Satellite Pro

User's Manual

2100

SatellitePro

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Choose freedom.

TOSHIBA

Copyright

Satellite Pro 2100 Series Portable Personal Computer User's Manual

First edition September 2002

Disclaimer

This manual has been validated and reviewed for accuracy. The instructions and descriptions it contains are accurate for the Satellite Pro 2100 Series Portable Personal Computers at the time of this manual's production. However, succeeding computers and manuals are subject to change without notice. TOSHIBA assumes no liability for damages incurred directly or indirectly from errors, omissions or discrepancies between the computer and the manual.

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EU Declaration of Conformity

CE

This product carries the CE-Mark in accordance with the related European Directives. CE-Marking is the responsibility of TOSHIBA Europe, Hammfelddamm 8, 41460 Neuss, Germany.

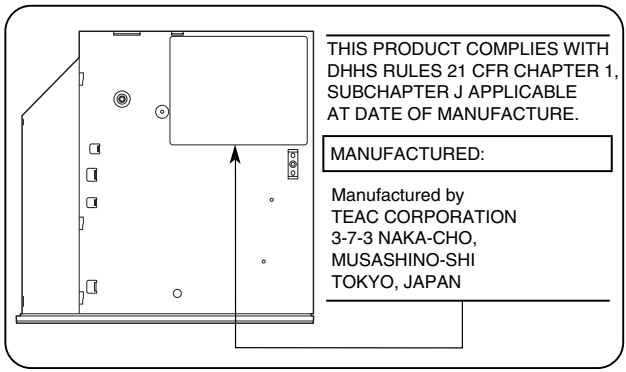
TEAC CD-ROM drive CD-224E-CA4 safety instruction

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

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

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

Location of the required label



CLASS 1 LASER PRODUCT
LASERSCHUTZKLASSE 1
PRODUKT
TO EN60825

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

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

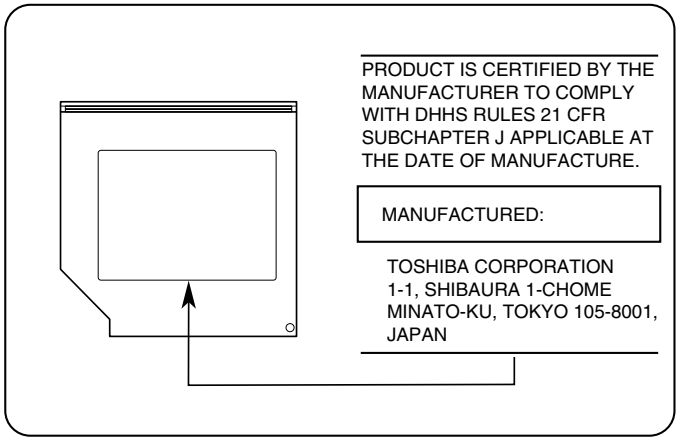
TOSHIBA CD-RW/DVD-ROM drive SD-R2212 safety instruction

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

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

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

Location of the required label



CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT
TO EN 60825-1

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.*

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.*

Matsushita CD-RW/DVD-ROM drive UJDA740** safety instruction

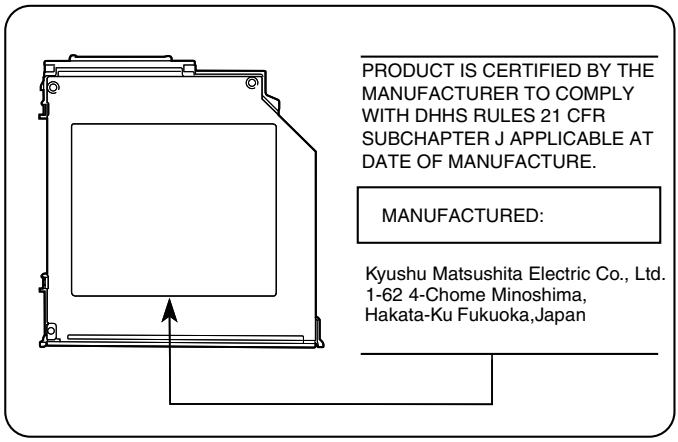
** means any letters or numbers.

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

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

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

Location of the required label



CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT
TO EN 60825-1

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.*

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

TEAC CD-RW/DVD-ROM drive DW-224E** safety instruction

** means any letters or numbers.

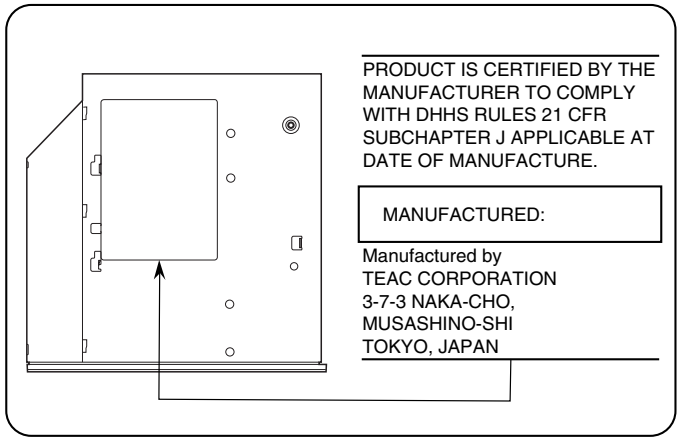
This product has been designed and manufactured according to FDA regulations "title 21. CFR. chapter 1, subchapter J. based on the radiation Control for Health and Safety Act of 1968," and is classified as a class 1 laser product. There is no hazardous invisible laser radiation confined in the protective housings.

The label required in this regulation is shown below.

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

	Optical pickup
Type:	007XL
Manufacturer:	Matsushita Electric Industrial Co., Ltd.
Laser output:	Less than 1.3m W (Play) and 28m W (Record) on the objective lens
Wavelength:	777-787nm (CD) 647~687nm (DVD)

Location of the required label



CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT
TO EN 60825-1

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.*

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

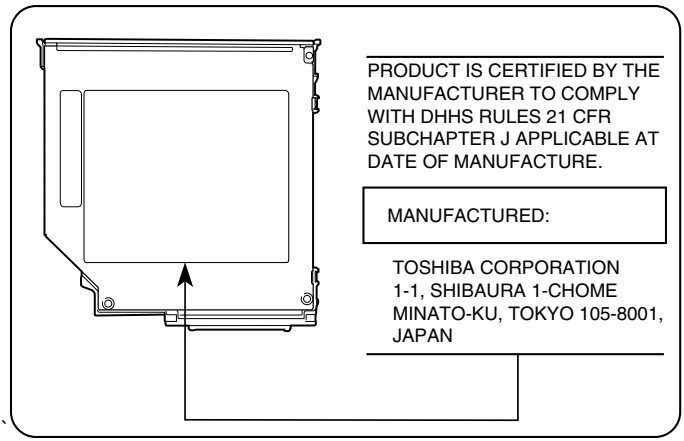
TOSHIBA DVD-ROM drive SD-C2612 safety instruction

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

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

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

Location of the required label



CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT
TO EN 60825-1

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.*

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

TEAC DVD-ROM drive DV-28E-B34 safety instruction

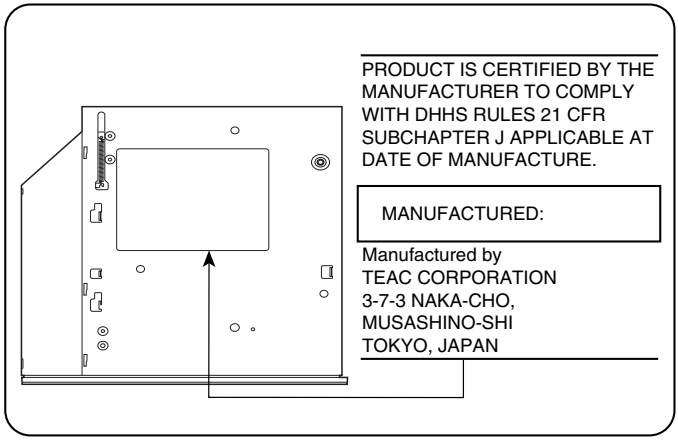
** means any letters or numbers.

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

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

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

Location of the required label



CLASS 1 LASER PRODUCT
LASERSCHUTZKLASSE 1
PRODUKT
TO EN60825

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

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

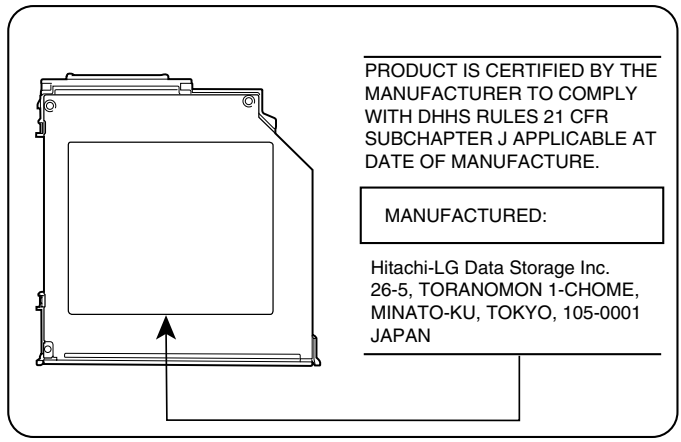
HITACHI DVD-ROM drive GDR-8081N-ATABB0 safety instruction

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.

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

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

Location of the required label



CLASS 1 LASER PRODUCT
LASERSCHUTZKLASSE 1
PRODUKT
TO EN60825

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

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

Modem warning notice

Conformity Statement

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

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

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

Network Compatibility Statement

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

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

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

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

General Precautions

TOSHIBA computers are designed to optimise safety, minimise 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. Please also refer to the *Safety Instruction Manual*.

Stress injury

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

Heat Warning

- 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.
- 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.
- The surface of the AC adaptor can become hot when in use. This condition does not indicate a malfunction. If you need to transport the AC adaptor, disconnect it and let it cool before moving it.
- Do not lay the AC adaptor on a material that is sensitive to heat. The material could be damaged.

Mobile phones

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

Pressure or impact damage

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

PC Card overheating

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

CE compliance

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

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

Working environment

This product was designed to fulfil the EMC (electromagnetic compatibility) requirements to be observed for so-called "Residential, commercial and light industry environments".

TOSHIBA do not approve the use of this product in working environments other than the above mentioned "Residential, commercial and light industry environments".

For example, the following environments are not approved:

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

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

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

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

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

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

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

Network connection (class A warning)

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

Information on the secure use of the CD-RW

Please adhere to the following information on the use of the CD-RW to minimise the risk of unsuccessful storing process. As the storing may be unsuccessful despite your adhering to these information, for example because of a defective storing medium, you should even if the software indicates a successful storage, always check if the data has been stored successfully.

About TOSHIBA Wireless Solution

Wireless LAN Card Types

The Wireless LAN Card is a wireless network card that complies with the IEEE 802.11 standard on wireless LANs (Revision B). The Wireless LAN Card supports data rates up to 11 Mbit/s.

- Wi-Fi (Wireless Fidelity) certified by the Wireless Ethernet Compatibility Alliance (WECA). This means that your Wireless hardware will communicate with other vendors' IEEE 802.11 compliant wireless LAN product.
- Fully compatible with any other wireless LAN system based on Direct Sequence Spread Spectrum (DSSS) radio technology that complies with the "IEEE 802.11 standard on wireless LANs (Revision B).

Wireless LAN cards

The Wireless LAN Card supports the following wireless LAN features:

- Automatic Transmit Rate Select mechanism in the transmit range of 11, 5.5, 2 and 1 Mbit/s.
- Frequent Channel Selection (2.4 GHz).
- Roaming over multiple channels.
- Card Power Management.
- Wired Equivalent Privacy (WEP) data encryption, based on the 128 bit RC4 encryption algorithm as defined in the IEEE 802.11 standard on wireless LANs.

Wireless Interoperability

The TOSHIBA Wireless LAN Mini PCI Card products are designed to be interoperable with any Wireless LAN product that is based on Direct Sequence Spread Spectrum (DSSS) radio technology, and is compliant to:

- The IEEE 802.11 Standard on Wireless LANs (Revision B), as defined and approved by the Institute of Electrical and Electronics Engineers.
- The Wireless Fidelity (WiFi) certification as defined by the WECA Wireless Ethernet Compatibility Alliance.

Wireless LAN and your Health

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

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

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

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

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

Safety Instruction for Wireless Products

If your computer has wireless function, all safety instructions must be read carefully and must be fully understood, before attempting to use our Wireless Products.

This manual contains the safety instructions that must be observed in order to avoid potential hazards that could result in personal injuries or could damage your Wireless Products.

Limitation of Liability

For damage occurring due to an earthquake or thunder, fire beyond our responsibility, action by third party, other accident, intentional or accidental mistakes by a user, misuse, use under abnormal conditions, we do not take any responsibility.

For incidental damage (loss of business profit, business interruption, etc.) occurring due to use or disability of the product, we do not take any responsibility.

For damage occurring due to non observance of the contents described in the instruction manual, we do not take any responsibility.

For damage occurring due to erroneous operation or hang up caused by use in combination with products not related to our company, we do not take any responsibility.

Usage Restrictions

Do not use the Wireless Products for controlling equipment:

- Equipment directly linked with human life corresponds to the following.
  - Medical equipment such as life support systems, equipment used in operations, etc.
  - Exhaust systems for gases such as poisonous gas etc. and exhaust systems for smoke.
  - Equipment that must be set up in compliance with various laws such as the Fire Services Act, the Construction Standard Act, etc.
  - Equipment corresponding to that mentioned above.
- Equipment linked with human safety or having a serious influence on the safe maintenance of public function, etc., because it is not designed or manufactured for this type of use.
  - Traffic control equipment for air, railroad, road, marine transport, etc.
  - Equipment used in atomic power plants etc.
  - Equipment corresponding to that mentioned above.

WARNING

Turn OFF the Wireless Communication switch of Wireless Products in a congested place, such as a crowded commuter train.

Keep this product away from a cardiac pacemaker at least 22cm.

Radio waves can potentially affect cardiac pacemaker operation, thereby causing respiratory troubles.

Turn OFF the Wireless Communication switch inside a medical facility or near medical electric equipment. Do not bring medical electric equipment close to the product.

Radio waves can potentially affect medical electric equipment, thereby causing an accident due to malfunction.

Turn OFF the Wireless Communication switch near an automatic door, fire alarm or other automatic control equipment.

Radio waves can potentially affect automatic control equipment, thereby causing an accident due to malfunction.

Do not turn ON the Wireless Communication switch in aircraft or in places that generate or can generate radio interference.

Radio waves can potentially affect them, causing an accident due to malfunction.

Monitor possible radio interference or other troubles to other equipment while the product is used. If any effect is caused, turn OFF the Wireless Communication switch.

Otherwise, radio waves can potentially affect other equipment, thereby causing an accident due to malfunction.

When using the product in a car, check with the automobile dealer if the car has an adequate electromagnetic compatibility (EMC).

Radio waves of the product can potentially hamper safe driving.

Depending on car model, the product can rarely affect car electronic equipment if it is used in a car.

NOTE

Do not use the product in the following places:

Places near a microwave oven where a magnetic field generates and places where static electricity or radio interference generates.

Depending on environment, radio waves can not reach to the product.

Regulatory Information

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

Canada – Industry Canada (IC)

This device complies with RSS 210 of Industry Canada.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device."

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit étre prét à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC with essential test suites as per standards:

- EN 60950 Safety of Information Technology equipment
- ETS 300 328 Technical requirements for radio equipment
- ETS 300 826 General EMC requirements for radio equipment.

Belgium/ België/Belgique	For outdoor usage only channel 10 (2457 MHz) and 11 (2462 MHz) is allowed. For private usage outside buildings across public grounds over less than 300m no special registration with IBPT/BIPT is required. Registration to IBPT/BIPT is required for private usage outside buildings across public grounds over more than 300m. An IBPT/BIPT license is required for public usage outside building. For registration and license please contact IBPT/BIPT. Gebruik buiten gebouw alleen op kanalen 10 (2457 MHz) en 11 (2462 MHz). Voor privé-gebruik buiten gebouw over publieke groud over afstand kleiner dan 300m geen registratie bij BIPT/IBPT nodig; voor gebruik over afstand groter dan 300m is wel registratie bij BIPT/IBPT nodig. Voor publiek gebruik buiten gebouwen is licentie van BIPT/IBPT verplicht. Voor registratie of licentie kunt u contact opnemen met BIPT. L'utilisation en extérieur est autorisé sur le canal 10 (2457 MHz) et 11 (2462 Mhz). Dans le cas d'une utilisation privée, à l'extérieur d'un bâtiment, au-dessus d'un espace public, aucun enregistrement n'est nécessaire pour une distance de moins de 300m. Pour une distance supérieure à 300m un enregistrement auprès de l'IBPT est requise. Pour une utilisation publique à l'extérieur de bâtiments, une licence de l'IBPT est requise. Pour les enregistrements et licences, veuillez contacter l'IBPT.
Germany/ Deutschland	License required for outdoor installations. Check with reseller for procedure to follow Anmeldung im Outdoor-Bereich notwendig, aber nicht genehmigungspflichtig. Bitte mit Händler die Vorgehensweise abstimmen.

France	Restricted frequency band: only channels 10 and 11 (2457 MHz and 2462 MHz respectively) may be used in France. License required for every installation, indoor and outdoor installations. Please contact ART for procedure to follow. Bande de fréquence restreinte : seuls les canaux 10 à 11 (2457 et 2462 MHz respectivement) doivent être utilisés en France. Toute utilisation, qu'elle soit intérieure ou extérieure, est soumise à autorisation. Vous pouvez contacter l'Autorité de Régulation des Télécommuniations (http://www.art-telecom.fr) pour la procédure à suivre.
Italy/Italia	License required for indoor use. Use with outdoor installations not allowed E'necessaria la concessione ministeriale anche per l'uso interno. Verificare con i rivenditori la procedura da seguire. L'uso per installazione in esterni non e' permessa.
Nederland	License required for outdoor installations. Check with reseller for procedure to follow Licentie verplicht voor gebruik met buitenantennes. Neem contact op met verkoper voor juiste procedure

USA-Federal Communications Commission(FCC)

This device complies with Part 15 of FCC Rules. Operation of the devices in a Wireless LAN System is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference that may cause undesired operation.

TOSHIBA is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this TOSHIBA Wireless LAN Mini PCI Card, or the substitution or attachment of connecting cables and equipment other than specified by TOSHIBA .

The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

Caution: Exposure to Radio Frequency Radiation.

The Toshiba Wireless LAN Mini PCI Card will be installed with one of two types of antennas. Both antenna types, when installed are located at the upper edge of the LCD screen.

For both antennas, the radiated output power of the TOSHIBA Wireless LAN Mini PCI Card is far below the FCC radio frequency exposure limits. Nevertheless, the TOSHIBA Wireless LAN Mini PCI Card shall be used in such a manner that the potential for human contact during normal operation is minimized. In normal operating configuration, the LCD in the upright position, the distance between the antenna and the user should not be less than 20cm.

Refer to the Regulatory Statements as identified in the documentation that comes with those products for additional information.

Relevant transmitters include FCC IDs: CJ6PA3171WL, CJ6PA3121BT.

Taiwan

Article 14	Unless approved, for any model accredited low power radio frequency electric machinery, any company, trader or user shall not change the frequency, increase the power or change the features and functions of the original design.
Article 17	Any use of low power radio frequency electric machinery shall not affect the aviation safety and interfere with legal communications. In event that any interference is found, the use of such electric machinery shall be stopped immediately, and reusing of such products can be resumed until no interference occurs after improvement. The legal communications mentioned in the above item refer to radio communications operated in accordance with telecommunication laws and regulations. Low power radio frequency electric machinery shall resist against interference from legal communications or from industrial, scientific and medical radio emission electric machinery.

Using this equipment in Japan

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

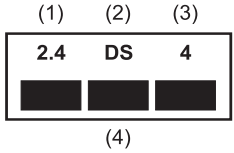
1. Sticker

Please put the following sticker on devices incorporating this product.

> In the frequency bandwidth of this equipment, industrial device, scientific device, medical device like microwave oven, licensed premises radio station and non-licensed specified low-power radio station for mobile object identification system (RF-ID) that is used in product line of factories, (Other Radio Stations) are used.
>
> 1. Please make sure before using this equipment that no Other Radio Stations are used in the neighbourhood.
> 2. In case that RF interference occurs to Other Radio Stations from this equipment, please change promptly the frequency for use, place to use, or stop emitting Radio.
> 3. Please contact TOSHIBA Direct PC if you have a problem, such as interference from this equipment to Other Radio Stations.

2. Indication

The indication shown below appears on this equipment.



(1) 2.4 : This equipment uses a frequency of 2.4GHz.

(2) DS : This equipment uses DS-SS modulation.

(3) 4 : The interference range of this equipment is less than 40m.

(4) ▬▬▬ : This equipment uses a frequency bandwidth from 2,400mhz to 2,483.5MHz.

It is impossible to avoid the band of mobile object identification systems.

Device Authorisation

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

The Name of the radio equipment: MPCI3A-20/R

JAPAN APPROVALS INSTITUTE FOR TELECOMMUNICATIONS EQUIPMENT Approval Number: D01-1128JP

TELECOM ENGINEERING CENTER Approval Number: 01NY A1088

The following restrictions apply:

- Do not disassemble or modify the device.
- Do not install the embedded wireless module into other device.

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Preface

Congratulations on your purchase of the Satellite Pro 2100 series computer. This powerful notebook computer provides excellent expansion capability, including multimedia devices, and it is designed to provide years of reliable, high-performance computing.

This manual tells how to set up and begin using your Satellite Pro 2100 series computer. It also provides detailed information on configuring your computer, basic operations and care, using optional devices and troubleshooting.

If you are a new user of computers or if you're new to portable computing, first read over the *Introduction* and *The Grand Tour* chapters to familiarise yourself with the computer's features, components and accessory devices. Then read *Getting Started* for step-by-step instructions on setting up your computer.

If you are an experienced computer user, please continue reading the preface to learn how this manual is organised, then become acquainted with this manual by browsing through its pages. Be sure to look over the *Special features* section of the *Introduction*, to learn about features that are uncommon or unique to the computers and carefully read *HW Setup and Passwords* to learn the HW Setup utility and how to set passwords. Also read *Getting Started* for procedures on restoring your preinstalled software.

Manual contents

This manual is composed of nine chapters, twelve appendices, 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 on restoring the preinstalled software.

Chapter 4, *Operating Basics*, includes instructions on using the following devices: Touch pad, the optical media drives, the internal modem, LAN and wireless LAN. 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.

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

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

Chapter 9, *Troubleshooting*, suggests courses of action if the computer doesn't seem to be working properly.

The Appendices provide technical information about your computer.

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

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

Conventions

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

Abbreviations

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

Icons

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

Keys

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

Key operation

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

Display

ABC

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

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

Messages

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

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

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

Chapter 1

Introduction

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

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:

Hardware

- Satellite Pro 2100 Series Portable Personal Computer
- Universal AC adaptor and power cord
- Modular cable for modem

Software

- The Windows XP preinstallation includes the following software:
  - Microsoft Windows XP Professional
  - TOSHIBA Utilities
  - Modem driver
  - Display Driver for Windows
  - Touch pad driver
  - Sound driver
  - DVD Video Player
  - Wireless LAN driver (Provided only if Wireless LAN is preinstalled.)
  - LAN driver
  - Infrared Device Driver
  - Online manual
  - Supervisor Password Utility
- Product Recovery CD-ROM
- Tools & Utilities CD-ROM

Documentation

- Your computer's documentation:
  - *Satellite Pro 2100 Series Personal Computer User's Manual*
  - *Satellite Pro 2100 Series QuickStart*
  - *Microsoft Windows manual*
  - *Safety Instruction Manual*
  - *Warranty information*

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:

Processor

Built-in

Some Satellite Pro 2100 Series computers are equipped with an Intel® Cerelon™ Processor 1.7 GHz, which incorporate a math co-processor, 32 KB level 1 cache memory and a level 2 cache memory.

Some Satellite Pro 2100 Series computers are equipped with an Intel® Pentium® 4 Processor, which incorporates a math co-processor, a 20 KB level 1 cache memory and a 512 KB level 2 cache memory.

- 1.70GHz Mobile Intel® Pentium® 4 Processor 1.70 GHz - M, Supports Enhanced Intel® SpeedStep™ technology.
- 1.9GHz Mobile Intel® Pentium® 4 Processor 1.9 GHz - M, Supports Enhanced Intel® SpeedStep™ technology.

Other processors may be offered in the future.

Memory

Built-in	On Celeron computers, SDR (Single Data Rate) 128, 256 or 512 MB memory modules can be installed in the two memory slots for a maximum of 1 GB system memory. On Pentium 4 computers, DDR (Double Data Rate) 128 or 256 MB memory modules can be installed in the two memory slots for a maximum of 512 MB system memory.
Video RAM	16 MB of VRAM is provided for video display.

Power

Battery pack	The computer is powered by one rechargeable lithium-ion battery pack.
RTC battery	The computer has an internal battery that backs up the internal Real Time Clock (RTC) and calendar.
AC adaptor	The universal AC adaptor provides power to the system and recharges the batteries when they are low. 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*.

Disks

Internal hard disk	Available in two sizes. ■ 18.63 GB (20.0 billion bytes) ■ 27.94 GB (30.0 billion bytes)
Diskette drive	A 3 ½" diskette drive accommodates 1.44MB double-sided, high-density, double-track (2HD) disks.
CD-ROM drive	A full-size, CD-ROM drive module lets you run either 12 cm (4.72") or 8 cm (3.15") compact disks without using an adaptor. The drive supports the following formats: ■ CD-ROM ■ CD-EXTRA ■ Audio CD ■ CD-R (read only) ■ Photo CD™ ■ 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 versatile disk/compact disk without using an adaptor. The drive supports the following formats: ■ CD-ROM ■ CD-EXTRA ■ Audio CD ■ CD-R (read only) ■ Photo CD™ ■ CD-Rewritable (read only) ■ DVD-ROM ■ DVD-Video ■ DVD-R
CD-RW/DVD-ROM drive	A full-size, CD-RW/DVD-ROM drive module lets you run either 12cm (4.72") or 8 cm (3.15") digital versatile disk/compact disk without using an adaptor. This drive supports the following formats: ■ CD-ROM ■ CD-EXTRA ■ Audio CD ■ CD-R ■ Photo CD™ ■ CD-Rewritable ■ DVD-ROM ■ DVD-Video ■ DVD-R

Display

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

Built-in	■ 14.1" XGA-TFT screen, 1024 horizontal and 768 vertical pixels up to 16 M colors
Graphics controller	A 128-bit graphics controller maximizes display performance. Refer to Appendix E for more information.

Keyboard

Built-in	85 keys or 86 keys, compatible with IBM 101-or 102-key enhanced keyboard, embedded numeric overlay, dedicated cursor control, and keys. See Chapter 5, *The Keyboard*, for details.

Touch pad

Built in	A pointer control device located in the center of the palm rest is used to control the on screen pointer. Scrolling of the vertical direction can be performed by turning the TOSHIBA Scroller. You can enable/disable the Touch pad by pressing hotkeys **Fn + F9**. For details on using the Touch pad, refer to the *Using the Touch pad* section in Chapter 4, *Operating Basics*. For information on using hotkeys, refer to the *Hotkey* section in Chapter 5, *Keyboard*.

If Touch pad is operated when operation of Touch pad is confirmed, a motion of cursor may become unstable rarely. Please lift a hand from Touch pad at once then, and wait as it is. It can be normally operated now after a while.

Ports

Parallel	Parallel printer or other parallel device (ECP compatible)
External monitor	15-pin, analog VGA port supports VESA DDC2B compatible functions.
Universal Serial Bus	The computer has three Universal Serial Bus (USB) ports. You can attach a number of USB-equipped devices to each USB port in a chain connection.
i.LINK™ (IEEE1394) (optional)	This port enables high-speed data transfer directly from external devices such as digital video cameras.
Infrared	The serial infrared port is compatible with Infrared Data Association (IrDA 1.1) standards. It enables cableless 4 Mbps, 1.152 Mbps, 115.2 kbps, 57.6 kbps, 38.4 kbps, 19.2 kbps or 9.6 kbps data transfer with IrDA 1.1 compatible external devices.

Slots

PC Card	Slot for PC Cards accommodates: ■ Two 5 mm Type II, or ■ One 10.5 mm Type III Refer to Chapter 8, Optional Devices, for details.
SD Card (optional)	This slot lets you easily transfer data from devices, such as digital cameras and Personal Digital Assistants, that use SD card flash-memory.

Multimedia

Sound system	It incorporates a 32-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.
Video-out jack	This RCA video jack lets you transfer NTSC or PAL video and sound data to external devices. Use the TV adaptor cable for video-out. Data output depends on the type of device connected to the TV adaptor cable.
CD/DVD Play button	This button directly launches various CD, DVD functions. Refer to Chapter 4, Operating Basics, for details.
Digital Audio Play button	This button directly launches various Digital Audio functions. Refer to Chapter 4, Operating Basics, for details.
Audio/Video control buttons	Audio/Video control buttons let you use the computer's CD-ROM, DVD-ROM,CD-R/RW or CD-RW/DVD-ROM drives as a stand-alone audio CD player. You can also use the buttons to control the computer's DVD video player and TOSHIBA Media player when the system is on.
Headphone jack	It is converted to analog for speaker output. If standard headphones are connected, the output is analog.
Microphone jack	A 3.5 mm mini microphone jack enables connection of a stereo microphone or three-conductor mini jack for monaural microphone or audio input.

Communications

Modem	An internal modem provides capability for data and fax communication. It supports V.90. Refer to Appendix J. 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 preinstalled as a standard device in some markets.
LAN	The computer is equipped with LAN circuits that support Ethernet LAN (10 megabits per second, 10BASE-T) and Fast Ethernet LAN (100 megabits per second, 100BASE-Tx).
Internet button	Press this button to launch an Internet browser. If the computer's power is off, you can press this button to turn on the computer's power and launch the browser automatically in one step.
TOSHIBA Console button	Press this button to launch an application automatically. The default is TOSHIBA Console.
Wireless LAN	In some markets, the computer is equipped with a wireless LAN mini-PCI card that is compatible with other LAN systems based on Direct Sequence Spread Spectrum radio technology that complies with the IEEE 802.11 Standard (Revision B). It supports data transfer up to 11 Mbit/s. It has Frequency Channel Selection (2.4 GHz) and allows roaming over multiple channels.

Security

Security lock slot	Connects an optional security lock to anchor the computer to a desk or other large object
PC card lock	A PC card can be secured by an optional security lock to prevent access to the PC card slot.

Software

Operating System	Windows XP Professional is preinstalled. Refer to the preinstalled software section at the front of this chapter.

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 input from the keyboard or pointing device for a time specified. Power is restored when any key is pressed or when there is input from a pointing device. You can specify the time in the *Turn off monitor* item of the *Power Save Mode* window in TOSHIBA 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. You can specify the time in the *Turn off hard disks* item of the *Power Save Mode* window in TOSHIBA Power Saver.
System automatic Standby (resume)/ Hibernation	This feature automatically shuts down the system in standby (resume) mode or Hibernation mode when there is no input or hardware access for a time specified. You can specify the time and select either System Standby or System Hibernate in the *System standby and System hibernate* item of the *Power Save Mode* window in TOSHIBA Power Saver.
Keypad overlay	A ten-key pad is integrated into the keyboard. Refer to the *Keypad overlay* section in Chapter 5, *Keyboard*, for instructions on using the keypad overlay.

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. You can monitor remaining battery capacity through the *Battery remaining* item of the *Power Save Modes* window in TOSHIBA Power Saver.
Battery save mode	This feature lets you save battery power. You can specify the Power Save Mode in the *Running on batteries* item of the *Power Save Modes* window in TOSHIBA Power Saver.
Power on password	Two levels of password security are available: supervisor and user. This feature prevents unauthorised access to your computer.
Instant security	A hotkey function blanks the screen providing quick and easy data security.
Panel power off/on	This feature turns power to the computer off when the display panel is closed and turns it back on when the panel is opened. You can specify the setting in the *When I close the lid* item of the *System Power Mode* window in TOSHIBA Power Saver.
Low battery automatic hibernation	When battery power is exhausted to the point that computer operation cannot be continued, the system automatically enters Hibernation and shuts down. You can specify the setting in the *Battery Alarm* item of the *Alarm* window in TOSHIBA Power Saver.
Heat dispersal	The CPU has an internal temperature sensor that automatically activates cooling procedures. Refer to the *Heat dispersal* section in Chapter 4, *Operating Basics,* for details on setting the options for cooling methods.

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. Refer to the *Turning off the power* section in Chapter 3, *Getting Started*, for details.
Standby	In Standby mode, power to the system remains on, but the CPU and all other devices are in sleep mode. When the computer is in standby mode, the Power LED glows orange. To enter Standby mode click Start, click Shut Down, select Standby and click OK. The computer enters Standby mode regardless of the Hibernate setting.

Before entering Standby mode, be sure to save your data.

Do not install or remove a memory module while the computer is in Standby mode. The computer or the module could be damaged.

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

CD/DVD Play button	Use this button to control DVD-Video and audio play, depending on the type of media.
Digital Audio Play button	Use this button to control Digital Audio play.

Utilities

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

TOSHIBA Power Saver	There are two ways to display the Windows XP Control Panel. The default is Category View. TOSHIBA Power Saver is under the Performance and Maintenance item.
HW Setup	This program lets you customise 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, open Printers and Other Hardware to access HW Setup.
TOSHIBA Controls	This program lets you assign applications to the Internet button (default setting is the browser) and to the TOSHIBA Console button (default setting is the TOSHIBA Console).
TOSHIBA Console	TOSHIBA Console is a graphical user interface that provides easy access to help and services. It is the default function launched by the TOSHIBA Console button.
DVD Video Player	The DVD Video Player is used to play DVD-Video. It has an on-screen interface and functions. Click Start, point to All Programs, point to InterVideo WinDVD, then click InterVideo WinDVD.
Drag'n Drop CD	This easy-to-use software lets you record CDs with just a few mouse clicks. You can create CDs in several formats including audio CDs that can be played on a standard stereo CD player and data CDs to store the files and folders on your hard drive. This software can be used only on models with CD-RW/DVD-ROM drive.

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 modules	Two memory modules can be installed in the computer.

Use only PC2100 compatible memory modules. See your TOSHIBA dealer for details.

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.
Security lock	A slot is available to attach a security cable to the computer to deter theft.
Wireless LAN Kit	This option enables wireless LAN functions in computers that do not have wireless preinstalled. It is installed by dealers only.

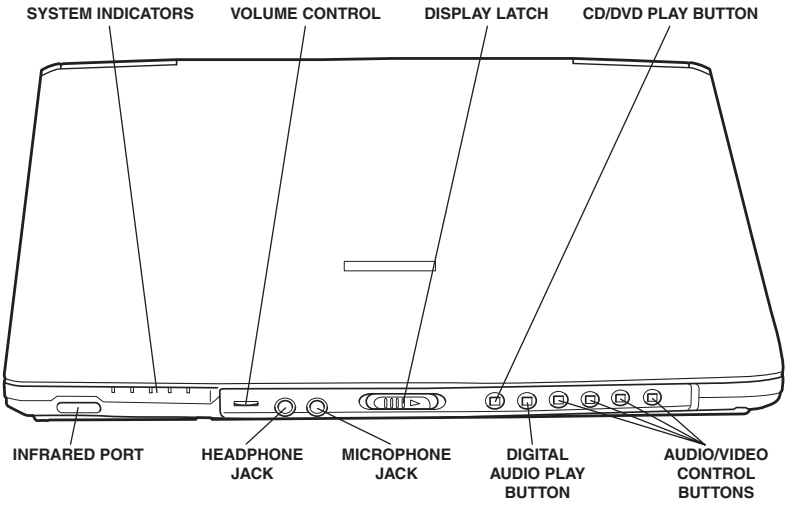
Chapter 2

The Grand Tour

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

Front with the display closed

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



Front of the computer with display closed

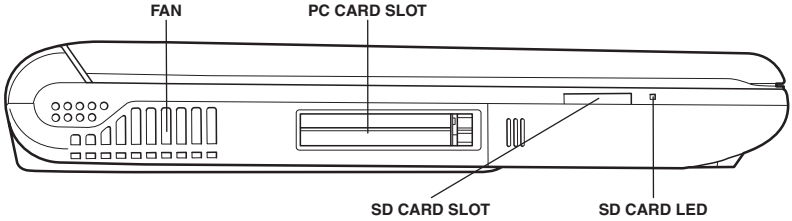
System indicators	The system indicators provide icons for monitoring the status of DC IN, Power, Battery, Built-in HDD and Diskette/Optical media drive. Details are given later in this chapter.
Volume control	Use this dial to adjust the volume of the stereo speakers.

Display latch	This latch secures the LCD panel in its closed position. Slide the latch to open the display.
CD/DVD Play button	Press this button to directly launch various CD and DVD functions. You can also turn on the computer's power by holding down this button for one second and turn off the power by holding it down for 0.5 second. Refer to Chapter 4, *Operating Basics*, for details.
Digital Audio Play button	Press this button to directly launch various digital audio functions. You can also turn on the computer's power by holding down this button for one second. Refer to Chapter 4, *Operating Basics*, for details.
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.
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.
Audio/Video control buttons	Previous button: Plays the previous track/chapter/ data. Play/pause button: Begins or pauses play. Stop button: Halts play. Next button: Plays the next track/chapter/data. Refer to Chapter 4, *Operating Basics*.

If Random or Shuffle is selected in Windows Media Player, selecting Next or Previous advances to a random selection.

Left side

This figure shows the computer's left side.



The left side of the computer

Fan — A fan keeps the CPU from overheating.

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

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

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

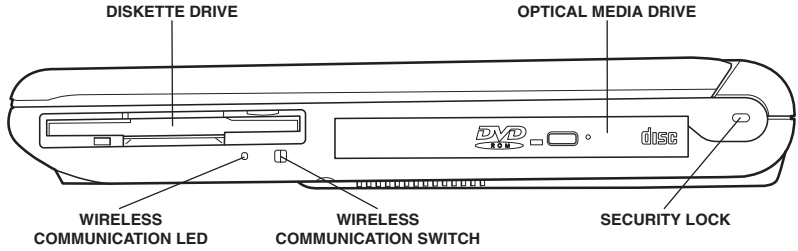
SD card slot (optional) — This slot lets you easily transfer data from devices, such as digital cameras and Personal Digital Assistants, that use SD cards. The cards have a high level of security and copy protection features. This slot does not support MultiMedia cards. Refer to Chapter 8, *Optional Devices*.

Keep foreign objects out of the SD card slot. A pin or similar object can damage the computer's circuitry.

SD card LED — This LED glows green when the computer is accessing the SD card slot.

Right side

This figure shows the computer's right side.



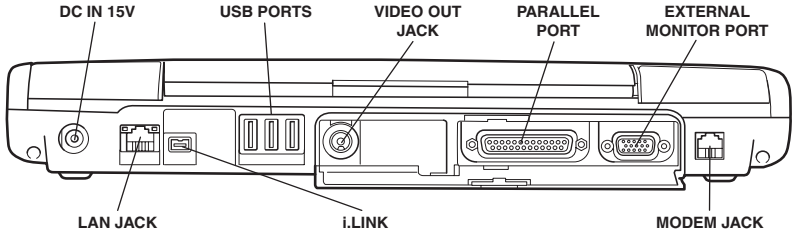
The right side of the computer

Diskette drive	This drive lets you use 1.44 MB double-sided, high-density, double-track (2HD) disks.
Optical media drive	The computer is configured with a full-size optical media drive module that lets you run either 12 cm (4.72") or 8 cm (3.15") disks without using an adaptor. See the *Drives* section in this chapter for technical specifications on each drive and to Chapter 4, *Operating Basics*, for information on using the drive and caring for disks. The following drives are available: ■ CD-ROM drive ■ DVD-ROM drive ■ CD-RW/DVD-ROM drive
Wireless communication LED	This LED glows orange when the wireless LAN functions are on.
Wireless communication switch	Slide this switch to turn the Wireless communication power on and off
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.

Off On

Back side

This figure shows the computer's back panel.



The back side of the computer

DC IN 15V	**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.
Ether	**LAN jack**	This jack lets you connect to a LAN. The adaptor has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T) and Fast Ethernet LAN (100 megabits per second, 100BASE-Tx).
	Link indicator (green)	This indicator glows green when the computer is connected to a LAN and the LAN is functioning properly.
	LAN active indicator (yellow)	This indicator glows yellow when data is being exchanged between the computer and the LAN.
S400 IEEE1394	**i.LINK (IEEE1394) port (optional)**	Connect an external device, such as a digital video camera to this port for high-speed data transfer.

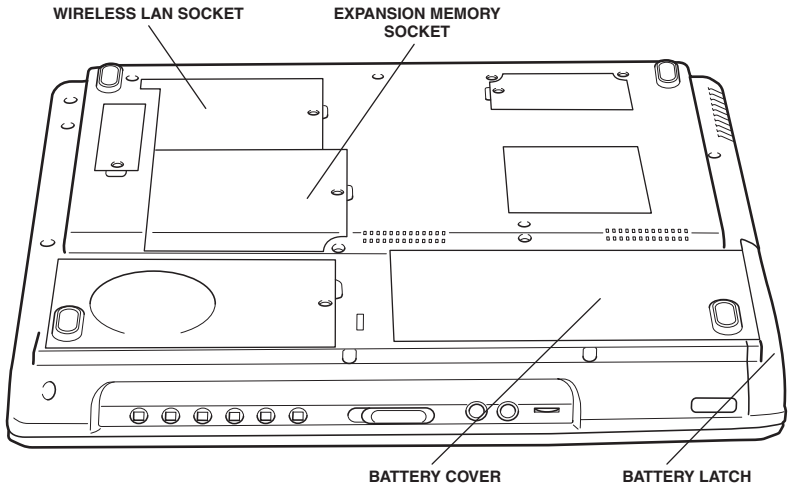
Universal Serial Bus ports	Each Universal Serial Bus (USB) port enables chain connection of a number of USB-equipped devices. For example, you might connect a USB-HUB to the computer, then connect a keyboard to the USB-HUB and a mouse to the keyboard.
Video out	Plug an RCA video connector into this jack for output of NTSC or PAL data.
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.
External monitor port	This 15-pin port lets you connect an external video display.
Modem jack	The modem jack lets you use a modular cable to connect the modem directly to a telephone line.

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

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

Underside

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

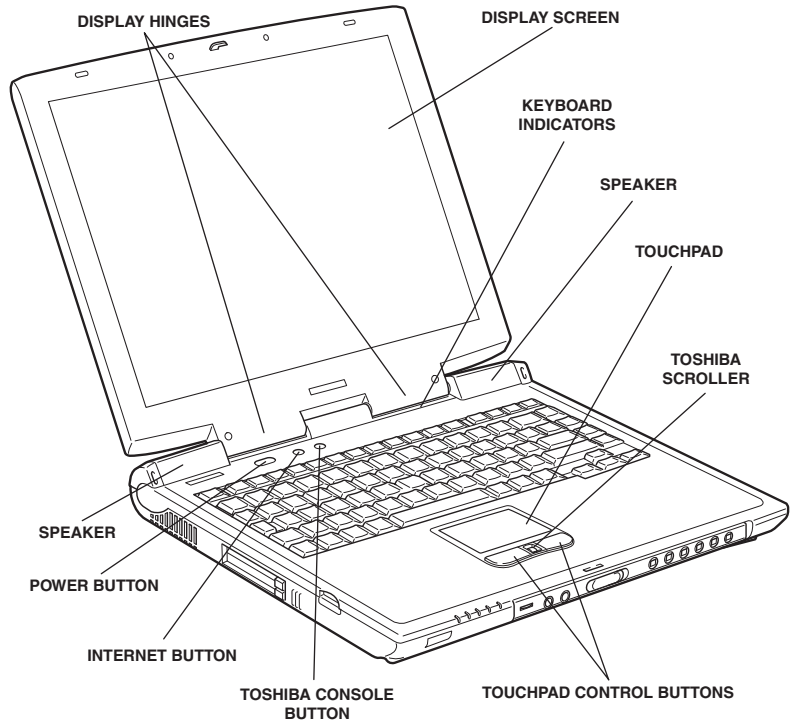


The underside of the computer

Wireless LAN socket	If your computer is without wireless LAN, you can consult your TOSHIBA dealer for installation of a Wireless LAN card.
Expansion memory socket	Use this socket to install a memory module to increase your computer's memory. Refer to the *Memory expansion* section in Chapter 8, *Optional Devices.*
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.

Front with the display open

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



The front with the display open

Touch pad	A pointer control device located in the centre of the palm rest is used to control the on-screen pointer. Refer to the *Using the Touch pad* section in Chapter 4, *Operating Basics*.
Touch pad control buttons	Control buttons below the Touch pad let you select menu items or manipulate text and graphics designated by the on-screen pointer.
TOSHIBA Scroller (optional)	Rotate this wheel to scroll the screen.
Stereo speakers	The speakers emit sound generated by your software as well as audio alarms, such as low battery condition, generated by the system.

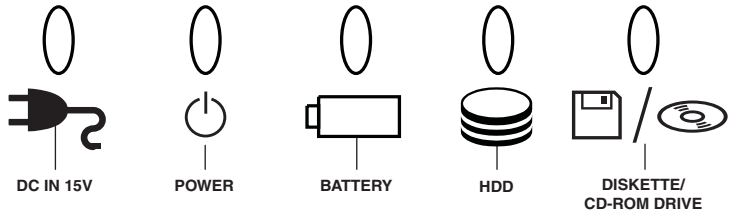
Power button	Press the power button to turn the computer's power on and off.
Internet button	Press this button to launch an Internet browser. If the computer's power is off, you can press this button to turn on the computer's power and launch the browser automatically in one step.
TOSHIBA Console button	You can associate an application to this button for automatic launch. If the computer is off, pressing this button starts the computer and launches the associated program automatically. The default in Windows XP is TOSHIBA Console.
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.
Display hinges	The display hinges hold the display screen at different angles for easy viewing.
Display screen	The LCD displays high-contrast text and graphics at up to 1024 x 768. Refer to Appendix E, *Display Controller and Modes*. When the computer operates on AC adaptor power, 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.
LCD Sensor switch	This switch senses when the LCD panel is closed or opened and activates the Panel Power Off/On feature. When you close the panel the computer enters Hibernation mode and shuts down. When you open the panel the computer starts in Hibernation mode. Use the TOSHIBA Power Saver Utility to enable or disable this feature. The default is "enabled." Refer to the TOSHIBA Power Saver Utility and Panel Power Off/On items in Chapter 1, *Introduction*, for details on settings.

Do not put a magnetic object close to the switch. The computer will automatically enter Hibernation mode and shut down even if the Panel Power Off feature is disabled.

Indicators

The next two figures show the indicator lights, which light when various computer operations are in progress.

System indicators



The system indicators

DC IN 15V	The **DC IN** indicator glows green when DC power is supplied from the AC power adaptor. If the adaptor's output voltage is abnormal or if the power supply malfunctions, this indicator flashes orange.
Power	The **Power** indicator glows green when the computer is on. If you turn off the computer in Stand by mode this indicator glows orange. In Hibernation mode, it does not glow.
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/Optical media	This indicator glows green when the computer is accessing a diskette in the diskette drive or a disk in the CD-ROM, DVD-ROM or CD-RW/DVD-ROM drive.

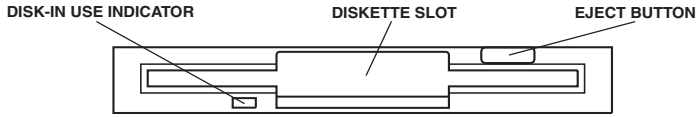
Keyboard indicator panels

Caps Lock	The Caps Lock LED (on the Caps Lock key) glows green when the alphabet keys are locked in uppercase.
Arrow mode	When the **Arrow mode** icon lights green, you can use the keypad overlay (light grey labelled keys) as cursor keys. Refer to the *Keypad overlay* section in Chapter 5, *The Keyboard*.
Numeric mode	You can use the keypad overlay (light grey labelled keys) for numeric input when the **Numeric mode** icon lights green. Refer to the *Keypad overlay* section in Chapter 5, *The Keyboard*.

Drives

This section describes the 3 ½" diskette and optical media drives.

3 ½" diskette drive



The diskette drive

The 3 ½" diskette drive lets you use high density (1.44 MB) 3 ½" 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.

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.

CD-ROM drive

The full-size, CD-ROM drive lets you run either 12 cm (4.72") or 8 cm (3.15") compact disks without using an adaptor.

This drive supports the following formats:

- CD-ROM
- Photo CD™
- CD-DA
- CD-ROM x A Mode2 (Form1,Form2)
- Enhanced CD (CD-EXTRA)
- CD-Text
- CD-R (read only)
- CD-Rewritable (read only)

Check the Diskette/Optical Media 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.

CD-RW/DVD-ROM drive

The full-size CD-RW/DVD-ROM drive module lets you record data to re-writable CDs as well as run either 12 cm (4.72") or 8 cm (3.15") CD/DVDs without using an adaptor. Use the preinstalled software, *Drag 'n Drop*, for writing CDs.

This drive supports the following formats:

- DVD-ROM
- DVD-Video
- CD-DA
- Photo CD™ (single/multi-session)
- CD-ROM Mode 1, Mode 2
- CD-ROM XA Mode 2 (Form1, Form2)
- CD-Text
- Enhanced CD (CD-EXTRA)
- CD-G (Audio CD only)
- Addressing Method 2

*Check the **CD-RW/DVD-In-Use** indicator when you use the CD-RW/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 CD/DVD or the drive.*

CD-RW/DVD-ROM 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

DVD-ROM drive

The full-size DVD-ROM drive module lets you run either 12 cm (4.72") or 8 cm (3.15") CD/DVDs without using an adaptor. It runs DVD-ROMs at maximum 8 speed and CD-ROMs at maximum 24 speed. When the computer is accessing a DVD-ROM, an LED next to the eject button glows.

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

This drive supports the following formats:

- DVD-ROM
- DVD-Video
- CD-DA
- Photo CD™ (single/multi-session)
- CD-ROM Mode 1, Mode 2
- CD-ROM XA Mode 2 (Form1, Form2)
- CD-Text
- Enhanced CD (CD-EXTRA)
- CD-G (Audio CD only)
- Addressing Method 2

*Check the **DVD-In-Use** 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 CD/DVD or the drive.*

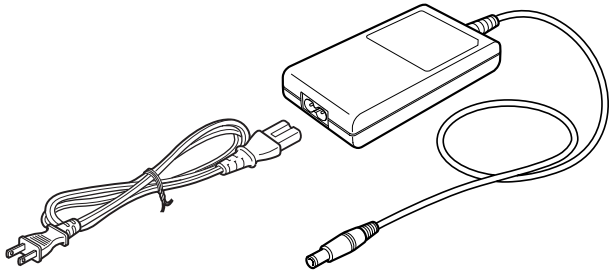
DVD-ROM drives and media are manufactured according to the specifications of six marketing regions. When you purchase DVD media, make sure it matches your drive, otherwise it will not play properly.

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

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/region.

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



The AC adaptor

Use of the wrong adaptor could damage your computer. TOSHIBA assumes no liability for any damage in such case. The current rating for the computer is 15 VDC, 5 amperes.

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
- Starting up for the first time
- Turning off the power
- Restarting the computer
- Restoring the preinstalled software

All users should be sure to carefully read the section Starting up for the first time.

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.
- Some components in the computer, including data storage media, can be damaged by magnets. Do not place the computer near magnetic objects or bring magnetic objects close to the computer. Be careful of objects, such as stereo speakers, that produce strong magnetic fields during operation. Also, be careful with metal objects, such as bracelets, which can be inadvertently magnetized.
- Do not operate the computer in close proximity to a mobile phone.
- Leave ample ventilation room for the fan. Do not block the vents.

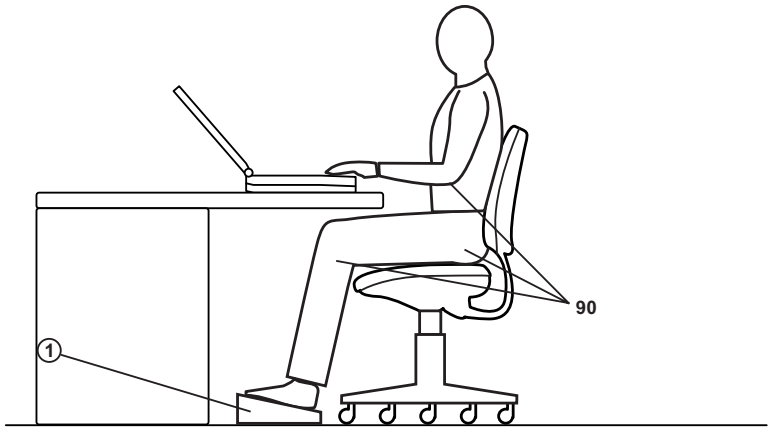
Placement of computer

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 maximise visibility.
- If you use a paper holder, set it at about the same height and distance as the computer.

Seating and posture

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



Posture and positioning of the computer

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

Lighting

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

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

Work habits

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

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

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

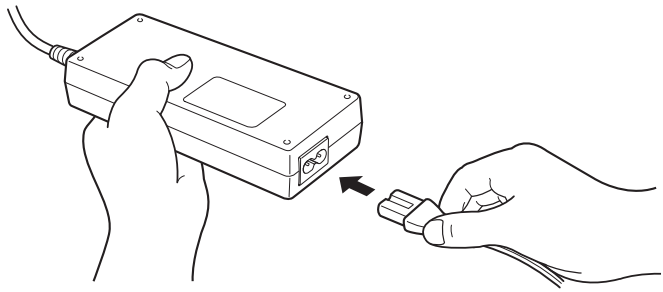
Connecting the AC adaptor

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

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

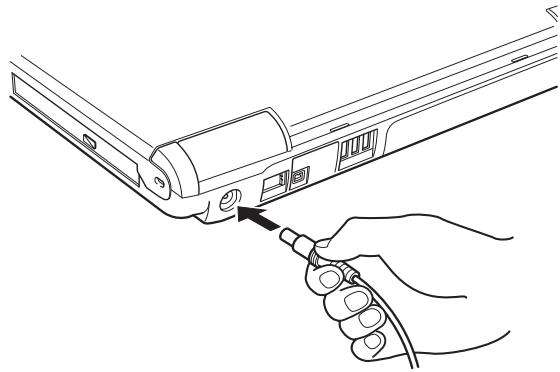
Use of the wrong adaptor could damage your computer. TOSHIBA assumes no liability for any damage in such case. The current rating for the computer is 15 VDC, 5 amperes.

1. Connect the power cord to the AC adaptor.



Connecting the power cord to the AC adaptor

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



Connecting the adaptor to the computer

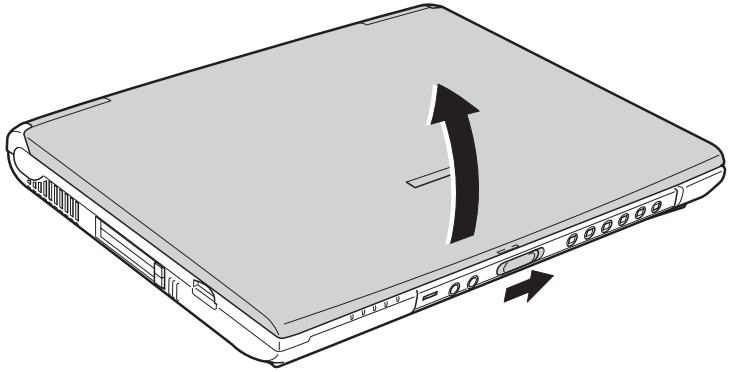
3. Plug the power cord into a live wall outlet. The **Battery** and **DC IN** indicators on the front of the computer should glow.

Opening the display

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

1. Slide the display latch on the front of the computer to the right to unlatch the display panel.
2. Lift the panel up and adjust it to the best viewing angle for you.

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

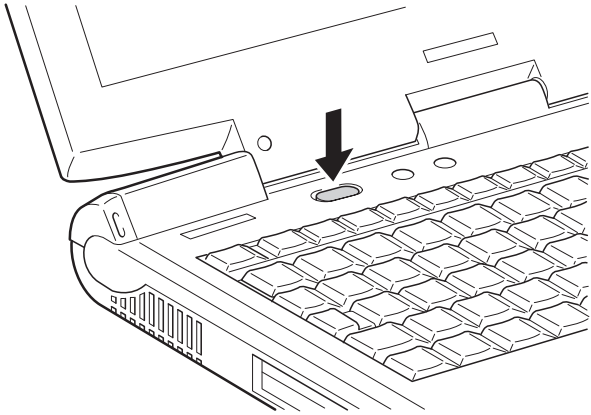


Opening the display

Turning on the power

This section describes how to turn on the power.

1. Make sure the diskette drive is empty. If a diskette is in the drive, press the eject button and remove the diskette.
2. Open the display panel.
3. Press and hold the computer's power button for two or three seconds.



Turning on the power

Starting up for the first time

When you first turn on the power, the computer's initial screen is the Microsoft Windows XP Startup Screen Logo. Follow the on-screen directions for each screen. During setup, you can click the **Back** button to return to the previous screen.

Be sure to read the **`Windows End User License Agreement`** display carefully.

Be sure to read the License Agreement carefully.

Turning off the power

The power can be turned off in one of the following modes: Shut down (Boot), Hibernation or Standby mode.

Shut Down mode (Boot mode)

When you turn off the power in Shut Down mode no data is saved and the computer will boot to the operating system's main screen.

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 the CD/DVD-ROM or diskette.

*Make sure the **Built-in HDD, optical media drive** and **SD Card** indicators are off. If you turn off the power while a disk is being accessed, you can lose data or damage the disk.*

3. Click **Start** and click **Turn Off Computer**. From the `Turn Off Computer` window click **Turn Off**.
4. Turn off the power to any peripheral devices.

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

Hibernation mode

The hibernation feature saves the contents of memory to the hard disk when the computer is turned off. The next time the computer is turned on, the previous state is restored. The hibernation feature does not save the status of peripheral devices.

*While entering hibernation mode, the computer saves the contents of memory to the HDD. Data will be lost if you remove the battery or disconnect the AC adaptor before the save is completed. Wait for the **Built-in HDD** indicator to go out.*

Do not install or remove a memory module while the computer is in hibernation mode. Data will be lost.

Benefits of hibernation

The hibernation feature provides the following benefits:

- Saves data to the hard disk when the computer automatically shuts down because of a low battery.

For the computer to shut down in hibernation mode, the hibernation feature must be enabled in two places in TOSHIBA Power Saver: the Hibernate window and the Battery Alarm item of the Alarm window. Otherwise, the computer will shut down in Standby mode. If battery power becomes depleted, data saved in Standby will be lost.

- You can return to your previous working environment immediately when you turn on the computer.
- Saves power by shutting down the system when the computer receives no input or hardware access for the duration set by the System hibernate feature.
- You can use the panel power off feature.

Starting Hibernation

To enter Hibernation mode, follow the steps below.

1. Click **Start**.
2. Select **Turn Off Computer**.
3. Open the **Turn Off Computer** dialog box. **`Hibernate`** is not displayed.
4. Press the **Shift** key. The **`Standby`** item will change to **`Hibernate`**.
5. Select **Hibernate**.

Automatic Hibernation

The computer will enter Hibernate mode automatically when you press the power button or close the lid. First, however, make the appropriate settings according to the steps below.

1. Open the **Control Panel**.
2. Open **Performance and Maintenance** and open **TOSHIBA Power Saver**.
3. Select the **Hibernate** window, select the **Enable Hibernate support** check box and click the **Apply** button.
4. Select the **Power Save Modes** window.
5. Double-click **Power Save Mode (Full Power, Normal, etc.)** and open the **System Power Mode** window.
6. Enable the desired Hibernation settings for **When I press the power button** and **When I close the lid**.
7. Click the **OK** button.

Data save in hibernation mode

When you turn off the power in hibernation mode, the computer takes a moment to save current memory data to the hard disk. During this time, the **Built-in HDD** indicator will light.

After you turn off the computer and memory is saved to the hard disk, turn off the power to any peripheral devices.

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

Standby mode

In standby mode the power remains on, but the CPU and all other devices are in sleep mode.

If the computer is not used or accessed in any way, including receipt of e-mail, for 30 minutes when the AC adaptor is connected, the computer will automatically enter Standby mode (TOSHIBA Power Saver default).

To restore operation, press the power button or press any key. The latter action works only if Wake-up on Keyboard is enabled in HW Setup.

If a network application is active when the computer automatically enters Standby, it might not be restored when the computer wakes up from standby. To prevent the computer from automatically entering standby mode, disable Standby in TOSHIBA Power Saver. Open TOSHIBA Power Saver and click the Power Save Mode tab to disable the Standby setting. That action, however, will nullify the computer's Energy Star compliance.

Standby precautions

Before entering Standby mode, be sure to save your data.

- Do not remove/install memory or remove power components:
- Do not remove/install the memory module. The computer or the module could be damaged.
- Do not remove the Battery Pack.

In any of the above cases, the standby configuration will not be saved.

The following message appears when you turn on the power:

WARNING: RESUME FAILURE.

PRESS ANY KEY TO CONTINUE.

If you carry the computer on board an aircraft or into a hospital, be sure to shut down the computer in hibernation mode or in shutdown mode to avoid radio signal interference.

Benefits of standby

The standby feature provides the following benefits:

- Restores the previous working environment more rapidly than does hibernation.
- Saves power by shutting down the system when the computer receives no input or hardware access for the duration set by the System Standby feature.
- You can use the panel power off feature.

Executing standby

*You can also enable Standby by pressing **Fn + F3**. See Chapter 5, Keyboard, for details.*

You can enter standby mode in one of three ways:

1. Click **start**, click **Turn Off Computer** and click **Stand by**.
2. Close the display panel. This feature must be enabled. To enable it, select the **TOSHIBA Power Saver** icon in the Control Panel and open the **System Power Mode** item.
3. Press the power button. This feature must be enabled. To enable it, select the **TOSHIBA Power Saver** icon in the Control Panel and open the **System Power Mode** item.

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

When the computer is shut down in standby mode, the power indicator glows orange.

If you are operating the computer on battery power, you can lengthen the operating time by shutting down in hibernation mode. Standby mode consumes more power.

Standby limitations

Standby will not function under the following conditions:

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

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 three ways to reset the computer system:

1. Select **Restart** from the **Turn Off Computer** window in the **start** box.
2. If the computer is already on, press **Ctrl** + **Alt** + **Del**.
3. Press the power button and hold it down for five seconds. Wait 10 to 15 seconds, then turn the power on again by pressing the power button.

Restoring the preinstalled software

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

Restoring the complete system

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

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

1. Load the Product Recovery CD-ROM in the drive and turn off the computer's power.
2. Hold down the **F12** key and turn on the power. When the TOSHIBA logo appears, release the **F12** key.
3. Use the left or right cursor key to select the CD-ROM icon in the displayed menu. For details, refer to the *Boot priority* section in Chapter 7, *HW Setup and Passwords.*
4. Follow the on-screen instructions.

Restoring TOSHIBA utilities and drivers

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

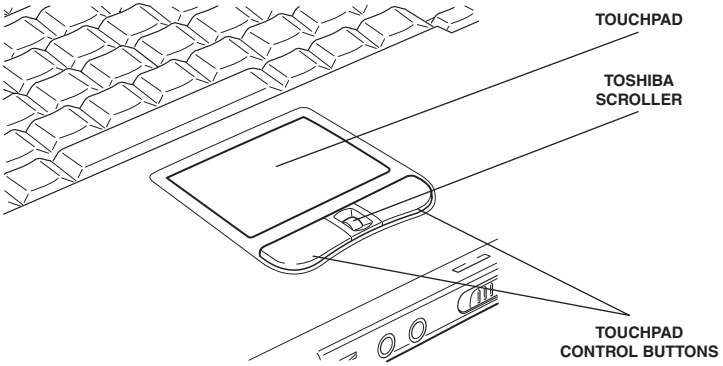
Chapter 4

Operating Basics

This chapter gives information on basic operations including using the Touch pad, optical media drives, the internal modem, LAN and Wireless LAN. It also provides tips on caring for your computer and on heat dispersal.

Using the Touch pad

To use the Touch pad, simply move your finger tip across it in the direction you want the on-screen pointer to go.



Touch pad and control buttons (TOSHIBA Scroller model only)

Two buttons below the keyboard are used like the buttons on a mouse pointer. Press the left button to select a menu item or to manipulate text or graphics designated by the pointer. Press the right button to display a menu or other function depending on the software you are using.

The optional TOSHIBA Scroller, between the control buttons, is used like the scroll wheel on a mouse. Roll it in the direction you want to scroll the screen vertically. Gently press the TOSHIBA Scroller down, and you will find a scroll icon on the screen. Then, you can scroll the display by tracking up and down on the Touch pad.

Do not press on the Touch pad too hard or press a sharp object such as a ball point pen against the Touch pad. The Touch pad could be damaged.

The Touch pad has similar functions to a two-button mouse with a scroll wheel. For some functions, you can tap the Touch pad instead of pressing a control button.

You can customize pointing device actions in ***Mouse Properties****. Open the* ***Control Panel****, select the* ***Mouse*** *icon and press* ***Enter*** *to open the* ***Mouse Properties*** *window.*

Click	Click the left control button or tap the Touch pad once.
Double click	Click the left control button twice or tap the Touch pad twice.
Drag and Drop	**1.** Select the material you want to move. Leave your finger on the Touch pad and move the material. **2.** Lift your finger to drop the material where you want it.
Scroll	**Touch pad** ■ **Vertical:** Move your finger up or down the right edge of the Touch pad. ■ **Horizontal:** Move your finger left or right along the bottom edge of the Touch pad. **TOSHIBA Scroller (TOSHIBA Scroller model only)** ■ Roll up or down to scroll the display vertically. Gently press TOSHIBA Scroller down, and you will find a scroll icon in the screen. When the icon appears, you can also scroll the display by tracing up or down on the Touch pad.

Using optical media drives

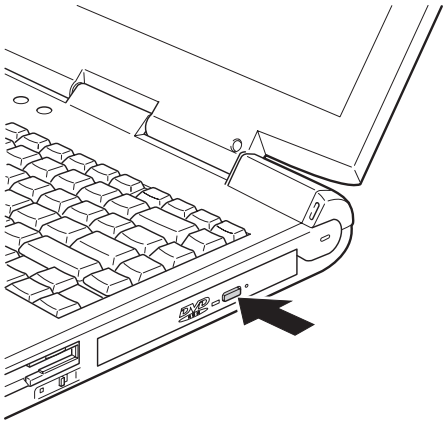
The computer can be configured with one of the following optical media drives: CD-ROM, DVD-ROM or CD-RW/DVD-ROM.

The text and illustrations in this section refer primarily to the DVD-ROM drive. However, operation is the same for the other drives. The full-size drive provides high-performance execution of DVD-ROM or CD-ROM-based programs. You can run either 12 cm (4.72") or 8 cm (3.15") disks without an adaptor. An ATAPI interface controller is used for drive operation. When the computer is accessing a disk, an LED on the drive glows. Refer to Chapter 2, *The Grand Tour*, for specifications on each type of drive.

Loading discs

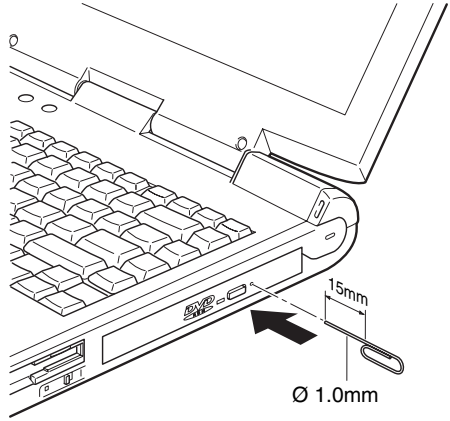
To load CD/DVDs, follow the steps below and refer to the accompanying figures.

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



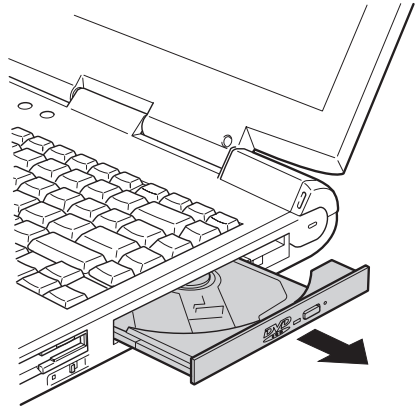
Pressing the eject button

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 15 mm) such as a straightened paper clip into the eject hole just to the right of the eject button.



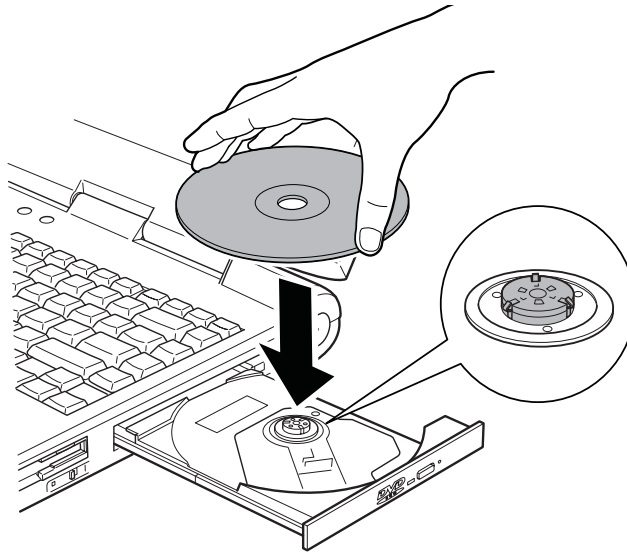
Manual release with the eject hole

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



Pulling the drawer open

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

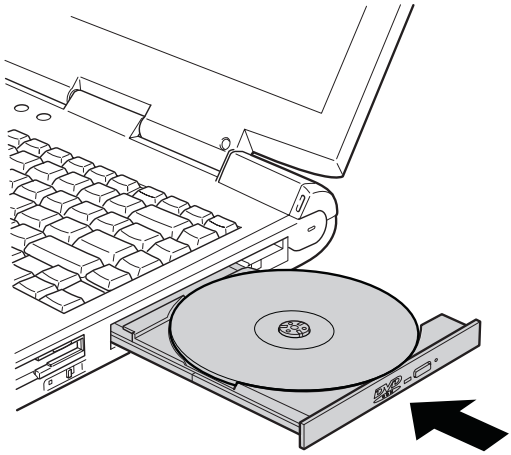


Inserting a CD/DVD

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

5. Press gently at the centre of the CD/DVD until you feel it click into place. The CD/DVD should lie below the top of the spindle, flush with the spindle base.
6. Push the centre of the drawer to close it. Press gently until it locks into place.

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



Closing the drawer

Removing discs

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

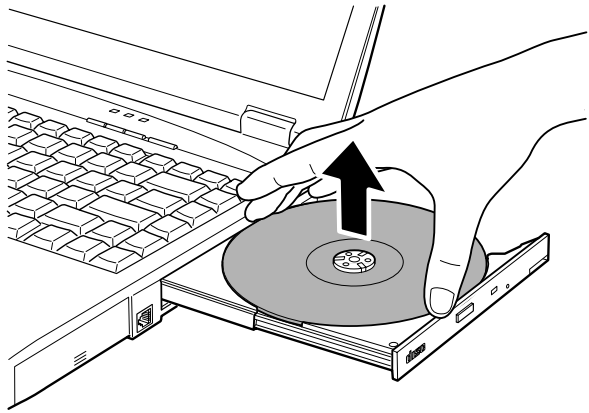
*Do not press the eject button while the computer is accessing the CD-RW/DVD-ROM drive. Wait for the **Diskette/DVD-ROM drive** indicator to go out before you open the drawer. Also, if the CD/DVD is spinning when you open the drawer, wait for it to stop before you remove it.*

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

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

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

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



Removing a CD/DVD

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

CD/DVD Play, Digital Audio Play buttons

This section describes how to use the CD/DVD Play button or the Digital Audio Play button to control the CD/DVD-ROM drive and Digital Audio Data.

You can turn on the computer's power by holding down the Digital Audio Play button for one second. When you use only the CD player, while the computer is off, you can turn the power off by pressing the CD/DVD Play button for 0.5 second. Pressing the Digital Audio Play button will not turn off the power.

	CD/DVD Play button	Digital Audio Play button
Power is off	If an audio CD is in the drive, the system enters CD Player mode and operates as a stand-alone CD player. If a DVD-Video disk is in the drive, the operating system starts and the DVD-Video player starts.	Operating system starts, Windows Media Player starts and Digital Audio Data play begins.
CD player mode	DVD-ROM drive power turns off.	Operating system starts, Windows Media Player starts and Digital Audio Data play begins.
OS is running	If an audio CD is in the drive, Windows Media Player starts and CD audio play begins. If a DVD-Video disk is in the drive, the DVD-Video player starts and DVD-Video play The CD/DVD icon is displayed in the Windows Task Bar.	Windows Media Player starts and Digital Audio Data play begins. The Digital Audio icon is displayed in the Task Bar.

To play Digital Audio Data, you must set the play list in the Windows Media Player. The next time you play Digital Audio Data in succession, the former play list will become active. If a CD was played the previous time, then All Audio will be used.

When the computer system power is off, if no control button is activated within four minutes of turning on the DVD-ROM drive power, power to the drive will automatically be turned off. In this case, press the CD/DVD Play button again to turn on the power.

Do not install or remove a memory module while the DVD-ROM drive power is on. First turn off the power to the DVD-ROM drive.

Audio/Video control buttons

Besides the power button, the following four buttons control functions of the DVD-ROM drives and Digital Audio Data:

1. **Play/Pause** Starts or pauses play.
2. **Stop** Stops play.
3. **Next** Advances to the next track, chapter or data.
4. **Previous** Returns to the previous track, chapter or data.

If Random or Shuffle is selected in Windows Media Player, selecting Next or Previous advances to a random selection.

Writing CDs

The full-size drive provides high-performance execution of CD/DVD-ROM-based programs. You can run either 12 cm (4.72") or 8 cm (3.15") CD/DVDs without an adaptor. For information on loading and unloading disks refer to the *Using optical media drive* section.

CD-R disks can be written to only once. CD-RW disks can be rewritten many times.

Before writing

Please observe the following points when you write or rewrite data.

- If you are using a CD-RW/DVD-ROM drive, make sure to use 8x speed for CD-R and CD-RW.
- We recommend the following manufacturers of CD-R and CD-RW media. Media quality can affect write or rewrite success rates.

  CD-R: TAIYOYUDEN CO., LTD.
  Mitsui Chemicals Inc.
  MITUBISHI CHEMICAL CORPORATION
  RICOH Co., Ltd.
  Hitachi Maxell Ltd.

  CD-RW: MITUBISHI CHEMICAL CORPORATION
  RICOH Co., Ltd.
- CD-RW can generally be rewritten about 1000 times. However, the actual number of rewrites is affected by the quality of the media and the way it is used.
- Be sure to connect the AC adaptor when you write or rewrite.
- Be sure to close all other software programs except the writing software.
- Do not run software such as a screen saver which can put a heavy load on the CPU.
- Operate the computer at full power. Do not use power-saving features.

- Do not write while virus check software is running. Wait for it to finish, then disable virus detection programs including any software that checks files automatically in the background.
- Do not use hard disk utilities, including those intended to enhance HDD access speed. They may cause unstable operation and damage data.
- Write from the computer's HDD to the CD. Do not try to write from shared devices such as a LAN server or any other network device.
- Writing with software other than *Drag'n Drop CD* has not been confirmed. Therefore, operation with other software cannot be guaranteed.

When writing or rewriting

Note the following when you write or rewrite a CD-R or CD-RW.

- Always copy data from the HDD to the CD. Do not use cut-and-paste. The original data will be lost if there is a write error.
- Before you use the **Erase** function, make sure the CD-RW disk does not contain any data you want to keep. **Erase** destroys all data on the disk.
- Do not perform any of the following actions :
  - Operate the computer for any other function, including use of a mouse or Touch pad, closing/opening the LCD panel.
  - Start a communication application such as a modem.
  - Apply impact or vibration to the PC.
  - Install, remove or connect external devices, including the following:

    PC card, SD card, SmartMedia, USB devices, external display, i.LINK devices, optical digital devices.
  - Use the CD/DVD Play button, the Digital Audio Play button or the Audio/Video control buttons to reproduce music and voice.
  - Open the CD-RW/DVD-ROM drive.
- If the media is poor in quality, dirty or damaged, writing or rewriting errors may occur.
- Set the computer on a level surface and avoid places subject to vibration such as airplanes, trains or cars. Do not use an unstable surface such as a stand.
- Keep mobile phones and other wireless communication devices away from the computer.

Media care

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

CDs/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 CDs/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 centre hole. Fingerprints on the surface may prevent the drive from properly reading data.
5. Do not expose to direct sunlight, extreme heat or cold. Do not place heavy objects on your CDs/DVDs.
6. If your CDs/DVDs become dusty or dirty, wipe them with a clean dry cloth. Wipe from the centre out, do not wipe in a circular direction around the CD/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.

Using the internal modem

This section describes how to make settings and connect the modem. Refer to the computer's online help files for more information. Refer also to the online help files for your modem software.

The International modem does not support voice functions. Data and fax functions are supported.

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

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

Region selection

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

1. Point to **All Programs**, point to **TOSHIBA Internal Modem** and click **Region Select Utility**.

Do not use the Country/Region Select function in the Modem setup utility in the Control Panel if the function is available. If you change the Country/Region in the Control Panel, the change may not take effect.

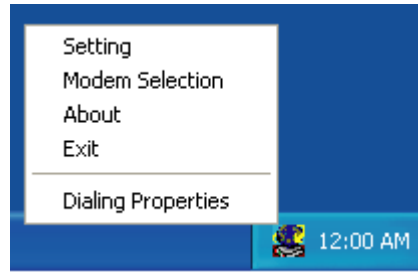
2. The Region Selection icon will appear in the Windows Task Bar.

The Region Selection icon

3. Click the icon with the primary mouse button to display a list of regions that the modem supports. A sub menu for telephony location information will also be displayed. A check will appear next to the currently selected region and telephony location.
4. Select a region from the region menu or a telephony location from the submenu.
   - When you click a region it becomes the modem's region selection, and the New Location for telephony will be set automatically.
   - When you select a telephony location, the corresponding region is automatically selected and it becomes the modem's current region setting.

Properties menu

Click the icon with the secondary mouse button to display the following menu.



The properties menu

Setting

You can enable or disable the following settings:

AutoRun Mode

Region Select Utility starts automatically when you start up the operating system.

Open the Dialling Properties dialog box after selecting region.

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

Location list for region selection.

A submenu appears displaying location information for telephony.

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

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

Modem selection

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

Dialling properties

Select this item to display the dialling properties.

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

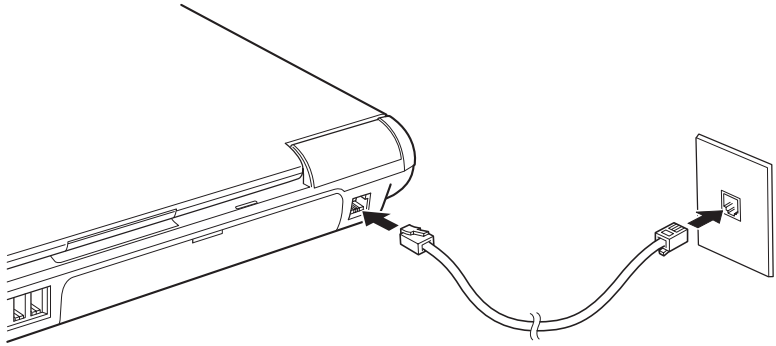
Connecting

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

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

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

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



Connecting the international modem

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

If you use a storage device such as a CD-ROM drive or HDD connected to a 16-bit PC card, modem speed might be slow or communication might be interrupted.

Disconnecting

To disconnect the international 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.

LAN

The computer is equipped with LAN circuits that support Ethernet LAN (10 megabits per second, 10BASE-T) and Fast Ethernet LAN (100 megabits per second, 100BASE-Tx). This section describes how to connect/disconnect to a LAN.

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

Wake-up on LAN does not work without the AC adaptor. Leave it connected, if you are using this feature.

Connecting LAN cable

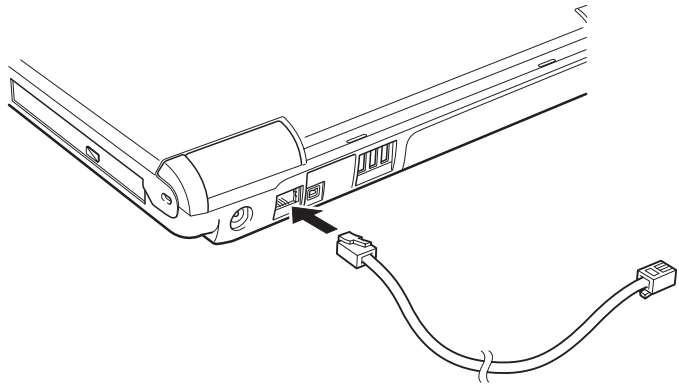
The computer must be configured properly before connecting to a LAN. Logging onto a LAN using the computer's default settings could cause a malfunction in LAN operation. Check with your LAN administrator regarding set-up procedures.

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

If you are using Ethernet LAN (10 megabits per second, 10BASE-T), you can connect with either a CAT5 or a CAT3.

To connect the LAN cable, follow the steps below.

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



Connecting the LAN cable

3. Plug the other end of the cable into a LAN hub connector. Check with your LAN administrator before connecting to a hub.

Disconnecting LAN cable

To disconnect the LAN cable, follow the steps below.

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

Wireless communications

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

Wireless LAN

The wireless LAN is compatible with other LAN systems based on Direct Sequence Spread Spectrum radio technology that complies with IEEE 802.11 wireless LAN standard (Revision B). It supports the following features:

Wi Fi™ THE STANDARD FOR WIRELESS FIDELITY is a Certification Mark of the Wireless Ethernet Compatibility Alliance, Inc.

- Automatic Transmit Rate Select mechanism in the transmit range of 11, 5.5, 2 and 1 Mbit/s.
- Frequency Channel Selection (2.4 GHz)
- Roaming over multiple channels
- Card Power Management
- Wired Equivalent Privacy (WEP) data encryption, based on the 128 bit RC4 encryption algorithm as defined in the IEEE 802.11 standard on wireless LANs.

Wake-up on LAN does not function on a wireless LAN.

Wireless communication switch

You can enable or disable Wireless LAN functions, with the on/off switch. No transmissions are sent or received when the switch is off. Slide the switch toward the back of the computer to turn it on and toward the front of the computer to turn it off.

Set the switch to off in airplanes and hospitals. Check the LED. It will stop glowing when the wireless communication function is off.

Wireless communication LED

The LED indicates the status of the wireless communication functions.

LED status	Indication
LED off	Wireless communication switch is set to off. Automatic power down because of overheating. Power malfunction.
LED glows	Wireless communication switch is on. Wireless communication is turned on by an application.

If you used the Task Bar to disable W-LAN, restart the computer or follow the procedures below to enable the system to recognize W-LAN. Open or click the following: **start**, **Control Panel**, **System**, **Hardware Device Manager**, **Network adaptors**, **TOSHIBA Wireless LAN Mini PCI Card** and **enable**.

Countries/Regions where type approvals, or use permission is in process, or already obtained for the built-in, or optionally available Wireless LAN Mini PCI-Card.

Do not use this equipment in Countries/Regions, in which this equipment is not approved. Contact one of your TOSHIBA Worldwide Computer Representatives in Appendix C for further information.

Australia *	Austria *	Azerbaijan
Belgium *	Bulgaria	Canada *
Czech Republic *	Denmark *	Egypt *
Estonia	Finland *	France *
Germany *	Greece *	Hong Kong *
Hungary	Iceland *	India
Indonesia	Ireland *	Italy *
Japan *	Jordan *	Korea
Kuwait	Latvia *	Lebanon
Liechtenstein *	Lithuania *	Luxemburg *
Malaysia	Malta *	Monaco *
Netherlands	Norway	New Zealand
Oman	Philippines *	Poland
Portugal *	Romania *	Russia
Saudi Arabia	Singapore *	Slovakia
Slovenia	South Africa *	Spain *
Sri Lanka	Sweden *	Switzerland *
Taiwan	Thailand *	Turkey *
UAE	Ukraine	United Kingdom *
USA *	Yugoslavia	

* Countries/Regions, where valid type approvals for Wireless LAN are available at the time of this manual's production.

Cleaning the computer

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

- Be careful not to spill liquids into the computer. If the computer does get wet, turn the power off immediately and let the computer dry completely before you turn it on again.
- Clean the computer using a slightly damp (with water) cloth. You can use glass cleaner on the display. Spray a small amount of cleaner on a soft, clean cloth and wipe the screen gently with the cloth.

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

Moving the computer

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

- Make sure all disk activity has ended before moving the computer. Check the **Built-in HDD** and **Diskette/Optical media 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 a 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 to select one of three temperature controls.

Maximum performance	Turns on fan first, then if necessary lowers CPU processing speed.
Performance	Uses a combination of fan and lowering the CPU processing speed.
Battery optimised	Lowers the CPU processing speed first, then if necessary turns on the fan.

If the temperature rises to a certain level, the cooling fan is turned on or the CPU operating speed is lowered.

When the CPU temperature falls to a normal range, the fan is turned off or the CPU speed returns to normal.

If the CPU becomes too hot with either setting, the system enters Suspend or Hibernation mode and automatically shuts down

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/region's keyboard layout your computer is configured with. Keyboards for numerous languages are available.

There are five types of keys: typewriter keys, keypad overlay, function keys, soft keys and cursor control keys. The typewriter keys and keypad control keys are grey. The other keys are dark grey.

Typewriter keys

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

There are some differences, however, between using a typewriter and using a computer keyboard:

- Letters and numbers produced in computer text vary in width. Spaces, which are created by a "space character," may also vary depending on line justification and other factors.
- The lowercase l (el) and the number 1 (one) are not interchangeable on computers as they are on a typewriter.
- The uppercase O (oh) and the 0 (zero) are not interchangeable.
- The **Caps Lock** function key locks only the alphabetic characters in uppercase while the shift lock on a typewriter places all keys in the shifted position.
- The **Shift** keys, the **Tab** key, and the **BkSp** (backspace) key perform the same function as their typewriter counterparts but also have special computer functions.

F1...F12 function keys

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

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

Soft Keys: Alt Gr Key Combinations

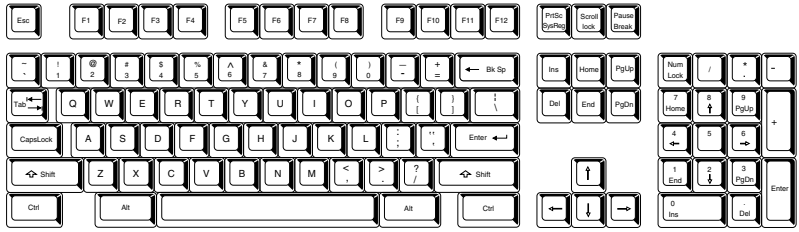
The **Alt Gr** key, at the right of the space bar, is used in combination with other keys to create accented or special characters (#,@,|, etc.). Note that some of the keys at the top of the keyboard bear three symbols (not to be confused with the blue or white letters on the side of some other keys).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

Soft keys: Fn key combinations

The **Fn** (function) is unique to TOSHIBA computers and is used in combination with other keys to form soft keys. Soft keys are key combinations that enable, disable or configure specific features.

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

Emulating keys on enhanced keyboard



A 101-key enhanced keyboard layout

The keyboard is designed to provide all the features of the 101-key enhanced keyboard, shown above. The 101/102-key enhanced keyboard has a numeric keypad and scroll lock key. It also has additional **Enter**, **Ctrl** and **Alt** keys to the right of the main keyboard. Since the keyboard is smaller and has fewer keys, some of the enhanced keyboard functions must be simulated using two keys instead of one on the larger keyboard.

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

Press **Fn + F10** or **Fn + F11** to access the integrated keypad. When activated, the grey keys with white numbers become numeric keypad keys (**Fn + F11**) or cursor control keys (**Fn + F10**). Refer to the *Keypad overlay* section in this chapter for more information on how to operate these keys. The power on default for both settings is off.

Press **Fn + F12 (ScrLock)** to lock the cursor on a specific line. The power on default is off.

Press **Fn + Enter** to simulate **Enter** on the enhanced keyboard's numeric keypad.

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

Hotkeys

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

Sound mute: Pressing **Fn** + **Esc** turns sound on or off. When you press these hotkeys, the current setting will be displayed in a window.

Instant security: Press **Fn** + **F1** to blank the screen to prevent others from accessing your data. Also, the HDD-off timing is set to one minute. To restore the screen and original settings, press any key or use the Touch pad. If you have set a screen saver password, a dialog will appear. Enter the password and click **OK**. If no screen saver password is set, the screen will be restored when you press any key or use the Touch pad.

Power save mode: Pressing **Fn** + **F2** changes the power save mode. Press **Fn** + **F2** once to display the Power Save Mode in a window. Press the hotkeys again to change the setting. You can also change this setting through the *Plugged in* or *Running on batteries* item of the *Power Saver Properties* window in Power Saver.

Standby: When you press **Fn** + **F3**, the computer can enter Standby. To avoid entering Standby unexpectedly, a dialog box appears for verification. However, if you check the checkbox in the dialog box, it will not appear from the next time.

Hibernation: When you press **Fn** + **F4**, the computer can enter Hibernation. To avoid entering Hibernation unexpectedly, a dialog box appears for verification. However, if you check the checkbox in the dialog box, it will not appear from the next time.

Display selection: Press **Fn** + **F5** to change the active display device. When you press these hot keys a dialog box appears. Only selectable devices will be displayed. Hold down **Fn** and press **F5** again to change the device. When you release **Fn** and **F5**, the selected device will change. If you hold down the keys for three seconds the selection will return to **LCD**.

HWSETUP	Active display	Change order
Auto-Selected	Internal	Int. -> Sim. -> Ext. -> TV
	External	Ext. -> TV -> Int. -> Sim.
Simultaneous	Internal and external	Sim. -> Ext. -> TV -> Int.

Display brightness: Pressing **Fn** + **F6** decreases the display brightness. When you press these hotkeys, the current setting will be displayed for two seconds by a pop-up icon. You can also change this setting through the *Monitor brightness* item of the *Power Save Mode* window in Power Saver.

Display brightness: Pressing **Fn** + **F7** increases the display brightness. When you press these hotkeys, the current setting will be displayed for two seconds by a pop-up icon. You can also change this setting through the *Monitor brightness* item of the *Power Save Mode* window in Power Saver.

You cannot change the display brightness for about 18 seconds after the LCD turns on. To protect display quality, the brightness level is set at the maximum value.

Wireless setting: If your computer has both Bluetooth and wireless LAN functions, you can press **Fn** + **F8** to select which type of wireless communication you want to use. When you press these hotkeys, a dialog box will appear. Continue holding down **Fn** and press **F8** to change the setting. If wireless communication is turned off, **`Disabled Wireless Communication Switch`** will be displayed.

If no wireless communication device is installed, no dialog box will not appear.

Touch pad: Pressing **Fn** + **F9** enables or disables the Touch pad function. When you press these hotkeys, the current setting will change and be displayed as an icon.

Windows special keys

The keyboard provides two keys that have special functions in Windows XP. One activates the **`Start`** menu and the other has the same function as the secondary mouse button.

This key activates the Windows XP **`Start`** menu.

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

Keypad overlay

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

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

Turning on the overlays

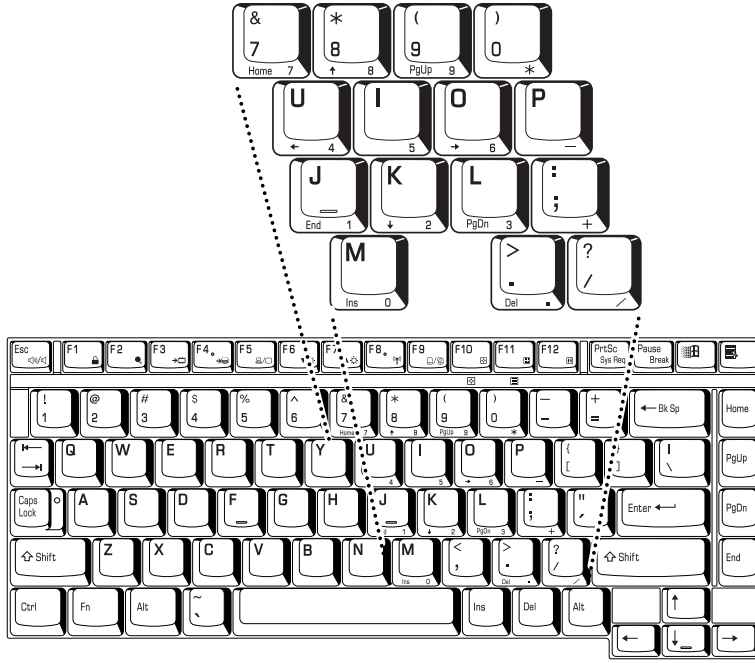
The numeric keypad overlay can be used for numeric data input or cursor and page control.

Arrow mode

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

Numeric mode

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



The numeric keypad overlay

Temporarily using normal keyboard (overlay on)

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

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

Temporarily using overlay (overlay off)

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

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

Temporarily changing modes

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

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

Generating ASCII characters

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

With the overlay on:

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

With the overlay off:

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

A list of ASCII characters with their codes is shown in Appendix G.

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

		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 panel alert you to the computer's operating capability and battery charge status.

Battery indicator

Check the **Battery** indicator to determine the status of the 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 from 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 power is being supplied to the computer while the computer is in Standby mode. The indicator blinks on for one second and off for two seconds.
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 pack

When the AC adaptor is not connected, the computer's main power source is a removable lithium ion battery pack, also referred to in this manual as the battery. You can purchase additional battery packs for extended use of the computer away from an AC power source.

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

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

Do not remove the Battery Pack while the computer is in Standby mode. Data is stored in RAM, so if the computer loses power, it will be lost. The next time you turn on the power, the following message will be displayed:

WARNING: RESUME FAILURE.

PRESS ANY KEY TO CONTINUE.

Real Time Clock battery

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

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

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

The computer's RTC battery is a lithium ion 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 ensure longer operating time on battery power as well as a longer life for your battery pack. Follow the instructions in this section carefully to assure safe operation and maximum performance.

Safety precautions

Mishandling of batteries can cause death, serious injury or property damage. Carefully observe the following advisories:

Danger: Indicates an imminently hazardous situation, which could result in death or serious injury, if you do not follow instructions.

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

Caution: Indicates a potentially hazardous situation, which if not avoided, may result in moderate or minor injury or property damage.

Note: Provides important information.

Danger

1. Never try to dispose of the battery pack by burning or expose it to a heating device such as a microwave oven. The battery pack could explode and cause bodily injury.
2. Never try to disassemble, repair or otherwise tamper with a battery pack. The battery pack will overheat and ignite. Leakage of caustic alkaline solution or other electrolytic substances will cause fire or injury, possibly resulting in death or serious injury.
3. Never short-circuit the battery pack by contacting the terminals with a metal object. A short-circuit can cause fire or otherwise damage the battery pack and possibly cause injury. To avoid accidental short-circuit, always wrap the battery pack in plastic and cover the terminals with electrical tape when storing or disposing of the battery pack.
4. Never puncture the battery pack with a nail or other sharp object. Never strike it with a hammer or other object. Never step on it.
5. Never try to charge the battery pack in any manner other than that described in the user's manual. Never connect the battery pack to a plug socket or to a automobile's cigarette lighter socket. It may rupture or ignite.

6. Use only the battery pack supplied with the computer or other device or an battery pack approved by the computer or device's manufacturer. Battery packs have different voltages and terminal polarities. Use of an improper battery could cause smoke, fire or rupture of the battery pack.
7. Never subject a battery pack to heat, such as storage near a heat source. Exposure to heat can cause the battery pack to ignite, explode or leak caustic liquid and cause death or serious injury. It could also fail or malfunction causing data loss.
8. Never expose the battery pack to abnormal shock, vibration or pressure. The battery pack's internal protective device will fail, causing it to overheat, explode, ignite or leak caustic liquids possibly resulting in death or serious injury.
9. Never let a battery pack become wet. A wet battery pack will overheat, ignite or rupture possibly resulting in death or serious injury.

Warning

1. Never allow caustic electrolyte fluid leaked from a battery pack to contact your eyes, skin or clothing. If caustic electrolyte fluid should contact your eyes, immediately wash your eyes with large amounts of running water and seek medical attention, to help prevent eye damage. It electrolyte fluid should contact your skin immediately wash it under running water to prevent rash. If it contacts your clothes, promptly remove them to prevent the fluid from contacting your skin or eyes.
2. Immediately turn off the power, disconnect the AC adaptor and remove the battery if any of the following events are observed in the battery pack: offensive or unusual odour, excessive heat, discoloration or deformation. Never use the computer again until it has been checked by a TOSHIBA service provider. It might generate smoke or fire, or the battery pack might rupture.
3. Make sure the battery is securely installed in the computer before attempting to charge the battery pack. Improper installation could generate smoke or fire, or cause the battery pack to rupture.
4. Keep the battery pack out or reach of infants and children. It can cause injury.

Caution

1. Never continue to use a battery pack after its recharging capacity has become impaired, or after the display of a warning message indicating that the battery pack's power is exhausted. Continued use of an exhausted or impaired battery pack could cause the loss of data.
2. Never dispose of battery packs with normal trash. Bring them to your TOSHIBA dealer or to another recycling centre to save resources and prevent environmental damage. Cover the terminals with electrical tape to prevent short-circuits, which could cause the battery pack to ignite or rupture.
3. Use only battery packs recommended by TOSHIBA as replacements.
4. Always make sure the battery pack is installed correctly and securely. Otherwise, a battery pack could fall out and possibly cause injury.
5. Charge the battery pack only in an ambient temperature between 5 and 35 degrees Celsius. Otherwise, the electrolyte solution might leak, battery pack performance might deteriorate and the battery life might be shortened.
6. Be sure to monitor the remaining battery power. If the battery pack and real time clock battery discharge completely, Standby and Suspend will not function and data in memory will be lost. Also, the computer might register an incorrect time and date. In this case, connect the AC adaptor to recharge the batteries.
7. Never install or remove the battery pack without first turning off the power and disconnecting the AC adaptor. Never remove the battery pack while the computer is in Suspend or Standby mode. Data will be lost.

Note

1. Never remove the battery pack while the Wake-up on LAN function is enabled. Data will be lost. Before you remove a battery pack, disable the Wake-up on LAN function.
2. To ensure the battery pack maintains maximum capacity, operate the computer on battery power once a week until the battery pack is fully discharged. Refer to the section *Extending battery life* in this chapter for procedures. If the computer is continuously operated on AC power for an extended period, more than a week, the battery might fail to retain a charge. It might not function efficiently over the expected life of the battery pack and the **Battery** indicator might not indicate a low-battery condition.
3. After the battery pack is charged, avoid leaving the AC adaptor connected and the computer turned off for more than a few hours at a time. Continuing to charge a fully-charged battery pack can damage the battery.

Charging the batteries

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

You must recharge a battery pack when it becomes discharged.

Procedures

To recharge a battery pack while it is installed in the computer, connect the AC adaptor to the DC IN socket and plug the other end into a working outlet.

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

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

Time

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

	Charging time (hours)	
Battery type	**Power on**	**Power off**
Battery pack	4 to 11 or longer	about 3
RTC battery	8 or longer	Doesn't charge

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

Once a battery pack is fully charged, it is recommended that you operate the computer only on battery power until the battery pack completely discharges. Doing so extends battery life and helps ensure accurate monitoring of battery capacity.

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

- The battery has not been used for a long time.
- The battery has completely discharged and been left in the computer for a long time.
- A cool battery is installed in a warm computer.

In such case, follow the steps below.

1. Fully discharge the battery by leaving it in the computer with the power on until the power automatically shuts off.
2. Plug in the AC adaptor.
3. Charge the battery until the **Battery** indicator glows green.

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

Leaving the AC adaptor connected will shorten battery life. At least once a month, run the computer on battery power until the battery is fully discharged, then recharge the battery.

Monitoring battery capacity

Remaining battery power can be monitored by the TOSHIBA Power Saver utility. Refer to *Utilities* in Chapter 1, *Introduction*.

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

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

Maximising battery operating time

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

How long the charge lasts in a battery depends on:

- How you configure the computer (for example, whether you enable battery-power saving options). The computer provides a battery save mode to conserve battery power. This mode has the following options:
  - Processing speed
  - Display auto off
  - HDD auto off
  - System auto off
  - LCD brightness
- 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 (standby mode)

When you turn off your computer with fully charged batteries, the computer will retain data for the following approximate time periods:

Battery pack	3.6 days or longer (Standby mode) 1 month or longer (Shut down mode)
RTC battery	1 month or longer

Extending battery life

To maximise 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 the battery has been fully recharged, 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

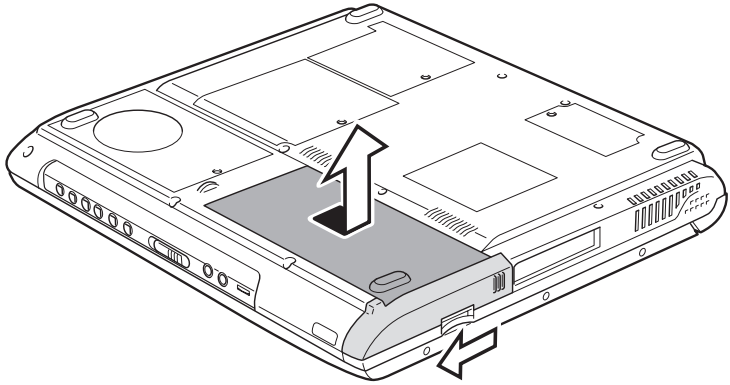
To replace a discharged battery pack, follow the steps below. Refer to Chapter 2, The Grand Tour, for component locations.

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

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

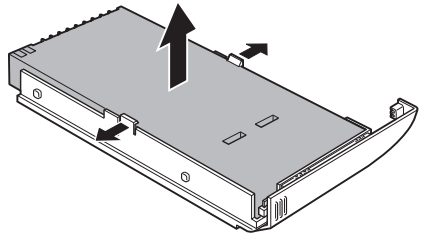
1. Save your work.
2. Turn the computer's power off. Make sure the **Power** indicator is off.
3. Remove all cables connected to the computer.
4. Turn the computer upside down.

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



Releasing the battery cover

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



Removing the battery pack

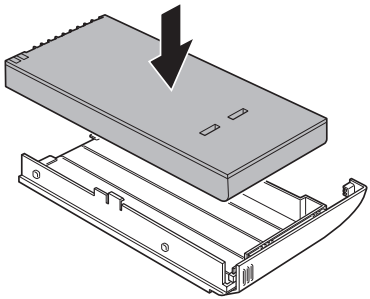
For environmental reasons, do not throw away a spent battery pack. Please return spent battery packs to your TOSHIBA dealer.

Installing the battery pack

To install a battery pack, follow the steps below.

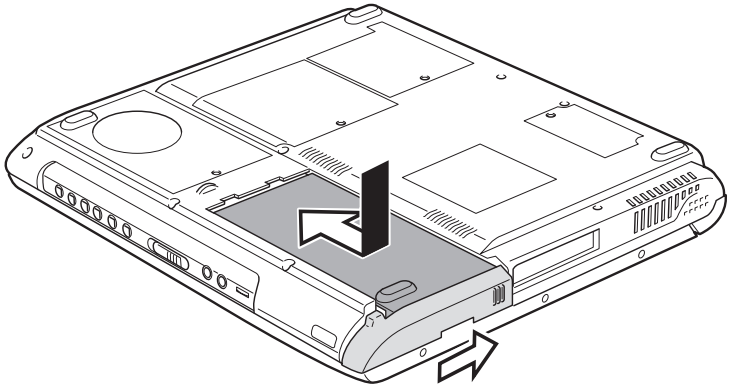
The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.

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



Inserting the battery pack

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



Securing the battery cover

Starting the computer by password

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

1. Turn on the power as described in Chapter 3, *Getting Started*. The following message appears:

```
Password =
```

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

2. Enter the password.
3. Press **Enter**.

If you enter the password incorrectly three times in a row, the computer shuts off. In this case, you must turn the computer back on to retry password entry.

Power-up modes

The computer has three power-up modes:

- Hibernation (saves data in memory to the hard disk)
- Standby (Power remains on, saving data in RAM, but the CPU and all other devices enter sleep mode.)
- Boot (does not save data in memory)

Refer also to the sections Turning off the power in Chapter 3, Getting Started and to Special Features in Chapter 1, Introduction.

Panel power off/on

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

When you open the panel, power turns on in Standby or Hybernation mode but not in boot mode.

If the panel power off function is enabled and you use Shut down Windows, do not close the display until the shut down function is completed.

System automatic Standby/Hibernation

This feature automatically turns off the system in Standby or Hibernation mode if the computer is not used for a set duration.

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

Chapter 7

HW Setup and Passwords

This chapter explains how to use the TOSHIBA HW Setup program 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).

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.

HW Setup

TOSHIBA HW Setup lets you configure settings for General, Password, Device Config, Parallel/Printer, Display, CPU (Pentium 4 models only), Boot Priority, Keyboard, USB and LAN.

If the supervisor password is set, access to the TOSHIBA HW Setup program can be prevented when the user password is used to log on to the computer.

Refer to the Supervisor password readme file for details on enabling/disabling access to HW Setup. The path to the readme file is ***C:\ProgramFiles\TOSHIBA\Windows Utilities\SVPWTool****. In the* ***SVPWTool*** *directory, open the* ***readme.htm*** *file.*

Accessing HW Setup

To run HW Setup, click **start**, click **Control Panel**, click **Printers and Other Hardware** and select **TOSHIBA HW Setup**.

HW Setup window

The HW Setup window contains the following tabs: General, Password, Device Config, Parallel/Printer, Display, CPU (Pentium 4 models only), Boot Priority, Keyboard, USB and LAN.

There are also three buttons: OK, Cancel and Apply.

OK	Accepts your changes and closes the HW Setup window.
Cancel	Closes the window without accepting your changes.
Apply	Accepts all your changes without closing the HW Setup window.

General

This window displays the BIOS version and contains two buttons: **Default** and **About**.

Default	Return all HW Setup values except Password to the factory settings.
About	Display the HW Setup version.

Setup

This field displays **BIOS Version** and date.

Password

User Password

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

Not Registered	Remove the password. (Default)
Registered	Set the password. A dialog box will appear to let you set the password.

To enter a user password:

1. Select **Registered** to display the following prompt:

Enter 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:

Enter Password: **

*If you click the **OK** button before entering the password, **Not registered** will appear on the display.*

3. Click the **OK** button. 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. You must repeat from step 1.

Entry Error!!!

To delete a user password:

1. Select **Not Registered** to display the following prompt:

```
Enter Password:
```

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

```
Enter Password: ****
```

*If you click the **OK** button before entering the password, **`Registered`** will appear on the display.*

3. Click the **OK** button. 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. You must repeat step 1.

```
Incorrect Password!!!
```

If you enter the password incorrectly three times, the screen will display:

`Sorry, access denied!!! Powering off your machine then powering it back on again are required to regain access.`

You will not be able to access the password option in HW Setup. 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.

Refer to the *Supervisor password* section later in this chapter for details on setting the supervisor password.

Device Config

Device Configuration

This option lets you set the device configuration.

Setup by OS	Operating system sets devices that it can control. (Default)
All Devices	BIOS sets all devices.

Parallel/Printer

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

Parallel Port Mode

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.

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.

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

CPU (Pentium 4 models only)

This feature appears only on computers with Mobile Intel® Pentium® 4 processor-M.

Dynamic CPU Frequency Mode

This option lets you choose from the following settings:

Dynamically Switchable	CPU power consumption and clock speed automatic switching function is enabled. When the computer is in use, CPU operation is automatically switched when necessary. (Default)
Always High	CPU power consumption and clock speed automatic switching function is disabled. The CPU always runs at its fastest speed.
Always Low	CPU power consumption and clock speed automatic switching function is disabled. The CPU always runs at low power consumption and low speed.

Boot Priority

Boot Priority Options

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

HDD -> FDD -> CD-ROM -> LAN	The computer looks for bootable files in the following order: HDD, diskette drive, CD-ROM* and LAN**. (Default)
FDD -> HDD -> CD-ROM -> LAN	The computer looks for bootable files in the following order: diskette drive, HDD, CD-ROM* and LAN**.
FDD -> CD-ROM -> LAN -> HDD	The computer looks for bootable files in the following order: diskette drive, CD-ROM*, LAN** and HDD.
HDD -> CD-ROM -> LAN -> FDD	The computer looks for bootable files in the following order: HDD, CD-ROM*, LAN** and diskette drive.
CD-ROM -> LAN -> FDD -> HDD	The computer looks for bootable files in the following order: CD-ROM*, LAN**, diskette drive and HDD.
CD-ROM -> LAN -> HDD -> FDD	The computer looks for bootable files in the following order: CD-ROM*, LAN**, HDD, diskette drive.

* CD-ROM refers to your DVD-ROM or CD-RW/DVD-ROM drive.

** The LAN item appears only on models with LAN capability.

You can override the settings and manually select a boot device in one of two ways:

- Press one of the following keys while the computer is booting:

1	Selects the primary HDD.
C	Selects the CD/DVD-ROM.
F	Selects the diskette drive.
N	Selects the network.
P	Selects the PC card HDD.

This procedure does not affect the settings.

- Use hot keys:

1. Hold down **F12** and boot the computer.
2. The following menu will be displayed with the following icons: Built-in HDD, CD-ROM, FDD, Network (LAN), PCA (ATA) card boot.

A bar will appear only under the selected device.

3. Use the left/right cursor keys to highlight the boot device you want and press **Enter**.

If a supervisor password is set, the menu above does not appear when you use the user password to start the computer.

In this computer, CD-ROM refers to the DVD-ROM or CD-RW/DVD-ROM drive.

The selection method above does not change the boot priority settings in HW Setup.

If you press a key other than one of those above or if the selected device is not installed, the system will boot according to the current setting in HW Setup.

Network Boot Protocol

Network Boot Protocol

This feature sets the protocol to remotely boot from the network.

[PXE]	Sets PXE as the protocol. (Default)
[RPL]	Sets RPL as the protocol.

Keyboard

Wake-up on Keyboard

Use this option to enable or disable Wake-up on Keyboard. When the computer is in standby mode, you can start it by pressing any key. This feature is effective only with the built-in keyboard.

Enabled	Enables the Wake-up on Keyboard.
Disabled	Disables the Wake-up on Keyboard.

USB

USB KB/Mouse 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 to **Enabled**.

Enabled	Enables the USB KB/Mouse Legacy Emulation. (Default)
Disabled	Disables the USB KB/Mouse Legacy Emulation.

LAN

Wake-up on LAN

This features lets the computer's power be turned on when it receives a wake-up signal from the LAN.

Enabled	Enables Wake-up on LAN.
Disabled	Disables Wake-up on LAN. (Default)

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

Wake-up on LAN does not work without the AC adaptor. Leave it connected, if you are using this feature.

Built-in LAN

Enabled	Enables Built-in LAN functions. (Default)
Disabled	Disables Built-in LAN functions.

Supervisor password

Refer to the readme file of the Supervisor Password Utility for instructions on setting the Supervisor Password.

The path to the readme file is **C:\Program Files\TOSHIBA\Windows Utilities\SVPWTool**. In the **SVPWTool** directory, open the **readme.htm** file.

Chapter 8

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
- SD cards (for configurations with SD card slot only)
- Memory modules

Power devices

- Additional battery pack
- Additional AC adaptor
- Battery charger

Peripheral devices

- Parallel printer
- External monitor
- Television
- i.LINK (IEEE1394) (for configurations with i.LINK port only)
- Security lock

PC cards

The computer is equipped with a PC card (PCMCIA) 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.

If you use a storage device such as a CD-ROM or HDD connected to a 16-bit PC card, modem speed might be slow or communication interrupted.

Installing a PC card

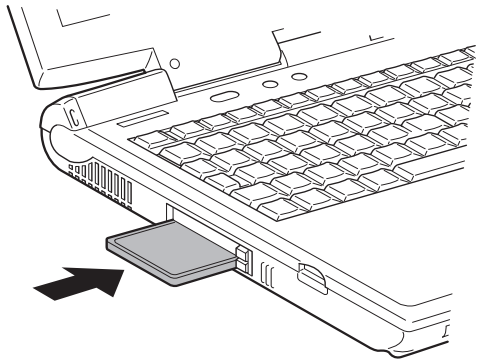
Two PC card connectors are located one above the other on the right side of the computer. Both connectors are accessed from the same slot. You can install two Type II cards, one in each connector, or one Type III card in the bottom connector.

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

Do not install a PC card while the computer is in Standby or Hibernation mode. Some cards might not work properly.

To install a PC card, follow the steps below.

1. Insert the PC card.
2. Press gently to ensure a firm connection.

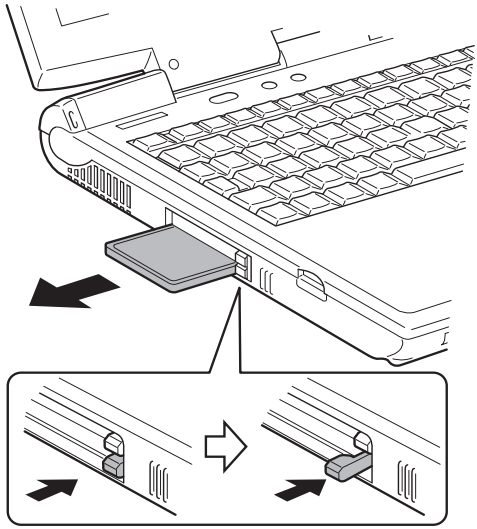


Installing a PC card

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

Removing a PC card

1. Click the **Safety Remove Hardware** icon on the Task Bar.
2. Click the PC card you want to remove.
3. Press the eject button of the PC card you want to remove to extend the button.
4. Press the extended eject button to pop the card out slightly.
5. Grasp the PC card and remove it.



Removing a PCcard

SD cards

If your computer is equipped with an SD card slot, it can accommodate Secure Digital flash memory cards with capacities of 8 MB, 16 MB, 32 MB, 64 MB and 128 MB. SD cards let you easily transfer data from devices, such as digital cameras and Personal Digital Assistants, that use SD card flash-memory. The cards have a high level of security and copy protection features.

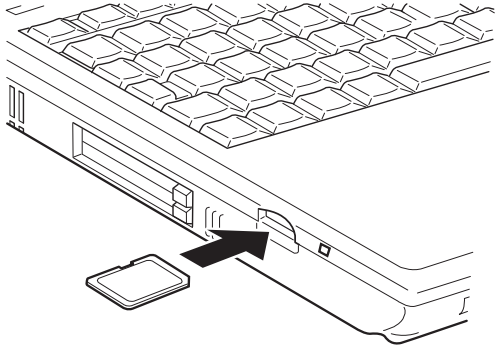
The slot cannot accommodate MultiMedia cards.

Keep foreign objects out of the SD card slot. A pin or similar object can damage the computer's circuitry.

Installing an SD card

To install an SD card, follow the steps below.

1. Insert the SD card.
2. Press gently to ensure a firm connection.



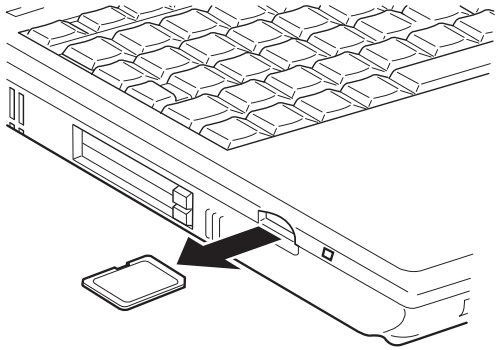
Inserting an SD card

Make sure the SD card is oriented properly before you insert it.

Removing an SD card

To remove an SD card, follow the steps below.

1. Open the **Safety Remove Hardware** icon on the system tray and disable the SD card.
2. Push in the card and release it to pop the card out slightly.
3. Grasp the card and remove it.



Removing an SD card

Make sure the SD card indicator is out before you remove the card or turn off the computer's power. If you remove the card or turn off the power while the computer is accessing the card you may lose data or damage the card.

Memory expansion

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

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

The next time you turn on the power, the following message will be displayed:

WARNING: RESUME FAILURE.

PRESS ANY KEY TO CONTINUE.

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

Some memory modules can be physically installed but are not compatible with the computer. In this case the computer will issue a warning.

***Pentium 4 models:** The computer will hang up, and the following message will be displayed: Please remove the incompatible memory module in Slot X (X represents A or B). In this case, shut down the power and remove the incompatible memory module.*

***Celeron models:** A beep will sound when you turn on the power. If the module is installed in slot A, there will be a long beep followed by a short beep. If the module is in slot B, there will be a long beep followed by two short beeps. If the memory module is 512 MB or more, there will be a long beep followed by four short beeps. In this case, shut down the power and remove the incompatible module.*

Installing a memory module

If you use the computer for a long time, the memory modules will become hot. In this case, let the memory modules cool to room temperature before you replace them.

Use a point size 0 Phillips screwdriver.

Follow the steps below to install a memory module.

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

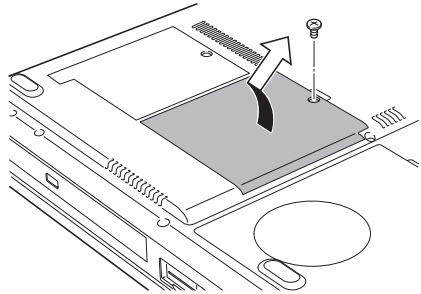
Do not try to install a memory module under the following conditions. You can damage the computer and the module.

The computer is turned on.

The computer was shut down using the Stand by mode.

Power to the DVD-ROM drive has been turned on by the CD Power switch.

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 the screw securing the memory module socket cover.
5. Slide your fingernail or a thin object under the cover and lift it off.

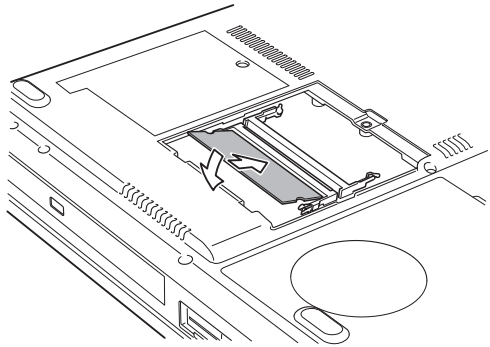


Removing the memory module socket cover

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

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

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



Installing a module

8. Seat the cover and secure it with one screw.
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 recognised.

Removing a memory module

If you use the computer for a long time, the memory modules will become hot. In this case, let the memory modules cool to room temperature before you replace them.

Use a point size 0 Phillips screwdriver.

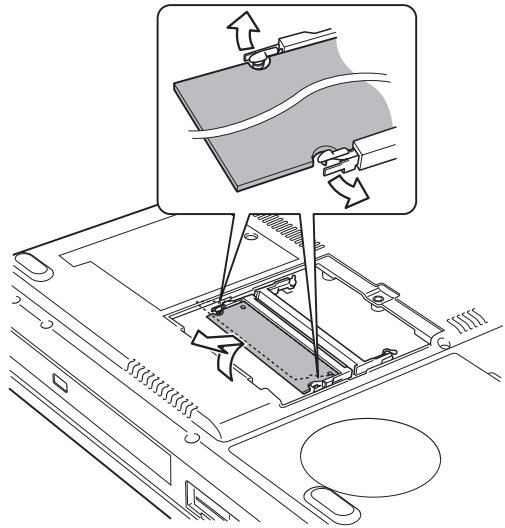
To remove the memory module, make sure the computer is in boot mode then:

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

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

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

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



Removing the memory module

6. Seat the cover and secure it with one screw.
7. Replace the battery.

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.

Additional AC adaptor

If you frequently carry the computer to different sites such as your home and office, having an AC adaptor at each location reduces the weight and bulk of your load.

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.

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 HW Setup program. Refer to Chapter 7, *HW Setup and Password*.
9. Select the **Parallel/Printer** tab from the **HW Setup** window.
10. Set the mode to **ECP** and press **OK**.
11. Choose **Reboot** for the change to take effect.
12. Select the printer in Windows' Add Printer Wizard. To access the **Add Printer Wizard** utility, click **Start**, point to **Settings**, click **Printers** and double click the **Add Printer** icon.

External monitor

An external analogue 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.

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 recognises the monitor and determines whether it is colour or monochrome.

You can use the HW Setup program to select between **Auto-Selected** and **Simultaneous** displays. Refer to Chapter 7, *HW Setup and Passwords*, for details on HW Setup.

If you have selected **Simultaneous** under the **Display** options of the Hardware Setup 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.

Television

A television can be connected to the video out port on the computer. To connect a television, follow the steps below.

1. Turn the computer off.
2. Use a video cable (not supplied) to connect the television to the video out port.
3. Turn the television on.
4. Turn the computer on.

You can use the hotkeys **Fn** + **F5** to change the display device. Refer to Chapter 5, *The Keyboard*.

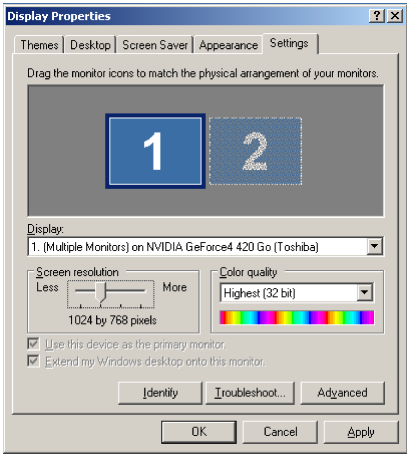
If a television is connected to the computer, set the TV type in Display Properties.

To set the TV type, follow the steps below.

1. Click **start** and click **Control Panel**.
2. Double-click the **Display** icon to open the Display Properties window.
3. Click the **Settings** tab and click the **Advanced** button.
4. Click the **nView** tab, click the **Device Settings** and click the **Select Output Device**.
5. Select **TV** in the **Output Device** tab.
6. Select **Format** box and select the format that your TV supports.

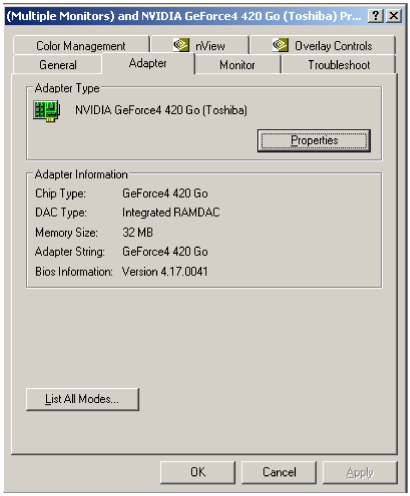
When connecting a TV (NTSC), please set the **`Display resolution`** to 640 x 480, following the steps below.

1. Open **Display properties** and select the **Settings** tab.
2. Select **Advanced**.



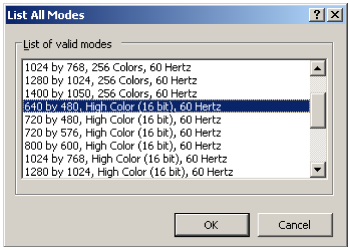
Display properties

3. Select the **Adaptor** tab, then select **List all modes**.



The Adaptor window

4. Select **640 by 480, High Color (16 bit), 60 Hertz**.



Resolution menu

i.LINK (IEEE1394)

If available on your computer, i.LINK (IEEE1394) is used for high-speed data transfer for a range of compatible devices such as:

- Digital video cameras
- Hard disk drives
- MO drives
- CD-RW drives

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

Precautions

- Make a back-up of your data before transferring it to the computer. There is a possibility that the original data will be damaged. There is a particular risk that some frames will be deleted in the case of digital video transfer.
- Do not transfer data in areas where static electricity is easily generated or in areas subjected to electronic noise. Data can be destroyed.
- If you are transferring data through an IEEE1394 hub, do not connect or disconnect other devices from the hub during data transfer. There is a likelihood that data will be damaged. Connect all devices to the hub before you turn on the computer's power.

Connecting

1. Make sure the connectors are properly aligned and plug the i.LINK (IEEE1394) cable into the computer.
2. Plug the other end of the cable into the device.

Note the following when you use i.LINK:

- You may need to install drivers for your i.LINK devices.
- Not all i.LINK devices have been tested. Therefore, compatibility with all i.LINK devices cannot be guaranteed.
- Use S100, S200 or S400 cables no longer than three meters.
- Some devices might not support standby or automatic off functions.
- Do not connect or disconnect an i.LINK device while it is using an application or when the computer is automatically shutting it down to save power. Data might be destroyed.

Disconnecting

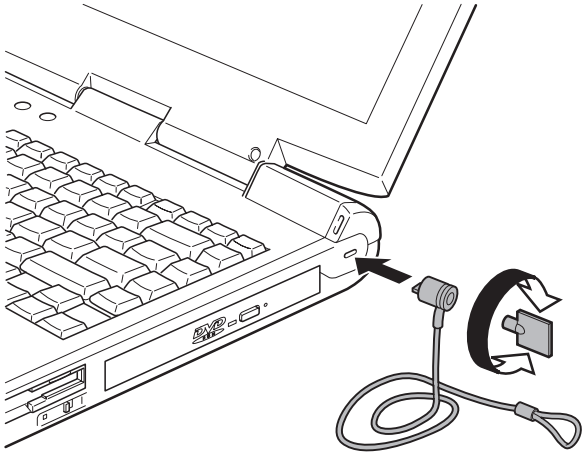
1. Click the **Safety Remove Hardware** icon on the Task Bar.
2. Point to **i.LINK (IEEE1394) device** and click.
3. Disconnect the cable from the computer then from the i.LINK device.

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

Security lock

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

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



Security lock

Chapter 9

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 recognise 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, 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 recognises the new device.
- Make sure all options are set properly in the setup program.
- Check all cables. Are they correctly and firmly attached? Loose cables can cause signal errors.
- Inspect all connecting cables for loose wires and all connectors for loose pins.
- Check that your diskette, CD-ROM or DVD-ROM is correctly inserted and that the diskette's write protect tab is correctly set.

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

Analysing the problem

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

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

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

Software

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

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

Next, check any error messages in the OS documentation.

Hardware

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

Hardware and system checklist

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

- System start-up
- Self Test
- Overheating power down
- AC Power
- Battery
- Password
- Keyboard
- LCD panel
- Hard disk drive
- DVD-ROM drive
- CD-RW/DVD-ROM drive
- Diskette drive
- Infrared port
- Printer
- PC card
- SD card
- Monitor
- Sound system
- Pointing device
- USB
- TV output signal
- Standby/Hibernation
- Memory expansion
- Modem
- i.LINK (IEEE1394)
- LAN
- Wireless LAN

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 HW Setup 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 main 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 Suspend or Hibernation mode and shut down.

Problem	Procedure
Computer shuts down and **DC IN** indicator blinks orange	Leave the computer off until it reaches room temperature, then turn it back on. If the computer is still too warm, the **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 should glow green)	Check the connections. Make sure the cord is firmly connected to the computer and a power outlet. Check the condition of the cord and terminals. If the cord is frayed or damaged, replace it. If the terminals are soiled, wipe them with cotton or a clean cloth. If the AC adaptor still does not power the computer, contact your dealer.

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 TOSHIBA Power Saver. 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 section in Chapter 7, *HW Setup and Passwords.*

Keyboard

Keyboard problems can be caused by your setup configuration. For more information refer to Chapter 5, The Keyboard, and Chapter 7, *HW Setup and Passwords.*

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, *HW Setup and Passwords*, 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.
Problems above remain unresolved or other problems occur	Refer to your software's documentation to determine if the software is causing the difficulty. Contact your dealer if the problems continue.

Hard disk drive

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. Contact your dealer if the problems continue.

DVD-ROM drive

For more information, refer to Chapter 2, *The Grand Tour*, and 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: CD-DA, Photo CD (single/multi-session), CD-ROM Mode 1, Mode 2, CD-ROM XA Mode 2 (Form1, Form2), CD-Text, Enhanced CD (CD-EXTRA), CD-G (Audio CD only), Addressing Method 2 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.

CD-RW/DVD-ROM drive

For more information, refer to Chapter 2, *The Grand Tour*, and to Chapter 4, *Operating Basics.*

Problem	Procedure
You cannot access a CD/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 CD/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 CD/DVD. Make sure there is no obstruction. Remove any foreign object. Check whether the CD/DVD is dirty. If it is, wipe it with a clean cloth dipped in water or a neutral cleaner. See the Disk care section in Chapter 4, Operating Basics, for details on cleaning.
Some CD/DVDs run correctly, but others do not	The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software's needs. Check the CD/DVD's documentation. Check the type of CD/DVD you are using. The drive supports: DVD-ROM: DVD-ROM, DVD-Video CD-ROM: CD-DA, Photo CD (single/multi-session), CD-ROM Mode 1, Mode 2, CD-ROM XA Mode 2 (Form1, Form2), CD-Text, Enhanced CD (CD-EXTRA), CD-G (Audio CD only), Addressing Method 2 Check the region code on the DVD. It must match that on the CD-RW/DVD-ROM drive. Region codes are listed in the Drives section in Chapter 2, The Grand Tour.

Problem	Procedure
Cannot write correctly	If you have trouble writing, make sure you are observing the following precautions: ■ Use only media recommended by TOSHIBA. ■ Do not use the mouse or keyboard during writing. ■ Use only the software supplied with the computer for recording. ■ Do not run or start other software during writing. ■ Do not jar the computer during writing. ■ Do not connect/ disconnect external devices or install/remove internal cards during writing. If problems persist, contact your dealer.

Diskette drive

For more information on the diskette drive, refer to Chapter 2, *The Grand Tour*. For information on diskette care, 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 matches 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. 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 section 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. Make sure the port is configured correctly. Make sure your software is configured to recognise the printer. Check your printer and software documentation.
Printer error	Check your printer documentation. If problems persist, contact your dealer.

PC card

Refer also to Chapter 8, Optional devices.

Problem	Procedure
PC card error occurs	Re-seat 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.

SD card (optional)

Refer also to Chapter 8, Optional devices.

Problem	Procedure
SD card error occurs	Reseat the SD card to make sure it is firmly connected. 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. If problems persist, contact your dealer.

Sound system

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 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 have connected to the computer. If problems persist, contact your dealer.

Pointing device

If you are using a USB mouse, also refer to the *USB* section in this chapter and to your mouse documentation.

Touch pad

Problem	Procedure
On-screen pointer does not respond to Pad operation	The system might be busy. If the pointer is shaped as an hourglass, wait for it to resume its normal shape and try again to move it.
Double-tapping does not work	Try changing the double-click speed in the mouse control utility. Open the **Control Panel**, select the **Mouse** icon and press **Enter**. **1.** Click the **Buttons** tab. **2.** Set the double-click speed as instructed and click **OK**.
The mouse pointer moves too fast or too slow	Try changing the speed setting in the mouse control utility. **1.** Open the **Control Panel**, select the **Mouse** icon and press **Enter**. **2.** Click the **Pointer Options** tab. **3.** Set the speed as instructed and click **OK**. If problems persist, contact your dealer.

USB mouse

Problem	Procedure
On-screen pointer does not respond to mouse operation	The system might be busy. If the pointer is shaped as an hourglass, wait for it to resume its normal shape and try again to move it.
Double- clicking does not work	Try changing the double-click speed in the mouse control utility. Open the **Control Panel**, select the **Mouse** icon and press **Enter**. **1.** Click the **Buttons** tab. **2.** Set the double-click speed as instructed and click **OK**.
The mouse pointer moves too fast or too slow	Try changing the speed setting in the mouse control utility. **1.** Open the **Control Panel**, select the **Mouse** icon and press **Enter**. **2.** Click the **Pointer Options** tab. **3.** Set the speed as instructed and click **OK**. If problems persist, contact your dealer.
The mouse pointer moves erratically	The mouse might be dirty. Refer to your mouse documentations for instructions on cleaning. 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 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 KB/Mouse Legacy Emulation item in **HW Setup** 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.

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. If problems persist, contact your dealer.

If you turn the computer off in Standby mode while the display is on TV, the computer will select either the internal LCD or an external computer CRT as the display device.

Standby/Hibernation

Problem	Procedure
The system will not enter Standby/ Hibernation	Is Windows Media™ Player open? The system might not enter Standby/Hibernation, if Windows Media Player is either playing a selection or finished playing a selection. Close Windows Media Player before you select Standby/Hibernation. If problems persist, contact your dealer.

Memory expansion

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

Problem	Procedure
Celeron models Beep sounds. (If slot A two beeps. If slot B three beeps. If both two and three beeps. If the memory module is 512 MB or more, five beeps)	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.** Turn off the power. **2.** Disconnect the AC adaptor and all peripheral devices. **3.** Remove the battery pack. **4.** Remove the memory module. **5.** Replace the battery pack and/or connect the AC adaptor. **6.** Turn on the power.
Pentium 4 models The computer hangs up and displays the following message: **`Please remove the incompatible memory module in Slot X (X represents A or B).`**	Make sure the memory module installed in the expansion slot is compatible with the computer. If an incompatible module has been installed, follow the steps below. **1.** Turn off the power. **2.** Disconnect the AC adaptor and all peripheral devices. **3.** Remove the battery pack. **4.** Remove the memory module. **5.** Replace the battery pack and/or connect the AC adaptor. **6.** Turn on the power.

Problem	Procedure
The computer does not recognise 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 adaptor 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.

Modem

Problem	Procedure
Communication software can't initialise modem	Make sure the computer's internal modem settings are correct. Refer to *Phone and Modem Options Properties* in the Control Panel.
You can hear a dial tone but can't make a call	If the call is going through a PBX machine, make sure the communication application's tone dial detection feature is disabled. You can also use the ATX command. Refer to Appendix H, AT Commands.
You place a call, but a connection can't be made	Make sure the settings are correct in your communications application.
After making a call you can't hear a ring	Make sure the tone or pulse selection in your communications application is set correctly. You can also use the ATD command. Refer to Appendix H, AT Commands.
Communication is cut off unexpectedly	The computer will automatically cut off communication when connection with the carrier is not successful for a set time interval. Try lengthening this time interval.

Problem	Procedure
A **CONNECT** display is quickly replaced by **NO CARRIER**	Check the error control setting in your communications application. You can also use the AT\N command. Refer to Appendix H, AT Commands.
Character display becomes garbled during a communication	In data transmission, make sure the parity bit and stop bit settings correspond with those of the remote computer. Check the flow control and communication protocol.
You cannot receive an incoming call	Check the rings before auto answer setting in your communications application. You can also use the ATS0 command. Refer to Appendix I, S-registers. If problems persist, contact your dealer.

i.LINK (IEEE1394) (iLINK models only)

Problem	Procedure
i.LINK device does not function	Make sure the cable is securely connected to the computer and to the device. Make sure the device's power is turned on. Reinstall the drivers. Open the Windows Control Panel and double-click the Add New Hardware icon. Follow the on-screen directions. Restart Windows. If problems persist, contact your dealer.

LAN

Problem	Procedure
Cannot access LAN	Check for a firm cable connection between the LAN jack and the LAN HUB.
Wake up on LAN does not work	Make sure the AC adaptor is connected. You cannot access a LAN using the computer's battery power. Check the TOSHIBA HW Setup program. The Wake-up on LAN option of LAN tab should be set to Enabled. If problems persist, contact your dealer.

Wireless LAN

If the following procedures do not restore LAN access, consult your LAN administrator. For more information on wireless communication, refer to Chapter 4, *Operating Basics.*

Problem	Procedure
Cannot access Wireless LAN	Make sure the computer's wireless communication switch is set to on. If problems persist, consult your LAN administrator.

If you need further assistance

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

Before you call

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

- Review troubleshooting sections in the documentation for software and peripheral devices.
- If a problem occurs when you are running software applications, consult the software documentation for troubleshooting suggestions. Call the software company's technical support for assistance.
- Consult the dealer you purchased your computer and/or software from. They are your best sources for current information and support.

Where to write

If you are still unable to solve the problem and suspect that it is hardware related, write to TOSHIBA at the nearest location listed in appendix C.

Appendix A

Specifications

This appendix summarises the computer's technical specifications.

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 metres	
Non-operating	-60 to 10,000 metres *maximum*	

Built-in Modem

Network control unit (NCU)		
Type of NCU	AA	
Type of line	Telephone line (analogue only)	
Type of dialling	Pulse Tone	
Control command	AT commands EIA-578 commands	
Monitor function	Computer's speaker	
Communication specifications		
Communication system	Data: Full duplex Fax: Half duplex	
Communication protocol	Data ITU-T-Rec (Former CCITT) Bell Fax ITU-T-Rec (Former CCITT)	 V.21/V.22/V.22bis/V.32/ V.32bis/V.34/V.90 103/212A V.17/V.29/V.27ter/ V.21 ch2
Communication speed	Data transmission and reception speed 300/1200/2400/4800/7200/9600/12000/14400/ 16800/19200/21600/24000/26400/28800/31200/ 33600 bps Data reception only with V.90 28000/29333/30666/32000/33333/34666/ 36000/37333/38666/40000/41333/42666/ 44000/45333/46666/48000/49333/50666/ 52000/53333/54666/56000 bps Fax 2400/4800/7200/9600/12000/14400 bps	
Error correcting	MNP class 4 and ITU-T V.42	
Data compression	MNP class 5 and ITU-T V.42bis	

Certification

This product is approved for electrical safety and/or electromagnetic compatibility (EMC) by the following associations:

TÜV
DIN GOST TÜV
UL
CSA
FCC

TOSHIBA declares that this product complies with the following directives to be observed for CE marking. CE-Marking is the responsibility of TOSHIBA Europe, Hammfelddamm 8, 41460 Neuss, Germany.

93/68/EEC	CE marking directive
89/336/EEC	EMC directive
73/23/EEC	Low voltage directive
99/05/EEC	R&TTE Directive
EN 60950	Electrical safety
EN 55022	EMC / Radio disturbances
EN 50082-1 or EN55024	EMC / Immunity
EN61000-3-2,-3-3	Disturbances in supply systems

Appendix B

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 metres
Wire size:	Minimum 0.75 mm2
Current rating:	Minimum 2 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
Australia:	AS

Europe:

Austria:	OVE
Belgium:	CEBEC
Denmark:	DEMKO
Finland:	SETI
France:	UTE
Germany:	VDE

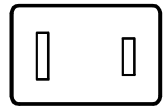
Italy:	IMQ
The Netherlands:	KEMA
Norway:	NEMKO
Sweden:	SEMKO
Switzerland:	SEV
United Kingdom:	BSI

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.

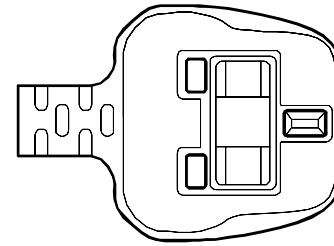
The following illustrations show the plug shapes for the U.S.A. and Canada, the United Kingdom, Australia and Europe.

USA and Canada



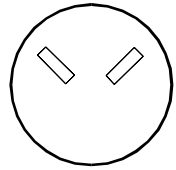
UL approved
CSA approved

United Kingdom



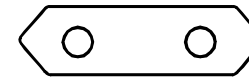
BS approved

Australia



AS approved

Europe



Approved by the
appropriate agency

Appendix C

The TOSHIBA International Warranty

The TOSHIBA International Warranty is a service policy on the parts and repair on your TOSHIBA portable personal computer which is automatically available to purchasers of the computer.

The cover is assured in major industrial countries of the world. It means that wherever you take your TOSHIBA mobile PC in this area, you will never be left without help should any problems arise.

What the warranty covers

The Warranty covers the computer in the standard version, including the AC adaptor. Batteries, modems, memory expansion kits and other TOSHIBA branded options, as well as third party expansion boards are NOT covered by this warranty. For information concerning warranties for these products, please consult your dealer.

If you would like to use the international warranty, please register with TOSHIBA. In case no registration card for the international warranty was bundled with your computer, please contact the nearest TOSHIBA representation for registration.

On the following pages is a list of the TOSHIBA companies who can be contacted if a claim on the warranty needs to be made.

If users need further addresses in eastern Europe or outside Europe, these are available from the national or European companies.

TOSHIBA's Worldwide Computer Representatives

Australia	Toshiba (Australia) Pty. Limited 84-92 Talavera Road, North Ryde NSW 2113	Tel: +61-2-9887-3322 Fax: +61-2-9888-3664 http://www.isd.toshiba.com.au
Austria	Toshiba Europe GmbH Handelskai 388 1020 Wien	Tel: +43-1-72031000 Fax: +43-1-72031002 http://www.toshiba.at
Azerbaijan	AZEL (Azerbaijan Electronics) Floor 5, 65 Fizuli Str. 370014 Baku	Tel: +99412-974040 Fax: +99412-974042 http://www.azel.net
Belgium	Toshiba Information Systems (Belgium) SANV Excelsiorlaan 40, B-1930 Zaventem	Tel: +32-900-10990 Fax: +32-2-725-3030 http://www.toshiba.be
Bulgaria	IMPEX Sofia Ltd. 12, Anton Naydenov Street, PO Box 184, 1710 Sofia	Tel: +359-2-962-1219 Fax: +359-2-962-5062
Canada	Toshiba of Canada Ltd. 191 McNabb Street Markham, Ontario L3R-8H2	Tel: +1-905-470-3500 Fax: +1-905-470-3487 http://www.toshiba.ca
Czech Republic	CHG Service , s.r.o. Vídeòská 201, 619 00 Brno	Tel: +420-5-4742-6581 Fax: +420-5-4742-6590 http:// www.chgservice.cz or www.toshiba-pc.cz
Denmark	Scribona Toshiba Digital Media Hovedvejen 9, DK-2600 Glostrup	Tel: +45-3823-7600 Fax: +45-3823-7601 http://www.toshiba.dk
Egypt	El Araby Co. 10, Mohammed Sabry Abolaalm Street P.O. Box 1224, Cairo 11511	Tel: +202-291-6989 Fax: +202-291-6454 http://www.elaraby.com.eg
Estonia	ServiceNet EE Pärnu str. 142A 11317 Tallinn	Tel: +372-6504-949 Fax: +372-6504-916 http://www.gnt.ee
Finland	Scribona TPC OY / Toshiba Digital Media Sinimäentie 14,P.O.Box 83, 02630 ESPOO	Tel: +358-9-5272555 Fax: +358-9-5272500 http://www.toshiba.se
France	Toshiba Systèmes (France) S.A. 7 Rue Ampère, 92804 Puteaux Cedex	Tel: +33-1-4728-2929 Fax: +33-1-4728-2247 http://www.toshiba.fr/pc
Germany	Toshiba Europe GmbH Leibnizstraße 2, D-93055 Regensburg	Tel: +49-(0)941-7807-888 Fax: +49-(0)941-7807-948 http://www.toshiba-tro.de
Greece	Ideal Electronics S.A. 3, Aristotelous Street 176 71 Kalithea/Athens	Tel: +30-(0)10-9001130 Fax: +30-(0)10-9001194 http://www.ideal.gr

Hungary	Technotrade Kft. Öv u, 185, 1147 Budapest	Tel: +36-1-467 6100 Fax: +36-1-252 6470 http://www.technotrade.hu
Ireland	See 'United Kingdom'	
Israel	Mafil Technologies (3000) Ltd 8 Bareket Street 49517 Petah Tikwa	Tel: +972-3-918-3333 Fax: +972-3-924-1310 http://www.mafil.co.il
Italy	Progetto Elettronica 92 .S.p.A Via de Gasperi 88a, 20017 Mazzo di Rho	Tel: +39-02-9397-5551 Fax: +39-02-9397-5299 http://www.pe92.it
Japan	Toshiba Corporation, IOPC 1-1, Shibaura 1-Chome, Minato-KU Tokyo 105-01	Tel: +81-3-3457-5565 Fax: +81-3-5444-9262 http://www.toshiba.co.jp
Jordan	Scientific & Medical Supplies Co. Jabal Amman, 1st Circle , Al Hayyek Street, Opposite to Housing Bank 11118 Amman	Tel: +962 (6) 4624907 Fax: +962 (6) 462858
Kuwait	Arabian Business Machines Co. Al Rai-Maintenance Dept., P.O. Box 29961, 13160 Safat	Tel: +965-242-9154 Fax: +965-241-4399
Latvia	ServiceNet LV Kalnciema 12a LV1048 Riga	Tel: +371-27 60 20 52 Fax: + 371-7 61 38 87http://www.gnt.lv
Lebanon	Pcdealnet Diab Bldg. Mkalles Rd., P.O. Box 11-316 Beirut	Tel: +961-1-682-956 Fax: +961-1-682-965
Lithuania	ServiceNet LT Palemono 7A 3023 Kaunas	Tel: + 370 37 4000 88 Fax: + 370 37 3108 05http://www.gnt.lt
Luxemburg	See 'Netherlands'	
Malta	Tabone Computer Centre Limited 111 Old Railway Track HMR-16 St Venera	Tel: +356-49 36 04 Fax: +356-49 36 03 http://www.tabone.com.mt
Morocco	C.B.I. Lotissement Attoufik, Rue No 1 Immeuble 29, Sidi Maar 20190, Casablanca	Tel: +212-2-243 71 71 Fax: +212-2-243 71 87
Netherlands	Toshiba Information Systems Benelux B.V. Rivium Boulevard 41 2909 LK Capelle a/d IJssel	Tel: +31-0900-1000-1000 Fax: +31-10-2882-390 http://www.toshiba.nl
Norway	Scribona Norge A/S; Toshiba PC Service Stålfjæra 20, P.O.Box 51, Kalbakken 0901 Oslo	Tel: +47-22-897-189 Fax: +47-22-897-166 http://www.toshiba.se

Oman (Sultanate of Oman)	Suhail&Saud Bahwan (SSB) Sarco Building, Ground Floor No. 459, Way No. 310 Al Noor Street, Ruwi 113 Muscat	Tel: +968-790 117 Fax: +968-790 192 http://www.ssbcd.co.com
Poland	AC Serwis Sp. Z o. o. ul. Partyzantów 71, 43-316 Bielsko-Biala	Tel: +48- 33-8130-205 Fax: +48- (33-8130-209 http://www.acserwis.com.pl
Portugal	Toshiba Information Systems Portugal Edificio D. Pedro I, Sala 17 Quinta da Fonte 2780-730 Paço d'Arcos	Tel: +351-707 265 265 Fax: +351-21-000-1675 http://www.toshiba.pt
Romania	Scop Computers SRL 162 Barbu Vacarescu St, Sector 2 71424 Bucharest	Tel: +40-1-231-4602 Fax: +40-1-231-4606 http://www.scop.ro
Russia	AC SERSO Sovetskoi Armii st. 5 127018 Moscow	Tel: +7 - 095 28 5577 Fax: +7 - 095 284 5880 http://www.cepco.ru
Saudi Arabia	Arabian Business Machines Co. Dareen Center, Ahsaa Road P.O. Box 2006 11451 Riyadh	Tel: +966-1 478 4909 Fax: +966-1 477 7803
Slovakia	HT Computers a.s. Dobrovicova 8; 81109 Bratislava	Tel: +421-2-59334 550 Fax: +421-2-59334 555 http://www.htc.sk
Slovenia	Inea d.o.o. Stegne 11, 1000 Ljubljana	Tel: +386-1-513-81-00 Fax: +386-1-513-81-60 http://www.inea.si
South Africa	CS IT Solutions Unit 6A, Mifa Industrial Park, 399 George Street 1685 Midrand	Tel: +27 (0) 11 314 1023 Fax: +27 (0) 11 314 2424 http://www.cs.co.za/it.htm.
Spain	Toshiba Information Systems (España) S.A. Parque Empresarial San Fernando Edificio Europa, 1a Planta, Escalera A 28831 (Madrid) San Fernando de Henares	Tel: +34-91-6606-700 Fax: +34-91-6606-760 http://www.toshiba.es
Sweden	Scribona Toshiba PC AB Sundbybergsvägen 1, Box 1374 171 27 Solna	Tel: +46-200-212100 Fax: +46-8-734-4656 http://www.toshiba.se
Switzerland	TOSHIBA Europe (Schweiz) Chriesbaumstrasse 4 Postfach 171 CH-8604 Volketswil	Tel: +41-848-845250 Fax: +41-1-908 5658 http://www.toshiba.ch

Turkey	Bekom Bilgisayar Elekronik Komunikasyon Buyukdere Cad. Laie Ishani No. 62 K., 1 Mecidiyeköy, Istanbul	Tel: +90 212 275 87 97 Fax: +90 212 275 8740 http://www.toshibatr.com
Ukraine	DKT-SERSO Lesya Ukrainka blv, 26 01133 Kiev	Tel: +380-44-573-9627 Fax: +380-44-254-4646 http://www.dkt-cepco.com.ua
United Arab Emirates	Al-Futtaim Electronics P.O. Box 531, Bin Ham Building, Mezzanine Floor Adjacent to BurJuman Dubai	Tel: +971 4 351 5004 Fax: +971 4 351 4254 http://www.toshibauae.com
United Kingdom	Toshiba Information Systems (UK) Ltd. Toshiba Court, Weybridge Business Park Addlestone Road, Weybridge KT15 2UL	Tel: +44-1932-828828 Fax: +44-1932-822958 http://www.toshiba.co.uk
United States	Toshiba America Information Systems, Inc. 9740 Irvine Blvd., P.O. Box 19724 Irvine, CA 92713-9724	Tel: +1-949-583-3000 Fax: +1-949-583-3345 http://www.toshiba.com
Yugoslavia	CT Computers d.o.o. Vladimira Popovica 6 11070 Beograde	Tel: +381-11-311-2060 Fax: +381-11-311-2060 http://www.comtrade.co.yu
Or for all countries not listed, please call the **Toshiba International Service Line**: or E-mail: **toshibawarranty@unn.unisys.com**		Tel: +352 460433

TOSHIBA addresses for the Internet/World Wide Web

TOSHIBA Europe
http://www.toshiba-europe.com

TOSHIBA Japan
http://www.toshiba.co.jp

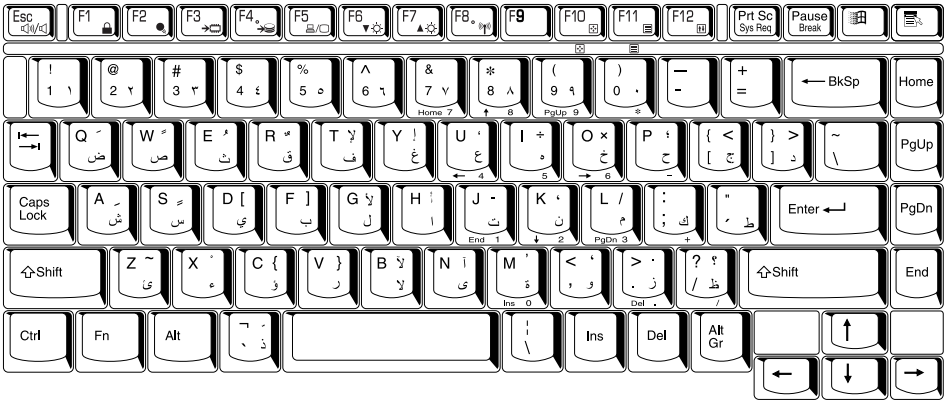
TOSHIBA America
http://www.toshiba.com

TOSHIBA Canada
http://www.toshiba.ca

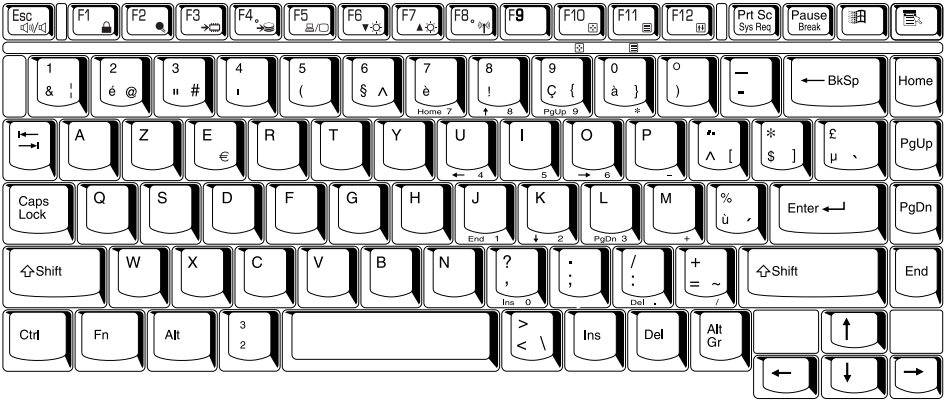
Appendix D

Keyboard Layouts

Arabic

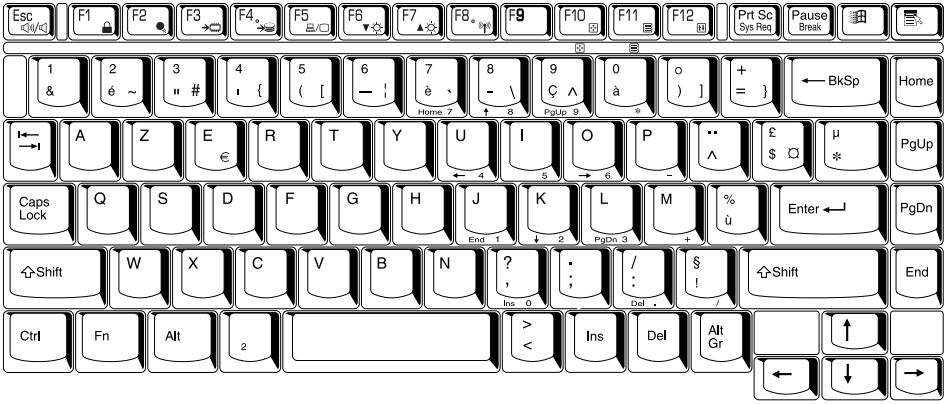


Belgian



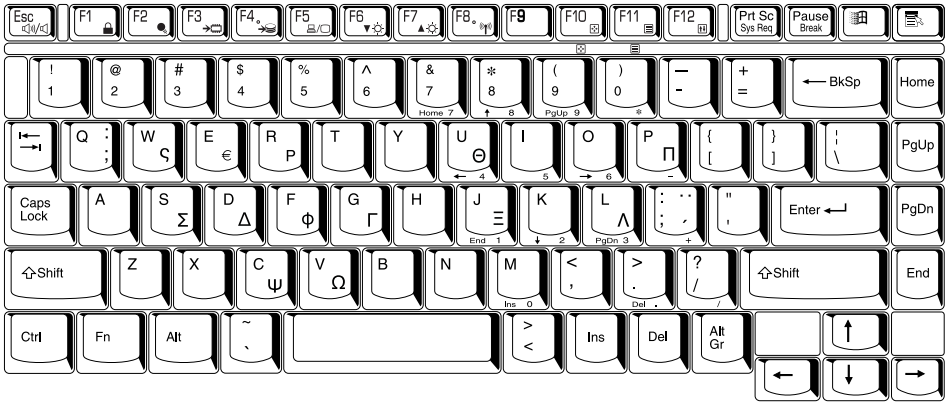
Danish

French



German

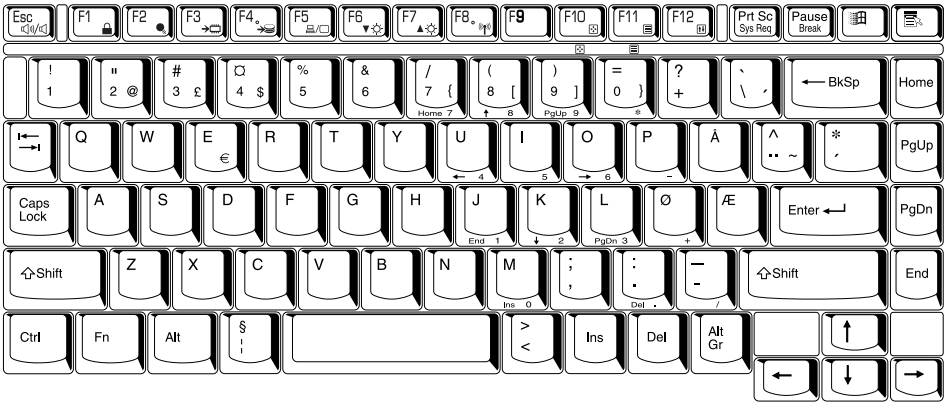
Greek



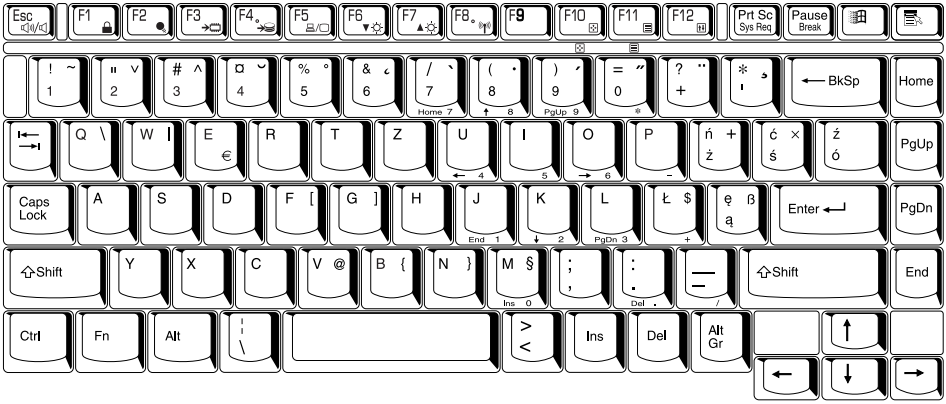
Hebrew

Italian

Norwegian



Polish



Portuguese

Russian

Spanish

Swedish

Swiss-German

Turkish

UK English

US English


Esc
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
Prt Sc
Sys Req
Pause
Break
BkSp
Home
PgUp
Caps Lock
Enter
PgDn
Shift
End
Ctrl
Fn
Alt
Ins
Del
Alt

Appendix E

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), Extended Graphics Array (XGA), Super Extended Graphics Array (SXGA) and Super Extended Graphics Array plus (SXGA+) support for the internal LCD and external monitors.

One model is available:

- 14.1" XGA, 1024 horizontal x 768 vertical pixels

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 1600 horizontal and 1200 vertical pixels at up to 64K colours or 1024 horizontal and 768 vertical pixels at up to 16M colours.

The display controller also controls the video mode, which uses industry standard rules to govern the screen resolution and the maximum number of colours that can be displayed on screen.

Software written for a given video mode will run on any computer that supports the mode.

The computer's display controller supports all VGA and SVGA modes, the most widely used industry standards.

Video modes

The computer supports video modes defined in the table below. If your application offers a selection of mode numbers that do not match the numbers on the table, select a mode based on mode type, resolution, character matrix, number of colours and refresh rates. Also, consider the following points:

- If your software supports both graphics and text modes, the screen display may appear to operate faster using a text mode.
- The LCD's highest graphics resolution is 1024 horizontal x 768 vertical lines.

If a resolution greater than the display's physical capacity is selected, the display driver renders a virtual display.

Video modes

Video Mode	Type	Resolution	Character matrix (pels)	LCD Colours	CRT Colours	Scanning frequency Vertical
0, 1	VGA Text	40 x 25 Characters	8 x 8	16 of 256K	16 of 256K	70Hz
2, 3	VGA Text	80 x 25 Characters	8 x 8	16 of 256K	16 of 256K	70Hz
0*, 1*	VGA Text	40 x 25 Characters	8 x 14	16 of 256K	16 of 256K	70Hz
2*, 3*	VGA Text	80 x 25 Characters	8 x 14	16 of 256K	16 of 256K	70Hz
0+, 1+	VGA Text	40 x 25 Characters	8(9) x 16	16 of 256K	16 of 256K	70Hz
2+, 3+	VGA Text	80 x 25 Characters	8(9) x 16	16 of 256K	16 of 256K	70Hz
4, 5	VGA Grph	320 x 200 Pels	8 x 8	4 of 256K	4 of 256K	70Hz
6	VGA Grph	640 x 200 Pels	8 x 8	2 of 256K	2 of 256K	70Hz
7	VGA Text	80 x 25 Characters	8(9) x 14	Mono	Mono	70Hz
7+	VGA Text	80 x 25 Characters	8(9) x 16	Mono	Mono	70Hz

Video modes

Video Mode	Type	Resolution	Character matrix (pels)	LCD Colours	CRT Colours	Scanning frequency Vertical
D	VGA Grph	320 x 200 Pels	8 x 8	16 of 256K	16 of 256K	70Hz
E	VGA Grph	640 x 200 Pels	8 x 8	16 of 256K	16 of 256K	70Hz
F	VGA Grph	640 x 350 Pels	8 x 14	Mono	Mono	70Hz
10	VGA Grph	640 x 350 Pels	8 x 14	16 of 256K	16 of 256K	70Hz
11	VGA Grph	640 x 480 Pels	8 x 16	2 of 256K	2 of 256K	60Hz
12	VGA Grph	640 x 480 Pels	8 x 16	16 of 256K	16 of 256K	60Hz
13	VGA Grph	320 x 200 Pels	8 x 8	256 of 256K	256 of 256K	70Hz
	SVGA Grph	640 x 480 Pels		256 of 256K	256 of 256K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	800 x 600 Pels		256 of 256K	256 of 256K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1024 x 768 Pels		256 of 256K	256 of 256K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1280 x 1024 Pels		256 of 256K	256 of 256K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1400 x 1050 Pels*		256 of 256K	256 of 256K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1600 x 1200 Pels		256 of 256K	256 of 256K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1920 x 1440 Pels		256 of 256K	256 of 256K	60Hz 75Hz
	SVGA Grph	2048 x 1536 Pels		256 of 256K	256 of 256K	60Hz 75Hz

Video modes

Video Mode	Type	Resolution	Character matrix (pels)	LCD Colours	CRT Colours	Scanning frequency Vertical
	SVGA Grph	640 x 480 Pels		64K of 64K	64K of 64K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	800 x 600 Pels		64K of 64K	64K of 64K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1024 x 768 Pels		64K of 64K	64K of 64K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1280 x 1024 Pels		64K of 64K	64K of 64K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1400 x 1050 Pels		64K of 64K	64K of 64K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1600 x 1200 Pels		64K of 64K	64K of 64K	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1920 x 1440 Pels		64K of 64K	64K of 64K	60Hz 75Hz
	SVGA Grph	2048 x 1536 Pels		64K of 64K	64K of 64K	60Hz 75Hz
	SVGA Grph	640 x 480 Pels		16M of 16M	16M of 16M	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	800 x 600 Pels		16M of 16M	16M of 16M	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1024 x 768 Pels		16M of 16M	16M of 16M	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1280 x 1024 Pels		16M of 16M	16M of 16M	60Hz 75Hz 85Hz 100Hz

Video modes

Video Mode	Type	Resolution	Character matrix (pels)	LCD Colours	CRT Colours	Scanning frequency Vertical
	SVGA Grph	1400 x 1050 Pels*		16M of 16M	16M of 16M	60Hz 75Hz 85Hz 100Hz
	SVGA Grph	1600 x 1200 Pels		16M of 16M	16M of 16M	60Hz 75Hz
	SVGA Grph	1920 x 1440 Pels		16M of 16M	16M of 16M	60Hz 75Hz
	SVGA Grph	2048 x 1536 Pels		16M of 16M	16M of 16M	60Hz 75Hz

*This mode is supported on SXGA+ LCD only.

Some video modes are not supported with the Multimonitor feature and Different Refresh rate mode. If you use Multimonitor and experience trouble, open the ***Display Properties*** *window and reduce the resolution, number of colors and refresh rate for the external monitor and LCD.*

Appendix F

If your computer is stolen

Always take care of your computer and try to prevent it from being stolen. You are the owner of a valuable technical device, which may be highly attractive to thieves, so please do not leave it unattended in a public place. To further help protect against theft, security cables can be bought for use with your notebook when it is being used at home or in the office.

Make a note of your computer's machine type, model number, and serial number, and put it in a safe place. You will find this information on the underside of your notebook. Please also keep the receipt of the computer you purchased.

Should your computer be stolen, however, we'll help you try to find it. Before contacting TOSHIBA, please prepare the following information which is necessary to uniquely identify your computer:

- In which country was your computer stolen?
- What type of machine do you have?
- What was the model number (PA number)?
- What was the serial number (8 digits)?
- When was it stolen, i.e. date?
- What was the warranty seal number (if available)?
- What is your address, phone, and fax number?

To register the theft, please follow these procedures:

- Fill in the TOSHIBA Theft Registration form (or a copy of it) below.
- Attach a copy of your receipt showing where your computer was purchased.
- Either fax or send the receipt and registration form to the address below.

Your registration will be entered in a database, which is used to track TOSHIBA computers at our service points around Europe.

TOSHIBA Theft Registration

Send to: TOSHIBA Europe GmbH
Technical Service and Support
Leibnizstr. 2
93055 Regensburg
Germany

Fax number: +49 (0) 941 7807 925

Country stolen:	
Machine type: (e.g. Satellite Pro 2100)	
Model number: (e.g. PS210E YXT)	
Serial number: (e.g. 70123456E)	
Date stolen:	
Warranty seal: (e.g. 9813 123456 049)	

Owner's details

Name:	
Company:	
Street:	
Postal Code/City:	
Country:	
Phone:	
Fax:	

Appendix G

ASCII Character Codes

This appendix shows the American Standard Code for Information Interchange (ASCII) on the following pages. The characters in the **IBM char** column appear on your display when you type the corresponding ASCII code (as described in Chapter 5, The Keyboard). The characters that are printed, however, depend on the software you are using. For most software, the printed output for decimal codes 32 to 128 will match your screen display.

Dec code	Hex code	IBM char	Sort seq	Ctrl char
000	00		000	NUL
001	01	☺	1	SOH
002	02	☻	2	STX
003	03	♥	3	ETX
004	04	♦	4	EOT
005	05	♣	5	ENQ
006	06	♠	6	ACK
007	07	•	7	BEL
008	08	◘	8	BS
009	09	○	9	HT
010	0A	◙	10	LF
011	0B	♂	11	VT
012	0C	♀	12	FF
013	0D	♪	13	CR
014	0E	♫	14	SO
015	0F	☼	15	SI
016	10	►	16	DLE
017	11	◄	17	DC1
018	12	↕	18	DC2
019	13	!!	19	DC3
020	14	¶	20	DC4
021	15	§	21	NAK
022	16	▬	22	SYN
023	17	↨	23	ETB
024	18	↑	24	CAN
025	19	↓	25	EM
026	1A	→	26	SUB
027	1B	←	27	ESC
028	1C	∟	28	FS
029	1D	↔	29	GS
030	1E	▲	30	RS
031	1F	▼	31	US

Dec code	Hex code	IBM char	Sort seq
032	20	space	32
033	21	!	33
034	22	"	34
035	23	#	35
036	24	$	36
037	25	%	37
038	26	&	38
039	27	'	39
040	28	(	40
041	29	)	41
042	2A	*	42
043	2B	+	43
044	2C	,	44
045	2D	-	45
046	2E	.	46
047	2F	/	47
048	30	0	48
049	31	1	49
050	32	2	50
051	33	3	51
052	34	4	52
053	35	5	53
054	36	6	54
055	37	7	55
056	38	8	56
057	39	9	57
058	3A	:	58
059	3B	;	59
060	3C	<	60
061	3D	=	61
062	3E	>	62
063	3F	?	63

Dec code	Hex code	IBM char	Sort seq
064	40	@	64
065	41	A	65
066	42	B	66
067	43	C	67
068	44	D	68
069	45	E	69
070	46	F	70
071	47	G	71
072	48	H	72
073	49	I	73
074	4A	J	74
075	4B	K	75
076	4C	L	76
077	4D	M	77
078	4E	N	78
079	4F	O	79
080	50	P	80
081	51	Q	81
082	52	R	82
083	53	S	83
084	54	T	84
085	55	U	85
086	56	V	86
087	57	W	87
088	58	X	88
089	59	Y	89
090	5A	Z	90
091	5B	[	91
092	5C	\	92
093	5D	]	93
094	5E	^	94
095	5F	_	95

Dec code	Hex code	IBM char	Sort seq
096	60	′	96
097	61	a	97
098	62	b	98
099	63	c	99
100	64	d	100
101	65	e	101
102	66	f	102
103	67	g	103
104	68	h	104
105	69	i	105
106	6A	j	106
107	6B	k	107
108	6C	l	108
109	6D	m	109
110	6E	n	110
111	6F	o	111
112	70	p	112
113	71	q	113
114	72	r	114
115	73	s	115
116	74	t	116
117	75	u	117
118	76	v	118
119	77	w	119
120	78	x	120
121	79	y	121
122	7A	z	122
123	7B	{	123
124	7C	¦	124
125	7D	}	125
126	7E	~	126
127	7F	⌂	127

Dec code	Hex code	IBM char	Sort seq
128	80	Ç	67
129	81	ü	85
130	82	é	69
131	83	â	65
132	84	ä	65
133	85	à	65
134	86	å	65
135	87	ç	67
136	88	ê	69
137	89	ë	69
138	8A	è	69
139	8B	ï	73
140	8C	î	73
141	8D	ì	73
142	8E	Ä	65
143	8F	Å	65
144	90	É	69
145	91	æ	65
146	92	Æ	65
147	93	ô	79
148	94	ö	79
149	95	ò	79
150	96	û	85
151	97	ù	85
152	98	ÿ	89
153	99	Ö	79
154	9A	Ü	85
155	9B	¢	36
156	9C	£	36
157	9D	¥	36
158	9E	Pt	36
159	9F	*f*	36

Dec code	Hex code	IBM char	Sort seq
160	A0	á	65
161	A1	í	73
162	A2	ó	79
163	A3	ú	85
164	A4	ñ	78
165	A5	Ñ	78
166	A6	ā	166
167	A7	ō	167
168	A8	¿	63
169	A9	⌐	169
170	AA	¬	170
171	AB	½	171
172	AC	¼	172
173	AD	¡	33
174	AE	«	34
175	AF	»	34
176	B0	▒	
177	B1	▓	
178	B2	▒	
179	B3	│	
180	B4	┤	
181	B5	╡	
182	B6	╢	
183	B7	╖	
184	B8	╕	
185	B9	╣	
186	BA	║	
187	BB	╗	
188	BC	╝	
189	BD	╜	
190	BE	╛	
191	BF	┐	

Dec code	Hex code	IBM char	Sort seq
192	C0	└	
193	C1	┴	
194	C2	┬	
195	C3	├	
196	C4	─	
197	C5	┼	
198	C6	╞	
199	C7	╟	
200	C8	╚	
201	C9	╔	
202	CA	╩	
203	CB	╦	
204	CC	╠	
205	CD	═	
206	CE	╬	
207	CF	╧	
208	D0	╨	
209	D1	╤	
210	D2	╥	
211	D3	╙	
212	D4	╘	
213	D5	╒	
214	D6	╓	
215	D7	╫	
216	D8	╪	
217	D9	┘	
218	DA	┌	
219	DB	▉	
220	DC	▄	
221	DD	▌	
222	DE	▐	
223	DF	▀	

Dec code	Hex code	IBM char	Sort seq
224	E0	α	
225	E1	ß	83
226	E2	Γ	
227	E3	Π	
228	E4	Σ	
229	E5	σ	
230	E6	µ	
231	E7	ϒ	
232	E8	Φ	
233	E9	Θ	
234	EA	Ω	
235	EB	δ	
236	EC	φ	
237	ED	ϕ	
238	EE	E	
239	EF	Λ	
240	F0	Ξ	
241	F1	±	
242	F2	≥	
243	F3	≤	
244	F4	⌠	
245	F5	⌡	
246	F6	÷	
247	F7	≈	
248	F8	∘	
249	F9	∙	
250	FA	▪	
251	FB	√	
252	FC	η^{2}	
253	FD		
254	FE	■	
255	FF		

Appendix H

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.

This chapter describes AT commands for data mode. Fax and voice commands are taken care of by application software.

The format for entering AT commands is:

ATXn

where **X** is the AT command, and **n** is the specific value for that command. After you type in the command press **Enter**.

Any command issued is acknowledged with a response in either text or numeric values known as result codes.

All commands and command-values accepted by the modem are described in this section; any entry other than those listed results in an error.

+++ Escape sequence

The escape sequence allows the modem to exit data mode and enter on-line command mode. While in on-line command mode, you can communicate directly to your modem using AT commands. Once you finish, you can return to data mode using the ATO command.

A pause, the length of which is set by Escape Guard Time (S12), must be completed after an escape sequence is entered, This pause prevents the modem from interpreting the escape sequence as data.

The value of the escape sequence character may be changed using register S2.

A/ Repeat last command

This command repeats the last command string entered. Do not precede this command with an AT prefix or conclude it by pressing **Enter**.

A Answer command

This command instructs the modem to go off-hook and answer an incoming call.

Refer to the section Country select command and S-register in Appendix I for country-specific codes.

Bn Communication standard setting

This command determines the communication standard CCITT or Bell.

B0 Selects CCITT V.22 mode when the modem is at 1200 bps.

B1 Selects Bell 212A when the modem is at 1200 bps (default).

B15 Selects V.21 when the modem is at 300 bps.

B16 Selects Bell 103J when the modem is at 300 bps (default).

Result Codes:

OK n=0,1,15,16

ERROR Otherwise

Dn Dial

This command instructs the modem to dial a telephone number. Enter **n** (the telephone number and any modifiers) after the ATD command.

Any digit or symbol (0-9, *, #, A, B, C, D) may be dialled as touch-tone digits. Characters such as spaces, hyphens, and parentheses do not count. They are ignored by the modem, but you may want to include them to make the number and modifiers easier to read.

The following may be used as phone number modifiers:

P Pulse dialling.

T Touch-tone dialling (default).

, Pause during dialling. Pause for time specified in Register S8 before processing the next character in the dial string.

W Wait for dial tone. Modem waits for a second dial tone before processing the dial string.

@ Wait for quiet answer. Wait for five seconds of silence after dialling the number. If silence is not detected, the modem sends a NO ANSWER result code back to the caller.

! Hook flash. Causes the modem to go on-hook for 0.5 seconds and then return to off-hook.

; Return to command mode. Causes the modem to return to command mode after dialling a number, without disconnecting the call.

S=n Dial a telephone number previously stored using the &Zn=X command (See &Zn=X command for more information). The range is 0-3.

Refer to the section Country select command and S-register in Appendix I for country-specific codes.

En Echo command

This command controls whether or not the characters entered from your computer keyboard are displayed on your monitor (echoed) while the modem is in command mode.

E0 Disables echo to the computer.

E1 Enables echo to the computer (default).

Result Codes:

OK n=0,1

ERROR Otherwise

Hn Hook control

This command instructs the modem to go on-hook to disconnect a call, or off-hook to make the phone line busy.

H0 Modem goes on-hook (default).

H1 Modem goes off-hook.

Result Codes:

OK n=0,1

ERROR Otherwise

In Request ID information

This command displays product information about the modem.

I0 Returns device information.

I1 Calculates ROM checksum and displays it on the DTE.

I2 Performs a ROM check and calculates and verifies the checksum displaying **OK** or **ERROR**.

I3 Same as **I0**.

I4 Returns firmware version for data pump.

I9 Returns country code.

Result Codes:

OK n=0,1,2,3,4,9

ERROR Otherwise

Ln Monitor speaker volume

This command sets speaker volume to low, medium, or high.

L0 Low volume.

L1 Low volume. (Same as L0)

L2 Medium volume (default).

L3 High volume.

Result Codes:

OK n=0,1,2,3

ERROR Otherwise

Mn Monitor speaker mode

This command turns the speaker on or off.

M0 The speaker is off.

M1 The speaker is on until the modem detects the carrier signal (default).

M2 The speaker is always on when modem is off-hook.

Result Codes:

OK n=0,1,2

ERROR Otherwise

Nn Modulation handshake

This command controls whether or not the local modem performs a negotiated handshake at connection time with the remote modem when the communication speed of the two modems is different.

N0 When originating or answering, this is for handshake only at the communication standard specified by S37 and the ATB command.

N1 When originating or answering, begin the handshake at the communication standard specified by S37 and the ATB command (default).

During handshake, a lower transmission speed may be selected.

Result Codes:

OK n=0,1

ERROR Otherwise

On Return on-line to data mode

O0 Instructs the modem to exit on-line command mode and return to data mode (see AT escape sequence, +++).

O1 This command issues a retrain before returning to on-line data mode.

O3 This command issues a rate renegotiation before returning to on-line data mode.

Result Codes:

OK n=0,1,3

ERROR Otherwise

P Select pulse dialling

This command configures the modem for pulse (non touch-tone) dialling. Dialled digits are pulsed until a T command or dial modifier is received. Tone dial is the default setting.

Refer to table H -1 for country-specific codes.

Qn Result code control

Result codes are informational messages sent from the modem and displayed on your monitor. Basic result codes are OK, CONNECT, RING, NO CARRIER, and ERROR. The ATQ command allows the user to turn result codes on or off.

Q0 Enables modem to send result codes to the computer (default).

Q1 Disables modem from sending result codes to the computer.

Result Codes:

OK n=0,1

ERROR Otherwise

T Select tone dialling

This command instructs the modem to send DTMF tones while dialling. Dialled digits are tone dialled until a P command or dial modifier is received. This is the default setting.

Vn DCE response format

This command controls whether result codes (including call progress and negotiation progress messages) are displayed as words or their numeric equivalents.

V0 Displays result codes as digits.

V1 Displays result codes as text (default).

Result Codes:

OK n=0,1

ERROR Otherwise

Xn Result code selection, call progress monitoring

This command sets detection options for dial tones and busy signals, which is its primary function. It also, however, enables or disables extended result codes.

Refer to table H-1 for country-specific codes.

Command	Extended result code	Dial tone detect	Busy signal detect
X0	Disable	Disable	Disable
X1	Enable	Disable	Disable
X2	Enable	Enable	Disable
X3	Enable	Disable	Enable
X4 (default)	Enable	Enable	Enable
X5	Enable	Enable	Enable
X6	Enable	Enable	Enable
X7	Disable	Enable	Enable

Extended result codes

Disabled: Displays only the basic result codes **OK**, **CONNECT**, **RING**, **NO CARRIER**, and **ERROR**.

Enabled: Displays basic result codes, along with the connect message and the modem's data rate, and an indication of the modem's error correction and data compression operation.

Dial tone detect

Disabled: The modem dials a call regardless of whether it detects a dial tone. The period of time the modem waits before dialling is specified in register S6.

Enabled: The modem dials only upon detection of a dial tone, and disconnects the call if the dial tone is not detected within 10 seconds.

Busy tone detect

Disabled: The modem ignores any busy tones it receives.

Enabled: The modem monitors for busy tones.

Result Codes:

OK n=0,1,2,3,4,5,6,7

ERROR Otherwise

Zn Recall stored profile

The modem performs a soft reset and restores (recalls) the configuration profile according to the parameter supplied. If no parameter is specified, zero is assumed. Either Z0 or Z1 restores the profile.

Result Codes:

OK n=0,1

ERROR Otherwise

&Cn Data Carrier Detect (DCD) control

Data Carrier Detect is a signal from the modem to the computer indicating that a carrier signal is being received from a remote modem. DCD normally turns off when the modem no longer detects the carrier signal.

&C0 The state of the carrier from the remote modem is ignored. DCD circuit is always on.

&C1 DCD turns on when the remote modem's carrier signal is detected, and off when the carrier signal is not detected (default).

Result Codes:

OK n=0,1

ERROR Otherwise

&Dn DTR control

This command interprets how the modem responds to the state of the DTR signal and changes to the DTR signal.

&D0 Ignore. The modem ignores the true status of DTR and treats it as always on. This should only be used if your communication software does not provide DTR to the modem

&D1 If the DTR signal is not detected while in on-line data mode, the modem enters command mode, issues an OK result code, and remains connected.

&D2 If the DTR signal is not detected while in on-line data mode, the modem disconnects (default).

&D3 Reset on the on-to-off DTR transition.

Result Codes:

OK n=0,1,2,3

ERROR Otherwise

&F Load factory settings

This command loads the configuration stored and programmed at the factory. This operation replaces all of the command options and the S-register settings in the active configuration with factory values.

&F Recall factory setting as active configuration.

&Gn V.22bis guard tone control

This command determines which guard tone, if any, to transmit while transmitting in the high band (answer mode). This command is only used in V.22 and V.22bis mode. This option is not used in North America and is for international use only.

&G0 Guard tone disabled (default).

&G1 Sets guard tone to 550 Hz.

&G2 Sets guard tone to 1800 Hz.

Result Codes:

OK n=0,1,2

ERROR Otherwise

&Kn Local flow control selection

&K0 Disables flow control.

&K3 Enables CTS/RTS flow control (default).

&K4 Enables XON/XOFF flow control.

Result Codes:

OK n=0,3,4

ERROR Otherwise

&Pn Select Pulse Dial Make/Break Ratio (WW)

&P0 Selects 39% - 61% make/break ratio at 10 pulses per second.

&P1 Selects 33% - 67% make/break ratio at 10 pulses per second.

&P2 Selects 39% - 61% make/break ratio at 20 pulses per second.

Result Codes:

OK n=0 to 2

ERROR Otherwise

&Tn Self-test commands

These tests can help to isolate problems if you experience periodic data loss or random errors.

&T0 Abort. Stops any test in progress.

&T1 Local analogue loop. This test verifies modem operation, as well as the connection between the modem and computer. Any data entered at the local DTE is modulated, then demodulated, and returned to the local DTE. To work properly, the modem must be off-line.

Result Codes:

OK n=0

CONNECT n=1

ERROR Otherwise

&V View active configuration and stored profile

This command is used to display the active profiles on your computer's monitor.

&V View active file

For example:

Option	Selection	AT Command
Comm Standard	Bell	B
Command Char Echo	Enable	E
Speaker Volume	Medium	L
Speaker Control	OnUntilCarr	M
Result Codes	Enable	Q
Dialler Type	Tone	T/P
Result Code Form	Text	V
Extend Result Code	Enable	X
Dial Tone Detect	Enable	X
Busy Tone Detect	Enable	X
LSD Action	Standard RS-232C	&C
DTR Action	Ignore	&D
Press any key to continue; Esc to quit.		
V.22b Guard Tone	Disable	&G

Option	Selection	AT Command
Flow Control	Hardware	&K
Error Control Mode	V.42, MNP, Buffer	\N
Data Compression	Enable	%C
Auto AnswerRing#	0	S0
AT Escape Char	43	S2
CarriageRtn Char	13	S3
Linefeed Char	10	S4
Backspace Char	8	S5
Blind Dial Pause	2 sec.	S6
No Answer Timeout	50 sec.	S7
“,” Pause Time	2 sec.	S8
Press any key to continue: Esc to quit.		
No Carrier Disc	2000 msec.	S10
DTMF Dial Speed	95 msec.	S11
Escape GuardTime	1000 msec.	S12
Data Calling Tone	Disabled	S35
Line Rate	33600	S37
DSVD mode	Disabled	-SSE
Press any key to continue: Esc to quit.		
Stored phone numbers		
&Z0=		
&Z1=		
&Z2=		
&Z3=		
OK		

&W Store current configuration

Saves the current (active) configuration (profile), including S-Registers.

The current configuration comprises a list of storable parameters illustrated in the **&V** command. These settings are restored to the active configuration upon receiving a **Zn** command or at power up. Refer to the **&V** command.

&W Stores the current configuration.

&Zn=x Store telephone number

This command is used to store up to four dialling strings in the modem's nonvolatile memory for later dialling. The format for the command is **&Zn**="stored number" where n is the location 0-3 to which the number should be written. The dial string may contain up to 40 characters. The ATDS=n command dials using the string stored in location n.

Result codes:

OK n=0,1,2,3

ERROR Otherwise

\Nn Error control mode selection

This command determines the type of error control used by the modem when sending or receiving data.

\N0 Buffer mode. No error control.

\N1 Same as **\N0**.

\N2 MNP or disconnect mode. The modem attempts to connect using MNP2-4 error control procedures. If this fails, the modem disconnects.

This is also known as MNP reliable mode.

\N3 V.42, MNP, or buffer (default).

The modem attempts to connect in V.42 error control mode. If this fails, the modem attempts to connect in MNP mode. If this fails, the modem connects in buffer mode and continues operation. This is also known as V.42/MNP auto reliable mode.

\N4 V.42 or disconnect. The modem attempts to connect in V.42 error control mode. If this fails, the call will be disconnected.

\N5 V.42. MNP or Buffer (same as \N3).

\N7 V.42. MNP or Buffer (same as \N3).

Result Codes:

OK n=0,1,2,3,4,5,7

ERROR Otherwise

\Qn Local flow control selection

\Q0 Disable flow control.

\Q1 XON/XOFF software flow control.

\Q3 CTS/RTS to DTE (default).

Result Codes:

OK n=0,1,3

ERROR Otherwise

\Vn Protocol result code

\V0 Disable protocol result code appended to DCE speed.

\V1 Enable protocol result code appended to DCE speed (default).

Result Codes:

OK n=0,1

ERROR Otherwise

%B View numbers in blacklist

This command displays the phone numbers for which connections have failed. If you are using the modem in a country that does not require blacklisting, an error code results when you execute this command.

Refer to table H-1 for country-specific codes.

%Cn Data compression control

This command determines the operation of V.42bis and MNP class 5 data compression. On-line changes do not take effect until a disconnect occurs first.

%C0 V.42bis/MNP 5 disabled. No data compression.

%C1 V.42bis/MNP 5 enabled. Data compression enabled (default).

Result Codes:

OK n=0,1

ERROR Otherwise

Table H-1: AT commands that vary according to country regulations

	ATA	ATDP/ATP/ &P (10PPS)	AT%B	ATS0
Australia	Normal	Enable	Disable	0 to 255
Austria	If S1 is not 0, then active	Enable	Enable	0 and 2 to 6
Belgium	Normal	Enable	Enable	0 and 2 to 6
Denmark	Normal	Disable	Disable	0 and 2 to 6
Finland	Normal	Enable	Disable	0 and 2 to 6
France	If S1 is not 0, then active	Enable	Enable	0 and 2 to 6
Germany	If S1 is not 0, then active	Enable	Enable	0 and 2 to 6
Italy	If S1 is not 0, then active	Enable	Enable	0 and 2 to 6
Netherlands	Normal	Enable	Enable	0 and 2 to 6
New Zealand	Normal	Enable	Disable	0 to 255
Norway	Normal	Enable	Enable	0 and 2 to 6
Portugal	Normal	Enable	Disable	0 and 2 to 6
Spain	Normal	Enable	Enable	0 to 255
Sweden	Normal	Disable	Disable	0 to 255
Switzerland	Normal	Enable	Disable	0 and 2 to 6
U.K.	Normal	Enable	Disable	0 to 255

Table H-1: AT commands that vary according to country regulations

	ATS11	AT&P (20PPS)	ATS6	ATS8	ATS91	ATX
Australia	Fixed (85)	Disable	12	4	10	Normal
Austria	Fixed (85)	Disable	4	4	10	Normal
Belgium	Fixed (85)	Disable	12	4	10	Always dial tone detect
Denmark	Fixed (85)	Disable	4	4	10	Always dial tone detect
Finland	Fixed (85)	Disable	4	4	10	Always dial tone detect
France	Fixed (85)	Disable	12	4	10	Normal
Germany	Fixed (85)	Disable	4	4	10	Normal
Italy	Fixed (85)	Disable	4	4	10	Normal
Netherlands	Fixed (85)	Disable	4	4	10	Always dial tone detect
New Zealand	Fixed (85)	Disable	4	4	10	Normal
Norway	Fixed (85)	Disable	4	4	10	Normal
Portugal	Fixed (150)	Disable	4	4	10	Always dial tone detect
Spain	Fixed (150)	Disable	4	4	10	Normal
Sweden	Fixed (85)	Disable	4	4	10	Normal
Switzerland	Fixed (85)	Disable	4	4	10	Normal
U.K.	Fixed (85)	Disable	4	4	10	Normal

Appendix I

S-registers

S-registers contain the settings that determine how a number of functions of the internal modem operate. For example, how many times to let the telephone ring before the modem answers and how long to wait before it hangs up if a connection fails. You can also customise certain AT commands such as the escape sequence and command line termination.

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. If the value is out of the acceptable range, then an error is generated.

This chapter describes the settings for each S-register.

S-register values

The format for displaying the value of an S-register is:

ATSn?

where **n** is the register number. After you type in the register press **Enter**.

The format for modifying the value of an S-register is:

ATSn=r

where **n** is the register number, and **r** is the new register value. After you type in the register and its new value press **Enter**.

S0 Auto answer ring number

This register determines the number of rings the modem will count before automatically answering a call. Enter 0 (zero) if you do not want the modem to automatically answer at all. When disabled, the modem can only answer with an ATA command.

Range: (0-255) or (0 or 2 to 6) depending on the country

Default: 0

Units: rings

S1 Ring counter

This register is read only. The value of S1 is incremented with each ring. If no ring occurs over a six-second interval, this register is cleared.

Range: 0-225

Default: 0

Units: rings

S2 AT escape character (user defined)

This register determines the ASCII values used for an escape sequence. The default is the + character. The escape sequence allows the modem to exit data mode and enter command mode when on-line. Values greater than 127 disable the escape sequence.

Range: 0-255

Default: 43

Units: ASCII

S3 Command line termination character

This register determines the ASCII values as the carriage return character. This character is used to end command lines and result codes.

Range: 0-127, ASCII decimal

Default: 13 (carriage return)

Units: ASCII

S4 Response formatting character (user defined)

This register determines the ASCII value used as the line feed character. The modem uses a line feed character in command mode when it responds to the computer.

Range: 0-127, ASCII decimal

Default: 10 (line feed)

Units: ASCII

S5 Command line editing character (user defined)

This register sets the character recognised as a backspace and pertains to asynchronous only. The modem will not recognise the backspace character if it is set to a value that is greater than 32 ASCII. This character can be used to edit a command line. When the echo command is enabled, the modem echoes back to the local DTE the backspace character, an ASCII space character, and a second backspace character. This means a total of three characters are transmitted each time the modem processes the backspace character.

Range: 0-127, ASCII decimal

Default: 8 (backspace)

Units: ASCII

S6 Wait before dialling

This register sets the length of time, in seconds, that the modem must wait (pause) after going off-hook before dialling the first digit of the telephone number. The modem always pauses for a minimum of two seconds, even if the value of S6 is less that two seconds. The wait for dial tone call progress feature (W dial modifier in the dial string) will override the value in register S6. This operation, however, may be affected by some ATX options according to country restrictions. In some countries, S6 will set dial tone detect time.

Range: 2-65

Default: 4 or 12

Units: seconds

S7 Connection completion time-out

This register sets the time, in seconds, that the modem must wait before hanging up because carrier is not detected. The timer is started when the modem finishes dialling (originate), or goes off-hook (answer). In originate mode, the timer is reset upon detection of an answer tone if allowed by county restriction. The timer also specifies the wait for silence time for the @ dial modifier in seconds. S7 is not associated with the W dial modifier.

Range: 1-255

Default: 50

Units: seconds

S8 Comma pause time

This register sets the time, in seconds, that the modem must pause when it encounters a comma (,) in the dial command string. In some countries, S8 will set both wait before dialling and comma pause time.

Range: 0-65

Default: 4

Units: seconds

S10 Automatic disconnect delay

This register sets the length of time, in tenths of a second, that the modem waits before hanging up after a loss of carrier. This allows for temporary carrier loss without causing the local modem to disconnect.

The actual interval the modem waits before disconnection is the value in register S10.

Range: 1-254

Default: 20

Units: .1 seconds

S11 DTMF dialling speed

This register determines the dialling speed which is prefixed for each country.

Range: 50-150

Default: 85 or 150

Units: .001 seconds

S12 Escape guard time

This register sets the value (in 20 ms increments) for the required pause after the escape sequence (default 1 s).

Range: 0-255

Default: 50

Units: .02 seconds

S37 Dial line rate

S37 = 0 (default)	maximum modem speed
S37 = 1	reserved
S37 = 2	1200/75 bps
S37 = 3	300 bps
S37 = 4	reserved
S37 = 5	1200 bps
S37 = 6	2400 bps
S37 = 7	4800 bps
S37 = 8	7200 bps
S37 = 9	9600 bps
S37 = 10	12000 bps
S37 = 11	14400 bps
S37 = 12	16800 bps
S37 = 13	19200 bps
S37 = 14	21600 bps
S37 = 15	24000 bps
S37 = 16	26400 bps
S37 = 17	28800 bps
S37 = 18	31200 bps
S37 = 19	33600 bps

AT command set result codes

The following table shows the result codes.

The result code summary

Result Code	Numeric	Description
OK	0	Command executed
CONNECT	1	Modem connected to line
RING	2	A ring signal has been detected
NO CARRIER	3	Modem lost carrier signal, or does not detect carrier signal, or does not detect answer tone
ERROR	4	Invalid command
CONNECT 1200 EC*1	5	Connection at 1200 bps
NO DIAL TONE	6	No dial tone detected
BUSY	7	Busy signal detected
NO ANSWER	8	No quiet answer
CONNECT 2400 EC*1	10	Connection at 2400 bps
CONNECT 4800 EC*1	11	Connection at 4800 bps
CONNECT 9600 EC*1	12	Connection at 9600 bps
CONNECT 14400 EC*1	13	Connection at 14400 bps
CONNECT 19200 EC*1	14	Connection at 19200 bps
CONNECT 7200 EC*1	24	Connection at 7200 bps
CONNECT 12000 EC*1	25	Connection at 12000 bps
CONNECT 16800 EC*1	86	Connection at 16800 bps
CONNECT 300 EC*1	40	Connection at 300 bps
CONNECT 21600 EC*1	55	Connection at 21600 bps
CONNECT 24000 EC*1	56	Connection at 24000 bps
CONNECT 26400 EC*1	57	Connection at 26400 bps
CONNECT 28800 EC*1	58	Connection at 28800 bps
CONNECT 31200 EC*1	59	Connection at 31200 bps
CONNECT 33600 EC*1	60	Connection at 33600 bps

Result Code	Numeric	Description
DELAYED*2	88	Delay is in effect for the dialled number
BLACKLISTED*2	89	Dialled number is blacklisted
BLACKLIST FULL*2	90	Blacklist is full

*1: *EC only appears when the Extended Result Codes configuration option is enabled. EC is replaced by one of the following symbols, depending upon the error control method used:*

V.42bis - V.42 error control and V.42bis data compression.

V.42 - V.42 error control only.

MNP 5 - MNP class 4 error control and MNP class 5 data compression.

MNP 4 - MNP class 4 error control only.

NoEC - No error control protocol.

*2: *In some countries, these result codes may not appear.*

Appendix J

V.90

The Toshiba internal modem uses V.90 technology. The modem is capable of downstream speeds of 56Kbps (kilobits per second) when connected to an Internet service provider that supports V.90. As with any modem, the actual throughput (speed of data transfer) depends on analogue telephone line conditions, which can vary considerably. Therefore, many users will experience throughput in the range of 32-44Kbps under normal telephone line conditions. Upstream data flows at the V.34 rate.

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

V.90 mode

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

Result codes for a V.90 connection

No.	Result code	Description
70	CONNECT 32000 EC*	Connection at 32000 bits/s
72	CONNECT 36000 EC*	Connection at 36000 bits/s
74	CONNECT 40000 EC*	Connection at 40000 bits/s
76	CONNECT 44000 EC*	Connection at 44000 bits/s
78	CONNECT 48000 EC*	Connection at 48000 bits/s
80	CONNECT 52000 EC*	Connection at 52000 bits/s
82	CONNECT 56000 EC*	Connection at 56000 bits/s
100	CONNECT 28000 EC*	Connection at 28000 bits/s
101	CONNECT 29333 EC*	Connection at 29333 bits/s
102	CONNECT 30666 EC*	Connection at 30666 bits/s
103	CONNECT 33333 EC*	Connection at 33333 bits/s
104	CONNECT 34666 EC*	Connection at 34666 bits/s
105	CONNECT 37333 EC*	Connection at 37333 bits/s
106	CONNECT 38666 EC*	Connection at 38666 bits/s
107	CONNECT 41333 EC*	Connection at 41333 bits/s
108	CONNECT 42666 EC*	Connection at 42666 bits/s
109	CONNECT 45333 EC*	Connection at 45333 bits/s
110	CONNECT 46666 EC*	Connection at 46666 bits/s
111	CONNECT 49333 EC*	Connection at 49333 bits/s
112	CONNECT 50666 EC*	Connection at 50666 bits/s
113	CONNECT 53333 EC*	Connection at 53333 bits/s
114	CONNECT 54666 EC*	Connection at 54666 bits/s

*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)

Appendix K

Wireless LAN

This appendix describes Wireless LAN features and TOSHIBA Wireless LAN card specifications. For details on Wireless LAN settings, refer to the LAN Card Settings and Client Manager help file. These references have the latest information.

Card specifications

Physical specifications

Form Factor	Mini-PCI TypeIIIA	
Dimensions		
Weight		
Temperature and Humidity		
Operation	0 to 55 C	Maximum humidity 95%
Transit	-20 to 70 C	15 to 95% (no condensation)
Storage	-10 to 60 C	10 to 90% (no condensation)

Although the card may still operate in the range of –20 to 70 C, operation outside the range of 0 to 55 C may no longer be according to specifications.

Power Characteristic

Doze Mode	45mA
Receive Mode	250mA
Transmit Mode	350mA
Power Supply	3.3V

Networking Characteristics

Compatibility	IEEE 802.11 Standard for Wireless LANS (DSSS) Wi-Fi (Wireless Fidelity) certified by the Wireless Ethernet Compatibility Alliance (WECA)
Network Operating System	Microsoft Windows® Networking
Host Operating System	Microsoft Windows® XP: ■ NDIS5.1 Miniport Driver
Media Access Protocol	CSMA/CA (Collision Avoidance) with Acknowledgement (ACK)
Data Rate	■ High 11 Mb/s ■ Medium 5.5 Mb/s ■ Standard 2 Mb/s ■ Low 1 Mb/s The cards use an automatic Transmit Rate Select mechanism.

Radio characteristics

Radio characteristics of Wireless LAN cards may vary according to:

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

Wireless communication is often subject to local radio regulations. Although Wireless LAN networking products have been designed for operation in the license-free 2.4 GHz band, local radio regulations may impose limitations on the use of Wireless communication equipment.

Refer to the flyer Information to the User for regulatory information that may apply in your country/region.

Radio characteristics

R-F Frequency Band	2.4GHz (2400-2483.5 MHz)
Modulation Technique	Direct Sequence Spread Spectrum ■ CCK for High & Medium Transmit Rate ■ DQPSK for Standard Transmit Rate ■ DBPSK for Low Transmit Rate
Spreading	11-chip Barker Sequence
Bit Error Rate (BER)	Better than 10-5
Nominal Output Power	15 dBm

	High Speed	Medium Speed	Standard Speed	Low Speed
Transmit Rate	11 Mb/s	5.5 Mb/s	2 Mb/s	1Mb/s
Receiver Sensitivity	-83 dBm	-87 dBm	-91 dBm	-94 dBm
Delay Spread (at FER of <1%)	65 ns	225 ns	400 ns	500 ns

The range of the Wireless signal is related to the Transmit Rate of the Wireless communication. Communications at lower Transmit range may travel longer distances.

The range values listed in the table above are typical distances as measured at the TOSHIBA Wireless LAN laboratories. These values provide rule-of-thumb guides. They may vary according to the actual radio conditions at the location where the Wireless LAN product is installed.

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

The above table lists the typical ranges when used indoors in office environments such as the following:

- In **Open Office environments**, where antennas can see each other, i.e. there are no physical obstructions between them.
- In **Semi-open Office environments**, where work space is divided by shoulder-height, hollow wall elements; antennas are at desktop level.
- In **Closed Office environments**, work space is separated by floor-to-ceiling solid walls.

Supported frequency sub-bands

Subject to the radio regulations that apply in your country/region, your Wireless LAN card may support a different set of 2.4 GHz channels (see following table).

Consult your Authorised Wireless LAN or TOSHIBA Sales office for information about the radio regulations that apply in your country/region.

Wireless IEEE 802.11 Channels Sets

Frequency Range	2400-2483.5 MHz
Channel ID	
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457*
11	2462

* Factory-set default channels

When installing Wireless LAN cards, the channel configuration is managed as follows:

- For Wireless clients that operate in a Wireless LAN Infrastructure, the Wireless LAN card will automatically start operation at the channel identified by the Wireless LAN Access Point. When roaming between different access points the station can dynamically switch to another channel if required.
- For Wireless LAN cards installed in Wireless clients operating in a peer-to-peer mode, the card will use the default channel 10.
- In a Wireless LAN Access Point, the Wireless LAN card will use the factory-set default channel (printed in bold), unless the LAN Administrator selected a different channel when configuring the Wireless LAN Access Point device.

Appendix L

Internal Modem Guide

This appendix describes how to install and the remove the internal modem.

Do not remove the base cover except to remove or install the internal modem or to check the PTT label.

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

Always remove the Battery Pack and disconnect the AC Adaptor before removing the base cover.

Be careful not to drop any screws or other foreign matter into the computer. Metal or other foreign matter can damage the computer.

Installing the internal modem

The internal modem is preinstalled. The following is for information only.

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 board

To install the modem board and jack, follow the steps below.

1. Turn the computer upside down.
2. Remove two screws securing the modem socket cover.
3. Lift off the modem socket cover.
4. Connect the modem cable to the modem board.
5. Remove two screws from the modem board socket.
6. Align the connectors and seat the modem board.
7. Secure the modem board with the two screws removed in step 5.
8. Seat the modem socket cover and secure it with two screws.

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. Turn the computer upside down.
2. Remove the battery.
3. Remove two screws securing the modem socket cover.
4. Lift off the modem socket cover.
5. Remove two screws securing the modem board. Store the screws in a safe place. Be careful not to lose them.
6. Disconnect the modem board and lift it out.
7. Disconnect the modem cable.
8. Seat the modem socket cover and secure it with two screws.

Glossary

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

A

adaptor: A device that provides an interface between two dissimilar electronic devices. For example, the AC adaptor modifies the power from a wall outlet for use by the computer. This 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.

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

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

antistatic: A material used to prevent the build-up of static electricity.

application: A group of programs that together are used for a specific task such as accounting, financial planning, spreadsheets, word processing, and games, 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. This is no longer necessarily used when booting Windows NT 4.0 and higher.

B

backup: A duplicate copy of files kept as a spare in case the original is destroyed.

batch file: A file that can be executed from the system prompt containing a sequence of operating system commands or executable files. *See also* AUTOEXEC.BAT.

billion byte (Bi.B): A unit of data storage equal to 1,000,000,000 bytes. *See also* million byte.

binary: The base two number system composed of zeros and ones (off or on), used by most digital computers. The right most digit of a binary number has a value of 1, the next a value of 2, then 4, 8, 16, and so on. For example, the binary number 101 has a value of 5. *See also* ASCII.

BIOS: Basic Input Output System. The firmware that controls data flow within the computer. *See also* firmware.

bit: Derived from "binary digit," the basic unit of information used by the computer. It is either zero or one. Eight bits is one byte. *See also* byte.

Bluetooth: A short-range radio technology designed to simplify wireless communication among computers, communication devices and the Internet.

board: A circuit board. An internal card containing electronic components, called chips, which perform a specific function or increase the capabilities of the system.

boot: Short for bootstrap. A program that starts or restarts the computer. The program reads instructions from a storage device into the computer's memory.

bps: Bits per second. Typically used to describe the data transmission speed of a modem.

buffer: The portion of the computer's memory where data is temporarily stored. Buffers often compensate for differences in the rate of flow from one device to another.

bus: An interface for transmission of signals, data or electric power.

byte: The representation of a single character. A sequence of eight bits treated as a single unit; also the smallest addressable unit within the system.

C

cache memory: High speed memory which stores data that increases processor speed and data transfer rate. When the CPU reads data from main memory, it stores a copy of this data in cache memory. The next time the CPU needs that same data, it looks for it in the cache memory rather than the main memory, which saves time. The computer has two cache levels. Level one is incorporated into the processor and level two resides in external memory.

capacity: The amount of data that can be stored on a magnetic storage device such as a diskette (floppy disk) or hard disk. It is usually described in terms of kilobytes (KB), where one KB = 1024 bytes and megabytes (MB), where one MB = 1024 KB.

Card Station II: A device that enables one-point connection to a number of peripheral devices and provides additional ports and slots.

card: Synonym for board. *See* board.

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

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

CGA: Colour/graphics adaptor. A video display protocol defined by the IBM Colour/Graphics Monitor Adaptor and its associated circuitry. This protocol supports two-colour 640x200 and four-colour 320x200 graphics, and 16-colour 640x200 and 320x200 text modes.

character: Any letter, number, punctuation mark, or symbol used by the computer. Also synonymous with byte.

chassis: The frame containing the computer.

chip: A small semiconductor containing computer logic and circuitry for processing, memory, input/output functions and controlling other chips.

CMOS: Complementary Metal-Oxide Semiconductor. An electronic circuit fabricated on a silicon wafer that requires very little power. Integrated circuits implemented in CMOS technology can be tightly packaged and are highly reliable.

cold start: Starting a computer that is currently off (turning on the power).

COM1, COM2, COM3 and COM4: The names assigned to the serial and communication ports.

commands: Instructions you enter at the terminal keyboard that direct the actions of the computer or its peripheral devices.

communications: The means by which a computer transmits and receives data to and from another computer or device. See parallel interface; serial interface.

compatibility: 1) The ability of one computer to accept and process data in the same manner as another computer without modifying the data or the media upon which it is being transferred. 2) the ability of one device to connect to or communicate with another system or component.

components: Elements or parts (of a system) which make up the whole (system).

computer program: A set of instructions written for a computer that enable it to achieve a desired result.

computer system: A combination of hardware, software, firmware, and peripheral components assembled to process data into useful information.

configuration: The specific components in your system (such as the terminal, printer, and disk drives) and the settings that define how your system works. You use the HW Setup program to configure your system.

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

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

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

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

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

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

D

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

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

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

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

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

Desk Station V Plus: An expansion device that provides the computer with additional ports, slots and bays.

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

dialog box: A Windows element that requires the user to provide further information, such as number of copies to print.

disk drive: The device that randomly accesses information on a disk and copies it to the computer's memory. It also writes data from memory to the disk. To accomplish these tasks, the unit physically rotates the disk at high speed past a read-write head.

disk storage: Storing data on magnetic disk. Data is arranged on concentric tracks much like a phonograph record.

diskette: A removable disk that stores magnetically encoded data 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 colour 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 Adaptor. A video display protocol defined by the IBM Enhanced Graphics Adaptor and its associated circuitry for direct drive TTL displays that supports 16-colour/monochrome 640x350 and 16-colour 640x200 and 320x200 graphics, and 16-colour 640x350 and 320x350 text modes.

erase: *See* delete.

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

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

execute: To interpret and execute an instruction.

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

F

file: A collection of related information; a file can contain data, programs, or both.

firmware: A set of instructions built into the hardware which controls and directs a microprocessor's activities.

fixed disk: *See* hard disk.

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

floppy disk: *See* diskette.

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

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

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

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

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

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

HW 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

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

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

icon: A small graphic image displayed on the screen or in the indicator panel. In Windows, an icon represents an object that the user can manipulate.

i.LINK (IEEE1394): This port enables high-speed data transfer directly from external devices such as digital video cameras.

infrared port: A cableless communications port capable of using infrared signals to send serial data.

input: The data or instructions you provide to a computer, communication device or other peripheral device from the keyboard or external or internal storage devices. The data sent (or output) by the sending computer is input for the receiving computer.

instruction: Statements or commands that specify how to perform a particular task.

interface: 1) Hardware and/or software components of a system used specifically to connect one system or device to another. 2) To physically connect one system or device to another to exchange information. 3) The point of contact between user, the computer, and the program, for example, the keyboard or a menu.

interrupt request: A signal that gives a component access to the processor.

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 megabyte.

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

magiCDisc: A TOSHIBA utility that lets you create a CD-ROM data base for quick access to CD-ROM data.

main board: See motherboard.

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

MDA: Monochrome Display Adaptor. A video display protocol defined by the IBM Monochrome Display Adaptor and its associated circuitry for direct drive TTL displays that supports a monochrome 720x350 text mode.

megabyte (MB): A unit of data storage equal to 1024 kilobytes. *See also* kilobyte.

megahertz: A unit of wave frequency that equals 1 million cycles per second. *See also* hertz.

menu: A software interface that displays a list of options on the screen. Also called a screen.

microprocessor: A hardware component contained in a single integrated circuit that carries out instructions. Also called the central processing unit (CPU), one of the main parts of the computer.

million byte: A unit of data storage equal to 1,000,000 bytes.

MMX: Refers to microprocessors with additional instructions beyond the x86 standard. The instructions were developed on the basis of multimedia code requirements and thus improve the performance of multimedia applications.

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

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.

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

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

O

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

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

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

parity: 1) The symmetrical relationship between two parameter values (integers) both of which are either on or off; odd or even; 0 or 1. 2) In serial communications, an error detection bit that is added to a group of data bits making the sum of the bits even or odd. Parity can be set to none, odd, or even.

password: A unique string of characters used to identify a specific user. The computer provides various levels of password protection such as user, supervisor and eject.

pel: The smallest area of the display that can be addressed by software. Equal in size to a pixel or group of pixels. *See* pixel.

peripheral component interconnect: An industry standard 32-bit bus.

peripheral device: An I/O device that is external to the central processor and/or main memory such as a printer or a mouse.

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

port replicator: *See* Card Station II.

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

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

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

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

R

Radio frequency interference (RFI) shield: A metal shield enclosing the printed circuit boards of the printer or computer to prevent radio and TV interference. All computer equipment generates radio frequency signals. The FCC regulates the amount of signals a computing device can allow past its shielding. A Class A device is sufficient for office use. Class B provides a more stringent classification for home equipment use. TOSHIBA portable computers comply with Class B computing device regulations.

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.

RCA jack: A single-pin connector that carries composite video signals, which include both contrast and colour information. *See also* S-video.

restart: Resetting a computer without turning it off (also called 'warm boot' or 'soft reset'). To restart the computer, press **Ctrl + Alt + Del** while the computer is on. *See also* boot.

resume: A feature that lets you turn off the power without first exiting a program and retain your data in RAM. When you turn on the computer, the screen appears the same as when you turned it off. Also called standby in Windows 98.

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

RJ11: A modular telephone jack.

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

RS-232C: The Electronic Industries Association (EIA) interface standard that describes the 25-pin connector interface and control, data, and status signals that allow asynchronous communications between computers, printers, communications and other peripheral devices.

S

SCSI: Small Computer System Interface is an industry standard interface for connection of a variety of peripheral devices.

serial communications: A communications technique that uses as few as two interconnecting wires to send bits one after another.

serial interface: Refers to a type of information exchange that transmits information sequentially, one bit at a time. Contrast: Parallel interface.

serial port: A communications port to which you can connect devices, such as a modem, mouse, or serial printer.

serial: The handling of data bits one after the other.

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

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

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

standby: *See* resume.

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

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

suspend: *See* resume.

S-video: This connection provides separate lines for contrast and colour, which produces a video image superior to that produced by a composite connection. *See also* RCA jack.

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

system disk: A disk that has been formatted with an operating system. For MS-DOS the operating system is contained in two hidden files and the COMMAND.COM file. You can boot a computer using a system disk. Also called an operating system disk.

T

terminal: A typewriter-like keyboard and CRT display screen connected to the computer for data input/output.

TFT: A colour LCD technology that applies individual transistors to each pixel enabling fine display control and excellent screen legibility.

touch pad: A pointing device integrated into the TOSHIBA computer palm rest.

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

U

USB: The *Universal Serial Bus* is a way to connect up to 127 devices through one connector. A new development in 1997, this offers significantly improved ease of use and reliability than earlier expansion methods.

V

VGA: Video Graphics Array is an industry standard video adaptor that lets you run any popular software.

volatile memory: Random access memory (RAM) that stores information as long as 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.

wireless LAN: A short-range radio technology designed to simplify wireless communication with other LAN systems based on Direct Sequence Spread Spectrum radio technology that complies with the IEEE 802.11 Standard (Revision B) .

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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