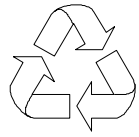
AcerPower SN
System

Service Guide

Service guide files and updates are available
on the AIPG/CSD web; for more information,
please refer to http://csd.acer.com.tw



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Conventions

The following conventions are used in this manual:

`Screen messages`	Denotes actual messages that appear on-screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information!

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.
2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

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System Introduction

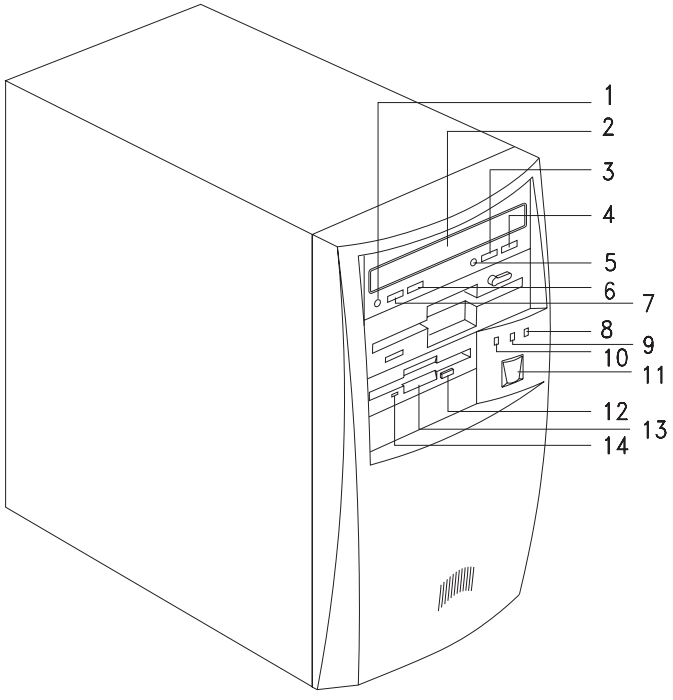
This product is a Pentium II / Pentium III processor-based Micro ATX, IBM PC/AT compatible system with PCI/ AGP bus.

It supports:

- Intel Pentium II / Pentium III processor
- 512 KB PBSRAM L2 cache incorporated in Pentium II CPU
- 2 * 168 pin DIMM sockets (maximum up to 256MB)
- Power management features
- CPU SMM (System Management Mode)
- ACPI compliance BIOS
- API (Application Program Interface) feature
- ATA compliance hard disk power saving feature
- Onboard PCI master enhanced local bus IDE (Embedded in ALI M1543C chipset)
- PIO mode 4
- Ultra DMA/33
- Onboard serial ports - 2 high speed NS16C550 compatible UARTs with 16 byte FIFOs
- Onboard parallel port - SPP, EPP and ECP (IEEE 1284 compliant)
- Onboard FDD interface - 1.2MB/1.44MB/2.88MB & 3 mode floppy diskette drive
- PS/2 keyboard
- PS/2 mouse
- Plug-and-Play (PnP) features
- 2 USB connector
- On board Crystal CS4280 PCI Audio Interface; Crystal CS4297 Audio Codec ‘97
- Onboard Slot1 (GTL+ bus).
- Support Wake-on LAN.
- 3 PCI slots + 1 AGP slot
- Software shutdown for Windows 95/98
- On-board DC-to-DC converter (VRM 8.2 spec)

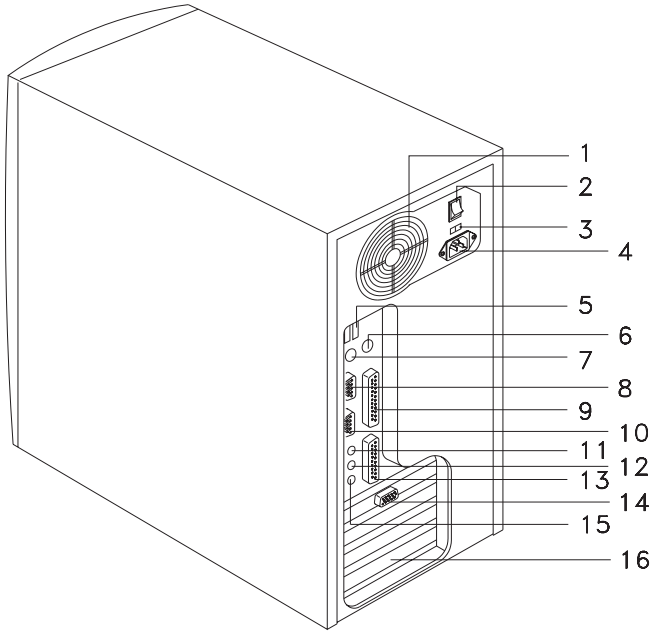
System Outlook for AcerPower SN

Front Panel



No.	Description
1	Headphone/Earphone port
2	CD-ROM tray
3	Stop/Eject button
4	Skip/Forward button
5	CD-ROM LED
6	Increase Volume button
7	Decrease Volume button
8	Turbo LED
9	Power LED
10	Hard disk drive LED
11	Power button
12	3.5-inch floppy disk drive eject button
13	3.5-inch floppy disk drive
14	3.5-inch floppy disk drive LED

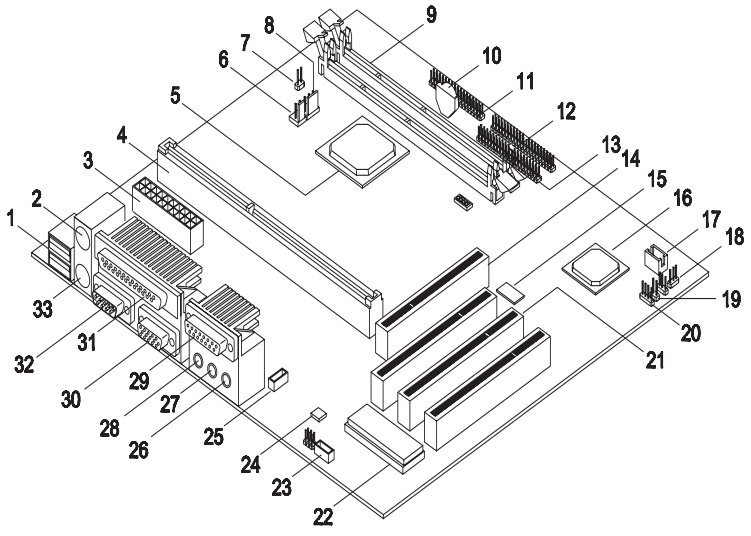
Rear Panel



No.	Description
1	Fan
2	System main power switch
3	Voltage selector
4	System power socket
5	USB ports
6	PS/2 mouse port
7	PS/2 keyboard port
8	Serial 2 port
9	Parallel port
10	Serial 1 port
11	Speaker-out/Line-out port
12	Line-in port
13	Game/MIDI portt
14	VGA/Monitor port
15	Microphone-in port
16	Add-on card brackets

Board Layout

Your system board should look just like the following figure:



The following table lists the components that you will find on the system board:

No.	Component	No.	Component
1	USB ports	18	Power/Suspend LED connector
2	PS/2 mouse port	19	Power button connector
3	ATX power connector	20	Modem ring-in connector
4	CPU connector	21	PCI slots
5	PCI-AGP-Memory controller	22	System BIOS chip
6	2-pin CPU fan connector	23	Fax-modem connector
7	Reset connector	24	Audio CODEC ‘97
8	3-pin CPU fan connector	25	CD-in connector
9	DIMM sockets	26	Microphone-in port
10	Battery	27	Line-in port
11	Floppy disk drive connector	28	Line-out port
12	IDE 1 connector	29	MIDI port
13	IDE 2 connector	30	COM 1 port
14	AGP slot	31	Parallel/Printer port
15	Audio controller	32	COM 2 port
16	PCI-to-ISA bus controller	33	PS/2 keyboard port
17	Wake-on LAN connector		

Hardware Specifications and Configurations

Processor

Item	Specification
Type	Intel Pentium II / Pentium III.
Slot	Slot 1*
Speed	Pentium II processor: 350/400 MHz Pentium III processor: 450/500 MHz
Bus frequency	66 / 100 MHz
Voltage	Processor voltage can be detected by the system without setting any jumper.

* Slot 1 defines the mechanical and electrical specification for Pentium II processor slot. It is defined and developed by Intel.

BIOS

Item	Specification
BIOS code programmer	Acer
BIOS version	V3.2
BIOS ROM type	Bulk mode flash ROM
BIOS ROM model number	Winbond W29C020-90B
BIOS ROM size	256KB
BIOS ROM package	32-pin DIP package
Support protocol	PCI 2.1, APM1.2, DMI 2.00.1, E-IDE, ACPI 1.0, ESCD 1.03, ANSI ATA 3.0, PnP 1a, Bootable CD-ROM 1.0, ATAPI
Boot from CD-ROM feature	Yes
Supports LS-120 drive	Yes
Supports BIOS boot block feature	No
BIOS password control	Check/bypass by JP7 setting
Acer logo display control during POST	Enable/disable by BIOS setting

NOTE: The BIOS can be overwritten/upgraded using the “AFLASH” utility (AFLASH.EXE)

BIOS Hotkey List

Hotkey	Function	Description
CTRL + ALT + ESC	Enter BIOS Setup Utility	Press while the system is booting to enter BIOS Setup Utility.
F8	Enable hidden page of BIOS Setup Utility	Press in BIOS Setup Utility main menu screen, the Advanced Options menu then appears. The items shown in the Advanced Options menu are: Memory/Cache Options PnP/PCI Options

System Memory

Item	Specification
Onboard embedded memory size	0MB
Memory socket number	2 sockets (2 banks)
Supported memory size per socket	32MB / 64MB / 128MB
Supported maximum memory size	256MB (128MB x 2)
Supported memory type	SDRAM
Supported memory speed	*100MHz (PC100) (for Local Bus speed 100MHz or 66 MHz) 66MHz (for Local Bus speed 66MHz)
Supported memory voltage	3.3 V
Supported memory module package	168-pin DIMM
Supported parity check feature	No
Support for Error Correction Code (ECC) feature.	No
Memory module combinations	You can install memory modules in any combinations as long as they match the above specifications.

* The default is 100 MHz

DIMM Combinations

DIMM1	DIMM2	TOTAL	DIMM1	DIMM2	TOTAL
32M	0	32M	64M	32M	96M
64M	0	64M	64M	64M	128M
128M	0	128M	64M	128M	192M
0	32M	32M	128M	32M	160M
0	64M	64M	128M	64M	192M
0	128M	128M	128M	128M	256M
32M	32M	64M			
32M	64M	96M			
32M	128M	160M			

Cache Memory

Item	Specification
First-Level Cache Configurations	
Cache function control	Enable/disable by BIOS Setup
Second-Level Cache Configurations The information below is only applicable to systems with installed Pentium II processor .	
Tag RAM location	On Pentium II/ Pentium III processor
L2 Cache RAM location	On Pentium II/ Pentium III processor
L2 Cache RAM type	PBSRAM (Pipelined-burst Synchronous RAM)
L2 Cache RAM size	Depends on Processor type
L2 Cache RAM speed	One-half the processor core clock frequency
L2 Cache function control	Enable/disable by BIOS Setup
L2 Cache scheme	Fixed in write-back

Audio Interface

Item	Specification
Audio controller	Crystal CS4280 with Crystal CS4297 Audio Codec'97
Audio controller resident bus	PCI bus
Audio function control	Enable/disable by BIOS Setup
Mono or stereo	Stereo
Resolution	18 bits
Compatibility	Compliant to Microsoft Windows Sound System, Sound Blaster Pro standard, and Microsoft PC'98 and WHQL audio requirement.
Music synthesizer	Yes, integrated FM synthesizer
Sampling rate	48 KHz (max.)
MPU-401 support	Yes
Microphone jack	Connect via CN12
Headphone jack	Connect via CN12
Joystick port	Connect via CN12
Fully DOS games compatibility	Not support

IDE Interface

Item	Specification
IDE controller	Built-in ALI M1543C
IDE controller resident bus	PCI bus
Number of IDE channel	2 (CN13 and CN14)
Supports IDE interface	E-IDE (Support PIO mode-4 and Ultra DMA /33), ANSIS ATA rev.3.0/ ATAPI
Supported LS-120	Yes
Supported bootable CD-ROM	Yes

Diskette drive Interface

Item	Specification
Diskette drive controller	Built-in ALI M1543C
Supported diskette drive formats	1.2MB, 1.44MB, 2.88MB and 3-mode format

Parallel Port

Item	Specification
Parallel port controller	Built-in ALI M1543C
Number of parallel ports	1
ECP/EPP support	Yes
Connector type	25-pin D-type female connector
Parallel port function control	Enable/disable by BIOS Setup
Optional ECP DMA channel (in BIOS Setup)	DMA channel 1 DMA channel 3
Optional parallel port I/O address (via BIOS Setup)	3BCh 378h 278h
Optional parallel port IRQ (via BIOS Setup)	IRQ5 IRQ7

Serial Port

Item	Specification
Serial port controller	Built-in ALI M1543C
Number of serial ports	2
Serial port locations	CN11
CS16C550 UART support	Yes, with 16 bytes FIFO
Connector type	9-pin D-type female connector
Optional serial port I/O address (via BIOS Setup)	3F8h 2F8h 3E8h 2E8h
Optional serial port IRQ (via BIOS Setup)	COM1: IRQ 4 COM2: IRQ 3

Memory Address Map

Address	Size	Function
000000 - 07FFFF	512 Kbytes	Host Memory
080000 - 09FFFF	128 Kbytes	Host/PCI Memory
0A0000 - 0BFFFF	128 Kbytes	PCI/ISA Video Buffer Memory
0C0000 - 0C7FFF	32 Kbytes	Video BIOS Memory
0C8000 - 0DFFFF	96 Kbytes	ISA Card BIOS & Buffer Memory
0E0000 - 0EFFFF	64 Kbytes	BIOS Extension Memory Setup and Post Memory PCI Development BIOS
0F0000 - 0FFFFF	64 Kbytes	System BIOS Memory
100000 - UPPER LIMIT		Main Memory
UPPER LIMIT - 4GBytes		PCI Memory

PCI INTx# and IDSEL Assignment Map

PCI INTx #	PCI Devices	Device IDSEL : ADxx
INTA#	PCI-Slot1	AD31
INTB#	PCI-Slot2	AD30
INTC#	PCI-Slot3	AD27
INTD#	Audio Controller (CS4280)	AD22

PCI Slot IRQ Routing Map

PCI INTX#	INTA	INTB	INTC	INTD	Bus Mastering
PCI slot 1	Route 1	Route 2	Route 3	Route 4	Enabled
PCI slot 2	Route 2	Route 3	Route 4	Route 1	Enabled
PCI slot 3	Route 3	Route 4	Route 1	Route 2	Enabled

I/O Address Map

Hex Range	Devices
000-00F	DMA Controller-1
020-021	Interrupt Controller-1
040-043	System Timer
060-060	Keyboard Controller 8742
061-061	System Speaker
070-071	CMOS RAM Address and Real Time Clock
081-08F	DMA Controller-2
0A0-0A1	Interrupt Controller-2
0C0-0DF	DMA Controller-2
0F0-0FF	Math Co-Processor
170-177	Secondary IDE
1F0-1F7	Primary IDE
278-27F	Parallel Printer Port 2
2F8-2FF	Serial Asynchronous Port 2
378-37F	Parallel Printer Port 1
3F0-3F5	Floppy Disk Controller
3F6-3F6	Secondary IDE
3F7-3F7	Primary IDE
3F8-3FF	Serial Asynchronous Port 1
0CF8	Configuration Address Register
0CFC	Configuration Data Register
778-77A	Parallel Printer Port 1

ALI M1543C GPIO (General Purpose I/O) PIN Definitions

Item		Description
GPO3	FANOFFJ	0: Turn off the fan 1: Turn on the fan
GPO22	DISS0I01	0: Disabled 1: Enabled
GPI2	CHKPSW	0: Bypass 1: Check password
GPO2	PWRLED	0: Suspend 1: Normal

IRQ Assignment Map

IRQx	System Devices	Add-On-Card Devices
IRQ0	Timer	Not be used
IRQ1	Keyboard	Not be used
IRQ2	Cascade Interrupt Control	Not be used
IRQ3	Serial Alternate	Reserved
IRQ4	Serial Primary	Reserved
IRQ5	Parallel port (Alternate)	Reserved
IRQ6	Floppy Diskette	Reserved
IRQ7	Parallel Port	Reserved
IRQ8	Real Time Clock	Not be used
IRQ9	Not be used	Reserved
IRQ10	Not be used	Reserved
IRQ11	Not be used	Reserved
IRQ12	PS/2 Mouse	Reserved
IRQ13	Math Coprocessor Exception	Not be used
IRQ14	Hard disk drive	Reserved
IRQ15	Hard disk drive	Reserved

DRQ Assignment Map

DRQx	System Devices	Add-On-Card Devices
DRQ0	Not be used	Reserved
DRQ1	Not be used	Reserved
DRQ2	Floppy Diskette	Not be used
DRQ3	Not be used	Reserved
DRQ4	Cascade	Not be used
DRQ5	Not be used	Reserved
DRQ6	Not be used	Reserved
DRQ7	Not be used	Reserved

System Board Major Chips

Item	Controller
System core logic	ALI M1621/ ALI M1543C
Super I/O controller	Built-in in ALI M1543C
Audio controller	Crystal CS4280
Hard disk drive controller	Built-in ALI M1543C
Keyboard controller	Built-in ALI M1543C
RTC	ALI M5819

Power Management

Power Saving Mode Phenomenon List

Power Saving Mode	Phenomenon
IDE Hard Disk Standby mode	Hard disk drive is in standby mode (spindle turned-off)
Monitor Power Saving mode	Monitor is in suspend mode (V-sync.=0Hz).
System Standby mode	Power LED illuminate in amber color Hard disk drive is in standby mode (spindle turned-off) Monitor is in off mode (V-sync. and H-sync. =0Hz).
System Suspend mode	Power LED illuminate in amber color Hard disk drive is in standby mode (spindle turned-off) Monitor is in off mode (V-sync. and H-sync. =0Hz). Processor fan turns off

NOTE: The VGA BIOS should support DPMS (Desktop Power Management System) for the standby and suspend mode function call. When the Display Standby Timer expires, the system BIOS will execute the DPMS service routines.

Environmental Requirements

Item	Specifications
Temperature	
Operating	+10 ~ +35°C
Non-operating	-20 ~ +60°C
Humidity	
Operating	20% to 80% RH
Non-operating	20% to 80% RH
Vibration	
Operating (unpacked)	5 ~ 18 Hz: 0.015 mm 18 ~ 250 Hz: 0.25 G
Non-operating (packed)	5 ~ 27.1 Hz: 0.6 G 27.1 ~ 50 Hz: 0.016 mm 50 ~ 500 Hz: 2 G

System Utilities

BIOS Setup Utility

The BIOS Utility is a hardware configuration program built into your system's Basic Input/Output System (BIOS).

Since most systems are already properly configured and optimized, there is no need to run this utility. However, if you encounter configuration problems and get the "Run Setup" message, you will need to run this utility.

Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

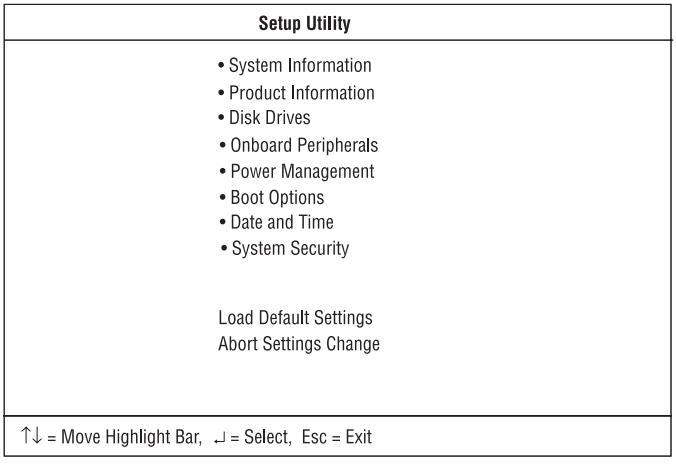
NOTE: If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask a qualified technician for assistance.

Entering Setup

To enter Setup, press the key combination **Ctrl-Alt-Esc**.

IMPORTANT:Important! You must press Ctrl-Alt-Esc simultaneously while the system is booting. This key combination does not work during any other time.

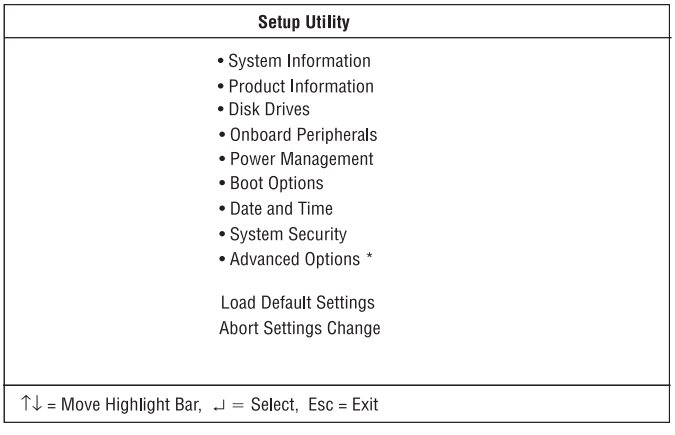
The Setup Utility main menu then appears:



The system supports two BIOS Utility levels: Basic and Advanced. The above screen is the BIOS Utility Basic Level screen. It allows you to view and change only the basic configuration of your system.

If you are an advanced user, you may want to check the detailed configuration of your system. Detailed system configurations are contained in the Advanced Level. To view the Advanced Level, press the **F8** key.

The following screen shows the Setup Utility Advanced Level main menu:



NOTE: The F8 key works only when you are in the main menu. This means that you can activate the Advanced Level only when you are in the main menu. Also, items marked by an (*) are only visible in the Advanced Level.

The command line at the bottom of the menu tells you how to move within a screen and from one screen to another.

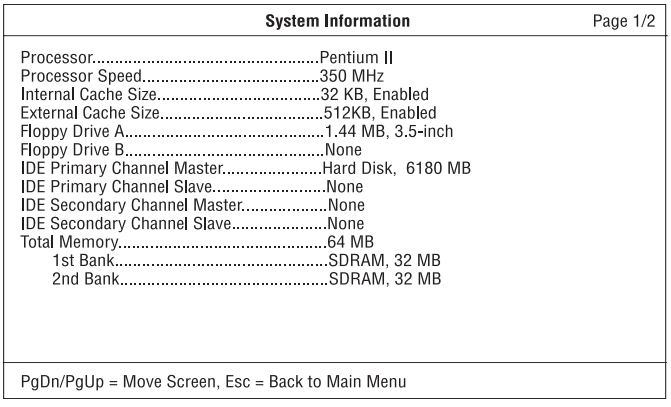
- To select an option, move the highlight bar by pressing ↓ or ↑ then press **Enter**.
- Press **PgDn** to move to the next page or **PgUp** to return to the previous page.
- To change a parameter setting, press ← or → until the desired setting is found.
- Press **Esc** to return to the main menu. If you are already in the main menu, press **Esc** again to exit Setup.

The parameters on the screens show default values. These values may not be the same as those in your system.

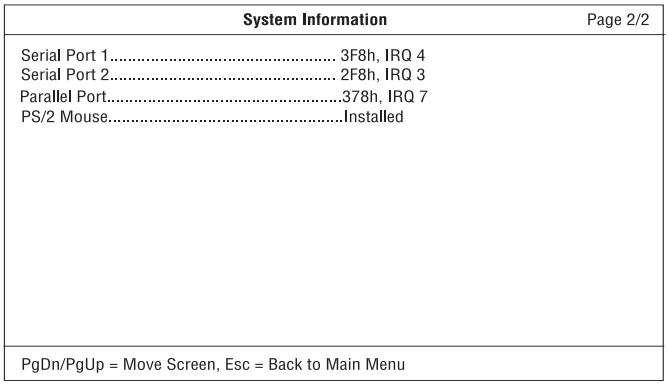
The grayed items on the screens have fixed settings and are not user-configurable.

System Information

The following screen appears if you select System Information from the main menu:



The following screen shows page 2 of the System Information menu:



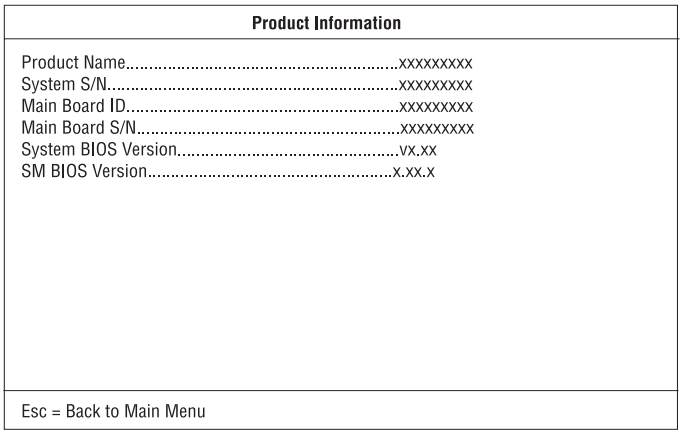
These pages show the current basic configuration of your system.

The following table describes the parameters found in the System Information pages:

Parameter	Description	Format
Processor	Specifies the type of processor currently installed in your system.	
Processor Speed	Specifies the speed of the processor currently installed in your system.	Speed in MHz
Internal Cache Size	Specifies the first-level or the internal memory (i.e., the memory integrated into the CPU) size, and whether it is enabled or disabled.	Cache size in KB
External Cache Size	Specifies the second-level cache memory size currently supported by the system.	Cache size in KB
Floppy Drive A	Shows the floppy drive A type.	Capacity, dimension
Floppy Drive B	Shows the floppy drive B type.	Capacity, dimension
IDE Primary Channel Master	Specifies the current configuration of the IDE device connected to the master port of the primary IDE channel.	Drive type, capacity
IDE Primary Channel Slave	Specifies the current configuration of the IDE device connected to the slave port of the primary IDE channel.	Drive type, capacity
IDE Secondary Channel Master	Specifies the current configuration of the IDE device connected to the master port of the secondary IDE channel.	Drive type, capacity
IDE Secondary Channel Slave	Specifies the current configuration of the IDE device connected to the slave port of the secondary IDE channel.	Drive type, capacity
Total Memory	Specifies the total amount of onboard memory. The memory size is automatically detected by BIOS during the POST. If you install additional memory, the system automatically adjusts this parameter to display the new memory size.	Memory size in MB
1st Bank	Indicates the type of DRAM installed in the DIMM 1 socket. The None setting indicates that there is no DRAM installed.	DIMM type, capacity in MB
2nd Bank	Indicates the type of DRAM installed in the DIMM 2 socket. The None setting indicates that there is no DRAM installed.	DIMM type, capacity in MB
Serial Port 1	Shows the serial port 1 address and IRQ settings.	Address, IRQ
Serial Port 2	Shows the serial port 2 address and IRQ settings.	Address, IRQ
Parallel Port	Shows the parallel port address and IRQ settings.	Address, IRQ
PS/2 Mouse	Indicates if there is a mouse connected to your system. This is automatically detected by BIOS.	Displays Installed if there is a mouse detected; otherwise, it displays None.

Product Information

The screen below appears if you select Product Information from the main menu:



The Product Information menu contains general data about the system, such as the product name, serial number, BIOS version, etc. This information is necessary for troubleshooting (may be required when asking for technical support).

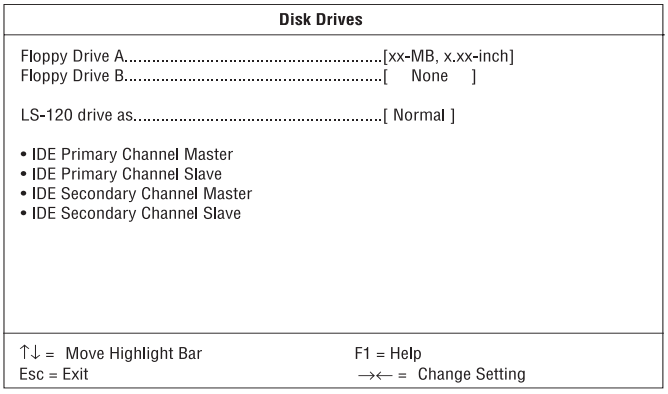
The following table describes the parameters found in this menu:

Parameter	Description
Product Name	Displays the model name of your system
System S/N	Displays your system's serial number
Main Board ID	Displays the system board's identification number
Main Board S/N	Displays your system board's serial number
System BIOS Version	Specifies the version of your BIOS utility
SM BIOS version	Specifies the version of the SM BIOS utility installed in your system. The System Management (SM) BIOS allows you to check your system hardware components without actually opening your system. Hardware checking is done via software during start up.

Disk Drives

Select Disk Drives from the main menu to configure the drives installed in your system.

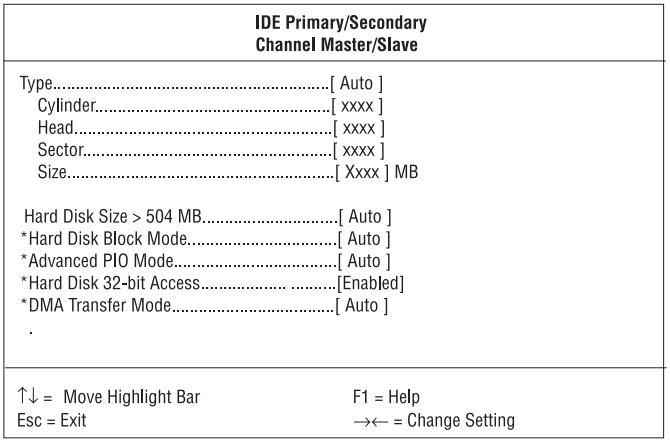
The following screen shows the Disk Drives menu:



The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Floppy Drive A / B	Allows you to configure your floppy drive	None 360 KB, 5.25-inch 1.2 MB, 5.25-inch 720 KB, 3.5-inch 1.44 MB, 3.5-inch 2.88 MB, 3.5-inch
LS-120 drive as	Allows you to enable the LS-120 device installed in your system and to specify the function of the device. The setting affects how BIOS will detect the device.	**Normal** Drive A Drive B Hard Disk
IDE Primary Channel Master	Lets you configure the hard disk drive connected to the master port of IDE channel 1.	
IDE Primary Channel Slave	Lets you configure the hard disk drive connected to the slave port of IDE channel 1.	
IDE Secondary Channel Master	Lets you configure the hard disk drive connected to the master port of IDE channel 2.	
IDE Secondary Channel Slave	Lets you configure the hard disk drive connected to the slave port of IDE channel 2.	

The following screen appears if you select any of the IDE Drive parameters:

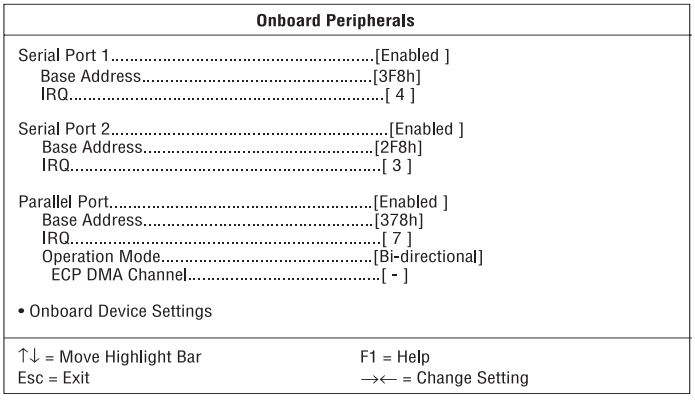


The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Type	Lets you specify the type of hard disk installed in your system. If you want BIOS to automatically configure your hard disk, select Auto. If you know your hard disk type, you can enter the setting manually. Setting this parameter also sets the Cylinder, Head, Sector, and Size parameters.	**Auto,** None, or User. The User setting allows you to enter your settings manually if you know your hard disk type. The Auto setting also sets the Cylinder, Head, Sector, and Size parameters.
Cylinder	Specifies your hard disk's number of cylinders, and is automatically set depending on your Type parameter setting.	
Head	Specifies your hard disk's number of heads, and is automatically set depending on your Type parameter setting.	
Sector	Specifies your hard disk's number of sectors, and is automatically set depending on your Type parameter setting.	
Size	Specifies the size of your hard disk, in MB, and is automatically set depending on your type parameter setting.	
Hard Disk Size > 504 MB	Enables your system to support hard disks with capacities more than 504 MB.	**Auto** or Disabled
Hard Disk Block Mode	Enhances your hard disk performance by allowing data transfer in blocks (multiple sectors) at a rate of 256 bytes per cycle. This parameter appears only in the Advanced Level.	**Auto** or Disabled
Advanced PIO Mode	Improves your hard disk performance by allowing faster data recovery and read/write timing; thus, it reduces the hard disk's activity time. This parameter appears only in the Advanced Level.	**Auto** or Mode 0 to 4
Hard Disk 32-bit Access	Improves your hard disk performance by allowing the use of the 32-bit hard disk access. This parameter appears only in the Advanced Level.	**Enabled** or Disabled
DMA Transfer Mode	Lets you enable the Ultra DMA and Multi-DMA modes to enhance your hard disk performance. This parameter appears only in the Advanced Level.	**Auto**, Multi Mode 0 to 2, or Ultra Mode 0 to 2

Onboard Peripherals

The Onboard Peripherals menu allows you to configure the onboard devices. Selecting this option from the main menu displays the following screen:

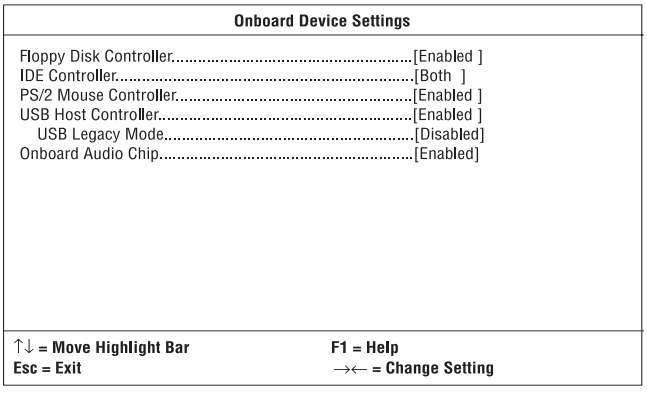


The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Serial Port 1 / 2	Let you enable or disable the serial ports.	**Enabled** or Disabled
Base Address	Lets you set a logical base address for each serial port. This parameter is configurable only if the Serial Port parameter is enabled.	**3F8h** (for serial port 1), **2F8h** (for serial port 2), 2E8h, 3E8h
IRQ	Lets you assign an interrupt for each serial port. This parameter is configurable only if the Serial Port parameter is enabled.	4 or 11 (for serial port 1), 3 or 10 (for serial port 2)
Parallel Port	Lets you enable or disable the parallel port.	**Enabled** or Disabled
Base Address	Lets you set a logical base address for the parallel port. This parameter is configurable only if the Parallel Port parameter is enabled.	3BCh, **378h**, 278h
IRQ	Lets you assign an interrupt for the parallel port. This parameter is configurable only if the Parallel Port parameter is enabled.	5 or **7**
Operation Mode	Lets you set your parallel port's operation mode. This parameter is configurable only if the Parallel Port parameter is enabled.	Standard Parallel Port (SPP), **Bidirectional**, Enhanced Parallel Port (EPP), Extended Capabilities Port (ECP)
ECP DMA Channel	Allows you to assign a DMA channel for the ECP parallel port function. This parameter is configurable only if you select the Extended Capabilities Port (ECP) as the operation mode.	1 or 3
Onboard Device Settings	Allows you to configure the device controllers available on board. Selecting this option displays the Onboard Device Settings sub-menu.	

Onboard Device Settings

The following screen shows the Onboard Device Settings sub-menu:



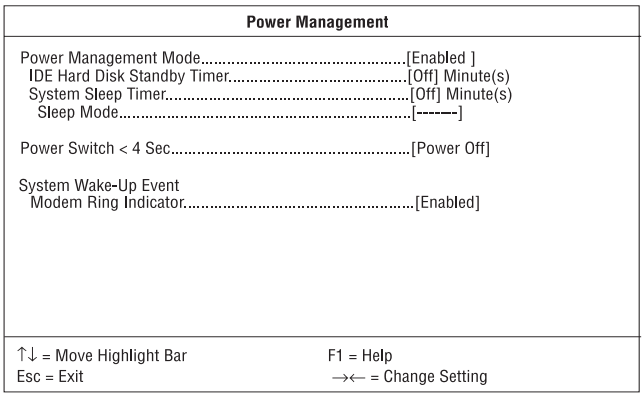
The following table describes the parameters found in this sub-menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Floppy Disk Controller	Lets you enable or disable the onboard floppy disk controller.	**Enabled** or Disabled
IDE Controller	Lets you enable or disable the onboard primary, secondary or both IDE interfaces.	Primary, **Both**, or Disabled
PS/2 Mouse Controller	Lets you enable or disable the onboard PS/2 mouse controller.	**Enabled** or Disabled
USB Host Controller	Lets you enable or disable the onboard USB host controller.	**Enabled** or Disabled
USB Legacy Mode	Lets you activate or deactivate the USB keyboard connected to your system. When activated, the USB keyboard functions in a DOS environment.	Enabled or **Disabled**
Onboard Audio Chip	Lets you activate or deactivate the audio controller on board.	**Enabled** or Disabled

Power Management

The Power Management menu lets you configure the system power-management feature.

The following screen shows the Power Management parameters and their default settings:



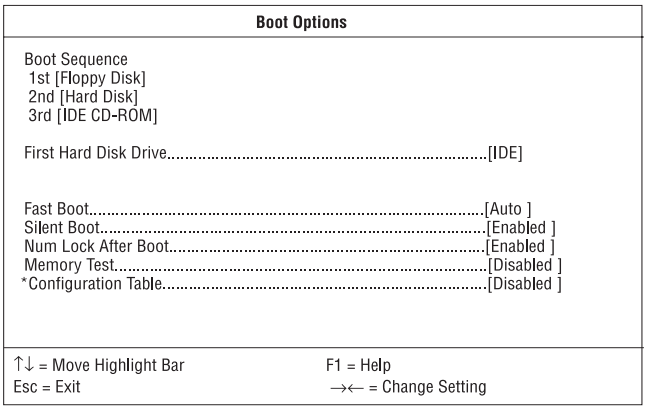
The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Power Management Mode	Allows you to reduce the system's power consumption. When enabled, the IDE hard disk and system timers become configurable.	**Enabled** or Disabled
IDE Hard Disk Standby Timer	Allows the hard disk to enter Standby mode after inactivity of 1 to 15 minutes, depending on your setting.	1 to 15 minutes, or **Off**
System Sleep Timer	Automatically puts the system to power-saving mode after a specified period of inactivity. Any keyboard or mouse action, or any activity detected from the IRQ channels resumes system operation.	2, 5, 10, 15, 20, 30, 40, 50...120 minutes, or **Off**
Sleep Mode	Lets you specify the power-saving mode that the system will enter after a specified period of inactivity. This parameter is configurable only if the System Sleep Timer is enabled.	Standby or Suspend
Power Switch < 4 sec.	Lets you specify whether to automatically turn off the machine or put the system to Suspend mode when the power switch is pressed for less than 4 seconds.	**Power Off** or Suspend
System Wake-up Event	Lets you specify the activity that will resume the system to normal operation.	
Modem Ring Indicator	Wakes the system from Sleep mode once any fax/modem activity is detected.	**Enabled** or Disabled

Boot Options

This option allows you to specify your preferred settings for bootup.

The following screen appears if you select Boot Options from the main menu:

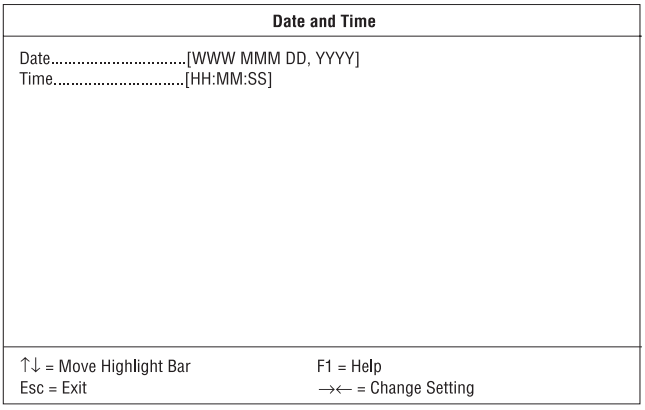


The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Boot Sequence	Allows you to specify the boot search sequence.	Floppy Disk, Hard Disk, IDECD-ROM
First Hard Disk Drive	Specifies whether the BIOS utility will boot from an IDE hard disk or a SCSI hard disk drive.	**IDE** or SCSI
Fast Boot	Allows you to define your system's booting process, whether to skip some POST routines or proceed with the normal booting process.	**Auto** or Disabled
Silent Boot	When enabled, BIOS is in graphical mode and displays only an identification logo during POST and while booting. Then, the screen displays the operating system prompt (as in DOS) or logo (as in Windows 95). If any error occurs while booting, the system automatically switches to the text mode. You may also switch to the text mode while booting by pressing **F9** after you hear a beep that indicates the activation of the keyboard.	**Enabled** or Disabled
Num Lock After Boot	Allows you to activate or deactivate the Num Lock function upon booting.	**Enabled** or Disabled
Memory Test	Lets you specify whether you want BIOS to perform or bypass the RAM test during POST.	Enabled or **Disabled**
Configuration Table	Allows you to enable or disable the display of the configuration table after POST but before booting. The configuration table gives a summary of the hardware devices and settings that BIOS detected during POST. This parameter appears only when you are in the Advanced Level.	Enabled or **Disabled**

Date and Time

The following screen appears if you select the Date and Time option from the main menu:



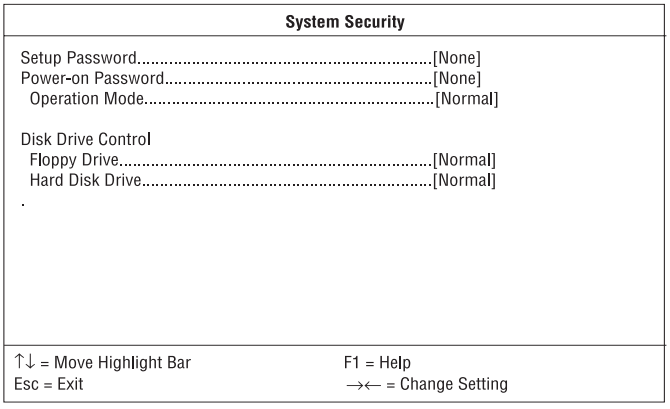
The following table describes the parameters found in this menu:

Parameter	Description	Options
Date	Lets you set the date following the weekday-month-day-year format.	Weekday: Sun, Mon, Tue, Wed, Thu, Fri, Sat Month: Jan, Feb...Dec Day: 1 to 31 Year: 1980 to 2079
Time	Lets you set the time following the hour-minute-second format.	Hour: 0 to 23 Minute: 0 to 59 Second: 0 to 59

System Security

The Setup program has a number of security features to prevent unauthorized access to the system and its data.

The following screen appears if you select System Security from the main menu:



The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

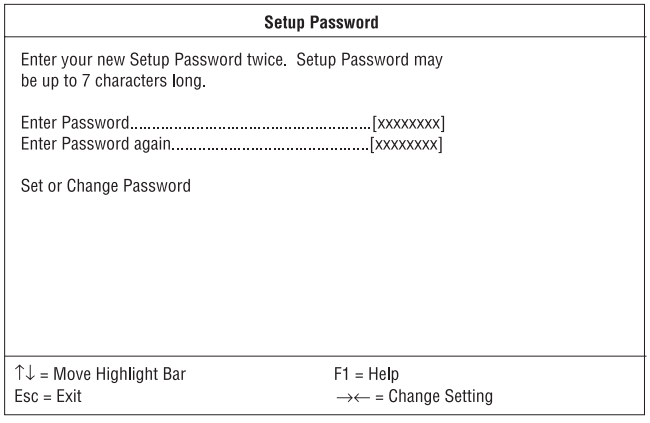
Parameter	Description	Options
Setup Password	Prevents unauthorized access to the BIOS utility.	**None** or Present. The Present setting allows you to set a Setup password. For instructions on how to set a Setup password, refer to "Setting a Password" on page 26.
Power-on Password	Secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system.	**None** or Present. The Present settings allows you to set a Power-on password. For instructions on how to set a Setup password, refer to "Setting a Password" on page 26.
Operation Mode	Lets you enable or disable the password prompt display. When set to Normal, the password prompt appears before system boot. When set to Keyboard Lock, the password prompt does not appear; however, your system will not respond to any keyboard or mouse input until you enter the correct password.	**Normal** or Keyboard Lock
Disk Drive Control	Allows you to protect your system's floppy drive and hard disk data from being modified (possible under DOS mode only).	
Floppy Drive	Protects your floppy drive data from being modified.	**Normal**, Write Protect All Sectors, Write Protect Boot Sectors
Hard Disk Drive	Protects your hard disk data from being modified.	**Normal**, Write Protect All Sectors, Write Protect Boot Sectors

Setting a Password

1. Make sure that **JP7** is set to **1-2** (bypass password).

NOTE: You cannot enter the BIOS utility if a Setup password does not exist and JP7 is set to 2-3 (password check enabled). By default, JP7 is set to 1-2 (bypass password).

2. Enter the BIOS utility and select System Security .
3. Highlight the Setup Password parameter to set a Setup password, or Power-on Password to set a Power-on password. Then press ← or →. The following screen appears:



4. Type a password. The password may consist of up to seven characters. Then press **Enter**.

NOTE: Be very careful when typing your password because the characters do not appear on the screen.

5. Retype the password then press **Enter**.
6. After setting the password, highlight the Set or Change Password option.
7. Press **Esc** to return to the System Security screen.
8. Press **Esc** to return to the main menu.
9. Press **Esc** to exit the BIOS utility. A dialog box appears asking if you want to save the CMOS data.
10. Select Yes to save the changes and reboot the system.
11. After rebooting, turn off the system then open the housing.
12. Set **JP7** to **2-3** to enable the password function.

If you have set a Setup password, the next time you want to enter the BIOS utility, you must key-in your Setup password.

If you have set a Power-on password, you will be prompted to enter that password every time you boot your system.

Changing or Removing the Password

Should you want **to change one of your passwords**, do the following:

1. Enter the BIOS utility and select System Security.
2. Highlight the Setup Password parameter (for Setup password) or the Power-on Password parameter (for Power-on password). Then press ← or →. The Password menu appears.
3. From the Password menu, highlight the Set or Change Password option.
4. Enter a new password.
5. Press **Esc** to return to the System Security screen.
6. Press **Esc** to return to the main menu.
7. Press **Esc** to exit the BIOS utility. A dialog box appears asking if you want to save the CMOS data.
8. Select Yes to save the changes.

To remove the password, simply select the Setup Password parameter (for Setup password) or the Power-on Password parameter (for Power-on password) from the System Security menu and set it to None.

Bypassing the Password

If you forget your password, you can bypass the password security feature by hardware. Follow these steps to bypass the password:

1. Turn off and unplug the system.
2. Open the system housing and set **JP7** to **1-2** to bypass the password function.
3. Turn on the system and enter the BIOS utility. This time, the system does not require you to type in a password.

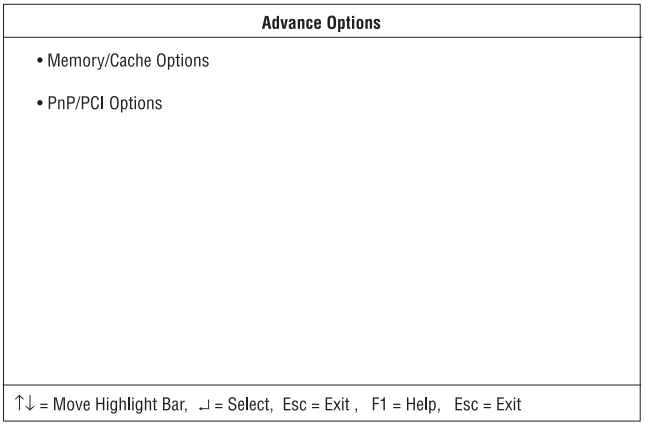
You can either change the existing password or remove it by selecting None. Refer to “Changing or Removing the Password” on page 26 for the procedure.

Advanced Options

NOTE: The Advanced Options selection is available only in the Advanced Level.

The Advanced Options menu allows you to configure the system memory and PCI device settings.

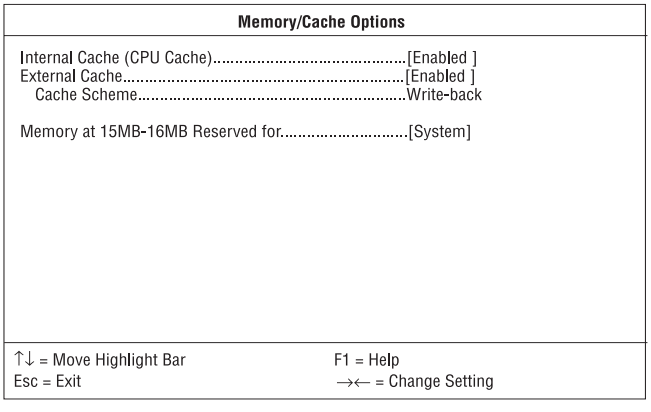
The following screen shows the Advanced Options parameters:



CAUTION: Do not change any settings in the Advanced Options menu if you are not a qualified technician to avoid damaging the system.

Memory/Cache Options

Selecting Memory/Cache Options from the Advanced Options menu displays the following screen:



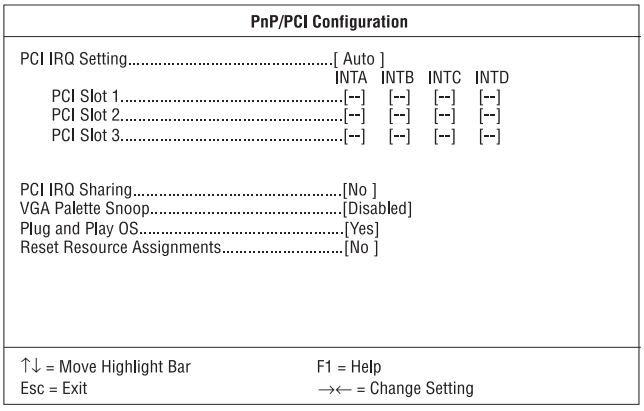
This menu lets you configure the system memory.

The following table describes the parameters found in this sub-menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Internal Cache (CPU Cache)	Lets you enable or disable the primary cache memory, i.e., the CPU memory.	**Enabled** or Disabled
External Cache	Lets you enable or disable the secondary cache memory.	**Enabled** or Disabled
Cache Scheme	This parameter is non-configurable and is always set to Write-back. The Write-back mode updates the cache but not the memory (write-back mode) when there is a write instruction.	**Write-back**
Memory at 15MB-16MB Reserved for	To prevent memory address conflicts between the system and expansion boards, reserve this memory range for the use of either the system or an expansion board. Some VGA cards have required settings for this feature. Check your VGA card manual before setting this parameter.	**System** or Add-on card

PnP/PCI Options

The PnP/PCI Options allows you to specify the settings for your PCI devices. Selecting this option displays the following screen:

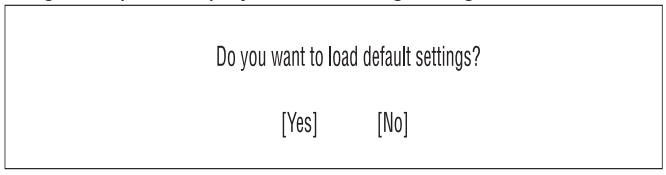


The following table describes the parameters found in this sub-menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
PCI IRQ Setting	Allows you to automatically or manually configure the Plug-and-Play (PnP) devices installed in your system. Refer to your device manual for technical information about the PCI card.	**Auto** or Manual
PCI Slot 1 / 2 / 3	Allow you to manually assign an interrupt for each PCI device installed in your system. When the PCI IRQ Settings is set to Auto, BIOS automatically assigns the available IRQs to the PCI devices.	
PCI IRQ Sharing	Allows you to assign the same IRQ to two different devices.	**Yes** or No
VGA Palette Snoop	Enables the palette snooping feature if you installed more than one VGA card in the system, allowing the control palette register (CPR) to manage and update the VGA RAM DAC (Digital Analog Converter, a color data storage) of each VGA card installed in the system. The snooping process lets the CPR send a signal to all the VGA cards so that they can update their individual RAM DACs. The signal goes through the cards continuously until all RAM DAC data has been updated. This allows the display of multiple images on the screen. Some VGA cards have required settings for this feature. Check your VGA card manual before setting this parameter.	Enabled or **Disabled**
Plug and Play OS	Lets you specify whether BIOS will initialize only PnP boot devices such as SCSI cards, or all PnP boot and non-boot devices such as sound cards.	**Yes** or No
Reset Resource Assignments	When enabled, avoids IRQ conflict when installing non-PnP and PnP ISA cards. This clears all resource assignments and allows BIOS to reassign resources to all installed PnP devices the next time the system boots.	Yes or **No** After clearing the resource data, it is recommended that you reset the parameter to its default, i.e., No.

Load Default Settings

You need to reload the BIOS default settings every time you make changes to your system hardware configuration (such as memory size, CPU type, hard disk type, etc.); otherwise, BIOS will keep the previous CMOS settings. Selecting this option displays the following dialog box:

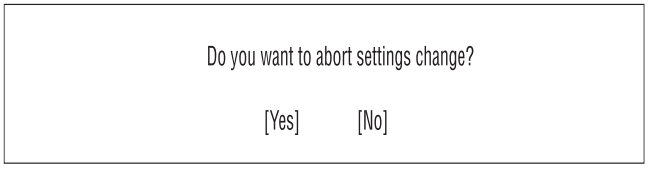


Choosing Yes enables BIOS to automatically detect the hardware changes that you have made in your system. This option also allows you to restore the default settings.

Choosing No returns you to the main menu without loading the default settings.

Abort Settings Change

Selecting the Abort Settings Change option from the main menu displays the following dialog box:

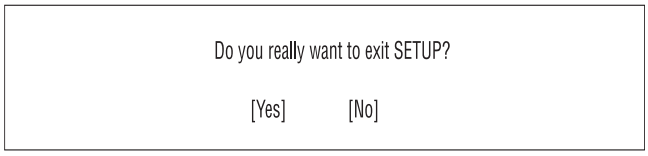


Choosing Yes discards all the changes that you have made and reverts the parameters to their previously saved settings.

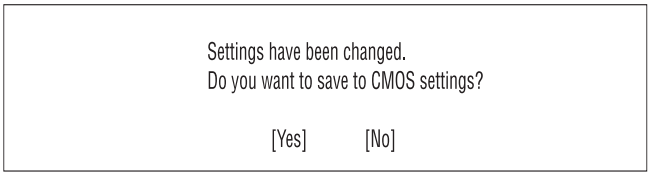
Choosing No returns you to the main menu. BIOS retains all changes that you have made.

Exiting Setup

To exit the BIOS utility, simply press **Esc**. The following dialog box appears:



Select Yes to exit Setup. Select No to return to the main menu. If you have made changes in the parameter settings, the following dialog box appears:



Select Yes to save your changes before you exit Setup. Select No to discard all changes and exit Setup.

Flash (BIOS) Update Procedure

NOTE: The flash update procedure does not change the model number and serial number information in BIOS.

1. Prepare a bootable DOS diskette disk with AFLASH.EXE, MSG.DAT, VXXYYZZ.BIN files

NOTE: The AFLASH.EXE and MSG.DAT are flash utility program. The VXXYYZZ.BIN is BIOS source code binary file.

2. Insert the diskette and boot from drive A.
3. Do not boot with any memory related driver such as HIMEM.SYS, EMS.SYS....
4. At the DOS prompt, type A:> AFLASH VXXYYZZ.BIN and press Enter.
5. The program updates the BIOS automatically.

IMPORTANT: Verify the BIOS checksum value shown on screen is the same as the one in VXXYYZZ.BIN file.

6. Wait for the update to complete.

WARNING: Do not turn off the system power while the BIOS is programming, or the flash ROM will be destroyed.

7. Power off system after the BIOS is completely updated.

BIOS-contained Model Number and Serial Number

The model number and serial number information is stored in BIOS ROM and displayed in the “Model Information” of BIOS Setup main menu. If a service repair is completed by replacing a new system board or a new BIOS ROM, then you are required to input the original system’s model number and serial number into the new BIOS ROM.

IMPORTANT: To better fit local service requirements, your regional office MAY have other rules. Please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

Follow these steps to input the model number and serial number to BIOS:

1. Prepare a bootable DOS diskette with CHGDMI.EXE and MODEL.DMI files.
2. Insert the diskette and boot from drive A.

WARNING:Do not boot with any memory related driver such as HIMEM. SYS, EMS. SYS....

3. At the DOS prompt, type A:>CHGDMI /W then press Enter. When the screen shows:

   System Product Name:

Enter the model number and press Enter to continue. You can type a maximum of 16 characters (without spaces)

4. When the screen shows:

   System Serial Number:

Enter the serial number and press Enter to continue. You can type a maximum of 16 character (Without spaces).

5. Type A:>CHGDMI /D and press Enter to display and verify your input model number and serial number information.

Removal and Replacement

This chapter contains step-by-step procedures on how to disassemble the desktop computer for maintenance and troubleshooting.

To disassemble the computer, you need the following tools:

1. Wrist grounding strap and conductive mat for preventing electrostatic discharge
2. Flat-bladed screwdriver
3. Phillips screwdriver
4. Hexagonal screwdriver
5. Plastic stick

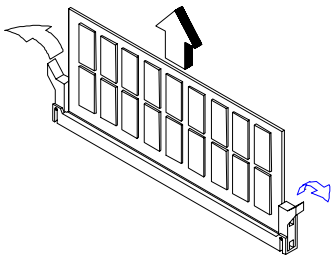
NOTE: The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.

Removing/Installing the DIMM

Removing a DIMM

To remove the DIMM:

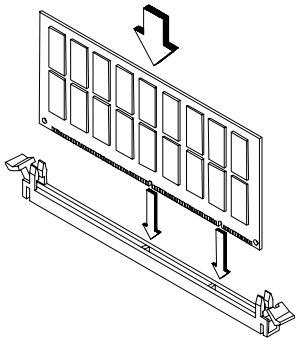
1. Press the holding clips on both sides of the socket outward to release the DIMM.
2. Gently pull the DIMM out of the socket.



Installing a DIMM

Follow these steps to install a DIMM:

1. Open the clips on the socket.
2. Align the DIMM with the socket.
3. Press the DIMM into the socket until the clips lock into the DIMM



NOTE: The system automatically detects the amount of memory installed. Run Setup to view the new value for total system memory and make a note of it.

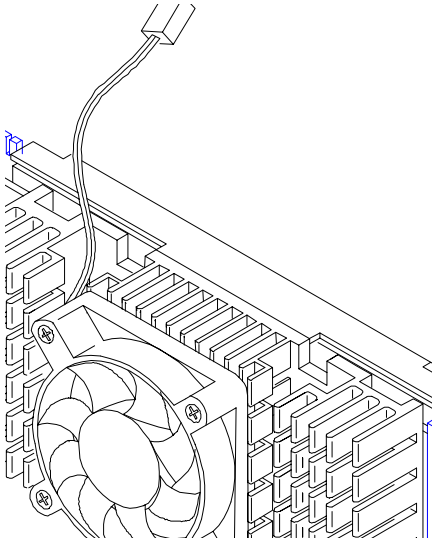
Removing/Installing the Processor

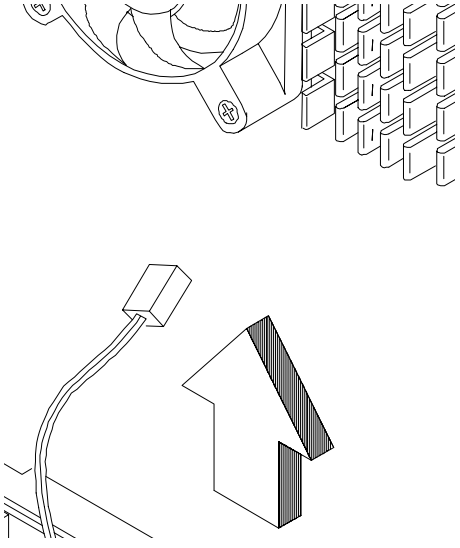
Removing the PentiumII with SECC2 Package Type Processor

NOTE: Observe the ESD precautions when installing or removing a system component.

Follow these steps to remove the CPU:

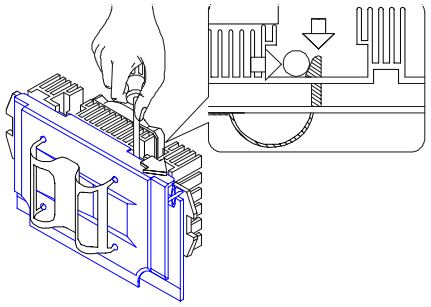
1. Disconnect the 2-pin fan/heatsink cables from the system board.
2. While slightly pulling both sides of the retention mechanism, pull out the CPU.



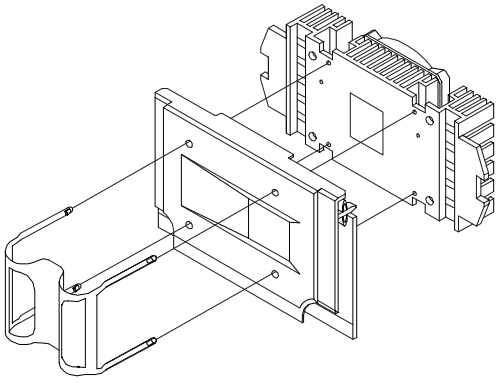


Removing the Pentium II with SECC2 Package Type Fan-sink

1. Use a screw driver to slide the fastener odes outward to unlock the fan-sink.



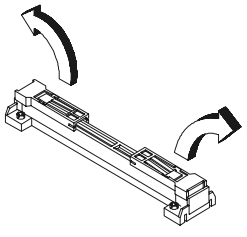
2. Carefully remove the fan-sink from the processor.

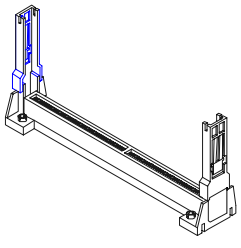


Installing the Pentium II with SECC2 Package Type Processor into the System Board

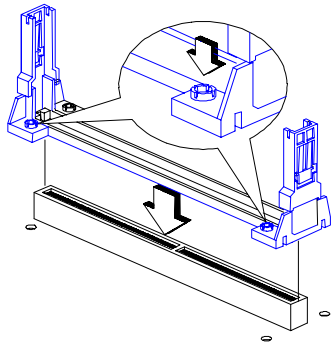
Follow these steps to install the processor module:

1. Unfold and pull out the sides of retention mechanism.



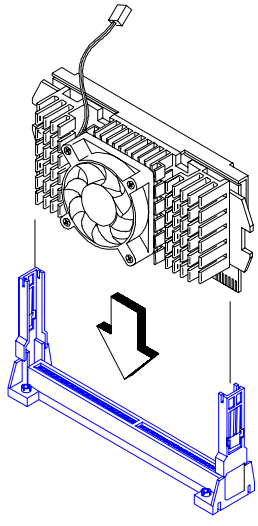


2. Place the retention mechanism over the CPU connector on the system board and press it until it clicks into place.
3. Press down the four plastic rivets to secure the retention mechanism. Make sure all four rivets are properly inserted into the holes on the system board.



4. Press down the processor until the golden fingers completely fit into the connector and the latches on the sides lock the processor into place.

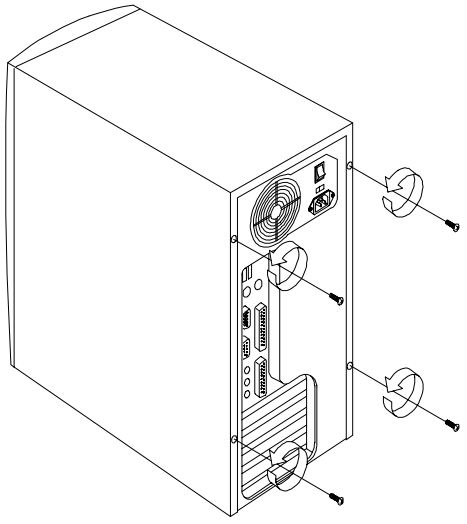
NOTE: Check the sides of the retention mechanism. The latches should be properly inserted into the appropriate slots on the retention mechanism.



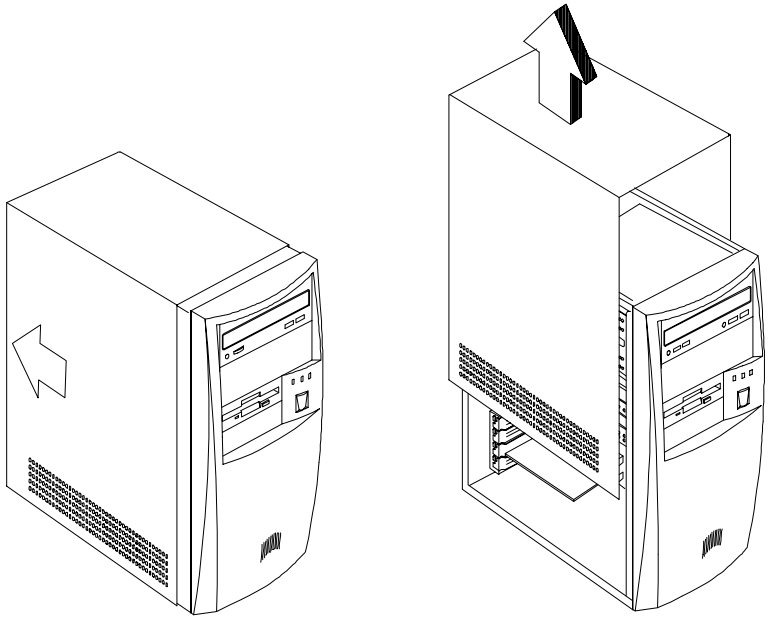
Opening the Housing

NOTE: Turn off the system power (unplug the power cord) before opening the system or connecting or removing any peripheral device.

1. Place the system unit on a flat, steady surface.
2. Remove the four screws from the rear panel. Set the screws aside. You will need them when replacing the housing cover.

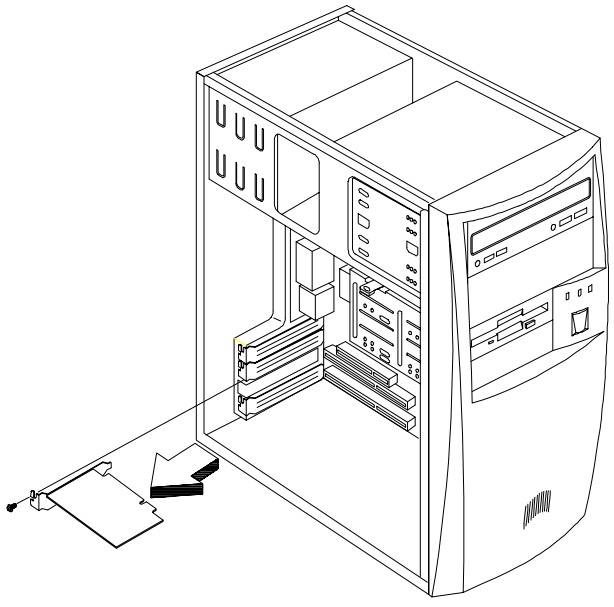


3. Push the housing cover slightly backward.
4. Pull the housing cover upward and remove it from the chassis.



Removing the Expansion Board

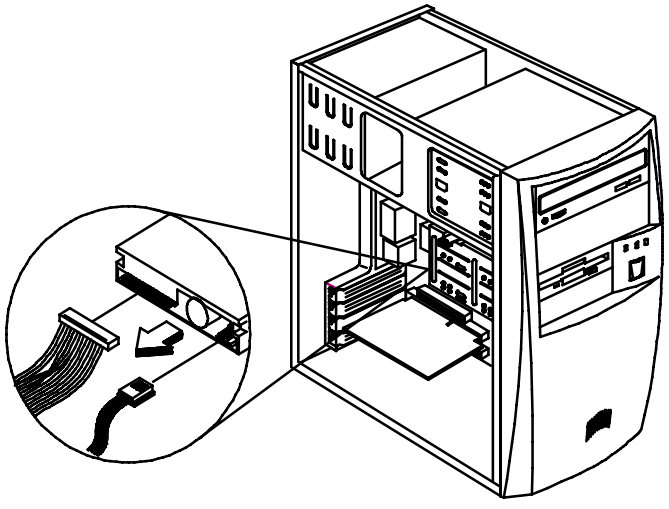
1. Remove the screw on the bracket of an expansion board. Set the screws aside. You will need them when replacing the expansion board.
2. Gently pull out the board to remove it from the expansion slot.



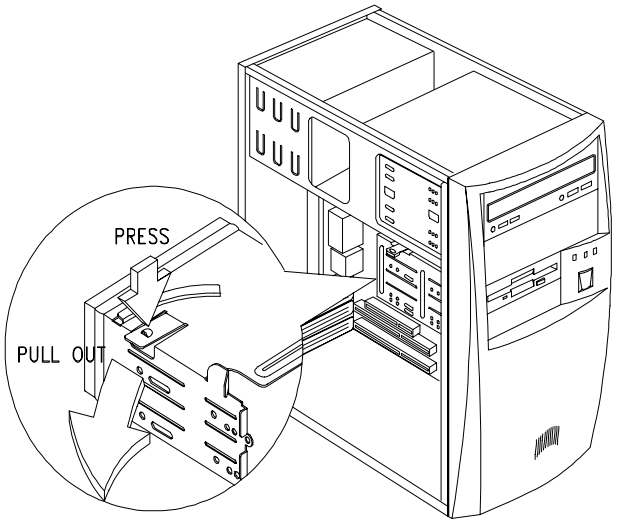
Removing the 3.5-inch Drive

Follow these steps to install a 3.5-inch diskette drive or a hard disk drive:

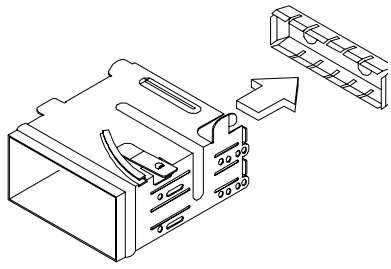
1. Disconnect the disk drive cables and the power cable.



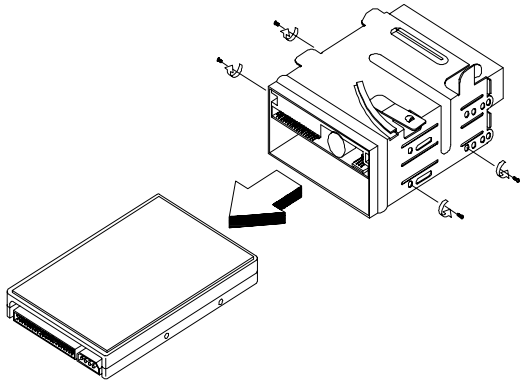
2. Remove the 3.5-inch drive frame from the housing by pressing the tab on top and pivoting the frame outward.



NOTE: A metal drive cover should be pulled out before you install a new drive to an empty 3.5-inch bay. This cover should be removed if a 3.5-inch drive is installed. The function of the cover is to prevent EMI effect.



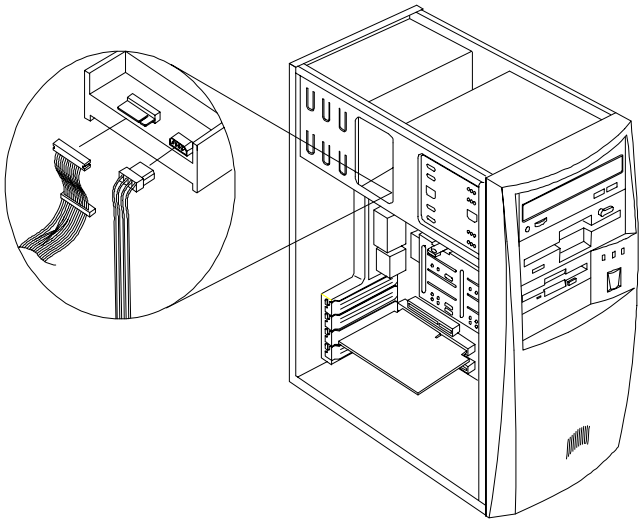
3. Remove the screws along the sides of the drive frame and carefully pull out the 3.5-inch disk drive.



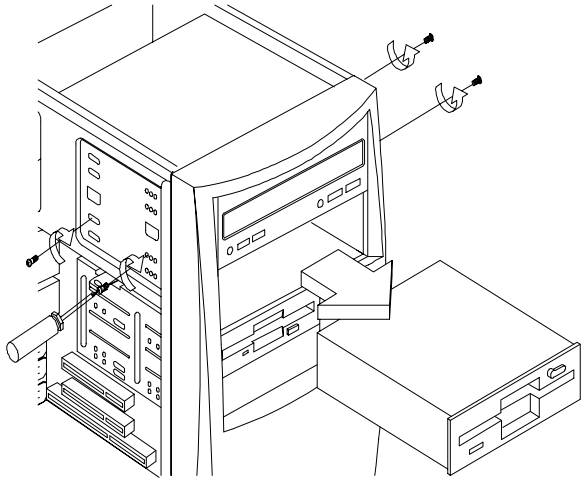
Removing the 5.25-inch Drive

To remove a 5.5-inch diskette drive or a CD-ROM drive:

1. Remove the diskette drive cable and the power cable.

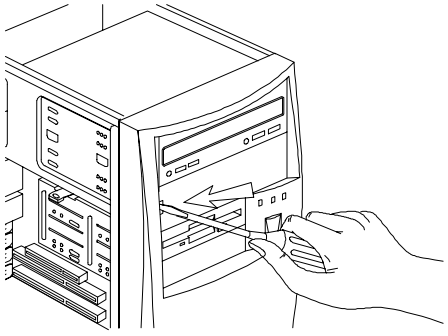


2. Remove the screws on the sides and gently pull out the diskette drive or CD-ROM to remove it from the housing.

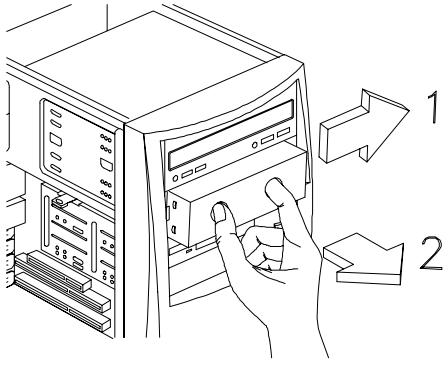


Installing the 5.25-inch Drive

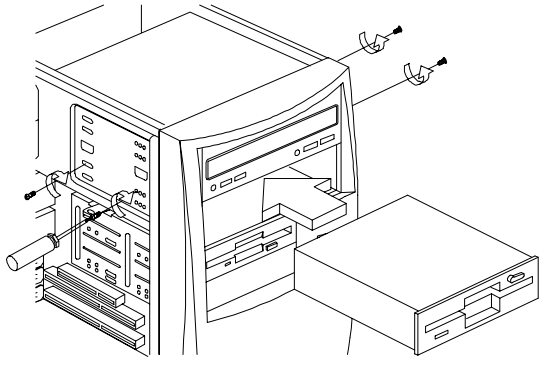
1. When installing a 5.25-inch drive to an empty bay, use a flat-head screw driver to open and remove the bay panel as shown below,



2. Pull the metal bay cover to the side until the other end is released, then pull it to remove it from the housing.

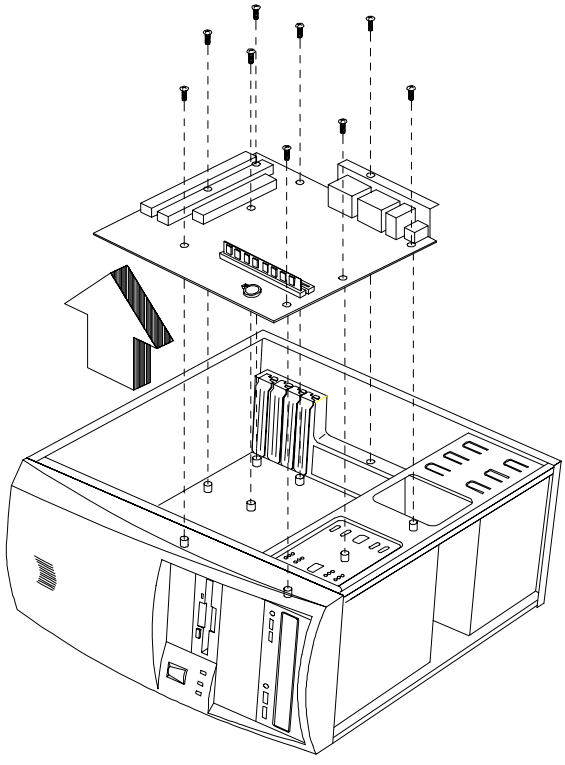


3. Insert the 5.25-inch drive into the drive bay and secure it with four screws on the side.



Removing the System Board

1. Put the housing to lying position with the open area facing upward.
2. Remove all the necessary screws and carefully pull out the system board.



Troubleshooting

This chapter provides troubleshooting information for the AcerPower SN:

- Power-On Self-Test (POST)
- Index of Error Messages
- Index of Error Symptoms
- Undetermined Problems

Power-On Self-Test (POST)

Each time you turn on the system, the power-on self test (POST) is initiated. Several items are tested during POST, but is for the most part transparent to the user.

The Power-On Self Test (POST) is a BIOS procedure that boots the system, initializes and diagnoses the system components, and controls the operation of the power-on password option. If POST discovers errors in system operations at power-on, it displays error messages on screen, generates a check point code at port 80h or even halts the system if the error is fatal.

The main components on the system board that must be diagnosed and/or initialized by POST to ensure system functionality are as follows:

- Microprocessor with built-in numeric coprocessor and cache memory subsystem
- Direct memory access (DMA) controller (8237 module)
- Interrupt system (8259 module)
- Three programmable timers (system timer and 8254 module)
- ROM subsystem
- RAM subsystem
- RTC RAM subsystem and real time clock/calendar with battery backup
- Onboard serial interface controller
- Onboard parallel interface controller
- Embedded hard disk interface and one diskette drive interface
- Keyboard and auxiliary device controllers
- I/O ports
  - PS/2-compatible mouse port
  - PS/2-compatible keyboard port
- Serial ports
- Parallel ports
- USB port

POST Error Messages List

If you cannot run the diagnostics program tests but did receive a POST error message, use “POST Error Messages List” to diagnose system problems. If you did not receive any error message, look for a description of your error symptoms in “Error Symptoms List” on page 53.

NOTE: When you have deemed it necessary to replace an FRU, and have done so, you must run a total system check to ensure that no other activity has been affected by the change. This system check can be done through the diagnostics program.

NOTE: Check all power supply voltages, switch, and jumper settings before you replace the system board. Also check the power supply voltages if you have a “system no-power” condition.

If you are unable to correct the problem by using the “BIOS Messages List” table and “Error Symptoms List” table, go to “Undetermined Problems” on page 57.

NOTE: To diagnose a problem, first find the BIOS error messages in left column. If directed to a check procedure, replace the FRU indicated in the check procedure. If no check procedure is indicated, the first Action/FRU listed in right column is the most likely cause.

BIOS Messages	Action/FRU
I/O Parity Error	System board
CPU Clock Mismatch	Enter BIOS Setup and load the default settings. Ensure the jumper setting for processor is set correctly.
Real Time Clock Error CMOS Battery Bad CMOS Checksum Error	Enter BIOS Setup and load the default settings. RTC Battery. System Board.
Equipment Configuration Error	Ensure the system configuration set in BIOS Setup is correct. Enter BIOS Setup and load the default settings. RTC battery. System board.
Memory Size Change System Management Memory Bad Memory Error at MMMM:SSSS:OOOOh	Insert the memory modules in the DIMM sockets properly, then reboot the system. Memory module. System board.
RAM Parity Error	Enter BIOS Setup to disable parity check. Memory module System board
PS/2 Keyboard Error or Keyboard Not Connected PS/2 Keyboard Interface Error PS/2 Keyboard Locked	Re-connect PS/2 keyboard and mouse. Enter BIOS Setup and load the default settings. PS/2 keyboard PS/2 mouse System board
Onboard xxx... Conflict(s)	Enter BIOS Setup and load the default settings. Remove all adapter cards that are NOT factory-installed, then reboot the system.
Floppy Disk Controller Error Floppy Drive A Error Floppy Drive B Error	Diskette drive cable/connection. Diskette drive. System board
On Board Parallel Port Conflict(s) On Board Serial Port 1 Conflict(s) On Board Serial Port 2 Conflict(s)	Enter BIOS Setup and load the default settings. Remove all adapter cards that are NOT factory-installed, then reboot the system.

BIOS Messages	Action/FRU
IDE Primary Channel Master Drive Error IDE Primary Channel Slave Drive Error IDE Secondary Channel Master Drive Error IDE Secondary Channel Slave Drive Error	Enter BIOS Setup and load the default settings. Check IDE drive jumper. IDE hard disk drive power. IDE hard disk drive cable/connection. IDE hard disk drive.
IRQ Setting Error Expansion ROM Allocation Failed I/O Resource Conflict(s) Memory Resource Conflict(s) System Resource Conflict(s)	Load default settings in Setup. Enter BIOS Setup and set the **Reset Resource Assignments** of the **PnP/PCI Options** to Yes, then reboot the system. Remove all adapter cards that are NOT factory-installed, then reboot the system
PCI Device Error	Load default settings in Setup. Enter BIOS Setup and set the **Reset Resource Assignments** of the **PnP/PCI Options** to Yes, then reboot the system. Remove all adapter cards that are NOT factory-installed, then reboot the system.
PS/2 Pointing Device Interface Error PS/2 Pointing Device Error PS/2 Pointing Device Error or Not Connected	Re-connect PS/2 keyboard and mouse. Enter BIOS Setup and load the default settings. PS/2 mouse PS/2 keyboard System board
Onboard Pointing IRQ Device Conflict(s)	Enter BIOS Setup and load the default settings. Remove all adapter cards that are NOT factory-installed, then reboot the system.
Press Ctrl_Alt_Esc key to enter Setup or F1 key to continue	Press **Ctrl-Alt-Del** to enter Setup and reconfigure the system.
Press 1 key to enter Setup or other key to continue	Press **1** to enter Setup and check the configuration. Pressing other keys prevent entering Setup.
Press Esc to turn off NMI, or any key to reboot	Press **Esc** to reject NMI error or press any other key to reboot the system.
Insert system diskette and press <Enter> key to reboot	Insert a bootable disk into the floppy disk drive or remove this disk if a hard disk is installed.

Error Symptoms List

NOTE: To diagnose a problem, first find the error symptom in the left column. If directed to a check procedure, replace the FRU indicated in the check procedure. If no check procedure is indicated, the first Action/ FRU listed in right column is the most likely cause.

Error Symptom	Action/FRU
Processor / Processor Fan	
Normally, the processor fan should be operative, and the processor clock setting should be exactly set to match its speed requirement before diagnosing any processor problems.	
Processor fan does not run but power supply fan runs.	Ensure the system is not in power saving mode. See “Power Management” in chapter 2. With the system power on, measure the voltage of processor fan connector. Its reading should be +12Vdc. System board.
Processor test failed.	Processor. System board.
System Board and Memory	
Ensure the memory modules are installed properly and the contact leads are clean before diagnosing any system problems.	
Memory test failed.	See "Memory" System board
Incorrect memory size shown or repeated during POST.	Insert the memory modules in the DIMM sockets properly, then reboot the system. Memory module. System board.
System works but fails to enter power saving mode when the `Power Management Mode` is set to `Enabled`, and power saving timer set in BIOS has elapsed.	Enter BIOS Setup and load default settings. In Windows 98, check settings in Power Management Property of Control Panel. Reload software from Recovery CD.
System hangs before system boot.	See "Index of Symptoms" See "Undetermined Problems"
System hangs after system boot.	Execute a system test and set it to stop at “Halt on Error” to see the potential cause of the problem. See “Undetermined Problems”.
Blinking cursor only; system does not work.	Diskette/IDE drive connection/cables Diskette/IDE disk drives See Undetermined Problems. System board
Diskette Drive	
Ensure the diskette drive is configured correctly in BIOS Setup and its read/write head is clean before diagnosing any diskette drive problems.	
Media and drive are mismatched.	Ensure the diskette drive is configured correctly in the Disk Drives of BIOS Setup. Ensure the diskette drive is correctly formatted. Diskette drive connection/cable Diskette drive System board

Error Symptom	Action/FRU
Diskette drive does not work.	Ensure the diskette drive is not set to None in the Disk Drives of BIOS Setup. Diskette drive power Diskette drive connection/cable Diskette drive System board
Diskette drive read/write error.	Diskette. Ensure the diskette drive is not set to Write protect in the Security Options of BIOS Setup. Diskette drive cable. Diskette drive. System board.
Diskette drive LED comes on for more than 2 minutes when reading data.	Diskette Diskette drive connection/cable Diskette drive System board
Diskette drive LED fails to light, and the drive is unable to access for more than 2 minutes.	Diskette Diskette drive power Diskette drive connection/cable Diskette drive System board
Diskette drive test failed.	Diskette Diskette drive Diskette drive cable System board
Hard Disk Drive	
Ensure hard disk drive is configured correctly in BIOS Setup, cable/jumper are set correctly before diagnosing any hard disk drive problems.	
Hard disk drive test failed.	Enter BIOS Setup and Load default settings. Hard disk drive cable. Hard disk drive. System board.
Hard disk drive cannot format completely.	Enter BIOS Setup and Load default settings. Hard disk drive cable. Hard disk drive. System board.
Hard disk drive has write error.	Enter BIOS Setup and Load default settings. Hard disk drive.
Hard disk drive LED fails to light, but system operates normally.	With the system power on, measure the voltage of hard disk LED connector. Hard drive LED cable.
CD/DVD-ROM Drive	
Ensure CD/DVD-ROM drive is configured correctly in BIOS Setup, cable/jumper are set correctly and its laser beam is clean before diagnosing any CD/DVD-ROM drive problems.	
CD/DVD-ROM drive LED doesn't come on but works normally.	CD/DVD-ROM drive
CD/DVD-ROM drive LED flashes for more than 30 seconds before LED shutting off. Software asks to reinstall disc. Software displays a reading CD/DVD error.	CD/DVD-ROM may have dirt or foreign material on it. Check with a known good disc. CD/DVD-ROM is not inserted properly. CD/DVD-ROM is damaged.

Error Symptom	Action/FRU
CD/DVD-ROM drive cannot load or eject when the system is turned on and its eject button is pressed and held.	Disconnect all cables from CD/DVD-ROM drive except power cable, then press eject button to try to unload the disk. CD/DVD-ROM drive power. CD/DVD-ROM drive
CD/DVD-ROM drive does not read and there are no messages are displayed.	CD may have dirt or foreign material on it. Check with a known good disc. Ensure the CD/DVD-ROM driver is installed properly. CD/DVD-ROM drive.
CD/DVD-ROM drive can play audio CD but no sound output.	Ensure the headphone jack of the CD/DVD-ROM has an output. Turn up the sound volume. Speaker power/connection/cable. CD/DVD-ROM drive.
Real-Time Clock	
Real-time clock is inaccurate.	Ensure the information in the `Date and Time` of BIOS Setup is set correctly. RTC battery. System board
Audio	
Audio software program invokes but no sound comes from speakers.	Speaker power/connection/cable.
Modem	
Modem ring cannot wake up system from suspend mode.	Ensure the `Modem Ring Indicator` in BIOS Setup or `Power Management` is set to `Enabled`. If PCI modem card is used, reinsert the modem card to PCI slot firmly or replace modem card. If ISA modem card is used, ensure the modem ring-in cable from the modem card to system board is connected properly. In Win 98, ensure the telephone application is configured correctly for your modem and set to receive messages and/or fax.
Data/fax modem software program invokes but cannot receive/send data/fax	Ensure the modem card is installed properly.
Fax/voice modem software program invokes but has no sound output. (Data files are received normally; voice from modem cannot be produced, but system sound feature works normally.)	Ensure the modem voice-in cable from modem adapter card to system board
Video and Monitor	
Video memory test failed. Video adapter failed.	Remove all non-factory-installed cards. Load default settings (if screen is readable). System board
Display problem: - Incorrect colors No high intensity Missing, broken, or incorrect characters Blank monitor(dark) Blank monitor(bright) Distorted image Unreadable monitor Other monitor problems	Monitor signal connection/cable. Monitor Video adapter card System board
Display changing colors.	Monitor signal connection/cable Monitor System board

Error Symptom	Action/FRU
Display problem not listed above (including blank or illegible monitor).	"Monitor". Load default settings (if screen is readable). System board
Parallel/Serial Ports	
Execute "Load BIOS Default Settings" in BIOS Setup to confirm ports' presence before diagnosing any parallel/serial ports problems.	
Serial or parallel port loop-back test failed.	Make sure the LPT# or COM# you test is the same as is set in BIOS Setup. Loop-back. System board.
Printing failed.	Ensure the printer driver is properly installed. Refer to the service manual for the printer. Printer. Printer cable. System board.
Printer problems.	Refer to the service manual for the printer.
Keyboard	
Some or all keys on keyboard do not work.	Keyboard
Power Supply	
Pressing power switch does not turn off system. (Only unplug power cord from electrical outlet can turn off system.)	Ensure the `Power Switch < 4 sec.` in BIOS Setup of `Power Management` is not set to `Suspend`. Power switch cable assembly
Pressing power switch does not turn on system.	Ensure the power override switch (situated at the back of the machine, just above the connector for the power cable) is not set to off. Power switch cable assembly.
Executing software shutdown from Windows98 Start menu does not turn off system. (Only pressing power switch can turn off the system).	Load default settings. Reload software from Recovery CD.
No system power, or power supply fan is not running.	Power Supply System Board
Other Problems	
Any other problems.	Undetermined Problems

Undetermined Problems

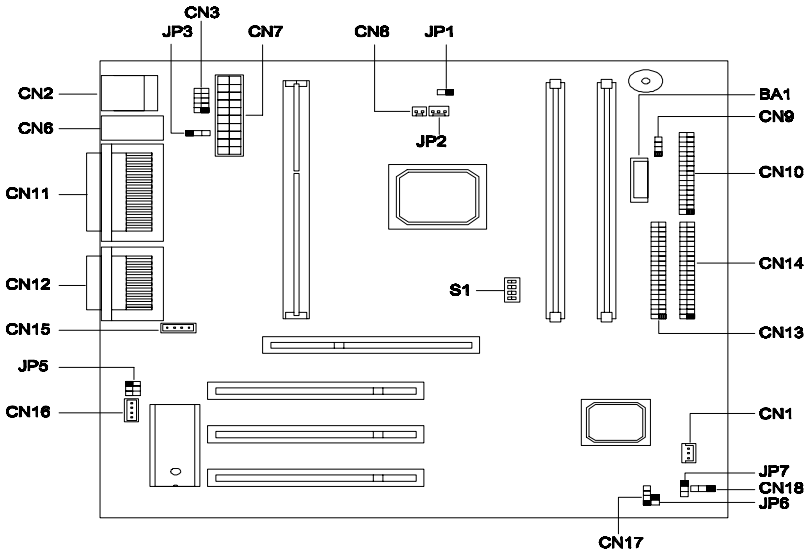
If an error message is present, go to “POST Error Messages List” on page 51. If you did not receive any messages, see if the symptom is listed in “or “Error Symptoms List” on page 53. If you still cannot solve the problem, continue with this check:

1. Check the power supply voltages. If the voltages are correct continue with the following steps:
2. Power off the system unit.
3. Perform the following checks, one by one, until you have isolated the problem FRU.
    - ❑ Load default settings in setup.
    - ❑ Check all system board jumper positions and switch settings.
    - ❑ Check all adapter card jumper positions.
    - ❑ Check all device jumper positions.
    - ❑ Check all cables and connectors for proper installation.
4. If the jumpers, switch, and voltage settings are correct, remove or disconnect the following, one at a time:
    - ❑ Non-Acer devices
    - ❑ External devices
    - ❑ Any adapter card (modem card or video card, if installed)
    - ❑ CD/DVD-ROM drive
    - ❑ Diskette drive
    - ❑ Hard disk drive
    - ❑ DIMM
    - ❑ Processor
    - ❑ System board
5. Power on the system unit.
6. Repeat steps 2 through 5 until you find the failing device or adapter.

Jumper and Connector Information

Jumpers and Connectors

Refer to the following figure for the location of the jumpers and connectors on the system board:



The following table lists the onboard jumpers, their respective functions and possible settings.

Jumper	Function and Settings
JP3	Keyboard Turn-on Function 1-2 Enabled 2-3 Disabled (default)
JP5	Audio Line Type 1-3, 2-4 Line out (default) 3-5, 4-6 Speaker out
JP7	Password Check 1-2 Disabled (default) 2-3 Enabled
S1	CPU Core Clock Multiplier Switch 1 Switch 2 Switch 3 Switch 4 Ratio On On On On 2 On Off On On 3 Off On On On 4 Off Off On On 5 On On Off On 6 On Off Off On 7 Off On Off On 8 Off On Off Off 1.5 On On On Off 2.5 On Off On Off 3.5 (def) Off On On Off 4.5 Off Off On Off 5.5 On On Off Off 6.5 On Off Off Off 7.5

The following table lists the onboard connectors and their respective functions.

Connector	Function
CN1	Wake-on LAN
CN2	USB
CN3	Reserved for USB daughtercard
CN6	Upper port: mouse; Lower port: keyboard
CN7	ATX power
CN8	2-pin CPU fan
CN9	Hard disk drive (HDD) light emitting diode (LED)
CN10	Floppy disk drive (FDD)
CN11	Upper: printer; Lower left: COM 2; Lower right: COM 1
CN12	Upper: MIDI; Lower left: line-out; Lower middle: line-in; Lower right: mic-in
CN13	IDE 2
CN14	IDE 1
CN15	CD input
CN16	Fax-voice-modem
CN17	Modem ring in
CN18	Power / suspend LED
JP1	Reset
JP2	3-pin CPU fan
JP6	Power button

Floppy Disk / Hard Disk Support

The board comes with an enhanced PCI IDE controller that supports PIO mode 4 and Ultra DMA (Direct Memory Access) mode data transfers. Two PCI IDE interfaces are mounted on board to enable the system to support a maximum of four IDE hard disks, or any other IDE devices. See “Jumpers and Connectors” on page 59 for the location of the IDE interfaces.

Connect the cables according to the IDE hard disk configuration listed in the table below. Follow the instructions in the housing installation manual on how to install a hard disk in the system.

IDE Connector	Master	Slave
IDE 1 (CN14)	Hard disk 0	Hard disk 1
IDE 2 (CN13)	Hard disk 2/IDE CD-ROM	Hard disk 3

Audio Function

The board provides a complete 3-D audio solution via the onboard 3-D audio controller and the following audio connectors:

- Mono microphone port
- Stereo line-in port
- Stereo line-out port
- Game/MIDI port

These connectors enable the system to accommodate external audio devices.

USB Support

USB is a new serial bus design that is capable of cascading low and medium-speed peripherals (less than 12 Mbps) such as a keyboard, mouse, joystick, scanner, printer and modem/ISDN. With USB, complex cable connections at the back panel of your PC can be eliminated.

The board comes with two USB ports (CN2). See “Jumpers and Connectors” on page 59 for the location of the ports.

Modem Ring-in Function

The Modem Ring-in function enables the system to resume from suspend mode by monitoring the fax/modem (or any device of similar type) activities. Any signal or activity detected from the Modem ring-in connector automatically returns the system to normal operation. Refer to “Jumpers and Connectors” on page 59 for the location of the Modem ring-in connector (CN17) on the system board.

Wake-on LAN

The Wake-on LAN (WOL) feature is a special feature that allows the system to be activated by a network connection via the onboard WOL connector (CN1). Aside from WOL, common network functions such as remote access, file sharing, etc. are also supported.

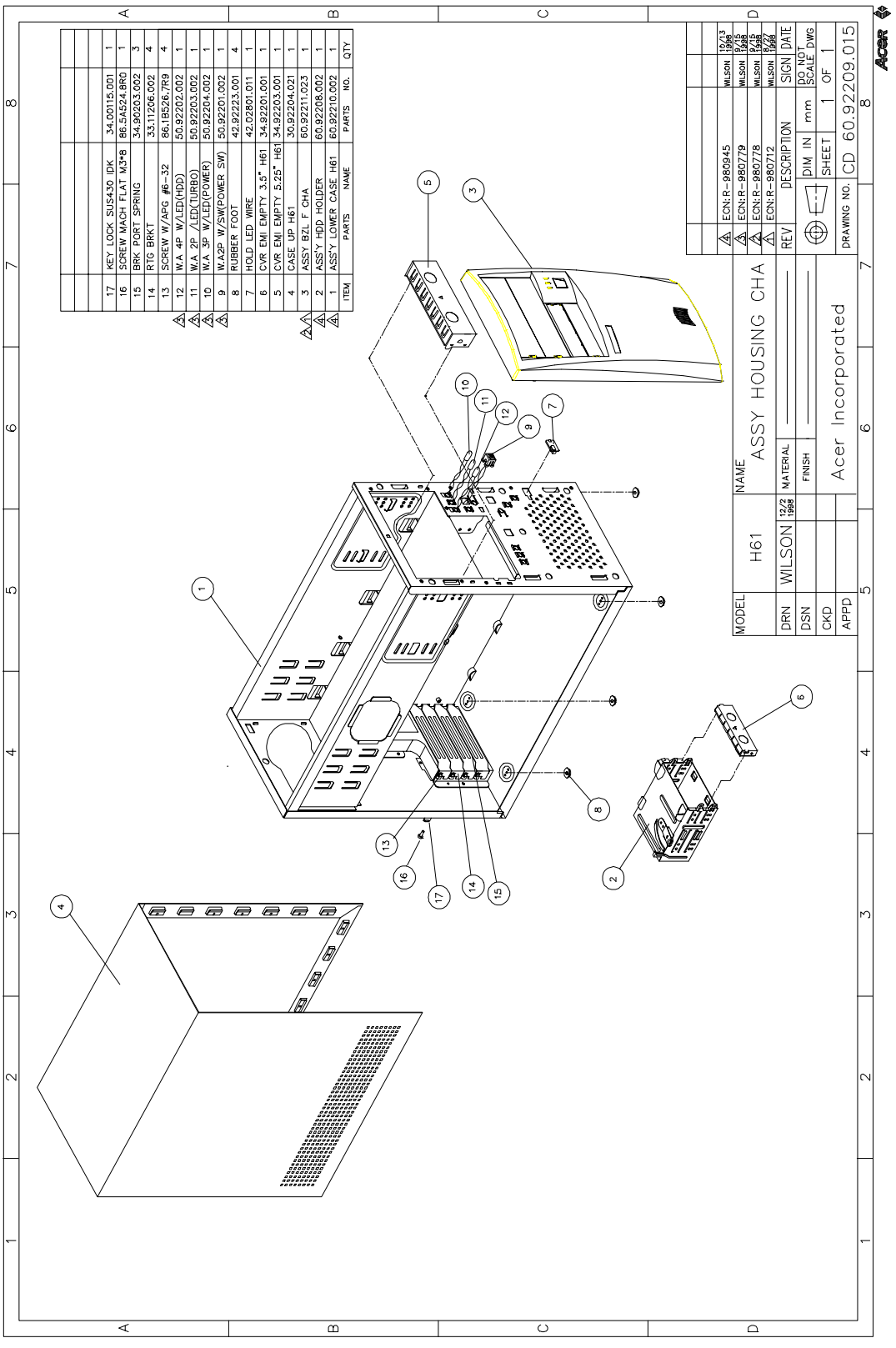
Refer to “Jumpers and Connectors” on page 59 for the location of the WOL connector (CN1) on the system board.

FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of Acer Power SN. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE: Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

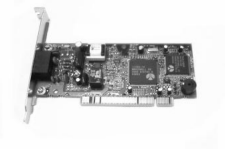
NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how best to dispose it, or follow the rules set by your regional Acer office on how to return it.


ITEM PARTS NAME PARTS NO. QTY
17 KEY LOCK SUS430 IDK 34.00115.001 1
16 SCREW MACH FLAT M3*8 86.5A524.8R0 1
15 BRK PORT SPRING 34.90203.002 3
14 RTG BRKT 33.11206.002 4
13 SCREW W/APG #6-32 86.1B526.7R9 4
12 W.A 4P W/LED(HDD) 50.92202.002 1
11 W.A 2P /LED(TURBO) 50.92203.002 1
10 W.A 3P W/LED(POWER) 50.92204.002 1
9 W.A2P W/SW(POWER SW) 50.92201.002 1
8 RUBBER FOOT 42.92223.001 4
7 HOLD LED WIRE 42.02801.011 1
6 CVR EMI EMPTY 3.5" H61 34.92201.001 1
5 CVR EMI EMPTY 5.25" H61 34.92203.001 1
4 CASE UP H61 30.92204.021 1
3 ASSY BZL F CHA 60.92211.023 1
2 ASSY HDD HOLDER 60.92208.002 1
1 ASSY LOWER CASE H61 60.92210.002 1
ECN:R-980945 WILSON 12/13 1998
ECN:R-980779 WILSON 8/15 1998
ECN:R-980778 WILSON 7/15 1998
ECN:R-980712 WILSON 7/15 1998
REV DESCRIPTION SIGN DATE
MODEL H61
NAME ASSY HOUSING CHA
DRN WILSON 12/2 1998
DSN
CKD
APPD
MATERIAL
FINISH
Acer Incorporated
DIM IN mm
SHEET 1 OF 1
DRAWING NO. CD 60.92209.015
BOM
SCALE DWG
Acer

Picture	Part Name	Description	Part No.
Processor			
	Pentium-II 350MHz 512K 100MHz INTEL	IC CPU INT PII-350 PLGA SECC2	01.IDSCH.350
	Pentium-II 400MHz 512K 100MHz INTEL	IC CPU INT PII-400 OLGA SECC2	01.IDSCH.400
	Pentium-III 450MHz 512K 100MHz INTEL	IC CPU KATMAI-450 100M FSB OLGA	01.IKATM.450
	Pentium-III 500MHz 512K 100MHz INTEL	IC CPU KATMAI-500 100M FSB OLGA	01.IKATM.500
Memory			
	32MB DIMM W/O ECC NEC	SDIMM 32M 243469(NEC)	72.24346.00N
	64MB DIMM W/O ECC NEC	SDIMM 64M 243539(NEC)	72.24355.00N
	128MB DIMM W/O ECC NEC	SDIMM 128M 243639(NEC)	72.24363.00N
	32MB DIMM W/O ECC MICRON	SDIMM 32M MT4LSDT464AG V.CB2	72.04464.L02
	64MB DIMM W/O ECC Micron	SDIMM 64M MT8LSDT864AG V.CB4	72.08864.L02
	128MB DIMM W/O ECC Micron	SDIMM 128M MT16LSDT164AG(ACER)	72.16164.L01
	32MB DIMM W/O ECC Siemens	SDIMM 32M HYS64V4200GU-8 PC100	72.64420.00N
	64MB DIMM W/O ECC Siemens	SDIMM 64M HYS64V8200GU-8 PC100	72.64820.A0N
	128MB DIMM W/O ECC Siemens	SDIMM 128M HYS64V16220GU-8SIM	72.64162.00N

Picture	Part Name	Description	Part No.
Monitor			
	15" (110v North Hemiphere) AAC/ACLA API	1555-121	91.71602.301
	15" (universal 220/110v North Hemiphere) ACI/AEB/ACLA API	1555-410	91.71602.302
	15" (universal 220/110v Equatorial Hemiphere) ACI/ACLA API	1555-610	91.71602.303
	15" (universal 220/110v South Hemiphere) ACI API	1555-510	91.71602.304
	15" (universal 110v North Hemiphere) STK API	1555-431	91.71602.305
	17" 77CJ Acer power AAC/ACLA JEAN	J71C	90.38A02.001
	17" 77CJ Acer power ACI/AEB JEAN	J71C	90.38A02.002
	17" 77CJ Acer power ACI/ACLA JEAN	J71C	90.38A02.003
	17" 77CJ Acer power ACI (N.Z& AUS) JEAN	J71C	90.38A02.004
	17" 77CJ Acer power STK/TWN JEAN	J71C	90.38A02.005
	17" 77CJ Acer power China JEAN	J71C	90.38A02.007
	17" 77CJ Acer power Tco JEAN	J71C	90.38A02.006
FDD			
	3.5" FDD 3 mode Panasonic	FDD 1.44MB JU256A276P L IBM 3M	56.01060.001
HDD			
	4.3G HDD U4 Series Seagate	HDD 4.3G SEAGATE/ ST34311	56.02831.211
	8.6G HDD U4 Series Seagate	HDD 8.4G U4 SEAGATE/ ST38421A	56.02A32.041
	13G HDD Keystone Seagate	HDD 13G KS66 SEAGATE/ ST313032A	56.02A82.021
	17.2G HDD Keystone Seagate	HDD 17G KSS66 SEAGAT/ ST317242A	56.02B22.011
	6.4G HDD Quasar Maxtor	HDD 6.4G MAXTOR/90648D3	56.02A03.021
	4.3G HDD Corona Quantum	HDD 4.3G QUANTUM/CR4.3AT	56.02833.291
	8.6G HDD Corona Quantum	HDD 8.6GB QUANTUM/ CR8.4AT	56.02A31.041
	13G HDD Corona Quantum	HDD 13G QUANTUM/CR13.0AT	56.02A84.001

Picture	Part Name	Description	Part No.
CD-ROM			
	40X CD-ROM API	CD ROM DV 40X API/ 91.28D37.147	56.10212.011
	40X CD-ROM Acer open	CD-940E/AKUAG4A AAC	91.24D37.007
DVD-ROM			
	6X DVD-ROM Hitachi	DVD 6X/32X HITACHI/GD-3000	56.2238A.021
Cable			
	Cable pack	SWITCH/LED CABLE PACK H61	6M.92202.001
	FDD cable	C.A 34P 2C 450MM FDD H61	50.92205.021
	HDD/CD-ROM cable 3 connector	C.A 40P 3C 250+100MM IDE H61	50.92207.001
	HDD/CD-ROM cable 2 connector	C.A 40P 2C 350MM IDE H61	50.92206.011
	AUDIO cable	W.A 4P 2C 520MM AUDIO V62LA GF	50.37702.011
	Wake on lan cable	W.A 3/3P 203MM FW03035-00 ALN	50.80306.001
System Board			
	V80M Mainboard AGP slot	V80M M/B SLOT1 AGP CRYSTAL/IO	55.37A01.001

Picture	Part Name	Description	Part No.
VGA Card			
	VGA card Rage 128VR AGP 8M ATI	VGA CARG ATI/XPERT99	54.02023.031
	VGA card Rage pro turbo AGP 8M ATI	VGA CARD ATI/100-411019 4-8MB	54.02055.001
	VGA card Rage IIC AGP 4M ATI	VGA CARD 3D CHG R2C 4MB SDRAM	54.02045.011
Modem Card			
	56k modem ANI US	MODEM V.FCC NET/ RA56(AMIRA99P)	54.09281.011
	56k modem ANI EMEA	MODEM V.EMEA NET/ RA56(AMIRE99)	54.09281.001
Lan Card			
	10/100MB Lan card ANI	LAN ANI/ALN-325/B50 PCI10/100	54.03111.001
	10/100MB NIC-559 Lan card ACER	TBD	91.82610.103
	10/100MB NIC-558Lan card ACER	LAN CARD WITH INTEL 82558	91.82610.001
Power			
	145w power supply Delta	SPS 145W DELTA/DPS-145PB-82A	56.04145.1Q1
	145w power supply HI-POWER	SPS 145W M1CR0ATX SIX145M3V.A0	56.04145.4S1
Housing			
	H61 Housing	ASSY HSG CHA H61	60.92209.015
Mechanical Parts			
	Case Lower	ASSY LOWER CASE H61	60.92210.001
	Case Upper 002	CASE UP SECC 002 H61	30.92204.021

Picture	Part Name	Description	Part No.
	HDD EMI cover	CVR EMI EMPTY 5.25"(TOOL) H61	34.92203.001
	CD-ROM EMI bracket	CVR HDD EMI (TOOLING) SUS H61	34.92201.001
	Front Panel GEN	ASSY BZL F GEN H61	60.92211.001
	Front Panel CHA	ASSY BZL F CHA H61	60.92211.023
	CD-ROM empty cover 002	CVR EMPTY 525 CHA HIPS D065 61	42.92221.021
	FDD empty cover 002	CVR EMPTY 35 CHA HIPS D065 H61	42.92222.021
	Drive bracket	ASSY HDD HOLDER H61	60.92208.002

Picture	Part Name	Description	Part No.
	CPU fan sink for SECCII	FAN SINK PII(SECCII/ RPM)OLGA	90.00028.620
	CPU fan sink for SECCII	FAN SINK PII(SECCII/STD)OLGA	90.00028.618
Screws			
	Screw	SCRW PAN W/FLT SPG M3*6L NI	86.1H524.6R0
	Screw	SCRW MACH PAN W/SPG#6-32*5/16	86.1B526.7R9
	Screw	SCRW MACH BDG #6-32*3/16" NI	86.4A5A6.012
	Screw	SCRW MACH FLAT M3*0.5P*8L NI	86.5A524.8R0
Miscellaneous Parts			
	Foot stand	FOOT RUBBER SILICON H61	42.92223.001
	Power switch knob GEN	KNOB PWR GEN HIPS 002 H61	42.92225.011
	Power switch knob CHA	KNOB PWR CHA HIPS 002 H61	42.92219.011
	Power switch knob spring	SPRING POWER KNOB SUS IDCMT/FU	34.02708.001
	Key lock	KEY LOCK SUS430 IDK	34.00115.001

Picture	Part Name	Description	Part No.
	Bracket port spring	SPRING PBSPS T0.15 IDEMT	34.90203.002
	LED cable catch	HOLDER WIRI NYLON66 IDC-DT	42.02801.011
	Bracket port	BRKT PORT SECC 1116SX(CD)	33.11206.002
Keyboard			
	PS/2 keyboard us API	KB PS2 (US) API ALL	91.22H07.081
Mouse			
	PS/2 button mouse Primax	MOUSE PRIMAX 2 BUTTON MUS9J	90.AB362.003
	PS/2 button mouse Logitech	MOUSE LOGITECH 2 BUTTON/ S42	90.00026.915
	PS/2 wheel mouse Primax	MOUSE WHEEL PRIMAX/ MOSXK D002	90.00026.069
	PS/2 wheel mouse Logitech	MOUSE LOGITECH WHEEL/S48	90.00026.914
Speaker			
	PS/2 power speaker Midiland	A-1	91.38A12.003

Model Number and Configurations

This appendix provides the BASIC model number and the configuration to AcerPower SN decided for Acer's "global" product offering. Contact your regional offices or the responsible personnel/channel to provide you with further extension model numbers and configurations

- Brand name: ACER
- Product Name: AcerPower SN
- Description: 64 Bit Computer System

Test Compatible Components List

AcerPowerSN compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under MS DOS® V6.22, Windows® 98 (EN/CHN), Windows® NT 4.0 (EN) and Windows® 2000 (EN) environments. In addition to these tests, the network communication functions are also tested under Linux® 5.2 and SCO Unix® 5.05 environments and the Year 2000 support capability has been verified too.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests. Regarding configuration, combination and test procedures, please refer to the "V80M Compatibility Test Report" released by the Acer Desktop System Testing Department.

MS DOS V6.22 Environment Test

MS DOS®V6.22 Function Test

Item	Specification
Processor	Pentium II 400 Pentium II 450
Memory	96MB 128MB
Cache	512K
Floppy Diskette drive	Panasonic 3 Mode Mitsumi
Hard Diskette drive	Maxtor 6.4 GB Maxtor 6.5 GB Quantum 13.0 GB
CD-ROM	Aopen 40X CD-ROM
DVD-ROM	Hitachi 6X DVD-ROM
Mouse	Logitech PS/2 2 button
Monitor	15” AcerView 56C 17” Aspire 77S
Keyboard	API 52P

MS Windows 98 (EN/CHN) Environment Test

Microsoft® Windows® 98 (En/CHN) Function Test

Item	Specification
Processor	Pentium II 350 Pentium II 500
Memory	128 MB (64 MB*2) 256 MB (128 MB*2)
Cache	512K
Diskette drive	Panasonic 3 Mode Mitsumi
Hard Diskette drive	Seagate 8.6 GB Seagate 13.0 GB
CD-ROM	Aopen 40X CD-ROM
DVD-ROM	Hitachi 6X DVD-ROM
Mouse	Logitech PS/2 2 button Logitech PS/2 Wheel
Monitor	15” AcerView 56C 17” Aspire 77S
Keyboard	Logitech PS/2 2 button Logitech PS/2 Wheel
Display Adapter	ATI Rage 128VR AGP ATI Rage IIC AGP ATI Rage Pro Turbo AGP 2X
LAN Adpater	ALN-325NIC 559 NIC-558 NIC-559
Fax/Modem Adapter	ANI AMI-RA99P ANI AMI-RE99P
Joystick/GamePad	USB SideWinder Precision Pro SideWinder Precision Pro
USB Devices	Aspire USB Mouse Acerscan 310U HP USB 895Cxi HP USB 895Cxi
Printer Device	HP 895Cxi Epson Stylus Color 440

MS Windows NT 4.0 Workstation Environment Test

Microsoft® Windows® NT 4.0 Workstation Function Test

Item	Specification
Processor	Pentium II 350 Pentium II 500
Memory	128 MB (64 MB*2) 256 MB (128 MB*2)
Cache	512K
Diskette drive	Panasonic 3 Mode Mitsumi
EIDE Channel 1 Master	Seagate 8.6 GB Seagate 13.0 GB
CD-ROM	Aopen 40X CD-ROM
DVD-ROM	Hitachi 6X DVD-ROM
Mouse	Logitech PS/2 2 button Logitech PS/2 Wheel
Monitor	15” AcerView 56C 17” Aspire 77S
Keyboard	Logitech PS/2 2 button Logitech PS/2 Wheel
Display Adapter	ATI Rage 128VR AGP ATI Rage IIC AGP ATI Rage Pro Turbo AGP 2X
LAN Adapter	ALN-325 NIC-559 NIC-558

MS Windows 2000 Environment Test

Microsoft® Windows® 2000 Function Test

Item	Specification
Processor	Pentium II 400 Pentium II 500
Memory	128 MB 256 MB
Cache	512K
Diskette drive	Panasonic Mitsumi
Hard Diskette drive	Seagate 8.6 GB Seagate 13.0 GB Quantum 13.0 GB Maxtor 6.4 GB
CD-ROM	Aopen 40X CD-ROM
DVD-ROM	Hitachi 6X DVD-ROM
VGA Adapter	ATI Rage 128 VR AGP ATI Rage IIC AGP
Lan Adapter 1	ALN-325 NIC-558
Lan Adapter 2	NIC-559
Modem	ANI AMI-RE99P ANI AMI-RA99P
Mouse	Logitech PS/2 2 button Logitech PS/2 Wheel
Monitor	15” AcerView 56C 17” Aspire 77S
Keyboard	API 52P

LINUX Environment Test

LINUX Function Test

Item	Specification
Processor	Pentium II 400 Pentium II 500
Memory	128 MB 256 MB
Cache	512K
Diskette drive	Panasonic Mitsumi
Hard Diskette drive	Seagate 8.6 GB Seagate 13.0 GB
CD-ROM	Aopen 40X CD-ROM
DVD-ROM	Hitachi 6X DVD-ROM
VGA Adapter	ATI Rage 128 VR AGP ATI Rage Pro Turbo AGP 2X
Lan Adapter 1	ALN-325 NIC-558
Lan Adapter 2	NIC-559
Mouse	Logitech PS/2 2 button Logitech PS/2 Wheel
Monitor	15” AcerView 56C 17” AcerView 76C
Keyboard	API 52P

SCO UNIX Environment Test

SCO UNIX Function Test

Item	Specification
Processor	Pentium II 400 Pentium II 500
Memory	128 MB 256 MB
Cache	512K
Diskette drive	Panasonic Mitsumi
Hard Diskette drive	Seagate 8.6 GB Seagate 13.0 GB
CD-ROM	Aopen 40X CD-ROM
DVD-ROM	Hitachi 6X DVD-ROM
Lan Adapter 1	ALN-325 NIC-558
Lan Adapter 2	NIC-559
Mouse	Logitech PS/2 2 button Logitech PS/2 Wheel
Monitor	15” AcerView 56C 17” AcerView 76C
Keyboard	API 52P

Online Support Information

This appendix describes online technical support services available to help you repair your Acer Systems.

If you are a distributor, dealer, ASP or TPM, please refer your technical queries to your local Acer branch office. Acer Branch Offices, Regional Offices and Regional Group may access our website. However some information sources will require a user I.D. and password. These can be obtained directly from Acer CSD Taiwan.

Acer's Website offers you convenient and valuable support resources whenever you need them.

You can the information on all of Acer's Notebook, Desktop and Server models including;

- Service guides for all models
- User's manuals
- Training materials
- BIOS updates
- Software utilities

Also contained on this website is

- Detailed information on Acer's International Traveler's Warranty (ITW)
- An overview of all the support services we offer, accompanied by a list of telephone, fax and email contacts for all your technical queries.

Here is the Acer headquarters' Customer Service Division Internet address for your support information:

http://csd.acer.com.tw

If you have any suggestions or comments, please do not hesitate to communicate these to

TerryMasi@acer.com.tw, or fax to (886) 2 86911799.

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