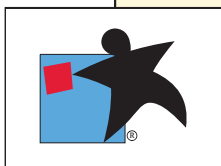


# TOSHIBA

*Satellite Pro*

Model

**USER'S MANUAL**  
**4200/4300 Series**



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*Toshiba Satellite Pro 4200/4300 Series Portable Personal Computer User's Manual*

First edition January 2000

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# Toshiba DVD-ROM drive SD-C2302\*\* safety instructions

\*\*means any letters or numbers.

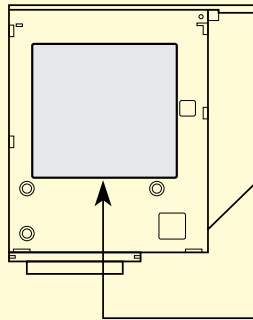


*The DVD-ROM drive employs a laser system. To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorised service location.*

*Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.*

*To prevent direct exposure to the laser beam, do not try to open the enclosure.*

## Location of the required label



PRODUCT IS CERTIFIED BY THE MANUFACTURER TO COMPLY WITH DHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT THE DATE OF MANUFACTURE.

MANUFACTURED:

TOSHIBA CORPORATION  
1-1, SHIBAURA 1-CHOME  
MINATO-KU, TOKYO 105-8001,  
JAPAN

CLASS 1 LASER PRODUCT  
LASERSCHUTZKLASSE 1  
PRODUKT  
TO EN60825

**CAUTION:** *This appliance contains a laser system and is classified as a "CLASS 1 LASER PRODUCT". To use this model properly, read the instruction manual carefully and keep this manual for your future reference. In case of any trouble with this model, please contact your nearest "AUTHORISED service station". To prevent direct exposure to the laser beam, do not try to open the enclosure.*

**CAUTION:** *USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THE OWNER'S MANUAL MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.*

# TEAC CD-ROM drive CD-224E safety instructions

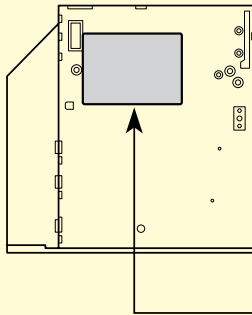


The CD-ROM drive employs a laser system. To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorised service location.

Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.

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LASER KLASSE 1

TEAC CORPORATION  
3-7-3 NAKA-CHO,  
MUSASHINO-SHI  
TOKYO, JAPAN

CLASS 1 LASER PRODUCT  
LASERSCHUTZKLASSE 1  
PRODUKT  
TO EN60825

**CAUTION:** This appliance contains a laser system and is classified as a "CLASS 1 LASER PRODUCT". To use this model properly, read the instruction manual carefully and keep this manual for your future reference. In case of any trouble with this model, please contact your nearest "AUTHORISED service station". To prevent direct exposure to the laser beam, do not try to open the enclosure.

**CAUTION:** USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THE OWNER'S MANUAL MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

# Toshiba CD-ROM drive XM-1902B safety instructions

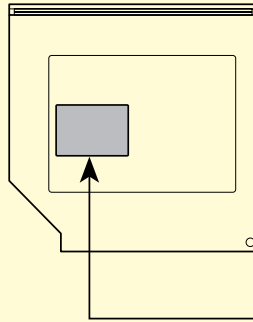


The CD-ROM drive employs a laser system. To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorised service location.

Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.

To prevent direct exposure to the laser beam, do not try to open the enclosure.

## Location of the required label



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CLASS 1 LASER PRODUCT  
LASERSCHUTZKLASSE 1  
PRODUKT  
TO EN60825

**CAUTION:** This appliance contains a laser system and is classified as a "CLASS 1 LASER PRODUCT". To use this model properly, read the instruction manual carefully and keep this manual for your future reference. In case of any trouble with this model, please contact your nearest "AUTHORISED service station". To prevent direct exposure to the laser beam, do not try to open the enclosure.

**CAUTION:** USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THE OWNER'S MANUAL MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

---

## General Precautions

Toshiba computers are designed to optimise safety, minimise strain and withstand the rigours 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.

### Stress injury

Carefully read the *Safety Instruction Manual*. It contains information on prevention of stress injuries to your hands and wrists that can be caused by extensive keyboard use. Chapter 3, **Getting Started**, also includes information on work space design, posture and lighting that can help reduce physical stress.

### Heat Warning

The base of the PC can become very warm; while the temperature will not be too hot to the touch, prolonged physical contact may result in a temporary heat imprint on the skin. It is recommended that prolonged physical contact is avoided.

Also, if the computer has been used for a long time, avoid direct contact with the metal plate supporting the I/O ports. It can become hot.

### Mobile phones

Use of mobile phones can interfere with the PC sound system. The PC operation is not impaired but it is recommended that a distance of 30 cm is maintained between the PC & the mobile phone.

### Pressure or impact damage

Do not apply heavy pressure to the computer or subject it to strong impact. Excessive pressure or impact can cause damage to computer components or otherwise cause malfunctions.

### PC card overheating

Some PC cards can become hot with prolonged use. If two cards are installed, both can become hot even if only one is used extensively. Overheating of a PC card can result in errors or instability in the PC card operation. Also, be careful when you remove a PC card that has been used for a long time.



---

## CE compliance

This product and the original options are designed to observe the related EMC (Electromagnetic compatibility) and safety standards. However, Toshiba should not 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 assure that the system (PC plus options / cables) still fulfils the required standards. To avoid in general EMC problems following advice should be observed:

- 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 (environments with a mains voltage >230V~)
- Medical Environments
- Automotive Environments
- Aircraft Environments



---

*If this product is supplied with a network port, please refer to the paragraph "Network connection".*

---

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

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.

---

## Network connection (class A warning)

If this product has networking capabilities and will be connected to a network, Class A radiation limits will be observed (in accordance with technical conventions). This means that if the product will be used in a domestic environment, other devices in the near surrounding may suffer interference. Consequently, please do not use this product in such environments (for example a living room), otherwise you could be held responsible for any ensuing interference.

## 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 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 contained 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	- 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 approval. 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.

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# Preface

Congratulations on your purchase of the Satellite Pro 4200 or 4300 Series computer. This powerful notebook computer provides excellent expansion capability, including multimedia devices, and it is designed to provide years of reliable, high-performance computing.

This manual tells how to set up and begin using your Satellite Pro 4200 or 4300 Series 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 the [Introduction](#) and [The Grand Tour](#) chapters to familiarise yourself with the computer's features, components and accessory devices. Then read [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 organised, then become acquainted with this manual by browsing through its pages. Be sure to look over the Special features section of the [Introduction](#), to learn about features that are uncommon or unique to the computers and carefully read [Setup and Password Security](#).

## Manual contents

This manual is composed of 9 chapters, 8 appendices, a glossary, and an index.

Chapter 1, [Introduction](#), is an overview of the computer's features, capabilities, and options.

Chapter 2, [The Grand Tour](#), identifies the components of the computer and briefly explains how they function.

Chapter 3, [Getting Started](#), provides a quick overview of how to begin operating your computer and gives tips on safety and designing your work area.

Chapter 4, [Operating Basics](#), includes instructions on using the following devices: AccuPoint™ II, CD/DVD-ROM drive and internal modem. It also provides tips on care of the computer, diskettes and CD/DVD-ROMs.

---

Chapter 5, **The Keyboard**, describes special keyboard functions including the keypad overlay and hotkeys.

Chapter 6, **Power and Power-Up Modes**, gives details on the computer's power resources and battery save modes.

Chapter 7, **Setup and Password Security**, explains how to configure the computer using the TSETUP program. It also tells how to set a password.

Chapter 8, **Optional Devices**, describes the optional hardware available.

Chapter 9, **Troubleshooting**, provides helpful information on how to perform some diagnostic tests, and suggests courses of action if the computer doesn't seem to be working properly.

The Appendices provide technical information about your computer.

The **Glossary** defines general computer terminology and includes a list of acronyms used in the text.

The **Index** quickly directs you to the information contained in this manual.

## 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 **Ctrl** 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 type face you see to the left.

Text you are to type in is usually preceded by the keyboard icon.

## Display



ABC

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

Text generated by the computer is usually preceded by the screen icon.

## 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.*

---



# Introduction

This chapter contains an equipment checklist and identifies the computer's features, options and accessories.



*Some of the features described in this manual may not function properly if you use an operating system that was not preinstalled by Toshiba.*

---

## Equipment checklist

Carefully unpack your computer. Save the box and packing materials for future use. Check to make sure you have all the following items:

- Satellite Pro 4200 or 4300 Series Portable Personal Computer
- Universal AC adaptor and power cord
- Spare AccuPoint™ II (pointing device) caps
- Modular cable (for modem)
- The following software preinstalled on your hard disk:

If you have Windows 95, the following software will be retained on the hard disk:

- Microsoft® Windows 95
- Toshiba Utilities
- Modem driver
- Display Driver for Windows
- Sound driver
- Hypertext online help
- DVD Video Player (only on models with a DVD drive)

If you have Windows 98, the following software will be retained on the hard disk:

- Microsoft Windows 98
- The same utilities and drivers that are installed with Windows 95.
- Backup CD-ROMs
  - Toshiba Product Recovery CD-ROM, containing the complete software image that came pre-installed
- Toshiba Tools & Utilities CD-ROM, containing the drivers and utilities that came pre-installed

- 
- Your computer's documentation:
    - *Satellite Pro 4200 or 4300 Series Personal Computer User's Manual*
    - *Satellite Pro 4200 or 4300 Series QuickStart*
    - *Microsoft Windows manual package*
    - *Safety Instruction Manual*

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

## Features

The computer uses Toshiba's advanced Large Scale Integration (LSI), Complementary Metal-Oxide Semiconductor (CMOS) technology extensively to provide compact size, minimum weight, low power usage, and high reliability. This computer incorporates the following features and benefits:

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<b>Microprocessor</b>	The computer is equipped with a Mobile Pentium® III processor which incorporates a math co-processor and 32 KB cache memory. <b>4280 Series:</b> 500 megahertz <b>4320 Series:</b> 600 megahertz featuring SpeedStep™ technology The <b>4270 Series</b> is equipped with a Mobile Celeron processor, which operates at 500 megahertz.
<b>Level 2 cache</b>	A 256 KB level 2 cache on the Pentium processors and a 128 KB level 2 cache on the Celeron processors maximizes performance.
<b>Memory</b>	The computer comes with built-in 64 MB of Random Access Memory (RAM). Memory can be expanded up to 320 MB.
<b>Video RAM</b>	The computer provides 8 MB of RAM for video display.
<b>Battery pack</b>	The computer is powered by a rechargeable lithium-ion battery pack.
<b>RTC battery</b>	The computer has an internal battery that backs up the Real Time Clock (RTC) and calendar.

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---

<b>Display</b>	<p>The computer supports high-resolution video graphics and employs a AGP bus for superior performance. The screen is a 13.0" DSTN screen with 800 horizontal x 600 vertical pixels or 13.3", 14.1" or 15.0" XGA-TFT with 1024 horizontal x 768 vertical pixels. It can be set at a wide range of viewing angles for maximum comfort and readability. The display controller also supports simultaneous display on the internal LCD and on an external monitor.</p>
<b>Graphics controller</b>	<p>The graphics controller incorporates a 3D graphics accelerator to maximize video performance and enable flickerless display. It also enables display of up to 1024 x 768 pixels on the computer's LCD panel and up to 1600 x 1200 pixels on a high-resolution external monitor.</p> <p>Full Accelerated Graphics Port 2X support features a peak bandwidth of 2x the PCI bus.</p>
<b>AC adaptor</b>	<p>The universal AC adaptor provides power to the system and recharges the batteries. It comes with a detachable power cord.</p> <p>Because it is universal, it can receive a range of AC voltage from 100 to 240 volts; however, the output current varies among different models. Using the wrong model can damage your computer. See the AC adaptor section in Chapter 2, <a href="#">The Grand Tour</a>.</p>
<b>Keyboard</b>	<p>An easy-to-use 85-key (United States) or 86-key (Europe) keyboard provides a numeric keypad overlay for fast numeric data entry or for cursor and page control. It also includes two keys that have special functions in Windows; one activates the <b>start</b> menu and the other functions as the secondary mouse button. The computer's keyboard supports software that uses a 101- or 102-key enhanced keyboard. See Chapter 5, <a href="#">The Keyboard</a>, for details.</p>
<b>AccuPoint™ II</b>	<p>This pointer control stick, located in the centre of the keyboard, provides convenient control of the cursor without requiring desk space for a mouse.</p> <p>Two additional programmable scroll buttons provide convenient scrolling through large documents or web sites</p>

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**Hard disk drive**

The Satellite Pro 4270 or 4280 Series has an integrated 6.0 gigabyte\* , 2 ½" hard disk drive (HDD) for nonvolatile storage of data and software.

The Satellite Pro 4320 Series has an integrated 12 gigabyte\* , 2 ½" hard disk drive (HDD) for nonvolatile storage of data and software.

Other hard disk drive sizes may be available in the future.

\* One gigabyte means one billion byte

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**Diskette drive**

A 3 ½" diskette drive accommodates both 1.44 MB double-sided, high-density, double-track (2HD) and 720 KB double-sided, double-density, double-track (2DD) disks.

---

**CD-ROM drive**

A full-size, maximum 24-speed CD-ROM drive lets you run either 12 cm (4.72") or 8 cm (3.15") compact discs without using an adaptor. The computer is configured with either a CD-ROM drive or a DVD-ROM drive. This drive supports the following formats:

- Audio CD
- Photo CD™
- ISO 9660
- CD-Extra
- CDR (Read Only)
- CD-Rewritable (Read Only)

---

**DVD-ROM drive  
(available for Satellite  
Pro 4320 Series)**

A full-size, DVD-ROM drive module lets you run either 12 cm (4.72") or 8 cm (3.15") digital video disk/compact disks without using an adaptor. The drive is configured with Regional Playback Control 2 (RPC2). The drive runs DVD-ROMs at maximum 6 speed and CD-ROMs at maximum 24 speed. The computer is configured with either a CD-ROM drive or a DVD-ROM drive.

This drive supports the same formats as the CD-ROM drive plus the following:

- DVD-ROM
  - DVD-Video
-



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<b>Sound system</b>	A Sound Blaster™ Pro™ and Windows Sound System (WSS) compatible sound system gives your computer multimedia capability. It incorporates a 64-channel Wave Table Synthesizer and hardware acceleration for advanced sound applications including 3D games, DVD movie playback and Internet communications. The sound system is equipped with stereo speakers, a volume control knob and jacks for microphone and headphone.
<b>Microphone port</b>	Enables connection of a microphone for audio input.
<b>Headphone port</b>	Enables connection of a stereo headphone for audio output.
<b>Parallel port</b>	A Centronics®-compatible parallel interface port lets you connect a parallel printer or other parallel device. This port supports the Extended Capabilities Port (ECP) standard.
<b>Serial port</b>	A standard, 9-pin, serial port lets you connect such serial devices as a serial printer, , bar code reader, or Optical Character Reader (OCR). This port supports 16550 Universal Asynchronous Receiver/Transmitter (UART) compliant high-speed data transfer.
<b>External monitor port</b>	The female, 15-pin, D-shell connector lets you connect to an external video display, which is recognized automatically. It supports Video Electronic Standards Association (VESA) Display Data Channel (DDC) 2B compatible functions.
<b>Universal Serial Bus port</b>	A Universal Serial Bus (USB) port enables chain connection of a number of USB-equipped devices to one port on your computer. For example, you might connect a USB-HUB to the computer, then connect a keyboard to the USB-HUB and a mouse to the keyboard. Use the USB drivers that come with external USB devices. If your operating system does not support USB, you can still use a USB mouse and keyboard by setting the <code>USB Legacy</code> item in TSETUP to <code>Enabled</code> . Refer to Chapter 7, <a href="#">Setup and Password Security</a> , for details.

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<b>PS/2™ mouse/ keyboard port</b>	This port lets you connect a PS/2 mouse or PS/2 keyboard to the computer.
<b>PC card slots</b>	A PC Card Slot accommodates two 5 mm cards (Type II) or one 10.5 mm (Type III) card. These slots support 16-bit PC Cards and CardBus PC Cards (32 bit). For more information, refer to the PC Card section in Chapter 8, <a href="#">Optional Devices</a> .
<b>Video out</b>	This RCA video jack lets you transfer NTSC or PAL data to external devices.
<b>Memory expansion socket</b>	Two sockets are available for installation of 32, 64 or 128 MB memory modules.
<b>International modem</b>	A built-in modem provides capability for data and fax communication and supports ITU-T V.90 and K56 flex. It operates at 56,000 bps (maximum) for data transfer and at 14,400 bps (maximum) for fax. The speed of data transfer and fax depends on analog telephone line conditions. It has a RJ-11 modem jack for connecting to a telephone line.
<b>Infrared port</b>	An infrared port on the back of the computer enables use of Infrared Data Association (IrDA) devices. The infrared port is compatible with Fast InfraRed (FIR) standards enabling cableless 4 Mbps data transfer with IrDA 1.1 compatible external devices.
<b>Plug and Play</b>	When you connect an external device to the computer, Plug and Play capability enables the system to recognize the connection and make the necessary configurations automatically. This feature is effective only with Windows 98/95.

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## Special features

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

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<b>Hotkeys</b>	Key combinations let you quickly modify the system configuration directly from the keyboard without running a system configuration program.
<b>Display automatic power off</b>	This feature automatically cuts off power to the internal display when there is no keyboard input for a time specified. Power is restored when any key is pressed. If you use Windows 95, you can specify the time in the <i>Display Auto Off</i> window of Power Save Modes in Power Saver. If you use Windows 98, you can specify the time in the <i>Turn off monitor</i> item of the Power Save Mode window of Power Saver.
<b>HDD automatic power off</b>	This feature automatically cuts off power to the hard disk drive when it is not accessed for a time specified. Power is restored when the hard disk is accessed. If you use Windows 95, you can specify the time in the <i>HDD Auto Off</i> window of Power Save Modes in Power Saver. If you use Windows 98, you can specify the time in the <i>Turn off hard disks</i> item of the Power Save Mode window of Power Saver.
<b>System automatic power off</b>	This feature automatically turns off power to the system when there is no activity for a period of time specified. If you use Windows 95, you can specify the time in the <i>System</i> window of Power Save Modes in Power Saver. If you use Windows 98, you can specify the time in the <i>System standby</i> item of the Power Save Mode window of Power Saver.
<b>Keypad overlay</b>	Dark grey keys with grey lettering make up the keypad overlay, which lets you use the keyboard for ten-key operations or cursor control.
<b>Intelligent power supply</b>	A microprocessor in the computer's intelligent power supply detects the battery's charge and calculates the remaining battery capacity. It also protects electronic components from abnormal conditions, such as voltage overload from an AC adaptor.

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<b>Battery save mode</b>	This feature lets you save battery power. If you use Windows 95, you can specify the Power Save Mode in the <i>Power Save Modes</i> window in Power Saver. If you use Windows 98, you can specify the Power Save Mode in the <i>Running on batteries</i> item of the Power Save Modes window in Power Saver.
<b>Power on password</b>	Two levels of password security are available: supervisor and user. This feature prevents unauthorized access to your computer.
<b>Instant security</b>	A hotkey function blanks the screen and disables the computer providing for quick and easy data security.
<b>Panel power on/off</b>	This feature turns power to the computer off when the display panel is closed and turns it back on when the panel is opened. If you use Windows 95, you can specify the setting in the <i>System</i> window of Power Save Modes in Power Saver. If you use Windows 98, you can specify the setting in the <i>When I close the lid</i> item of the System Power Mode window of the Power Save Modes in Power Saver.
<b>Low battery automatic suspend</b>	When battery power is exhausted to the point that computer operation cannot be continued, the system automatically enters Hibernation and shuts down.
<b>Auto power on</b>	This feature lets you set a time and date for the computer to turn on automatically. The feature is useful for receiving remote communications while you are asleep or away. If you use Windows 95, you can specify the time in the <i>Auto Power On</i> window in Power Saver. If you use Windows 98, you can specify the time in <i>Scheduled Tasks</i> .
<b>Ring indicator power on</b>	This feature lets the computer's power be turned on automatically when a call comes in from a remote modem. When the computer's internal modem or an external modem connected to the computer's serial port receives a call from a remote modem, it sends a ring indicator power on signal to the computer. This features also works with a PC Card modem in Windows 98. It works only in Resume (Suspend or Standby) mode.

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## Heat dispersal

To protect from overheating, the CPU has an internal temperature sensor. If the computer's internal temperature rises to a certain level, the cooling fan is turned on or the processing speed is lowered. To make one of the three temperature control settings in Windows 95, use the System window of Power Save Modes in Power Saver. In Windows 98, use Fan window in Power Save Modes.

- **Maximum performance (Windows 95) Auto 1 (Windows 98)** Turns on fan first, then if necessary lowers CPU processing speed.
- **Performance (Windows 95) Auto 1 (Windows 98)** Uses a combination of fan and lowering the CPU processing speed.
- **Battery optimized (Windows 95) Auto 1 (Windows 98)** Lowers the CPU processing speed first, then if necessary turns on the fan.

---

## Hibernation

This feature lets you turn off the power without exiting from your software. The contents of main memory is saved to the hard disk, when you turn on the power again, you can continue working right where you left off.



*You cannot use Hibernation under the following conditions:  
You are using Drive Space for Drive C or other compression utility.  
You are using Windows 98 drive converter to convert files to the File Allocation Table 32 format.*

---

## Resume (Suspend, Standby)

If you have to interrupt your work, you can turn off the power without exiting from your software. Data is maintained in the computer's main memory. When you turn on the power again, you can continue working right where you left off.



*The Resume mode is called Suspend/Resume in Windows 95 and Standby in Windows 98. The functions are essentially the same.*



*Do not remove the battery pack while the computer is in Resume mode. Data in memory will be lost.*

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## Utilities

This section describes preinstalled utilities and tells how to start them. For details on operations, refer to each utility's online manual, help files or read.me files.

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<b>Power Saver Utility</b>	To access this power savings management program, open the Control Panel and double-click the Power Saver icon.
<b>Hardware setup</b>	This program lets you customize your hardware settings according to the way you work with your computer and the peripherals you use. To start the utility, click the Windows <b>Start</b> button, point to settings and click <b>Control Panel</b> . In the <b>Control Panel</b> , double-click the <b>Toshiba Hardware Setup</b> icon.
<b>TSETUP</b>	An easy-to-use menu lets you customize the configuration of your computer in a DOS environment according to the way you work with your computer and the peripherals you use. Refer to Chapter 7, <a href="#">Setup and Password Security</a> .
<b>DVD Video Player (DVD models only)</b>	The DVD Video Player is used to play DVD Movies. It has an on-screen interface and functions similar to those of a standard DVD player. Click <b>Start</b> , point to <b>Programs</b> , point to <b>Mediamatics DVD Express</b> , then click <b>Mediamatics DVD Player</b> .

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## Options

You can add a number of options to make your computer even more powerful and convenient to use. The following options are available:

---

<b>Memory expansion</b>	A 32, 64, 128 or 256 MB memory module can be installed in the computer.
<b>Battery pack</b>	An additional battery pack can be purchased from your Toshiba dealer. Use it as a spare to increase your computer operating time.
<b>AC adaptor</b>	If you use your computer at more than one site frequently, it may be convenient to purchase an additional AC adaptor for each site so you will not have to carry the adaptor with you.
<b>Battery charger</b>	A battery charger lets you charge extra batteries outside the computer.
<b>Card Station III</b>	The Card Station III provides the ports available on the computer, in addition to MIDI/Joystick, audio line-out and separate PS/2 and PS/2 keyboard ports. It also has two USB ports and two additional PC Card Slots that each accommodate a 5 mm (Type II) or a 10.5 mm (Type III) card. A spacer is required to connect the computer to a Card Station III. However, Card Station III is not compatible with the Satellite Pro 4320.
<b>Card Station IV</b>	The Card Station IV provides the ports available on the computer, in addition to audio line-in and line-out jacks and separate ports for PS/2 mouse and PS/2 keyboard, two USB ports and one PC Card Slot (Type III) that can be used in addition to the slots on the computer. Please use only the 60 watts AC adaptor in combination with Satellite Pro 4320.
<b>Spacer</b>	Connect the computer to an optional spacer for connection to Card Station III.
<b>Port Replicator</b>	The Port Replicator provides the ports available on the computer, in addition to MIDI/Joystick, audio line-in and line-out and separate PS/2 mouse and PS/2 keyboard ports. It also has two USB ports.
<b>Keytop sets</b>	You can customize your keyboard for a variety of languages by replacing the keytops.
<b>Security lock</b>	A slot is available to attach a security cable to the computer to deter theft.

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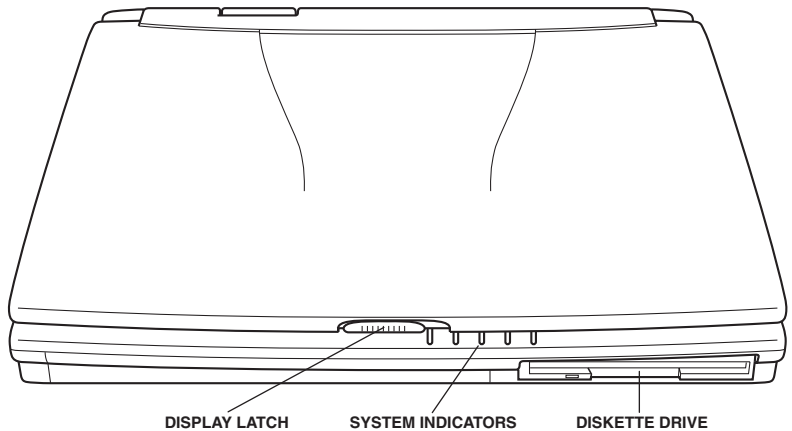


# The Grand Tour

This chapter identifies the various components of your computer. Become familiar with each component before you operate the computer.

## Front with the display closed

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



*Front of the computer with display closed*

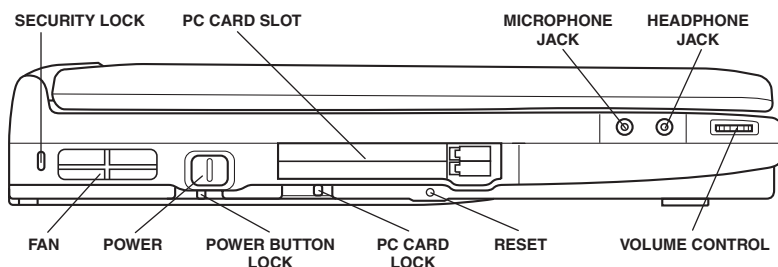
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<b>Diskette drive</b>	This drive lets you use both 1.44 MB double-sided, high-density, double-track (2HD) and 720 KB double-sided, double-density, double-track (2DD) disks.
<b>System indicators</b>	The system indicators provide icons for monitoring the status of DC IN, Power, Battery, Built-in HDD and Diskette/CD-ROM drive. Details are given later in this chapter.
<b>Display latch</b>	This latch secures the LCD panel in its closed position. Slide the latch to open the display.

---

## Left side

This figure shows the computer's left side.



*The left side of the computer*



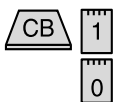
### Power

Press the power button to turn the computer's power on and off.



### Power button lock

Set this lock to the locked position to prevent inadvertent power on or power off.



### PC Card slot

A PC Card slot can accommodate two 5 mm PC Cards (Type II) or one 10.5 mm PC Card (Type III). You can install any industry standard PC Card such as a SCSI adaptor, Ethernet adaptor or flash memory card.



*Keep foreign objects out of the PC Card slot. A pin or similar object can damage the computer's circuitry.*



### PC Card lock

This lock prevents removal of a PC Card when it is in the lock position and a security lock is connected.



### Security lock

A security cable attaches to this slot. The optional security cable anchors your computer to a desk or other large object to deter theft.



### Volume control

Use this dial to adjust the volume of the stereo speakers.



### Headphone jack

A standard 3.5 mm mini headphone jack enables connection of a stereo headphone (16 ohm minimum) or other device for audio output. When you connect headphones, the internal speakers are automatically disabled.



### Microphone jack

A standard 3.5 mm mini microphone jack enables connection of a monaural microphone or other device for audio input.



## Reset

Press the reset button to reset the computer when it does not respond to keyboard commands. Use a narrow object such as the tip of a covered ball-point pen. The system restarts, clearing all data in memory and overriding the Resume feature. See Chapter 6, [Power and Power-Up Modes](#), for more information on the switch and Resume.



*Do not use a pencil to push the reset button. Pencil lead can break off inside the computer and damage its circuitry.*

## Fan

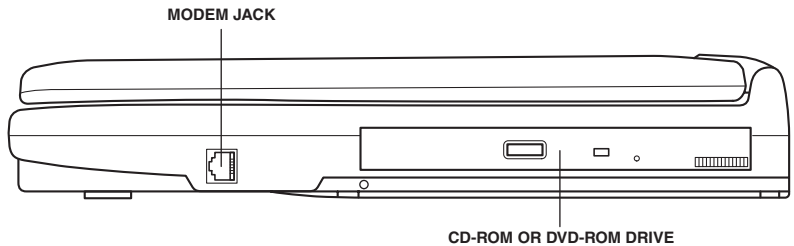
A fan keeps the CPU from overheating.



*Be careful not to block the fan vent. Also be careful to keep foreign objects out of it. A pin or similar object can damage the computer's circuitry.*

## Right side

This figure shows the computer's right side.



*The right side of the computer*

### CD-ROM drive

A full-size, maximum 24-speed CD-ROM drive module lets you run either 12 cm (4.72") or 8 cm (3.15") compact disks without using an adaptor. The computer is configured with either a CD-ROM drive or a DVD-ROM drive. See Chapter 4, [Operating Basics](#), for information on using the drive and caring for CDs.

### DVD-ROM drive (available for Satellite Pro 4320)

A full-size DVD-ROM drive module lets you run either 12 cm (4.72") or 8 cm (3.15") digital video disk/compact disk without using an adaptor. The drive is configured as Regional Playback Control 2 (RPC2). The computer is configured with either a CD-ROM drive or a DVD-ROM drive. See Chapter 4, [Operating Basics](#), for information on using the drive and caring for DVDs.

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## Modem jack

A RJ-11 modem jack lets you use a modular cable to connect the modem directly to a telephone line.



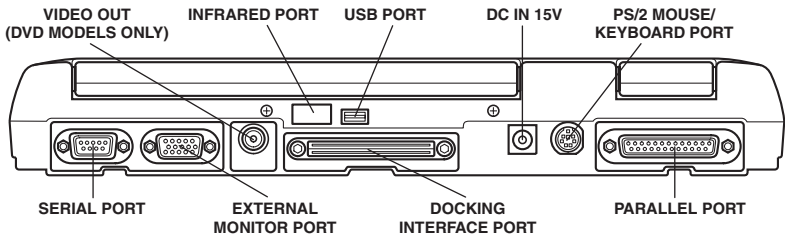
*In case of a lightning storm, unplug the modem cable from the telephone jack.*

*Do not connect the modem to a digital telephone line. A digital line will damage the modem.*

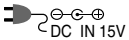
---

## Back side

This figure shows the computer's back panel.



*The back side of the computer*



### DC IN 15V

The AC adaptor's DC output plug connects to this socket. Use only the model of AC adaptor that comes with the computer. Using the wrong adaptor can damage your computer.



### External monitor port

This 15-pin port lets you connect an external video display.



### Serial port

Use this 9-pin port to connect external serial devices such as an external modem, a serial mouse or printer.



### Parallel port

This Centronics-compatible 25-pin parallel port is used to connect a parallel printer or other parallel device. This port supports Extended Capabilities Port (ECP) standard.

---



**PS/2 mouse/  
keyboard port**

Use this port to connect an external PS/2 compatible mouse or keyboard. The computer automatically recognizes which device you have connected when you turn on the power.



**Infrared port**

This infrared port is compatible with Infrared Data Association (IrDA) Fast InfraRed (FIR) standards. It enables cableless 4 Mbps data transfer with IrDA 1.1 compatible external devices.



**Universal Serial Bus  
port**

A plastic cover protects the Universal Serial Bus (USB) port, which enables chain connection of a number of USB-equipped devices to one port on your computer. For example, you might connect a USB-HUB to the computer, then connect a keyboard to the USB-HUB and a mouse to the keyboard.



**Docking interface  
port**

This port enables connection of an optional Card Station III/IV or Port Replicator described in the Options section of Chapter 1, [Introduction](#). It is protected by a rubber cover.

**Video out**

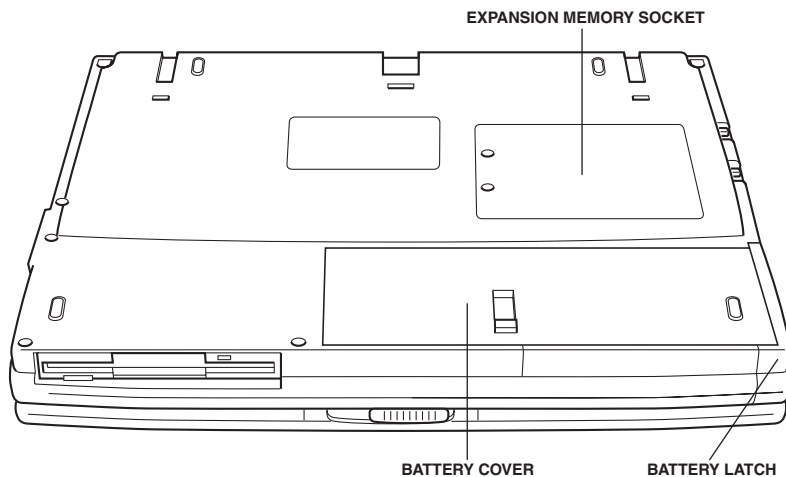
Plug a RCA video connector into this jack for output of NTSC or PAL data.

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## Underside

This illustration shows the underside of the computer. Make sure the display is closed before turning over your computer.



*The underside of the computer*



### **Battery cover**

This cover protects the battery pack, which powers the computer when the AC adaptor is not connected. For detailed information on the battery pack, refer to Chapter 6, [Power and Power-Up Modes](#).



### **Battery latch**

Slide this latch open to remove the battery pack.



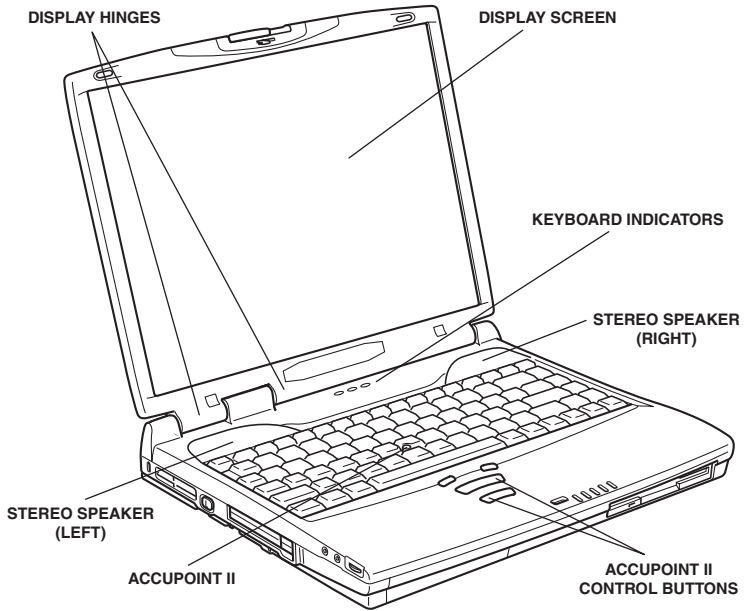
### **Expansion memory sockets**

Use these sockets to install a memory module to increase your computer's memory by 32, 64 or 128 MB. Refer to the Memory expansion section in Chapter 8, [Optional Devices](#).

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## Front with the display open

This illustration shows the front of the computer with the display open. To open the display, slide the display latch on the front of the display and lift up. Position the display at a comfortable viewing angle.



*The front with the display open*

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### Display screen

The LCD displays high-contrast text and graphics. The computer's LCD consists of up to 1024 x 768 pixels or dots. Refer to [Appendix E](#).

When the computer operates on the AC adaptor the display screen's image will be somewhat brighter than when it operates on battery power. The lower brightness level is intended to save battery power.

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### Display hinges

The display hinges hold the display screen at easy-to-view angles.

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### Keyboard indicators

The keyboard indicators provide icons to let you monitor the caps lock, arrow mode and numeric mode functions. Details are given later in this chapter.

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### Stereo speakers

The speakers emit sound generated by your software as well as audio alarms, such as low battery condition, generated by the system.

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**AccuPoint™ II**

A pointer control device located in the centre of the keyboard is used to control the on-screen pointer. Refer to the Using AccuPoint™ II section in Chapter 4, [Operating Basics](#).

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**AccuPoint™ II control buttons**

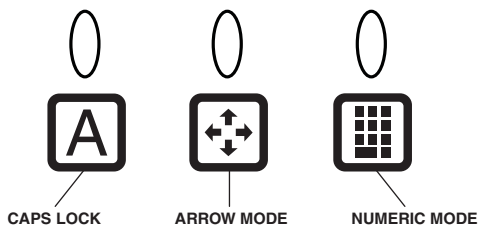
Control buttons below the keyboard let you select menu items or manipulate text and graphics designated by the on-screen pointer.

---

## Indicators

The following illustrations show the indicator lights, which light when various computer operations are in progress.

### *Keyboard indicators*



*The keyboard indicators*

**Caps Lock**

This icon glows green when the alphabet keys are locked in uppercase.

**Arrow mode**

When the **Arrow mode** icon lights green, you can use the keypad overlay (light grey labelled keys) as cursor keys. Refer to the Keypad overlay section in Chapter 5, [The Keyboard](#).

**Numeric mode**

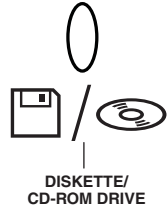
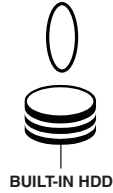
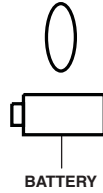
You can use the keypad overlay (light grey labelled keys) for numeric input when the **Numeric mode** icon lights green. Refer to the Keypad overlay section in Chapter 5, [The Keyboard](#).

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## System indicators



### The system indicators



#### DC IN 15V

The **DC IN** indicator glows green when DC power is supplied from the AC power adaptor. If the adaptor's output voltage is abnormal or if the power supply malfunctions, this indicator flashes orange.



#### Power

The **Power** indicator glows green when the computer is on. If you turn off the computer in Resume mode (Suspend, Standby), this indicator blinks orange (one second on, two seconds off) while the computer shuts down.



*The Resume mode is called Suspend/Resume in Windows 95 and Standby in Windows 98. The functions are essentially the same.*



#### Battery

The **Battery** indicator indicates the condition of the battery's charge: Green indicates full charge, orange indicates battery charging and flashing orange indicates a low battery charge. Refer to Chapter 6, [Power and Power-Up Modes](#).



#### Built-in HDD

This indicator glows green when the computer is accessing the hard disk.



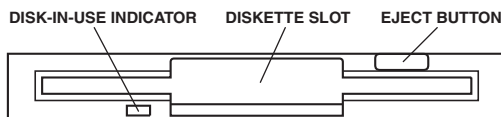
#### Diskette/CD-ROM/ DVD-ROM drive

This indicator glows green when the computer is accessing a diskette in the diskette drive or a disc in the CD-ROM/DVD-ROM drive.

## Drives

This section describes the 3 ½" diskette, DVD-ROM and CD-ROM drives.

### 3 ½" diskette drive



*The diskette drive*

The 3 ½" diskette drive lets you use either double density (720 KB) or high density (1.44 MB) 3 ½" diskettes for data transfer and storage.

<b>Disk-In-Use Indicator</b>	This indicator lights when the diskette is being accessed.
<b>Diskette slot</b>	Insert diskettes in this slot.
<b>Eject button</b>	When a diskette is fully seated in the drive, the eject button pops out. To remove a diskette, push in the eject button and the diskette pops out partially for easy removal.



*Check the disk-in-use indicator when you use the diskette drive. Do not press the eject button or turn off the computer while the light is glowing. Doing so could destroy data and damage the diskette or the drive.*

### DVD-ROM drive (available for some Satellite Pro 4320 Series)

A full-size DVD-ROM drive module lets you run either 12 cm (4.72") or 8 cm (3.15") digital video disk/compact disk without using an adaptor. The drive is configured as Regional Playback Control 2 (RPC2). The computer is configured with either a CD-ROM drive or a DVD-ROM drive.



*The read speed is slower at the centre of a disk and faster at the outer edge. The minimum (centre) and maximum (outer edge) for DVDs and CDs are:*

<b>DVD</b>	<i>2.5-speed (centre)</i>	<i>6-speed (outer edge)</i>
<b>CD</b>	<i>10.3-speed (centre)</i>	<i>24-speed (outer edge)</i>

---

This drive supports the following formats:

- DVD-ROM
- Audio CD
- Photo CD
- ISO 9660
- DVD-Video
- CD-EXTRA
- CD-R (read only)
- CD-Rewritable (read only)



*The DVD-ROM drive*

---

<b>Eject button</b>	Press the eject button to open the drawer partially.
<b>Eject hole</b>	Insert a slender object to open the drawer when the power to the computer is off.
<b>DVD-In-Use Indicator</b>	This indicator lights when the DVD is being accessed.

---



*Check the Diskette/CD-ROM Drive indicator when you use the DVD-ROM drive. Do not press the eject button, disconnect a drive or turn off the computer while the light is glowing. Doing so could damage the DVD/CD or the drive.*

---

### **Region codes**

DVD drives and media are manufactured according to the specifications of six marketing regions. When you purchase DVD media, make sure it matches your drive, otherwise it will not play properly.

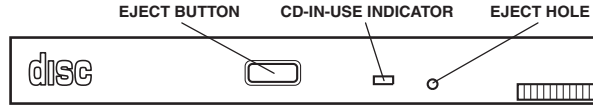
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<b>Code</b>	<b>Region</b>
1	Canada, United States
2	Japan, Europe, South Africa, Middle East
3	Southeast Asia, East Asia
4	Australia, New Zealand, Pacific Islands, Central America, South America, Caribbean
5	Russia, Indian Subcontinent, Africa, North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

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---

## CD-ROM drive



*The CD-ROM drive*

The full-size, maximum 24-speed CD-ROM drive lets you run either 12 cm (4.72") or 8 cm (3.15") compact discs without using an adaptor. The computer is configured with either a CD-ROM drive or a DVD-ROM drive.

This drive supports the following formats:

- Audio CD
- CD-EXTRA
- Photo CD
- CD-R (read only)
- ISO 9660
- CD-Rewritable (read only)

---

<b>Eject button</b>	Press the eject button to open the drawer partially.
<b>CD-In-Use Indicator</b>	This indicator lights when the CD is being accessed.
<b>Eject hole</b>	Insert a slender object to open the drawer when the power to the computer is off.

---



*Check the Diskette/CD-ROM Drive indicator when you use the CD-ROM drive. Do not press the eject button or turn off the computer while the light is glowing. Doing so could damage the CD or the drive.*

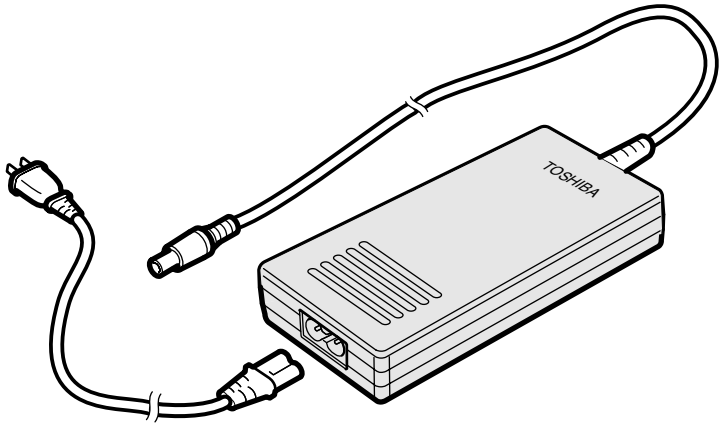
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## AC adaptor

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

To recharge the battery, simply connect the AC adaptor to a power source and the computer. See Chapter 6, [Power and Power-Up Modes](#), for details.



*The AC adaptor*



*Use of the wrong adaptor could damage your computer. Toshiba assumes no liability for any damage in such case. The current ratings are:*

<i>Satellite Pro 4300 series</i>	<i>60W, 15V DC, 4 Amperes</i>
<i>All other models</i>	<i>45W, 15V DC, 3 Amperes</i>



# Getting Started

This chapter provides basic information to get you started using your computer. It covers the following topics:

- Setting up your work space — for your health and safety
- Connecting the AC adaptor
- Opening the display
- Turning on the power
- Turning off the power
- Restarting the computer
- Restoring the preinstalled software

## Setting up

Establishing a comfortable work site is important for you and your computer. A poor work environment or stressful work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. Proper ambient conditions should also be maintained for the computer's operation. This section discusses the following topics:

- General conditions
- Placement of the computer and peripheral devices
- Seating and posture
- Lighting
- Work habits

---

## General conditions

In general, if you are comfortable, so is your computer, but read the following to make sure your work site provides a proper environment.

- Make sure there is adequate space around the computer for proper ventilation.
- Make sure the AC power cord connects to an outlet that is close to the computer and easily accessible.
- The temperature should be 5 to 35 degrees Centigrade (41 to 95 degrees Fahrenheit) and the relative humidity should be 20 to 80 percent.
- Avoid areas where rapid or extreme changes in temperature or humidity may occur.
- Keep the computer free of dust, moisture, and exposure to direct sunlight.
- Keep the computer away from heat sources, such as electric heaters.
- Do not use the computer near liquids or corrosive chemicals.
- Do not place the computer near objects that create strong magnetic fields (e.g., stereo speakers).
- Do not operate the computer in close proximity to a mobile phone.
- Leave ample ventilation room for the fan. Do not block the vents.

## Placement of computer

Position the computer and peripheral devices to provide comfort and safety.

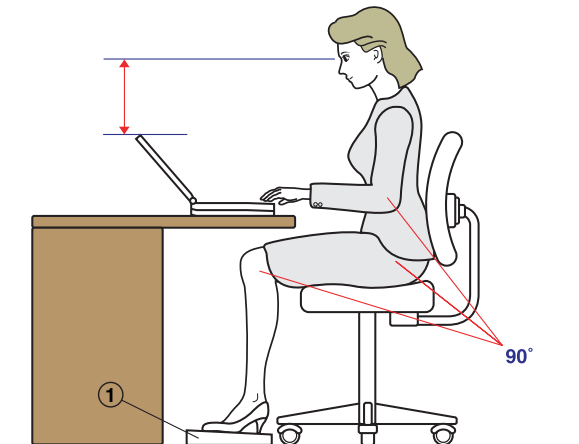
- Set the computer on a flat surface at a comfortable height and distance. The display should be no higher than eye level to avoid eye strain.
- Place the computer so that it is directly in front of you when you work and make sure you have adequate space to easily operate other devices.
- Allow adequate space behind the computer to let you freely adjust the display. The display should be angled to reduce glare and maximize visibility.
- If you use a paper holder, set it at about the same height and distance as the computer.



---

## Seating and posture

The height of your chair in relation to the computer and keyboard as well as the support it gives your body are primary factors in reducing work strain. Refer to the following tips.



*Posture and positioning of the computer*

- Place your chair so that the keyboard is at or slightly below the level of your elbow. You should be able to type comfortably with your shoulders relaxed.
- Your knees should be slightly higher than your hips. If necessary, use a foot rest (see "1" in the illustration) to raise the level of your knees to ease pressure on the back of your thighs.
- Adjust the back of your chair so it supports the lower curve of your spine.
- Sit straight so that your knees, hips and elbows form approximately 90 degree angles when you work. Do not slump forward or lean back too far.

---

## Lighting

Proper lighting can improve legibility of the display and reduce eye strain.

- Position the computer so that sunlight or bright indoor lighting does not reflect off the screen. Use tinted windows, shades or other screen to eliminate sun glare.
- Avoid placing the computer in front of bright light that could shine directly in your eyes.
- If possible, use soft, indirect lighting in your computer work area. Use a lamp to illuminate your documents or desk, but be sure to position the lamp so that it does not reflect off the display or shine in your eyes.

## Work habits

A key to avoiding discomfort or injury from repetitive strain is to vary your activities. If possible, schedule a variety of tasks into your work day. If you must spend long periods at the computer, finding ways to break up the routine can reduce stress and improve your efficiency.

- Sit in a relaxed posture. Good positioning of your chair and equipment as described earlier can reduce tension in your shoulders or neck and ease back strain.
- Vary your posture frequently.
- Occasionally stand up and stretch or exercise briefly.
- Exercise and stretch your wrists and hands a number of times during the day.
- Frequently, look away from the computer and focus your eyes on a distant object for several seconds, for example 30 seconds every 15 minutes.
- Take frequent short breaks instead of one or two long breaks, for example, two or three minutes every half hour.
- Have your eyes examined regularly and visit a doctor promptly, if you suspect you might be suffering from a repetitive strain injury.

A number of books are available on ergonomics and repetitive strain injury or repetitive stress syndrome. For more information on these topics or for pointers on exercises for such stress points as hands and wrists, please check with your library or book vendor. Also refer to the computer's *Safety Instruction Manual*.

---

## Connecting the AC adaptor

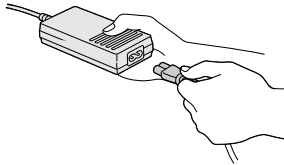
Attach the AC adaptor when you need to charge the battery or you want to operate from AC power. It is also the fastest way to get started, because the battery pack will need to be charged before you can operate from battery power.

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](#).



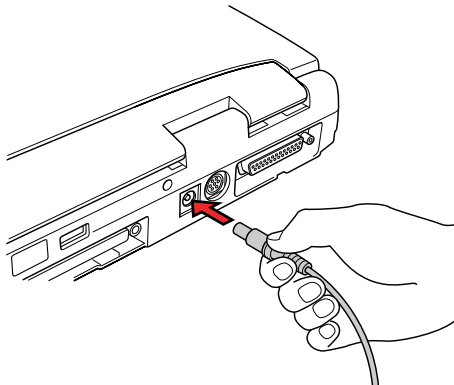
*Use of the wrong adaptor could damage your computer. Toshiba assumes no liability for any damage in such case. The current rating for the computer is 3.0 amperes.*

1. Connect the power cord to the AC adaptor.



*Connecting the power cord to the AC adaptor*

2. Connect the AC adaptor's DC output plug to the **DC IN** input port on the back of the computer.



*Connecting the adaptor to the computer*

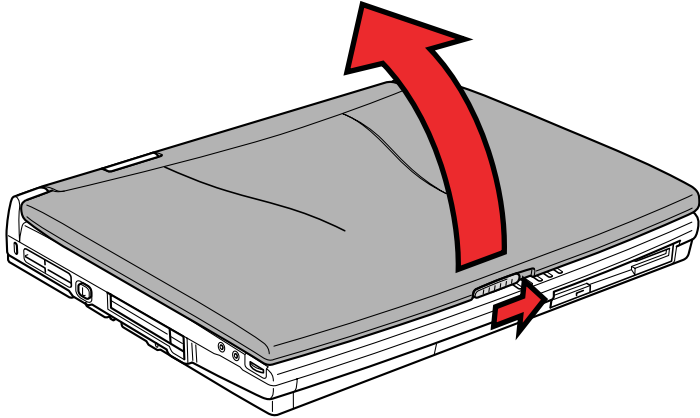
3. Plug the power cord into a live wall outlet. The **Battery** and **DC IN** indicators on the front of the computer should glow.

---

## Opening the display

The display panel can be rotated in a wide range of angles for optimal viewing.

1. Slide the display latch on the front of the computer to the right to unlatch the display panel.



*Opening the display*

2. Lift the panel up and adjust it to the best viewing angle for you.

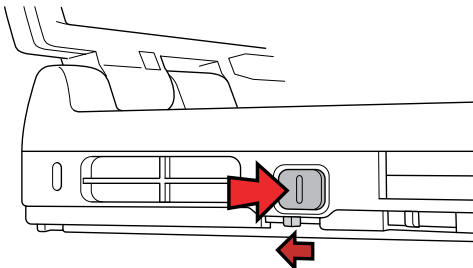


*Use reasonable care when opening and closing the display panel. Opening it vigorously or slamming it shut could damage the computer.*

## Turning on the power

This section describes how to turn on the power.

1. Make sure the diskette drive is empty. If a diskette is in the drive, press the eject button and remove the diskette.
2. Slide the power button lock to the left to unlock the power button.
3. Press and hold the computer's power button for two or three seconds.



*Turning on the power*

---

## Turning off the power

When you have finished work, follow the steps below to turn off the power to your computer.

1. If you have entered data, save it to the hard disk or to a diskette.
2. Make sure all disk activity has stopped, then remove any CD-ROM, DVD-ROM or diskette.



---

*Make sure the **Built-in HDD and Diskette/CD-ROM/DVD-ROM drive** indicators are off. If you turn off the power while a disk is being accessed, you can lose data or damage the disk.*

---

3. If you are using Windows 95, click **Start** then click **Shut Down** or **Suspend**.

If you are using Windows 98, click **Start** and click **Shut Down**. From the **Shut Down** menu select **Shut Down** or **Standby**.

**Shut Down** exits all applications; **Suspend** and **Standby** saves the screen as it is so you can continue where you left when you turn the power back on.



---

*Generally, it is a good idea to use the Windows **Shut Down** menu rather than the power switch to turn off the computer. However, if you are using Windows 95, you can activate the Toshiba Service power off function to ensure a safe shutdown when you press the power switch.*

---

4. 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 system. For example, if:

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

There are five ways to reset the computer system:

1. Select **Shut Down** from the Windows **Shut Down** menu in the **Start** box. After the computer shuts down, turn the power back on.
2. Select **Restart** from the Windows **Shut Down** menu in the **Start** box.
3. Press **Ctrl + Alt + Del**.
4. If you're experiencing a problem with a software application and the computer does not accept keyboard input, press the reset button.
5. Turn the power off, wait 10 to 15 seconds, then turn the power on again by pressing the power button. (This method works only when the computer is in boot mode.)

---

## Restoring the preinstalled software

If preinstalled files are damaged, use the Product Recovery CD-ROM or the Toshiba Tools & Utilities CD-ROM to restore them.

### Restoring the complete system

To restore the operating system and all preinstalled software, follow the steps below.



*When you reinstall the Windows operating system, the hard disk will be reformatted and all data will be lost. Make sure you have a backup copy of your data, before you perform a complete system recovery.*

1. Load the Product Recovery CD-ROM in the drive and turn off the computer's power.
2. Hold down the **C** key and turn on the power. When **In Touch with Tomorrow TOSHIBA** appears, release the **C** key.  
Follow the on-screen directions to restore the preinstalled software.
3. On some computers you will be prompted to replace the Product Recovery CD. Follow the on-screen directions.
4. After recovery is complete, remove the Product Recovery CD.
5. Press **Ctrl + Alt + Del** to restart the system. Refer to your Microsoft user's manual for Window's setup instructions.

### Restoring Toshiba utilities and drivers

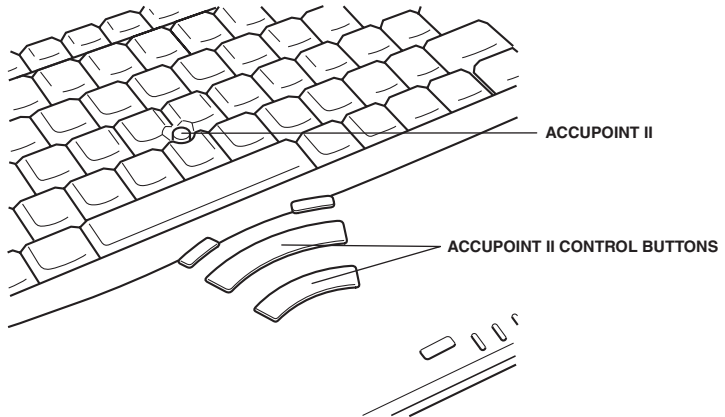
If Windows is working properly, individual drivers or applications can be separately restored. Use the Tools & Utilities CD-ROM according to instructions in the booklet contained in the CD box to reinstall Toshiba utilities and drivers.

# Operating Basics

This chapter gives information on basic operations including using AccuPoint™ II and using the CD-ROM/DVD-ROM drive. It also provides tips on caring for disks and your computer and on heat dispersal.

## Using AccuPoint™ II

To use the AccuPoint™ II, simply push it with your finger tip in the direction you want to move the on-screen pointer.



*AccuPoint™ II and control buttons*

Two buttons below the keyboard are used like the buttons on a mouse pointer. Press a button to select a menu item or to manipulate text or graphics designated by the pointer.

---

## AccuPoint™ II precautions

Under certain conditions the on-screen pointer may travel contrary to AccuPoint™ II operation. For example, if

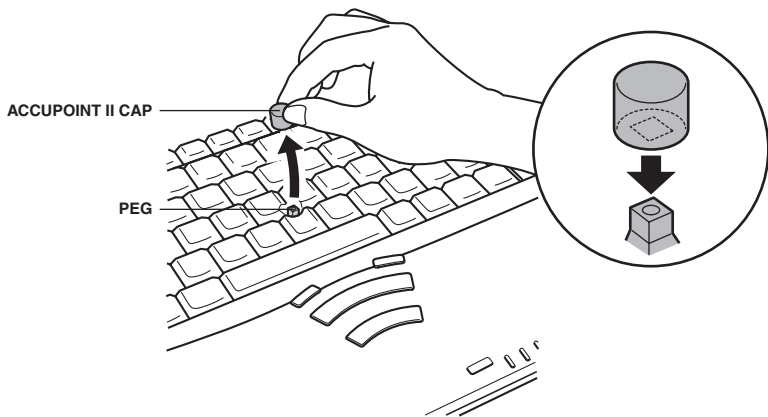
- You touch the AccuPoint™ II during power-up.
- You apply constant, soft pressure to the AccuPoint™ II.
- There is a sudden temperature change.
- Strong stress is applied to the AccuPoint™ II.

If such travelling occurs, it is not a malfunction. Wait a moment for the pointer to stop, then continue operation.

## Replacing the cap

The AccuPoint™ II cap is an expendable item that can be purchased from your computer dealer. It should be replaced after prolonged use.

1. To remove the AccuPoint™ II cap, firmly grasp the cap and pull it straight up.



*Removing the AccuPoint™ II cap*

2. Position a new cap on the peg and press it into place.



*The peg is square, so be careful to align the cap's square hole with the peg.*



---

## Using CD-ROM/DVD-ROM drives

The full-size drive provides high-performance execution of CD-ROM-based programs. You can run either 12 cm (4.72") or 8 cm (3.15") compact discs without an adaptor. An ATAPI interface controller is used for CD-ROM operation. When the computer is accessing a CD-ROM, an LED on the drive glows. Refer to Chapter 1, [Introduction](#), and [Appendix A](#) for additional information.

### ***CD-ROM drive***

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<b>CD</b>	24-speed (outer edge)
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### ***DVD-ROM drive (available for Satellite Pro 4320 series)***

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<b>CD</b>	10.3-speed (centre)	24-speed (outer edge)
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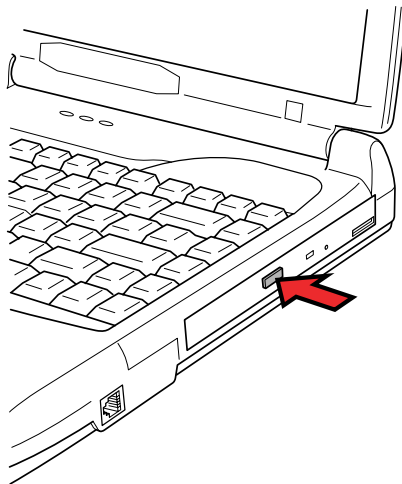
<b>DVD</b>	2.5-speed (centre)	6-speed (outer edge)
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## Loading compact discs

To load CDs, follow the steps below and refer to the accompanying figures.

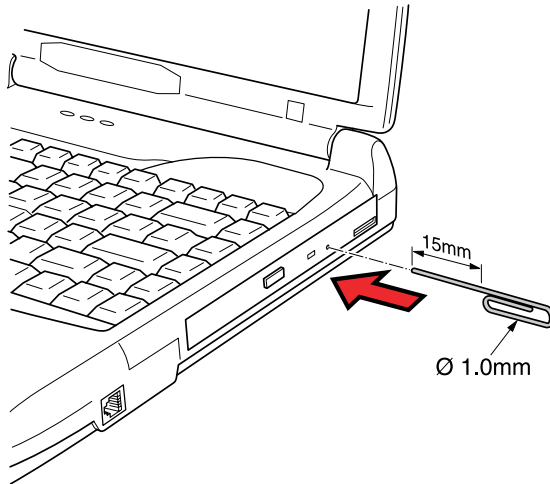
1. Turn on the power.
2. a. Press the CD-ROM eject button to open the drawer slightly.



*Pressing the CD-ROM eject button*

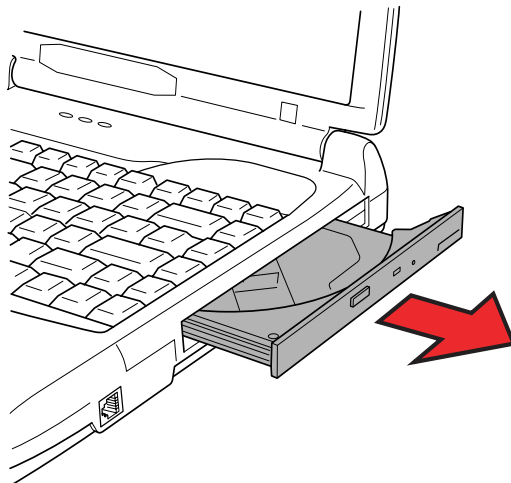
---

b. Pressing the eject button will not open the drawer when the computer's power is off. If the power is off, you can open the drawer by inserting a slender object (about 1.5 cm) such as a straightened paper clip into the eject hole just to the right of the eject button.



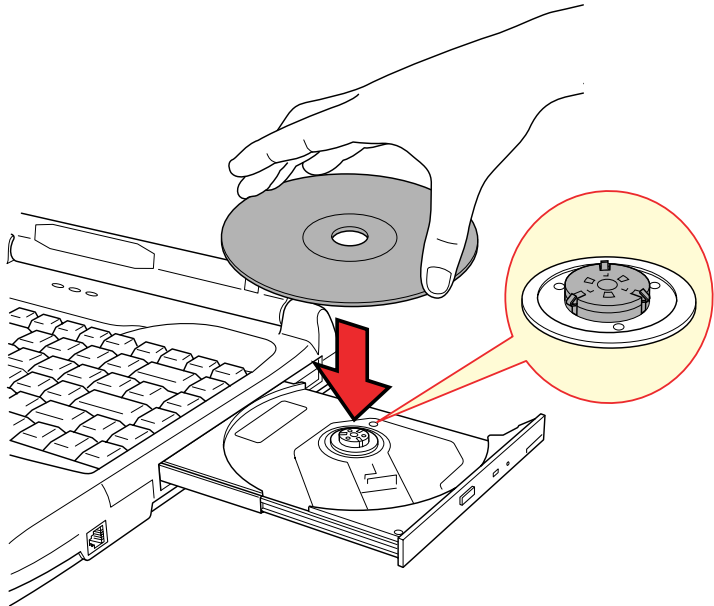
*Manual release with the eject hole*

**3.** Grasp the drawer gently and pull until it is fully opened.



*Pulling the drawer open*

- 
4. Lay the CD, label side up, in the drawer.



*Inserting a CD*



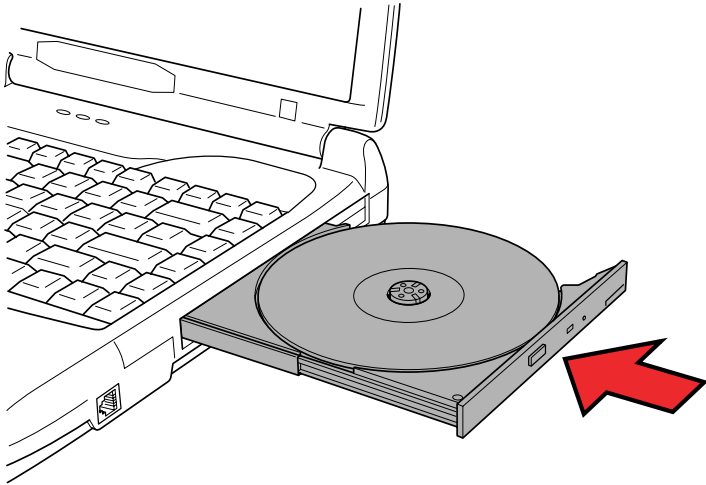
*Be careful not to touch the lens or the area around it. Doing so could cause the drive to malfunction.*

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

- 
6. Push the centre of the drawer to close it. Press gently until it locks into place.



*If the CD is not seated properly when the drawer is closed, the CD might be damaged. Also, the drawer might not open fully when you press the eject button.*



*Closing the CD-ROM drawer*

## Removing compact discs

To remove the CD, follow the steps below and refer to the following illustration.



*Do not press the eject button while the computer is accessing the CD-ROM drive. Wait for the **Diskette/CD-ROM drive** indicator to go out before you open the drawer. Also, if the CD-ROM is spinning when you open the drawer, wait for it to stop before you remove it.*

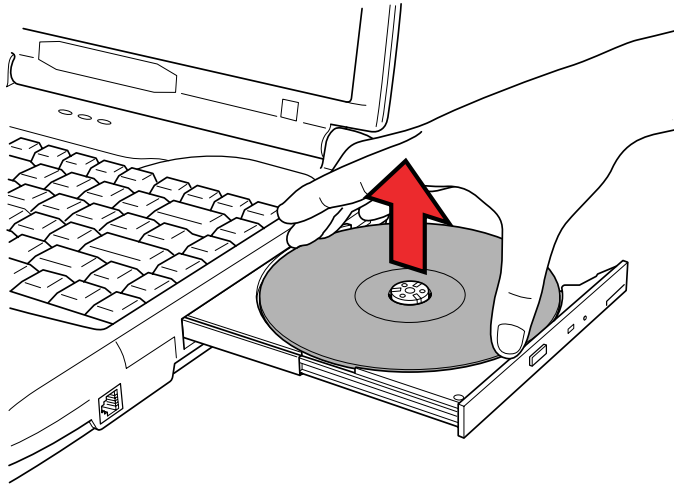
1. To pop the drawer partially open, press the eject button. Gently pull the drawer out until it is fully opened.



*When the drawer pops open slightly, wait a moment to make sure the CD has stopped spinning before pulling the drawer fully open.*

*Turn off the power before you use the eject hole. If the CD is spinning when you open the drawer, the CD could fly off the spindle and cause injury.*

2. The CD extends slightly over the sides of the drawer so you can grasp it. Hold the CD gently and lift it out.



*Removing a CD*

3. Push the centre of the drawer to close it. Press gently until it locks into place.

## Disk care

This section provides tips on protecting data stored on your CD/DVDs and diskettes.

### CDs

Handle your CDs with care. The following simple precautions will increase the lifetime of your CDs and protect the data stored on them:

1. Store your CDs in the container they came in to protect them and keep them clean.
2. Do not bend the CD.
3. Do not write on, apply a sticker to, or otherwise mar the surface of the CD that contains data.
4. Hold the CD by its outside edge or the edge on the centre hole. Fingerprints on the surface may prevent the drive from properly reading data.
5. Do not expose to direct sunlight, extreme heat or cold. Do not place heavy objects on your CDs.
6. If your CDs become dusty or dirty, wipe them with a clean dry cloth. Wipe from the centre out, do not wipe in a circular direction around the CD. If necessary, use a cloth dampened in water or a neutral cleaner. Do not use benzine, thinner or similar cleaner.

---

## Diskette Care

Handle your diskettes with care. The following simple precautions will increase the lifetime of your diskettes and protect the data you store on them:

1. Store your diskettes in the container they came in to protect them and keep them clean. If a diskette is dirty, do not use cleaning fluid. Clean it with a soft damp cloth.
2. Do not slide back the diskette's protective metal covering or touch the diskette's magnetic surface. Fingerprints may prevent the diskette drive from reading data from the diskette.
3. Data may be lost if the diskette is twisted; bent; or exposed to direct sunlight, extreme heat or cold.
4. Do not place heavy objects on your diskettes.
5. Do not eat, smoke, or use erasers near your diskettes. Foreign particles inside the diskette's jacket can damage the magnetic surface.
6. Magnetic energy can destroy the data on your diskettes. Keep your diskettes away from speakers, radios, television sets and other sources of magnetic fields.

## International modem

This section describes how to connect and disconnect the international modem to and from a telephone jack. Refer to the online help files for the internal modem for details on operation of your modem and modem software.



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*In case of a lightning storm, unplug the modem cable from the telephone jack.*

*Do not connect the modem to a digital telephone line. A digital line will damage the modem.*

---

## Country selection

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

### ***Selection using Toshiba utility***

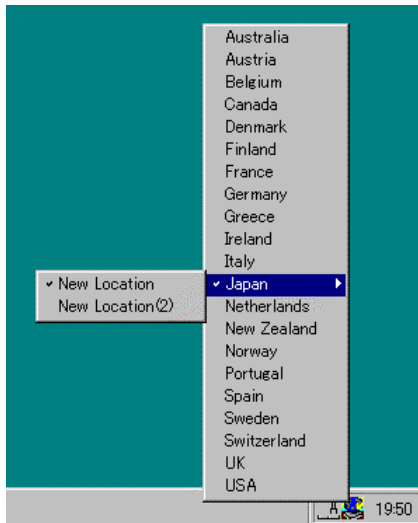
This utility is used with Windows 95/98 and Windows NT.

1. Click **Start**, point to **Programs**, point to **TOSHIBA Internal Modem** and click **Country Selection**.
2. The Country Selection icon will appear in the Windows Task Tray.



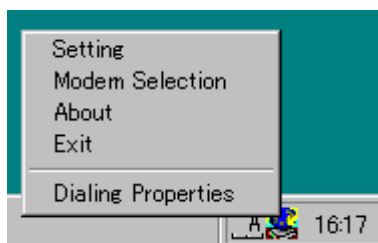
*The Country Selection icon*

3. Click the icon with the primary mouse button to display a list of countries that the modem supports. A sub menu for telephony location information will also be displayed. A check will appear next to the currently selected country and telephony location.



*The country list*

4. Select a country from the country menu or a telephony location from the submenu.
  - When you click a country it becomes the modem's country selection, and the New Location for telephony will be set automatically.
  - When you select a telephony location, the corresponding country is automatically selected and it becomes the modem's current country setting.
5. Click the icon with the secondary mouse button to display the following menu.



*The setting menu*

---

## Setting

You can enable or disable the following settings:

### *Show flags for country selection.*

The national flags of supported countries are displayed.

### *AutoRun Mode*

The country-selecting utility starts automatically when you start up the operating system.

### *Open the Dialling Properties dialog box after selecting country.*

The dialling properties dialog box will be displayed automatically after you select the country.

### *Location list for country selection.*

A submenu appears displaying location information for telephony.

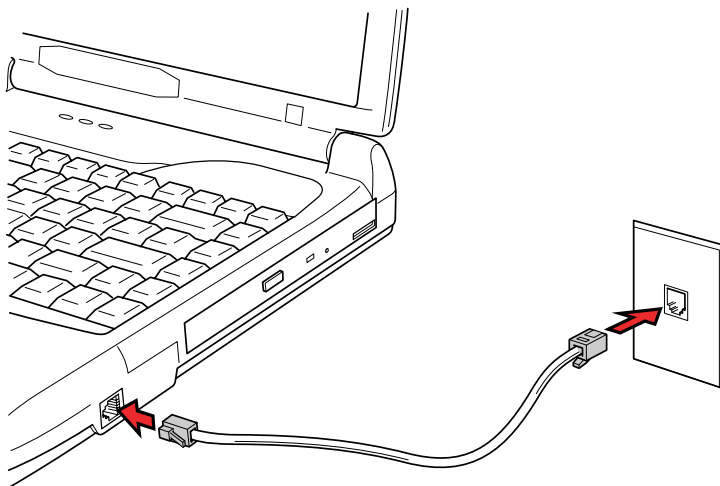
### *Open dialog box, if the modem and Telephony Current Location country code do not match.*

A warning dialog box is displayed if current settings for country code and telephony location are incorrect.

## Connecting

To connect the internal modem cable, follow the steps below.

1. Plug one end of the modular cable into the modem jack.
2. Plug the other end of the modular cable into a telephone jack.



*Connecting the internal modem*



---

## Disconnecting

To disconnect the internal modem cable, follow the steps below.

1. Pinch the lever on the connector in the telephone jack and pull out the connector.
2. Disconnect the cable from the computer in the same manner.

## Video out

Use this jack to connect to a television. Be sure to use a video cable.

## Cleaning the computer

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

- 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 before you turn it on again.
- Clean the computer using a slightly damp (with water) cloth. You can use glass cleaner on the display. Spray a small amount of cleaner on a soft, clean cloth and wipe 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

The computer is designed for rugged durability. However, a few simple precautions taken when moving the computer will help ensure trouble-free operation.

- Make sure all disk activity has ended before moving the computer. Check the **Built-in HDD** and **Diskette/CD-ROM/DVD-ROM drive** indicators on the computer.
- If a diskette is in the diskette drive, remove it.
- If a CD-ROM is in the CD-ROM drive, remove it. Also make sure the CD-ROM drawer is securely closed.
- Turn off the power to the computer.
- Disconnect all peripherals before moving the computer.
- Close the display. Do not pick up the computer by its display panel or back (where the interface ports are located).
- Close all port covers.
- Disconnect the AC adaptor if it is connected.
- Use the carrying case when transporting the computer.

---

## Heat dispersal

To protect from overheating, the CPU has an internal temperature sensor that triggers a cooling fan or lowers the CPU operating speed.

Use Power Saver Utility or the TSETUP program to select one of three temperature controls.

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<b>Maximum performance (Windows 95) Auto 1 (Windows 98)</b>	Turns on fan first, then if necessary lowers CPU processing speed.
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<b>Performance (Windows 95) Auto 1 (Windows 98)</b>	Uses a combination of fan and lowering the CPU processing speed.
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<b>Battery optimized (Windows 95) Auto 1 (Windows 98)</b>	Lowers the CPU processing speed first, then if necessary turns on the fan.
---	--

---

If the temperature rises to a certain level, the cooling fan is turned on or the CPU operating speed is lowered. When the CPU temperature falls to a normal range, the fan is turned off or the CPU speed returns to normal.



*If the CPU becomes too hot with either setting, the system enters Resume mode and automatically shuts down.*

---

# The Keyboard

The computer's keyboard layouts are compatible with a 101/102-key enhanced keyboard. By pressing some keys in combination, all the 101/102-key keyboard functions can be executed on the computer.

The number of keys on your keyboard depends on which country's keyboard layout your computer is configured with. Keyboards for numerous languages are available. These optional international keyboard layouts are illustrated in Appendix D, [Keyboard Layouts](#).

There are five types of keyboard keys: grey keys, function keys, dark grey keys, soft keys and overlay keys for keypad entry and cursor control.

## Grey keys

The grey keys, like standard typewriter keys, produce the upper- and lower-case letters, numbers, punctuation marks, and special symbols that appear on the screen.

There are some differences, however, 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) are not interchangeable on computers as they are on a typewriter.
- The uppercase O (oh) and the 0 (zero) are not interchangeable.
- The **Caps Lock** function key locks only the alphabetic characters in uppercase while the shift lock on a typewriter places all keys in the shifted position.
- The **Shift** keys, the **Tab** key, and the **BkSp** (backspace) key perform the same function as their typewriter counterparts but also have special computer functions.

---

## F1...F12 function keys

The function keys, not to be confused with **Fn**, are the 12 keys at the top of your keyboard. These keys are dark grey, but function differently from the other dark grey keys.



**F1** through **F12** are called function keys because they execute programmed functions when pressed. Used in combination with the **Fn** key, keys marked with icons execute specific functions on the computer. See the section, *Soft keys: Fn key combinations*, in this chapter. The function executed by individual keys depends on the software you are using.

## Soft Keys: Alt Gr Key Combinations



The **Alt Gr** key, at the right of the space bar, is used in combination with other keys to create accented or special characters (#, @, !, etc.). Note that some of the keys at the top of the keyboard bear three symbols (not to be confused with the blue or white letters on the side of some other keys). To generate the third symbol, hold **Alt Gr** and press the key bearing the character you wish to create. Please note that since the **Alt Gr** key is not present on the American keyboard, it cannot be used if you have installed an American keyboard driver in MS-DOS or Windows.

### The Euro symbol

By pressing **Alt Gr + e** (**Alt Gr + 5**, **Alt Gr + 4** or **Alt Gr + u** on some keyboards) you can generate the Euro symbol. Please note that only Arial, Times New Roman and Courier New fonts of Windows 98 have the Euro symbol implemented. Please look at Microsoft web pages for newer patches and updates.



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*You may need to update the fonts on your printer to be able to print the Euro symbol properly.*

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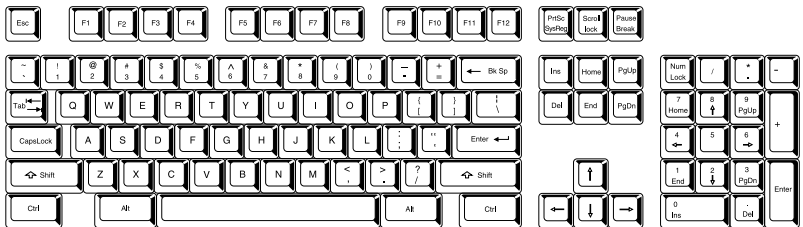
## Soft keys: Fn key combinations

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.



*Some software may disable or interfere with soft-key operations. Soft-key settings are not restored by the Resume feature.*

### Emulating keys on enhanced keyboard



*A 101-key enhanced keyboard layout*

The keyboard is designed to provide all the features of the 101-key enhanced keyboard, shown above. The 101/102-key enhanced keyboard has a numeric keypad and scroll lock key. It also has additional **Enter**, **Ctrl** and **Alt** keys to the right of the main 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.

Your software may require you to use keys that the keyboard does not have. Pressing the **Fn** key and one of the following keys simulates the enhanced keyboard's functions.



Press **Fn + F10** or **Fn + F11** to access the integrated keypad. When activated, the grey keys with white numbers become numeric keypad keys (**Fn + F11**) or cursor control keys (**Fn + F10**). 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.



Press **Fn + Ctrl** to simulate the enhanced keyboard's right **Ctrl** key.



Press **Fn + Alt** to simulate the enhanced keyboard's right **Alt** key.

## Hotkeys

Hotkeys (**Fn** + a function or cursor key) let you enable or disable certain features of the computers.



**Display Brightness:** Pressing **Fn + Esc** in a Windows 98 environment changes the Display Brightness menu. When you press these hotkeys, the current setting will be displayed in a window. These hotkeys work only in Windows 98. You can also change this setting through the *Monitor brightness* item of the *Power Save Mode* window in Power Saver.



*In Windows 95, use the Display Auto Off window in Windows 95 Power Saver utility to set the display brightness level.*



**Instant security:** Press **Fn + F1** to lock the keyboard and blank the screen to prevent others from accessing your data. To restore the screen and original settings, enter the password. If no password is set, press **Enter** or **F1**. See Chapter 7, [Setup and Password Security](#).



**Battery save mode:** Pressing **Fn + F2** changes the battery save mode.

If you press **Fn + F2** in a Windows 95 environment, an icon panel is displayed showing the setting. If you press **Fn + F2** in a Windows 98 environment, the Power Scheme menu is displayed. You can name and save your own custom configurations. When you press these hotkeys, the current setting will be displayed in a window. You can also change this setting through the *Power Save Modes* feature of the Power Saver.



**Power up mode:** Pressing **Fn + F3** changes the power up mode. When you press these hotkeys, the current setting will be displayed in a window. If you use Windows 95, you can use the *System* window of the Power Saver utility. In a Windows 98 environment, use the *When I press the power button* item of the *System Power Mode* window in the Power Saver utility.



**Alarm volume:** Press **Fn + F4** to adjust the alarm volume to off, low, medium or high. The first time you press **Fn + F4** the volume is set to off. Continue holding down **Fn** and press **F4** again to change the setting. A beep sounds to let you know the current alarm volume. The volume at power on depends on the latest setting.



**Display selection:** Pressing **Fn + F5** changes the active display device. As indicated in the table below, the changes depend on the computer's display type, current setting and whether you have an external monitor connected.

TSETUP	Active display	Change order
Auto-Selected	Internal	Int. → Sim. → Ext.
	External	Ext. → Int. → Sim.
Simultaneous	Internal and external	Sim. → Ext. → Int.

---

## Windows special keys

The keyboard provides two keys that have special functions in Windows: one activates the **start** menu and the other has the same function as the secondary mouse button.



This key activates the Windows **start** menu.



This key has the same function as the secondary mouse button.

## Emulating Fn key on external keyboard

The **Fn** key is only on Toshiba keyboards. If you use an external keyboard attached to the computer, you can execute **Fn** key combinations by emulating the **Fn** key. For example, you might hold down **left Shift + left Ctrl** then press **F3** to change the power up mode. See Chapter 7, [Setup and Password Security](#), for details on setting the **Fn** key equivalent.

## Keypad overlay

Your computer's keyboard does not have an independent numeric keypad, but its numeric keypad overlay functions like one.

The keys in the centre of the keyboard with white letters make up the numeric keypad overlay. The overlay provides the same functions as the numeric keypad on the 101/102-key enhanced keyboard in the next illustration.

## Turning on the overlays

The numeric keypad overlay can be used for numeric data input or cursor and page control.

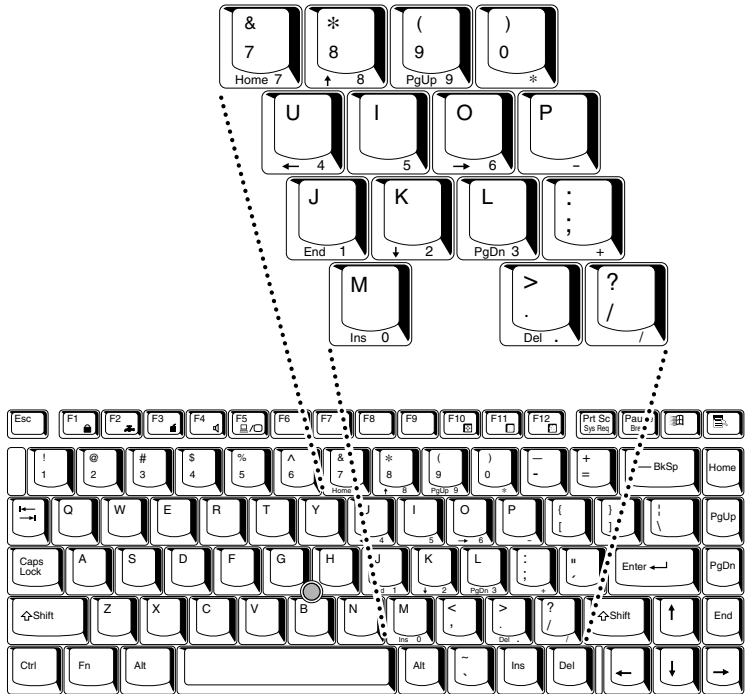
### *Arrow mode*

To turn on the Arrow mode, press **Fn + F10** (**Arrow mode** icon lights). Now try cursor and page control using the keys shown in the following illustration. Press **Fn + F10** again to turn off the overlay.



## Numeric mode

To turn on the Numeric mode, press **Fn + F11** (Numeric mode icon lights). Now try numeric data entry using the keys in the following illustration. Press **Fn + F11** again to turn off the overlay.



*The numeric keypad overlay*

## Temporarily using normal keyboard (overlay on)

While using the overlay, you can temporarily access the normal keyboard without turning off the overlay:

1. Hold **Fn** and press any other key. All keys will operate as if the overlay were off.
2. Type upper-case characters by holding **Fn + Shift** and pressing a character key.
3. Release **Fn** to continue using the overlay.

---

## Temporarily using overlay (overlay off)

While using the normal keyboard, you can temporarily use the keypad overlay without turning it on:

1. Press and hold down **Fn**.
2. Check the keyboard indicators. Pressing **Fn** turns on the most recently used overlay. If the **Numeric mode** icon lights, you can use the overlay for numeric entry. If the **Arrow mode** icon lights, you can use it for cursor and page control.
3. Release **Fn** 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.

If the computer is in **Arrow mode**, you can switch temporarily to **Numeric mode** by pressing a shift key.

## Generating ASCII characters

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

With the overlay on:

1. Hold down **Alt**.
2. Using the overlay keys, type the ASCII code.
3. Release **Alt**, and the ASCII character appears on the display screen.

With the overlay off:

1. Hold **Alt + Fn**.
2. Using the overlay keys, type the ASCII code.
3. Release **Alt + Fn**, and the ASCII character appears on the display screen.

A list of ASCII characters with their codes is shown in [Appendix G](#).

# Power and Power-Up Modes

The computer's power resources include the AC adaptor and internal batteries. This chapter gives details on making the most effective use of these resources including charging and changing batteries, tips for saving battery power, and power up modes.

## Power conditions

The computer's operating capability and battery charge status are affected by the power conditions: whether an AC adaptor is connected, whether a battery is installed and what the charge level is for the battery.

*Table 6-1 Power conditions*

		Power on	Power off (no operation)
AC adaptor connected	Battery fully charged	<ul style="list-style-type: none"> <li>Operates</li> <li>Trickle charge</li> <li>LED: <b>Battery</b> green <b>DC IN</b> green</li> </ul>	<ul style="list-style-type: none"> <li>Trickle charge</li> <li>LED: <b>Battery</b> green <b>DC IN</b> green</li> </ul>
	Battery partially charged or no charge	<ul style="list-style-type: none"> <li>Operates</li> <li>Quick charge</li> <li>LED: <b>Battery</b> orange <b>DC IN</b> green</li> </ul>	<ul style="list-style-type: none"> <li>Quick charge</li> <li>LED: <b>Battery</b> orange <b>DC IN</b> green</li> </ul>
	No battery installed	<ul style="list-style-type: none"> <li>Operates</li> <li>No charge</li> <li>LED: <b>Battery</b> off <b>DC IN</b> green</li> </ul>	<ul style="list-style-type: none"> <li>No charge</li> <li>LED: <b>Battery</b> off <b>DC IN</b> green</li> </ul>

		Power on	Power off (no operation)
<b>AC adaptor not connected</b>	Battery charge is above low battery trigger point	<ul style="list-style-type: none"> <li>Operates</li> <li>LED: <b>Battery</b> off <b>DC IN</b> off</li> </ul>	—
	Battery charge is below low battery trigger point	<ul style="list-style-type: none"> <li>Operates</li> <li>Alarm sounds</li> <li>LED: <b>Battery</b> flashes orange <b>DC IN</b> off</li> </ul>	—
	Battery charge exhausted	Computer goes into hibernate mode and shuts down*	—
	No Battery installed	<ul style="list-style-type: none"> <li>No operation</li> <li>LED: <b>Battery</b> off <b>DC IN</b> off</li> </ul>	—

\* In Windows 98, Hibernate must be enabled in the Hibernate window of the Power Management Properties. Otherwise, the computer will shut down in Boot mode.

## Power indicators

As shown in the above table, the **Battery**, **DC IN** and **Power** indicators on the system indicator alert you to the computer's operating capability and battery charge status.

### Battery indicators

Check the **Battery** indicator to determine the status of the battery. The following indicator lights indicate the battery status:

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

---

## DC IN indicator

Check the **DC IN** indicator to determine the power status with the AC adaptor connected:

<b>Green</b>	Indicates the AC adaptor is connected and supplying proper power to the computer.
<b>Flashing orange</b>	Indicates a problem with the power supply or overheating of the CPU. Plug the AC adaptor into another outlet. If the indicator still flashes, there could be a problem with the internal converter or the internal temperature is too high. Let the computer cool to room temperature. If it still does not operate properly, see your dealer.
<b>No light</b>	Under any other conditions, the indicator does not light.

## Power indicator

Check the **Power** indicator to determine the power status with the AC adaptor connected:

<b>Green</b>	Indicates power is being supplied to the computer and the computer is turned on.
<b>Blinking Orange</b>	Indicates the power was turned off while the computer was in Resume mode. The indicator turns on for one second and turns off for two seconds.



*The Resume mode is called Suspend/Resume in Windows 95 and Standby in Windows 98. The functions are essentially the same.*

<b>No light</b>	Under any other conditions, the indicator does not light.
-----------------	---

---

## Battery types

The computer has two types of batteries:

- Battery pack
- Real Time Clock (RTC) battery

### 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 battery. You can purchase additional battery packs for extended use of the computer away from an AC power source.

The battery is a disposable item. When its operation becomes short even when fully charged, replace it with a new one.



*The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by Toshiba as replacements.*

*Do not remove the battery pack while the computer is in Resume mode. Data in memory will be lost.*

### Real Time Clock battery

The Real Time Clock (RTC) battery provides power for the internal real time clock and calendar. It also maintains the system configuration.

If the RTC battery becomes completely discharged, the system loses this data and the real time clock and calendar stop working. The following message appears when you turn on the power:



```
**** Bad RTC battery ****  
**** Bad Check sum (CMOS) ****  
Check system. Then press [F1] key.
```



*The computer's RTC battery is a nickel metal hydride (NiMH) 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 of. Dispose of the battery as required by local ordinances or regulations.*

---

## Care and use of the battery pack

The battery pack is a vital component of portable computing. Taking proper care of it will help assure longer operating time on battery power as well as a longer life for your battery pack. Follow the instructions in this section carefully to ensure safe operation and maximum performance.

### Safety precautions

1. Be very careful not to short-circuit the battery pack. Contacting both terminals with a metal object can cause injury, fire or damage to the battery pack.
2. Do not overcharge, reverse charge, mutilate or disassemble the battery. Any one of those actions could release toxic materials, hydrogen and/or oxygen or other electrolytic substances or cause an increase in the battery's surface temperature.
3. Do not expose the battery pack to fire; the battery pack could explode.
4. Battery packs contain toxic substances. Do not dispose of them with ordinary trash. Dispose of battery packs only in accordance with local ordinances. Always cover the metal terminals with insulating tape to avoid short circuits.
5. If the battery has leaked or been vented, it should be replaced immediately. Use protective gloves when handling a damaged battery.
6. When it becomes necessary to replace the battery, it must be replaced only by an identical battery from the same manufacturer.
7. Do not expose the battery pack terminals to any metal object other than the computer contacts. Wrap it or place it in a plastic bag when transporting it.
8. When you install the battery pack, you should hear a click when it is seated properly.
9. Charge the battery pack only in the computer or in a battery charger designated as an approved option.
10. Reverse polarity should be avoided with all batteries. The battery is designed so that it cannot be installed in reverse polarity.

---

## Charging the batteries

When the power in the battery pack becomes low, the **Battery** indicator flashes orange indicating that only a few minutes of battery power remain. If you continue to use the computer while the **Battery** indicator flashes, the computer enables Hibernation mode (so you don't lose data) and automatically turns 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** socket and plug the other end into a working outlet.

The **Battery** indicator glows orange when the battery is being charged.



---

*Use only the computer connected to an AC power source or the optional Toshiba Battery charger to charge the battery pack. Do not attempt to charge the battery pack with any other charger.*

---

### Time

The following table shows the time required to fully charge a discharged battery.

Battery type	Charging time (hours)	
	Power on	Power off
Battery	4 to 10 or longer	about 3
RTC battery	10 or longer	Doesn't charge



---

*The charging time when the computer is on is affected by ambient temperature, the temperature of the computer and how you use the computer. If you make heavy use of external devices, for example, the battery might scarcely charge at all during operation. Refer also to the section Maximizing battery operating time. The same factors affect charge time.*

---

### Battery charging notice

The battery may not charge right away under the following conditions:

- The battery is extremely hot or cold. To ensure the battery charges to its full capacity, charge the battery at room temperature of 10° to 30°C (50° to 88°F).
- The battery is nearly completely discharged. Leave the AC adaptor connected for a few minutes and the battery should begin charging.



---

## Monitoring battery capacity

Remaining battery power can be monitored by the Power Saver Utility program. Refer to Utilities in Chapter 1, [Introduction](#).



*Wait at least 16 seconds after turning on the computer before trying to monitor the remaining operating time. The computer needs this time to check the battery's remaining capacity and to calculate the remaining operating time, based on the current power consumption rate and remaining battery capacity. The actual remaining operating time may differ slightly from the calculated time.*

*With repeated discharges and recharges, the battery's capacity will gradually decrease. Therefore, an often used, older battery will not operate for as long as a new battery even when both are fully charged. In this case, battery monitoring will indicate a 100% charge for both the old and new battery, but the displayed estimated time remaining will be shorter for the older battery.*

## Maximising battery operating time

A battery's usefulness depends on how long it can supply power on a single charge.

How long the charge lasts in a battery depends on:

- How you configure the computer (for example, whether you enable battery-power saving options). The computer provides a battery save mode to conserve battery power. This mode has the following options:
  - Processing speed
  - Display auto off
  - HDD auto off
  - System auto off
  - LCD brightnessSee Chapter 7, [Setup and Password Security](#).
- How often and how long you use the hard disk, CD-ROM and the diskette drive.
- How much charge the battery contained to begin with.
- How you use optional devices, such as a PC Card, to which the battery supplies power.
- Enabling Resume mode conserves battery power if you are frequently turning the computer off and on.
- Where you store your programs and data.
- Closing the display when you are not using the keyboard saves power.
- Operating time decreases at low temperatures.
- The condition of the battery terminals. Make sure the battery 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:

---

<b>Battery pack</b>	4 to 7 days
<b>RTC battery</b>	1 month or longer

---

## Extending battery life

To maximize the life of your battery pack:

- If you have extra battery packs, rotate their use.
- If you will not be using the system for an extended period, remove the battery pack.
- Store spare battery packs in a cool dry place out of direct sunlight.

## Replacing the battery pack

When the battery pack reaches the end of its operating life you will need to install a new one. The life of the battery pack is generally about 500 recharges. If the **Battery** indicator flashes orange shortly after fully recharging the battery, the battery pack needs to be replaced.

You might also replace a discharged battery pack with a charged spare when you are operating your computer away from an AC power source. This section explains how to remove and install the battery pack.

## Removing the battery pack

To replace a discharged battery pack, follow the steps below.



---

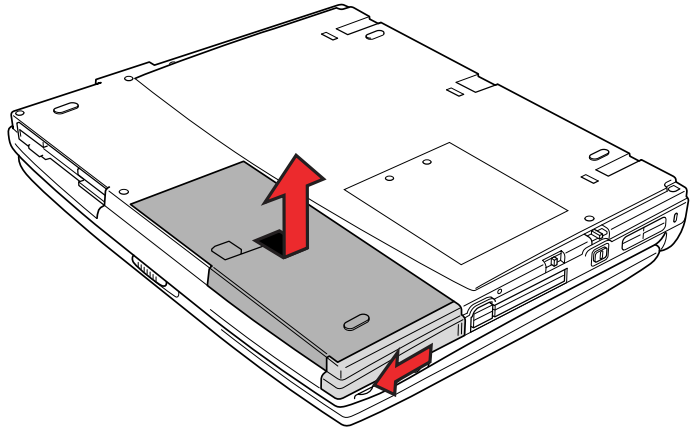
*When handling battery packs, be careful not to short circuit the terminals. Also do not drop, hit or otherwise apply impact; do not scratch or break the casing and do not twist or bend the battery pack.*

*Do not remove the battery pack while the computer is in Resume mode. Data in memory will be lost.*

---

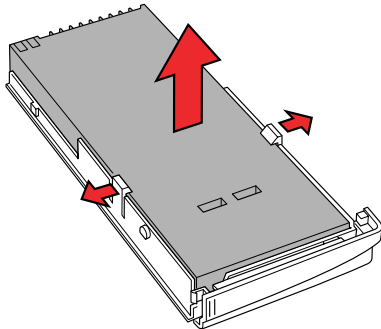
1. Save your work.
2. Turn the computer's power off. Make sure the **Power** indicator is off.
3. Remove all cables connected to the computer.
4. Turn the computer upside down.

- 
5. Slide the battery latch to the right, then pull the battery cover slightly forward and lift it out.



*Releasing the battery cover*

6. Lay the battery cover upside down. Push the latches to the outside and lift out the battery pack.



*Removing the battery pack*



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*For environmental reasons, do not throw away a spent battery pack. Please return spent battery packs to your Toshiba dealer.*

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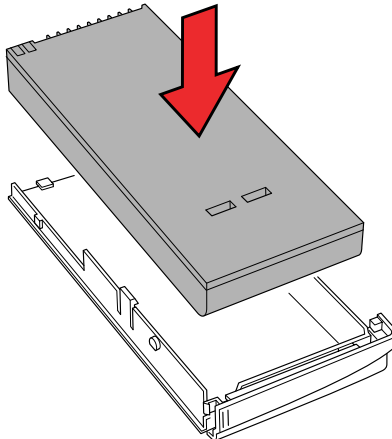
## Installing the battery pack

To install a battery pack, follow the steps below.



*The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by Toshiba as replacements.*

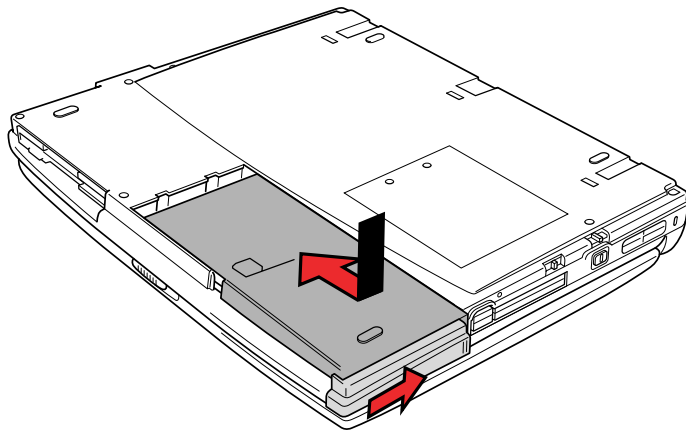
1. Turn the computer's power off.
2. Disconnect all cables connected to the computer.
3. Hold the battery pack so that the label faces down and the connectors on the battery face the connectors on the computer.
4. Lay the battery pack in the cover and make sure it is secured by the latches.



*Inserting the battery pack*

5. Make sure the battery latch is set to the open position, then align the back edge of the cover with the icon and gently press down and back.

- Slide the battery latch into place to secure the battery pack.




*Securing the battery cover*

## Starting the computer by password

If you registered a password as supervisor or user, you must enter it to start the computer. If you forget your password, use the password service diskette. For more information about how to set a password and make a password service diskette, refer to the Password security section in Chapter 7, [Setup and Password Security](#).

To start up the computer with the password, follow these steps:

- Turn on the computer as described in Chapter 3, [Getting Started](#), and the following message appears:




Password =



*At this point, the hotkeys **Fn + F1** to **F5** do not work. They will function after you enter the password.*

- Enter the password.
- Press **Enter**. The computer displays the message below while it starts up.



Valid password entered, system is now starting up.



*If you have set a password and the computer boots by the alarm Power On function and Resume is on, the computer will start with the instant security function enabled. The password = message is not displayed; however, you must enter the password to use the computer.*

---

If you enter the password incorrectly, a buzzer sounds.



*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.*

The following steps describe how to use a service password diskette to start the computer if you've forgotten the supervisor's or user's password. If you did not make a password service diskette, contact your dealer.

1. Insert the password service diskette in the drive. See the Password security section in Chapter 7, [Setup and Password Security](#), for details on how to create a password service diskette.



*If the computer is in Resume mode, the password service diskette will not work when you turn on the power. In this case, press the reset button.*

2. When you press **Enter**, the password will be deleted and the following message appears.



Set Password Again? (Y/N)

Press **Y** to run the TSETUP program and set a new password.

Press **N** to restart the computer.



*The password service diskette must be inserted in drive A, otherwise the display will return to `PaSSword = .` If you have inserted the diskette in drive A and the message still appears, the password service diskette is faulty. In this case, contact your dealer.*

*If the boot priority is set for the hard disk, press the reset button and hold down **F** key to boot from the diskette drive.*

## Power-up modes

The computer has three power-up modes:

- Hibernation (saves data in memory to the hard disk)
- Resume (retains data in memory)
- Boot (does not save data in memory)



*Refer also to the sections [Turning off the power](#) in Chapter 3, [Getting Started](#), and to [Special Features](#) in Chapter 1, [Introduction](#).*

---

## Hotkeys

You can use hotkeys **Fn + F3** to set the power-up modes. See *Chapter 5, The Keyboard*, for details.

## TSETUP

You can use the MS-DOS-based utility TSETUP to set two power-up modes: Resume and Boot. See Chapter 7, *Setup and Password Security*, for details.



*The **Resume** mode is called **Suspend/Resume** in Windows 95 and **Standby** in Windows 98. The functions are essentially the same.*

## Panel power off

You can set up your computer so that power turns on automatically when you open the display panel and turns off when you close it.

Refer to Special Features, in Chapter 1, *Introduction*, for an explanation of how to enable this convenient feature.



*If you use the **Suspend** or **Standby** button in the Windows Shut Down menu to turn off the computer, do not close the panel until the suspend function is completed. If you close the panel before the suspend function is completed, Resume will not work.*

## System auto off

This feature turns the system off automatically if it is not used for a set duration.

Refer to Special Features, in Chapter 1, *Introduction*, for an explanation of how to set the duration.

## Auto Power On

This feature lets you set a time for the system to turn on automatically.

Refer to Special Features, in Chapter 1, *Introduction*, for an explanation of how to set the power on timing.

---

## Ring indicator power on

This feature lets the computer's power be turned on automatically when a call comes in from a remote modem. When a modem receives a signal from a remote modem, it sends a ring indicator power on call to the computer. This feature does not work with a PC Card under Windows 95.

Refer to Chapter 7, [Setup and Password Security](#), for an explanation of how to enable ring indicator power on.



# Setup and Password Security

This chapter explains how to use TSETUP to configure your computer and how to set security passwords.

When you configure the computer, the computer stores your selected values in memory that is backed up by the internal Real Time Clock (RTC) battery.



---

*If the RTC battery fully discharges, configuration data is lost. A checksum error is displayed when you start the computer and the system configuration returns to default values. To charge the RTC battery, connect the AC adaptor and turn on the computer's power. The RTC battery does not charge when the computer is turned off.*

---

## TSETUP

TSETUP is an MS-DOS-based program that provides similar functions to Hardware Setup and Power Saver Utility. Settings for the HDD Mode, CPU cache and level 2 cache explained in this chapter, cannot be made in Hardware Setup. The SYSTEM SETUP screen is displayed when you execute the file TSETUP.EXE, which is stored in the Windows subdirectory on your hard disk.



---

*If the supervisor password is set and you log onto the computer with the user password, you cannot access the TSETUP program.*

---

## Executing TSETUP

1. Select **Restart (the computer)** in **MS-DOS mode?** from the **Shut Down** window.
2. After the computer reboots in MS-DOS, type **TSETUP** and press **Enter**. TSETUP displays the **SYSTEM SETUP** screen.

The TSETUP screen is divided into two pages **SYSTEM SETUP (1/2)** and **SYSTEM SETUP (2/2)**.

```

                                SYSTEM SETUP (1/2)                                ACPI BIOS version = x.xx
----- MEMORY -----
Total                               = 65536 KB
----- PASSWORD -----
Not Registered
----- BATTERY -----
Battery Save Mode                    = Full power
----- PERIPHERAL -----
Pointing Devices                    = Auto-Selected
Ext Keyboard "Fn"                   = Disabled
USB Legacy Emulation                = Disabled
Parallel Port Mode                  = ECP
Hard Disk Mode                      = Enhanced IDE (Normal)
----- BOOT PRIORITY -----
Boot Priority                        = FDD->HDD->CD-ROM
Power On Boot Select                = Enable
----- DISPLAY -----
Power On Display                    = Auto-Selected
LCD Display Stretch                 = Disabled
TV Config.
----- OTHERS -----
Power-up Mode                      = Resume
CPU Cache                          = Enabled
Level 2 Cache                      = Enabled
Processor serial number             = Disabled
Auto Power On                      = Disabled
Alarm Volume                       = High
System Beep                        = Enabled
Panel Power On/Off                 = Disabled

```

```

                                SYSTEM SETUP (2/2)                                ACPI BIOS version = x.xx
----- CONFIGURATION -----
Device Config.                      = All Devices
----- I/O PORTS -----
Serial                              = COM1(3F8H/IRQ4)
Built-in Modem                      = COM2(2F8H/IRQ3)
Parallel                            = LPT1(378H/IRQ7/CH3)
----- PCI BUS -----
PCI BUS                             = IRQ11
----- PC CARD -----
Controller Mode                     = Auto-Selected
----- DRIVES I/O -----
HDD                                 = Primary IDE(1F0H/IRQ14)
CD-ROM                             = Secondary IDE(170H/IRQ15)
----- FLOPPY DISK I/O -----
Floppy Disk                         = (3F2H/IRQ6/CH2)

```

↑ ↓ ← → : Select items   Space, BkSp: Change values   PgDn, PgUp: Change pages  
Esc: Exit without saving   Home: Set default values   End: Save changes and Exit

*The system setup screen*



*The Panel Power On/Off item appears only when the computer is in Resume mode.*

---

## Changing values in the TSETUP menu

1. Press ← and → to move between the two columns. Press ↑ and ↓ to move between items in a column.
2. Press either the space bar or **BkSp** to change the value.
3. Press **PgUp** or **PgDn** to change pages.



*On either page, you can go directly to a specific group by pressing the first letter (highlighted) of the group's name. For example, press **B** to go to the Battery group.*

---

## Accepting changes and exiting SYSTEM SETUP

1. Press **End** to accept the changes you made.  
If the changed item does not require the system to reboot, the following message is displayed:



Are you sure? (Y/N)

If the changed item requires the system to reboot, the following message is displayed:



Are you sure? (Y/N)

The changes you made will cause the system to reboot.

2. To make other changes, press **N**. Repeat the steps above.
3. To accept the changes, press **Y**.



*You can press **Esc** to quit at any time without saving changes. TSETUP asks you to confirm that you don't want to save your changes.*

---

## Default configuration

When you access TSETUP, the current configuration is displayed.

1. To show the default configuration, press **Home**.
2. To accept the default settings, press **End** and then press **Y**.



*When you execute the default setting, the following settings are not changed:*

- *Hard Disk Mode*
  - *Password*
  - *Write Policy*
-

---

## TSETUP options

The SYSTEM SETUP screen is divided into functionally related groups. This section describes each group and its options.



*Most functions described in this section can also be changed using Toshiba's Hardware Setup or Power Saver Utility in Windows. The I/O port, IRQ and DMA channel are set in Windows 95/98 Device Manager.*

### First page of TSETUP

#### Memory

This group displays the system's total memory.

#### Password

This option allows you to set or reset the user password for power on and instant security.

<b>Registered</b>	The user password has been registered.
<b>Not Registered</b>	The user password has not been registered.



*If the supervisor password has been registered, it must be entered to access this and other TSETUP functions as well as Hardware Setup.*

For details on setting the password, refer to the Password security section later in this chapter.

#### Battery

These options let you set battery save functions for optimum performance or battery power conservation.

##### *Battery Save Mode*

This option is used to select **Full Power**, **Low Power** or **User Setting** of the **BATTERY SAVE OPTIONS**.



*These settings are for the MS-DOS environment only. When you use Windows, settings made in Power Saver will be used.*

---

## Full power

The following shows full power settings. (Default)

```
BATTERY SAVE OPTIONS
Processing Speed = High
CPU Sleep Mode  = Enabled
Display Auto Off = 30Min.
HDD Auto Off    = 30Min.
System Auto Off = Disabled
                (Resume mode only)
LCD Brightness  = Super-Bright or Bright*
Cooling Method  = Performance
```

\* *Displays Super-Bright when the AC adaptor is connected and Bright when using battery power.*

---

## Low Power

The following shows low power settings:

```
BATTERY SAVE OPTIONS
Processing Speed = Low
CPU Sleep Mode  = Enabled
Display Auto Off = 03Min.
HDD Auto Off    = 03Min.
System Auto Off = 30Min.
                (Resume mode only)
LCD Brightness  = Bright or Semi-Bright*
Cooling Method  = Battery optimized
```

\* *Displays Bright when the AC adaptor is connected and Semi-Bright when using battery power.*

---

## User Setting

This option, allows you to set the battery save parameters on the sub-window, **BATTERY SAVE OPTIONS**. When you select this option, the automatic setting feature (**Full Power** Or **Low Power**) is disabled and the user-preferred parameters become effective.

---

---

## Peripheral

This group of options determines how a number of internal and external devices work with your computer.

### Pointing Devices

Use this option to enable or disable the AccuPoint II when a PS/2 mouse is connected to the computer.

This tab lets you select **Auto-Selected** and **Simultaneous**.

---

<b>Auto-Selected</b>	If a PS/2 mouse is connected to the computer when you turn on the power, the PS/2 mouse is enabled and the AccuPoint II is disabled. Otherwise, the AccuPoint II is enabled. (Default)
<b>Simultaneous</b>	Enables both the AccuPoint II and PS/2 mouse.

---

### Ext. Keyboard "Fn"

This item lets you set the **Fn** key equivalent when you are using an external keyboard.

---

<b>Disabled</b>	No <b>Fn</b> key equivalent (Default)
<b>Fn Equivalent</b>	<b>Left Ctrl + Left Alt*</b> <b>Right Ctrl + Right Alt*</b> <b>Left Alt + Left Shift</b> <b>Right Alt + Right Shift</b> <b>Left Alt + Caps Lock</b>

---



*If you select **Left Ctrl + Left Alt** or **Right Ctrl + Right Alt** for this option, you cannot use the selected keys to reboot the computer in combination with the **Del** key. For example, if you select **Left Ctrl + Left Alt**, you must use **Right Ctrl**, **Right Alt** and **Del** to reboot the computer. **Left Ctrl**, **Left Alt** and **Del** cannot be used.*

---

---

## USB Legacy Emulation

Use this option to enable or disable USB Legacy Emulation. If your operating system does not support USB, you can still use a USB mouse and keyboard by setting the **USB Legacy Emulation** item in TSETUP to **Enabled**.

---

**USB Legacy Emulation** = Disabled (Default)  
= Enabled

---

## Parallel Port Mode

This tab lets you set the Printer Port type. Use the Windows Device Manager to make settings for the Parallel port.

### Printer Port Type

The options in this tab are **ECP** and **Standard Bi-directional**.

---

<b>ECP</b>	Sets the port type to Extended Capabilities Port (ECP). For most printers, the port should be set to <b>ECP</b> . (Default)
<b>Standard Bi-directional</b>	This setting should be used with some other parallel devices.

---

## Hard Disk Mode

Use this item to select the hard disk mode. The hard disk mode can be set only in TSETUP.



*Formats for Enhanced IDE and Standard IDE are different, so if you change the setting, you will have to reformat the hard disk for the appropriate setting.*

---

---

<b>Enhanced IDE (Normal)</b>	Select this mode when using MS-DOS, Windows 95/98 or Windows NT. (Default)
<b>Standard IDE</b>	Select this mode when using an operating system that does not support Enhanced IDE. If this mode is selected with MS-DOS, up to 504 MB is logically available even though the disk's capacity is larger than 504 MB.

---

---

## **Boot priority**

This tab sets the priority for booting the computer. Select from the following settings:

---

<b>FDD → HDD → CD-ROM</b>	The computer looks for bootable files first on the diskette drive, then on the HDD and last on the CD/DVD-ROM. (Default)
<b>HDD → FDD → CD-ROM</b>	The computer looks for bootable files first on the HDD, then on the diskette drive and last on the CD/DVD-ROM.
<b>FDD → CD-ROM → HDD</b>	The computer looks for bootable files first on the diskette drive, then on the CD/DVD-ROM and last on the HDD.
<b>HDD → CD-ROM → FDD</b>	The computer looks for bootable files first on the HDD, then on the CD/DVD-ROM and last on the diskette drive.
<b>CD-ROM → FDD → HDD</b>	The computer looks for bootable files first on the CD/DVD-ROM, then on the diskette drive, and last on the HDD.
<b>CD-ROM → HDD → FDD</b>	The computer looks for bootable files first on the CD/DVD-ROM, then on the HDD, and last on the diskette drive.

---

You can override the settings and manually select a boot device by pressing one of the following keys while the computer is booting:

---

<b>F</b>	Selects the diskette drive.
<b>B</b>	Selects the HDD.
<b>C</b>	Selects the CD/DVD-ROM.

---

This procedure does not affect the settings.

## **Power On Boot Select**

This tab lets you enable or disable the F2 hotkey, which changes the boot device when pressed during start up.

## **Display**

This tab lets you customize your computer's display settings for either the internal LCD screen or for an external monitor.



---

## Power On Display

Lets you set the display to be used when the computer is booted.

---

<b>Auto-Selected</b>	Selects an external monitor if one is connected. Otherwise, it selects the internal LCD. (Default)
<b>Simultaneous</b>	Selects both the internal LCD and external monitor for simultaneous display.

---



*You cannot select TV display in TSETUP. To display on a TV screen use hot keys **Fn + F5**. Refer to Chapter 5, [The Keyboard](#).*

---



*The LCD Display Stretch feature cannot be set in the Display window of Hardware Setup. To set this function, follow the steps below.*

1. Click **Start**, point to **Settings** and click **Control Panel**.
  2. Double-click the **Display** icon to open the **Display Properties** window. If you are using Windows 95, skip to step 4. If you are using Windows 98, continue with step 3.
  3. Click the **Settings** tab and click the **Advanced** button.
  4. Click the **Flat Panel** tab and click the **Display Stretch** check box.
- 

## LCD Display Stretch

This feature is used to enable or disable the text mode stretch.

The options are **Enabled** and **Disabled** (Default). Enabling this feature increases the display area of the screen.

## TV

This option allows you to select the type of TV.

---

<b>TV Type</b>	<b>NTSC</b> (National Television System Committee) <b>PAL</b> (Phase Alternation Line)
----------------	---

---

---

<b>TV Output Signal</b>	<b>Composite</b>
-------------------------	------------------

---

## Others

Whether or not you need to configure the computer with these options depends primarily on the kind of software or peripherals you use.

---

## Power-up Mode

This option lets you choose between Resume and boot mode.



*These settings are for the MS-DOS environment only. When you use Windows, settings made in Power Saver will be used.*

---

## CPU Cache, Level 2 Cache

Use this feature to enable or disable the CPU cache and to set the write policy.

**Level 2 Cache** and **Write Policy** are activated only when the CPU cache is enabled. Disabling the CPU cache also disables these features.

**Write-back** policy provides better system performance, because main memory is accessed only when necessary to update the cache contents with changes in main memory. **Write-through** policy accesses main memory every time data is handled by the processor. The write policy option is used only for the CPU cache.

---

<b>CPU Cache Options</b>	<b>Enabled:</b> Enables the CPU cache. (Default) <b>Disabled:</b> Disables the CPU cache.
--------------------------	--

---

<b>Level 2 Cache Options</b>	<b>Enabled:</b> Enables the level 2 cache. (Default) <b>Disabled:</b> Disables the level 2 cache.
------------------------------	--

---

<b>Write Policy</b>	<b>Write-back:</b> Sets the write policy to write-back. (Default) <b>Write-through:</b> Sets the write policy to write-through.
---------------------	--

---

## Processor Serial Number

Use this feature to enable or disable the ability of a remote location to read your processor's serial number.

---

<b>Processor Serial Number</b>	= Disabled (Default)
--------------------------------	----------------------

---

<b>Processor Serial Number</b>	= Enabled
--------------------------------	-----------

---

This item appears under the following conditions:

- A supervisor password is set, but a user password is not set.
- If a supervisor password and a user password are both set and the user password is used to log onto the computer, this item will appear if no restriction is placed on the user password.

---

## Auto Power On

This option lets you set a time for automatic power on and lets you enable or disable the ring indicator feature. **Ring Indicator** is displayed only when the computer is in Resume mode.

OPTIONS		
Alarm Time	=	00:00:00
Alarm Date Option	=	Disabled
Ring indicator	=	Disabled

**Alarm Time** is set in the sequence of hours and minutes. Seconds cannot be changed. **Alarm Date Option** is set in the sequence of month and day. If the alarm date is set to **Disabled**, the computer will be powered on once when the set time is reached. Press ↓ to move the cursor to the right and ↑ to move the cursor to the left when you set the time.



*The Alarm Time setting does not work in a Windows 98 environment. If you are using Windows 98, use Scheduled Tasks to set the Alarm Time.*

---

## Alarm Volume

This option disables or sets the volume level of the alarm. Setting this option to off disables the computer's sound function for alarms. This option can also be set with hotkeys.

---

<b>Off</b>	Disables alarm
<b>Low</b>	Sets the alarm volume to low
<b>Medium</b>	Sets the alarm volume to medium
<b>High</b>	Sets the alarm volume to high (Default)

---

When **Alarm Volume** is selected, the subwindow below is displayed to let you enable or disable certain functions.

ALARM VOLUME OPTIONS		
Low Battery Alarm	=	Enabled
Panel Close Alarm	=	Enabled

## System Beep

Use this feature to enable or disable the system beep.

---

## **Panel Power On/Off**

This option allows you to automatically turn your computer on or off by opening or closing the display panel.

### **Second page of TSETUP**

## **Configuration**

This option allows you to set the configuration method.

## **I/O Ports**

This option lets you specify the settings for the serial and parallel ports and built-in modem. Use the Windows 95/98 Device Manager to change these settings. Refer to your Windows 95/98 documentation.

## **Serial**

This option allows you to set the COM level for the serial port.

The serial port interrupt request level (IRQ) and I/O port base address for each COM level is shown below.

---

<b>COM level</b>	<b>I/O address</b>	<b>Interrupt level</b>
COM1	3F8H	4 (Default)
COM2	2F8H	3
COM3	3E8H	4
COM3	3E8H	5
COM3	3E8H	7
COM4	2E8H	3
COM4	2E8H	5
COM4	2E8H	7
Not used		(Disables port)
Others		(Other settings made automatically by plug-and-play operating systems)

---



*If the setting for the serial port is the same as that for the Built-in Modem or Parallel port, the port(s) is set to Not Used or disabled.*

---

## Built-in Modem

This option allows you to set the COM level for the built-in modem port.



*If a built-in modem (not available in some markets) is not installed, this selection is not active.*

The built-in modem port interrupt request level (IRQ) and I/O port base address for each COM level is shown below.

COM level	I/O address	Interrupt level
COM1	3F8H	4 (Default)
COM2	2F8H	3
COM3	3E8H	4
COM4	2E8H	3
Not used		(Disables port)



*If the setting for the built-in modem port is the same as that for the Serial or Parallel port, the port(s) is set to Not Used or disabled.*

## Parallel

Use the Windows 95/98 Device Manager to change these settings. Refer to your Windows 95/98 documentation. The Parallel Port field lets you set the I/O address for the parallel port and the Parallel Port Mode.

When the Parallel Port Mode (see settings below) is set to Standard Bi-directional, the options are:

LPT setting	I/O address	Interrupt level
LPT 1	378H	7
LPT 2	278H	5
LPT 3	3BCH	7
Not Used		(Disables port)
Others		(Other settings made automatically by plug-and-play operating systems)

When the Parallel Port Mode (see settings below) is set to ECP, the DMA channel can also be set to 1 or 3. The default is 3.

LPT setting	I/O address	Interrupt level	DMA Channel
LPT 1	378H	7	3 (Default)
LPT 2	278H	5	3
LPT 3	3BCH	7	3
Not Used		(Disables port)	
Others		(Other settings made automatically by plug-and-play operating systems)	

### **PCI bus**

It is for information only and cannot be changed. It appears only in TSETUP.

PCI BUS = IRQ\*\* (Interrupt level is displayed.)

### **PC Card**

This option lets you set the PC Card Controller mode.

#### **PC Card Controller Mode**

This option lets you set the PC Card Controller mode.

Auto-Selected	Use this setting for all PC Cards if you are using a plug-and-play operating system. (Default)
CardBus/16bit	If the card does not work properly with the Auto-Selected setting, use this setting for CardBus PC Cards.
PCIC Compatible	If the card does not work properly with the Auto-Selected and CardBus/16bit settings, use this setting for 16-bit PC Cards.



*When Device Config is set to Setup by OS, you must set the PC Card to Auto-Selected.*

---

## ***Drives I/O***

This item displays the installed hard disk drives and CD/DVD-ROM drives: HDD, CD-ROM. It appears only in TSETUP.

### ***Settings for Hard Disk Drive***

---

<b>HDD</b>	=	<b>Primary IDE (1F0H/IRQ14)</b> (HDD ready for use)
------------	---	--

---

### ***Settings for CD/DVD-ROM drive***

---

<b>CD-ROM</b>	=	<b>Secondary IDE (170H/IRQ15)</b> (CD/DVD-ROM ready for use)
---------------	---	---

---

## ***Floppy disk I/O***

This item displays the address, interrupt level and DMA channel settings for the diskette drive. It appears only in TSETUP.

**Floppy Disk = (3F2H/IRQ6/CH2)**

## **Password security**

Two security levels are available: supervisor and user. The supervisor password is provided for system managers or others who need to control the computer's settings. If you do not need to restrict access to the computer's settings by other users, it is better to register only a user password.

The following describes restrictions that apply to the user password mode when both supervisor and user passwords are registered. They do not apply if only the user password is registered.

### ***User password log on***

The following restrictions apply when you log on with a user password:

---

<b>TSETUP</b>	No access
<b>F, B, C switch</b>	You cannot use the <b>F, B, C</b> keys to change boot priority.

---

---

## Supervisor password logon

The following restrictions apply to the user when you log on with a supervisor password:

---

<b>Instant security</b>	User password will not provide access to the computer.
<b>Resume Mode</b>	User password will not provide access to the computer.

---



*The supervisor password will provide access to the computer from instant security or Resume mode even if the user password was used to log on to the computer. However, access will be limited to the user level.*

---

## How to set the passwords

This section describes how to set the supervisor and user password.



*You can use either capital or small letters to enter the password. Please do not use any national specific characters.*

---

## Supervisor password

In Windows 95/98, the **SVPW** program works only in the MS-DOS environment. SVPW is stored in the Windows directory. To set the supervisor password, follow the steps below.

1. Go to the DOS prompt, type in **SVPW**, and press **Enter**.
2. If the password has not been registered, the following line will be displayed:



```
SUPERVISOR PASSWORD = Not Registered  
Do you want to register the supervisor  
password <Y/N>?
```

3. Press **Y** to enter a password. The following line will be displayed:



```
Enter Password --->
```

4. Enter a password of up to 10 characters. The character string you enter is displayed as a string of asterisks. For example, if you enter a password consisting of four characters, the display is shown as:



```
Enter Password ---> ****
```

5. Press **Enter**. The following message appears, allowing you to verify the password.



```
Verify Password --->
```



- 
6. a.) If character strings match, the password is registered and the display changes to:



```
SUPERVISOR PASSWORD = Registered
USER PASSWORD MODE = Unable to run SETUP
Do you want to change the setting <Y/N>?
```

If you do not want to provide user access to the TSETUP program, press **N** to return to the DOS prompt.

To provide user access to TSETUP, press **Y** and continue with the procedures in the section *Enabling TSETUP* in this chapter.

- b.) If the character strings do not match, the following message appears:



```
Password verify error!
Do you want to retry <Y/N>?
```

Press **Y** to return to step 3. Press **N** to return to the DOS prompt.

### **User password**

To enter a user password, execute TSETUP, then:

1. Go to the **Password** item and press the **Space** or **BkSp** key to display the following prompt:



```
Password =
```

2. Enter a password of up to 10 characters. The character string you enter is displayed as a string of asterisks. For example, if you enter a password consisting of four characters, the display is shown as:



```
Password = ****
```



*If you press **Enter** before entering the password, **Not registered** will appear on the display.*

3. Press **Enter**. The following message appears, allowing you to verify the password.



```
Verify Password =
```

4. If character strings match, the password is registered and the display changes to:



```
Registered
```

If they do not match, the following message appears along with a beep indicating you must repeat from step 2.



```
Entry Error!!
```

---

## How to reset the passwords

This section describes how to reset the supervisor and user password.

### *Supervisor password*

1. Go to the DOS prompt, type in **SVPW**, and press **Enter**.
2. If the password has been registered, the following line will be displayed:



```
SUPERVISOR PASSWORD = Registered
Do you want to delete the supervisor
password <Y/N>?
```

3. Press **Y** to delete the password. The following line will be displayed:



```
Enter Password --->
```

4. Enter the currently registered password. The character string you enter is displayed as a string of asterisks. For example, if you enter a password consisting of four characters, the display is shown as:



```
Enter Password ---> ****
```

5. Press **Enter**. If character strings match, the password is deleted and the display changes to:



```
SUPERVISOR PASSWORD = Not Registered
```

If they do not match, the following message appears:



```
Password verify error!
Do you want to retry <Y/N>?
```

Press **Y** to return to step 3. Press **N** to return to DOS.



---

*If you enter the password incorrectly three times, the screen displays:*

**Password access denied!**

*You will not be able to access the SVPW program. In this case you must turn the power off and back on to retry the procedure.*

---

6. Follow the same procedures described in the earlier section, How to set the passwords, to set a new supervisor password.



---

*After you register or delete a supervisor password, if you press the reset switch before turning off the power, your latest supervisor password setting will be cancelled.*

---

7. A switch on the supervisor's password command lets you enable or disable TSETUP access in user password mode. Refer to the section Enabling TSETUP access in user password mode in this chapter.

---

## User password

To delete a user password, execute TSETUP, then:

1. Press the **Space** or **BkSp** key to display the following prompt:



Password =

2. Enter the currently registered password. The character string you enter is displayed as a string of asterisks.



Password = \*\*\*\*



*If you press **Enter** before entering the password, **Registered** will appear on the display.*

3. Press **Enter**. If the character string you enter matches the registered password, the password option is reset and the display changes to:



Not Registered

If they do not match, the following message appears along with a beep indicating you must repeat step 2.



Entry Error!!



*If you enter the password incorrectly three times, the screen displays:*

**Access denied!!**

*You will not be able to access the password item in the TSETUP menu. In this case you must turn the power off and back on to retry the procedure.*

4. Follow the same procedures described in the earlier section, How to set the passwords, to set a new user password.



*After you register or delete a user password, if you press the reset switch before turning off the power, your latest user password setting will be cancelled.*

---

## Enabling TSETUP access in user password mode

There are two ways to display the menu letting you provide access to TSETUP and other restrictions imposed by the supervisor password. When you register a supervisor password and when you enter the command **SVPW/U** at the DOS prompt.



*To prevent a user from using this switch to access TSETUP, the supervisor must copy the SVPW.EXE file to a diskette and delete it from the hard disk.*

1. a.) When you register a supervisor password the following message appears.



```
USER PASSWORD MODE = Unable to run SETUP
Do you want to change the setting <Y/N>?
```

To change the setting, press **Y** and go to step 2.

- b.) Type **SVPW/U** at the DOS prompt and press **Enter**.

- If the supervisor password is not registered, entering **SVPW /U** will display the following message:



```
Unable to change user password mode because
supervisor password is not registered.
```

- If the supervisor password is registered, one of the following sets of messages will be displayed:

- If TSETUP access is disabled (and other restrictions in effect):



```
USER PASSWORD MODE = Unable to run SETUP
Do you want to change the setting <Y/N>?
```

- If TSETUP access is enabled:



```
USER PASSWORD MODE = Able to run SETUP
Do you want to change the setting <Y/N>?
```

If you select **N**, you will return to the DOS prompt.

Select **Y** to change the setting.

You will be prompted to enter the current supervisor password:



```
Supervisor Password--->
```

---

2. Type in the password and press **Enter**.

The following menu appears:

1. Able to run SETUP
2. Unable to run SETUP
3. Unable to show Processor Serial Number item.



Select number <1/2/3>?

- If you select **1**, TSETUP access is enabled (and other restrictions disabled). The following is displayed:



USER PASSWORD MODE = Able to run SETUP

- If you select **2**, TSETUP access is disabled (and other restrictions disabled). The following is displayed:



USER PASSWORD MODE = Unable to run SETUP

- If you select **3**, TSETUP access is enabled (and other restrictions disabled), but the Processor Serial Number is not shown. The following is displayed:



USER PASSWORD MODE = Unable to show Processor  
Serial Number.

---

## Making a password service diskette

If you forget the password, the password service diskette lets you bypass the password function. To make a password service diskette, you will need one 3 ½" 2DD or 2HD diskette that contains no data you want to keep.



---

*You cannot make a password service diskette for the supervisor password.*

---

Follow these steps:

1. Set the password as described in the previous section.
2. Insert a diskette in the 3 ½" diskette drive.
3. Press **End**.

If the changed item does not require the system to reboot, the following message is displayed:



```
Are you sure? (Y/N)
```

```
Insert password service disk if necessary.
```

If the changed item requires the system to reboot, the following message is displayed:



```
Are you sure? (Y/N)
```

```
The changes you made will cause the system  
to reboot.
```

```
Insert password service disk if necessary.
```

4. Press **Y** and the following will be displayed:



```
Password Service Disk Type? (1:2HD, 2:2DD)
```

5. Select **1** for a high-density diskette or **2** for a double density diskette.

After the password data is written, the diskette drive's indicator goes off and the following message is displayed:



```
Remove the password service disk, then press  
any key.
```

6. Remove the diskette.



---

*It is highly recommended that you make a password service disk. Otherwise, you will have to contact your dealer if you cannot remember the password. The password service diskette does not work when the computer is in Resume or Hibernation mode. Refer to Chapter 6, [Power and Power-Up Modes](#), for details on using the password service diskette.*

---



*When a password service disk is made, the computer overwrites all the data on the diskette with password data. Make sure the diskette you insert does not contain any data you want to keep.*

---



*If your computer is protected by the Power on Password, when you turn the power on the following message appears:*

**password =**

*If the computer boots by the Auto Power On function and Resume is on, the computer will start with the instant security function enabled. The message above is not displayed.*

*In either case you have to enter the password. If you enter an invalid password three times in succession, the computer will shut down. You must turn the power back on to retry password entry.*

---





# Optional Devices

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

## ***Cards/memory***

- PC Cards
- Memory modules

## ***Power devices***

- Additional battery pack
- Battery charger

## ***Peripheral devices***

- Card Station IV
- Card Station III with Spacer
- Port Replicator
- Parallel printer
- External monitor
- PS/2 mouse
- PS/2 keyboard
- Security lock

## **PC Cards**

The computer is equipped with a PC Card expansion slot that can accommodate two 5 mm Type II cards or one 10.5 mm Type III card. Any PC Card that meets industry standards (manufactured by Toshiba or other vendor) can be installed. The slots support 16-bit PC Cards, including PC Card 16's multifunction card and CardBus PC Cards.

CardBus supports the new standard of 32-bit PC Cards. The bus provides superior performance for the greater demands of multimedia data transmission.

---

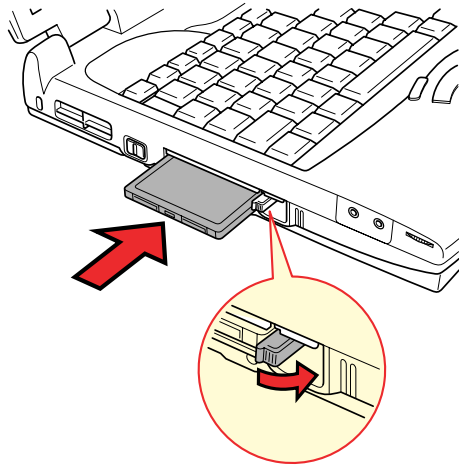
## Installing a PC Card

Two PC Card connectors are located one above the other on the left side of the computer. Both connectors are accessed from the same slot. You can install two Type II cards, one in each connector, or one Type III card in the bottom connector.

Windows' hot-install feature lets you install PC Cards while the computer's power is on.

To install a PC Card, follow the steps below.

1. Release the PC Card lock.
2. Insert the PC Card and press gently to ensure a firm connection.
3. Pull out the eject button and fold it down.



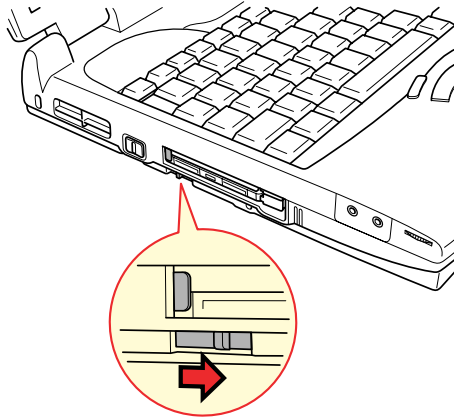
*Installing a PC Card*

- 
4. Slide the PC Card lock into the locked position.



*If you connect a security cable to the computer, the PC Card lock will be blocked, preventing removal or installation of a PC Card. To remove or install a PC Card, first remove the security cable.*

---



*Securing the PC Card lock*

After installing the card, refer to the card's documentation and check the configuration to make sure it is appropriate for your card.

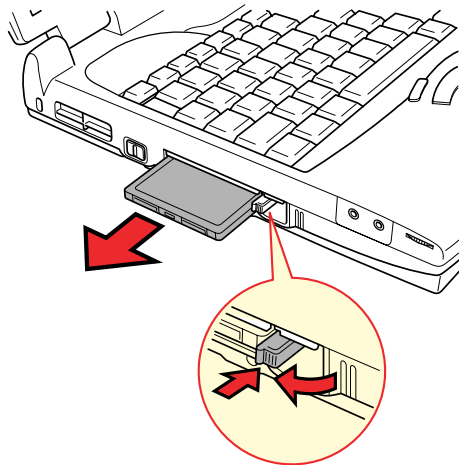
---

## Removing a PC Card



*Before you remove a PC Card, refer to the card's documentation for procedures and use Windows PC Card Properties utility to deselect the card. To access the PC Card Properties utility click Start, point to Settings, click Control Panel and double click the PC Card Properties icon.*

1. Release the PC Card lock.
2. Pull out the eject button next to the PC Card you want to remove and press the button to pop the card out slightly.
3. Grasp the PC Card and remove it.



*Removing a PC Card*

## Memory expansion

You can install additional memory in the computer's memory module sockets to increase the amount of RAM. This section describes how to install and remove a memory module.



*Before you install or remove a memory module, turn off the computer with the Shut Down option in the Windows Start menu. If you install or remove a memory module while the computer is in Standby or Hibernation mode, data will be lost.*

*The first expansion memory module must be installed in socket A. Do not try to operate the computer with the only memory expansion module in socket B*

---

## Installing memory module

Follow the steps below to install a memory module.

1. Set the computer to boot mode and turn off the power.

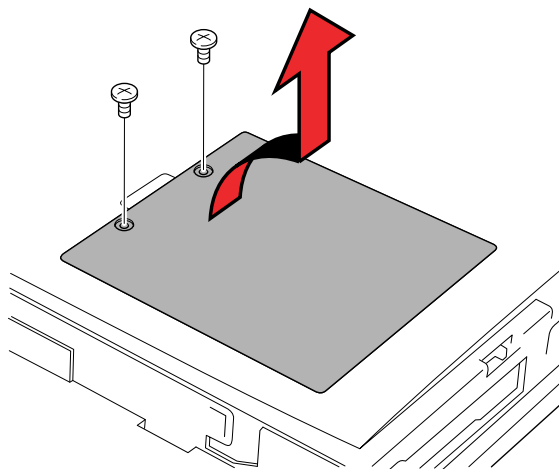


---

*Do not try to install a memory module with the computer turned on. You can damage the computer and the device.*

---

2. Remove all cables connected to the computer.
3. Turn the computer upside down and remove the battery (refer to Chapter 6, [Power and Power-Up Modes](#)).
4. Remove two screws securing the memory module socket cover.
5. Slide your fingernail or a thin object under the cover and lift it off.



*Removing the memory module socket cover*

6. Fit the module's connectors into the computer's connectors at about a 45 degree angle and press the module carefully to ensure a firm connection.

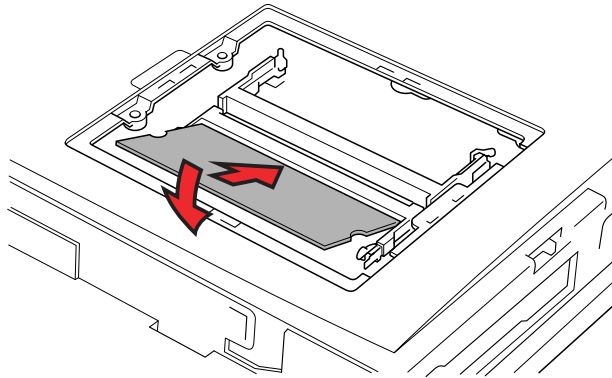


---

*Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*

---

7. Push the module down so it lies flat. Latches on either side will click into place to secure the module.



*Installing a module*

8. Seat the cover and secure it with two screws.
9. Replace the battery pack as described in Chapter 6, **Power and Power-Up Modes**.
10. Turn the power on and make sure the added memory is recognized.
11. Clear Hibernation files. Refer to the section Clearing Hibernation files.

## Removing memory module

To remove the memory module, make sure the computer is in Boot mode then:

1. Be sure the power is off and all cables are disconnected from the computer.



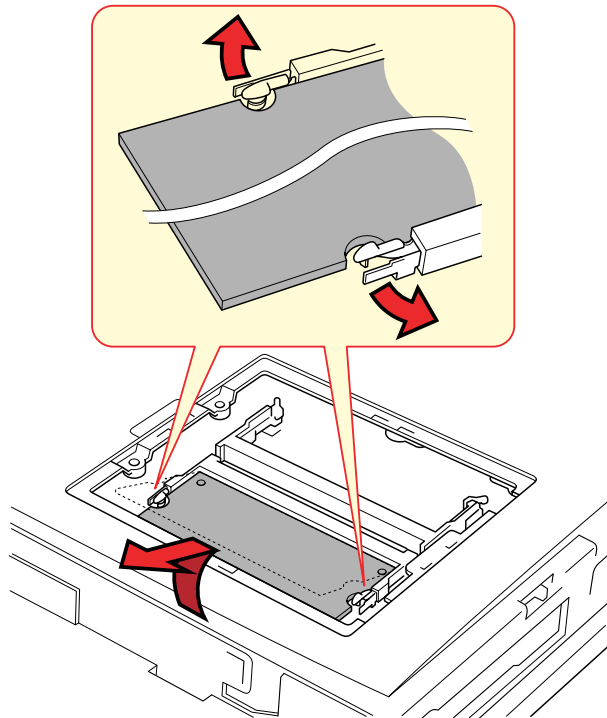
*Do not try to remove a memory module with the computer turned on. You can damage the computer and the device.*

2. Turn the computer upside down and remove the battery and two screws securing the memory module socket cover.
3. Slide your fingernail or a thin object under the cover and lift it off.
4. Push the latches to the outside to release the module. A spring will force one end of the module up.

5. Grasp the module and pull it out.



*Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*



*Removing the memory module*

6. Seat the cover and secure it with two screws and replace the battery.
7. Clear Hibernation files. Refer to the section Clearing Hibernation files.

## Clearing Hibernation files

After you install or remove a memory module, you will need to clear Hibernation related files. Follow the steps below.

1. Click the **Start** button and click **Shut Down**.
2. Select **Restart in MS-DOS mode** and click **OK**.
3. At the MS-DOS prompt type **CD \Windows** and press **Enter**.
4. Type **HALLOC /C** and press **Enter**.
5. Type **Exit** and press **Enter**, and the computer will restart.

---

## Additional battery pack

You can increase the portability of the computer with additional battery packs (PA2487U). If you're away from an AC power source and your battery runs low, you can replace it with a freshly charged battery. See Chapter 6, [Power and Power-Up Modes](#).

## Battery charger

The battery charger (PA2488U) provides a convenient way to charge battery packs without requiring the use of your computer. The battery charger holds up to two Lithium-ion battery packs, which it charges one after the other in succession. Charging time is about 4.0 hours per battery.

## Card Station IV

This chapter describes the functions of the Card Station IV (PA3024U) and identifies the locations of its connectors.



---

*Use only the AC adaptor that came with the Card Station IV or the Satellite Pro 4320. Do not use the AC adaptor that came with your Satellite Pro 4280 computer to connect the Card Station IV to a power source.*

---

In addition to the ports available on the computer, a Card Station IV provides audio line-in and line-out jacks and separate ports for PS/2™ mouse and PS/2 keyboard, two USB ports and one PC Card Slot that can be used in addition to the slots on the computer. The Card Station IV connects directly to the docking interface port on the back of the computer so no cabling is necessary. The AC adaptor connects the Card Station IV to a power source.

The following connections are available on the Card Station IV. Connecting methods are explained later in this chapter.

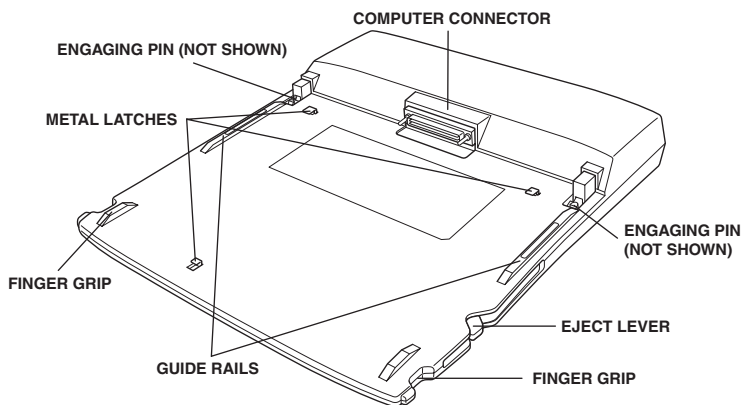
- External monitor port
- Parallel printer port
- Serial port
- PS/2 mouse port
- PS/2 keyboard port
- DC IN socket
- Security lock slot
- Audio line-in, line-out jacks
- Microphone jack
- Universal Serial Bus (two)
- PC Card Slots



---

## Front

The following illustration shows the Card Station IV's front.



*The front*

---

<b>Computer connector</b>	This is the computer interface. It connects directly to the computer's docking interface port.
<b>Finger grips</b>	Use these grips to steady the Card Station IV as you push the computer forward with your thumbs.
<b>Guide rails</b>	These rails guide the computer to a proper connection with the Card Station IV.
<b>Metal latches</b>	These latches engage slots on the bottom of the computer to hold it securely to the Card Station IV.
<b>Engaging pins</b>	These pins engage holes on the computer to secure the connection.

---

## Right side

Refer to the illustration above for the location of items on the Card Station IV's right side.

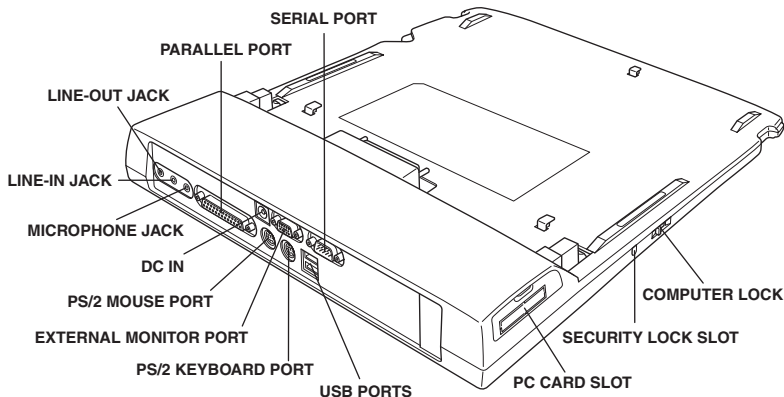
---

<b>Eject lever</b>	This lever pops out for easy disconnection of the computer from the Card Station IV
--------------------	---

---

## Back

The following illustration shows the Card Station IV's back.



*The back*



### **DC IN 15V**

The AC adaptor connects to this socket.



### **Parallel port**

Use this Centronics-compatible, 25-pin parallel port to connect a parallel printer or other parallel device. It replaces the computer's parallel port.



### **External monitor port**

This 15-pin port lets you connect an external video monitor. Note that the Resume feature is effective with an external monitor.



### **Serial port**

Use this 9-pin port to connect serial devices such as an external modem, serial mouse or serial printer. It replaces the computer's serial port.



### **Universal Serial Buses**

Two Universal Serial Buses (USB) enable daisy-chain connection of a number of USB-equipped devices to one USB.

**Microphone jack**

A standard 3.5 mm mini microphone jack enables connection of microphone for audio input. When you connect a microphone, the internal microphone is automatically disabled.

**Line-in jack**

A standard 3.5 mm mini line-in jack enables connection of a stereo device for audio input.

**Line-out jack**

A standard 3.5 mm mini line-out jack enables connection of a stereo device for audio output.

**PS/2 keyboard port**

Use this port to connect a PS/2 keyboard.

**PS/2 mouse port**

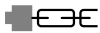
Use this port to connect a PS/2 compatible pointing device.

## Left side

Refer to the previous illustration for the location of items on the Card Station IV's left side.

**Computer lock**

Slide this lock back to enable connection or disconnection of the computer to the Card Station IV. Slide it forward to lock the computer to the Card Station IV.

**Security lock slot**

This slot lets you attach a security cable to the Card Station IV to deter theft. Attach one end of the cable to the Card Station IV and the other end to a desk or other large object.

**PC Card Slot**

A PC Card Slot can accommodate one 5 mm PC Card (Type II) or one 10.5 mm PC Card (Type III). You can install any industry standard PC Card such as a SCSI adaptor, Ethernet adaptor or flash memory card.

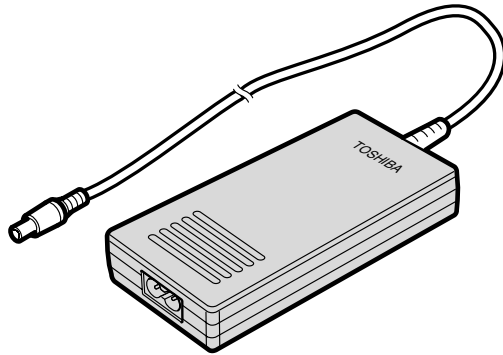


*Keep foreign objects out of the PC Card Slot. A pin or similar object can damage the computer's circuitry.*

---

## AC adaptor

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



*The AC adaptor*



*Use of the wrong adaptor could damage your computer. Toshiba assumes no liability for any damage in such case. The current rating for the computer is 3.0 amperes.*

---

## Connecting to the Card Station IV

The Card Station IV is designed to assure a secure connection by a few simple operations.



*Before connecting, make sure the engaging pins are down.*

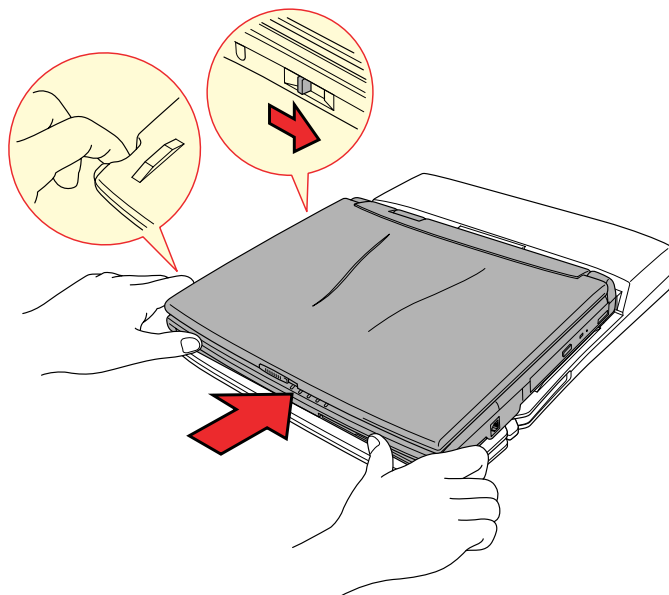
*Before connecting, remove the rubber cover from the computer's Docking Interface cover.*

*When a Card Station IV is connected to the computer, you will not be able to use the ports along the back of the computer or the USB ports.*

---

To connect the Card Station IV, follow the steps below.

1. Remove the rubber cover from the Docking Interface port.
2. Make sure the engaging pins on the Card Station IV are down.
3. Seat the computer between the Card Station IV's guide rails.
4. Grasp the finger grips on either side of the Card Station IV and slowly push the computer toward the connector.



*Connecting to the Card Station IV*

5. Press firmly to assure a secure connection.
6. Slide the computer lock forward to prevent inadvertent release of the computer from the Card Station IV.



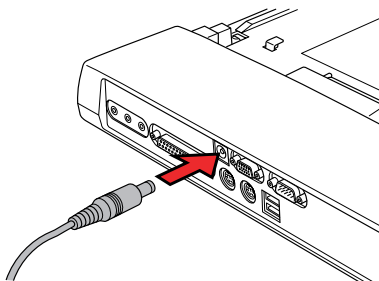
*The computer lock is integrated with the PC Card lock on the computer. When it is in the lock position, you will not be able to remove or install a PC Card.*

---

---

## Connecting the AC adaptor

To supply AC power to the computer, connect the AC adaptor as shown below.

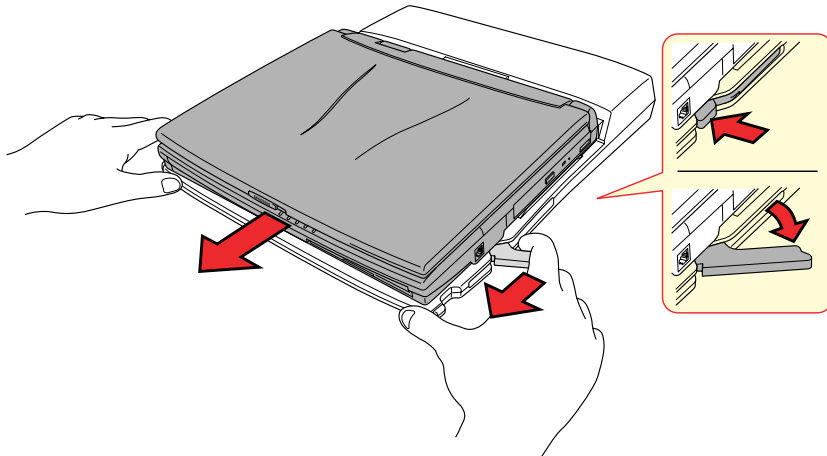


*Connecting the AC adaptor*

## Disconnecting the Card Station IV

To disconnect the Card Station IV, follow the steps below.

1. Shut down the computer.
2. Make sure the computer lock is pushed back to enable disconnection of the computer from the Card Station IV.
3. Press on the eject lever release button on the front of the computer and pull the eject lever back to disconnect the computer.



*Disconnecting from the Card Station IV*

4. Lift off the computer.



*Under Windows 95, an information screen will appear the first time you click Eject PC from the Start menu or the first time you operate the computer lock. Click OK to acknowledge the message and proceed. The screen does not appear if you are using Windows 98.*

---

## Card Station III

In addition to the ports available on the computer, a Card Station III (PA2717UY) provides MIDI/joystick ports, two PC Card Slots that can be used in addition to the slots on the computer and separate ports for PS/2 mouse and PS/2 keyboard. The Card Station III connects directly to the docking interface port on the back of the computer so no cabling is necessary. The AC adaptor connects the Card Station III to a power source.



*Card Station III can be used via an optional Spacer with the Satellite Pro 4280 series. However, it is not compatible with the Satellite Pro 4320. Connecting methods are explained later in this chapter.*

*Before connecting, make sure the engaging pins are down.*

*Before connecting, remove the rubber cover from the computer's Docking Interface cover.*

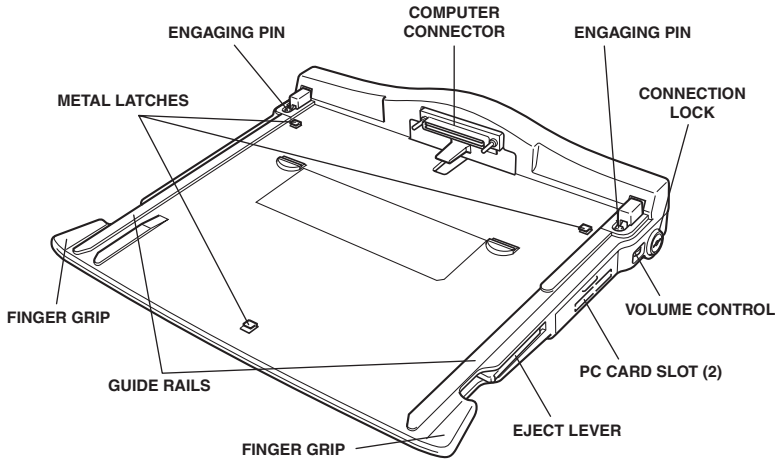
Ports for connecting the following devices are available on the Card Station III.

- External monitor
- Parallel printer
- Serial devices
- PS/2 mouse
- PS/2 keyboard
- PC Card Slots (two)
- DC IN socket
- Security lock slot
- MIDI/Joystick
- Audio line-in, line-out jacks
- Headphone jack
- Microphone jack
- Volume control
- Universal Serial Bus (two)
- External diskette drive port (Not used)

---

## Front

The illustration below shows the Card Station III's front.



*The front*

---

<b>Computer connector</b>	This is the computer interface. It connects directly to the computer's docking interface port.
<b>Finger grips</b>	Use these grips to steady the Card Station III as you push the computer forward with your thumbs.
<b>Guide rails</b>	These rails guide the computer to a proper connection with the Card Station III.
<b>Metal latches</b>	These latches engage slots on the bottom of the computer to hold it securely to the Card Station III.
<b>Engaging pins</b>	These pins engage holes on the computer to secure the connection.

---



## Right side

Refer to the previous illustration for the location of items on the Card Station III's right side.

---

**Eject lever** This lever pops out for easy disconnection of the computer from the Card Station III.

---



**PC Card Slot** A PC Card Slot accommodates a 5 mm (Type II) or a 10.5 mm (type III) card. This slot supports CardBus. (**Slot 2**)

---



**Volume control** Use this dial to adjust the headphone volume.

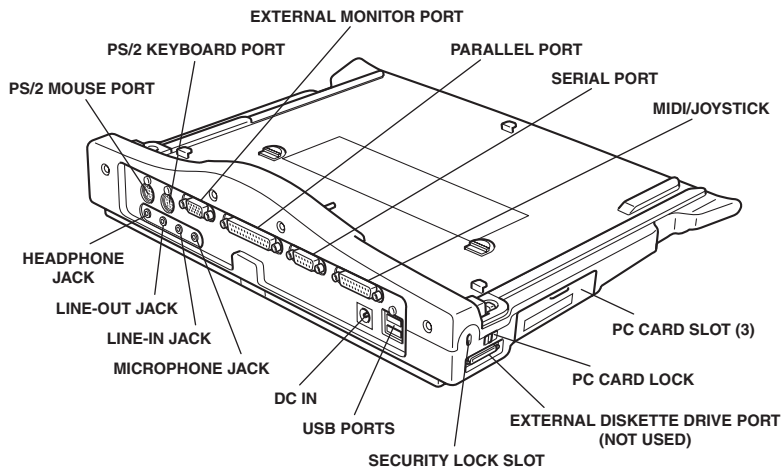
---

**Connection lock** This key lock prevents inadvertent disconnection of the computer and Card Station III and it locks the right side PC Card. Turn the key 90 degrees to lock the computer only; turn it 180 degrees to lock both the computer and the PC Card.

---

## Back

The following illustration shows the Card Station III's back.



*The back*



---

**DC IN 15V** The AC adaptor connects to this socket.

---



**MIDI/Joystick port** This port enables connection of a MIDI joystick for use with games or other specialized software.

---

**Parallel port**

Use this Centronics-compatible, 25-pin parallel port to connect a parallel printer or other parallel device. It replaces the computer's parallel port.

**External monitor port**

This 15-pin port lets you connect an external video monitor. Note that the Resume feature is effective with an external monitor.

**Serial port**

Use this 9-pin port to connect serial devices such as an external modem, serial mouse or serial printer. It replaces the computer's serial port.

**Universal Serial Buses**

Two Universal Serial Buses (USB) enable daisy-chain connection of a number of USB-equipped devices to one USB.

**Headphone jack**

A standard 3.5 mm mini headphone jack enables connection of a stereo headphone (16 ohm minimum) or other device for audio output. When you connect headphones, the internal speaker is automatically disabled.

**Microphone jack**

A standard 3.5 mm mini microphone jack enables connection of microphone for audio input. When you connect a microphone, the internal microphone is automatically disabled.

**Line-in jack**

A standard 3.5 mm mini line-in jack enables connection of a stereo device for audio input.

**Line-out jack**

A standard 3.5 mm mini line-out jack enables connection of a stereo device for audio output.

**PS/2 keyboard port**

Use this port to connect a PS/2 keyboard.

**PS/2 mouse port**

Use this port to connect a PS/2 compatible pointing device.

---

## Left side

Refer to the previous illustration for the location of items on the Card Station III's left side.



---

### PC Card Slot

A PC Card Slot accommodates a 5 mm (Type II) or a 10.5 mm (type III) card. This slot supports CardBus. (**Slot 3**)

---

### PC Card lock

Push this lever toward the front of the Card Station III to lock the PC Card. Push the lever back to unlock the card.



---

### External diskette drive port

The external diskette drive port is not used with this computer.



---

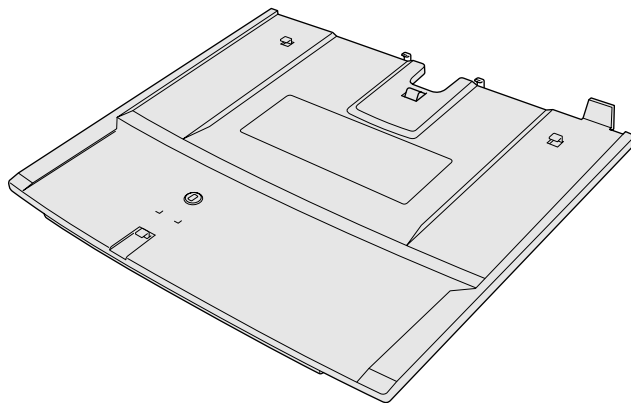
### Security lock slot

This slot lets you attach a security cable to the Card Station to deter theft. Attach one end of the cable to the Card Station III and the other end to a desk or other large object.

---

## Spacer

The illustration below shows the spacer (PA2730U) used when connecting to the Card Station III.



*The spacer*

---

## Connecting to the Card Station III

Connection of the Card Station III requires a spacer. You can connect the spacer by itself to either the Card Station III or to the computer. You can also either prevent or enable disconnection of the computer from the spacer while the spacer remains connected to the Card Station III.

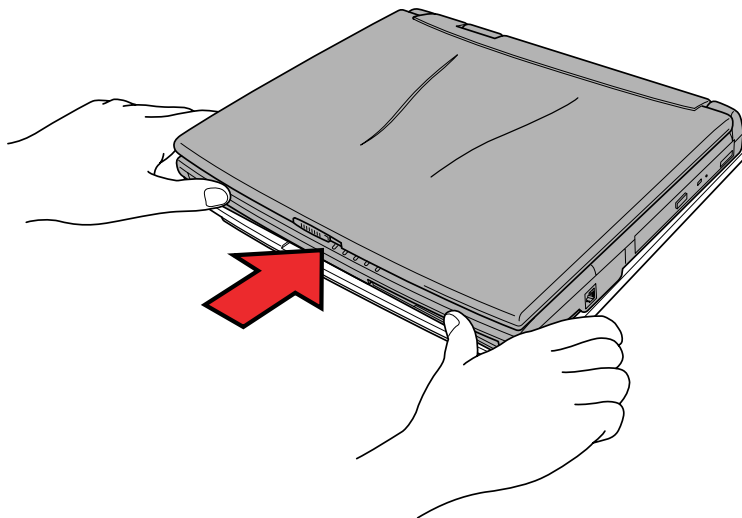
This section describes two ways of connecting to the Card Station III:

1. Computer with spacer
2. Spacer alone

### *Connecting the computer with spacer to the Card Station III*

This section describes connection of the spacer to the computer, then connection of the computer with spacer to the Card Station III. The unlock status lets you remove the computer from the spacer without removing the spacer from the Card Station III.

1. Remove the rubber cover from the computer's Docking Interface port, and set the computer lock on the bottom of the spacer to the unlock position.
2. Seat the computer between the spacer guide rails and push the computer forward to secure it on the spacer.



*Connecting the computer to the spacer*

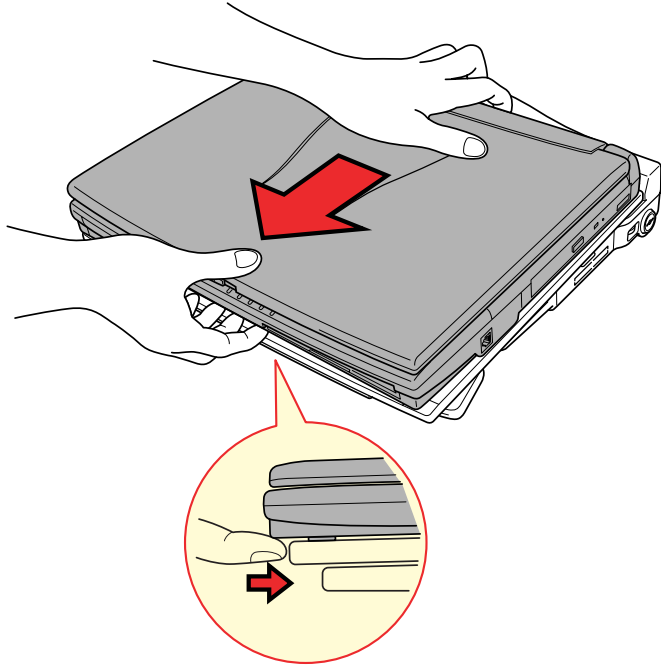
3. Connect the spacer with computer to the Card Station III as described in the next section.

---

## ***Disconnecting the computer without the spacer***

To disconnect the spacer alone or spacer with computer from the Card Station III, follow the steps below.

1. Shut down the computer or for hot undock click **Start** then click **Eject**.
2. Place one hand on the front of the computer and the other hand on the back.
3. Use the hand on the back of the computer to push the computer forward to disconnect it. Make sure the computer does not pop out too forcefully.



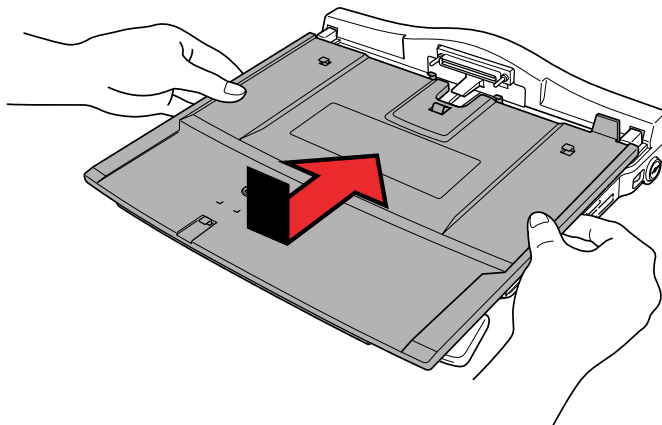
*Connecting the spacer*

---

### ***Connecting the spacer to the Card Station III***

This section describes connection of the spacer to the Card Station III.

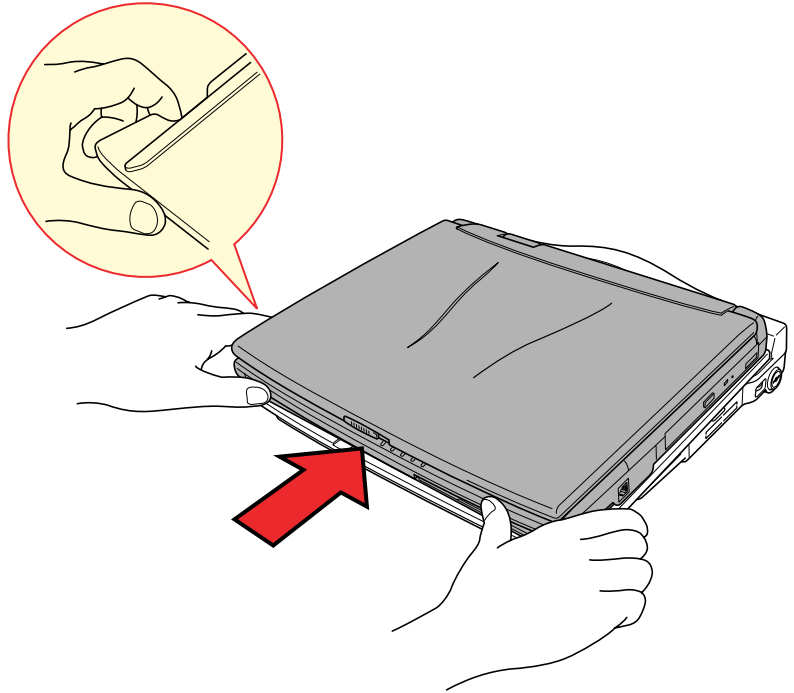
1. Make sure the engaging pins on the Card Station III are down (pull the release lever forward).
2. Seat the spacer between the guide rails on the Card Station III.



#### ***Connecting the spacer***

3. Hold the Card Station III and spacer together on each side and slide the spacer forward with your thumbs.
4. Remove the rubber cover from the computer's Docking Interface port, and set the computer lock on the bottom of the spacer to the unlock position.
5. Make sure the engaging pins are down (pull the release lever forward).

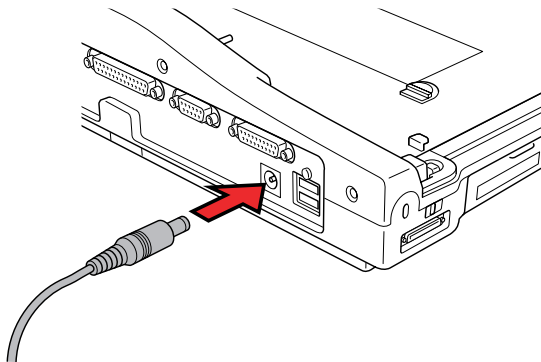
- 
6. Seat the computer between the spacer guide rails and push the computer forward to secure the connection with the Card Station III.



*Connecting the computer*

### **Connecting the AC adaptor**

To supply AC power to the computer, connect the AC adaptor as shown below.



*Connecting the AC adaptor*

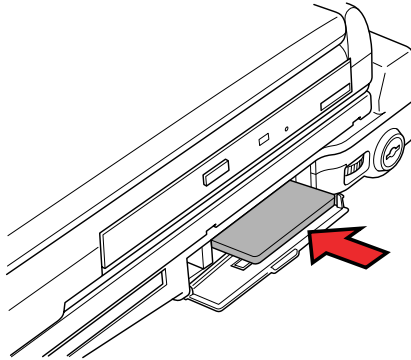
---

## Installing and removing PC Cards

The Card Station III has two PC Card Slots, one on either side, that each accommodate one Type II or one Type III card.

To install a PC Card, follow the steps below.

1. Turn off the computer if it is connected.
2. A pair of flaps protects the PC Card Slot. Insert the PC Card through these flaps.



*Installing a card in the Card Station III*

3. When the card is almost fully seated, you will feel some resistance. Press gently to assure a firm connection, but do not force the card into position.



---

*Before you turn on the power to the computer, make sure it is in boot mode.*

---

4. Set the lock for the appropriate PC Card. For the left side, slide the lock toward the front of the Card Station III. For the right side, turn the key lock 180 degrees.



---

*If you connect a security cable to the Card Station III, the PC Card lock will be blocked, preventing removal or installation of a PC Card. To remove or install a PC Card, first remove the security cable.*

---



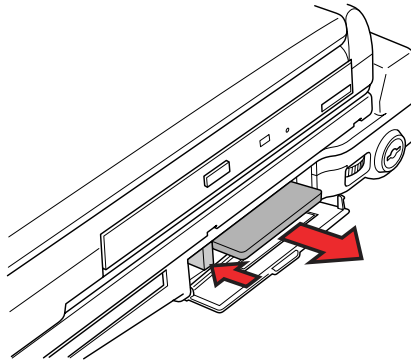
---

To remove a PC Card, follow the steps below.



*Make sure the computer is in boot mode, then turn off the power. If the computer is not attached, do not remove the card unless the computer was in Boot mode the last time you turned it off when it was attached to the Card Station III.*

1. Turn off the computer if it is connected.
2. Unlock the PC Card. For the left side, slide the lock toward the back of the Card Station III. For the right side, turn the key lock back 90 degrees.
3. Press the eject button and the card will pop out slightly.



*Removing a card from the Card Station III*

4. Grasp the card and pull it out.

---

## Port Replicator

In addition to the ports available on the computer, a Port Replicator (PA2731UE) provides audio line-in and line-out jacks, MIDI/joystick ports and separate ports for PS/2 mouse and PS/2 keyboard. The Port Replicator connects directly to the docking interface port on the back of the computer so no cabling is necessary. The AC adaptor connects the Port Replicator to a power source.



---

*Before connecting, make sure the engaging pins are down.*

*Before connecting, remove the rubber cover from the computer's Docking Interface cover.*

---

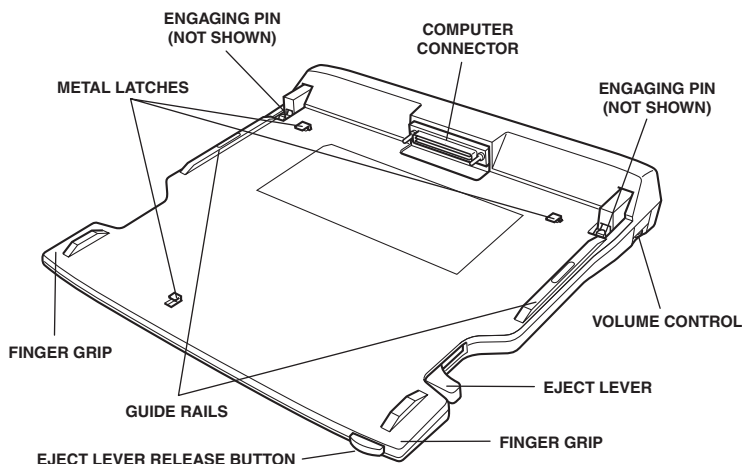
Ports for connecting the following devices are available on the Port Replicator. Connecting methods are explained later in this chapter.

- External monitor
- Parallel printer
- Serial devices
- PS/2 mouse
- PS/2 keyboard
- DC IN socket
- Security lock slot
- MIDI/Joystick
- Audio line-in, line-out jacks
- Headphone jack
- Microphone jack
- Volume control
- Universal Serial Bus (two)

---

## Front

The illustration below shows the Port Replicator's front.



*The front*

---

<b>Computer connector</b>	This is the computer interface. It connects directly to the computer's docking interface port.
<b>Finger grips</b>	Use these grips to steady the Port Replicator as you push the computer forward with your thumbs.
<b>Guide rails</b>	These rails guide the computer to a proper connection with the Port Replicator.
<b>Metal latches</b>	These latches engage slots on the bottom of the computer to hold it securely to the Port Replicator.
<b>Eject lever release button</b>	Press this button when you pull the eject lever to disconnect the Port Replicator.
<b>Engaging pins</b>	These pins engage holes on the computer to secure the connection.

---


## Right side

Refer to the previous illustration for the location of items on the Port Replicator's right side.

---

**Eject lever** This lever pops out for easy disconnection of the computer from the Port Replicator

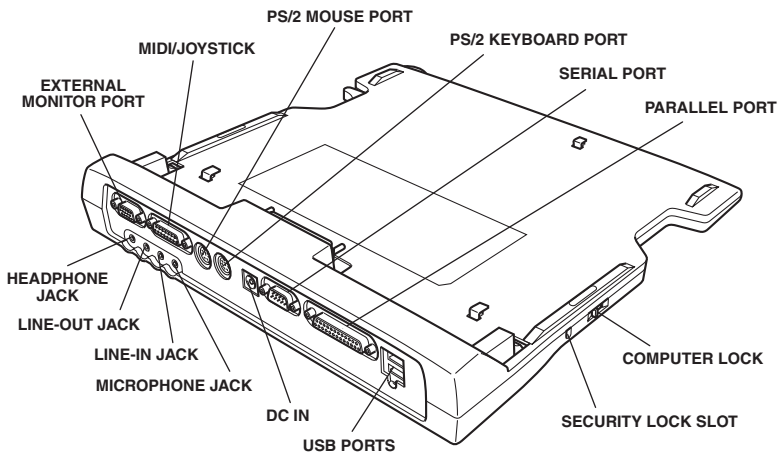
---

 **Volume control** Use this dial to adjust the headphone volume.

---

## Back

The illustration below shows the Port Replicator's back.



*The back*



---

**DC IN 15V** The AC adaptor connects to this socket.

---



**MIDI/Joystick port** This port enables connection of a MIDI joystick for use with games or other specialized software.

---



**Parallel port** Use this Centronics-compatible, 25-pin parallel port to connect a parallel printer or other parallel device. It replaces the computer's parallel port.

---



**External monitor port** This 15-pin port lets you connect an external video monitor. Note that the Resume feature is effective with an external monitor.

---



**Serial port** Use this 9-pin port to connect serial devices such as an external modem, serial mouse or serial printer. It replaces the computer's serial port.

---



---

**Universal Serial Buses**

Two Universal Serial Buses (USB) enable daisy-chain connection of a number of USB-equipped devices to one USB.

---

**Headphone jack**

A standard 3.5 mm mini headphone jack enables connection of a stereo headphone (16 ohm minimum) or other device for audio output. When you connect headphones, the internal speaker is automatically disabled.

---

**Microphone jack**

A standard 3.5 mm mini microphone jack enables connection of microphone for audio input. When you connect a microphone, the internal microphone is automatically disabled.

---

**Line-in jack**

A standard 3.5 mm mini line-in jack enables connection of a stereo device for audio input.

---

**Line-out jack**

A standard 3.5 mm mini line-out jack enables connection of a stereo device for audio output.

---

**PS/2 keyboard port**

Use this port to connect a PS/2 keyboard.

---

**PS/2 mouse port**

Use this port to connect a PS/2 compatible pointing device.

---

## Left side

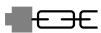
Refer to the previous illustration for the location of items on the Port Replicator's left side.

---

**Computer lock**

Slide this lock back to enable connection or disconnection of the computer to the Port Replicator. Slide it forward to lock the computer to the Port Replicator.

---

**Security lock slot**

This slot lets you attach a security cable to the Card Station to deter theft. Attach one end of the cable to the Port Replicator and the other end to a desk or other large object.

---

---

## Connecting the Port Replicator

The Port Replicator is designed to assure a secure connection by a few simple operations.

To connect the Port Replicator, follow the steps below.

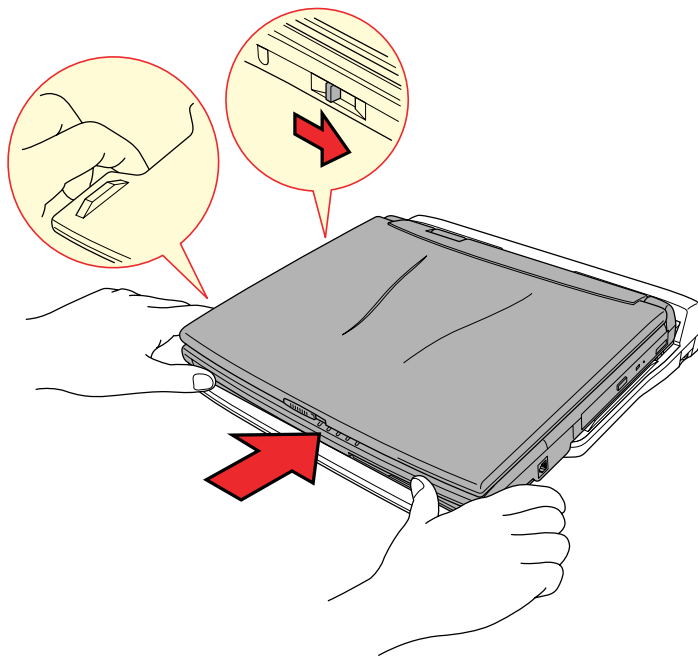
1. Remove the rubber cover from the Docking Interface port.
2. Make sure the engaging pins on the Port Replicator are down.
3. Seat the computer between the Port Replicator's guide rails.
4. Grasp the finger grips on either side of the Port Replicator and slowly push the computer toward the connector.



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*On the right side, be sure to put your finger behind the eject lever.*

---



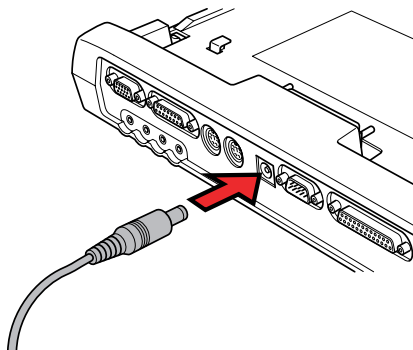
*Connecting to the Port Replicator*

5. Press firmly to assure a secure connection.
6. Slide the computer lock forward to prevent inadvertent release of the computer from the Port Replicator.

---

## Connecting the AC adaptor

To supply AC power to the computer, connect the AC adaptor as shown below.

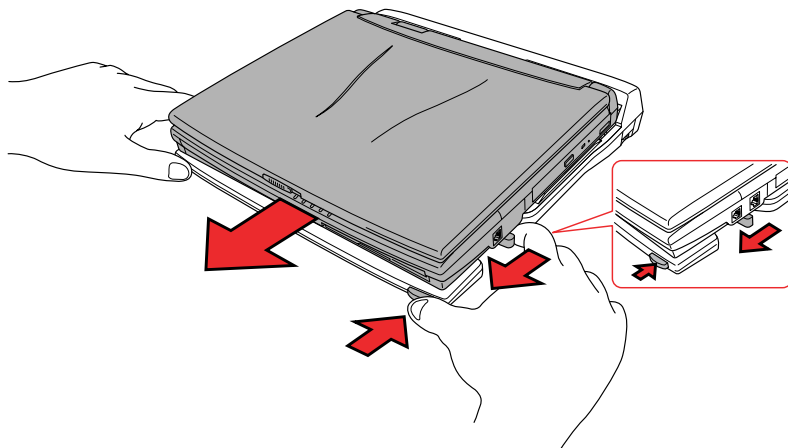


*Connecting the AC adaptor*

## Disconnecting the Port Replicator

To disconnect the Port Replicator, follow the steps below.

1. Shut down the computer.
2. Make sure the computer lock is pushed back to enable disconnection of the computer from the Port Replicator.
3. Press on the eject lever release button on the front of the computer and pull the eject lever back to disconnect the computer.



*Disconnecting from the Port Replicator*

4. Lift off the computer.

---

## Parallel printer

You can connect any standard Centronics-compatible parallel printer to your computer. All you need is an IBM PC™ parallel printer cable. Your dealer can supply one or you can purchase one at most computer stores.

The cable's connectors are designed so that it is impossible for you to connect them incorrectly. To connect a printer, follow these steps:

1. Turn off the computer.
2. Insert one end of the cable into the computer's parallel port.
3. Tighten the screws that fasten the cable connector to the computer's parallel port.
4. Insert the other end of the cable into the printer's parallel connector.
5. Fasten the connector to the printer with the clips on the parallel port.
6. Turn on the printer.
7. Turn on the computer.
8. Start the Hardware Setup program. Refer to Chapter 1, [Introduction](#).
9. Select the **Parallel/Printer** tab from the **Hardware Setup** window.
10. Set the mode to **ECP** and press **OK**.
11. Choose **Reboot** for the change to take effect.
12. Select the printer in Windows **Add Printer Wizard**. To access the **Add Printer Wizard** utility, click **Start**, point to **Settings**, click **Printers** and double click the **Add Printer** icon.



---

## External monitor

An external analog monitor can be connected to the external monitor port on the computer. The computer supports VGA and Super VGA video modes. To connect a monitor, follow the steps below.



*The Resume feature can be used with an external monitor. Simply enable Resume and the computer will maintain the data as it is displayed on the external monitor.*

1. Turn the computer off.
2. Connect the monitor to the external monitor port.
3. Turn the monitor's power on.
4. Turn the computer on.

When you turn on the power, the computer automatically recognizes the monitor and determines whether it is colour or monochrome.

You can use the Hardware Setup or TSETUP program to select between **Auto-Selected** and **Simultaneous** displays. Refer to Chapter 1, [Introduction](#), for directions on starting Hardware Setup or to Chapter 7, [Setup and Password Security](#), for details on TSETUP.

If you have selected **Simultaneous** under the **Display** options of the Hardware Setup or TSETUP program, both the external monitor and the internal LCD will be active when you turn on the computer. If **Auto-Selected** is selected, only the external monitor will be active.

To change the display settings, press **Fn + F5**. If you disconnect the monitor before you turn the computer off, be sure to press **Fn + F5** to switch to the internal display. Refer to Chapter 5, [The Keyboard](#), for details on using hot keys to change the display setting.

---

## PS/2 mouse

Use the PS/2 mouse/keyboard port on the computer.

Make sure the mouse has a cable with a 6-pin connector for the PS/2 mouse port. If the mouse's cable is not compatible, see your dealer for an adaptor cable.



*How the computer treats the connection to a PS/2 mouse depends on the setting for **Pointing Devices** under the **Others** options in the Setup program. If **Simultaneous** is selected, you can operate both the AccuPoint and the PS/2 mouse. If **Auto Selected** is chosen, the AccuPoint is disabled when a PS/2 mouse is connected.*

To connect a PS/2 mouse:

1. Turn the computer off.
2. Connect the PS/2 mouse to the PS/2 mouse/keyboard port on the computer, pressing gently to assure a firm connection.
3. Turn on the computer.

To disconnect the mouse, turn off the computer and pull out the mouse connector.

Consult your mouse manual for instructions on how to install necessary software.

## PS/2 keyboard

Use the PS/2 mouse/keyboard port on the computer. When an external keyboard is connected, you can use both the external keyboard and the computer's internal keyboard. To connect a PS/2 keyboard:

1. Turn the computer off.
2. Plug the PS/2 keyboard connector into the PS/2 mouse/keyboard port on the computer, pressing gently to assure a firm connection.
3. Turn on the computer.

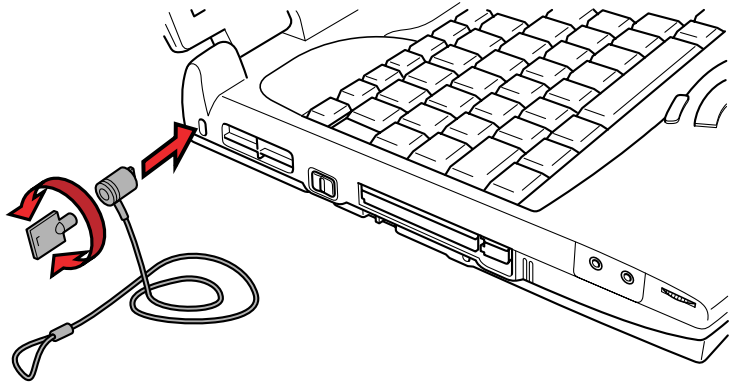
To disconnect the keyboard, turn off the computer and pull out the keyboard connector.

---

## Security lock

A security lock enables you to anchor your computer to a desk or other heavy object to help prevent unauthorized removal of the computer.

Attach one end of a cable to the desk and the other end to the security lock slot on the right side of the computer.



*Security lock*



*If you connect a security cable to the computer when the PC Card lock is set to the lock position, you will not be able to remove or install a PC Card. To remove or install a PC Card, first remove the security cable.*



# Troubleshooting

Toshiba designed the computer for durability. However, should problems occur, following the procedures in this chapter can help to determine the cause.

All readers should become familiar with this chapter. Knowing what might go wrong can help prevent problems from occurring.

## Problem solving process

Resolving problems will be much easier if you observe the following guidelines:

- Stop immediately when you recognize a problem exists. Further action may result in data loss or damage. 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 **PrtSc**.
- Isolate the problem. Using the tools available to you, such as the troubleshooting tips in this chapter and the diagnostic test program, **TDIAGS**, try to discover the specific actions that caused the problem.

The questions and procedures offered in this chapter are meant as a guide, they are not definitive problem solving techniques. Many problems can be solved simply, but a few may require help from your dealer. If you find you need to consult your dealer or others, be prepared to describe the problem in as much detail as possible.

## Preliminary checklist

Consider the simplest solution first. The items 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, turn the computer off. When you turn the computer back on it recognizes the new device.
- Make sure all options are set properly in the setup program.
- Check all cables. Are they correctly and firmly attached? Loose cables can cause signal errors.

- 
- Inspect all connecting cables for loose wires and all connectors for loose pins.
  - Check that your diskette, CD-ROM or DVD-ROM is correctly inserted and that the diskette's write protect tab is correctly set.

Make notes of your observations and keep them in a permanent error log. This will help you describe your problems to your dealer. If a problem recurs, the log will help you identify the problem faster.

## Analysing the problem

Sometimes the system gives clues that can help you identify why it is malfunctioning. Keep the following questions in mind:

- Which part of the system is not operating properly: keyboard, diskette drives, hard disk drive, printer, display. Each device produces different symptoms.
- Is the operating system configuration set properly? Check the configuration options.
- What appears on the display screen? Does it display any messages or random characters? Print a copy of the screen if you have a printer attached. Look up the messages in the software and operating system documentation. Check that all connecting cables are correctly and firmly attached. Loose cables can cause erroneous or intermittent signals.
- Do any indicators light? Which ones? What colour are they? Do they stay on or blink? Write down what you see.
- Do you hear any beeps? How many? Are they long or short? Are they high pitched or low? Is the computer making any unusual noises? Write down what you hear.

Record your observations so you can describe them to your dealer.

## Software

The problems may be caused by your software or diskette. If you cannot load a software package, the media (usually a diskette) may be damaged or the program might be corrupted. Try loading another copy of the software.

If an error message appears while you are using a software package, check the software documentation. These documents usually include a problem solving section or a summary of error messages.

Next, check any error messages in the OS documentation.

## Hardware

If you cannot find a software problem, check your hardware. First run through the items in the preliminary checklist above. If you still cannot correct the problem, try to identify the source. The next section provides checklists for individual components and peripherals.

---

## 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
- Hotkeys
- Keyboard
- LCD panel
- Hard disk drive
- CD-ROM drive
- Diskette drive
- Infrared port
- Printer
- AccuPoint II
- PS/2 mouse
- Serial mouse
- PC Card
- Monitor
- Sound system
- USB
- Hibernation

### System start-up

When the computer does not start properly, check the following items:

- Self Test
- Power Sources
- Power-on Password

### Self test

When the computer starts up, the self test will be run automatically, and the following will be displayed:



In Touch with Tomorrow  
TOSHIBA

This message remains on the screen for a few seconds.

If the self test is successful, the computer tries to load the operating system, depending on how the Boot Priority is set in the Hardware Setup or TSETUP program.

If any of the following conditions are present, the self test failed:

- The computer stops and does not proceed to display information or messages except the Toshiba logo.
- Random characters appear on the screen, and the system does not function normally.
- The screen displays an error message.

Turn off the computer and check all cable connections as well as PC Card and memory module connections. If the test fails again, contact your dealer.

---

## Power

When the computer is not plugged into an AC outlet, the battery pack is the primary power source. However, your computer has a number of other power resources, including intelligent power supply, Real Time Clock battery. These resources are interrelated and any one could affect apparent power problems. This section provides check lists for AC power and the battery. If you cannot resolve a problem after following them, the cause could lie with another power resource. In such case, contact your dealer.

### *Overheating power down*

If the computer's internal temperature becomes too high, the computer will automatically enter Resume mode and shut down.

---

<b>Problem</b>	<b>Procedure</b>
Computer shuts down and <b>DC IN</b> indicator blinks orange	Leave the computer off until it reaches room temperature, then turn it back on.  If the computer is still too warm, the <b>DC IN</b> indicator will continue blinking when you turn on the power. Let it cool longer and try again.  If the computer has reached room temperature and still does not start, or if it starts but shuts down quickly contact your dealer.

---

### *AC power*

If you have trouble turning on the computer with the AC adaptor connected, check the **DC IN** indicator. Refer to Chapter 6, [Power and Power-Up Modes](#), for more information.

---

<b>Problem</b>	<b>Procedure</b>
AC adaptor doesn't power the computer ( <b>DC IN</b> indicator should glow green)	Check the connections. Make sure the cord is firmly connected to the computer and a power outlet.  Check the condition of the cord and terminals. If the cord is frayed or damaged, replace it. If the terminals are soiled, wipe them with cotton or a clean cloth.  If the AC adaptor still does not power the computer, contact your dealer.

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## Battery

If you suspect a problem with the battery, check the **DC IN** indicator as well as the indicators for the battery. For information on indicators and battery operation see Chapter 6, [Power and Power-Up Modes](#).

Problem	Procedure
Battery doesn't power the computer	The battery may be discharged. Connect the AC power cord to charge the battery.
Battery doesn't charge when the AC power cord is attached (Battery indicator does not glow orange)	<p>If the battery is completely discharged, it will not begin charging at once. Wait a few minutes.</p> <p>If the battery still does not charge, make sure the outlet is supplying power. Plug in an appliance and see if it works. If it doesn't, try another power source.</p> <p>Check whether the battery is hot or cold. If the battery is too hot or too cold, it will not charge properly. Let it reach room temperature.</p> <p>Unplug the AC adaptor and remove the battery to make sure the terminals are clean. If necessary wipe them with a soft dry cloth dipped in alcohol.</p> <p>Connect the AC adaptor and replace the battery.</p> <p>Check the Battery indicator. If it does not glow, let the computer charge the battery for at least 20 minutes. If the Battery indicator glows after 20 minutes, let the battery continue to charge for at least another 20 minutes before turning on the computer.</p> <p>If the indicator still does not glow, the battery may be at the end of its operating life. Replace it.</p> <p>If you do not think the battery is at the end of its operating life, see your dealer.</p>
Battery doesn't power the computer as long as expected	Check the power consumption settings in Power Saver or TSETUP. Consider using a power saving mode.

---

## Password

If you forgot your password, you can use your password service diskette to start the computer. If you did not make a password service diskette or if it doesn't work, see your dealer.

---

Problem	Procedure
Cannot enter password	Refer to the Password security section in Chapter 7, <a href="#">Setup and Password Security</a> .

---

## Hotkeys

Refer to Chapter 5, [The Keyboard](#), for information on using hotkeys. Make sure the operation is correct and try a few hotkey combinations.

---

Problem	Procedure
Hotkeys do not work	If you are using an external keyboard, make sure the External Keyboard <b>Fn</b> key is set to the combination you are using.  If you are still unable to use the hotkeys, consult your dealer.

---

## Keyboard

Keyboard problems can be caused by your setup configuration. For more information refer to Chapter 5, [The Keyboard](#), and Chapter 7, [Setup and Password Security](#).

---

Problem	Procedure
Some letter keys produce numbers	Check that the numeric keypad overlay is not selected. Press <b>Fn + F10</b> and try typing again.
Output to screen is garbled	Make sure the software you are using is not remapping the keyboard. Remapping involves reassigning the meaning of each key. See your software's documentation. If you are still unable to use the keyboard, consult your dealer.

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## LCD panel

Apparent LCD problems may be related to the computer's setup. Refer to Chapter 7, [Setup and Password Security](#), for more information.

Problem	Procedure
Lines appear broken	Check if you are in DOS mode. In DOS, lines may appear broken, because of the LCD screen's higher resolution. The Windows display should appear normal.
No display	Press hotkeys <b>Fn + F5</b> to change the display priority, to make sure it is not set for an external monitor.  Make sure instant security was not activated. Try entering your password, if you have one registered. Or, turn the power off and back on to clear instant security.



*Pressing the reset button will also clear instant security. But if the computer is in Resume mode, your data will not be saved.*

Problems above remain unresolved or other problems occur	Refer to your software's documentation to determine if the software is causing the difficulty. Run the diagnostics program <b>TDIAGS</b> . Contact your dealer if the problems continue.
--	--

## Hard disk drive

Refer to Chapter 7, [Setup and Password Security](#), for more information.

Problem	Procedure
Computer does not boot from hard drive	Insert a system diskette and reboot.  There may be a problem with your operating system files. Refer to your OS documentation.
Slow performance	Your files may be fragmented. Run SCANDISK and defragmenter to check the condition of your files and disk. Refer to your OS documentation or online HELP for information on running SCANDISK and the defragmenter.  Run the diagnostics program <b>TDIAGS</b> . Contact your dealer if the problems continue.

---

## CD-ROM drive

For more information, refer to Chapter 4, [Operating Basics](#).

Problem	Procedure
You cannot access a CD in the drive	<p>Make sure the drive's drawer is securely closed. Press gently until it clicks into place.</p> <p>Open the drawer and make sure the CD is properly seated. It should lie flat with the label facing up.</p> <p>A foreign object in the drawer could block laser light from reading the CD. Make sure there is no obstruction. Remove any foreign object.</p> <p>Check whether the CD is dirty. If necessary, wipe it with a clean cloth dipped in water or a neutral cleaner. See the Disk care section in <a href="#">Chapter 4</a> for details on cleaning.</p>
Some CDs run correctly, but others do not	<p>The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software's needs. Check the CD's documentation.</p> <p>Check the type of CD you are using. The drive supports audio CDs, photo CDs, ISO 9660 and CD plus.</p> <p>If problems persist, contact your dealer.</p>

---

## DVD-ROM drive

For more information, refer to Chapter 4, [Operating Basics](#).

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Problem	Procedure
You cannot access a DVD in the drive	<p>Make sure the drive's drawer is securely closed. Press gently until it clicks into place.</p> <p>Open the drawer and make sure the DVD is properly seated. It should lie flat with the label facing up.</p> <p>A foreign object in the drawer could block laser light from reading the DVD. Make sure there is no obstruction. Remove any foreign object.</p> <p>Check whether the DVD is dirty. If it is, wipe it with a clean cloth dipped in water or a neutral cleaner. See the Disk care section in Chapter 4, <a href="#">Operating Basics</a>, for details on cleaning.</p>
Some DVD/CDs run correctly, but others do not	<p>The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software's needs. Check the DVD/CD's documentation.</p> <p>Check the type of DVD/CD you are using. The drive supports:</p> <p>DVD-ROM: DVD-ROM, DVD-Video</p> <p>CD-ROM: Audio CD, Photo CD, ISO 9660, CD-EXTRA, CD-R (read only), CD-Rewritable (read only)</p> <p>Check the region code on the DVD. It must match that on the DVD drive. Region codes are listed in the <i>DVD-ROM drive</i> section in Chapter 2, <a href="#">The Grand Tour</a>.</p> <p>If problems persist, contact your dealer.</p>

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## Diskette drive

For more information, refer to Chapter 4, [Operating Basics](#).

<b>Problem</b>	<b>Procedure</b>
Some programs run correctly, but others do not	The software or hardware configuration may be causing a problem. Make sure the hardware configuration match's your software's needs.
You cannot access the diskette drive	Try another disk. If you can access this disk, the original disk (not the disk drive) is probably causing the problem.  Run the diagnostics program <b>TDIAGS</b> .  If problems persist, contact your dealer.

## Infrared port

Refer also to the documentation for your IrDA compatible device and related software.

<b>Problem</b>	<b>Procedure</b>
Infrared devices do not work as expected	Make sure there is no obstruction blocking communication between the computer and the target device.  If problems persist, contact your dealer.

---

## Printer

Refer also to the Parallel printer sections in Chapter 8, [Optional Devices](#), and to the troubleshooting and other relevant sections in your printer and software documentation.

Problem	Procedure
Printer does not turn on	Check that the printer is connected to an electric outlet. Make sure the outlet is supplying power by plugging in an appliance.
Computer/printer do not communicate	Make sure the printer is turned on and is online (ready to use). Inspect the cable connecting the printer to the computer for damage. Make sure it is securely connected. A parallel printer connects to the parallel port and a serial printer to the RS-232C serial port. Make sure the ports are configured correctly. Make sure your software is configured to recognize the printer. Check your printer and software documentation.
Printer error	Check your printer documentation. Run the diagnostics program <b>TDIAGS</b> . If problems persist, contact your dealer.

## Pointing device

If you are using a PS/2 or serial mouse, also refer to Chapter 8, [Optional Devices](#), and to your mouse documentation.

### **AccuPoint™ II**

Problem	Procedure
On-screen pointer does not respond to AccuPoint™ II operation	If a PS/2 or serial mouse is connected, check the Hardware Setup or TSETUP program. The <b>Pointing Device</b> option should be set to <b>Simultaneous</b> to use both the AccuPoint II and an external mouse. If problems persist, contact your dealer.

---

## ***PS/2 mouse***

---

<b>Problem</b>	<b>Procedure</b>
On-screen pointer does not respond to PS/2 mouse operation	<p>Check that the PS/2 mouse cable's 6-pin connector is firmly connected to the mouse/keyboard port.</p> <p>You may have connected the mouse after turning the computer on. Turn off the computer, make sure the mouse is firmly connected and turn the computer back on.</p> <p>Is your software configured to recognize the mouse? Check the software documentation.</p> <p>If problems persist, contact your dealer.</p>

---

## ***Serial mouse***

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<b>Problem</b>	<b>Procedure</b>
On-screen pointer does not respond to serial mouse operation	<p>Check for a firm connection between the serial port and the cable's 9-pin connector.</p> <p>Did you connect the mouse before turning on the computer?</p> <p>Is the <b>serial port</b> set properly? Check Windows 95/98 Device Manager.</p> <p>Is your software configured to recognize the mouse? Check the software documentation.</p> <p>If problems persist, contact your dealer.</p>

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## PC Card

Refer also to Chapter 8, [Optional Devices](#).

---

Problem	Procedure
PC Card error occurs	Reseat the PC Card to make sure it is firmly connected. Make sure the connection between the external device and the card is firm. Check the card's documentation. If problems persist, contact your dealer.

---

## Monitor

Refer also to Chapter 8, [Optional Devices](#), and to your monitor's documentation.

---

Problem	Procedure
Monitor does not turn on	Make sure that the external monitor's power switch is on. Confirm that the external monitor's power cable is plugged into a working power outlet.
No display	Try adjusting the contrast and brightness controls on the external monitor. Press hotkeys <b>Fn + F5</b> to change the display priority and make sure it is not set for the internal display.
Display error occurs	Check that the cable connecting the external monitor to the computer is attached firmly. Run the diagnostics program <b>TDIAGS</b> . If problems persist, contact your dealer.

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## Sound system

Refer also to Chapter 7, [Setup and Password Security](#).

---

<b>Problem</b>	<b>Procedure</b>
No sound is heard	<p>Adjust the volume control dial.</p> <p>Check the software volume settings.</p> <p>Make sure the headphone connection is secure.</p> <p>Check Windows 95/98 Device Manager. Make sure the sound function is enabled and that settings for I/O address, Interrupt level and DMA are correct for your software and do not conflict with other hardware devices that you may have connected to the computer.</p> <p>If problems persist, contact your dealer.</p>

---

## USB

Refer also to your USB device's documentation.

---

<b>Problem</b>	<b>Procedure</b>
USB device does not work	<p>Check for a firm cable connection between the USB ports on the computer and the USB device.</p> <p>Make sure the USB device drivers are properly installed. Refer to your Windows 95/98 documentation for information on checking the drivers.</p> <p>If you are using an operating system that does not support USB, you can still use a USB mouse and/or USB keyboard. If these devices do not work, make sure the USB Legacy Emulation item in TSETUP is set to Enabled.</p> <p>This feature works only for mouse and keyboard. Also, the mouse and keyboard must be connected, before you boot the computer.</p> <p>If problems persist, contact your dealer.</p>

---

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## Hibernation

Problem	Procedure
Hibernation does not work	Are you using a compression utility on C drive? Hibernation will not work with Windows 95 Drvspace or other compression utility. Hibernation will not work if the Windows 98 Drive Converter converts the file allocation table to FAT32. If problems persist, contact your dealer.

## TV output signal

Problem	Procedure
Display on TV is poor	Make sure the TV type is correct for the TV set: NTSC (US) or PAL (Europe).
No display	Try adjusting the contrast and brightness controls on the external monitor. Press hotkeys <b>Fn + F5</b> to change the display. Refer to Chapter 5, <a href="#">The Keyboard</a> . If problems persist, contact your dealer.



*If you turn the computer off in Resume mode while the display is on TV, the computer will select either the internal LCD or an external computer CRT as the display device.*

---

## Memory expansion

Refer also to Chapter 8, [Optional Devices](#), for information on installing memory modules.

---

<b>Problem</b>	<b>Procedure</b>
The following message is displayed: <b>Please remove the incompatible memory module</b>	Make sure the memory module installed in the expansion slot is compatible with the computer. If an incompatible module has been installed, follow the steps below. <ol style="list-style-type: none"><li>1. Disconnect the AC adaptor and all peripheral devices.</li><li>2. Remove the battery.</li><li>3. Remove the memory module.</li><li>4. Replace the battery and/or connect the AC adaptor.</li><li>5. Turn on the power.</li></ol>
The computer does not recognize the memory module	There are two slots for memory modules. Make sure one memory module is installed in slot A. If a module is installed in slot B only, follow the steps below. <ol style="list-style-type: none"><li>1. Turn off the power.</li><li>2. Disconnect the AC adaptor and all peripheral devices.</li><li>3. Remove the battery.</li><li>4. Remove the memory module from slot B and install it in slot A.</li><li>5. Replace the battery and/or connect the AC adaptor.</li><li>6. Turn on the power.</li></ol> If problems persist, contact your dealer.

---

---

## Diagnostic test

The diagnostic test program checks system components to help you determine the cause of the computer's problem.

### Executing the diagnostic test program

To start the diagnostics, follow these steps:

1. Check all cables for loose connections.
2. Select **Restart (the computer) in MS-DOS mode?** from the **Shut Down** window.
3. Be sure the computer is not in virtual 86 mode. The test will not run in that mode. If you try to run the test in virtual 86 mode, the following message will be displayed:



Cannot execute in a virtual 8086 mode.

If the preceding message is displayed, remove memory managers from your config.sys file. See your MS-DOS documentation for information on the config.sys file.

4. Go to drive C and at the DOS prompt `c:\>`, type **TDIAGS**. MS-DOS loads the diagnostic test and displays the following screen:



```
TOSHIBA personal computer xxxx DIAGNOSTICS  
version x.xx (c) copyright TOSHIBA Corp. 19xx  
Test the DIAGNOSTICS (Y/N)
```

5. To execute the program type **Y**; to exit, type **N**.

---

## Choosing test options

Before the test begins, you are prompted to select whether to test the following components. To select the test, type **Y** at the prompt, otherwise type **N**.

---

<b>Component</b>	<b>Prompt</b>
<b>Diskette drive</b>	<b>Test the FDD (Y/N)?</b> This test writes patterns to the diskette. Use a formatted, write-enabled diskette. Data on the diskette will be destroyed.
<b>Hard disk drive</b>	<b>Test the HDD (Y/N)?</b> This test writes a small amount of data to the hard disk.
<b>Printer</b>	<b>Test the Printer (Y/N)?</b> Before executing this test, make sure the printer is connected and turned on. If you select <b>Y</b> , the following prompt will appear: <b>Compatible with IBM printer (Y/N)?</b> Select <b>Y</b> for IBM compatible and <b>N</b> for non-compatible. If you are not sure, select <b>N</b> . Selecting <b>Y</b> for a non-compatible printer may result in garble and processing of excess pages.

---

---

## Test sequence

The diagnostic test checks the computer and attached peripherals in the following sequence:

1. System test
2. Memory test
3. Display tests
4. Floppy Disk (Diskette) test
5. Hard disk test
6. Printer test

When a test is in progress, the program displays:



IN PROGRESS *TTSSDSS*

where **TT** indicates the test number, the first **SS** indicates the subtest number, **D** indicates the drive (if tested), and the second **SS** indicates the hardware status.

## Subtests

The following gives details on each subtest:

### *System/memory*

The System and Memory tests run together for about one minute. The System test displays no messages. The Memory test displays the following message:



MEMORY TEST      IN PROGRESS *XXXXXX*

where *xxxxxx* is the current memory location being tested. The memory test includes conventional and extended memory.

If either test aborts:

1. Write down everything that appears on screen.
2. Press **Ctrl + Pause (Break)** or **Ctrl + C** to return to the diagnostics menu.
3. Consult your dealer.





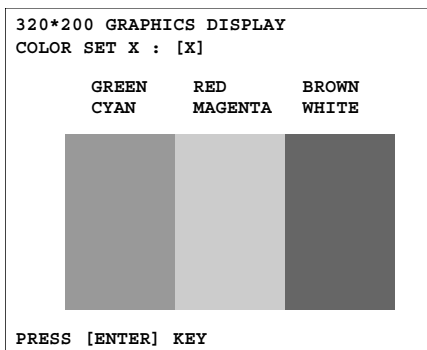


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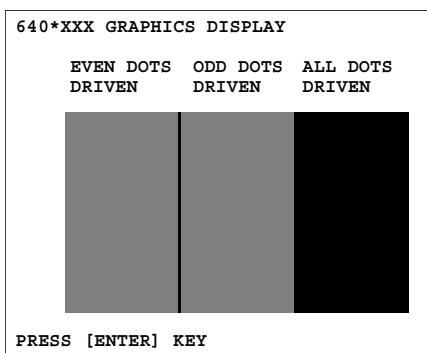
## Graphics capabilities

This set of displays tests the screen's capabilities for each graphics mode. During the test, the resolution and mode number appear above an image representing the mode's capabilities. The number inside the brackets is the mode number. If the image appears normal, press **Enter** to test the next mode. If the image on your screen appears different from the one shown below, contact your dealer.

The first two tests check the 320 x 200 graphics modes:



The remaining screens 640 x 200 mode 6, 640 x 200 mode E, 640 x 350 mode 10 and 640 x 480 mode display similar tests.



---

## Floppy disk (Diskette test)

After the last graphics display test, the program displays the following prompt:



```
FLOPPY DISK                                503000
Mount the work disk(s) on the drive(s), then press
[Enter] key
[Warning : The contents of the disk(s) will be
destroyed]
```

If diskette drives are connected, this prompt asks you to insert a diskette into each diskette drive you want to test. The diskettes you insert should contain no important information because the test destroys all data on the diskette.

The diskettes must be write enabled. For 3 ½" diskettes, the write-protect tab must be closed so you cannot see through it.

These disks must also be formatted

Press **Enter** when you've inserted the disk(s) in the drive(s). The test begins and displays:



```
FLOPPY DISK TEST IN PROGRESS 503000
```

If there is an error, the **ABORTED** message appears. Write down the highlighted numbers and press **Ctrl + Break** to return to the **DIAGNOSTICS MENU**. If a disk drive fails, check the following:

- Disks are properly formatted.
- Disks are not damaged.

Try another disk and if there is still a problem, consult your dealer.



---

*If you change your mind and decide not to test a disk, press **Ctrl + Break** to return to the **DIAGNOSTICS MENU**.*

---

## Hard disk test

If the diskette test passes, and you selected to test the hard disk, you see the following message:



```
HARD DISK TEST IN PROGRESS 805000
```

If this test aborts, write down any messages and consult your dealer. The computer or the drive may require service. Press **Enter** to return to the **DIAGNOSTICS MENU**.

## Printer test

If the hard disk test passes and you selected to test the printer, you see the following message:



PRINTER TEST IN PROGRESS 60xxxx

where xxxx is a counter that shows the test is still in progress.

If you specified an IBM compatible printer, the test prints:

```
PRINTER TEST
1. THIS LINE SHOWS NORMAL PRINT
2. THIS LINE SHOWS DOUBLE WIDTH PRINT.
3. THIS LINE SHOWS COMPRESSED PRINT
4. THIS LINE SHOWS EMPHASIZED PRINT
5. THIS LINE SHOWS DOUBLE STRIKE PRINT
6. ALL CHARACTERS PRINT
! " $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o
p q r s t u v w x y z { | } ~
```

If you specified a printer that is not IBM compatible, the test prints:

```
! " $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o
! " $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o p
" $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o p q
# $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o p q r
$ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o p q r s
% & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o p q r s t
& ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o p q r s t u
' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o p q r s t u v
( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o p q r s t u v w
) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a b c d e f g h i j k l m n o p q r s t u v w x
```

If an error occurs, the test displays the **ABORTED** message.

Write down all messages and highlighted numbers and check the following items:

- Is the printer cord securely plugged into a live wall outlet?
- Is the printer cable properly connected to the computer?
- Is the printer turned on?
- Is the printer ready (on-line and selected)?

Run the test again. If the **ABORTED** message appears, consult your dealer.

If the printer tests successfully, the following message is displayed:



DIAGNOSTICS completed

Press [Enter key]

Press **Enter** to return to the **DIAGNOSTICS MENU**.

---

## If you need further assistance

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, it is important to investigate other sources of assistance first. Before contacting Toshiba, try the following:

- Review troubleshooting sections in the documentation for software and peripheral devices.
- If a problem occurs when you are running software applications, consult the software documentation for troubleshooting suggestions. Call the software company's technical support for assistance.
- Consult the dealer you purchased your computer and/or software from. They are your best sources 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 nearest location listed in [Appendix C](#).



# Specifications

This appendix summarises the computer's technical specifications.

## Physical dimensions

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<b>Weight</b>	typical 3.18 kilograms This may vary depending on configuration.
<b>Size</b>	309 (w) × 262.5 (d) × 44 (h) millimetres The configuration with the 15" screen is slightly larger.

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## Environmental Requirements

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<b>Conditions</b>	<b>Ambient temperature</b>	<b>Relative humidity</b>
<b><i>Operating</i></b>	5°C (41°F) to 35°C (95°F)	20% to 80%
<b><i>Non-operating</i></b>	-20°C (-4°F) to 65°C (149°F)	10% to 95%
<b><i>Thermal Gradient</i></b>	20°C per hour maximum	
<b><i>Wet-bulb temperature</i></b>	26°C maximum	
<b>Conditions</b>	<b>Altitude (from sea level)</b>	
<b><i>Operating</i></b>	-60 to 3,000 metres	
<b><i>Non-operating</i></b>	-60 to 10,000 metres <i>maximum</i>	

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## Power Requirements

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<b>AC adaptor</b>	60 watts for the 4300 Series 45 watts all other models 100 - 240 volts AC 50 or 60 hertz (cycles per second)
<b>Amperes</b>	4A 4300 Series 3A All other models
<b>Computer</b>	15 Volts DC

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## Processor

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<b>Built-in</b>	The computer is equipped with a Mobile Pentium® III processor which incorporates a math co-processor and 32 KB cache memory. <b>4280 Series:</b> 500 megahertz <b>4320 Series:</b> 600 megahertz featuring SpeedStep® technology The <b>4270 Series</b> is equipped with a Mobile Celeron processor, which operates at 500 megahertz.
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## Memory

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<b>Built-in</b>	64 MB expandable to 320 MB.
<b>Optional</b>	32 MB, 64 MB, 128 MB memory modules.
<b>Microprocessor cache</b>	32 KB cache memory is incorporated in the processor.
<b>Level 2 cache</b>	256 KB level 2 cache on the Pentium processors and a 128 KB level 2 cache on the Celeron processors.
<b>Video RAM</b>	8 MB of RAM is provided for video display.

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## Disks

<b>Internal hard disk</b>	Satellite Pro 4270/4280: 6.0* gigabyte hard disk drive Satellite Pro 4320: 12* gigabyte hard disk drive * one gigabyte means one billion byte
<b>Diskette drive</b>	Accommodates either 3 ½" 1.44-megabyte or 720-kilobyte diskettes.
<b>CD-ROM drive</b>	Maximum 24-speed CD-ROM installs in the computer. The drive supports the following formats: <ul style="list-style-type: none"><li>• Audio CD</li><li>• Photo CD™</li><li>• ISO 9660</li><li>• CD-EXTRA</li><li>• CD-R (read only)</li><li>• CD-Rewritable (read only)</li></ul>
<b>DVD-ROM drive (available for Satellite Pro 4320)</b>	A full-size, DVD-ROM drive module lets you run either 12 cm (4.72") or 8 cm (3.15") digital video disk/compact disks without using an adaptor. The drive is configured as Regional Playback Control 2 (RPC2). It runs DVD-ROMs at maximum 6 speed and CD-ROMs at maximum 24 speed. This drive supports the same formats as the CD-ROM drive plus the following: <ul style="list-style-type: none"><li>• DVD-ROM</li><li>• DVD-Video</li></ul>

## Display

<b>Built-in</b>	13.0" DSTN screen with 800 horizontal x 600 vertical pixels or 13.3", 14.1" or 15.0" XGA-TFT with 1024 horizontal x 768 vertical pixels.
<b>Graphics controller</b>	A 64-bit graphics controller maximises display performance.

## Keyboard

<b>Built-in</b>	84 keys or 86 keys, compatible with IBM enhanced keyboard, embedded numeric overlay, dedicated cursor control, and two dedicated Windows keys.
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## Ports

<b>Parallel</b>	Parallel printer or other parallel device (ECP compatible)
<b>Serial</b>	RS-232C compatible port (16550 UART compatible)
<b>External monitor</b>	15-pin, analogue VGA port supports VESA DDC2B compatible functions.
<b>PS/2 Mouse/Keyboard</b>	Connects an external PS/2 mouse or PS/2 keyboard
<b>Microphone</b>	Enables connection of a monaural microphone
<b>Headphone</b>	Enables connection of a stereo headphone
<b>Security lock slot</b>	Connects a security lock to anchor the computer to a desk or other large object
<b>Infrared</b>	The infrared port is compatible with Infrared Data Association (IrDA 1.1) Fast InfraRed (FIR) standards. It enables cableless 4 Mbps data transfer with IrDA 1.1 compatible external devices.
<b>Universal Serial Bus</b>	The Universal Serial Bus (USB) enables chain connection of a number of USB-equipped devices to one port on your computer.
<b>Video-out</b>	This RCA video jack lets you transfer data to external devices. It supports DVD decoding.
<b>Docking interface</b>	Special port for connecting a CardStation IV, CardStation III and Port Replicator.

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## AccuPoint™ II

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<b>Built-in</b>	A pointing device, the AccuPoint™ II, in the centre of the keyboard and control buttons at the base of the keyboard enable control of the on-screen pointer.
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## PC card slot

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<b>Built-in</b>	Slot for PC cards (PCMCIA) accommodates: <ul style="list-style-type: none"><li>• two 5 mm Type II, or</li><li>• one 10.5 mm Type III</li></ul>
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## Toshiba Bass Enhanced Sound System

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<b>Built-in</b>	Sound Blaster Pro and Windows Sound System compatible sound system provides internal stereo speakers as well as jacks for an external microphone, headphone. It also has a volume control dial.
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## Software

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<b>Standard</b>	Windows operating system, Toshiba Utilities and drivers preloaded on hard disk.
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## Built-in Modem

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### Network control unit (NCU)

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<b>Type of NCU</b>	AA
<b>Type of line</b>	Telephone line (analog only)
<b>Type of dialling</b>	Pulse Tone
<b>Control command</b>	AT commands EIA-578 commands
<b>Monitor function</b>	Computer's speaker

---

### Communication specifications

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<b>Communication system</b>	Data: Full duplex Fax: Half duplex
<b>Communication protocol</b>	Data ITU-T-Rec (Former CCITT) V.21/V.22/V.22bis/V.32/V.32bis/V.34/V.90 Bell 103/212A Other K56 flex Fax ITU-T-Rec (Former CCITT) V.17/V.29/V.27ter/V.21 ch2
<b>Communication speed</b>	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 K56flex 32000/34000/36000/38000/40000/42000/ 44000/46000/48000/50000/52000/54000/ 56000 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
<b>Error correcting</b>	MNP class 4 and ITU-T V.42
<b>Data compression</b>	MNP class 5 and ITU-T V.42bis

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## Options

	PA Number	Article
<b>Memory</b>	PA3003U-K	32 MB memory kit
	PA3004U-K	64 MB memory kit
	PA3005U-K	128 MB memory kit
<b>Keyboard</b>	PA3006GR	Keycaps for German keyboard
	PA3006FR	Keycaps for French keyboard
	PA3006SC	Keycaps for Scandinavian keyboard
	PA3006SL	Keycaps for Swiss keyboard
	PA3006IT	Keycaps for Italian keyboard
	PA3006SP	Keycaps for Spanish keyboard
	PA3006BE	Keycaps for Belgian keyboard
PA3006EN	Keycaps for English keyboard	
<b>Expansion</b>	PA2717UYN	CardStation III
	PA2731UE	Port Replicator
	PA2730U	Spacer (for CardStation III)
	PA3024UE-1PRP	CardStation IV
<b>Power</b>	PA2450UY	Universal AC adaptor
	PA2487URG	Lithium-ion battery pack
	PA2488UE	Battery charger

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## Certification

This product is approved for electrical safety and/or electromagnetic compatibility (EMC) by the following associations:

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TÜV

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DIN GOST TÜV

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UL

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CSA

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FCC

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Toshiba declares that this product complies with the following directives to be observed for CE marking. CE-Marking is the responsibility of Toshiba Europe, Hammfelddamm 8, 41460 Neuss, Germany.

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93/68/EEC	CE marking directive
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89/336/EEC	EMC directive
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73/23/EEC	Low voltage directive
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EN 60950	Electrical safety
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EN 55022 B	EMC / Radio disturbances
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EN 50082-1	EMC / Immunity
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EN61000-3-2,-3-3	Disturbances in supply systems
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# 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 in which it is used. All cords must meet the following specifications:

<b>Length:</b>	Minimum 2 metres
<b>Wire size:</b>	Minimum 0.75 mm <sup>2</sup>
<b>Current rating:</b>	Minimum 2 Amperes
<b>Voltage rating:</b>	125 or 250 VAC (depending on country's power standards)

## Certification agencies

<b>U.S. and Canada:</b>	UL listed and CSA certified No. 18 AWG, Type SVT or SPT-2 two conductor
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<b>Australia:</b>	AS
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### *Europe:*

<b>Austria:</b>	OVE
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<b>Belgium:</b>	CEBEC
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<b>Denmark:</b>	DEMKO
-----------------	-------

<b>Finland:</b>	SETI
-----------------	------

<b>France:</b>	UTE
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<b>Germany:</b>	VDE
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<b>Italy:</b>	IMQ
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<b>The Netherlands:</b>	KEMA
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**Norway:** NEMKO

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**Sweden:** SEMKO

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**Switzerland:** SEV

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**United Kingdom:** BSI

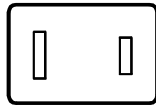
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In Europe, power cords must be VDE type, H05VVH2-F and two conductor.

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

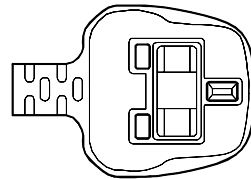
The following illustrations show the plug shapes for the U.S.A. and Canada, the United Kingdom, Australia and Europe.

**USA and Canada**



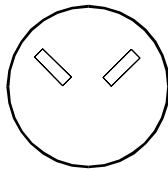
UL approved  
CSA approved

**United Kingdom**



BS approved

**Australia**



AS approved

**Europe**



Approved by the  
appropriate agency



# The Toshiba International Warranty

The Toshiba International Warranty is a service policy on the parts and repair on your Toshiba portable personal computer which is automatically available to purchasers of the computer.

The cover is assured in major industrial countries of the world. It means that wherever you take your Toshiba mobile PC in this area, you will never be left without help should any problems arise.

## *What the warranty covers*

The Warranty covers the computer in the standard version, including the AC adaptor. Batteries, modems, memory expansion kits and other Toshiba branded options, as well as third party expansion boards are NOT covered by this warranty. For information concerning warranties for these products, please consult your dealer.



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*If you would like to use the international warranty, please register with Toshiba. You will then receive a warranty sticker to be placed on your computer. In case no registration card for the international warranty was bundled with your computer, please contact the nearest Toshiba representation for registration.*

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On the following pages is a list of the Toshiba companies who can be contacted if a claim on the warranty needs to be made. If difficulties arise which cannot be solved from one of these addresses, the headquarters for Toshiba computers in Europe can be found at:

### **Toshiba Europe GmbH**

- Regensburg Operations -  
Leibnizstrasse 2  
D-93055 Regensburg  
Germany  
Tel: +49 (0)941 7807-888  
Fax: +49 (0)941 7807-925

If users need further addresses in eastern Europe or outside Europe, these are available from the national or European companies.

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## Toshiba's Worldwide Computer Representatives

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<b>Australia</b>	Toshiba (Australia) Pty. Limited 84-92 Talavera Road, North Ryde NSW 2113	Tel: +61-2-9887-3322 Fax: +61-2-9888-3664 <a href="http://www.isd.toshiba.com.au">http://www.isd.toshiba.com.au</a>
<b>Austria</b>	Toshiba Europe GmbH Handelskai 388 1020 Wien	Tel: +43-1-72031000 Fax: +43-1-72031002 <a href="http://www.toshiba.at">http://www.toshiba.at</a>
<b>Belgium</b>	Toshiba Information Systems Benelux B.V. Excelsiorlaan 40, B-1930 Zaventem	Tel: +32-2-715-8700 Fax: +32-2-725-3030 <a href="http://www.toshiba.be">http://www.toshiba.be</a>
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<b>Estonia</b>	CHS Estonia Parnu mnt. 142A 11317 Tallinn	Tel: +372-6504-960 Fax: +372-6504-916
<b>Finland</b>	Scribona TPC OY Sinimäentie 14,P.O.Box 83, 02630 ESPOO	Tel: +358-9-5272555 Fax: +358-9-5272500 <a href="http://www.toshiba.se">http://www.toshiba.se</a>
<b>France</b>	Toshiba Systèmes (France) S.A. 7 Rue Ampère, 92804 Puteaux Cedex	Tel: +33-1-4728-2929 Fax: +33-1-4728-2499
<b>Germany</b>	Toshiba Europe GmbH Leibnizstraße 2, D-93055 Regensburg	Tel: +49-(0)941-7807-888 Fax: +49-(0)941-7807-948 BBS: +49-(0)941-7807-999 <a href="http://www.toshiba-tro.de">http://www.toshiba-tro.de</a>
<b>Greece</b>	Ideal Electronics S.A. 190 Syngrou Ave.; 176 71 Kalithea/Athens	Tel: +30-1-95625514 Fax: +30-1-9579094
<b>Hungary</b>	Technotrade Kft. Szerencs utca 202, 1147 Budapest	Tel: +36-1-410-5987 Fax: +36-1-4106691 <a href="http://www.technotrade.hu">http://www.technotrade.hu</a>
<b>Ireland</b>	See 'United Kingdom'	
<b>Italy</b>	Progetto Elettronica 92 s.r.l. Viale Certosa 138, 20156 Milano	Tel: +39-02-9397-5551 Fax: +39-02-9397-5299 <a href="http://www.toshiba.it/pc">http://www.toshiba.it/pc</a>

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<b>Latvia</b>	CHS Riga Kalnciema 12a LV1048 Riga	Tel: +371-27 60 20 52 Fax: + 371-7 61 38 87
<b>Lithuania</b>	CHS Baltic Palemono 7A 3023 Kaunas	Tel: + 370 7 31 01 34 Fax: + 370 7 31 08 05
<b>Luxemburg</b>	See 'Netherlands'	
<b>Morocco</b>	C.B.I. 22 Rue de Béthune, Casablanca	Tel: +212-2-30-65-35 Fax: +212-2-30-80-68
<b>Malta</b>	Tabone Computer Centre Limited 111 Old Railway Track HMR-16 St Venera	Tel: +356-49 36 04 Fax: +356-49 36 03 <a href="http://www.tabone.com.mt">http://www.tabone.com.mt</a>
<b>Netherlands</b>	Toshiba Information Systems Benelux B.V. Rivium Boulevard 41 2909 LK Capelle a/d IJssel	Tel: +31-10-2882-300 Fax: +31-10-2882-390 <a href="http://www.toshiba.nl">http://www.toshiba.nl</a>
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<b>Poland</b>	AC Serwis Sp. Z o. o. ul. Partyzantów 71, 43-316 Bielsko-Biala	Tel: +48 (0-33)8130-205 Fax: +48 (0-33)8130-209 <a href="http://www.techmex.com.pl">http://www.techmex.com.pl</a>
<b>Portugal</b>	Quinta Grande Assistência Técnica Informática Lda. Av. Quinta Grande, 30 J; 2720-487 Alfragide	Tel: +351-21-472-1730 Fax: +351-21-472-1739
<b>Romania</b>	Scop Computers SRL 162 Barbu Vacarescu St, Sector 2 71424 Bucharest	Tel: +40-1-231-4602 Fax: +40-1-231-4606 <a href="http://www.scop.ro">http://www.scop.ro</a>
<b>Slovakia</b>	HTC a.s. Dobrovicova 8; 81109 Bratislava	Tel: +421-7-593345-50 Fax: +421-7-593345-55 <a href="http://www.htc.sk">http://www.htc.sk</a>
<b>Slovenia</b>	Inea d.o.o. Ljubljanska 80, 61230 Domzale	Tel: +386-61-718-000 Fax: +386-61-721672 <a href="http://www.inea.si">http://www.inea.si</a>
<b>Spain</b>	Toshiba Information Systems (España) S.A. Parque Empresarial San Fernando Edificio Europa, 1a Planta, Escalera A 28831 (Madrid) San Fernando de Henares	Tel: +34-91-6606-700 Fax: +34-91-6606-760 <a href="http://www.toshiba.es">http://www.toshiba.es</a>

<b>Sweden</b>	Scribona Toshiba PC AB Sundbybergsvägen 1, Box 1374 171 27 Solna	Tel: +46-200-212100 Fax: +46-8-734-4656 <a href="http://www.toshiba.se">http://www.toshiba.se</a>
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<b>United Kingdom</b>	Toshiba Information Systems (UK) Ltd. Toshiba Court, Weybridge Business Park Addlestone Road, Weybridge KT15 2UL	Tel: +44-1932-828828 Fax: +44-1932-822958 <a href="http://www.toshiba.co.uk">http://www.toshiba.co.uk</a>
<b>United States</b>	Toshiba America Information Systems, Inc. 9740 Irvine Blvd., Irvine, CA 92713-9724	Tel: +1-949-583-3000 Fax: +1-949-583-3345 <a href="http://www.toshiba.com">http://www.toshiba.com</a>

Or for all countries not listed, please call the **Toshiba International Service Line:**  
or E-mail: [toshibawarranty@unn.unisys.com](mailto:toshibawarranty@unn.unisys.com)

Tel: +352 460433

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<http://www.toshiba-teg.com>

### ***Toshiba America***

<http://www.toshiba.com>

### ***Toshiba Japan***

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

### ***Toshiba Canada***

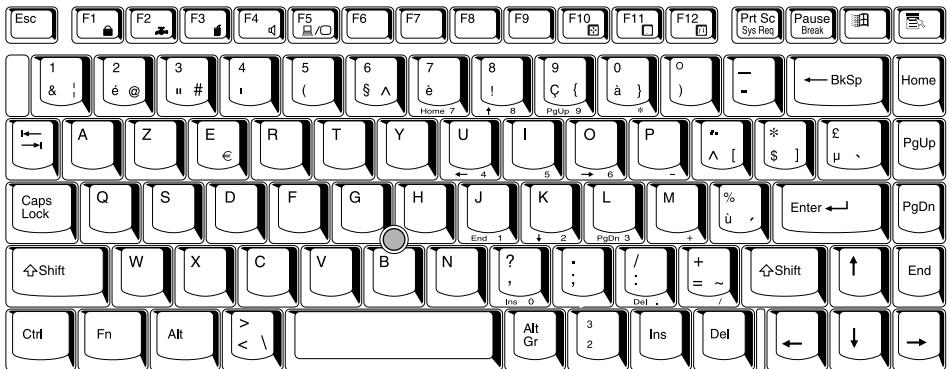
<http://www.toshiba.ca>

## Toshiba Bulletin Board Service addresses

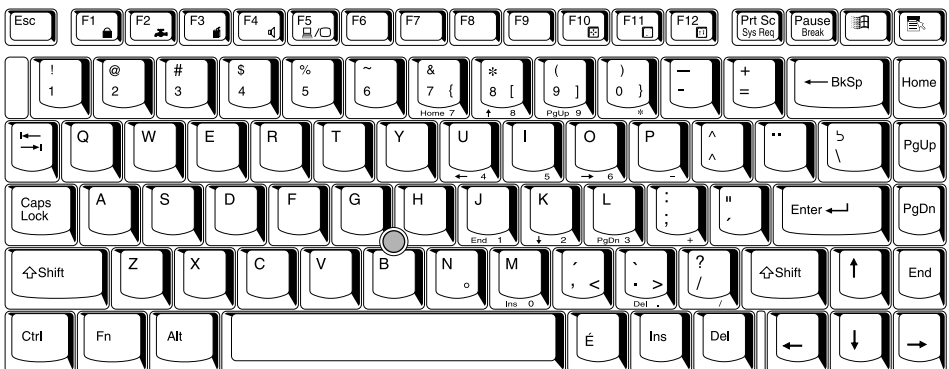
<b>Analogue number:</b>	+49 941-7807-999
<b>ISDN1:</b>	+49 941-7810500
<b>ISDN2:</b>	+49 941-7813131
<b>Internet BBS:</b>	<a href="http://www.toshiba-tro.de">www.toshiba-tro.de</a>

# Keyboard Layouts

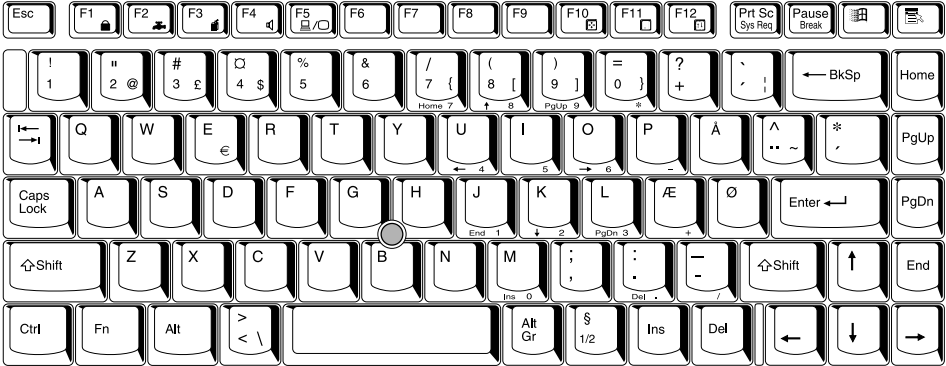
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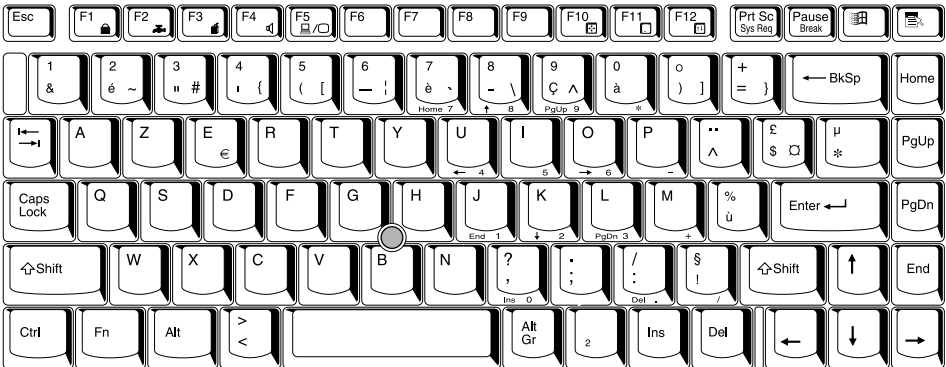
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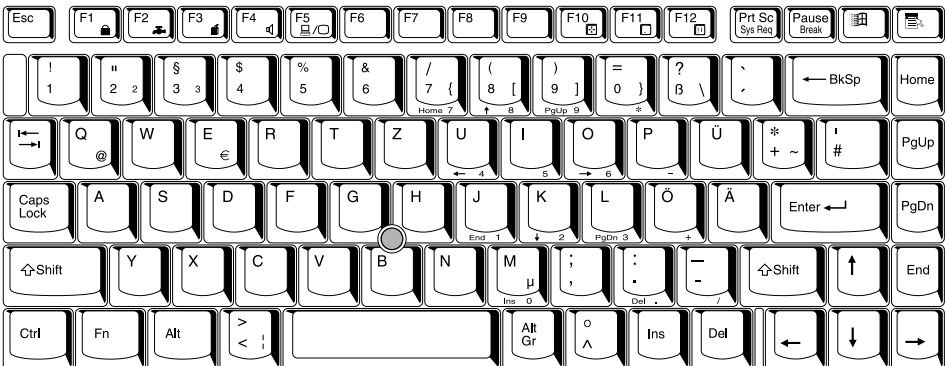
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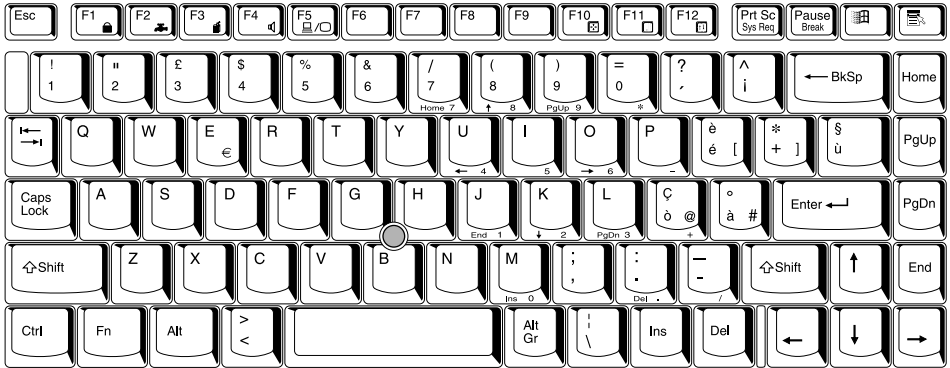
## French



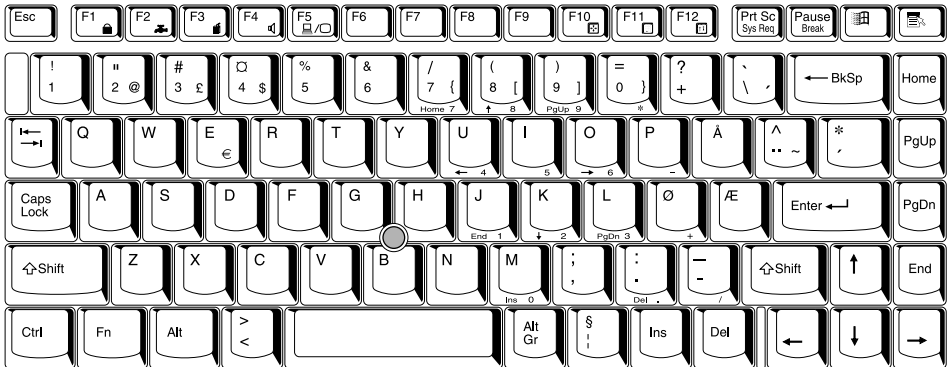
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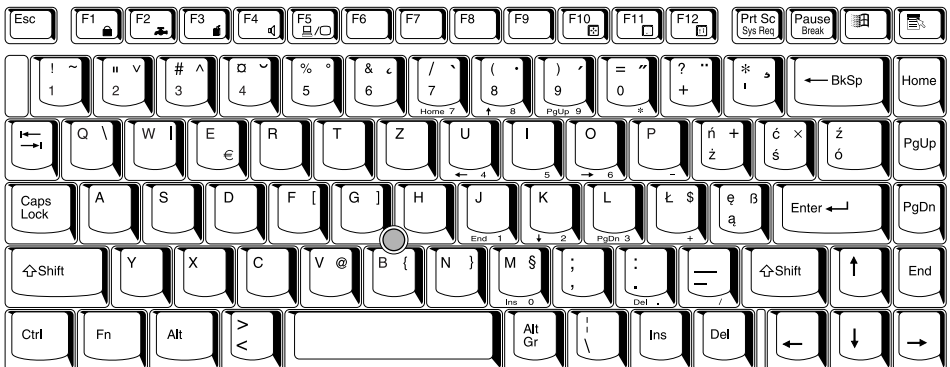
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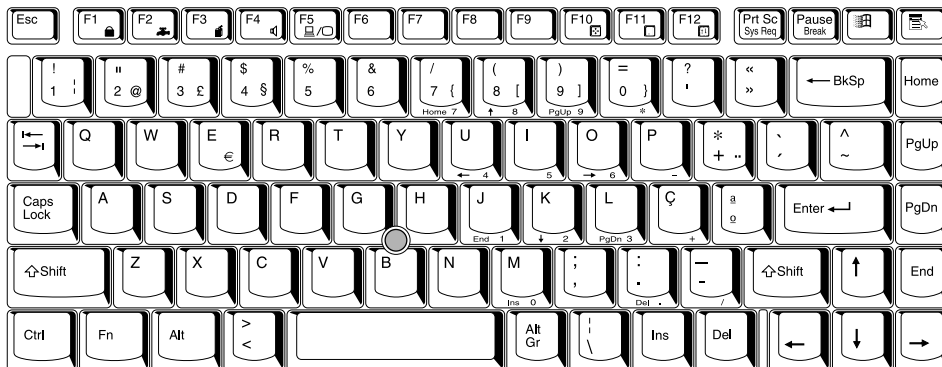
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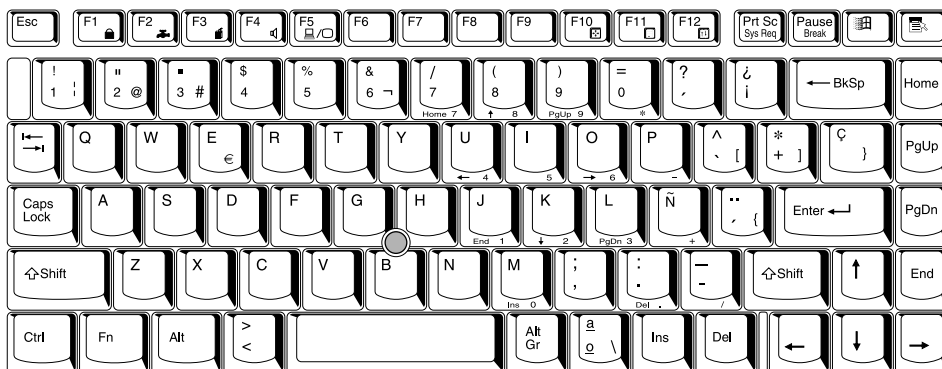
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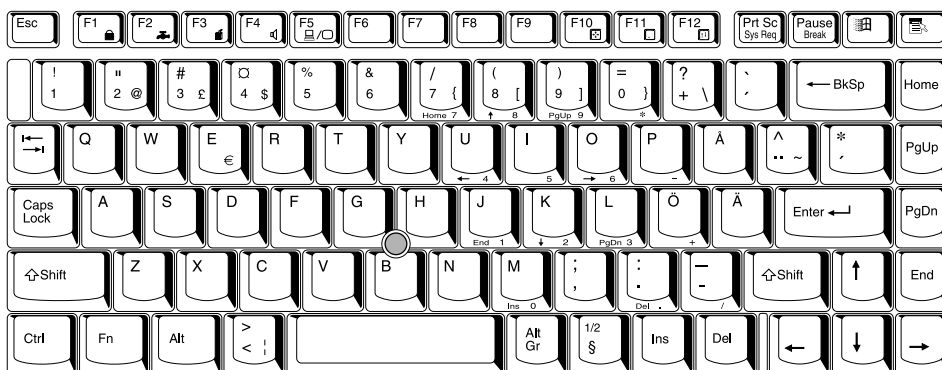
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## Spanish

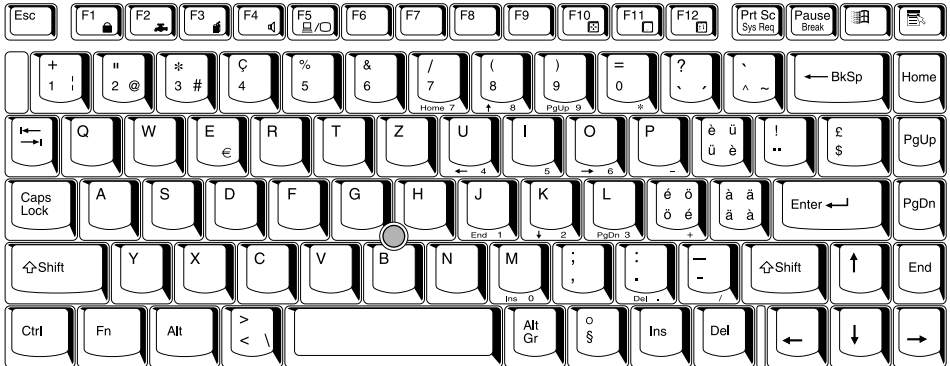


## Swedish

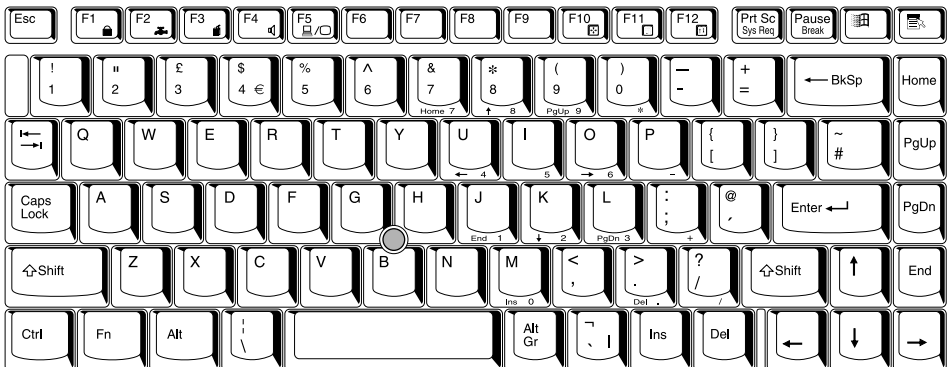




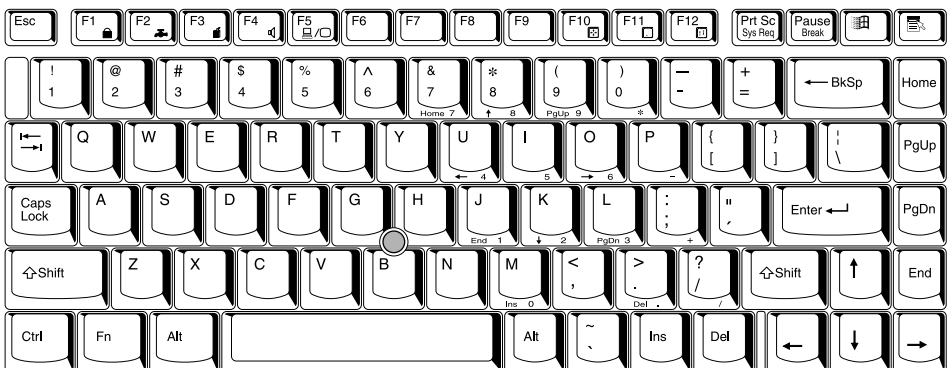
## Swiss-German



## UK English



## US English





# Display Controller and Modes

## Display controller

The display controller interprets software commands into hardware commands that turn particular pixels on or off.

The controller is an advanced Video Graphics Array (VGA) that provides Super VGA (SVGA) and Extended Graphics Array (XGA) support for the internal LCD and external monitors.



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*Because of the LCD's increased resolution, lines may appear broken in DOS mode.*

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A high-resolution external monitor connected to the computer can display up to 1280 horizontal and 1024 vertical pixels at up to 256 colours or 1024 horizontal and 768 vertical pixels at up to 16M colours.

The display controller also controls the video mode, which uses industry standard rules to govern the screen resolution and the maximum number of colours that can be displayed on screen.

Software written for a given video mode will run on any computer that supports the mode.

The computer's display controller supports all VGA and SVGA modes, the most widely used industry standards.

## Video modes

The computer supports video modes defined in the following table. If your application offers a selection of mode numbers that do not match the numbers on the table, select a mode based on mode type, resolution, character matrix, number of colours and refresh rates. Also, consider that if your software supports both graphics and text modes, the screen display may appear to operate faster using a text mode.

*Table 1. Video modes*

Type	Resolution	Character matrix (pels)	LCD colours	CRT colours	Scanning frequency Ver./Hor.
VGA Text	40 x 25 Characters	8 x 8	16 of 256k	16 of 256k	70Hz/31.5kHz
VGA Text	80 x 25 Characters	8 x 8	16 of 256k	16 of 256k	70Hz/31.5kHz
VGA Text	40 x 25 Characters	8 x 14	16 of 256k	16 of 256k	70Hz/31.5kHz
VGA Text	80 x 25 Characters	8 x 14	16 of 256k	16 of 256k	70Hz/31.5kHz
VGA Text	40 x 25 Characters	8(9) x 16	16 of 256k	16 of 256k	70Hz/31.5kHz
VGA Text	80 x 25 Characters	8(9) x 16	16 of 256k	16 of 256k	70Hz/31.5kHz
VGA Grph	320 x 200 Pels	8 x 8	4 of 256k	4 of 256k	70Hz/31.5kHz
VGA Grph	640 x 200 Pels	8 x 8	2 of 256k	2 of 256k	70Hz/31.5kHz
VGA Text	80 x 25 Characters	8(9) x 14	Mono	Mono	70Hz/31.5kHz
VGA Text	80 x 25 Characters	8(9) x 16	Mono	Mono	70Hz/31.5kHz
VGA Grph	320 x 200 Pels	8 x 8	16 of 256k	16 of 256k	70Hz/31.5kHz
VGA Grph	640 x 200 Pels	8 x 8	16 of 256k	16 of 256k	70Hz/31.5kHz
VGA Grph	640 x 350 Pels	8 x 14	Mono	Mono	70Hz/31.5kHz
VGA Grph	640 x 350 Pels	8 x 14	16 of 256k	16 of 256k	70Hz/31.5kHz
VGA Grph	640 x 480 Pels	8 x 16	2 of 256k	2 of 256k	60Hz/31.5kHz
VGA Grph	640 x 480 Pels	8 x 16	16 of 256k	16 of 256k	60Hz/31.5kHz
VGA Grph	320 x 200 Pels	8 x 8	256 of 256k	256 of 256k	70Hz/31.5kHz
SVGA Grph	640 x 480 Pels	8 x 16	256 of 256k	256 of 256k	60/75/85Hz 31.5/37.6/43.3kHz

*Table 1. Video modes*

Type	Resolution	Character matrix (pels)	LCD colours	CRT colours	Scanning frequency Ver./Hor.
SVGA Grph	800 x 600 Pels	8 x 16	256 of 256k	256 of 256k	60/75/85Hz 37.8/46.9/53.7kHz
SVGA Grph	1024 x 768 Pels	8 x 16	256 of 256k*	256 of 256k	60/75/85Hz 48.3/60.0/68.7kHz
SVGA Grph	1280 x 1024 Pels	8 x 16	256 of 256k* (Virtual)	256 of 256k	60/75/85Hz 64.0kHz
SVGA Grph	1600 x 1200 Pels	8 x 16	256 of 256k* (Virtual)	256 of 256k	60/75Hz 64.0kHz
SVGA Grph	640 x 480 Pels	8 x 16	64k of 64k	64k of 64k	60/75/85Hz 31.5/37.6/43.2kHz
SVGA Grph	800 x 600 Pels	8 x 16	64k of 64k	64k of 64k	60/75/85Hz 37.8/46.9/53.7kHz
SVGA Grph	1024 x 768 Pels	8 x 16	64k of 64k*	64k of 64k	60/75/85Hz 48.3/60.0/68.7kHz
SVGA Grph	1280 x 1024 Pels	8 x 16	64k of 64k*	64k of 64k	60/75/85Hz 48.3/60.0/68.7kHz
SVGA Grph	1600 x 1200 Pels	8 x 16	64k of 64k*	64k of 64k	60/75Hz 48.3/60.0/68.7kHz
SVGA Grph	640 x 480 Pels	8 x 16	16M of 16M	16M of 16M	60/75/85Hz 31.5/37.5/43.3kHz
SVGA Grph	800 x 600 Pels	8 x 16	16M of 16M	16M of 16M	60/75/85Hz 37.8/46.9/53.7kHz
SVGA Grph	1024 x 768 Pels	8 x 16	16M of 16M*	16M of 16M	60/75Hz 48.3/60.0/68.7kHz
SVGA Grph	1280 x 1024 Pels	8 x 16	16M of 16M*	16M of 16M	60Hz 48.3/60.0/68.7kHz

\* Enters virtual mode when the LCD screen resolution is 800 x 600 (panning).



# 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 was the warranty seal number (if available)?
- What is your address, phone, and fax number?

***To register the theft, 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.

Your registration will be entered in a database, which is used to track Toshiba computers at our service points around Europe.

---

## **Toshiba Theft Registration**

Send to: Toshiba Europe GmbH  
Technical Service and Support  
Leibnizstr. 2  
93055 Regensburg  
Germany

Fax number: +49 (0) 941 7807 925

Country stolen:	
Machine type: (e.g. Satellite Pro 4280)	
Model number: (e.g. PA1218E YXT)	
Serial number: (e.g. 70123456E)	
Date stolen:	
Warranty seal: (e.g. 9813 123456 049)	

### **Owner's details**

Name:	
Company:	
Street:	
Postal Code/City:	
Country:	
Phone:	
Fax:	



# ASCII Character Codes

This appendix shows the American Standard Code for Information Interchange (ASCII) on the following pages. The characters in the **IBM char** column appear on your display when you type the corresponding ASCII code (as described in Chapter 5, [The Keyboard](#)). The characters that are printed, however, depend on the software you are using. For most software, the printed output for decimal codes 32 to 128 will match your screen display.

Dec code	Hex code	IBM char	Sort seq	Ctrl char
000	00		000	NUL
001	01	☺	1	SOH
002	02	☹	2	STX
003	03	♥	3	ETX
004	04	♦	4	EOT
005	05	♣	5	ENQ
006	06	♠	6	ACK
007	07	•	7	BEL
008	08	◼	8	BS
009	09	○	9	HT
010	0A	◻	10	LF
011	0B	○	11	VT
012	0C	○	12	FF
013	0D	♪	13	CR
014	0E	♪	14	SO
015	0F	⚙	15	SI
016	10	▶	16	DLE
017	11	◀	17	DC1
018	12	↕	18	DC2
019	13	!!	19	DC3
020	14	¶	20	DC4
021	15	§	21	NAK
022	16	▬	22	SYN
023	17	↕	23	ETB
024	18	↑	24	CAN
025	19	↓	25	EM
026	1A	→	26	SUB
027	1B	←	27	ESC
028	1C	┌	28	FS
029	1D	↔	29	GS
030	1E	▲	30	RS
031	1F	▼	31	US

Dec code	Hex code	IBM char	Sort seq
032	20	space	32
033	21	!	33
034	22	"	34
035	23	#	35
036	24	\$	36
037	25	%	37
038	26	&	38
039	27	'	39
040	28	(	40
041	29	)	41
042	2A	*	42
043	2B	+	43
044	2C	,	44
045	2D	-	45
046	2E	.	46
047	2F	/	47
048	30	0	48
049	31	1	49
050	32	2	50
051	33	3	51
052	34	4	52
053	35	5	53
054	36	6	54
055	37	7	55
056	38	8	56
057	39	9	57
058	3A	:	58
059	3B	;	59
060	3C	<	60
061	3D	=	61
062	3E	>	62
063	3F	?	63

Dec code	Hex code	IBM char	Sort seq
064	40	@	64
065	41	A	65
066	42	B	66
067	43	C	67
068	44	D	68
069	45	E	69
070	46	F	70
071	47	G	71
072	48	H	72
073	49	I	73
074	4A	J	74
075	4B	K	75
076	4C	L	76
077	4D	M	77
078	4E	N	78
079	4F	O	79
080	50	P	80
081	51	Q	81
082	52	R	82
083	53	S	83
084	54	T	84
085	55	U	85
086	56	V	86
087	57	W	87
088	58	X	88
089	59	Y	89
090	5A	Z	90
091	5B	[	91
092	5C	\	92
093	5D	]	93
094	5E	^	94
095	5F	_	95

Dec code	Hex code	IBM char	Sort seq
096	60	'	96
097	61	a	97
098	62	b	98
099	63	c	99
100	64	d	100
101	65	e	101
102	66	f	102
103	67	g	103
104	68	h	104
105	69	i	105
106	6A	j	106
107	6B	k	107
108	6C	l	108
109	6D	m	109
110	6E	n	110
111	6F	o	111
112	70	p	112
113	71	q	113
114	72	r	114
115	73	s	115
116	74	t	116
117	75	u	117
118	76	v	118
119	77	w	119
120	78	x	120
121	79	y	121
122	7A	z	122
123	7B	{	123
124	7C		124
125	7D	}	125
126	7E	~	126
127	7F	␣	127

Dec code	Hex code	IBM char	Sort seq
128	80	Ç	67
129	81	ü	85
130	82	é	69
131	83	â	65
132	84	ä	65
133	85	à	65
134	86	ã	65
135	87	ç	67
136	88	ê	69
137	89	ë	69
138	8A	è	69
139	8B	ï	73
140	8C	î	73
141	8D	ì	73
142	8E	Ä	65
143	8F	Å	65
144	90	É	69
145	91	æ	65
146	92	Æ	65
147	93	ô	79
148	94	ö	79
149	95	ò	79
150	96	û	85
151	97	ù	85
152	98	ÿ	89
153	99	Ö	79
154	9A	Ü	85
155	9B	ç	36
156	9C	£	36
157	9D	¥	36
158	9E	Pt	36
159	9F	f	36

Dec code	Hex code	IBM char	Sort seq
160	A0	á	65
161	A1	í	73
162	A2	ó	79
163	A3	ú	85
164	A4	ñ	78
165	A5	Ñ	78
166	A6	ā	166
167	A7	ō	167
168	A8	¿	63
169	A9	┌	169
170	AA	└	170
171	AB	½	171
172	AC	¼	172
173	AD	¡	33
174	AE	«	34
175	AF	»	34
176	B0	⋮	
177	B1	⋮	
178	B2	⋮	
179	B3	┆	
180	B4	┆	
181	B5	┆	
182	B6	┆	
183	B7	┆	
184	B8	┆	
185	B9	┆	
186	BA		
187	BB	┆	
188	BC	┆	
189	BD	┆	
190	BE	┆	
191	BF	┆	

Dec code	Hex code	IBM char	Sort seq
192	C0	┆	
193	C1	┆	
194	C2	┆	
195	C3	┆	
196	C4	┆	
197	C5	┆	
198	C6	┆	
199	C7	┆	
200	C8	┆	
201	C9	┆	
202	CA	┆	
203	CB	┆	
204	CC	┆	
205	CD	==	
206	CE	≠	
207	CF	┆	
208	D0	┆	
209	D1	┆	
210	D2	┆	
211	D3	┆	
212	D4	┆	
213	D5	┆	
214	D6	┆	
215	D7	┆	
216	D8	┆	
217	D9	┆	
218	DA	┆	
219	DB	■	
220	DC	■	
221	DD	■	
222	DE	■	
223	DF	■	

---

<b>Dec code</b>	<b>Hex code</b>	<b>IBM char</b>	<b>Sort seq</b>
224	E0	$\alpha$	83
225	E1	$\beta$	
226	E2	$\Gamma$	
227	E3	$\Pi$	
228	E4	$\Sigma$	
229	E5	$\sigma$	
230	E6	$\mu$	
231	E7	$\Upsilon$	
232	E8	$\Phi$	
233	E9	$\Theta$	
234	EA	$\Omega$	
235	EB	$\delta$	
236	EC	$\phi$	
237	ED	$\phi$	
238	EE	E	
239	EF	$\Lambda$	
240	F0	$\Xi$	
241	F1	$\pm$	
242	F2	$\geq$	
243	F3	$\leq$	
244	F4	$\int$	
245	F5	$\int$	
246	F6	$+$	
247	F7	$\approx$	
248	F8	$\circ$	
249	F9	■	
250	FA	■	
251	FB	$\sqrt{\quad}$	
252	FC	$\eta$	
253	FD	$^2$	
254	FE	■	
255	FF		

---

# International Modem Guide

When you are familiar with the procedures and information in this guide, carefully follow the steps described for installing the international modem.



*Do not disassemble the computer beyond the steps described in this instruction or touch any components not specifically described.*

## Installing the modem

To install the modem follow the procedures below.

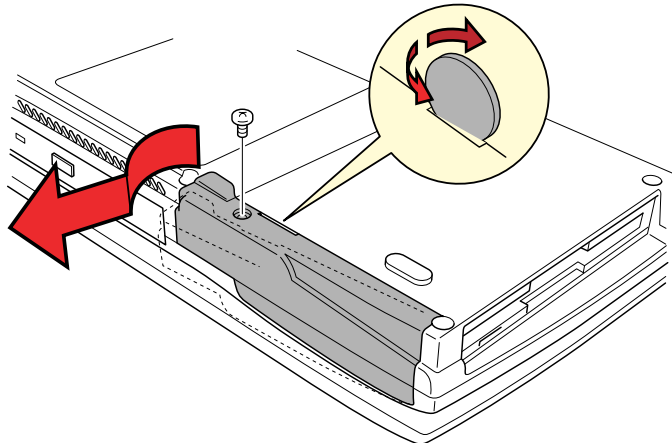
### Removing the battery pack

Before installing the international modem, remove the battery pack. Refer to Chapter 6, [Power and Power-Up Modes](#), for details on removing the battery pack.

### Installing the modem cover and jack

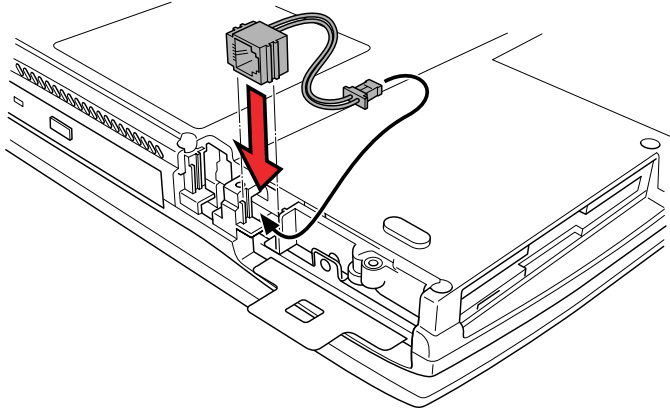
To install the modem cover and jack, follow the steps below and refer to following illustrations.

1. Remove one screw securing the cover.
2. Use a coin to release latches on the cover.



*Removing the cover*

3. Thread the modem cable into the hole shown below and fit the modem jack into its slot.



*Seating the modem jack*

4. Seat the cover and press to secure the latches. Be sure the jack fits the hole in the cover properly.
5. Secure the cover with one screw.

## Accessing the modem slot

To access the modem slot, you will need to move back the keyboard. Follow the steps below.

1. Turn the computer right side up.
2. Slide the display latch on the front of the computer to the right and open the display panel.
3. A plastic strip lies between the keyboard and the palm rest. To remove it, slip your fingernails or a thin object between the strip and the palm rest. Pry up to release six latches securing the strip.
4. A metal brace lies under the plastic strip at about the midpoint. Remove one screw securing the metal brace and lift it out.
5. Lift up the key board a little and move it back three or four centimetres. Be careful not to pull the keyboard's ribbon cable.

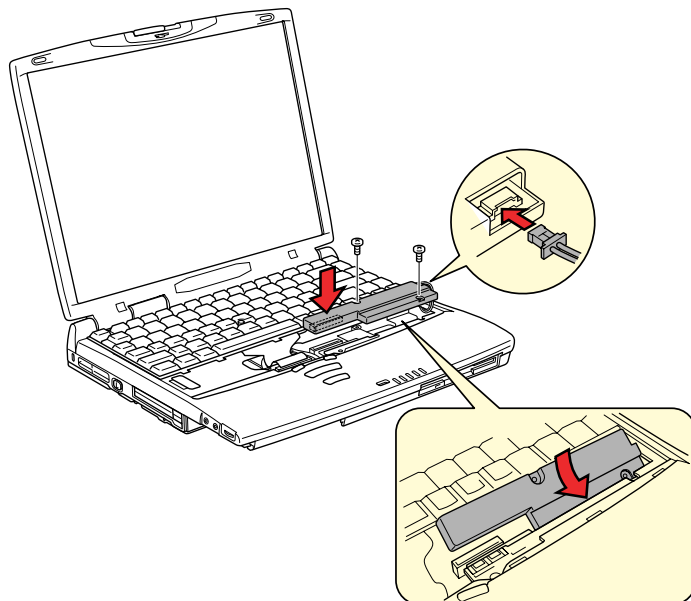


---

## Connecting the modem board

To connect the modem board, follow the steps below.

1. Connect the cable.
2. Align the connectors and seat the modem board. Press to ensure a firm connection.
3. Secure the modem board with two screws.



*Removing two screws and opening the keyboard*

## Replacing the keyboard

To replace the keyboard, follow the steps below.

1. Seat the keyboard. Be careful not to pinch or twist the ribbon cable.
2. Seat the metal keyboard brace and secure it with one screw.
3. Lay the plastic keyboard brace in place and press to secure the latches.

## Installing the battery pack

Refer to Chapter 6, [Power and Power-Up Modes](#) for details on installing the battery pack.

---

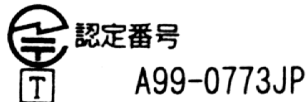
## Removing the international modem

To remove the modem.

1. Remove the battery
2. Move the keyboard back.
3. Remove the internal modem board.
4. Remove the modem jack and cable.
5. Secure the modem slot cover.
6. Replace the keyboard and secure the braces.
7. Install the battery pack.

Refer to the installation procedures for details.

The international modem is approved by Japan Approvals Institute for Telecommunications Equipment.



---

# Glossary

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

## A

**AccuPoint II:** A pointing device integrated into the Toshiba computer keyboard.

**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.

**analogue signal:** A signal whose characteristics such as amplitude and frequency vary in proportion to (are an analogue of) the value to be transmitted. Voice communications are analogue signals.

**ANSI:** American National Standards Institute. An organisation 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 build-up 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.

**AUTOEXEC.BAT:** A batch file that executes a series of MS-DOS commands and programs each time you start the computer. This is no longer necessarily used when booting Windows NT 4.0 and higher.

## 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.  
*See also* AUTOEXEC.BAT.

**billion byte (Bi.B):** A unit of data storage equal to 1,000,000,000 bytes.  
*See also* million byte.

**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 diskette (floppy disk) or hard disk. It is usually described in terms of kilobytes (KB), where one KB = 1024 bytes and megabytes (MB), where one MB = 1024 KB.

**Card Station IV:** A device that enables one-point connection to a number of peripheral devices and provides additional ports and slots.

**card:** Synonym for board. *See* board.

**CardBus:** An industry standard bus for 32-bit PC Cards.

**Centronics:** The printer manufacturer whose method of data transmission between a parallel printer and a computer has become an industry standard.

**CGA:** Colour/graphics adaptor. A video display protocol defined by the IBM Colour/Graphics Monitor Adaptor and its associated circuitry. This protocol supports two-colour 640x200 and four-colour 320x200 graphics, and 16-colour 640x200 and 320x200 text modes.

**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 parallel interface; 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 Hardware Setup or TSETUP 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).

**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 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.
- data:** Information that is factual, measurable or statistical that a computer can process, store, or retrieve.
- 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.
- Desk Station V Plus:** An expansion device that provides the computer with additional ports, slots and bays.
- device driver:** A program that controls communication between a specific peripheral device and the computer. The CONFIG.SYS file contains device drivers that MS-DOS loads when you turn the computer on.
- dialog box:** A Windows element that requires the user to provide further information, such as number of copies to print.
- 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.
- diskette:** A removable disk that stores magnetically encoded data. Also called a floppy disk.
- display:** A CRT, LCD, or other image producing device used to view computer output.
- documentation:** The set of manual 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).
- dual-scan supertwisted nematic (DSTN) display:** A thin-screen, passive matrix colour LCD that meets VGA standards.

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## E

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**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.

**EGA:** Enhanced Graphics Adaptor. A video display protocol defined by the IBM Enhanced Graphics Adaptor and its associated circuitry for direct drive TTL displays that supports 16-colour/monochrome 640x350 and 16-colour 640x200 and 320x200 graphics, and 16-colour 640x350 and 320x350 text modes.

**erase:** See delete.

**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.

**escape:** 1) A code (ASCII code 27), signalling 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.

**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.

**firmware:** A set of instructions built into the hardware which controls and directs a microprocessor's activities.

**fixed disk:** See hard disk.

**floppy disk drive (FDD):** An electromechanical device that reads and writes to floppy disks. See also diskette.

**floppy disk:** See diskette.

**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 labelled **F1** through **F12** that tell the computer to perform certain functions.



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## G

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***gigabyte (GB)***: A unit of data storage equal to 1024 megabytes. *See also* megabyte.

***GND***: Ground. An RS-232C signal used in the exchange of data between a computer and serial device.

***graphics***: Drawings, pictures, or other images, such as charts or graphs, to present information.

## H

---

***hard disk drive (HDD)***: An electromechanical device that reads and writes a hard disk. *See also* hard disk.

***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.

***hardware***: The physical electronic and mechanical components of a computer system: typically, the computer itself, external disk drives, etc. *See also* software and firmware.

***Hardware Setup***: A Toshiba utility that lets you set the parameters for various hardware components.

***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 dock/undock***: Connecting or disconnecting a device to or from the computer while the computer is on.

***hotkey***: 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.

---

## I

**I/O devices:** Equipment used to communicate with the computer and transfer data to and from it.

**I/O:** Input/output. Refers to acceptance and transfer of data to and from a computer.

**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.

**infrared port:** A cableless communications port capable of using infrared signals to send serial data.

**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.

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## 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

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**level 2 cache:** See cache.

**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 the large scale integration.

## M

---

**main board:** See motherboard.

**maths co-processor:** A circuit built into the processor that is dedicated to intensive math calculations.

**MDA:** Monochrome Display Adaptor. A video display protocol defined by the IBM Monochrome Display Adaptor and its associated circuitry for direct drive TTL displays that supports a monochrome 720x350 text mode.

**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.

**million byte:** A unit of data storage equal to 1,000,000 bytes.

**MMX:** Refers to microprocessors with additional instructions beyond the x86 standard. The instructions were developed on the basis of multimedia code requirements and thus improve the performance of multimedia applications.

---

**mode:** A method of operation, for example, the boot mode or the resume mode.

**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.

**MPEG:** Moving picture coding expert group is an industry standard architecture for compression of video signals.

## N

---

**non-system disk:** A formatted diskette (floppy disk) you can use to store programs and data but you cannot use to start the computer. *See* system disk.

**non-volatile 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 non-volatile 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.

**on-line 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

**parallel interface:** Refers to a type of information exchange that transmits information one byte (8 bits) at a time. *See also* serial interface.

**parallel:** Refers to two or more processes or events that can occur simultaneously, and without interfering with each other. *See also* serial.

**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, supervisor and eject.

**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.

**port replicator:** *See* Card Station II.

**port:** The electrical connection through which the computer sends and receives data to and from devices or other computers.

**Power Saver Utility:** 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 fibreglass, 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.

**RCA jack:** A single-pin connector that carries composite video signals, which include both contrast and colour information. *See also* S-video.

**restart:** Resetting a computer without turning it off (also called 'warm boot' or 'soft reset'). To restart the computer, press **Ctrl + Alt + Del** while the computer is on. *See also* boot.

**resume:** A feature that lets you turn off the power without first exiting a program and retain your data in RAM. When you turn on the computer, the screen appears the same as when you turned it off. Also called standby in Windows 98.

**RGB:** Red, green, and blue. A device that uses three input signals, each activating an electron gun for a primary additive colour (red, green, and blue) or port for using such a device. *See also* CRT.

**RJ11:** A modular telephone jack.

**ROM:** Read Only Memory: A non-volatile memory chip manufactured to contain information that controls the computer's basic operation. You cannot access or change information stored in ROM.

**RS-232C:** The Electronic Industries Association (EIA) interface standard that describes the 25-pin connector interface and control, data, and status signals that allow asynchronous communications between computers, printers, communications and other peripheral devices.

---

## S

- SCSI:** Small Computer System Interface is an industry standard interface for connection of a variety of peripheral devices.
- serial communications:** A communications technique that uses as few as two interconnecting wires to send bits one after another.
- serial interface:** Refers to a type of information exchange that transmits information sequentially, one bit at a time. Contrast: Parallel interface.
- serial port:** A communications port to which you can connect devices, such as a modem, mouse, or serial printer.
- serial:** The handling of data bits one after the other.
- 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.
- standby:** *See* resume.
- 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 colour LCD. The computer sets subpixels independently, each may emit a different degree of brightness. *See also* pixel.
- suspend:** *See* resume.
- S-video:** This connection provides separate lines for contrast and colour, which produces a video image superior to that produced by a composite connection. *See also* RCA jack.
- synchronous:** Having a constant time interval between successive bits, characters or events.
- system disk:** A disk that has been formatted with an operating system. For MS-DOS the operating system is contained in two hidden files and the COMMAND.COM file. You can boot a computer using a system disk. Also called an operating system disk.

---

## T

---

**TDIAG:** A Toshiba diagnostic program used for testing and configuring the computer system's resources.

**terminal:** A typewriter-like keyboard and CRT display screen connected to the computer for data input/output.

**TTL:** Transistor-transistor logic. A logic circuit design that uses switching transistors for gates and storage.

## U

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**USB:** The *Universal Serial Bus* is a way to connect up to 127 devices through one connector. A new development in 1997, this offers significantly improved ease of use and reliability than earlier expansion methods.

## 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 dock/undock:** Connecting or disconnecting a device to or from the computer while the computer is suspended.

**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.

**write protection:** A method for protecting a diskette (floppy disk) from accidental erasure.

## Z

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**ZV port:** Zoomed Video port dedicated to high-performance video data transfer.



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