Notice

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September , 2000

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Federal Communications Commission (FCC) Statement

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

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

Warning:

[A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used.]

[Use only shielded cables to connect I/O devices to this equipment.]

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

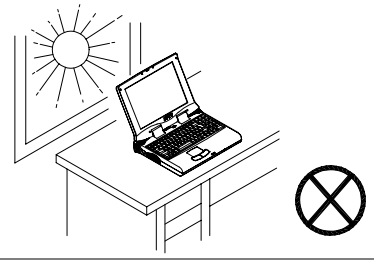
[ ]: depend on EUT condition.

Safety Instructions

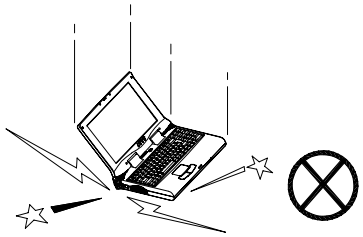
As with any other piece of precision electronic equipment, proper care and operation of your notebook computer will prolong its use. Help your notebook computer last longer by following this advice:

Handling the Computer

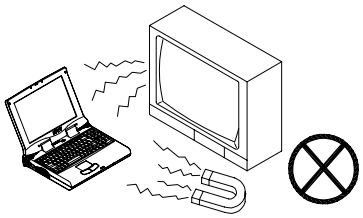
Do not expose it to excessive heat or direct sunlight.



Do not expose your notebook computer to any shock or vibration.

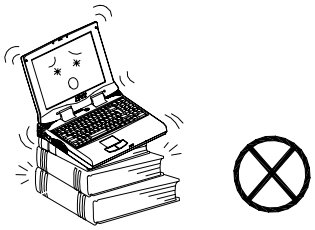


Do not expose it to strong magnetic fields.

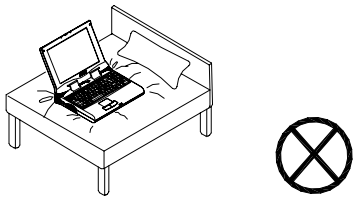


Do not leave it in a place where foreign matter or moisture may effect the system.

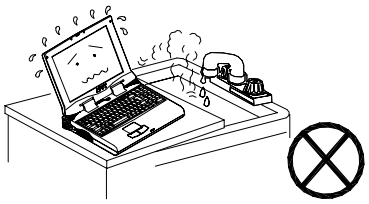
Do not place the computer on an unstable surface.



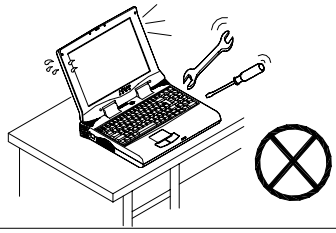
Do not place the computer on any surface which will block the vents.



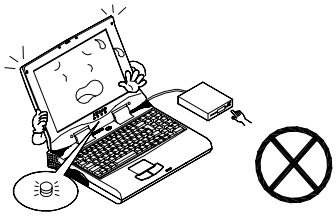
Don't use or store the computer in a humid environment.



Do not disassemble the computer by yourself.

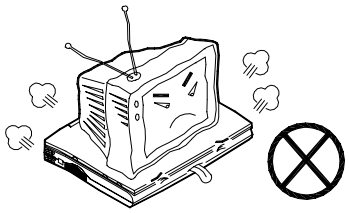


Do not turn off any peripheral devices when the computer is on.

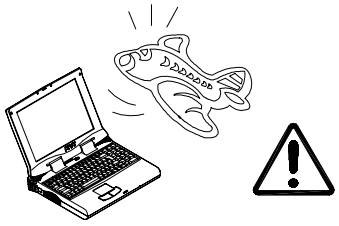


Do not turn off the power until you properly shutdown all programs.

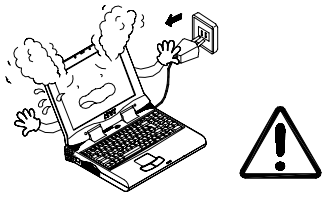
Do not place anything heavy on the computer.



When traveling by air, follow the airline's instructions for in-flight use.



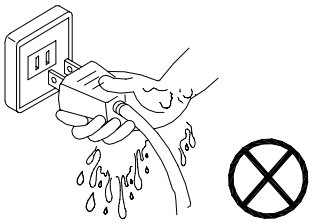
If there is an unusual odor, heat or smoke coming from your computer, unplug the cord.



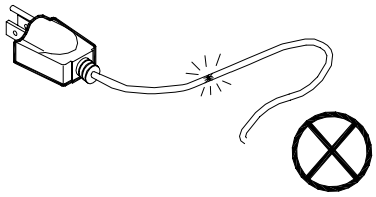
Perform routine maintenance on your computer.

Handling of the Power Cord & Battery

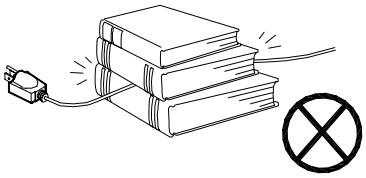
Do not plug in the power cord if you are wet.



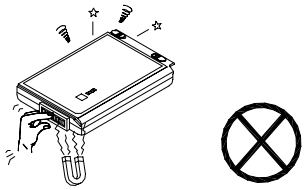
Do not use the power cord if it is broken.



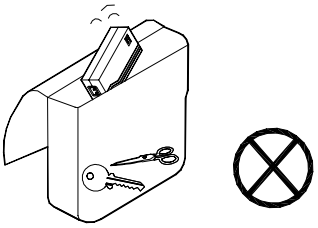
Do not place heavy objects on the power cord.



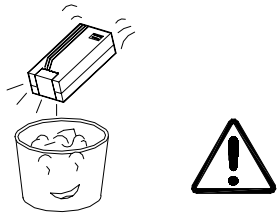
Do not touch the battery contacts with your hands or any metal objects.



Keep the battery away from any metal appliances.

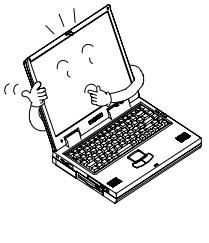


Affix tape to the battery contacts before disposing of the battery.

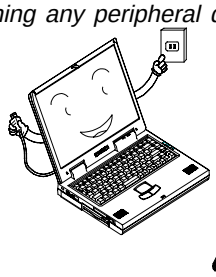


Handling of Peripheral Devices

Use only approved brands of peripheral devices.

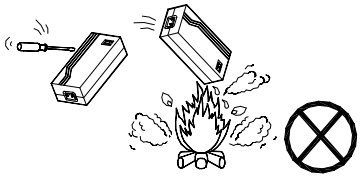


Unplug the power cord before attaching any peripheral devices.



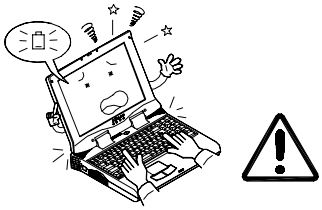
Other reminders

Do not throw the computer or accessories into a fire.



Do not touch the poisonous liquid if the LCD panel breaks.

Remember to periodically save your data. Data may be lost if the battery is depleted.



Take periodic breaks if you are using the computer for long periods of time.

Developing Good Work Habits

Developing good work habits are important if you need to work in front of the computer for long periods of time. Improper work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. The following tips should help reduce the strain:

- Adjust the height of the chair and/or desk so that the keyboard is at or slightly below the level of your elbow. Keep your forearms, wrists, and hands in a relaxed position.
- Your knees should be slightly higher than your hips. Place your feet flat on the floor or on a footrest if necessary.
- Use a chair with a back and adjust it to support your lower back comfortably.
- Sit straight so that your knees, hips and elbows form approximately 90 degree angles when you are working.

Remember to:

- Alter your posture frequently.
- Stretch and exercise your body several times a day.
- Take periodic breaks when you work at the computer for long periods of time. Frequent and short breaks are better than fewer and longer breaks.

Lighting

Proper lighting and comfortable display viewing angle can reduce eye strain and muscle fatigue in your neck and shoulders.

- Position the display to avoid glare or reflections from overhead lighting or outside sources of light.
- Keep the display screen clean and set the brightness and contrast to levels that allow you to see the screen clearly.
- Position the display directly in front of you at a comfortable viewing distance.
- Adjust the display viewing angle to find the best position.

Table of Contents

Chapter 1: Getting Started

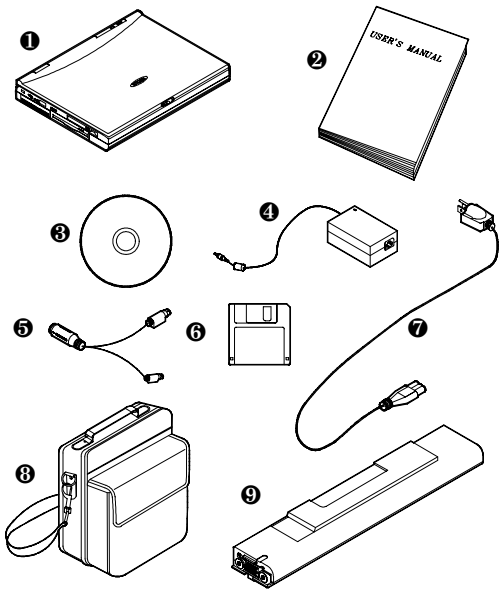
Lets take a closer look at your new notebook computer.

This chapter will cover the following areas:

- Checking the Items
- Opening the LCD Display
- Top View with Display Open
- Right Side View
- Rear View
- Left Side View
- Bottom View

Checking the Items

Carefully remove everything from the shipping box and check the items one by one. If any item is missing or damaged, contact your dealer immediately.

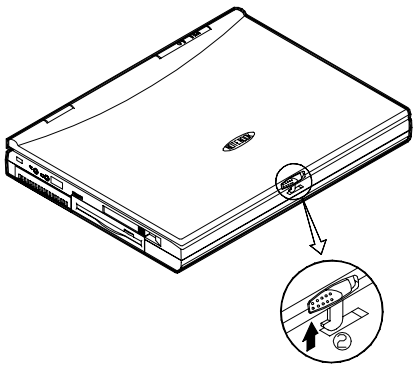


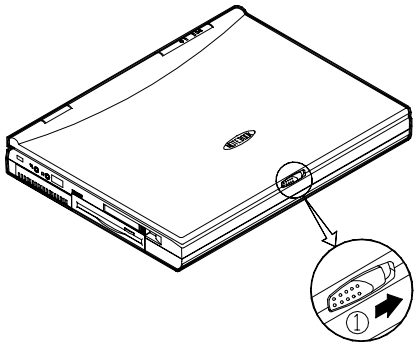
You should have:

1. Notebook Computer
2. User's Manual
3. CD-ROM
4. Power Adapter
5. PS/2 Transfer Cable
6. Utilities Diskette(s)
7. Power Cord
8. Carry Bag
9. Battery Pack

Opening the LCD display

1) Move the cover latch to the right to release the top cover.
2) Lift the top cover to reveal the LCD panel and keyboard.
3) Adjust the LCD panel to a comfortable viewing angle.





Top View with Display Open

LCD Display

The Notebook has a 12.1" SVGA/XGA TFT LCD (Liquid Crystal Display) panel which supports up to a 800 × 600 × 32 bit resolution. The LCD panel is driven by an AGP bus video controller with 8~32 MB video memory.

LED Power Indicators

These indicators display the current power source of the computer. For more information please refer to Chapter 2 LED power indicators.

LED Status Indicators

These LED indicators display the system's operational status. Refer to Chapter 2 LED status indicators for more information.

Stereo Speakers

Two built-in speakers provide rich, stereo sound.

Trackpad and Buttons

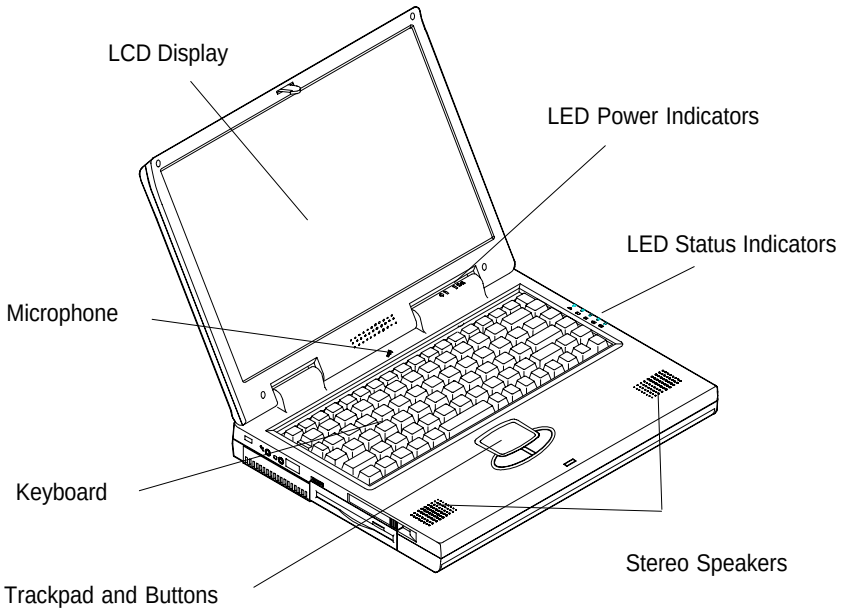
The pointing device features a sensitive glide pad for precise movements. It functions the same as a two-button mouse. The right trackpad button is the same as a right mouse button; the left trackpad button is the same as a left mouse button.

Keyboard

This 88 key keyboard has an embedded numeric keypad and can be used with Win95, Win98, Windows 2000, Windows NT 4.0 and Linux. It also has many of the same features as a full-size desktop keyboard and can easily be replaced with non-English keyboards.

Microphone

With the built-in microphone you can record on your notebook computer.



Right Side View

Power Button

Pressing this button turns your notebook computer on or off. After proper configuration with the System Configuration Utility (SCU), the Power Button can also be used as a Suspend/Resume hot button.

> ***Note:*** *After turning your notebook computer off, wait a few seconds before turning it on again.*

Easy to change 5.25" DVD-ROM Drive

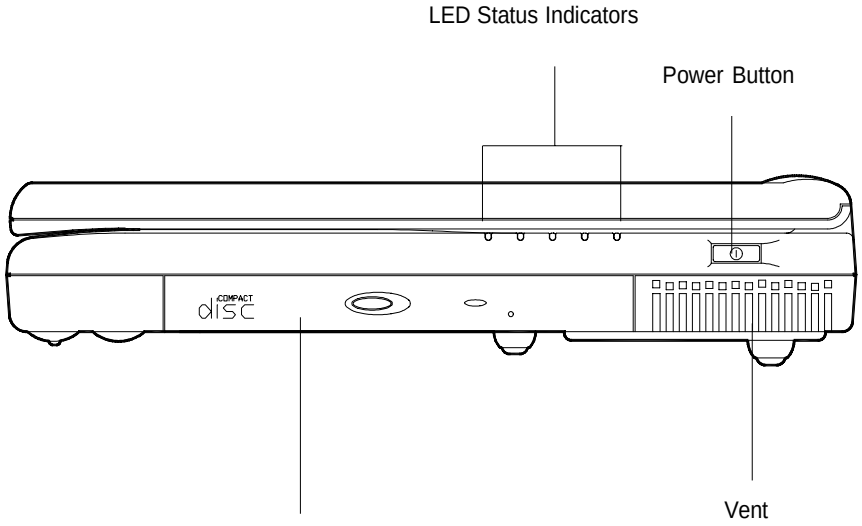
The notebook comes standard with a 8 speed DVD-ROM drive. The removable DVD-ROM drive module can be replaced with optional drive units, such as a 12.7 mm high 5.25" CD-ROM drive. (Please refer to the chapter 2 for more information on using the DVD-ROM or Chapter 4 for removing or replacing the DVD-ROM.)

LED Status Indicators

These LED indicators display the system's operational status. Refer to Chapter 2 LED status indicators for more information.

Vent

Prevents the notebook from overheating.


LED Status Indicators
Power Button
Vent
5.25" DVD-ROM Drive

Rear View

PS/2 Type Port

The PS/2 Type Port uses a 6 pin connector for connecting an external PS/2 type mouse or keyboard.

USB Port

The Universal Serial Bus (USB) port makes adding peripheral devices easy.

External Monitor (CRT) Port

The External Monitor uses a 15 pin connector for connecting an external CRT monitor. Simultaneous display on the LCD screen and external CRT monitor is possible.

Parallel Port

The Parallel Port uses a 25 pin female connector for connecting a parallel printer or other parallel devices. This parallel port supports EPP (Enhanced Parallel Port) V1.7/V1.9 and ECP (Extended Capabilities Port) modes.

Serial Port

The RS-232 serial port uses a 9 pin male connector for connecting an external serial mouse or serial printer.

Lan Port

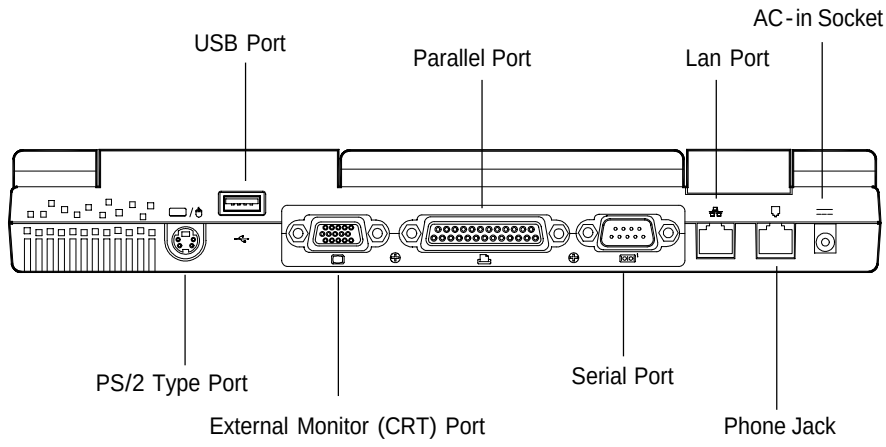
Use this port to connect your notebook computer to a Local Area Network

Phone Jack

The phone jack is used to support an optional internal modem. If you do not intend to install this optional modem, please do not punch out the phone jack. For more information on the phone jack please refer to Chapter 3.

AC-in Socket

Plug the AC adapter into this socket to connect to an external power supply. To disconnect, pull the plug (not the cord) directly back.



Left Side View

Security Slot

A lock for your computer can be attached to this slot to prevent possible theft.

Microphone-in Jack

A microphone can be connected to your notebook with this jack.

Speaker-out Jack

Headphone and speakers can be attached to the system through this jack.

Infrared Port

This port allows communication with an infrared-compatible device. The Infrared port supports Amplitude Shifted Keyed IR (ASKIR) mode. For further information, please refer to the manual of the wireless device you wish to connect.

Volume Control knob

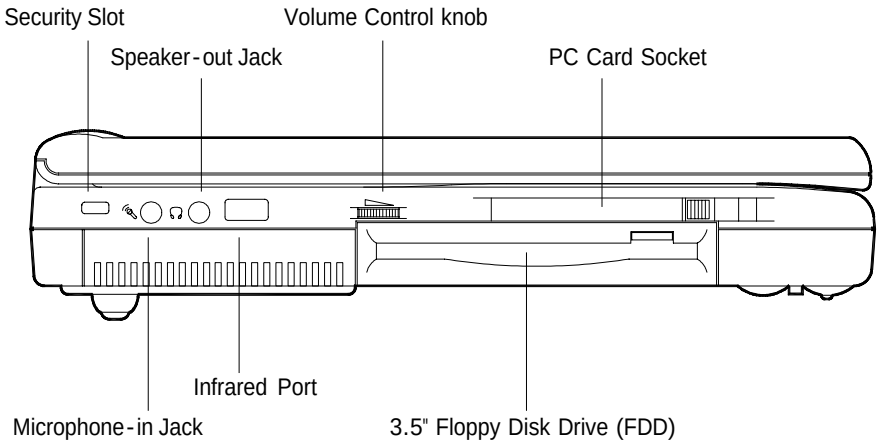
Adjust the audio output with this dial.

3.5" Floppy Disk Drive (FDD)

The drive is a 3.5", 3 mode, 1.44 MB easy to change floppy disk drive.

PC Card Socket

The notebook provides one Type II PC card socket. This socket supports CardBus.



Bottom View

Heat Sink and CPU Cover

The CPU and Heat Sink are under this cover. To upgrade the CPU you must remove this cover and remove the Heat Sink. For further details please refer to Chapter 4.

DVD / FDD Cover

The connecting cables of the DVD/CD-ROM drive and FDD are located beneath this cover. For more information on removing the drives please refer to Chapter 4.

Battery Pack Latch

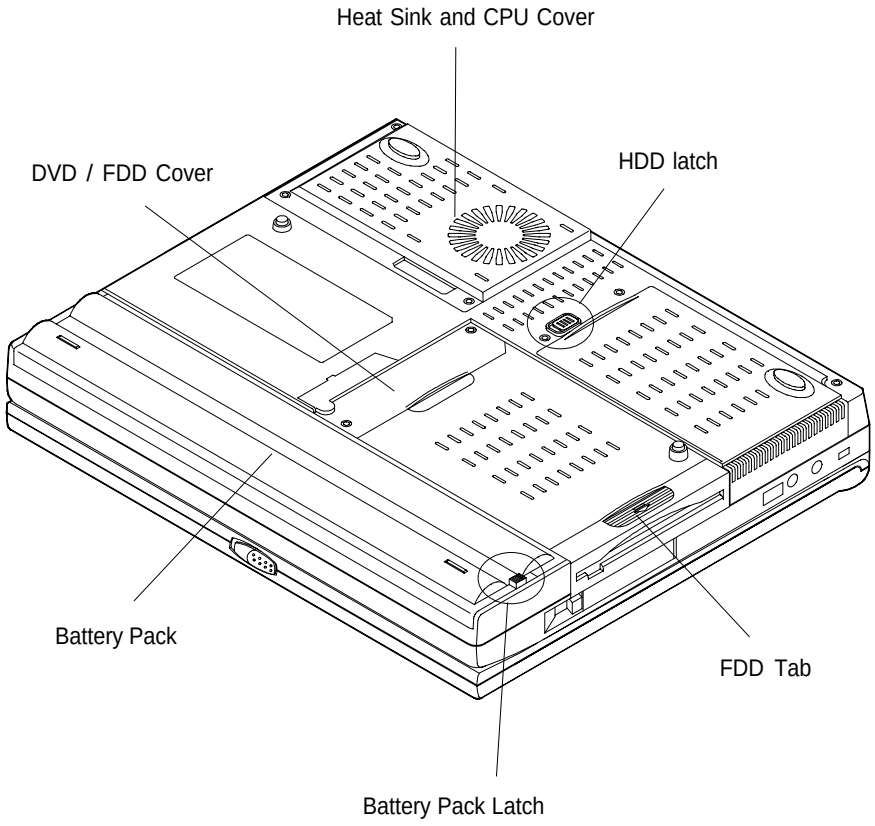
This latch secures the battery pack in its bay. (Please refer to Chapter 2 for more information on inserting or removing the Battery pack.)

FDD Tab

After you have disconnected the FDD from the computer, pull on this tab to release the Floppy Disk Drive module from its bay. (Please refer to Chapter 4 for more information on inserting or removing the Floppy Disk Drive.)

HDD latch

This latch secures the Hard Disk Drive (HDD) module in its bay. (Please refer to Chapter 2 for more information on inserting or removing the Hard Disk Drive.)


Heat Sink and CPU Cover
DVD / FDD Cover
HDD latch
Battery Pack
FDD Tab
Battery Pack Latch

Chapter 2: Using the Computer

Your notebook computer can be used almost anywhere, in the home, office, or on the road. To learn more about how to operate your computer, the features available and how to power your computer please read this chapter.

The topics covered in this chapter are:

- The Power Sources
- Battery Pack
- Turning on the Computer
- LED indicators
- The Hard Disk Drive
- The Floppy Disk Drive
- The DVD/CD-ROM
- The PC Card Sockets
- Hot Keys
- The Numeric Keypad

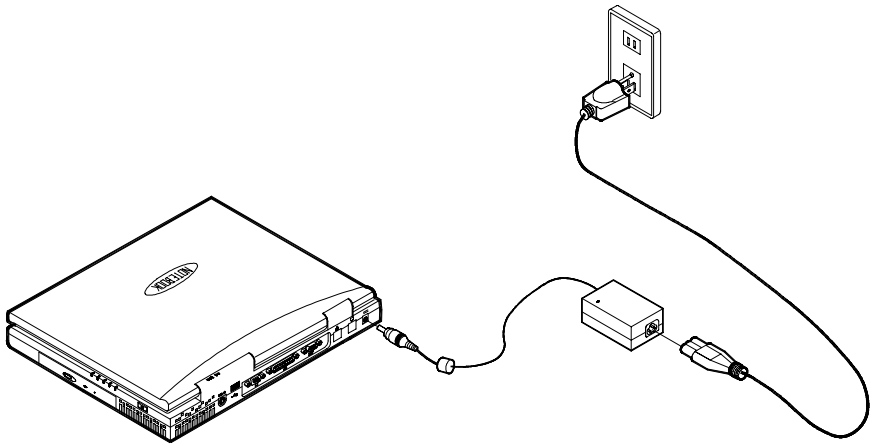
The Power Sources

The computer can be powered by either an AC adapter or battery pack depending on where you want to use it.

AC Power Adapter

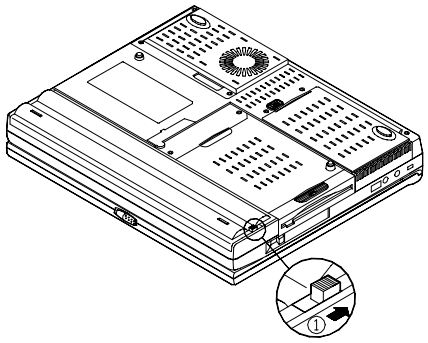
Use only the power adapter that comes with your computer. An incorrect type of power adapter will damage the computer and its components.

1) Plug the power adapter cord into the AC-in socket on the rear panel of the computer.
2) Connect the power adapter with the power cord.
3) Plug the power cord into a properly grounded outlet.



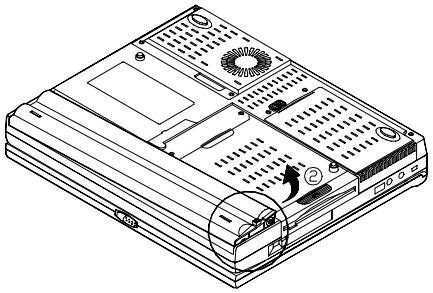
Battery Pack

The battery pack allows you to use your notebook computer when you are on the road or an electrical outlet is unavailable. Battery life depends on the application and the configuration you're using.



Removing the battery pack

1) Turn the computer over.
2) Slide the latch in the direction indicated ①.
3) Gently grasp the battery pack on the edge below the latches and lift it out of the bay ②.



Inserting the battery pack

1) Turn the computer over.
2) Place the battery in its bay inserting the side without the latch in first.
3) Push down on the side with the latch until it clicks into place.

Note: *To increase battery life, let the battery discharge completely before recharging.*

Recharging by AC Power

The battery pack will automatically recharge when it is in its bay in the computer and the computer is plugged into an AC power supply.

While the battery is recharging, you can still use the computer. It will take several hours to fully recharge the battery and slightly longer if you are using the computer while the battery is recharging.

(Please refer to LED power indicators in this chapter for more information on the battery charge status.)

Note:

– The battery indicator light will blink when the battery overheats or there is a problem with the battery. Should this happen, remove the battery and allow it to cool down. If the indicator light still blinks contact your vendor about a possible battery problem.

– The battery has protection design to detect the temperature while recharging or discharging. To ensure the battery can be recharged, while discharging wait until the battery returns to normal temperature, then recharge the battery

– For better battery life:

1) Fully discharge the battery before recharging.

2) Recharge the battery to full capacity each time you recharge it.

Proper Handling of the Battery Pack

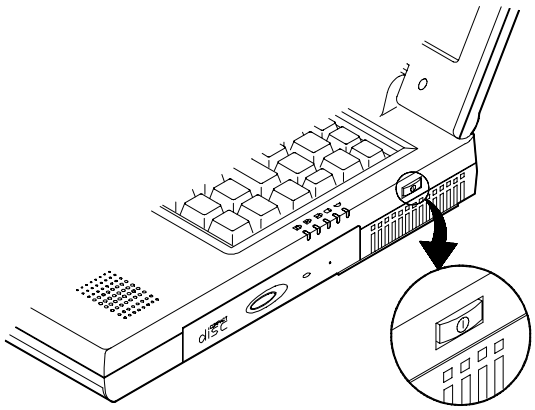
Do not disassemble the battery pack under any circumstances.

Do not expose the battery to fire or high temperatures, it may explode.

Do not connect the metal terminals (+, -) together.

Turning on the Computer

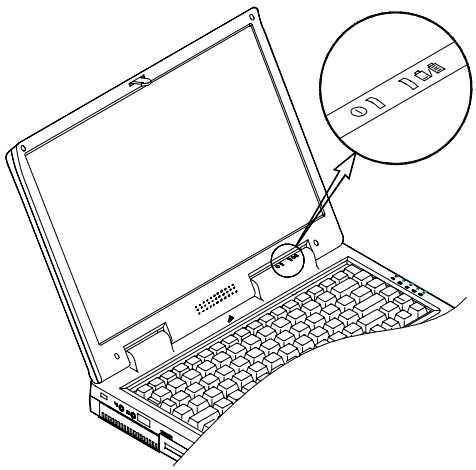
Now you are ready to begin using your new notebook computer. To turn it on simply press the power button on the right side of the computer.



After proper configuration with the System Configuration Utility (SCU), the Power Button can also be used as a Suspend/Resume hot button (Please refer to Chapter 5, BIOS Utilities, Power Menu for more information.)

LED Indicators

To display useful information there are two sets of LED indicators on your computer, they are the LED Power Indicators and LED Status Indicators.



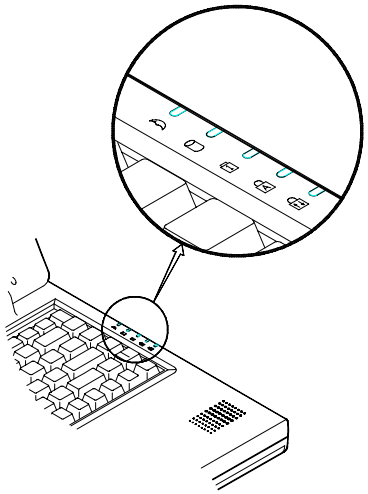
LED Power Indicators

The LED power indicators located on the top right side display the power status.

Icon	Color	Description
⏻	Green	Battery power is being used while the computer is on.
	Red	AC power is being used while the computer is on.
	Blinking Red	Battery power is critically low.
🔋	Green	Battery is fully charged.
	Red	Battery is being charged.

LED Status Indicators

Once your computer is on and in use the LED status indicators will display the system's operating status.



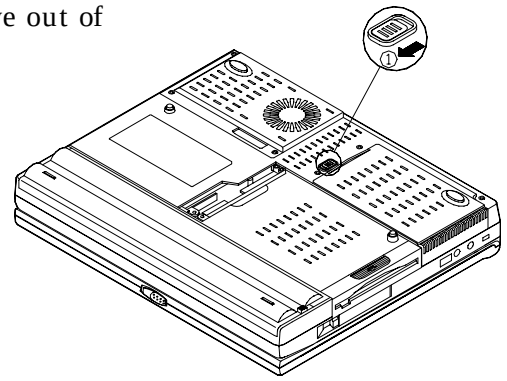
Icon	Color	Description
	Green	The system has entered the configured suspend mode.
	Green	The hard disk is being accessed
	Green	Num lock is activated
	Green	Cap Lock is activated.
	Green	Scroll Lock is activated.

The Hard Disk Drive (HDD)

The hard disk drive is used to store your data internally in the notebook computer. It is mounted in a removable case and can be taken out to accommodate other 2.5" IDE hard disk drives with a height of 12.7 mm or 9.5 mm. The system supports PIO mode 4, Master mode IDE, LBA mode and provides a high performance data transfer rate at speeds up to 66 MBytes/second (ATA-66). For data security you can easily remove the HDD.

Removing the HDD

1) Turn the computer off.
2) Turn the computer over.
3) Locate the HDD latch ①.
4) Slide and hold the latch forward then slide the HDD out of the computer.
5) Lift the hard disk drive out of the computer.



Inserting the HDD

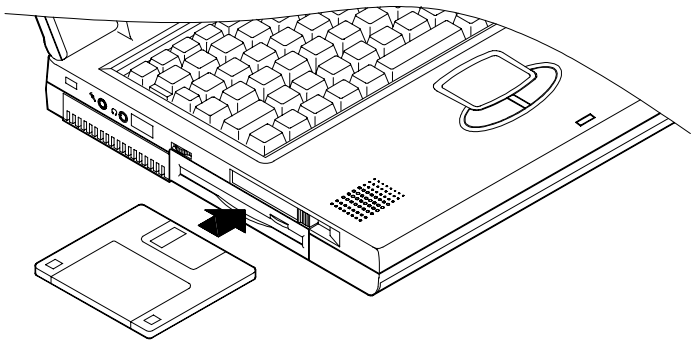
1) Turn off the computer.
2) Turn the computer over.
3) Place the HDD case into the computer.
4) Slide the HDD in until you hear a click.

The Floppy Disk Drive (FDD)

The computer is equipped with a 1.44 MB, 3.5" floppy disk drive module. It is usually designated drive A by default and can be used as a boot device if properly set in the SCU (please refer to Chapter 5, BIOS Utilities).

Inserting/Removing Diskettes

When using the floppy drive, always insert your floppy diskette label-side up. To remove your diskette, press the eject button on the top-right corner of the floppy drive.

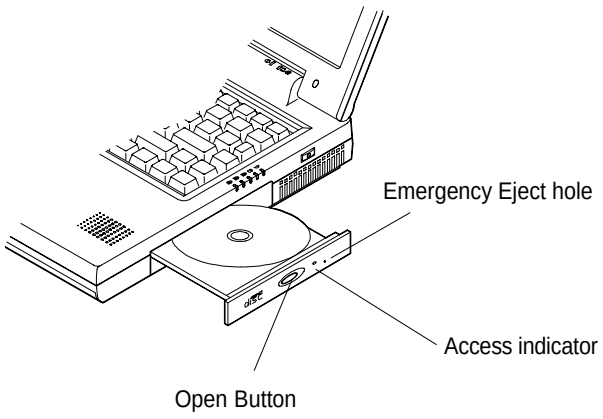


The DVD-ROM Drive

The notebook computer comes standard with a 8x speed removable 5.25" DVD-ROM drive. It is labeled drive D and may be used as a boot device if properly set in the System Configuration Utility. The removable DVD-ROM drive can be replaced with optional drive units, such as a 12.7 mm high CD-ROM drive.

Loading Disks

To insert a disk, press the Open Button and carefully place a disk into the Disk tray with label-side facing up (see below). Push the disk tray in and you are ready to start. The Access Indicator will light up while data is being accessed or while an audio disk is playing. When power is unexpectedly interrupted, insert an object such as a straightened paper clip into the Emergency Eject hole to open the tray.



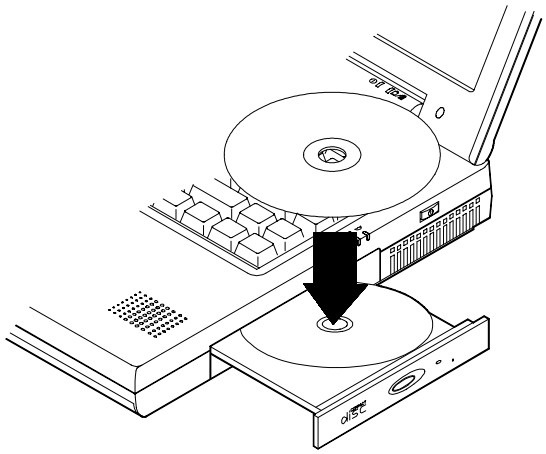
Note: *When manually ejecting a disk, DO NOT use a sharpened pencil or similar object that may break and become lodged in the hole.*

Handling Disks

Proper handling of your disks will prevent them from being damaged. Please follow the advice listed below to make sure that the data stored on your CD/DVD-ROMs can be accessed.

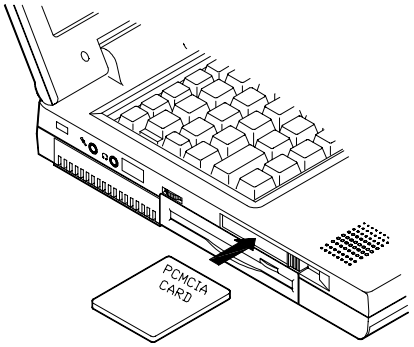
Remember to:

- Hold the disk by the edges; do not touch the surface of the disk.
- Use a clean, soft, dry cloth to remove dust or fingerprints.
- Do not write on the surface with a pen.
- Do not attach paper or other materials to the surface of the disk.
- Do not store or place the disk in high-temperature areas.
- Do not use benzene, thinners, or other cleaners to clean the disk.
- Do not bend the disk.
- Do not drop or subject the disk to shock.



The PC Card Slots

The computer is equipped with one PC card slot (previously referred to as PCMCIA). The slot supports one Type II PC card or CardBus card.

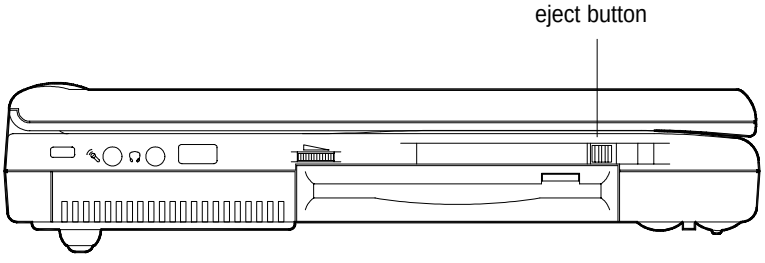


Inserting PC Cards

Align the PC card with the slot and push the card in until it is firmly in place.

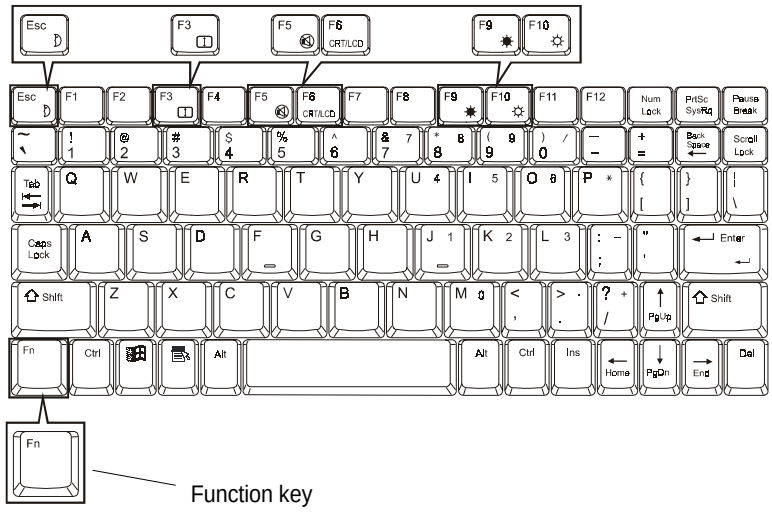
Removing PC Cards

To remove a PC card, simply press the eject button next to the slot.



Hot Keys

Hot Keys allow you to change operational features instantly. You activate the Hot Key functions by pressing the Fn key or Function key which is located on the bottom-left of the keyboard and one of the keys with the blue icons (F3, F6, etc....) located at the top of your keyboard.



Available Hot Key commands

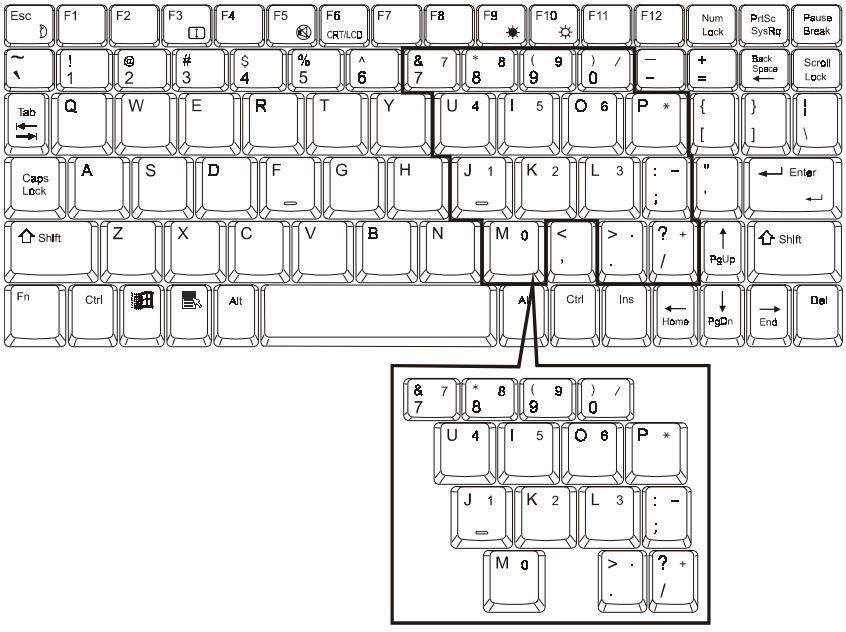
Fn + F3	Expand LCD display
Fn + F5	Toggle audio on/off
Fn + F6	Toggle between CRT / LCD / LCD+CRT
Fn + F9	Decrease LCD brightness
Fn + F10	Increase LCD brightness
Fn + Esc	Suspend/resume

The Numeric Keypad

A numeric keypad is integrated into the keyboard for easy numeric data input. The keypad stands out by its blue typeface.

To use the keypad simply:

1) Activate the Num Lock feature (press the Num Lock key).
2) Press and hold down the Fn key.
3) Press the desired number keys.



Chapter 3: Adding Peripherals

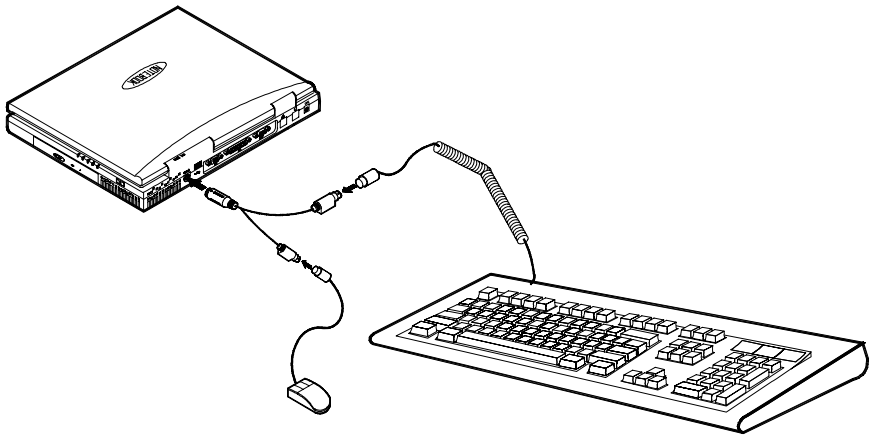
To enhance your computer's capabilities, you can attach peripheral devices to the computer using the ports or jacks located on the rear and left side of the computer.

The computer can support the following peripheral devices and this chapter will explain how to connect them to your notebook:

- PS/2 Keyboard or Mouse
- USB Compatible Device
- Serial Mouse
- External Monitor (CRT)
- Parallel Printer
- Modem
- LAN port
- Security Lock

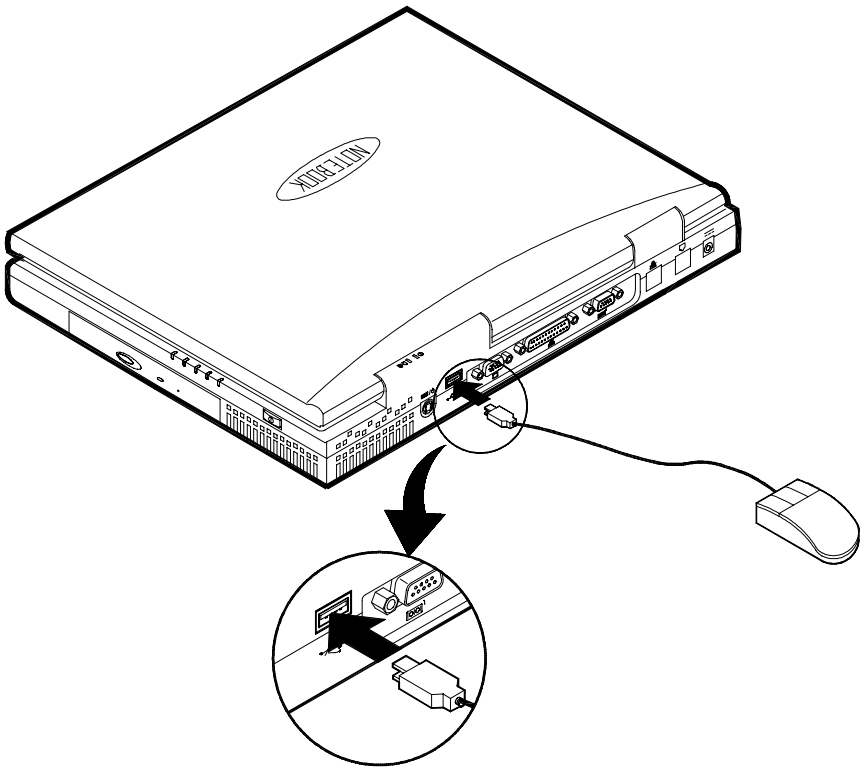
PS/2 Keyboard or Mouse

The computer can use a PS/2 keyboard or mouse attached directly to the PS/2 port or if you want you can attach both using the PS/2 transfer cable that comes with your notebook computer. Attach the external keyboard or mouse to the PS/2 port as shown below.



USB Compatible Device

The computer has a USB port for connecting a USB compatible keyboard, mouse, game pad or other USB device. Simply plug the device into the USB port as shown below.

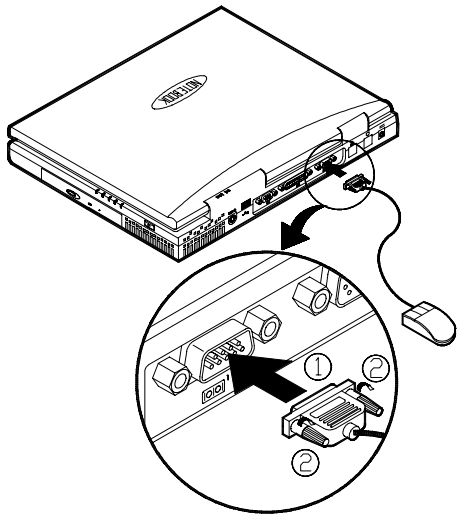


Serial Mouse

The serial port features a 9 pin connector. You can connect any serial device such as a mouse to this port.

To connect a serial device you must:

1) Turn off the computer.
2) Connect the cable to the serial port on the rear of the computer ①.
3) Tighten the screws that fasten the cable to the serial port ②.
4) Turn on the computer.



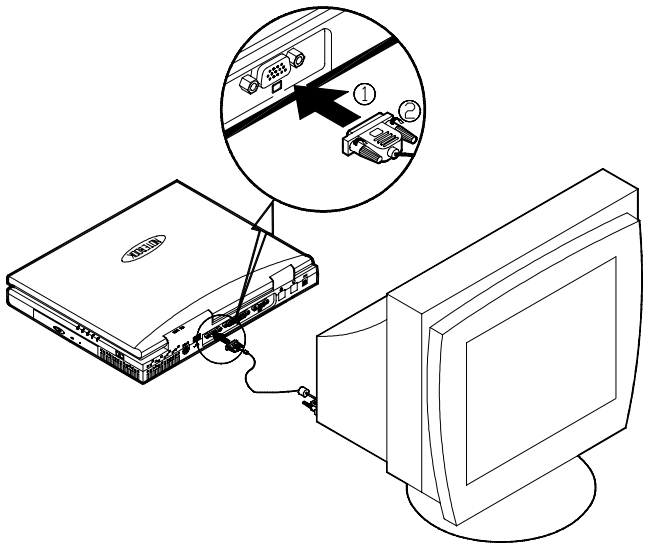
Note: *In addition, you may need to install the manufacturer-supplied driver for the serial mouse. Refer to the device's user guide for more information.*

External Monitor (CRT)

The computer can support an XGA compatible external monitor. The external monitor can be used simultaneously with the LCD display turned on or off. You can setup your computer to use an external monitor by entering the System Configuration Utility (SCU) and selecting the appropriate parameters or using the Fn + F6 keys (refer to Hot Keys in Chapter 2).

To install an external monitor you simply:

1) Turn off the computer.
2) Connect the cable to the CRT port on the rear of the computer ①.
3) Tighten the screws that fasten the cable to the CRT ②.
4) Insert the other end of the cable to the external monitor.
5) Turn on the computer.

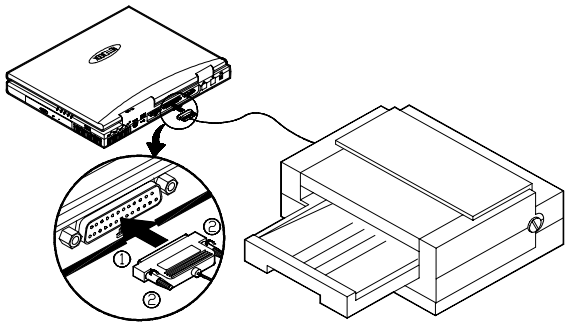


Parallel Printer

You can connect any standard Centronics parallel printer to your computer using the parallel port.

To connect a printer simply:

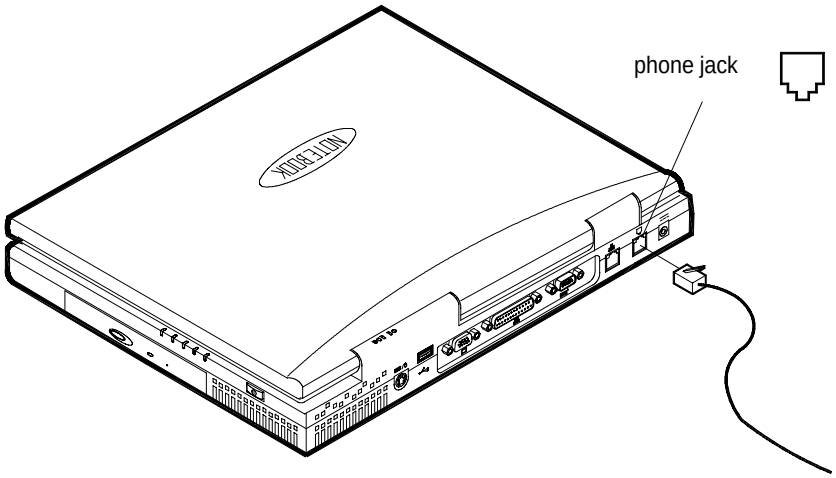
1) Turn off the computer.
2) Connect the cable to the parallel port on the rear of the computer ①.
3) Tighten the screws that fasten the cable to the parallel port ②.
4) Insert the other end of the cable to the printer's connector.
5) Fasten the cable's connector.
6) Turn on the printer and computer.



Note: *You may also need to install the manufacturer-supplied driver for the printer. Refer to the device's user guide for more information. If the connected printer supports Enhanced Parallel Port (EPP) or Extended Capabilities Port (ECP) mode, please enter the System Configuration Utility (SCU) to configure the required setting.*

Internal Modem

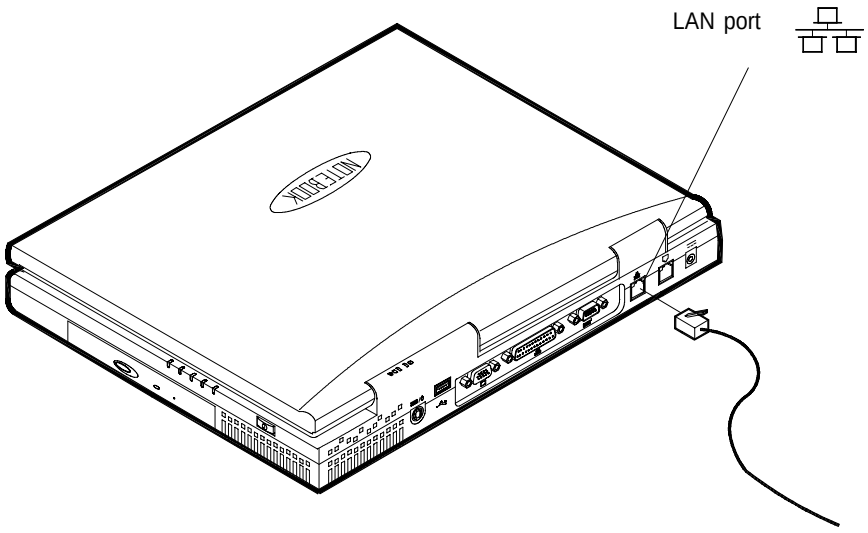
The notebook has a phone jack (RJ-11) for connecting to a phone line. To connect your computer's internal modem to a phone line, simply plug a phone cord into the phone jack.



LAN port

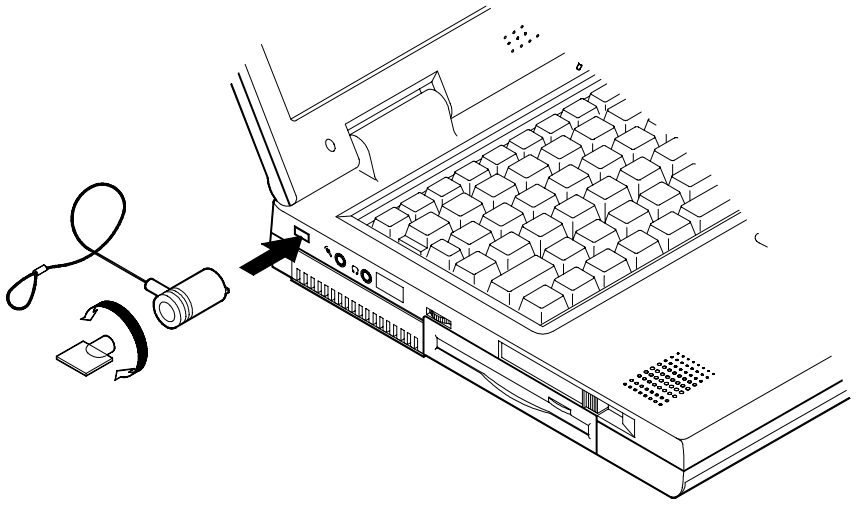
(RJ-45)

The notebook has a LAN port for connecting to a LAN (Local Area Network). To connect to a LAN, simply plug the LAN line into the port.



Security Lock

A security lock can be installed on your notebook computer to help prevent theft. To install the security lock, wrap the cable around a desk or other immovable object, then insert the locking device in the slot located on the left side of your notebook computer.



Chapter 4: Upgrading the Computer

This chapter will explain how to upgrade your notebook computer. Please follow the steps in this chapter and if you have any problems or questions, you can contact your dealer for further help.

Before you upgrade the computer, you will need:

- A small crosshead or Philips screwdriver
- A small regular screw driver.
- An antistatic wrist strap

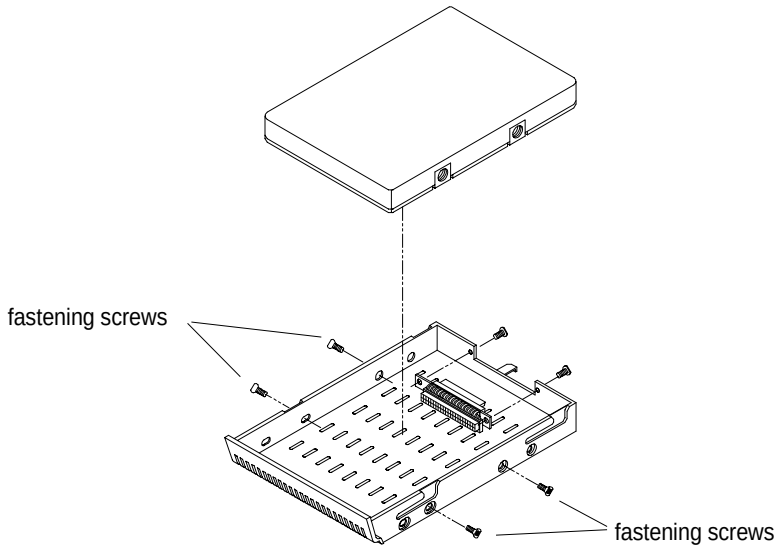
Note: *Make sure you wear an antistatic wrist strap to ground yourself before working with or repairing the internal components. Static electricity may damage the components.*

This chapter will cover the following topics:

- Replacing the HDD
- Replacing the FDD
- Replacing the DVD-ROM Module
- Upgrading the Memory
- Adding or replacing the processor

Replacing the HDD

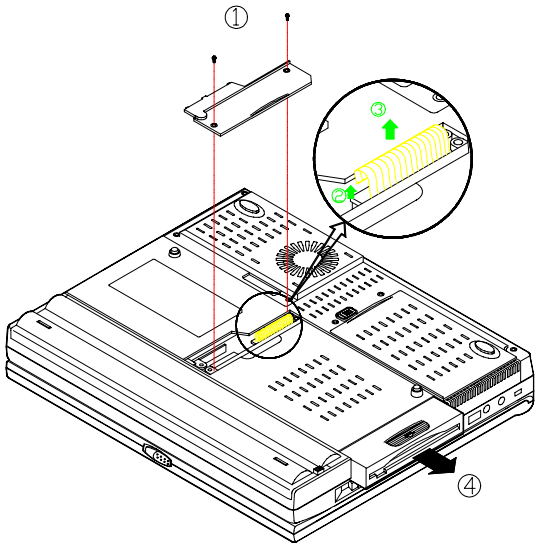
1) Remove the HDD case from the computer (refer to **Removing the HDD** in Chapter 2 for details).
2) Remove the two sets of screws on the side of the case.
3) Slowly remove the HDD from the case until you see the connecting cable.
4) Gently disconnect the cable from the HDD being careful not to bend any pins or crimp the cable.
5) Connect a new HDD to the cable being careful not to bend any pins or crimp the cable.
6) Slowly place the HDD back into the case.
7) Hold the HDD firmly in place with two screws on each side.
8) Insert the HDD into the computer (refer to **Inserting the HDD** in Chapter 2 for details)



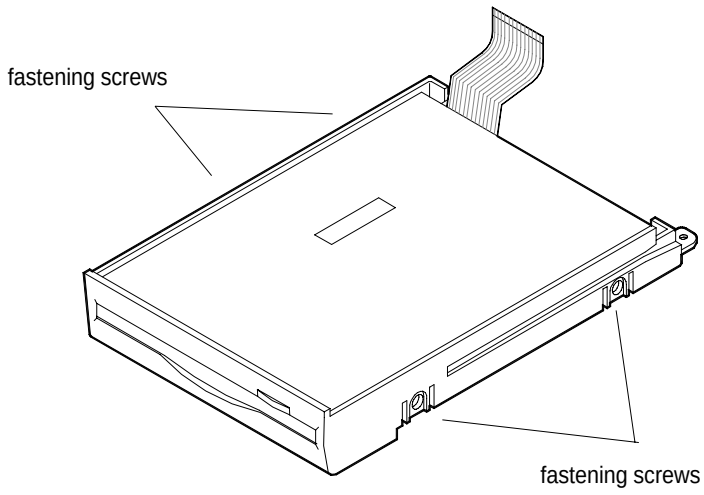
Replacing the FDD

Removing the Floppy Disk Drive

1) Turn off the computer.
2) Turn the computer over.
3) Locate the DVD / FDD cover ①.
4) Unscrew and remove the cover .
5) Lift the white plastic piece which holds the FDD cable in place ②.
6) Pull out the FDD cable ③.
7) Grasp the FDD tab and gently PULL the FDD out of the computer ④.



8) Remove the two screws on each side of the FDD tray.
9) Remove the FDD from its tray. (see picture)



The FDD floppy disk drive out of its bay

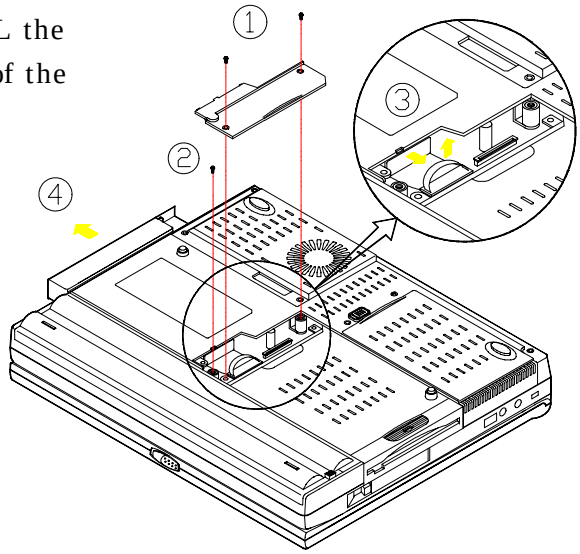
Inserting the Floppy Disk Drive

Follow the instructions for removing the FDD in reverse order.

Replacing the DVD-ROM Module

Removing the DVD-ROM Module

1) Turn off the computer.
2) Turn the computer over.
3) Locate the DVD/FDD cover ①.
4) Unscrew and remove the cover.
5) Remove the single screw which holds the DVD-ROM in the computer ②.
6) Locate the cable tab and gently pull the cable tab upward to disconnect the DVD-ROM from the computer mainboard ③.
7) Grasp the DVD-ROM tab and gently PULL the DVD-ROM out of the computer ④.



Inserting the DVD-ROM module

Refer to removing the DVD-ROM and follow the instructions in reverse order.

Upgrading the Memory

The computer has two memory sockets for PC-100/PC-133 compliant, 144 pin SODIMM (Small Outline Dual In-line Memory Module) modules. The memory can be expanded to 512 MB with the following combinations:

Bank 0 (64-bit)	Bank 1 (64-bit)	Power	Total Size
32 MB	Empty	3.3V	32 MB
32 MB	32 MB		64 MB
64 MB	Empty		64 MB
64 MB	32 MB		96 MB
64 MB	64 MB		128 MB
128 MB	Empty		128 MB
128 MB	32 MB		160 MB
128 MB	64 MB		192 MB
128 MB	128 MB		256 MB
256 MB	Empty		256 MB
256 MB	32 MB		288 MB
256 MB	64 MB		320 MB
256 MB	128 MB		384 MB
256 MB	256 MB		512 MB

Once a new module is installed the memory size is automatically detected by the POST routines when you turn on your computer.

Installing a Memory Module

1) Turn off the computer.
2) Press the two keyboard latches at the top of the keyboard to elevate the keyboard from its normal position.
3) Carefully lift the keyboard assembly out to expose the mainboard.

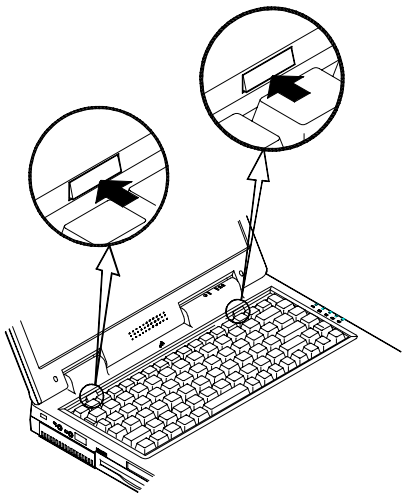


Figure 4-1

4) Locate the memory banks, Bank 0 is on the right and Bank 1 is on the left.

Note: *Only use Bank 0 if you have one memory module. If you are using two memory modules always use the larger module in Bank 0.*

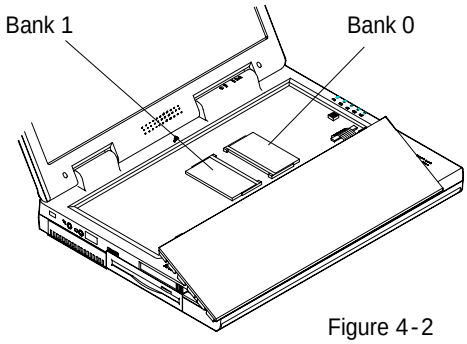
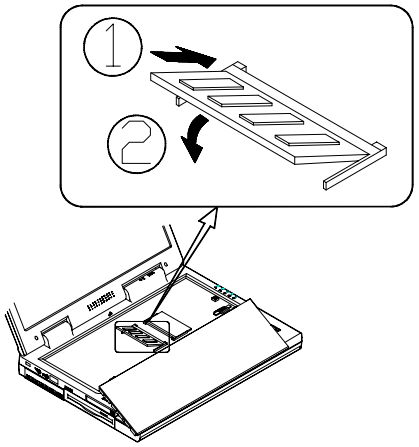
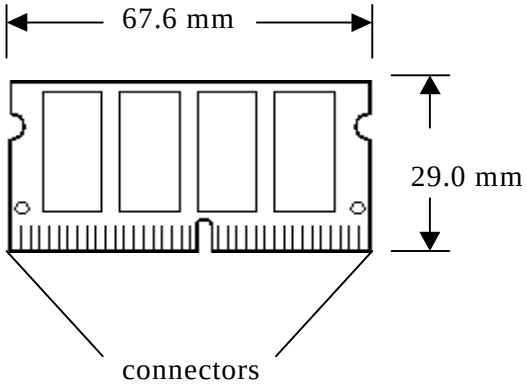


Figure 4-2

5) Insert the memory module at an angle (about 45°) and fit its connectors firmly into the bank ①.
6) Press down the edge of the memory module and lock it into place ②.
7) Put the keyboard back into place.



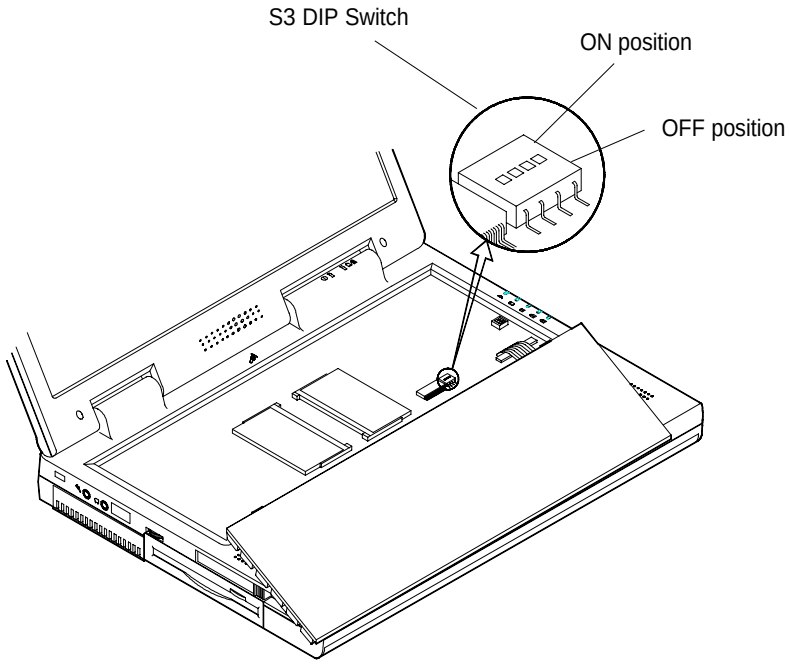
Note: *Make sure the connectors go into the bank. You must use a RAM module that complies with Intel unbuffered SODIMM (67.6 mm x 29.0 mm). Please consult your dealer for the details.*



Changing the S3 DIP Switch settings

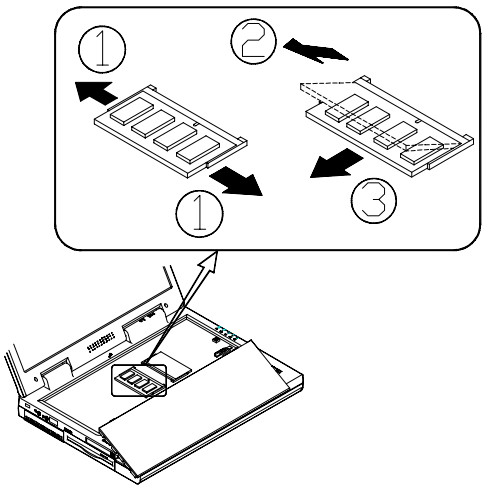
Once you have installed the new memory you will have to change the DIP Switch settings depending on the type of memory you have installed. Please refer to the chart below for the correct settings for the S3 DIP Switches

SDRAM TYPE	S3-1	S3-2	S3-3	S3-4
PC100	ON	OFF	OFF	OFF
PC133	ON	OFF	ON	OFF



Removing a Memory Module

1) Turn off the computer.
2) Press the two keyboard latches to elevate the keyboard from its normal position (refer to page 4-7, Figure 4-1)
3) Carefully lift the keyboard assembly out to expose the mainboard.
4) Locate the memory sockets. Bank 0 is on the left and Bank 1 is on the right. (refer to page 4-7, Figure 4-2)
5) Gently pull the two latches outward on both ends of the module ①.
6) The module will pop up ②.
7) Remove the memory module ③.
8) Install a new memory module if desired (refer to Installing a Memory Module).
9) Put the keyboard back into place.



Adding or replacing the processor.

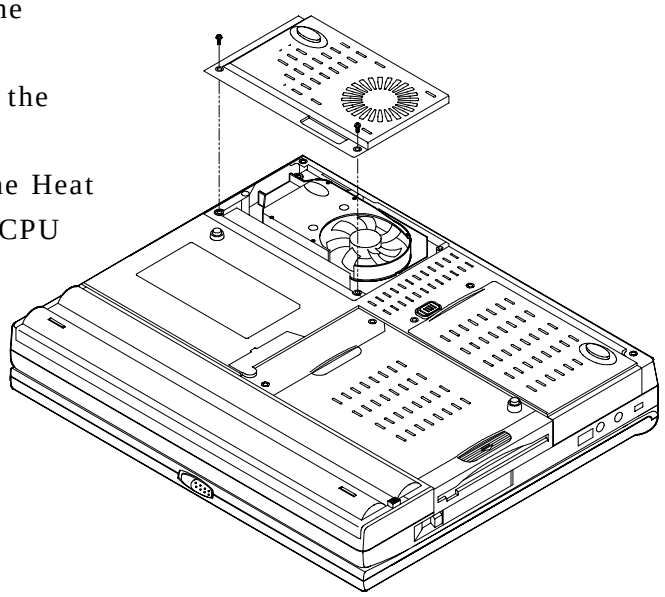
Note: *If you plan on removing the heat sink, which is necessary to add or replace the processor, you will need to have a replacement heat sink pad available. Before proceeding, please contact your dealer to get a replacement pad which you will need when you reinstall the heat sink.*

In order to add or replace the processor you must:

A: Remove the heat sink
B: Remove the processor
C: Insert a new processor
D: Reinstall the heat sink
E: Changing the SW1 DIP Switch settings

A: Remove the heat sink

1) Turn off the computer
2) Turn over the computer
3) Remove the Heat Sink and CPU Cover



4) Remove the 4 screws which hold the heat sink in place.
5) Gently remove the heat sink cable.
6) Lift the heat sink out of the computer

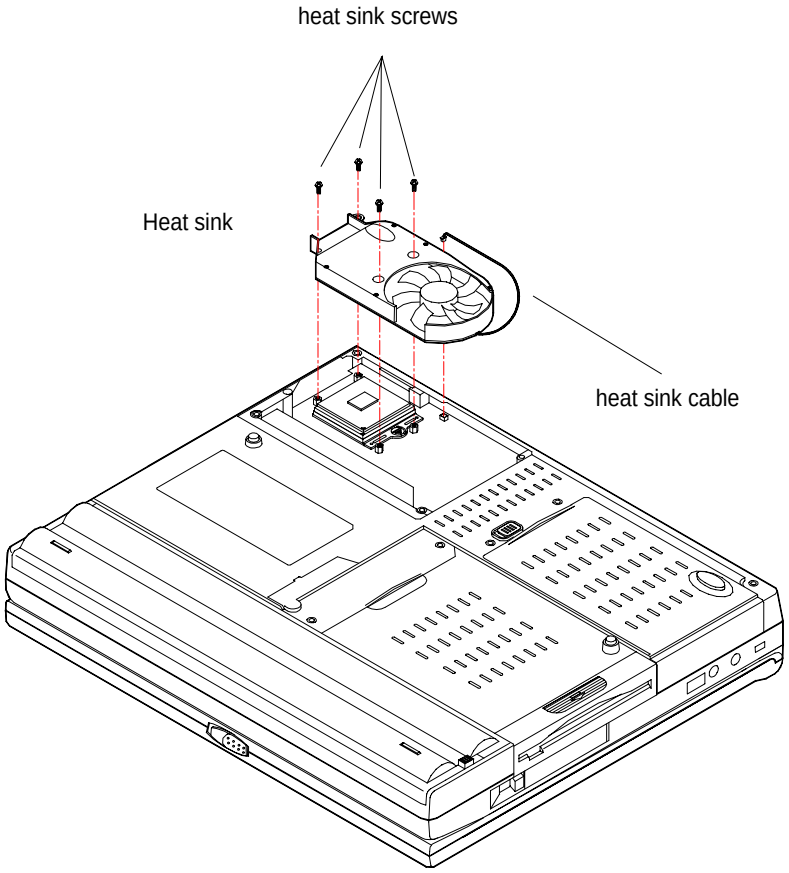
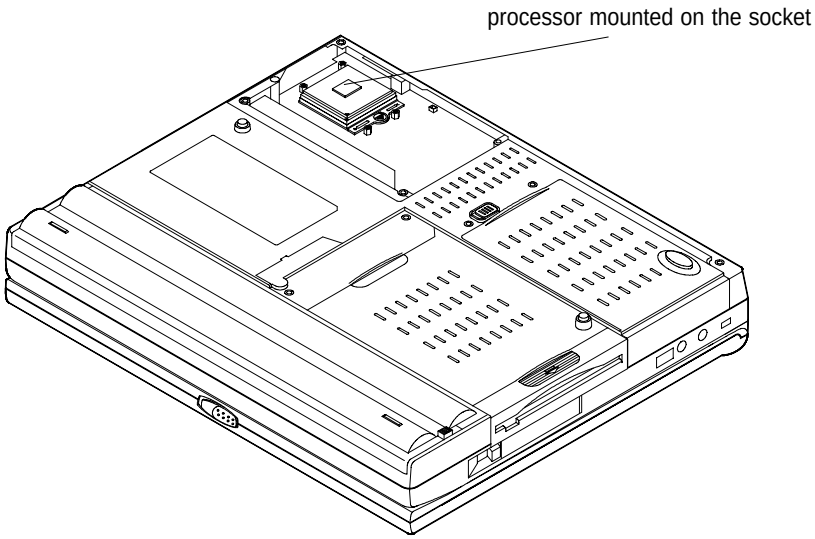
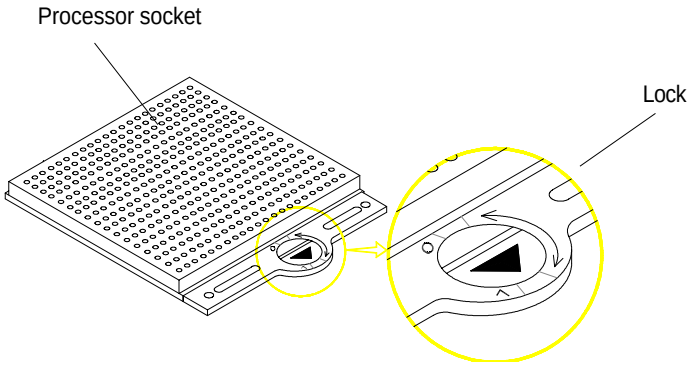


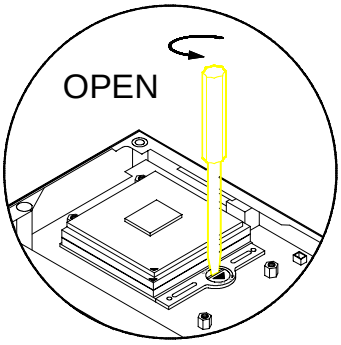
Figure 4-3

B: Remove the processor

The processor is secured on the mainboard with a lock which is easily opened using a small regular screwdriver.
With the heat sink already removed you will need to set the lock to the open position before removing the processor:

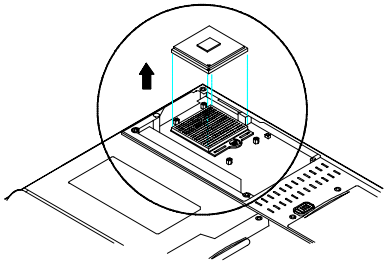






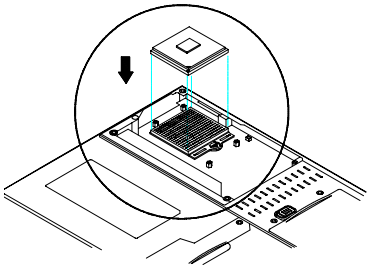
1) Turn the screw on the processor lock to the open position. (O)

2) Lift the processor from the socket.

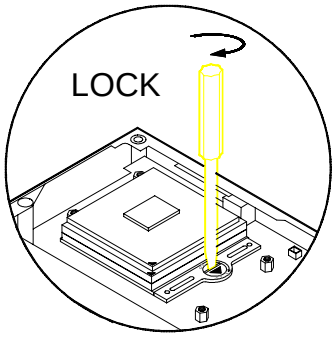


C: Insert a new processor

1) With the processor lock in the open position, align the pins of the processor with the holes in the socket.



2) Press the processor into the socket.

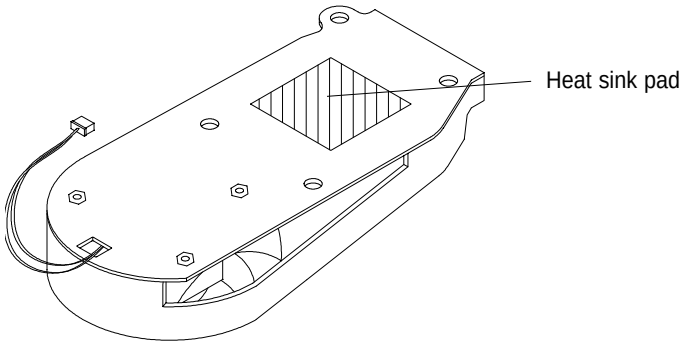


3) Turn the screw to the locked position (L)

D: Reinstall the heat sink

Note: *When reinstalling the heat sink, you will also have to replace the heat sink pad. A heat sink pad can be obtained from your dealer.*

1) Peel off the old heat sink pad and stick on a new one.
2) Insert the heat sink cable in the slot. (page 4-12, Figure 4-3)
3) Align the 4 screw holes on the heat sink with those on the mainboard and screw them in about half way. Once all the screws are in about half way and the heat sink is seated probably tighten the screws.



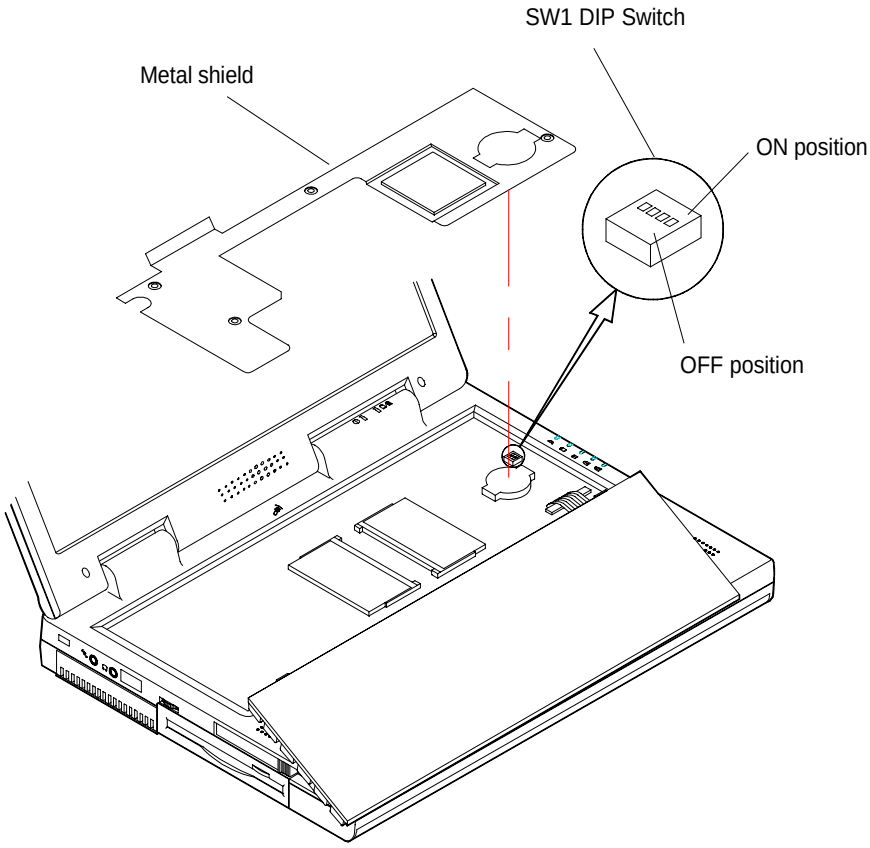
E: Changing the SW1 DIP Switch settings

If you have installed the processor with Intel Speedstep you will have to change the SW1 DIP Switch settings. Follow these steps to get to change the SW DIP Switch setings:

1) Turn off the computer.
2) Press the two keyboard latches to elevate the keyboard from its normal position (refer to page 4-7, Figure 4-1)
3) Carefully lift the keyboard assembly out to expose the mainboard.
4) Remove the metal protective shield (refer to the picture on page 4-17)
5) Locate the SW1 DIP Switch on the right side.
6) Change the settings to the following:

SW1 settings for Intel Speedstep® Processor			
SW1-1	**SW1-2**	**SW1-3**	**SW1-4**
ON	ON	ON	OFF

7) Put the metal shield back into place
8) Put the keyboard back into place.


SW1 DIP Switch
Metal shield
ON position
OFF position

Chapter 5: BIOS Utilities

In this chapter you will learn about the Power On Self Test (POST), power management and how to configure the system parameters using the System Configuration Utility (SCU).

- Power on Self Test (POST)
- System Configuration Utilities
- Features of the SCU
  - . Startup Menu
  - . Memory Menu
  - . Disks Menu
  - . Components Menu
  - . Power Menu
  - . Exit Menu
- Power Management

Power on Self Test (POST)

The system BIOS (Basic Input/Output System) performs a series of tests on the system memory and key computer components every time the computer is powered on. These tests are called the Power On Self Test (POST). Should an error exist, the POST routine may halt execution (depending on the problem). If no error exists, the POST will initialize the BIOS configuration, and boot (start) the operating system.

Post Message: Normal Operation

You will see the following message on the POST Screen if no error exists after the POST is performed

```
SystemSoft MobilePRO BIOS Version 1.01 (2482-00)-(R1.00.pr03)
Copyright 1983-1996 SystemSoft Corp. All Rights Reserved

500 MHz Pentium III with MMX CPU
CPU Microcode Update Rev 002h Complete
L2 Cache: 256K installed
8 MB Video RAM
SystemSoft Plug-n-Play BIOS Ver.1.17.01

Base Memory                 000640 Kb
Extended Memory             121856 Kb
Total Memory                122880 Kb
Shared Memory               008192 Kb

Auto Detecting IDE Devices[Done]

<CTRL-ALT-S> to enter System Configuration Utility

INITIALIZING BOOT CD-ROM
INITIALIZING 2 nd ATAPI — None
```

Note:
*You may press the **Spacebar** key to skip the memory test.*

POST Message: Error Detected

If an error is detected, you will see the following WARNING message on the POST Screen. You may press **F1** key to continue, or press the **Ctrl-Alt-S** keys simultaneously to enter the System Configuration Utility.

```
SystemSoft MobilePRO BIOS Version 1.01 (2482-00)-(R1.00.pr03)
Copyright 1983-1996 SystemSoft Corp. All Rights Reserved

500 MHz Pentium III with MMX CPU
CPU Microcode Update Rev 002h Complete
L2 Cache: 256K installed
8 MB Video RAM
SystemSoft Plug-n-Play BIOS Ver.1.17.01

Base Memory                    000640 Kb
Extended Memory          121856 Kb
Total Memory                   122880 Kb
Shared Memory                  008192 Kb

WARNING – HARD DISK CONTROLLER 1 FAILURE
Auto Detecting IDE Devices[Done]

<CTRL-ALT-S> to enter System Configuration Utility
Press F1 to Continue
```

System Configuration Utility

The System Configuration Utility (SCU) can be used to set your notebook's system parameters. Things like the date and time or power settings are what you set in the SCU.
The settings are stored in a nonvolatile battery-backed CMOS RAM. This means that your settings are saved even when the notebook is turned off.

Information in the System Configuration Utility

Here is a list of the system settings which may be changed within the System Configuration Utility.

This menu bar choice	Allows you to set or change:
Startup	Date and Time, Fast Boot, Boot Device, Display, Enable Battery Low Beep, Enable LCD expand Mode, Enable Power On Beep, Enable PNP OS Support, Display OEM logo, Enable S/PDIF digital output, Boot Password, SCU Password.
Memory	Cache Systems, VGA Shared Memory.
Disks	Diskette Drives, IDE Settings.
Components	COM Ports, LPT Port, PS/2 Mouse Port, Keyboard Numlock, Keyboard Repeat.
Power	Enable Power Saving, Low Power Saving, Medium Power Saving, High Power Saving, Customize, Suspend Controls, Resume Timer, Enable MODEM Ring Resume, Enable Battery Low Suspend, CPU SpeedStep Controls.
Exit	Save and Exit, Exit (No Save), Default Settings, Restore Settings, Version Info.

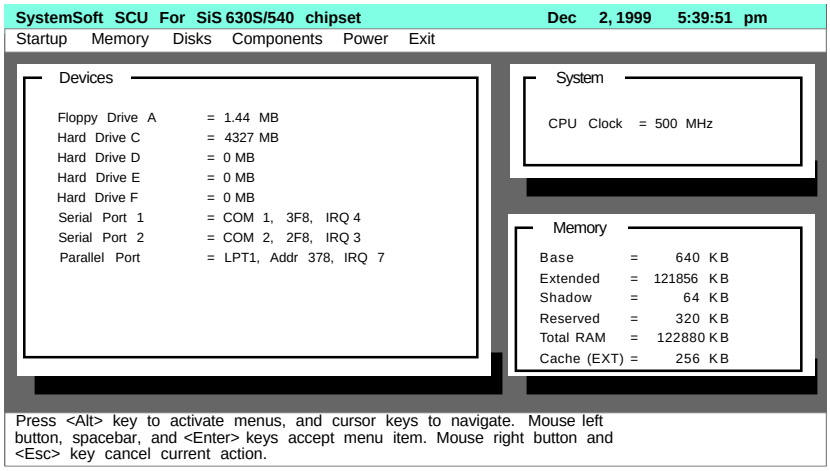
Initiating the System Configuration Utility

The System Configuration Utility (SCU) can be accessed by pressing the Ctrl, Alt, and S keys simultaneously when you turn on your computer and see this message:

<CTRL-ALT-S> to enter System Configuration Utility

This message lasts only a few seconds and if you don't respond in time, the computer will initiate the boot process. If you were unable to enter the SCU you must reboot the system and try again.

Note: *During startup, if your computer has a logo screen or picture appear instead of the POST Screen, wait until a curser appears in the top right corner before hitting <CTRL-ALT-S> to enter the System Configuration Utility*



Working with the Menu Bar

Use these keys to begin working in the SCU.

Keys	Action
Alt	Highlights the menu bar
Left arrow (←) Right arrow (→) Highlighted letters	Selects a menu bar option.
Left mouse button Down arrow (↓) Spacebar Enter	Opens the menu bar option.
Right mouse button Esc	Cancels current action

Working with the Pull-down Menu (Submenu)

Once your desired menu bar item is highlighted, press Enter or the down arrow to see the pull-down menu items. You move about the pull-down menu with these keys:

Keys	Action
Down/Up arrows (↓) (↑) Highlighted letters	Select a pull-down menu item.
Enter	Enable/disable the specified function. A (√) indicates, the function is on.
Esc	Close the pull-down menu and Save the changes.

Some Pull-Down menu options have an arrow to the left of the entry. Choose these options by pressing Enter and another screen will be displayed. Navigate the new screen with the following keys:

Keys	**Action**
Tab	Move from one record to another.
Down/Up arrows (↓)(↑)	Change the value of a field.
Spacebar	Select a field
Enter	Choose <OK> to save any changes. <Cancel> to ignore any changes.
Esc	Quit

Features of the SCU

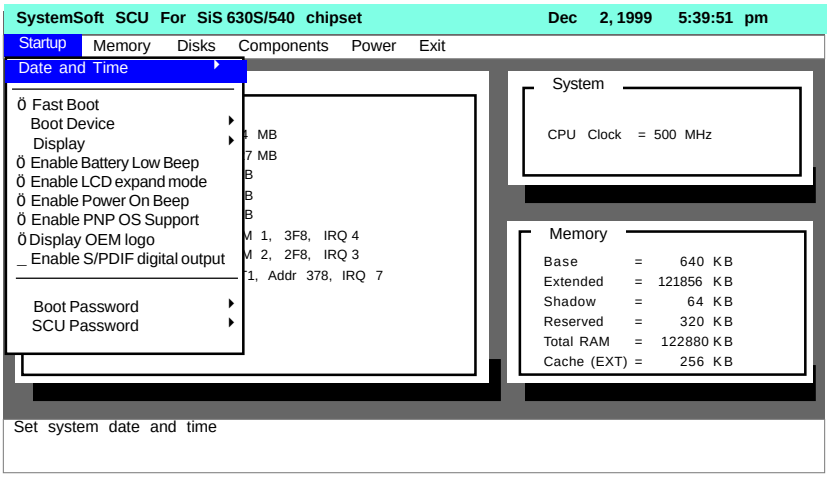
Startup Menu

Item	Setting/Option		Function
Date and Time	Day/Month/Year Hour/Minute/Second		Set the date and time.
Fast Boot	Enable		Initialize and quickly boot the system by skipping certain diagnostic tests.
	Disable		Disable the Fast Boot.
Boot Device	1st Boot Device	Hard Disk C	Specify the system's 1st choice for the boot drive.
		CD-ROM Drive	
		Diskette A	
	2nd Boot Device	Hard Disk C	Specify the system's 2nd choice for the boot drive.
		CD-ROM Drive	
		Diskette A	
	3rd Boot Device	Hard Disk C	Specify the system's 3rd choice for the boot drive.
		CD-ROM Drive	
		Diskette A	
Display	LCD		Activate the system's LCD panel.
	CRT		Activate an external monitor.
	LCD + CRT		Activate both the LCD and the CRT.

Startup Menu (continued)

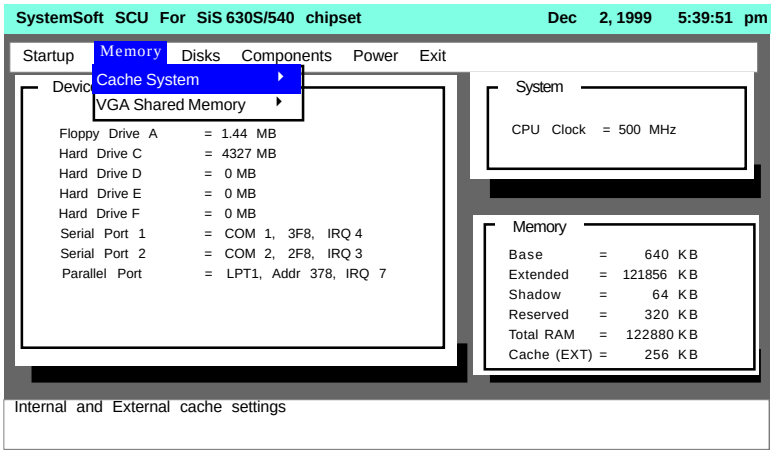
Item	Setting/Option	Function
Enable Battery Low Beep	Enable	A series of warning beeps will sound when the battery power is low.
	Disable	Disable the above.
Enable LCD Expand Mode	Enable	Stretch the display to fill the entire area of the LCD panel.
	Disable	Disable the above.
Enable Power On Beep	Enable	Enable or Disable Power On Beep.
	Disable	
Enable PNP OS Support	Enable	Enable or disable PNP OS Support
	Disable	
Display OEM logo	Enable	During computer startup another picture can be shown in place of the POST Screen (Power on Self Test)
	Disable	
Enable S/PDIF digital output	Enable	Enable or Disable S/PDIF, which is used for digital audio output.
	Disable	
Boot Password	Enter old Power-On Password	Set a password for booting the computer. Only users who enter a correct password can boot the system.
	Enter new Power-On Password	
	Verify new Power-On Password	
	Enable Password to Power-On	
SCU Password	Enter old Setup Password	Set a password for modifying the SCU. Only users who enter the correct password can change the SCU.
	Enter new Setup Password	
	Verify new Setup Password	
	Enable Setup Password	

Startup Menu (continued)



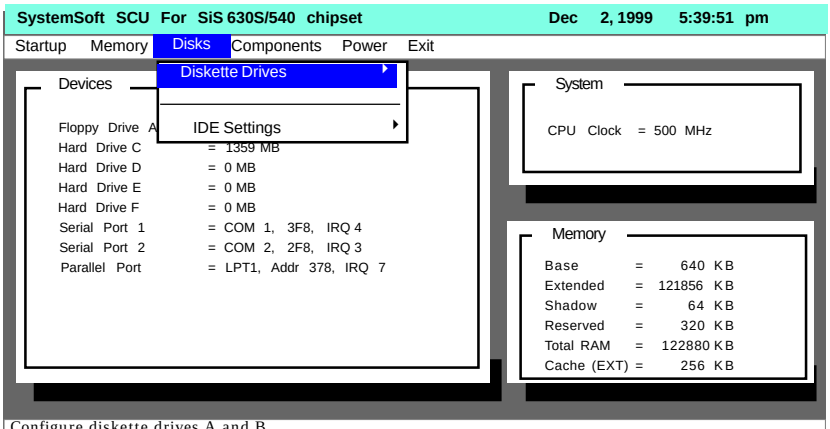
Memory Menu

Item	Setting/Option		Function
Cache Systems	L1 Cache	Disabled	Disable the processor's internal cache.
		Write Back	Enable the Processor's internal write-back cache.
	L2 Cache	Disabled	Disable the L2 cache controller.
		Write Back	Enable the LS write-back cache.
VGA shared memory	8 MB		Select the VGA shared memory size
	16 MB		
	32 MB		



Disks Menu

Item	Setting/Option		Function
Diskette Drives	Drive A	None	Specify the drive types for the diskette drive A.
		1.44 MB	
IDE Settings	Primary HDD	Drive Enabled	Enable enhanced IDE settings.
		PIO Mode	
	CD-ROM / DVD-ROM /	Drive Enabled	
		PIO Mode	
	IDE UDMA-33/66/100 Function	Enable	
		Disable	
	IDE 32 Bit I/O	Enable	
		Disable	

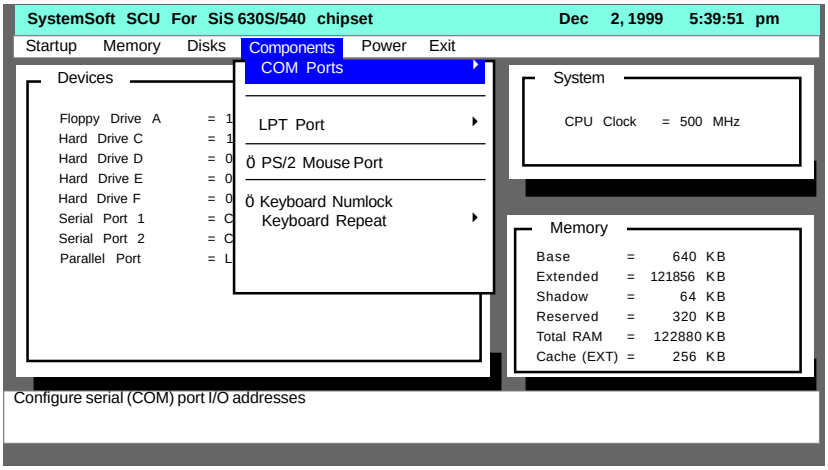


Components Menu

Item	Setting/Option		Function
COM Ports	COM A I/O Settings	None	Specify the COM A configuration. (COM3 & COM4 Only for DOS mode and Non-PnP OS.)
		COM1, 3F8, IRQ4	
		COM2, 2F8, IRQ3	
		COM3, 3E8, IRQ10	
		COM4, 2E8, IRQ11	
	COM B I/O Settings	None	Specify the COM B configuration. (COM3 & COM4 Only for DOS mode and Non-PnP OS.)
		COM1, 3F8, IRQ4	
		COM2, 2F8, IRQ3	
		COM3, 3E8, IRQ10	
		COM4, 2E8, IRQ11	
	Mode Setting for COM B	Normal (16550)	Define the COM B hardware.
		IrDA (HPSIR)	
		ASK IR	
		FAST IR	
	DMA Setting for Fast IR	DMA 0	Specify the Fast IR DMA configuration.
		DMA 1	
		DMA 3	
LPT Port	Port Address	None	Specify the LPT port and IRQ configuration.
		LPT1, Addr 378, IRQ7	
		LPT2, Addr 278, IRQ5	
		LPT3, Addr 3BC, IRQ7	
	Port Definition	Standard AT (Centronics)	
		Bidirectional (PS-2)	
		Enhanced Parallel (EPP)	
		Extended Capabilities (ECP)	
	DMA Setting For ECP Mode	DMA 1	Specify the ECP DMA configuration.
		DMA 3	
	EPP Type	EPP 1.9	Specify the EPP type.

Components Menu (continued)

Item	Setting/Option		Function
PS/2 Mouse Port	Enable		Enable the system's trackpad or an external PS/2 mouse.
	Disable		Disable the trackpad or PS/2 mouse if an external mouse is connected to COM A port.
Keyboard Numlock	Enable		Specify whether Num Lock is on or off at system boot time.
	Disable		
Keyboard Repeat	Key Repeat Rate	2 cps	Define the rate (characters per second) at which the keyboard repeats while a key is depressed.
		6 cps	
		10 cps	
		15 cps	
		20 cps	
		30 cps	
	Key Delay	1/4 sec	Specify the amount of time (second) that will pass after a key is depressed before the key starts to repeat.
		1/2 sec	
		3/4 sec	
		1 sec	



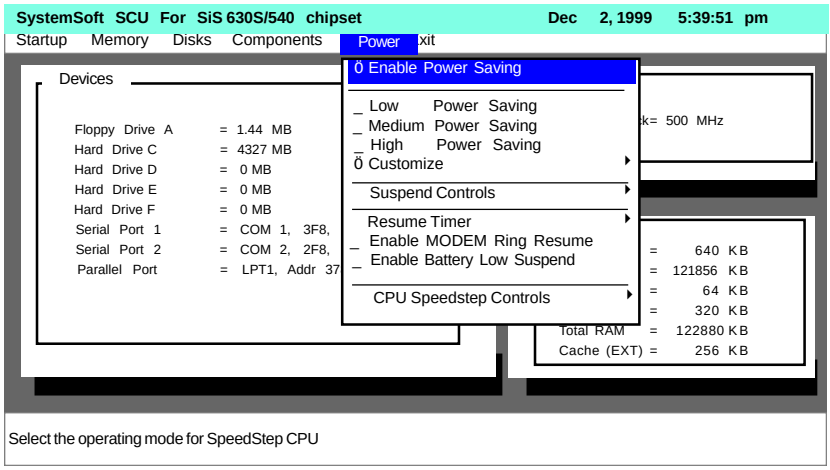
Power Menu

Item	Setting/Option		Function
Enable Power Saving	Enable		Enable/Disable all power saving features.
	Disable		
Low Power Saving	Enable		Enable/Disable the power saving to its lowest which results in max. performance but shortest battery life.
	Disable		
Medium Power Saving	Enable		Enable/Disable the power saving to its medium which results in both moderate performance and battery life.
	Disable		
High Power Saving	Enable		Enable/Disable the power saving to its highest which results in min. performance but longest battery life.
	Disable		
Customize	Disk Standby	5 sec	The hard disk will be put on standby if it is not accessed within the specified period. Hard disk power will be restored when the disk drive is accessed again.
		10 sec	
		20 sec	
		30 sec	
		1 min	
		5 min	
		10 min	
		Always on	

Power Menu (continued)

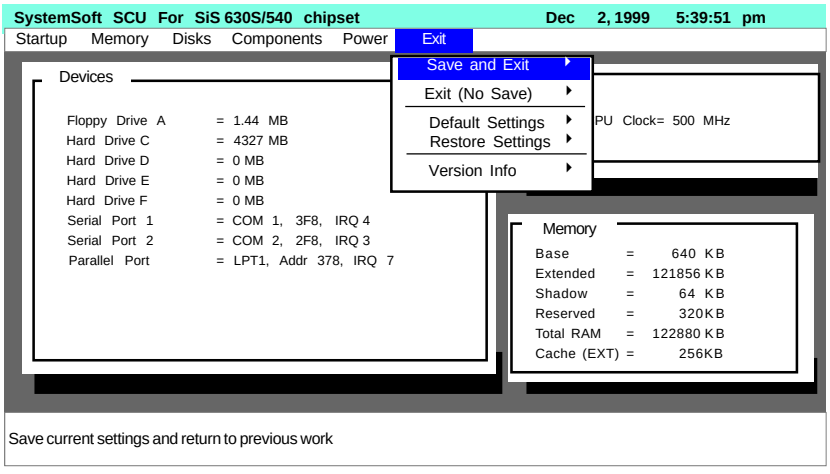
Item	Setting/Option		Function
Suspend Controls	Power Button Function	Power On/Off	The power button is switched to turn the system on or off.
	Suspend Type	Suspend to Disk	Specify the suspend mode for power management.
		Powered on Suspend	
Resume Timer	Alarm Resume	Enable	Resume the system from the configured suspend mode when resume alarm timer expires.
		Disable	
	Resume Month/Day/Hour/Minute		The system will resume at the specified time (month, day, hour and minute).
Enable MODEM Ring Resume	Enable		Resume the system from STR or POS mode when a modem ring is detected (which modem should be connected to the serial port).
	Disable		Disable the above.
Enable Battery Low Suspend	Enable		Automatically suspend the system to disk upon a low battery condition.
	Disable		Disable the above.
CPU Speedstep Controls	Maximum performance mode always		
	Battery optimized mode always		
	Automatically switch between Maximum performance and Battery optimized.		

Power Menu (continued)



Exit Menu

Item	Function
Save and Exit	Exits the utility and saves all changes to CMOS ;then reboot the system.
Exit (No Save)	Exit without saving any current changes.
Default Settings	Loads the default (factory) settings for all items.
Restore Settings	Restore the current setup settings to the original custom ones.
Version Info	Show current BIOS version information.



Power Management

You can manage power consumption while maintaining system performance by setting your computer to one of the available power management modes. Information on the various types of power management are listed below. If you want information on how to set the power management options please refer to the Power Menu in this chapter.

Advanced Power Management (APM 1.2)

To reduce power consumption, the system provides built-in Advanced Power Management (APM 1.2). The APM function varies depending on your operating system (OS). Some operating systems, such as Windows NT do not support APM.

Advanced Configuration and Power Interface (ACPI)

ACPI enables a computer to turn its peripherals on and off for improved power management. It also allows the PC to be turned on and off by external devices, so that the pressing a trackpad button or the keyboard will "wake up" the machine.

Disk Standby

The computer's hard disk drive motor will be turned off if the hard drive has not been accessed for a specified period of time. If the system reads or writes data the hard disk motor will be turned back on.

Suspend and Resume

With this function you can stop an operation and restart where you left off. The hard disk is turned off, and the CPU is made to idle at its slowest speed and all open applications are retained in memory. This system features two suspend mode levels:

Powered On Suspend (POS) and Suspend to Disk (SD).

Caution: Do not enter suspend mode when you are:

1: Accessing any of the disk drives, such as the HDD, FDD or DVD-ROM drive.
2: Using any audio or video applications.
3: Playing a DOS game.

Powered On Suspend (POS)

Powered On Suspend saves the least amount of power, but takes the shortest time to return to full operation. When you are not using your computer for a certain length of time, which you specify in the SCU Power Menu, it will enter POS mode to save power.

Resume from POS Mode

The system can resume from POS mode by:

- Pressing any keyboard key.
- Pressing the power button (if configured as a Suspend/ Resume function under SCU)
- An incoming call to your modem.
- Alarm resume is enabled and expires.

Suspend to Disk

Suspend to Disk uses no power and saves all of your information on a part of the HDD. It saves the maximum power but takes the longest time to return to full operation. You can set your notebook to automatically enter Suspend to Disk mode when the battery power is almost depleted. This prevents losing any data due to loss of power. To set this feature, go to the SCU Power Menu and choose Enable Battery Low Suspend.

In order to use Suspend to Disk, you must partition your Hard Disk Drive, the instructions are as follows:

1: Use your operating system's FDISK program to delete all hard disk partitions if any already exist on the target drive.

2: Boot the system and run the 0VMAKFIL.EXE Utility to create the Suspend to Disk partition on the hard disk. The size of the Suspend to Disk partition will be the installed DRAM (n) plus 8 MB integrated video RAM.

:\>**0VMAKFIL** -Pn

For example, if the system DRAM is 32 MB, 0VMAKFIL will create a partition size of approximately 40 MB.

:\>**0VMAKFIL** -P32

Resume from Suspend to Disk Mode

The system will resume from Suspend-to-Disk mode by:

- Pressing the power button.
- Alarm resume (month/day/hour/minute)

Chapter 6: Installing Drivers

This chapter provides step-by-step instructions for installing device drivers and utilities, for more detailed information please refer to your operating system's manual or the product manual supplied with the device you wish to install. The information here has been designed for users with basic computer knowledge though inexperienced users may also find this section helpful. (In this chapter, we assume the DVD-ROM drive as drive E.)

The chapter includes:

- Preparation for a New Notebook
- Installing Windows 98 SE (For reference only)
- PC Card Problem in Windows 98
- Installing Windows 2000 (For reference only)
- Installing Drivers in Windows 98 SE
- Installing Drivers in Windows 2000
- Installing Drivers in Windows NT4.0

Preparation for a New Notebook

1) Use a bootable floppy disk to start the system.
2) Run the FDISK utility from DOS to create a bootable partition. (See DOS manual for the operation details.)
3) Format the hard disk.
   Follow the command "**Format C: /S**"
   to create a bootable hard disk and make the boot system files.
   (C:/S copies system files to the formatted disk)
4) Copy the file "MSCDEX.exe" from the floppy disk to drive C.
5) Insert the CD-ROM/DVD-ROM driver disk.
   Type "**A: Install**".
6) Restart the system.

***Note 1**: Using another computer you can copy the CD-ROM/DVD-ROM driver from the CD-ROM disk on to a floppy disk.*

***Note 2**: If the supplied CD-ROM/DVD-ROM driver does not offer an install program, you can copy the driver to drive C, and then configure the Config.sys and Autoexec.bat files.*

Installing Windows 98 SE (For Reference Only)

1) Start DOS.
2) Insert the Windows 98 CD-ROM.
3) Type “setup”, then press **Enter**.
4) When the “Windows 98 Setup” program initializes, click **Continue**.
5) When the “License Agreement” dialog box appears. Select “I accept the Agreement” and click **Next**.
6) At the “Windows Product key” prompt, enter the product's ID number and press **Next**.
7) When the “Select Directory” dialog box appears. Select the path “C:\Windows”, or type another path if you prefer. Then click **Next**.
8) When you see “Setup Options”, select “Portable” and click **Next**.
9) Follow the on-screen instructions and choose the recommended options.
10) Restart your computer.

PC Card Problem in Windows 98

After installation of Windows 98 or Windows 98 Second Edition, you may find that the PC cards arenot working normally and you may noticed one or more of the following:

- An exclamation mark appears in the PC card driver in **Device Manager**
- PC cards don't work at all
- PC card controllers are not enumerated
- PC card controllers are disabled on power-up
- PC card controllers are disabled when you resume the computer from Suspend mode

This is a problem caused by Microsoft Windows 98 (Second Edition). To resolve the problem, immediately after installing Windows 98SE install the program file **PCI.vxd** to update your system driver. The PCI.vxd driver is supplied by your computer dealer**.**
For more information on this, refer to the Microsoft article "CardBus Device Not Enumerated with TI 14xx or 44xx CardBus Controllers" (Article ID: Q233017) which can be found on Microsoft's web site.

Installing Windows 2000 (For Reference Only)

***Note**: The installation steps could be a bit different depending on your system's status. For details, refer to your Windows 2000 manual.*

1) Start DOS.
2) Insert the Windows 2000 Installation CD-ROM disk.
3) Change the directory to I386 or wherever the file "WINNT.exe" is located.
4) Type "WINNT", and press **Enter**.
5) "Windows 2000 Setup" appears, press **Enter** to continue.
6) "Windows 2000 Professional Setup" starts copying files to your HDD.
7) After copying, press **Enter** to restart your computer.
8) After entering "Windows 2000 Professional Setup", press **Enter** to "set up Windows 2000 now".
9) Press **F8** for "Windows 2000 Licensing Agreement".
10) Select the drive (partition) where you want to install Windows 2000, and press **Enter**.
11) Choose the file system you want and press **Enter**. (The "FAT" file system is recommended.)
12) To format the drive (partition), press **F**. (Please note all data on the formatted drive will be lost.)
13) Setup will proceed with formatting, file-copying, and then reboot the system.
14) When the system enters Windows 2000, follow the on-screen instructions and press **Next**.
15) When Windows asks for Your Product Key, type the product's ID number and then press **Next**.
16) Continue to press **Next** until Setup starts to install

various components, and performs its final tasks.

17) Click **Finish** to complete Windows 2000 Setup Wizard.
18) The computer will restart Windows 2000 automatically.

Installing Drivers in Windows 98 SE

Step 1: Installing the LAN driver

1) Click **Start**.
2) Select **Run**.
3) Choose the path E:\LAN\WIN98\Setup.exe
4) Run Setup.exe.
5) Follow the on-screen instructions, and continue to press **Next**.
6) Click **Finish** to restart your computer.

Step 2: Installing the VGA driver

1) Click **Start**.
2) Select **Run**.
3) Choose the path E:\video\Win9X\Setup.exe
4) Run Setup.exe.
5) Follow the on-screen instructions, and continue to press **Next**.
6) Click **Finish** to restart your computer.

Step 3: Installing the Audio Driver

If you intend to use your computer with the DVD and external speakers, you can have a better sound quality if you use S/PIF. This simply requires installing a different audio driver and making a change in the SCU.

(Without S/PDIF)

1) Click **Start**.
2) Select **Run**.
3) Specify the path to E:\Audio\Win98\Setup.exe
4) Run Setup.exe.
5) Follow the on-screen instructions, and continue to press **Next**.
6) Click **Finish** to restart your computer.

(With S/PDIF)

1) Remove the previous audio driver if already installed.
2) Reboot the computer and go to the SCU by pressing **Ctrl**+**Alt**+**S**.
3) Enable S/PDIF under the Startup menu
4) Click **Start** and select **Run**.
5) Type **E:\Audio\Win98\Setup.exe -vxd** and press **OK** to install the audio driver.
6) Click **Finish** to restart your computer.

For more information on the driver, refer to the Readme file under the directory.

Step 4: Installing the Modem Driver (Optional)

1) Click **Start**.
2) Select **Settings** and **Control Panel**.
3) Double click the **System** icon.
4) Click the **Device Manager** tab.
5) Locate the “PCI Communication Device” under “Other devices”.

6) Double click "PCI Communication Device"
7) Click the **Driver** tab and choose **Update Driver**.
8) Press **Next**.
9) Select "Search for a better driver than the one your device is using now" and press **Next**.
   Select "Specify a location" and choose **Browse** to specify the location to E:\MDC\Win98
10) Press **OK**.
11) Follow the on-screen instructions and press **Next**.
12) Click **Finish** to complete the setup.
13) Restart your computer.

Step 5: Installing the PCMCIA Driver (Optional)

1) Click **Start**.
2) Select **Settings** and **Control Panel**.
3) Double click the **System** icon.
4) Click the **Device Manager** tab.
5) Click on "PCMCIA socket"
6) Select "Generic Card Bus Controller"
7) Choose **Remove**.
8) Press Refresh
9) In the "Add New Hardware Wizard" window, press **Next**.
10) Select "Search for the better driver for your device" and press **Next**.
11) Select "Specify a location" and choose **Browse** to specify the location to E:\Pcmcia\Win98
12) Press **OK**. *You should now see the driver EnE Tech CB1410 Card Bus Controller being loaded.*
13) Follow the on-screen instructions and press **Next**.

14) Click **Finish** to complete the setup.
15) Restart your computer.

Step 6: Installing the DVD driver.

Note: *If you intend to connect you notebook computer with external speakers when using the DVD you will need to first install the audio driver capable of handling S/PDIF. Please refer to* ***Step 3: Installing the Audio Driver*** *(with S/PDIF) for more information.*

1) Insert the Win DVD CD-ROM into your drive, The installation program automatically runs when you insert the DVD disk into the DVD-ROM drive.
2) After the DVD driver is installed, click **Start** and select **Settings** and **Control Panel**.
3) Double click the **System** icon.
4) Click the **Device Manager** tab.
5) Select the DVD-ROM type device located under "CDROM.".
6) Click the **Properties** button.
7) Click the **Settings** tab, and enable DMA mode..
8) Restart the computer.
9) Start the DVD player and go to Propreties (The third icon from the right).
10) Select Audio
11) Select Enable S/PDIF

Installing Drivers in Windows 2000

Step 1: Installing the LAN Driver

1) Click **Start**.
2) Select **Run**.
3) Open the path to E:\LAN\WIN2000\SETUP.EXE.
4) Run SETUP.EXE.
5) Follow the on-screen instructions, and press **Next**.
6) Choose "No, I will restart my computer later" and click **Finish.**

Step 2: Installing the VGA Driver

1) Click **Start**.
2) Select **Run**.
3) Open the path to E:\VGA\WIN2000\SETUP.EXE.
4) Run SETUP.EXE.
5) Follow the on-screen instructions, and press **Next**.
6) Choose "No, I will restart my computer later" and click **Finish.**

Step 3: Installing the AGP Driver

1) Click **Start**.
2) Select **Run**.
3) Open the path to E:\WIN2000\AGP\SETUP.EXE.
4) Run SETUP.EXE.
5) Follow the on-screen instructions, and press **Next**.
6) Choose "No, I will restart my computer later" and click **Finish.**

Step 4: Installing the Audio Driver

1) Click **Start**.
2) Select **Run**.
3) Open the path to E:\Audio\SETUP.EXE.
4) Run SETUP.EXE.
5) Follow the on-screen instructions, and press **Next**.
6) When the "Digital Signature Not Found" dialog box appears, choose **Yes** to continue the installation.
7) Click **Finish** to restart your computer now.

For more information, please refer to the Readme file under the directory.

Step 5: Installing the Modem Driver (Optional)

1) Click **Start**.
2) Select **Settings** and **Control Panel**.
3) Double click the **System** icon.
4) Click the **Hardware** tab and choose **Device Manager**.
5) Locate "PCI Simple Communicatons Controller" under "Other devices".
6) Double Click "PCI Simple Communicatons Controller" to go to the PCI Device Properties window.
7) Select Driver tab
8) Select "Update Driver"
9) Select Next
10) Select "Search for a suitable driver for my device" and press **Next**.
11) Select "Specify a location" and press **Next**.
12) Choose **Browse** to specify the path to either

E:\modem\Win2000

13) Click **Next** to install the driver.
14) If the "Digital Signature Not Found" dialog box appears, press **Yes** to continue.
15) Click **Finish** to complete the setup.
16) Close the Modem Properties window.
17) Restart your computer.

Step6: Installing the PCMCIA Driver (Optional)

1) Click **Start**.
2) Select **Settings** and **Control Panel**.
3) Double click the **System** icon.
4) Click the **Hardware** tab and choose **Device Manager**.
5) Click on "PCMCIA adapters"
6) Double click on "Generic Card Bus Controller"
7) Select Driver tab
8) Select "Update Driver"
9) Select Next
10) Select "Search for a suitable driver for my device" and press **Next**.
11) Select "Specify a location" and press **Next**.
12) Choose **Browse** to specify the path to either E:\Pcmcia\Win2000
13) Click **Next** to install the driver. *You should now see the driver EnE Tech CB1410 Card Bus Controller being loaded.*
14) Click **Finish** to complete the setup.
15) Close the PCMCIA Properties window.
16) Restart your computer.

Step 7: Installing the DVD driver (optional).

Insert the Win DVD CD-ROM into your drive and follow the instructions.

Step 8: Installing the SiSIDE Driver

1) Click **Start**.
2) Select **Run**.
3) Open the path to E:\Utility\Setup.exe
4) Run Setup.exe\
5) Follow the on-screen instructions.

Note: *The computer will not restart automatically once the setup process completes, you will need to restart your computer for the changes to take effect.*

Installing Drivers in Windows NT4.0

Note 1: *After installing Windows NT4.0, please install the latest Service Pack to enhance the function. Download the latest Service Pack version from the Microsoft web site.*

Note 2: *Before installing the following drivers, press "Ctrl+Alt+S" to enter the SCU when the computer boots. In the Startup Menu, deselect "Enable PNP OS Support" and choose "Save and Exit" in the Exit Menu*

Step 1: Installing the VGA Driver

1) Click **Start**.
2) Select **Control Panel**.
3) Double Click on Display
4) Select the Settings Tab
5) Choose Display Type
6) Choose Change
7) Select Have Disk
8) Open the path to E:\WINNT40
9) Click OK
10) Click OK
11) Select YES when you see "You are about to install a third-party driver"
12) Click OK
13) Close the Display Properties Window
14) Select Yes to restart you computer

Step 2: Installing the Audio Driver

1) Click **Start**.
2) Select **Run**.
3) Open the path to E:\Audio\Setup.exe.
4) Run Setup.exe.
5) Follow the on-screen instructions, and press **Next**.
6) Click **Finish** to restart your computer now.

For more information, please refer to the Readme file under the directory.

Step 3: Installing the LAN Driver (Optional)

1) Click **Start**.
2) Select **Control Panel**.
3) Double Click on Network
4) Select the Adapters Tab
5) Choose Remove to remove the current driver, if there is no current driver go to the next step.
6) Choose Add to add the new driver.
7) Choose Have Disk
8) Enter E:\WinNT and select OK
9) Select OK to choose the supported software
10) Select OK for fast Ethernet dapter Setup
11) Select Close
12) Enter the TCP/IP properties and select OK. If you don't know this information select cancel and contact you Network administrator.
13) Click yes to restart the computer

Step 4: Installing the Modem Driver (Optional)

1) Restart your computer and go to the SCU (System Configuration Utility)
2) Select Startup from the menu list
3) Go down to "Enbale PNP OS Support"
4) Disbale PNP OS Support by highlighting "Enable PNP OS Support" and hitting Enter.
5) Go the the Components Menu
6) Sekect COM Ports
7) Change the COM B I/O Settings to None
8) Save and exit

In Windows NT

9) Click **Start**.
10) Select **Run**.
11) Open the path to E:\Audio\Setup.exe.
12) Run Setup.exe.
13) Follow the on-screen instructions, and press **Next**.
14) Click **Finish** to restart your computer now.

Step 5: Installing the DVD driver.

1) Insert the Win DVD CD-ROM into your drive and follow the instructions.

Chapter 7: Troubleshooting

Should you have any problems with your computer, before consulting the computer vendor, you may want to attempt to solve the problem yourself. This chapter lists some common problems and their possible solutions.

- Audio
- Battery
- Boot Password
- CD-ROM/DVD-ROM
- Floppy Disk Drive
- Hard Disk Drive
- Hardware Installation
- LCD Panel
- Memory Module
- PC Card
- Power
- Printer

Audio

Problem: The speaker cannot be heard.
Solution: The volume might be set too low, please check the volume control.

Problem: The volume is too high (or too low).
Solution: The volume is not correctly set, please check the volume control.

Problem: The headphone doesn't work.
Solution 1: The volume level is not correctly set, please check the volume control.
Solution 2: The headphone is plugged into the wrong jack.
Solution 3: There is no audio source

Battery

Problem: The battery pack will not charge.
Solution 1: The battery pack is exposed to an excessively hot or cold environment. Place the battery in a suitable environment and after it returns to normal temperature try again.
Solution 2: The battery may be bad and may need to be replaced, call your vendor for more details.

Problem: The battery pack will not charge and the charge indicator light is off.
Solution 1: The battery is already fully charged and the indicator light is broken.
Solution 2: The battery pack is exposed to an excessively hot or cold environment. Place the battery in a suitable environment

and after it returns to normal temperature try again.
Solution 3: The battery may be bad and may need to be replaced, call your vendor for more details.
Problem: A beeping sound is heard and the low-battery indicator is on.
Solution: The battery power is nearly used up. Connect the AC adapter to your computer or press the **Fn + Esc** key combination to enter suspend mode.

Problem: A beep isn't heard when the low-battery indicator turns on, or the gauge indicates power is less than 10%.
Solution: The battery power is nearly used up and the volume control may be turned down. Please adjust the volume control and connect the computer with the AC adapter.

Problem: Actual battery operating time is shorter than expected.
Solution 1: The battery is exposed to excessively high or low temperatures. Suitable operating conditions are between 32°F and 113°F (0°C and 45°C) while the ideal temperature for battery operation is between 50°F and 95°F (10°C and 35°C).
Solution 2: Make sure the battery is fully discharged and re-charge it completely before reusing.
Solution 3: Power management has been turned off, turn the power management back on.
Solution 4: A peripheral device or PC card is consuming a lot of power. Turn off the unused device to save power.
Solution 5: Previously the battery was given only a partial charge. Always fully charge the battery after it has been totally

used up.

Note: *Make sure the battery is totally used up before recharging and make sure you recharge the battery to full capacity each time you recharge it.*

Boot Password

Problem: You forget the boot password.
Solution: If you forget the password, you may have to delete the memory and you could lose all of the data on your computer. Call your vendor for help.

CD-ROM/DVD-ROM

Problem: The compact disk tray will not open when there is a disk in the tray.
Solution: The compact disk is not correctly placed in the tray, gently try to remove the disk using the eject hole.

Problem: The compact disk cannot be read.
Solution 1: The compact disk is not correctly placed in the tray.
Solution 2: The compact disk is dirty. Please clean it with a CD-ROM cleaner kit.
Problem: A music compact disk can be read while a data disk can not.
Solution: There may be a problem with the disk hardware or software. Refer to your operating system manual for more information on the software and make sure you have the correct software installed for running video compact disks. If the proper

software is properly installed and a problem still exists, contact your vendor about a possible hardware problem.

Problem: All compact disks cannot be read.

Solution 1: The Windows system does not recognize the DVD-ROM drive or the DVD-ROM drive is not compatible with other devices. Make sure you have the DVD-ROM drive properly installed and configured.

Solution 2: The DVD-ROM drive is dirty, please clean it with a DVD/CD-ROM cleaner kit.

Solution 3: There may be a problem with the disk hardware or software. Refer to your operating system manual for more information on the software and make sure you have the proper software installed for using compact disks. If the correct software is properly installed, contact your vendor about a possible hardware problem.

Floppy Disk Drive (FDD)

Problem: The floppy disk drive will not write data to disk.

Solution 1: The floppy disk is not formatted.

Solution 2: The floppy disk is write-protected. Undo the protection.

Solution 3: You specified an incorrect disk drive.

Solution 4: There is not enough unused space available on the disk. Please use a new disk or delete any unneeded data.

Problem: ***The disk drive will not read the disk.***

Solution 1: The disk is not formatted.

Solution 2: The disk is damaged.

Solution 3: An incorrect disk type is used.

Hard Disk Drive (HDD)

Problem*: *The message "Non-system disk" appears.
***Solution*:** The computer is trying to boot from an incorrect floppy disk. Please remove the floppy and insert a correct one before restarting the computer.

***Problem:* The computer takes longer during START UP.**
Solution 1: Data saved on the hard disk drive may be lost or damaged. Please operate the disk scan or disk defragmenter to check for any lost or damaged data.
Solution 2: As in low battery status, the computer is waking up from the suspend mode.

Hardware Installation

Problem: The computer will not recognize a peripheral device as part of the system.
Solution 1: The new device is not powered on, please power on the device, then restart the computer.
Solution 2: You did not properly configure the system for the new device or install the device. Try reconfiguring the device or reinstalling the device using the device manual and drivers.
Solution 3: The computer is not properly connected to the device. Please make sure the device is properly connected with the computer.
Solution 4: You did not properly configure the system for the new device. Please reconfigure the system according to the instructions which came with the new device.

LCD Panel

Problem: The screen is blank.

Solution 1: The panel may be set for an external monitor, please reset to normal display using the hot keys.

Solution 2: The screen saver is activated, please press any key or touch the trackpad to return to your display.

Solution 3: The brightness or contrast needs to be adjusted.

Solution 4: The system is in suspend mode. Please press any key to wake up the computer.

Problem: The LCD panel displays incorrect fonts or blinks when the computer is connected with an external monitor.

Solution: The external monitor resolution exceeds what the LCD panel can support. Please disconnect the external monitor and restart the computer.

Memory Module

Problem: The computer will not boot.

Solution: An incorrect type of memory module is installed. Make sure a correct module is installed.

Problem: The memory capacity is insufficient.

Solution: The memory is not correctly configured for the application. Make sure the memory is correctly configured for the application.

Problem: The detected memory capacity is not correct.

Solution: A memory module is not correctly installed or not compatible with your computer.

Problem: The message "out of memory" is displayed.
Solution: The memory configuration is not correctly set or the memory is not enough to run the application.

Problem: The message "insufficient memory" is displayed.
Solution: The application cannot be operated since all the memory is used up.

PC Card

Problem: The PC card cannot be configured.
Solution: The PC card is not supported.

Problem: The system cannot recognize the PC card.
Solution 1: The PC card is not inserted into the socket or inserted incorrectly.
Solution 2: The PC card driver is not installed.
Solution 3: The PC card or card driver is not compatible with the computer.

Problem: A beep sound is not heard while the PC card is inserted.
Solution: The beep sound control is closed.

Power

Problem: ***The computer will not boot when the battery pack is not inserted.***
Solution 1: The power cord is not correctly connected with the AC adapter. Make sure the power cord is firmly plugged into a

grounded outlet and the computer.
Solution 2: The outlet does not work, use another outlet.

Problem: ***The system has automatically entered suspend mode***.
Solution 1: The system's temperature is too high, let it cool before using.
Solution 2: The system has entered suspend mode after a specified period of time. Press any key to wake up the computer.

Printer

Problem: The printer cannot be added to the system.
Solution: The printer power is off or the printer is not correctly connected to the computer.

Problem: The printer will not work.
Solution 1: The printer is not turned on, please turn on the printer.
Solution 2: The printer is not properly connected. Please make sure the printer is properly connected.
Solution 3: There is no paper in the printer. Please put more paper in the printer.
Solution 4: The printer driver is not installed or is configured incorrectly. Please check to see that the printer is properly installed and configured.
Solution 5: The printer is a network printer and it is not properly connected to the network.

Problem: The printer prints incorrect data.

Solution 1: The printer driver is not installed or configured correctly.

Solution 2: The printer connector is not correctly connected.

Appendix

A. Specifications

Processors

- Intel® Mobile Pentium III® processors 450/500, 600/650/700/750/800/850/900/950/1GMHz with Speedstep, 256KB integrated full speed L2 cache, Packaged in µPGA2
- Intel Mobile Celeron processors 450/500/550/600/650/700/750 MHz, 28KB integrated full speed L2 cache; Packaged in µPGA2

Memory

- Two 144pin SODIMM sockets support Sync DRAM SODIMM (3.3V)
- PC-100/133MHz, main memory up to 512 MB, depending on 32/64/128/256 MB SODIMM Module

System BIOS

- 256KB Flash PROM
- Insyde BIOS
- Plug and Play
- ACPI (v1.0b)

Display

- 12.1" LCD TFT (LVDS), SVGA/XGA

Storage

- 3.5" 1.44MB Floppy Drive (easy to change)
- One 12.7mm high bay for removable DVD-ROM(8X) / CD-ROM (24X)
- Removable 2.5" 12.7(h) OR 9.5 mm(h) HDD
- Supports IDE HDD Ultra DMA33/66/100

Audio

- 3D stereo sound support
- AC'97 Audio
- 2 built-in stereo speakers
- Built-in microphone.
- Volume control dial

Keyboard

- Winkey keyboard, multi-langauge available

PC Card Sockets

- One type II slot, supports 32-bit PC Card Bus architecture, PCMCIA 2.1 Compliant

Input / Output

- Built- in 2 Button Track pad (PS/2)
- One USB port
- One Serial Port

- One Parallel port
- One Infrared port, IrDA 1.1 Compliant, FIR/SIR/ASKIR
- External CRT monitor
- One External keyboard / Mouse (PS/2) Port
- One headphone jack
- One microphone jack
- One RJ-11 Modem jack
- One RJ-45 LAN jack
- DC-in jack

Communication

- MDC Detach internal 56k V.90 Data/Fax Modem On Board
- 10/100 Mps Ethernet

Power

- AC adaptor AC in 100~240V, 47~63Hz.
- Battery: Removable Li-Ion
- Supports ACPI v1.0b
- Supports APM v1.2

OS Support

- Windows 95/98, Windows NT 4.0, Windows 2000 and Linux

B: Battery Information

Please follow these simple guidelines to get the best use out of your battery.

New battery

Always use a new battery before recharging it.

Battery life

Battery life may be shortened through improper maintenance. To optimize the life and improve the performance of your battery, fully discharge and recharge the battery at least once every 30 days.

Battery gauge

The battery has an internal gauge which measures the battery life. The gauge relies on a battery's "memory" to determine the level it must stop charging or discharging the battery. This "memory" will become distorted if you partially charge or partially discharge the battery too often.

To increase the accuracy of the gauge, you must fully discharge and then fully recharge the battery at least once every 30 days or after about 20 partial discharges.

Conserving battery power

A. Advanced Power Management

Your notebook computer has Advanced Power Management (APM) features which slow down the speed of the processor and components. Using these features will help conserve battery power.

B. Display brightness

The LCD display consumes a lot of power, so setting the brightness level to low will save power.

C. Applications and external devices:

Different applications and external devices consume battery power even when they are not being used. To conserve battery power we recommend:

- Closing modem or communication applications when they are not being used.
- Removing any unused PC Cards from the computer.
- PC Cards quickly use up battery power even if the system enters Suspend mode.
- Removing any unnecessary external devices from the computer.

Q & A

How do I completely discharge the battery ?

Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer by yourself even when you see a message or hear beeps that indicate the battery is critically low, just let the computer use up all of the battery power and shut down on its own.

How do I fully charge the battery ?

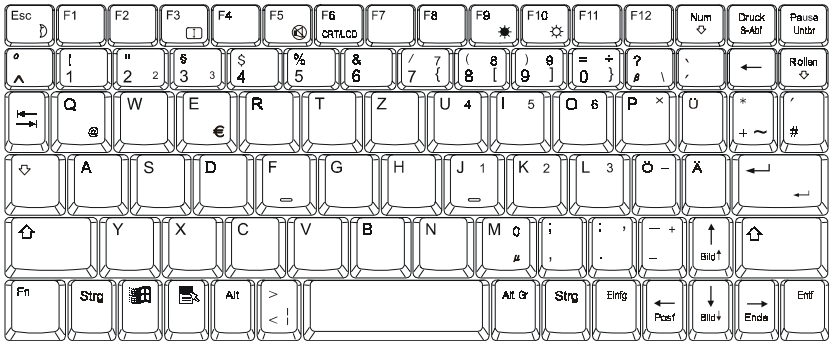
When charging the battery, don't stop until the battery LED indicator light is green.

How do I maintain the battery ?

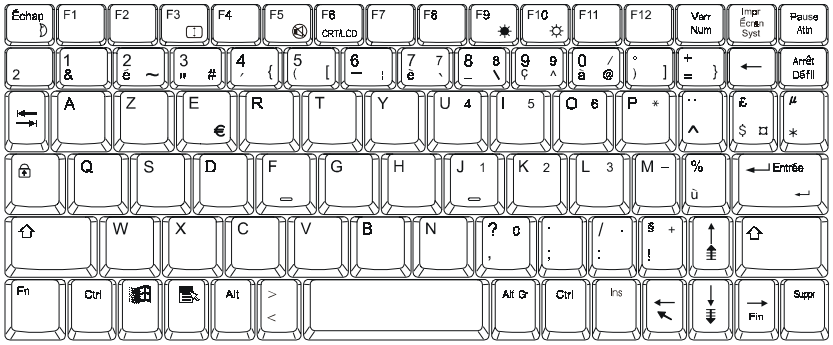
Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

C: Different Keyboards

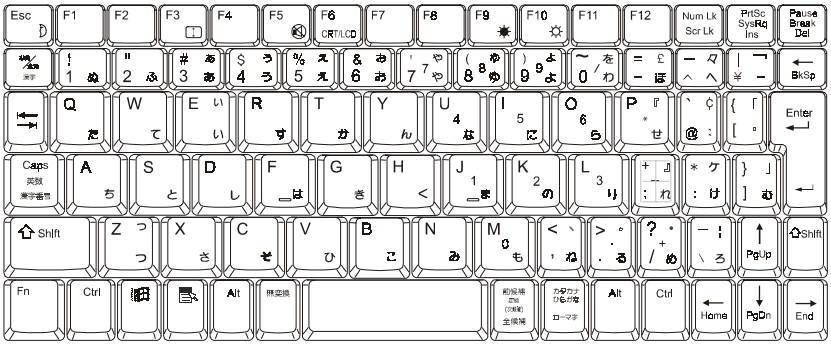
Below are different versions of keyboards for your reference:



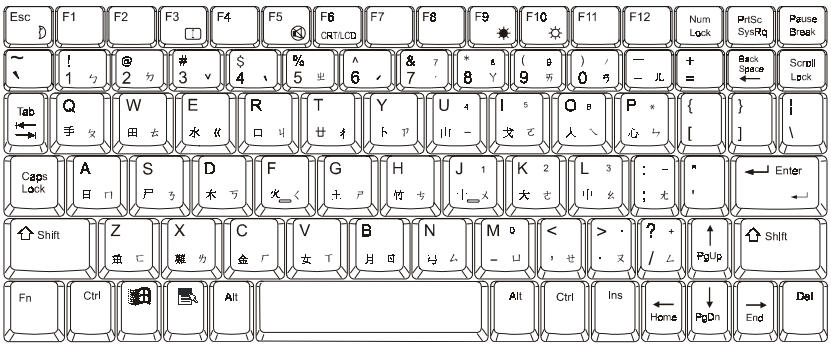
Germany Keyboard



French Keyboard



Japanese Keyboard



Chinese Keyboard

Glossary

A

AC (**A**lternating **C**urrent) - The power from a standard household electrical outlet.

adapter - A device that allows compatibility between different equipment. An AC adapter converts AC current to DC current which is needed to operate a computer.

AGP (**A**ccelerated **G**raphics **P**ort) - A high-speed graphics port that provides a direct connection between the display adapter and memory

application - A program such as a word processor, database or image editor.

B

BIOS (**B**asic **I**nput **O**utput **S**ystem) - An essential set of routines in a PC, which is stored on a chip and provides an interface between the operating system and the hardware.

bit (**b**inary **d**igit) - The smallest unit of information on a machine. If a computer is a 32-bit machine it may mean that its data registers are 32 bits wide or that it uses 32 bits to identify each address in memory.

boot - The loading of the operating system and other basic software which occurs when you start-up the computer.

bus - A collection of wires through which data is transmitted from one part of a computer to another.

byte (**b**inar**y te**rm) - A unit of storage capable of holding a single character. On almost all modern computers, a byte is equal to 8 bits.

C

cache - When you cache something you improve the speed of access to it by moving it one stage closer to the CPU.
CardBus - A 32-bit version of the PCMCIA PC Card standard.
CD-ROM (**C**ompact **D**isc **R**ead **O**nly **M**emory) - A format used to store data such as text, graphics or stereo sound. Also refers to the drive which can read this format.
configuration - The makeup of a system. To "configure" is to choose options in order to create a custom system
CPU (**C**entral **P**rocessing **U**nit) - The computing part of the computer. It controls the interpretation and execution of instructions.

D

DC (**D**irect **C**urrent) - Power which a computer requires for operation.
DIP switch - A series of tiny switches built into circuit boards which enable you to configure a circuit board for a particular type of computer or application.
DOS (**D**isk **O**perating **S**ystem) - Developed by Microsoft, it was the standard operating system for IBM-compatible personal computers.
DRAM - The most common type of computer RAM, called D-RAM or DRAM.
driver - A program that controls a device. Every device, whether it be a printer, disk drive, or keyboard, must have a driver program.
DVD - Originally called Digital VideoDisc since it was used

mostly for video, now called Digital Versatile Disc, similar to a CD only with greater storage capacity.

F

flash BIOS - BIOS which can be updated.

flash memory - A memory chip that keeps its information even when the computer is powered off. Used in BIOS which can be updated, like the system in your computer.

flash ROM BIOS - see flash BIOS.

function key - The keys F1, F2, … which have specific functions assigned to them. By pressing one of the function keys you can execute certain commands depending on the computer and operating system you are using.

G

GB (**G**iga**b**yte) - A unit of storage, one gigabyte is equal to 1,024 megabytes.

H

Hot key - see **function keys**.

I

interface - Something that connects two separate things. Hardware interface connects the computer to attached hardware such as a printer.

I/O (**I**nput/**O**uput) - Term used when your computer needs data entered (input) or has data to go to another source such as a

printer or floppy disk (output).
IrDA (**I**nfra**r**ed **D**ata **A**ssociation) - IrDA ports allow a laptop to exchange data or use a printer without a cable connection.

J

jack - A connector used primarily to connect external devices to your computer such as a microphone, video source, phone line, etc..
jumper - A metal bridge that closes an electrical circuit. They are sometimes used to configure expansion boards.

K

KB (Kilobyte) - A unit of storage, one kilobyte is equal to 1024 bytes.

L

LAN (**L**ocal **A**rea **N**etwork) - A communications network within a confined physical area. It is made up of servers, workstations, a network operating system and a communications link.
LCD (**L**iquid **C**rystal **D**isplay) - A display technology that uses rod-shaped molecules (liquid crystals) that flow like liquid and bend light.
LED (**L**ight **E**mitting **D**iode) - an electronic device that lights up when electricity is passed through it. The indicator lights on the computer are LEDs.
load - To copy a program from some source, such as a disk or tape, into memory for execution.
Lithium-Ion battery - A type of battery which is ideal for note-

book computers because of its light weight and high energy density. Also, lithium-ion batteries do not use poisonous metals, such as lead, mercury or cadmium.

M

MB (Megabyte) - 1,048,576 bytes or 1024 KB

memory - Area in the computer where information is stored on chips, an example is RAM.

MHz - One MHz represents one million cycles per second. The speed of microprocessors, called the clock speed, is measured in megahertz.

MMX - A type of microprocessor that can handle many common multimedia operations that are normally handled by a separate sound or video card.

mode - An operational state that a system has been switched to.

modem (**mo**dulate-**dem**odulate) - A device that adapts a computer to a telephone line by converting the computer's digital pulses into audio frequencies for the telephone when sending. And the reverse when receiving a signal from the telephone line.

module - Referring to hardware, a module is a self-contained component.

mouse - The most popular pointing device. It was called a mouse because it more or less resembled one, with the cord being the mouse's tail.

N

NiMH battery - Batteries which are common in notebook computers and contain Nickel-Metal Hydride.

P

parallel port - A socket on a computer used to connect a printer or other parallel device via the computer's parallel interface.

parallel printer - A printer that receives information from a computer one character (letter, number, etc.) at a time.

partition - A reserved part of disk or memory that is set aside for some purpose. New hard disks must be partitioned before they can be formatted for the operating system, this is done with the FDISK utility.

PC Card - See **PCMCIA Card**.

PCMCIA Card - A credit-card sized, removable module for portable computers standardized by PCMCIA. Also known as PC Cards, they are 16-bit devices that are used to attach modems, network adapters, sound cards, radio transceivers, solid state disks and hard disks to a portable computer. The PC Card is a "plug and play" device, which is configured automatically by the Card Services software

PCMCIA is an acronym for **P**ersonal **C**omputer **M**emory **C**ard **I**nternational **A**ssociation which is an international standards body and trade association that was founded to establish a standard for connecting peripherals to portable computers.

peripheral - Any external device attached to a computer, such as a printer, disk drive, display monitor, etc..

Plug and Play - The ability to add a new component and have it work without having to perform any technical analysis or procedure.

PnP - see Plug and Play

POST (**P**ower **O**n **S**elf **T**est) - A series of built-in diagnostics that are performed when the computer is booted.

R

RAM (**R**andom **A**ccess **M**emory) - The memory available to programs, different programs will need more or less RAM depending on what they are doing. RAM is the most common type of memory found in computers.

reboot - To restart a computer.

ROM (**R**ead **O**nly **M**emory) - A memory chip that permanently stores instructions and data. Its contents are created at the time of manufacture and cannot be altered. ROM chips are used to store control routines in personal computers (ROM BIOS), peripheral controllers and other electronic equipment.

resume - To restart your computer from suspend mode.

S

serial port - A socket on a computer used to connect a modem, mouse, scanner or other serial device to the computer.

setup - (1) A utility program which modifies the BIOS.
(2) Assembly and adjustment of a computer's components.
(3) The preparation of the system for normal operation.

suspend - To stop an operation with the hard disk turned off and the CPU idling at its slowest speed. This is done to save power when you are not using your computer for long periods of time.

SDRAM (**S**ynchronous **DRAM**) - A type of DRAM that can run at much higher clock speeds than conventional memory.

T

TFT (**T**hin **F**ilm **T**ransistor) - The term typically refers to active matrix screens on laptop computers. Active matrix LCD provides a sharper screen display and broader viewing angle compared to passive matrix.

U

USB (**U**niversal **S**erial **B**us) - A hardware interface for low-speed peripherals such as the keyboard, mouse, joystick, scanner, printer and telephony devices. Devices are plugged directly into a four-pin socket on the PC.

utility - A program that provides file management capabilities, such as sorting, copying, comparing, listing and searching, as well as diagnostic and measurement routines that check the health and performance of the system.

V

VGA (**V**ideo **G**raphics **A**rray) - The minimum standard for PC video display.

Z

Zoomed Video (ZV) Port - An extension to the PC Card (PCMCIA) standard that provides a high transfer rate for video applications on portable computers. The ZV Port is built into the notebook computer and activated by plugging in an MPEG PC Card that is ZV Port-compliant.