Acer

Aspire E560/T660 and AcerPower F6
Service Guide

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

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Revision History

Please refer to the table below for the updates of Desktop Aspire E560/T660 and AcerPower F6 service guide.

Date	Chapter	Updates
September 11, 2006		first release

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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, you should check the most up-to-date information available on your regional web or channel. For whatever reason, if 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.

System Specification

Overview

Main Board

	Description
Size	Max. 244 mm x 244 mm, MicroATX
Processor	• Socket type: Intel socket T LGA775 pin • Socket quantity: one • Intel Prescott 775 / Smithfield / Cedar Mill / Presler / Conroe, FSB 533/800/1066MHz (FMB 95W or lower) • Intel Celeron D 775, FSB 533MHz
System Chipset	• GMCH: ATI RC415s • ICH: ATI SB600

Memory	• Two DDR2 connectors
	• Capacity:
	  • 256MB to 1GB DDR2 667/533/400 unbuffered ECC SDRAM module support
	  • Max. 256MB to 4GB memory support
	  • Dual-channel function enabled when plugging in two same memory size DDR2 memory modules

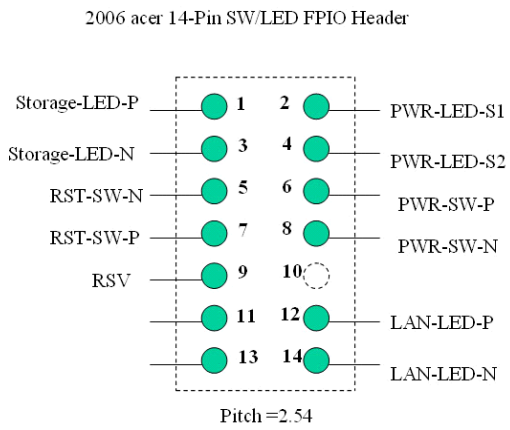
Onboard Graphic Solution	• ATI RC415s integrated graphics device (IGD) solution
	  • DVMT technology support
	  • One VGA port on the rear side

PCI Express / PCI Slots	• One PCI Express x16 slot • One PCI Express x1 slot • Two PCI 2.2 5V slots
FDD	• One slot for FDD • 1.44MB / 3 mode 3.5” devices support
IDE	• One 40-pin PATA IDE slot, PIO mode 0/1/2/3/4 and ATA mode 33/66/100 support • Four SATA slots, HDD/CD-ROM/CD-RW/DVD-ROM/DVD-RW/DVD+RW/DVD Dual/DVD Super Multi Plus support

Audio	• Controller: ATI SB600 compatible
	• Chip: HD audio codec ALC888 HD codec 7.1 with S/PDIF out/in
	• Connectors support:
	  • Rear six jacks that follow HD audio definition
	  • Front microphone in
	  • Front headphone out
	  • S/PDIF header (1*3)
	  • CD-in
	  • AUX-in
	  • Front panel audio header (2*5) support
	  • HD de-pop CKT added
	  • S/N ration: 90 dB at rear output jack

LAN	• Controller: PCI-E Giga LAN • H/W, F/W, and S/W should be able to support ASF compliant

USB	• Controller: ATI SB600 compatible
	• Onboard four USB back panel ports
	• Connector pin: standard Intel FPIO pin definition
	• Data transfer rate support: USB 2.0/1.1
	• For 1394 SKU: ten ports
	  • Two for front daughter board
	  • Two for internal USB card reader
	  • Four for rear I/O (two co-lay with rear I/O, under RJ-45 port, for internal USB RF & IR receiver board support)
	  • Two reserved header
	• For non-1394 SKU: ten ports
	  • Four for front daughter board
	  • Four for rear I/O (two co-lay with rear I/O, under RJ-45 port)
	  • Two reserved header

Front Panel IO Header	

System LDE Definition	• Power state LED:
	  • S0: blue steady
	  • S1/S3: blue blinking
	  • S4/S5: off
	• HDD state LED:
	  • IDE active: blue blinking
	  • IDE idle: off
	• LAN state LED:
	  • LAN active: blue blinking
	  • LAN idle: off

All Onboard Connectors List	• Rear I/O connectors:
	  • One PS/2 keyboard port, one PS/2 mouse port
	  • One parallel port, one serial port
	  • One GA (CRT) port
	  • One RJ-45 LAN port
	  • Four USB ports for non-1394 SKU; four USB ports + IEEE 1394 port for 1394 SKU
	  • 7.1 channel phone jack
	• Onboard connectors:
	  • One CPU socket
	  • Two memory sockets
	  • One PCI Express x16 socket
	  • One PCI Express x1 socket
	  • Two PCI slots
	  • One FDD slot
	  • One PATA IDE connector
	  • Four SATA IDE connectors
	  • Three 2*7 pin Intel FPIO specification USB pin connectors (follow Intel FPIO standard specification)
	  • One 2*5 pin Intel FPIO specification microphone-in/headphone-out pin connector
	  • One serial port 2*5 pin connector (2nd serial port)
	  • One CD-in four-pin connector (CD-ROM audio input)
	  • One S/PDIF three-pin connector
	  • One four-pin CPU fan connector
	  • One four-pin system fan connector with three-pin system fan co-layout
	  • One intrusion alarm connector
	  • One 24-pin ATX interface PS3/PS2 SPS connector
	  • One 2*7 pin front panel IO header
	  • Two reserved two-pin GPIO connector
	  • One onboard buzzer
	  • Color management for onboard connector

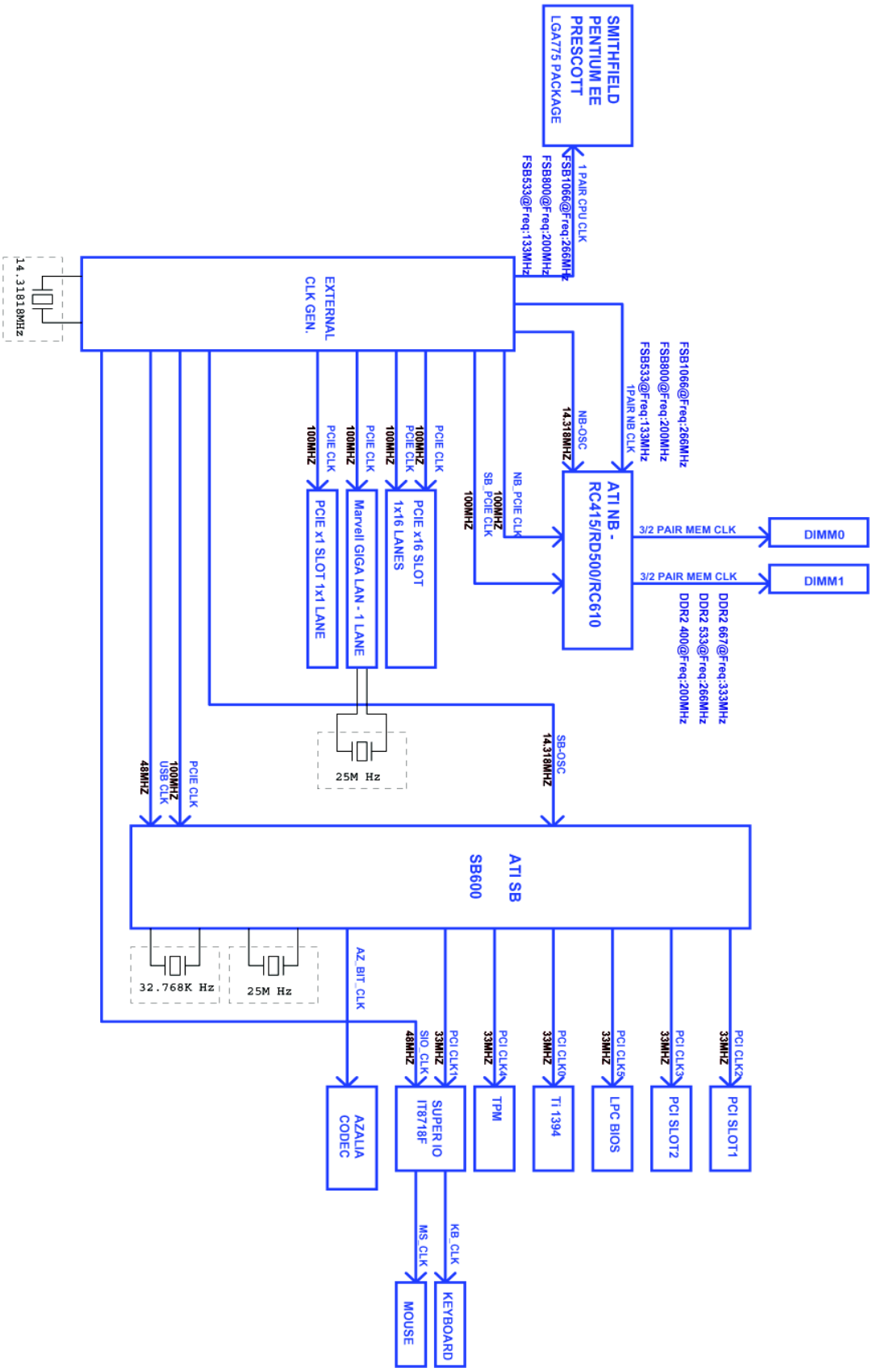
Special Design Specification

	Description
Thermal Design	• At least four steps fan speed control by hardware monitor • Intel MTM technology, default read/write enabled • CPU overheat (120°C) power off protection • Compliant with Intel 2005 Mainstream and Performance FMB design • Compliant with Intel 2006 TDP

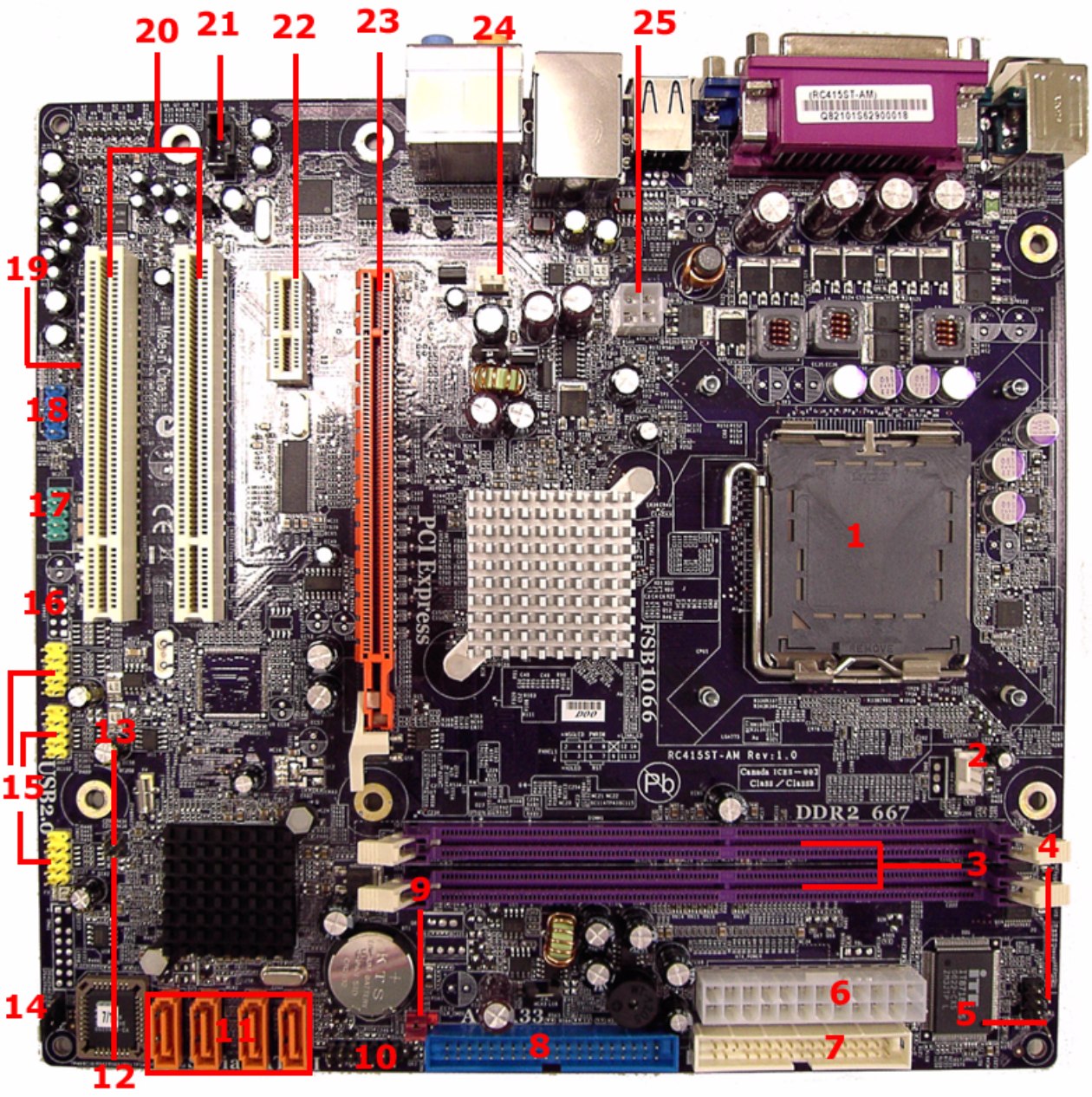
Wake-Up Event Specification

	S1	**S3**	**S4**	**S5**
Power Button	Enabled	Enabled	Enabled	Enabled
PS2 Keyboard	Enabled	Enabled	n/a	n/a
USB Keyboard	Enabled	Enabled	n/a	n/a
WOL (wake on LAN)	n/a	n/a	n/a	n/a
WOR (wake on Ring)	n/a	n/a	n/a	n/a
RTC (real time clock)	n/a	n/a	n/a	Enabled

Block Diagram



Main Board Placement



#	Label	Component	#	Label	Component
1	CPU socket	LGA775 socket for Intel Pentium D/Pentium 4/ Celeron D CPUs	2	CPU_FAN	CPU cooling fan connector
3	DIMM1~2	240-pin DDR2 SDRAM slots	4	IR1	Infrared header
5	CHS1	Chassis detect header	6	ATX_POWER	Standard 24-pin ATX power connector
7	FDD	Floppy diskette drive connector	8	IDE1	Primary IDE channel

9	CLR_CMOS	Clear CMOS jumper	10	PANEL1	Front panel switch/LED header
11	SATA1~4	Serial ATA connectors	12	JP2	To be defined
13	JP1	To be defined	14	BIOS_WP	BIOS protect jumper
15	USB3~5	Front panel USB headers	16	1394A1*	Onboard 1394a header
17	COM2	Onboard serial port header	18	AUDIO1	Front panel audio header
19	SPDIFO2	SPDIF out header	20	PCI1~2	32-bit add-on card slots
21	AUX_IN	Auxiliary In connector	22	PCIEX1	PCI Express x1 slot
23	PCIEX16	PCI Express x16 slot	24	SYS_FAN	System fan connector
25	ATX_12V	Auxiliary 4-pin power connector			

Front Panel

Aspire E560

#	Description
1	Optical driver
2	Optical drive eject button
3	Power button
4	USB ports
5	Speaker/Headphone jack
6	Microphone jack
7	Indicators
8	Floppy disk drive
9	Card reader
10	IEEE 1394 port

Aspire T660

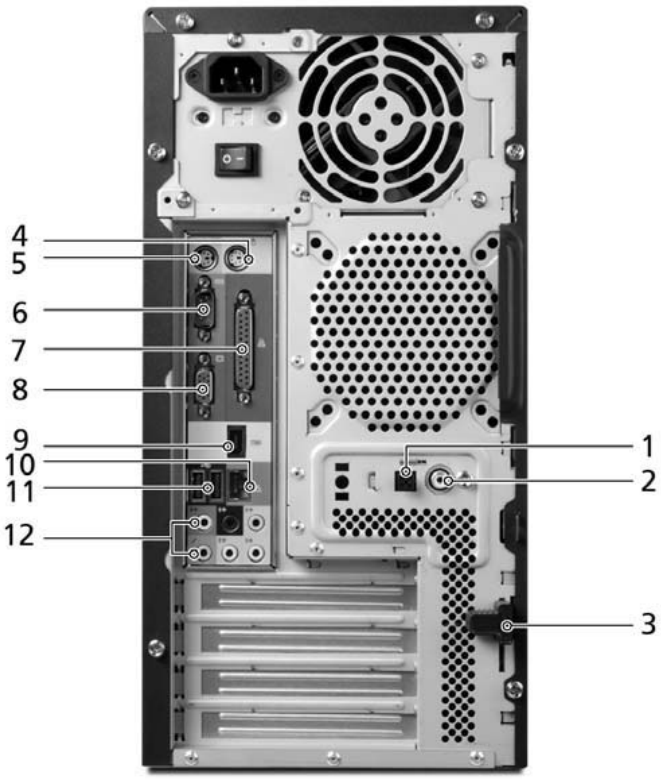
#	Description
1	Optical device
2	Floppy drive
3	Power button
4	Microphone jack
5	Speaker/Headphone jack
6	USB ports

AcerPower F6

#	Description
1	Optical driver
2	Floppy disk drive
3	Card reader
4	indicators
5	USB ports
6	Microphone jack
7	Speaker/Headphone jack
8	Power button

Rear Panel

Aspire E560/T660



#	Description
1	Optical driver
2	Floppy disk drive
3	Card reader
4	indicators
5	USB ports
6	Microphone jack
7	Speaker/Headphone jack
8	Power button

Acer Empowering Technology

Acer's innovative Empowering Technology makes it easy for you to access frequently used functions and manage your new Acer notebook. It features the following handy utilities:

AcerPower F6

- **Acer eSettings Management** accesses system information and adjusts settings easily.
- **Acer eLock Management** limits access to external storage media.
- **Acer eDataSecurity Management** protects data with passwords and advanced encryption algorithms.
- **Acer ePerformance Management** improves system performance by optimizing disk space, memory and registry settings.
- **Acer eAcoustics Management** offers a useful tool to balance your computing power needs with your desired level of quietness.
- **Acer eRecovery Management** backs up and recovers data flexibly, reliably and completely.

Aspire E560/T660

- **Acer eDataSecurity Management** protects data with passwords and advanced encryption algorithms.
- **Acer ePerformance Management** improves system performance by optimizing disk space, memory and registry settings.
- **Acer eRecovery Management** backs up and recovers data flexibly, reliably and completely.

For more information, press the e key to launch the Empowering Technology menu, then click on the appropriate utility and select the Help or Tutorial function.

Empowering Technology password

Before using Acer eLock Management and Acer eRecovery Management, you must initialize the Empowering Technology password. Right-click on the Empowering Technology toolbar and select "Password Setup" to do so. If you do not initialize the Empowering Technology password, you will be prompted to do so when running Acer eLock Management or Acer eRecovery Management for the first time.

Acer eSettings Management

Acer eSettings Management allows you to inspect hardware specifications, change BIOS passwords or other Windows settings, and to monitor the system health status. Acer eSettings Management also:

- Provides a simple graphical user interface for navigating.
- Displays general system status and advanced monitoring for power users on Acer computer.

Acer eLock Management

Acer eLock Management is a security utility that allows you to lock your removable data, optical and floppy drives to ensure that data can't be stolen while your notebook is unattended.

- Removable data devices - includes USB disk drives, USB pen drives, USB flash drives, USB MP3 drives, USB memory card readers, IEEE 1394 disk drives and any other removable disk drives that can be mounted as a file system when plugged into the system.
- Optical drive devices - includes any kind of CD-ROM or DVD-ROM drives.
- Floppy disk drives - 3.5-inch disks only.
- Interfaces - includes serial ports, parallel port, infrared (IR), and Bluetooth.

To activate Acer eLock Management, a password must be set at first. Once set, you can apply locks to any of the devices. Lock(s) will immediately be set without any reboot necessary, and will remain locked after rebooting, until unlocked.

Note: If you lose your password, there is no method to reset it except by reformatting your notebook

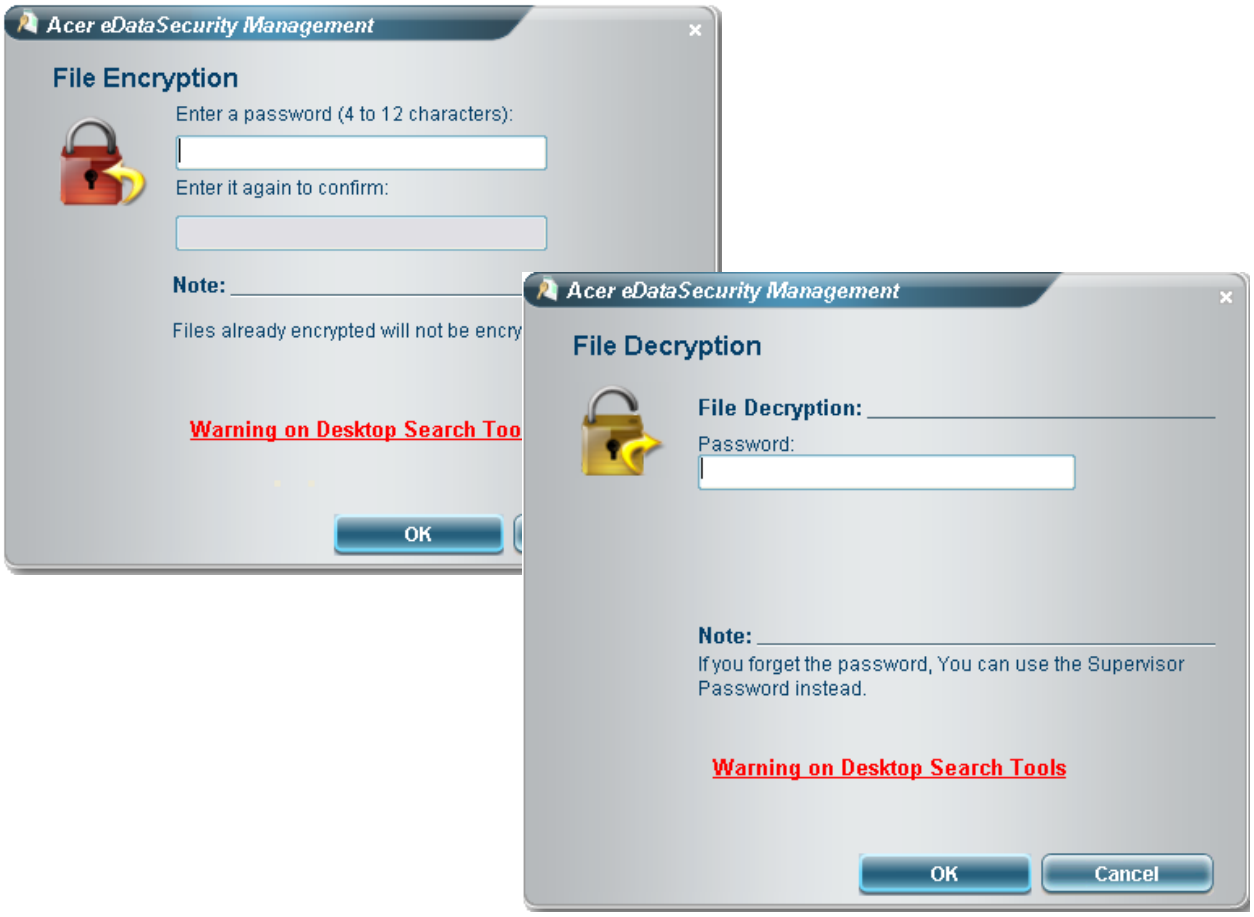
or taking your notebook to an Acer Customer Service Center. Be sure to remember or write down your password.

Acer eDataSecurity Management

Acer eDataSecurity Management is handy file encryption utility that protects your files from being accessed by unauthorized persons. It is conveniently integrated with Windows explorer as a shell extension for quick and easy data encryption/decryption and also supports on-the-fly file encryption for MSN Messenger and Microsoft Outlook.

The Acer eDataSecurity Management setup wizard will prompt you for a supervisor password and default encryption. This encryption will be used to encrypt files by default, or you can choose to enter your won file-specific password when encrypting a file.

Note: The password used encrypt a file is the unique key that the system needs to decrypt it. If you lose the password, the supervisor password is the only other key capable of decrypting the file. If you lose both passwords, there will be no way to decrypt your encrypted file! **Be sure to safeguard all related passwords!**



Acer ePerformance Management

Acer ePerformance Management is a system optimization tool that boosts the performance of your Acer notebook. It provides and express optimization method to release unused memory and disk space quickly. The user can also enable advanced options for full control over the following option:

- Memory optimization - releases unused memory and check usage.
- Disk optimization - removes unneeded items and files.
- Speed optimization - improves the usability and performance of your Windows XP system.

Acer eAcoustics Management

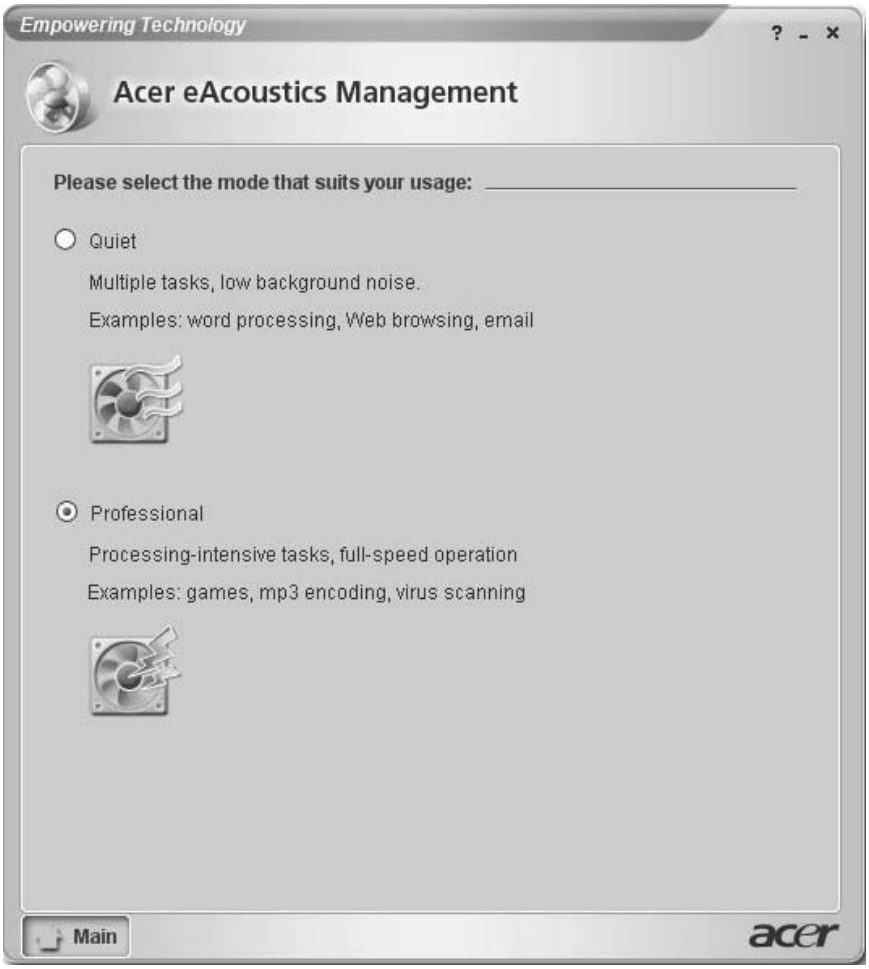
Acer eAcoustics Management offers you a useful tool to balance your computing power needs with your desired level of quietness. By reducing the processor speed for tasks that require less processing, the CPU and system fans can run slower, thus reducing the amount of sound generated by these components.

Using Acer eAcoustics Management

To launch Acer eAcoustics Management

- Click on the **Acer eAcoustics Management** icon in the Empowering Technology toolbar.
- From the Start menu, go to **(All) Programs > Acer Empowering Technology > Acer eAcoustics Management**.

Then Acer eAcoustics Management main page will come out.



Acer eAcoustics Management Main Page

Listed on the main page are two options for Acer eAcoustics Management, labeled as Quiet and Professional. Select the mode that suits your working requirements best, and exit the utility to apply the settings.

Quiet

Use this mode for tasks that require low processing power, like word processing, Web browsing, and instant messaging. This mode creates the lowest audio disturbance.

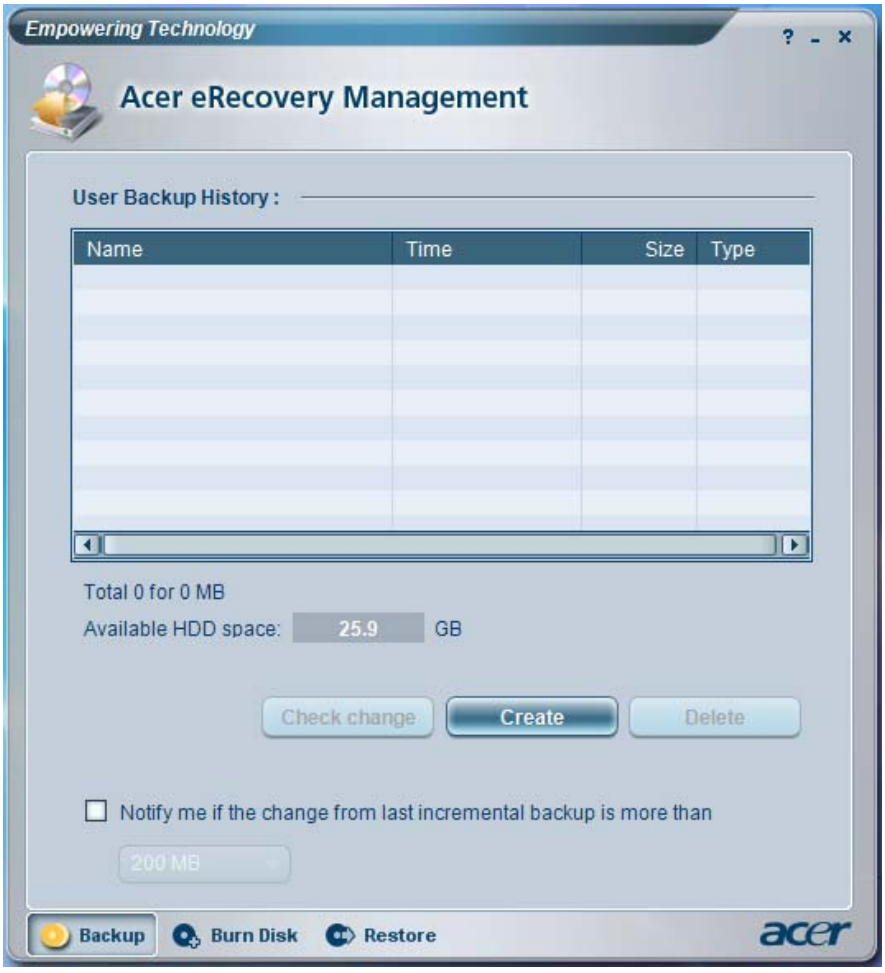
Professional Mode

Use this mode for processing-intensive tasks, when you require full-speed operation.

Acer eRecovery Management

Acer eRecovery Management is a powerful utility that does away with the need for recovery disks provided by the manufacturer. The Acer eRecovery Management utility occupies space in a hidden partition on your system's HDD. User-created backups are stored on D:\ drive. Acer eRecovery Management provides you with:

- Password protection
- Recovery of applications and drivers
- Image/data backup
  - Backup to HDD (set recovery point)
  - Backup to CD/DVD
- Image/data recovery tools
  - Recovery from a hidden partition (factory defaults)
  - Recovery from the HDD (most recent user-defined recovery point)
  - Recover from CD/DVD



For more information, please refer to **Acer eRecovery Management**.

Note: If your computer did not come with a Recovery CD or System CD, please use Acer eRecovery Management's **System backup to optical disk** feature to burn a backup image to CD or DVD. To ensure the best results when recovering your system using a CD or Acer eRecovery Management, detach all peripherals (except the external Acer ODD, if your computer has one), including the ezDock.

Acer Disc-to-Disc Recovery

Restore without a Recovery CD

This recovery process helps you restore the C:\ drive with the original software content that is installed when you purchase your system. Follow the steps below to rebuild your C:\ drive.

Note: The C:\ drive will be reformatted and all data will be erased. It is important to back up all data files before you use this option.

1. Restart the system.
2. While the Acer logo comes out, press <Alt> + <F10> to enter the recovery process.
3. The message **The system has password protection. Please enter 000000:** will be displayed.
4. Enter six zeros and continue.
5. The Acer Recovery main page appears.
6. Use the arrow keys to scroll through the items (operating system versions) and press <Enter> to select.

Multilingual Operating System Installation

Follow the instructions to choose the operating system and language you prefer when you first power on the system.

1. Turn on the system.
2. Acer's multilingual operating system selection menu will pop up automatically.
3. Use the arrow keys to scroll to the language version you want. Press <Enter> to confirm your selection.
4. The operating system and language you choose now will be the only option for future recovery operations.
5. The system will install the operating system and language you choose.

Hardware Specification and Configuration

Processor

Item	Specification
Type	Intel Prescott 775 / Smithfield / Cedar Mill / Presler / Conroe
Feature	• FSB: 533/800/1066MHz • Socket type: Intel socket T LGA 775-pin • HyperThreading Technology and FSB Dynamic Bus Inversion (DBI) support • 36-bit host bus addressing support, allowing the CPU to access the entire GMCH memory address space

System Main Chipset

Item	Specification
Core logic	ATI RC415 + ATI SB600
System clock	ICS ICS6304471
BIOS ROM	SST 49LF040B
Memory controller	ATI RC415
Super I/O controller	ITE IT8718F-S
Audio Codec & Amplifier	Realtek ALC888 (high definition audio)

North Bridge

Item	Specification
Chipset	ATI RC415
Feature	• 64-bit DDR2 SDRAM system memory interface for optimal performance support • One x2 (expandable to x4) A-Link Express interface (PCI Express 1.0a compliant) for connection to the ATI IXP • One PCI Express x16 graphics interface support, fully compliant to the PCI Express Base Specification revision 1.0a • DDR2 667/533/400 SDRAM support

South Bridge

Item	Specification
Chipset	ATI SB600
Feature	• Enhanced DMA controller, interrupt controller, and timer functions • Compliant to PCI Express Base Specification v1.0a • Compliant to PCI 2.3 specification at 33MHz • Compliant to SATA2 specification • Integrated USB 2.0 Host Controller support up to ten USB 2.0 ports • Compliant to AC'97 Codec/High Definition Audio Codec support eight-channel audio output • Integrated IDE controller support Ultra DMA 133/100/66

System Memory

Item	Specification
Feature	• DDR2 667/533/400MHz SDRAM memory interface design with single-channel DDR2 architecture • Accommodates two unbuffered DIMMS slots • Maximum memory up to 2GB

Onboard LAN

Item	Specification
Feature	• Two-wire serial interface (TWSI) for VPD • Compliant to PCI Express base specification 1.1 • Compliant to 802.3x flow control • IEEE 802.3u/ab, 802.1p and 802.1q support • Compliant to 10/100/1000 IEEE 802.3 • WOL power management and ACPI 2.0 specification

1394 Fireware

Item	Description
Feature	• Fully compliant to provisions of IEEE Std 1394-1395 or a high performance serial bus and IEEE Std 1394a-2000 • Three IEEE Std 1394a-2000 fully compliant cable ports at 100/200/400 Mb/s

Audio

Item	Description
Feature	• High performance DACs with 97dB SNR (A-weighting), ADCs with 90dB SNR (A-weighting) • 3.3V digital core power; 1.5V~3.3V digital IO power for HDA bus; 3.3V~5.0V analog power • High quality analog differential CD input • Meets performance requirements for Microsoft WLP 3.0 audio Premium desktop and mobile PCs

BIOS Hotkey List

Hotkey	Description
DEL	To enter BIOS Setup Utility: press the DEL key while the system is booting to enter BIOS Setup Utility.

Hardware Monitor Function

Item	Description
Feature	• Smart fan control system, Thermal Cruise and Speed Cruise support • Six VID input pins for CPU Vcore identification • Two thermal inputs from optionally remote thermistors or 2N3904 transistors or Pentium 4 thermal diode output • Four external voltage detect inputs • Three intrinsic voltage monitoring (typical for Vbat, +5VSB, +5CC) • Two fan speed monitoring inputs • Two fan speed control (DC analog output) • WATCHDOG comparison of all monitored items • Overheat indication output • Issue SMI#, IRQ, OVT# to activate system protection

Environment Requirements

Item	Specification
Temperature	
Operating	+5^{O}C ~ +35^{O}C
Non-operating	-20^{O}C ~ +60^{O}C (storage packed), -10^{O}C ~ +60^{O}C (unpacked)
Humidity	
Operating	15% to 80% RH, non-condensing
Non-operating	10% to 90% RH, non-condensing at 40^{o}C
Vibration	
Operating	5 ~ 500Hz, 2.20g RMS random, 10 minutes per axis in all three axes
Non-operating	5 ~ 500Hz, 1.09g RMS random, one hour per axis in all three axes

Drop Test

Drop Test				
Definition	The protection ability of packing & cushion must be capable of withstanding, with no physical or functional damage, mechanical impact from height-specific drops.			
Test Standard				
Package Cross Weight		Drop Height		Not of Drop
KGs	lbs	CM	Inch	
0~9.1	0~20	76	30	10
9.1~18.2	20~40	61	24	10
18.2~27.3	40~60	46	18	10
27.3~45.4	60~100	31	12	10
10 drops: one corner, three edges, six surfaces				

Power Management Function (ACPI Support Function)

Device Standby Mode

- Independent power management timer for hard disk drive devices (zero to 15 minutes, time step = one minute).
- Hard disk drive goes into Standby mode (for ATA standard interface).
- Disable V-sync to control the VESA DPMS monitor.
- Resume method: device activated (keyboard for DOS, keyboard & mouse for Windows).
- Resume recovery time: three to five seconds.

Global Standby Mode

- Global power management timer (two to 120 minutes, time step = 10 minutes).
- Hard disk drive goes into Standby mode (for ATA standard interface).
- Disable H-sync and V-sync signals to control the VESA DPMS monitor.
- Resume method: return to original state by pushing external switch button, modem ring in, keyboard and mouse for APM mode.
- Resume recovery time: seven to 10 seconds.

Suspend Mode

- Independent power management timer (two to 120 minutes, time step = 10 minutes) or pushing external switch button.
- CPU goes into SMM.
- CPU asserts STPCLK# and goes into the Stop Grant state.
- LED on the panel turns amber color.
- Hard disk drive goes into SLEEP mode (for ATA standard interface).
- Disable H-sync and V-sync signals to control the VESA DPMS monitor.
- Ultra I/O and VGA chip go into power saving mode.
- Resume method: return to original state by pushing external switch button, modem ring in, keyboard and mouse for APM mode.
- Return to original state by pushing external switch button, modem ring in and USB keyboard for ACPI mode.

ACPI

- ACPI specification 1.0b
- S0, S1, S3 and S5 sleep state support
- Onboard device power management support
- Onboard device configuration support

Setup Utilities

About the Setup Utility

The computer uses the latest Award BIOS (Basic Input and Output System) with support for Windows Plug and Play. The CMOS chip on the main board contains the ROM setup instructions for configuring the main board BIOS.

The BIOS Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in Battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you have stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

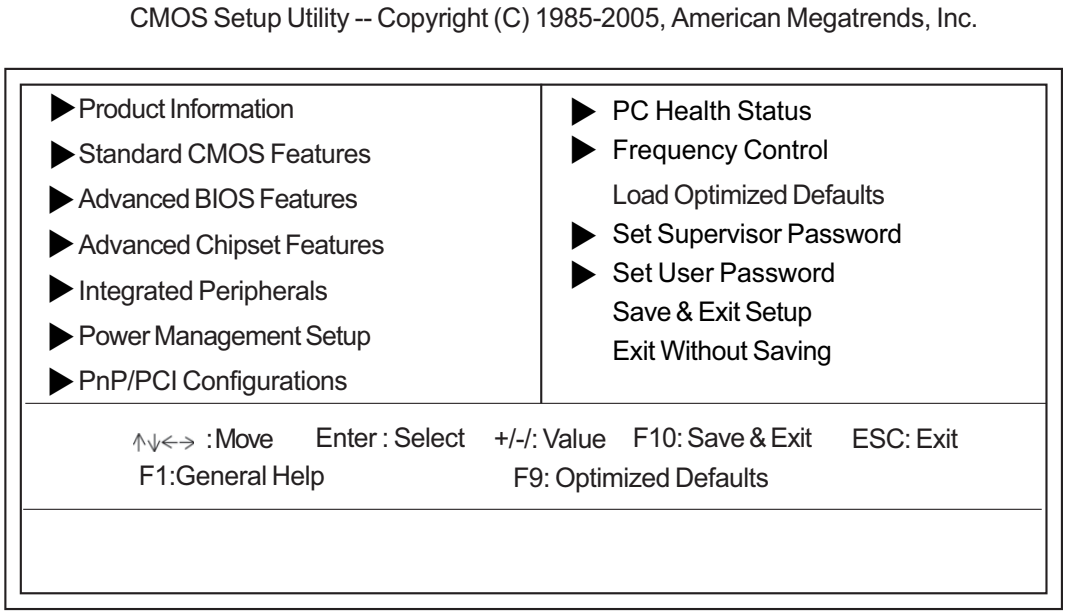
The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message will appear.

Press DEL to enter SETUP

Press the delete key to enter the BIOS Setup Utility.



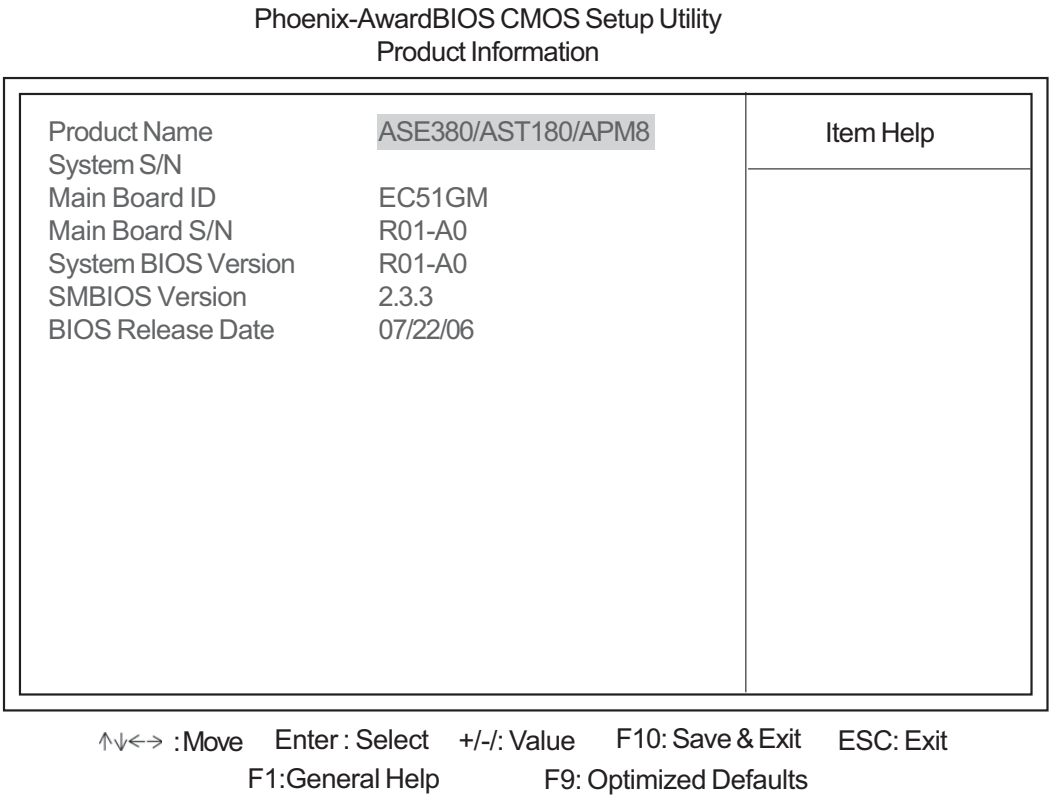
BIOS Navigation Keys

The BIOS navigation keys are listed below.

Key	Function
ESC	Exits the current menu.
←↑↓→	Scrolls through the items on a menu.
+/-/PU/PD	Modifies the selected field's values.
F1	Displays a screen that describes all key functions.
F9	Loads an optimized setting for better performance.
F10	Saves the current configuration and exits setup.

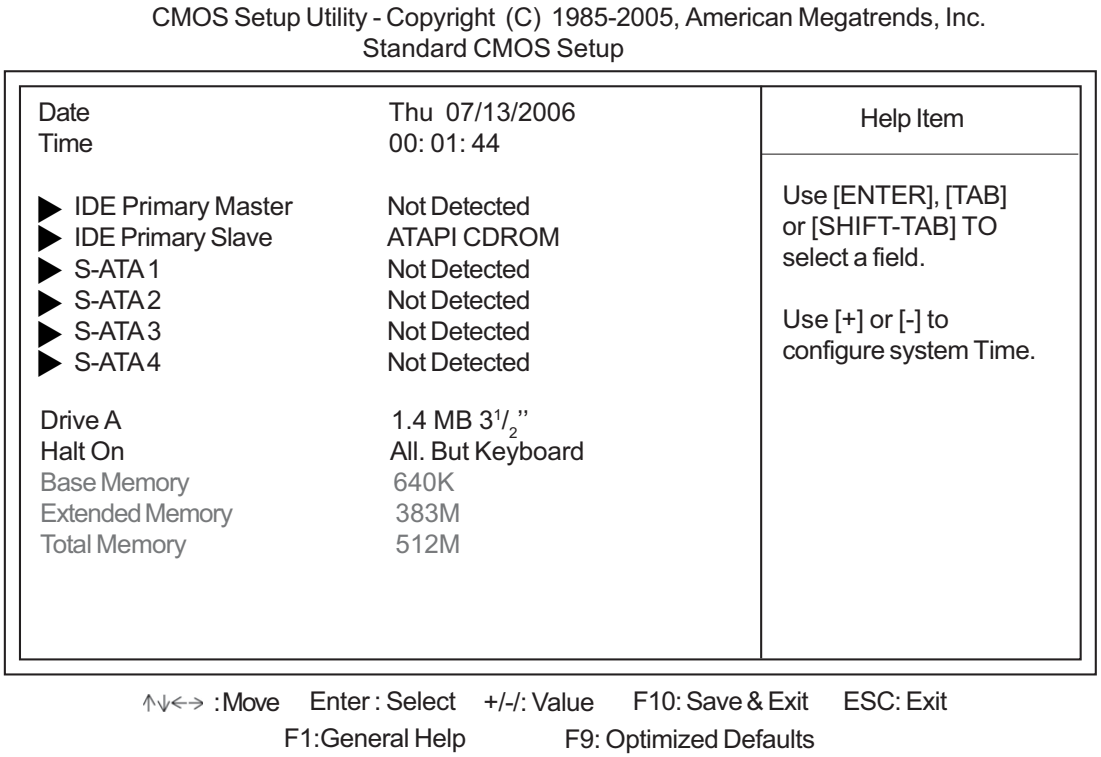
Product Information

This option displays basic information about the system. Press <Esc> to return to the main menu setting page.



Standard CMOS Features

The option displays basic information about the system. Press <Esc> to return to the main menu setting page.



Date and Time

The Date and Time items show the current date and time set on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

IDE Primary Master/Slave SATA 1~4

Your computer has one IDE channel and can be installed with one or two devices (Master and Slave). Use this item to configure each device on the IDE channel. This main board features four SATA connectors supporting four SATA drives. SATA refers to Serial ATA (Advanced Technology Attachment), the standard interface for the IDE hard drives which are currently used in most PCs.

Drive A

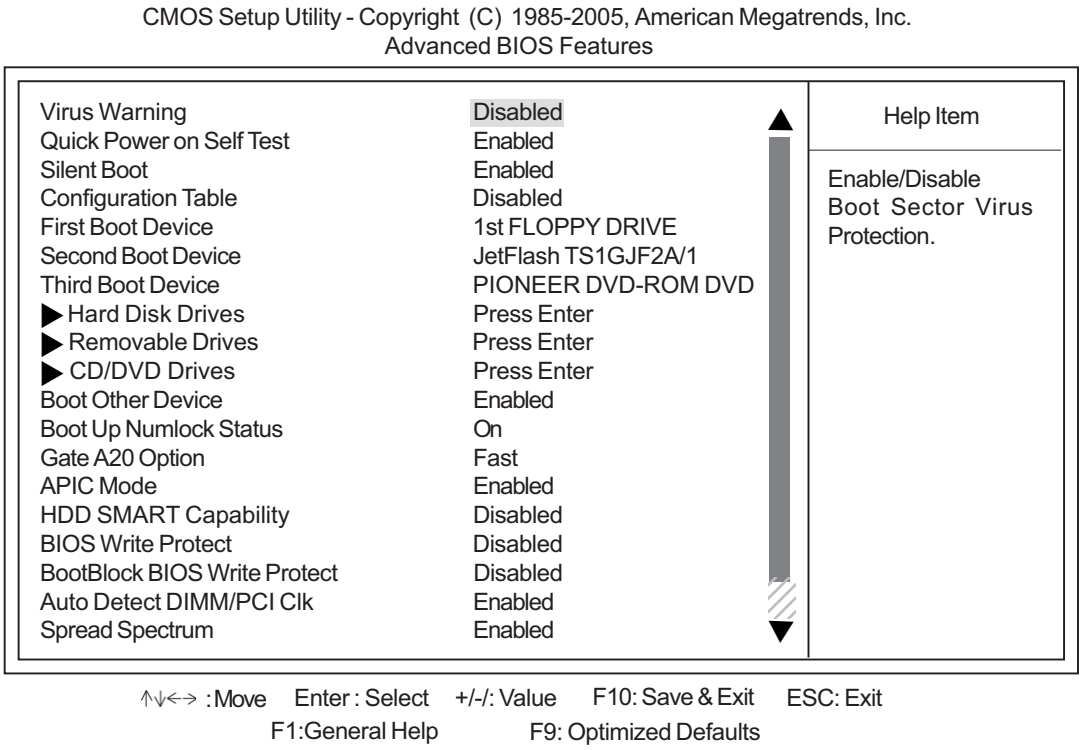
The item defines the properties of any diskette drive attached to the system.

Halt On

This item defines the operation of the system POST (Power On Self Test) routine. YOu can use this item to select which types of errors in the POST are sufficient to halt the system.

Advanced BIOS Features

This page sets up more advanced information about the system. Handle this page with caution. Any changes can affect the operation of the system.



Virus Warning

This item enables or disables the boot sector virus protection.

Quick Power On Self Test

You can enable this item to shorten the power on self testing (POST) and have your system startup faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

Silent Boot

If enabled, BIOS will show a full screen logo at boot. If disabled, BIOS will set the initial display mode to BIOS and show the diagnostic POST screen at boot.

Configuration Table

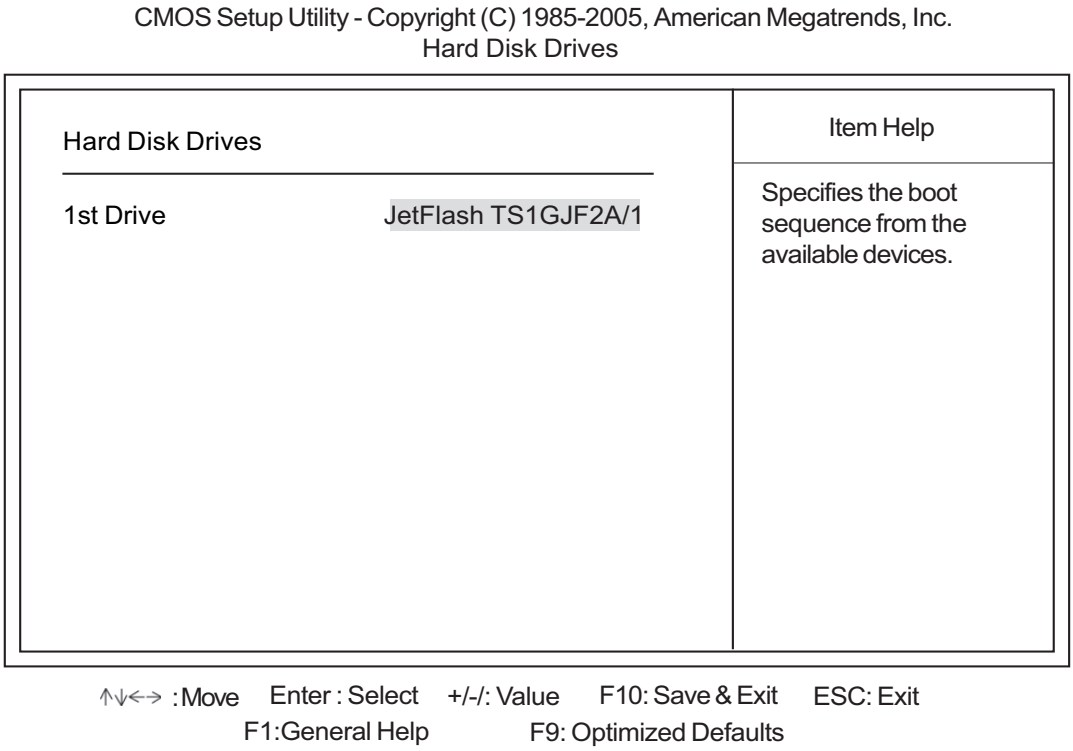
Use this item to show summary screen.

First / Second / Third Boot Device

Use this item to determine the device order of the devices that your system searches for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on the main board.

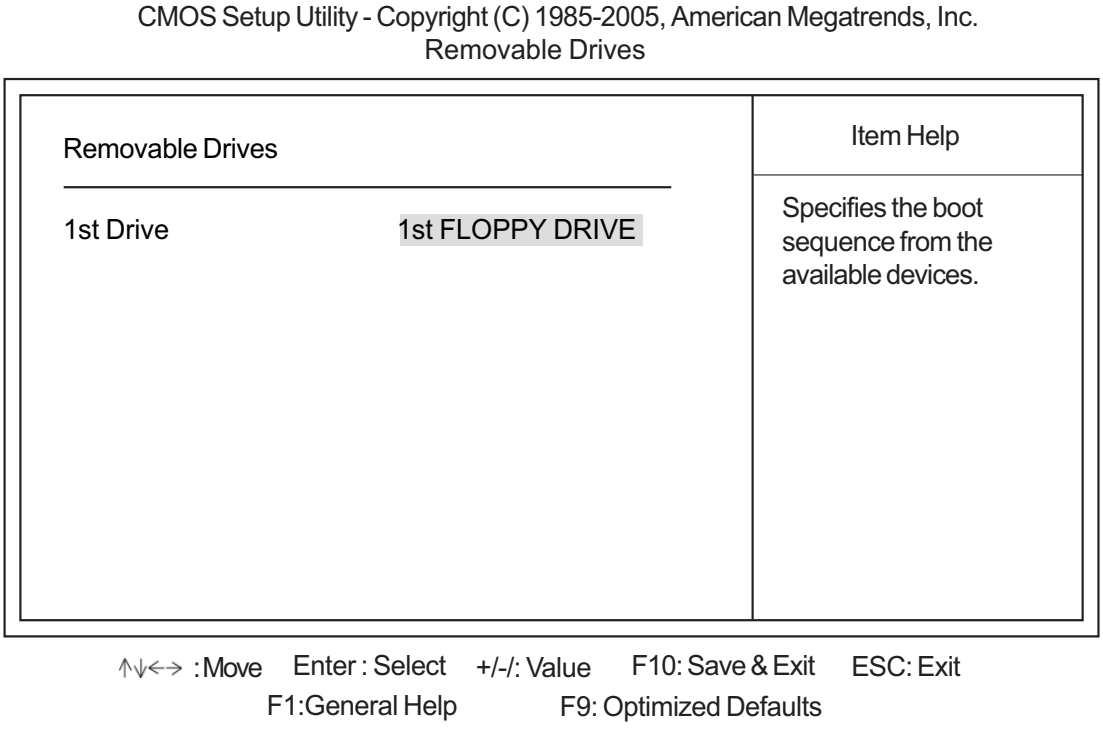
Hard Disk Drives

Scroll this item and press <Enter> to view the following screen.



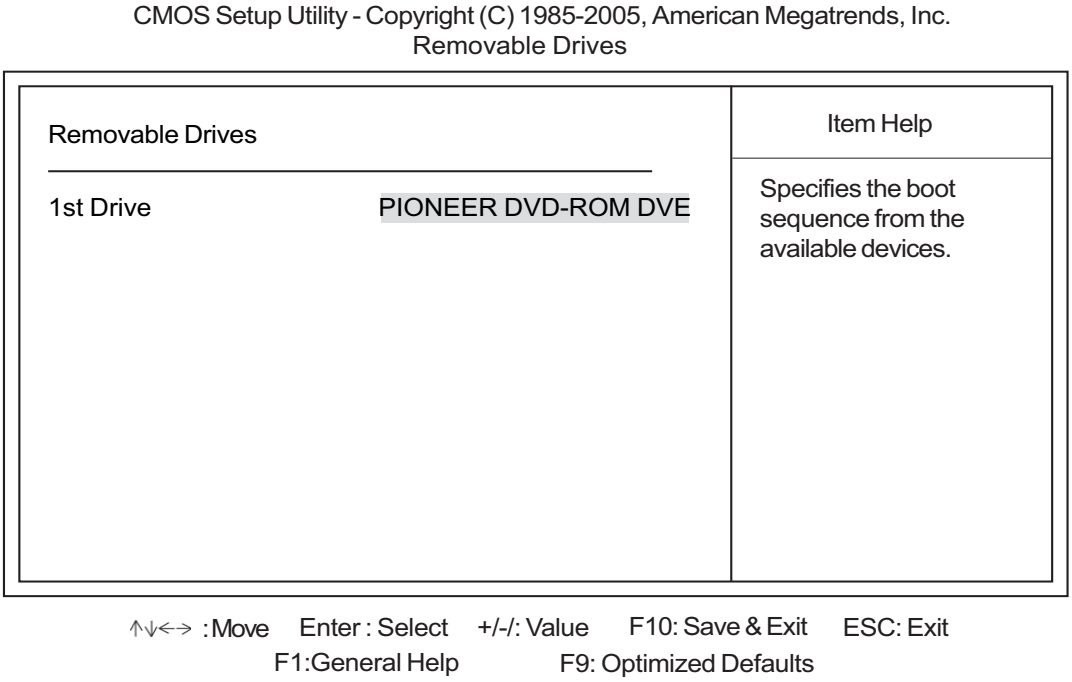
Removable Drives

Scroll this item and press <Enter> to view the following screen.



CD/DVD Drives

Scroll this item and press <Enter> to view the following screen. Press <Esc> to return to the main menu setting page.



Boot Other Device

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second, and Third boot devices.

Boot Up NumLock Status

This item defines if the keyboard NumLock key is active when your system is booted.

Gate A20 Option

This item defines how the system handles legacy software that was written for an earlier generation of processors. Set this item for the default value.

APIC Mode

This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

HDD S.M.A.R.T Capability

The S.M.A.R.T (Self-Monitoring, Analysis, and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T software resides on both the disk drive and the host computer.

BIOS Write Protect (Disabled)

This item disables BIOS write protect function.

Boot Block BIOS Write Protect (Disabled)

This item disables Boot Block BIOS write protect function.

Auto Detect DIMM/PCI Clk (Enabled)

This item determines whether the BIOS should actively reduce EMI (Electromagnetic Interference) and reduce power consumption by turning off unoccupied or inactive expansion slots.

Spread Spectrum (Disabled)

If you enable this item, it can significantly reduce the EMI (Electromagnetic Interference) generated by the system.

Hyper-Threading Technology (Enabled)

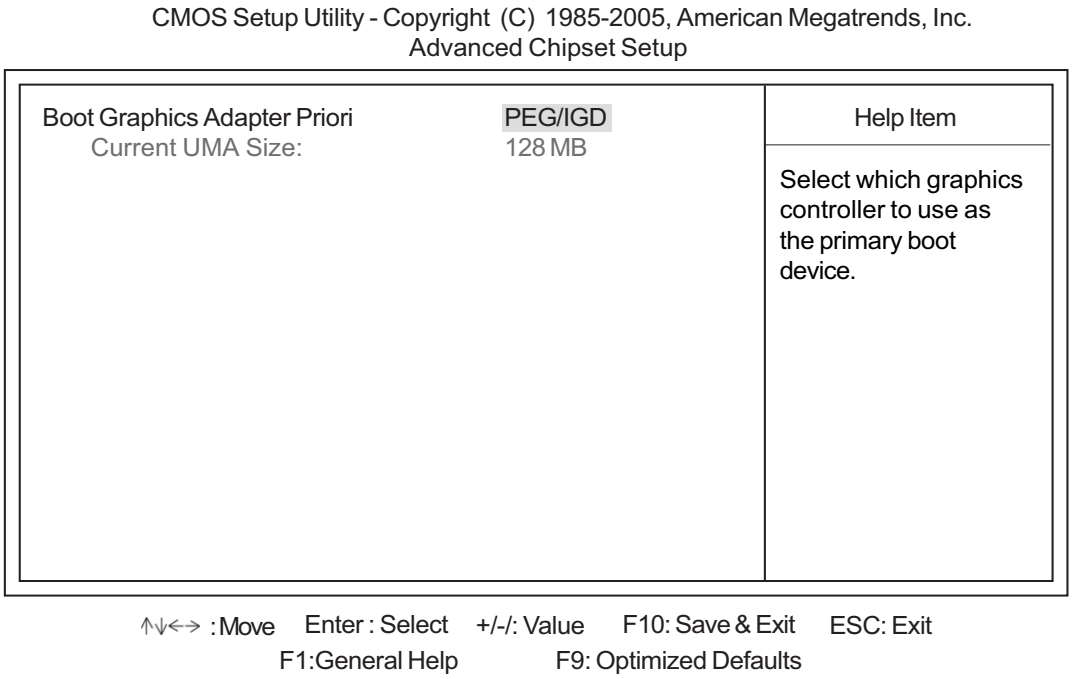
This item enables or disables Hyper-Threading technology function.

Surround View Function (Disabled)

This item enables or disables surround view function.

Advanced Chipset Features

This page sets up more advanced information about the system. Handle this page with caution. Any changes can affect the operation of the system.



Boot Graphics Adapter (PEG/IGD)

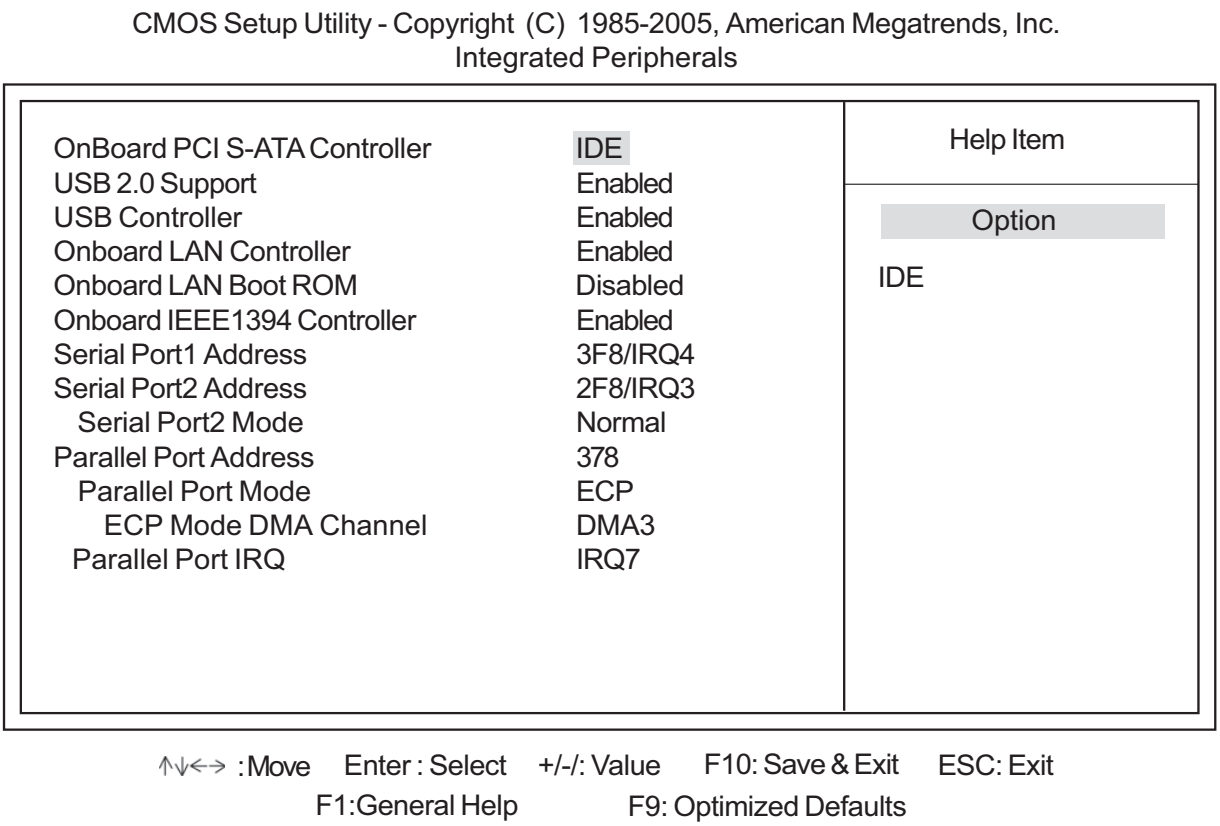
This item allows you to choose the primary graphics adapter.

Current UMA Size (256MB)

This item shows the current UMA size.

Integrated Peripherals

This page sets up some parameters for peripheral devices connected to the system. Press <Esc> to return to the main menu setting page.



Onboard PCI SATA Controller (RAID)

Use this item to enable or disable the onboard PCI SATA controller.

USB 2.0 Support (Enabled)

Use this item to enable or disable the USB 2.0 support.

USB Controller (Enabled)

Use this item to enable or disable the USB controller.

Onboard LAN function (Enabled)

User this item to enable or disable the onboard LAN function.

Onboard LAN Boot ROM (Disabled)

Use this item to enable or disable the booting from the onboard LAN or a network add-on card with a remote boot ROM installed.

Onboard IEEE 1394 Controller (Enabled)

Use this item to enable or disable the onboard VIA 1394 device.

Serial Port 1/2 Address (3F8/IRQ4/2F8/IRQ3)

This item allows users to manually set the address for serial port 1 and port 2.

Serial Port 2 Mode (Normal)

Use this item to enable or disable the onboard serial port and to assign a port address.

Parallel Port Address (378)

Use this item to enable or disable the onboard parallel port and to assign a port address.

Parallel Port Mode (ECP)

Use this item to set the parallel port mode. You can select Normal (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or EPP & ECP.

ECP Mode DMA Channel (DMA3)

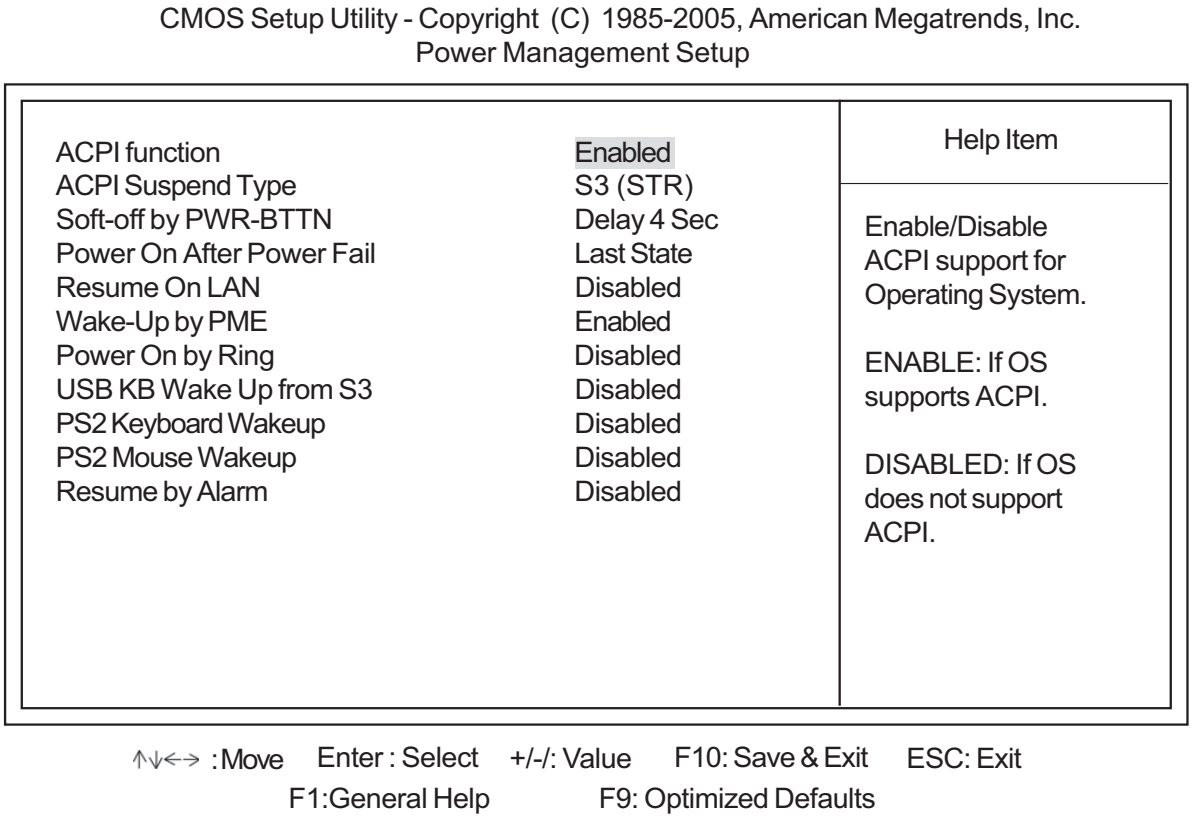
When the onboard parallel port is set to ECP mode, the parallel port can use DMA3 or DMA1.

Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

Power Management Setup

This page sets up some parameters for system power management operation. Press <Esc> to return to the main menu setting page.



ACPI Function (Enabled)

This item allows users to enable or disable the ACPI power management function.

ACPI Suspend Type (S3(STR))

You can use this item to define how your system suspends. In the default, S3 (STR), the suspend mode is a suspend to RAM, i.e., the system shuts down with the exception of a refresh current to the system memory.

Soft-Off by PWR-BTTN (Delay 4 Sec.)

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the power button on the system. If the item is set to Delay 4 Sec., then you have to hold the power button down for four seconds to cause a software power down.

Power On After Power Fail (Last State)

This item enables the system to restart automatically or return to its operating status.

Resume on LAN (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume on LAN. You must use an ATX power supply in order to user this feature.

Wake-Up by PME (Enabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI modem or PCI LAN card. You must use an ATX power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI card.

Power On by Ring (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the modem. You must use the ATX power supply in order to use this feature.

USB KB Wake Up from S3 (Enabled)

This item allows you to enable/disable the USB device wake-up function from S3/S4 mode.

PS2 Keyboard Wake-up (Disabled)

This item allows you to enable or disable the keyboard activity to awaken the system from power saving mode.

PS2 Mouse Wake-up (Disabled)

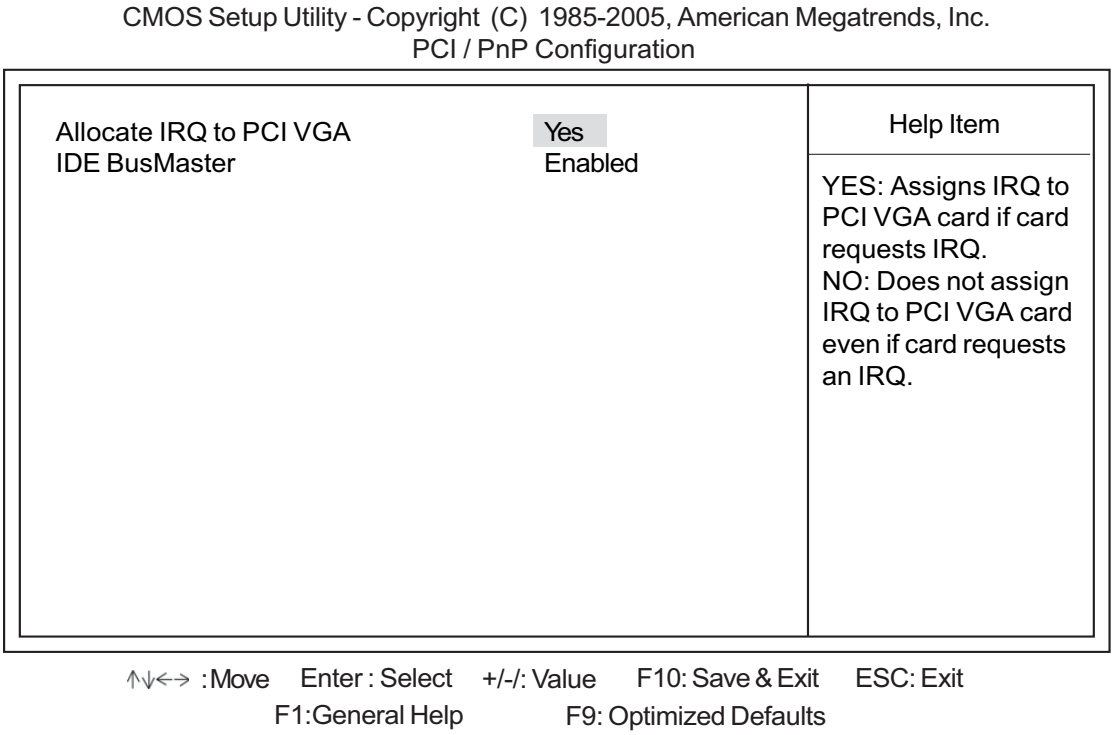
This item can enable or disable the mouse movement to awaken the system from power saving mode.

Resume by Alarm (Disabled)

Under ACPI (Advanced Configuration and Power Management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the power button on your system. If the item is set for Instant-Off, then the power button causes a software power down. If the item is set for Delay four Sec., then you have to hold the power button down for four seconds to cause a software power down.

PCI/PnP Configuration

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.



Allocate IRQ to PCI VGA (Yes)

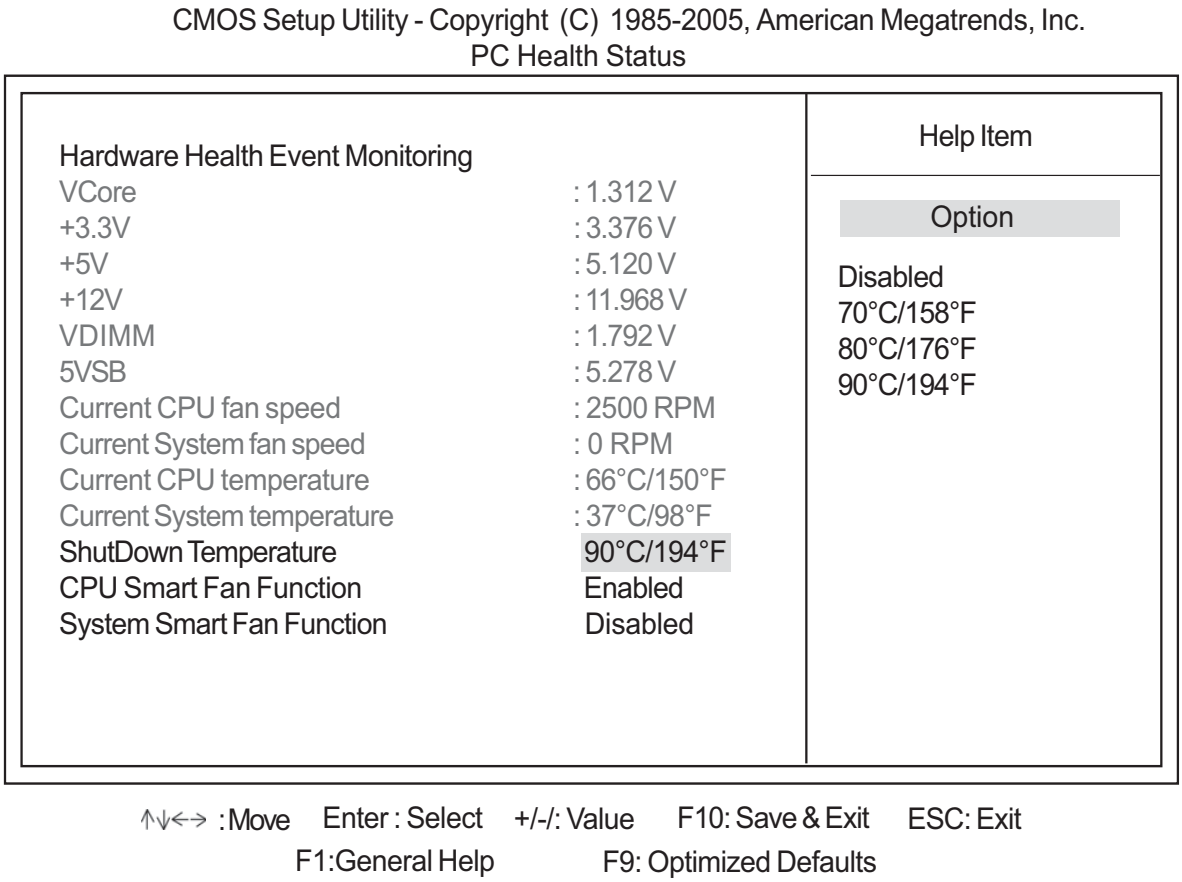
If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system. You set this value to No to free up an IRQ.

IDE Bus Master (Enabled)

This item is used to enable or disable IDE Bus Master.

PC Health Status

This item lets you monitor the parameters for critical voltages, temperature and fan speeds. Press <Esc> to return to the main menu setting page.



System Component Characteristics

This items display the monitoring of the overall hardware health status.

- VCore
- +3.3V
- +5V
- +12V
- VDIMM
- 5VSB
- Current CPU fan speed
- Current system fan speed
- Current CPU temperature
- Current system temperature

Shut Down Temperature

Enables you to set the maximum temperature that the system can reach before powering down.

CPU Smart Fan Function (Enabled)

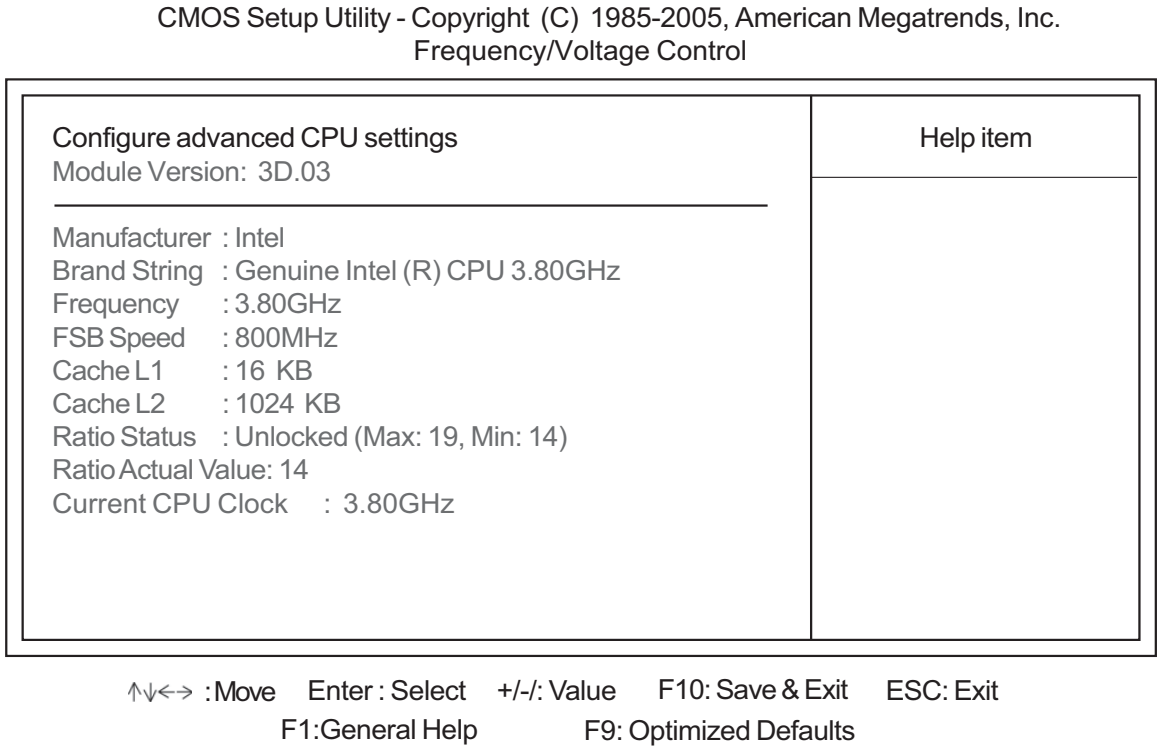
This item is used to enable or disable CPU smart fan function.

System Smart Fan Function (Disabled)

This item is used to enable or disable CPU smart fan function.

Frequency Control

You can set the clock speed and system bus for the computer. The clock speed and system bus are determined by the kind of processor you have installed on the main board. Press <Esc> to return to the main menu setting page.



Manufacturer/Brand String/Frequency/FSB Speed

There are display-only fields and show the information of current manufacturer, brand of COU, frequency and Front side Bus of the CPU installed on the main board.

Cache L1/L2

These items show the actual CPU internal level 1/2 cache size.

Ratio Status/Ratio Actual Value

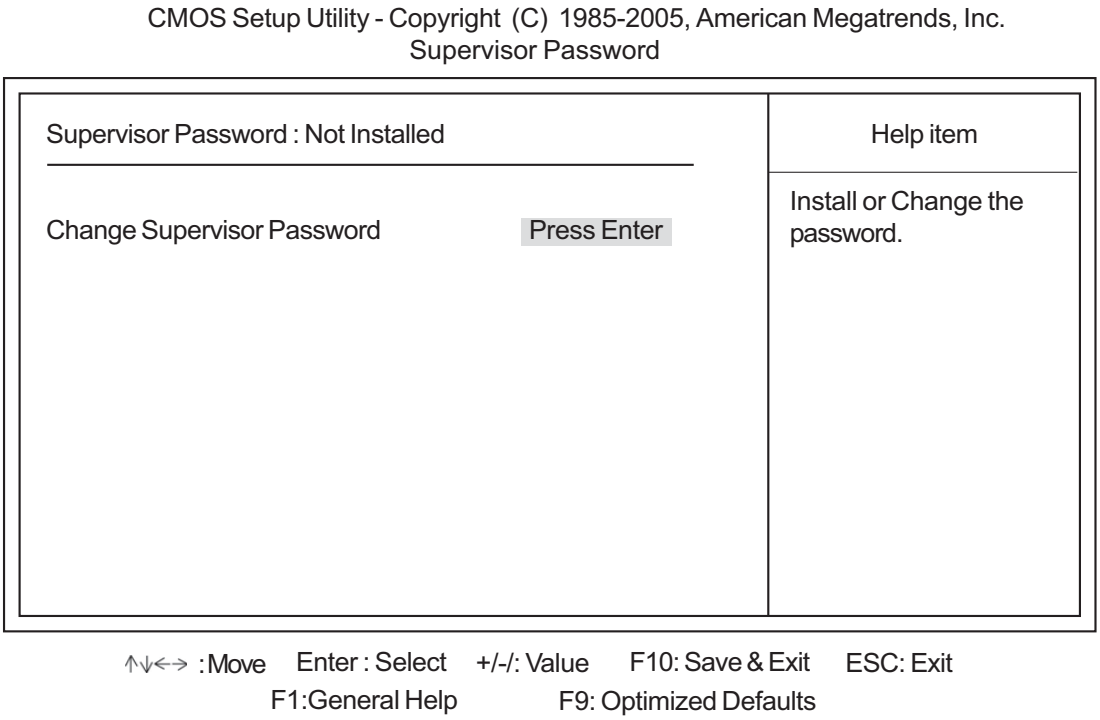
These items show the locked ratio status and the actual ratio of the CPU installed on the main board.

Current CPU Clock (3.80GHz)

Use this item to set current CPU clock.

Set Supervisor Password

This page helps you install or change a password. Press <Esc> to return to the main menu setting page.



Supervisor Password (Not Installed)

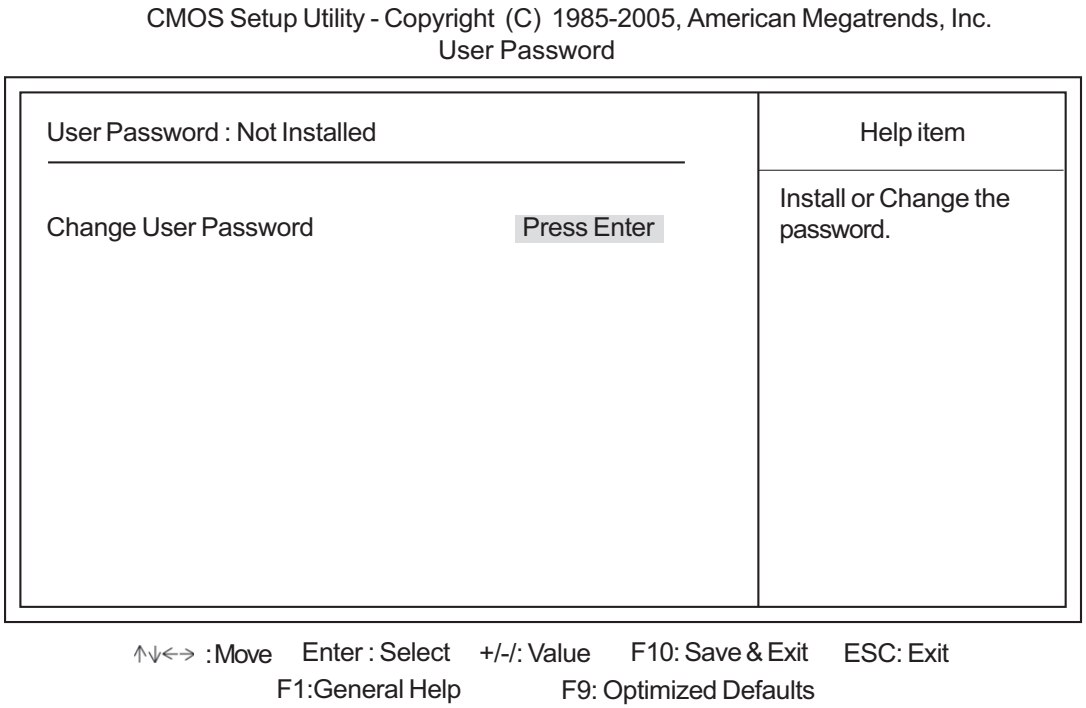
This item indicates whether a supervisor password has been set. If the password has been installed, *installed* will display. If not, *Not Installed* will come out.

Change Supervisor Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the submenu to change the supervisor password.

Set User Password

This item helps you set or change a password. Press <Esc> to return to the main menu setting page.



User Password (Not Installed)

This item indicates whether a supervisor password has been set. If the password has been installed, *installed* will display. If not, *Not Installed* will come out.

Change User Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the submenu to change the user password.

Load Optimized Defaults

This option will open a dialog box that lets you install stability-oriented defaults for all appropriate items in the Setup Utility. Select [OK] then press <Enter> to install the defaults. Select [Cancel] then press <Enter> to not install the defaults.

Save and Exit Setup

You can highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press [OK] to save and exit, or press [Cancel] to return to the main menu.

Exit without Saving

You can highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit without Saving dialog box appears, press [OK] to discard changes and exit, or press [Cancel] to return to the main menu.

NOTE: If you have made settings that you do not want to save, choose **Discard Changes and Exit** and press [OK] to discard any changes you have made.

Machine Disassembly and Replacement

General Information

This chapter contains step-by-step procedures on how to disassemble the Aspire E560/T660 and AcerPower F6 for maintenance and troubleshooting.

To disassemble the notebook, you need the tools below:

- Wrist ground strap and conductive mat for preventing electrostatic discharge
- Small Philips screw driver
- Flat head screw driver
- Hexagonal driver
- Tweezers

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. When you remove the stripe cover, please be careful not to scrape the cover.

Before You Begin

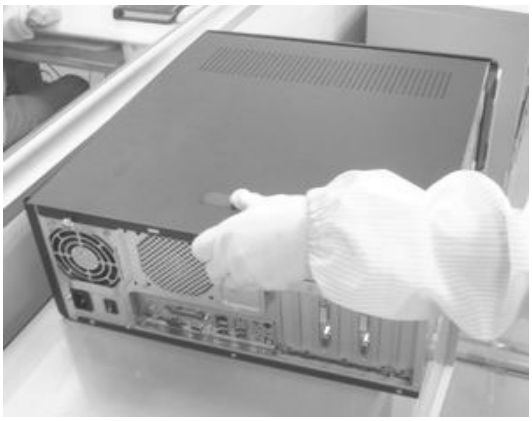
Before proceeding with the disassembly procedure, you have to make sure that:

- The system and all peripherals are powered off.
- The AC adaptor and all power and signal cables from the system are unplugged.
- The battery pack is removed.

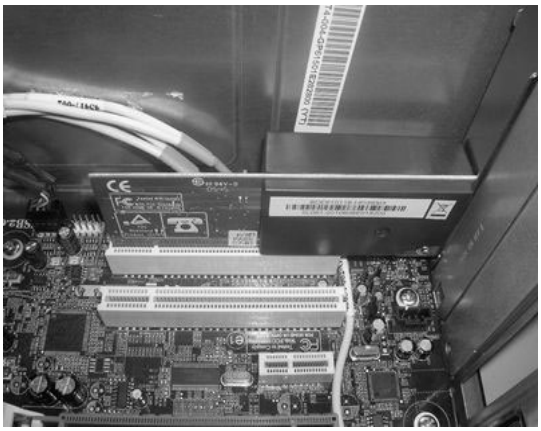
NOTE: There are several types of screws used to secure the main unit. The screws vary in length. Please refer to the screws table after the flowchart. Group the same type of screws together during service disassembling. Please also remember the screw location for each screw type. If you fasten the screws on the wrong location, the long screws may cause irrecoverable damage to the main board.

Aspire E560 Disassembly Procedure

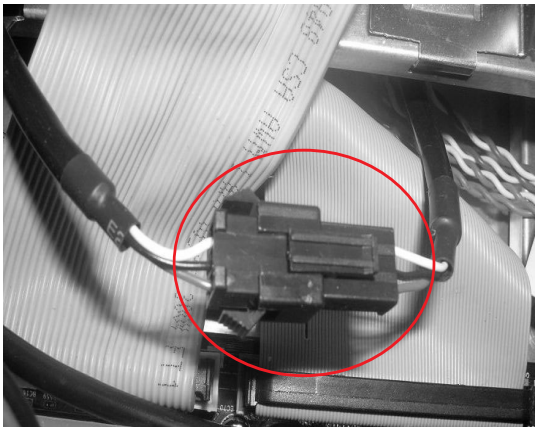
1. Place the system unit on a flat, steady and nonskid surface.
2. Release the lock handle then slide the left cover out.

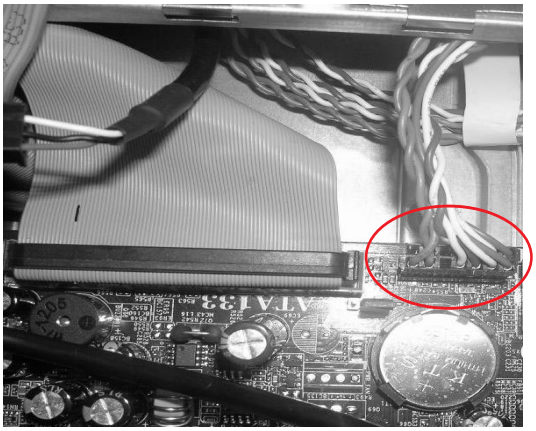


3. Detach the VGA card.
4. Detach the modem card.

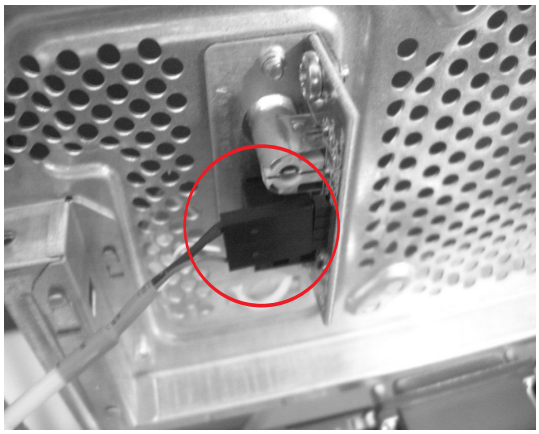


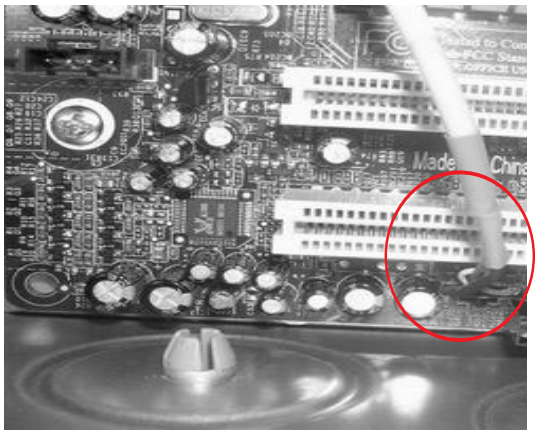
5. Disconnect the IR cable.
6. Disconnect the front bezel LED cable.



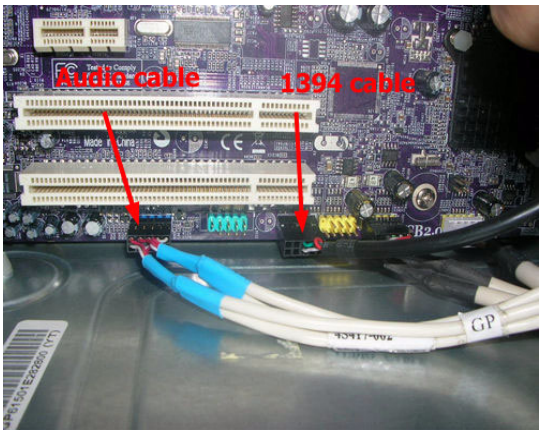


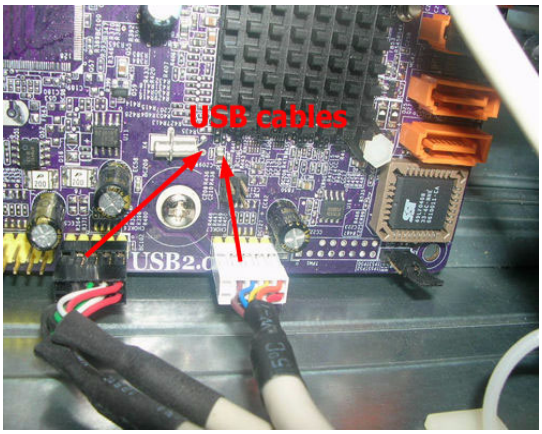
7. Disconnect the SPDIF cable.



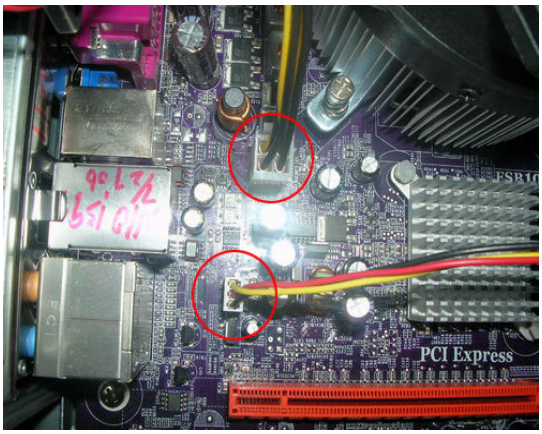


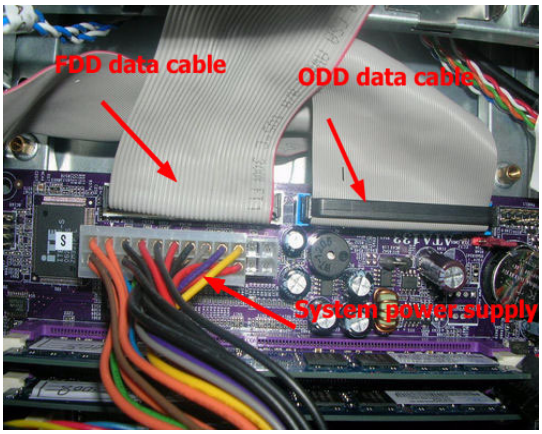
8. Disconnect the audio cable and the 1394 cable.
9. Disconnect the USB cables.



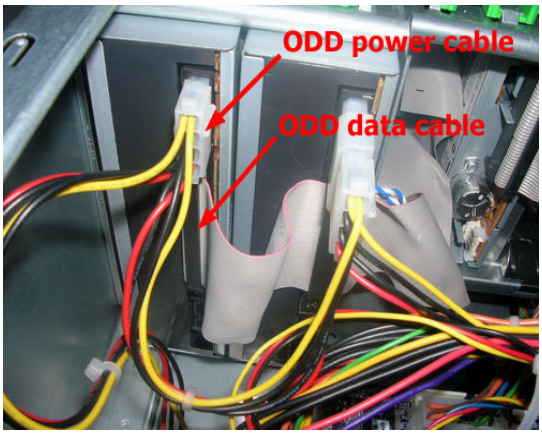


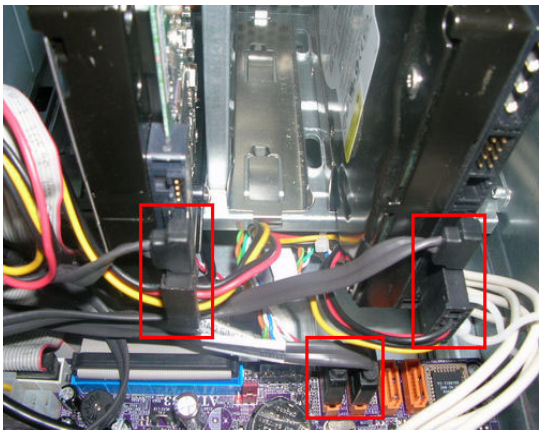
10. Disconnect the PA and the PD cables connected to the main board.
11. Disconnect the system power supply cable and FDD data cable and ODD data cable.



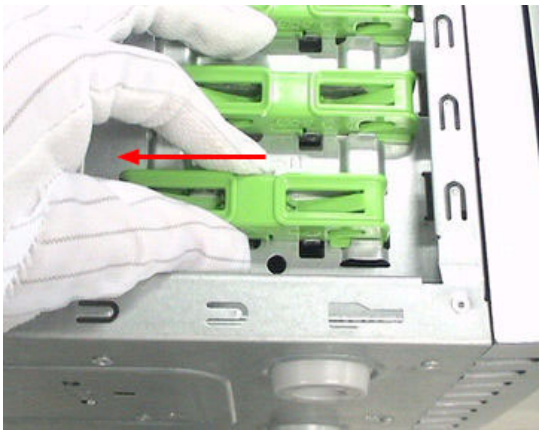


12. Disconnect the ODD power cable and the ODD data cable.
13. Disconnect the HDD power cable and the HDD data cable.



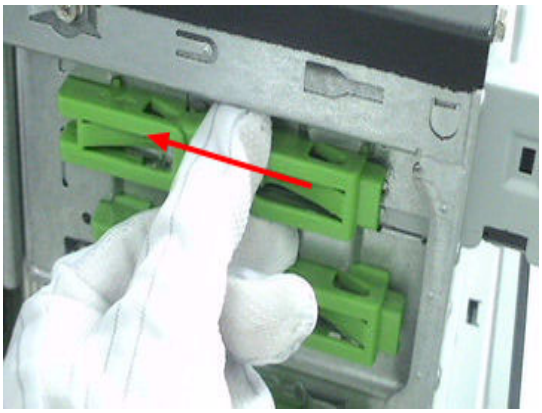


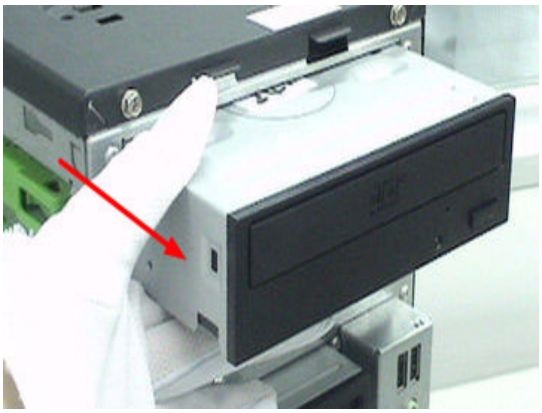
14. Slide the HDD holder as shown below then take the HDD out from the chassis.



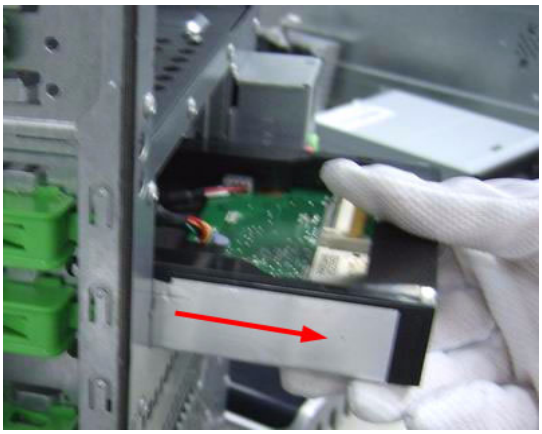
15. Release the three latches holding the front panel then remove the front panel.

16. Slide the ODD holder as shown below then take the ODD out from the chassis.

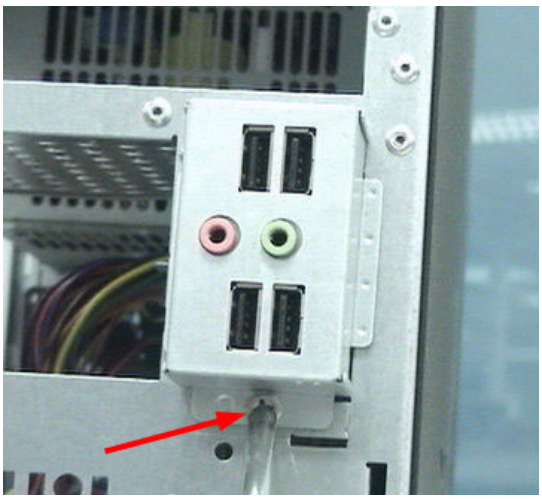




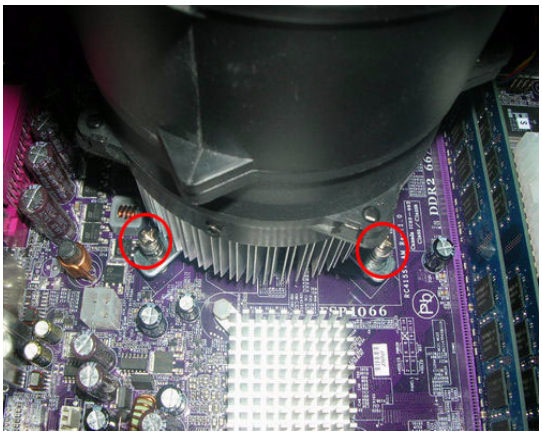
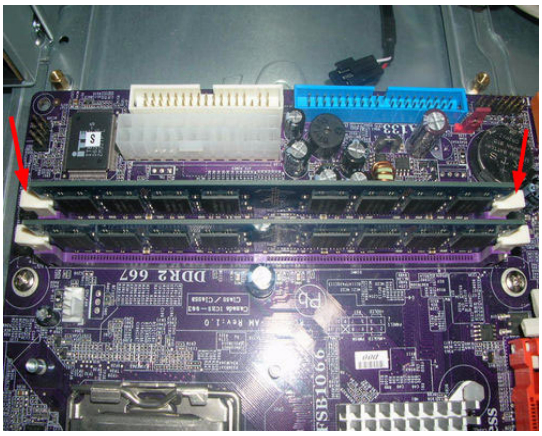
17. Detach the card reader.



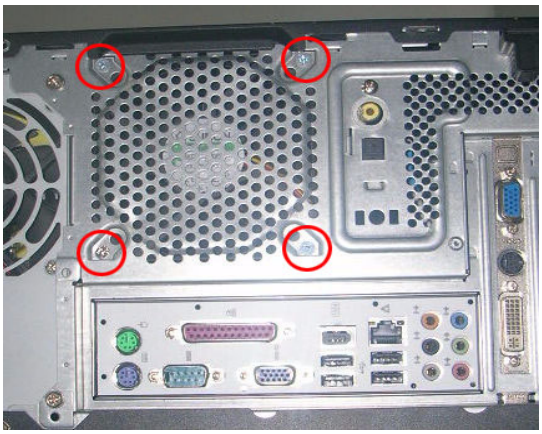
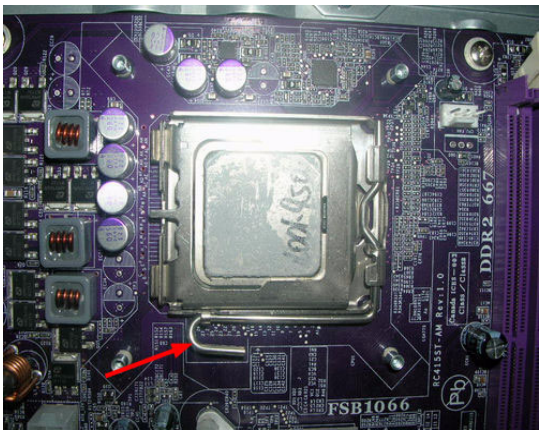
18. Release the screw holding the USB module then remove the USB module altogether with the USB and audio cable.



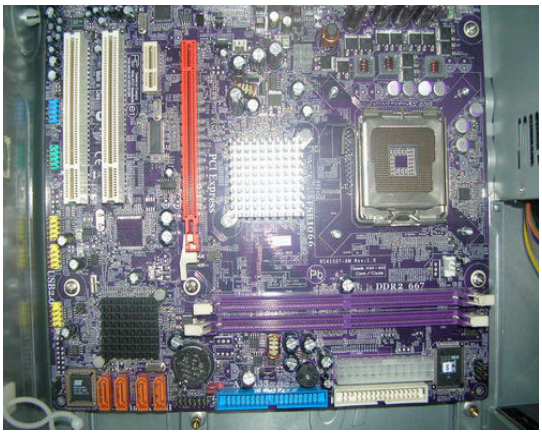
19. Release the four screws securing the CPU cooler then detach the CPU cooler. There are two other screws on the other side of the CPU cooler.
20. Push and release the two latches at the same time to remove the memory as the arrows indicate.

21. Release the four screws marked below then remove the system fan.
22. Release the CPU latch then carefully detach the CPU.

23. Release the screws securing the main board then detach the main board.



24. Release the four screws fastening the system power supply then remove the system power supply.

Troubleshooting

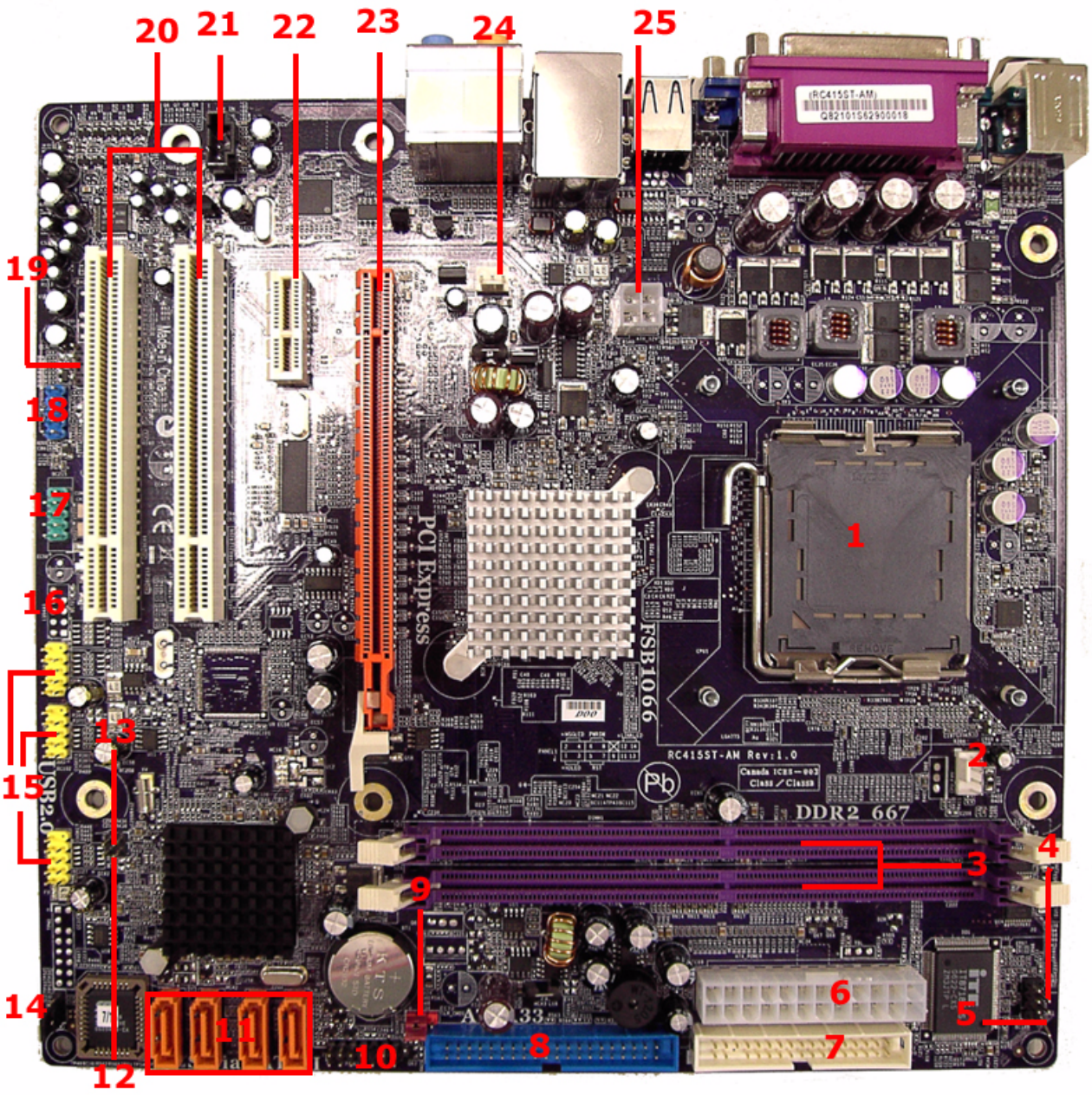
Please refer to generic troubleshooting guide in the service guide database for information with respect to following items:

- Power-On Self-Test (POST)
- POST Check Points
- POST Error Messages List
- Error Symptoms List

Jumper and Connector Information

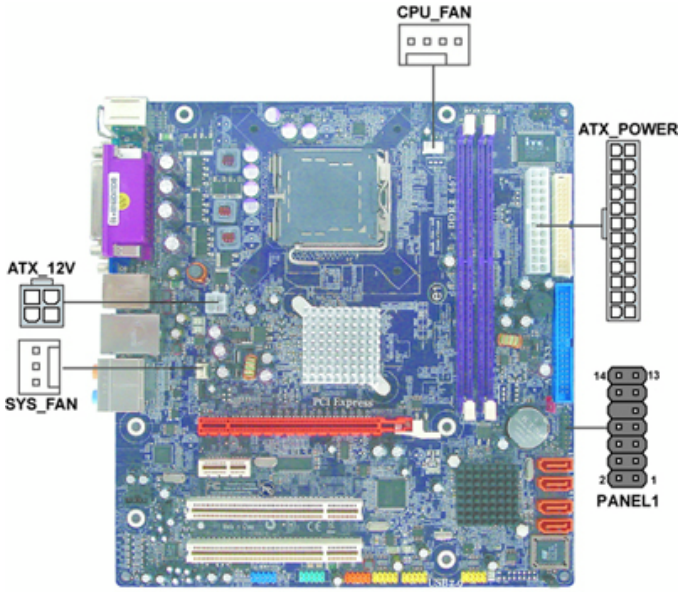
Introduction of Connectors

Main Board Placement

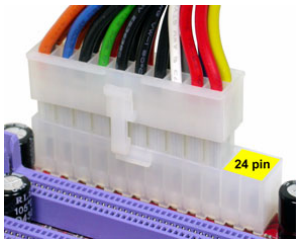


#	Label	Component	#	Label	Component
1	CPU socket	LGA775 socket for Intel Pentium D/Pentium 4/ Celeron D CPUs	2	CPU_FAN	CPU cooling fan connector
3	DIMM1~2	240-pin DDR2 SDRAM slots	4	IR1	Infrared header
5	CHS1	Chassis detect header	6	ATX_POWER	Standard 24-pin ATX power connector
7	FDD	Floppy diskette drive connector	8	IDE1	Primary IDE channel
9	CLR_CMOS	Clear CMOS jumper	10	PANEL1	Front panel switch/LED header
11	SATA1~4	Serial ATA connectors	12	JP2	To be defined
13	JP1	To be defined	14	BIOS_WP	BIOS protect jumper
15	USB3~5	Front panel USB headers	16	1394A1*	Onboard 1394a header
17	COM2	Onboard serial port header	18	AUDIO1	Front panel audio header
19	SPDIFO2	SPDIF out header	20	PCI1~2	32-bit add-on card slots
21	AUX_IN	Auxiliary In connector	22	PCIEX1	PCI Express x1 slot
23	PCIEX16	PCI Express x16 slot	24	SYS_FAN	System fan connector
25	ATX_12V	Auxiliary 4-pin power connector			

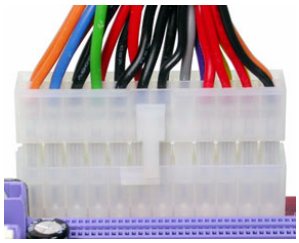
Power Cable Connectors



Please note that the 20-pin and 24-pin power cables can both be connected to the ATX1 connector. With the 20-pin power cable, just align the 20-pin power cable with the pin one of the ATX1 connector. However, using 20-pin power cable may make the system unbootable or unstable because of insufficient electricity. A minimum power of 300W is recommended for a fully-configured system.



Please note that, when installing 20-pin power cable, the latches of power cable falls on the left side of the ATX1 connector latch, just as the picture show.



When installing 24-pin power cable, the latches of power cable and ATX1 match well.

CPU_FAN: FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	CPU FAN control

NOTE: Please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max.) at +12V.

SYS_FAN: FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

ATX_POWER: ATX 24-pin Power Connector

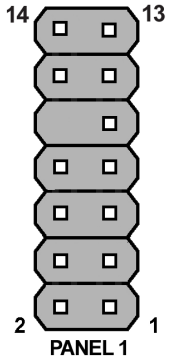
Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

ATX_12V: ATX 12V Power Connector

Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

Front Panel Header

The front panel header (PANEL1) provides a standard set of switch and LED headers commonly found on ATX or Micro ATX cases. Refer to the table below for information.



Pin	Signal Name	Function	Pin	Signal Name	Function
1	HD_LED (+)	Hard disk LED (+)	2	PWR_SLP	Power LED (+)
3	HD_LED (-)	Hard disk LED (-)	4	PWR_SLP	Power LED (-)
5	Reset_SW_N	Reset ground	6	PWR_SW_P	Power button signal
7	Reset_SW_P	Reset signal	8	PWR_SW_N	Power button ground
9	RSVD	Reserved	10	KEY	Key
11	RSVD	Reserved	12	LAN_LED (+)	LAN LED (+)
13	RSVD	Reserved	14	LAN_LED (-)	LAN LED (-)

Hard Drive Activity LED

Connecting pin one and pin three provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, and IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message Waiting LED

Connecting pin two and pin four to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires the connection of pin five and pin seven to a momentary-contact switch that is normally opened. When the switch is closed, the board resets and runs POST.

Power Switch

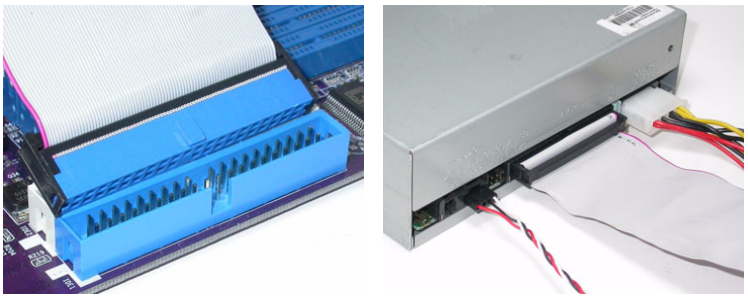
Supporting the power on/off function requires the connection of pin six and pin eight to a momentary-contact switch that is normally opened. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapse before the power supply recognizes another on/off signal.

LAN LED

Connecting pin 12 and pin 14 to a LAN LED provides visual indication that data is being read from or written to the LAN drive.

IDE Connector

The main board supports four high data transfer SATA ports with each runs up to 3.0 Gb/s. To get better system performance, users can connect the CD-ROM to the IDE channel, and set up the hard drives on the SATA ports.



IDE devices enclose jumpers or switches used to set the IDE device as Master or Slave. When installing two IDE devices by one cable, ensure that one device is set as Master and the other as Slave.

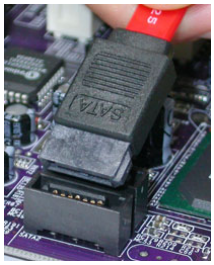
SATA Connectors

The main board features four SATA connectors to support four drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation.

NOTE: This main board does NOT support the **Hot-Plug** function.

SATA cable

SATA connector

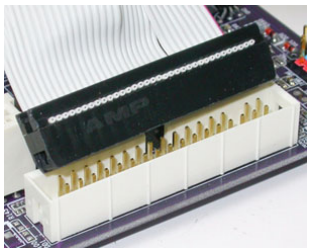


SATA power cable

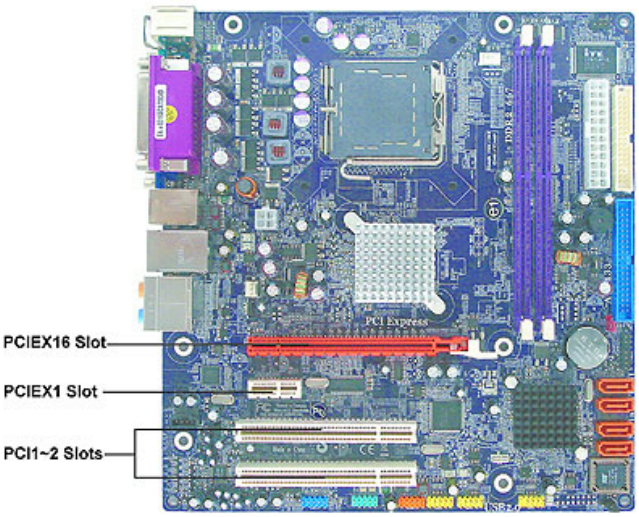
SATA device

FDD: Floppy Disk Drive Connector

This connector supports the provided floppy drive ribbon cable. The FDD connector is used to connect the FDD cable while the other end of the cable connects to the FDD drive.



Add-on Card Slots



PCIE x16 slot

The PCI Express x16 slot is fully compliant to the PCI Express Base Specification revision 1.0a.

PCIE2 slot (PCIE x1)

The PCI Express x1 slot is fully compliant to the PCI Express Base Specification revision 1.0a as well.

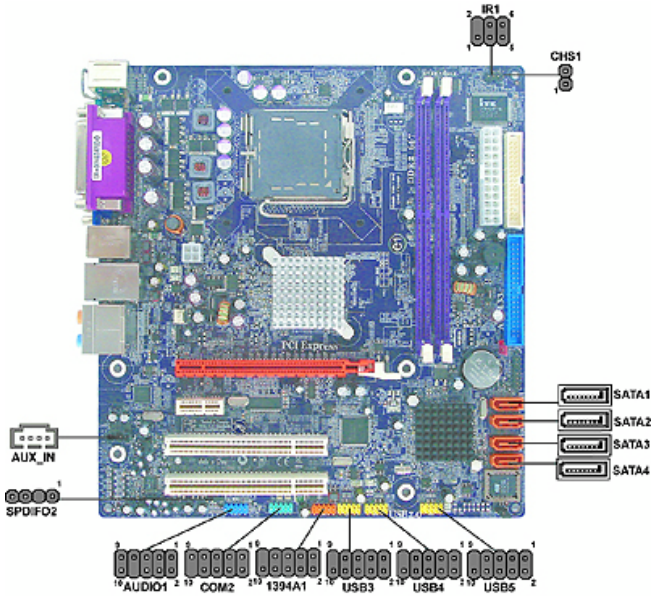
PCI1~2

This main board is equipped with two standard PCI slots. The PCI slots on this main board are PCI v2.3 compliant.

> **NOTE:** Before installing an add-on card, check the user guideline for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Optional Devices

Refer to the following information for connecting the main board optional devices.



AUDIO1: Front Panel Audio Header for Azalia

This header allows you to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	AUD_MIC	2	AUD_GND
3	MIC_BIAS	4	PRESENCE
5	AUD_F_R	6	AUD_RET_R
7	FRONT_IO_SENSE	8	KEY
9	AUD_F_L	10	AUD_RET_L

AUX_IN: Auxiliary in Connector

This connector is an additional line-in audio connector. It allows you to attach a line-in cable when the rear line-in jack is set as line-out port for four-channel function.

Pin	Signal Name	Function
1	AUX_R	AUX in right channel
2	GND	Ground
3	GND	Ground
4	AUX_L	AUX in left channel

CHS1: Chassis Intrusion Detect Header

Pin 1-2	Function
Short	Case opened
Open	Case closed

SATA1~4: Serial ATA Connectors

These connectors are used to support the new Serial ATA devices for the higher date transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface but still maintains the register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

SPDIFO2: SPDIF out Header (Optional)

This is an optional header that provides an SPDIFO (Sony / Philips Digital Interface) output to digital multimedia device through optional fiber or coaxial connector.

Pin	Signal Name	Function
1	+5VA	5V analog power
2	KEY	No pin
3	SPDIF	SPDIF digital output
4	GND	Ground

1394A1: IEEE 1394a Header (optional)

This header supports any device with IEEE 1394a interface.

Pin	Signal Name	Pin	Signal Name
1	TPA1P	2	TPA1M
3	GND	4	GND
5	TPB1B	6	TPB1M
7	CPWR2	8	CPWR2
9	Key	10	GND

IR1: Infrared Header

The main board supports an infrared (IR1) data port. Infrared port allows the wireless exchange of information between the computer and similarly equipped devices such as printers, laptops, PDAs, and other computers.

Pin	Signal Name	Pin	Signal Name
1	NC	2	KEY
3	VCC5	4	Ground
5	IRTX	6	IRRX

USB3~5 Front Panel USB Headers

The main board has four USB ports laid on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	USB_FP_OC0	Overcurrent signal

NOTE: Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

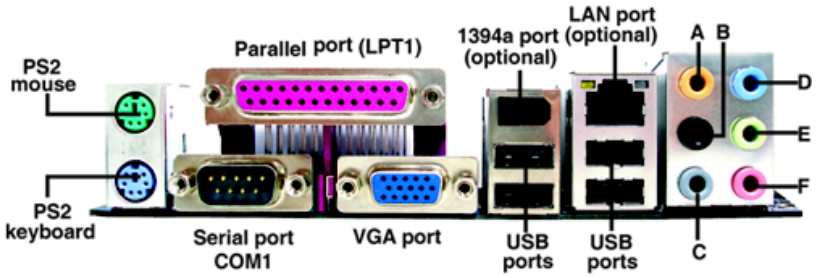
COM2: Onboard Serial Port Header

You can connect a serial port extension bracket to this header and add a second serial port to the system.

Pin	Signal Name	Function
1	DCDB	Data Carrier Detect
2	SINB	Serial Input
3	SOUTB	UART B Serial Output
4	DTRB	UART B Data Terminal Ready
5	GND	Ground
6	DSRB	Data Set Ready
7	RTSB	RART B Request to Send
8	CTSB	Clear to Send
9	RI	Ring Indicator
10	Key	No pin

I/O Devices

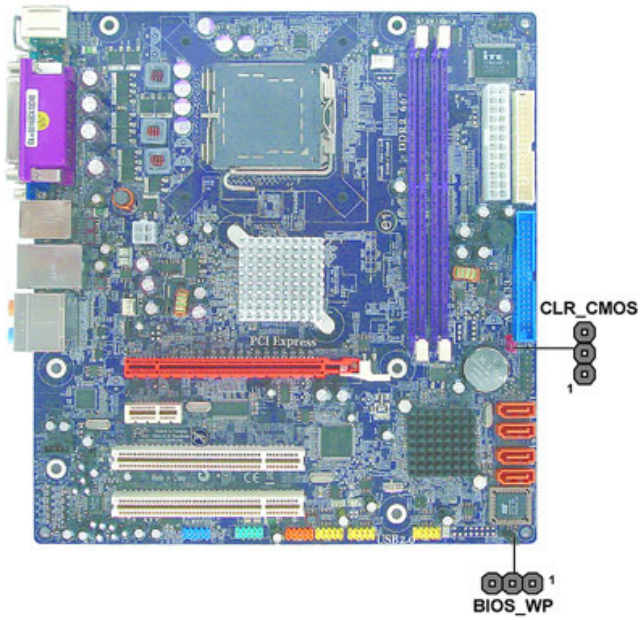
The backplane of the main board has the following I/O ports:



Part Name	Description
PS2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (LPT1)	Use LPT1 to connect printers or other parallel communication devices.
Serial Port (COM1)	Use the COM port to connect serial devices such as mouse or fax / modems. COM1 is identified by the system as COM1/3.
VGA Port	It serves as the connection between the system and an external monitor.
1394a Port (optional)	Use the 1394a port to connect to any firewire device.
LAN Port (optional)	It is the connection between an RJ-45 jack and the system.
USB Ports	Use the USB ports to connect USB devices.
Audio Ports	The D port is for stereo line-in jack, while the F port is for microphone in signal. This main board supports eight-channel audio devices that correspond to the A, B, C, and E port respectively. In addition, all of the three ports, B, C, and E provide users with both right and left channels individually. • A: Center & Woofer • B: Back Surround • C: Side Surround • D: Line-in • E: Front Out • F: Mic-in Rear **NOTE:** The above port definition can be changed to audio input or audio output by changing the driver utility setting.

Jumper Settings

This section explains how to set jumpers for correct configuration of the main board.



Jumper	Type	Description	Setting (default)	
BIOS_WP	3 pins	BIOS WRITE PROTECT	1-2: DISABLE 2-3: ENABLE	 BIOS_WP
CLR_CMOS	3 pins	CLEAR CMOS	1-2: NORMAL 2-3: CLEAR CMOS Before clearing the CMOS, make sure to turn off the system.	 CLR_CMOS