TOSHIBA

User's Manual

Portable Personal Computer

4200/4300 series

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

Copyright

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

First edition November 1999

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Toshiba DVD-ROM drive SD-C2302** safety instruction

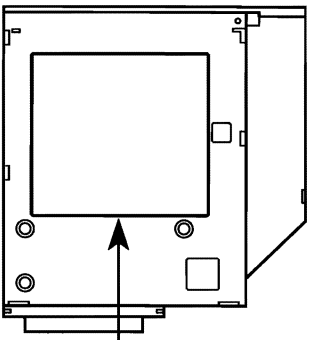
** means any letters or numbers.

CAUTIONS: 1. *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 authorized service location.*

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

3. *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 DATE OF MANUFACTURE.

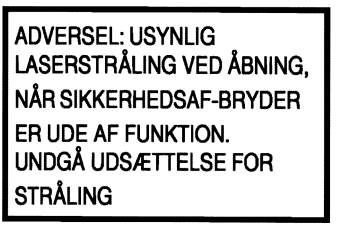
MANUFACTURED:

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

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

VORSICHT: *Dieses Gerät enthält ein Laser-System und ist als "LASERSCHUTZKLASSE 1 PRODUKT" klassifiziert. Für den richtigen Gebrauch dieses Modells lesen Sie bitte die Bedienungsanleitung sorgfältig durch und bewahren diese bitte als Referenz auf. Falls Probleme mit diesem Modell auftreten, benachrichtigen Sie bitte die nächste "autorisierte Service-Vertretung". Um einen direkten Kontakt mit dem Laserstrahl zu vermeiden darf das Gerät nicht geöffnet werden.*

ADVARSEL: *Denne mærking er anbragt udvendigt på apparatet og indikerer, at apparatet arbejder med laserstråler af klasse 1, hviket betyder, at der anvendes laserstrlier af svageste klasse, og at man ikke på apparatets yderside kan bilve udsat for utilladellg kraftig stråling.*



APPARATET BOR KUN ÅBNES AF FAGFOLK MED SÆRLIGT KENDSKAB TIL APPARATER MED LASERSTRÅLER!

Indvendigt i apparatet er anbragt den her gengivne advarselsmækning, som advarer imod at foretage sådanne indgreb i apparatet, at man kan komme til at udsætte sig for laserstråling.

OBS! *Apparaten innehåller laserkomponent som avger laserstråining överstigande gränsen för laserklass 1.*

VAROITUS. *Suojakoteloa si saa avata. Laite sisältää laserdiodin, joka lähetää näkymätöntä silmilie vaarallista lasersäteilyä.*

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.*

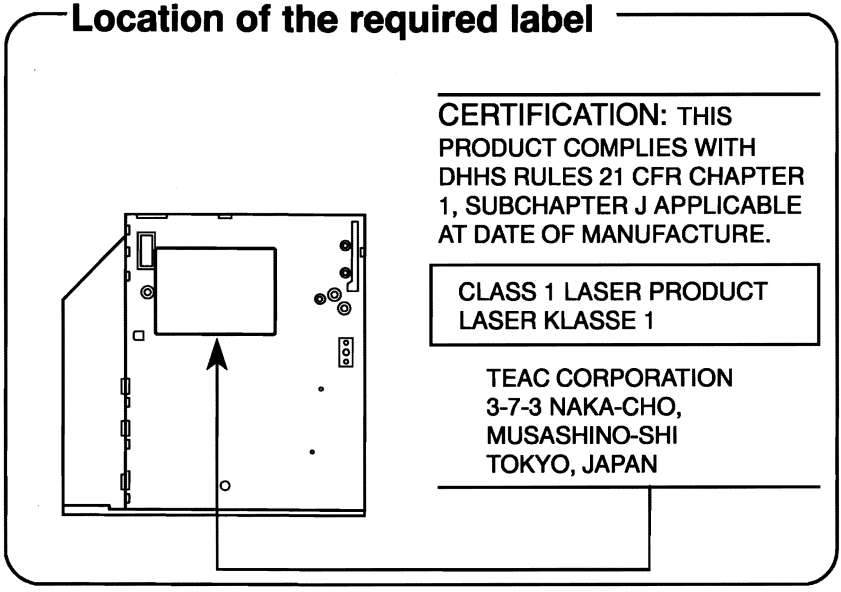
VORSICHT: *DIE VERWENDUNG VON ANDEREN STEURUNGEN ODER EINSTELLUNGEN ODER DAS DURCHFÜHREN VON ANDEREN VORGÄNGEN ALS IN DER BEDIENUNGSANLEITUNG BESCHRIEBEN KÖNNEN GEFÄHRLICHE STRAHLENEXPOSITIONEN ZUR FOLGE HABEN.*

TEAC CD-ROM drive CD-224E safety instruction

CAUTIONS: 1. 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 authorized service location.

2. *Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.*
3. *To prevent direct exposure to the laser beam, do not try to open the enclosure.*

Location of the required label



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

VORSICHT: *Dieses Gerät enthält ein Laser-System und ist als "LASERSCHUTZKLASSE 1 PRODUKT" klassifiziert. Für den richtigen Gebrauch dieses Modells lesen Sie bitte die Bedienungsanleitung sorgfältig durch und bewahren diese bitte als Referenz auf. Falls Probleme mit diesem Modell auftreten, benachrichtigen Sie bitte die nächste "autorisierte Service-Vertretung". Um einen direkten Kontakt mit dem Laserstrahl zu vermeiden darf das Gerät nicht geöffnet werden.*

CLASS 1 LASER PRODUCT
LASERSCHUTZKLASSE 1
PRODUKT
TO EN60825

ADVARSEL: *Denne mærking er anbragt udvendigt på apparatet og indikerer, at apparatet arbejder med laserstråler af klasse 1, hviket betyder, at der anvendes laserstrlier af svageste klasse, og at man ikke på apparatets yderside kan bilve udsat for utilladellg kraftig stråling.*

ADVERSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAF-BRYDER ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING

APPARATET BOR KUN ÅBNES AF FAGFOLK MED SÆRLIGT KENDSKAB TIL APPARATER MED LASERSTRÅLER!

Indvendigt i apparatet er anbragt den her gengivne advarselsmækning, som advarer imod at foretage sådanne indgreb i apparatet, at man kan komme til at udsætte sig for laserstråling.

OBS! *Apparaten innehåller laserkomponent som avger laserstråining överstigande gränsen för las2erklass 1.*

VAROITUS. *Suojakoteloa si saa avata. Laite sisältää laserdiodin, joka lähetää näkymätöntä silmilie vaarallista lasersäteilyä.*

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.*

VORSICHT: *DIE VERWENDUNG VON ANDEREN STEURUNGEN ODER EINSTELLUNGEN ODER DAS DURCHFÜHREN VON ANDEREN VORGÄNGEN ALS IN DER BEDIENUNGSANLEITUNG BESCHRIEBEN KÖNNEN GEFÄHRLICHE STRAHLENEXPOSITIONEN ZUR FOLGE HABEN.*

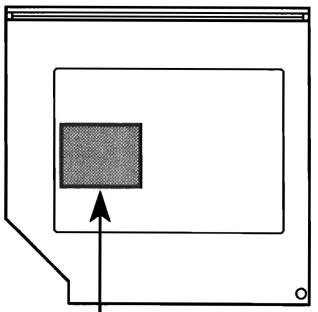
Toshiba CD-ROM drive XM-1902B safety instruction

CAUTIONS: 1. 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 authorized service location.

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

3. *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.

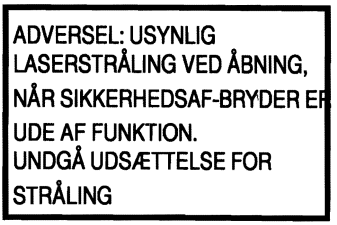
MANUFACTURED:

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME
MINATO-KU, TOKYO 105-0081, JAPAN

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

VORSICHT: *Dieses Gerät enthält ein Laser-System und ist als "LASERSCHUTZKLASSE 1 PRODUKT" klassifiziert. Für den richtigen Gebrauch dieses Modells lesen Sie bitte die Bedienungsanleitung sorgfältig durch und bewahren diese bitte als Referenz auf. Falls Probleme mit diesem Modell auftreten, benachrichtigen Sie bitte die nächste "autorisierte Service-Vertretung". Um einen direkten Kontakt mit dem Laserstrahl zu vermeiden darf das Gerät nicht geöffnet werden.*

ADVARSEL: *Denne mærking er anbragt udvendigt på apparatet og indikerer, at apparatet arbejder med laserstråler af klasse 1, hviket betyder, at der anvendes laserstrlier af svageste klasse, og at man ikke på apparatets yderside kan bilve udsat for utilladellg kraftig stråling.*



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***OBS!** Apparaten innehåller laserkomponent som avger laserstråining överstigande gränsen för las2erklass 1.*

***VAROITUS.** Suojakoteloa si saa avata. Laite sisältää laserdiodin, joka lähetää näkymätöntä silmilie vaarallista lasersäteilyä.*

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Modem warning notice

Modems preinstalled in computers with the following model numbers can be used only in the United States or Canada.

PS4**U-*****

PS4**C-*****

The asterisks represent any character.

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 confirm with the additional requirements conditional in EG 201 121.

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

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

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

Japan regulations

Country selection

If you are using the computer in Japan, technical regulations described in the Telecommunications Business Law require that you select the Japan country mode. It is illegal to use the modem in Japan with any other selection.

Redial

Up to two redial attempts can be made. If more than two redial attempts are made, the modem will return `Black Listed`. If you are experiencing problems with the Black Listed code, set the interval between redials at one minute or longer.

Japan's Telecommunications Business Law permits up to two redials on analogue telephones, but the redials must be made within a total of three minutes.

Pursuant to FCC CFR 47, Part 68:

When you are ready to install or use the modem, call your local telephone company and give them the following information:

- ❑ The telephone number of the line to which you will connect the modem
- ❑ The registration number that is located on the device

The FCC registration number of the modem will be found on either the device which is to be installed, or, if already installed, on the bottom of the computer outside of the main system label.

- ❑ The Ringer Equivalence Number (REN) of the modem, which can vary. For the REN of your modem, refer to your computer's user's guide.

The modem connects to the telephone line by means of a standard jack called the USOC RJ11C.

Type of service

Your modem is designed to be used on standard-device telephone lines. Connection to telephone company-provided coin service (central office implemented systems) is prohibited. Connection to party lines service is subject to state tariffs. If you have any questions about your telephone line, such as how many pieces of equipment you can connect to it, the telephone company will provide this information upon request.

Telephone company procedures

The goal of the telephone company is to provide you with the best service it can. In order to do this, it may occasionally be necessary for them to make changes in their equipment, operations, or procedures. If these changes might affect your service or the operation of your equipment, the telephone company will give you notice in writing to allow you to make any changes necessary to maintain uninterrupted service.

If problems arise

If any of your telephone equipment is not operating properly, you should immediately remove it from your telephone line, as it may cause harm to the telephone network. If the telephone company notes a problem, they may temporarily discontinue service. When practical, they will notify you in advance of this disconnection. If advance notice is not feasible, you will be notified as soon as possible. When you are notified, you will be given the opportunity to correct the problem and informed of your right to file a complaint with the FCC. In the event repairs are ever needed on your modem, they should be performed by Toshiba Corporation or an authorized representative of Toshiba Corporation.

Disconnection

If you should ever decide to permanently disconnect your modem from its present line, please call the telephone company and let them know of this change.

Fax branding

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity or individual sending the message and the telephone number of the sending machine or such business, other entity or individual. In order to program this information into your fax modem, you should complete the setup of your fax software before sending messages.

Instructions for IC CS-03 certified equipment

1 NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection.

The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

> ***CAUTION:*** *Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.*

2 The user manual of analog equipment must contain the equipment's Ringer Equivalence Number (REN) and an explanation notice similar to the following:

The Ringer Equivalence Number (REN) of the modem, which can vary. For the REN of your modem, refer to your computer's user's guide.

> ***NOTICE:*** *The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.*

3 The standard connecting arrangement (telephone jack type) for this equipment is jack type(s): USOC RJ11C.

Notes for Users in Australia and New Zealand

Modem warning notice for Australia

Modems connected to the Australian telecoms network must have a valid Austel permit. This modem has been designed to specifically configure to ensure compliance with Austel standards when the country selection is set to Australia. The use of other country setting while the modem is attached to the Australian PSTN would result in you modem being operated in a non-compliant manner. To verify that the country is correctly set, enter the command ATI which displays the currently active setting.

To set the country permanently to Australia, enter the following command sequence:

```
AT%TE=1
ATS133=1
AT&F
AT&W
AT%TE=0
ATZ
```

Failure to set the modem to the Australia country setting as shown above will result in the modem being operated in a non-compliant manner. Consequently, there would be no permit in force for this equipment and the Telecoms Act 1991 prescribes a penalty of $12,000 for the connection of non-permitted equipment.

Notes for use of this device in New Zealand

- The grant of a Telepermit for a device in no way indicates Telecom acceptance of responsibility for the correct operation of that device under all operating conditions. In particular the higher speeds at which this modem is capable of operating depend on a specific network implementation which is only one of many ways of delivering high quality voice telephony to customers. Failure to operate should not be reported as a fault to Telecom.
- In addition to satisfactory line conditions a modem can only work properly if:
  - a/ it is compatible with the modem at the other end of the call and
  - b/ the application using the modem is compatible with the application at the other end of the call - e.g., accessing the Internet requires suitable software in addition to a modem.
- This equipment shall not be used in any manner which could constitute a nuisance to other Telecom customers.

- Some parameters required for compliance with Telecom's PTC Specifications are dependent on the equipment (PC) associated with this modem. The associated equipment shall be set to operate within the following limits for compliance with Telecom Specifications:

  a/ There shall be no more than 10 call attempts to the same number within any 30 minute period for any single manual call initiation, and

  b/ The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next.

  c/ Automatic calls to different numbers shall be not less than 5 seconds apart.

- Immediately disconnect this equipment should it become physically damaged, and arrange for its disposal or repair.

- The correct settings for use with this modem in New Zealand are as follows:

  ATB0 (CCITT operation)

  AT&G2 (1800 Hz guard tone)

  AT&P1 (Decadic dialing make-break ratio =33%/67%

  ATS0=0 (not auto answer)

  ATS6=2, 3, 4, 5, 6 or 7 (Blind dial delay, factory default value of 2 is recommended)

  ATS7=less than 90 (Time to wait to carrier after dialing)

  ATS10=less than 150 (loss of carrier to hangup delay, factory default of 14 recommended)

  ATS11=95 (DTMF dialing on/off duration=95 ms)

  ATX2 (Dial tone detect, but not (U.S.A.) call progress detect)

- When used in the Auto Answer mode, the SO register must be set with a value between 2 and 10. This ensures:

  (a) a person calling your modem will hear a short burst of ringing before the modem answers. This confirms that the call has been successfully switched through the network.

  (b) caller identification information (which occurs between the first and second ring cadences) is not destroyed.

- The preferred method of dialing is to use DTMF tones (ATDT...) as this is faster and more reliable than pulse (decadic) dialing. If for some reason you must use decadic dialing, your communications program must be set up to record numbers using the following translation table as this modem does not implement the New Zealand "Reverse Dialing" standard.

  Number to be dialed: 0 1 2 3 4 5 6 7 8 9

  Number to program into computer: 0 9 8 7 6 5 4 3 2 1

  Note that where DTMF dialing is used, the numbers should be entered normally.

- The transmit level from this device is set at a fixed level and because of this there may be circumstances where the performance is less than optimal. Before reporting such occurrences as faults, please check the line with a standard Telepermitted telephone, and only report a fault if the phone performance is impaired.

- It is recommended that this equipment be disconnected from the Telecom line during electrical storms.

- When relocating the equipment, always disconnect the Telecom line connection before the power connection, and reconnect the power first.

- This equipment may not be compatible with Telecom Distinctive Alert cadences and services such as FaxAbility.

  NOTE THAT FAULT CALLOUTS CAUSED BY ANY OF THE ABOVE CAUSES MAY INCUR A CHARGE FROM TELECOM

General conditions

As required by PTC 100, please ensure that this office is advised of any changes to the specifications of these products which might affect compliance with the relevant PTC Specifications.

The grant of this Telepermit is specific to the above products with the marketing description as stated on the Telepermit label artwork. The Telepermit may not be assigned to other parties or other products without Telecom approval.

A Telepermit artwork for each device is included from which you may prepare any number of Telepermit labels subject to the general instructions on format, size and colour on the attached sheet.

The Telepermit label must be displayed on the product at all times as proof to purchasers and service personnel that the product is able to be legitimately connected to the Telecom network.

The Telepermit label may also be shown on the packaging of the product and in the sales literature, as required in PTC 100.

The charge for a Telepermit assessment is $337.50. An additional charge of $337.50 is payable where an assessment is based on reports against non-Telecom New Zealand Specifications. $112.50 is charged for each variation when submitted at the same time as the original.

An invoice for $NZ1237.50 will be sent under separate cover.

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Preface

Congratulations on your purchase of the 4200/4300 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 4200/4300 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 familiarize 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 organized, 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* to learn the TSETUP utility and how to set passwords.

Manual contents

This manual is composed of 9 chapters, eight appendixes, a glossary, and an index.

Chapter 1, *Introduction*, is an overview of the computer's features, utilities, 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. Be sure to read the section *Selecting the operating system*.

Chapter 4, *Operating Basics*, includes instructions on using the following devices: AccuPoint II, CD-ROM/DVD-ROM drive, diskette drive and internal modem. It also provides tips on care of the computer, diskettes and DVD/CD-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 in MS-DOS®. 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 Appendixes 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.

DISKCOPY A: B: 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.

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.

Messages

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

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

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

General Precautions

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

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

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 injury

Avoid prolonged physical contact with the bottom of the computer. If the computer is used for long periods, its surface can become very warm. While the temperature will not feel hot to the touch, if you maintain physical contact with the computer for a long time (if you rest the computer on your lap, for example) your skin might suffer low-heat injury.

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.

Pressure or impact damage

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

Chapter 1

Introduction

Chapter 1

Introduction

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

> ***CAUTION:*** *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:

- ❑ 4200/4300 Series Portable Personal Computer
- ❑ Universal AC adaptor and power cord
- ❑ Six spare AccuPoint II (pointing device) caps: two blue, one green and three gray. One gray cap has a rough top.
- ❑ The following software preinstalled on your hard disk:

> ***NOTE:*** *Your computer comes with either Windows 95 and Windows 98 preinstalled or Windows NT and Windows 2000 preinstalled. You must select one operating system. When you select one, the other will be permanently deleted from your computer.*

Windows 95/98

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

- Microsoft® Windows 95
- Toshiba Utilities
- RingCentral® (only with models with preinstalled modem)
- Modem drivers (only with models with preinstalled modem)
- Display Driver for Windows
- MouseWare®

- Sound driver
- Hypertext online help
- DVD Video Player (only on models with a DVD drive)

If you select 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.

❑ Product Recovery CD-ROM

❑ Your computer's documentation:

- *4200/4300 Series Personal Computer User's Manual*
- Microsoft Windows 95/98 manual package
- International Limited Warranty (ILW) Instruction
  (This instruction is included only with computers sold in ILW supported areas.)

Windows NT/2000

If you select Windows NT, the following software will be retained on the hard disk:

❑ The following software is preinstalled:

- Microsoft Windows NT
- Microsoft Internet Explorer 5
- Toshiba Windows Utilities
- Toshiba Power Management System
- Card Wizard™
- Ring Central®
- IntelliSync™, infrared device driver and file transfer/printer redirector application
- Display Drivers for Windows
- MouseWare®
- Sound Driver and audio applications
- Modem driver (only with models with preinstalled modem)
- Toshiba Docking Service
- Supervisor Password Utility

If you select Windows 2000, the following software will be retained on the hard disk:

- ❑ The following software is preinstalled:
  - Microsoft Windows 2000
  - Toshiba Utilities
  - Display Driver
  - Sound Driver
  - Modem driver (only with models with preinstalled modem)
  - DVD Video Player (only on models with a DVD drive)
- ❑ Your computer's documentation:
  - Windows NT/2000 manual package
  - The same documentation that is supplied with Windows 95/98.
- ❑ CD-ROMs and diskettes
  - Product Recovery CD-ROM
  - Intel LANDesk® Client Manager (one CD-ROM)

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:

Microprocessor — The computer is equipped with a Mobile Intel® Pentium® III or a Mobile Intel® Celeron™ processor which incorporates a math co-processor and 32 KB cache memory.

- 4260: Mobile Pentium® III processor 450 MHz
- 4270: Mobile Intel® Celeron™ processor 500 MHz
- 4280: Mobile Pentium® III processor 500 MHz
- 4320: Mobile Pentium® III processor 600 MHz Intel® SpeedStep™ technology
- 4340: Mobile Pentium® III processor 650 MHz Intel® SpeedStep™ technology

Level 2 cache	A level 2 cache maximizes performance. 4270: 128 KB 4260/4280/4320/4340: 256 KB
Memory	The computer comes with built-in 64 MB of Random Access Memory (RAM). Memory can be expanded up to 320 MB.
Video RAM	The computer provides 8 MB of RAM for video display.
Battery pack	The computer is powered by a rechargeable lithium-ion battery pack.
RTC battery	The computer has an internal battery that backs up the Real Time Clock (RTC) and calendar.
Keyboard	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 95/98/NT/2000; one activates the **Start** 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, *The Keyboard*, for details.
AccuPoint II	This pointer control stick, located in the center of the keyboard, provides convenient control of the cursor without requiring desk space for a mouse.
Display	The computer supports high-resolution video graphics and employs an AGP bus for superior performance. The screen 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. The following screens are available: 13.0" DSTN, 800 horizontal x 600 vertical pixels, up to 16 M colors 13.3" XGA-TFT, 1024 horizontal x 768 vertical pixels, up to 16 M colors 14.1" XGA-TFT, 1024 horizontal x 768 vertical pixels up to 16 M colors 15.0" XGA-TFT, 1024 horizontal x 768 vertical pixels up to 16 M colors

Graphics controller The graphics controller incorporates a 3D graphics accelerator to maximize video performance and enable flickerless display. It also enables display of up to 800 x 600 or 1024 x 768 pixels on the computer's LCD panel and up to 1600 x 1200 pixels on a high-resolution external monitor.

AC adaptor The universal AC adaptor provides power to the system and recharges the batteries. It comes with a detachable power cord.

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, *The Grand Tour*.

Hard disk drive The computer has an integrated, 2 1/2" hard disk drive (HDD) for nonvolatile storage of data and software. It comes in the following sizes.

- 5.59 gigabytes (6.0 billion bytes)
- 11.24 gigabytes (12.07 billion bytes)
- 16.90 gigabytes (18.14 billion bytes)

Diskette drive A 3 1/2" 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 disks 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

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

Sound system

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.

Parallel port

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.

Serial port

A standard, 9-pin, serial port lets you connect such serial devices as a serial printer, mouse, bar code reader, or Optical Character Reader (OCR). This port supports 16550 Universal Asynchronous Receiver/Transmitter (UART) compliant high-speed data transfer.

External monitor port

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.

Universal Serial Bus port

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 **USB Legacy** item in TSETUP to **Enabled**. Refer to Chapter 8, *Setup and Password Security* for details.

PS/2™ mouse/ keyboard port — This port lets you connect a PS/2 mouse or PS/2 keyboard to the computer.

PC Card Slots — 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 9, *Optional Devices*.

Video out — This RCA video jack lets you transfer NTSC or PAL data to external devices.

Memory expansion socket — Two sockets are available for installation of 32, 64 or 128 MB memory modules.

Internal modem — An internal modem provides capability for data and fax communication. It supports ITU-T V.90 and K56 flex™. Refer to Appendix E for details. The speed of data transfer and fax depends on analog telephone line conditions. It has a modem jack for connecting to a telephone line. It is not supported in some markets.

Infrared port — 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.

Plug and Play — 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.

Special features

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

Hotkeys	Key combinations let you quickly modify the system configuration directly from the keyboard without running a system configuration program.
Display automatic power off	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/NT, you can specify the time in the *Display Auto Off* window of Power Save Modes in Power Saver. If you use Windows 98/2000, you can specify the time in the *Turn off monitor* item of the Power Save Mode window of the Power Save Modes in Power Saver.
HDD automatic power off	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/NT, you can specify the time in the *HDD Auto Off* window of Power Save Modes in Power Saver. If you use Windows 98/2000, you can specify the time in the *Turn off hard disks* item of the *Power Save Mode* window of the Power Save Modes in Power Saver.
System automatic power off	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/NT, you can specify the time in the *System* window of Power Save Modes in Power Saver. If you use Windows 98/2000, you can specify the time in the *System standby* item of the Power Save Mode window of Power Save Modes in Power Saver.
Keypad overlay	Dark gray keys with gray lettering make up the keypad overlay, which lets you use the keyboard for ten-key operations or cursor control.
Intelligent power supply	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.

Battery save mode	This feature lets you save battery power. If you use Windows 95/NT, you can specify the Power Save Mode in the *Power Save Modes* window in Power Saver. If you use Windows 98/2000, you can specify the Power Save Mode in the *Running on batteries* item of the Power Save Modes window in Power Saver.
Power on password	Two levels of password security are available: supervisor and user. This feature prevents unauthorized access to your computer.
Instant security	A hotkey function blanks the screen and disables the computer providing for quick and easy data security.
Panel power on/off	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/NT, you can specify the setting in the *System* window of Power Save Modes in Power Saver. If you use Windows 98/2000, you can specify the setting in the *When I close the lid* item of the System Power Mode window of the Power Save Modes in Power Saver.
Low battery automatic suspend	When battery power is exhausted to the point that computer operation cannot be continued, the system automatically enters Hibernation and shuts down.
Auto power on	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/NT, you can specify the time in the *Auto Power On* window in Power Saver. If you use Windows 98/2000, you can specify the time in *Scheduled Tasks*.
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 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 feature also works with a PC Card modem in Windows 98. It works only in Resume (Suspend or Standby) mode.

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/NT, use the System window of Power Save Modes in Power Saver. In Windows 98/2000, use Fan window in Power Save Modes.

- Maximum performance (Windows 95/NT) / Auto 1 (Windows 98/2000) — Turns on the fan first, then if necessary lowers CPU processing speed.
- Performance (Windows 95/NT) / Auto 2 (Windows 98/2000) — Uses a combination of fan and lowering the CPU processing speed.
- Battery optimized (Windows 95/NT) / Auto 3 (Windows 98/2000) — 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.

NOTE: *You cannot use Hibernation under the following conditions:*

1. *You are using Drive Space for Drive C or other compression utility.*
2. *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.

NOTE: The `Resume` *mode is called* `Suspend/Resume` *in Windows 95/NT and* `Standby` *in Windows 98/2000. The functions are essentially the same.*

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

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 readme files.

Power Saver Utility	To access this power savings management program, open the Control Panel and double-click the Power Saver icon.
Hardware setup	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 Start button, point to settings and click Control Panel. In the Control Panel, double-click the Toshiba Hardware Setup icon.
Fn-esse	This Windows program lets you define your own "short-cut" keys to quickly launch applications and speed your work in Windows. To start the utility, click the Windows Start button, point to Programs, point to Toshiba Utilities and click Fn-esse.
TSETUP	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, *Setup and Password Security.*
DVD Video Player (DVD models only)	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 Start, point to Programs, point to Mediamatics DVD Express, then click Mediamatics DVD Player.
MouseWare	The Mouse Control utility lets you set the properties and functions for the AccuPoint II or PS/2 mouse. To start the utility, click the Windows Start button, point to Settings and click Control Panel. In the Control Panel, double-click the Mouse icon.

Options

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

Memory expansion	A 32, 64, or 128 MB memory module can be installed in the computer.
Battery pack	An additional battery pack can be purchased from your Toshiba dealer. Use it as a spare to increase your computer operating time.
AC adaptor	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.
Battery charger	A battery charger lets you charge extra batteries outside the computer.
Enhanced Port Replicator III	The Enhanced Port Replicator III provides the ports available on the computer, in addition to MIDI/Joystick, audio line-out and separate PS/2 mouse 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 an Enhanced Port Replicator III.
Enhanced Port Replicator IV	The Enhanced Port Replicator 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 that can be used in addition to the slots on the computer.
Spacer	Connect the computer to an optional spacer for connection to an Enhanced Port Replicator III.
Port Replicator	The Port Replicator provides the ports available on the computer, in addition to MIDI/Joystick, audio line-out and separate PS/2 mouse and PS/2 keyboard ports. It also has two USB ports.
Keytop sets	You can customize your keyboard for a variety of languages by replacing the keytops.
Security lock	A slot is available to attach a security cable to the computer to deter theft.

Chapter 2

The Grand Tour

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

Figure 2-1 shows the computer's front with its display panel in the closed position.

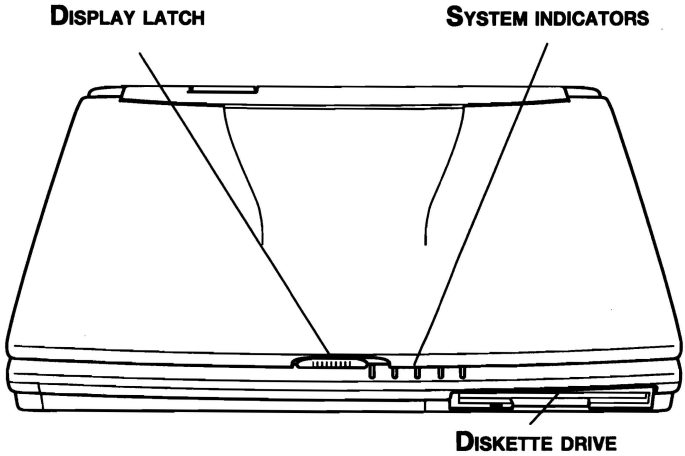


Figure 2-1 Front of the computer with display closed

Diskette drive 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.

System indicators 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.

Display latch This latch secures the LCD panel in its closed position. Slide the latch to open the display.

Left side

Figure 2-2 shows the computer's left side.

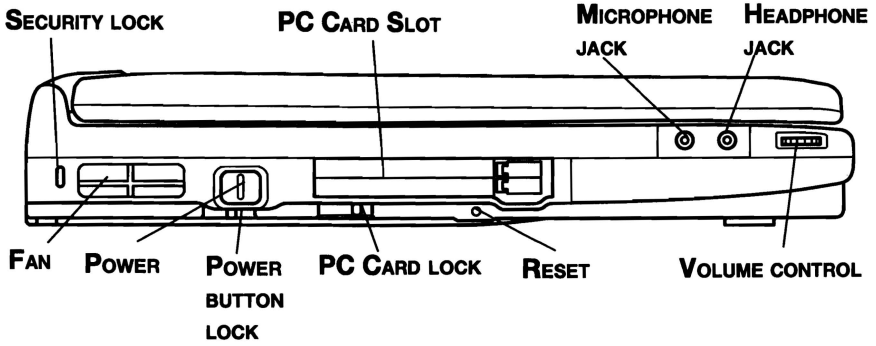


Figure 2-2 The left side of the computer

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.

CAUTION: 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 speaker is 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.

CAUTION: 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.

CAUTION: 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

Figure 2-3 shows the computer's right side.

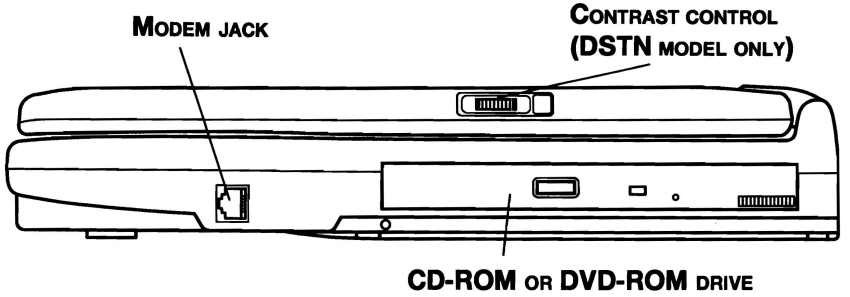


Figure 2-3 The right side of the computer

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 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.

Modem jack In areas where an internal modem is installed as standard equipment, there is a modem jack that lets you use a modular cable to connect the modem directly to a telephone line. The modem is not supported in some marketing regions.

CAUTIONS: 1. In case of a lighting storm, unplug the modem cable from the telephone jack.

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

Contrast control Use this dial to adjust the screen's readability (DSTN only).

Back side

Figure 2-4 shows the computer's back panel.

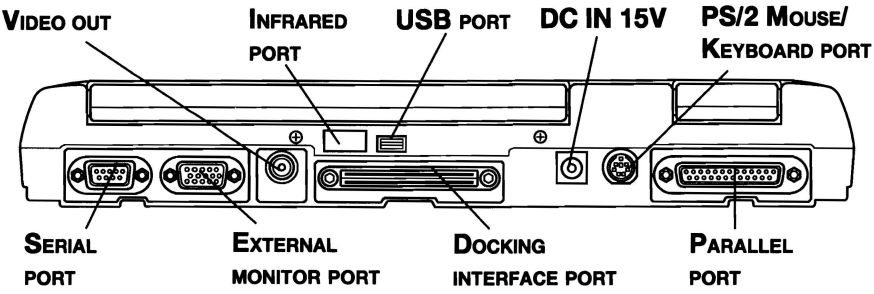


Figure 2-4 The back side of the computer

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 Enhanced Port Replicator III/IV or Port Replicator described in the *Options* section of Chapter 1, *Introduction*. It is protected by a rubber cover.

Video out

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

Underside

Figure 2-5 shows the underside of the computer. Make sure the display is closed before turning over your computer.

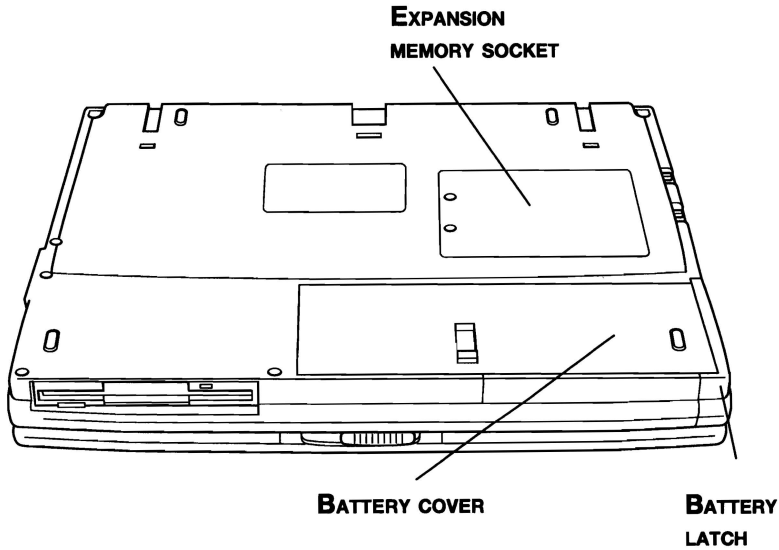
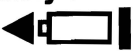


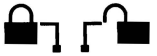
Figure 2-5 The underside of the computer

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 socket

Use this socket 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*.

Front with the display open

Figure 2-6 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.

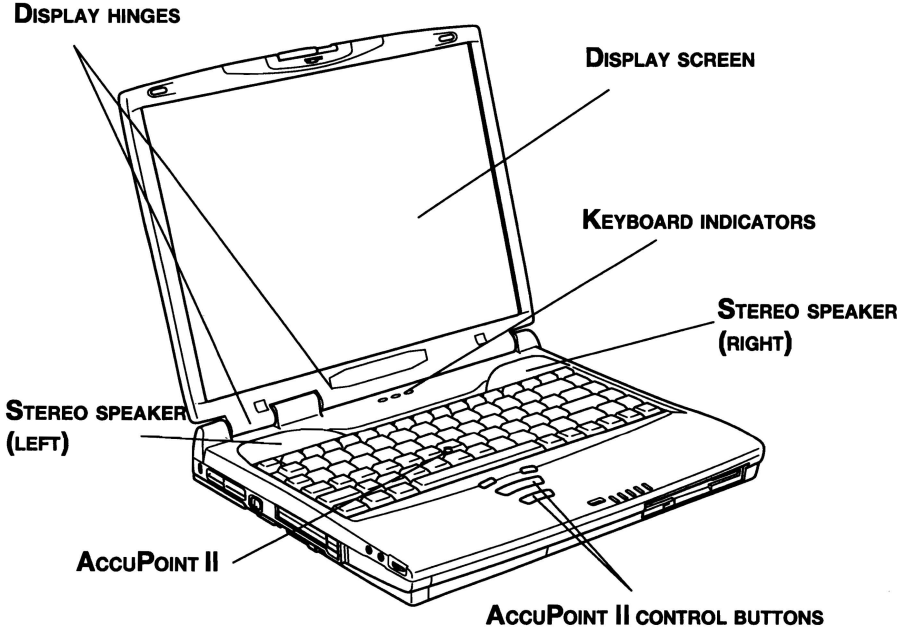


Figure 2-6 The 14.1 display model

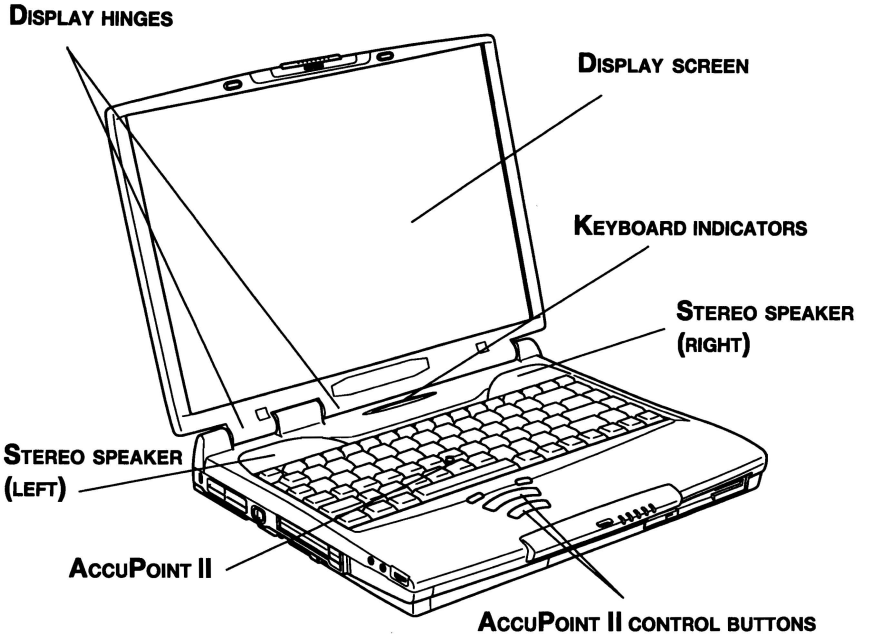


Figure 2-7 The 15.0"display model

Display screen The LCD displays high-contrast text and graphics. The DSTN screen displays up to 800 x 600 pixels or dots and the TFT screen displays up to 1024 x 768. Refer to *Appendix B*.

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.

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

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.

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

AccuPoint II A pointer control device located in the center of the keyboard is used to control the on-screen pointer. Refer to the *Using AccuPoint II* section in Chapter 4, *Operating Basics*.

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

Figures 2-7 and 2-8 show the indicator lights, which light when various computer operations are in progress.

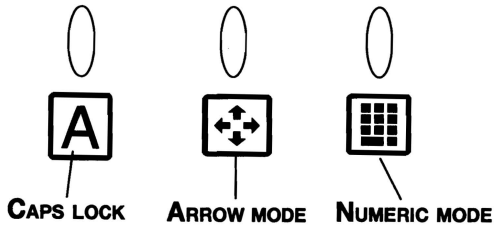


Figure 2-8 The keyboard indicators

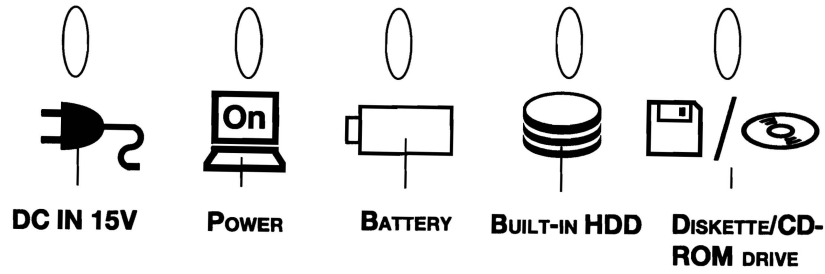


Figure 2-9 The system indicators

Keyboard indicators

Caps Lock

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

Arrow mode

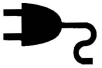
When the **Arrow mode** icon lights green, you can use the keypad overlay (light gray labeled keys) as cursor keys. Refer to the *Keypad overlay* section in Chapter 5, *The Keyboard.*

Numeric mode

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

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.

NOTE: 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 drive 

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

Drives

This section describes the 3 1/2" diskette, DVD-ROM and CD-ROM drives.

3 1/2" diskette drive

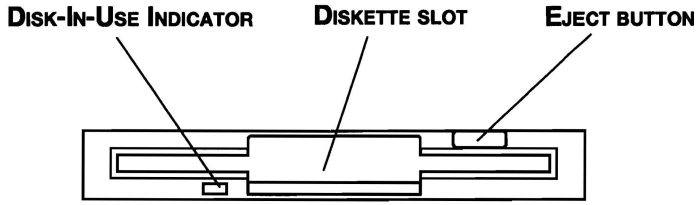


Figure 2-10 The diskette drive

The 3 1/2" diskette drive lets you use either double density (720 KB) or high density (1.44 MB) 3 1/2" diskettes for data transfer and storage.

Disk-In-Use Indicator This indicator lights when the diskette is being accessed.

Diskette slot Insert diskettes in this slot.

Eject button 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.

CAUTION: 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

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.

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

DVD	2.5-speed (center)	6-speed (outer edge)
CD	10.3-speed (center)	24-speed (outer edge)

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)

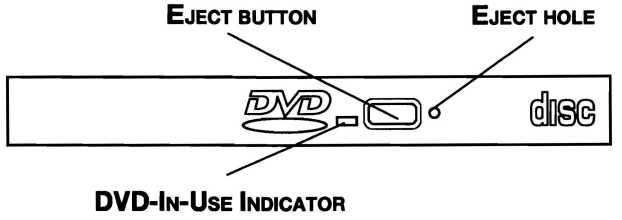


Figure 2-11 The DVD-ROM drive

Eject button Press the eject button to open the drawer partially.

Eject hole Insert a slender object to open the drawer when the power to the computer is off.

DVD-In-Use Indicator This indicator lights when the DVD is being accessed.

CAUTION: 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.

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.

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

CD-ROM drive

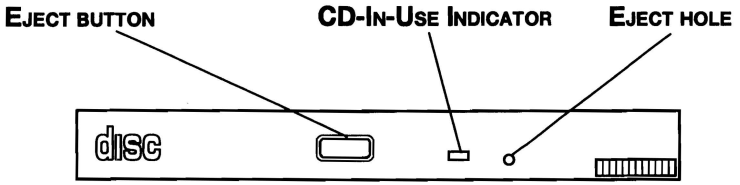


Figure 2-12 The CD-ROM drive

The full-size, maximum 24-speed CD-ROM drive lets you run either 12 cm (4.72") or 8 cm (3.15") compact disks 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
- CD-R (read only)
- CD-Rewritable (read only)

Eject button Press the eject button to open the drawer partially.

CD-In-Use Indicator This indicator lights when the CD is being accessed.

Eject hole Insert a slender object to open the drawer when the power to the computer is off.

***CAUTION:** 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.*

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.

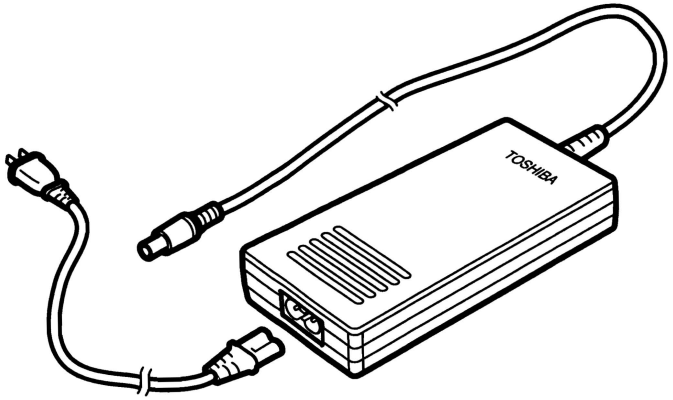


Figure 2-13 The AC adaptor

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

❑ *4200 series (15.0" TFT model)*	*60 W, 15 VDC, 4 amperes*
❑ *4300 series*	*60 W, 15 VDC, 4 amperes*
❑ *All other models*	*45 W, 15 VDC, 3 amperes*

Chapter 3

Getting Started

Getting Started

Chapter 3

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
- ❑ Selecting an operating system
- ❑ Turning off the power
- ❑ Restarting the computer
- ❑ Restoring the preinstalled software from the Product recovery CD-ROM

NOTE: All users should be sure to carefully read the section "Turning on the power." This section explains how to select one of the two preinstalled operating systems (OS), which is the first thing you must do after turning on the power.

Setting up your work space

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 and to figure 3-1.

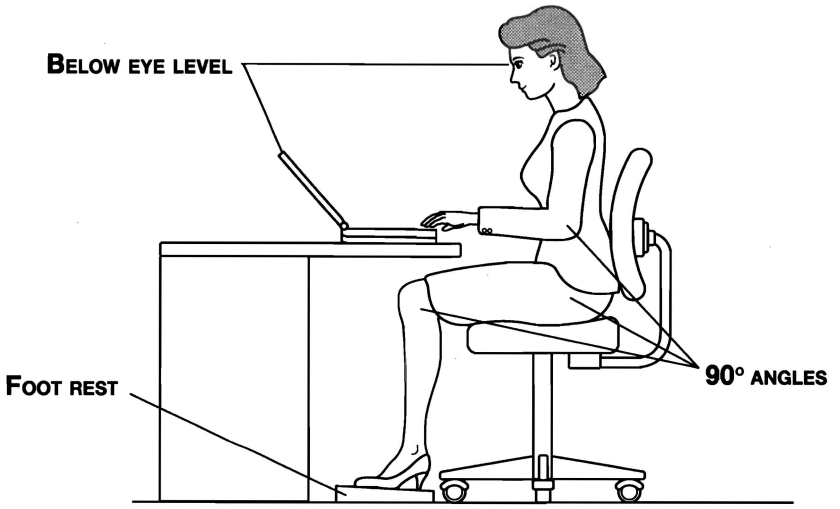


Figure 3-1 Posture and positioning of the computer

- ❑ 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 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.*

> ***CAUTION:*** *Use of the wrong adaptor could damage your computer. Toshiba assumes no liability for any damage in such case. The 4200/4300 series computers use different amperages:*
>
> - *4.0 amperes for 4200 (15.0" TFT model)/4300 series computers*
> - *3.0 amperes for all other models*

1. Connect the power cord to the AC adaptor.

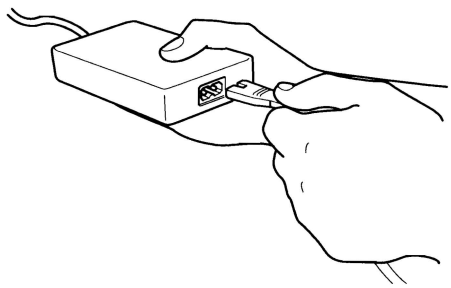


Figure 3-2 Connecting the power cord to the AC adaptor

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

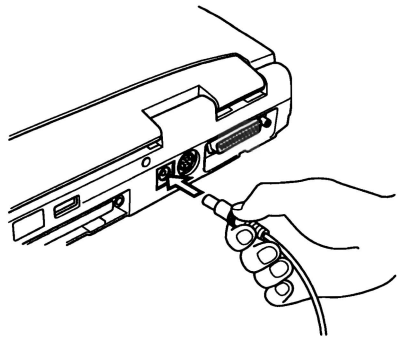


Figure 3-3 Connecting the adaptor to the computer

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.

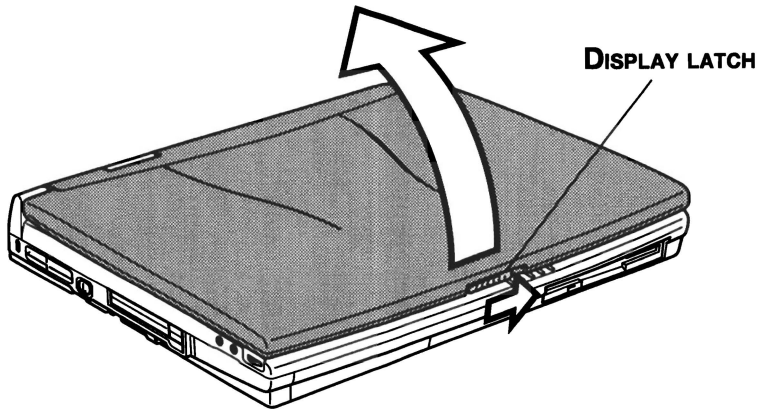


Figure 3-4 Opening the display

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

   CAUTION: *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.

NOTE: *After you turn on the power for the first time, do not turn it off until you have selected an operating system (OS) and your selected OS has started up. Refer to the section* Selecting an operating system *in this chapter.*

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.

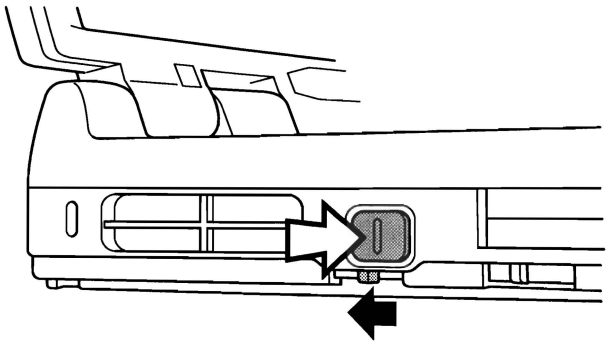


Figure 3-5 Turning on the power

Selecting an operating system

One of two sets of operating systems are installed on your computer's hard disk: Windows 95 and Windows 98 or Windows NT and 2000. Refer to the appropriate section below to select one OS.

> *CAUTION: After your selection, the other OS will be permanently erased from your system.*

Windows 95/98

When you first turn on the power, the computer's initial screen is the Selecting OS Menu. Select one OS and press **Enter**. Follow the on-screen direction for each screen. After you complete your selections, the system will boot in the OS you chose.

Be sure to read the `License Agreement` display carefully. Also read all the information in the Windows 95 `Certificate of Authenticity` screen or the Windows 98 `Windows Product Key` screen. This screen asks you to enter the product ID number in Windows 95 or product key in Windows 98.

The sealed Windows manual package contains a Certificate of Authenticity, which contains the product ID number in Windows 95 or product key in Windows 98. (The number is 20 figures for Windows 95 and 25 figures for Windows 98.) Enter the appropriate number into the Windows 95 `Certificate of Authenticity` screen or the Windows 98 `Windows Product Key` dialogue box. If the number is not in the manual package, you can get from a seal on the bottom of the computer.

> *NOTE: Be sure to read the License Agreement carefully.*

Windows NT/2000

When you first turn on the power, the computer's initial screen is the Selecting OS Menu. Select one OS and press **Enter**. Follow the on-screen direction for each screen. After you complete your selections, the system will boot in the OS you chose.

Be sure to read the `License Agreement` display carefully. Also read all the information in the Windows NT `Certificate of Authenticity` screen or the Windows 2000 `Windows Product Key` screen. This screen asks you to enter the product ID number in Windows NT or product key in Windows 2000.

The sealed Windows manual package contains a Certificate of Authenticity, which contains the product ID number in Windows NT or product key in Windows 2000. (The number is 20 figures for Windows NT and 25 figures for Windows 2000.) Enter the appropriate number into the Windows NT `Certificate of Authenticity` screen or the Windows 2000 `Windows Product Key` dialogue box. If the number is not in the manual package, you can get from a seal on the bottom of the computer.

NOTE: Be sure to read the License Agreement carefully.

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.

   CAUTION: Make sure the **Built-in HDD** *and* **Diskette/CD-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**.

   If you are using Windows NT/2000, point to **Start** and click **Shut Down** or **Suspend**.

   `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.

   NOTE: 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/NT, 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.

   CAUTION: 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 from the Product Recovery CD-ROM

If preinstalled files are damaged, use the Product Recovery CD-ROM to restore them. To restore the operating system and all preinstalled software, follow the steps below.

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

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.
3. Follow the on-screen instructions.

Chapter 4

Operating Basics

Operating Basics

Operating Basics

This chapter gives information on basic operations including using AccuPoint II and using the CD-ROM drive and 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.

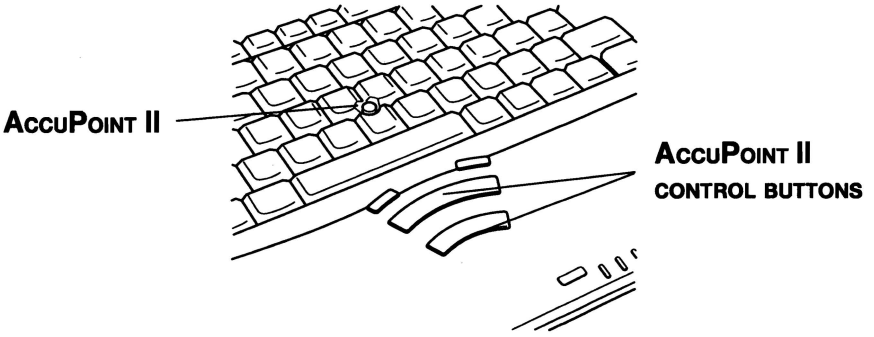


Figure 4-1 AccuPoint II and control buttons

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 traveling 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 should be replaced after prolonged use. There are six spare AccuPoint II caps supplied with the computer. One cap has a rough top.

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

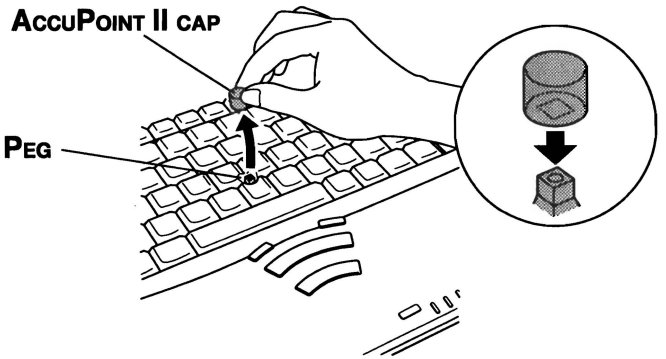


Figure 4-2 Removing the AccuPoint II cap

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

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

Using CD-ROM/DVD-ROM drives

The text and illustrations in this section refer primarily to the CD-ROM drive. However, operation is the same for the DVD-ROM drive. 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 disks/digital video 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

CD	24-speed (outer edge)

DVD-ROM drive

CD	10.3-speed (center)	24-speed (outer edge)
DVD	2.5-speed (center)	6-speed (outer edge)

Loading compact disks

To load compact disks (CDs), follow the steps below and refer to figures 4-3 to 4-7.

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

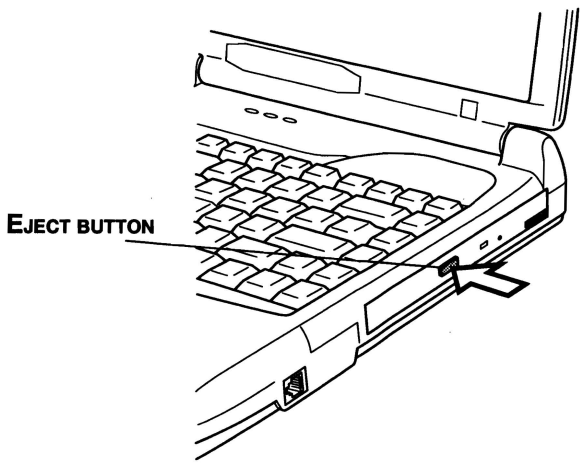


Figure 4-3 Pressing the CD-ROM eject button

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.

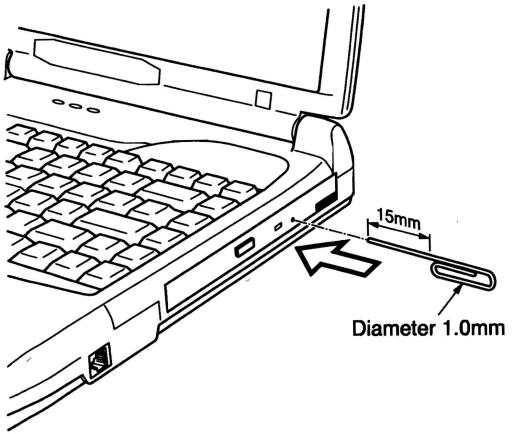


Figure 4-4 Manual release with the eject hole

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

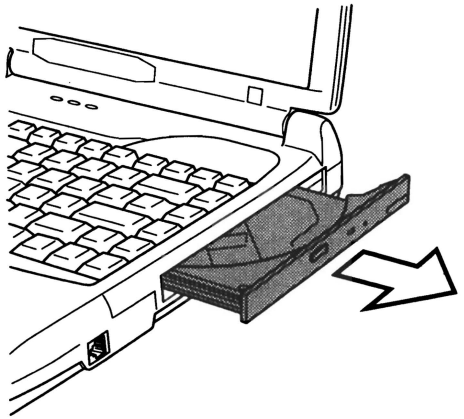


Figure 4-5 Pulling the drawer open

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

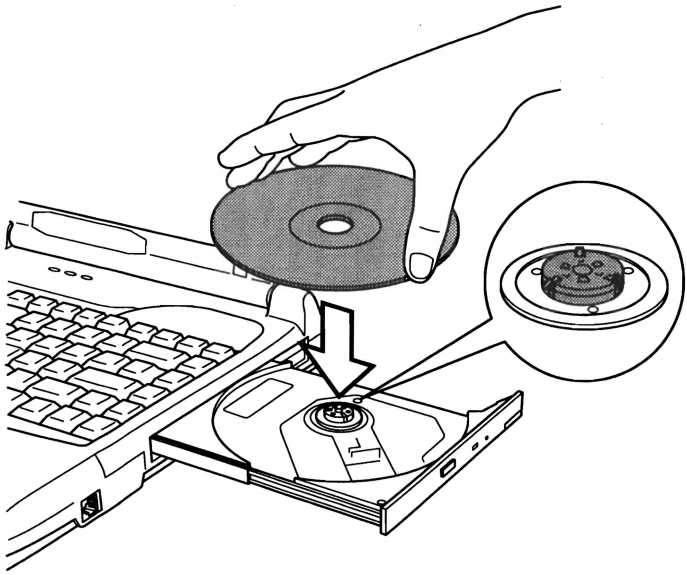


Figure 4-6 Inserting a CD

***CAUTION:** 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 center 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 center of the drawer to close it. Press gently until it locks into place.

CAUTION: 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.

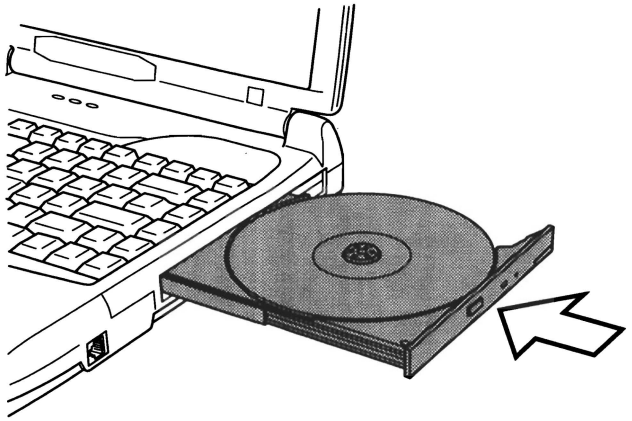


Figure 4-7 Closing the CD-ROM drawer

Removing compact disks

To remove the CD, follow the steps below and refer to figure 4-8.

CAUTION: 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.

CAUTIONS: 1. When the drawer pops open slightly, wait a moment to make sure the CD has stopped spinning before pulling the drawer fully open.

2. 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.

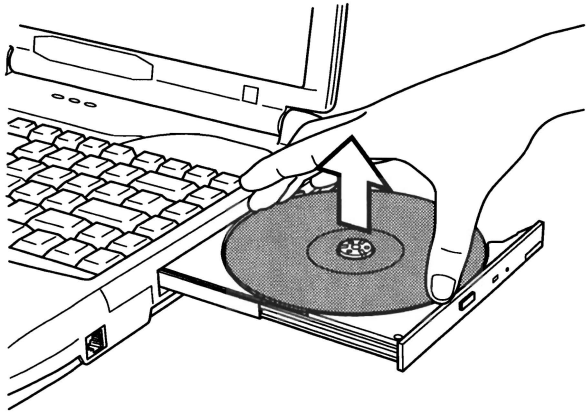


Figure 4-8 Removing a CD

3. Push the center 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.

CD/DVDs

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

1. Store your CD/DVDs in the container they came in to protect them and keep them clean.
2. Do not bend the CD/DVD.
3. Do not write on, apply a sticker to, or otherwise mar the surface of the CD/DVD that contains data.
4. Hold the CD/DVD by its outside edge or the edge on the center 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 CD/DVDs.

6. If your CD/DVDs become dusty or dirty, wipe them with a clean dry cloth. Wipe from the center out, do not wipe in a circular direction around the CD/DVD. 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.

Internal modem

This section describes how to connect and disconnect the internal modem to and from a telephone jack. The internal modem is not supported in some marketing regions. Refer to the online help files for the internal modem and RingCentral for details on operation of your modem and modem software.

NOTE: The internal modem does not support the voice functions described in the RingCentral's online help files. All data and fax functions are supported.

CAUTIONS: 1. In case of a lightning storm, unplug the modem cable from the telephone jack.

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

Country selection

Modems preinstalled in computers with the following model numbers can be used only in the United States or Canada. The Country Select Utility has not been supported.

PS4**U-*****

PS4**C-*****

The asterisks represent any character.

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/2000.

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

Figure 4-9 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.

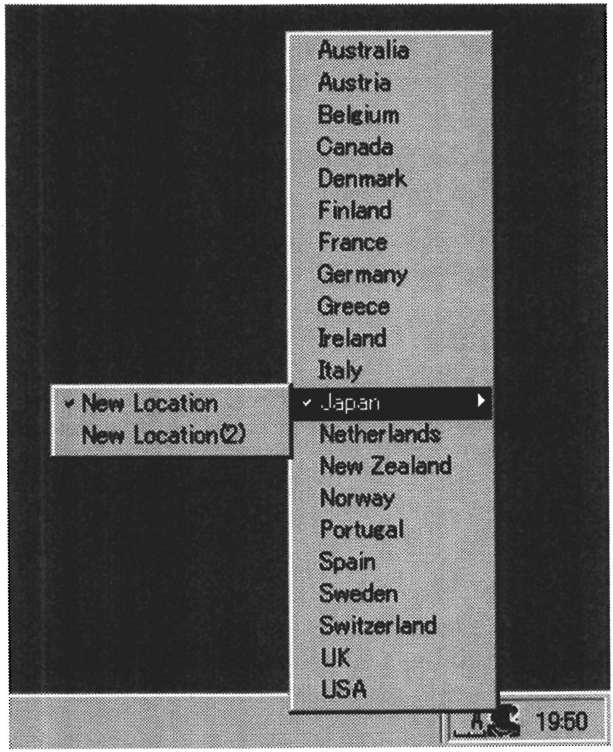


Figure 4-10 The country list

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.

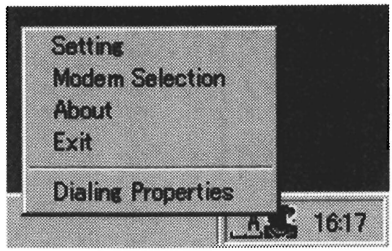


Figure 4-11 The country list

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 Dialing Properties dialog box after selecting country.

The dialing 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.

Modem selection

If the computer cannot recognize the internal modem, a diaolg box is displayed. Select the COM port for your modem to use.

Dialing properties

Select this item to display the dialing properties.

County list

You can select from among the following countries.

1. Austria
2. Belgium
3. Denmark
4. Finland
5. France
6. Germany
7. Greece
8. Ireland
9. Italy
10. Netherlands
11. Norway
12. Portugal
13. Spain
14. Sweden
15. Switzerland
16. UK
17. USA
18. Japan
19. Canada
20. Australia
21. New Zealand

Selection using AT commands

DOS is not supported by this utility. If you use a DOS-based communications software, you will have to use an AT command to enter the country settings.

Start your communications software and set terminal mode. Then follow the steps below.

1. Type **AT%TE=1** and press **Enter**.

2. Type **ATS133= ***, where the asterisk represents one of the hexadecimal values below and press **Enter**.

   The values (hexadecimal) for each country are:

Austria	F	Ireland	1A	Switzerland	D
Belgium	2	Italy	8	UK	E
Denmark	3	Netherlands	7	USA	19
Finland	4	Norway	A	Japan	10
France	5	Portugal	18	Canada	1C
Germany	6	Spain	B	Australia	1
Greece	21	Sweden	C	New Zealand	9

3. Type **AT&F** and press **Enter**.
4. Type **AT&W** and press **Enter**.
5. Type **AT%TE=0** and press **Enter**.

After setting up the country code input the **ATZ** command to reset the software.

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.

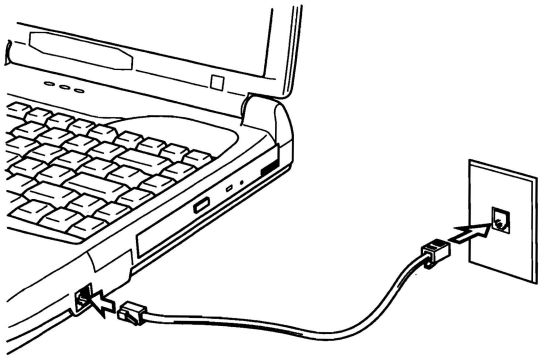


Figure 4-12 Connecting the internal modem

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.

  CAUTION: *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 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.

Maximum performance (Windows 95/NT) Auto 1 (Windows 98/2000)	Turns on fan first, then if necessary lowers CPU processing speed.
Performance (Windows 95/NT) Auto 2 (Windows 98/2000)	Uses a combination of fan and lowering the CPU processing speed.
Battery optimized (Windows 95/NT) Auto 3 (Windows 98/2000)	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.

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

Chapter 5

The Keyboard

The Keyboard

Chapter 5

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 H, *Keyboard Layouts*.

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

Gray keys

The gray 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 upper-case 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 gray, but function differently from the other dark gray 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: 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.

> *NOTE: 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

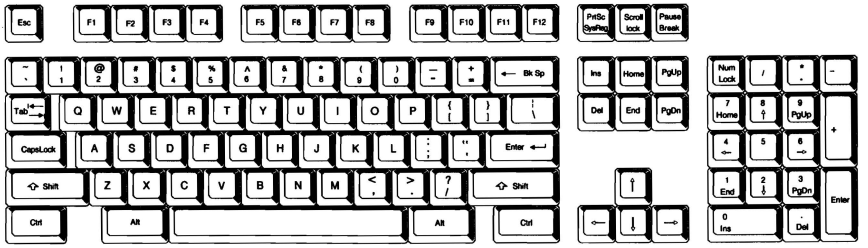
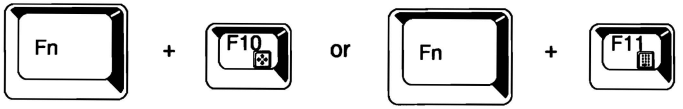


Figure 5-1 A 101-key enhanced keyboard layout

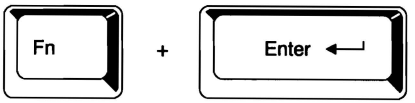
The keyboard is designed to provide all the features of the 101-key enhanced keyboard, shown in figure 5-1. The 101/102-key enhanced keyboard has a numeric keypad and scroll lock key. It also has additional **Enter**, **Ctrl** and **Alt** keys to the right of the main keyboard. Since the keyboard is 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 gray 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.

> *NOTE: In Windows 95/NT, use the* Display Auto Off *window in Windows 95/NT Power Saver utility to set the display brightness level. In Windows 2000, use the* Power Save Mode *window in Power Saver.*

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/NT environment, an icon panel is displayed showing the setting. If you press **Fn** + **F2** in a Windows 98/2000 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/NT, you can use the *System* window of the Power Saver utility. In a Windows 98/2000 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. → TV
	External	Ext. → TV→ Int. → Sim.
Simultaneous	Internal and external	Sim. → Ext. → TV → Int.

Windows 95/98/NT/2000 special keys

The keyboard provides two keys that have special functions in Windows 95/98/NT/2000: one activates the **Start** menu and the other has the same function as the secondary mouse button.

This key activates the Windows 95/98/NT/2000 **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 center 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 figure 5-2.

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 figure 5-2. 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 figure 5-2. Press **Fn** + **F11** again to turn off the overlay.

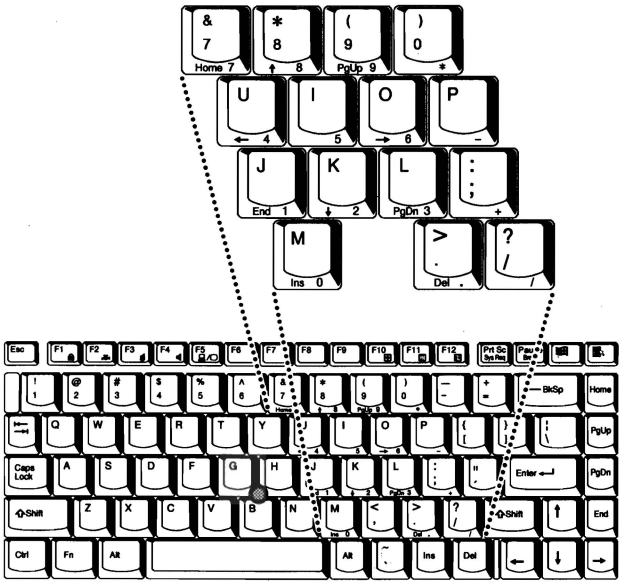


Figure 5-2 The numeric keypad overlay (U.S.)

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.

Chapter 6

Power and Power-Up Modes

Chapter 6

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	• Operates • Trickle charge • LED: **Battery** green **DC IN** green	• Trickle charge • LED: **Battery** green **DC IN** green
	Battery partially charged or no charge	• Operates • Quick charge • LED: **Battery** orange **DC IN** green	• Quick charge • LED: **Battery** orange **DC IN** green
	No battery installed	• Operates • No charge • LED: **Battery** off **DC IN** green	• No charge • LED: **Battery** off **DC IN** green

Table 6-1 Power conditions continued

		Power on	Power off (no operation)
AC adaptor not connected	Battery charge is above low battery trigger point	• Operates • LED: **Battery** off **DC IN** off	
	Battery charge is below low battery trigger point	• Operates • Alarm sounds • LED: **Battery** flashes orange **DC IN** off	
	Battery charge exhausted	Computer goes into resume mode and shuts down	
	No battery installed	• No operation • LED: **Battery** off **DC IN** off	

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:

Flashing orange	The battery charge is low. The AC adaptor must be connected to recharge the battery.
Orange	Indicates the AC adaptor is connected and charging the battery.
Green	Indicates the AC adaptor is connected and the battery is fully charged.
No light	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:

Green	Indicates the AC adaptor is connected and supplying proper power to the computer.
Flashing orange	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.
No light	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:

Green	Indicates power is being supplied to the computer and the computer is turned on.
Blinking orange	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.

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

No light	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

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.

CAUTIONS: 1. *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.*

2. *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.
```

CAUTION: 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.

> *CAUTION: 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.

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

> *NOTE: 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.*

NOTES: 1. *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.*

2. *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.*

Maximizing 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 brightness

  See 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:

Battery	4 to 7 days
RTC battery	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.

CAUTIONS: 1. *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.*

2. *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.

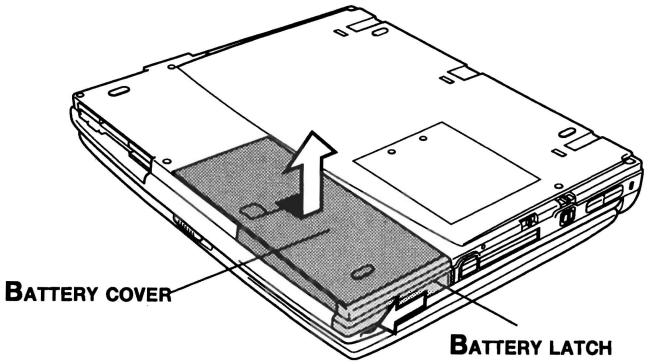


Figure 6-1 Releasing the battery cover

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

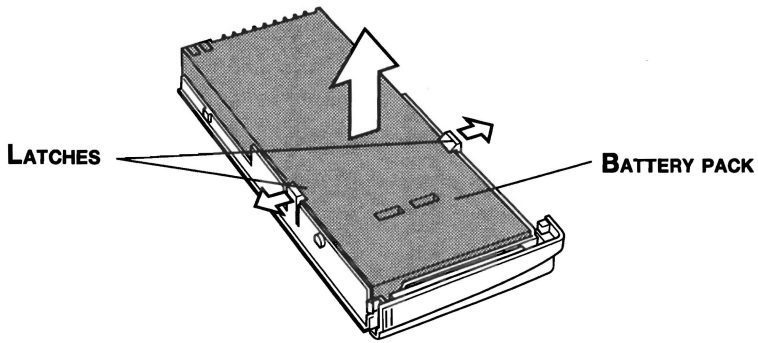


Figure 6-2 Removing the battery pack

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

Installing the battery pack

To install a battery pack, follow the steps below.

***CAUTION:** 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.

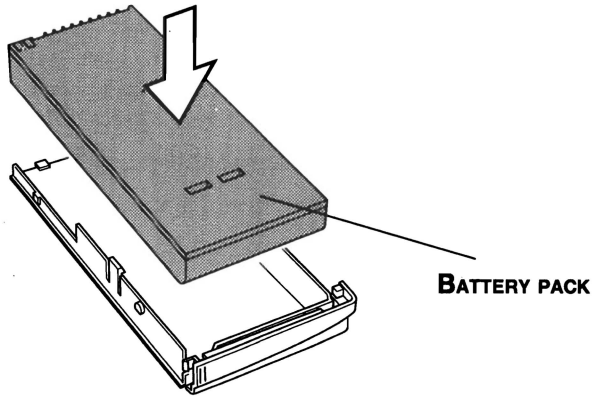


Figure 6-3 Inserting the battery pack

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

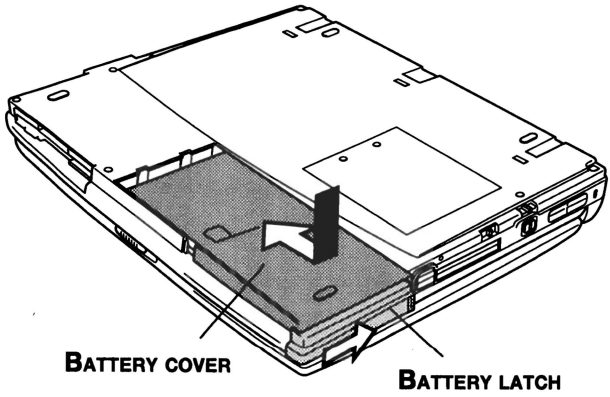


Figure 6-4 Securing the battery cover

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:

1. Turn on the computer as described in Chapter 4, *Operating Basics* and the following message appears:

   ```
   Password =
   ```

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

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

   ```
   Valid password entered, system is now starting up.
   ```

   NOTE: 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.

NOTE: 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.

   NOTE: 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.

NOTES: 1. *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.*

2. *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)

NOTE: 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, *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.

NOTE: The `Resume` *mode is called* `Suspend/Resume` *in Windows 95/NT and* `Standby` *in Windows 98/2000. The functions are essentially the same.*

Panel power on/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.

> *NOTE: 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.

Chapter 7

Setup and Password Security

Setup and Password Security

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 battery powered Real Time Clock (RTC).

> *NOTE: 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.

> *NOTE: 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).

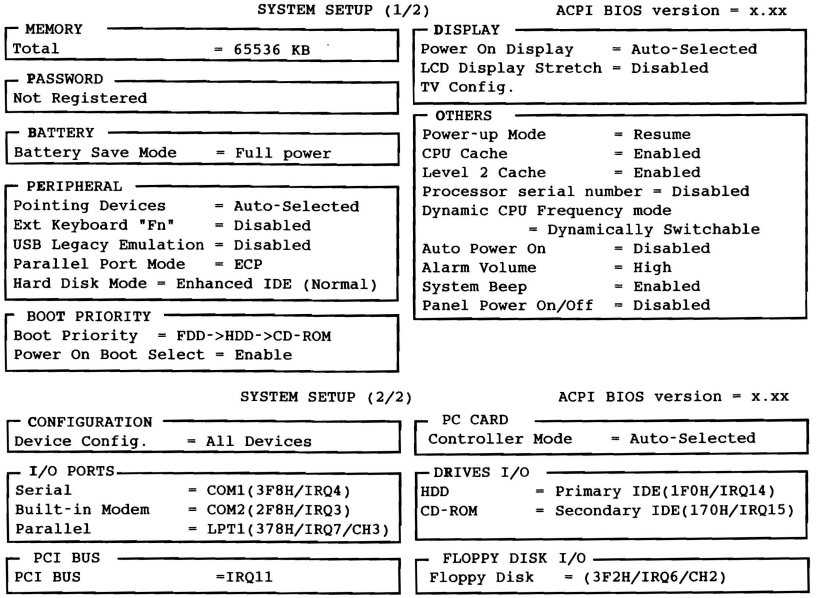


Figure 7-1 The system setup screen

NOTES: 1. The **Panel Power On/Off** *item appears only when the computer is in Resume mode.*

2. The **Dynamic CPU Frequency mode** *item appears only on 4300 series computers.*

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.

   NOTE: 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 re-
   boot.
   ```

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

   NOTE: 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**.

   NOTE: 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.

NOTE: 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.

`Registered`	The user password has been registered.
`Not Registered`	The user password has not been registered.

NOTE: 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`.

NOTE: 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.

Pointing Devices

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

`Auto-Selected`	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)
`Simultaneous`	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.

`Disabled`	No **Fn** key equivalent (Default)		
`Fn Equivalent`	`Left Ctrl`	+	`Left Alt`
	`Right Ctrl`	+	`Right Alt`
	`Left Alt`	+	`Left Shift`
	`Right Alt`	+	`Right Shift`
	`Left Alt`	+	`Caps Lock`

NOTE: 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`.

`ECP`	Sets the port type to Extended Capabilities Port (ECP). For most printers, the port should be set to `ECP`. (Default)
`Standard Bi-directional`	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.

> ***NOTE:*** *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.*

`Enhanced IDE (Normal)`	Select this mode when using MS-DOS, Windows for Workgroups, Windows 95/98/NT/2000 or OS/2™. (Default)
`Standard IDE`	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:

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

F	Selects the diskette drive.
B	Selects the HDD.
C	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.

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

NOTE: You cannot select TV display in TSETUP. To display on a TV screen use hot keys **Fn** + **F5**. *Refer to Chapter 5, Keyboard.*

NOTE: 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.*

This option is used to select the display when booting up.

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.

`TV Type`	`NTSC` (National Television System Committee)
	`PAL` (Phase Alternation Line)
`TV Output Signal`	`Composite`

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.

> *NOTE: 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.

`CPU Cache Options`	`Enabled`: Enables the CPU cache. (Default) `Disabled`: Disables the CPU cache.
`Level 2 Cache Options`	`Enabled`: Enables the level 2 cache. (Default) `Disabled`: Disables the level 2 cache.
`Write Policy`	`Write-back:` Sets the write policy to write-back. (Default) `Write-through:` 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.

`Processor Serial Number` = `Disabled` (Default)

`Processor Serial Number` = `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.

Dynamic CPU Frequency mode (4300 series only)

This option lets you choose from the following settings:

`Dynamically Switchable`	Enables Pentium® III processor featuring Intel® SpeedStep™ technology.
`Always High`	Disables Pentium® III processor featuring Intel® SpeedStep™ technology and always runs the processor at its maximum speed.
`Always Low`	Disables Pentium® III processor featuring Intel® SpeedStep™ technology and always runs the processor at its default speed.

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.

> ***NOTE:*** *The Alarm Time setting does not work in Windows 98, nor does it work in Windows 2000 when Scheduled Tasks is available . If you are using Windows 98 or if Scheduled Tasks is available in Windows 2000, 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.

`Off`	Disables alarm
`Low`	Sets the alarm volume to low
`Medium`	Sets the alarm volume to medium
`High`	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.

COM level	I/O address	Interrupt level	
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)

> *NOTE: 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.

> *NOTE: 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	
COM2	2F8H	3	(Default)
COM3	3E8H	4	
COM4	2E8H	3	
Not Used			(Disables port)

> *NOTE: 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 95/98/2000 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.

NOTE: 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

`HDD = Primary IDE (1F0H/IRQ14)`
(HDD ready for use)

Settings for CD/DVD-ROM drive

`CD-ROM = Secondary IDE (170H/IRQ15)`
(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:

TSETUP	No access
F, B, C switch	You cannot use the **F, B, C** key to change boot priority.

Supervisor password logon

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

Instant security	User password will not provide access to the computer.
Resume Mode	User password will not provide access to the computer.

NOTE: 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. All passwords can be set using the Hardware Setup program.

NOTE: You can use either capital or small letters to enter the password.

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.

In Windows NT/2000, refer to the readme file of the Supervisor Password Utility for instructions on setting the supervisor password.

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 = ****
```

NOTE: 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.

   NOTE: 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 password*, to set a new supervisor password.

   NOTE: 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 canceled.

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.

In Windows NT/2000, refer to the readme file of the Supervisor Password Utility for instructions on setting the supervisor password.

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 = ****
   ```

   NOTE: 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!!
   ```

   NOTE: 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 password*, to set a new user password.

   NOTE: 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 canceled.

Enabling TSETUP access in user password mode

In Windows NT/2000, refer to the readme file of the Supervisor Password Utility for instructions on setting the 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.

NOTE: 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--->
```

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

2. 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 1/2" 2DD or 2HD diskette that contains no data you want to keep.

> *NOTE: 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 1/2" 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.

NOTE: 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.*

CAUTION: 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.

NOTE: 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.

Chapter 8

Optional Devices

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

- ❑ Enhanced Port Replicator IV
- ❑ Enhanced Port Replicator 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. Insert the PC Card and press gently to ensure a firm connection.
2. Pull out the eject button and fold it down.

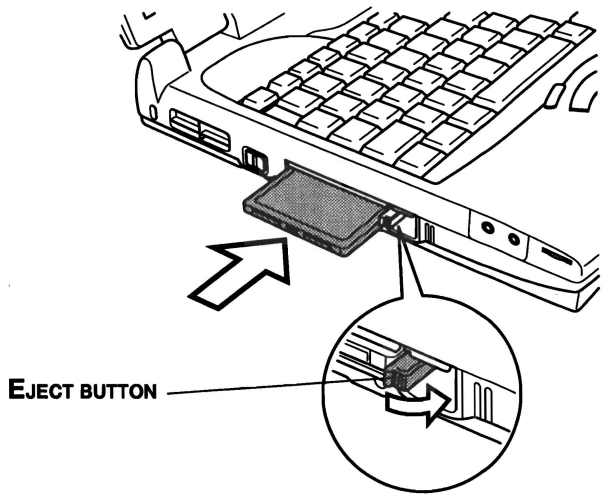


Figure 8-1 Installing a PC Card

3. Slide the PC Card lock into the locked position.

   NOTE: 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.

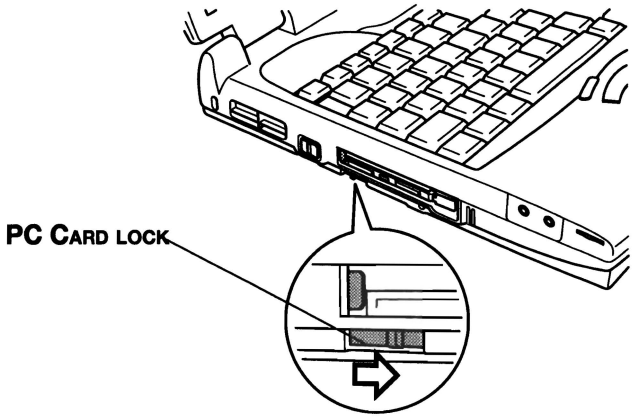


Figure 8-2 Securing the PC Card lock

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

CAUTION: 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.

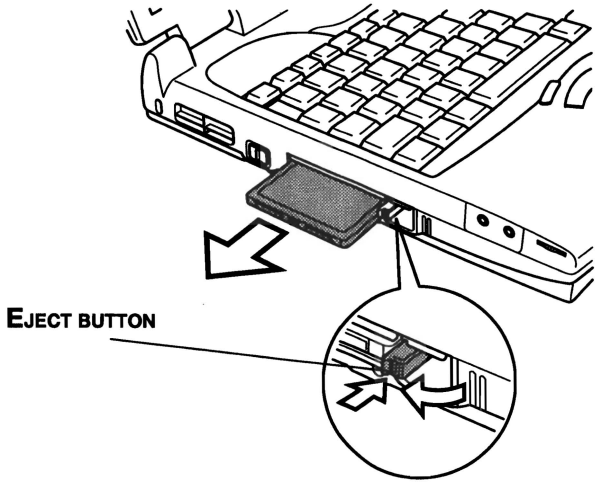


Figure 8-3 Removing a PC Card

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.

CAUTIONS: 1. *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.*

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

Installing memory module

Follow the steps below to install a memory module.

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

   CAUTION: 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.

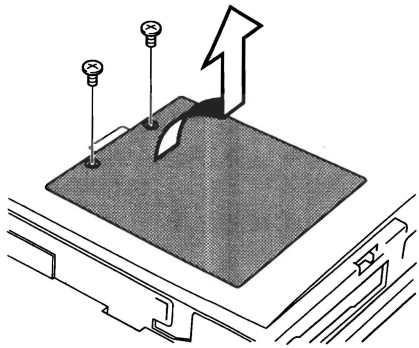


Figure 8-4 Removing the memory module socket cover

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.

   CAUTION: 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.

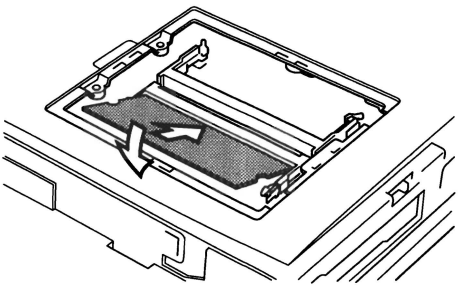


Figure 8-5 Installing a module

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.

   ***CAUTION:** 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.

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

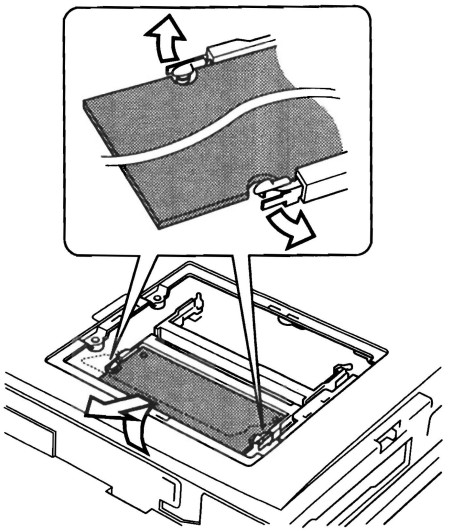


Figure 8-6 Removing the memory module

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**, then restart the computer.

Additional battery pack

You can increase the portability of the computer with additional battery packs. 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.

Enhanced Port Replicator IV

This chapter describes the functions of the Enhanced Port Replicator IV and identifies the locations of its connectors.

> ***CAUTION:*** *Use only the AC adaptor that came with the Enhanced Port Replicator IV. Do not use the AC adaptor that came with your computer to connect the Enhanced Port Replicator IV to a power source.*

In addition to the ports available on the computer, a Enhanced Port Replicator 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 Enhanced Port Replicator IV connects directly to the docking interface port on the back of the computer so no cabling is necessary. The AC adaptor connects the Enhanced Port Replicator IV to a power source.

The following connections are available on the Enhanced Port Replicator 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

Figure 8-7 shows the Enhanced Port Replicator IV's front.

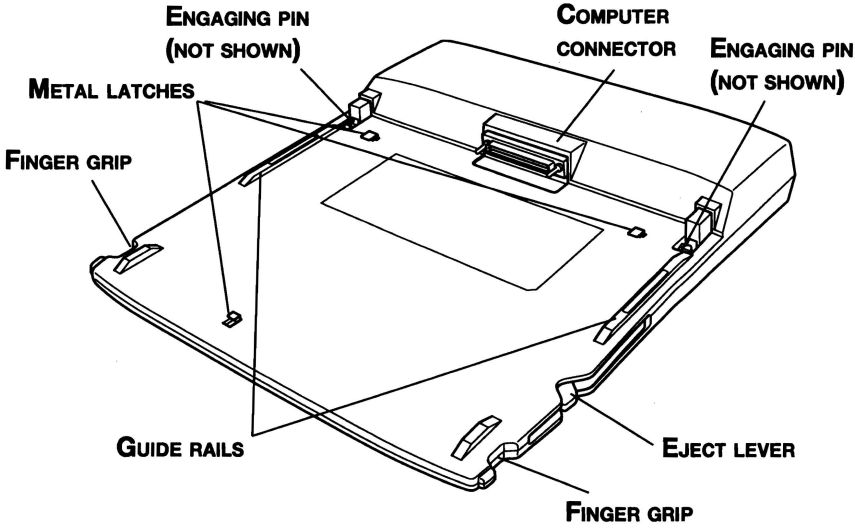


Figure 8-7 The front

Computer connector This is the computer interface. It connects directly to the computer's docking interface port.

Finger grips Use these grips to steady the Enhanced Port Replicator IV as you push the computer forward with your thumbs.

Guide rails These rails guide the computer to a proper connection with the Enhanced Port Replicator IV.

Metal latches These latches engage slots on the bottom of the computer to hold it securely to the Enhanced Port Replicator IV.

Engaging pins These pins engage holes on the computer to secure the connection.

Right side

Refer to Figure 8-7 for the location of items on the Enhanced Port Replicator IV's right side.

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

Back

Figure 8-8 shows the Enhanced Port Replicator IV's back.

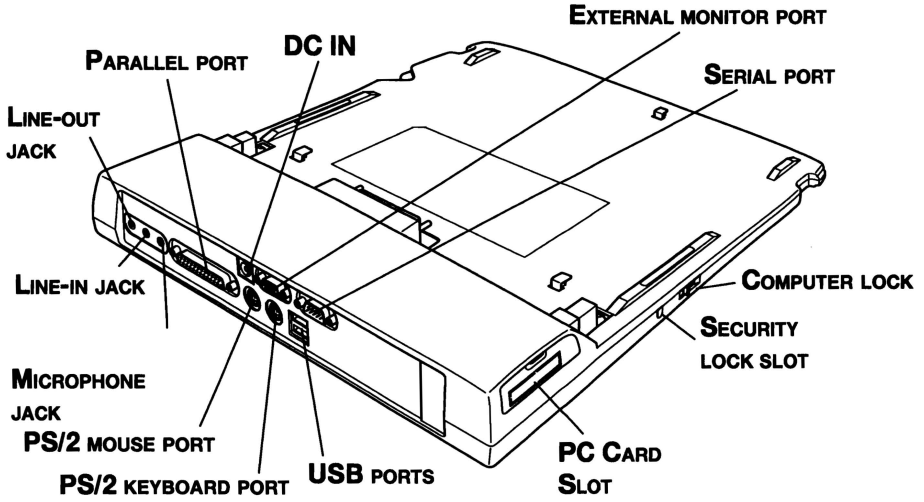


Figure 8-8 The back

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 Figure 8-8 for the location of items on the Enhanced Port Replicator IV's left side.

Computer lock

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

Security lock slot

This slot lets you attach a security cable to the Enhanced Port Replicator IV to deter theft. Attach one end of the cable to the Enhanced Port Replicator 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.

CAUTION: 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 Enhanced Port Replicator 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.

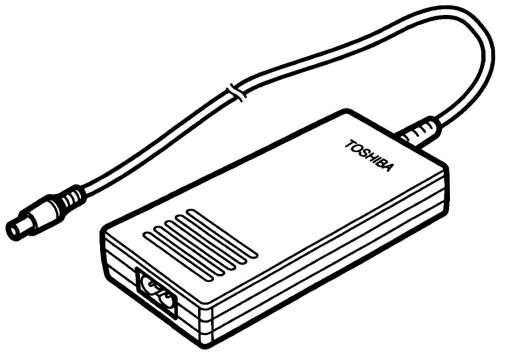


Figure 8-9 The AC adaptor

CAUTION: *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 4.0 amperes.*

Connecting the Enhanced Port Replicator IV

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

NOTES: 1. *Before connecting, make sure the engaging pins are down.*

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

3. *When an Enhanced Port Replicator 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 Enhanced Port Replicator IV, follow the steps below.

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

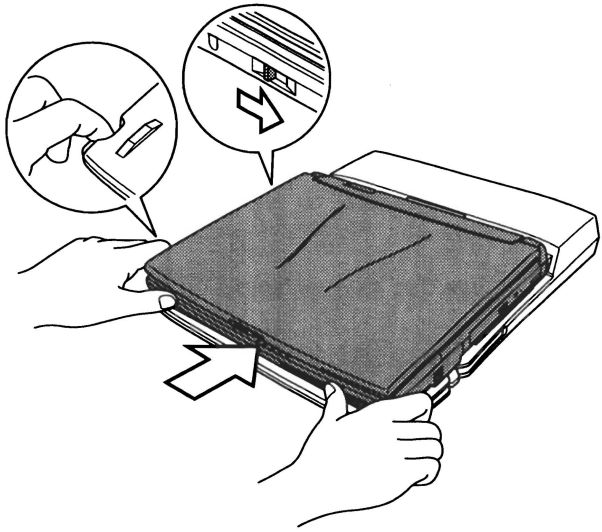


Figure 8-10 Connecting to the Enhanced Port Replicator IV

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

***NOTE:** 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.

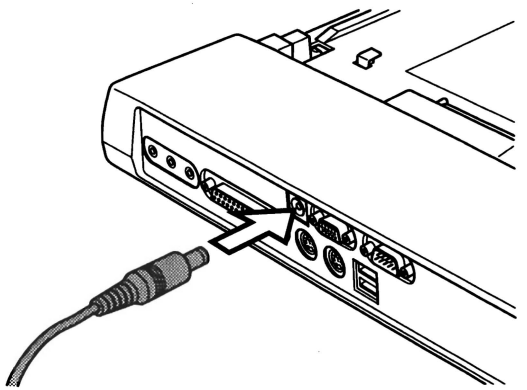


Figure 8-11 Connecting the AC adaptor

Disconnecting the Enhanced Port Replicator IV

To disconnect the Enhanced Port Replicator 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 Enhanced Port Replicator 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.

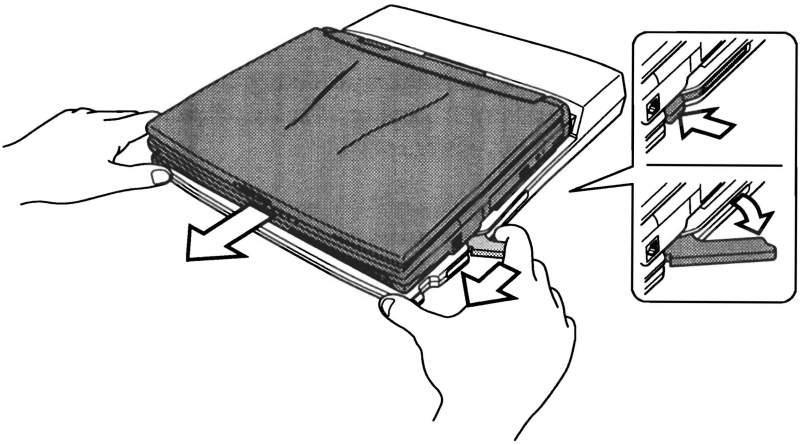


Figure 8-12 Disconnecting from the Enhanced Port Replicator IV

4. Lift off the computer.

   CAUTION: *If the computer is using Windows 95, a screen will appear the first time you click* ***Eject PC*** *from the* ***Start*** *menu or the first time you set the key lock to eject on. The screen does not appear if you are using Windows 98.*

Enhanced Port Replicator III

In addition to the ports available on the computer, an Enhanced Port Replicator III 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 Enhanced Port Replicator III connects directly to the docking interface port on the back of the computer so no cabling is necessary. The AC adaptor connects the Enhanced Port Replicator III to a power source.

NOTE:
1. *A spacer, which is available separately, is required to connect the computer to the Enhanced Port Replicator III. Connecting methods are explained later in this chapter.*
2. *Before connecting, make sure the engaging pins are down.*
3. *Before connecting, remove the rubber cover from the computer's Docking Interface cover.*

Ports for connecting the following devices are available on the Enhanced Port Replicator 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

Figure 8-13 shows the Enhanced Port Replicator III's front.

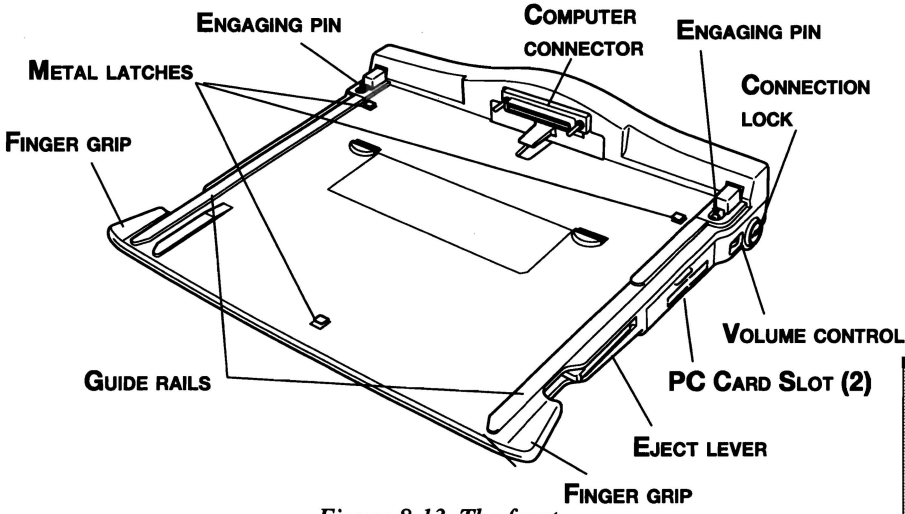


Figure 8-13 The front

Computer connector This is the computer interface. It connects directly to the computer's docking interface port.

Finger grips Use these grips to steady the Enhanced Port Replicator III as you push the computer forward with your thumbs.

Guide rails These rails guide the computer to a proper connection with the Enhanced Port Replicator III.

Metal latches These latches engage slots on the bottom of the computer to hold it securely to the Enhanced Port Replicator III.

Engaging pins These pins engage holes on the computer to secure the connection.

Right side

Refer to Figure 8-13 for the location of items on the Enhanced Port Replicator III's right side.

Eject lever This lever pops out for easy disconnection of the computer from the Enhanced Port Replicator III.

PC Card Slot 2 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 Enhanced Port Replicator 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

Figure 8-14 shows the Enhanced Port Replicator III's back.

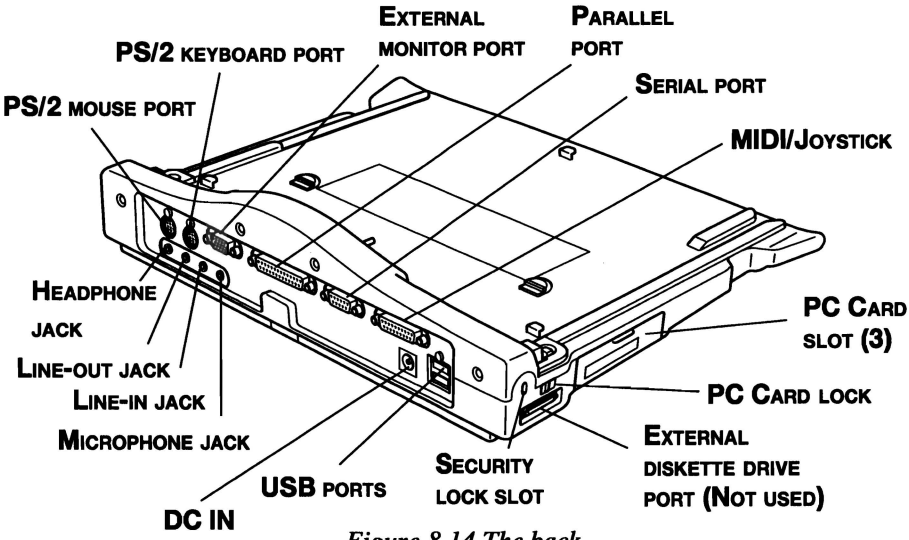


Figure 8-14 The back

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 Figure 8-14 for the location of items on the Enhanced Port Replicator 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 Enhanced Port Replicator 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 enhanced port replicator to deter theft. Attach one end of the cable to the Enhanced Port Replicator III and the other end to a desk or other large object.

Spacer

Figure 8-15 shows the spacer used when connecting to the Enhanced Port Replicator III.

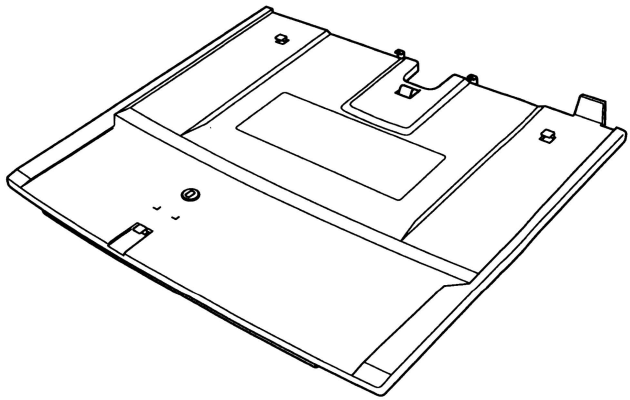


Figure 8-15 The spacer

Connecting to the Enhanced Port Replicator III

Connection of the Enhanced Port Replicator III requires a spacer. You can connect the spacer by itself to either the Enhanced Port Replicator 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 Enhanced Port Replicator III.

This section describes three ways of connecting to the Enhanced Port Replicator III:

1. Computer with spacer
2. Spacer alone

1. Connecting the computer with spacer to the Enhanced Port Replicator III

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

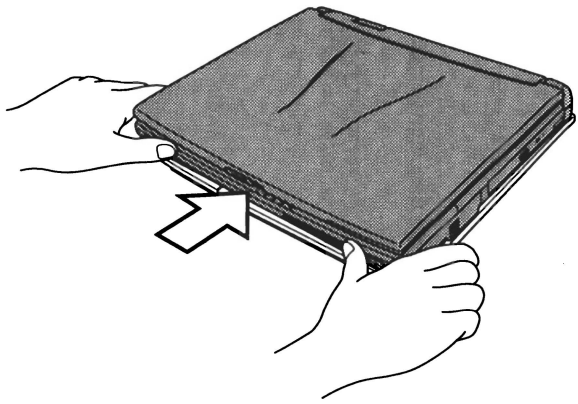


Figure 8-16 Connecting the computer to the spacer

3. Connect the spacer with computer to the Enhanced Port Replicator III in the same as described in the previous section.

Disconnecting the computer without the spacer

To disconnect the spacer alone or spacer with computer from the Enhanced Port Replicator 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.

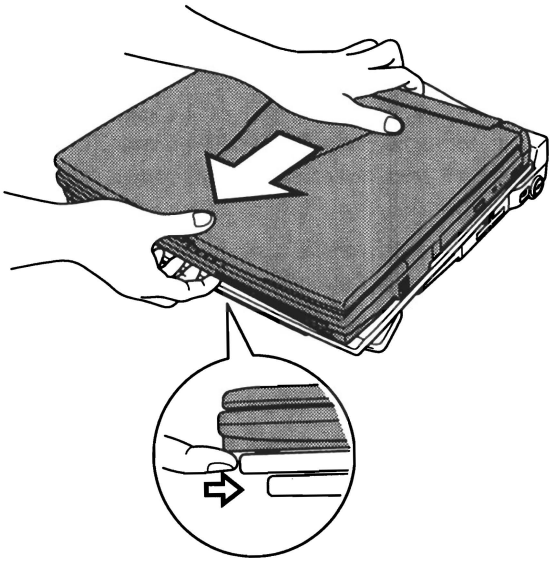


Figure 8-17 Connecting the spacer

2. Connecting the spacer to the Enhanced Port Replicator III

This section describes connection of the spacer to the Enhanced Port Replicator III.

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

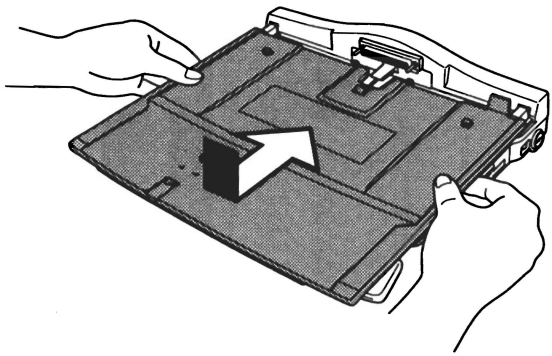


Figure 8-18 Connecting the spacer

3. Hold the Enhanced Port Replicator 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 Enhanced Port Replicator III.

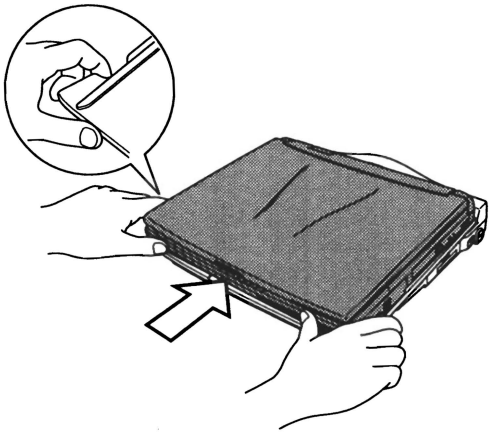


Figure 8-19 Connecting the computer

Connecting the AC adaptor

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

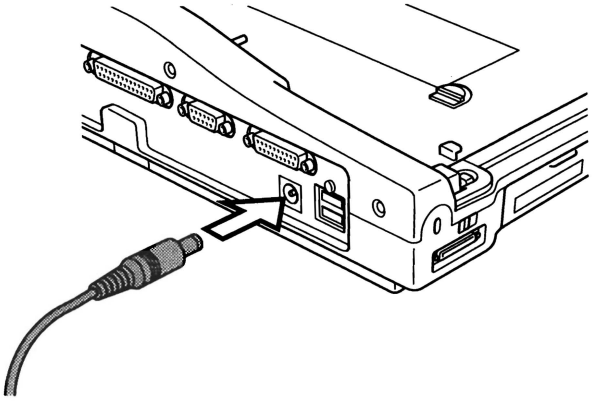


Figure 8-20 Connecting the AC adaptor

Installing and removing PC Cards

The Enhanced Port Replicator 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.

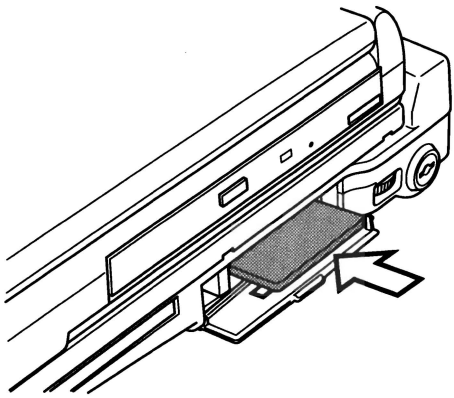


Figure 8-21 Installing a card in the Enhanced Port Replicator III

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.

   NOTE: *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 Enhanced Port Replicator III. For the right side, turn the key lock 180 degrees.

   NOTE: *If you connect a security cable to the Enhanced Port Replicator 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.

> ***NOTE:*** *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 Enhanced Port Replicator 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 Enhanced Port Replicator III. For the right side, turn the key lock back 90 degrees.
3. Press the eject button and the card will pop out slightly.

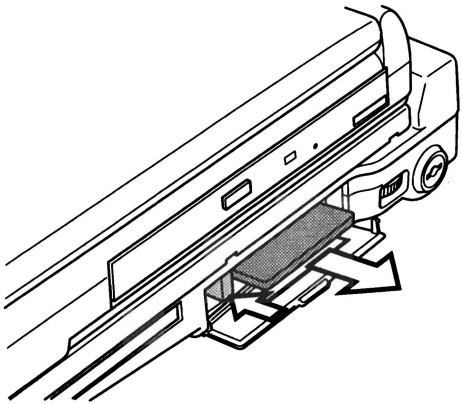


Figure 8-22 Removing a card from the Enhanced Port Replicator III

4. Grasp the card and pull it out.

Port Replicator

In addition to the ports available on the computer, a Port Replicator 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.

NOTES: 1. Before connecting, make sure the engaging pins are down.

2. 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

Figure 8-23 shows the Port Replicator's front.

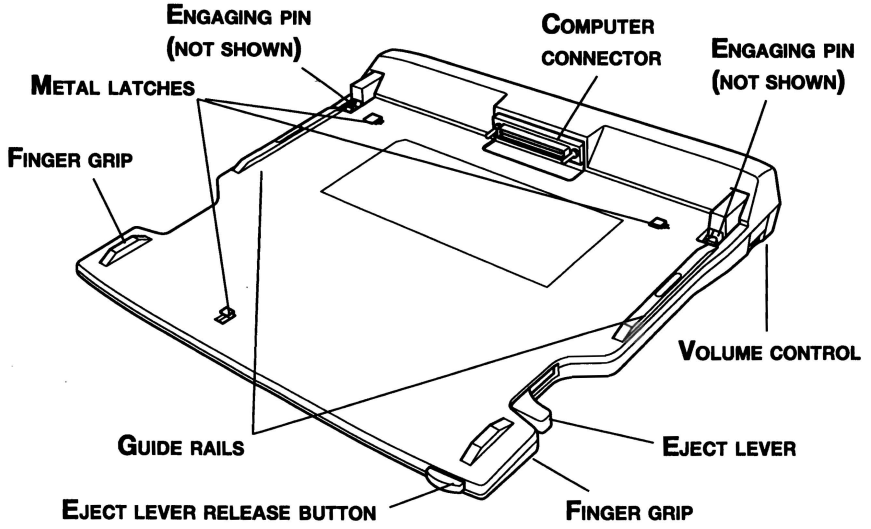


Figure 8-23 The front

Computer connector This is the computer interface. It connects directly to the computer's docking interface port.

Finger grips Use these grips to steady the Port Replicator as you push the computer forward with your thumbs.

Guide rails These rails guide the computer to a proper connection with the Port Replicator.

Metal latches These latches engage slots on the bottom of the computer to hold it securely to the Port Replicator.

Eject lever release button Press this button when you pull the elect lever to disconnect the Port Replicator.

Engaging pins These pins engage holes on the computer to secure the connection.

Right side

Refer to Figure 8 -23 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

Figure 8-24 shows the Port Replicator's back.

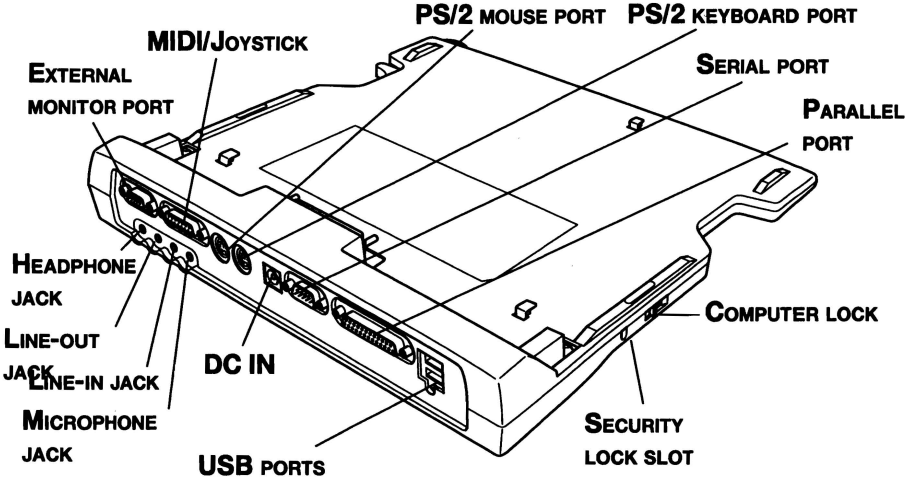


Figure 8-24 The back

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 Figure 8-24 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 enhanced port replicator 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.

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

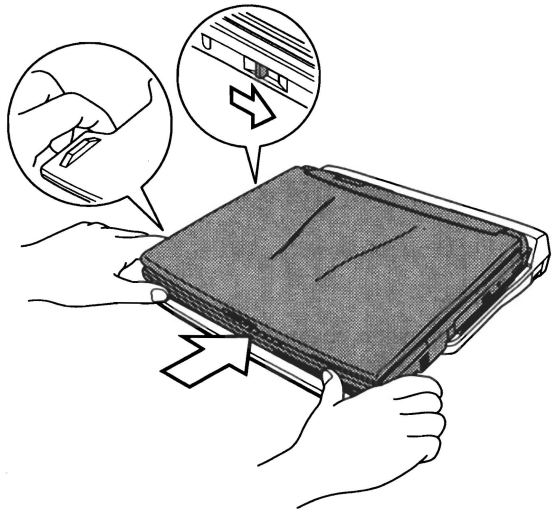


Figure 8-25 Connecting to the Port Replicator

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.

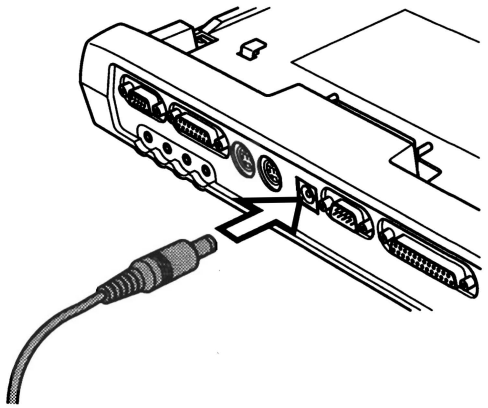


Figure 8-26 Connecting the AC adaptor

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.

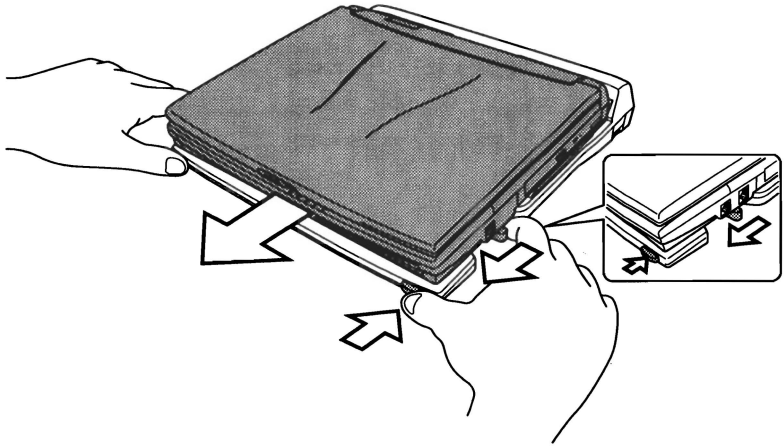


Figure 8-27 Disconnecting from the Port Replicator

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 Configuration Options` window.
10. Set the mode to `Output` and press `OK`.
11. Choose `Reboot` for the change to take effect.
12. Select the printer in Windows Add Print Wizard. To access the `Add Print 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.

> *NOTE: 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 color 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.

> *NOTE: 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.

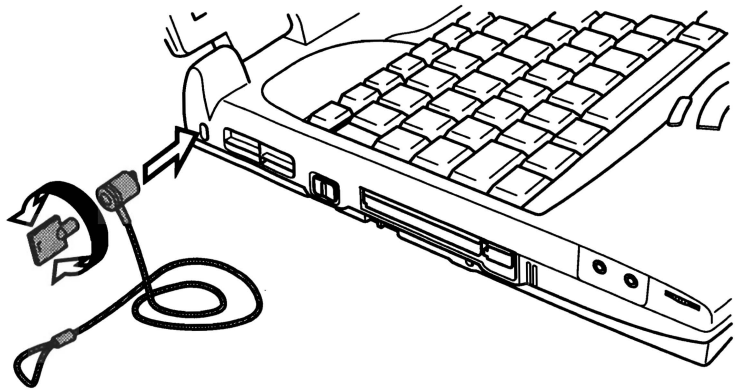


Figure 8-28 Security lock

***NOTE:** 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.*

Chapter 9

Troubleshooting

TROUBLESHOOTING

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.

Analyzing 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 color 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
- ❑ DVD-ROM drive
- ❑ Diskette drive
- ❑ Infrared port
- ❑ Printer
- ❑ AccuPoint II
- ❑ PS/2 mouse
- ❑ Serial mouse
- ❑ PC Card
- ❑ Monitor
- ❑ Sound system
- ❑ USB
- ❑ Hibernation
- ❑ Video out

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.

Problem	Procedure
Computer shuts down and **DC IN** indicator blinks orange	Leave the computer off until the computer reaches room temperature, then turn it back on. If the computer is still too warm, the **DC IN** 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.

Problem	Procedure
AC adaptor doesn't power the computer (**DC IN** indicator does not 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.

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)	If the battery is completely discharged, it will not begin charging at once. Wait a few minutes. 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. 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. 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. Connect the AC adaptor and replace the battery. 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. If the indicator still does not glow, the battery may be at the end of its operating life. Replace it.

	If you do not think the battery is at the end of its operating life, see your dealer.
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, *Setup and Password Security*.

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 Fn key equivalent 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 **Fn** + **F10** 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.

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 **Fn** + **F5** 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. ***NOTE:*** *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 TDIAGS. 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 TDIAGS. 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	Make sure the drive's drawer is securely closed. Press gently until it clicks into place.
	Open the drawer and make sure the CD is properly seated. It should lie flat with the label facing up.
	A foreign object in the drawer could block laser light from reading the CD. Make sure there is no obstruction. Remove any foreign object.
	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 Chapter 4 for details on cleaning.
Some CDs 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. Check the CD's documentation.
	Check the type of CD you are using. The drive supports audio CDs, photo CDs, ISO 9660 and CD plus. If problems persist, contact your dealer.

DVD-ROM drive

For more information, refer to Chapter 4, *Operating Basics.*

Problem	Procedure
You cannot access a DVD in the drive	Make sure the drive's drawer is securely closed. Press gently until it clicks into place.
	Open the drawer and make sure the DVD is properly seated. It should lie flat with the label facing up.
	A foreign object in the drawer could block laser light from reading the DVD. Make sure there is no obstruction. Remove any foreign object.
	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, *Operating Basics*, for details on cleaning.
Some DVD/CDs run correctly, but others do not	The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software's needs. Check the DVD/CD's documentation.
	Check the type of DVD/CD you are using. The drive supports: DVD-ROM: DVD-ROM, DVD-Video CD-ROM: Audio CD, Photo CD, ISO 9660, CD-EXTRA, CD-R (read only), CD-Rewritable (read only)

	Check the region code on the DVD. It must match that on the DVD drive. Region codes are listed in the *DVD-ROM drive* section in Chapter 2, *The Grand Tour.*
	If problems persist, contact your dealer.

Diskette drive

For more information, refer to Chapter 4, *Operating Basics.*

Problem	Procedure
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 TDIAGS.
	If problems persist, contact your dealer.

Infrared port

Refer also to the documentation for your IrDA compatible device and related software.

Problem	Procedure
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 TDIAGS. 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 `Pointing Device` option should be set to `Simultaneous` to use both the AccuPoint II and an external mouse. If problems persist, contact your dealer.

PS/2 mouse

Problem	Procedure
On-screen pointer does not respond to PS/2 mouse operation	Check that the PS/2 mouse cable's 6-pin connector is firmly connected to the mouse/keyboard port. 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. Is your software configured to recognize the mouse? Check the software documentation. If problems persist, contact your dealer.

Serial mouse

Problem	Procedure
On-screen pointer does not respond to serial mouse operation	Check for a firm connection between the serial port and the cable's 9-pin connector.
	Did you connect the mouse before turning on the computer?
	Is the `Serial port` set properly? Check Windows 95/98/2000 Device Manager.
	Is your software configured to recognize the mouse? Check the software documentation.
	If problems persist, contact your dealer.

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 **Fn + F5** 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 TDIAGS.
	If problems persist, contact your dealer.

Sound system

Refer also to Chapter 7, *Setup and Password Security.*

Problem	Procedure
No sound is heard	Adjust the volume control dial.
	Check the software volume settings.
	Make sure the headphone connection is secure.

	Check Windows 95/98/2000 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. If problems persist, contact your dealer.

USB

Refer also to your USB device's documentation.

Problem	Procedure
USB device does not work	Check for a firm cable connection between the USB ports on the computer and the USB device.
	Make sure the USB device drivers are properly installed. Refer to your Windows 95/98/2000 documentation for information on checking the drivers.
	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**. This feature works only for mouse and keyboard. Also, the mouse and keyboard must be connected, before you boot the computer. If problems persist, contact your dealer.

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 your area: NTSC (US) or PAL (Europe).
No display	Try adjusting the contrast and brightness controls on the external monitor.
	Press hotkeys **Fn + F5** to change the display. Refer to Chapter 5, *Keyboard.*
	NOTE: *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.*
	If problems persist, contact your dealer.

Memory expansion

Refer also to Chapter 8, *Optional Devices*, for information on installing memory modules.

Problem	Procedure
The following message is displayed: `Please remove the incompatible memory module`	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. 1. Disconnect the AC adpator and all peripheral devices. 2. Remove the battery. 3. Remove the memory module. 4. Replace the battery and/or connect the AC adaptor. 5. Turn on the power.
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. 1. Turn off the power. 2. Disconnect the AC adpator and all peripheral devices. 3. Remove the battery. 4. Remove the memory module from slot B and install it in slot A. 5. Replace the battery and/or connect the AC adaptor. 6. Turn on the power. 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**.

Component	Prompt
Diskette drive	`Test the FDD (Y/N)?`

This test writes test patterns to the diskette. Use a formatted, write-enabled diskette. Data on the diskette will be destroyed.

Hard disk drive `Test the HDD (Y/N)?`

This test writes a small amount of data to the hard disk.

Printer `Test the Printer (Y/N)?`

Before executing this test, make sure the printer is connected and turned on.

If you select **Y**, the following prompt will appear:

```
Compatible with IBM printer (Y/N)?
```

Select **Y** for IBM compatible and **N** for non-compatible. If you are not sure, select **N**. Selecting **Y** 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 test
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:

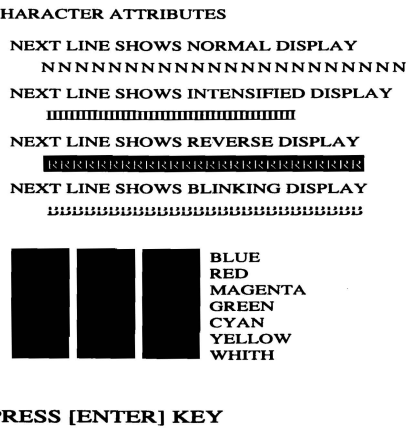
```
MEMORY TEST      IN PROGRESS XXXXXX
```

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.

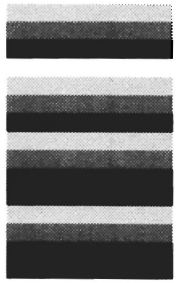
Display tests (Character attributes) After the System/Memory tests end, the Display tests begin with the Character attributes screen shown below.



Make sure the line under the message **NEXT LINE SHOWS BLINKING DISPLAY** is actually blinking.

After you press **Enter**, the following screen appears:

```
320*200 GRAPHICS DISPLAY [ 13 ]
```



```
BLACK
BLUE
GREEN
CYAN
RED
MAGENTA
BROWN
WHITE
GRAY
LIGHT BLUE
LIGHT GREEN
LIGHT CYAN
LIGHT RED
LIGHT MAGENTA
YELLOW
INTENSE WHITE

PRESS [Enter] KEY
```

If your display does not match the test screen, write down the differences and contact your dealer. If it does match, press **Enter** to continue the display test.

(Character sets) There are two character set tests. The first checks that the screen can display characters in a 40-column by 25-row format (the characters are wider than normal). The display screen appears as:

```
CHARACTER SET 40*25
 ☺☻♥♦♣♠•◘○◙♂♀♪♫☼►◄↕‼¶§▬↨↑↓→←∟↔▲▼!"#$%&'
()*+,-./ 0123456789:;<=>?@ABCDEFGHIJKLMNO
PQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvw
xyz{|}~⌂ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥₧ƒ
áíóúñÑªº¿⌐¬½¼¡«» ▒▓│┤╡╢╖╕╣║╗╝╜╛┐└┴┬├─┼╞╟
╚╔╩╦╠═╬╧╨╤╥╙╘╒╓╫╪┘┌ αßΓπΣσµτΦΘΩδ∞øε∩
≡±≥≤⌠⌡÷≈°∙·√ⁿ²■
```

If the display screen matches the figure above, start the second character set test by pressing **Enter**. If your screen doesn't match the diagnostic test display, write down the differences and contact your dealer.

The second test checks that the screen can display characters in an 80-column by 25-row format. The display screen should look like:

```
80*25 CHARACTER DISPLAY
0123456789012345678901234567890123456789012345678901234567890123456789012345678901234567
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklm
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmn
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnc
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnop
$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopq
%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqr
&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrst
()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstu
)*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvw
+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwx
,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxy
-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{
/0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|
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123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~
23456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~
3456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ ç
456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ çü

PRESS [ENTER] KEY.
```

If the display screen matches the figure above, press **Enter** to start the next test. If your screen doesn't match the diagnostic test display, write down the differences and contact your dealer.

(Graphics capabilities)

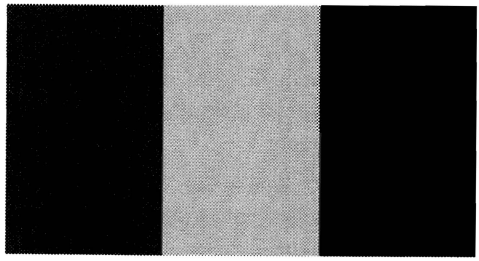
This set of displays tests the screen's capabilities for each graphics mode.

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:

```
320*200 GRAPHICS DISPLAY
COLOR SET X : [X]

        GREEN     RED         BROWN
        CYAN      MAGENTA     WHITE
```

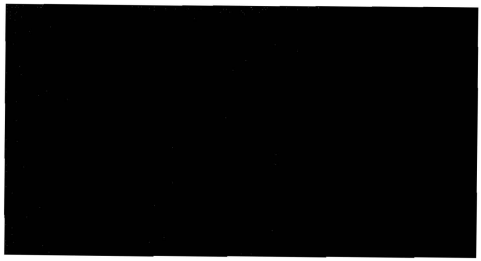


```
PRESS [Enter] KEY
```

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.


```
640*XXX GRAPHICS DISPLAY

        EVEN DOTS    ODD DOTS    ALL DOTS
        DRIVEN       DRIVEN      DRIVEN
```



```
PRESS [Enter] KEY
```

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 1/2" 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 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.

NOTE: 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 LINES SHOWS NORMAL PRINT.
2.     THIS   LINE   SHOWS   DOUBLE   WIDTH   PRINT.
3.  THIS LINES SHOWS COMPRESSED PRINT.
4.  THIS LINES SHOWS EMPASIZED PRINT.
5.  THIS LINES SHOWS DOUBLE STRIKE PRINT.
6.  ALL CHARACTERS PRINT

 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmn
opqrstuvwxyz{|}~
```

If you specified a printer that is not IBM compatible, the test prints:

```
  !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnc
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnop
 "#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopq
 #$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqr
 $%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
 %&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrst
 &'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstu
 '()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
 ()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvw
 )*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwx
 *+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxy
```

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 (online 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.

Toshiba support

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

Before you call

Some problems you experience may be related to software or the operating system, 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 below:

Outside of Europe

Australia

Toshiba (Australia) Pty, Ltd.
Information Systems Division
84-92 Talavera Road,
North Ryde, N.S.W. 2113
Sydney

Canada

Toshiba of Canada Ltd.
191 McNabb Street,
Markham, Ontario
L3R 8H2

Singapore

Toshiba Singapore Pte. Ltd.
438B Alexandra Road #06-01
Alexandra Technopark
Singapore 119968

United States of America

Toshiba America Information Systems, Inc.
9740 Irvine Boulevard
Irvine, California 92618
USA

In Europe

Germany & Austria

Toshiba Europe (I.E.) GmbH
Geschäftsbereich,
Deutschland-Österreich
Hammfelddamm 8,
D-41460 Neuss, Germany

France

Toshiba Systèms France S.A.
7, Rue Ampère B.P. 131,
92804 Puteaux Cedex

Netherlands

Toshiba Information Systems, Benelux B.V.
Rivium Boulevard
41 2909 LK Capelle a/d IJssel

Spain

Toshiba Information Systems, ESPAÑA
Parque Empresarial San Fernando
Edificio Europa, 1ª Planta,
Escalera A 28830 Madrid

United Kingdom

Toshiba Information Systems (U.K.) Ltd.
Toshiba Court
Weybridge Business Park
Addlestone Road
Weybridge, Surrey KT15 2UL

The Rest of Europe

Toshiba Europe (I.E.) GmbH
Hammfelddamm 8,
D-41460 Neuss, Germany

Appendixes

Specifications

This appendix summarizes the computer's technical specifications.

Physical Dimensions

Weight	typical 3.18 kilograms
Size	309 × 44 × 262.5 millimeters

Environmental Requirements

Conditions	**Ambient temperature**	**Relative humidity**
Operating	5°C (41°F) to 35°C (95°F)	20% to 80%
Non-operating	-20°C (-4°F) to 65°C (149°F)	10% to 95%
Thermal Gradient	20°C per hour maximum	
Wet-bulb temperature	26°C maximum	
Conditions	**Altitude (from sea level)**	
Operating	-60 to 3,000 meters	
Non-operating	-60 to 10,000 meters *maximum*	

Power Requirements

AC adaptor	Watts 60 W	4200 series (15.0" TFT model)/4300 series
	40W	All other models
	100-240 volts AC	
	50 or 60 hertz (cycles per second)	
Computer	15 VDC	
	Amperes 4A	4200 series (15.0" TFT model)/4300 series
	3A	All other models

Processor

Built-in — The computer is equipped with a Mobile Intel® Pentium® III or a Mobile Intel® Celeron™ processor which incorporates a math co-processor and 32 KB cache memory.

4260: Mobile Pentium® III processor 450 MHz

4270: Mobile Intel® Celeron™ processor 500 MHz

4280: Mobile Pentium® III processor 500 MHz

4320: Mobile Pentium® III processor 600 MHz
Intel® SpeedStep™ technology

4340: Mobile Pentium® III processor 650 MHz
Intel® SpeedStep™ technology

Memory

Built-in	64 MB expandable to 320 MB.
Optional	32 MB, 64 MB, 128 MB memory modules
Microprocessor cache	32 KB cache memory is incorporated in the processor.
Level 2 cache	Level 2 cache A level 2 cache maximizes performance. 4270: 128 KB 4260/4280/4320/4340: 256 KB
Video RAM	8 MB of RAM is provided for video display

Disks

Internal hard disk
- 5.59 gigabytes (6.0 billion bytes)
- 11.24 gigabytes (12.07 billion bytes)
- 16.90 gigabytes (18.14 billion bytes)

Diskette drive — Accommodates either 3 1/2" 1.44-megabyte or 720-kilobyte diskettes.

CD-ROM drive — Maximum 24-speed CD-ROM installs in the computer.

The drive supports the following formats:

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

DVD-ROM drive — 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:

- DVD-ROM
- DVD-Video

Display

Built-in — 13.0" DSTN, 800 horizontal x 600 vertical pixels, up to 16 M colors

13.3" XGA-TFT, 1024 horizontal x 768 vertical pixels, up to 16 M colors

14.1" XGA-TFT, 1024 horizontal x 768 vertical pixels up to 16 M colors

15.0" XGA-TFT, 1024 horizontal x 768 vertical pixels up to 16 M colors

Graphics controller — A 64-bit graphics controller maximizes display performance.

Keyboard

Built-in — 85 keys or 86 keys, compatible with IBM enhanced keyboard, embedded numeric overlay, dedicated cursor control,  and  keys.

Ports

Parallel	Parallel printer or other parallel device (ECP compatible)
Serial	RS-232C compatible port (16550 UART compatible)
External monitor	15-pin, analog VGA port supports VESA DDC2B compatible functions.
PS/2 Mouse/ Keyboard	Connects an external PS/2 mouse or PS/2 keyboard
Microphone	Enables connection of a monaural microphone
Headphone	Enables connection of a stereo headphone

Security lock slot	Connects a security lock to anchor the computer to a desk or other large object
Infrared	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.
Universal Serial Bus	The Universal Serial Bus (USB) enables chain connection of a number of USB-equipped devices to one port on your computer.
Video-out	This RCA video jack lets you transfer data to external devices. It supports DVD decoding.
Docking interface	Special port for connecting an Enhanced Port Replicator IV, Enhanced Port Replicator III and Port Replicator.

AccuPoint II

Built-in	A pointing device, the AccuPoint II, in the center of the keyboard and control buttons at the base of the keyboard enable control of the on-screen pointer.

PC Card Slot

Built-in	Slot for PC cards (PCMCIA) accommodates: two 5 mm Type II, or one 10.5 mm Type III

Sound System

Built-in	Sound Blaster Pro and Windows Sound System compatible sound system provides internal stereo speakers as well as jacks for an external microphone and headphone. It also has a volume control dial.

Software

Standard	Windows 95 or Windows 98 operating system, Toshiba Utilities preloaded and drivers preloaded on hard disk.

Built-in Modem

Network control unit (NCU)

Type of NCU	AA
Type of line	Telephone line (analog only)
Type of dialing	Pulse Tone
Control command	AT commands EIA-578 commands
Monitor function	Computer's speaker

Communication specifications

Communication system	Data:	Full duplex
	Fax:	Half duplex
Communication protocol	Data	
	ITU-T-Rec (Former CCITT)	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
Communication speed	Data transmission and reception 300/1200/2400/4800/7200/9600/12000/14400/ 16800/19200/21600/24000/26400/28800/31200/ 33600 bps Data reception only with 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	
Error correcting	MNP class 4 and ITU-T V.42	
Data compression	MNP class 5 and ITU-T V.42bis	

Display Controller and Modes

Display controller

The display controller interprets software commands into hardware commands that turn particular pels 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. The DSTN screen displays up to 800 x 600 (SVGA) and the TFT screen displays up to 1024 x 768 (XGA).

> ***NOTE:** Because of the LCD's increased resolution, lines may appear broken in DOS mode.*

A high-resolution external monitor connected to the computer can display up to 1280 horizontal and 1024 vertical pixels at up to 256 colors or 1024 horizontal and 768 vertical pixels at up to 16M colors.

The display controller also controls the video mode, which uses industry standard rules to govern the screen resolution and the maximum number of colors 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 the video modes defined in table 1. 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 colors 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 colors*	*CRT colors*	*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

Table 1 Video modes continued

Type	*Resolution*	*Character matrix (pels)*	*LCD colors*	*CRT colors*	*Scanning frequency Ver./Hor.*
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
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

Table 1 Video modes continued

Type	*Resolution*	*Character matrix (pels)*	*LCD colors*	*CRT colors*	*Scanning frequency Ver./Hor.*
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

* and ** Enters virtual mode when the LCD screen resolution is 800 x 600 (panning).

** Enters virtual mode when the LCD screen resolution is 1024 x 768 (panning).

AT Commands

In most cases, you will not need to type AT commands manually. However, there might be some occasions when you will need to do so.

For details on AT commands, refer to the online manual.

S-registers

S-registers contain the settings that determine how a number of functions of the internal modem operate. The contents of the registers are changed automatically when you modify corresponding settings in your communication software. If you choose, however, you can display and edit the contents of the registers manually when the modem is in command mode.

For details on S-registers, refer to the online manual.

V.90/K56flex

The Toshiba internal modem uses V.90 and K56flex technology. The modem is capable of downstream speeds of 56Kbps (kilobits per second) when connected to an Internet service provider that supports V.90 or K56flex. As with any modem, the actual throughput (speed of data transfer) depends on analog telephone line conditions, which can vary considerably. Therefore, many users will experience throughput in the range of 28-50Kbps under normal telephone line conditions. Upstream data flows at the V.34 rate.

> ***NOTE:*** *V.90/K56flex rates can be achieved only when one V.90/K56flex-capable host modem is connected to another. The Toshiba Internal modem will select automatically V.34 if the remote modem lacks V.90/K56flex capability or if a combination of network and/or phone line conditions prevent V.90/K56flex connection.*

V.90 mode

Function	Transmission speed
Data V.90	From 56K (maximum) to 28Kbps (minimum) Reception only

K56flex mode

Function	Transmission speed
Data K56flex	From 56K (maximum) to 32Kbps (minimum) Reception only

Table E-1 Result codes for a V.90/K56FLEX connection

No.	Result code	Description
70	CONNECT 32000 EC*	Connection at 32000 bits/s (K56flex or V.90 mode)
71	CONNECT 34000 EC*	Connection at 34000 bits/s (K56flex mode)
72	CONNECT 36000 EC*	Connection at 36000 bits/s (K56flex or V.90 mode)
73	CONNECT 38000 EC*	Connection at 38000 bits/s (K56flex mode)
74	CONNECT 40000 EC*	Connection at 40000 bits/s (K56flex or V.90 mode)
75	CONNECT 42000 EC*	Connection at 42000 bits/s (K56flex mode)
76	CONNECT 44000 EC*	Connection at 44000 bits/s (K56flex or V.90 mode)
77	CONNECT 46000 EC*	Connection at 46000 bits/s (K56flex mode)
78	CONNECT 48000 EC*	Connection at 48000 bits/s (K56flex or V.90 mode)
79	CONNECT 50000 EC*	Connection at 50000 bits/s (K56flex mode)
80	CONNECT 52000 EC*	Connection at 52000 bits/s (K56flex or V.90 mode)
81	CONNECT 54000 EC*	Connection at 54000 bits/s (K56flex mode)
82	CONNECT 56000 EC*	Connection at 56000 bits/s (K56flex or V.90 mode)
100	CONNECT 28000 EC*	Connection at 28000 bits/s (V.90 mode)
101	CONNECT 29333 EC*	Connection at 29333 bits/s (V.90 mode)
102	CONNECT 30666 EC*	Connection at 30666 bits/s (V.90 mode)
103	CONNECT 33333 EC*	Connection at 33333 bits/s (V.90 mode)
104	CONNECT 34666 EC*	Connection at 34666 bits/s (V.90 mode)
105	CONNECT 37333 EC*	Connection at 37333 bits/s (V.90 mode)
106	CONNECT 38666 EC*	Connection at 38666 bits/s (V.90 mode)
107	CONNECT 41333 EC*	Connection at 41333 bits/s (V.90 mode)
108	CONNECT 42666 EC*	Connection at 42666 bits/s (V.90 mode)
109	CONNECT 45333 EC*	Connection at 45333 bits/s (V.90 mode)
110	CONNECT 46666 EC*	Connection at 46666 bits/s (V.90 mode)
111	CONNECT 49333 EC*	Connection at 49333 bits/s (V.90 mode)
112	CONNECT 50666 EC*	Connection at 50666 bits/s (V.90 mode)
113	CONNECT 53333 EC*	Connection at 53333 bits/s (V.90 mode)
114	CONNECT 54666 EC*	Connection at 54666 bits/s (V.90 mode)

* EC stands for the Error Control method, which appears only when the extended result codes configuration option is enabled. EC is replaced by one of the following symbols, depending on the error control method used.

V42bis	V.42 error control and V.42bis data compression
V42	V.42 error control only
NoEC	No error control protocol

AT Command

-V90=* V.90 Dial Line Rate

-V90 sets the maximum V.90 downstream that the modem attempts to connect.

-V90=0 V.90 disabled

-V90=1 V.90 enabled: automatic speed selection - maximum modem speed (default)

S-register

S38 K56flex Dial Line Rate

S38 sets the maximum K56flex downstream that the modem attempts to connect.

S38=0 K56flex disabled (default)

S38=1 K56flex enabled: automatic speed selection - maximum modem speed

Internal Modem Guide

When you are familiar with the procedures and information in this guide, carefully follow the steps described for installing the internal modem.

> *CAUTION: Do not disassemble the computer beyond the steps described in this instruction or touch any components not specifically described.*

Installing the internal modem

To install the internal modem follow the procedures below.

Removing the battery pack

Before installing the internal modem, remove the battery pack. Refer to chapter 6 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 figures 1 and 2.

1. Remove one screw securing the cover.
2. Use a coin to release latches on the cover.

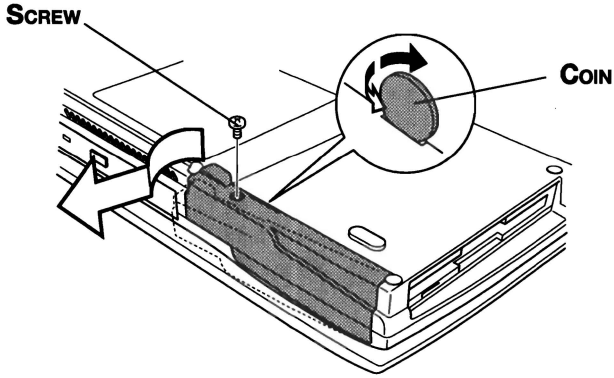


Figure F-1 Removing the cover

3. Thread the modem cable into the hole shown below and fit the modem jack into its slot.

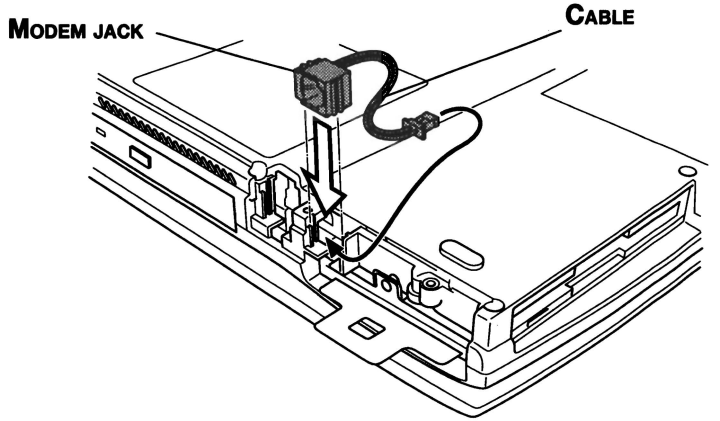


Figure F-2 Seating themodem jack

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 rightside 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 centimeters. Be careful not to pull the keyboard's ribbon cable.

Connecting the internal modem board

To connect the internal 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.

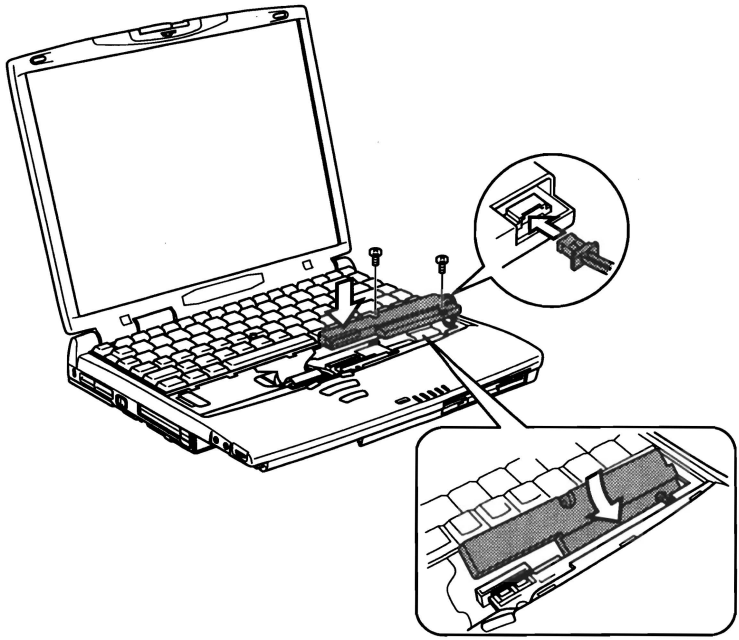


Figure F-3 Removing two screws and opening the keyboard

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 for details on installing the battery pack.

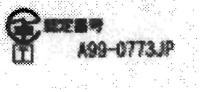
Removing the internal modem

To remove the internal 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 internal modem is approved by Japan Approvals Institute for Telecommunications Equipment.



Appendix G

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:

Length:	Minimum 2 meters
Wire size:	Minimum 0.75 mm^2
Current rating:	Minimum 2.5 amperes
Voltage rating:	125 or 250 VAC (depending on country's power standards)

Certification agencies

U.S. and Canada: UL listed and CSA certified

No. 18 AWG, Type SVT or SPT-2 two conductor

Europe:

Austria:	OVE	Italy:	IMQ
Belgium:	CEBEC	The Netherlands:	KEMA
Denmark:	DEMKO	Norway:	NEMKO
Finland:	SETI	Sweden:	SEMKO
France:	UTE	Switzerland:	SEV
Germany:	VDE	United Kingdom:	BSI

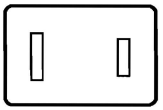
Australia: AS

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.

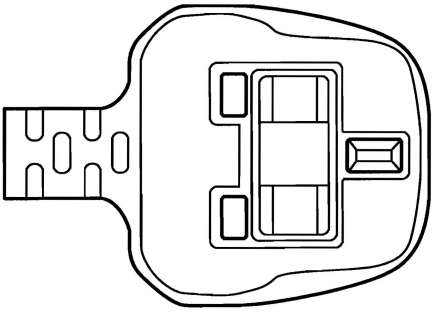
The following illustrations show the plug shapes for the U.S.A. and Canada, the United Kingdom, Australia and Europe.

USA and Canada



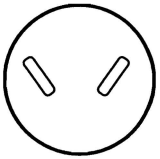
UL approved
CSA approved

United Kingdom



BS approved

Australia



AS approved

Europe

Approved by the appropriate agency

Keyboard Layouts

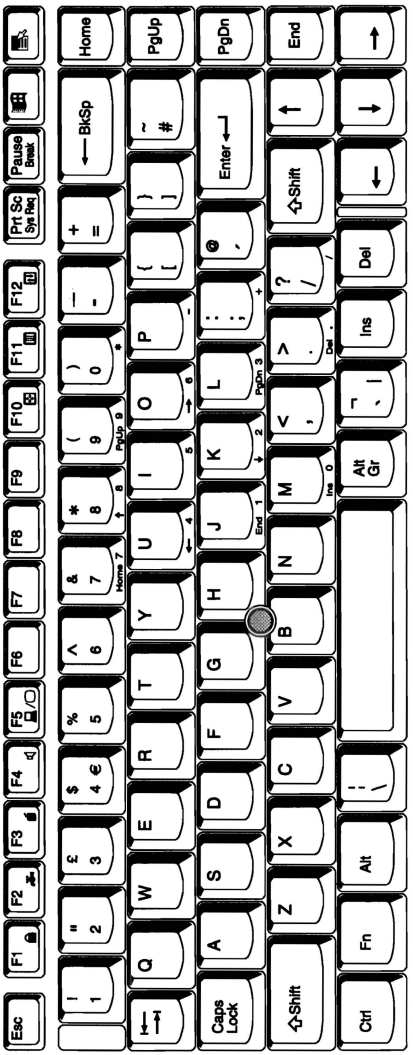


Figure H-1 United Kingdom (UK)

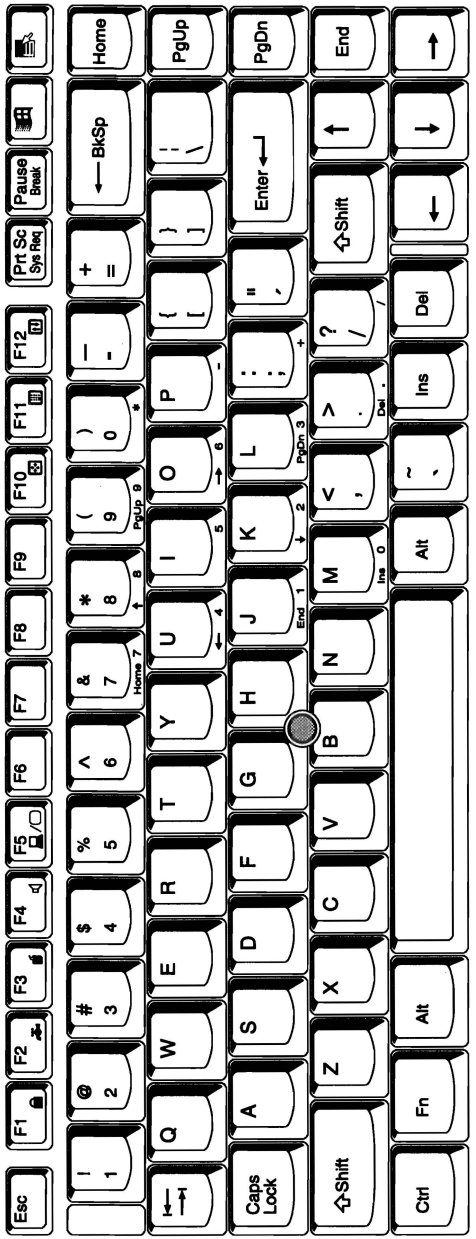


Figure H-2 United States (US)

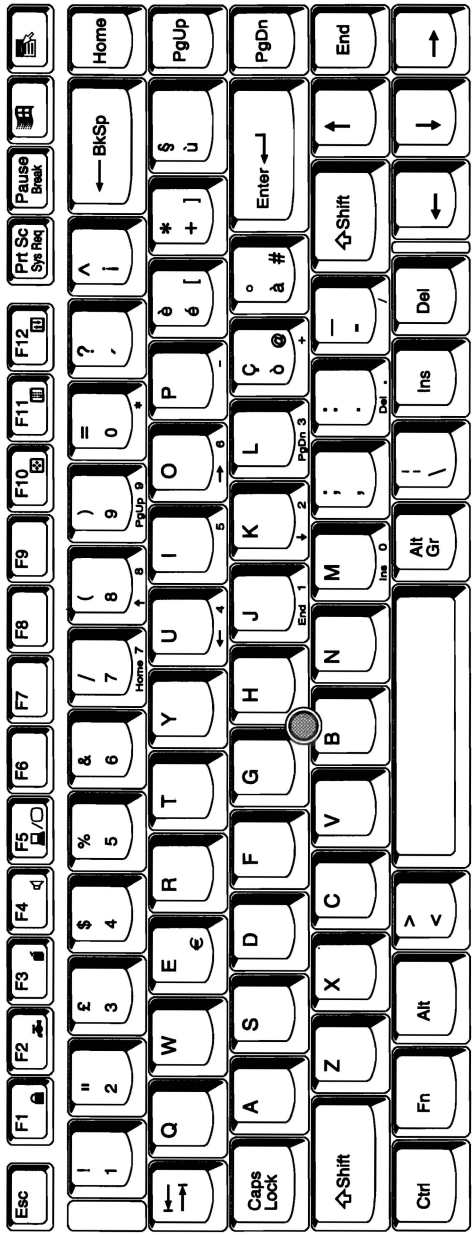


Figure H-3 Italian (IT)

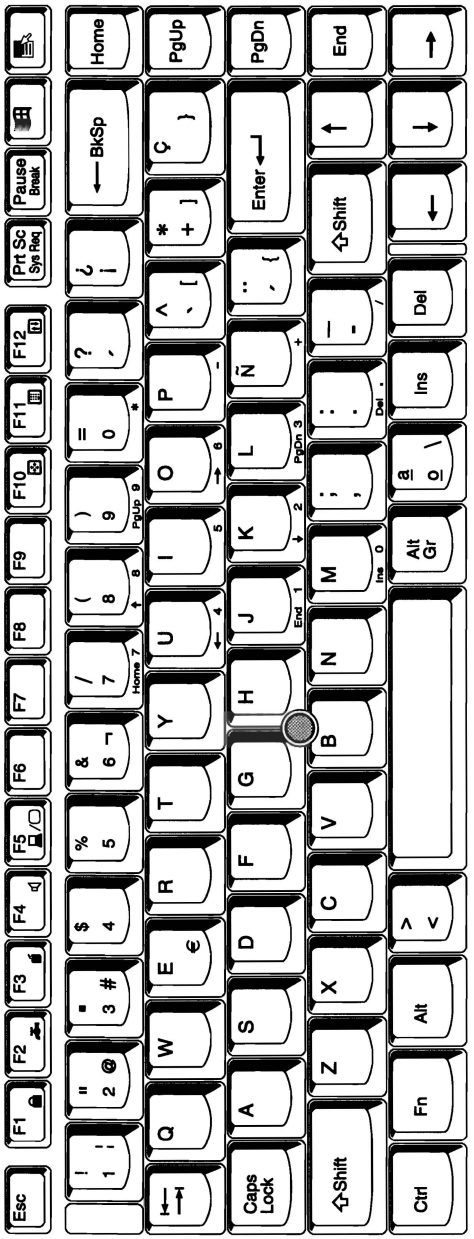


Figure H-4 Spanish (SP)

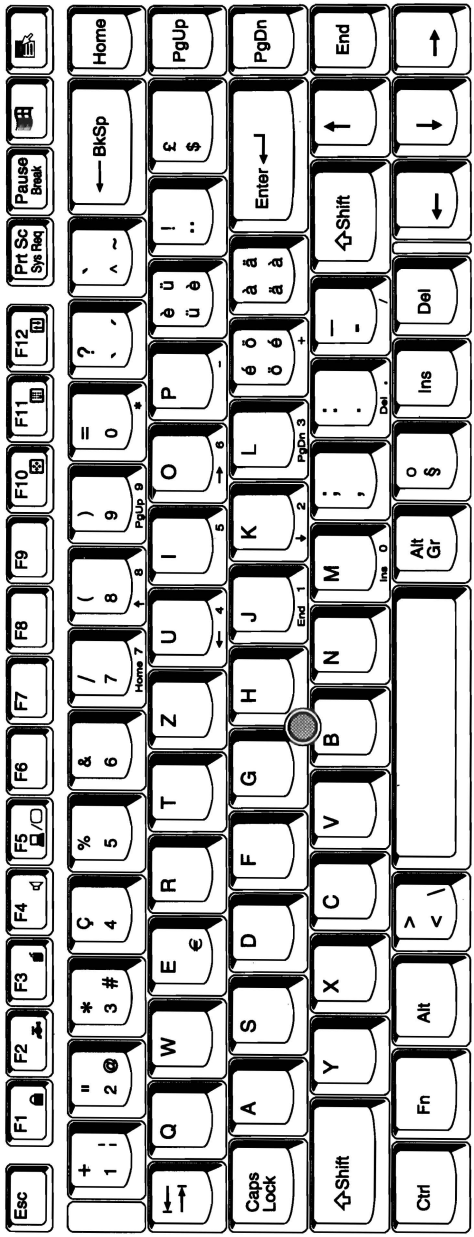


Figure H-5 Swiss-German (SL)

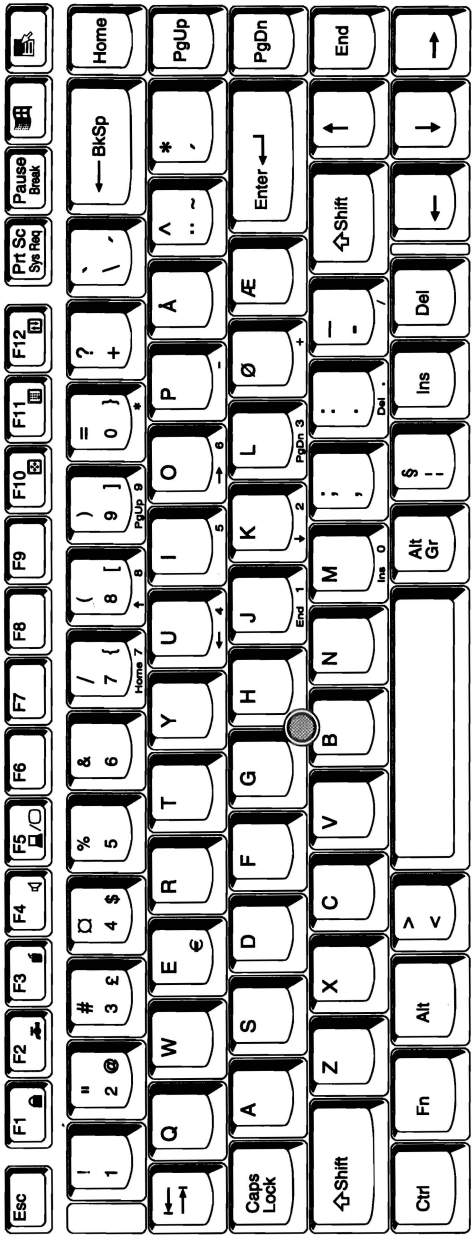


Figure H-6 Scandinavian (SC)

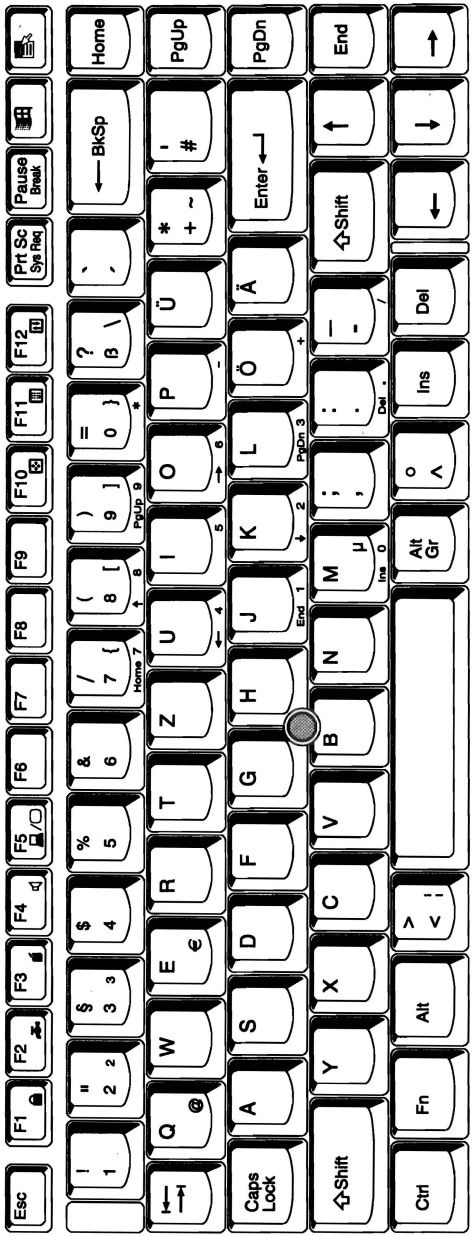


Figure H-7 German (GR)

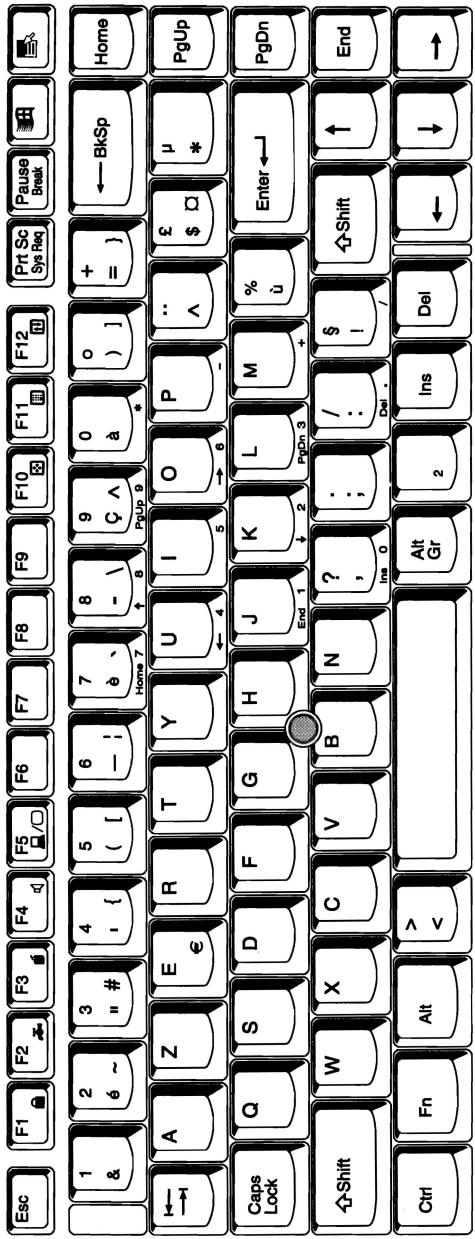


Figure H-8 French (FR)

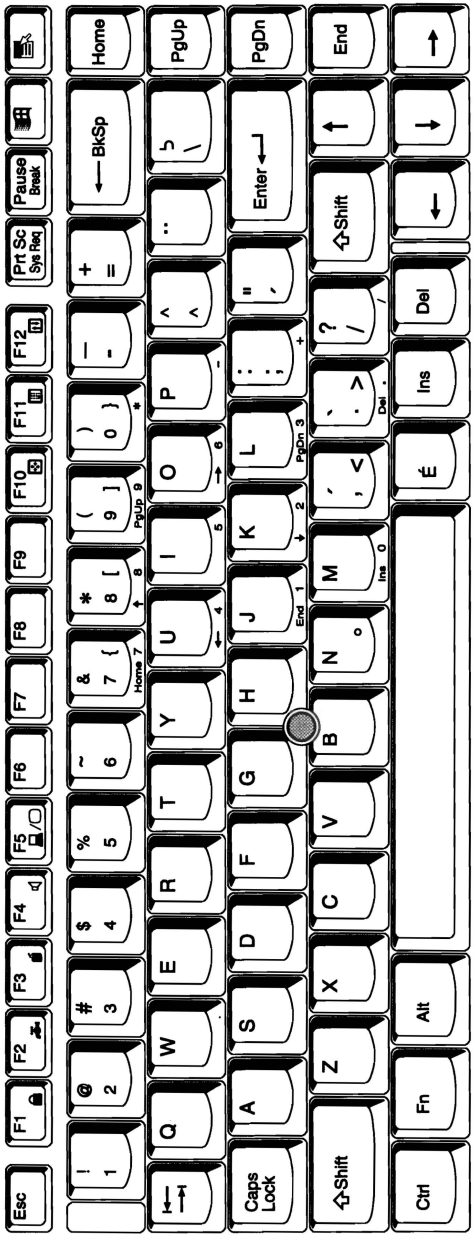


Figure H-9 Canadian (Specialized)

Glossary

The terms in this glossary cover the topics discussed in this manual. Alternate naming is included for reference.

Abbreviations

AC: alternating current

AGP: accelerated graphics port

ANSI: American National Standards Institute

APM: advanced power management

ASCII: American Standard Code for Information Interchange

BIOS: basic input output system

CD-ROM: Compact Disk-Read Only Memory

CMOS: complementary metal-oxide semiconductor

CPU: central processing unit

CRT: cathode ray tube

DC: direct current

DDC: display data channel

DMA: direct memory access

DOS: disk operating system

DSTN: dual-scan supertwisted nematic

ECP: extended capabilities port

FDD: floppy disk drive

FIR: fast infrared (refer to IrDA 1.1)

HDD: hard disk drive

IDE: integrated drive electronics

I/O: input/output

IrDA: Infrared Data Association

IRQ: interrupt request

KB: kilobyte

LCD: liquid crystal display

LED: light emitting diode

LSI: large scale integration

MDA: monochrome display adapter

MPEG: moving picture coding experts group

MS-DOS: Microsoft Disk Operating System

OCR: optical character recognition (reader)

PCB: printed circuit board

PCI: peripheral component interconnect

RAM: random access memory

RGB: red, green, and blue

ROM: read only memory

RTC: real time clock.

SIO: serial input/output

(Abbreviations continued)

SCSI: small computer system interface

SVGA: super video graphics array

TFT: thin-film transistor

UART: universal asynchronous receiver/transmitter

USB: Universal Serial Bus

VESA: Video Electronics Standard Association

VGA: video graphics array

VRT: voltage reduction technology

ZV: Zoomed Video

A

AccuPoint: A pointing device integrated into the Toshiba computer keyboard.

adapter: A device that provides an interface between two dissimilar electronic devices. For example, the AC adapter modifies the power from a wall outlet for use by the computer. This terms also refers to the add-in circuit cards that control external devices, such as video monitors and magnetic tape devices.

allocate: To assign a space or function for a specific task.

alphanumeric: Keyboard characters including letters, numbers and other symbols, such as punctuation marks or mathematical symbols.

alternating current (AC): Electric current that reverses its direction of flow at regular intervals.

analog signal: A signal whose characteristics such as amplitude and frequency vary in proportion to (are an analog of) the value to be transmitted. Voice communications are analog signals.

ANSI: American National Standards Institute. An organization established to adopt and define standards for a variety of technical disciplines. For example, ANSI defined the ASCII standard and other information processing requirements.

antistatic: A material used to prevent the buildup of static electricity.

application: A group of programs that together are used for a specific task such as accounting, financial planning, spreadsheets, word processing, and games, etc.

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.

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.

binary: The base two number system composed of zeros and ones (off or on), used by most digital computers. The rightmost 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: Synonym for board. *See* board.

CardBus: An industry standard bus for 32-bit PC Cards.

CD-ROM: A Compact Disk-Read Only Memory is a high capacity disk that can be read from but not written to. The CD-ROM drive uses laser, rather than magnetic heads, to read data from the disk.

Centronics: A printer manufacturer whose method of data transmission between a parallel printer and a computer become an industry standard.

CGA: Color/graphics adapter. A video display protocol defined by the IBM Color/Graphics Monitor Adapter and its associated circuitry. This protocol supports two-color 640x200 and four-color 320x200 graphics, and 16-color 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 TSETUP program or the pop-up window to control your system configuration.

control keys: A key or sequence of keys you enter from the keyboard to initiate a particular function within a program.

controller: Built-in hardware and software that controls the functions of a specific internal or peripheral device (e.g. keyboard controller).

co-processor: A circuit built into the processor that is dedicated to intensive math calculations.

CPS: Characters per second. Typically used to indicate the transmission speed of a printer.

CPU: Central processing unit. The portion of the computer that interprets and executes instructions.

CRT: Cathode Ray Tube. A vacuum tube in which beams projected on a fluorescent screen-producing luminous spots. An example is the television set.

cursor: A small, blinking rectangle or line that indicates the current position on the display screen.

D

data: Information that is factual, measurable or statistical that a computer can process, store, or retrieve.

data bits: A data communications parameter controlling the number of bits (binary digits) used to make up a byte. If data bits = 7 the computer can generate 128 unique characters. If data bits = 8 the computer can generate 256 unique characters.

DC: Direct Current. Electric current that flows in one direction. This type of power is usually supplied by batteries.

default: The parameter value automatically selected by the system when you or the program do not provide instructions. Also called a preset value.

delete: To remove data from a disk or other data storage device. Synonymous with erase.

device driver: A program that controls communication between a specific peripheral device and the computer. The CONFIG.SYS file contains device drivers that MS-DOS loads when you turn the computer on.

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 used on a microcomputer. Also called floppy disk.

display: A CRT, plasma screen, 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 color LCD that meets VGA standards.

E

echo: To send back a reflection of the transmitted data to the sending device. You can display the information on the screen, or output it to the printer, or both. When a computer receives back data it transmitted to a CRT (or other peripheral device) and then retransmits the data to printer, the printer is said to echo the CRT.

EGA: Enhanced Graphics Adapter. A video display protocol defined by the IBM Enhanced Graphics Adapter and its associated circuitry for direct drive TTL displays that supports 16-

color/monochrome 640x350 and 16-color 640x200 and 320x200 graphics, and 16-color 640x350 and 320x350 text modes.

erase: *See* delete.

escape: 1) A code (ASCII code 27), signaling the computer that what follows are commands; used with peripheral devices such as printers and modems. 2) A means of aborting the task currently in progress.

escape guard time: A time before and after an escape code is sent to the modem which distinguishes between escapes that are part of the transmitted data, and escapes that are intended as a command to the modem.

execute: To interpret and execute an instruction.

Extended Capability Port: An industry standard that provides a data buffer, switchable forward and reverse data transmission, and run length encoding (RLE) support.

F

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: *See* diskette.

floppy disk drive (FDD): An electromechanical device that reads and writes to floppy disks. *See also* diskette.

Fn-esse: A Toshiba utility that lets you assign functions to hotkeys.

folder: An icon in Windows used to store documents or other folders.

format: The process of readying a blank disk for its first use. Formatting establishes the structure of the disk that the operating system expects before it writes files or programs onto the disk.

function keys: The keys labeled **F1** through **F12** that tell the computer to perform certain functions.

G

gigabyte (GB): A unit of data storage equal to 1024 megabytes. *See also* megabyte.

GND: Ground. An RS-232C signal used in the exchange of data between a computer and serial device.

graphics: The use of drawings, pictures, or other images, such as charts or graphs, to present information.

H

hard disk: A non-removable disk usually referred to as drive C. The factory installs this disk and only a trained engineer can remove it for servicing. Also called fixed disk.

hard disk drive (HDD): An electromechanical device that reads and writes a hard disk. *See also* hard disk.

hardware: The physical electronic and mechanical components of a computer system: typically, the computer itself, external disk drives, etc. *See also* software and firmware.

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.

hotkey: A Toshiba 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

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 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.

I/O: Input/output. Refers to acceptance and transfer of data to and from a computer.

I/O devices: Equipment used to communicate with the computer and transfer data to and from it.

IrDA 1.1: An industry standard that enables cableless infrared serial data transfer at speeds of up to 4 Mbps.

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 megabit.

L

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 darkens the liquid crystal to provide contrast to lighted portions of the display.

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.

MDA: Monochrome Display Adapter. A video display protocol defined by the IBM Monochrome Display Adapter 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.

mode: A method of operation, for example, the boot mode or the resume mode.

modem: Derived from modulator/demodulator, a device that converts (modulates) digital data for transmission over telephone lines and then converts modulated data (demodulates) to digital format where received.

monitor: A device that uses rows and columns of pixels to display alphanumeric characters or graphic images. *See* 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.

nonvolatile memory: Memory, usually read-only (ROM), that is capable of permanently storing information. Turning the computer's power off does not alter data stored in nonvolatile memory.

numeric keypad overlay: A feature that allows you to use certain keys on the keyboard to perform numeric entry, or to control cursor and page movement.

O

OCR: Optical Character Recognition (reader). A technique or device that uses laser or visible light to identify characters and input them into a storage device.

OCR wand: A device that reads, using an optical device, hand written or machine printed symbols into a computer. *See also* OCR.

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: Refers to two or more processes or events that can occur simultaneously, and without interfering with each other. *See also* serial.

parallel interface: Refers to a type of information exchange that transmits information one byte (8 bits) at a time. *See also* serial interface.

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.

plug and play: A capability with Windows 95/98 that enables the system to automatically recognize connections of external devices and make the necessary configurations in the computer.

pixel: A picture element. The smallest dot that can be made on a display or printer. Also called a pel.

port: The electrical connection through which the computer sends and receives data to and from devices or other computers.

printed circuit board (PCB): A hardware component of a processor to which integrated circuits and other components are attached. The board itself is typically flat and rectangular, and constructed of fiberglass, to form the attachment surface.

program: A set of instructions a computer can execute that enables it to achieve a desired result. See also application.

prompt: A message the computer provides indicating it is ready for or requires information or an action from you.

R

RAMDRIVE: Part of the computer's random access memory assigned to simulate a disk. RAMDRIVE is a feature of MS-DOS.

Random Access Memory (RAM): High speed memory within the computer circuitry that can be read or written to.

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.

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.

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.

RGB: Red, green, and blue. A device that uses three input signals, each activating an electron gun for a primary additive color (red, green, and blue) or port for using such a device. *See also* CRT.

RJ11: A modular telephone jack.

ROM: Read Only Memory: A nonvolatile memory chip manufactured to contain information that controls the computer's basic operation. You cannot access or change information stored in ROM.

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: The handling of data bits one after the other.

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.

SIO: Serial Input/Output. The electronic methodology used in serial data transmission.

soft key: Key combinations that emulate keys on the IBM keyboard, change some configuration options, stop program execution, and access the numeric keypad overlay.

software: The set of programs, procedures and related documentation associated with a computer system. Specifically refers to computer programs that direct and control the computer system's activities. *See also* hardware.

stop bit: One or more bits of a byte that follow the transmitted character or group codes in asynchronous serial communications.

subpixel: Three elements, one red, one green and blue (RGB), that make up a pixel on the color LCD. The computer sets subpixels independently, each may emit a different degree of brightness. See also pixel.

synchronous: Having a constant time interval between successive bits, characters or events.

system disk: A disk that has been formatted with an operating system. 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.

TFT: Transistor-transistor logic. A logic circuit design that uses switching transistors for gates and storage.

TTL: A color LCD technology that applies individual transistors to each pixel enabling fine display control and excellent screen legibility

U

Universal Serial Bus: This serial interface lets you communicate with several devices connected in a chain to a single port on the computer.

V

VGA: Video graphics array is an industry standard video adapter that lets you run any popular software.

volatile memory: Random access memory (RAM) that stores information as long as the computer is connected to a power source.

W

warm start: Restarting or resetting a computer without turning it off.

window: A portion of the screen that can display its own application or document. Often used to mean a Microsoft Windows window.

write protection: A method for protecting a diskette (floppy disk) from accidental erasure.

Z

ZV port: Zoomed Video port dedicated to high-performance video data transfer.

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