Notice

Updating or revising this manual or making any changes to the information herein will be initiated when the company deems it necessary. The company reserves the right to take the above-mentioned actions and is under no obligation to notify any person of such actions in advance or afterwards.

1997

Trademark

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Intel, Pentium are trademarks of Intel Corporation.

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Other brand and product names are trademarks of their respective companies.

Warranty Provisions

Warranties for the Notebook Computer may vary with different areas. If you have any questions, please call your local dealer with the serial number of your unit, and you will be provided with all warranty information you need.

The manufacturer is not liable to any purchaser for damage, lost revenue, lost wages, lost savings, or any other incidental or consequential damages arising from the purchase or use of the product or inability to use the product.

FCC Notice

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.

CE - Certificate

This model is in compliance with the requirements of the following regulation:

EN 55 022: CLASS B

Important Safety Instructions

Please read and follow these important instructions.

1. Follow all warnings and instructions marked on this product.
2. Unplug this product from the wall outlet before cleaning it or connecting peripheral devices.
3. Use a damp cloth with mild soap to clean this product. Do not apply cleaner directly to the unit. Do not use volatile or abrasive cleaners on this product.
4. Do not place this product on an unstable surface where it may fall.
5. Do not block or cover the system's ventilation openings. Also, never place this product near or over a radiator or heat register, or in a built-in installation unless adequate ventilation is provided.
6. Operate this product in accordance with its rated power specifications. If you are unsure of your local power specifications, consult your dealer or local power company.
7. This product is equipped with a 3-wire grounding type plug. This is an important safety feature; do not defeat its purpose. If you do not have access to such power, have a qualified electrician install a proper outlet.
8. Do not allow anything to rest on the power cord. Do not locate this product where persons will likely walk on the cord.
9. If an extension cord is used with this product, make sure the total current drawn by the products plugged into the extension cord do not exceed the extension cord or outlet power ratings.
10. Do not allow foreign matter to enter the system.
11. Do not attempt to service this product yourself. Opening or removing covers may expose dangerous voltage points. Refer all repair work to qualified service personnel.
12. Unplug this product from the wall outlet, do not operate it, and immediately seek proper servicing if:
    - ✓ The power cord or plug is damaged or frayed.
    - ✓ Liquid or foreign matter has entered this product.
    - ✓ This product has been exposed to rain or water.
    - ✓ This product has been dropped or damaged.
    - ✓ This product exhibits a distinct change in performance, indicating a need for service.
13. Do not use any battery pack other than the one specifically designed for this system. Batteries may explode or leak if exposed to fire or improperly handled or guarded. Refer battery replacement to your dealer or qualified service personnel.
14. Only use UL listed/CSA certified, type SVT/SJT power cords rated 6A 250V minimum (VDE approved or equivalent). It should be a detachable type with a minimum length of 6 feet.
15. Adjust only those controls that are covered by these operating instructions. Improper adjustment of other controls may result in serious damage to the system which is not covered by the warranty.

Table of Contents

Chapter 1 Getting Started

Chapter 2 Operating

Chapter 3 BIOS Utilities

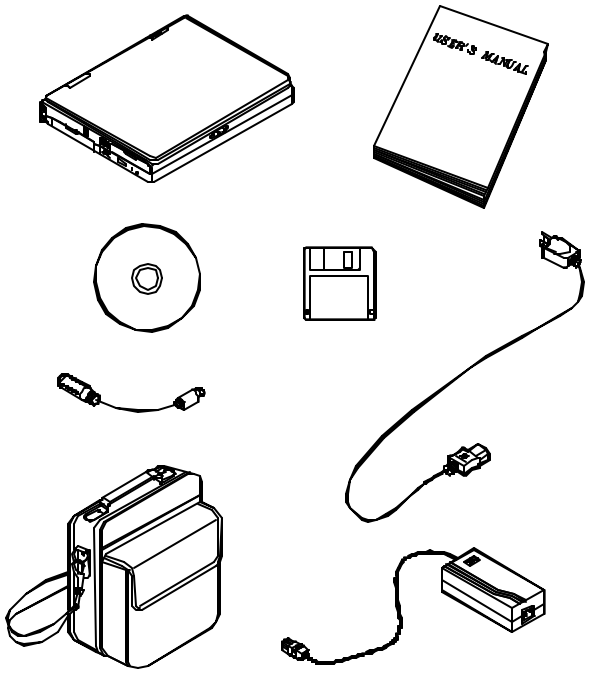
Chapter 1: Getting Started

This chapter provides a short introduction and tutorial that will familiarize you with the Notebook system and get you up and running quickly.

Unpacking

Carefully unpack the Notebook Computer and its included accessories. If there are any discrepancies or problems, contact your dealer immediately. Be sure to save the packing materials in the case you need to repack and ship the Notebook back in the future.

- Notebook Computer.
- Carrying bag.
- Power adapter.
- Power cord.
- User manual.
- PS/2 transfer cable.
- Utilities diskette(s).
- Compact Disk.

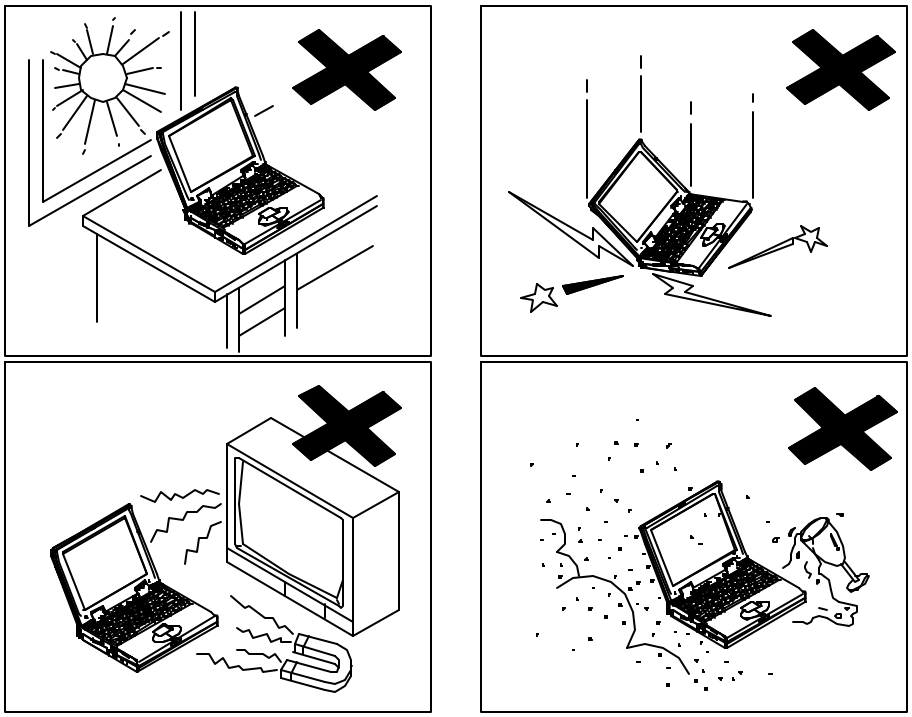


Operating Environment

Thanks to the Notebook's ability to run on battery power, its compactness in size, and light weight, it can be conveniently operated wherever the temperature and humidity are comfortable enough for you to work.

If you properly care for the Notebook, it will provide many years of reliable service. However, remember this computer system is a precision instrument and it should not be:

- Exposed to excessive heat or direct sunlight.
- Subjected to shock or vibration.
- Exposed to strong magnetic fields.
- Left in a place where foreign matter or moisture may enter the system.



System Features

The Notebook Computer is a state-of-the-art, high performance, portable system. It offers a host of features specially designed to enhance performance and usability.

- **CPU**
  - ✓ Intel P54C.
  - ✓ Intel P54LM.
  - ✓ Intel P55C with MMX technology.

- **Memory**
  - ✓ 3.3 V power supply.
  - ✓ Supports Fast Page Mode/EDO.
  - ✓ 512KB secondary cache PBSRAM.
  - ✓ 8MB expandable up to 128MB.
  - ✓ *8/16/32/64MB 144-pin SODIMM RAM modules (option).*

- **System BIOS**
  - ✓ 256KB flash ROM.
  - ✓ PCI 2.1.
  - ✓ Plug and Play 1.0a.

- **Display**
  - ✓ 13.0" DSTN XGA (1024x768 pixels) LCD panel available.
  - ✓ 13.3"/14.1" TFT XGA (1024x768 pixels) LCD panel available.
  - ✓ 4MB display memory.
  - ✓ Video Port Manager (VPM) for Zoomed Video (ZV) port.
  - ✓ Simultaneous display with an external monitor.

- **Input/Output**
  - ✓ Built-in trackpad (PS/2).
  - ✓ Dual USB ports.
  - ✓ Serial port.
  - ✓ Parallel port.
  - ✓ CRT port.
  - ✓ Game port.
  - ✓ S-Video port.
  - ✓ PS/2 type port.
  - ✓ 168-pin expansion port.
  - ✓ Headphone jack, Microphone-in jack, Line-in jack.

- **PC Card Sockets**
  - ✓ One Type III or two Type II PC cards.
  - ✓ CardBus support.
  - ✓ One ZV-capable socket.

- **Mass Storage**
  - ✓ 2.5” or 3.0” hard disk drive.
  - ✓ 3.5” floppy disk drive (interchangeable).
  - ✓ 5.25” CD-ROM.
  - ✓ *2.5” or 3.0” secondary hard disk drive. (option).*

- **Infrared Wireless Communication**
  - ✓ IrDA (HPSIR).
  - ✓ ASKIR.
  - ✓ FIR.

- **Audio**
  - ✓ Sound Blaster Pro compatible.
  - ✓ 3D stereo sound effects.
  - ✓ Built-in microphone.
  - ✓ 1MB ROM wavetable.

- **Power Management**
  - ✓ Doze mode.
  - ✓ Suspend/Resume.
  - ✓ Display Idle mode.
  - ✓ Hard disk idle mode.
  - ✓ APM 1.2.

- **Rechargeable battery Pack**
  - ✓ Ni-MH, Li-Ion available.
  - ✓ Battery low warning.
  - ✓ Auto-switching with AC power adapter.
  - ✓ *Secondary Battery Pack (option)*.

- **AC Power Supply**
  - ✓ External model: AC-D01
  - ✓ Alternative model: F1650L

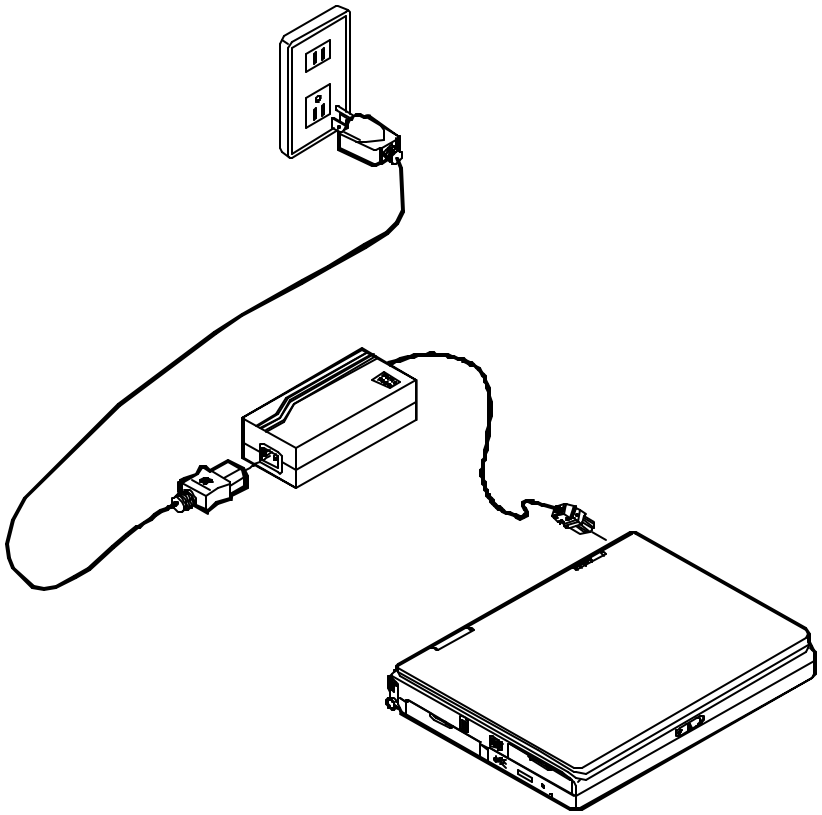
- **Size & Weight**
  - ✓ 323mm(w)x263.5mm(d)x58mm(h)
  - ✓ 4.15kg.

Quick Starting-Up

Powering the System

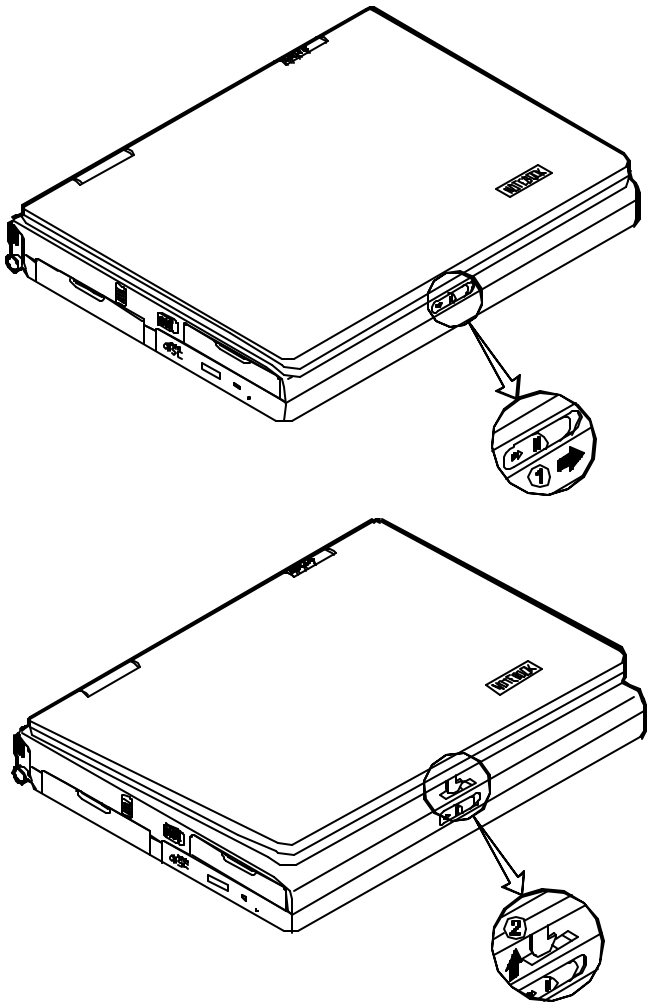
Use only the Power Adapter that comes with your Computer. System operation with an incorrect power adapter will cause damage to the Notebook and its components.

1. Connect the power cord to the power adapter.
2. Plug the power adapter to the DC-in socket on the rear panel of the Notebook.
3. Plug the AC power cord into a properly grounded outlet.



Opening the LCD Cover

1. Slide the top cover latch to the right to release the latch.
2. Lift the top cover to reveal the LCD panel and keyboard.
3. Raise the LCD panel to a comfortable viewing angle.
4. Press the power button once to turn the system on, once to turn it off.



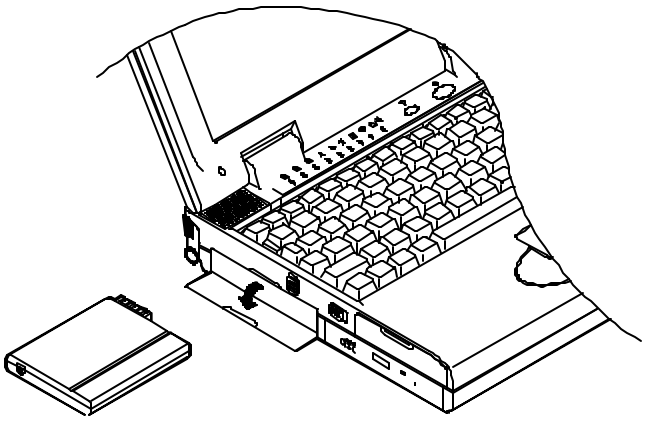
Portable Operating

Primary Battery Pack

The Notebook system can be powered by battery pack for continuous portable operation without an external power source when you take it away from the office. The actual operating time, however, will be dependent upon the application you use and the configuration you set.

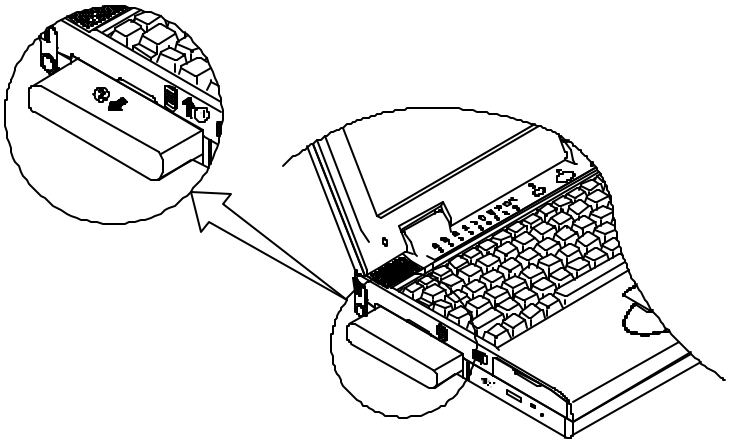
Inserting

1. Open the battery access door on the left side of the Notebook.
2. Slide the battery into the compartment until the latch clicks into place.
3. Close the access door.



Removing

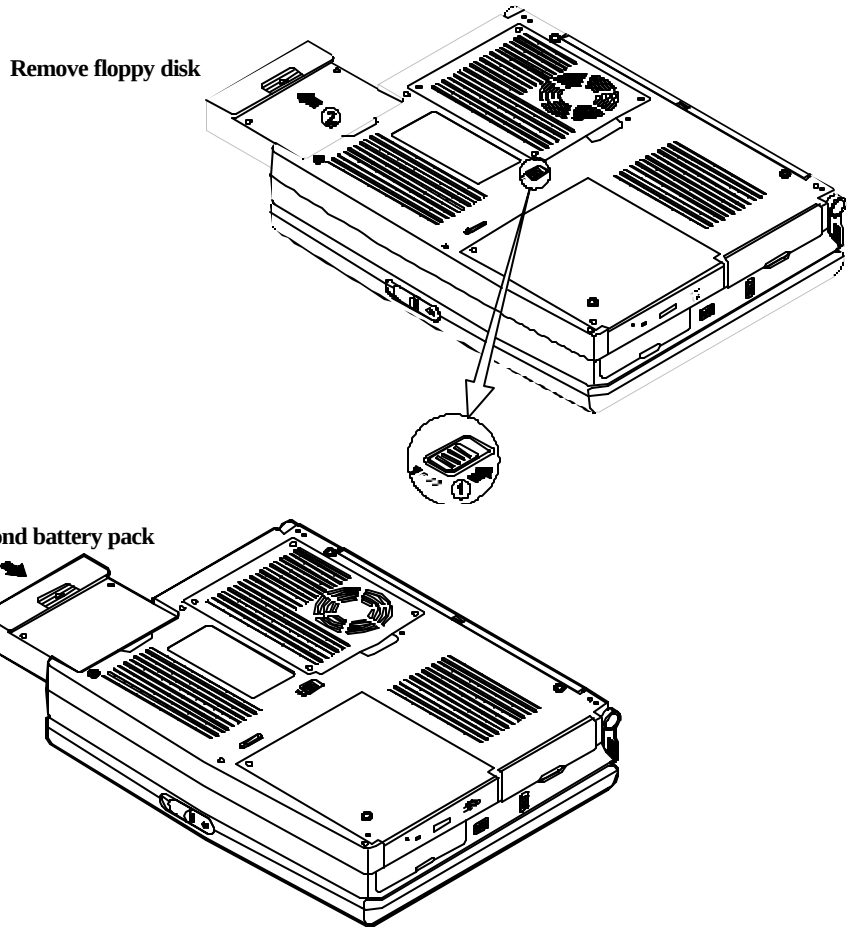
1. Open the access door.
2. Press the battery latch upward to pop up the battery pack.
3. Pull the battery pack out of the compartment.



Secondary Battery Pack (Option)

When you need prolonged use without the availability of the AC adapter, you may consider a spare battery, called Secondary Battery Pack, for optimal portable operation. Contact your dealer for more information.

1. Turn the Notebook off.
2. Turn the Notebook over.
3. Locate the FDD (Floppy Disk Drive) latch.
4. Press the latch in the illustrated direction and pull the Floppy Disk Drive out of the compartment.
5. Slide the Secondary Battery Pack all the way into the empty compartment.



Top-Front View

A. LCD Panel

The LCD display is XGA (1024x768 pixels) compatible and driven by a PCI local bus video controller with 4MB video memory providing high performance and crystal clear resolution. It may measure 13.0" or 13.3" or 14.1" diagonally and be of either Dual Scan or Active Matrix TFT technologies, depending upon what model you purchased.

B. Stereo Speakers

Two built-in speakers provide clear stereophonic sound.

C. Trackpad

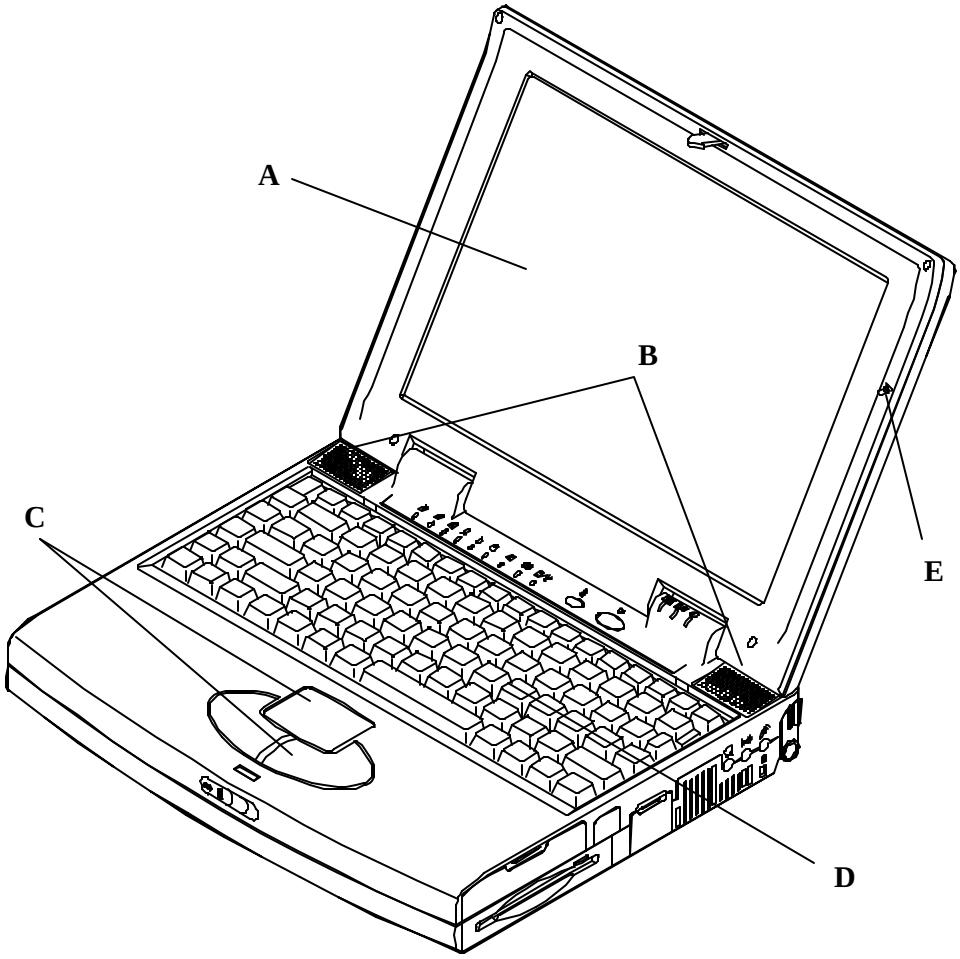
The pointing device features a sensitive glide pad for precise movements. It functions like a two-button mouse does. The right trackpad button is equivalent to the right mouse button; the left trackpad button is equivalent to the left mouse button.

D. Windows 95 Keyboard

The Notebook utilizes an 86 key Windows 95 keyboard. It is detachable for various language versions.

E. Microphone

This is the built-in microphone.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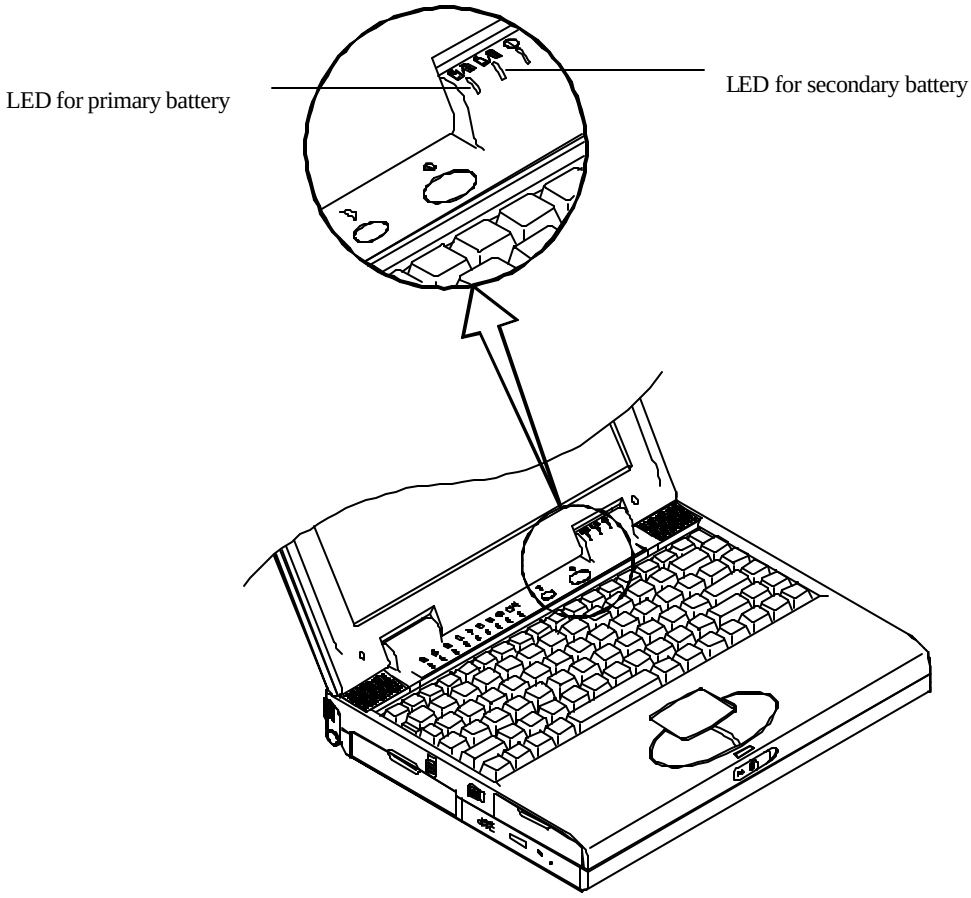
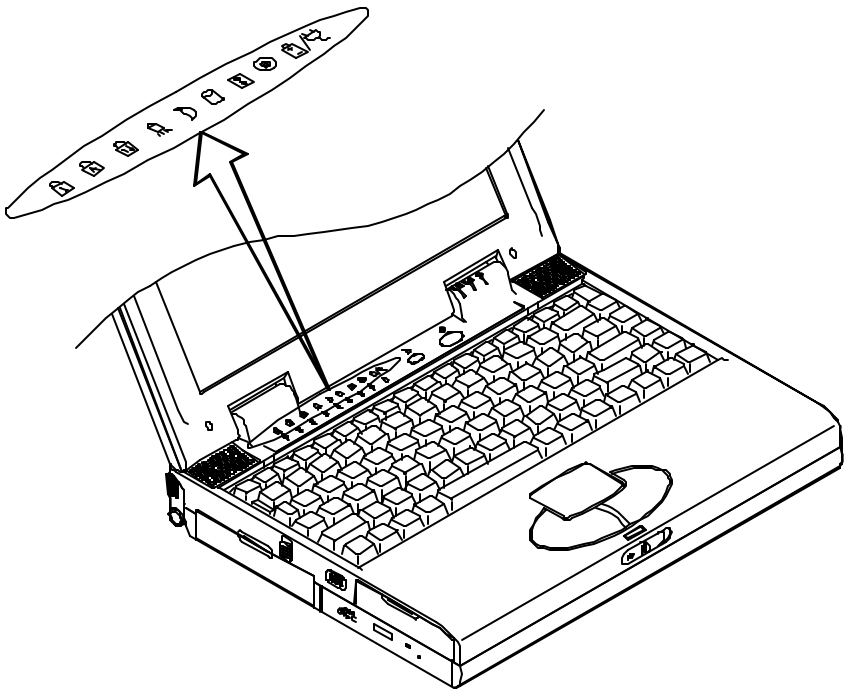
Icon	Color of Light	Description
	Green	System power is on (either by AC or by battery)
	Red	Secondary Battery is being charged.
	Green	Secondary Battery is fully charged.
	Red	Primary Battery is being charged.
	Green	Primary Battery is fully charged.
	N/A	Toggle the power switch to turn the system on or off.
	N/A	Press the button to initialize the suspend mode or resume the system operation from the Suspend mode.



LED Indicators

Icon	Color of Light	Description
	Red	AC power is used.
	Green	Battery power is used.
	Red/green blinking	Battery power is critically low.
	Green	CD-ROM is accessing.
	Green	Floppy Disk Drive is accessing.
	Green	Hard Disk Drive is accessing.
	Green	The system has entered the 5V-Suspend mode.
	Green	The CPU is running at the maximum speed.
	Green	Scroll lock function is activated.
	Green	Caps lock function is activated.
	Green	Num lock function is activated.



Right Side View

A. PC Card Sockets

One Type III or two Type II PC cards may be used. The ejection button for the upper slot is located on the left. The eject button for the lower slot is on the right. Both sockets will expand the system capabilities when a PC card is inserted.

B. 3.5" Floppy Disk Drive

The Notebook comes standard with a 1.44MB floppy drive installed. You may press the button on its top-right side for diskette ejection. This compartment may also be used for optional accessory, such as the Secondary Battery Pack, or 2.5"/3.0" hard disk storage.

C. Infrared

The Notebook provides an infrared communication that is IrDA compliant. It can be used to make a cordless connection between the system and an IrDA compliant device.

D. MIDI/Game Port

This port is used for connecting a MIDI keyboard or instrument. A standard joystick may also be connected.

E. Ventilation Grids

The ventilation grids are necessary to dissipate heat. Do not block or obstruct them during operation.

F. Security Connector

It is used to protect your Notebook from being stolen. Wrap the steel cable around your desk. Next insert the locking device into this security connector.

G. Headphone Jack

Headphone can be attached to the system through this jack, so can external speakers that have built-in output power amplifier.

H. Line-in Jack

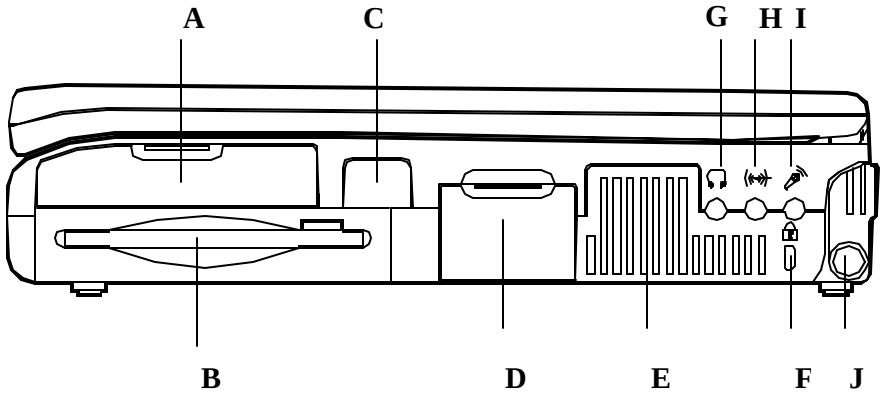
External audio source can be fed into the Notebook through this jack.

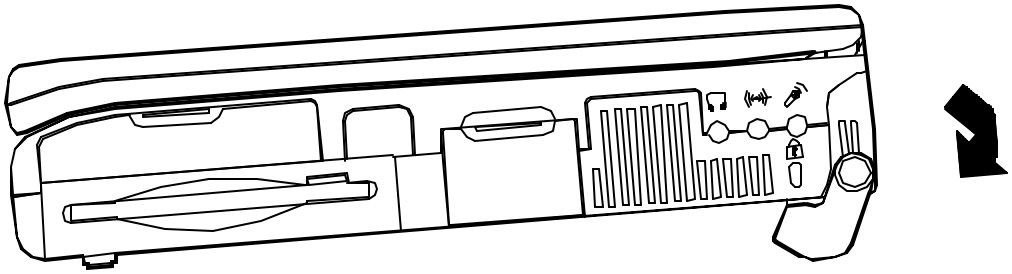
I. Microphone-in Jack

Use this jack to connect a microphone to the system.

J. Right-Side Stand

Move this stand (together with the left one) to adjust the typing angle. **If a high speed CPU is installed on the system, erecting the stands on both sides will be necessary for heat dissipation during operation.**





Left Side View

A. 2.5”/3.0” Removable Hard Disk Drive and Latch

This compartment houses a removable 2.5” or 3.0” hard disk drive. To replace the hard disk, slide the latch to the left and pull out the hard disk gently.

B. 5.25” CD-ROM Drive

The 5.25” IDE CD-ROM is installed in this compartment. The eject button is located in the middle of the front cover of the drive. Pressing it will release the CD tray.

C. Emergency Eject Hole

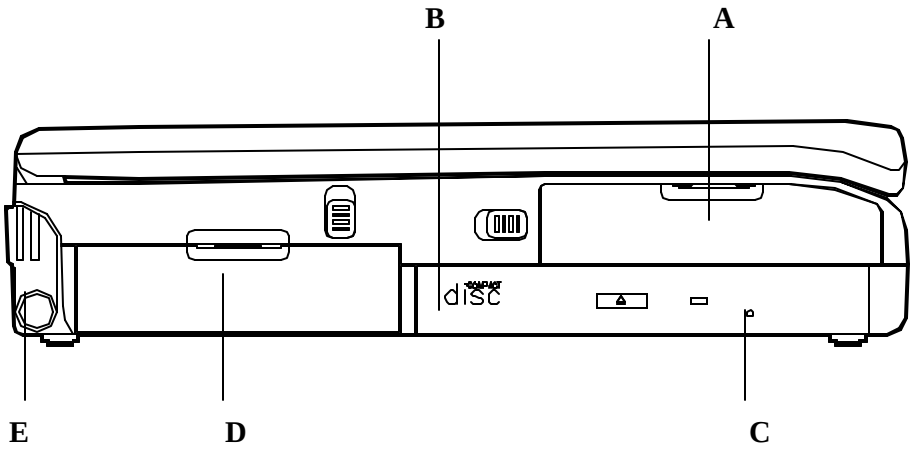
When system power is unexpectedly interrupted, insert an instrument such as a straightened paper clip into this hole to manually eject the CD tray.

D. Primary Battery Pack and Latch

This compartment houses a removable and rechargeable battery pack. Pressing the battery latch upward will pop up the battery pack.

E. Left-Side Stand

Move this stand (together with the right one) to adjust the typing angle.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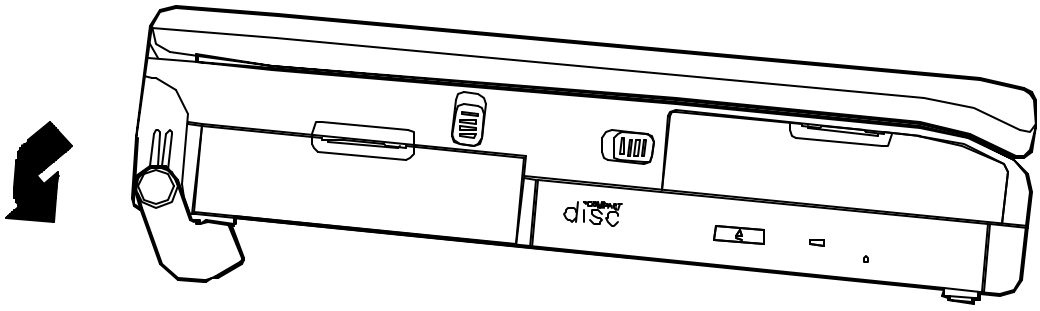


Rear View

A. AC-in Socket

Plug the AC adapter into this connector for power supply. To disconnect the power adapter, pull the plug (not the cord) directly back.

B. Ventilation Grids

The ventilation grids are necessary to dissipate heat. Do not block or obstruct them during operation.

C. Expansion Port

This port is used to connect the proprietary Port Replicator.

D. Dual USB Ports

The dual Universal Serial Bus (USB) ports simplify the expansion capability for peripheral devices.

E. Parallel Port

This parallel port supports EPP (Enhanced Parallel Port) and ECP (Extended Capabilities port) modes.

F. External Monitor Port

This port is used for display output to an external monitor. Simultaneous display with the LCD panel is available.

G. S-Video Jack

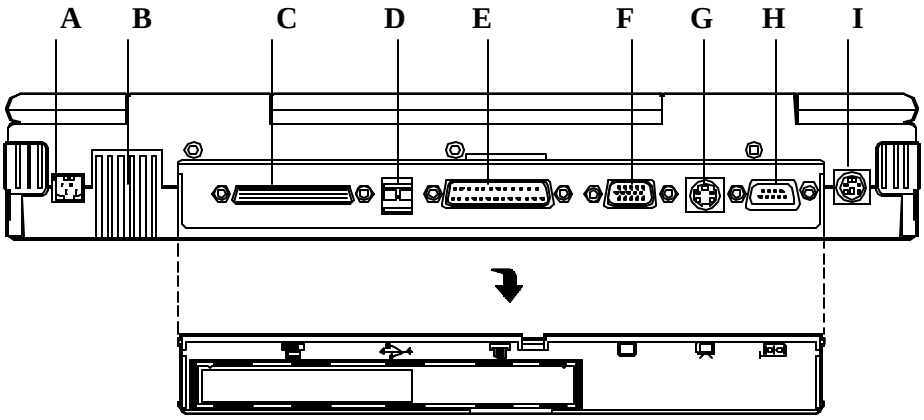
Use this jack to transmit video signal to a TV set.

H. Serial Port

This RS232 port is UART 16C550 compatible.

I. PS/2 Type Port

This port is used to connect an external PS/2 mouse or keyboard.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Chapter 2: Operating

The Notebook has many advanced features to help you with your computing work. This Chapter describes each of the Notebook's hardware features and show you how to use them.

Before you begin working with any internal components of the Notebook, removal all batteries and disconnect the AC power adapter.

Make sure that you wear an anti-static wrist strap to ground yourself before working with any internal components of the Notebook. Static electricity may damage components beyond repair.

- Setting DIP Switch.
- TV-Output.
- Upgrading CPU.
- Expanding Memory.
- Using Hot Keys.
- Using PC Card Sockets.
- Replacing Hard Disk Drive.
- Replacing Floppy Disk Drive.
- Using CD-ROM.
- Using Embedded Numeric Keypad.
- Using Power Management.

Setting DIP Switch

Remove the keyboard to reveal the system's circuit board. Locate the DIP Switch (SW1) to set the correct configuration for the following purposes:

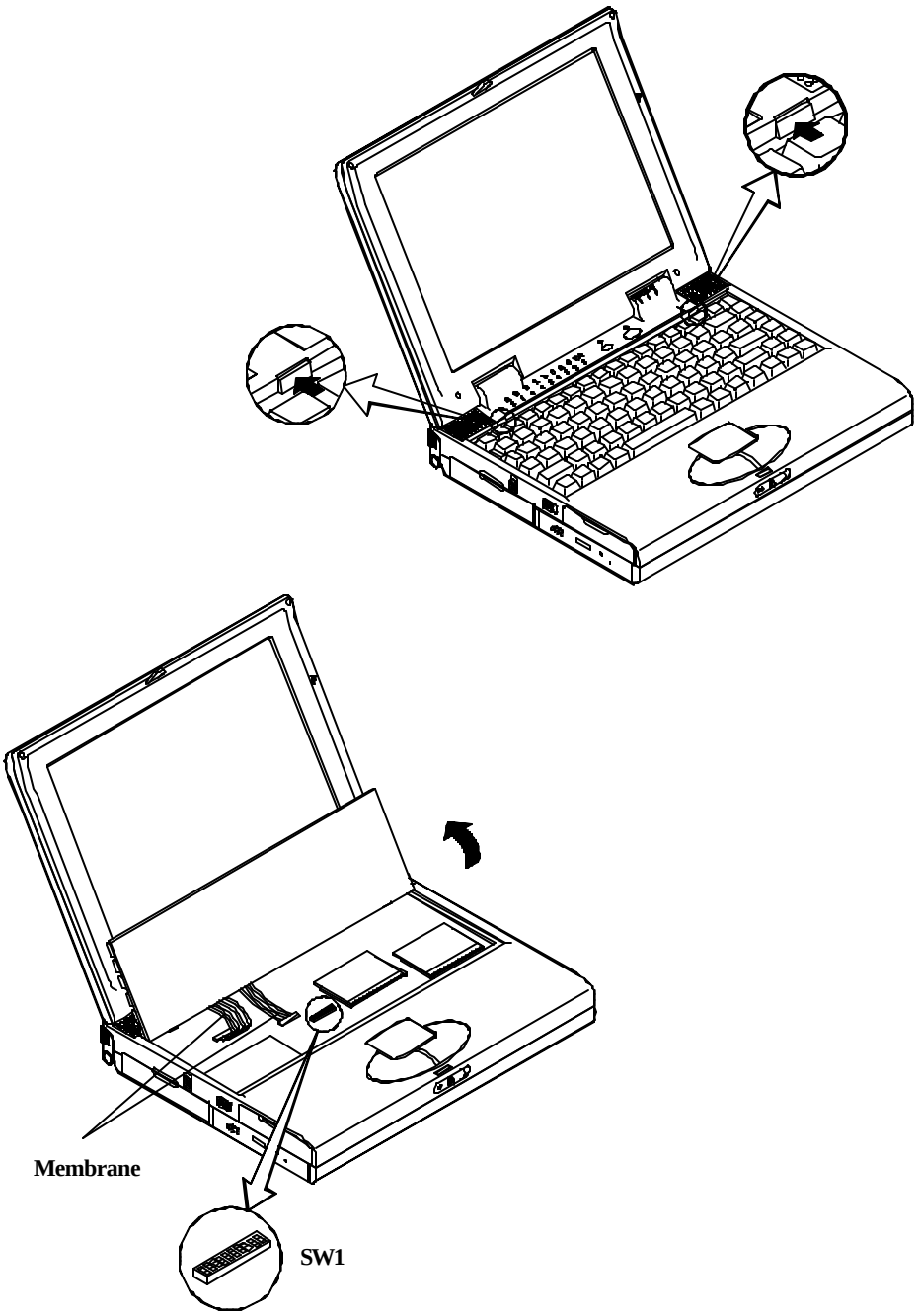
- Flash ROM BIOS update.
- CPU upgrade.

DIP Switch (SW1)				Purpose
SW1-1		**SW1-2**		**Flash ROM BIOS**
Off		Off		Existing BIOS
On		On		Updating BIOS
SW1-5	**SW1-6**	**SW1-7**	**SW1-8**	**CPU Speed**
Off	Off	Off	Off	90 MHz
Off	On	Off	Off	100 MHz
Off	Off	Off	On	120 MHz
Off	On	Off	On	133 MHz
Off	Off	On	On	150 MHz
Off	On	On	On	166 MHz
Off	On	On	Off	200 MHz
Off	On	Off	Off	233 MHz

Accessing DIP Switch (SW1)

1. Press the two keyboard latches so that the keyboard can be elevated from its normal position.
2. Carefully lift the keyboard assembly out so that the circuit board is exposed.
3. Locate the DIP Switch SW1 to set the hardware configuration.
4. **Never try to change other switch pins setting than what you are going to work, because they may have been properly configured specifically for your Notebook.**

Note: When working with the keyboard, keep the membrane from scraped to guarantee the precision connection.


Membrane
SW1

TV-Output

The Notebook is equipped to output video signals to a TV set through the S-Video connector. Different countries use different TV broadcast standards. A TV set must comply with the appropriate standard to properly receive broadcast signals. In the Unites States, TV sets are built to comply with the NTSC standard. Many countries in Europe and Asia use the PAL standard. You should refer to your TV user guide to make sure which TV standard you are using.

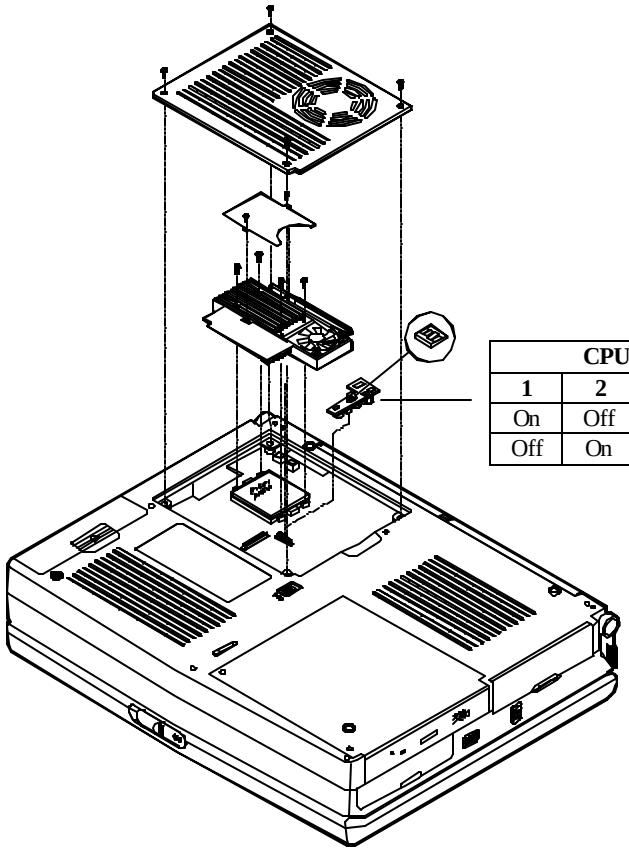
TV-output capabilities allow display of realistic game, video, and multimedia on the large-screen TV. The Notebook uses hardware filtering technologies to reduce flicker for qualified presentation.

Upgrading CPU

The system is capable of hosting a wide range of Intel CPUs' speed. Upgrading your CPU will increase your computing speed. The higher the CPU speed you install, the better the system performance you get. Different CPUs may have different power voltages.

Replacing CPU

1. Turn the Notebook over.
2. Remove the CPU cover.
3. Remove the two screws that fasten the bracket mounted on the heat sink.
4. Remove the four screws that fasten the heat sink mounted on the CPU.
5. Set the correct CPU power voltage of the *CPU Power Module*. Refer to the user guide of the CPU.

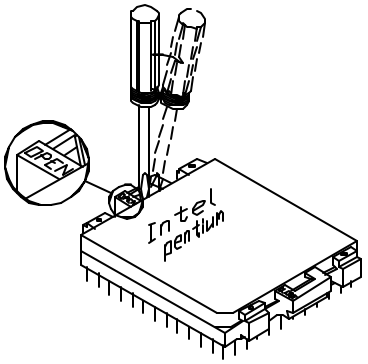


CPU Power Module				
1	**2**	**3**	**4**	**CPU**
On	Off	Off	Off	2.45V
Off	On	Off	Off	2.8V

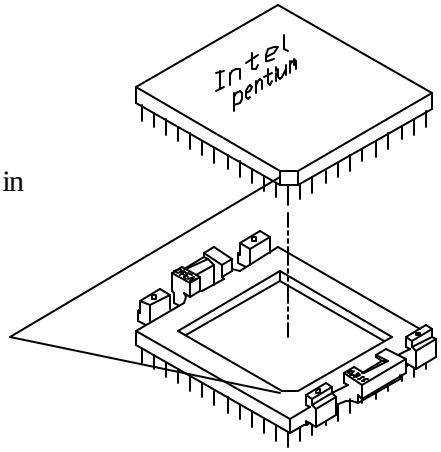
ZIF Socket Operation

A ZIF (Zero Insertion Force) socket is provided to facilitate CPU removal and installation for you. **You may need to contact your dealer for the proprietary tool to work with the ZIF socket. Improper tool or incorrect operation may damage the socket.**

- Insert **the proprietary tool** into the OPEN position of the ZIF socket. Move the screwdriver to the right to unlock the CPU.

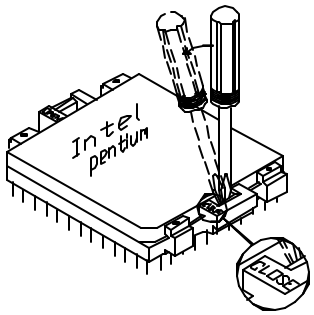


- Align the **index corner** to install the CPU in place.



Index corner

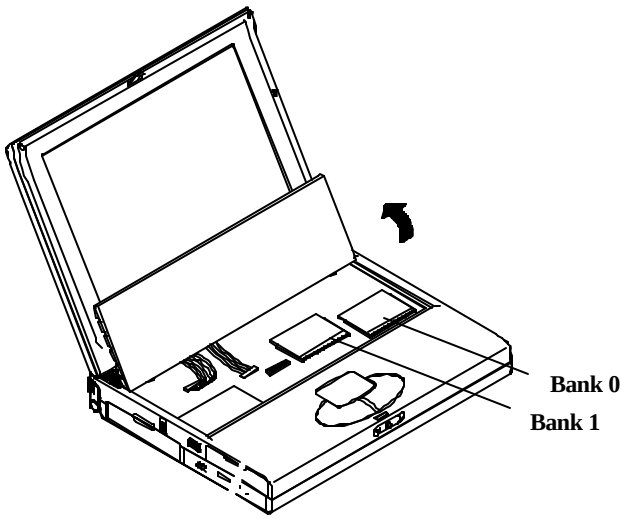
- Insert **the proprietary tool** into the CLOSE position of the ZIF socket and lever to the left to lock the CPU.



Expanding Memory

The system has two memory sockets for different RAM Modules to expand the memory up to 128MB. These RAM Modules are 144-pin SODIMM (Small Outline Dual In-line Memory Module) type. The Notebook supports Fast Page Mode, EDO operation. With the following memory configurations, the total memory size will be automatically detected by the POST routines:

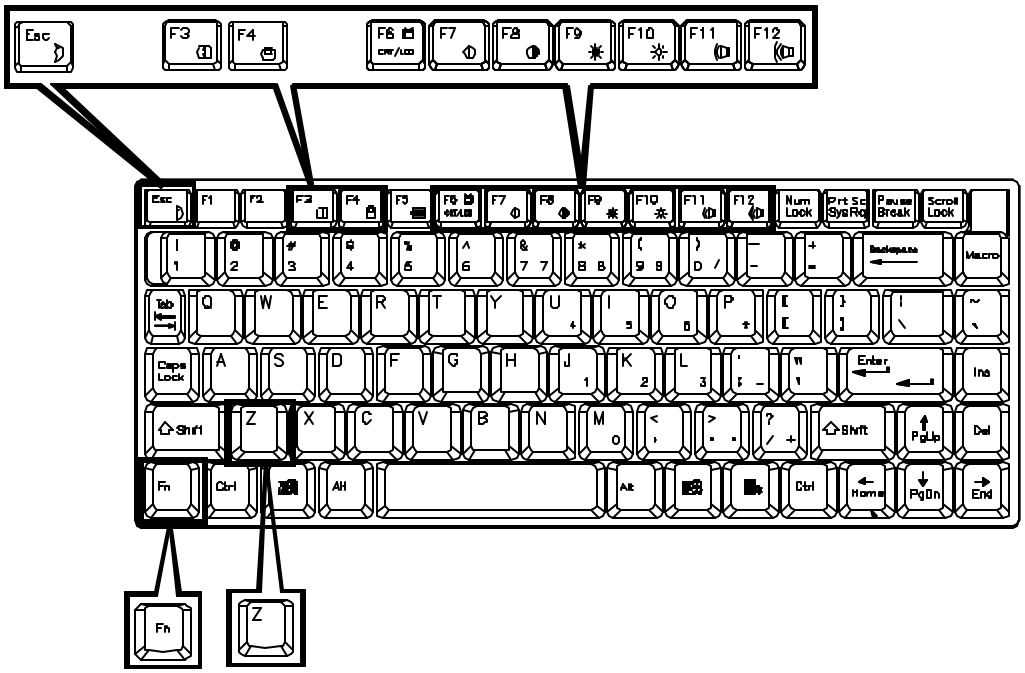
Bank 0 (64-bit)	Bank 1 (64-bit)	Power	Speed	Total Size
(1Mx16)x4	None	3.3V	70ns/60ns	8MB
(1Mx16)x4	(1Mx16)x4			16MB
(1Mx16)x8	None			16MB
(2Mx8)x8	None			16MB
(1Mx16)x8	(1Mx16)x4			24MB
(4Mx16)x4	None			32MB
(2Mx8)x8	(2Mx8)x8			32MB
(1Mx16)x8	(1Mx16)x8			32MB
(4Mx16)x4	(4Mx16)x4			64MB
(4Mx16)x8	None			64MB
(8Mx8)x8	None			64MB
(4Mx16)x8	(4Mx16)x4			96MB
(4Mx16)x8	(4Mx16)x8			128MB
(8Mx8)x8	(8Mx8)x8			128MB



Using Hot Keys

Located on the bottom-left edge of the keyboard layout is a colored ***Fn*** key. It is a special key only found on the Notebook to make key combination with other keys for easy access to system features. Hold down the Fn key while pressing other key as below:

Hot Keys	System Features	Remark
Fn + F3	Expand LCD display	*Graphics only*
Fn + F4	Control display top/center position	
Fn + F6	Toggle LCD/CRT/TV/LCD & CRT	*PAL 800x600 or NTSC 640x480*
Fn + F7	Reduce LCD contrast	*Dual scan LCD only*
Fn + F8	Increase LCD contrast	*Dual scan LCD only*
Fn + F9	Reduce LCD brightness	
Fn + F10	Increase LCD brightness	
Fn + F11	Reduce audio volume	
Fn + F12	Increase audio volume	
Fn + Z	Toggle audio mute on/off	
Fn + Esc	Initialize the suspend mode	



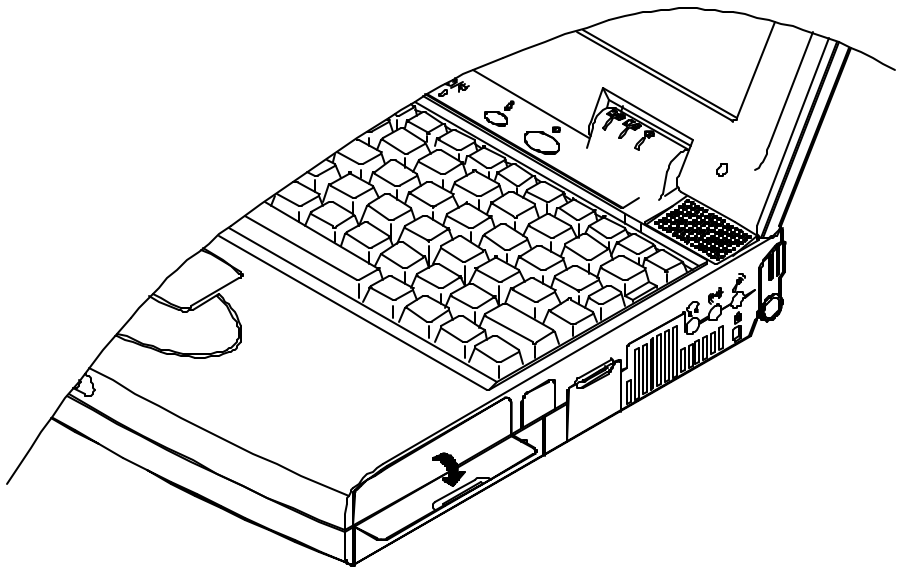
Using PC Card Sockets

The Notebook provides system expanding capabilities with two PC card sockets (previously referred to as PCMCIA) by inserting various PC cards. Both sockets supports 5V/3.3V 16-bit PC cards and 3.3V 32-bit PC cards (referred to as **CardBus**). The lower socket is **ZV (Zoomed Video)** capable.

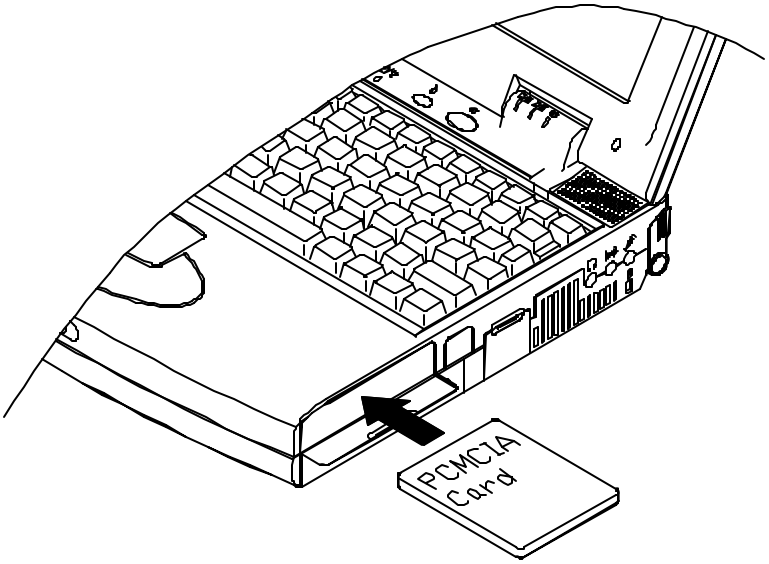
The PC cards may be LAN, fax/modem, communication devices, or expanded memory. PC cards have three types: Type I measures 3.3mm thick; Type II 5.0mm; and Type III 10.5mm. You may accordingly use two Type II PC cards or one Type III PC card with the 68-pin connector in each socket.

Inserting and Removing PC Cards

- Open the access door on the right side of the Notebook.

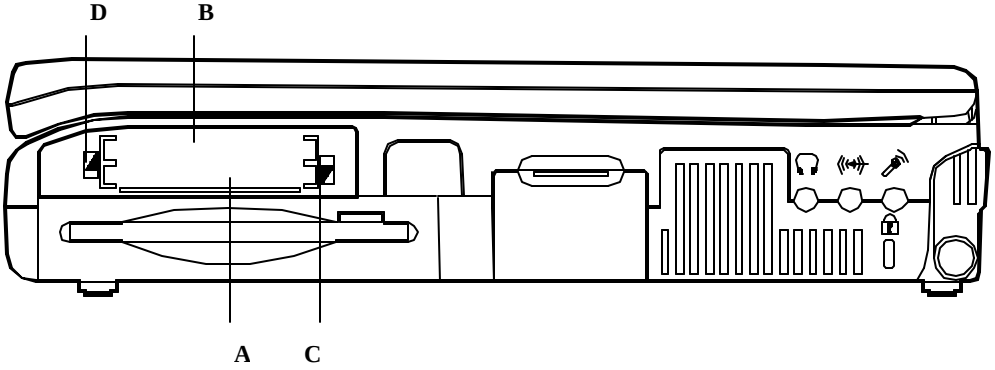


- To insert a PC card, align the card with the slot and push it in firmly until it locks into place.



- To remove
  a PC card, press the appropriate eject button and the card will be ejected from its slot.

A.	**Socket A**
B.	**Socket B**
C.	**Eject Button for Socket A**
D.	**Eject Button for Socket B**

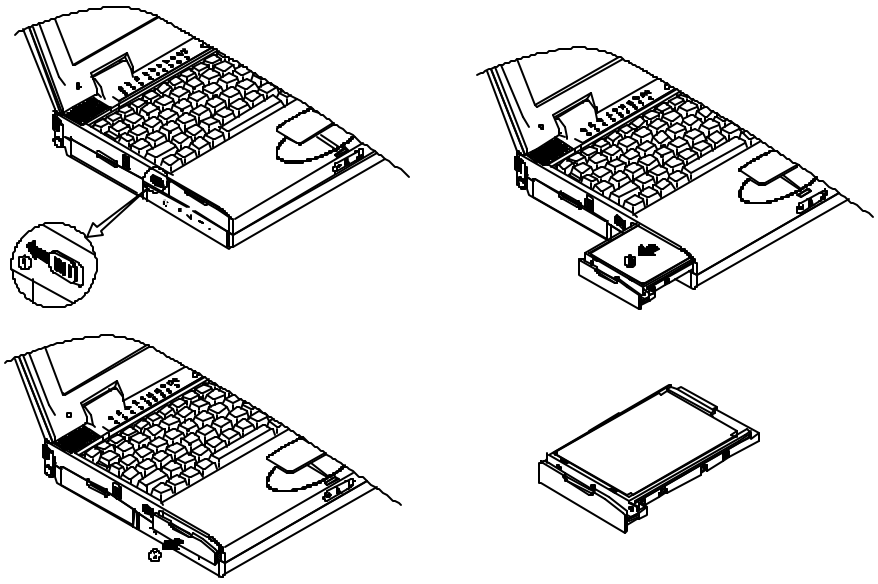


Replacing Hard Disk Drive

The hard disk drive of the Notebook can be removed since it is mounted on a removable tray. The tray can house either any **2.5"** IDE hard disk drive with a height of 19mm or less, or any **3.0"** IDE hard disk drive with a height of 12.5mm or less. You should contact your dealer for the proper hard disk case if the other size of hard disk is used instead. The system BIOS supports drives with capacities greater than 528MB through the Logical Block Addressing (LBA) mode. The system setup that is included with the BIOS can be used to configure the system to accept different drives. Refer to *Chapter 3, WINBIOS Setup* for instructions to operate the utility.

Removing

1. **Turn the system power off**.
2. Press the hard disk latch leftward. Holding the latch leftward, pull gently and firmly the hard disk away from the compartment.
3. Be careful when disconnecting the cable from the hard disk drive not to bend any pins or "crimp" the cable.



Inserting

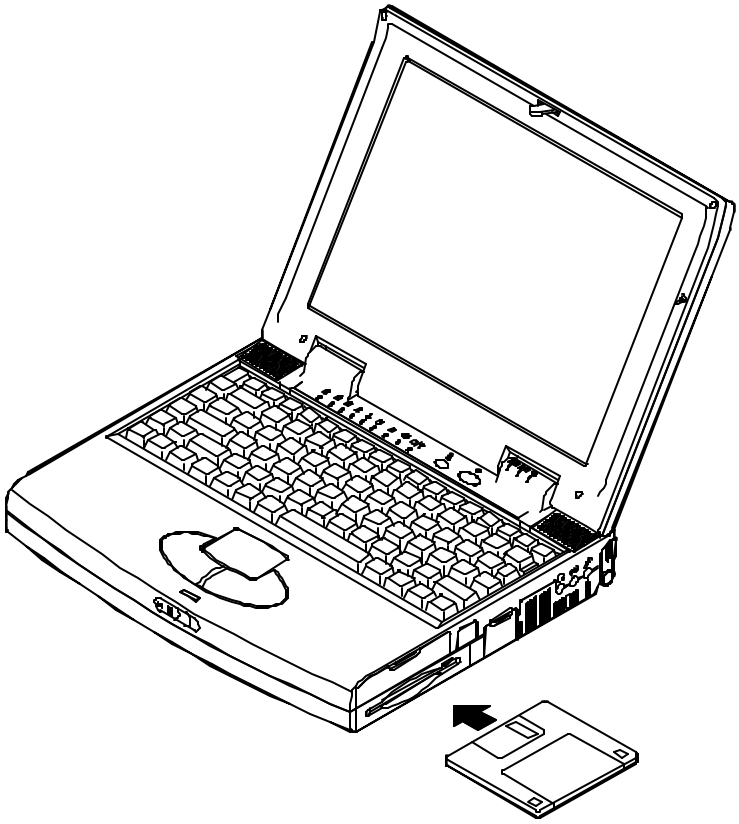
When inserting the hard disk drive back into the Notebook, be sure to firmly seat the hard disk drive tray into the compartment. You will feel the tray "click" into position when it is seated properly.

Replacing Floppy Disk Drive

The Notebook comes standard with a 1.44"MB, 3.5" floppy disk module. It is labeled drive A: and may be used as a boot drive if properly set.

The compartment that the floppy disk currently resides may get exchangeable with these options: *Secondary Battery Pack*, or *2.5" hard disk module*, or *3.0" hard disk module.* Contact your dealer for more details of these options.

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.

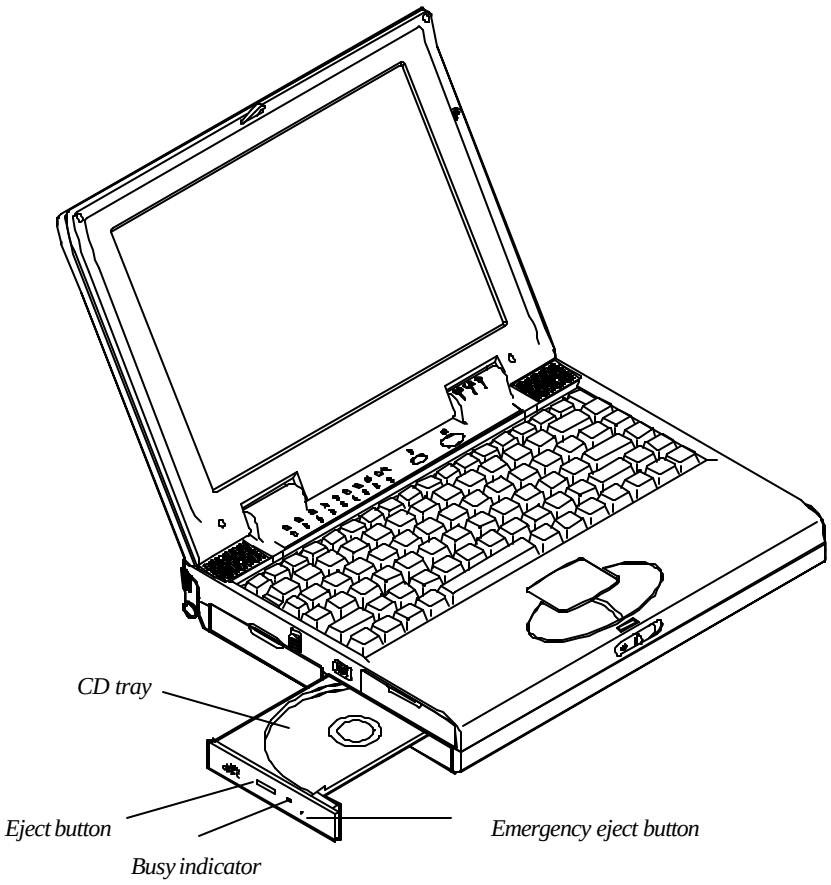


Using CD-ROM

The Notebook comes standard with a 5.25" CD-ROM that is internally mounted. It is labeled drive D: and may be used as a boot drive if properly set.

Do not disassemble the CD-ROM from the Notebook. Only certified technicians should perform repairs to the CD-ROM.

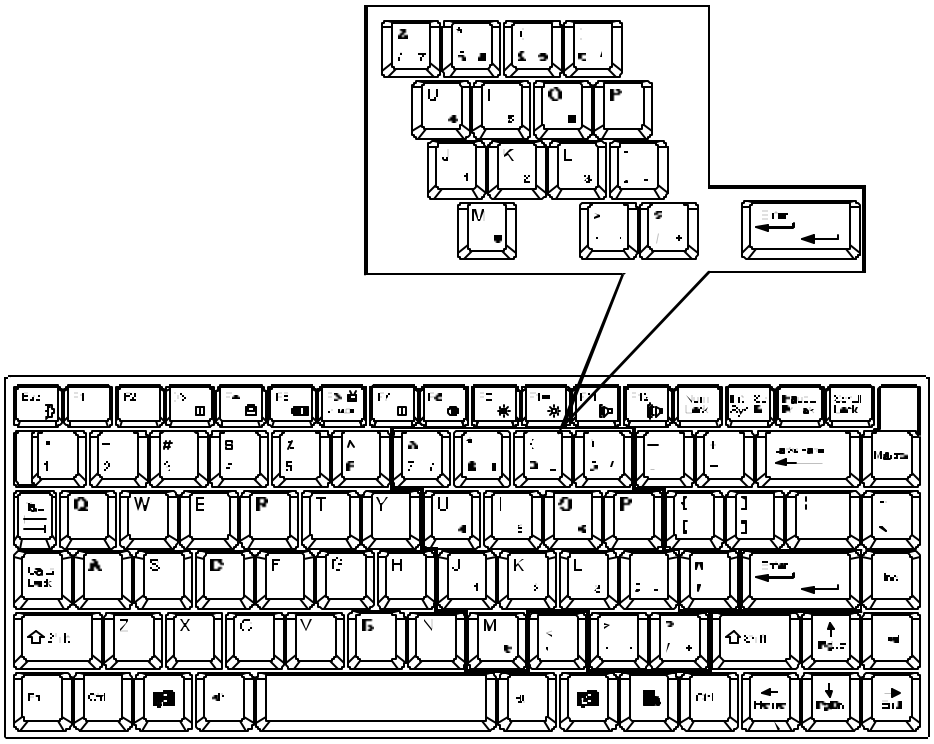
To insert a CD, press the *Eject Button* and place the CD on the *Disc Tray* label side facing up. Push the CD tray in, and you are ready to get started. The *Busy Indicator* will light up while data is accessed or audio is playing. When system power is unexpectedly interrupted, insert an instrument such as a straightened paper clip into the *Emergency Eject Hole* to manually eject the tray.



Using Numeric Keypad

The colored keys in the middle section of the keyboard will function as a Numeric Keypad. Follow these steps to access the Numeric Keypad:

- Press the **NumLock** key to lock the Numeric Keypad.
- Notice if the NumLock LED indicator in green light.
- Press the **Fn** key along with the specified keys to operate the Numeric Keypad.



Using Power Management

The Notebook system provides you with various modes to manage its power consumption while maintaining system performance. Refer to *Chapter 3: WINBIOS Setup* on how to set the options.

Doze

Doze mode is the state in which the CPU is fully alive and operational, yet running at a speed that is greatly reduced in order to save power. The system may enter the Doze mode when there is no system activity for a specified period of time.

Suspend and Resume

The system offers the ability to halt operations at extremely low power yet retain all its programming, called ***Suspend***. The Suspend Mode features two levels: *5V-Suspend-Mode (referred to as Suspend-to-DRAM)* and *0V-Suspend-Mode (referred to as Suspend-to-Disk)*. *5V-Suspend-Mode* will respond to interrupt events to determine a return to normal operation, called ***Resume***.

LCD Idle

The system will shut off the Notebook's LCD display panel backlight after a specified period of time of display inactivity. The display panel backlight will be turned back on once there is any input to the Notebook or any output from the Notebook.

Hard Disk Idle

The system will turn off the Notebook's hard disk drive motor if it has not been accessed after a specified period of time. The motor will be turned back on once the system attempts to read or write data to it.

Advanced Power Management (APM 1.2)

The Notebook provides built-in Advanced Power Management (APM 1.2) support to reduce power consumption. The functionality of APM varies depending on the operating system you are using. Some operating systems do not support APM, such as Windows NT, and therefore, cannot take advantage of the system's capabilities in this area.

Chapter 3: BIOS Utilities

Power On Self Test (POST)

The system BIOS (Basic Input/Output System) performs a series of Power On Self Test (POST) on system memory and key computer components every time the computer is powered on. If an error exists, the POST routine may halt execution (depending on the severity of the problem). POST also initializes BIOS configuration then boots the operating system.

POST: Normal Operation

If no error occurs, the BIOS will begin to boot.

POST: Error Detected

If an error is detected before the display device is initialized, a series of audible beeps will be emitted to indicate that a *fatal error* has occurred. Fatal errors do not allow the computer to continue the boot process.

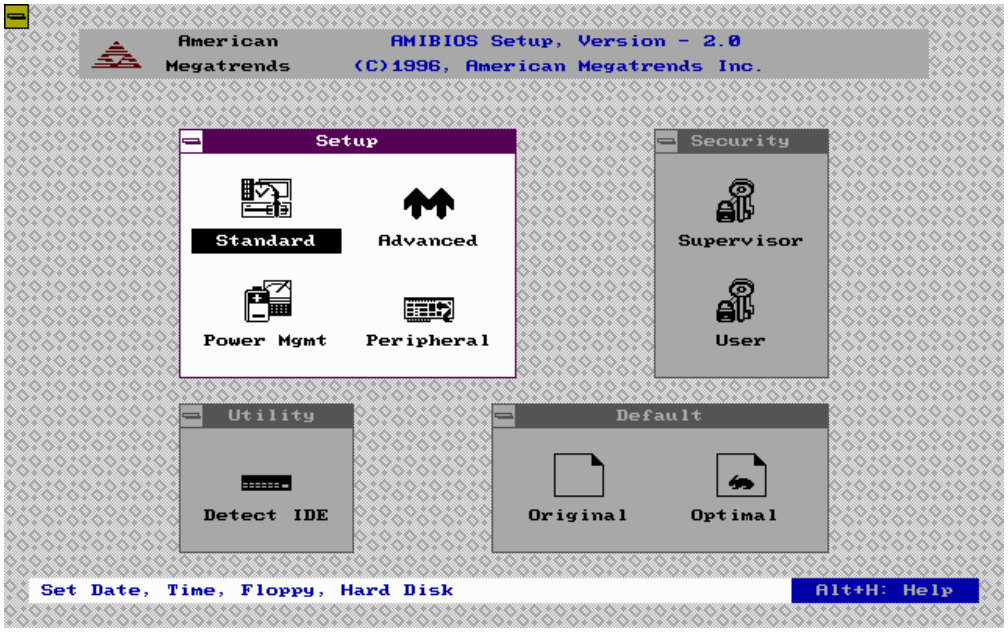
WINBIOS Setup

WINBIOS Setup configures system parameter settings that are stored in non-volatile battery-backed CMOS RAM. The information will be saved even when the power is turned off, and retains that when the system is turned back on. WINBIOS provides you with graphical user interface for easy access.

Invoking WINBIOS Setup

Access WINBIOS Setup by pressing *Del* key when POST (Power On Self Test) executes.

Hit <DEL> if you want to run setup



Working with WINBIOS Setup

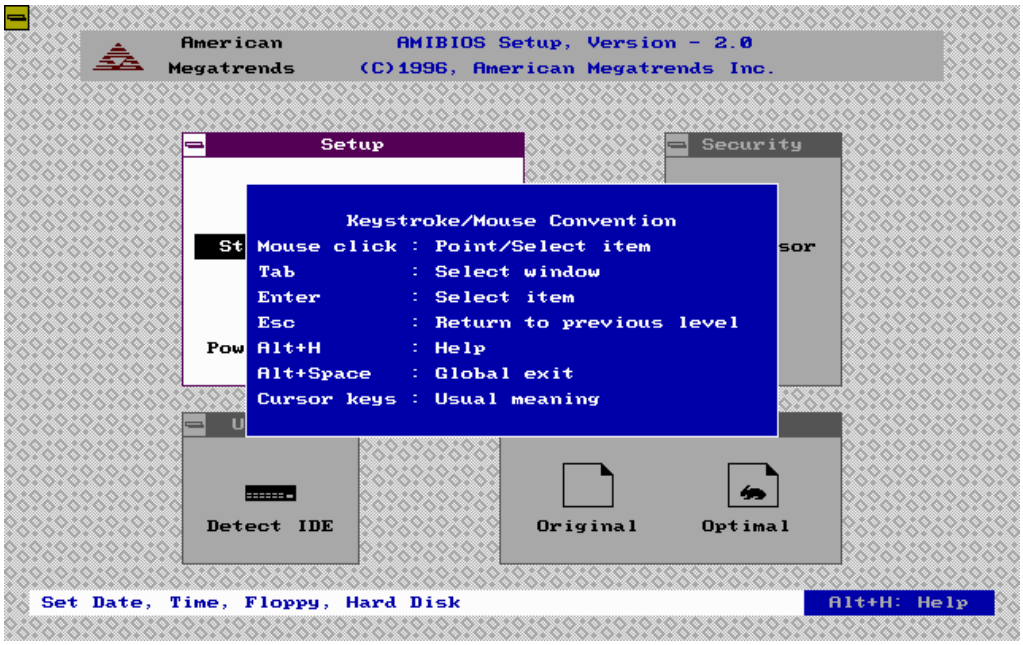
The WINBIOS Setup has four windows; ***Setup, Utilities, Security, and Default.*** Each window contains several icons. To activate a specific function, click on the corresponding icon.

WINBIOS Window	Main Menu	Description
Setup	Standard	Sets the time and date, configures disk drives.
	Advanced	Configures basic system performance parameters.
	Power Mgmt	Configures power conservation features.
	Peripheral	Configures Input/output support.
Security	Supervisor User	Supervisor Password setting. User Password setting.
Utility	Detect IDE	Auto detects IDE device.
Default	Original	Restores old values.
	Optimal	Loads optimal settings.

Help

Press key combination *Alt* + *H* to pop up the on-line Help window. Use the trackpad pointing device to access the WINBIOS Setup or use the specific key defined as below:

Keystroke	Function
Tab	Moves to the next window or field.
Enter	Selects in the current field.
Esc	Closes the current operation.
Alt + H	Accesses a Help window.
Alt + Spacebar	Exits WINBIOS Setup.



Standard Setup

Pri Master
Sec Master
Sec Slave

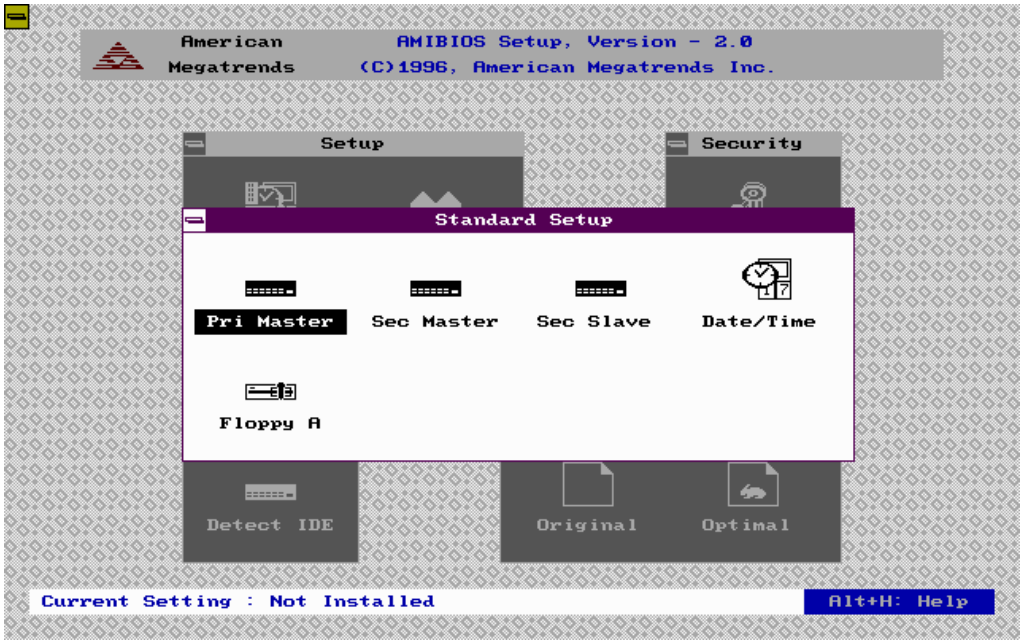
Click on an icon to set the parameters.
Type: Not Installed, 1~46, User, Auto, CDROM, Floptical.
LBA/Large Mode: Off, On.
Block Mode: Off, On.
32Bit Mode: Off, On.
PIO Mode: Auto, 0, 1, 2, 3, 4, 5.

Date/Time

Enters the current date and time: *Day/Month/Year; Hour/Minute/Second*

Floppy A

Specifies the floppy disk type: *Not Installed, 360KB 5 1/4, 1.2MB 5 1/4, 720KB 3 1/2, 1.44MB 3 1/2, 2.88MB 3 1/2.*


American
Megatrends
AMIBIOS Setup, Version - 2.0
(C)1996, American Megatrends Inc.
Setup
Security
Standard Setup
Pri Master
Sec Master
Sec Slave
Date/Time
Floppy A
Detect IDE
Original
Optimal
Current Setting : Not Installed
Alt+H: Help

Advanced Setup

Plug and Play Aware O/S Set *Yes* if the operating system is Plug & Play-aware. Set *No* if the OS is not PnP-aware.

1st Boot Device Set the first boot drive. The settings are *Disabled, IDE-0, IDE-1, Floppy, Floptical, CDROM.*

2nd Boot Device Set the second boot drive. The settings are *Disabled, IDE-0, Floppy, Floptical* or *CDROM.*

3rd Boot Device Set the third boot drive. The settings are *Disabled, IDE-0, Floppy, Floptical* or *CDROM.*

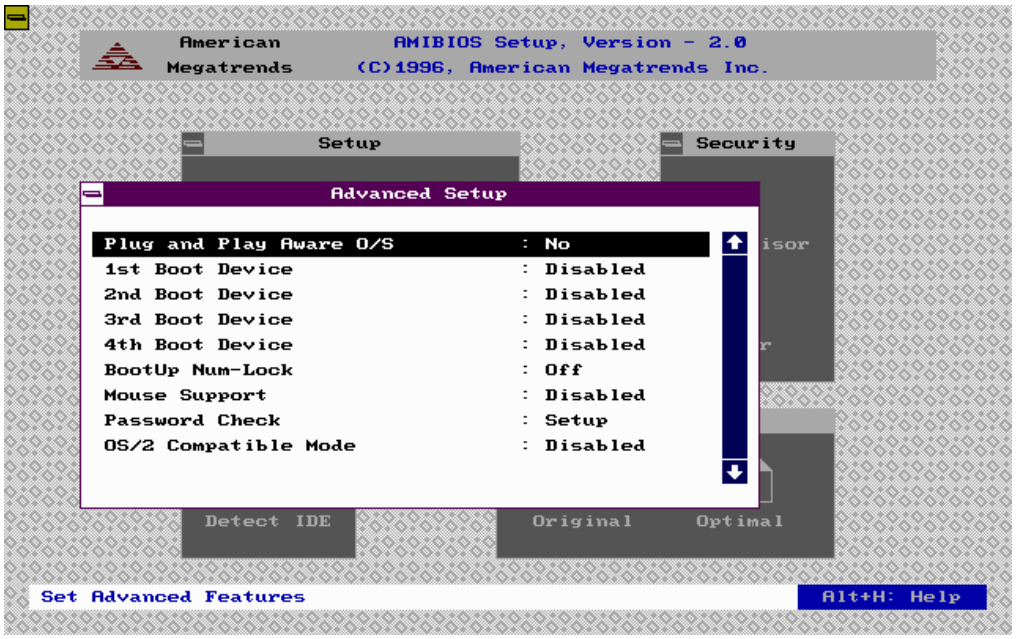
4th Boot Device Set the fourth Boot drive. The settings are *Disabled, IDE-0, Floppy, Floptical* or *CDROM.*

BootUp Num-Lock Set *Off* to turn the Num Lock key off when the system is booted, or set *On* to turn the Num Lock on.

Mouse Support Set *Enabled* to support a PS/2-type mouse, or set *Disabled* to disable the capability.

Password Check Set *Always* to pop up a password prompt every time the Notebook is turned on. Set *Setup* to pop up a password prompt every time WINBIOS is accessed.

OS/2 Compatible Mode Set *Enabled* to run with IBM OS/2. Set *Disabled* to disable the capability.


American Megatrends
AMIBIOS Setup, Version - 2.0
(C)1996, American Megatrends Inc.
Setup
Security
Advanced Setup
Plug and Play Aware O/S : No
1st Boot Device : Disabled
2nd Boot Device : Disabled
3rd Boot Device : Disabled
4th Boot Device : Disabled
BootUp Num-Lock : Off
Mouse Support : Disabled
Password Check : Setup
OS/2 Compatible Mode : Disabled
Detect IDE
Original
Optimal
Set Advanced Features
Alt+H: Help

Power Management Setup

Auto DOZE Mode CPU Clock — Set the CPU clock state when the CPU enters DOZE Mode. The settings are *Disabled, CPU* 3/4, CPU/2, CPU/4, CPU/8,* or *CPU/16.*

Auto DOZE Mode Time Out — Specify the length of a period of system inactivity. When the timer expires, the CPU enters DOZE Mode. The settings are *Disabled, 1/2 second, 2 seconds, 8 seconds.*

Suspend Mode — Set the level of suspend mode. The settings are *5 volt (Suspend to DRAM), 0 volt (Suspend to Disk),* or *5V to 0V (Suspend from DRAM to Disk).*

Suspend Time Out — Specify the length of a period of system inactivity. When the timer expires, the system enters Suspend Mode. The settings are *Disabled,* or from *1 minute* to *20 minutes.*

5V to 0V Suspend Time Out — Specify the length of a period of system inactivity. When the timer expires, the system enters 5V to 0V Suspend Mode (if configured so). The settings are from *1 minute* to *120 minutes.*

Battery Low Suspend — Suspend the system upon a low battery condition. The settings are *Disabled,* or *Enabled.*

Resume Alarm — Resume the system from 5V Suspend Mode (if configured so) when resume alarm timer expires. The settings are *Enabled, or Disabled.*

Resume Alarm Time — Set the time to resume the system from 5V Suspend Mode.

Monitor Video for Suspend

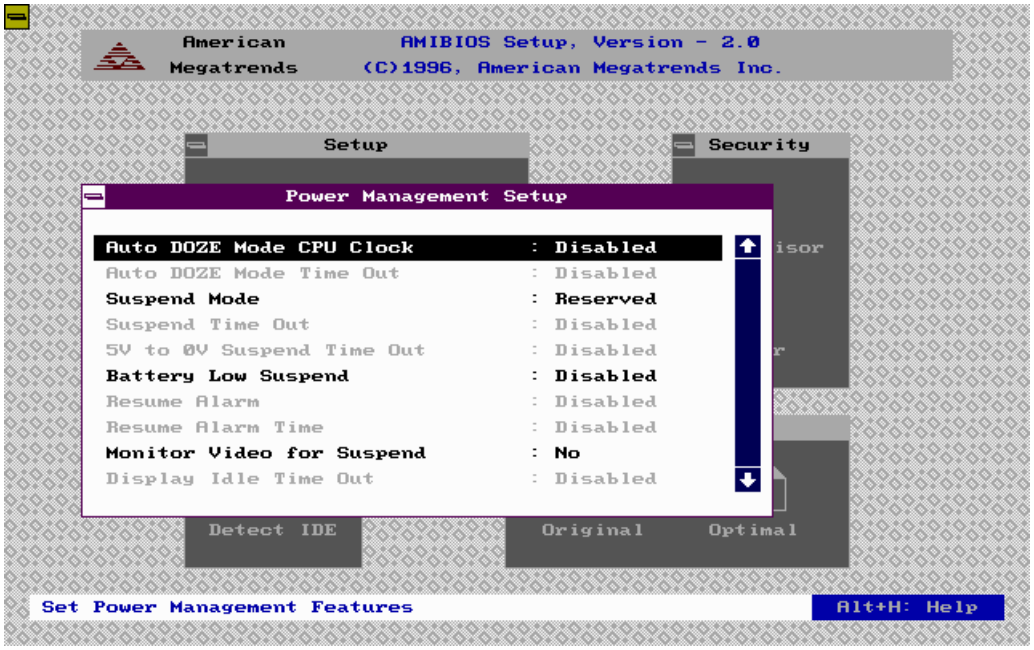
If there is no display activity for a specified period of time, the system enters Suspend Mode. The settings are *No* or *Yes*.

Display Idle Time Out

Specify the length of a period of video inactivity. When the timer expires, the LCD display will be put on standby mode. The settings are *Disabled*, or from *1* to *20 minutes*.

Hard Disk Idle Time Out

Specify the length of a period of hard disk inactivity. If the timer expires, the hard disk will be put on standby mode. The settings are *Disabled*, or from *1 minute* to *20 minutes*.



Peripheral Setup

TV Mode

Set the TV system appropriate for your local video standard when TV-out is required. The settings are *Disabled, NTSC,* or *PAL.*

OnBoard Parallel Port

Enable the parallel port and specify the base I/O port address. The settings are *Disabled, 378h, 278h,* or *3BCh.*

Parallel Port Mode

Specify the parallel port mode. The settings are *Normal, EPP (Enhanced Parallel Port),* or *ECP (Extended Capabilities Port).*

EPP Version

Set the EPP mode version when **Parallel Port Mode** is configured to be *EPP.* The settings are version *1.9* or *1.7.*

Parallel Port IRQ

This option allows you to specify the parallel IRQ. The settings are *5* or *7.*

Parallel Port DMA

This option is available only if the setting for the **Parallel Port Mode** is *ECP.* Available settings are *1, or 3.*

OnBoard Serial Port1

Enable the serial port 1 and specify the base I/O port address for serial port 1. The settings are *Disabled, 3F8h, 2F8h, 3E8h,* or *2E8h.*

OnBoard Serial Port2

Enable the serial port 2 and specify the base I/O port address for serial port 2. The settings are *Disabled, 3F8h, 2F8h, 3E8h,* or *2E8h.*

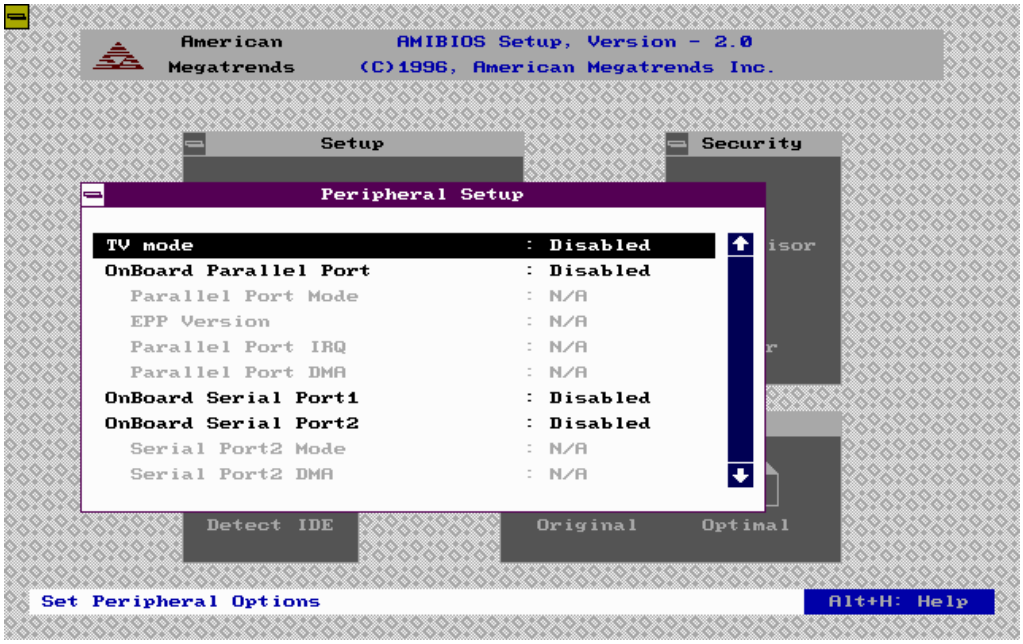
Serial Port2 Mode

Specify Serial Port 2 Mode. The settings are *Standard, IrDA (HPSIR), ASK IR,* or *Fast IR.*

Serial Port2 DMA

This option is available only if the setting for **Serial Port2 Mode** is *Fast IR.* The settings are *1,* or *3.*

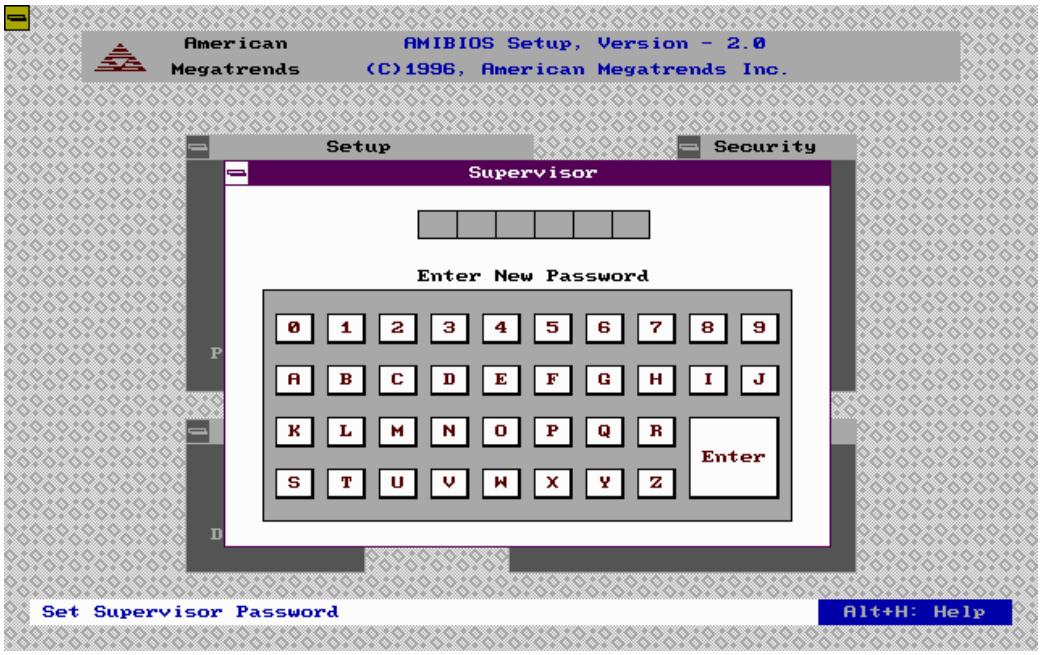
OnBoard Audio Base Port	Specify the audio base I/O port address. The settings are *Disabled, 220h, 230h, 240h, or 250h.*
OnBoard MIDI Port	Specify the onboard MIDI I/O port address. The settings are *Disabled, 300h, 310h, 320h, or 330h.*
1st Audio DMA Channel	Specify the first audio DMA channel. The settings are *DMA #0, DMA#1, DMA#3.*
2nd Audio DMA Channel	Specify the second audio DMA channel. The settings are *Disabled, DMA #0, DMA#1, DMA#3.*
IRQ Select	Select an IRQ signal. The settings are *Disabled, IRQ5, 7, 9, 10, 11.*


American
Megatrends
AMIBIOS Setup, Version - 2.0
(C)1996, American Megatrends Inc.
Setup
Security
Peripheral Setup
TV mode : Disabled
OnBoard Parallel Port : Disabled
Parallel Port Mode : N/A
EPP Version : N/A
Parallel Port IRQ : N/A
Parallel Port DMA : N/A
OnBoard Serial Port1 : Disabled
OnBoard Serial Port2 : Disabled
Serial Port2 Mode : N/A
Serial Port2 DMA : N/A
Detect IDE
Original
Optimal
Set Peripheral Options
Alt+H: Help

Security

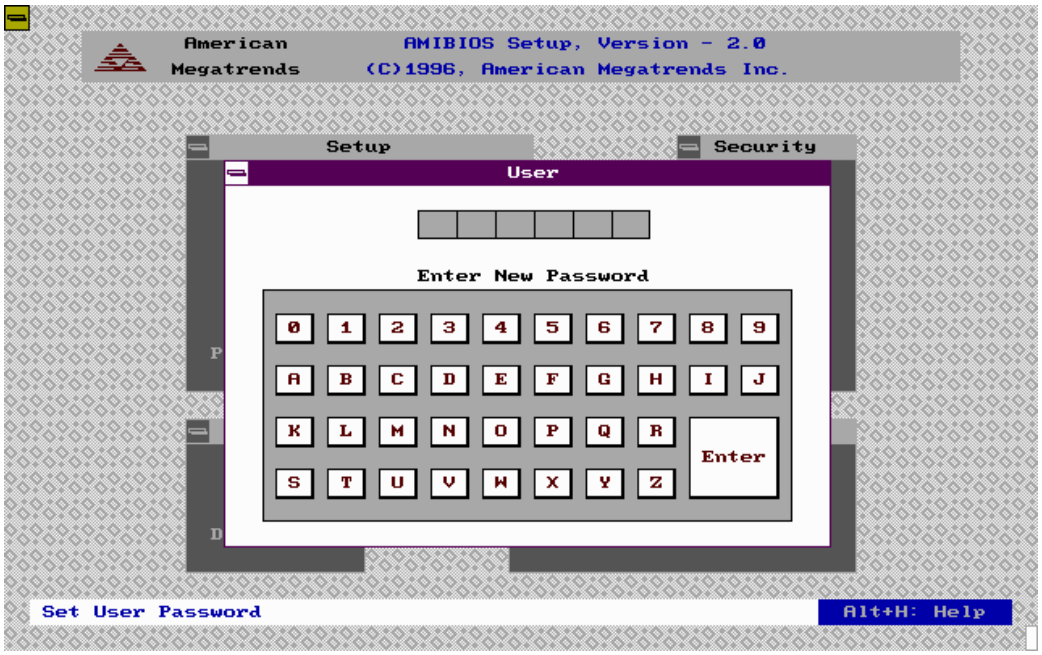
Supervisor

Enter a supervisor password up to 6 characters every time the system is booted or when WINBIOS Setup is accessed. You may either type the password on the keyboard, or select letters using the mouse. The password does not appear on the screen when typed.



User

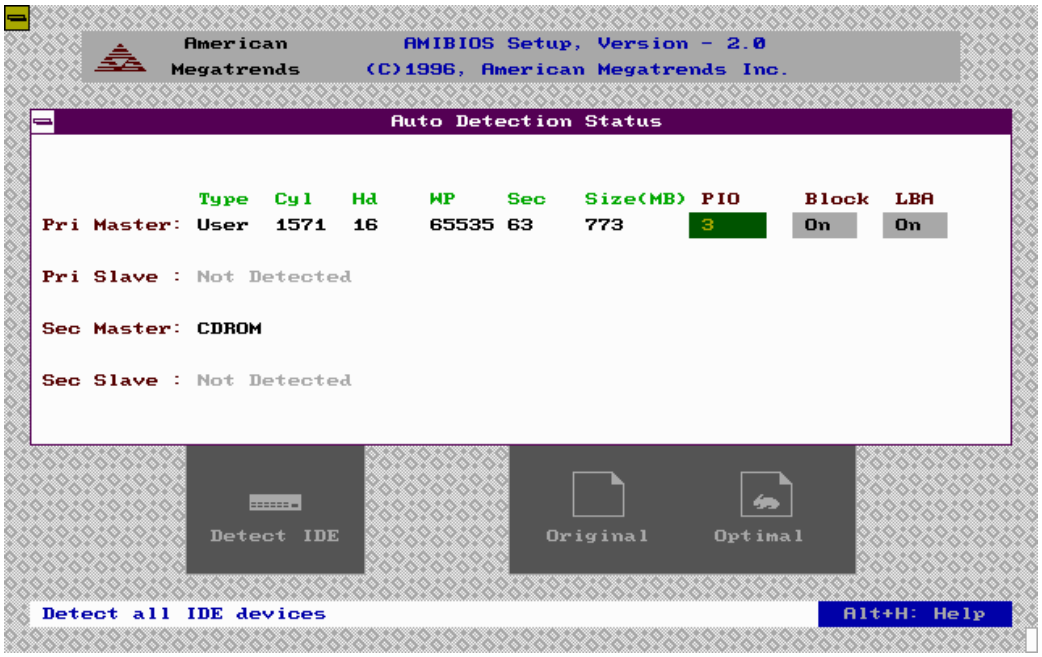
Enter a user password up to 6 characters every time the system is booted or when WINBIOS Setup is accessed. Prior setting of supervisor password is required.



Utility

Detect IDE

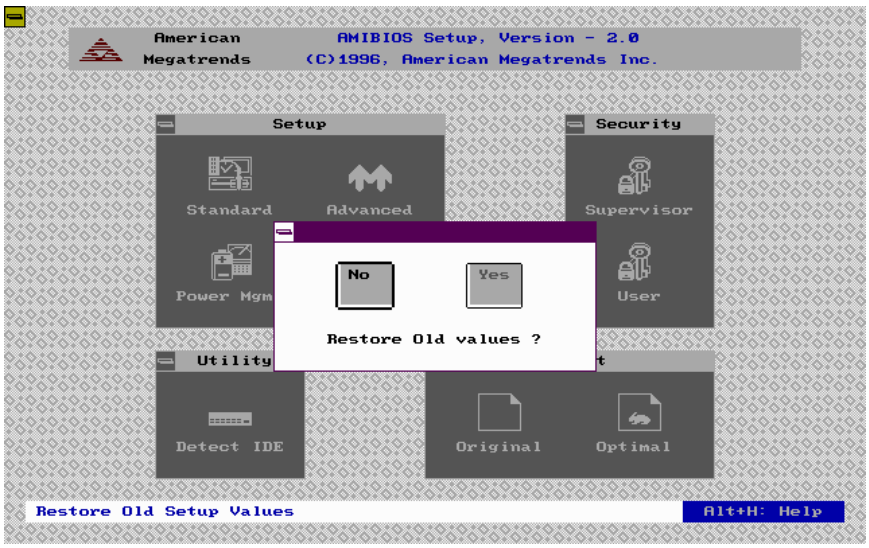
Select the IDE Detection icon to automatically detect all drive parameters: *Type*, *Cyl* (number of cylinders), *Hd* (number of heads), *WP* (Starting write precompensation cylinder), *Sec* (number of sectors), *Size* (drive capacity). Click on **PIO** Mode to select the IDE programmed I/O mode among the settings *Auto*, *0*, *1*, *2*, *3*, *4*, *5*. Click on **Block** Mode and choose *On* to support IDE drives that use Block Mode. Click on **LBA** Mode and choose *On* to support IDE drives whose capacities are greater than 528MB.

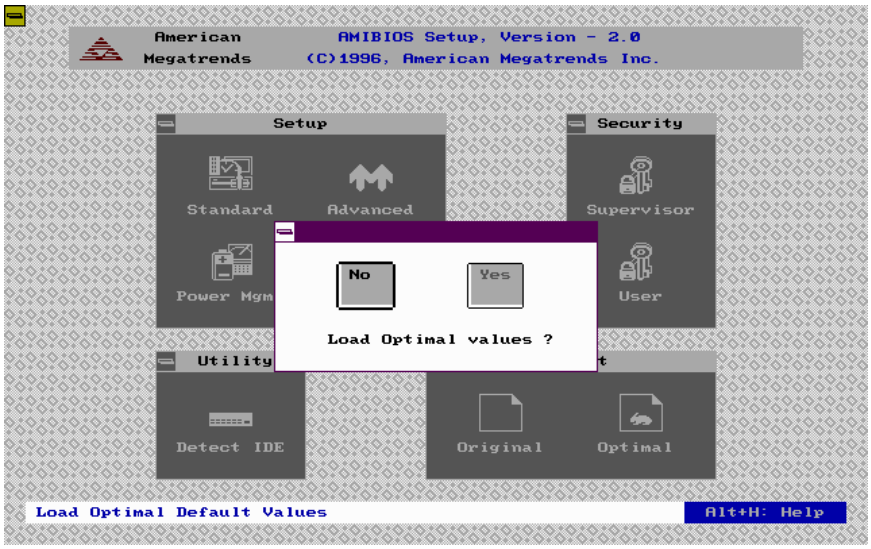


Default

Original Restore the current setup settings to the old values.

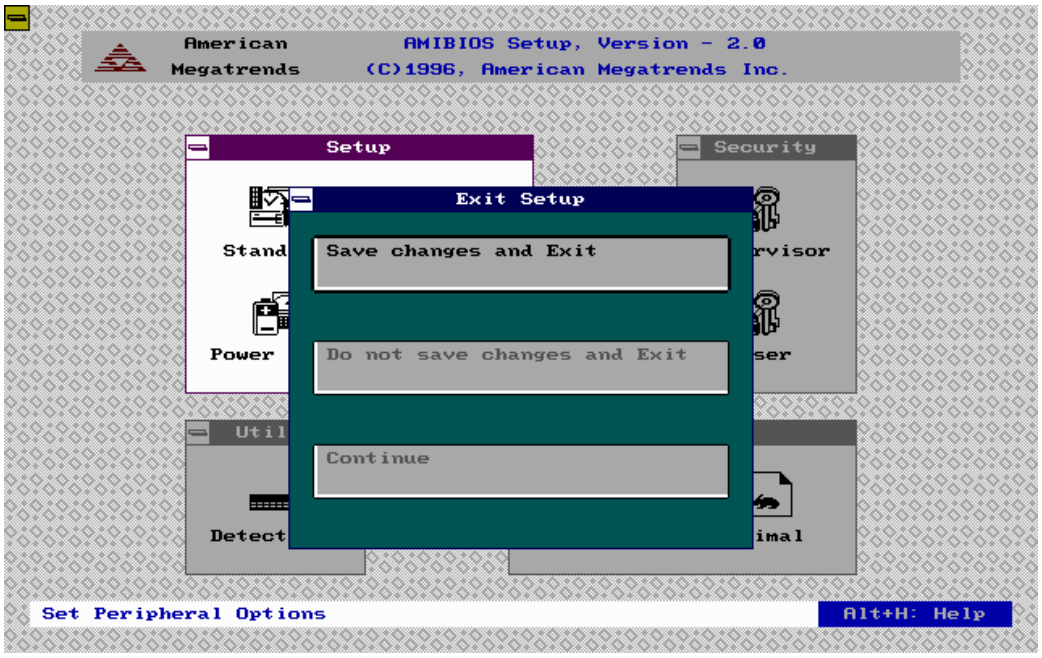
Optimal Load the optimal values for best system performance.





Exit

Click the Close button in the upper-left corner of the window to close the WINBIOS Setup. You can also follow the Help instruction to exit the WINBIOS by pressing *Esc* key.



System Resources

As the expansion of the system will increase with more and more devices, so will the possibility of system resource conflicts, such as IRQs. The system may run short of IRQs in resource allocation to devices. Below is the defaulted Interrupt Request in the Notebook system. You may even need to disable one device to enable another, to guarantee a conflict free configuration. All IRQs are configurable in most known operating systems, some even accessible in the CMOS BIOS as previously described. For greater details, please refer to your operating system's manual.

IRQs	**Devices**
IRQ0	Timer
IRQ1	Keyboard
IRQ2	Cascade
IRQ3	COM 2
IRQ4	COM 1
IRQ5	Audio
IRQ6	Floppy disk drive
IRQ7	Parallel port
IRQ8	Real time clock
IRQ9	Not used
IRQ10	USB
IRQ11	PCMCIA
IRQ12	PS/2 (Trackpad)
IRQ13	Floating point unit
IRQ14	Primary IDE interface (HDD)
IRQ15	Secondary IDE interface (CD-ROM)

Utility

0V Suspend (HDPREPEZ.EXE)

The utility HDPREPEZ.EXE is used to create the 0V-Suspend partition or DOS FAT-compatible file reserved for storing the system state during a 0 Volt suspend mode.

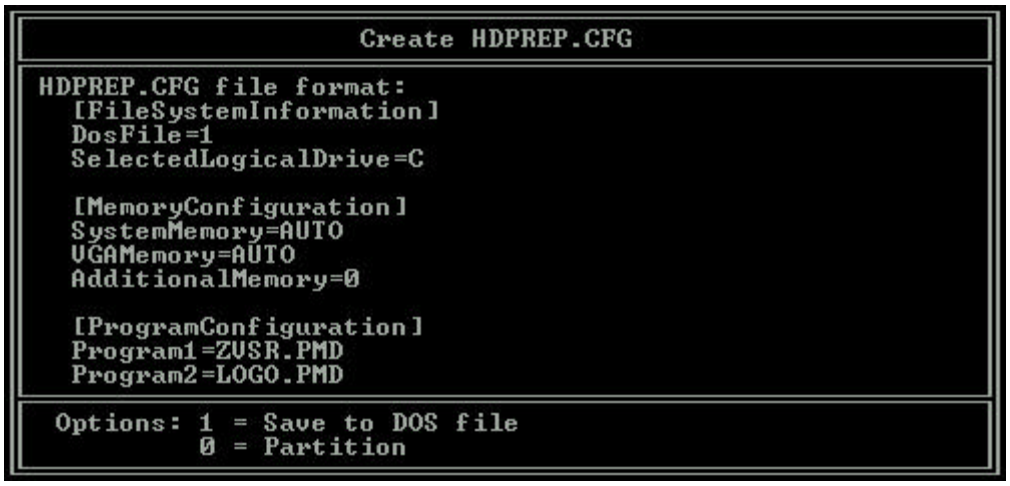
1. Insert the 0V-Suspend Utility in the appropriate drive, for example Drive A:, to create a configuration file named HDPREP.CFG.

   A:\>HDPREPEZ /C

2. A screen will appear for configuration as shown in the next page.
3. DosFile=1 Options: *1* = Save to DOS file.
   0 = Partition (Use your operating system's FDISK program to create a partition on the hard disk whose size should accommodate the following configured memory.)
4. SelectedLogicalDrive=C Options: Select logical drive from C to Z if *Save to DOS file.*
5. SystemMemory=AUTO Options: Enter system memory in KB, e.g. 8096, or *AUTO* for auto-detection.
6. VGAMemory=AUTO Options: Enter video memory in KB, e.g. 1024, or *AUTO* for auto-detection.
7. AdditionalMemory=0 Options: Enter additional memory to reserve in KB, or *0* if none.
8. Program1=ZVSR.PMD Options: Use *ZVSR.PMD* default display file, or enter [Path]\FileName for 0V Suspend/Resume display program, or *_None_* for no display program.
9. Program2=LOGO.PMD Options: Use *LOGO.PMD* default display file, or enter [Path]\FileName for logo display program, or *_None_* for no display program.
10. Create file HDPREP.CFG (Y/N)? Options: *Y* for Yes, or *N* for No.
    (Keep the diskette write-enable and press Enter to create HDPREP.CFG on it.)
11. Execute the HDPREPEZ.EXE utility again to create the DOS FAT -compatible file or create the partition.

    A:\>HDPREPEZ

12. Reboot your Notebook system.


Create HDPREP.CFG
HDPREP.CFG file format:
[FileSystemInformation]
DosFile=1
SelectedLogicalDrive=C
[MemoryConfiguration]
SystemMemory=AUTO
VGAMemory=AUTO
AdditionalMemory=0
[ProgramConfiguration]
Program1=ZUSR.PMD
Program2=LOGO.PMD
Options: 1 = Save to DOS file
0 = Partition