the computer up. The “USB Wakeup function” operates under Windows Vista operating system and it works for all USB ports.
TOSHIBA PC Health Monitor	The TOSHIBA PC Health Monitor software monitors computer system functions such as power consumption, the cooling system and HDD Drop sensor. It alerts users of specific system conditions via pop-up messages. It also tracks the usage of the computer and related devices, logging the service relevant information on the computer’s hard disk drive. Refer to Appendix G, *Legal Footnotes*.

TOSHIBA Value Added Package

This section describes the TOSHIBA Component features pre-installed on the computer.

TOSHIBA Power Saver	TOSHIBA Power Saver provides you with the features of more various power supply managements.
TOSHIBA Button Support	This utility controls the following computer button functions. ■ TOSHIBA Assist ■ TOSHIBA Presentation The starting application from the button can be changed.
TOSHIBA Zooming Utility	This utility allows you to enlarge or reduce the icon size on the Windows Desktop, or the zoom factor associated with specific supported applications.
TOSHIBA PC Diagnostic Tool	The TOSHIBA PC Diagnostic Tool will display basic system configuration information and allow the functionality of some of the computer’s built-in hardware devices to be tested.
TOSHIBA Password Utility	The TOSHIBA Password utility allows you to set a password in order to restrict access to the computer.

TOSHIBA Flash Cards	The TOSHIBA Flash Cards provide a quick way to modify selected system functions and to launch applications. ■ Hot key function ■ TOSHIBA utility launcher function
HW Setup	This utility allows you to customize your hardware settings according to the way you work with the computer and the peripherals you use.
TOSHIBA Accessibility	The TOSHIBA Accessibility utility provides support to movement impaired users when they need to use the TOSHIBA Hot-key functions. In use, the utility allows you to make the **FN** key "sticky", that is you can press it once, release it, and they press one of the "**F**" keys in order to access its specific function. When set, the **FN** key will remain active until another key is pressed.

TOSHIBA Tablet PC Extension

This section describes the pre-installed TOSHIBA Tablet PC features that come with the computer. To access these components, click **Start** -> **All Programs** -> **Tablet PC**.

TOSHIBA Rotation Utility	This utility controls the screen orientation setting for both Laptop mode and Tablet mode. You can set four types of orientation setting: ■ Primary landscape ■ Primary portrait ■ Secondary landscape ■ Secondary portrait The default setting of PC mode is Primary Landscape while that for Tablet mode is Primary Portrait.
TOSHIBA Accelerometer Utilities	When TOSHIBA Accelerometer Utilities is enabled, you can invoke the **Start** menu, switch active windows or launch predefined applications by shaking the computer vertically or horizontally, or by tilting it.

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, please refer to each utility's online manual, help files or README.TXT file.

DVD Video Player

This software is provided for playback of DVD Video.

For more information, please refer to the *TOSHIBA DVD PLAYER* section in Chapter 4, *Operating Basics*.

- *Frame dropping, audio skipping or out of synch audio and video may occur during playback of some DVD Video titles.*
- *Make sure to connect the computer's AC adaptor when playing a DVD Video. Power-saving features may interfere with smooth playback.*

Fingerprint Utility

This product has a fingerprint utility installed for the purpose of enrolling and recognizing fingerprints which can then be linked to a username and password in order to remove the need to input these details from the keyboard. Just by swiping an enrolled finger against the fingerprint sensor, the following functions will be enabled:

- Logon to Windows and access a security enabled homepage through Internet Explorer.
- Files and folders can be encrypted/decrypted and third party access to them is prevented.
- Disable the password-protected screen-saver when returning from a power-saving mode such as Sleep Mode.
- Authentication of the User Password and, if applicable, the HDD (Hard Disk Drive) Password when booting up the computer (Pre-OS Authentication).
- Single-Swipe Sign On feature

For more information, please refer to the *Using the Fingerprint Sensor* section in Chapter 4, *Operating Basics*.

TOSHIBA Face Recognition	TOSHIBA Face Recognition uses a face verification library to verify the face data of users when they log in to Windows. If the verification is successful, the user will be logged into Windows automatically. The user can thus avoid having to enter a password, which makes the login process easier. For more information, please refer to the *Using TOSHIBA Face Recognition* section in Chapter 4, *Operating Basics*.
Bluetooth Stack for Windows by Toshiba	This software enables communication between the computer and external Bluetooth devices such as printers and mobile phones. To access this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **Bluetooth**.

Bluetooth functions cannot be used in models that do not have a Bluetooth module installed

TOSHIBA SD Memory Boot Utility	The TOSHIBA SD Memory Boot Utility allows you to create a bootable SD memory card to start the system. You can boot TOSHIBA SD Memory Boot Utility from the menu bar as follows. Click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **SD Memory Boot Utility**.

SD Memory Card Format Utility and other SD functions are packaged into TOSHIBA SD Memory Utilities.

TOSHIBA SD Memory Card Format	This utility allows you to format an SD/SDHC memory card by the SD standard format. To access this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **SD Memory Card Format**.
TOSHIBA Assist	TOSHIBA Assist is a graphical user interface that provides access to specific tools, utilities and applications that make the use and configuration of the computer easier. To access this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **TOSHIBA Assist**.

TOSHIBA ConfigFree	TOSHIBA ConfigFree is a suite of utilities that improve the ease and control of communication devices and network connections, help in the identification of communication problems and allow the creation of profiles if you need to switch between different locations and communication networks. To access this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **ConfigFree**.
TOSHIBA Mic Effect	TOSHIBA Mic Effect provides you the Echo Canceller and the Microphone Array fuctions. For more instructions for this software, refer to the *Sound System* section in Chapter 4, *Operating Basics*.
TOSHIBA Disc Creator	You can create CDs and DVDs in a number of formats including audio CDs that can be played on a standard CD player, and data CDs/DVDs which can store copies of the files and folders on your computer's hard disk drive. This software can be used on models with a DVD Super Multi (Double Layer) Drive Kit II. To start this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **CD&DVD Applications** -> **Disc Creator**.
TOSHIBA DVD-RAM Utility	This utility has the function of Physical Format and Write-Protect to DVD-RAM. This utility is contained the setup module of TOSHIBA Disc Creator. To start this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **CD&DVD Applications** -> **DVD-RAM Utility**.
CD/DVD Drive Acoustic Silencer	This utility allows you to configure the read speed of the optical disc drive. You can either configure Normal Mode, which operates the drive at its maximum speed for quick data access, or Quiet Mode which runs audio CDs at single speed and which can lessen operational noise. It is ineffective with DVDs.

Windows Mobility Center	This section describes the Windows Mobility Center. Mobility Center is a utility for accessing several mobile PC settings quickly in one window. A default maximum of eight tiles are provided by the operating system, and the additional three tiles are added to your Mobility Center. ■ Lock Computer: This can be used to lock your computer without turning it off. This has the same function as the **Lock** button at the bottom of the right pane in the start menu. ■ TOSHIBA Assist: This can be used to open **TOSHIBA Assist** if it is already installed on your computer.
TOSHIBA Tablet Access Code Logon Utility	If a Windows password has been set, you can logon to the operating system by entering a handwriting signature into the dialog box using the Tablet PC Pen when prompted. To start this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **Tablet PC** -> **Tablet Access Code Logon Utility**.
TOSHIBA USB Sleep and Charge Utility	This utility is able to either enable or disable the USB Sleep and Charge function. Shows the positions of USB ports that support the USB Sleep and Charge function and displays the battery's remaining capacity. To start this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **USB Sleep and Charge**.
Trusted Platform Module (TPM)	The TPM (Trusted Platform Module) is a security encryption device for the hard disk drive. BIOS setup and Infineon TPMSoftware Professional Package must be configured in order to use TPM. For further information on how to set up and use this utility, please refer to the Infineon TPM Installation Guide from the C:\TOSAPINS\Infineon TPM Installation Guide.

To enable TPM through the BIOS setup:

1. *Turn on the computer while pressing the* **ESC** *key.*
2. *Press the* **F1** *key when directed.*
3. *Press the* **PGDN** *key.*
4. *Press the down arrow key until TPM is highlighted, then press the space bar to change the TPM status to Enabled.*
5. *Press the* **Y** *key to save the changes.*
6. *Press* **END** *and then press the* **Y** *key to accept the changes. The computer will restart.*

In order to change the **TPM** *setting when the* **Hide TPM** *setting is currently set to* **Yes**, *switch the* **Hide TPM** *setting from* **Yes** *to* **No**.

Optional devices

Optional devices can expand the computer's capabilities and its versatility. This section describes the connection or installation of the following devices:

To connect optional devices (such as USB device or External monitor) to the computer, be sure to check the shape and orientation of the connector before connecting.

Cards/memory

- PC Card
- Smart Card
- Bridge media slot
  - Secure Digital (SD) Card (SD memory card, SDHC memory card, miniSD Card, microSD Card)
  - Memory Stick (Memory Stick, Memory Stick PRO, Memory Stick PRO Duo)
  - xD picture card
  - MultiMediaCard
- Additional memory module

Peripheral devices

- HDD Kit (Serial-ATA)
- Ultra Slim Bay HDD Adaptor II
- External monitor
- USB FDD Kit
- eSATA
- i.LINK (IEEE1394)
- TOSHIBA Express Port Replicator

Other

- Security lock

PC Card

The computer is equipped with a single PC Card slot that can accommodate a Type II format card. Any PC Card that meets industry standards, either manufactured by TOSHIBA or another vendor, can be installed as the slot supports 16-bit PC Cards and 32-bit CardBus cards. For reference, CardBus supports the newer standard of 32-bit PC Cards and provides superior performance for the greater demands of applications such as multimedia data transmission.

PC Cards can sometimes become hot during computer operation. Before you remove a PC Card always wait for it to cool. You could get burned removing a hot PC Card.

The computer is equipped with either a PC Card slot or a Smart Card slot.

Inserting a PC Card

The Windows hot-install feature allows you to insert PC Cards while the computer is turned on.

Do not insert a PC Card while the computer is in Sleep Mode or Hibernation Mode as you may find that some cards do not work properly.

To insert a PC Card, follow the steps as detailed below:

1. Insert the PC Card into the PC Card slot on the side of the computer.
2. Press the PC Card gently to ensure a firm connection is made.

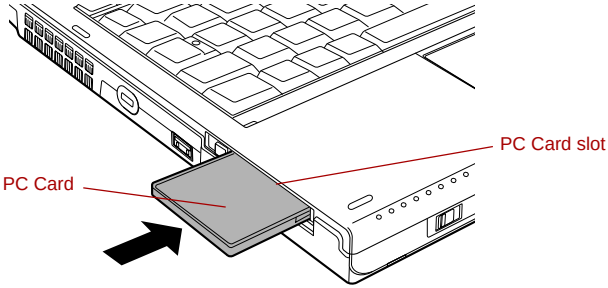


Figure 3-1 Inserting the PC Card

3. After inserting the PC Card, you should refer to its documentation and also check the configuration in Windows in order to ensure that it is correct.

Removing a PC Card

To remove a PC Card, follow the steps as detailed below:

1. Open the **Safely Remove Hardware** icon on the Windows Taskbar.
2. Point to **PC Card** and click the left Touch Pad control button.
3. Press the PC card eject button to extend it.

If the PC card is not inserted all the way, the eject button may not cause it to pop out sufficiently to allows it to be grasped. Be sure to push the PC card firmly into the computer and slide the eject button again.

4. Press the extended PC Card eject button in order to eject the PC Card partially out of the computer.
5. Grasp the PC Card and remove it.

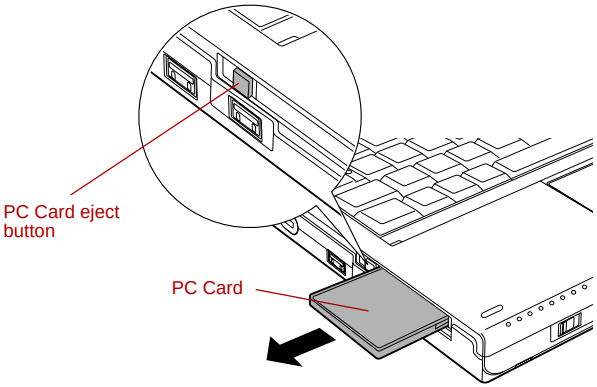


Figure 3-2 Removing the PC Card

Smart Card

The computer may be equipped with a single Smart Card slot that can accommodate a Type II format card.

A Smart Card is a credit card sized plastic card. An extremely thin integrated circuit (IC chip) is embedded into the card on which information can be recorded. These cards can be used for a wide variety of applications including telephone related and electronic monetary payments.

This section contains information on the proper use of the Smart Card slot, and it is strongly recommended that you read it before operating the computer.

- *Your computer supports ISO7816-3 asynchronous cards (support protocols are T=0 and T=1) with a working voltage of 5V.*
- *The computer is equipped with either a PC Card slot or a Smart Card slot.*

Inserting a Smart Card

The Smart Card slot is located on the left side of the computer. The Windows hot-install feature allows you to insert a Smart Card while the computer is turned on.

To install a Smart Card, follow the steps as detailed below:

1. Insert the Smart Card into the Smart Card slot with the metal connectors facing up.
2. Press the Smart Card gently to ensure a firm connection is made. The computer will identify the Smart Card and display an icon in the Windows Taskbar.

- *When inserting a Smart Card into the Smart Card slot, make sure to confirm that the card is oriented correctly before inserting.*
- *Insert the Smart Card until it reaches the end of the Smart Card slot. There will be about 2cm of the Smart Card sticking out of the Smart Card slot. Do not attempt to insert it further.*
- *Always remove the Smart Card from the Smart Card slot before moving the computer.*
- *Remove the Smart Card after use.*

Failure to follow these instructions may result in damage to the computer and/or damage to the Smart Card.

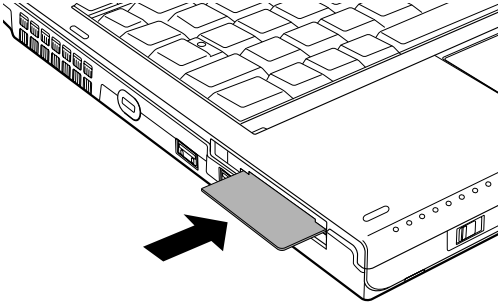


Figure 3-3 Inserting a Smart Card

3. After inserting the Smart Card, you should refer to its documentation and also check the configuration in Windows in order to ensure that it is correct.

Removing a Smart Card

To remove a Smart Card, follow the steps as detailed below:

1. Open the **Safely Remove Hardware** icon on the Windows Taskbar.

- *Before removing the Smart Card, confirm that the Smart Card is not working with any program or system.*
- *Be careful not to bend the Smart Card while removing it from the computer.*

2. Point to **Smart Card** and click the left Touch Pad control button.
3. Grasp the Smart Card and remove it.

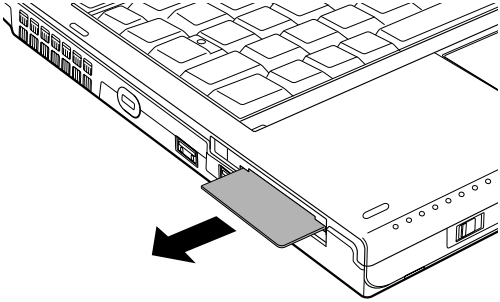


Figure 3-4 Removing a Smart Card

Bridge media slot

The computer is equipped with a Bridge 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 Bridge 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.*
- *Memory Stick Duo is not compatible with the Bridge media slot. Do not insert Memory Stick Duo into the slot or you may not be able to remove it. Data may be lost or damaged if you use any memory media other than those supported.*

- *This Bridge media slot supports the following memory media.*
  - *Secure Digital (SD) Card (SD memory card, SDHC memory card, miniSD Card, microSD Card)*
  - *Memory Stick (Memory Stick, Memory Stick PRO, Memory Stick PRO Duo)*
  - *xD picture card*
  - *MultiMediaCard (MMC)*
- *Please note that an adaptor is required to use miniSD/microSD Card.*
- *Please note that an adaptor is required to use Memory Stick PRO Duo.*
- *Please note that not all memory media have been tested and verified to work correctly. Therefore, it is not possible to guarantee that all memory media will operate properly.*
- *The slot does not support Magic Gate functions.*

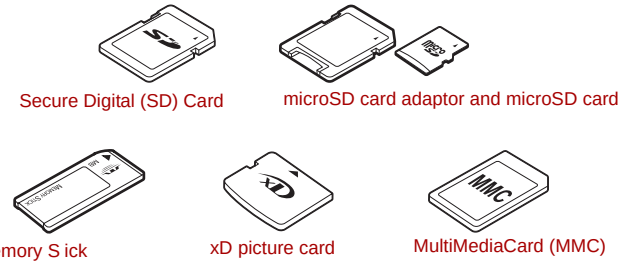


Figure 3-5 Examples of memory media

Memory media

This section provides the important safety precautions in order to handle your memory media.

Points to note about the SD/SDHC memory card

SD/SDHC 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 playback protected material on another computer or other device, and you may not reproduce any copyrighted material except for your personal enjoyment.

Below is a simple explanation for distinguishing SD memory cards from SDHC memory cards.

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

- *The SD memory card logo is ( ).*
- *The SDHC memory card logo is ( ).*

- The maximum capacity of SD memory cards is 2GB. The maximum capacity of SDHC memory cards is 16GB.

Card Type	Capacities
SD	8MB, 16MB, 32MB, 64MB, 128MB, 256MB, 512MB, 1GB, 2GB
SDHC	4GB, 8GB, 16GB

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 an SD/SDHC memory card

SD/SDHC memory cards are sold already formatted in conformity to specific standards. If you format the SD/SDHC memory card again, be sure to format it with the TOSHIBA SD Memory Card Format utility, not with the format command provided within Windows.

In order to run the TOSHIBA SD Memory Card Format utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **SD Memory Card Format**.

The TOSHIBA SD Memory Card Format utility does not format the protected area of the SD/SDHC memory card - should you need to format all areas of the memory card, including the protected area, you will need to obtain an appropriate application that applies the copy protection system.

Media care

Observe the following precautions when handling the card.

Card care

- 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.
- Do not leave a card partially inserted in the slot. Press the card until you hear it click into place.

Memory card care

- 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 backup 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

The following memory media have a function for protect.

- SD Card (SD memory card, SDHC memory card)
- Memory Stick (Memory Stick, Memory Stick PRO, Memory Stick PRO Duo)
- MultiMediaCard (MMC)

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

Inserting a memory media

The following instructions apply to all types of supported media devices. To insert a memory media, follow the steps as detailed below:

1. Turn the memory media so that the contacts (metal areas) are face down.
2. Insert the memory media into the Bridge media slot on the side of the computer.
3. Press the memory media gently to ensure a firm connection is made.

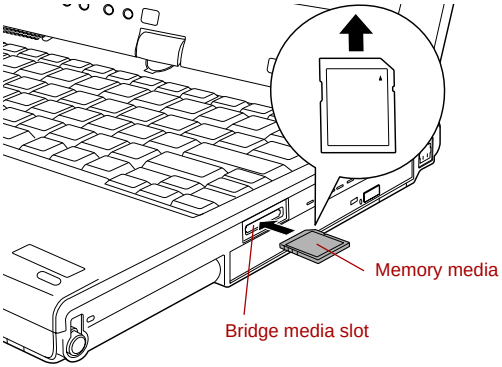


Figure 3-6 Inserting a memory media

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

Removing memory media

The following instructions apply to all types of supported media devices. To remove memory media, follow the steps as detailed below:

1. Open the **Safely Remove Hardware** icon on the Windows Taskbar.
2. Point to **memory media** and click the left Touch Pad control button.
3. Press the memory media to partially extend it out of the computer.
4. Grasp the media and remove it.

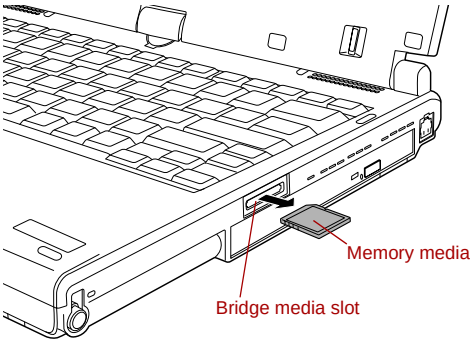


Figure 3-7 Removing memory media

- *Make sure the* **Bridge Media slot** *indicator is out before you remove the memory media or turn off the computer's power. If you remove the memory media or turn off the power while the computer is accessing the memory media, you may 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 Bridge Media slot.*

Additional memory module

This computer is equipped with two memory slots; Slot A is beneath the keyboard and Slot B is in the underside of the computer.

You can install additional memory into the computer in order to increase the amount of system memory that is available. This section describes how to install and remove optional memory modules.

- *You should place a mat beneath the computer in order to prevent the computer's lid from becoming scratched or damaged when you are installing/replacing the memory module. In this instance you should avoid mats that are made of materials that hold or generate static electricity.*
- *When installing or removing a memory module, you must ensure that you do not touch any other internal areas of the computer.*

- *Use only memory modules approved by TOSHIBA.*
- *Do not try to install or remove a memory module under the following conditions.*
  a. *The computer is turned on.*
  b. *The computer was shut down in either Sleep or Hibernation Mode.*
  c. *Wake-up on LAN is enabled.*
  d. *Wake-up on Wireless LAN is enabled.*
  e. *The wireless communication switch is turned on.*
- *Be careful not to let screws or other foreign matter fall into the computer. It could cause malfunction or electric shock.*
- *Additional memory module is a precision electronic component that may be fatally damaged by static electricity. Since the human body can carry static electricity, it is important that you discharge yourself before touching or installing any additional memory modules. To discharge your body's static electricity, simply touch any metal close to you with bare hands.*

Point to note about memory module error

If you install a memory module that is not compatible with the computer, the **Power** indicator will flashes (on for 0.5 seconds, off for 0.5 seconds) in the following ways;

- If there is an error in only Slot A or no memory module is inserted in Slot A: repeatedly flashes orange twice, then green.
- If there is an error in Slot B: repeatedly flashes orange, then green twice.
- If there are errors in both Slot A and Slot B: repeatedly flashes orange twice, then green twice.

In all instances you should shut down the computer and remove the incompatible module(s).

Use an adequate screwdriver to remove and fasten the screws - the use of an incorrect screwdriver can damage the screw heads.

Installing a memory module (Slot A)

To install a memory module, follow the steps as detailed below:

1. Set the computer to Boot Mode and turn its power off - make sure the **Power** indicator is off (refer to the *Turning off the power* section in Chapter 1, *Getting Started*, if required).
2. Remove the AC adaptor and all cables and peripherals connected to the computer.
3. Turn the computer upside down and remove the battery pack (refer to *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required).
4. Turn your computer over.
5. Open the display panel so that the screen faces directly upward.
6. Slip your finger under a notch at the end of the keyboard brace and lift up to release latches and remove the keyboard brace.
7. Remove two screws securing the keyboard.

Use a point size 0 Phillips screwdriver.

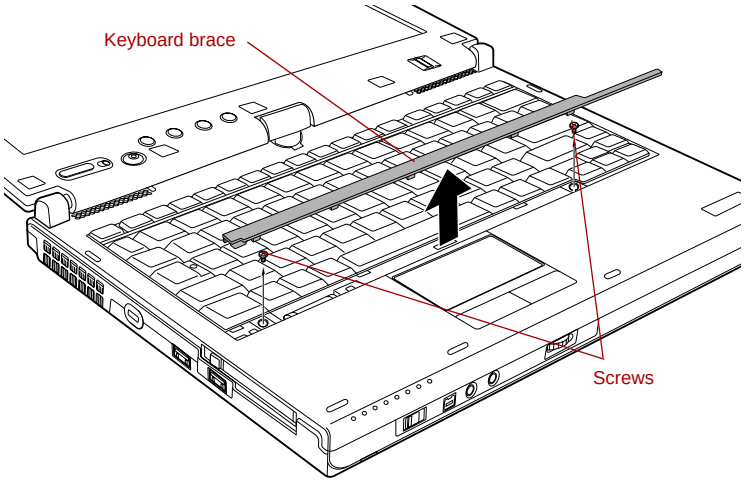


Figure 3-8 Removing the keyboard brace and two screws

8. Lift up the back of the keyboard, rotate it toward you and lay in face down on the palm rest.

- *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.*
- *When you move the keyboard forward, do not touch the keys. Doing so could cause misalignment. Hold the keyboard by the sides and lay it gently on the palm rest.*
- *The keyboard is connected to the computer by a keyboard ribbon cable. Be careful not to apply tension to this cable when you lift up the keyboard. Do not try to disconnect this cable.*

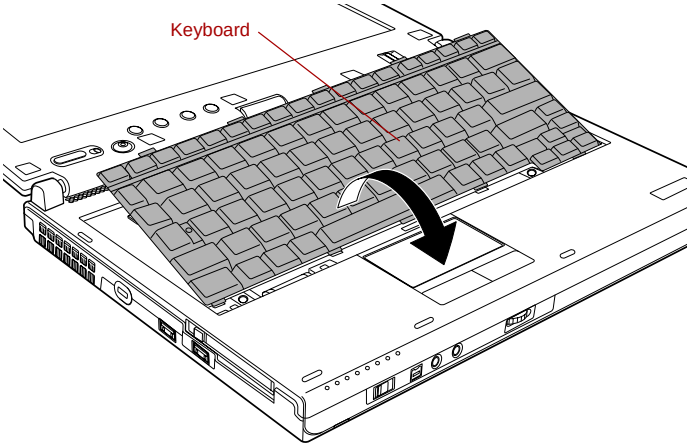


Figure 3-9 Rotate the keyboard

9. Remove the two screws and take off the memory module cover.

Use a point size 1 Phillips screwdriver.

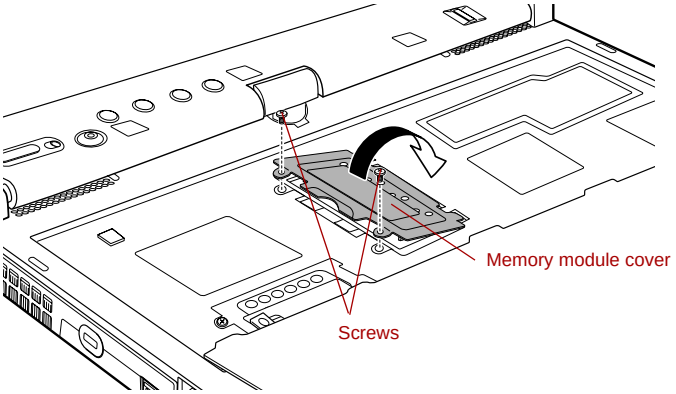


Figure 3-10 Removing the memory module cover

10. Align the notch of the memory module with that of the memory module slot and gently insert the module into the slot at about a 45 degree angle before holding it down until the latches on either side snap into place.

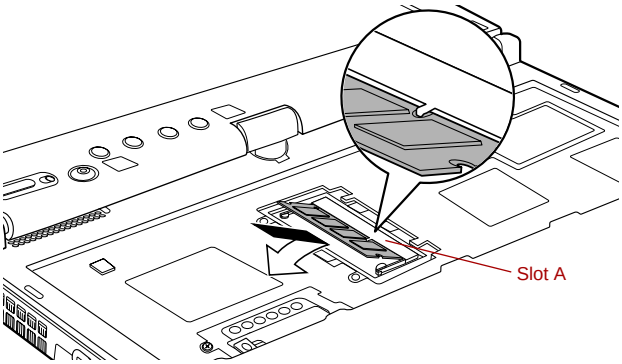


Figure 3-11 Installing the memory module

- *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.*
- *Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*
- *The memory module cover will be hot after using the computer for long periods of time. Exercise caution when removing.*

- *Slot A is reserved for the first memory module. Use slot B for expansion memory modules. If only one module is installed, use slot A.*
- *When inserting or removing memory modules, make sure to use the correct slot (A or B).*
- *Align the grooves along the edges of the memory module with the locking tabs on the connector and insert the memory module into the connector firmly - if you find it difficult to install the memory module, gently prise the locking tabs outwards using the tip of your finger. Please also ensure that you hold the memory module along its left and right hand edges - the edges with the grooves in.*

11. Screw in the two screws and replace the memory module cover.

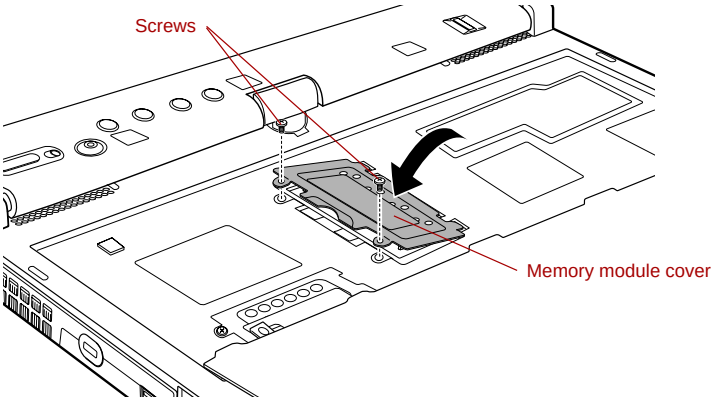


Figure 3-12 Seating the memory module cover

12. Insert the tabs on the front of the keyboard into the corresponding notches on the computer and place the keyboard down.

When seating the keyboard, be sure to connect the circuit board if the keyboard ribbon cable was pulled out while you were removing the keyboard.

13. Replace the keyboard and secure it using the two screws.

Be sure to use all two screws removed in step 7. Make sure no screw was dropped into the computer. Make sure no foreign matter can be found inside the computer.

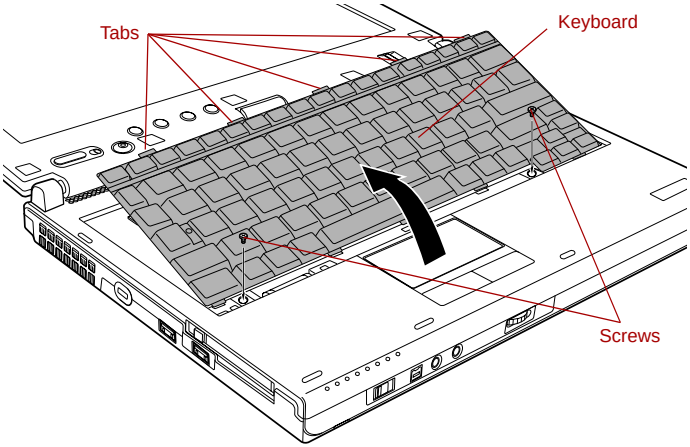


Figure 3-13 Replace the keyboard

14. Set the keyboard brace into its groove and hold down to secure the latches.
15. Install the battery pack. Refer to *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, for details.
16. Turn your computer over.
17. Turn the computer on and make sure the added memory is recognized - to confirmed it, **Start** -> **Control Panel** -> **System and Maintenance** -> **System** icon.

Removing a memory module (Slot A)

The slot A is reserved for main memory. Use the slot B for expanded memory. If only one card is installed, use the slot A.

To remove the memory module, follow the steps as detailed below:

1. Set the computer to Boot Mode and turn its power off - make sure the **Power** indicator is off (refer to the *Turning off the power* section in Chapter 1, *Getting Started*, if required).
2. Remove the AC adaptor and all cables and peripherals connected to the computer.
3. Turn the computer upside down and remove the battery pack (refer to *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required).
4. Follow steps 4 through 9 in *Installing a memory module (Slot A)* to appear the memory module.
5. Push the latches to the outside to release the memory module. A spring will force one end of the memory module up.

6. Grasp the sides of the memory module and pull it out.

- *If you use the computer for a long time, the memory modules and the circuits located close to the memory modules will become hot. In this case, let them cool to room temperature before you replace them. Or you will get burnt if you touch any of them.*
- *Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*

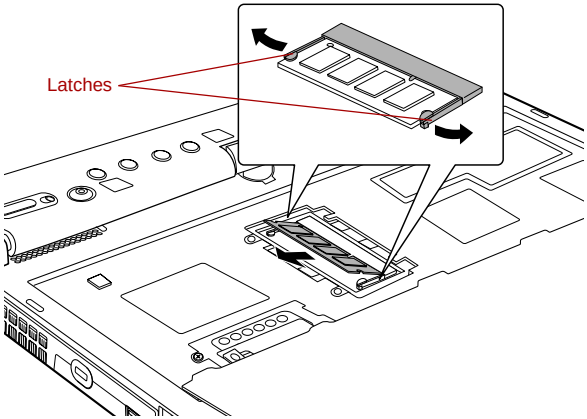


Figure 3-14 Removing the memory module

7. Rotate the keyboard back into place and secure the keyboard brace as described in the previous section.
8. Install the battery pack. Refer to *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, for details.
9. Turn your computer over.

Installing a memory module (Slot B)

To install a memory module, follow the steps as detailed below:

1. Set the computer to Boot Mode and turn its power off - make sure the **Power** indicator is off (refer to the *Turning off the power* section in Chapter 1, *Getting Started*, if required).
2. Remove the AC adaptor and all cables and peripherals connected to the computer.
3. Close the display panel.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

4. Turn the computer upside down and remove the battery pack (refer to the *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required).
5. Loosen the screw securing the memory module cover in place - please note that this screw is attached to the cover in order to prevent it from being lost.

Use a point size 1 Phillips screwdriver.

6. Slide your fingernail or a thin object under the cover and lift it off.

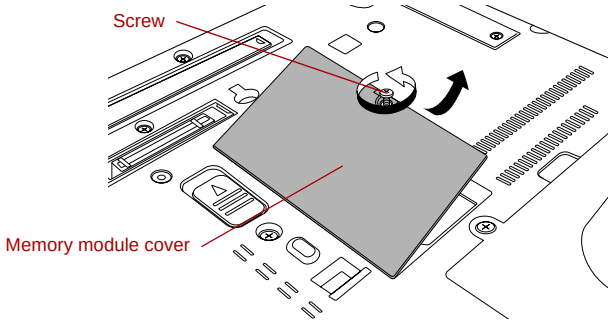


Figure 3-15 Removing the memory module cover

7. Align the notch of the memory module with that of the memory module slot and gently insert the module into the slot at about a 45 degree angle before holding it down until the latches on either side snap into place.

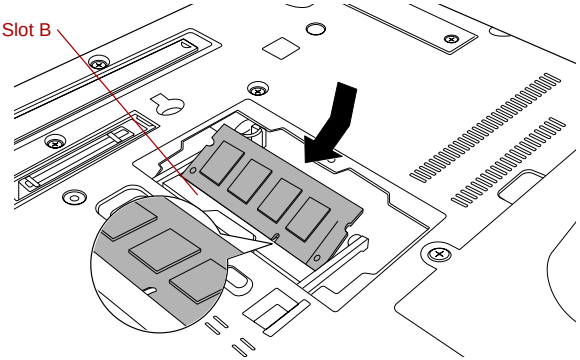


Figure 3-16 Seating the memory module

- *Never allow metal objects, such as screws, staples and paper clips, to enter the computer. Foreign metal objects can create a short circuit, which can cause computer damage and fire, possibly resulting in serious injury.*
- *Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*

Align the grooves along the edges of the memory module with the locking tabs on the connector and insert the memory module into the connector firmly - if you find it difficult to install the memory module, gently prise the locking tabs outwards using the tip of your finger.

Please also ensure that you hold the memory module along its left and right hand edges - the edges with the grooves in.

8. Seat the memory module cover in place and secure it with one screw.

Take care to ensure that the memory module cover is firmly closed.

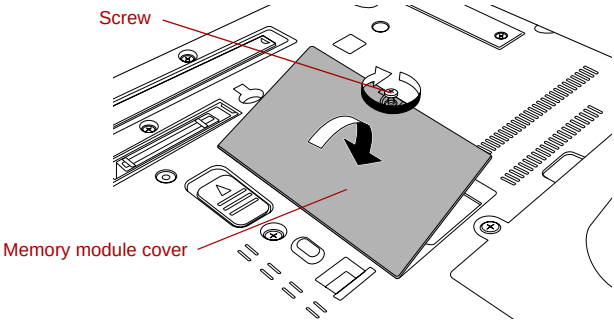


Figure 3-17 Seating the memory module cover

9. Install the battery pack - refer to *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required.
10. Turn your computer over.
11. Turn the computer on and make sure the added memory is recognized - to confirmed it, **Start** -> **Control Panel** -> **System and Maintenance** -> **System** icon.

Removing a memory module (Slot B)

To remove the memory module, follow the steps as detailed below:

1. Set the computer to Boot Mode and turn its power off - make sure the **Power** indicator is off (refer to the *Turning off the power* section in Chapter 1, *Getting Started*, if required).
2. Remove the AC adaptor and all cables and peripherals connected to the computer.
3. Close the display panel.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

4. Turn the computer upside down and remove the battery pack (refer to *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required).
5. Loosen the screw securing the memory module cover in place - please note that this screw is attached to the cover in order to prevent it from being lost.
6. Slide your fingernail or a thin object under the cover and lift it off.
7. Push the latches away from the module in order to release it - a spring will force one end of the module up at an angle.
8. Grasp the memory module by its edges and remove it from the computer.

- *If you use the computer for a long time, the memory modules and the circuits locating close to the memory modules will become hot. In this case, let them cool to room temperature before you replace them. Or you will get burnt if you touch any of them.*
- *Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*

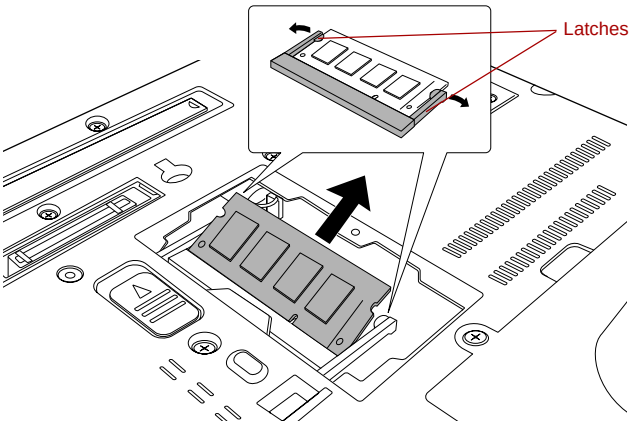


Figure 3-18 Removing the memory module

9. Seat the memory module cover in place and secure it with one screw.

Take care to ensure that the memory module cover is firmly closed.

10. Install the battery pack - refer to *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required.
11. Turn your computer over.

HDD Kit (Serial-ATA)

An extra hard disk drive expands the flexibility of your system and allows you to carry your data separately without having to carry the computer.

The HDD Kit (Serial-ATA) can either replace the hard disk drive installed inside the computer or be connected to the Ultra Slim Bay HDD Adaptor II (optional).

Use a point size 1 Phillips screwdriver to remove and fasten the screws - the use of an incorrect screwdriver can damage the screw heads.

Removing the hard disk drive pack

To remove the hard disk drive pack, follow the steps as detailed below:

1. Set the computer to Boot Mode and turn its power off - make sure the **Power** indicator is off (refer to the *Turning off the power* section in Chapter 1, *Getting Started*, if required).
2. Remove the AC adaptor and all cables and peripherals connected to the computer.
3. Close the display panel.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

4. Turn the computer upside down and remove the battery pack (refer to *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required).
5. Loosen two screws securing the hard disk drive cover in place.

6. Lift the cover up and out, and remove it from the computer.

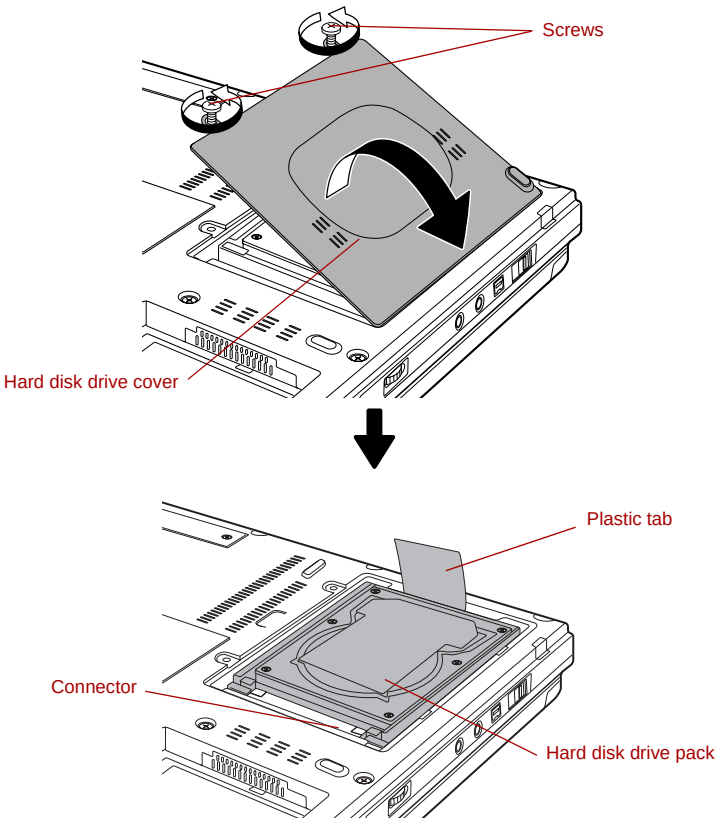


Figure 3-19 Removing the hard disk drive cover

7. Follow the below steps to remove the hard disk drive pack as shown in below figure.

Never allow metal objects, such as screws, staples and paper clips, to enter the computer. Foreign metal objects can create a short circuit, which can cause computer damage and fire, possibly resulting in serious injury.

a. Hold the plastic tab and lift it carefully so that the hard disk drive pack slopes. Do not pull the cable.

b. Grasp the edges of the connector with one hand and the edges of the hard disk drive pack with the other hand.

c. Hold them firmly and remove the hard disk drive pack from the connector. Please be careful not to pull the connector cables when you remove the hard disk drive pack.

- *Be sure that you grasp the hard disk drive pack by its edges when you remove/install the hard disk drive pack.*
- *Do not pull the connector cables when you remove/install the hard disk drive pack.*

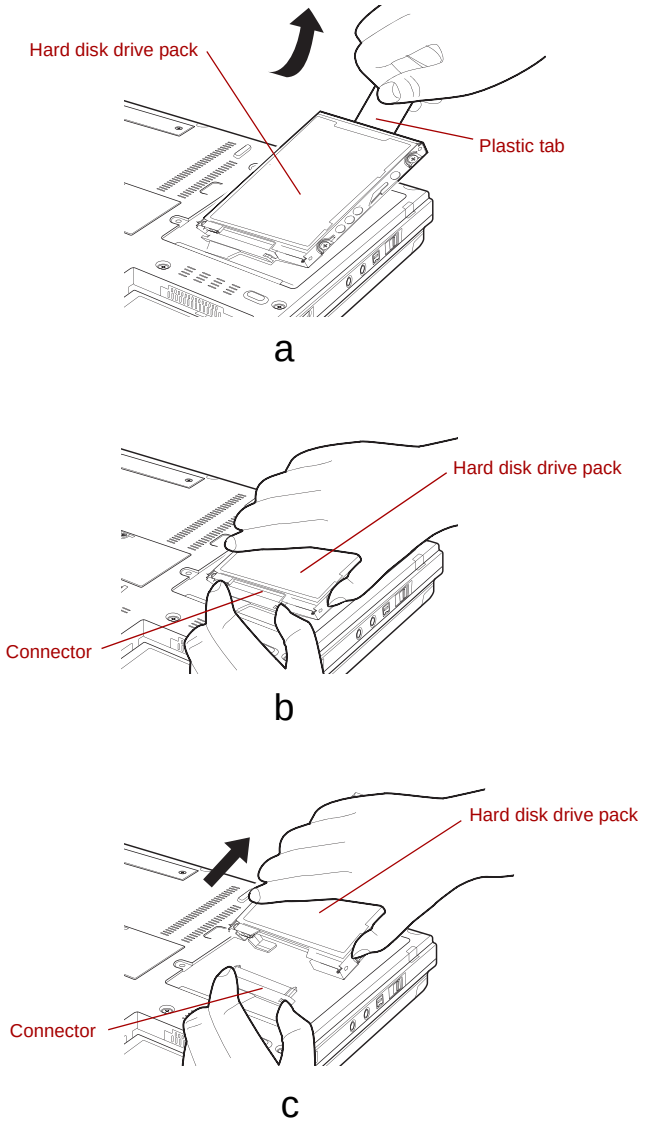


Figure 3-20 Removing the hard disk drive pack

Installing the hard disk drive pack

To install the hard disk drive pack, follow the steps as detailed below:

1. Grasp the edges of the connector with one hand and the edges of the hard disk drive pack with the other hand.
2. Connect the hard disk drive to the connector. Ensure they are connected firmly. Please be careful not to pull the connector cables when you install the hard disk drive pack.

- *Be sure that you grasp the hard disk drive pack by its edges when you remove/install the hard disk drive pack.*
- *Do not pull the connector cables when you remove/install the hard disk drive pack.*

3. With the connector connected, lower the hard disk driver down to the storage position.

Never allow metal objects, such as screws, staples and paper clips, to enter the computer. Foreign metal objects can create a short circuit, which can cause computer damage and fire, possibly resulting in serious injury.

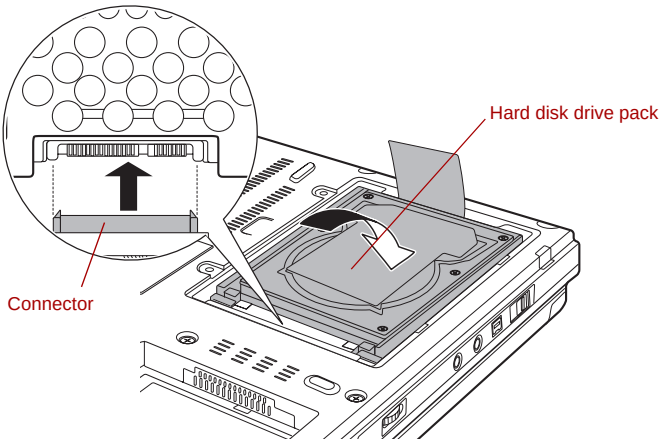


Figure 3-21 Installing the hard disk drive pack

4. Seat the cover and press down until the latches click into place.
5. Secure the cover with two screws.
6. Turn your computer over.

Ultra Slim Bay HDD Adaptor II (optional)

You can increase your computer's data storage capacity by installing an additional hard disk drive in the Ultra Slim Bay.

To install a hard disk drive in the Ultra Slim Bay HDD Adaptor II follow the steps below.

1. Slide the lock to the unlock position and open the lid.

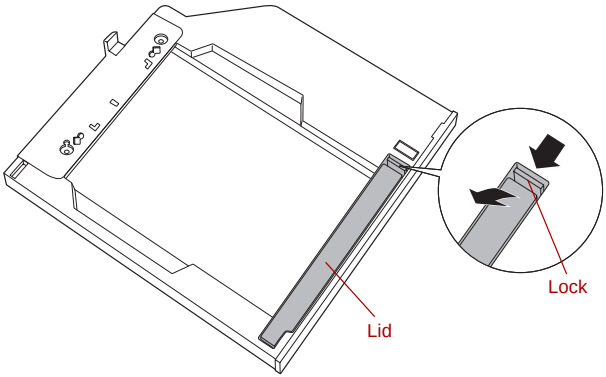


Figure 3-22 Opening the lid

2. Insert the hard disk drive in the Ultra Slim Bay HDD Adaptor II and push forward to ensure a firm connection.

Tuck the Plastic tab underneath the hard disk drive.

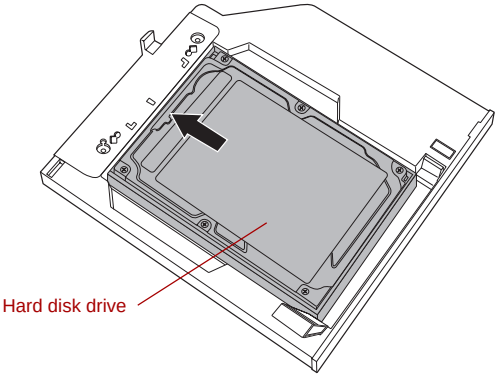


Figure 3-23 Inserting the hard disk drive

3. Close the lid and slide the lock to the lock position.

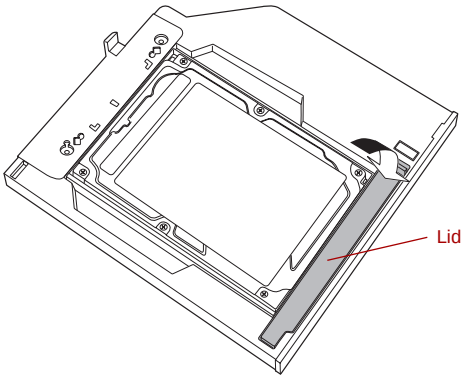


Figure 3-24 Closing the lid

For details on inserting the Ultra Slim Bay HDD Adaptor II in the computer's Ultra Slim Bay slot, refer to Chapter 4, *Operating Basics*.

External monitor

An external analog monitor can be connected to the external monitor port on the computer.

Connecting the monitor cable

To connect a monitor, follow the steps as detailed below:

1. Turn the computer's power off.
2. Connect the monitor cable to the external monitor port and tighten the screws on the left and right hand side of the connector as required.

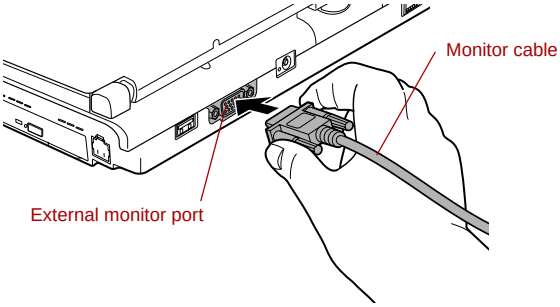


Figure 3-25 Connecting the monitor cable to the external monitor port

3. Turn the external monitor's power on.
4. Turn the computer's power on.

When you turn on the power, the computer will automatically recognize the monitor and determine whether it is a color or monochrome device. In the event that you find that there are issues getting an image displayed on the correct monitor, you should consider using the **FN** + **F5** hot key to change the display settings (if you then disconnect the external monitor before you turn the computer's power off, be sure to press **FN** + **F5** hot key again to switch to the internal display).

Please refer to Chapter 5, *The Keyboard*, for further details on using hot keys to change the display setting.

Do not disconnect the external monitor while in Sleep or Hibernation Mode. Turn off the computer before disconnecting the external monitor.

USB *FDD Kit*

The USB floppy diskette drive accommodates either a 1.44MB or 720KB floppy diskette and connects to one of the computer's USB ports.

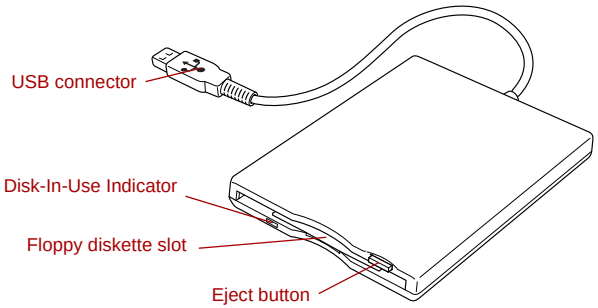


Figure 3-26 The USB floppy diskette drive

Connecting the USB floppy diskette drive

To connect the drive, plug the floppy diskette drive's USB connector into a computer's USB port.

Make sure the connector is properly aligned with the socket. Do not try to force the connection, doing so can damage the connecting pins.

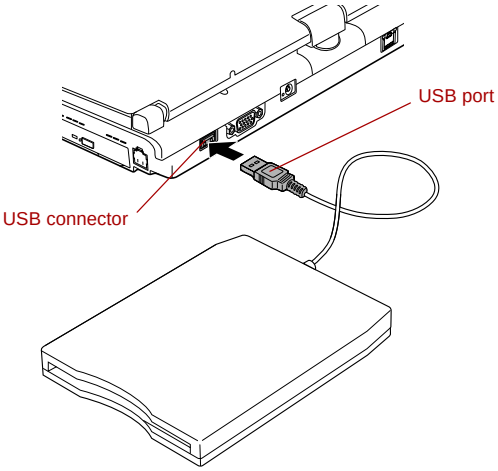


Figure 3-27 Connecting the USB floppy diskette drive

If you connect the USB floppy diskette drive after the computer has already been turned on, it will take about ten seconds for it to be recognized by the computer. Do not attempt to disconnect and reconnect the drive before this period has elapsed.

Disconnecting the USB floppy diskette drive

When you have finished using the USB floppy diskette drive, you can follow the procedures below in order to disconnect it:

1. Wait for the Disk-In-Use Indicator light to go out to make sure all floppy diskette activity has stopped.

If you disconnect the USB floppy diskette drive or turn off the power while the computer is accessing the drive you may lose data or damage the floppy diskette or the drive.

2. Click the **Safely Remove Hardware** icon on the Windows Taskbar.
3. Click the USB floppy diskette drive device that you want to remove.
4. Carefully pull the floppy diskette drive's USB connector out from within the computer's USB port.

eSATA (External Serial ATA)

An device corresponding to eSATA function can be connected to the eSATA/USB combo port on the computer.

Connecting the eSATA device

To connect an eSATA device, follow the steps as detailed below:

1. Connect an eSATA cable to the eSATA/USB combo port.

Make sure the connector is properly aligned with the socket.
Do not try to force the connection, doing so can damage the connecting pins.

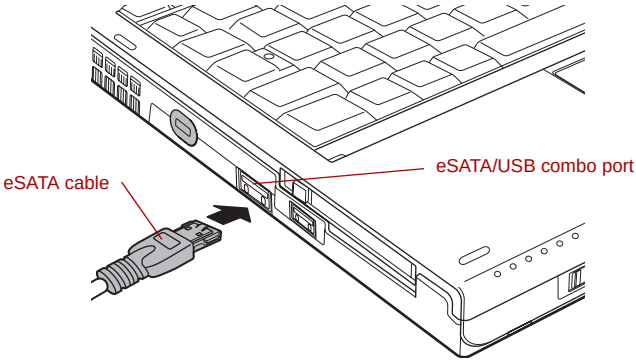


Figure 3-28 Connecting an eSATA cable to the eSATA/USB combo port

- *A connected eSATA device may not be recognized if it is connected to the computer's eSATA/USB combo port while the computer is in Sleep Mode or Hibernation Mode. If this occurs, disconnect the eSATA device and then reconnect the device while the computer is turned on.*
- *If you connect an eSATA device after the computer has already been turned on, it will take about ten seconds for it to be recognized by the computer.*
  Do not attempt to disconnect and reconnect the drive before this period has elapsed.

Disconnecting an eSATA device

When you have finished using an eSATA device, you can follow the procedures below in order to disconnect it:

1. Wait for the indicator light of an eSATA device to go out to make sure all activity has stopped.

If you disconnect an eSATA device or turn off the power while the computer is accessing the drive you may lose data or damage an eSATA device or the drive.

2. Click the **Safely Remove Hardware** icon on the Windows Taskbar.
3. Click an eSATA device that you want to remove.
4. Carefully pull an eSATA device's eSATA/USB combo connector out from within the computer's eSATA/USB combo port.

i.LINK (IEEE1394)

i.LINK (IEEE1394) is used for high-speed data transfer for a range of compatible devices such as:

- Digital video cameras
- Hard disk drives
- MO drives
- Writable optical disc drives

i.LINK uses a four-pin connector, which does not carry any electric current. External devices will need their own power supply to operate.

Precautions

- Make a back-up of your data before transferring it to the computer. There is a possibility that the original data will be damaged. There is a particular risk that some frames will be deleted in the case of digital video transfer. TOSHIBA assumes no liability for such loss of data.
- Do not transfer data in areas where static electricity is easily generated or in areas subjected to electronic noise. Data can be destroyed.
- If you are transferring data through an IEEE1394 hub, do not connect or disconnect other devices from the hub during data transfer. There is a likelihood that data will be damaged. Connect all devices to the hub before you turn on the computer's power.
- You may not use any copyrighted video or music data copied from a video camera except for your personal enjoyment.
- If you connect/disconnect an i.LINK device to/from another i.LINK device that is currently exchanging data with the computer, data frames might be dropped.
- Make sure data transfer has ended or turn off the computer, before you:
  - Connect/disconnect an i.LINK device to/from the computer.
  - Connect/disconnect an i.LINK device to/from another i.LINK device that is connected to the computer.

Connecting the i.LINK (IEEE1394) cable

To connect the i.LINK (IEEE1394) cable, follow the steps as detailed below:

1. Make sure the connectors are properly aligned and plug the i.LINK (IEEE1394) cable into the computer.

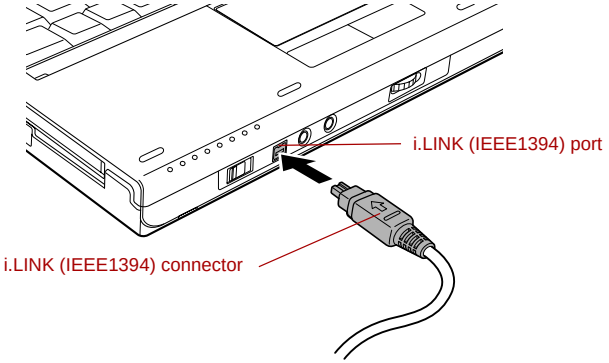


Figure 3-29 Connecting the i.LINK (IEEE1394) cable into the computer

2. Plug the other end of the cable into the device.

Note the following when you use i.LINK:

- You may need to install drivers for your i.LINK devices.
- Not all i.LINK devices have been tested. Therefore, compatibility with all i.LINK devices cannot be guaranteed.
- Some devices might not support sleep or automatic off functions.
- Do not connect or disconnect an i.LINK device while it is using an application or when the computer is automatically shutting it down to save power. Data might be destroyed.

Disconnecting the i.LINK (IEEE1394) cable

To disconnect the i.LINK (IEEE1394) cable, follow the steps as detailed below:

1. Open the **Safely Remove Hardware** icon on the Windows Taskbar.
2. Point to **i.LINK (IEEE1394) device** and click.
3. Disconnect the cable from the computer then from the i.LINK device.

Refer also to the documentation that came with your i.LINK device.

TOSHIBA Express Port Replicator

The TOSHIBA Express Port Replicator connects directly to the docking interface on the underside of the computer. The AC adaptor connects the TOSHIBA Express Port Replicator to a power source.

The computer must be configured properly before connecting to a LAN. Logging onto a LAN using the computer's default settings could cause a malfunction in LAN operation. Check with your LAN administrator regarding set-up procedures.

- *You must connect the AC adaptor before you connect to a TOSHIBA Express Port Replicator.*
- *When a TOSHIBA Express Port Replicator is connected to the computer, you can not use the following computer's ports: LAN jack, DC IN 15V jack and External monitor port.*
- *When connecting an AC Adaptor to the TOSHIBA Express Port Replicator, use only the AC Adaptor included with TOSHIBA Express Port Replicator. Do not use the computer's AC Adaptor.*

The following ports are available on the TOSHIBA Express Port Replicator.

- RJ45 LAN jack
- External monitor port
- DC IN 15V jack
- Security lock slot
- Universal Serial Bus 2.0 port (four)
- DVI port

- *As the port operation of all DVI (Digital Visual Interface) monitors has not been confirmed, some DVI monitors may not function properly.*
- *Set the TOSHIBA Express Port Replicator's Slide Adjuster to SLIDE position #4 when connecting this computer to the TOSHIBA Express Port Replicator. Refer to the TOSHIBA Express Port Replicator User's Manual for more details on connection methods.*

Security lock

A security locks enable you to anchor your computer a desk or other heavy object in order to help prevent unauthorized removal or theft. The computer has a security lock slot on its left 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. Please 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, follow the steps as detailed below:

1. Turn the computer so its left hand side faces you.
2. Align the security cable with the 'lock hole' and secure it in place.

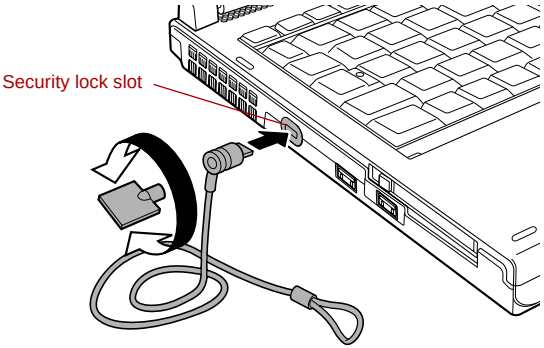


Figure 3-30 Security lock

Optional accessories

You are able to add a number of options and accessories in order to make your computer even more powerful and convenient to use. For reference, the following list details some of the items that are available from your reseller or TOSHIBA dealer:

DDR2-800 Memory Module	A 512MB, 1,024MB, 2,048MB or 4,096MB memory module (DDR2-800) can easily be installed in the computer.
Universal AC Adaptor	If you frequently use your computer at more than one site, it may be convenient to purchase an additional AC adaptor to be kept at each site in order to remove the need to always carry the adaptor with you.

Battery Pack	An additional battery pack can be purchased for use as either a spare or replacement. Please refer to Chapter 6, *Power and Power-Up Modes*, for further information.
Slice Expansion Battery	This battery pack increases your computer's operating time when a main battery pack is also installed. It is connectable to the Docking port of the computer.
Slice Expansion Battery adaptor	The Slice Expansion Battery adaptor is used to connect with the Battery Charger in order to charge a Slice Expansion Battery.
Battery Charger	The optional battery charger allows you to charge extra battery packs outside of having to use the computer.
USB FDD Kit	The USB floppy diskette drive accommodates either a 1.44MB or 720KB floppy diskette through connection to one of the computer's USB ports. In use, please be aware that, while you cannot format 720KB floppy diskettes under Windows Vista®, you are able to read and write to diskettes that have already been formatted.
HDD Kit (Serial-ATA)	You can increase your computer's data storage capacity with additional hard disk drive.
TOSHIBA Express Port Replicator	The TOSHIBA Express Port Replicator provides the ports available on the computer in addition to a digital visual interface (DVI) port, External monitor port, Universal Serial Bus port (USB2.0) x 4, LAN jack.
Tablet PC Pen	Tablet PC Pens can be purchased from your TOSHIBA dealer for use as spare items (spare pen tips and a tip draw-out tool are included).
Reserve Pen	Reserve Pen can be purchased from your TOSHIBA dealer. Use the Reserve Pen in place of the Tablet PC Pen if the Tablet PC Pen is lost or broken.

Ultra Slim Bay options

The following modules can be installed in the Ultra Slim Bay.

Ultra Slim Bay HDD Adaptor II	An adaptor lets you install an optional hard disk drive described in *Ultra Slim Bay HDD Adaptor II (optional)*.
Ultra Slim Bay DVD Super Multi (Double Layer) Drive Kit II	Refer to the *Hardware* section for details.

Chapter 4

Operating Basics

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

Pointing Devices

The pointing devices of this computer vary from model to model.

- Digitizer screen model: The Touch Pad and the Tablet PC Pen which comes with the computer can be used as a pointing device.
- Digitizer and touch screen model: The Touch Pad and Tablet PC Pen which comes with the computer or a finger can be used as pointing devices.

Using the Touch Pad

To use the Touch Pad, simply touch and move your fingertip across it in the direction you want the on-screen pointer to go.

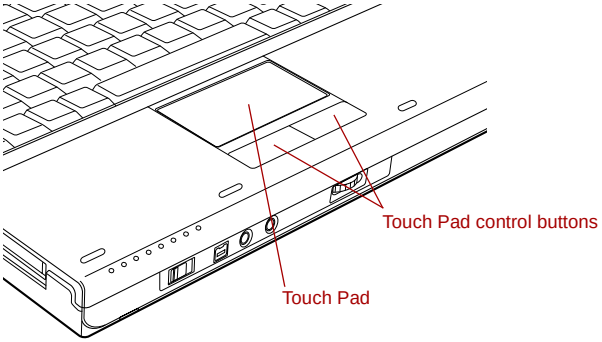


Figure 4-1 Touch Pad and Touch Pad control buttons

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.

You can also tap the Touch Pad to perform functions similar to those of the left button on a standard mouse.

Click: Tap once

Double-click: Tap twice

Drag and drop: Tap to select the item(s) you want to move, leave your finger on the Touch Pad after the second tap and then move the item(s) to their new destination.

Using the Tablet PC Pen and Reserve Pen

You can use the Tablet PC Pen to execute actions and enter data. Hold the Tablet PC Pen in a natural position and tap, press or trace on the screen lightly.

Some computers in the series are equipped with a Tablet PC Pen and a Reserve Pen.

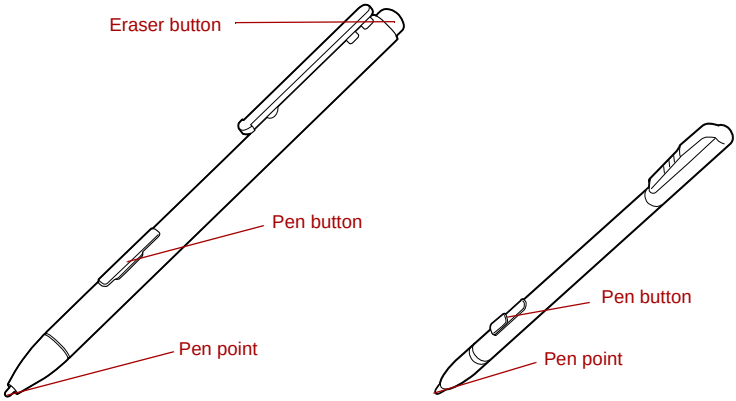


Figure 4-2 The Tablet PC Pen (left) and Reserve Pen (right)

Eraser button	You can use this button as an eraser when using a graphics software application. Text based software application enable you to select and delete characters with a one-touch action.
Pen button	Provides the same function as clicking the right Touch Pad control button.
Pen point	Provides the same function as clicking the left Touch Pad control button.

Observe the following precautions on the handling of the Tablet PC Pen.

- *In order to avoid damages to the display screen, please refrain from doing anything other than the specified operation methods. Failure to do so could cause a malfunction or characteristic deterioration.*
- *Do not tap or press the Tablet PC Pen forcefully against the display as this could damage the Tablet PC Pen and the screen itself.*
- *Avoid using or keeping the Tablet PC Pen in areas where the temperature can change rapidly or in places, such as a car, where the Tablet PC Pen is exposed to direct sunlight. Store the Tablet PC Pen without any pressure being applied to the buttons. Failure to do so could cause a malfunction or characteristic deterioration.*
- *The Tablet PC Pen is composed of precision parts. Do not drop the Tablet PC Pen. Strong impact causes a malfunction or characteristic deterioration.*
- *Do not apply excessive force to the Tablet PC Pen point and the side buttons. Excessive force applied to these parts causes short life or characteristic deterioration (Allowable force to pen point, Eraser button, Pen button: less than 1 kg, for less than 30 seconds).*
- *Avoid water entering the Tablet PC Pen or condensation forming within it as either condition will cause a malfunction.*
- *Do not disassemble the Tablet PC Pen. It causes maladjustment or short life.*
- *Do not stain the Tablet PC Pen with cosmetics or chemicals as this will cause a deterioration in appearance. Use a glass wiping cloth or dry cloth to clean the Tablet PC Pen. Do not use volatile liquids such as alcohol, thinner or petroleum benzine to clean the Tablet PC Pen.*
- *Do not apply excessive force to the Tablet PC Pen point as a bent or deformed pen point will cause a malfunction.*
- *Keep the small parts of the Tablet PC Pen, such as the pen point or the knob of the side buttons, away from infants and small children to prevent the accidental ingestion by them.*
- *Do not use a ball point pen instead of the Tablet PC Pen included with the product.*
- *Do not use a broken pen tip.*
- *The pen tip cannot be replaced if it is worn (Reserve Pen only).*

- *You can change the Tablet PC Pen setting and the Touch pointer setting, using the Pen and Input Device.*
- *TOSHIBA is not liable for any problems arising on the products due to the use of the Tablet PC Pen in an environment where the above conditions are not satisfied or because of its use by unspecified number of users.*

Removing the Tablet PC Pen

To remove the Tablet PC Pen, follow the steps as described below:

1. Push the Tablet PC Pen in the Tablet PC Pen slot, so that it protrudes slightly.
2. Pull the Tablet PC Pen to remove it from the Tablet PC Pen slot.

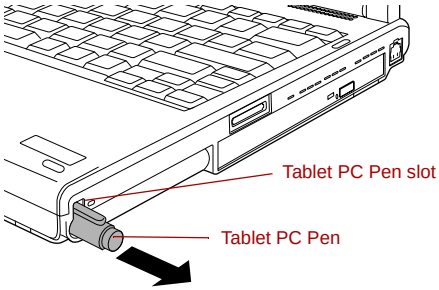


Figure 4-3 Removing the Tablet PC Pen

Inserting the Tablet PC Pen

The Tablet PC Pen is included in the small case coming with the product. Remove the Tablet PC Pen from small case and install it to the computer as follows:

1. Insert the Tablet PC Pen into the Tablet PC Pen slot until it clicks.

The Tablet PC Pen and the Reserve Pen are different in shape. Do not insert the Reserve Pen into the Tablet PC Pen slot.

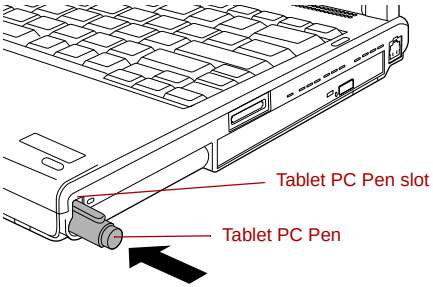


Figure 4-4 Inserting the Tablet PC Pen

Pen actions

You can use the Tablet PC Pen to enter data, start programs, move objects and execute other actions.

Single tap

Lightly tap the tip of the Tablet PC Pen on an object and lift it immediately to execute an action. A single tap is similar to clicking the left touch pad control button.

Double tap

Lightly tap the tip of the Tablet PC Pen twice on an object and lift it immediately to execute an action. A double-tap is similar to double-clicking the left touch pad control button.

Press and hold

Touch the tip of the Tablet PC Pen to the display screen and hold it there to display a pop-up menu or other action. Press and hold is similar to clicking the right touch pad control button.

Drag

Touch the Tablet PC Pen to the screen. Without lifting the Tablet PC Pen, drag it across the screen to select text or objects.

Drag and drop

Touch the Tablet PC Pen to the screen to select an object. Without lifting the Tablet PC Pen, drag it across the screen. Lift the Tablet PC Pen to drop the object to a new location.

Replacing the pen tip

To replace the pen tip, follow the steps as described below:

1. Pinch the tip with a draw-out tool and pull it out.
2. Insert a new pen tip into the Tablet PC Pen carefully, and press it securely.

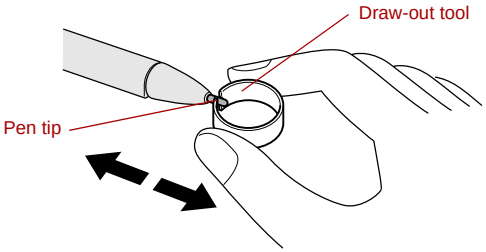


Figure 4-5 Replacing the pen tip

Do not continue to use a broken pen tip as this may result in scratching of the display panel. When the pen tip breaks replace it with one of the refills delivered with the Tablet PC Pen. When these refills have run out, you can purchase a new pen set from a TOSHIBA authorized dealer.

- *A short and worn pen point is difficult to pull out. Replace the pen point with a refill before it becomes too short to remove.*
- *It is recommended that you keep another pen set as a spare. You can buy replacement pen sets from your TOSHIBA authorized dealer.*

Removing the Reserve Pen case

To remove the Reserve Pen case, follow the steps as detailed below:

1. Save your work.
2. Turn the computer's power off - ensure that the **Power** indicator is off.
3. Remove all cables and peripherals that are connected to the computer.
4. Close the display panel and turn the computer upside down.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

5. Slide and then lift out the Reserve Pen case.

Push lightly the point shown by the arrow using an object with a thin tip.

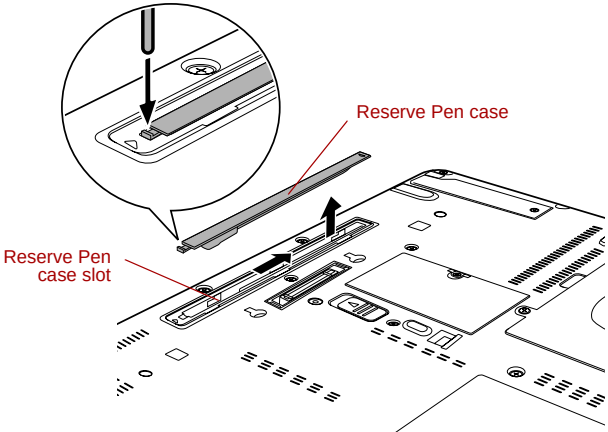


Figure 4-6 Removing the Reserve Pen case

Inserting the Reserve Pen case

To insert the Reserve Pen case, follow the steps as detailed below:

1. Insert the Reserve Pen case into the Reserve Pen case slot on the computer and slide it until it locks.

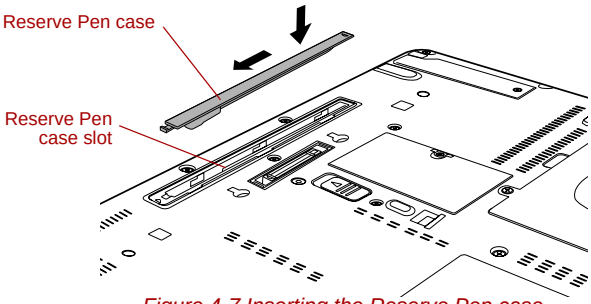


Figure 4-7 Inserting the Reserve Pen case

Storing and Removing the Reserve Pen from the Reserve Pen case

Follow the procedures below to remove the Reserve Pen from the Reserve Pen case.

Removing the Reserve Pen from the Reserve Pen case

1. Lift the Reserve Pen up from the Reserve Pen case by its end.

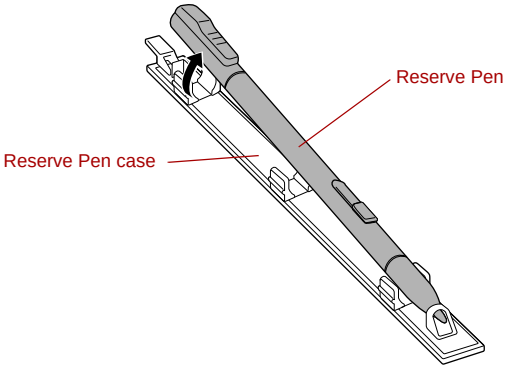


Figure 4-8 Removing the Reserve Pen from the Reserve Pen case

Storing the Reserve Pen in the Reserve Pen case

1. Insert the tip of the Reserve Pen into the Reserve Pen case holder and press down.

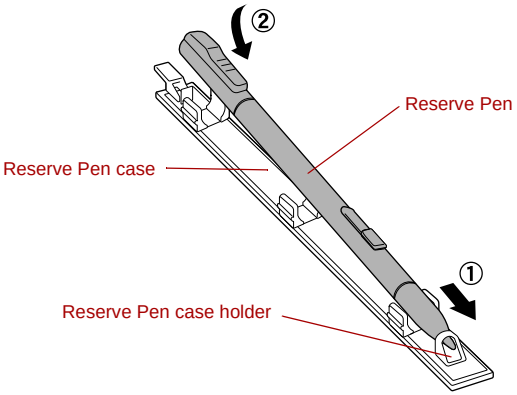


Figure 4-9 Storing the Reserve Pen in the Reserve Pen case

Using the Tablet mode

This section explains Tablet mode functions and use.

Operating the computer in Tablet mode

When operating the computer in Tablet mode, follow the instructions below.

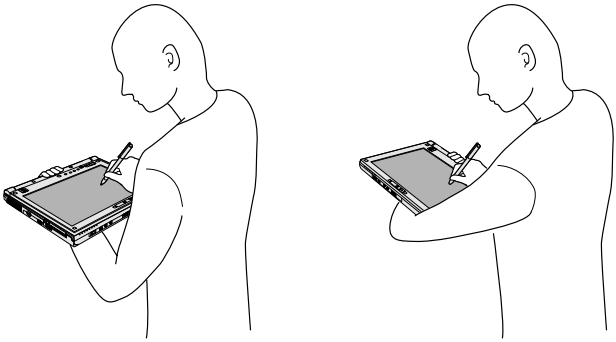


Figure 4-10 Operating the computer in Tablet mode (using a Tablet PC Pen)

- Hold the computer firmly on your forearm. Do not block the vent.
- Remove the AC adaptor from the computer when using it in Tablet mode held in your forearm.
- Do not use the computer while walking or driving a car.
- Change to Laptop mode and turn off the computer before carrying it. Do not carry the computer with power on or in Sleep Mode. Do not carry the computer while the **Hard Disk Drive** indicator is glowing.
- Do not expose the computer to rapid temperature changes (such as would be the case if you brought the computer from a cold environment into a warm room). When rapid temperature changes are unavoidable, leave the computer for around two hours before turning it on to prevent the formation of condensation.
- Remove all external peripheral devices and their connection cables from the computer before carrying.
- 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.
- Do not put the computer in a bag when it is in Tablet mode.

- The function of the display screen varies from model to model.
  - Digitizer screen model: Please use the Tablet PC Pen to operate, which comes with the computer.

    Please carefully observe the following items in order to avoid damaging the display screen. Incorrect use could cause the screen to be scratched.
    - Do not press on the screen with anything other than the included touch pen (especially with anything pointed).
    - Prevent long fingernails and rings or other metal from touching the screen.
    - Do not apply excessive pressure to the screen.
  - Digitizer and touch screen model: Please operate either using the Tablet PC Pen which comes with the computer or your finger.

    Please carefully observe the following items in order to avoid damaging the display screen. Incorrect use could cause the screen to be scratched.
    - Do not press on the screen with anything other than the included touch pen (especially with anything pointed)
    - Prevent long fingernails and rings or other metal from touching the screen.
    - Do not apply excessive pressure to the screen.
    - If you operate simultaneously by finger and Tablet PC Pen, then the operation of Tablet PC Pen gets executed. Operations done by the finger are not available.
    - Only touch one location at a time when operating using your finger. If you touch multiple locations simultaneously, the input will not be correctly interpreted.

- The display panel works as a touch sensitive digitizer screen. However, the outer edges of the screen may be less sensitive. Please keep the Tablet PC Pen or your finger inside the display area when you use it near the edges of the display panel. The position of the pen may not be recognized if you move the Tablet PC Pen or your finger too fast towards the outer edge. Please be sure to slide the Tablet PC Pen or your finger slowly in areas near the edges of the screen.

  Use the Tablet PC Pen or your finger in the areas enclosed by the dotted line as shown in the following figure.

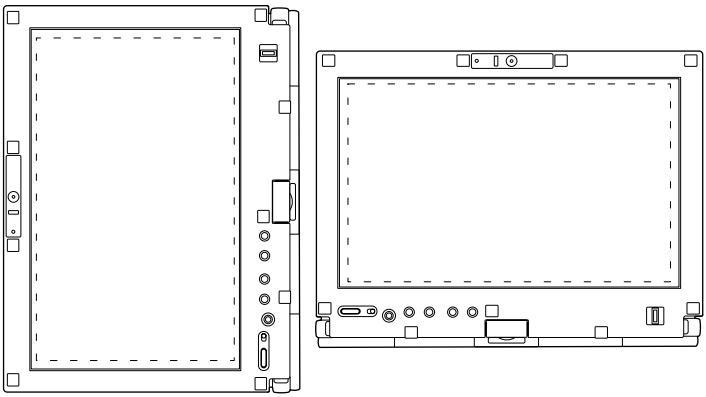


Figure 4-11 Use area of a Tablet PC Pen

- *When performing operations on the display screen using the Table PC Pen or a finger, the on-screen cursor position may deviate from the actual pen (or finger) position in the following situations:*
  - *If the screen resolution is lower than 1280 x 800 (For example 800 x 600)*
  - *When the Aspect Ratio Options in the Intel GMA Driver for Mobile (Intel Graphics Media Accelerator Driver for mobile) Display Settings are set to Maintain Aspect Ratio or Center Desktop*

  Adjust one of the following settings to correct cursor position deviation.
  - *Set the resolution to 1280 x 800*
  - *Set the Aspect Ratio Options to Full Screen (No Border)*
- *Do not block the vent of the computer when holding it. If you continue to expose your skin to the hot air expelled from the vent for a long time, your skin might suffer low temperature injury.*

Changing to the Tablet mode

To change from Laptop mode to the Tablet mode, follow the instructions below.

1. Open the display panel to the upright position.

When rotating the display panel, be sure to keep the display panel at a 90-degree angle to the keyboard.

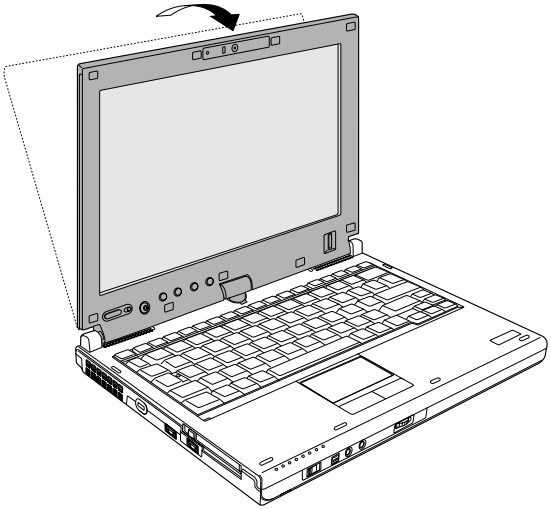


Figure 4-12 Changing to the Tablet mode (1)

- *Place the computer on a stable, flat surface such as a desktop and rotate the display panel slowly, holding the panel at its lower part.*
- *To change from Laptop mode to Tablet mode you must rotate the display panel 180 degrees clockwise.*

Tablet mode icon	Turn the display panel to the direction indicated by the Tablet mode icon.

To change from Tablet mode to Laptop mode you must rotate the display panel 180 degrees counter-clockwise.

Laptop mode icon	Turn the display panel to the direction indicated by the Laptop mode icon.

2. Rotate the display panel clockwise slowly.

- *When rotating display panel of your computer, be sure to slowly turn it in the proper direction, and not apply excessive force or speed.*
- *Do not attempt to rotate the display panel past the maximum rotation point. Forcing the display panel past the maximum rotation point will damage the display panel.*
- *Rotating the display panel counter-clockwise will break the hinge and cause the computer to cease to function correctly.*

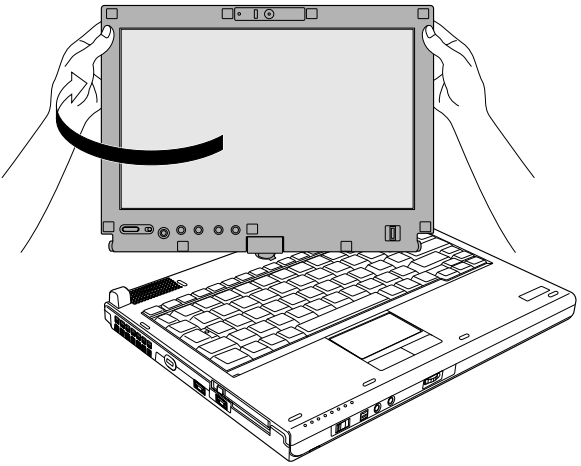


Figure 4-13 Changing to the Tablet mode (2)

3. Close the display panel slowly with display surface facing upwards.

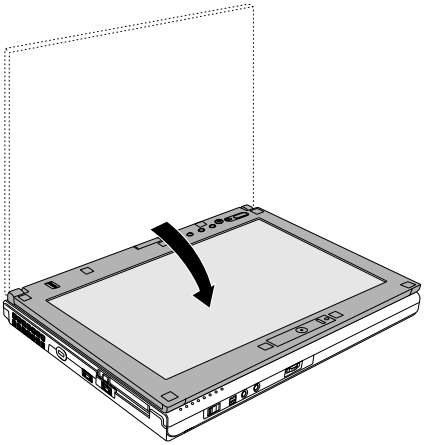


Figure 4-14 Changing to the Tablet mode (3)

Changing to the Laptop mode

To change the operating mode to the Laptop mode, follow the steps as detailed below:

1. Raise the display to the upright position carefully.
2. Rotate the display counter-clockwise slowly.
3. Close the display.

Changing the screen orientation

The orientation of the computer screen can be changed to one of the following four display modes:

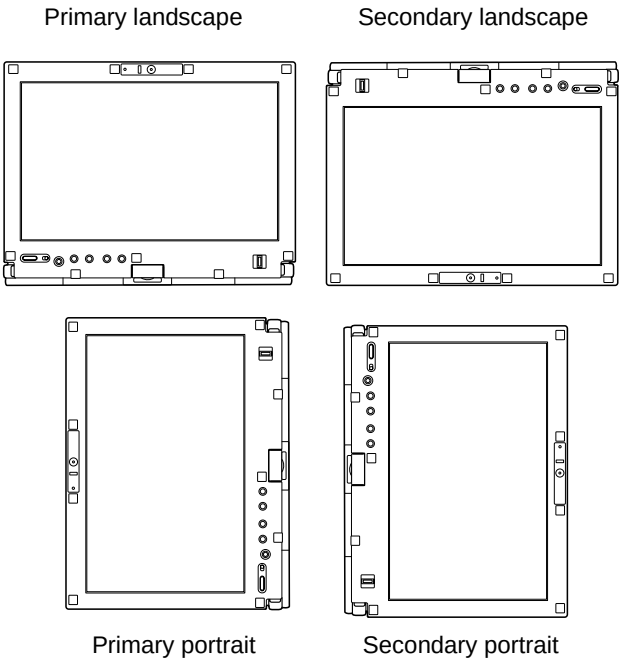


Figure 4-15 Four display modes

- *Execute the following applications on Primary landscape:*
  - *3D game software*
  - *3D screen saver*
  - *Playback of a motion picture as would be the case using DVD-Video playback on the computer connected to an external DVD-ROM Drive.*
- *The screen cannot automatically rotate in the following cases. You should first quit the running application and then rotate the screen:*
  - *Running of an application that changes the screen resolution dynamically, such as a game that is running in full-screen mode.*
  - *DOS prompt in full-screen mode.*
  - *Running of 3D screen saver.*

- *Do not play 3D game software or replay DVD-Video in a display mode other than Primary landscape. An abnormality will appear on the Windows screen display when you replay a DVD-Video in a mode other than Primary landscape because DVD playback software can boot only in the Primary landscape mode.*
- *An abnormality will appear on the Windows screen display when you change from Tablet mode to Laptop mode while a 3D screen saver is running. In this case, press any key while in Laptop mode to deactivate the 3D screen saver.*

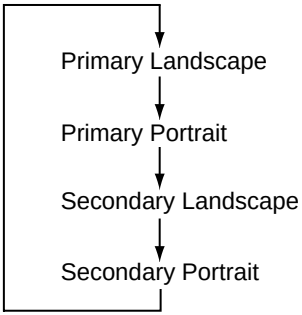
Method 1: Changing the screen orientation using TOSHIBA Accelerometer Utilities and TOSHIBA Rotation Utility

When the TOSHIBA Accelerometer Utilities and TOSHIBA Rotation Utility are running, changes in the orientation of the top and bottom of the screen is automatically recognized by pressing ESC/Rotation button for more than a second.

Method 2: Changing the screen orientation using Taskbar

1. Click **Start** and open **Control Panel**.
2. Select **Mobile PC**.
3. Open **Tablet PC Settings**.
4. Click **Change** button in **Display** tab.

5. Select a screen orientation from the Orientation pull down menu and change the screen.



You can set the orientation of the desktop screen just after rotating the display from **Start** -> **All Programs** -> **TOSHIBA** -> **Tablet PC** -> **Rotation Utility***.*

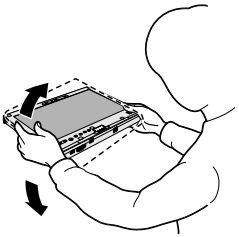
Using Accelerometer Utilities

When you shake the computer:

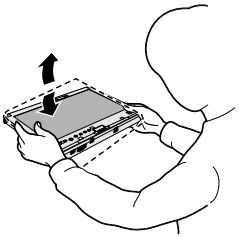
- *Do not shake the computer too strongly as this may cause the computer to be dropped or hit those people or items around you.*
- *Avoid using the computer in crowded places (e.g. in commuter trains or in busy streets).*
  This may cause injury to children or adults, or damage to the computer.

When the TOSHIBA HDD protection function is turned on and the Tilt function (function to start applications, etc. by waving the computer vertically or horizontally) is used, the TOSHIBA HDD protection message may be displayed on the screen. Turn off the TOSHIBA HDD protection function in order to stop such messages from displaying.

It is safer if you hold the computer with both hands horizontally as shown in the below example.



The computer is shaken horizontally.



The computer is shaken perpendicularly.

Figure 4-16 Shake the computer

Using the Fingerprint Sensor

This product has a fingerprint utility installed for the purpose of enrolling and recognizing fingerprints. By enrolling the ID and password onto the fingerprint authentication feature, it is no longer necessary to input the password from the keyboard. Fingerprint feature enables you to:

- Logon to Windows and access a security enabled homepage through Internet Explorer.
- Files and folders can be encrypted/decrypted and third party access to them prevented.
- Disable the password-protected screen-saver when returning from a power-saving mode such as Sleep Mode.
- Authentication of the User Password and, if applicable, the HDD (Hard Disk Drive) Password when booting up the computer (Pre-OS Authentication).
- Single-Swipe Sign On feature

Fingerprint cannot be used in models that do not have a fingerprint module installed.

How to Swipe your Finger

Using the following steps when swiping fingers for fingerprint registration or authentication will help to minimize authentication failures:

Align the first joint of the finger to the center of the sensor. Lightly touch the sensor and swipe finger levelly towards you until the sensor surface becomes visible. In performing this process, you should also take care to ensure that the center of your fingerprint is on the sensor.

The following illustrations show the recommended way to swipe your finger over the fingerprint sensor.

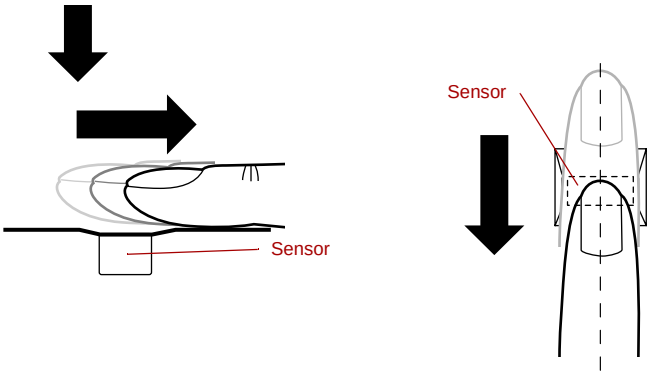


Figure 4-17 Swipe the finger

- *Avoid swiping with your finger stiff or pressed too hard onto the sensor, and take care to ensure that the center of the fingerprint is touching the sensor before swiping. Either of these conditions may cause fingerprint reading to fail.*
- *Check the center of the fingerprint whorl before swiping and then ensure this is swiped along the center line of the sensor.*
- *There is a possibility of authentication failures if the finger is swiped too quickly or too slowly - follow any on-screen instructions to adjust the speed used during the swipe process.*

Points to note about the Fingerprint Sensor

Please be aware of the following considerations when using the fingerprint sensor. A failure to follow these guidelines might result in damage to the sensor, sensor failure, fingerprint recognition problems or a lower fingerprint recognition success rate.

- Do not scratch or poke the sensor with your nails or any hard or sharp objects.
- Do not press the sensor strongly.
- Do not touch the sensor with a wet finger or any wet objects - keep the sensor surface dry and free from water vapor.
- Do not touch the sensor with a soiled or dirty finger as minute foreign particles of dust and dirt may scratch it.
- Do not paste stickers or write on the sensor.
- Do not touch the sensor with a finger or any other object which may have a build-up of static electricity on it.

Observe the following before you place your finger on the sensor whether for fingerprint enrollment/registration or recognition.

- Wash and dry your hands thoroughly.
- Remove static electricity from your fingers by touching any metal surface. Static electricity is a common cause of sensor failures, especially when the weather is dry.
- Clean the sensor with a lint-free cloth - do not use detergent or any other chemicals to clean the sensor.
- Avoid the following finger conditions for enrollment or recognition as they may result in fingerprint enrollment errors or a drop in the fingerprint recognition success rate
  - Soaked or swollen finger, for example as may occur after taking a bath.
  - Injured finger
  - Wet finger
  - Soiled or oily finger
  - Extremely dry skin condition on finger

Observe the following to improve the fingerprint recognition success rate.

- Enroll two or more fingers.
- Enroll additional fingers if a recognition failure often occurs when using already enrolled fingers.
- Check the condition of your finger - any conditions which have changed since enrollment, such as injury, rough skin, and extremely dry, wet, soiled, dirty, oily, soaked or swollen fingers, may lower the recognition success rate. Also if the fingerprint is worn down or the finger becomes thinner or fatter, the recognition success rate may be lowered.
- As the fingerprint for each finger is different and unique you should ensure that only the registered or enrolled fingerprint or fingerprints are used for identification.
- Check the position and speed at which you swipe your finger across the sensor - please refer to the preceding drawing.
- The fingerprint sensor compares and analyzes the unique characteristics in a fingerprint. However, there may be instances where certain users are unable to register their fingerprints due to insufficient unique characteristics in their fingerprints.
- The recognition success rate may differ from user to user.

Setup Procedure

Please use the following procedure when first using fingerprint authentication.

Fingerprint Registration

You should initially enroll the required authentication data using the **Fingerprint Enrollment** Wizard.

- *In use, the fingerprint authentication system will use the same username and password as defined within the Windows operating system.*
- *This sensor has the memory space for at least twenty-one fingerprint patterns. You might be able to register more fingerprint patterns depending on the sensor memory usage.*

1. To run this program, click **Start** -> **All Programs** -> **TrueSuite Access Manager** -> **TrueSuite Access Manager**.

You are also able to start the Fingerprint Enrollment Wizard by using the following methods.

- *Click the Fingerprint Software icon in the Taskbar.*

2. The **Verify** screen will be displayed, enter the Windows logon password and click the **Next** button.

   If no Windows password has been configured, you will be asked to configure the password in a new screen. Follow the on-screen instructions to configure the Windows password. Then click the **Next** button.

3. On the **User's Fingers** screen click the box above the finger you wish to register.

   If any of the previously enrolled fingerprints is selected again, the latest information will be enrolled and any previous information over-written.

4. The **Fingerprint Enrollment** screen will be displayed and the tutorial will begin. First click "Replay video" and confirm the proper movement for the finger you wish to register. Then confirm the message displayed on this screen and ensure that there is a check mark in the **Run Interactive Tutorial** box. Once this has been done, click **Next**.
5. At the **Scanning Practice** screen, you are able to practice swiping (three times) your finger to ensure you use the correct method. Click "Try again" to if you wish to practice again. You have finished practicing, click **Next** button.
6. Register your fingerprint on the **Fingerprint Image Capture** screen.

   Let the computer read the finger to be registered 3 times. An image of your fingerprint will be shown on the screen each time the fingerprint is successfully read.

   Once the fingerprint is successfully read for the third time, the message **`Successfully combined`** will be displayed beneath the fingerprint images. Click the **Next** button.
7. When the **Store To Sensor** screen is displayed, check **Store fingerprint to Sensor**. Click **Finish** to complete fingerprint registration.

It is strongly recommended that you register 2 or more fingerprints. Repeat the procedure from step 3 to register another fingerprint.

How to Delete the Fingerprint Data

Saved fingerprint data is stored in special non-volatile memory inside the fingerprint sensor. Therefore, if you give the computer to someone else, or dispose of it in any way, the following process is recommended to delete your fingerprint information:

1. To run this program, click **Start** -> **All Programs** -> **TrueSuite Access Manager** -> **TrueSuite Access Manager** .
2. The **Verify** screen will be displayed, so either swipe your registered finger or enter the Windows logon password and click the **Next** button.
3. The **User's Fingers** screen is displayed.

   - To delete all registered fingerprints

     1. Click **Delete All Fingerprints**.
     2. Follow the on-screen instructions to deleted the registered fingerprints.

   - To delete individual fingerprints

     1. Click the fingerprint mark above the registered finger.
     2. Click **Delete All Fingerprints**.
     3. "Are you sure you want to delete this fingerprint?" will be displayed on the screen, click **Yes** button.

4. When **Delete All Fingerprints** is selected, the user selection screen will be displayed, so select which user's fingerprint data to delete.
   - Selecting "Delete current user's fingerprints" will delete the fingerprint data for the currently logged in user.
   - Selecting "Delete all users' fingerprints" will delete the fingerprint data for all users, however this item can only be selected if the currently logged in user has administrator privileges.
5. A message will be displayed asking for confirmation to delete the fingerprint data, click the **Yes** button.

In use, please be aware of the following limitations of the fingerprint sensor:

- A warning message will be displayed when recognition is abnormal or recognition is not successful within a fixed duration.
- The fingerprint sensor compares and analyzes the unique characteristics in a fingerprint. However, there may be instances where certain users are unable to register their fingerprints due to insufficient unique characteristics in their fingerprints.
- The recognition success rate may differ from user to user.
- Toshiba does not guarantee that this fingerprint recognition technology will be error-free.
- Toshiba does not guarantee that the fingerprint sensor will recognize the enrolled user or accurately screen out unauthorized users at all times. Toshiba is not liable for any failure or damage that might arise out of the use of this fingerprint recognition software or utility.

Points to note about the Fingerprint Utility software

You are able to backup saved fingerprint data and information within the by using the Import or Export User Data facility under the fingerprint management software. However, please be aware that any encrypted files cannot be backup within File protection using this function - in these instances it is recommended that you backup these files to external media using standard file copy processes.

The Encrypting File System (EFS) is a Windows Vista® feature.

If a file is encrypted using EFS, it cannot be encrypted further using the fingerprint authentication function.

Windows Logon via Fingerprint Authentication

If required, you are also able to use fingerprint authentication in place of the usual Windows logon process using your username and password.

This method is especially useful where there are many users using the same computer as it removes the need for actual user selection when the system is started.

Fingerprint Authentication Procedure

1. Start up the computer.
2. At the Windows **Welcome** screen, choose any of the enrolled fingers and swipe the fingerprint on the sensor - if the authentication process is successful, the user will automatically be logged in to Windows.

If the fingerprint authentication process fails you will need to log into Windows using the appropriate username and password. In addition, you should use this manual login process if fingerprint authentication fails for three consecutive tries - a warning message will be displayed when authentication is not normal or is not successful within a fixed duration.

Fingerprint Pre-OS Authentication

General

The fingerprint authentication system can be used to replace the keyboard based password authentication system that is used when the computer is turned on.

If you do not want to use the fingerprint authentication system for password authentication while booting up the computer, instead you prefer using the keyboard entry method, simply press the **BACK SPACE** key or the ESC/ Rotation button when the Fingerprint Pre-OS Authentication screen is displayed.

Using this process will switch the password input screen across to the keyboard based entry screen.

- *You must ensure that you use the TOSHIBA Password Utility to register a User Password before using the Fingerprint Pre-OS Authentication and its extended function to allow fingerprints to be used to access the computer when it is turned on.*
- *If the fingerprint authentication process fails five times, a preset time limit is exceeded, or you press the* **BACK SPACE** *key,* `[Password =]` *will be displayed on the screen and you will have to enter either the User Password or Supervisor Password manually in order to start the computer.*
- *When swiping your finger, please ensure that you do it slowly and at a constant speed. If you find that this does not improve the authentication rate, you should try to adjust the speed at which the finger is swiped.*
- *If there are any changes in the environment or settings related to authorization, you will be required to provide authorization information such as a User Password and, if applicable, the HDD (Hard Disk Drive) password.*

How to Enable Fingerprint Pre-OS Authentication Settings

It is necessary to first enroll your fingerprint with the Fingerprint Application prior to enabling and configuring the Fingerprint Pre-OS Authentication System. You should check that your fingerprint is enrolled before configuring the settings.

1. To run this program, click **Start** -> **All Programs** -> **TrueSuite Access Manager** -> **TrueSuite Access Manager with Admin**.
2. UserAccountControl screen is displayed, click the **Allow** button.

   This setting can only be changed if the currently logged in user has administrator privileges.
3. Swipe a registered finger on the fingerprint sensor.
4. Click the **Setting menu** at the TrueSuiteAccessManager screen.
5. Administrator Setting screen is displayed, select the “Enable Pre-OS Fingerprint Authentication” check box and then click **OK**.
6. Click the **Exit** button at the TrueSuiteAccessManager screen.

Fingerprint Single-Swipe Sign On Feature

General

This is a feature that allows the user to complete the authentication for both the User/BIOS Password and, if applicable, the HDD (Hard Disk Drive) Password and logging onto Windows using only one fingerprint authentication when booting up.

It is necessary to register the User/BIOS Password and Windows Logon Password before using the Fingerprint Pre-OS Authentication and this Fingerprint Single-Swipe Sign On Feature. Please use the TOSHIBA Password Utility to register your User/BIOS Password.

Only one fingerprint authentication is required to replace the User/BIOS Password and, if applicable, the HDD (Hard Disk Drive) Password and the Windows Logon Password.

How to Enable Fingerprint Single-Swipe Sign On Feature

It is necessary to first enroll your fingerprint with the Fingerprint application prior to enabling and configuring the Fingerprint Single-Swipe Sign On feature. You should check that your fingerprint is enrolled before configuring the settings.

1. To run this program, click **Start** -> **All Programs** -> **TrueSuite Access Manager** -> **TrueSuite Access Manager with Admin**.
2. UserAccountControl screen is displayed, click the **Allow** button.

   This setting can only be changed if the currently logged in user has administrator privileges.
3. Swipe a registered finger on the fingerprint sensor.
4. Click the **Setting menu** at the TrueSuiteAccessManager screen.
5. When the Administrator Setting screen is displayed, select the “Enable Single-Sign On Fingerprint Authentication” check box and then click **OK**.
6. Click the **Exit** button at the TrueSuite Access Manager screen.

Fingerprint utility limitations

TOSHIBA does not guarantee that the fingerprint utility technology will be completely secure or error-free, or that it will accurately screen out unauthorized users at all times. TOSHIBA is not liable for any failure or damage that might arise out of the use of the fingerprint software.

- *The fingerprint sensor compares and analyzes the unique characteristics in a fingerprint. However, there may be instances where certain users are unable to register their fingerprints due to insufficient unique characteristics in their fingerprints.*
- *The recognition success rate may differ from user to user.*

Web Camera

Some models are equipped with a **Web Camera,** which 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 such as **Windows Live Messenger**. **Camera Assistant Software** will help you to add various video effects to your video or photograph.

Using Camera Assistant Software

Enables the transmission of video and use of video chat via the internet using specialized applications.

The effective pixel count for this web camera is 1.3 million.

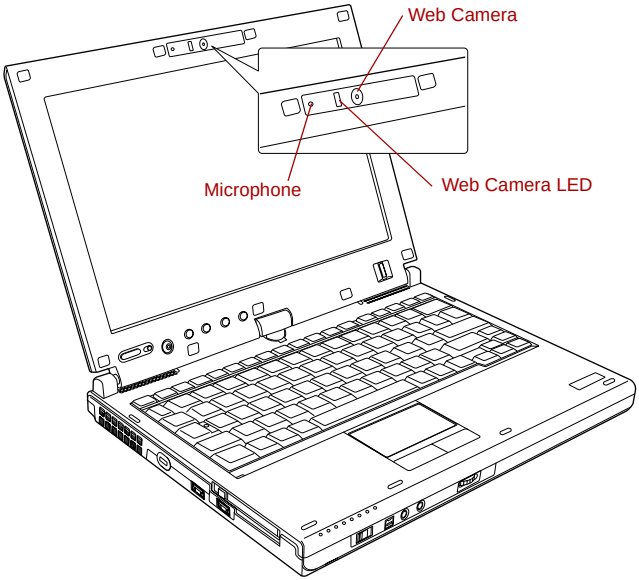


Figure 4-18 Web Camera

Please refer to the Camera Assistant Software Online Help for details.

- *Do not point the web camera directly at the sun.*
- *Do not touch or press strongly on the web camera lens. Doing so may reduce image quality. Use an eyeglass cleaner (cleaner cloth) or other soft cloth to clean the lens if it becomes dirty.*
- *Setting the [Size] to more than "800x600" will cause a larger amount of data to be written to the hard disk drive and may interfere with smooth recording.*
- *When recording in dimly lit environments, the following procedure can be used to select "Night Mode" which allows for brighter images with less noise.*

  1. *Click the* **Properties** *button on the [Web Camera] menu.*
  2. *Check* **Night Mode** *on the [Options] tab.*
  3. *Click the* **OK** *button.*

  The number of frames per second is lowered when "video recording" in "Night Mode". This may result in the playback of the recorded video file seeming unsmooth.

Using Presto! BizCard 5 Software

Web Camera also has Business Card Reader function.

Your computer has been preinstalled with **Presto! BizCard 5** software for use with the computer's web camera feature. Performance may vary depending on data capture conditions, data format and other factors.

The following conditions may affect the accuracy of the reader.

- Data capture conditions such as ambient lighting (brightness), focus, angle and resolution. Normal or balanced lighting is recommended. Web camera default settings (auto exposure) are usually adequate. The card should not be placed at an inclined.
- The quality of the card itself and the card format, e.g. color of card, card design and/ or fonts used.
  - Certain hand written font styles and/or overly artistic fonts are not easily recognized
  - The best font size for Asian languages is 48 pixels. Less than 38 pixels will result in degraded capture quality.
- The condition of the business card, e.g. a card that is worn out, has been written on or is dirty, may not be recognized.

To launch this utility, click **Start** -> **All Programs** -> **NewSoft** -> **Presto! BizCard 5 SE** -> **Presto! BizCard 5 SE**

Please refer to the **Presto! BizCard 5** Online Help for details.

Using TOSHIBA Face Recognition

TOSHIBA Face Recognition uses a face verification library to verify the face data of users when they log in to Windows. The user can thus avoid having to enter a password, which makes the login process easier.

- *TOSHIBA Face Recognition does not guarantee the correct identification of a user. Changes to the likeness of a registrant, such as hair style changes, wearing a cap, or wearing glasses may effect the recognition rates when such changes occur after the registrant had registered.*
- *TOSHIBA Face Recognition may incorrectly recognize faces that are similar to a registrant.*
- *For high security purposes, TOSHIBA Face Recognition is not a suitable substitute for Windows passwords. When security is a high priority, use your established Windows passwords to log in.*
- *Bright background light and/or shadows may prevent a registrant from being recognized correctly. In that case, log in using your Windows password. If recognition of a registrant fails repeatedly, refer to your computer documentation to learn ways to improve recognition performance.*
- *TOSHIBA Face Recognition records face data in a log when face recognition fails. When transferring ownership or disposing of your computer, please uninstall the application or delete all the logs created by the application. For details on how to do this, see help file.*
- *TOSHIBA Face Recognition can be used only in Windows Vista.*

Disclaimer

Toshiba does not guarantee that the face recognition utility technology will be completely secure or error-free. Toshiba does not guarantee that the face recognition utility will accurately screen out unauthorized users at all times. Toshiba is not liable for any failure or damage that might arise out of the use of the face recognition software or utility.

TOSHIBA, ITS AFFILIATES AND SUPPLIERS SHALL HAVE NO RESPONSIBILITY FOR DAMAGE TO OR LOSS OF ANY BUSINESS, PROFITS, PROGRAMS, DATA, NETWORK SYSTEMS OR REMOVABLE STORAGE MEDIA ARISING OUT OF OR RESULTING FROM THE USE OF THE PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

How to register the Face Recognition Data

Take a picture for facial verification purposes, and register the data needed when you log in. To register the data needed when you log in, follow the steps as described below:

1. To launch this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **TOSHIBA Face Recognition**.
   - The **Registration** screen is displayed for a logged-in user whose face has not been registered.
   - The **Management** screen is displayed for a logged-in user whose face has already been registered.
2. Click the **Register face** button in the **Management** screen.
   The **Registration** screen is displayed.
   - If you wish to practice, click on the **Next** button in the **Registration** screen.
   - If you do not wish to practice, click on the **Skip** button in the **Registration** screen.
3. Click the **Next** button to start the guide.
4. First, take a picture while moving your neck slightly to the left and right.
5. Now take a picture while moving your neck down and up.
   - Click the **Back** button to practice the guide once more.
6. Click the **Next** button to start image-capturing process.
   Adjust the position of your face so that it fits within the face-shaped frame.
7. Once your face has been positioned properly, the recording will commence.
   Start moving your neck very slightly to the left and right, and then move your neck down and up.
8. Registration will end after you have repeatedly moved your neck left, right, down and up.
   When the register succeeds, below message will be displayed on the screen:
   “**`Registration successful. Now we'll do the verification test. Click the Next button.`**”.
   Click the **Next** button to perform the verification test.
9. Perform the verification test. Face the screen as you do when you register.
   - If verification fails, click the **Back** button and re-register.
     Please refer to step 8 from step 6.
10. If verification is successful, click the **Next** button and register an account.
11. Register the account.
    Fill in the account registration fields.
    Fill in the all fields.
12. The **Management** screen is displayed.
    The registered account name will be displayed. Clicking on it will cause the captured image of your face to be displayed on the left.

How to Delete the Face Recognition Data

Delete image data, account information, and personal record data created during registration. To delete the Face Recognition Data, follow the steps as described below:

1. To launch this utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **TOSHIBA Face Recognition**.
   The **Management** screen is displayed.
2. Select a user which is deleted in the **Management** screen.
3. Click the **Delete** button. "**`You are about to delete the user data. Would you like to continue?`**" will be displayed on the screen.
   - If you do not want the data to be deleted, click the **No** button and you will then be returned to the **Management** screen.
   - Clicking on the **Yes** button will remove the selected user from the **Management** screen.

How to launch the help file

For further information on this utility, please refer to help file.

- To launch the help file, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **TOSHIBA Face Recognition Help**.

Windows Logon via TOSHIBA Face Recognition

This section explains how to logon to Windows with TOSHIBA Face Recognition. Two authentication modes are provided.

- **AUTO Mode Login screen**: If the face authentication tile is selected by default, you can log in without using the keyboard or mouse.
- **1:1 Mode Login screen**: This mode is essentially the same as AUTO mode, but the **Select Account** screen will appear before the **Display Captured Image** screen, and you will need to select the user account to be authenticated in order to start the authentication process.

AUTO Mode Login screen

1. Turn on the computer.
2. The **Select Tiles** screen will be displayed.
3. Select **Start face recognition** ( ).
4. "**`Please turn your face to the camera`**" will be displayed.
5. Verification will be performed. If the authentication is successful, the image data taken in step 4 will be faded in and placed over one another.
   - If an error occurs during authentication, you will be returned to the **Select Tiles** screen.
6. **Windows Welcome** screen will be displayed, and will be logged in automatically to Windows.

1:1 Mode Login screen

1. Turn on the computer.
2. The **Select Tiles** screen will be displayed.
3. Select **Start face recognition** ( ).
4. The **Select Account** screen will be displayed.
5. Select the account, and click the **arrow** button.
6. "`Please turn your face to the camera`" will be displayed.
7. Verification will be performed. If the authentication is successful, the image data taken in step 6 will be faded in and placed over one another.
   - If an error occurs during authentication, you will be returned to the **Select Tiles** screen.
8. **Windows Welcome** screen will be displayed, and will be logged in automatically to Windows.
   - If authentication was successful, but an authentication error subsequently occurred during the login to Windows, you will be asked to provide your account information.

Changing Ultra Slim Bay modules

Ultra Slim Bay is a single-drive bay that accommodates either of the following modules.

- Ultra Slim Bay DVD Super Multi (Double Layer) Drive Kit II
- Ultra Slim Bay HDD Adaptor II

Only use the Ultra Slim Bay modules that are provided with your computer.

Do not use any Ultra Slim Bay DVD Super Multi drive or HDD Adaptor from other models including PORTEGE M700/M710, otherwise the computer might be damaged.

This section explains how to change modules in the Ultra Slim Bay. The illustrations show replacement of the Ultra Slim Bay DVD Super Multi (Double Layer) Drive Kit II with the Ultra Slim Bay HDD Adaptor II.

To avoid injury, do not put your hand into the Ultra Slim Bay slot.

Removing the optical disc drive module

To remove the optical disc drive, follow the steps as described below:

1. Save your work.
2. Turn the computer's power off - ensure that the **Power** indicator is off.
3. Remove all cables and peripherals that are connected to the computer.
4. Close the display panel.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

Wait for all disk indicators to go out before you turn over the computer and do not lay the computer down gently. Shock can damage the HDD or other components.

5. Turn the computer upside down and remove the battery pack (refer to *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required).
6. Remove the Ultra Slim Bay lock screw from the Lock position.
7. Set the Ultra Slim Bay lock screw in the Unlock position.
8. Slide the Ultra Slim Bay latch to the unlock position.
9. Grasp the hook in the concave of the optical disc drive and slide it out.

The optical disc drive and other Ultra Slim Bay modules can become hot with use. Be careful when removing the module.

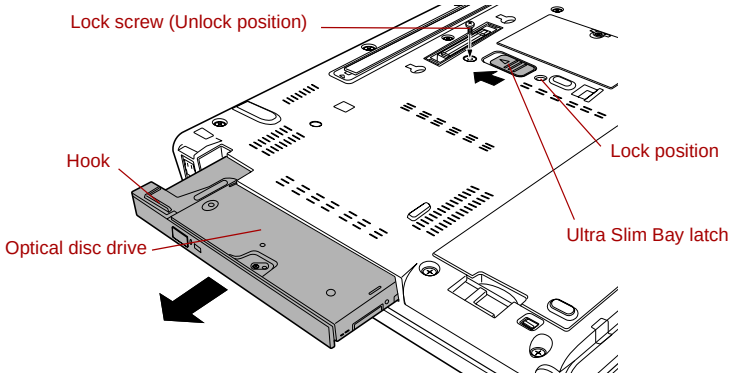


Figure 4-19 Removing the optical disc drive

Inserting an Ultra Slim Bay HDD Adapor II module

To insert the Ultra Slim Bay HDD Adaptor II, follow the steps as described below:

1. Insert the Ultra Slim Bay HDD Adaptor II in the computer as shown below and press until the Ultra Slim Bay latch clicks.
2. Remove the Ultra Slim Bay lock screw from the Unlock position.
3. If you want to lock the Ultra Slim Bay HDD Adaptor II, set the Ultra Slim Bay lock screw in the hole for the lock position.

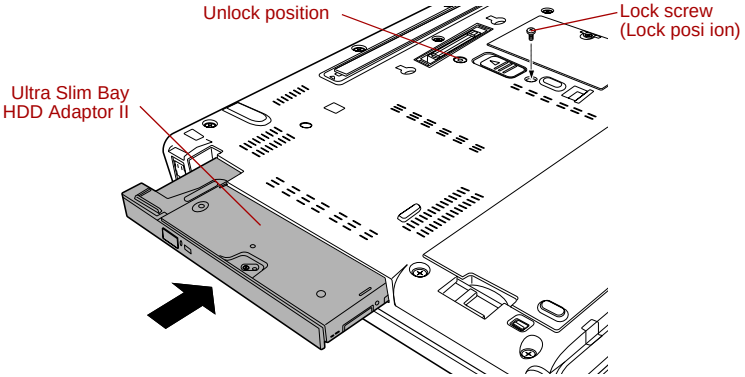


Figure 4-20 Inserting the Ultra Slim Bay HDD Adaptor II

Ultra Slim Bay Case

The DVD Super Multi (Double Layer) Drive Kit II is equipped with an Ultra Slim Bay Case. This section explains how to remove and install the DVD Super Multi (Double Layer) Drive Kit II unit.

Store the DVD Super Multi (Double Layer) Drive Kit II unit in the Ultra Slim Bay Case when removing it from the computer or transporting it.

Refer to Ultra Slim Bay Case *section in this chapter.*

Removing a unit

To remove the DVD Super Multi (Double Layer) Drive Kit II unit from the Ultra Slim Bay Case, follow the steps as described below:

1. Slide the Ultra Slim Bay latch to the unlock position.
2. Grasp the DVD Super Multi (Double Layer) Drive Kit II unit and slide it out.

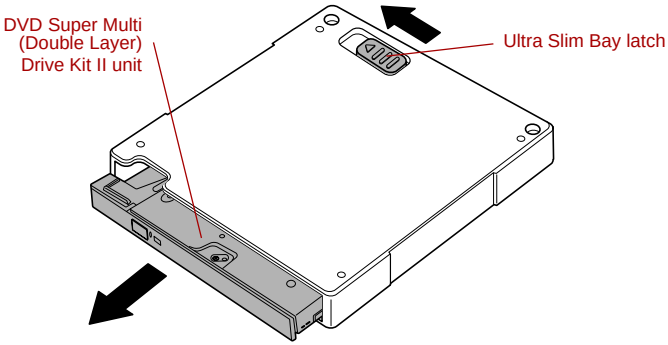


Figure 4-21 Removing the DVD Super Multi (Double Layer) Drive Kit II unit

Inserting a unit

To insert the DVD Super Multi (Double Layer) Drive Kit II unit into the Ultra Slim Bay Case, follow the steps as described below:

- Insert the DVD Super Multi (Double Layer) Drive Kit II unit in the Ultra Slim Bay Case as shown below and press until the Ultra Slim Bay latch clicks.

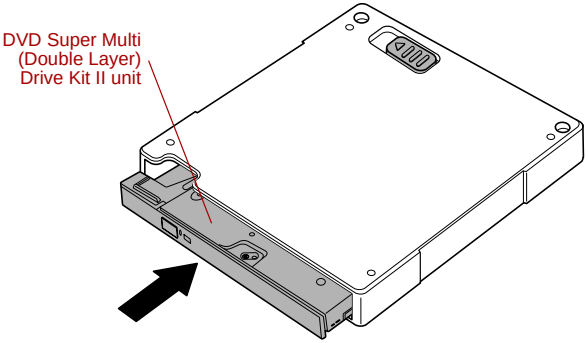


Figure 4-22 Inserting the DVD Super Multi (Double Layer) Drive Kit II unit

Using optical disc drives

The full-size drive provides high-performance execution of CD/DVD-ROM-based programs. You can run either 12 cm (4.72") or 8 cm (3.15") CD/DVDs without an adaptor. A Serial ATA interface controller is used for CD/DVD-ROM operation. When the computer is accessing a CD/DVD-ROM, an indicator on the drive glows.

Use the DVD playback application to view DVD-Video discs.

If you have a DVD Super Multi (Double Layer) Drive Kit II, refer also to the *Writing CD/DVDs on DVD Super Multi (Double Layer) Drive Kit II* section for precautions on writing to CDs/DVDs.

When the power of the optical disc drive is off, pressing the **FN** + **Tab** *keys will turn the power of the optical disc drive on. Furthermore, it is possible to set it to turn the power of the optical disc drive on and eject the tray at the same time.*

Loading discs

To load CD/DVDs, follow the steps as detailed below:

1. When the computer's power is on, press the eject button to open the disc tray slightly.
2. Grasp the disc tray gently and pull until it is fully opened.

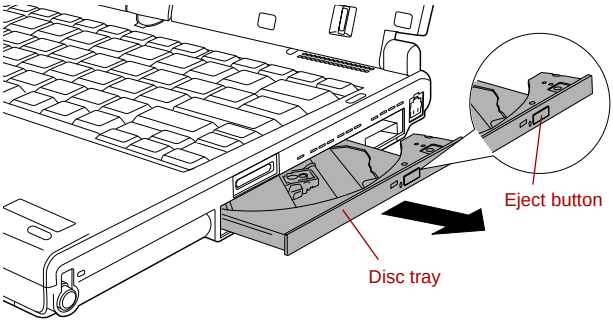


Figure 4-23 Pressing the eject button and pulling the disc tray open

3. Lay the CD/DVD, label side up, in the disc tray.

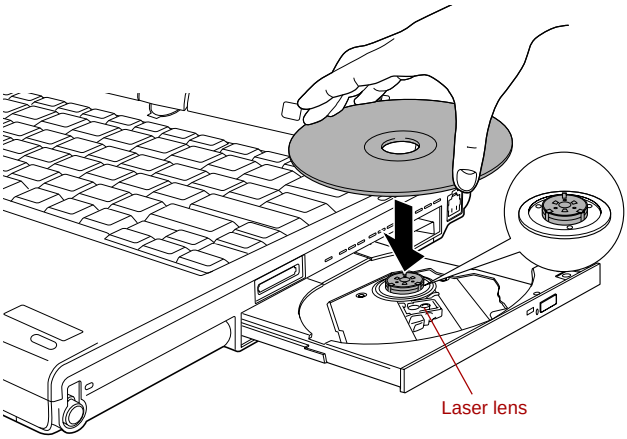


Figure 4-24 Inserting a CD/DVD

When the disc tray is fully opened, the edge of the computer will extend slightly over the CD/DVD tray. Therefore, you will need to turn the CD/DVD at an angle when you place it in the disc tray. After seating the CD/DVD, however, make sure it lies flat.

- *Do not touch the laser lens or any portion of its surrounding casing as this could cause misalignment.*
- *Prevent foreign objects from entering the drive. Check the surface of the disc tray, especially the area behind the front edge of the disc tray, to make sure there are no such objects before closing the drive.*

4. Press gently at the center of the CD/DVD until you feel it click into place. The CD/DVD should lie below the top of the spindle, flush with the spindle base.

5. Push the center of the disc tray to close it. Press gently until it locks into place.

If the CD/DVD is not seated properly when the disc tray is closed, the CD/DVD might be damaged. Also, the disc tray might not open fully when you press the eject button.

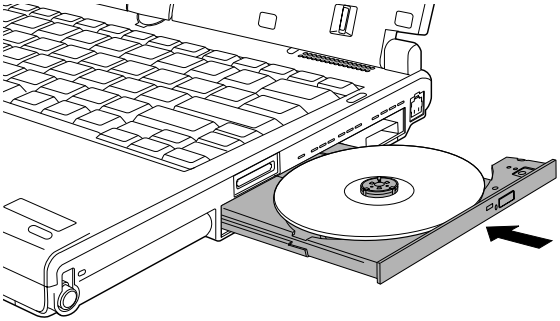


Figure 4-25 Closing the CD/DVD disc tray

Removing discs

To remove the CD/DVD, follow the steps as detailed below:

Do not press the eject button while the computer is accessing the media drive. Wait for the optical disc drive indicator to go out before you open the disc tray. Also, if the CD/DVD is spinning when you open the disc tray, wait for it to stop before you remove it.

1. To pop the disc tray partially open, press the eject button. Gently pull the disc tray out until it is fully opened.

When the disc tray pops open slightly, wait a moment to make sure the CD/DVD has stopped spinning before pulling the disc tray fully open.

2. The CD/DVD extends slightly over the sides of the disc tray so you can grasp it. Gently lift out the CD/DVD.

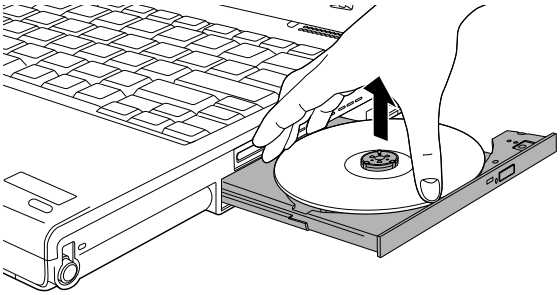


Figure 4-26 Removing a CD/DVD

3. Push the center of the disc tray to close it. Press gently until it locks into place.

Optical Drive Auto Lock

This function automatically locks the optical disc drive eject button if the computer detects any vibration or other shocks while running on the battery.

This function prevents the disc tray from opening even if the eject button is pushed unexpectedly.

When the Optical Drive Auto Lock is on, there will be key mark on the bottom right of the Optical Drive Power icon in the Taskbar.

To enable this function, turn the Optical Drive Power ON.

Setting the Optical Drive Auto Lock

Right click the Optical Drive Power icon in the Taskbar to change the Optical Drive Auto Lock settings.

Enabling and Disabling Optical Drive Auto Lock

1. Right click on the **Optical Drive Power** icon on the Taskbar.
2. Click **Optical Drive Auto Lock** -> **Enable or Disable**.

Lock Time Settings for Optical Drive Auto Lock

This sets the amount of time required to pass before the optical disc drive eject button unlocks when the Computer detects vibration or other shock.

1. Right click on the **Optical Drive Power** icon on the Taskbar.
2. Click **Unlock time settings** -> **1s or 3s or 5s**.

- *When the Optical Drive Auto Lock is engaged, the* **FN**+**Tab** *key combination and Eject Buttons on application screens are disabled.*
- *Optical Drive Auto Lock is not enabled immediately after the computer is started, the Disc tray is closed, or the optical disc drive is switched from OFF to ON using the* **FN**+**Tab** *keys.*

How to remove CD/DVD when the disc tray will not open

Pressing the eject button will not open the disc tray when the computer power is off. If the power is off, you can open the disc tray by inserting a slender object (about 15 mm) such as a straightened paper clip into the eject hole near the eject button.

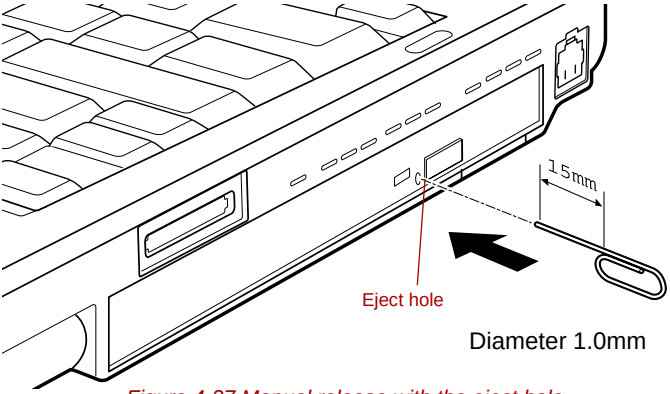


Figure 4-27 Manual release with the eject hole

Turn off the power before you use the eject hole. If the CD/DVD is spinning when you open the disc tray, the CD/DVD could fly off the spindle and cause injury.

Writing CD/DVDs on DVD Super Multi (Double Layer) Drive Kit II

You can use the DVD Super Multi (Double Layer) Drive Kit II to write data to either CD-R, CD-RW, DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer), DVD+RW or DVD-RAM discs. TOSHIBA Disc Creator is provided as writing software with this computer.

- *Please refer to the Writable discs in Chapter 2 for details about the types of writable CD and DVD discs that can be supported by this computer.*
- *Do not turn off the power to the optical disc drive while the computer is accessing it as this may cause you to lose data.*
- *To write data to CD-R/-RW media, use the* **TOSHIBA Disc Creator** *feature that is installed on your computer.*
- *When the power of the optical disc drive is off, the disc tray will not open even if the eject button is pushed. Use the ODD to turn the power of the optical disc drive on. Please refer to Chapter 5, Hot keys.*

When writing information to media using an optical drive, you should always ensure that you connect the AC adaptor to a live power socket. It is possible that, if data is written while powered by the battery pack, the write process may sometimes fail due to low battery power - in these instances data loss may occur.

Important message

Before you write or rewrite to any of the media supported by the DVD Super Multi (Double Layer) Drive Kit II, please read and follow all of the setup and operating instructions in this section. If you fail to do so, you may find that the DVD Super Multi (Double Layer) Drive Kit II may not function properly, and you may fail to write or rewrite information successfully - this may cause you to either lose data or incur other damage to the drive or media.

Disclaimer

TOSHIBA does not bear responsibility for the following:

- Damage to any CD-R, CD-RW, DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer), DVD+RW or DVD-RAM disc that may be caused by writing or rewriting with this product.
- Any change or loss of the recorded contents of CD-R, CD-RW, DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer), DVD+RW or DVD-RAM media that may be caused by writing or rewriting with this product, or for any business profit loss or business interruption that may be caused by the change or loss of the recorded contents.
- Damage that may be caused by using third party equipment or software.

Given the technological limitations of current optical disc writing drives, you may experience unexpected writing or rewriting errors due to disc quality or problems with hardware devices. In view of this, it is good practice to make two or more copies of important data, in case of any undesired change or loss of the recorded contents.

Before writing or rewriting

- Based on TOSHIBA's limited compatibility testing, we suggest the following manufacturers of CD-R, CD-RW, DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer), DVD+RW or DVD-RAM media, however, it must be noted that disc quality can affect write or rewrite success rates. Please also be aware that in no event does TOSHIBA guarantee the operation, quality or performance of any disc.

CD-R:

TAIYO YUDEN CO., Ltd.,
MITSUBISHI Chemical Corporation,
Ricoh Co., Ltd.
Hitachi Maxell,Ltd.

CD-RW(Multi-Speed and High-Speed):

MITSUBISHI Chemical Corporation,
Ricoh Co., Ltd.

CD-RW (Ultra-Speed):

MITSUBISHI Chemical Corporation.

DVD-R:

DVD Specifications for Recordable Disc for General Version 2.0

Matsushita Electric Industrial Co.,Ltd.,(for 4x, 8x and 16x speed media)

TAIYO YUDEN Co.,Ltd.(for 8x and 16x speed media)

DVD-R (Dual Layer):

MITSUBISHI Chemical Corporation. (for 4x and 8x speed media)

DVD-RW:

DVD Specifications for Recordable Disc for Version 1.1 or version 1.2

Victor Company of Japan, Ltd. (JVC) (for 2x, 4x and 6x speed media)
MITSUBISHI Chemical Corporation.(for 2x, 4x and 6x speed media)

DVD+R:

MITSUBISHI Chemical Corporation,(for 8x and 16x speed media)

Ricoh Co., Ltd.(for 8x and 16x speed media)

DVD+R (Double Layer):

MITSUBISHI Chemical Corporation,(for 2.4x and 8x speed media)

DVD+RW

MITSUBISHI Chemical Corporation.(for 2.4x, 4x and 8x speed media)

DVD-RAM:

DVD Specifications for DVD-RAM Disc for Version 2.0, Version 2.1 or Version 2.2
Matsushita Electric Industrial Co.,Ltd. (for 3x and 5x speed media)
Hitachi Maxell,Ltd. (for 3x and 5x speed media)

- *DVD Super Multi (Double Layer) Drive Kit II cannot use discs that allow writing faster than 16x speed (DVD-R and DVD+R media), 8x speed (DVD-R (Dual Layer), DVD+RW and DVD+R (Double Layer) media), 6x speed (DVD-RW media), 5x speed (DVD-RAM media).*
- *Some types and formats of DVD-R (Dual Layer) and DVD+R (Double Layer) discs may be unreadable.*
- *2.6GB and 5.2GB DVD-RAM media cannot be read from or written to.*
- *DISC created in DVD-R (Dual Layer) format4 (Layer Jump Recording) cannot be read.*

- If the disc is poor in quality, or is dirty or damaged, writing or rewriting errors may be noted - ensure that you check all discs for dirt or damage before you use them.
- The actual number of rewrites to CD-RW, DVD-RW, DVD+RW or DVD-RAM media will be affected by the quality of the disc itself and the way in which it is used.
- There are two types of DVD-R media available, authoring discs and general use discs. Do not attempt to use authoring discs as only general use discs can be written to by a computer drive.
- You can use both DVD-RAM discs that can be removed from a cartridge and DVD-RAM discs designed without a cartridge.
- You may find that other computer DVD-ROM drives or other DVD players may not be able to read DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer) or DVD+RW discs.
- Data written to a CD-R, DVD-R, DVD-R (Dual Layer), DVD+R or DVD+R (Double Layer) discs cannot be deleted either in whole or in part.
- Data deleted/erased from a CD-RW, DVD-RW, DVD+RW or DVD-RAM disc cannot be recovered. You must check the content of the disc carefully before you delete it, taking care that, if multiple drives that can write data to discs are connected, you do not delete data from the wrong one.
- In writing to DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer), DVD+RW or DVD-RAM media, some space is required for file management, so you may not be able to write to the full capacity of the disc.
- Since the disc is based on the DVD standard, it might be filled with dummy data if the written data is less than about 1GB. Therefore, in these circumstance, even if you write only a small amount of data, it might take additional time to fill in the dummy data.
- When multiple drives that can write data to discs are connected, be sure that you do not write to or delete data from the wrong drive.
- Be sure to connect the AC adaptor to the computer before you write or rewrite any information.
- Before you enter either Sleep Mode or Hibernation Mode, take care to ensure that any DVD-RAM writing has been completed. In this instance, writing is finished if you can eject the DVD-RAM media.

- Be sure to close all other software programs except for the writing software itself.
- Do not run software such as a screen saver which can put a heavy load on the processor.
- Operate the computer at its full power settings - do not use any power-saving features.
- Do not write information while virus checking software is running, instead wait for it to finish, then disable the virus protection applications, including any software that checks files automatically in the background.
- Do not use any hard disk utilities, including those that are intended to enhance hard disk drive access speeds, as they may cause unstable operation and damage data.
- CD-RW (Ultra Speed +) media should not be used as data may be lost or damaged.
- You should always write from the computer's hard disk drive onto the CD/DVD - do not try to write from shared devices such as a server or any other network device.
- Writing with software other than TOSHIBA Disc Creator has not been confirmed, therefore operation with other software applications cannot be guaranteed.

When writing or rewriting

Please observe the following points while you write or rewrite data to CD-R, CD-RW, DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer), DVD+RW or DVD-RAM media:

- Always copy data from the hard disk drive to the optical media - do not use the cut-and-paste function as the original data will be lost if there is a write error.
- Do not perform any of the following actions:
  - Change users in the Windows Vista® operating system.
  - Operate the computer for any other function, including such tasks as using a mouse or Touch Pad, or closing/opening the display panel.
  - Start a communication application such as a modem.
  - Apply impact or vibration to the computer.
  - Install, remove or connect external devices, including such items as a PC Card, Smart Card, SD/SDHC Card, USB device, external monitor, i.LINK device, or an optical digital device.
  - Use the audio/video control button to reproduce music or voice.
  - Open the optical disc drive.
- Do not use shut down, log off, Sleep Mode or Hibernation Mode functions while writing or rewriting.

- Make sure that the write/rewrite operation is completed before going into either Sleep Mode or Hibernation Mode (writing is completed if you can remove an optical media on the DVD Super Multi (Double Layer) Drive Kit II).
- If the media is of poor quality, or is dirty or damaged, writing or rewriting errors may occur.
- Set the computer on a level surface and avoid places subject to vibration such as airplanes, trains or cars. In addition, do not use the computer on an unstable surface such as a stand.
- Keep mobile phones and other wireless communication devices away from the computer.

TOSHIBA Disc Creator

Please be aware of the following limitations when you use the TOSHIBA Disc Creator:

- DVD Video cannot be created using TOSHIBA Disc Creator.
- DVD Audio cannot be created using TOSHIBA Disc Creator.
- You cannot use TOSHIBA Disc Creator's "Audio CD for Car or Home CD Player" function to record music to DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer) or DVD+RW media.
- Do not use the "Disc Backup" function of TOSHIBA Disc Creator in order to copy DVD Video or DVD-ROM material that has copyright protection.
- DVD-RAM discs cannot be backed up using the "Disc Backup" function of TOSHIBA Disc Creator.
- You cannot back up CD-ROM, CD-R or CD-RW media to DVD-R, DVD-R (Dual Layer) or DVD-RW media using the "Disc Backup" function of TOSHIBA Disc Creator.
- You cannot back up CD-ROM, CD-R or CD-RW media to DVD+R, DVD+R (Double Layer) or DVD+RW media using the "Disc Backup" function of TOSHIBA Disc Creator.
- You cannot back up DVD-ROM, DVD Video, DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer) or DVD+RW to CD-R or CD-RW media using the "Disc Backup" function of TOSHIBA Disc Creator.
- TOSHIBA Disc Creator cannot record in packet format.
- You might not be able to use the "Disc Backup" function of TOSHIBA Disc Creator to back up a DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer) or DVD+RW disc that was made with other software on a different optical media recorder.

- If you add data to a DVD-R, DVD-R (Dual Layer), DVD+R or DVD+R (Double Layer) disc that you have already recorded to, you might not be able to read the added data under some circumstances. For example, it cannot be read under 16-bit operating systems, such as Windows 98SE and Windows Me, while in Windows NT4 you will need Service Pack 6 or later, and in Windows 2000, you will need Service Pack 2. In addition to this, some DVD-ROM and DVD-ROM / CD-R/RW drives cannot read this added data regardless of the operating system.
- TOSHIBA Disc Creator does not support recording to DVD-RAM discs - to achieve this you should use Windows Explorer or another similar utility.
- When you back up a DVD disc, be sure that the source drive supports recording to DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer) or DVD+RW media - if this is not the case then the source disc might not be backed up correctly.
- When you back up a DVD-R, DVD-R (Dual Layer), DVD-RW, DVD+R, DVD+R (Double Layer) or DVD+RW disc, be sure to use the same type of disc.
- You cannot partially delete any data written to a CD-RW, DVD-RW or DVD+RW disc.

Data Verification

To verify that data has been written or rewritten correctly to a data CD/DVD you should follow the steps below before you begin the write/rewrite process:

1. Click **Start** -> **All Programs** -> **TOSHIBA** -> **CD&DVD Application** -> **TOSHIBA Disc Creator** to access the **TOSHIBA Disc creator** utility.
2. Open the **Data CD/DVD Setting** dialog box by one of the following methods:
   - Click the **Recording settings** button ( ) for writing on the main toolbar in the **Data CD/DVD** mode.
   - Select **Settings for Each Mode** -> **Data CD/DVD** in the **Settings** menu.
3. Select the **Verify written data** check box.
4. Select **File Open** or **Full Compare** mode.
5. Click the **OK** button.

How to learn more about TOSHIBA Disc Creator

Please refer to the Help files for additional TOSHIBA Disc Creator information.

TOSHIBA DVD PLAYER

Please be aware of the following limitations when you use the TOSHIBA DVD PLAYER:

Notes on use

- Frame dropping, audio skipping or out of synch audio and video may occur during playback of some DVD Video titles.
- Close all other applications when using the “TOSHIBA DVD PLAYER”. Do not open any other applications or carry out any other operations during DVD Video playback. Playback may stop or not function properly in some situations.
- Unfinalized DVDs created on home DVD recorders may not be playable on the computer.
- Use DVD-Video discs with a region code which is either “the same as the factory default setting” or “ALL”.
- Do not playback DVD discs Video while watching or recording television programs using other applications. Doing so may cause DVD Video playback or television program recording errors. In addition, if pre-scheduled recording starts during DVD Video playback it may cause DVD Video playback or television program recording errors. Please view DVD Video during times when there is no recording pre-scheduled.
- The resume function cannot be used with some discs on the “TOSHIBA DVD PLAYER”.
- It is recommended the AC adaptor be connected when playing DVD-Video. Power saving features may interfere with smooth playback. When playing DVD-Video using battery power, set the Power Options to “Balance”.
- Screen savers will not display while playing a movie in the “TOSHIBA DVD PLAYER”. The computer will also not go into Sleep Mode, Hibernation Mode or shutdown while using “TOSHIBA DVD PLAYER”.
- Do not configure the Display automatic power off function to run while the “TOSHIBA DVD PLAYER” is running.

Display Devices & Audio

- “TOSHIBA DVD PLAYER” will only run when “Colors” is set to “Highest (32 bit)”. The “Colors” setting can be adjusted on the “Monitor” tab in the “Display Settings”. To open the Display Settings, click **Start** -> **Control Panel** -> **Appearance and Personalization** -> **Personalization** -> **Display Settings**.
- If the DVD Video image is not displayed on an external display or television, stop the “TOSHIBA DVD PLAYER”, and change the screen resolution in “Resolution” on the “Monitor” tab in the “Display Settings”. However, video cannot be output to some external displays and televisions due to output or playback conditions.
- When viewing DVD-Video on an external display or TV, change the display device before playing. DVD-Video cannot be displayed simultaneously (in clone mode) on both the computer’s display panel and an external display.
- Do not change the screen resolution while running the “TOSHIBA DVD PLAYER”.

TOSHIBA DVD PLAYER

- “TOSHIBA DVD PLAYER” software is supported for playback of DVD-Video and DVD-VR.
- The “TOSHIBA DVD PLAYER” does not have a parental control function.
- In order to protect copyrights, the Windows Print Screen function is disabled when “TOSHIBA DVD PLAYER” is running.
- (Print Screen functions are disabled even when running other applications besides “TOSHIBA DVD PLAYER” and when “TOSHIBA DVD PLAYER” is minimized.) Please close the “TOSHIBA DVD PLAYER” to use the Print Screen function.
- Carry out the installation/uninstallation of the “TOSHIBA DVD PLAYER” under a user account with administrator rights.
- Do not change Windows Users while “TOSHIBA DVD PLAYER” is running.
- For some DVD Video discs, using the control window to change the audio track will also change the subtitle track.

Starting TOSHIBA DVD PLAYER

Use the following procedure to start “TOSHIBA DVD PLAYER”.

1. Insert an DVD-Video in the DVD Super Multi drive while Windows Vista is running.
   When an DVD-Video disc is set in the DVD drive, the following application selection screen may appear.
   If this occurs, select **Play DVD movie**, then click **OK** to launch the **TOSHIBA DVD PLAYER**.

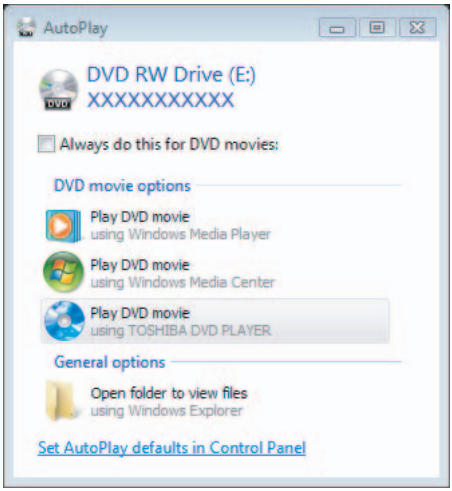


Figure 4-28 Application selection screen

2. Touch the **CD/DVD** panel on the Front operation panel.
   Or select **Start** -> **All Programs** -> **TOSHIBA DVD PLAYER** -> **TOSHIBA DVD PLAYER** to start “TOSHIBA DVD PLAYER”.

Operating TOSHIBA DVD PLAYER

Notes on Using “TOSHIBA DVD PLAYER”.

- Screen display and available features may vary amongst DVD-Videos and scenes.
- Only operation buttons (including remote controller and Front operation panels) which correspond to currently available and active features will be useable during DVD playback.
- If the menu is opened in the Display Area using the Control window’s Top Menu or Menu buttons, touch pad and mouse menu operations may not be able to be used.

Open TOSHIBA DVD PLAYER HELP

TOSHIBA DVD PLAYER features and instructions are also explained in detail in “TOSHIBA DVD PLAYER Help”.

Use the following procedure to open “TOSHIBA DVD PLAYER Help”.

Click the “Help” button ( ) in the Display Area.

Media care

This section provides tips on protecting data stored on your CD’s, DVD’s and floppy diskettes. Handle your media with care. Following the simple precautions listed below will increase the lifetime of your media and protect the data stored on it.

CD/DVDs

1. Store your CD’s and DVD’s in the containers they originally came in to protect them and keep them clean.
2. Do not bend the CD’s or DVD’s.
3. Do not write on, apply a sticker to, or otherwise mar the surface of the CD or DVD that contains the data.
4. Hold the CD or DVD by its outside edge or the edge on the center hole - any fingerprints on the surface of the disc can prevent the drive from properly reading data.
5. Do not expose the CD or DVD to direct sunlight, extreme heat or cold.
6. Do not place heavy objects on your CD’s or DVD’s.
7. If your CD’s or DVD’s become dusty or dirty, wipe them with a clean dry cloth from the center hole outwards - do not wipe in a circular direction. If necessary, you can use a cloth that has been lightly dampened in water or a neutral cleaner but you must not use benzine, thinner or any similar cleaning solution.

Floppy diskettes

The USB floppy diskette drive is available only as an option.

1. Store your floppy diskettes in the container they came in to protect them and keep them clean. If a floppy diskette becomes dirty, clean it with a soft, lightly dampened cloth - do not use cleaning fluid.
2. Never open the shutter or touch the magnetic surface of your floppy diskette - doing this could permanently damage it and lose data.
3. Always handle floppy diskettes with care to prevent the loss of stored data.
4. Always apply the floppy diskette label in the correct location and never apply a new label on top of an existing one - in this instance the label could come loose and damage the floppy diskette drive.

5. Never use a pencil for writing on a floppy diskette label as the dust from the pencil lead could cause a system malfunction if it found its way onto the computer's components. In this instance, always use a felt-tipped pen and write the label first before applying it to the floppy diskette.
6. Never put a floppy diskette in a location where water or other liquid may make contact with it, or where it is excessively damp - either of these conditions could cause data loss.
7. Never use a wet or damp floppy diskette - this could damage the floppy diskette drive or other devices within the computer.
8. Data may be lost if the floppy diskette is twisted, bent, or exposed to direct sunlight, extreme heat or cold.
9. Do not place heavy objects on your floppy diskettes.
10. Do not eat, smoke, or use items such as erasers near your floppy diskettes as foreign particles inside the jacket of the floppy diskette can damage the magnetic surface.
11. Magnetic energy can destroy the data on your floppy diskettes. In view of this you should keep your floppy diskettes away from speakers, radios, televisions and other sources of magnetic fields.

Sound System

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 Taskbar, and 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

Follow the steps below to change the microphone recording level.

1. Right click on the speaker icon on the 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.

PC Beep Level

Follow the steps below to change the PC Beep playback level.

1. Right click on the speaker icon on the Taskbar, and select **Playback Devices** in the sub menu.
2. Select **Speakers**, and click **Properties**.
3. On the **Levels** tab move the **PC Beep** slider to increase or decrease the PC Beep volume level.

Audio Enhancements

In order to apply the sound effects for your current speaker, follow the steps below.

1. Right click on the speaker icon on the Taskbar, and 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**.

Realtek HD Audio Manager

You can confirm and change the audio configuration using the **Realtek Audio Manager**. To launch the **Realtek Audio Manager**, click **Start** -> **Control Panel**, switch to the **Classic View**, then double-click **Realtek HD Audio Manager**.

When you first launch the Realtek Audio Manager, you will see two device tabs. **Speakers** is the default output device. **Microphone** is the default input device. To change the default device, click the **Set Default Device** button under the chosen device tab.

Information

Click the **information button** to view hardware information, software information, and language setting.

Power Management

The audio controller in your computer can be turned off when the audio function is not used. To adjust the configuration of audio power management, click the **battery button** .

- When audio power management is enabled, the circle button at the upper left of the Power Management is blue and convex.
- When audio power management is disabled, the button is black and concave.

Speaker Configuration

Click the **playback button** to confirm the internal speakers or the headphone sound is coming from the right direction.

Default Format

You can change the sample rate and bit depth of sound.

TOSHIBA Mic Effect

TOSHIBA Mic Effect provides you with a hands-free environment for holding mutual communication via the Internet Protocol or Local Area Network. If you wish to communicate with someone on your computer, you can use a messenger application. However, with such an application, you would hear your own voice returning to you as echo during the communication if you did not use a headset system or headphone. TOSHIBA Mic Effect will reduce these echoes generated on your computer.

To apply the echo cancellation, follow the steps below.

1. Click the right button of a mouse on the speaker icon on the Taskbar, and select **Playback Devices** in the sub menu.
2. On the **Playback** tab, select **Speakers**, and click **Properties**.
3. On the **Advanced** tab, select "**16 bit, 48000 Hz (DVD Quality)**" in the pull-down menu of Default Format, and then click **OK**.
4. On the **Recording** tab, select **Microphone**, and click **Properties**.
5. On the **Advanced** tab, select "**2 channel, 16 bit, 48000 Hz (DVD Quality)**" in the pull-down menu of the Default Format pane.
6. On the **TOSHIBA Mic Effect** tab, select the **Enable Echo Canceller** check box, and click **Apply**.

Modem

This section describes how to connect and disconnect the internal modem to and from a telephone jack.

- *Connection to any communication line other than an analog phone line could cause a computer system failure.*
  - *Connect the built-in modem only to ordinary analog phone lines.*
  - *Never connect the built-in modem to a digital line (ISDN).*
  - *Never connect the built-in modem to the digital connector on a public telephone or to a digital private branch exchange (PBX).*
  - *Never connect the built-in modem to a key telephone system for residences or offices.*
- *Never operate your computer on AC power during a thunderstorm. If you see lightning or hear thunder, immediately turn off the computer. An electric surge caused by the storm, may result in a system failure, loss of data or hardware damage.*
- *Modem functions cannot be used in models which are not equipped with a modem.*

This information is applicable to the models equipped with a built-in modem.

Region selection

Telecommunication regulations vary from one region to another, so you will need to make sure the internal modem's settings are correct for the region in which it will be used.

The built-in modem can be used only in specified countries and regions. Using the modem in an area not specified for use may cause a system failure. Check the specified areas carefully before using it.

To select a region, follow the steps as detailed below:

1. Click **Start** -> **All Programs** -> **TOSHIBA** -> **Networking** -> **Modem Region Select**.

If it is available, do not use the Country/Region Select function included as part of the modem setup utility within the Control Panel - if you change the country/region setting this way you may find that the change does not take effect.

2. The Region Selection icon will appear in the Windows Taskbar.
3. Click the icon with the primary (left) mouse button to display a list of regions that the modem supports, together with a sub-menu which details telephony location information - a check mark will appear next to the currently selected region and telephony location.
4. Select either a region from the region menu or a telephony location from the sub-menu.
   - When you click a region it becomes the modem's default selection for any new dialling locations that are created within the Windows Control Panel (Phone and Modem Options).
   - When you select a telephony location, the corresponding region is automatically selected and becomes the modem's default setting.

Properties menu

Click the icon with the secondary (right) mouse button in order to display a Properties menu on the screen.

Setting

Within the Properties menu you are able to either enable or disable the following settings:

AutoRun Mode

Allows you to configure whether the Modem Region Select utility starts automatically whenever you start up the operating system.

Open the Dialing Properties dialog box after selecting region.

Allows you to configure whether the dialing properties dialog box will be displayed automatically after you have selected a region.

Location list for region selection.

Displays a sub-menu appears which details location information.

Open dialog box, if the modem and Telephony Current Location region code do not match.

Displays a warning if the current settings for both region code and telephony location are different.

Modem Selection

If the computer cannot recognize the internal modem, a dialog box is displayed from which you should select the appropriate communications port for your modem to use.

Dialing Properties

You should select this item in order to display the dialing properties.

If you are using the computer in Japan, the Telecommunications Business Law requires that you select Japan region mode. It is illegal to use the modem in Japan with any other selection.

Connecting the modular cable

To connect the modem's modular cable, follow the steps as detailed below:

- *Connection to any communication line other than an analog phone line could cause a computer system failure.*
  - *Connect the built-in modem only to ordinary analog phone lines.*
  - *Never connect the built-in modem to a digital line (ISDN).*
  - *Never connect the built-in modem to the digital connector on a public telephone or to a digital private branch exchange (PBX).*
  - *Never connect the built-in modem to a key telephone system for residences or offices.*
- *Never operate your computer on AC power during a thunderstorm. If you see lightning or hear thunder, immediately turn off the computer. An electric surge caused by the storm, may result in a system failure, loss of data or hardware damage.*

1. Plug the end of the modular cable into the computer's modem jack.
2. Plug the other end of the modular cable into a telephone jack.

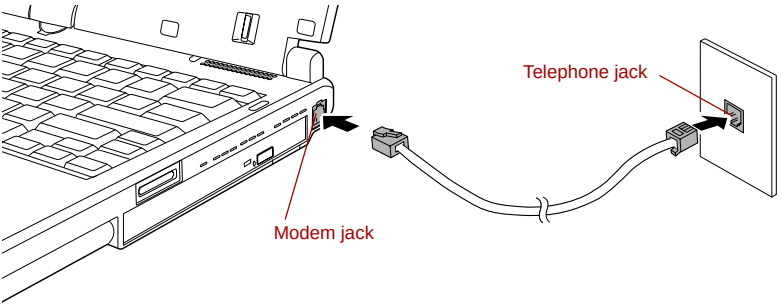


Figure 4-29 Connecting the internal modem

Do not pull on the cable or move the computer while the cable is connected.

If you use a storage device such as an optical drive or hard disk drive connected to a 16-bit PC Card, you might experience the following problems with the operation of the modem:

- *The modem speed is slow or communication is periodically interrupted.*
- *Skips or jumps may be noted in sound.*

Disconnecting the modular cable

To disconnect the modular cable, follow the steps as detailed below:

1. Pinch the lever on the plug in the telephone jack and pull it out from within the connector.
2. Pinch the lever on the plug in the computer's modem jack and pull it out from within the computer.

Wireless communications

The computer's wireless communication function supports both Wireless LAN and Bluetooth devices.

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

- *Do not use the Wireless LAN (Wi-Fi), Bluetooth or Wireless WAN 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, Bluetooth or Wireless WAN operation.*
- *Turn Wi-Fi, Bluetooth and Wireless WAN functionalities off when near a person who may have a cardiac pacemaker implant or other medical electric device. Radio waves may affect pacemaker or medical device operation, possibly resulting in serious injury. Follow the instruction of your medical device when using any Wi-Fi or Bluetooth or Wireless WAN functionality.*
- *Always turn off Wi-Fi or Bluetooth or Wireless WAN 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 may 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(*) will have to be configured for all computers connected to the same network in order to re-enable network connections.
  ** Please be sure to use new network name.*

Wireless LAN

The Wireless LAN is compatible with other LAN systems based on Direct Sequence Spread Spectrum / Orthogonal Frequency Division Multiplexing radio technology that complies with the IEEE802.11 Wireless LAN standard.

Do not install or remove a memory module while Wake-up on Wireless LAN is enabled.

- *The Wake-up on Wireless LAN function consumes power even when the system is off. Leave the AC adaptor connected while using this feature.*
- *The Wake-up on Wireless LAN function is effective only when it is connected with an Access Point. This function becomes invalid when the connection is broken.*

- Frequency Channel Selection of 5GHz for IEEE 802.11a or/and IEEE802.11n draft 2.0.
- Frequency Channel Selection of 2.4GHz for IEEE 802.11b/g or/and IEEE802.11n draft 2.0.
- Roaming over multiple channels
- Card power management
- Wired Equivalent Privacy (WEP) data encryption based on an 128-bit encryption algorithm
- Wi-Fi Protected Access (WPA)

The transmission speed over the wireless LAN, and the distance over which the wireless LAN can reach, may vary depending on surrounding electromagnetic environment, obstacles, access point design and configuration, client design and software/hardware configurations. The transmission rate described is the theoretical maximum speed as specified under the appropriate standard - the actual transmission speed will be lower than the theoretical maximum speed.

Setting

1. Please make sure that the **Wireless Communication Switch** is turned on.
2. Click **Start** and then click **Connect To** to display **Connect to a network** window.
3. Click **Set up a connection or network**.
4. Follow the wizard. You will need the name of the wireless network together with security settings. Consult the documentation accompanied with your router or ask your wireless network administrator for the settings.

Security

- TOSHIBA strongly recommend that you enable encryption functionality, otherwise your computer will be open to illegal access by an outsider using a wireless connection. If this occurs, the outsider may 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.

Bluetooth wireless technology

Bluetooth™ wireless technology eliminates the need for cables between electronic devices such as desktop computers, printers and mobile phones.

You cannot use the computer's built-in Bluetooth functions and an optional Bluetooth devices simultaneously. For reference, Bluetooth wireless technology has the following features:

Worldwide operation

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

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.

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.

Bluetooth Stack for Windows by TOSHIBA

Please note that this software is specifically designed for the following operating systems:

- Microsoft Windows Vista

Information regarding the use of this software with these operating systems is listed below, with further details being contained with the electronic help files supplied with the software.

This Bluetooth Stack is based on the Bluetooth Version 1.1/1.2/2.0+EDR/ 2.1+EDR specification. However, TOSHIBA cannot confirm the compatibility between any computing products and/or other electronic devices that use Bluetooth, other than TOSHIBA notebook computers.

Release Notes related to the Bluetooth Stack for Windows by TOSHIBA

1. Fax application software:
   Please be aware that there is some fax application software that you cannot use on this Bluetooth Stack.
2. Multi-user considerations:
   On Windows Vista, the use of Bluetooth is not supported in a multi-user environment. This means that, when you use Bluetooth, other users that are logged into the same computer will not be able to use this type of functionality.

Product Support:

The latest information regarding operating system support, language support or available upgrades can be found on our web site *http://www.toshiba-europe.com/computers/tnt/bluetooth.htm* in Europe or *www.pcsupport.toshiba.com* in the United States.

Wireless communication switch

You can enable or disable Wireless communication (Wireless LAN, Bluetooth and Wireless WAN) functions, with the on/off switch. No transmissions are sent or received when the switch is off. Slide the switch to the right to turn it on and to the left to turn it off.

Wireless communication Indicator

The wireless communication indicator shows the status of the computer's wireless communication functions.

Indicator status	Indication
Indicator off	The wireless communication switch is off - no wireless functionality is available.
Indicator glows	Wireless communication switch is on. Wireless LAN or Bluetooth is turned on by an application.

If you used the Taskbar to disable the wireless LAN, restart the computer or perform the following procedure to re-enable it: **Start** -> **Control Panel** -> **System and Maintenance** -> **System** -> **Device Manager** -> **Network adapters** and right click **the wireless device** then choose **enable.**

LAN

The computer has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T), Fast Ethernet LAN (100 megabits per second, 100BASE-TX) and Gigabit Ethernet LAN (1000 megabits per second, 1000BASE-T).

This section describes how to connect/disconnect to a LAN.

Do not install or remove a memory module while Wake-up on LAN is enabled.

- *The Wake-up on LAN function consumes power even when the system is off. Leave the AC adaptor connected while using this feature.*
- *The Link speed (10/100/1000 megabits per second) changes automatically depending on the network conditions (connected device, cable or noise and so on).*

LAN cable types

The computer must be configured properly before connecting to a LAN. Logging onto a LAN using the computer's default settings could cause a malfunction in LAN operation. Check with your LAN administrator regarding set-up procedures.

If you are using Gigabit Ethernet LAN (1000 megabits per second, 1000BASE-T), be sure to connect with a CAT5E cable or higher. You cannot use a CAT3 or CAT5 cable.

If you are using Fast Ethernet LAN (100 megabits per second, 100BASE-TX), be sure to connect with a CAT5 cable or higher. You cannot use a CAT3 cable.

If you are using Ethernet LAN (10 megabits per second, 10BASE-T), you can connect with a CAT3 or higher cable.

Connecting the LAN cable

To connect the LAN cable, follow the steps as detailed below:

- *Connect the AC adaptor before connecting the LAN cable. The AC adaptor must remain connected during LAN use. If you disconnect the AC Adaptor while the computer is accessing a LAN, the system may hang up.*
- *Do not connect any other cable to the LAN jack except the LAN cable. Otherwise, malfunctions or damage may occur.*
- *Do not connect any power supplying device to the LAN cable that is connected to the LAN jack. Otherwise, malfunctions or damage may occur.*

1. Turn off the power to the computer and to all external devices connected to the computer.
2. Plug one end of the cable into the LAN jack. Press gently until you hear the latch click into place.

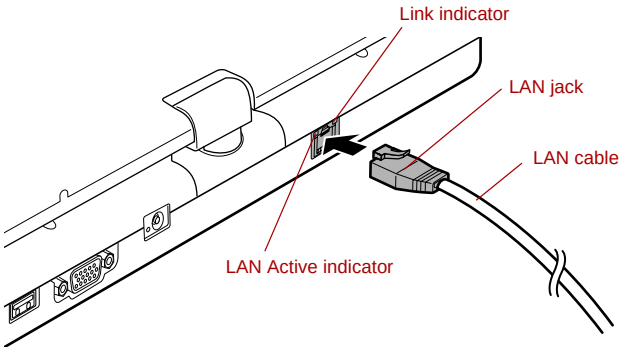


Figure 4-30 Connecting the LAN cable

3. Plug the other end of the cable into a LAN hub connector or router. Check with your LAN administrator and hardware or software vendor before using or configuring a network connection.

When the computer is exchanging data with the LAN, the **LAN Active** *indicator glows orange. When the computer is connected to a LAN hub but is not exchanging data, the* **Link** *indicator glows green.*

Disconnecting the LAN cable

To disconnect the LAN cable, follow the steps as detailed below:

Make sure the **LAN Active** *indicator (orange LED) is out before you disconnect the computer from the LAN.*

1. Pinch the lever on the connector in the computer's LAN jack and pull out the connector.
2. Disconnect the cable from the LAN hub or router in the same manner. Check with your LAN administrator and hardware or software vendor before disconnecting from the hub.

Computer Handling

This section explains computer handling and maintenance.

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 circumstance 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 slightly water dampened cloth.
- 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 rugged durability you should exercise a few simple precautions when moving it in order to help ensure trouble-free operation.

- Before moving the computer, it is recommended that you change the setting associated with the Hard Disk Drive Protection feature. Please refer to the section, *Using the Hard Disk Drive (HDD) Protection*, in this chapter for further information.
- Make sure all disk/disc activity has ended before moving the computer - check that the HDD and other indicators on the front of the computer are off.
- Turn off (shut down) the computer.
- Disconnect the AC adaptor and all peripherals before moving the computer.
- Close the display panel.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

- 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 may result in minor heat injury.
- 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 may cause damage to either the computer and/or the card resulting in product 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.

Using the Hard Disk Drive (HDD) Protection

This computer has a function for reducing the risk of damage on the hard disk drive.

Using an acceleration sensor built into the computer, TOSHIBA HDD Protection detects vibration shocks and similar signs of movement of the computer, and automatically moves the Hard Disk Drive head to a safe position to reduce the risk of damage that could be caused by head-to-disk contact.

- *This function does not guarantee that the hard disk drive will not be damaged.*
- *The secondary hard disk drive is not supported by the TOSHIBA HDD protection function.*
- *TOSHIBA HDD Protection cannot be used in models that are equipped with SSD.*

When vibration is detected, a message will be displayed on the screen, and the icon in the Taskbar notification area will change to the protection state. This message is displayed until the **OK** button is pressed or 30 seconds pass. When vibration subsides, the icon returns to the normal state.

Taskbar icon

State	Icon	Description
Normal		TOSHIBA HDD Protection is enabled.
Protection		TOSHIBA HDD Protection is active. The hard disk drive head is in a safe position.
OFF		TOSHIBA HDD Protection is disabled.

TOSHIBA HDD Protection Properties

You can change the TOSHIBA HDD Protection settings by using the TOSHIBA HDD Protection Properties window. To open the window, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **HDD Protection Settings**. The window can also be started from the icon on the Taskbar or from the **Control Panel**.

HDD Protection

You can choose whether to enable or disable TOSHIBA HDD Protection.

Detection Level

This function can be set to four levels. The sensitivity levels in which vibrations, impacts and their similar signs are detected can be set to OFF, 1, 2 and 3 in ascending order. Level 3 is recommended for better protection of the computer. However, when the computer is used in a mobile environment or in other unstable conditions, setting the detection level to 3 could result in frequent execution of TOSHIBA HDD Protection, which will slow Hard Disk Drive reading and writing. Set a lower detection level when the speed of Hard Disk Drive reading and writing is a priority.

Different detection levels can be set depending on whether the computer is used as handheld or mobile usages, or whether it is used in a stable environment such as on a table in the workplace or at home. By setting different detection levels for the computer depending on whether it runs with the AC power (desktop) or with batteries (handheld or mobile usage), the detection level automatically switches according to the power connection mode.

3D Viewer

This feature displays a 3D object on the screen which moves in according to tilting or vibration of the computer.

When the TOSHIBA HDD Protection detects computer vibration the Hard Disk Drive head is parked and the 3D object disk rotation will stop. When the head is un-parked the disk will begin to rotate again.

The **3D Viewer** can be started from the icon in the task tray.

- *This 3D object virtually represents the Computer's internal Hard Disk Drive. This representation may vary from the actual number of disks, disk rotation, head movement, part size, shape and direction.*
- *This feature may use a large amount of CPU and memory on some models. The computer may become slow or sluggish when attempting to run other applications while the 3D Viewer is displayed.*
- *Intensely shaking the computer or other subjecting it to strong impacts may cause damage to the computer.*

Details

To open the Details window, click the **Setup Detail** button in the TOSHIBA HDD Protection Properties window.

Detection Level Amplification

When the AC adaptor is disconnected or the lid is closed, HDD Detection assumes that the computer will be carried and sets the detection level to the maximum for 10 seconds.

TOSHIBA HDD Protection Message

Specify whether to display a message when TOSHIBA HDD Protection is active.

This function does not work when the computer is starting, in Sleep Mode, in Hibernation Mode, in transition to Hibernation Mode, recovering from Hibernation Mode, or powered off. Be sure to not subject the computer to vibration or impact while the function is disabled.

Using the TOSHIBA USB Sleep and Charge Utility

This utility displays whether the USB Sleep and Charge function is enabled or disabled and shows the positions of USB ports that support the USB Sleep and Charge function. It also displays the remaining battery capacity.

USB Sleep and Charge

Your computer can supply USB bus power (DC5V) to the USB port even when the power of the computer is turned OFF. “Power OFF” includes Sleep Mode, Hibernation Mode or shutdown state.

This function can be used for ports that support the USB Sleep and Charge function (hereinafter called “compatible ports”).

Compatible ports are USB ports that have the *(⚡).* symbol icon.

You can use the “USB Sleep and Charge function” to charge certain USB-compatible external devices such as mobile phones or portable digital music players.

However, the “USB Sleep and Charge function” may not work with certain external devices even if they are compliant with the USB specification. In those cases, turn the power of the computer ON to charge the device.

- *When "USB Sleep and Charge function" is set to [Enabled], USB bus power (DC5V) will be supplied to compatible ports even when the power of the computer is turned OFF.*
  USB bus power (DC5V) is similarly supplied to the external devices which are connected to the compatible ports. However, some external devices cannot be charged solely by supplying USB bus power (DC5V).
  As for the specifications of the external devices, please contact the device manufacturer or check the specifications of the external devices thoroughly before use.
- *Using the USB sleep and charge function to charge external devices will take longer than charging the devices with their own chargers.*
- *If external devices are connected to compatible ports when the AC adaptor is not connected to the computer, the battery of the computer will be depleted even when the power of the computer is turned OFF. As such, we recommend that you connect the AC adaptor to the computer when using the USB sleep and charge function.*
- *External devices connected to the USB bus power (DC5V) function that interfaces with the power ON/OFF of the computer may always be in an operational state.*
- *When there is a current overflow of the external devices connected to the compatible ports, USB bus power (DC5V) supply may be stopped for safety reasons.*
- *When "USB Sleep and Charge function" is set to [Enabled], the "USB Wakeup function" does not work for compatible ports.*
  In that case, if there is a USB port that does not have the USB Sleep and Charge function-compatible icon ( ), attach the mouse or keyboard to it.
  If all USB ports have the USB Sleep and Charge function-compatible icon ( ), change the "USB Sleep and Charge function" setting to [Disabled].
  The "USB Wakeup function" will now work, but the "USB Sleep and Charge function" will be disabled.

Metal paper clips or hair pins/clips will generate heat if they come into contact with USB ports. Do not allow USB ports to come into contact with metal products, for example when carrying the computer in your bag.

Starting the USB Sleep and Charge Utility

To start the utility, click **Start**-> **All Programs** -> **TOSHIBA** -> **Utilities** -> **USB Sleep and Charge**.

Enabling USB Sleep and Charge

This utility can be used to enable and disable the USB Sleep and Charge function in groups. USB Sleep and Charge compatible USB ports are assigned to each group.

Select the check boxes for each group to enable the USB Sleep and Charge function for the USB ports assigned to that group. In the default state all groups are disabled.

Power supply mode settings

There are several USB Sleep and Charge function modes.

“Mode 1” should normally be used. Set one of the other modes if the charge function cannot be used in “Mode 1”. The selected charge mode will be applied to all groups.

Some groups may be grayed out and not able to be selected for some modes. This indicates that those groups are not compatible with the selected mode and the USB Sleep and Charge function cannot be used.

In this situation, either select a different mode, or set one of the selectable “Groups”. This function may not be able to be used with some connected external devices even if the appropriate group is selected. In this situation, clear the check boxes for each group and stop using this function.

Battery Settings

This utility can be used to specify the lower limit of remaining battery life for USB Sleep and Charge. Move the slider bar to specify the lower limit. If the remaining battery life falls below the setting, the USB Sleep and Charge function will be stopped. Selecting the “AC Only” check box sets the utility to only charge when the AC adaptor is connected.

Heat dispersal

To protect against overheating, the processor is equipped an internal temperature sensor which activates a cooling fan or lowers the processing speed if the computer’s internal temperature rises to a certain level. You are able to select whether to control this temperature by either turning on the fan first, then if necessary lowering the processor speed, or by lowering the processor speed first, then if necessary turning on the fan - these functions are controlled within the Power Options.

When the processor’s temperature falls to a normal range, the fan will be turned off and the processor operation returned to its standard speed.

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

Chapter 5

The Keyboard

The computer's keyboard layouts are compatible with a 104/105-key enhanced keyboard - by pressing some keys in combination, all of the 104/105-key enhanced keyboard functions can be performed on the computer.

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

In use there are six different types of keys, specifically typewriter keys, function keys, soft keys, Hot keys, Windows special keys and the keypad overlay.

Typewriter keys

The typewriter keys produce the upper-case and lower-case letters, numbers, punctuation marks, and special symbols that appear on the screen. However, there are some differences between using a typewriter and using a computer keyboard:

- Letters and numbers produced in computer text vary in width. Spaces, which are created by a "space character" may also vary depending on line justification and other factors.
- The lowercase l (el) and the number 1 (one), together with the uppercase O (oh) and the 0 (zero), are not interchangeable on computers as they are on a typewriter.
- The **CAPS LOCK** function key locks only the alphabetic characters into upper-case while the Shift Lock function on a typewriter places all keys in the shifted position.
- The **SHIFT** keys, the **Tab** key, and the **BACK SPACE** key perform the same function as their typewriter counterparts but also have special computer functions.

Never remove the key caps on your keyboard. Doing so could cause damage to the parts under the key caps.

Function keys: F1 ... F12

The function keys (not to be confused with the special **FN** key) are the twelve keys at the top of your keyboard - these keys function differently from other keys.

F1 through **F12** are called function keys because they execute programmed functions when pressed and, when used in combination with the **FN** key, those keys marked with icons also execute specific functions on the computer. Please refer to the section, *Soft keys: FN key combinations*, in this chapter for further information, taking care to note that the function executed by individual keys will depend on the software you are using.

Soft keys: FN key combinations

The **FN** (function) is unique to TOSHIBA computers and is used in combination with other keys to form soft keys. Soft keys are key combinations that enable, disable or configure specific features.

Please note that some software may disable or interfere with soft-key operations, and that the soft-key settings are not restored when the computer returns from Sleep Mode.

Emulating keys on an enhanced keyboard

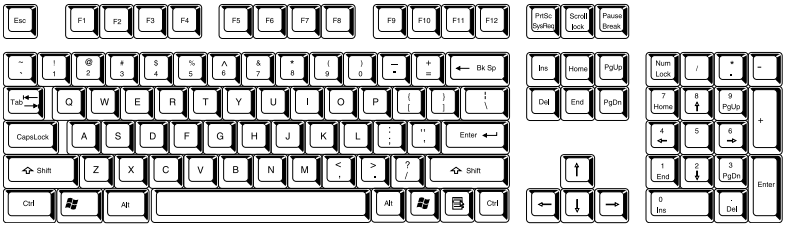
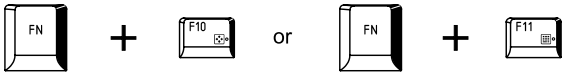


Figure 5-1 A 104-key enhanced keyboard layout

This computer's keyboard is designed to provide all the features of the 104-key enhanced keyboard.

Since the keyboard is smaller and has fewer keys, some of the enhanced keyboard functions must be simulated using two keys instead of one on the larger keyboard.

The **FN** key can be combined with the following keys to simulate functions similar to those of keys on the 104/105 key enhanced keyboard which are not on this computer's keyboard.



Press **FN** + **F10** or **FN** + **F11** to access the computer's integrated keypad. When activated, the keys with grey markings on their bottom edge become either numeric keypad keys (**FN** + **F11**) or cursor control keys (**FN** + **F10**). Please refer to the *Keypad overlay* section in this chapter for more information on how to operate these keys. The power on default for both settings is off.

Press **FN** + **F12** (**ScrLock**) to lock the cursor on a specific line. The power on default is off.

Press **FN** + **ENTER** to simulate **ENTER** on the enhanced keyboard's numeric keypad.

Hot keys

Hot keys (pressing **FN** + a function or **ESC** key) let you enable or disable certain features of the computer.

Mute: Pressing **FN** + **ESC** turns the volume on and off.

Lock: Pressing **FN** + **F1** enters "Lock computer mode". To restore your desktop, you need to log on again.

Power Plan: Pressing **FN** + **F2** changes the power settings.

Sleep: Pressing **FN** + **F3** switches the system to Sleep Mode.

Hibernate: Pressing **FN** + **F4** switches the system to Hibernation Mode.

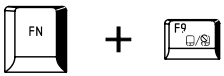
Output: Pressing **FN** + **F5** changes the active display device.

Brightness Down: Pressing **FN** + **F6** decreases the computer's display panel brightness in individual steps.

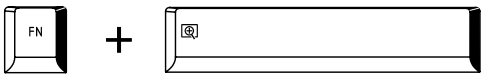
Brightness Up: Pressing **FN** + **F7** increases the computer's display panel brightness in individual steps.

Wireless: Pressing **FN** + **F8** switches the active wireless devices if the wireless communication switch is switched on.

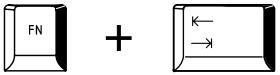
If no wireless communication device is installed, no dialog box will appear.



Touch Pad: Pressing **FN** + **F9** enables or disables the Touch Pad function.



Zoom: Pressing **FN** + **Space** changes the display resolution.



ODD: Pressing **FN** + **Tab** turns the power of the optical disc drive on/off or ejects the disc tray.

TOSHIBA Zooming Utility (reduce): Pressing **FN** + **1** reduces the icon size on the desktop or the font sizes within one of the supported application windows.

TOSHIBA Zooming Utility (enlarge): Pressing **FN** + **2** enlarges the icon size on the desktop or the font sizes within one of the supported application windows.

FN Sticky key

You can use the TOSHIBA Accessibility Utility to make the **FN** key sticky, that is, you can press it once, release it, and then press an "**F Number**" key. To start the TOSHIBA Accessibility utility, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **Accessibility**.

Windows special keys

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

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

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

Keypad overlay

Your computer's keyboard does not have a separate numeric keypad but includes a numeric keypad overlay which functions like one - this is located in the center of the keyboard with the relevant keys having grey letters at their front edge. The overlay provides the same functions as the numeric keypad on a standard 104/105-key enhanced keyboard.

Turning on the overlays

The numeric keypad overlay can be used for numeric data input or cursor and page control.

Arrow Mode

To turn on Arrow Mode, press **FN** + **F10** - the Arrow Mode indicator lights and you are able to access cursor and page control functions by using the keys. You are able to press **FN** + **F10** again to turn off this overlay function.

Numeric Mode

To turn on Numeric Mode, press **FN** + **F11** - the Numeric Mode indicator lights and you are able to access numeric characters by using the keys. You are able to press **FN** + **F11** again to turn off this overlay function.

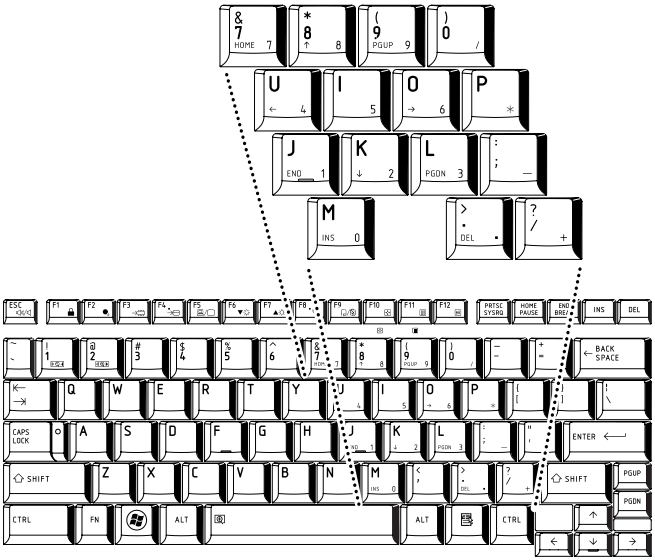


Figure 5-2 The numeric keypad overlay

Temporarily using normal keyboard (overlay on)

While using the overlay, you can temporarily access the normal keyboard functions without having to turn the overlay off:

1. Hold down **FN** key and press any other key - this key will operate as if the overlay were off.
2. Type upper-case characters by holding down **FN** + **SHIFT** and pressing a character key.
3. Release **FN** key to continue using the selected overlay function.

Temporarily using overlay (overlay off)

While using the normal keyboard function, you can temporarily use the keypad overlay without having to turn it on:

1. Hold down **FN** key.
2. Check the keyboard indicators as pressing the **FN** key will turn on the most recently used overlay function - if the Numeric Mode indicator lights you can use the overlay for numeric entry, while if the Arrow Mode indicator lights, you can use the overlay for cursor and page control function.
3. Release **FN** key to return to normal keyboard operation.

Temporarily changing modes

If the computer is in **Numeric Mode**, you can switch temporarily to **Arrow Mode** by pressing a **SHIFT** key, while if it is in **Arrow Mode**, you can switch temporarily to **Numeric Mode** by also pressing a **SHIFT** key.

Generating ASCII characters

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

With the overlay on:

1. Hold down **ALT** key.
2. Using the overlay keys, type the ASCII code of the character you require.
3. Release **ALT** - the ASCII character will appear on the display screen.

With the overlay off:

1. Hold down **ALT** + **FN**.
2. Using the overlay keys, type the ASCII code of the character you require.
3. Release **ALT** + **FN** - the ASCII character will appear on the display screen.

Chapter 6

Power and Power-Up Modes

The computer's power resources include the AC adaptor, battery pack and any internal batteries. This chapter provides details on making the most effective use of these resources, and includes information on charging and changing batteries, tips for saving battery power, and information on the different power-up modes.

Power conditions

The computer's operating capability and battery charge status are affected by different power conditions, including whether an AC adaptor is connected, whether a battery pack is installed and what the charge level is for that battery.

Table 6-1 Power conditions

		Power on	Power off (no operation)
AC adaptor connected	Main Battery fully charged	• Operates • No charge • LED: **Battery** green **DC IN** green	• No charge • LED: **Battery** green **DC IN** green
	Main Battery partially charged or no charge	• Operates • Charge *1 • LED:**Battery** orange **DC IN** green	• Quick charge *1 • LED: **Battery** orange **DC IN** green
	No Main battery installed	• Operates • No charge • LED: **Battery** off **DC IN** green	• No charge • LED: **Battery** off **DC IN** green

Table 6-1 Power conditions continued

		Power on	Power off (no operation)
AC adaptor connected	2nd battery fully charged	• Operates • No charge • LED: **2nd battery** green **DC IN** green	• No charge • LED: **2nd battery** green **DC IN** green
	2nd battery partially charged or no charge	• Operates • Charge*2 • LED: **2nd battery** orange **DC IN** green	• Quick charge*2 • LED: **2nd battery** orange **DC IN** green
	No 2nd battery installed	• Operates • No charge • LED: **2nd battery** off **DC IN** green	• No charge • LED: **2nd battery** off **DC IN** green
AC adaptor not connected	Main battery charge is above low battery trigger point	• Operates • LED: **Battery** off **DC IN** off	
	Main battery charge is below low battery trigger point	• Operates • LED: **Battery** flashes orange **DC IN** off	
	Main battery charge is exhausted	Computer shuts down *3	
	No main battery installed	• No operation *4 • LED: **Battery** off **DC IN** off	

Table 6-1 Power conditions continued

		Power on	Power off (no operation)
AC adaptor not connected	2nd battery charge is above low battery trigger point	• Operates • LED: **2nd battery** off **DC IN** off	
	2nd battery charge is below low battery trigger point	• Operates • LED: **2nd battery** flashes orange **DC IN** off	
	2nd battery charge is exhausted	Computer shuts down *3	
	No 2nd battery is installed	• No operation *5 • LED: **2nd battery** off **DC IN** off	

*1 When the Slice Expansion Battery is not charging.

*2 When the main battery is not charging.

*3 For the computer to shut down in Hibernation Mode, the Hibernation feature must be enabled in Power Options. If a main battery and a Slice Expansion Battery are installed, the computer does not shut down until the charge in both batteries is exhausted.

*4 When no Slice Expansion Battery is installed.

*5 When no main battery is installed.

When batteries are charged, the main battery is charged first. When it is fully charged, the Slice Expansion Battery is charged.

Monitoring of power condition

As shown in the below table, the **Battery, 2nd battery, DC IN** and **Power** indicators on the system indicator panel alert you to the computer's operating capability and battery charge status.

Battery indicator

Check the **Battery** indicator to determine the status of the main battery and the **2nd battery** indicator to determine the status of the Slice Expansion Battery. The following indicator lights indicate the battery status:

Flashing orange	The battery charge is low, the AC adaptor must be connected in order to recharge the battery.
Orange	Indicates the AC adaptor is connected and the battery is charging.
Green	Indicates the AC adaptor is connected and the battery is fully charged.
No light	Under any other conditions, the indicator does not light.

If the battery pack becomes too hot while it is being charged, the charge will stop and the **Battery** *indicator will go out. When the battery pack's temperature falls to a normal range, charging will resume - this process will occur regardless of whether the computer's power is on or off.*

DC IN indicator

Check the **DC IN** indicator to determine the power status with the AC adaptor connected - the following indicator conditions should be noted:

Green	Indicates the AC adaptor is connected and is correctly supplying power to the computer.
Flashing orange	Indicates a problem with the power supply. You should initially try plugging the AC adaptor into another power outlet - if it still does not operate properly, you should contact your reseller or dealer.
No light	Under any other conditions, the indicator does not light.

Power indicator

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

Green	Indicates power is being supplied to the computer and the computer is turned on.
Blinking orange	Indicates that the computer is in Sleep Mode and that there is sufficient power available (AC adaptor or battery) to maintain this condition. In Sleep Mode, this indicator will turn on for one second and off for two seconds.
No light	Under any other conditions, the indicator does not light.

Battery

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

Battery types

The computer has three different types of batteries.

Battery pack

When the AC adaptor is not connected, the computer's main power source is a removable lithium ion battery pack, also referred to in this manual as the main battery. You can purchase additional battery packs for extended use of the computer away from an AC power source although you should not change the battery pack while the AC adaptor is connected.

Before you remove the battery pack, save your data and shut down the computer, or place the computer into Hibernation Mode. Please be aware that, when placing the computer into Hibernation Mode, the contents of memory will be saved to the hard disk drive, although for safety sake, it is best to also save your data manually.

Slice Expansion Battery

The Slice Expansion Battery can be purchased separately as an optional accessory.

For detailed information on this battery, refer to *Connecting and disconnecting the Slice Expansion Battery*.

Real Time Clock (RTC) battery

The Real Time Clock (RTC) 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 battery becomes completely discharged, the system will lose this information and the real time clock and calendar will stop working - in this instance the following message will be displayed when you turn on the power:

```
**** RTC battery is low or CMOS checksum is
inconsistent ****
Press [F1] key to set Date/Time.
```

You can change the Real Time Clock settings by turning the computer on while pressing the **ESC** key and then the **F1** key when prompted. Please refer to Chapter 8, *Troubleshooting*, for further information.

The RTC battery does not charge while the computer is turned off even if the AC adaptor is attached.

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.

- *Make sure the battery is securely installed in the computer before attempting to charge the battery pack. Improper installation could generate smoke or fire, or cause the battery pack to rupture.*
- *Keep the battery pack out of reach of infants and children. It can cause injury.*

- *The battery pack and Slice Expansion Battery are lithium ion battery, which can explode if not replaced, used, handled or disposed of properly. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.*
- *The computer's RTC battery is a Ni-MH battery and should be replaced only by your dealer or by a TOSHIBA service representative. The battery can explode if not properly replaced, used, handled or disposed. Dispose of the battery as required by local ordinances or regulations.*
- *Charge the battery pack only in an ambient temperature between 5 and 35 degrees Celsius. Otherwise, the electrolyte solution might leak, battery pack performance might deteriorate and the battery life might be shortened.*
- *Never install or remove the battery pack without first turning off the power and disconnecting the AC adaptor. Never remove the battery pack while the computer is in Sleep Mode. Data could be lost.*

- *Never remove the battery pack while the Wake-up on LAN function is enabled. Data will be lost. Before you remove a battery pack, disable the Wake-up on LAN function.*
- *Never remove the battery pack while the Wake-up on Wireless LAN function is enabled. Data will be lost. Before you remove a battery pack, disable the Wake-up on Wireless LAN function.*

Charging the batteries

When the power in the battery pack becomes low, the **Battery** indicator will flash orange to indicate that only a few minutes of battery power remain. If you continue to use the computer while the **Battery** indicator flashes, the computer will enable 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 while it is installed in the computer, connect the AC adaptor to the DC IN 15V jack and plug the other end into a working outlet - the **Battery** indicator will glow orange while the battery is being charged.

Use only the computer connected to an AC power source or optional TOSHIBA Battery charger to charge the battery pack. Never attempt to charge the battery pack with any other charger.

Time

The following table shows the approximate time required to fully charge a discharged battery.

Charging time (hours)

Battery type	Power on	Power off
Battery pack (4700mAh)	about 3.0 to 13.0	about 3.0
Slice Expansion Battery (4000mAh)	about 3.0 to 9.5	about 2.5
RTC battery	24	Doesn't charge

Please 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. Please refer to the section Maximizing battery operating time*, for further information.*

Battery charging notice

The battery may 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, you should charge it at room temperature of between 5° to 35°C (41° to 95°F).
- The battery is nearly completely discharged. In this instance you should leave the AC adaptor connected for a few minutes and the battery should begin charging.

The **Battery** indicator may 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.
- A cool battery is installed in a warm computer.

In such cases you should follow the steps as detailed below:

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 15V jack of the computer, and to a wall outlet that is supplying power.
3. Charge the battery until the **Battery** indicator glows green.

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 Taskbar
- Via the Battery Status in the Windows Mobility Center window

- *You should wait at least 16 seconds after turning on the computer before trying to monitor the remaining operating time. This is because the computer needs this time to check the battery's remaining capacity and then calculate the remaining operating time, based on this together with the current power consumption.*
- *Please be aware that the actual remaining operating time may differ slightly from the calculated time.*
- *With repeated discharges and recharges, the battery's capacity will gradually decrease. In view of this it will be 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

A battery's usefulness 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
- Hard disk drive power off period
- How often and for how long you use the hard disk drive and external disk(c) drives, for example, optical disc and floppy diskette drive.
- How much charge the battery contained to begin with.
- How you use optional devices, such as a PC Cards, 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.
- The condition of the battery terminals - you should always ensure the terminals stay clean by wiping them with a clean dry cloth before installing the battery pack.

Retaining data with power off

When you turn off your computer with fully charged batteries, the batteries retain data for the following approximate time periods:

Retention time

Battery type	State and Retention Time
Battery pack (4700mAh)	about 3 days (Sleep Mode) about 75 days (Boot Mode)
Slice Expansion Battery (4000mAh)	about 3 days (Sleep Mode) about 65 days (Boot Mode)
RTC battery	30 days

Extending battery life

To maximize the life of your battery packs:

- At least once a month, disconnect the computer from a power source and operate it on battery power until the battery pack fully discharges. Before doing so, follow the steps as detailed below.

  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 **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 15V jack of the computer, and to a wall outlet that is supplying power. The **DC IN** indicator should glow green, and the **Battery** indicator should glow orange to indicate that the battery pack is being charged, however, in the event that **DC IN** 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 **Battery** indicator glows green.

- If you have extra battery packs, rotate their use.
- If you will not be using the system for an extended period, for example for more than one month, remove the battery pack from the computer.
- Store spare battery packs in a cool dry place out of direct sunlight.

Replacing the battery pack

Please be aware that the battery pack is classified as a consumable item.

The operating life of the battery pack will gradually reduce through repeated charging and discharging, and will need to be replaced when it reaches the end of its operating life. In addition to this, you might also replace a discharged battery pack with a charged spare when you are operating your computer away from an AC power source for an extended period of time.

This section explains how to remove and install the battery pack, and begins with the removal process which is detailed through the following steps.

- *Do not remove the battery pack while the computer is in Sleep Mode. Data is stored in RAM, so if the computer loses power it could be lost.*
- *In Hibernation Mode, data will be lost if you remove the battery pack or disconnect the AC adaptor before the save is completed. Wait for the* **Hard Disk Drive** *indicator to go out.*
- *Do not touch the battery release latch while holding the computer or the battery pack might fall out due to the unintentional release of the battery release latch and cause injuries.*

Removing the battery pack

To remove a discharged battery, follow the steps as detailed below:

1. Save your work.
2. Turn the computer's power off - ensure that the **Power** indicator is off.
3. Remove all cables and peripherals that are connected to the computer.
4. Close the display panel and turn the computer upside down.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

5. Slide the battery lock towards the release ( ) position to make the battery release latch movable.

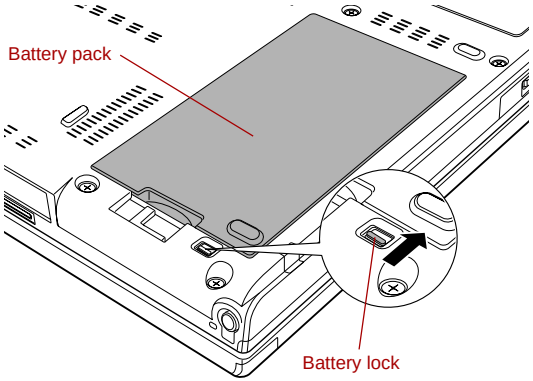


Figure 6-1 Releasing the battery pack (1)

6. Slide and hold the battery release latch (1) to disengage the battery pack and then remove it from the computer (2).

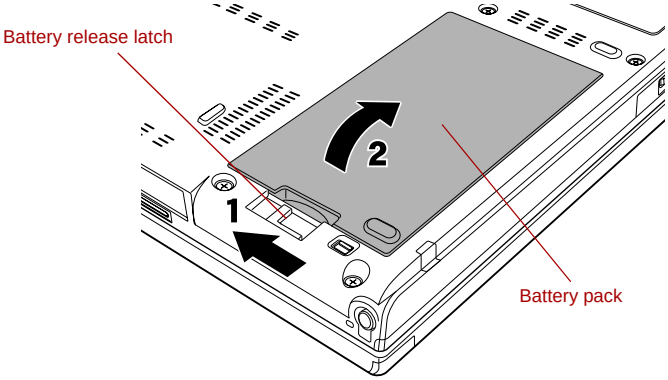


Figure 6-2 Releasing the battery pack (2)

Installing the battery pack

To install a battery pack, follow the steps as detailed below:

Do not touch the battery release latch while holding the computer or the battery pack might fall out due to the unintentional release of the battery release latch and cause injuries.

1. Insert the battery pack as far as it will go into the computer (1).
2. Ensure that the battery pack is securely in place and the battery lock (2) is in its (🔒) position.

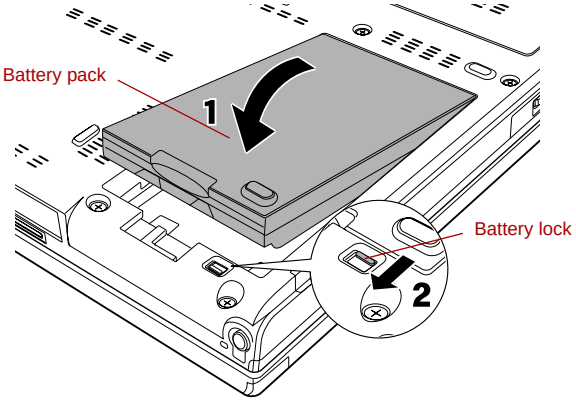


Figure 6-3 Securing the battery pack

3. Turn your computer over.

Connecting and disconnecting the Slice Expansion Battery

This battery pack increases your computer's operating time when a main battery pack is also installed.

This section explains how to connect and disconnect the Slice Expansion Battery, and begins with the removal process which is detailed through the following steps.

Connecting the Slice Expansion Battery

To connect the Slice Expansion Battery to the computer, follow the steps as detailed below:

When handling Slice Expansion Battery, be careful not to short circuit the terminals. Also do not drop, hit or otherwise apply impact; do not scratch or break the casing and do not twist or bend the latches of it.

1. Be sure the computer's power is off and all cables are disconnected.
2. Close the display panel and turn the computer upside down.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

3. Remove the protective cap from the Slice Expansion Battery.
4. Open latches on the Slice Expansion Battery and fit a tab on the battery into the docking port on the underside of the computer.

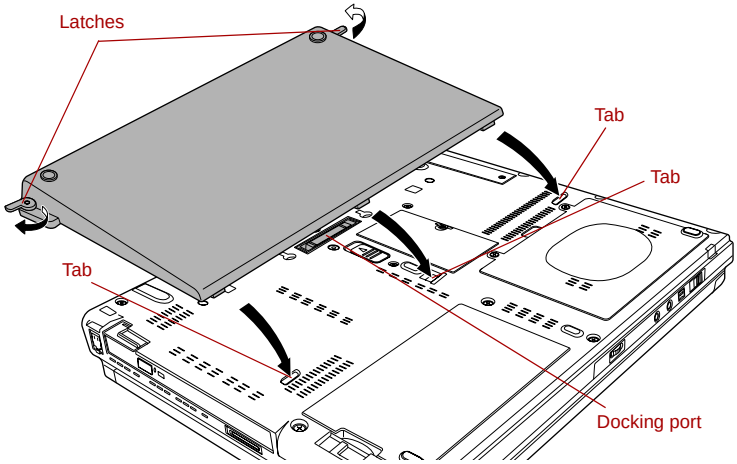


Figure 6-4 Seating the Slice Expansion Battery

5. Close the latches to secure the Slice Expansion Battery to the computer.

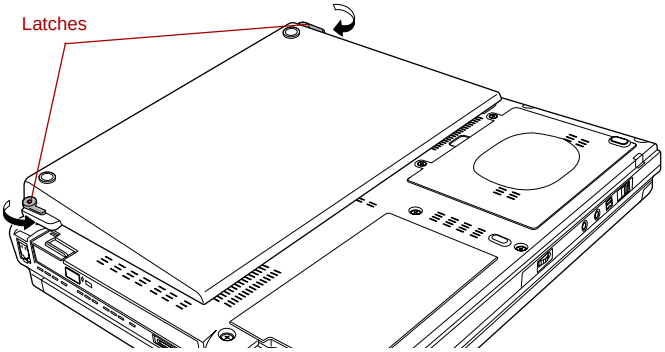


Figure 6-5 Securing the latches

Disconnecting the Slice Expansion Battery

To disconnect the Slice Expansion Battery from the computer, follow the steps as detailed below:

1. Save your work.
2. Turn the computer's power off. Make sure the **Power** indicator is off.
3. Remove all cables connected to the computer.
4. Close the display panel and turn the computer upside down.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

5. Open the release latches in the direction of the arrows.

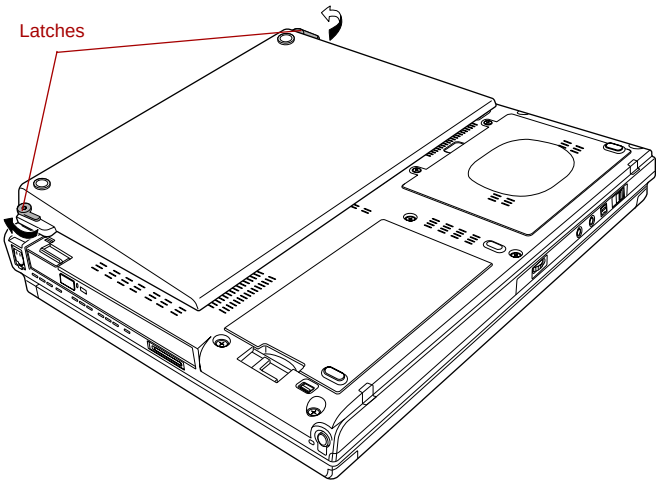


Figure 6-6 Releasing the latches

6. Lift off the Slice Expansion Battery.

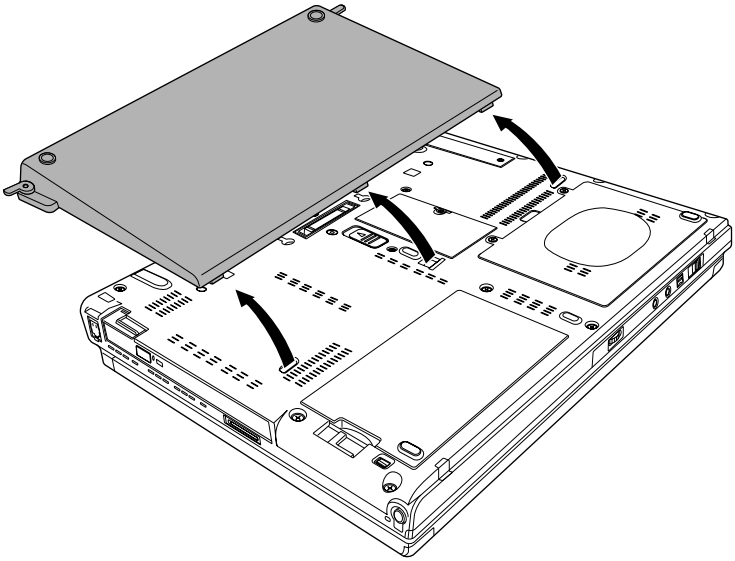


Figure 6-7 Removing the Slice Expansion Battery

7. Be sure to replace the protective cap before storing the Slice Expansion Battery.

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, point to or click the following items:

Start -> All Programs -> TOSHIBA -> Utilities -> Password Utility

The User Password dialog box contains two main fields: **`User Password and User Token`**.

User authentication may be required to validate user rights when using "TOSHIBA Password Utility" to delete or change passwords, or create tokens, etc.

User Password field

- **Set** (button)
  Click this button to register a password of up to 50 characters. After a password is set, you will be prompted to enter it when you start the computer. Check "Set the same string simultaneously as the HDD User Password" when setting the HDD User Password.

- *After you set the password, a dialog box will be displayed asking whether you want to save it to a floppy diskette or 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 and so on.*

- **Delete** (button)
  Click this button to delete a registered password. Before you can delete a password, you must first enter the current password correctly or insert a proper token. Please use BIOS Setup to change or delete the HDD Passwords or to set the HDD Master Password.

- *To start the BIOS Setup:*
  1. *Turn on the computer while pressing the* **ESC** *key.*
  2. *Press the* **F1** *key when directed.*

- *To end the BIOS Setup:*

  Press **End** and then press the **Y** key to accept the changes. The computer will restart.

- **Change** (button)
  Click this button to change a registered password. Before you can change a password, you must first enter the current password correctly or insert a proper token. Please use BIOS Setup to change or delete the HDD Passwords or to set the HDD Master Password.
- **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 will be displayed together with the prompt asking you to enter a password.

- *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 can't accept this risk, don't 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 may not be correctly reflected. For more information on shutting down or restarting the computer, refer to* Turning on the power *in Chapter 1.*

User Token field

- **Create** (button)
  You can use an SD Card token, instead of entering the password. After you have registered a password, insert an SD Card in SD Card slot and click **Create**. You can use an SD Card of any capacity, but it must be formatted correctly.

  If an unformatted card or one with an incompatible format is inserted, you will be prompted to format it with a tool named TOSHIBA SD Memory Card Format. To start the format tool, point to or click the following items:

  Start -> All Programs -> TOSHIBA -> Utilities -> SD Memory Card Format

When you format an SD memory card, all data will be deleted. Be sure to save data on the card to other media before you format the card.

- **Disable** (button)
  Click this button to invalidate the token. You cannot re-validate old tokens, but you can use the same SD Cards to create new tokens.

After using the token created for authentication, do not leave it inserted in the SD Card slot, ensure that the token is removed from the slot and stored in a safe location. If the token is left in the slot, there is a danger of theft or a third party using it for authentication and operating the user's computer (resulting in extraction, modification or deletion of data) when the user is not at their desk.

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, execute the file TOSPU.EXE. The file is located at:

```
C:\Program Files\Toshiba\PasswordUtility\TOSPU.exe
```

This utility lets you do the following:

- Register, delete or change the Supervisor Password.
- Create or invalidate a Supervisor Password token.

This function in the TOSHIBA Password Utility lets you invalidate only supervisor tokens or all tokens, including user and supervisor tokens.

- Specify restrictions for general users.

Starting the computer by password

If you have already registered a password, there are four ways to start the computer:

- Insert an SD Card token before you turn on the computer. The computer will start normally, without displaying a password prompt.
- Swipe your fingerprint on the sensor if you have already registered the fingerprint with the Fingerprint utility and enabled Fingerprint System Boot Authentication. If you would not like to swipe your finger or cannot authenticate the fingerprint for some reasons, push the **BACK SPACE** key to skip the fingerprint authentication screen. You can try to swipe the fingerprint up to five times. If you failed fingerprint authentication five times, you must enter the password manually to start the computer.
- Log on with the Tablet PC Pen when in Tablet mode. Refer to *Tablet mode* section in this chapter.
- Enter the password manually.

The password is necessary only if the computer was Shutdown and Hibernation in Boot Mode.

It is not needed in Sleep Mode and Restart.

To enter a password manually, follow the steps as detailed below:

1. Turn on the power as described in Chapter 1, *Getting Started*. The following message will appear in the screen:

```
Password=
```

2. Enter the Password.

3. Press **ENTER**.

If you enter the password incorrectly three times in a row, the computer shuts off. In this case, you must turn the computer back on to retry password entry.

Tablet mode

Enter your password by tapping the on-screen keyboard using the Tablet PC Pen or your finger.

On-screen keyboard can not be used in Display screen model.

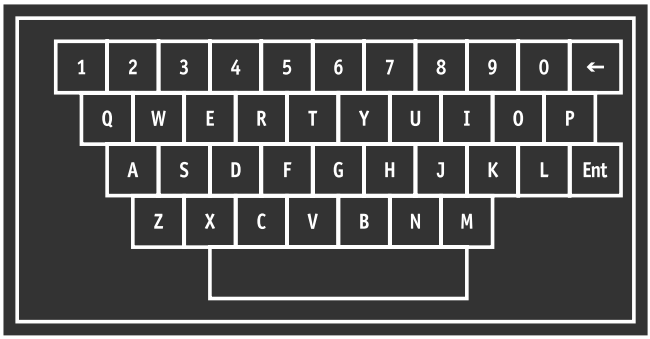


Figure 6-8 On-screen keyboard

- The beep sounds when tapping the on-screen keyboard with the Tablet PC Pen or your finger. An * (asterisk) is displayed after "**`Password =`**" and one character is input for every tapping.

Register your password to the computer in the Laptop mode using the standard keyboard. Refer to TOSHIBA Password Utility*, in this chapter for the detail.*

Power-up modes

The computer has three different power-up modes as follows:

- Boot Mode : The computer will shut down without saving data - in view of this you must always save your work before you turn the computer off.
- Hibernation Mode : Data in memory will be saved to the hard disk drive.
- Sleep Mode : Data will be maintained in the computer's memory.

Please refer to the sections Turning on the power *and* Turning off the power *in Chapter 1,* Getting Started*, for further information.*

Windows utilities

You can configure various settings associated with both Sleep Mode and Hibernation Mode within the Power Options (to access it, **Start** -> **Control Panel** -> **System and Maintenance** -> **Power Options**).

Hot keys

You can use the **FN** + **F3** hot key to enter Sleep Mode or **FN** + **F4** to enter Hibernation Mode. Please refer to Chapter 5, *The Keyboard*, for details.

Panel power on/off

You can set up your computer so that power is turned off automatically when you close the display panel, and turned on again when you open it. Please note that this function is only available for Sleep Mode or Hibernation Mode, not for Boot Mode.

If the panel power off function is enabled, and you manually shut down Windows, do not close the display panel until the shut down process has been completed.

System Auto Off

This feature turns the system off automatically if it is not used for a set period of time, and can be configured for both Sleep Mode or Hibernation Mode.

Chapter 7

HW Setup

This chapter explains how to use the TOSHIBA HW Setup program to configure your computer, and provides information on settings for various functions.

Accessing HW Setup

To run the HW Setup program, click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **HWSetup**.

HW Setup window

The HW Setup window contains a number of tabs (General, Display, Boot Priority, Keyboard, CPU, LAN, Device Config and USB) to allow specific functions of the computer to be configured.

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

OK	Accepts your changes and closes the HW Setup window.
Cancel	Closes the window without accepting your changes.
Apply	Accepts all your changes without closing the HW Setup window.

General

This window displays the BIOS version and contains two buttons: **Default** and **About**.

Default	Return all HW Setup values to the factory settings.
About	Display the HW Setup version.

Setup

This field displays the installed **BIOS version** and date.

Display

This tab lets you customize your computer's display settings for either the internal display or an external monitor.

Power On Display

This tab allows you to select the display to be used when the computer is started. Please note that this setting is only available on standard VGA mode and is not available as part of the Windows Desktop properties.

Auto-Selected	Selects an external monitor if one is connected, otherwise, it selects the internal display (default).
LCD + Analog RGB	Selects both the internal display and an external monitor for simultaneous display.
System LCD Only	Selects the internal display even if the external monitor is connected.

If the connected external monitor does not support the computer's current video mode, selecting the LCD + Analog RGB mode will not display any image on the external monitor.

Boot Priority

Boot Priority Options

This tab allows you to select the priority for booting the computer. The following settings are available:

FDD –> HDD –> CD-ROM –> LAN	The computer looks for bootable files on devices in the following order: 1. floppy diskette drive*1, 2. hard disk drive, 3. CD-ROM*2, 4. LAN.
HDD –> FDD –> CD-ROM –> LAN	The computer looks for bootable files on devices in the following order: 1. hard disk drive, 2. floppy diskette drive*1, 3. CD-ROM*2, 4. LAN.
FDD –> CD-ROM –> LAN –> HDD	The computer looks for bootable files on devices in the following order: 1. floppy diskette drive*1, 2. CD-ROM*2, 3. LAN, 4. hard disk drive.
HDD –> CD-ROM –> LAN –> FDD	The computer looks for bootable files on devices in the following order: 1. hard disk drive, 2. CD-ROM*2, 3. LAN, 4. floppy diskette drive*1.
CD-ROM –> LAN –> FDD –> HDD	The computer looks for bootable files on devices in the following order: 1. CD-ROM*2, 2. LAN, 3. floppy diskette drive*1, 4. hard disk drive.
CD-ROM –> LAN –> HDD –> FDD	The computer looks for bootable files on devices in the following order: 1. CD-ROM*2, 2. LAN, 3. hard disk drive, 4. floppy diskette drive*1.

You can override the settings and manually select a boot device by pressing one of the following keys while the computer is booting:

U	Selects the USB floppy diskette drive.
N	Selects the network.
1	Selects the built-in hard disk drive.
2	Selects the secondary hard disk drive.
C	Selects the CD-ROM*2.
M	Selects the USB memory drive.

*1 The floppy diskette drive will be used to start the computer when there is a bootable disk contained in the external drive. If SD memory card is installed as well, the external floppy diskette drive will be checked first, followed by the SD memory device itself.

*2 The optical disc drive will be used to start the computer when there is a bootable disk contained in the drive.

To change the boot drive, follow the steps below.

1. Hold down **F12** and boot the computer.
2. The following menu will be displayed with the following icons: Built-in hard disk drive, Ultra Slim Bay hard disk drive, CD-ROM, FDD (or SD memory card), Network (LAN), USB Memory boot.

Please note that a highlighted bar will only appear under the selected device.

3. Use the left/right cursor keys to highlight the boot device you want and press **ENTER**.

If a Supervisor Password has been set, manual boot device selection functions may be restricted.

The boot device selection methods described above will not change the boot priority settings that have been configured in HW Setup. In addition, if you press a key other than one of those listed, or if the selected device is not installed, the system will continue to boot according to the current and available settings in HW Setup.

HDD Priority Options

If more than one hard disk drive is installed in the computer, this option allows you to set the priority associated with hard disk drive detection - the first hard disk drive detected that has a valid boot command on it will be the device from which the computer will start.

Built-in HDD -> 2nd HDD -> USB (Default)	The priority is set as built-in HDD -> 2nd HDD -> USB.
2nd HDD -> Built-in HDD -> USB	The priority is set as 2nd HDD -> built-in HDD -> USB.
Built-in HDD -> USB -> 2nd HDD	The priority is set as built-in HDD -> USB -> 2nd HDD.
2nd HDD -> USB -> Built-in HDD	The priority is set as 2nd HDD -> USB -> built-in HDD.
USB -> Built-in HDD -> 2nd HDD	The priority is set as USB -> built-in HDD -> 2nd HDD.
USB -> 2nd HDD -> Built-in HDD	The priority is set as USB -> 2nd HDD -> built-in HDD.

- *If a boot command is not found on the first detected hard disk drive, the system will not boot from next hard disk drive in the list, instead it will search for the next device in the Boot Priority list and startup from this as appropriate.*
- *Please be aware that some modules may not be displayed.*

USB Memory BIOS Support Type

This option allows you to set the type of the USB memory to be used as a startup device.

HDD	Sets the USB memory to be the equivalent of a hard disk drive (default). With this setting, the USB memory device can be used to start the computer as though it were a hard disk drive based on the hard disk drive settings within both the Boot Priority and HDD Priority options detailed previously.
FDD	Sets the USB memory to be the equivalent of a floppy diskette drive. With this setting, the USB memory device can be used to start the computer as though it were a floppy diskette based on the floppy diskette drive settings within the Boot Priority option detailed previously.

Keyboard

Wake-up on Keyboard

When this feature is enabled, and the computer is in Sleep Mode, you can turn on the system by pressing any key. However, please be aware that this option will only work with the internal keyboard and only when the computer is in Sleep Mode.

Enabled	Enables the Wake-up on Keyboard function.
Disabled	Disables the Wake-up on Keyboard function (Default).

CPU

This function allows you to set the processor's operating mode.

Dynamic CPU Frequency Mode

This option allows you to configure the power saving modes associated with the processor. The following settings are available:

Dynamically Switchable	The processor's power consumption and automatic clock speed switching functions are enabled - in use the processor's operation is automatically switched when necessary (default).
Always High	The processor's power consumption and automatic clock speed switching functions are disabled - in use the processor will always run at its highest level of power consumption and its highest speed.
Always Low	The processor's power consumption and automatic clock speed switching functions are disabled - in use the processor will always run at a lower level of power consumption and a low speed.

LAN

Wake-up on LAN

This feature lets the computer's power be turned on when it receives a wake-up signal from the LAN.

Do not install or remove a memory module while Wake-up on LAN is enabled.

- *The Wake-up on LAN function consumes power even when the system is off. Leave the AC adaptor connected while using this feature.*
- *To enable it, you must check both the "Allow the device to wake the computer" and "Only allow management stations to wake the computer" check box within the "Intel Network Connection".*

Power will be automatically turned on when a signal is received from an administrator's computer which is connected via a network.

The following settings can be changed when the Built-in LAN is **Enabled**.

Connect the AC adaptor when using the Wake-up on LAN function. The battery retention time will be shorter than the times listed in this manual when this function is enabled. Refer to the section in chapter 6, *Retaining data with power off*.

Enabled	Enables Wake-up on LAN (Default).
Disabled	Disables Wake-up on LAN.

Built-in LAN

This feature enables or disables the Built-in LAN.

Enabled	Enables Built-in LAN functions (Default).
Disabled	Disables Built-in LAN functions.

Device Config

Device Configuration

This option allows you to set how the computer's hardware devices will be configured.

All Devices	The computer's BIOS will setup and configure all devices.
Setup by OS	The operating system will setup and configure all of the devices that it can control (default).

USB

USB KB/Mouse Legacy Emulation

You can use this option to enable or disable USB keyboard/mouse legacy emulation so that, even if your operating system does not support USB devices, you can still use a standard USB mouse and keyboard - to achieve this you should set the appropriate option(s) to Enabled.

Enabled	Enables the USB KB/Mouse Legacy Emulation function (Default).
Disabled	Disables the USB KB/Mouse Legacy Emulation function.

USB-FDD Legacy Emulation

Use this option to enable or disable USB floppy diskette drive legacy emulation. If your operating system does not support USB, you can still use a USB floppy diskette drive by setting the **USB-FDD Legacy Emulation** item to **Enabled**.

Enabled	Enables the USB floppy diskette drive legacy emulation function (Default).
Disabled	Disables the USB floppy diskette drive legacy emulation function.

Chapter 8

Troubleshooting

TOSHIBA have 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.

All users 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

Resolving problems will be much easier if you observe the following guidelines:

- Stop immediately when you recognize a problem exists as taking further action may result in data loss or damage, or you may 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. If you have a printer attached, print a copy of the screen using the computer's **PRTSC** key.

Please 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 may require help from your reseller, dealer or service provider - 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 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 the computer off, then when you turn the computer back on again it will recognize the new device.
- Make sure all optional accessories are configured properly in the computer's setup program and that all required driver software has been loaded (please refer to the documentation included with the optional accessories for further information on its installation and configuration).
- Check all cables to ensure 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 floppy diskette, CD or DVD media is correctly loaded and, in the case of a floppy diskette, that its write protect tab is correctly set.

Always try to make detailed notes of your observations and keep them in a permanent error log - this will help you to describe your problems to your reseller, dealer or service provider. In addition, if a problem recurs, the log you have made will help to identify the problem faster.

Analyzing the problem

Sometimes the computer will give you clues that can help you identify why it is malfunctioning. In view of this you should 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 will produce 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? If you have a printer attached, print a copy of the screen using the **PRTSC** key 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 your reseller, dealer or service provider.

Software	The problems may be caused by your software or disk. If you cannot load a software package, the media may be damaged or the program might be corrupted - in these instances try loading another copy of the software if possible. If an error message appears while you are using a software package you should refer to the documentation supplied with it as this will usually include a problem solving section or a summary of error messages. Next, you should check any error messages against the operating system documentation.
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 the device or software can be used with your computer. Use of incompatible devices may cause injury or may damage your computer.

Hardware and system checklist

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

- System start-up
- Self test
- Power
- Password
- Keyboard
- Internal display panel
- Hard disk drive
- DVD Super Multi (Double Layer) Drive Kit II
- USB floppy diskette drive
- PC Card
- Smart Card
- SD/SDHC Card
- Memory Stick
- xD picture card
- MultiMediaCard
- Pointing Device
- Fingerprint Sensor
- USB device
- eSATA device
- Additional memory module
- Sound system
- External monitor
- i.LINK (IEEE1394) device
- Modem
- LAN
- Wireless LAN
- Bluetooth

System start-up

When the computer does not start properly, check the following items:

- Self Test
- Power Sources
- Power-on Password

Self test

While booting up the computer, self test is executed automatically and the **TOSHIBA** logo is displayed on the screen.

This message remains on the screen for a few seconds.

If the self test is successful, the computer tries to load the operating system according to how the **Boot Priority** option is set within the TOSHIBA HW Setup program.

If any of the following conditions are present, the self test has failed:

- The computer stops and does not proceed to display information or messages except for the TOSHIBA logo.
- Random characters appear on the screen and the system does not function normally.
- The screen displays an error message.

In these instances, turn off the computer, check all cable connections and then restart it - if the self test fails again, contact your reseller, dealer or service provider.

Power

When the computer is not plugged into an AC power outlet, the battery pack is the primary power source. However, your computer also has a number of other power resources, including an intelligent power supply and a Real Time Clock (RTC) battery, all of which are interrelated with any one having the ability to produce apparent power problems.

This section provides checklists for AC power and the battery. If you cannot resolve a problem after following them, the cause may lie with another power related resource - in such an instance you should contact your reseller, dealer or service provider.

Overheating power down

In the event that the computer's internal operating temperature becomes too high, the system will automatically enter either Hibernation Mode or Sleep Mode and shut itself down.

Problem	Procedure
Computer shuts down and **DC IN** indicator blinks orange	Leave the computer off until the **DC IN** indicator stops blinking.

It is recommended to leave the computer off until the interior reaches room temperature even though the **DC IN** *indicator stops blinking.*

	If the computer has reached room temperature and it still does not start, or if it starts but shuts down quickly, contact your reseller, dealer or service provider.
Computer shuts down and its **DC IN** indicator is flashing green	This indicates a problem with the heat dispersal system - you should contact your reseller, dealer or service provider.

AC power

If you have trouble turning on the computer with the AC adaptor connected you should check the status of the **DC IN** indicator. Please refer to Chapter 6, *Power and Power-Up Modes*, for further information.

Problem	Procedure
AC adaptor doesn't power the computer (**DC IN** indicator does not glow green)	Check the connections to make sure that the power cord/adaptor is firmly connected to the computer and a working power outlet.
	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.
	If the AC adaptor still does not power the computer, you should contact your reseller, dealer or service provider.

Battery

If you suspect a problem with the battery, you should check the status of the **DC IN** indicator as well as the **Battery** indicator. Please refer to Chapter 6, *Power and Power-Up Modes*, for more information on these indicators, together with general battery operation.

Problem	Procedure
Battery doesn't power the computer	The battery may be discharged - connect the AC adaptor to recharge the battery.
Battery doesn't charge when the AC adaptor is attached (**Battery** indicator does not glow orange).	If the battery is completely discharged, it will not begin charging immediately, in these instances you should wait a few minutes before trying again. If the battery still does not charge, you should check that the power outlet the AC adaptor is connected to is supplying power - this can be tested by plugging another appliance into it.
	Check whether the battery is hot or cold to the touch - if so, it will not charge properly and should be allowed to reach room temperature before you try again.
	Unplug the AC adaptor and remove the battery to make sure its connecting terminals are clean - if necessary wipe them with a soft dry cloth lightly dipped in alcohol. Connect the AC adaptor and replace the battery, taking care to ensure that it is securely seated in the computer. Check the **Battery** indicator - if it does not glow, allow the computer to charge the battery for at least twenty minutes. If the **Battery** indicator starts to glow after this period, allow the battery to continue to charge for at least another twenty minutes before turning on the computer. However, if the indicator still does not glow, the battery may be at the end of its operating life and should be replaced. However, if you do not believe the battery is at the end of its operating life, you should speak to your reseller, dealer or service provider.
Battery doesn't 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 **Power saver** option under **Select a power plan** in the **Power Options**.

Real Time Clock

Problem	Procedure
The following message is displayed on the screen: `RTC battery is low or CMOS checksum is inconsistent. Press [F1] key to set Date/Time.`	The charge in the Real Time Clock (RTC) battery has run out - you will need to set the date and time in the BIOS setup application by using the following steps: 1. Press the **F1** key - the BIOS setup application will load. 2. Set the date in the **System Date** field. 3. Set the time in the **System Time** field. 4. Press the **END** key - a confirmation message will be displayed. 5. Press the **Y** key - the BIOS setup application will end and the computer will restart.

Password

Problem	Procedure
Cannot enter password	Please refer to the *TOSHIBA Password Utility* section in Chapter 6, *Power and Power-Up Modes*, for further information.

Keyboard

Keyboard problems can be caused by the setup and configuration of the computer - please refer to Chapter 5, *The Keyboard*, for further information.

Problem	Procedure
Some letter keys produce numbers	Check that the numeric keypad overlay is not activated - press the **FN** + **F11** hot key and try typing again.
Output to screen is garbled	Please refer to your software's documentation to ensure that its is not remapping the keyboard in any way (remapping involves changing or reassigning the function of each key). If you are still unable to use the keyboard, you should contact your reseller, dealer or service provider.

Internal display panel

Apparent computer's display panel problems may be related to the computer's setup and configuration - please refer to Chapter 7, *HW Setup*, for further information.

Problem	Procedure
No display	Press the **FN** + **F5** hot keys to adjust the display priority, and to make sure it is not set for output to an external monitor.
Markings appear on the computer's display panel.	These marks may have come from contact with the keyboard and Touch Pad while the display panel has been closed. You should 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 you let the display panel dry properly before closing it.
Problems above remain unresolved or other problems occur	You should initially refer to the documentation supplied with you software to determine if it is this that is causing the problems. Alternatively you may wish to run the TOSHIBA PC Diagnostic Tool to check the general operation of the computer. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

Hard disk drive

Problem	Procedure
Computer does not boot from hard disk drive	Check to see whether that is a floppy diskette in the floppy diskette drive or a CD-ROM/DVD-ROM in the optical disc drive - if so remove it and try to start the computer again. If this has no effect, check the **Boot Priority** setting within the TOSHIBA HW Setup utility - please refer to the *Boot Priority* section in Chapter 7, *HW Setup*, for further information.
	Please refer to your operating system documentation in order to determine whether there is a problem with any of the operating system files or settings.

Problem	Procedure
Slow performance	The files on the hard disk drive may be fragmented - in this instance you should run the disk Defragmentation utility to check the condition of your files and the hard disk drive. Please refer to the operating system's documentation or online Help File for further information on operating and using the Defragmentation utility.
	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 your reseller, dealer or service provider.

DVD Super Multi (Double Layer) Drive Kit II

For more information, refer to Chapter 4, *Operating Basics*.

Problem	Procedure
You cannot access a CD/DVD in the drive	Make sure the drive's disc tray is securely closed. Press gently until it clicks into place.
	Check whether the drive's power is on. If the power is off, press the **FN** + **Tab** hot key to turn on the power.
	Open the disc tray and make sure the CD/DVD is properly seated. It should lie flat with the label facing up.
	A foreign object in the disc tray could block laser light from reading the CD/DVD. Make sure there is no obstruction. Remove any foreign object.
	Check whether the CD/DVD is dirty. If it is, wipe it with a clean cloth dipped in water or a neutral cleaner. Refer to the *Media care* section in Chapter 4, for details on cleaning.

Problem	Procedure
Some CD/DVDs run correctly, but others do not	The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software's needs. Check the CD/DVD's documentation.
	Check the type of CD/DVD you are using. The drive supports: DVD-ROM: DVD-ROM, DVD-Video CD-ROM: CD-DA, CD-Text, Photo CD™ (single/multi-session), CD-ROM Mode 1, Mode 2, CD-ROM XA Mode 2 (Form1, Form2), Enhanced CD (CD-EXTRA), Addressing Method 2 Recordable DVD: DVD-R/-R DL, DVD+R/+R DL, DVD-RW, DVD+RW, DVD-RAM
	Check the region code on the DVD. It must match that on the DVD Super Multi (Double Layer) Drive Kit II. Region codes are listed in the *Optical disc drive* section in Chapter 2, *The Grand Tour*.

USB floppy diskette drive

For further information, please refer to Chapter 3, *Hardware, Utilities and Options*.

Problem	Procedure
Drive does not operate	Check the connection between the computer and the drive to ensure that it is properly attached.
Some programs run correctly but others do not	The computer's software or hardware configuration may be causing a problem - ensure that these configurations match your requirements (refer to any relevant documentation, for example that supplied with any software in use, for further information).
You cannot access the external floppy diskette drive	Try another floppy diskette in the drive - if you are able to access this disk then it indicates the original disk and not the drive is probably causing the problem. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

PC Card

For further information, please refer to Chapter 3, *Hardware, Utilities and Options*.

Problem	Procedure
PC Card error occurs	Remove the PC Card from the computer and then reinsert it in order to ensure it is firmly connected.
	In the event that the PC Card is attached to an external peripheral device, ensure that this connection is properly made.
	If the problem persists, then you should refer to the documentation supplied with your PC Card for further information. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

Smart Card

For further information, please refer to Chapter 3, *Hardware, Utilities and Options*.

Problem	Procedure
Smart Card error occurs	Remove the Smart Card from the computer, make sure to confirm that the card oriented correctly and reinsert it in order to ensure it is firmly connected. If the problem persists, then you should refer to the documentation supplied with your Smart Card for further information.

SD/SDHC Card

For further information, please refer to Chapter 3, *Hardware, Utilities and Options*.

Problem	Procedure
SD/SDHC Card error occurs	Remove the SD/SDHC Card from the computer and then reinsert it in order to ensure it is firmly connected. If the problem persists, then you should refer to the documentation supplied with your SD/SDHC Card for further information.
You cannot write to an SD/SDHC Card	Remove the SD/SDHC Card from the computer and check to ensure that it is not write protected.

Problem	Procedure
You cannot read a file	Check to ensure the required file is actually on the SD/SDHC Card that is inserted into the computer. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

Memory Stick

For further information, please refer to Chapter 3, *Hardware, Utilities and Options*.

Problem	Procedure
Memory Stick/Memory Stick PRO/Memory Stick PRO Duo error occurs	Remove the Memory Stick/Memory Stick PRO/ Memory Stick PRO Duo from the computer and then reinsert it in order to ensure it is firmly connected. If the problem persists, then you should refer to the documentation supplied with your Memory Stick/Memory Stick PRO/Memory Stick PRO Duo for further information.
You cannot write to an Memory Stick/Memory Stick PRO/Memory Stick PRO Duo	Remove the Memory Stick/Memory Stick PRO/ Memory Stick PRO Duo from the computer and check to ensure that it is not write protected.
You cannot read a file	Check to ensure the required file is actually on the Memory Stick/Memory Stick PRO/Memory Stick PRO Duo that is inserted into the computer. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

xD picture card

For further information, please refer to Chapter 3, *Hardware, Utilities and Options*.

Problem	Procedure
xD picture card error occurs	Remove the xD picture card from the computer and then reinsert it in order to ensure it is firmly connected. If the problem persists, then you should refer to the documentation supplied with your xD picture card for further information.

Problem	Procedure
You cannot read a file	Check to ensure the required file is actually on the xD picture card that is inserted into the computer. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

MultiMediaCard

For further information, please refer to Chapter 3, *Hardware, Utilities and Options*.

Problem	Procedure
MultiMediaCard error occurs	Remove the MultiMediaCard from the computer and then reinsert it in order to ensure it is firmly connected. If the problem persists, then you should refer to the documentation supplied with your MultiMediaCard for further information.
You cannot write to a MultiMediaCard	Remove the MultiMediaCard from the computer and check to ensure that it is not write protected.
You cannot read a file	Check to ensure the required file is actually on the MultiMediaCard that is inserted into the computer. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

Pointing device

If you are using a USB mouse, you should also refer to both the *USB device* section in this chapter, and the documentation supplied with your mouse.

Touch Pad

Problem	Procedure
On-screen pointer does not respond to pointing device operation	In this instance the system might be busy - Try moving the mouse again after waiting a short while.

Problem	Procedure
Double-tapping does not work	In this instance, you should initially try changing the double-click speed setting within the Mouse Control utility. 1. To access this utility, click **Start** -> **Control Panel** -> **Hardware and Sound** -> **Mouse** icon. 2. Within the Mouse Properties window, click the **Buttons** tab. 3. Set the double-click speed as required and click **OK**.
The mouse pointer moves too fast or too slow	In this instance, you should initially try changing the speed setting within the Mouse Control utility. 1. To access this utility, click **Start** -> **Control Panel** -> **Hardware and Sound** -> **Mouse** icon. 2. Within the Mouse Properties window, click the **Pointer Options** tab. 3. Set the pointer speed as required and click **OK**.
The reaction of Touch pad is either too sensitive or not sensitive enough.	Adjust the touch Sensitivity. 1. Click **Start** -> **Control Panel** -> **Hardware and Sound** -> **Mouse** icon. 2. Within the Mouse Properties window, click the **Advanced** tab. 3. Click the **Advanced feature settings...** button. 4. **Advanced feature settings** is displayed. 5. Within the Pointer speed and tapping settings, click **Settings...** button. 6. Detailed Touch Pad settings window is displayed. 7. Move the slider bar to adjust the sensitivity in the Touch Sensitivity. 8. Click **OK** button. 9. Click the **OK** button on **Advanced feature setting** screen. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

USB mouse

Problem	Procedure
On-screen pointer does not respond to mouse operation	In this instance the system might be busy - Try moving the mouse again after waiting a short while.
	Remove the mouse from the computer and then reconnect it to a free USB port in order to ensure it is firmly attached.
Double-clicking does not work	In this instance, you should initially try changing the double-click speed setting within the Mouse Control utility. 1. To access this utility, click **Start** -> **Control Panel** -> **Hardware and Sound** -> **Mouse** icon. 2. Within the Mouse Properties window, click the **Buttons** tab. 3. Set the double-click speed as required and click **OK**.
The mouse pointer moves too fast or too slow	In this instance, you should initially try changing the speed setting within the Mouse Control utility. 1. To access this utility, click **Start** -> **Control Panel** -> **Hardware and Sound** -> **Mouse** icon. 2. Within the Mouse Properties window, click the **Pointer Options** tab. 3. Set the pointer speed as required and click **OK**.
The mouse pointer moves erratically	The elements of the mouse responsible for detecting movement might be dirty - please refer to the documentation supplied with the mouse for instructions on how to clean it. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

Fingerprint Sensor

Problem	Procedure
Reading of the fingerprint was not successful.	In this instance you should try the fingerprint reading operation again using the correct finger position - please refer to *Using the Fingerprint Sensor* in Chapter 4, *Operating Basics*, for further information. Alternatively, you should try the recognition process again using another enrolled finger. The fingerprint sensor compares and analyzes the unique characteristics in a fingerprint. However, there may be instances where certain users are unable to register their fingerprints due to insufficient unique characteristics in their fingerprints. The recognition success rate may differ from user to user.
The fingerprint cannot be read due to injuries to the finger.	In this instance you should try the recognition process again using another enrolled finger. However, if fingerprints from all the enrolled fingers cannot be read, you should instead log into the computer by using the keyboard to input the password. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

USB device

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

Problem	Procedure
USB device does not work	Remove the USB device from the computer and then reconnect it to a free port in order to ensure it is firmly attached.
	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.
	If you are using an operating system that does not support USB, you are still able to use a USB mouse and/or USB keyboard by setting the **USB KB/Mouse Emulation** option within the TOSHIBA HW Setup utility to Enabled. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

USB Sleep and Charge function

Problem	Procedure
I cannot use the “USB Sleep and Charge function”.	The setting of “USB Sleep and Charge function” may be [Disabled]. Change the setting to [Enabled].
	When there is a current overflow of the external device connected to the compatible port, USB bus power (DC5V) supply may be stopped for safety reasons. When this happens, disconnect an external device if some external devices are connected. After that, turn the power of the computer ON/OFF to restore the function. If this function can not be still used even if only one external device is connected, stop using the external device because its current is over the acceptable value of this computer.
	Some external devices may not be able to use the “USB Sleep and Charge function”. In this case, please try one or more of the following methods. ■ Select another mode. ■ Turn OFF the computer while external devices are connected. ■ Connect external devices after turning OFF of the computer. If this function can not be still used, change the setting to [Disabled] and stop using this function.
The battery depletes quickly even when I turned OFF the power of the computer.	When “USB Sleep and Charge function” is set to [Enabled], USB bus power (DC5V) will be supplied to the external device connected to the compatible port. If external device is connected to the compatible port when the AC adaptor is not connected to the computer, the battery of the computer will be depleted even when the power of the computer is turned OFF. Connect the AC adaptor to the computer or change the “USB Sleep and Charge function” setting to [Disabled]. Instead use an USB port that does not have the USB Sleep and Charge function-compatible icon (⚡).

Problem	Procedure
External devices connected to the compatible ports do not work when connected to a compatible port.	Some external devices may not work when connected to a compatible port when the “USB Sleep and Charge function” is [Enabled]. Reconnect the external device after turning ON the computer. If the external device still does not work, connect device to an USB port that does not have the USB Sleep and Charge function-compatible icon (⚡) or change the “USB Sleep and Charge function” setting to [Disabled].
The “USB WakeUp function” does not work.	When “USB Sleep and Charge function” is set to [Enabled], the “USB WakeUp function” does not work for ports that support the USB Sleep and Charge function. In that case, use an USB port that does not have the USB Sleep and Charge function-compatible icon (⚡) or change the “USB Sleep and Charge function” setting to [Disabled].

eSATA device

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

Problem	Procedure
eSATA device does not work	Remove the eSATA device from the computer and then reconnect it to a free port it in order to ensure it is firmly attached. A connected eSATA device may not be recognized if it is connected to the computer’s eSATA/USB combo port while the computer is in Sleep Mode or Hibernation Mode. If this occurs, disconnect the eSATA device and then reconnect the device while the computer is turned on.
	Ensure that any required eSATA device drivers are properly installed - to achieve this you should refer to both the device documentation and the operating system documentation. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

Additional memory module

Please also refer to Chapter 3, *Hardware, Utilities and Options*, for further information on installing and removing memory modules.

Problem	Procedure
If there is a memory malfunction, the **Power** indicator will repeatedly flash (on for 0.5 seconds, off for 0.5 seconds) in the following patterns; If there is an error in only slot A or no memory module is inserted in Slot A: orange twice, then green once. If there is an error in Slot B: orange once, then green twice. If there are errors in both Slot A and Slot B: orange twice, then green twice.	In the event the **Power** indicator flashes when the computer is turned on, you should first check that the installed memory module(s) are compatible with the computer. If there is an error with a compatible memory module, there is a possibility the memory module is damaged. If you determine that an incompatible module has been installed, you should follow the steps as detailed below: 1. Turn off the computer. 2. Disconnect the AC adaptor and all peripheral devices. 3. Remove the battery pack. 4. Remove the incompatible memory module. 5. Install the battery and/or connect the AC adaptor. 6. Turn on the computer. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.
An error will occur if a memory module is inserted into Slot B while no memory module is inserted in Slot A.	Remove the memory module from Slot B and insert it into Slot A.

Sound system

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

Problem	Procedure
No sound is heard	Adjust the volume control dial.
	Check the software volume settings.
	Please check to see if Mute is turned off.
	Check to make sure the headphone connection is secure.
	Check within the Windows Device Manager application to ensure the sound device is enabled and that the device is properly working. For further information, please refer to "Troubleshooting in Windows" section of Windows Help and Support.
Annoying sound is heard	In this instance you may be experiencing feedback from either the internal microphone or an external microphone connected to the computer - please refer to *Sound System* in Chapter 4, *Operating Basics*, for further information. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

Volume control dial

Problem	Procedure
No sound is heard	Adjust the volume control dial. To increase the volume move the volume control dial to the right, and to decrease it move the volume control dial to the left. Turn the volume control dial while verifying the volume in order to adjust.
Annoying sound is heard	Volume cannot be adjusted during Windows start up or shut down. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

External monitor

Please also refer to Chapter 3, *Hardware, Utilities and Options*, 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, you should 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	Try adjusting the contrast and brightness controls on the external monitor.
	Press the **FN** + **F5** hot key in order to change the display priority and ensure that it is not set for the internal display only.
	Check to see if the external monitor is connected. When the external monitor is set as the primary display device in extended desktop mode, it will not display when the computer wakes up from Sleep Mode if the external monitor has been disconnected while in Sleep Mode. To keep this from happening, do not disconnect the external monitor while the computer is in Sleep or Hibernation Mode. Remember to turn off the computer before disconnecting the external monitor.
	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 may not display when turned on again. If this occurs, press **FN** + **F5** to re-set the display panel and external monitor to clone mode.
Display error occurs	Check that the cable connecting the external monitor to the computer is firmly attached. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

i.LINK (IEEE1394) device

Problem	Procedure
i.LINK device does not function	Make sure the cable is securely connected to the computer and to the device.
	Make sure the device's power is turned on.
	Reinstall the drivers. Click **Start** -> **Control Panel**, switch to the **Classic View**, then double-click the **Add Hardware** icon. Follow the on-screen directions.
	Restart Windows. If problems persist, contact your dealer.

Modem

Problem	Procedure
Communication software can't initialize modem	Make sure the computer's internal modem settings are correct - please refer to the Phone and Modem Options link within the Windows Control Panel.
You can hear a dial tone but can't make a call	If the call is going through a Private Branch Exchange (PBX), take care to ensure that the communication application's tone dial detection feature is disabled..
You place a call, but a connection can't be made	Make sure that the settings are correct within your communication application.
After making a call you can't hear a ring	Ensure that the communication application's tone or pule dialling selection feature is set correctly.
Communication is cut off unexpectedly	The computer will automatically cut off communication when connection with the carrier is not successful for a set time interval - try lengthening this time interval within your communication application.
A `CONNECT` display is quickly replaced by `NO CARRIER`	Ensure that the communication application's error control feature is set correctly.

Problem	Procedure
Character display becomes garbled during a communication	When transmitting data you should ensure that the parity bit and stop bit settings correspond with those of the remote computer - you should check the flow control and communication protocol settings within your communication application.
You cannot receive an incoming call	Ensure that the communication application's rings before auto answer feature is set correctly. If you are still unable to resolve the problem, contact your reseller, dealer or service provider.

LAN

Problem	Procedure
Cannot access LAN	Check for a firm cable connection between the LAN jack and the LAN hub.
Wake-up on LAN does not work	Make sure the AC adaptor is connected. The Wake-up on LAN function consumes power even when the system is off. If problems persist, consult your LAN administrator.

Wireless LAN

If the following procedures do not restore LAN access, consult your LAN administrator. For more information on wireless communication, refer to Chapter 4, *Operating Basics*.

Problem	Procedure
Cannot access Wireless LAN	Make sure the computer's Wireless communication switch is set to on. If problems persist, contact your LAN administrator.

Bluetooth

For further information on Bluetooth wireless communication, please refer to Chapter 4, *Operating Basics*.

Problem	Procedure
Cannot access Bluetooth device	Check to ensure the computer's Wireless Communication Switch is set to on.
	Check to ensure 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 your reseller, dealer or service provider.

TOSHIBA support

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

Before you call

Some problems you experience may 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.

Where to write

If you are still unable to solve the problem and suspect that it is hardware related, write to TOSHIBA at the location listed in the accompanying warranty booklet or visit *www.toshiba-europe.com* on the Internet.

Appendix A

Specifications

This appendix summarizes the computer's technical specifications.

Physical Dimensions

This section summarizes the computer's technical specifications.

Physical Dimensions

Weight (typical) *	1.99 kilograms, configured with: 12.1" WXGA, 1,024 MB RAM, 80GB HDD, DVD Super Multi (Double Layer) Drive Kit II, LAN (1000M bps), Wireless LAN, modem, Tablet PC Pen. * In the case of digitizer screen model. Weight will vary with other configurations. Above weight is measured at specific criteria. It is not guaranteed as the maximum weight of the actual product.
Size	305 (w) x 239 (d) x 37.4/39.4 (h) millimeters (not including parts that extend beyond the main body).

Environmental Requirements

Conditions	**Ambient temperature**	**Relative humidity**
Operating	5°C (41°F) to 35°C (95°F)	20% to 80% (noncondensing)
Non-operating	-20°C (-4°F) to 65°C (149°F)	10% to 90% (noncondensing)
Wet-bulb temperature	26°C maximum	
Conditions	**Altitude (from sea level)**	
Operating	-60 to 3,000 meters	
Non-operating	-60 to 10,000 meters maximum	

Power Requirements

AC adaptor	100-240 volts AC 50 or 60 hertz (cycles per second)
Computer	15 V DC 5.0 amperes

Built-in Modem

This information is applicable to the models equipped with a built-in modem.

Network control unit (NCU)		
Type of NCU	AA	
Type of line	Telephone line (analog only)	
Type of dialing	Pulse Tone	
Control command	AT commands EIA-578 commands	
Monitor function	Computer's speaker	
Communication specifications		
Communication system	Data: Full duplex Fax: Half duplex	
Communication protocol	Data ITU-T-Rec (Former CCITT) Bell Fax ITU-T-Rec (Former CCITT)	 V.21/V.22/V.22bis/V.32/ V.32bis/V.34/V.90 103/212A V.17/V.29/V.27ter/V.21 ch2

Communication speed	Data transmission and reception 300/1200/2400/4800/7200/9600/12000/14400/16800/19200/21600/24000/26400/28800/31200/33600 bps Data reception only with V.90 28000/29333/30666/32000/33333/34666/36000/37333/38666/40000/41333/42666/44000/45333/46666/48000/49333/50666/52000/53333/54666/56000 bps Fax 2400/4800/7200/9600/12000/14400 bps
Transmitting level	-10 dBm
Receiving level	-10 to -40 dBm
Input/output impedance	600 ohms ±30%
Error correcting	MNP class 4 and ITU-T V.42
Data compression	MNP class 5 and ITU-T V.42bis
Power supply	+3.3V (supplied by computer)

Appendix B

Display Controller and Video mode

Display controller

The display controller interprets software commands into hardware commands that turn particular parts on the screen on or off.

Due to the display panel's increased resolution, lines may appear broken in when displaying images in full-screen text mode.

The display controller also controls the video mode and uses industry standard rules to govern the screen resolution and the maximum number of colors that can be displayed at any one time. Therefore, software written for a given video mode will run on any computer that supports that mode.

Video mode

Video mode settings are configured via the **Display Properties** dialog.

To open the **Display Properties** dialog, click **Start** -> **Control Panel** -> **Appearance and Personalization** -> **Personalization** -> **Display Settings**.

If you are running some applications (for example a 3D application or video playback and so on), you may 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.

Disabling Windows Aero™ may aslo help correct this issue.

Appendix C

Wireless LAN

This appendix is intended to help you get your Wireless LAN network up and running, with a minimum of parameters.

Card Specifications

Form Factor	PCI Express Mini Card
Compatibility	■ IEEE 802.11 Standard for Wireless LANs ■ Wi-Fi (Wireless Fidelity) certified by the Wi-Fi Alliance. The “Wi-Fi CERTIFIED” logo is a certification mark of the Wi-Fi Alliance.
Network Operating System	■ Microsoft Windows Networking
Media Access Protocol	■ CSMA/CA (Collision Avoidance) with Acknowledgment (ACK)

Radio Characteristics

Radio Characteristics of Wireless LAN module may 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 2.4GHz and 5GHz band, local radio regulations may impose a number of limitations to the use of wireless communication equipment.

Radio Frequency	■ Band 5GHz (5150-5850 MHz) (Revision a and n draft 2.0) ■ Band 2.4GHz (2400-2483.5 MHz) (Revision b/g and n draft 2.0)

The range of the wireless signal is related to the transmit rate of the wireless communication. Communications at lower transmit range may 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 may either absorb or reflect the radio signal.

Supported Frequency Sub-bands

Subject to the radio regulations that apply in the countries/regions, your Wireless LAN module may support a different set of 5 GHz/2.4 GHz channels. Consult your Authorized Wireless LAN or TOSHIBA Sales office for information about the radio regulations that apply in the countries/regions.

2.4GHz Band Channels Sets (Wireless IEEE 802.11 Revision b, g and n draft 2.0)

Frequency Range **Channel ID**	2400-2497 MHz
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	**2457*1**
11	2462
12	**2467*2**
13	**2472*2**

*1 Factory-set default channels

*2 The band width and the channel which can be used depends on the installed wireless LAN module. And the approved channels on using are different at each country or region.

The channel configuration is managed as follows:

- For wireless clients that operate in a Wireless LAN Infrastructure, the Wireless LAN module will automatically start operation at the channel identified by the Wireless LAN Access Point. When roaming between different access points the station can dynamically switch to another channel if required.
- For Wireless LAN modules installed in wireless clients that operating in a peer-to-peer mode, the module will use the default channel 10.
- In a Wireless LAN Access Point, the Wireless LAN module will use the factory-set default channel (printed in bold), unless the LAN Administrator selected a different channel when configuring the Wireless LAN Access Point device.

5GHz Band Channels Sets (Wireless IEEE 802.11 Revision a and n draft 2.0)

Frequency Range **Channel ID**	5150-5850 MHz
34	**5170*1**
36	**5180*1**
38	**5190*1**
40	**5200*1**
42	**5210*1**
44	**5220*1**
46	**5230*1**
48	**5240*1**
52	**5260*1**
56	**5280*1**
60	**5300*1**
64	**5320*1**
100	**5500*1**
104	**5520*1**
108	**5540*1**
112	**5560*1**
116	**5580*1**
120	**5600*1**
124	**5620*1**
128	**5640*1**

132	**5660*1**
136	**5680*1**
140	**5700*1**
149	**5745*1**
153	**5765*1**
157	**5785*1**
161	**5805*1**
165	**5825*1**

*1 The channel which can be used depends on the installed wireless LAN module. And the approved channels on using are different at each country or region.

The channel configuration is managed as follows:

- For wireless clients that operate in a Wireless LAN Infrastructure, the Wireless LAN module will automatically start operation at the channel identified by the Wireless LAN Access Point. When roaming between different access points the station can dynamically switch to another channel if required.

Appendix D

Bluetooth wireless technology Interoperability

Bluetooth Adaptors from TOSHIBA 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 Ver. 2.1+EDR, as defined and approved by The Bluetooth Special Interest Group.
- Logo certification with Bluetooth wireless technology as defined by The Bluetooth Special interest Group.

- *When you use Bluetooth Adaptor from TOSHIBA close to 2.4 GHz Wireless LAN devices, Bluetooth transmissions might slow down or cause errors. If you detect certain interference while you use Bluetooth Adaptor from TOSHIBA, always change the frequency, move your computer to the area outside of the interference range of 2.4 GHz Wireless LAN devices (40 meters/43.74 yards or more) or stop transmitting from your computer. Please visit the following TOSHIBA PC product support website.*
- *Bluetooth and Wireless LAN devices operate within the same radio frequency range and may interfere with one another. If you use Bluetooth and Wireless LAN devices simultaneously, you may occasionally experience a less than optimal network performance or even lose your network connection.*
  If you should experience any such problem, immediately turn off either one of your Bluetooth or Wireless LAN.
  Please visit the following TOSHIBA PC product support website.

  TOSHIBA PC product support website.
  In Europe visit
  http://www.toshiba-europe.com/computers/tnt/bluetooth.htm
  In the United States visit
  http://www.pc.support.global.toshiba.com

Bluetooth wireless technology and your Health

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

Because products with Bluetooth wireless technology operate within the guidelines found in radio frequency safety standards and recommendations, TOSHIBA believes Bluetooth wireless technology is 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 Bluetooth wireless technology may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

- Using the equipment with Bluetooth wireless technology 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 device with Bluetooth wireless technology prior to turning on the equipment.

Regulatory statements

General

This product complies with any mandatory product specification in any country/region where the product is sold. In addition, the product complies with the following.

European Union (EU) and EFTA

This equipment complies with the R&TTE directive 1999/5/EC and has been provided with the CE mark accordingly.

Canada - Industry Canada (IC)

This device complies with RSS 210 of Industry Canada.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device.

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. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it 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 tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

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

TOSHIBA is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this Bluetooth Adaptor from TOSHIBA, or the substitution or attachment of connecting cables and equipment other than specified by TOSHIBA.

The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

Caution: Exposure to Radio Frequency Radiation

The radiated output power of the Bluetooth Adaptor from TOSHIBA is far below the FCC radio frequency exposure limits. Nevertheless, the Bluetooth Adaptor from TOSHIBA 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/rpb*.

Taiwan

Article 12 Without permission granted by the DGT or 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.

Article 14 The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved.

The said legal communications means radio communications is operated in compliance with the Telecommunications Act.

The low power radio-frequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices.

Using Bluetooth Adaptor from TOSHIBA equipment in Japan

In Japan, the frequency bandwidth of 2,400 - 2,483.5 MHz 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. Sticker

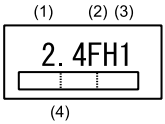
Please put the following sticker on computer incorporating this product.

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 TOSHIBA Direct PC if you have problems with interference caused by this product to Other Radio Stations.

2. Indication

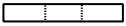
The indication shown below appears on this equipment.



(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 10 m.

(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.

3. TOSHIBA Direct PC

Monday - Friday	: 10:00-17:00
Toll Free Tel	: 0120-15-1048
Direct Dial	: 03-3457-4850
FAX	: 03-3457-4868

Device Authorization

This device obtains the Technical Conditions Compliance Approval, and it belongs to the device class of radio equipment of low-power data communication system radio station stipulated in the Telecommunications Business Law.

The Name of the radio equipment: EYTFXCS

JAPAN APPROVALS INSTITUTE FOR TELECOMMUNICATIONS EQUIPMENT

Approval Number: D07-0040001

The following restrictions apply:

Do not disassemble or modify the device.

Do not install the embedded wireless module into other device.

Appendix E

AC Power Cord and Connectors

The power cord's AC input plug 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:

Length:	Minimum 1.7 meters
Wire size:	Minimum 0.75 mm^2
Current rating:	Minimum 2.5 amperes
Voltage rating:	125 or 250 VAC (depending on country/region's power standards)

Certification agencies

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

Europe:

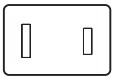
Austria:	OVE	**Italy:**	IMQ
Belgium:	CEBEC	**The Netherlands:**	KEMA
Denmark:	DEMKO	**Norway:**	NEMKO
Finland:	FIMKO	**Sweden:**	SEMKO
France:	LCIE	**Switzerland:**	SEV
Germany:	VDE	**United Kingdom:**	BSI

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

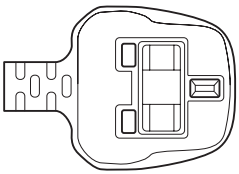
The following illustrations show the plug shapes for the U.S.A. and Canada, the United Kingdom, Australia and Europe.

USA



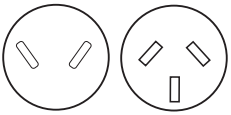
UL approved

United Kingdom



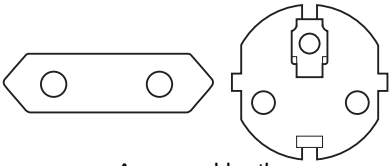
BS approved

Australia



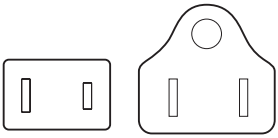
AS approved

Europe



Approved by the appropriate agency

Canada



CSA approved

Appendix F

TOSHIBA Anti-theft Protection Timer

This feature allows you to set up a timer-activated BIOS password that will prevent unauthorised system access in the event of theft.

When the time limit is exceeded, you are required to provide the Password or fingerprint authentication for the BIOS and Hard Disk Drive to gain access to the system.

To set permissions and limits for the TOSHIBA Anti-theft Protection Timer please use the TOSHIBA Password Utility.

The settings can only be activated or modified by a user with supervisor authority. If the supervisor password is not set, click on the **Set** button in **Supervisor Password** from the supervisor tab in TOSHIBA Password Utility and set the password on the dialog screen that appears.

Then, click on the **Set** button in TOSHIBA Anti-theft Protection Timer.

Take the following action if the set limit is exceeded.

- If the Supervisor Password is registered but the User Password is not, enter the Supervisor Password to boot up the computer.
- If both the Supervisor Password and the User Password are registered, enter either the Supervisor Password, the User Password or the fingerprint authentication to boot up the computer.

- *The limit counts the number of days from the last time Windows is logged on till the next time the computer is booted up. The range can be set from 1 to 28 days.*
- *Authentication is required if the computer's clock is significantly modified.*
- *If the Supervisor Password is deleted, this function becomes disabled.*

Appendix G

TOSHIBA PC Health Monitor

The TOSHIBA PC Health Monitor software program monitors computer system functions such as power consumption, the cooling system and HDD Drop sensor. It alerts users of specific system conditions via pop-up messages. It also tracks the usage of the computer and related devices, logging the service relevant information on the computer's hard disk drive.

The collected information includes device operation time and number of actuations or status changes (i.e.: number of power button and **FN** key combination uses, AC adaptor, battery, LCD, fan, HDD, sound volume, wireless communication switch, TOSHIBA Express Port Replicator and USB information), date of initial system use, and also computer and device usage (i.e.: power settings, battery temperature and recharging, CPU, memory, backlight illumination time, and temperatures for various devices). The stored data uses a very small portion of the total hard disk capacity, approximately 3MB or less per year.

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

Subject to the use restrictions above, the HDD data logged may be transferred to entities located outside of your country or region of residence (e.g., European Union). Those countries may or may not have the same data protection laws or data protection levels as required by your home country or region.

Once enabled, you may 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 HDD.

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

Starting the TOSHIBA PC Health Monitor

The TOSHIBA PC Health Monitor can be started using the following methods:

- Double click TOSHIBA PC Health Monitor in the **Welcome Center**.
- Click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **PC Health Monitor**.
- Click the icon ( ) in the notification area, then click the "**TOSHIBA PC Health Monitor is not enabled. Please click here for more details**." message when it is displayed. (*)

No matter which method is used, the TOSHIBA PC Health Monitor explanation screen will be displayed.

Clicking "**Next**" will display the "**TOSHIBA PC Health Monitor Software Notice & Acceptance**" screen. Please carefully read the information displayed. Selecting "**Enable this software program now**" and clicking "**OK**" will enable 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 will begin monitoring system functions and collecting information.

(*) This message will no longer be displayed after clicking "**Enable this software program now**" or "**Disable this software program now**" on the "**TOSHIBA PC Health Monitor Software Notice & Acceptance**" screen.

If a TOSHIBA PC Health Monitor message is displayed

A message will be displayed if any changes which may interfere with the operation of the program are detected. Follow the instructions displayed on screen in the message. However, if the following special message is displayed, carry out the procedures listed below.

1. If the "**It is possible that the PC cooling performance has decreased. Please click [OK] to run the TOSHIBA Cooling Performance Diagnostic Tool to check the cooling performance of your PC.**" message is displayed, Click "**OK**" to start the "TOSHIBA Cooling Performance Diagnostic Tool".
2. If the "**It is possible that the PC cooling performance has decreased. Please clean the cooling module according to the instructions in your PC User's Guide.**" message is displayed after running the "TOSHIBA Cooling Performance Diagnostic Tool", the cooling module requires cleaning. Refer to the *Cleaning the Cooling module* section, in this chapter.
3. After cleaning the cooling module, run the "TOSHIBA Cooling Performance Diagnostic Tool" again.
   Click **Start** -> **All Programs** -> **TOSHIBA** -> **Utilities** -> **Cooling Performance Diagnostic Tool**.

4. If the "**Please click [OK] to run the TOSHIBA Cooling Performance Diagnostic Tool to check the cooling performance of your PC.**" message is still displayed after running the "TOSHIBA Cooling Performance Diagnostic Tool" in step 3, it is recommended you turn off the computer and contact TOSHIBA support.

Cleaning the Cooling module

This section explains how to clean the Cooling module.

If you use the computer for a long period, the inside of the computer may become hot. Always allow the computer to cool to room temperature before you clean the cooling module.

1. Before cleaning the Cooling module, you should shut down the computer and remove the battery pack. Follow the steps as described below:

   a. Shut down the computer - make sure the **Power** indicator is off (refer to the *Turning off the power* section in Chapter 1, *Getting Started* if required).

   b. Remove the AC adaptor and all cables and peripherals connected to the computer.

   c. Close the display panel and turn the computer upside down.

Always make sure the display panel is closed in Laptop mode before turning the computer upside down.

   d. Remove the battery pack (refer to the *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required).

2. Remove the one screw securing the Cooling module cover as shown in the below figure.

Use a point size 0 Phillips screwdriver.

3. Slide your fingernail or a thin object under the cover and lift it off.

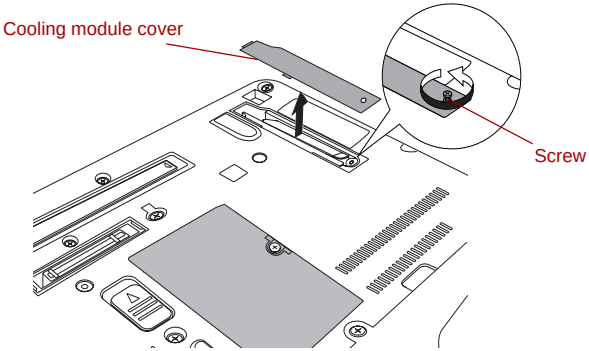


Figure G-1 Removing the cooling module cover

4. Lift the Fan hood up and out.

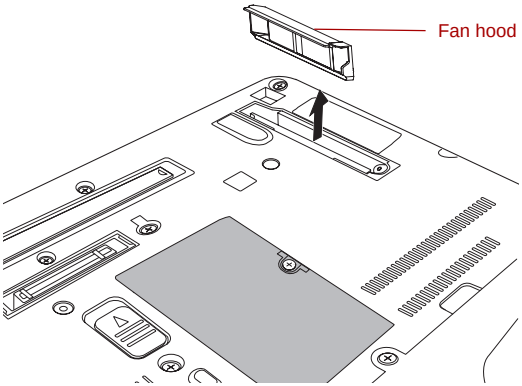


Figure G-2 Removing the Fan hood

5. Clean the Cooling module using a vacuum cleaner or other cleaning tool.

Do not use a ball pen, cotton swap or similar to remove dust. If these touch the inside of the computer, it could be damaged or become clogged, leading to further problems.

6. Put the Fan hood back into the computer.
7. Slide the Cooling module cover back into place on the computer to reattach.
8. Secure the Cooling module cover with one screw.
9. Install the battery pack (refer to the *Replacing the battery pack* section in Chapter 6, *Power and Power-Up Modes*, if required).
10. Turn your computer over.

Appendix H

Legal Footnotes

This chapter states the Legal Footnotes information applicable to TOSHIBA computers.

Non-applicable Icons

Certain computer chassis are designed to accommodate all possible configurations for an entire product series. Your selected model may not have all the features and specifications corresponding to all of the icons or switches shown on the computer chassis, unless you have selected all those features.

CPU

Central Processing Unit (“CPU”) Performance Legal Footnotes.

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

- use of certain external peripheral products
- use if 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°F to 86°F) or >25°C (77°F) at high altitude (all temperature references are approximate and may vary depending on the specific computer model - please refer to your computer documentation or visit the Toshiba website at www.pcsupport.toshiba.com for details).

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

Under some conditions, your computer product may automatically shut-down. 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.

Contact Toshiba technical service and support, refer to *TOSHIBA support* section in Chapter 8, *Troubleshooting*, for more information.

64-Bit Computing

64-bit processors are designed to take advantage of 32 and 64 bit computing.

64-bit computing requires that the following hardware and software requirements are met:

- 64-bit Operating System
- 64-bit CPU, Chipset and BIOS (Basic Input/Output System)
- 64-bit Device drivers
- 64-bit applications

Certain device drivers and/or applications may not be compatible with a 64-bit CPU and therefore may not function properly. A 32-bit version of the operating system is preinstalled on your computer unless explicitly stated that the operating system is 64-bit.

Memory (Main System)

Part of the main system memory may 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 may vary depending on the graphics system, applications utilized, system memory size and other factors. Only computers configured with a 64-bit operating system can address 4 GB or more of system memory.

Battery Life

Battery life may 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 may not charge while computer is consuming full power.

After going through many charge and discharge cycles, the battery will lose its ability to perform at maximum capacity and will need 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

One 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 may 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 will dim when the computer is operated on battery power and you may not be able to increase the brightness of the screen.

Graphics Processor Unit (“GPU”)

Graphics processor unit (“GPU”) performance may 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 may 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 will vary 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 may vary depending on surrounding electromagnetic environment, obstacles, access point design and configuration, and client design and software/hardware configurations.

The actual transmission speed will be lower than the theoretical maximum speed.

The wireless adapter is based on a draft release version of the IEEE 802.11n specification and; may not be compatible with, or support all features (e.g., security) of, certain Wi-Fi equipment.

USB Sleep and Charge

The “USB Sleep and Charge function” may not work with certain external devices even if they are compliant with the USB specification. In those cases, turn the power of the computer ON to charge the device.

Copy Protection

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

Appendix I

If your computer is stolen

Always take care of your computer and try to prevent it from being stolen. You are the owner of a valuable technical device, which may be highly attractive to thieves, so please do not leave it unattended in a public place. To further help protect against theft, security cables can be bought for use with your notebook when it is being used at home or in the office.

Make a note of your computer's machine type, model number, and serial number, and put it in a safe place. You will find this information on the underside of your notebook. Please also keep the receipt of the computer you purchased.

Should your computer be stolen, however, we'll help you try to find it. Before contacting TOSHIBA, please prepare the following information which is necessary to uniquely identify your computer:

- In which country was your computer stolen?
- What type of machine do you have?
- What was the model number (PA number)?
- What was the serial number (8 digits)?
- When was it stolen, i.e. date?
- What is your address, phone, and fax number?

To register the theft on paper, please follow these procedures:

- Fill in the TOSHIBA Theft Registration form (or a copy of it) below.
- Attach a copy of your receipt showing where your computer was purchased.
- Either fax or send the receipt and registration form to the address below.

To register the theft online, please follow these procedures:

- Visit *www.toshiba-europe.com* on the Internet. In the product area, choose **Computer Systems**.
- In the Computer Systems page, open the **Support & Downloads** menu and choose the **Stolen Units Database** option.

Your entries are used to track your computer at our service points.

TOSHIBA Theft Registration

Send to: TOSHIBA Europe GmbH
Technical Service and Support
Leibnizstr. 2
93055 Regensburg
Germany

Fax number: +49 (0) 941 7807 921

Country stolen:

Machine type:
(e.g. PORTÉGÉ M750)

Model number:
(e.g. PPM75EYXT)

Serial number:
(e.g. 12345678G)

Date stolen: Year Month Day

Owner's details

Last name, first name:

Company:

Street:

Postal Code/City:

Country:

Phone:

Fax:

Glossary

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

Abbreviations

AC: alternating current

ANSI: American National Standards Institute

ASCII: American Standard Code for Information Interchange

BIOS: basic input output system

bps: bits per second

CD: compact disc

CD-ROM: Compact Disc-Read Only Memory

CD-RW: Compact Disc-ReWritable

CMOS: complementary metal-oxide semiconductor

CPU: central processing unit

CRT: cathode ray tube

DC: direct current

DDC: display data channel

DDR: double data rate

DIMM: dual inline memory module

DMA: direct memory access

DOS: disk operating system

DVD: digital versatile disc

DVD-R: Digital Versatile Disc-Recordable

DVD-RAM: Digital Versatile Disc-Random Access Memory

DVD-R (Dual Layer): Digital Versatile Disc Recordable Dual Layer

DVD-ROM: Digital Versatile Disc-Read Only Memory

DVD-RW: Digital Versatile Disc-ReWritable

DVD+R (Double Layer): Digital Versatile Disc Recordable Double Layer

ECP: extended capabilities port

FDD: floppy diskette drive

FIR: fast infrared
GB: gigabyte
HDD: hard disk drive
IDE: integrated drive electronics
IEEE: Institute of Electrical and Electronics Engineers
I/O: input/output
IRQ: interrupt request
KB: kilobyte
LCD: liquid crystal display
LED: light emitting diode
LSI: large scale integration
MB: megabyte
PC: personal computer
PCI: peripheral component interconnect
RAM: random access memory
RGB: red, green, and blue
ROM: read only memory
RTC: real time clock
SCSI: small computer system interface
SIO: serial input/output
SDRAM: synchronous dynamic random access memory
SSD: Solid state drive
TFT: thin-film transistor
UART: universal asynchronous receiver/transmitter
USB: Universal Serial Bus
UXGA: ultra extended graphics array
VGA: video graphics array
VRT: voltage reduction technology
WXGA: wide extended graphics array
***XGA*:** extended graphics array

A

adaptor: A device that provides an interface between two dissimilar electronic devices. For example, the AC adaptor modifies the power from a wall outlet for use by the computer. This term also refers to the add-in circuit cards that control external devices, such as video monitors and magnetic tape devices.

allocate: To assign a space or function for a specific task.

alphanumeric: Keyboard characters including letters, numbers and other symbols, such as punctuation marks or mathematical symbols.

alternating current (AC): Electric current that reverses its direction of flow at regular intervals.

analog signal: A signal whose characteristics such as amplitude and frequency vary in proportion to (are an analog of) the value to be transmitted. Voice communications are analog signals.

ANSI: American National Standards Institute. An organization established to adopt and define standards for a variety of technical disciplines. For example, ANSI defined the ASCII standard and other information processing requirements.

antistatic: A material used to prevent the buildup of static electricity.

application: A group of programs that together are used for a specific task such as accounting, financial planning, spreadsheets, word processing and games.

ASCII: American Standard Code for Information Interchange. ASCII code is a set of 256 binary codes that represent the most commonly used letters, numbers, and symbols.

async: Short for asynchronous.

asynchronous: Lacking regular time relationship. As applied to computer communications, asynchronous refers to the method of transmitting data that does not require a steady stream of bits to be transmitted at regular time intervals.

B

backup: A duplicate copy of files kept as a spare in case the original is destroyed.

batch file: A file that can be executed from the system prompt containing a sequence of operating system commands or executable files.

binary: The base two number system composed of zeros and ones (off or on), used by most digital computers. The right-most digit of a binary number has a value of 1, the next a value of 2, then 4, 8, 16, and so on. For example, the binary number 101 has a value of 5. *See also* ASCII.

BIOS: Basic Input Output System. The firmware that controls data flow within the computer. *See also* firmware.

bit: Derived from “binary digit,” the basic unit of information used by the computer. It is either zero or one. Eight bits is one byte. *See also* byte.

board: A circuit board. An internal card containing electronic components, called chips, which perform a specific function or increase the capabilities of the system.

boot: Short for bootstrap. A program that starts or restarts the computer. The program reads instructions from a storage device into the computer’s memory.

bps: Bits per second. Typically used to describe the data transmission speed of a modem.

buffer: The portion of the computer's memory where data is temporarily stored. Buffers often compensate for differences in the rate of flow from one device to another.

bus: An interface for transmission of signals, data or electric power.

byte: The representation of a single character. A sequence of eight bits treated as a single unit; also the smallest addressable unit within the system.

C

cache memory: High speed memory which stores data that increases processor speed and data transfer rate. When the CPU reads data from main memory, it stores a copy of this data in cache memory. The next time the CPU needs that same data, it looks for it in the cache memory rather than the main memory, which saves time. The computer has two cache levels. Level one is incorporated into the processor and level two resides in external memory.

capacity: The amount of data that can be stored on a magnetic storage device such as a floppy diskette or hard disk drive. It is usually described in terms of kilobytes (KB), where one KB = 1024 bytes, megabytes (MB), where one MB = 1024 KB and gigabytes (GB), where one GB = 1024 MB.

card: Synonym for board. *See* board.

CardBus: An industry standard bus for 32-bit PC Cards.

CD-ROM: A Compact Disc-Read Only Memory is a high capacity disc that can be read from but not written to. The CD-ROM drive uses a laser, rather than magnetic heads, to read data from the disc.

CD-R: A Compact Disc-Recordable disc can be written once and read many times. See also CD-ROM.

CD-RW: A Compact Disc-ReWritable disc can be rewritten many times. *See* also CD-ROM.

character: Any letter, number, punctuation mark, or symbol used by the computer. Also synonymous with byte.

chassis: The frame containing the computer.

chip: A small semiconductor containing computer logic and circuitry for processing, memory, input/output functions and controlling other chips.

CMOS: Complementary Metal-Oxide Semiconductor. An electronic circuit fabricated on a silicon wafer that requires very little power. Integrated circuits implemented in CMOS technology can be tightly packaged and are highly reliable.

cold start: Starting a computer that is currently off (turning on the power).

COM1, COM2, COM3 and COM4: The names assigned to the serial and communication ports.

commands: Instructions you enter at the terminal keyboard that direct the actions of the computer or its peripheral devices.

communications: The means by which a computer transmits and receives data to and from another computer or device. *See* serial interface.

compatibility: 1) The ability of one computer to accept and process data in the same manner as another computer without modifying the data or the media upon which it is being transferred.
2) the ability of one device to connect to or communicate with another system or component.

components: Elements or parts (of a system) which make up the whole (system).

computer program: A set of instructions written for a computer that enable it to achieve a desired result.

computer system: A combination of hardware, software, firmware, and peripheral components assembled to process data into useful information.

configuration: The specific components in your system (such as the terminal, printer, and disk drives) and the settings that define how your system works. You use the HW Setup program to control your system configuration.

control keys: A key or sequence of keys you enter from the keyboard to initiate a particular function within a program.

controller: Built-in hardware and software that controls the functions of a specific internal or peripheral device (e.g. keyboard controller).

co-processor: A circuit built into the processor that is dedicated to intensive math calculations.

CPS: Characters Per Second. Typically used to indicate the transmission speed of a printer.

CPU: Central Processing Unit. The portion of the computer that interprets and executes instructions.

CRT: Cathode Ray Tube. A vacuum tube in which beams projected on a fluorescent screen-producing luminous spots. An example is the television set.

cursor: A small, blinking rectangle or line that indicates the current position on the display screen.

D

data: Information that is factual, measurable or statistical that a computer can process, store, or retrieve.

data bits: A data communications parameter controlling the number of bits (binary digits) used to make up a byte. If data bits = 7 the computer can generate 128 unique characters. If data bits = 8 the computer can generate 256 unique characters.

DC: Direct Current. Electric current that flows in one direction. This type of power is usually supplied by batteries.

default: The parameter value automatically selected by the system when you or the program do not provide instructions. Also called a preset value.

delete: To remove data from a disk or other data storage device. Synonymous with erase.

device driver: A program that controls communication between a specific peripheral device and the computer.

dialog box: A window that accepts user input to make system settings or record other information.

disk drive: The device that randomly accesses information on a disk and copies it to the computer's memory. It also writes data from memory to the disk. To accomplish these tasks, the unit physically rotates the disk at high speed past a read-write head.

disk storage: Storing data on magnetic disk. Data is arranged on concentric tracks much like a phonograph record.

display: A CRT, LCD, or other image producing device used to view computer output.

documentation: The set of manuals and/or other instructions written for the users of a computer system or application. Computer system documentation typically includes procedural and tutorial information as well as system functions.

DOS: Disk Operating System. *See* operating system.

driver: A software program, generally part of the operating system, that controls a specific piece of hardware (frequently a peripheral device such as a printer or mouse).

DVD-R (+R, -R): A Digital Versatile Disc-Recordable disk can be written once and read many times. The DVD-R drive uses a laser to read data from the disc.

DVD-RAM: A Digital Versatile Disc-Random Access Memory is a high-capacity, high performance disc that lets you store large volumes of data. The DVD-ROM drive uses a laser to read data from the disc.

DVD-R (Dual Layer): A disc having two layers on one side with the DVD-R storage capacity about 1.8 times larger than before. The DVD-RW drive uses a laser to read data from the disc.

DVD-ROM: A Digital Versatile Disc-Read Only Memory is a high capacity, high performance disc suitable for play back of video and other high-density files. The DVD-ROM drive uses a laser to read data from the disc.

DVD-RW (+RW, -RW): A Digital Versatile Disc-ReWritable disc can be rewritten many times.

DVD+R (Double Layer): A disc having two layers on one side with the DVD+R storage capacity about 1.8 times larger than before. The DVD-RW drive uses a laser to read data from the disc.

E

echo: To send back a reflection of the transmitted data to the sending device. You can display the information on the screen, or output it to the printer, or both. When a computer receives back data it transmitted to a CRT (or other peripheral device) and then retransmits the data to printer, the printer is said to echo the CRT.

erase: *See* delete.

escape: 1) A code (ASCII code 27), signaling the computer that what follows are commands; used with peripheral devices such as printers and modems.
2) A means of aborting the task currently in progress.

escape guard time: A time before and after an escape code is sent to the modem which distinguishes between escapes that are part of the transmitted data, and escapes that are intended as a command to the modem.

execute: To interpret and execute an instruction.

Extended Capability Port: An industry standard that provides a data buffer, switchable forward and reverse data transmission, and run length encoding (RLE) support.

F

fast infrared: An industry standard that enables cableless infrared serial data transfer at speeds of up to 4 Mbps.

file: A collection of related information; a file can contain data, programs, or both.

fingerprint sensor: The fingerprint sensor compares and analyzes the unique characteristics in a fingerprint.

firmware: A set of instructions built into the hardware which controls and directs a microprocessor's activities.

floppy diskette: A removable disk that stores magnetically encoded data.

floppy diskette drive (FDD): An electromechanical device that reads and writes to floppy diskettes.

Fn-esse: A TOSHIBA utility that lets you assign functions to hot keys.

folder: An icon in Windows used to store documents or other folders.

format: The process of readying a blank disk for its first use. Formatting establishes the structure of the disk that the operating system expects before it writes files or programs onto the disk.

function keys: The keys labeled **F1** through **F12** that tell the computer to perform certain functions.

G

gigabyte (GB): A unit of data storage equal to 1024 megabytes. *See also* megabyte.

graphics: Drawings, pictures, or other images, such as charts or graphs, to present information.

H

hard disk: A non-removable disk usually referred to as drive C. The factory installs this disk and only a trained engineer can remove it for servicing. Also called fixed disk.

hard disk drive (HDD): An electromechanical device that reads and writes a hard disk. *See also* hard disk.

hardware: The physical electronic and mechanical components of a computer system: typically, the computer itself, external disk drives, etc. *See also* software and firmware.

hertz: A unit of wave frequency that equals one cycle per second.

hexadecimal: The base 16 numbering system composed of the digits 0 through 9 and the letters A, B, C, D, E, and F.

host computer: The computer that controls, regulates, and transmits information to a device or another computer.

hot key: The computer's feature in which certain keys in combination with the extended function key, **FN**, can be used to set system parameters, such as speaker volume.

HW Setup: A TOSHIBA utility that lets you set the parameters for various hardware components.

I

icon: A small graphic image displayed on the screen or in the indicator panel. In Windows, an icon represents an object that the user can manipulate.

i.LINK (IEEE1394): This port enables high-speed data transfer directly from external devices such as digital video cameras.

input: The data or instructions you provide to a computer, communication device or other peripheral device from the keyboard or external or internal storage devices. The data sent (or output) by the sending computer is input for the receiving computer.

instruction: Statements or commands that specify how to perform a particular task.

interface: 1) Hardware and/or software components of a system used specifically to connect one system or device to another.
2) To physically connect one system or device to another to exchange information.
3) The point of contact between user, the computer, and the program, for example, the keyboard or a menu.

interrupt request: A signal that gives a component access to the processor.

I/O: Input/output. Refers to acceptance and transfer of data to and from a computer.

I/O devices: Equipment used to communicate with the computer and transfer data to and from it.

J

jumper: A small clip or wire that allows you to change the hardware characteristics by electrically connecting two points of a circuit.

K

K: Taken from the Greek word kilo, meaning 1000; often used as equivalent to 1024, or 2 raised to the 10th power. *See also* byte and kilobyte.

KB: *See* kilobyte.

keyboard: An input device containing switches that are activated by manually pressing marked keys. Each keystroke activates a switch that transmits a specific code to the computer. For each key, the transmitted code is, in turn, representative of the (ASCII) character marked on the key.

kilobyte (KB): A unit of data storage equal to 1024 bytes. *See also* byte and megabyte.

L

level 2 cache: *See* cache memory.

Light Emitting Diode (LED): A semiconductor device that emits light when a current is applied.

Liquid Crystal Display (LCD): Liquid crystal sealed between two sheets of glass coated with transparent conducting material. The viewing-side coating is etched into character forming segments with leads that extend to the edge of the glass. Applying a voltage between the glass sheets alters the brightness of the liquid crystal.

LSI: Large Scale Integration.
1) A technology that allows the inclusion of up to 100,000 simple logic gates on a single chip.
2) An integrated circuit that uses large scale integration.

M

main board: *See* motherboard.

megabyte (MB): A unit of data storage equal to 1024 kilobytes. *See also* kilobyte.

megahertz: A unit of wave frequency that equals 1 million cycles per second. *See also* hertz.

menu: A software interface that displays a list of options on the screen. Also called a screen.

microprocessor: A hardware component contained in a single integrated circuit that carries out instructions. Also called the central processing unit (CPU), one of the main parts of the computer.

mode: A method of operation, for example, the Boot Mode, Sleep Mode or the Hibernation Mode.

modem: Derived from modulator/demodulator, a device that converts (modulates) digital data for transmission over telephone lines and then converts modulated data (demodulates) to digital format where received.

monitor: A device that uses rows and columns of pixels to display alphanumeric characters or graphic images. *See also* CRT.

motherboard: A name sometimes used to refer to the main printed circuit board in processing equipment. It usually contains integrated circuits that perform the processor's basic functions and provides connectors for adding other boards that perform special functions. Sometimes called a main board.

MP3: An audio compression standard that enables high-quality transmission and real-time playback of sound files.

N

non-system disk: A formatted floppy diskette you can use to store programs and data but you cannot use to start the computer. *See* system disk.

nonvolatile memory: Memory, usually read-only (ROM), that is capable of permanently storing information. Turning the computer's power off does not alter data stored in nonvolatile memory.

numeric keypad overlay: A feature that allows you to use certain keys on the keyboard to perform numeric entry, or to control cursor and page movement.

O

OCR: Optical Character Recognition (reader). A technique or device that uses laser or visible light to identify characters and input them into a storage device.

online state: A functional state of a peripheral device when it is ready to receive or transmit data.

operating system: A group of programs that controls the basic operation of a computer. Operating system functions include interpreting programs, creating data files, and controlling the transmission and receipt (input/output) of data to and from memory and peripheral devices.

output: The results of a computer operation. Output commonly indicates data.
1) printed on paper, 2) displayed at a terminal, 3) sent through the serial port of internal modem, or 4) stored on some magnetic media.

P

parity: 1) The symmetrical relationship between two parameter values (integers) both of which are either on or off; odd or even; 0 or 1.
2) In serial communications, an error detection bit that is added to a group of data bits making the sum of the bits even or odd. Parity can be set to none, odd, or even.

password: A unique string of characters used to identify a specific user. The computer provides various levels of password protection such as user and supervisor.

pel: The smallest area of the display that can be addressed by software. Equal in size to a pixel or group of pixels. *See* pixel.

peripheral component interconnect: An industry standard 32-bit bus.

peripheral device: An I/O device that is external to the central processor and/or main memory such as a printer or a mouse.

pixel: A picture element. The smallest dot that can be made on a display or printer. Also called a pel.

plug and play: A capability with Windows that enables the system to automatically recognize connections of external devices and make the necessary configurations in the computer.

port: The electrical connection through which the computer sends and receives data to and from devices or other computers.

Power Saver: A TOSHIBA utility that lets you set the parameters for various power-saving functions.

printed circuit board (PCB): A hardware component of a processor to which integrated circuits and other components are attached. The board itself is typically flat and rectangular, and constructed of fiberglass, to form the attachment surface.

program: A set of instructions a computer can execute that enables it to achieve a desired result. *See also* application.

prompt: A message the computer provides indicating it is ready for or requires information or an action from you.

R

Radio frequency interference (RFI) shield: A metal shield enclosing the printed circuit boards of the printer or computer to prevent radio and TV interference. All computer equipment generates radio frequency signals. The FCC regulates the amount of signals a computing device can allow past its shielding. A Class A device is sufficient for office use. Class B provides a more stringent classification for home equipment use. TOSHIBA portable computers comply with Class B computing device regulations.

Random Access Memory (RAM): High speed memory within the computer circuitry that can be read or written to.

restart: Resetting a computer without turning it off (also called “warm boot” or “soft reset”). *See also* boot.

RGB: Red, green, and blue. A device that uses three input signals, each activating an electron gun for a primary additive color (red, green, and blue) or port for using such a device. *See also* CRT.

RJ45: A modular LAN jack.

ROM: Read Only Memory: A nonvolatile memory chip manufactured to contain information that controls the computer’s basic operation. You cannot access or change information stored in ROM.

S

SCSI: Small Computer System Interface is an industry standard interface for connection of a variety of peripheral devices.

SD/SDHC Card: Secure Digital cards are flash memory widely used in a variety of digital devices such as digital cameras and Personal Digital Assistants.

serial communications: A communications technique that uses as few as two interconnecting wires to send bits one after another.

serial interface: Refer to a type of information exchange that transmits information sequentially, one bit at a time.

SIO: Serial Input/Output. The electronic methodology used in serial data transmission.

soft key: Key combinations that emulate keys on the IBM keyboard, change some configuration options, stop program execution, and access the numeric keypad overlay.

software: The set of programs, procedures and related documentation associated with a computer system. Specifically refers to computer programs that direct and control the computer system's activities. *See also* hardware.

stop bit: One or more bits of a byte that follow the transmitted character or group codes in asynchronous serial communications.

subpixel: Three elements, one red, one green and blue (RGB), that make up a pixel on the color LCD. The computer sets subpixels independently, each may emit a different degree of brightness. *See also* pixel.

synchronous: Having a constant time interval between successive bits, characters or events.

system disk: A disk that has been formatted with an operating system. You can boot a computer using a system disk. Also called an operating system disk or bootable disk.

T

terminal: A typewriter-like keyboard and CRT display screen connected to the computer for data input/output.

TFT display: A liquid crystal display (LCD) made from an array of liquid crystal cells using active-matrix technology with thin film transistor (TFT) to drive each cell.

Touch Pad: A pointing device integrated into the TOSHIBA computer palm rest.

TTL: Transistor-transistor logic. A logic circuit design that uses switching transistors for gates and storage.

U

Universal Serial Bus: This serial interface lets you communicate with several devices connected in a chain to a single port on the computer.

V

VGA: Video Graphics Array is an industry standard video adaptor that lets you run any popular software.

volatile memory: Random access memory (RAM) that stores information as long as power is supplied to the computer.

W

warm start: Restarting or resetting a computer without turning it off.

window: A portion of the screen that can display its own application, document or dialog box. Often used to mean a Microsoft Windows window.

Wireless LAN: Local Area Network (LAN) through wireless communication.

Wireless WAN: Wide Area Network (WAN) through wireless communication.

write protection: A method for protecting a floppy diskette from accidental erasure.

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