Aspire M5640

Aspire M3640

Aspire M1640

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

PRINTED IN TAIWAN

Revision History

Please refer to the table below for the updates made on Aspire M5640/Aspire M3640/ Aspire M1640 service guide.

Date	Chapter	Updates

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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	Remind 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.

System Specifications

Features

Operating System

- Microsoft Windows Vista (Home Basic, Home Premium, Business)

Processor

- Socket Type: Intel® Socket T LGA 775 pin
- Processor Type:
  - Intel Celeron / Celeron D / Pentium D /Pentium Dual Core/ Core 2 Duo / Core2 Quad / Yorkfield / Wolfdale CPUs FSB 533/800/1066/1333 MHz CPUs

Chipset

- NV MCP73PV/S & NV MCP73VE

PCB

- Form Factor: Micro ATX
- Dimension/Layer: 244mm x244mm

Memory

- Memory Type: DDR2 533/667/800
- Support single channel 64 bit mode with maximum memory size up to 4GB
- Support un-buffered DIMM (MCP73S)
- DIMM Slot: 2
- Memory Max: 512MB to 4GB DDR2 memory technologies
- Capacity: Up to 2GB per DIMM with maximum memory size up to 4GB

PCI

- PCI Express Slot Type: x16
  - PCI Express x16 Slot Quantity: 1
- PCI Express Slot Type: x1
  - PCI Express x1 Slot Quantity: 1

- PCI Slot Type: PCI 2.3 5V slots
  - PCI Slot Quantity: 2

FDD

- Slot Quantity: 1
- Design Criteria:
  - Should support 1.44MB/3 mode 3.5” Devices

IDE

- Slot Type: 40pin PATA IDE slot
  - Slot Quantity: 1
  - Transfer rate support:
    - PIO Mode: 0/1/2/3/4
    - ATA mode: 33/66/100/133
  - Storage Type support:
    - HDD/CD-ROM/CD-RW/DVD-ROM/DVD-RW/DVD+ RW/DVD Dual/DVD SuperMultiPlus/HD DVD/BlueRay DVD

SATA

- Slot Type: SATA slot
- Slot Quantity: 4
- Storage Type support:
  - HDD/CD-ROM/CD-RW/DVD-ROM/DVD-RW/DVD+RW/DVD Dual/DVD SuperMultiPlus/Blu-Ray ODD

Audio

- Audio Type: HD audio codec
- Audio Channel: 7.1 channel
- Audio Controller /Codec: ALC888S HD codec 7.1
- Connectors support:

- Rear 6 jack follow HD audio definition, example as below
- Audio jacks color coding: should meet Microsoft Windows Logo Program Device Requirements: Audio-0002
- 1 S/PDIF-out header (1*4)
- 1 AUX-In header (1*4)
- 1 front panel audio header (2*5)
- Add HD de-pop CKT (the attachment is the reference, please propose your solution)
- S/N ratio: 90 dB at rear output jack

LAN

- MAC Controller: NV MCP73PV/S
- Intel 82566DC (10M/100M/1000M LAN)
- PHY: Realtek 8211BL Gigabit Ethernet Phy.

USB

- Controller Type: NV MCP73PV/S
- Ports Quantity: 10
  - 4 back panel ports
  - On-board: 3 2*5 headers
    - 4 ports for front daughter board
    - 4 ports for rear I/O
    - 2 ports for internal card reader.
  - Connector Pin: standard Intel FPIO pin definition
- Data transfer rate support:
  - USB 2.0/1.1

1394

- Controller: VIA VT6308P 1394a controller
- Connector Quantity: 2

- 1 rear 6pin IEEE1394 port
- 1 2x5pin onboard jumper

BIOS

- BIOS Type: Phoenix Award or AMI Kernel with Acer skin
- Size: 4Mb
- Note:
  - Boot ROM should be included (PXE function should be built in with default and RPL function is optional by service BIOS)
  - BIOS shall auto detect FDD to avoid checksum error when boot

I/O Connector

- Controller: Super I/O ITE 8718FX (F stepping or after; must full support Intel platform)

Rear I/O Connector

- 1 PS/2 Keyboard port,
- 1 PS/2 Mouse port,
- 1 COM port
- 1 DVI port (Aspire M1000 series only)
- 1 HDMI port (Aspire M3000/5000 series only),
- 1 D-Sub port,
- 1 RJ45 LAN port,
- 1 IEEE 1394 port (6 pin) (Aspire sku only)
- 4 USB ports
- 7.1 channel phone jack (6 audio jacks)

On-board connectors

- 1 CPU socket
- 2 DDR-2 memory sockets
- 1 PCI Express x16 slot

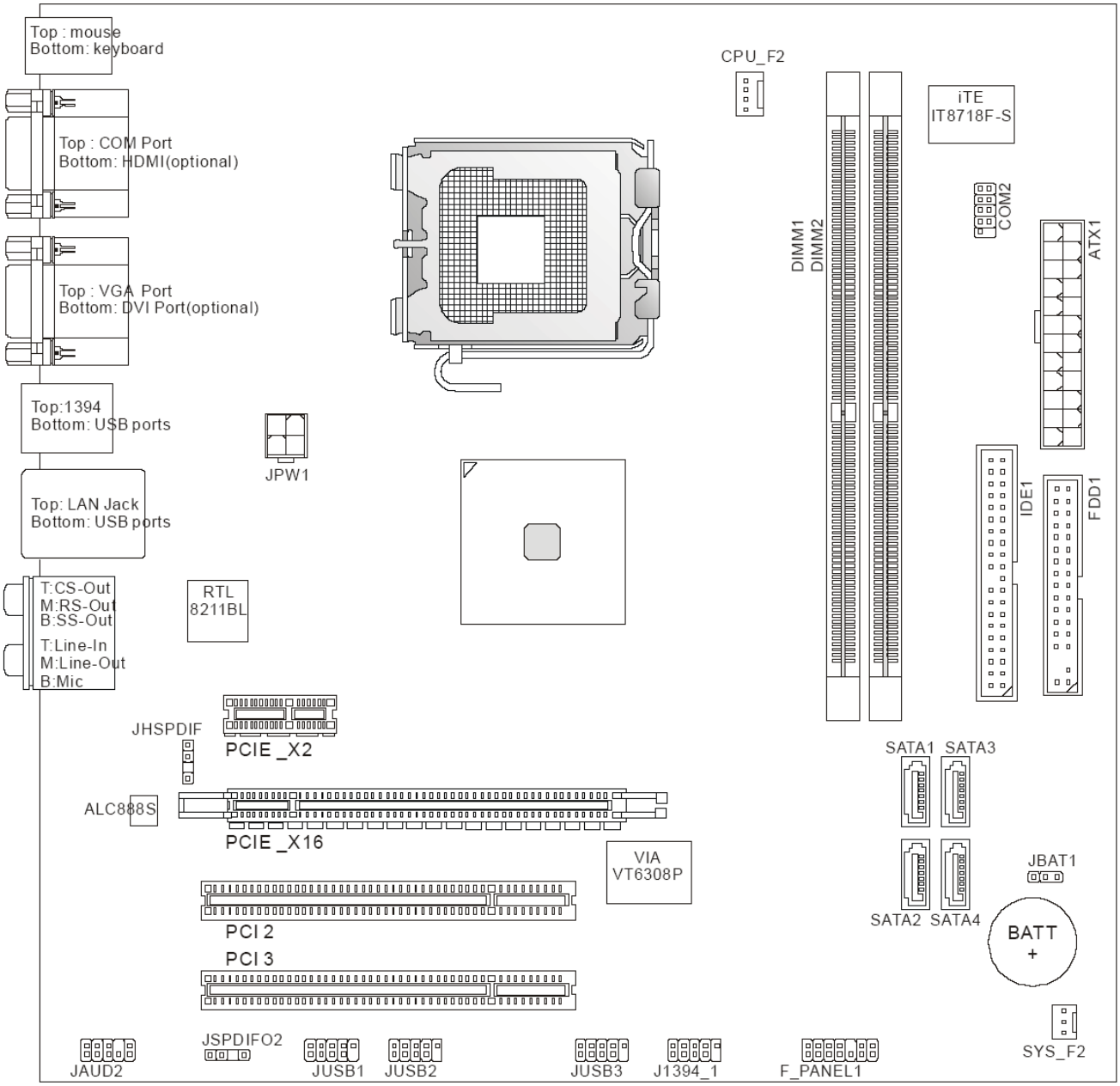
- 1 PCI Express x 1 slot
- 2 PCI slots
- 1 FDD slot
- 1 PATA connector
- 4 SATA connectors
- 3 2*5 pin Intel FPIO specification USB pin connectors (follow Intel FPIO standard Specification)
- 1 2*5 pin IEEE1394 jumper (reserve header on all SKU)
- 1 2*5 pin Intel FPIO spec. Microphone In/ Headphone Out pin connectors
- 1 serial port 2*5 pin connector (reserve header on all SKU)
- 1 AUX-In 4pin connector
- 1 1*4 S/PDIF out header (reserve header on all sku)
- 1 4 pin CPU Fan connector
- 1 3 pin System FAN connector with linear circuit
- 1 24pin + 4pin ATX interface PS3/PS2 SPS connector
- 1 2*7 pin front panel IO header
- 1 Jumper for clear CMOS
- 1 on board buzzer
- Color management for on board connecter (pls provide proposal)

Power Supply

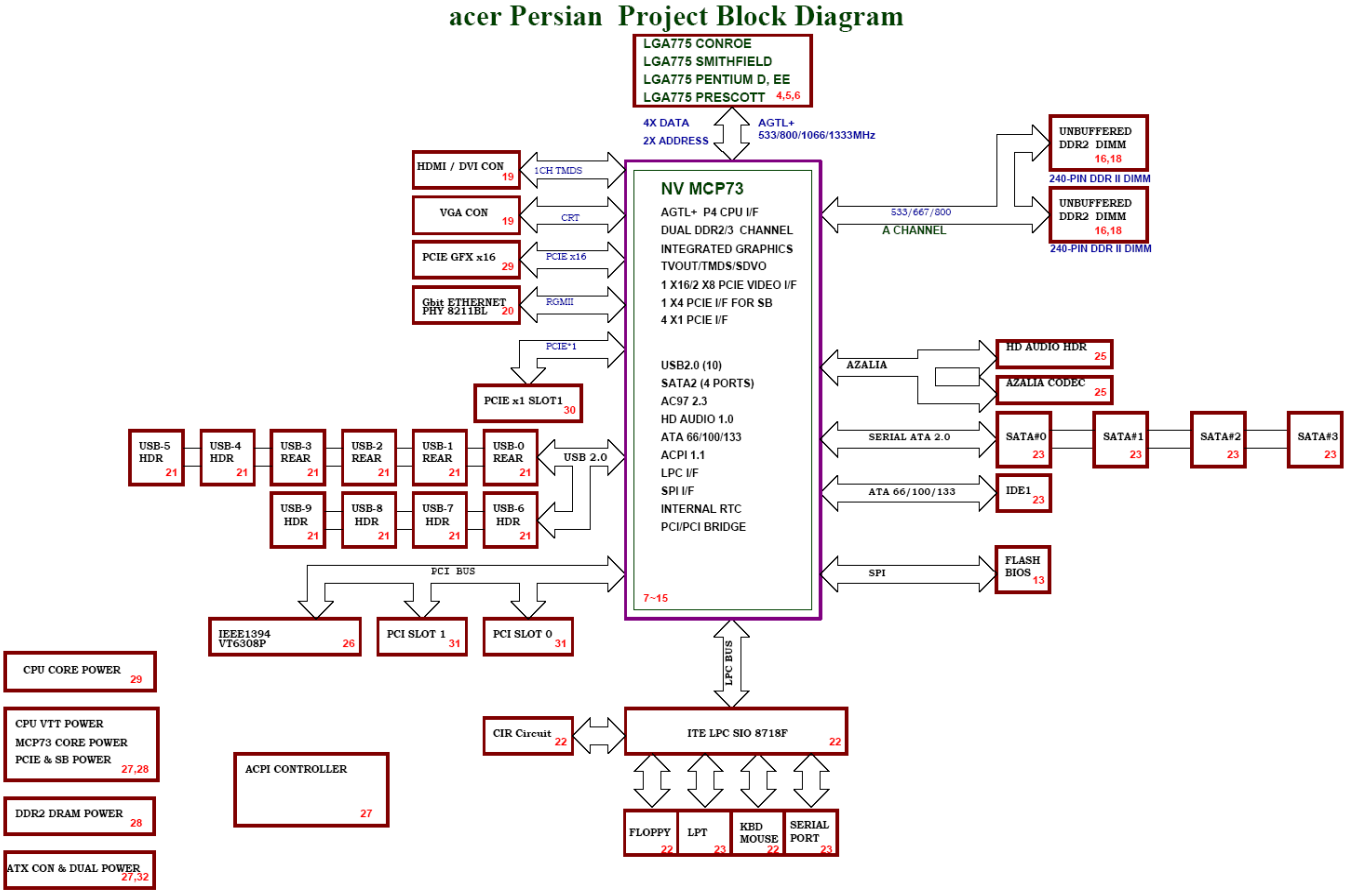
- Power Supply Mounting Features
  - Chassis accepts ATX-style power supply
  - Chasses accepts PS2, PS3 style power supply
  - Features for internal mounting tab
  - Location of 4 external mounting holes
- Power Supply Electrical Design Feature
  - 300W/250W in stable mode (Acer Assign System Power Unit)

- Design for Intel Broadwater/ICH8 series chipset compatible system
- Voltage design should be covered +5V, +3.3V, +12V, +5VSB, -12V (attention to 12V output capability)
- Demand for both PFC/Non-PFC solutions (two different quotations are needed)
- Minimum 2 Serial ATA power connector solution should be included (by default)
- Minimum 3 big 4-pin power connector included
- Minimum 1 small 4-pin power connector included
- PFC version will not provide switch selector for 115/230V AC input but it should be universal for Europe and China
- Non-PFC version should provide switch selector for 115/230V AC input and universal for worldwide
- PS2 style

Main board Placement



Block Diagram

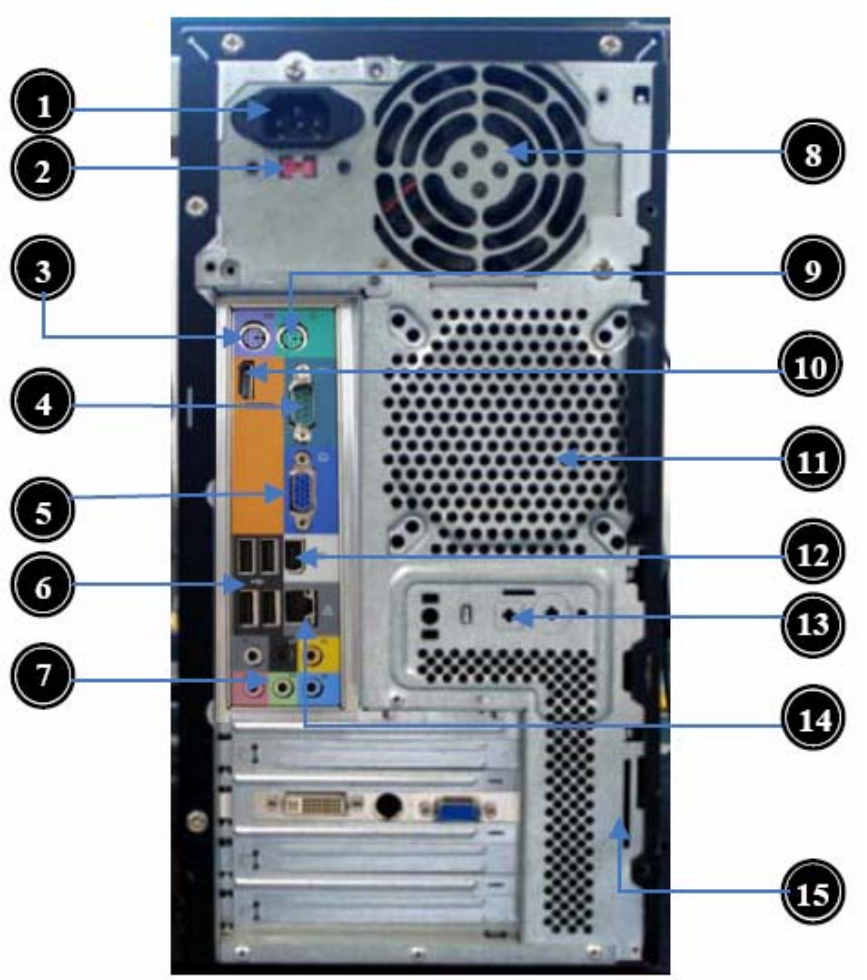


Aspire M5640 Front Panel

The computer's front panel consists of the following:

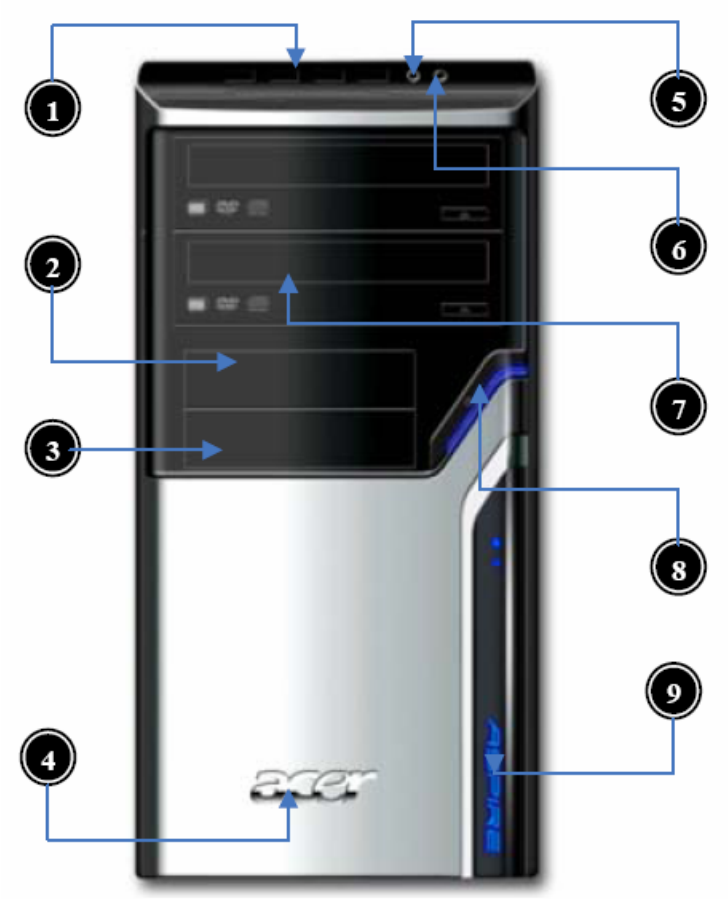
Label	Description
1	Optical drive
2	Card reader
3	Power and HDD LED
4	Power button
5	Speaker or headphone
6	Microphone jack
7	USB ports

Aspire M5640 Rear Panel



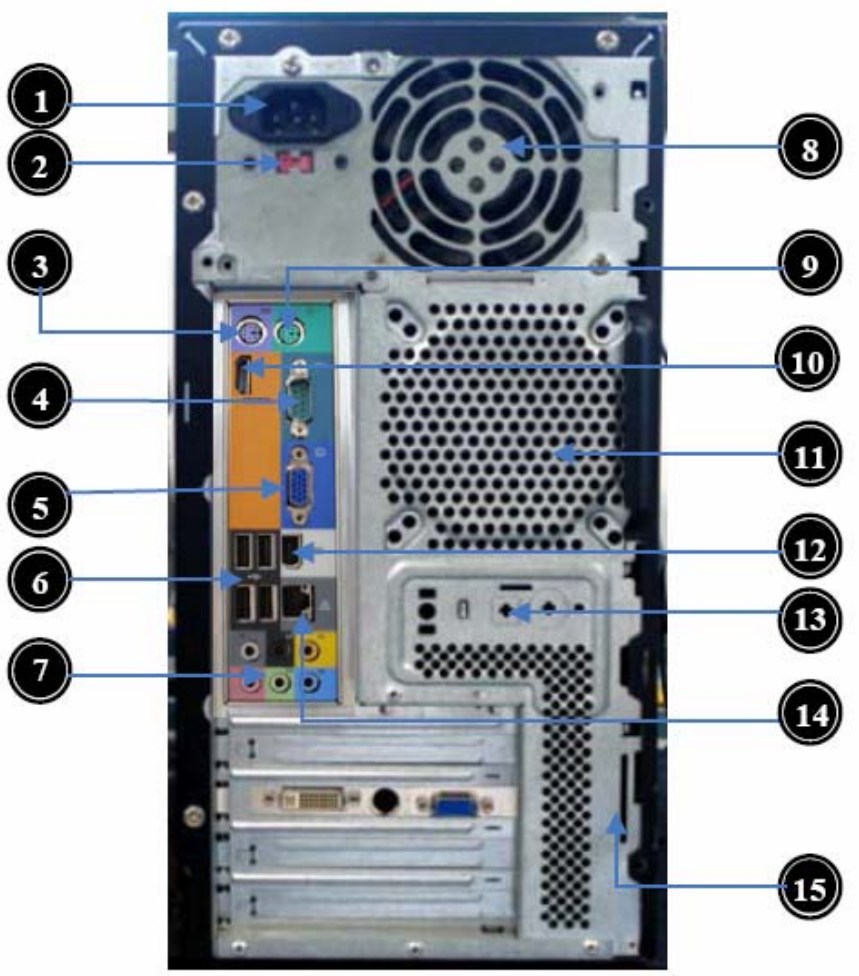
Label	Description	Label	Description
1	Power card socket	9	PS/2 mouse connector
2	Voltage selector switch	10	HDMI port
3	PS/2 keyboard connector	11	System Fan connector
4	COM port	12	IEEE 1394 port
5	Monitor connector	13	SPDIF port
6	USB 2.0 ports	14	LAN port
7	Audio port	15	Lock Handle
8	Fan aperture		

Aspire M3640 Front Panel



Label	Description
1	USB ports
2	Floppy disk drive
3	Card reader cover
4	Acer Logo
5	Microphone jack
6	Speaker or headphone
7	Optical drive
8	Power button
9	LED module

Aspire M3640 Rear Panel



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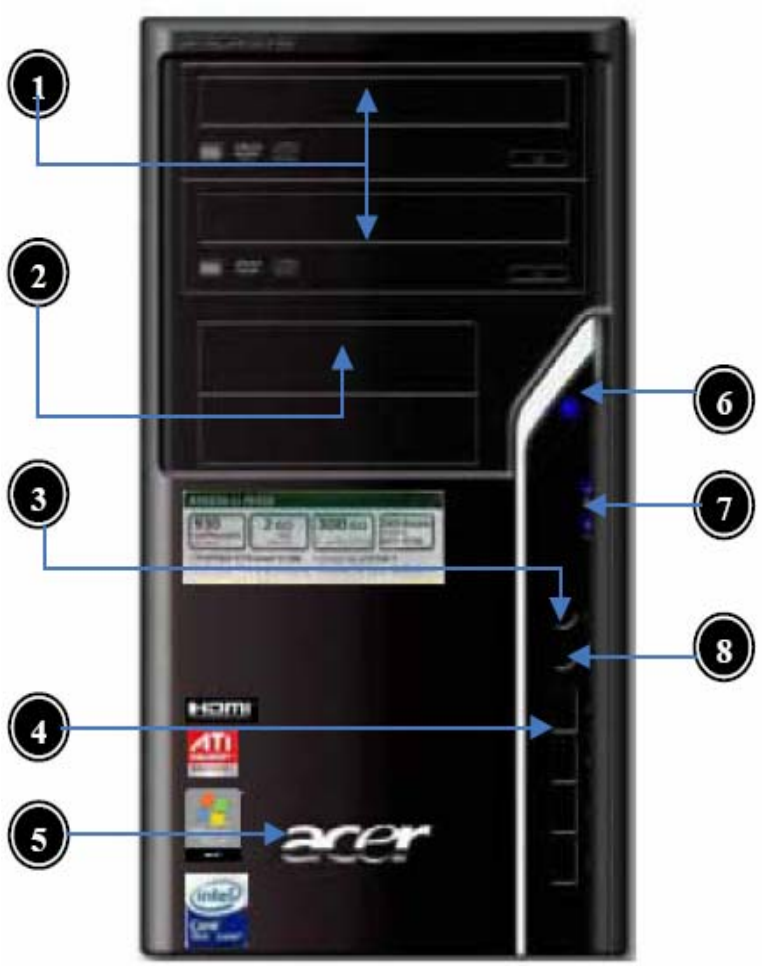
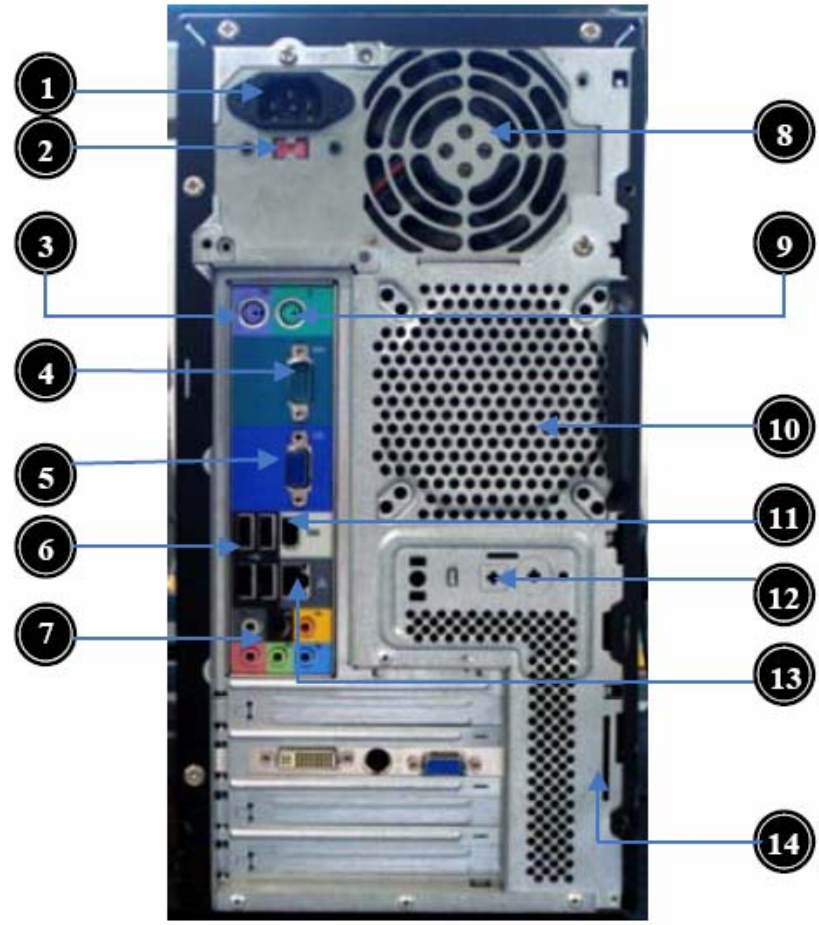
8	Fan aperture		

Aspire M1640 Front Panel



Label	Description
1	Optical drive
2	Floppy disk drive
3	Speaker or headphone
4	USB Ports
5	Acer Logo
6	Power button
7	LED Module
8	Microphone jack

Aspire M1640 Rear Panel



Label	Description	Label	Description
1	Power card socket	8	Fan aperture
2	Voltage selector switch	9	PS/2 mouse connector
3	PS/2 keyboard connector	10	System Fan connector
4	COM port	11	IEEE1394 port
5	Monitor connector	12	SPDIF port
6	USB 2.0 ports	13	LAN port
7	Audio port	14	Lock Handle

Hardware Specifications and Configurations

Processor

Item	Specification
Type	Processor Type: Intel Celeron / Celeron D / Pentium D /Pentium Dual Core / Core 2 Duo / Core2 Quad / Yorkfield / Wolfdale CPUs
Socket	LGA 775 pin
FSB	533/800/1066/1333 MHz CPUs
Minimum operating speed	0 MHz (If Stop CPU Clock in Sleep State in BIOS Setup is set to Enabled.)

BIOS

Item	Specification
BIOS code programmer	Phoenix Award or AMI Kernel with Acer skin
BIOS version	V6.0
BIOS ROM type	SPI Flash
BIOS ROM size	4Mb
Support protocol	SMBIOS (DMI) 2.4/DMI 2.0 (log file)
Device Boot Support	- 1st priority: SATA HDD - 2nd priority: CD-ROM - 3rd priority: FDD - 4th priority: LAN - 5th priority: USB device
Support to LS-120 drive	YES
Support to BIOS boot block feature	YES

BIOS Hotkey List

Hotkey	Function	Description
Del	Enter BIOS Setup Utility	Press while the system is booting to enter BIOS Setup Utility.

Main Board Major Chips

Item	Specification
North Bridge	NV MCP73PV/S & NV MCP73VE
South Bridge	NV MCP73PV/S & NV MCP73VE
APG controller	NV MCP73PV/S & NV MCP73VE
Super I/O controller	ITE 8718FX
Audio controller	Realtek HD audio codec ALC888S HD codec 7.1 (co-lay with ALC888)
LAN controller	Realtek 8211BL Gigabit Ethernet Phy.
HDD controller	NV MCP73PV/S &NV MCP73VE
Keyboard controller	ITE 8718FX

Memory Combinations

Slot	Memory	Total Memory
Slot 1	512MB, 1GB, 2GB	512MB~2GB
Slot 2	512MB, 1GB, 2GB	512MB~2GB
Maximum System Memory Supported		512MB~4GB

System Memory

Item	Specification
Memory slot number	2 slot
Support Memory size per socket	512MB/1GB/2GB
Support memory type	DDR2
Support memory interface	DDR2 800MHz
Support memory voltage	1.8V
Support memory module package	240-pin DDR2
Support to parity check feature	Yes
Support to error correction code (ECC) feature	No
Memory module combinations	You can install memory modules in any combination as long as they match the above specifications.

Audio Interface

Item	Specification
Audio controller	NV MCP73PV/S & NV MCP73VE
Audio controller type	ALC888S
Audio channel	codec 7.1
Audio function control	Enable/disable by BIOS Setup
Mono or stereo	Stereo
Compatibility	Sound Blaster Pro/16 compatible Mixed digital and analog high performance chip Enhanced stereo full duplex operation High performance audio accelerator and AC'97 support Full native DOS games compatibility Virtual FM enhances audio experience through real-time FM-to-Wavetable conversionMPU-401 (UART mode) interface for Wavetable synthesizers and MIDI devices Integrated dual game port Meets AC'97and WHQL specifications
Music synthesizer	Yes, internal FM synthesizer
Sampling rate	48 KHz (max.)
MPU-401 UART support	Yes
Microphone jack	Supported
Headphone jack	Supported

SATA Interface

Item	Specification
SATA controller	NV MCP73PV/S & NV MCP73VE
SATA controller resident bus	PCI bus
Number of SATA channel	SATA X 4
Support bootable CD-ROM	YES

Floppy disk drive Interface

Item	Specification
Floppy disk drive controller	ITE 8718FX
Floppy disk drive controller resident bus	ISA bus
Support FDD format	360KB, 720KB, 1.2MB, 1.44MB, 2.88MB

Parallel Port

Item	Specification
Parallel port controller	ITE 8718FX
Parallel port controller resident bus	ISA bus
Number of parallel parts	1
Support ECP/EPP	SPP / Bi-directional / ECP / EPP
Connector type	25-pin D-type female connector
Parallel port function control	Enable/disable by BIOS Setup
Optional EV+CP DMA channel (in BIOS setup)	DMA channel 1 DMA channel 3
Optional parallel port I/O address (via BIOS setup)	378h 278h
Optional parallel port IRQ (via BIOS setup)	IRQ5 IRQ7

USB Port

Item	Specification
Universal HCI	USB 2.0/1.1
USB Class	Support legacy keyboard for legacy mode
USB Connectors Quantity	4 ports for front daughter board 4 ports for rear I/O 2 ports for internal card reader.

Environmental Requirements

Item	Specification
Temperature	
Operating	+5°C ~ +35°C
Non-operating	-20 ~ +60°C (Storage package)
Humidity	
Operating	15% to 80% RH
Non-operating	10% to 90% RH
Vibration	
Operating (unpacked)	5 ~ 500 Hz: 2.20g RMS random, 10 minutes per axis in all 3 axes 5 ~500 Hz: 1.09g RMS random, 1 hour per axis in all 3 axes

Power Management

Devices	S1	S3	S4	S5
Power Button	V	V	V	V
USB Keyboard/Mouse	V	V	N/A	N/A
PME	Disabled	Disabled	Disabled	Disabled
RCT	Disabled	Disabled	Disabled	Disabled
WOR	Disabled	Disabled	Disabled	Disabled

- Devices wake up from S3 should be less than
- Devices wake up from S5 should be less than 10 seconds

System Utilities

The manufacturer or the dealer already configures most systems. There is no need to run Setup when starting the computer unless you get a Run Setup message.

The Setup program loads configuration values into the battery-backed nonvolatile memory called CMOS RAM.
This memory area is not part of the system RAM.

NOTE: If you repeatedly receive Run Setup messages, the battery may be bad/flat. In this case, the system cannot retain configuration values in CMOS.

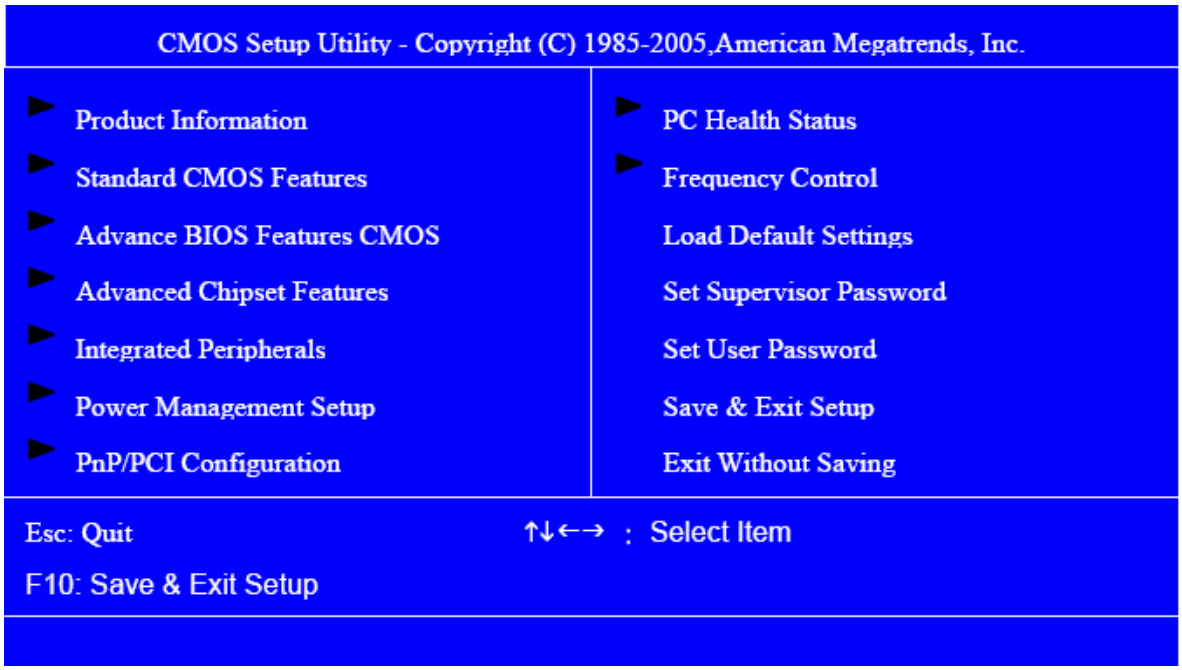
Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message of "Press DEL to enter SETUP" appears on the screen, press the key of [Delete] to enter the setup menu.

NOTE: If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On. You may also restart the system by simultaneously pressing [Ctrl+ Alt+ Delete].

The Setup Utility main menu then appears:

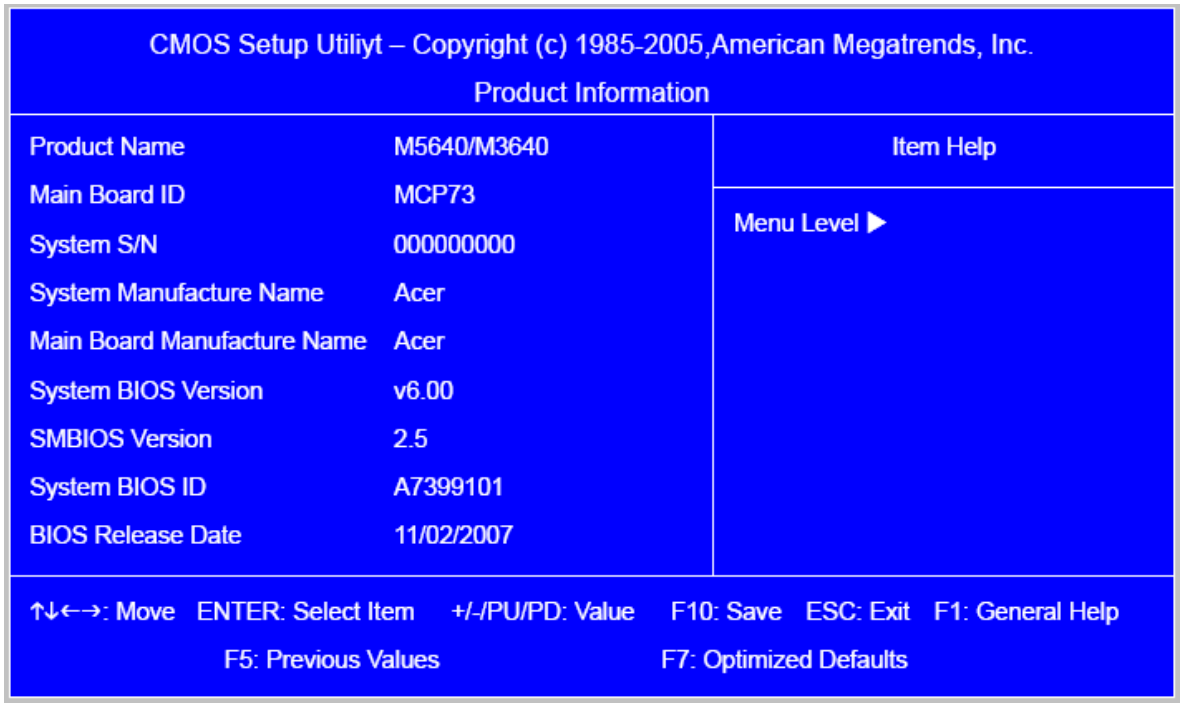


The items in the main menu are explained below:

Parameter	Description
Production Information	This page shows the relevant information of the main board
Standard CMOS Features	This setup page includes all the items in standard compatible BIOS
Advance BIOS Features	This setup page includes all the items of Award special enhanced features
Advance Chipset Features	This setup page includes all advanced chipset features
Integrated Peripherals	This setup page includes all onboard peripherals
Power Management Setup	This setup page includes all the items of Green function features
PnP/PCI Configuration	This setup page includes all configurations of PCI & PnP ISA resources
PC Health Status	This setup page is the System auto detect Temperature, voltage, and fan speed
Load Optimized Defaults	Load Optimized Settings Default Settings indicates the value of the system parameters which the system would be in best performance configuration
Set Supervisor Password	Change, set or disable password. It allows you to limit access to the system and Setup, or just to Setup
Set User Password	Change, set or disable password. It allows you to limit access to the System
Save & Exit Setup	Save CMOS value settings to CMOS and exit setup
Exit Without Saving	Abandon all CMOS value changes and exit setup

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 (maybe required when asking for technical support).

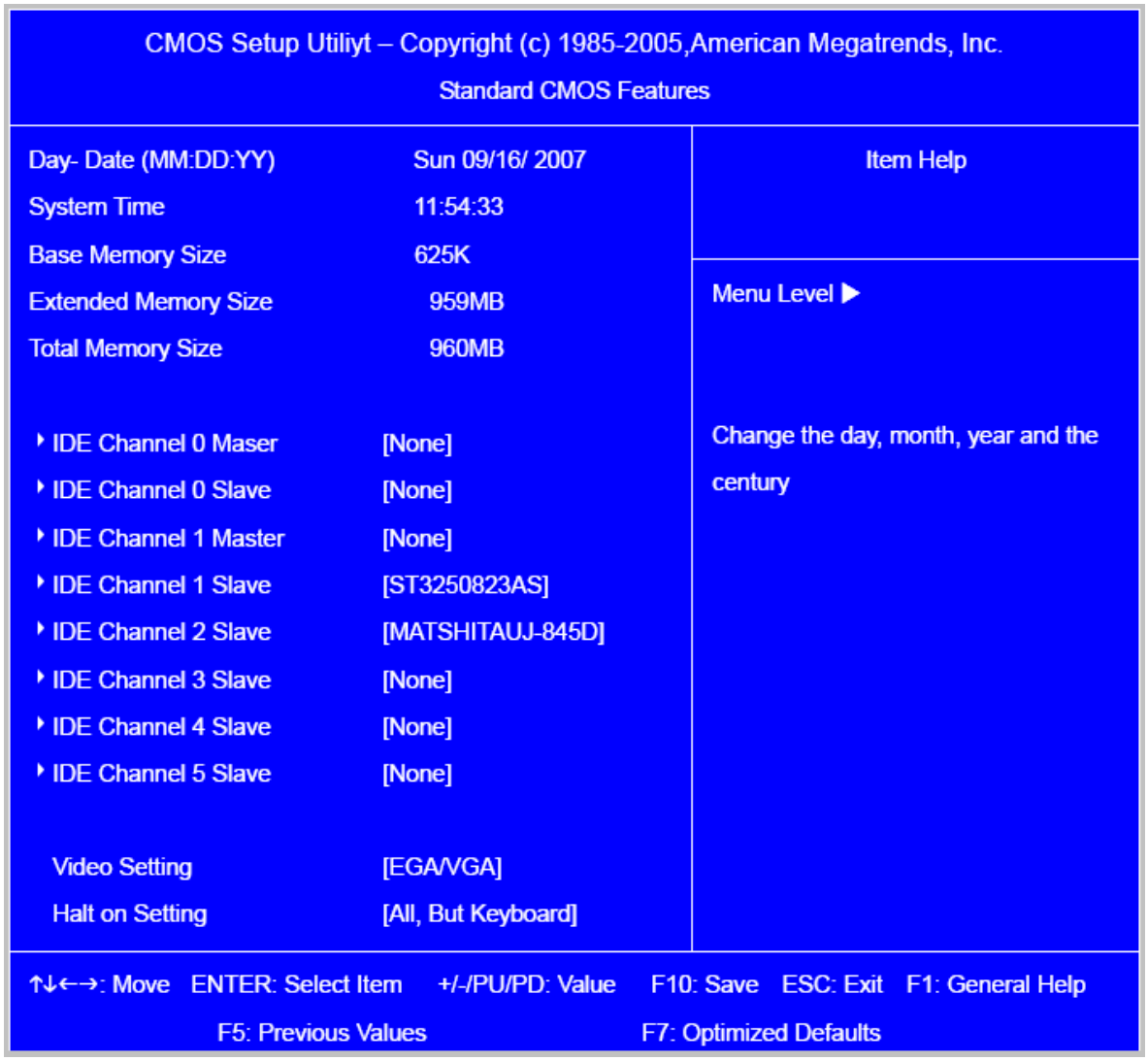


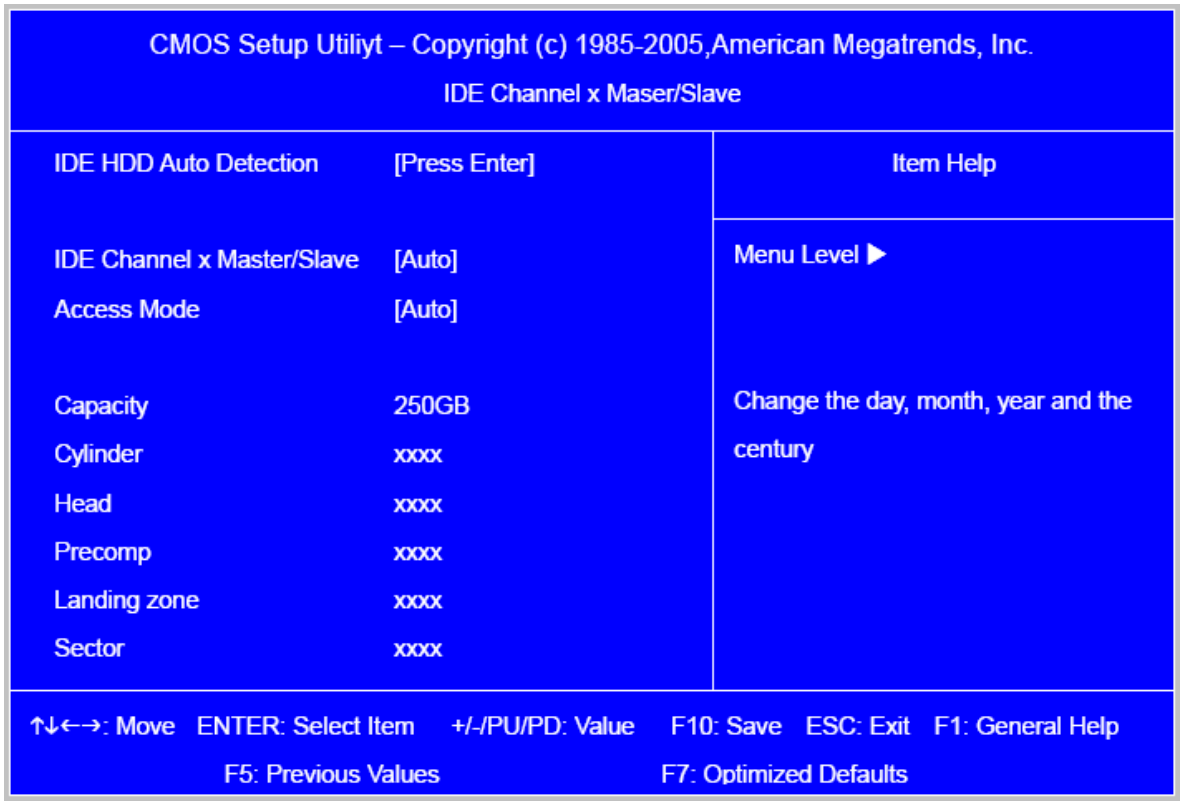
The following table describes the parameters found in this menu:

Parameter	Description
Production Name	This item lists the product name
System S/N	This item lists the system serial number
Main Board ID	This item lists the main board ID
Main Board S/N	This item lists the main board serial number
System BIOS Version	This item lists the system BIOS version
SMBIOS Version	This item lists the system SMBIOS version
System BIOS ID	This item lists the system BIOS ID
BIOS Release Date	This item lists the BIOS release date

Standard CMOS Setup

Select standard CMOS features from the main menu to configure some basic parameters in your system the following screen shows the standard CMOS features menu:





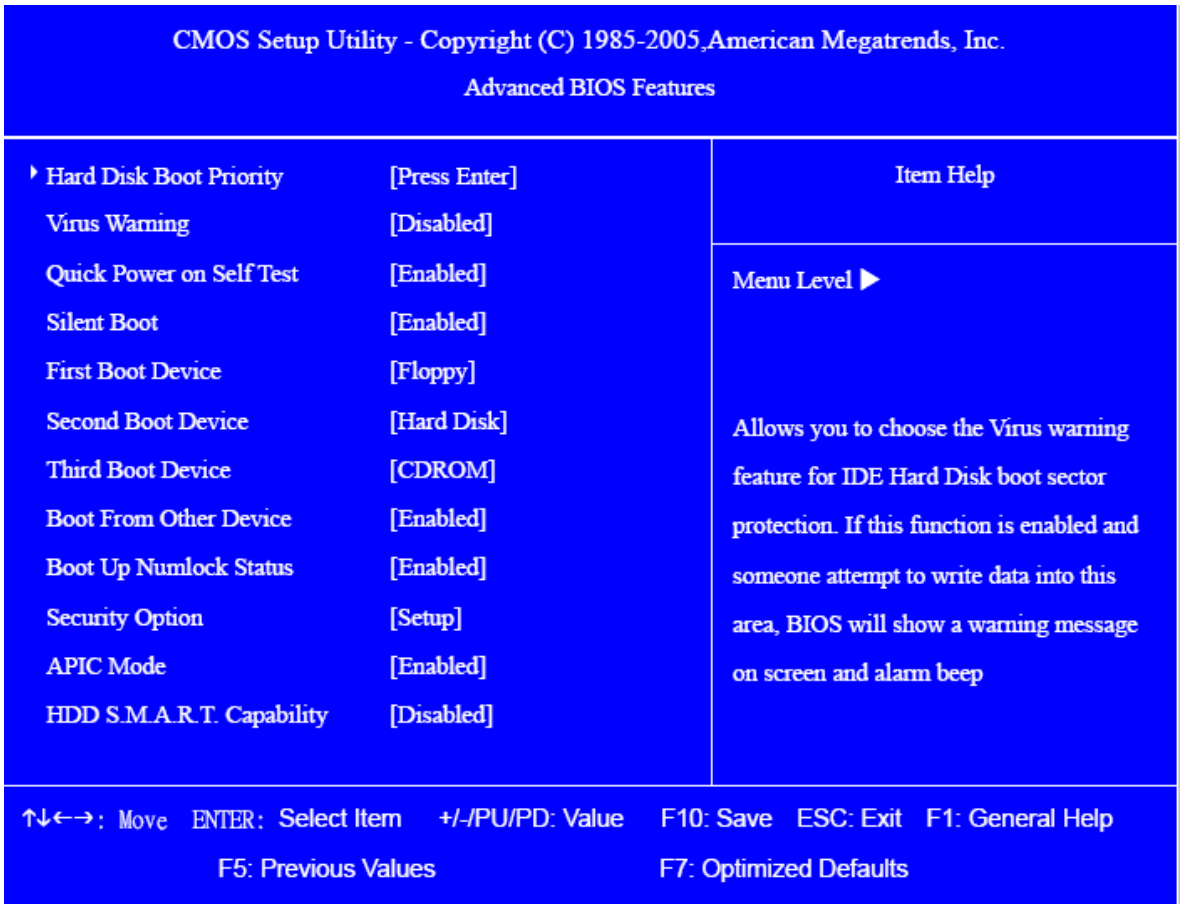
The following table describes the parameters found in this menu.

Parameter	Description	Options
Date	To set the date following the weekday-month-date-year format	Week: From [Sun.] to [Sat.]. determined by BIOS and is display only Day: from [1] to [31] (or the maximum allowed in the month. Year: from 1999 to 2099
System Time	To set the time following the hour-minute-second format	The items format is [hour] [minute][second]. The time is calculated base on the 24-hour timer clock.
Base Memory Size	640 K for system base memory	

Parameter	Description	Options
Extended Memory Size	The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the memory address map of CPU	
Total Memory Size	Total memory size for the system	
IDE Channel X Master IDE Channel X Slave	Hard disk drive connected to channel X master or slave port. To enter the IDE Master or Slave setup, press [Enter]. The IDE CD-ROM is always automatically detected	[Enter] for detection options [Auto]: BIOS automatically detects IDE devices during POST (default) [None]: No IDE devices are used and the system will skip the automatic detection step and allow for faster system start up [Manual]: Manually input the correct settings [Access Mode]: To set the access mode for the hard drive. The four options are: CHS/LBA/Large/Auto (default: Auto) Cylinder: Number of cylinders Head: Number of heads Precomp: Write precomp Landing Zone: Landing Zone Sector: Number of sectors
Video Setting	Select the type of primary video subsystem	
Halt on	This item enables use to select the situation if the BIOS stops the POST process and the notification	All Errors No Errors All, But Keyboard All, But Diskette All, But Disk/Key

Advanced Setup

The following screen shows the Advanced Setup:

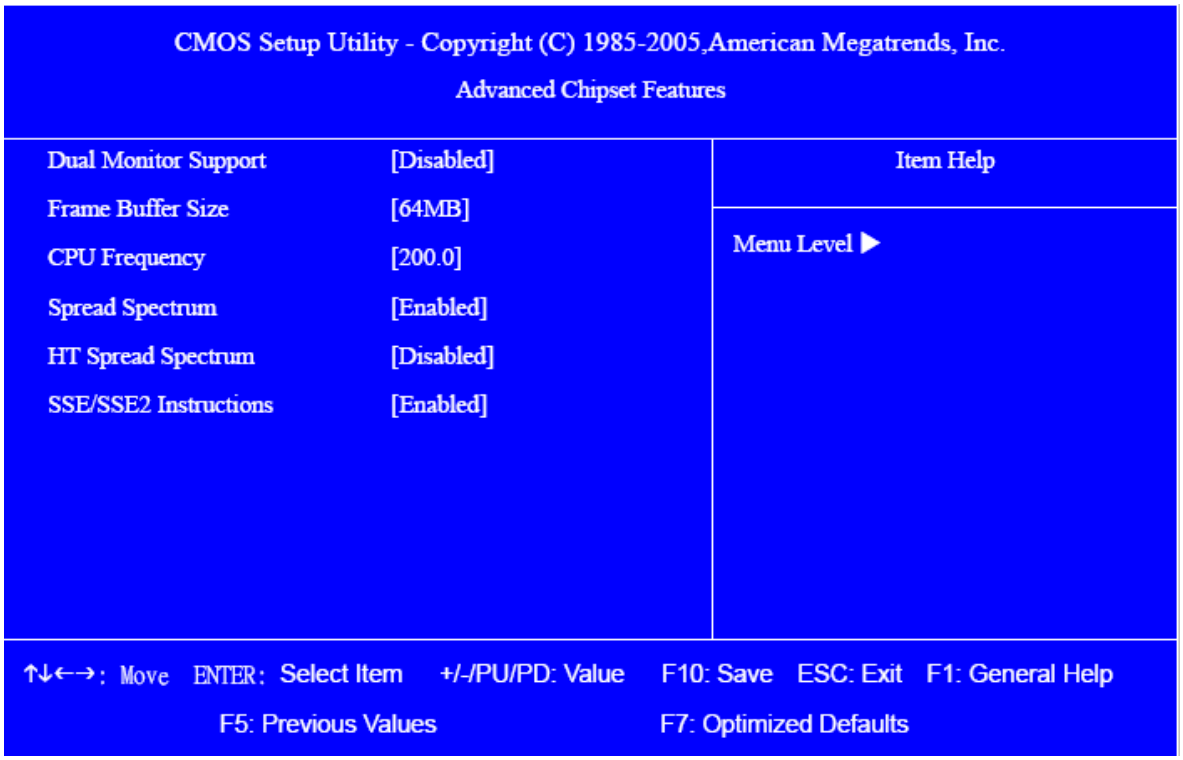


The following table describes the parameters found in this menu.

Parameter	Description	Options
Hard Disk Boot Priority	This features displays the Hard Disk Boot Device priority from high to low and allows users to set the Hard Disk Boot Device Priority. Press [Enter] to enter the setting screen. Use wory to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit.	[Press Enter]

Parameter	Description	Options
Virus Warning	This feature allows you to enable the VIRUS warning function for IDE Hard Disk boot sector protection. If this function is enabled and there is someone attempts to write data to this area, BIOS will show a warning message on screen and the alarm will beep.	[Enabled], [Disabled]
Quick Power On Self Test	This feature allows the system to skip certain tests while booting. When this function is enabled, it will decrease the time needed to boot the system, which means to quick power on self-test function.	[Enabled], [Disabled]
Silent Boot	This feature allows you to enable or disable if the screen logo to display or not during POST	[Enabled], [Disabled]
First/Second/ Third Boot Device	The item allows you to see the sequence of boot device where BIOS attempts to load the disk operation system.	[Floppy], [LS120], [Hard Disk], [CD-ROM], [ZIP], [USB-FDD], [USB-ZIP], [USB-CDROM], [USB-HDD], [LAN], [Disabled]
Boot From Other Devices	This item allows user to enable or disable to boot from other device	[Enabled], [Disabled]
Boot Up NumLock Status	This item allows user to enable or disable to set keyboard is number keys or arrow keys	[Enabled], [Disabled]
Security Option	This category allows you to limit access to the system and Setup, or just to Setup.	[System], [Setup]
APIC Mode	This option is used to set up enable or disable the APCI function	[Enabled], [Disabled]
HDD S.M.A.R.T Capability	S.M.A.R.T. which allows your hard disk to report any read/write errors and issue a warning when LDCM installed	[Enabled], [Disabled]

Advanced Chipset Setup

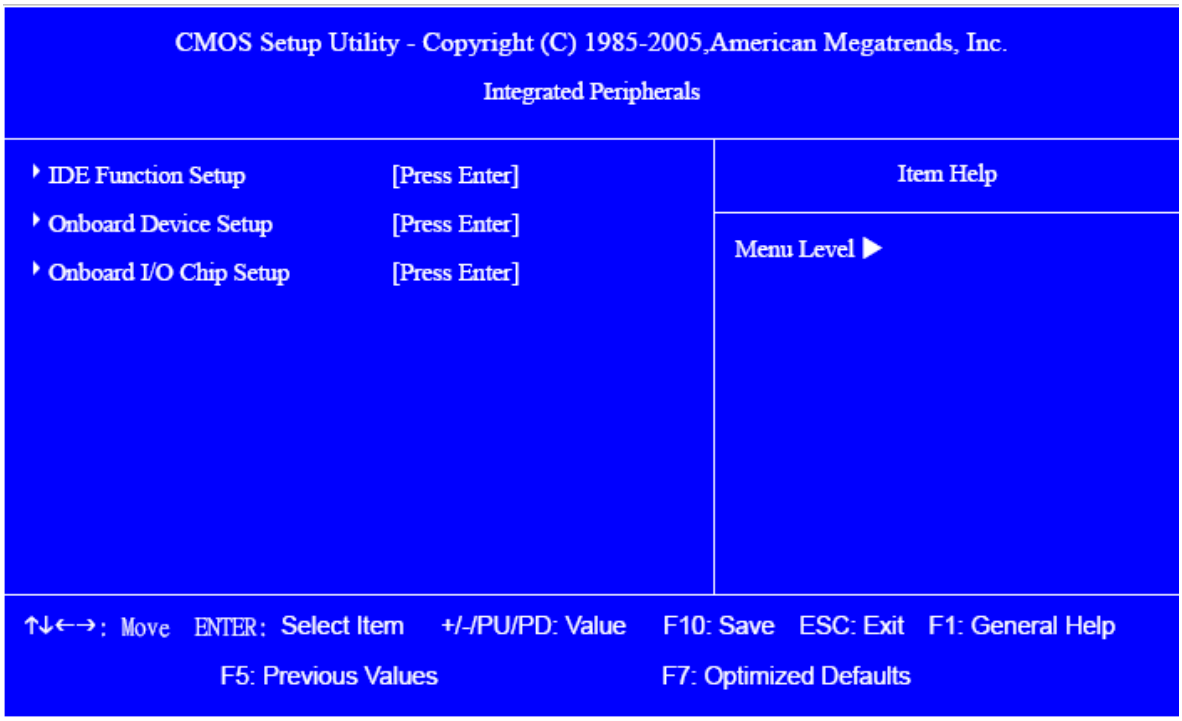


The following table describes the parameters found in this menu.

Parameter	Description	Options
Dual Monitor Support	This category allows you to enable or disable dual monitor support function	[Enabled], [Disabled]
Frame Buffer Size	This field displays how much frame buffer size of the system.	
CPU Frequency	This field allows you to determine CPU frequency of the system.	

Parameter	Description	Options
Spread Spectrum	When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI. This benefit may in some case be outweighed by problems with timing-critical devices, such as a clock-sensitive SCSI device.	[Enabled], [Disabled]
HT Spread Spectrum	Enables or Disables HT Spread Spectrum. HT is Hyper Transport between CPU and North Bridge.	[Enabled], [Disabled]
SSE/SSE2 Instructions	This feature controls the availability of the processor's SSE and SSE2 instruction sets. When enabled, the processor's SSE and SSE2 instruction sets are enabled. Software applications can make use of those instructions to better process large amounts of data quickly. When disabled, the processor's SSE and SSE2 instruction sets are disabled. Software applications will not be able to use those instructions to process multiple data elements simultaneously. However, the processor's MMX instruction set will still be available for use. It is highly recommended that you leave this BIOS feature at the default setting.	[Enabled], [Disabled]

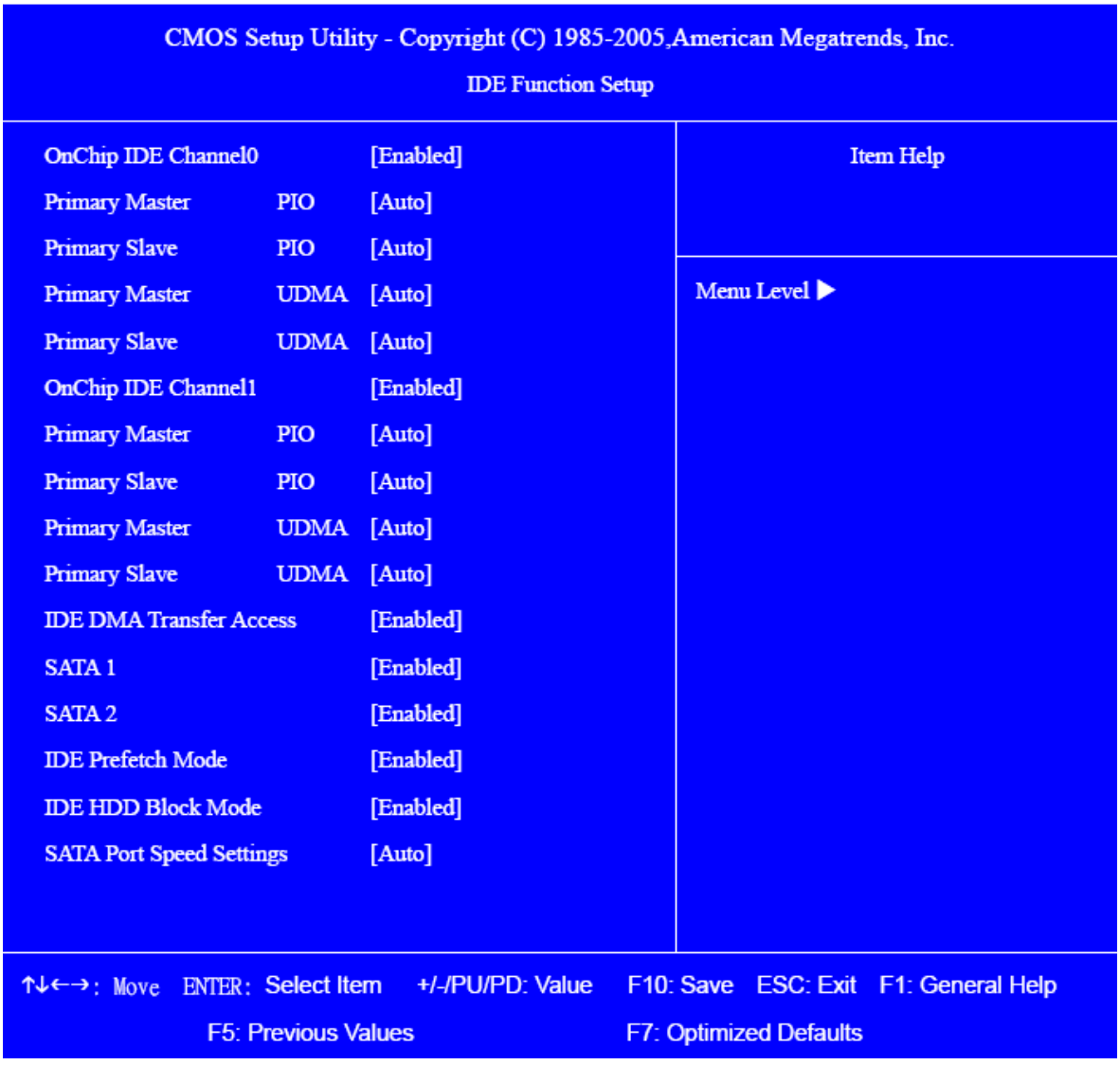
Integrated Peripherals



The following table describes the parameters found in this menu.

Parameter	Description	Options
IDE Function Setup	This page allows you to setup IDE function	[Press Enter]
Onboard Device Setup	This page allows you to setup onboard devices.	[Press Enter]
Onboard I/O Chip Setup	This page allows you to setup onboard I/O chip.	[Press Enter]

Integrated Peripherals-IDE Function Setup

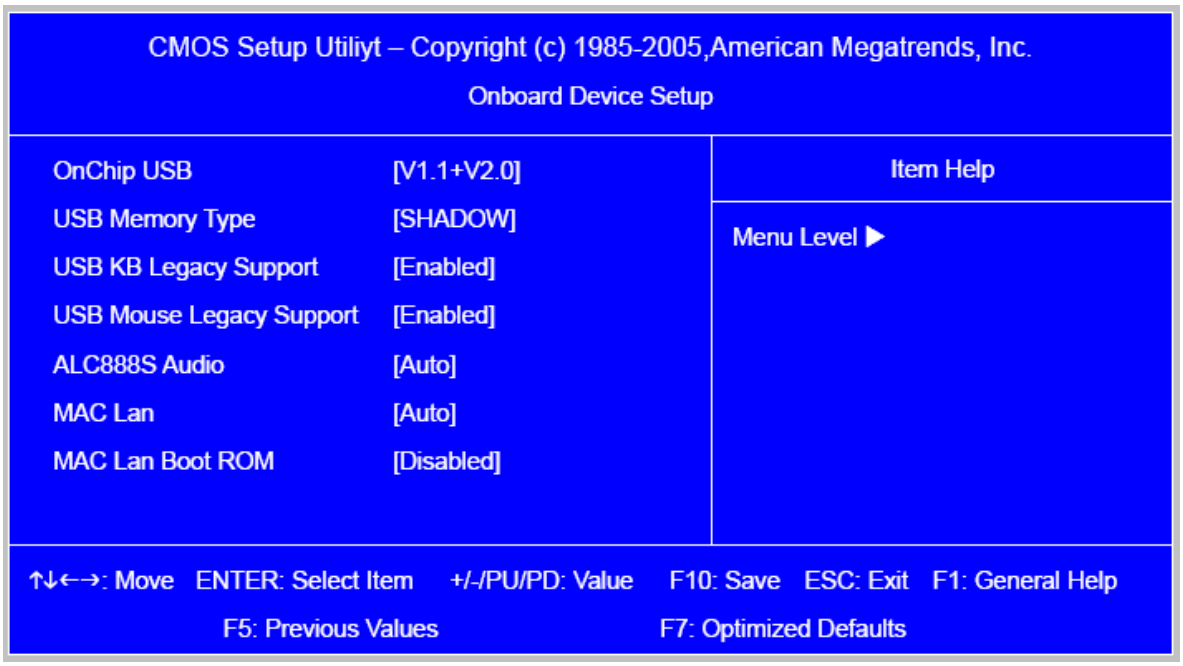


The following table describes the parameters found in this menu.

Parameter	Description	Options
IDE Primary/Secondary Master/Slave PIO	The four IDE PIO fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide increased performance. In Auto mode, the system automatically determines the best mode for each device.	
On-Chip IDE First/Second Channel	The Chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the first and/or second IDE interface. Select Disabled to deactivate an interface, if you install a primary and/or secondary add-in IDE interface.	[Enabled], [Disabled]
IDE Primary/Secondary Master/Slave UDMA	UDMA (Ultra DMA) is a DMA data transfer protocol that utilized ATA transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data ata maximum burst rate of 33 MB/s. When you select Auto in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device.	
IDE DMA Transfer Access	This category allows you to enable or disable DMA transfer access of IDE device (or IDE HDD)	[Enabled], [Disabled]
SATA 1/2	Enable/Disable Serial-ATA 1 or Serial-ATA-2. SATA 1 control port 1 and 3, SATA 2 control port 2 and 4.	
IDE Prefetch Mode	The onboard IDE drive interfaces supports IDE prefetching, for faster drive accesses. If you install a primary and/or secondary add-in IDE interface, set this field to Disabled if the interface does not support prefetching.	

Parameter	Description	Options
IDE HDD Block Mode	Block mode is also called block transfer, multiple commands, or multiple sectors read/write. If your IDE hard drive supports block mode(most new drives do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.	[Enabled], [Disabled]
SATA PORT Speed Settings	This category allows you to determine the speed of SATA port.	[Auto],

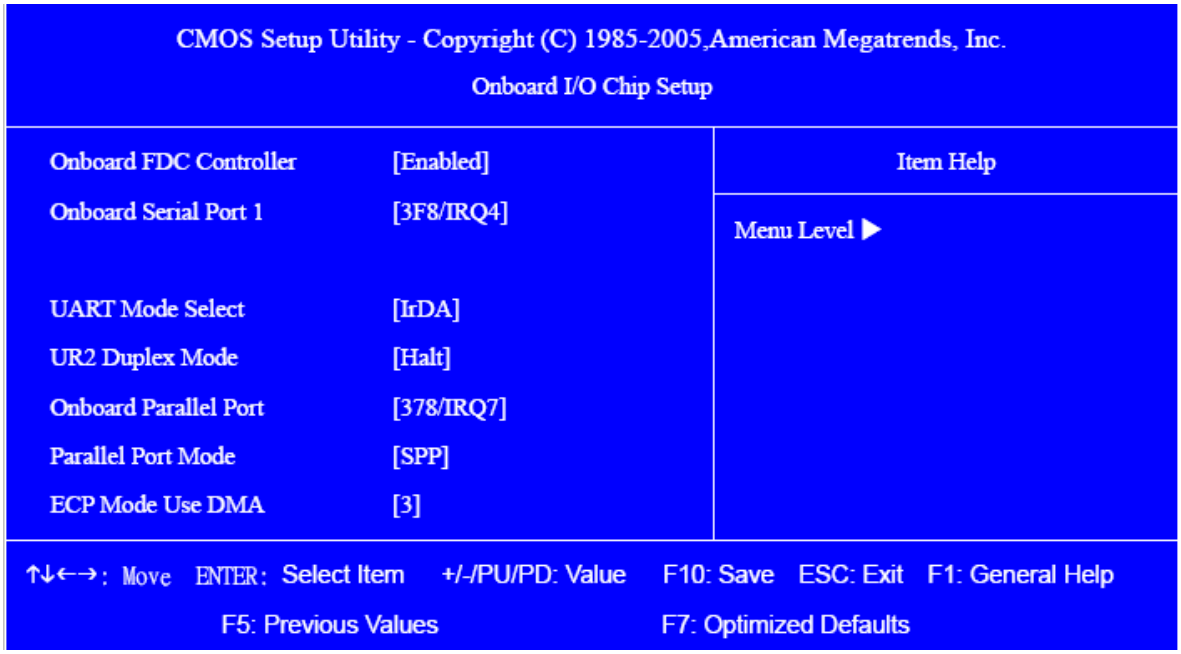
Integrated Peripherals-Onboard Device Setup



The following table describes the parameters found in this menu.

Parameter	Description	Options
On Chip USB	This field allows you to determine on chip USB type or disable on chip USB.	[V1.1+V2.0], [V1.1]
UDB Memory Type	Use this item to change the type of USB memory to shadow or Base memory.	[Shadow], [Base Memory]
USB KB Legacy Support	This field enables or disables USB keyboard support function.	[Enabled], [Disabled]
USB Mouse Support	This field enables or disables USB mouse support function.	[Enabled], [Disabled]
ALC888S Audio	Change the on board Audio to auto or disabled	[Auto], [Disable]
MAC LAN	Enables or disables onboard LAN controller, If you wish to use the motherboard's onboard LAN controller, you should certainly enable this BIOS feature. You can disable this feature if you do not want to use the motherboard's onboard LAN controller. This may free up an IRQ for other devices to use. This is useful if your motherboard does not support APIC and have many devices that can not share IR Qs.	[Enabled], [Disabled]
MAC LAN Boot ROM	Enables or disables on board LAN boot ROM.	[Enabled], [Disabled]

Integrated Peripherals -Onboard I/O Chip Setup

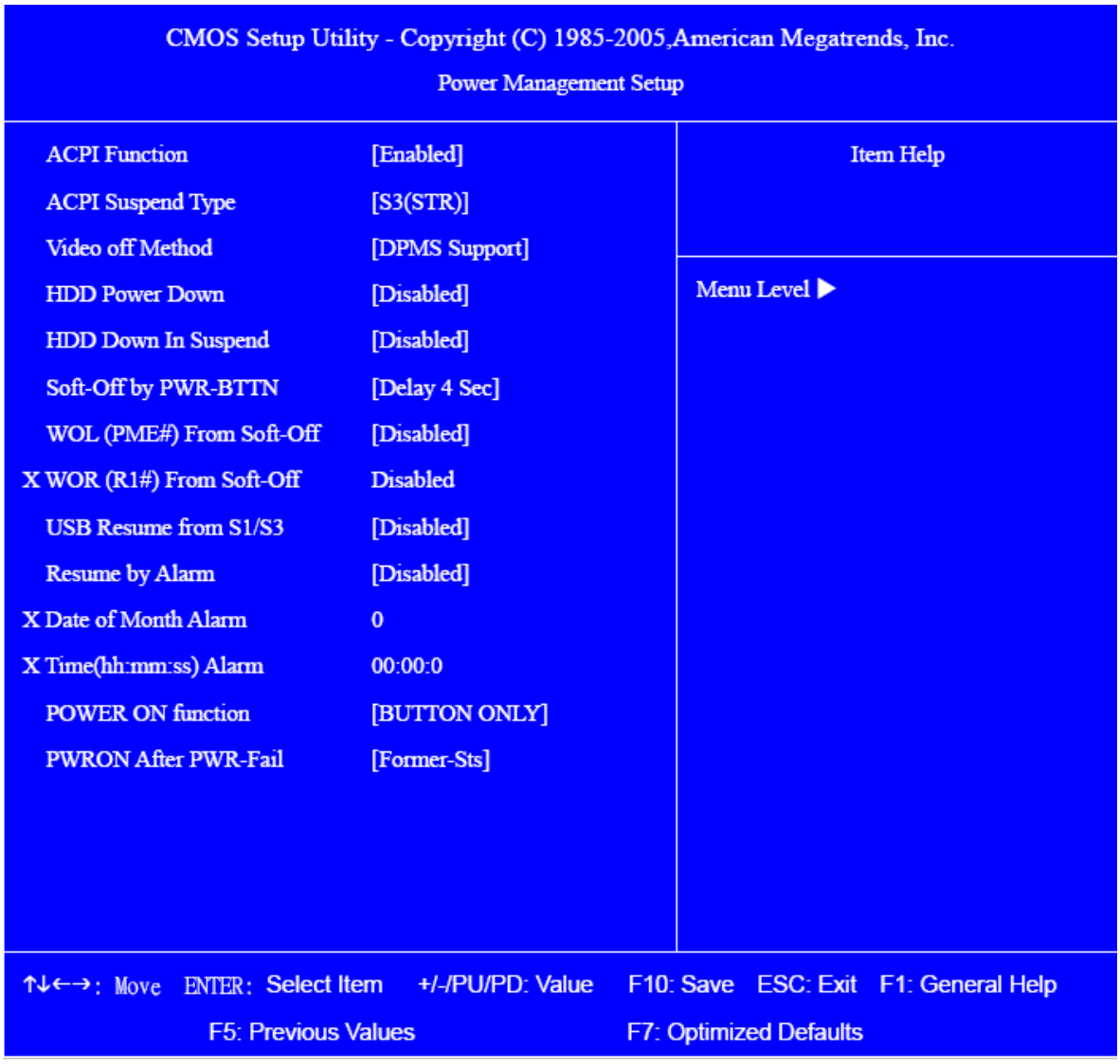


The following table describes the parameters found in this menu.

Parameter	Description	Options
Onboard FDC Controller	Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.	[Enabled]. [Disabled]
Onboard Serial Port 1	Select a logical COM port name and matching address for the serial port. Select an address and corresponding interrupt for the serial port.	
UR2 Duplex Mode	In an infrared port mode, this field appears. Full-duplex mode permits simultaneous tow-direction transmission. Half-duplex mode permits transmission in one direction only at a time. Select the value required by the IR device connected to the IR port.	
Onboard Parallel Port	Select a logical LPI port address and corresponding interrupt for the physical parallel port.	[xxx+IRQx]
Parallel Port Mode	Select an operating mode for the onboard parallel (printer) port.	[Normal], [EPP], [EPP], [EPP+ECP]
ECP Mode used DMA	This item allows users to manually set the DMA channel for ECP mode	

Power Management

The Power Management menu lets you configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use. The following screen shows the Power Management parameters and their default settings:

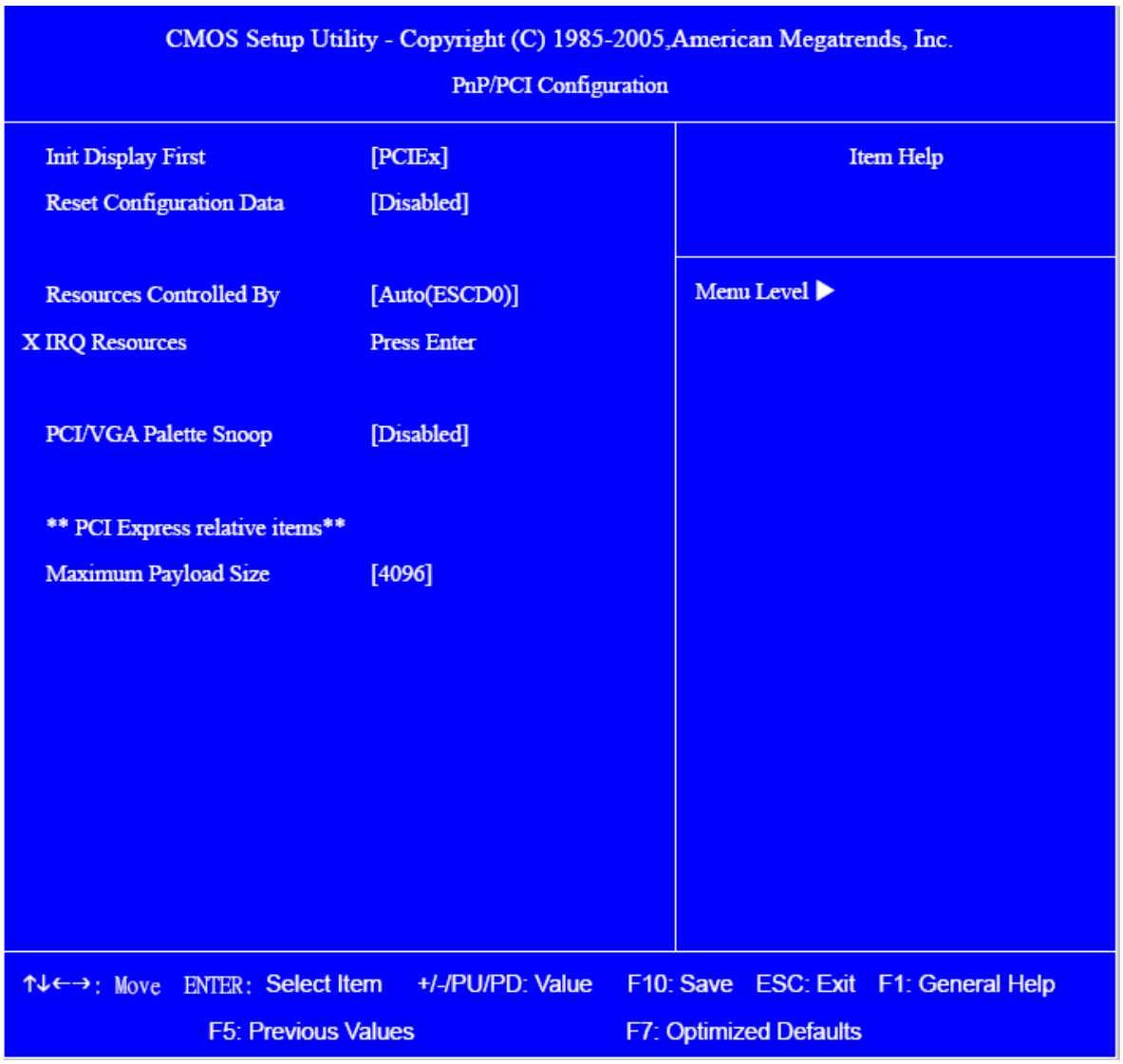


The following table describes the parameters found in this menu.

Parameter	Description	Options
ACPI Function	This item allows you to enable or disable the ACPI function	[Enabled], [Disabled]
ACPI Suspend Type	This item specifies the power saving modes for ACPI function. S1 (POSP: The S1 sleep mode is a low power state.. In this state, no system context (SPU or chipset) is lost and hardware maintains all system context/ S3 (STR): The S3 sleep mode is s power-down state in which power is supplied only to essential components such as main memory and wake-capable devices and all system context is saved to main memory. The information stored in memory will be used to restore the PC to the previous state when an wake-up event occurs.	[S1 (POS)]: Set ACPI suspend type to S1/POS (Power On Suspend). [S3 (STR)]: Set ACPI suspend type to S3/STR
HDD Power Down	The setting controls how long a hard disk drive must be left idle before it spins downs.	[Disabled], [Standby], [Suspend]
HDD Down In Suspend	Enables or Disables the functionality of HDD down in suspend	[Enabled], [Disabled]

Parameter	Description	Options
Soft-off by PWR/BTTN	When Enabled, turning the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity.	[Instant-off]: Press down button then power off instantly [Delay 4 Sec.]: Press Power button 3 sec. to power off. Enter suspend if button is pressed less than 4 sec.
WOL (PME#) From Soft-Off	This category enables or disables wake-on-Lan from soft-off	[Enabled], [Disabled]
Resume by Alarm	You can set “Resume by Alarm” item to enabled and key in Date/Time to power on system.	[Disabled] [Enabled]: Enable alarm function to Power On system. If RTC Alarm Lead to Power On is Enabled, Date(of Month) Alarm: Everyday, 1~31 Time(hh:mm:ss) Alarm: (0.~23):(0-59):(0~59)
POWER ON Function	Select the method to power on the system	[Button Only], [Keyboard 98], [Hot Key], [Mouse Left], [Mouse Right]
POWER After PWR-Fail	This field allows you to determine the power status to on/off or former-sts after the system	[FORMER-Sts], [On], [Off]

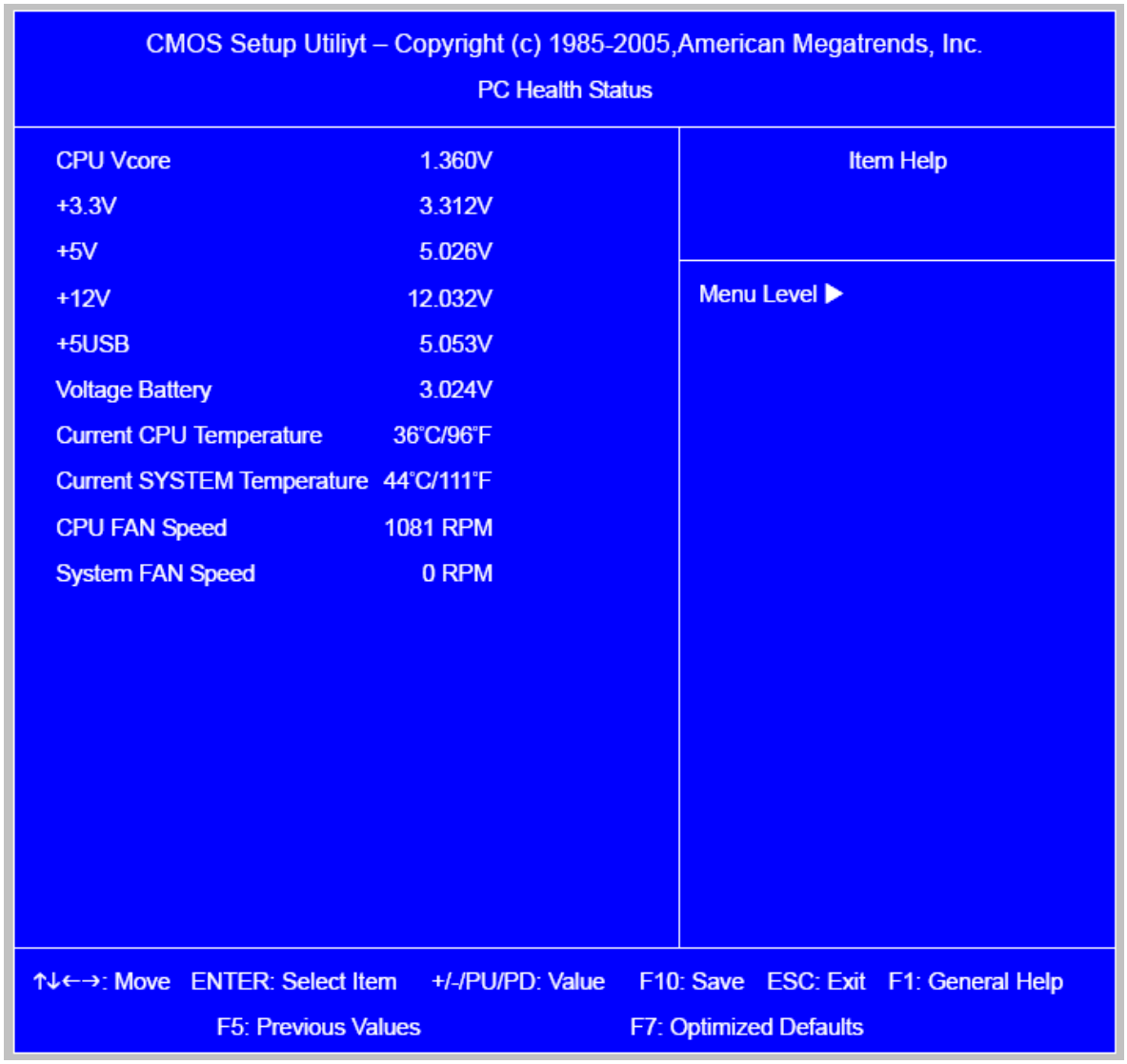
PCI/PnP Setup



The following table describes the parameters found in this menu.

Parameter	Description	Options
Init Display First	Initialize the AGP video display before initializing any other display device on the system. Thus the AGP display becomes the primary display.	
Reset Configuration Data	Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot	[Enabled], [Disabled]
Resources Controlled By	This item allows user to assign PnP resource (I/O address, IRQ&DMA channels) for Plug and Play compatible devices automatically or manually	[Auto] [Manual]
IRQ Resources	When resource are controlled by manually, assign each system interrupt a type , depending on the type of device using the interrupt. Option: [PCI Device]: Assign this IRQ for PCI device. [Reserved]: Reserve this IRQ for other device.	[Press Enter]
PCI/VGA Palette Snoop	This option is only very rarely needed. It should be left at “Disabled” unless a video device specifically requires the setting enabled upon installation.	[Disabled], [Enabled]
Maximum Payload Size	This field displays maximum payload size of the system	[128-4096]
PCI 1/2 IRQ Assignment	This item allows user to assign PCI IRQ for device	[Auto], [3] , [4] , [5] , [6] , [7], [10] , [11] , [12] , [14] , [15]

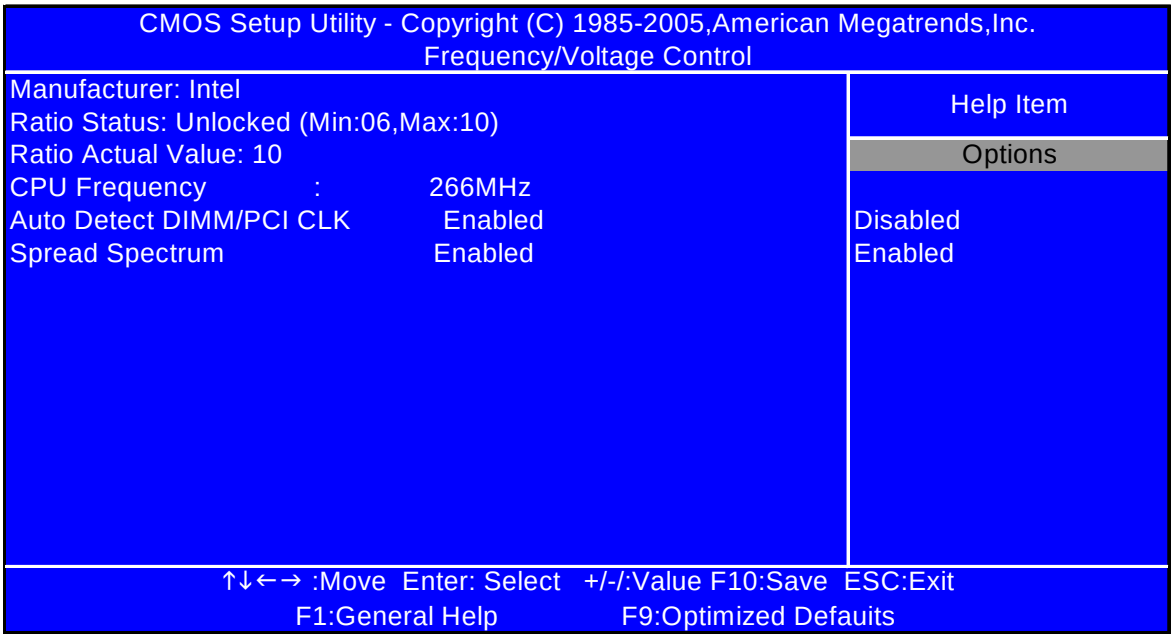
PC Health Status



The following table describes the parameters found in this menu:

rameter	Description	Options
V core	Detect system's voltage status automatically	
CPU Temperature	Detect CPU Temperature automatically	
CPU/SYSTEM FAN Speed (RPM)	Detect CPU/SYSTEM Fan Speed Status automatically	
CPU Smart FAN Control	The item displays the system Smart Fan Function status. It is always enabled by system.	

Frequency/Voltage Control

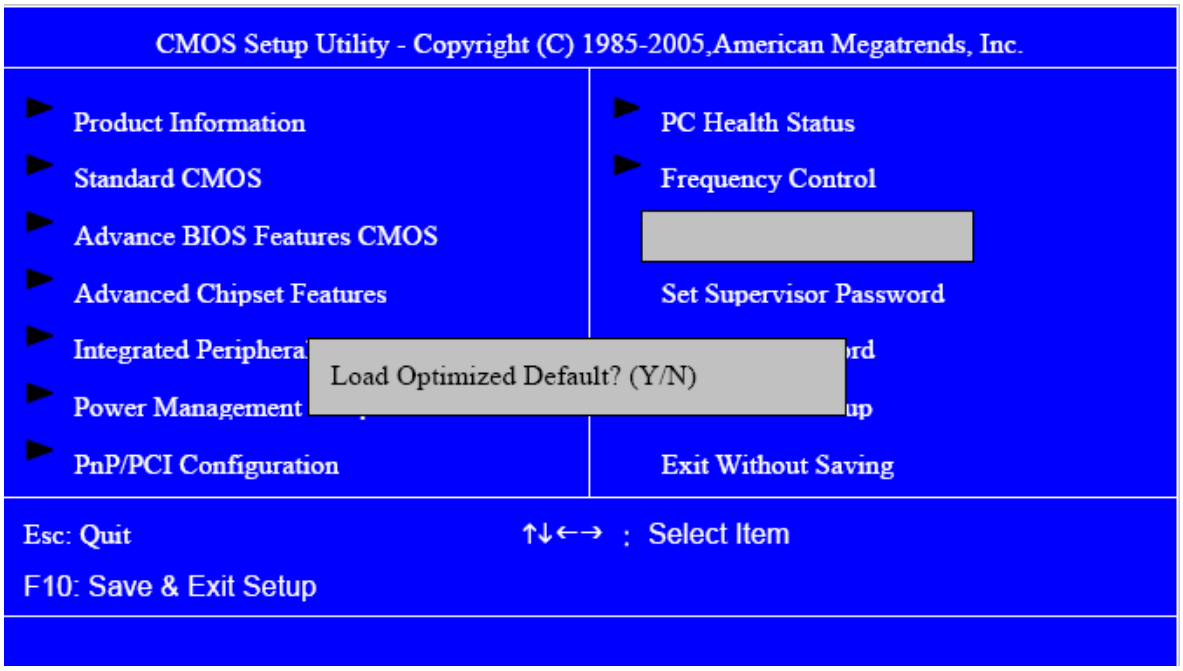


The following table describes the parameters found in this menu:

Parameter	Description	Options
Auto Detect DIMM/PCI CLK	This option allows you to enable/disable the feature of auto detecting the clock frequency of the installed PCI bus.	Enabled Disabled
Manufacturer	This item specifies CPU Manufacturer	Intel
CPU frequency	This item specifies CPU frequency	266MHz
Spread Spectrum	When the motherboard's clock generator pulses, the extreme values (spikes) of the pulses create EMI (Electromagnetic Interference). The spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have any EMI problem, leave the setting at Disabled for optimal system stability and performance. But if you are plagued by EMI, setting to Enabled for EMI reduction. Remember to disable Spread Spectrum if you are overlooking because even a slight jitter can introduce a temporary boost in clock speed which may just cause your over lock ed processor to lock up.	Enabled

Load Default Settings

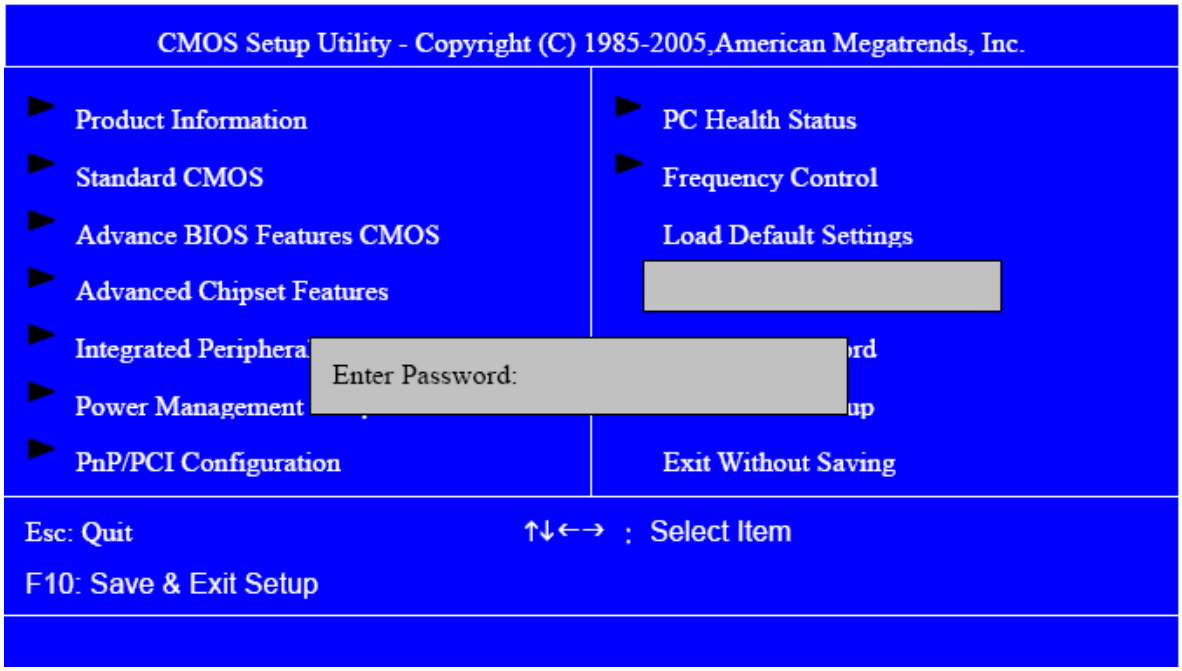
This option opens a dialog box that lets you install defaults for all appropriate items in the Setup Utility.



Parameter	Description	Options
Load Default Settings	Select the field loads the factory defaults for BIOS and Chipset Features, which the system automatically detects. This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility.	

Set Supervisor/User Password

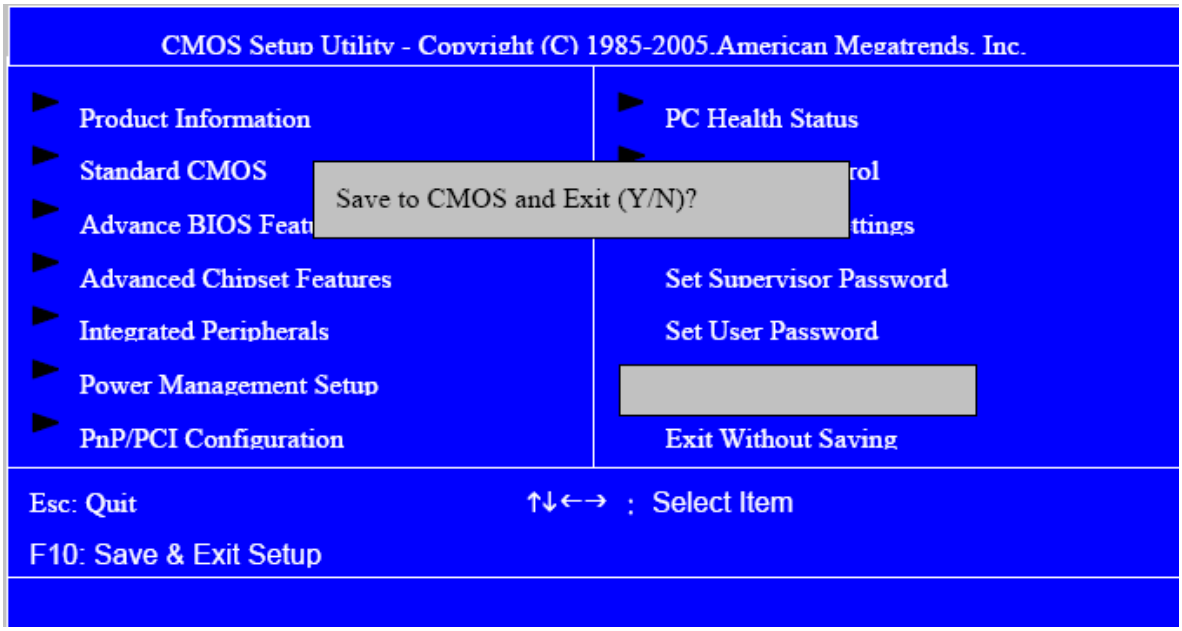
When this function is selected, the following message appears at the center of the screen to assist you in creating a password.



Parameter	Description	Options
Set Supervisor/User Password	When this function is selected, the following message appears at the center of the screen to assist you in creating a password. **ENTER PASSWORD** Type the password, up to eight characters, and press<Enter>. The password typed now will clear any previously entered password from CMOS Memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press<ESC> to abort the selection. **PASSWORD DISABLED** To disable password, just press<Enter> when you are prompted to enter password with empty. A message will confirm the password being disabled. If you have selected “System” in “Security Option” of “BIOS Feature Setup” menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup. If you have selected “Setup” at “Security Option” from “BIOS Features Setup” menu, you will be prompted for the password only when you enter BIOS Setup. Supervisor Password has higher priority than User Password. You can use Supervisor Password when booting the system or entering BIOS Setup to modify all settings.	

Save & Exit Setup

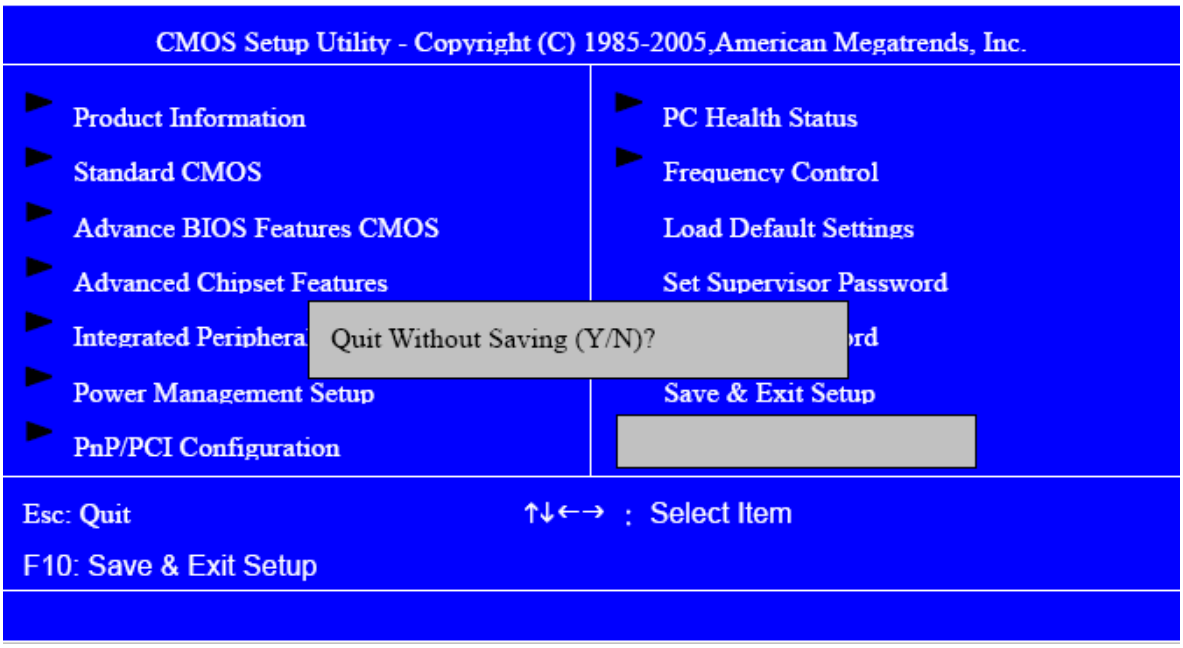
Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility.



Parameter	Description	Options
Save & Exit Setup	Press <Enter> to save the changes that have made in the Setup Utility and exit the Setup Utility. Press<Y> to save and Exit or <N> to return to the main menu.	

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility.



Parameter	Description	Options
Exit Without Saving	Press<Enter> to discard any changes and exit the Setup Utility	

Machine Disassembly and Replacement

To disassemble the computer, you need the following tools:

Wrist grounding strap and conductive mat for preventing electrostatic discharge.
Wire cutter.
Phillips screwdriver (may require different size).

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

General Information

Before You Begin

Before proceeding with the disassembly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.

2. 2.Unplug the AC adapter and all power and signal cables from the system

Disassembly Procedure

This section tells you how to disassemble the system when you need to perform system service. Please also refer to the disassembly video, if available.

CAUTION: Before you proceed, make sure you have turned off the system and all peripherals connected to it.

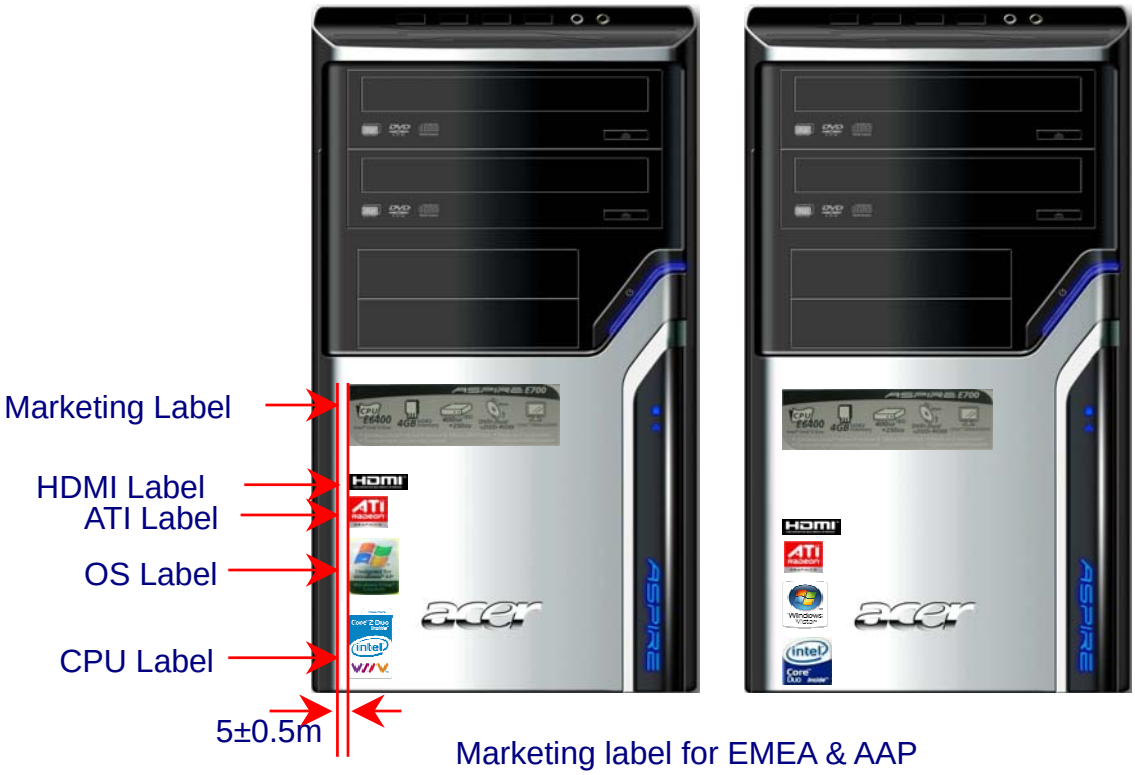
Bezel Label

Process:

1. According to the requirement, paste ATI, OS, CPU, HDMI and marketing label by SKU.

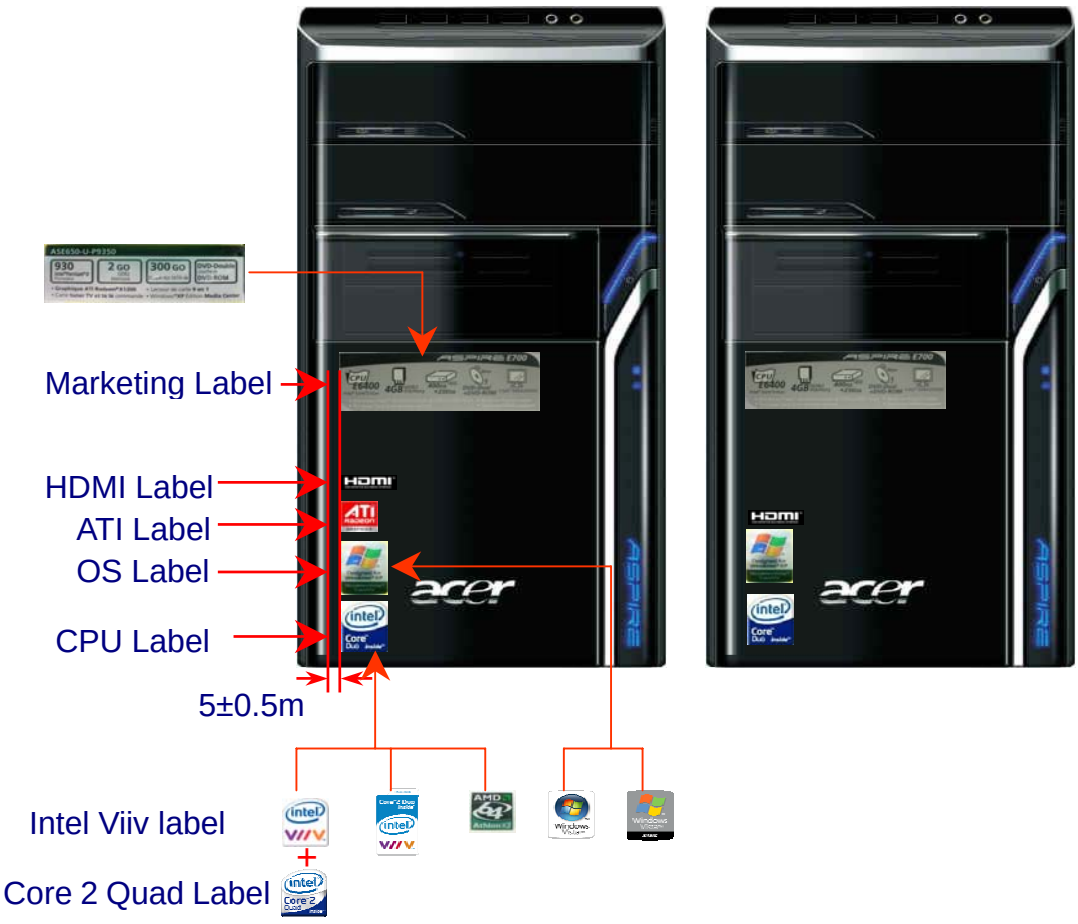
Aspire M3640

Marketing label for AAC



Marketing label for EMEA & AAP

Aspire M5640

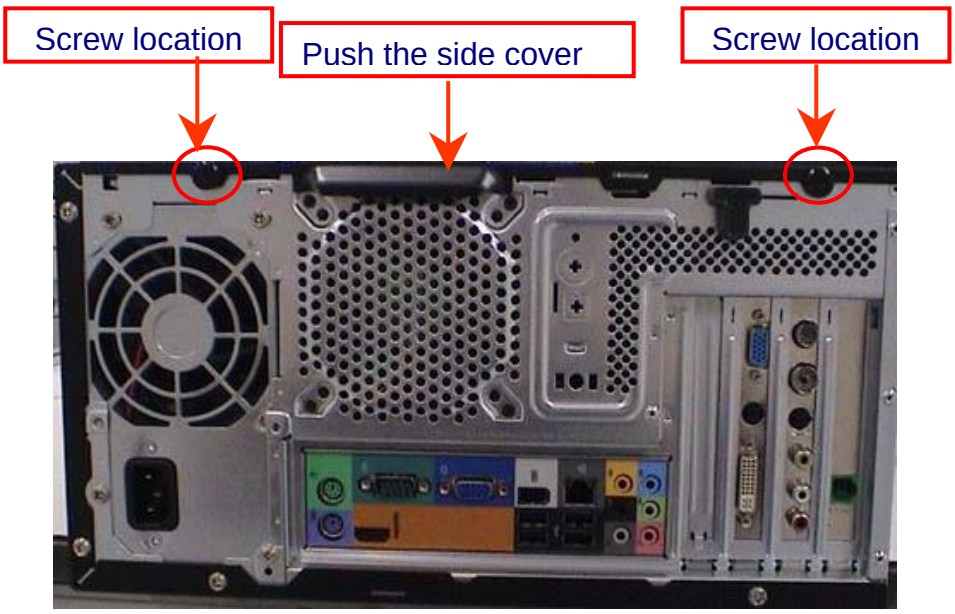


Aspire M1640

Remove side cover

Process:

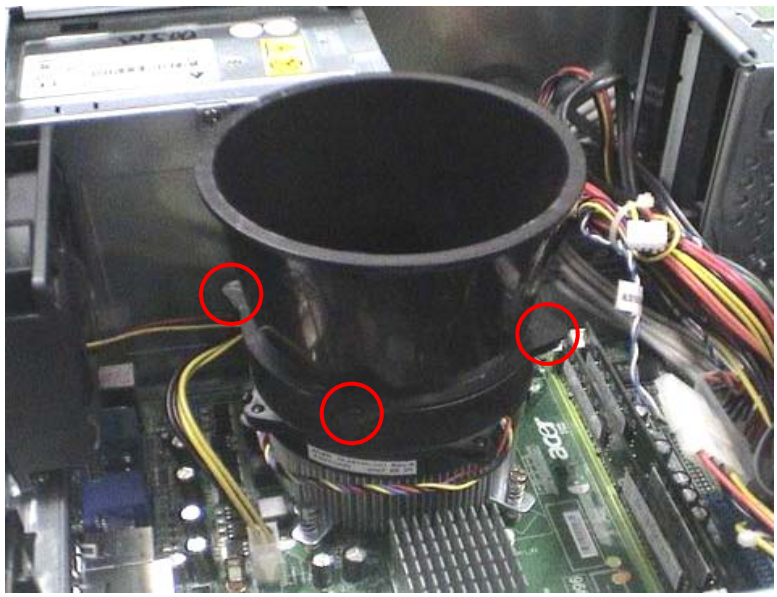
1. Put the Computer on the worktable lightly.
2. Release left side cover with 2 screws then remove left side cover.



Remove CPU fan pipe

Process:

1. Release the CPU pipe.

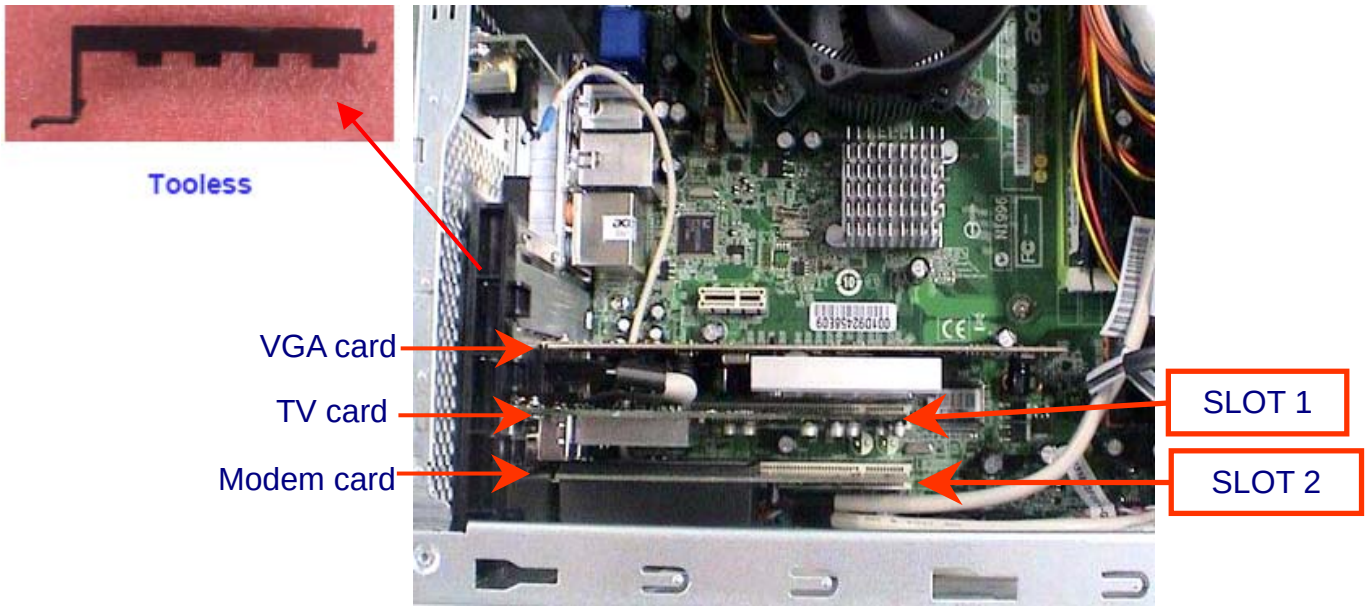


Remove Cards

Process:

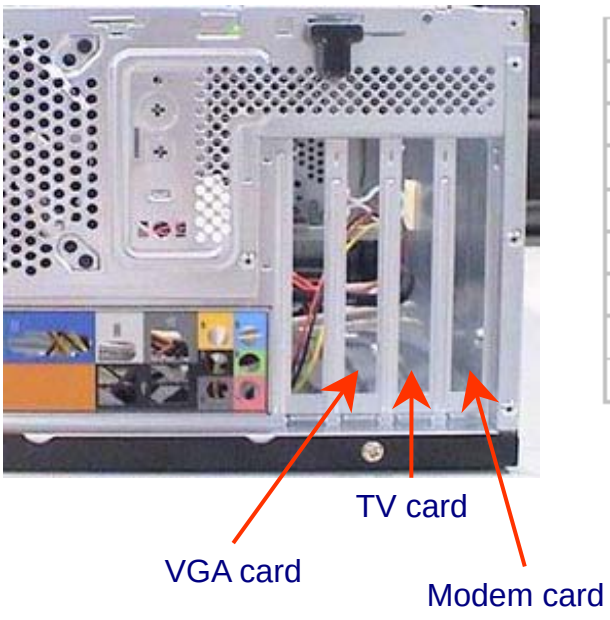
1. Release the slot cover tooless

2. Remove VGA 、TV、Modem Card，the following list is for your reference about the mutual location relation (Optional by SKU).



Notice:

I. Remove card, don't touch any electric parts on PCB.

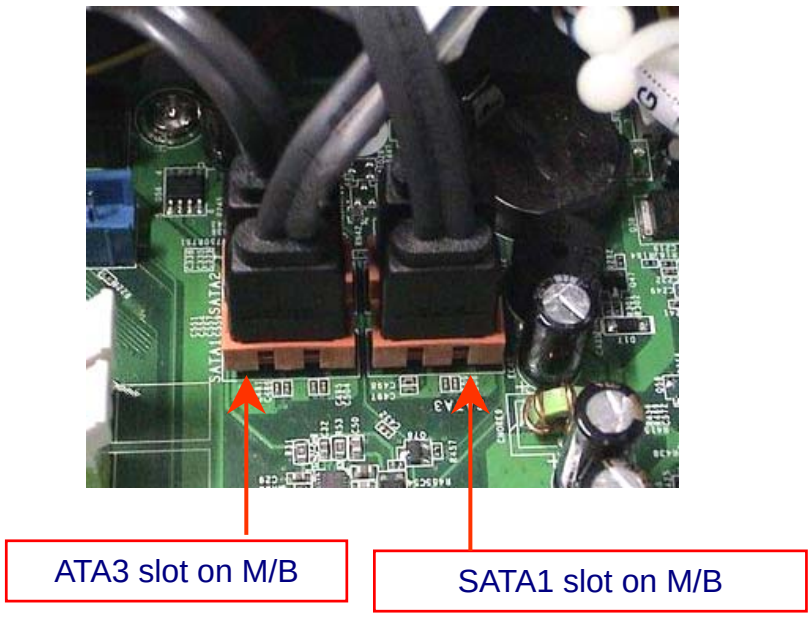


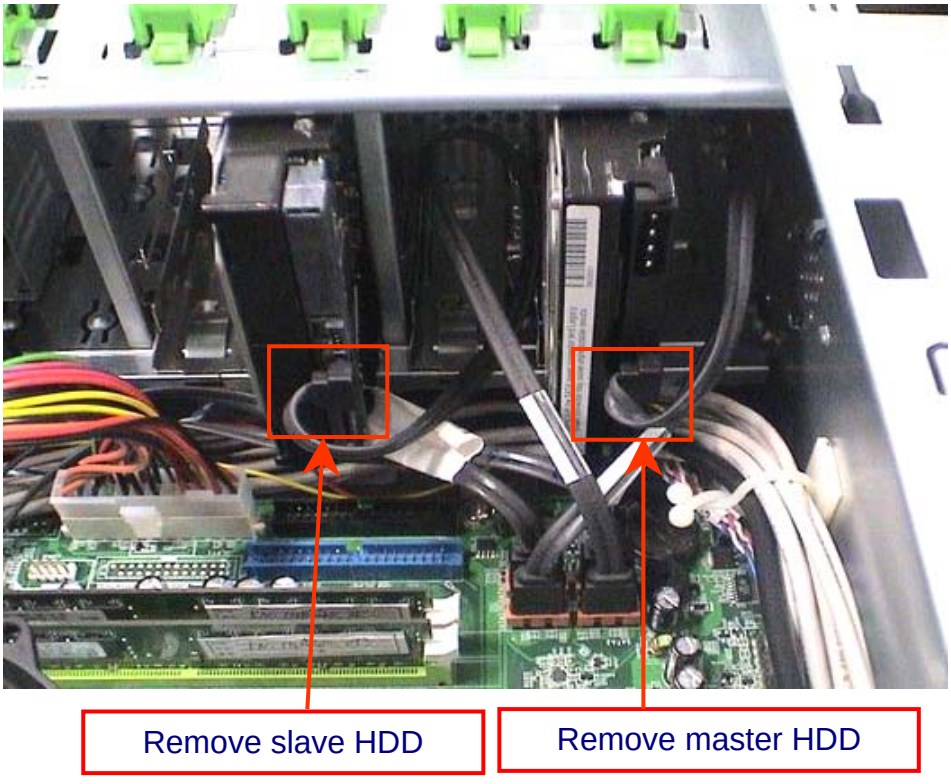
Slot 1	Slot 2
TV Card	N
N	Modem Card
1394 Card	N
Lan Card	N
TV Card	Modem Card
TV Card	1394/Lan Card
1394 /Lan card	Modem Card
Lan Card	1394 Card

Remove HDD Data Cables

Process:

1. Remove master HDD from M/B SATA1.
2. Remove slave ODD data cable from M/B SATA3.

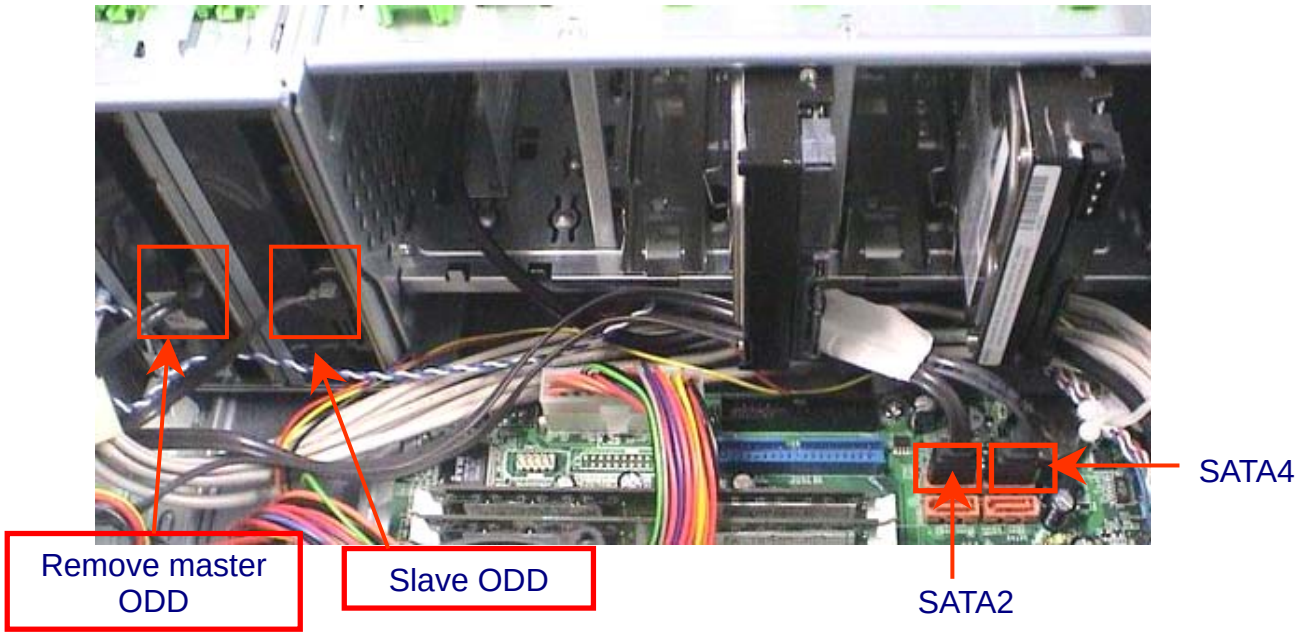




Remove ODD DATA cable

Process:

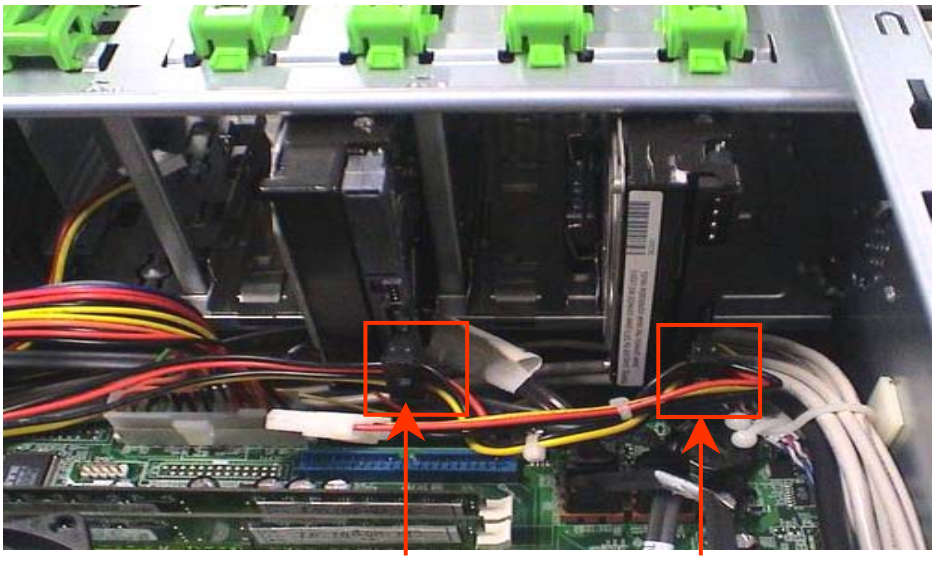
1. Remove master ODD data cable from Master ODD.
2. Remove slave ODD data cable from master and Slave ODD (Optional by SKU)



Remove HDD power cable

Process:

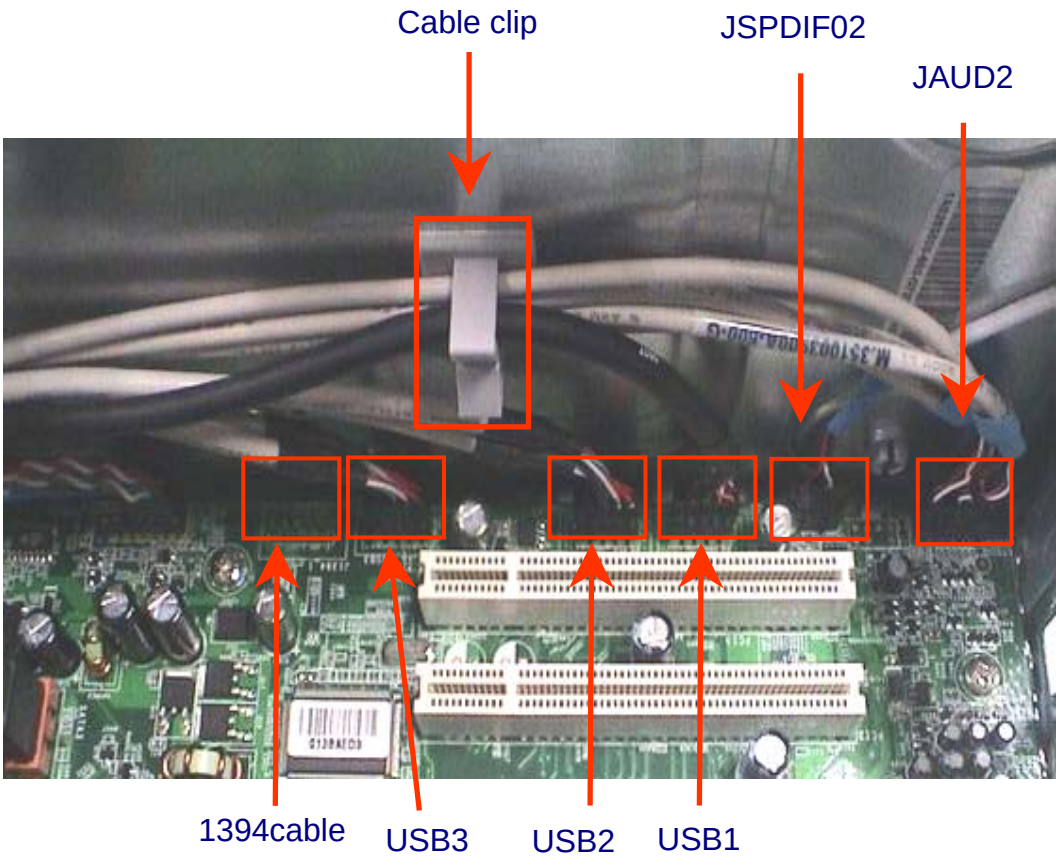
1. Remove master HDD data cable from master HDD.
2. Remove slave HDD data cable from slave HDD.



Remove Cables

Process:

1. Remove front audio cable from M/B “JAUD2”
2. Remove SPDIF cable from M/B” JSPDIF02”
3. Remove front USB cable from USB2 and USB3.
4. Remove card reader USB cable from USB1.
5. Release cable clip (no modem and audio cable is longer).



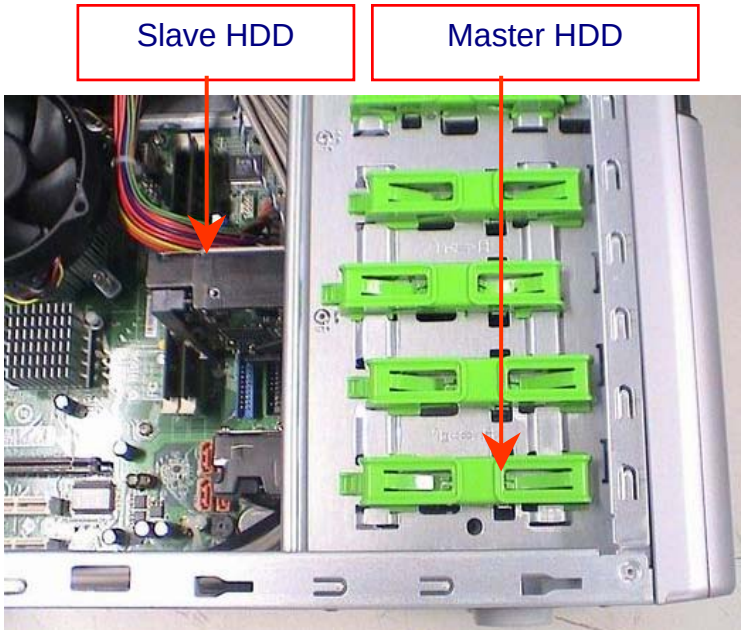
Notice:

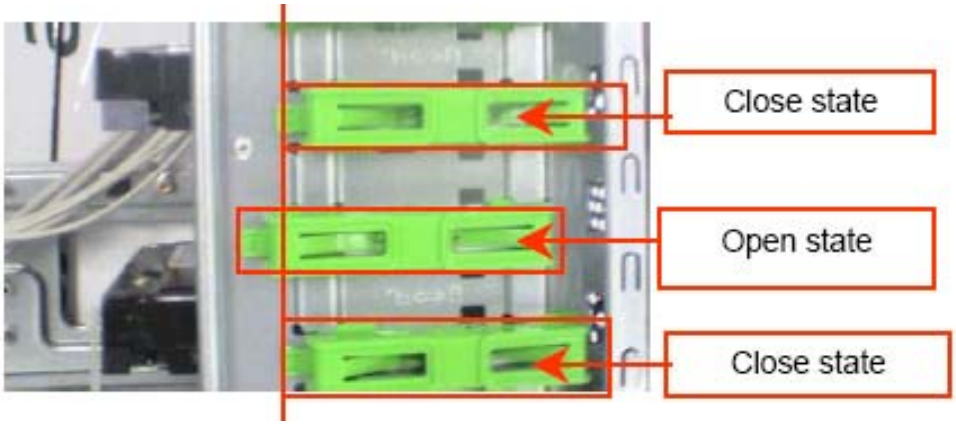
I. Front panel USB cable must be always connect to M/B USB2 and USB3 port whether has card reader.

Remove HDD

Process:

1. Remove Master HDD from the first HDD location.
2. Remove Slave HDD from the second HDD location. (Optional by SKU)

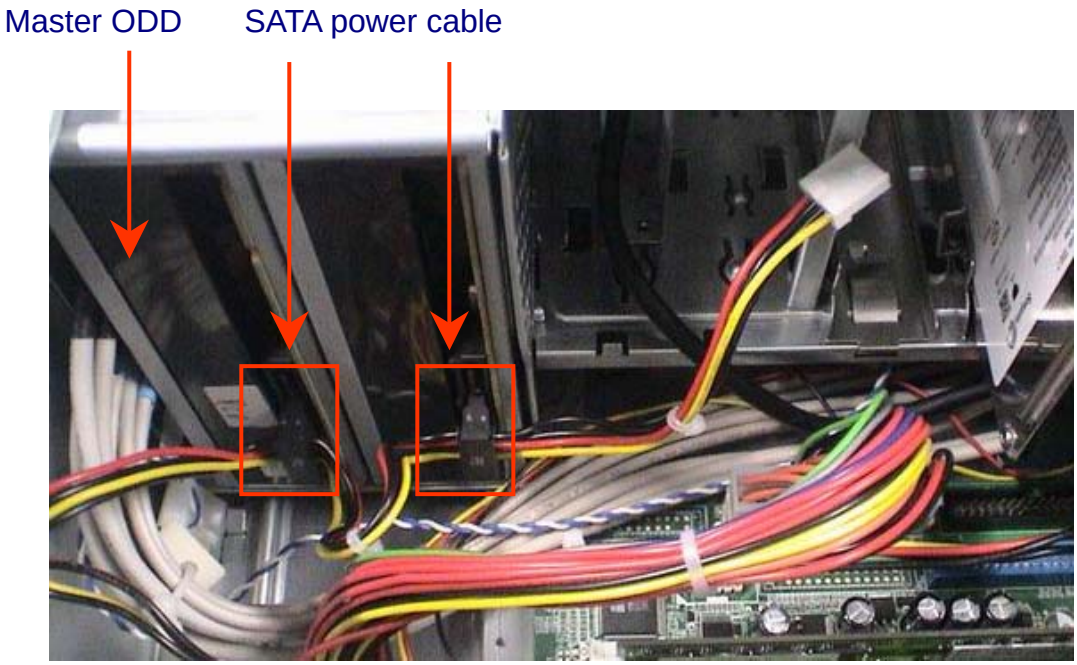




Remove ODD power cable

Process:

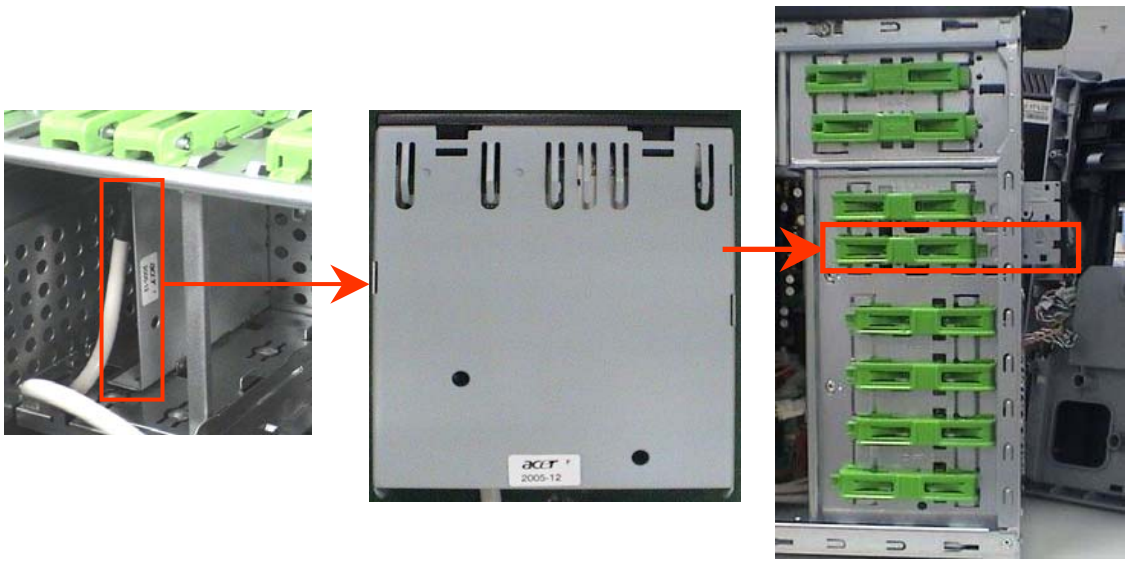
1. Remove ODD power cable from master ODD (for SATA ODD).
2. Remove ODD power cable from slave ODD (for SATA ODD).



Remove card reader

Process:

1. Remove card reader from chassis.

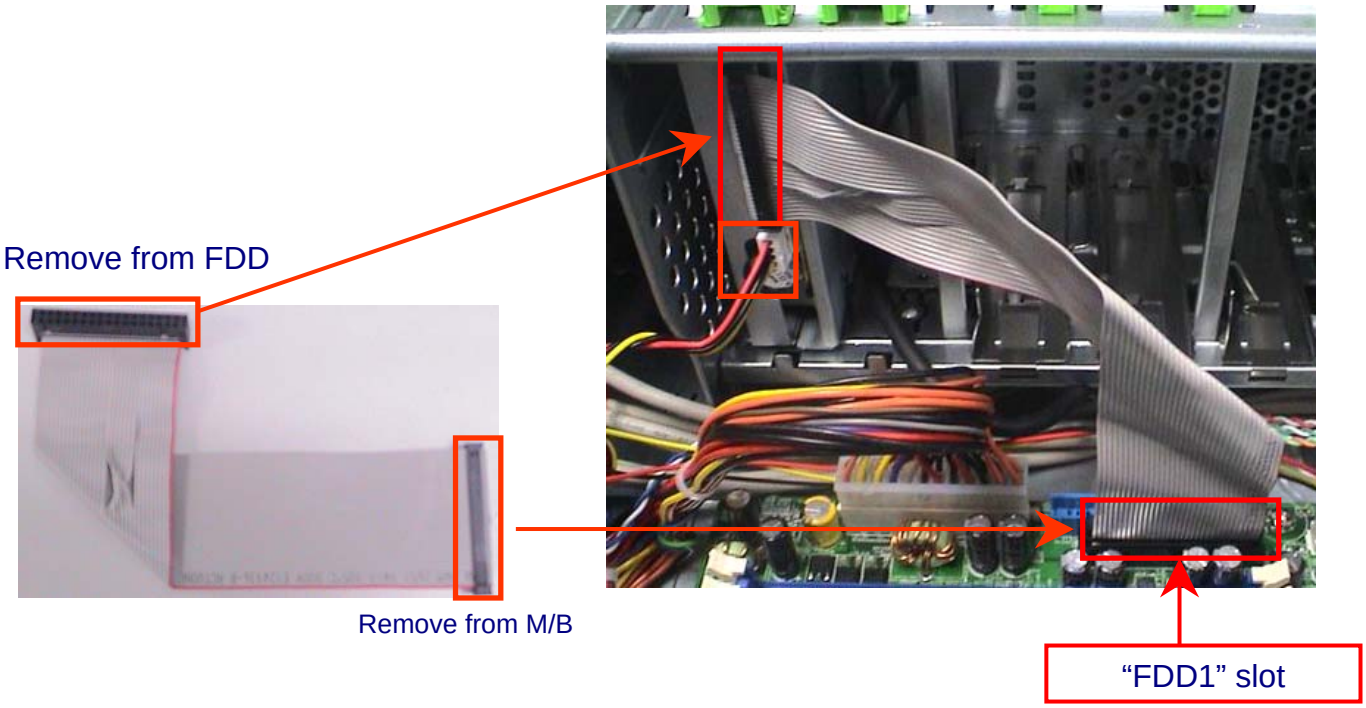


Remove FDD Cable

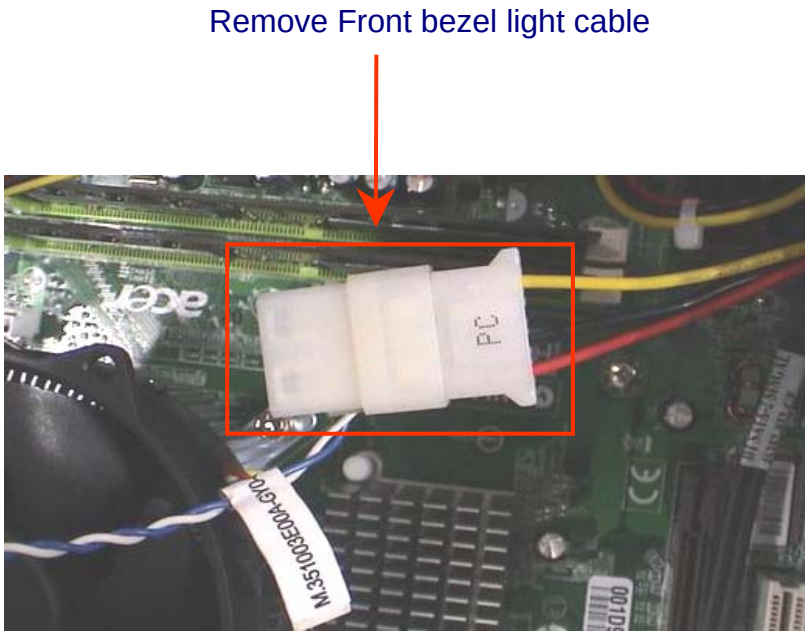
Process:

1. Remove FDD digital cable just as pictures (Optional by SKU).

2. Plug 4 pins power cord from FDD slot.



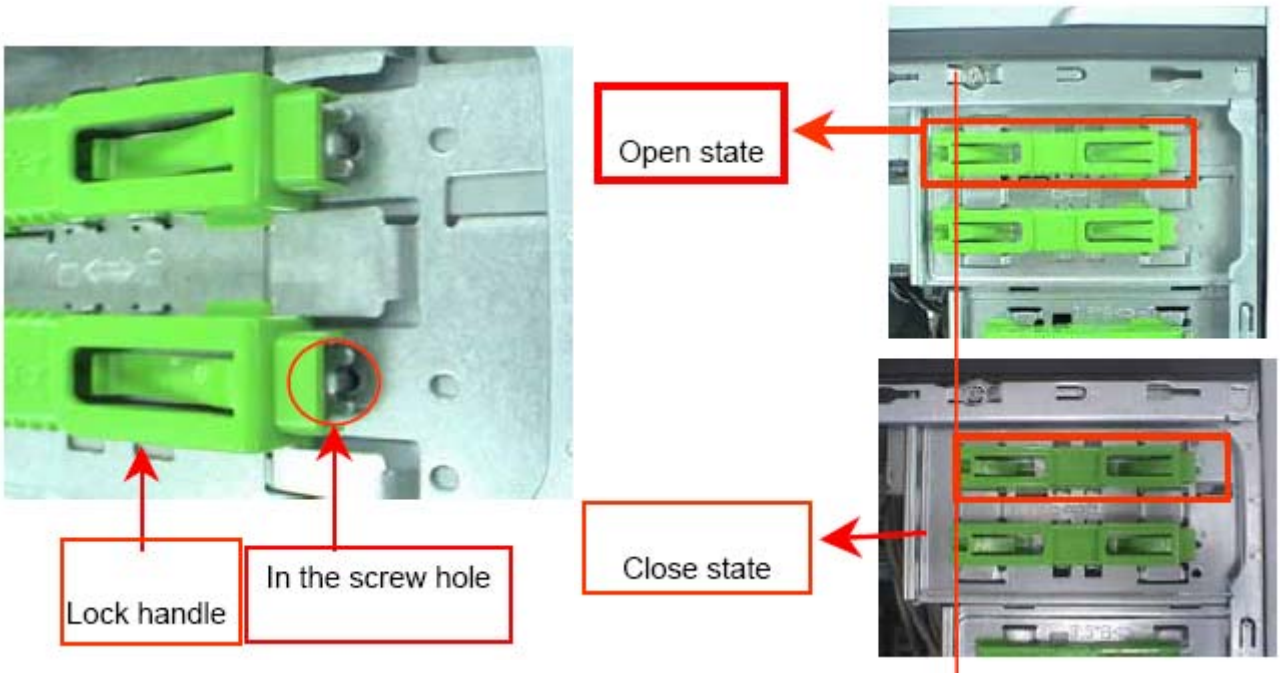
3. Remove front bezel light cable from PATA power cable

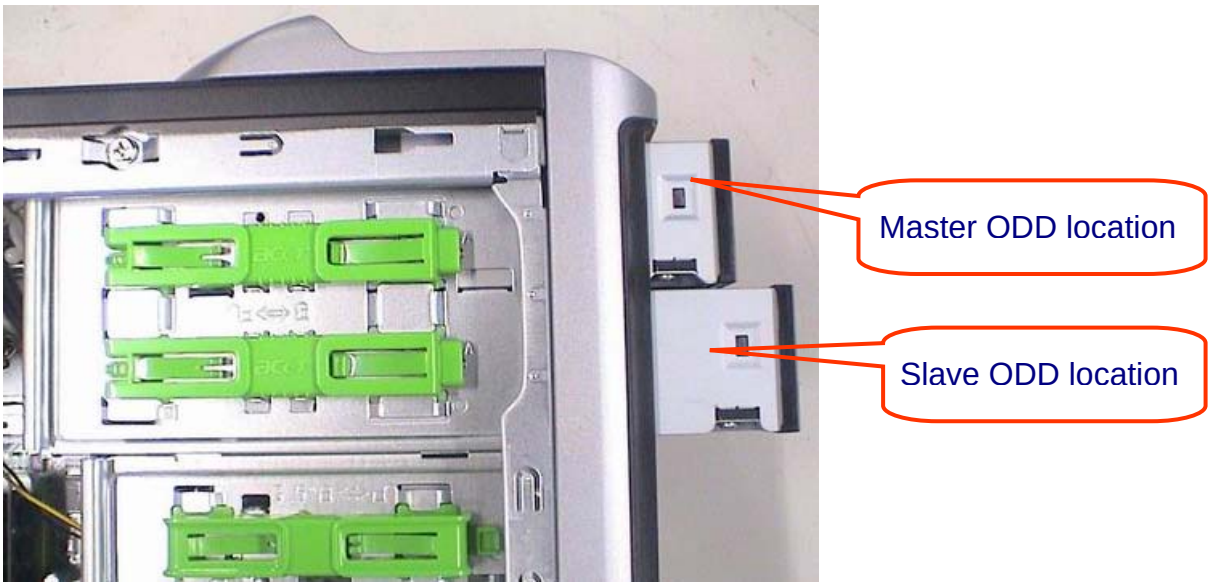


Remove ODD

Process:

1. Push the lock handle release ODD.
2. Remove Master ODD from the location.
3. Remove slave ODD from the location. (Optional by SKU)

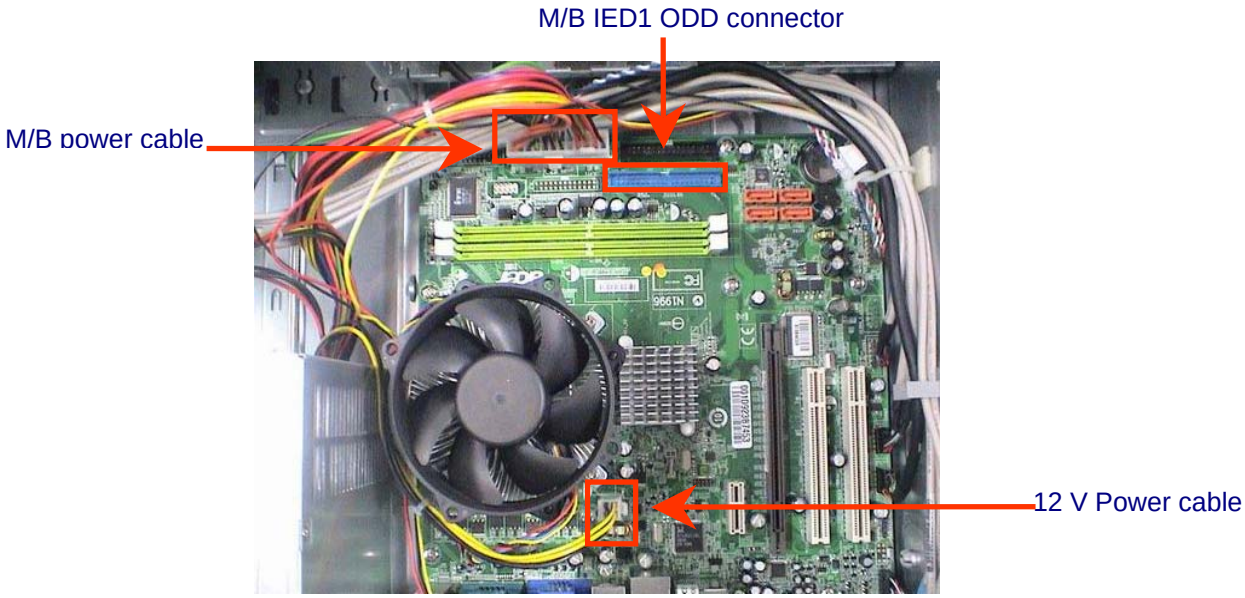




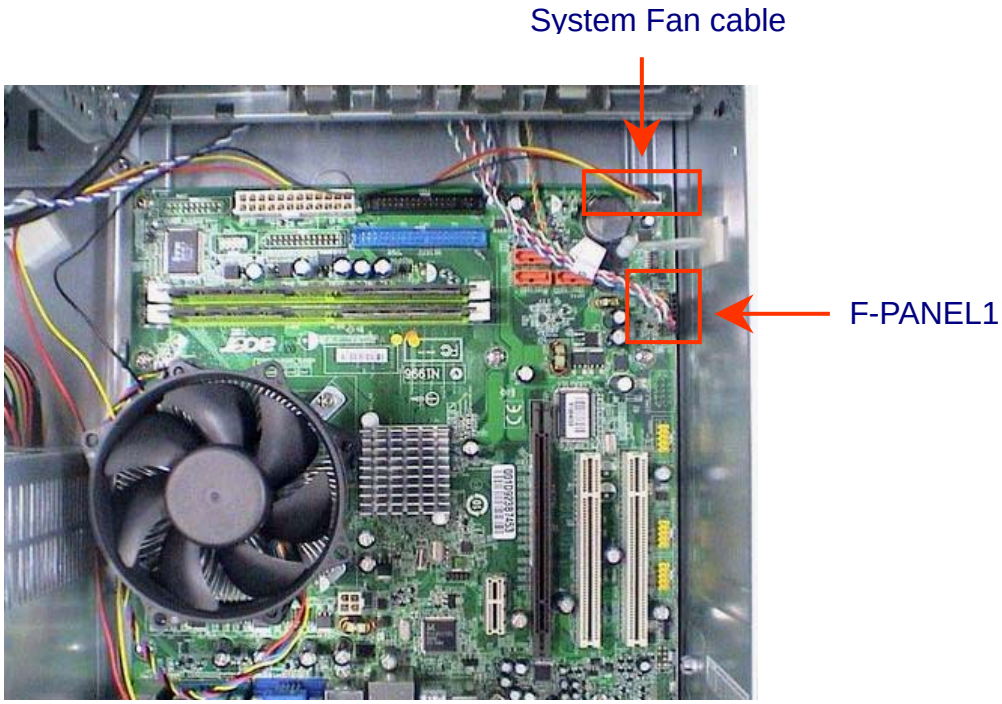
Remove Cables

Process:

1. Remove M/B power cable from M/B “ATX1”.
2. Remove 12 V power cable from M/B” JPW1”



3. Remove panel power cable from” F-PANEL1”.
4. Remove System Fan cable from M/B”SYS-F2”.

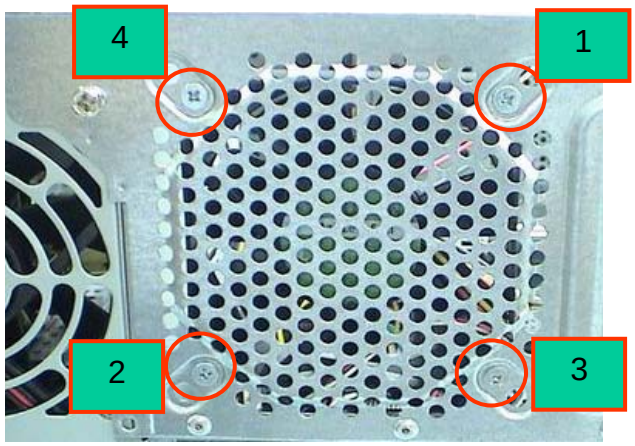


Remove System FAN

Process:

1. Release four screws according to the following picture.
2. Remove Sys FAN (Optional by SKU)

Release four screws.

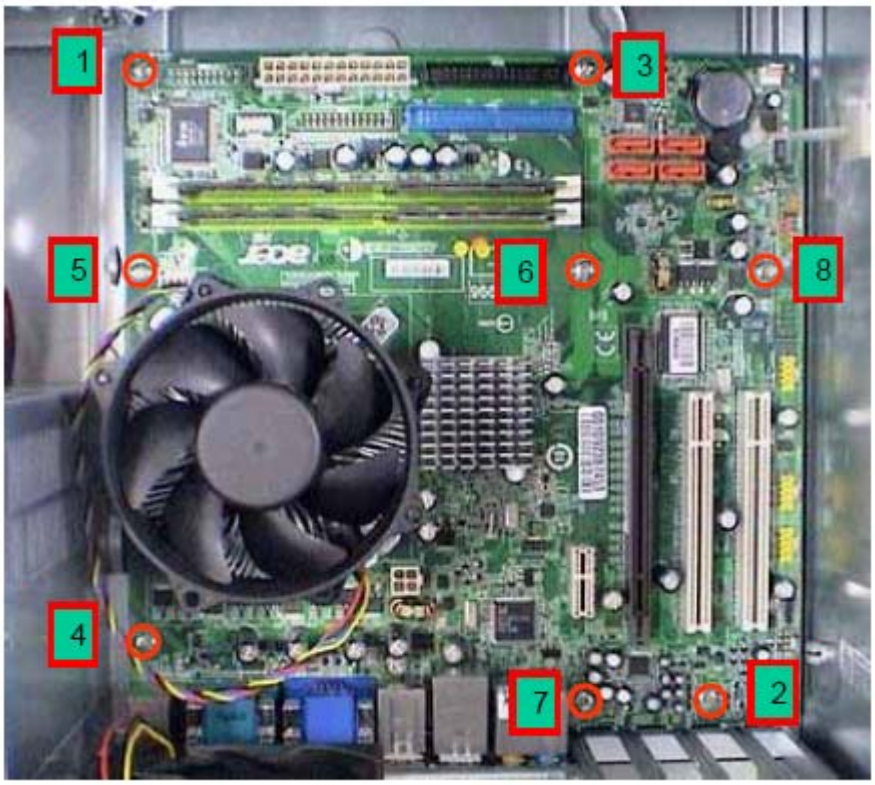


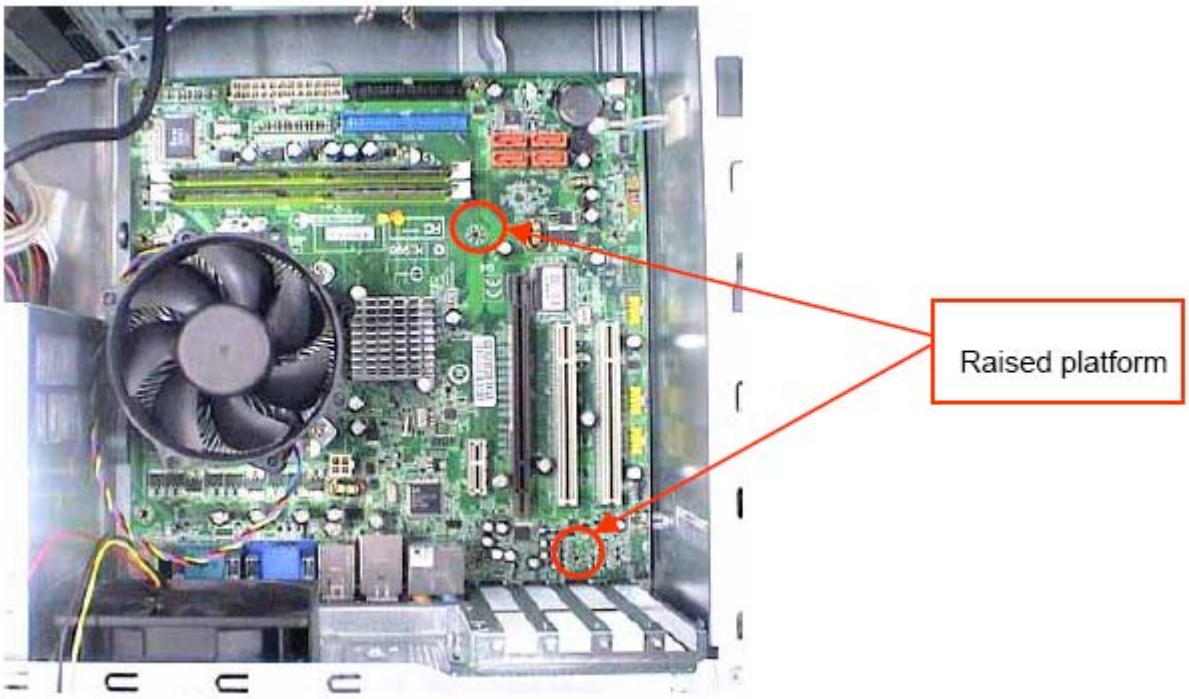
The direction of System FAN

Remove mother board

Process:

1. Release 8 pcs screws form the corresponding hole.
2. Release screws according to the following picture in turn.
3. Remove the Mother board from chassis.

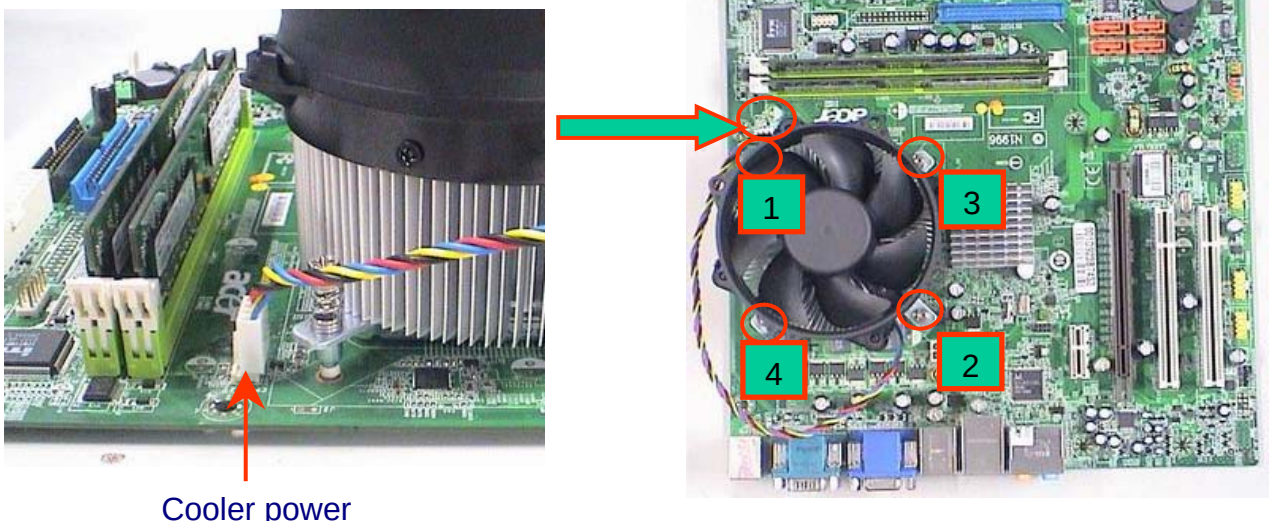




Remove CPU cooler

Process:

1. Remove cooler power cable from M/B “CPU-F2”.
2. Release screw 1 first, then fixes screw 2, screw 3 & screw 4 (As Picture).
3. Remove Cooler from the Retention module.



Remove memory

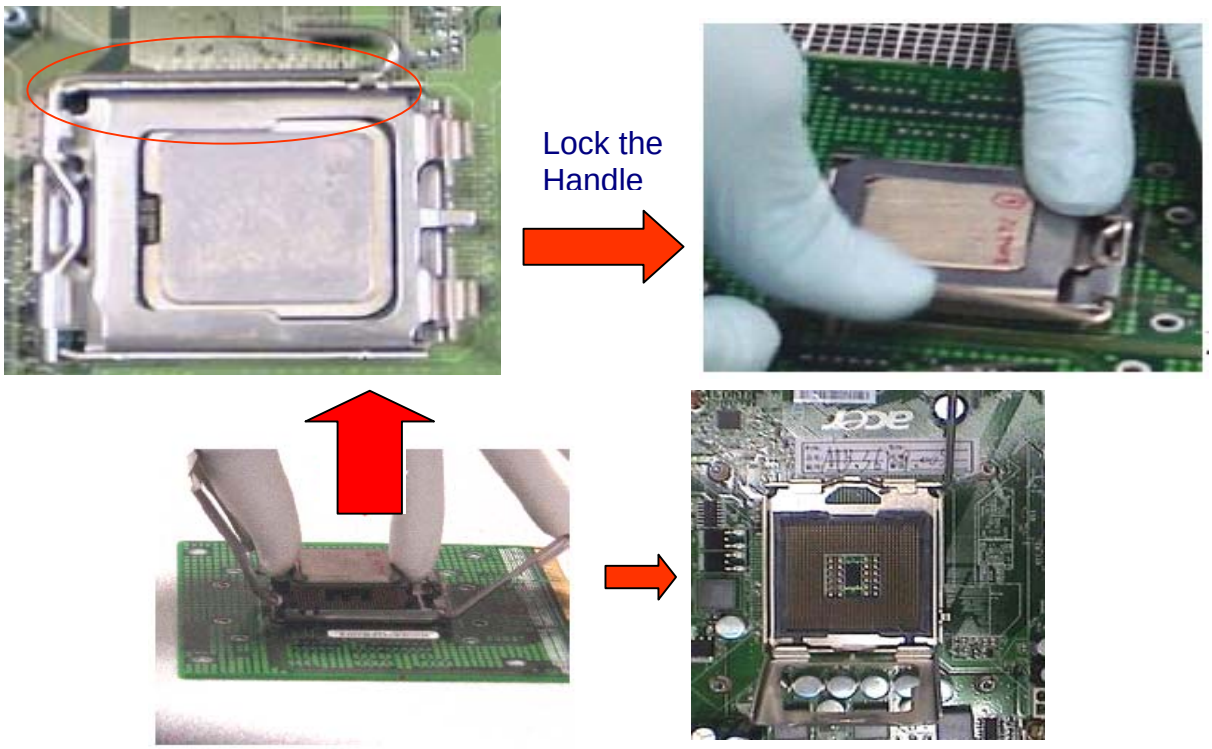
Process:

1. Remove the first Memory from DIMM.
2. Remove the second Memory from DIMM2 (Optional by SKU).

Remove CPU

Process:

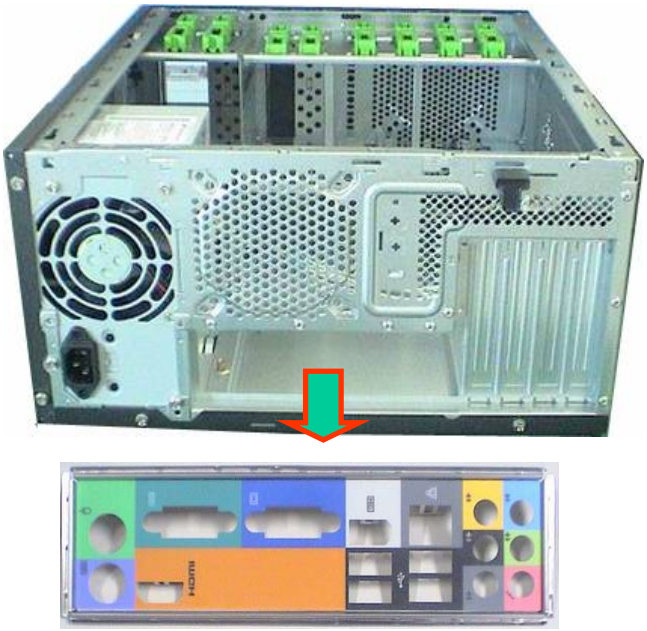
1. Remove CPU according following the pictures.



Remove I/O shielding

Process:

1. Remove I/O Shielding.



Troubleshooting

Please refer to generic troubleshooting guide for troubleshooting information relating to following topics:

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

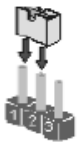
Jumper and Connector Information

Jumper Setting

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

Setting Jumper

Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

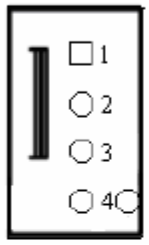
Description	Illustration
The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.	 SHORT OPEN
This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT	

Clear CMOS

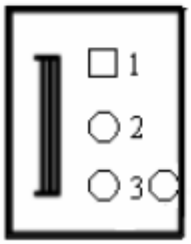
Jumper	Type	Description	Setting(Default)	Illustration
CLR_CMOS	3-pin	CLEAR CMOS	1-2 : Clear 2-3 : Normal Before clearing the CMOS,make sure to turn off the system	Clear CMOS  1

Checking Connector

CPU_FAN: CPU Cooling Fan Connector

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

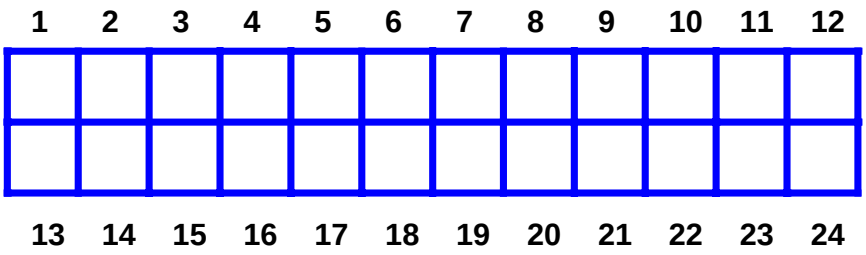
SYS_FAN/PWR_FAN: FAN Power Connectors

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

ATX12V: ATX 12V Power Connector

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

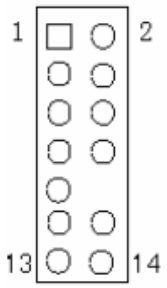
ATX_POWER: ATX 24-pin Power Connector



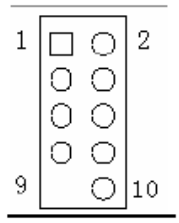
Pin	Signal Name	Pin	Signal Name
1	+3.3	13	+3.3V
2	+3.3	14	-12V
3	COM	15	COM
4	+5V	16	PS_ON
5	COM	17	COM
6	+5V	18	COM
7	COM	19	COM
8	PWR OK	20	-5V
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	COM

Front Panel Header

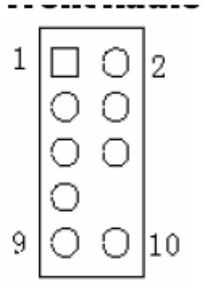
The front panel header (PANEL1) provides a standard set of switch and LED connectors commonly found on ATX or Micro ATX cases. Refer to the table below for information:

Illustration	Pin	Signal	Pin	Signal
	1	5V_SYS	2	GPIO_GRN_HDR_R
	3	HDD_LED_R	4	GPIO_YLW_HDR_R
	5	GND	6	PSIN
	7	ICH_SYS_RSTJ	8	GND
	9	5V_SYS	10	KEY
	11	NC	12	5V_SB
	13	NC	14	LAN_ACTJ

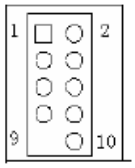
Front USB

Illustration	Pin	Signal	Function	Pin	Signal	Function
	1	VREG_FP_USBPWR0	Front panel USB power(Ports 0,1)	2	VREG_FP_USBPWR0	Front panel USB power(Ports 0,1)
	3	USB_FP_P0-	Front panel USB Port 0 Negative Signal	4	USB_FP_P1-	Front panel USB Port 1 Negative Signal
	5	USB_FP_P0+	Front panel USB Port 0 Positive Signal	6	USB_FP_P1+	Front panel USB Port 1 Positive Signal
	7	GROUND		8	GROUND	
	9	KEY		10	GROUND	

Front Audio

Illustration	Pin	Signal Name	Pin	Signal Name
	1	MIC2-L	2	AUD_GND
	3	MIC2-R	4	AUD_PRESENCE_L
	5	LINE2-R	6	MIC2-JD
	7	FRONT-IO-SENSE	8	KEY
	9	LINE2-L	10	LINE2-JD

Front 1394

Illustration	Pin	Signal Name	Pin	Signal Name
	1	TPA+	2	TPA-
	3	GROUND	4	GROUND
	5	TPB+	6	TPB-
	7	+12V(FUSED)	8	+12V(FUSED)
	9	KEY	10	GROUND

Aux_In

Illustration	Pin	Signal Name	Pin	Signal Name
	1	CD_IN_L	2	GROUND
	3	GROUND	4	CD_IN_R
	5	KEY		

Intruder

Pin	Signal Name	Pin	Signal Name
1	INTRUDERJ	2	GROUND

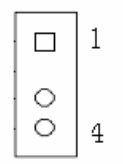
J3(for requested)

Pin	Signal Name	Pin	Signal Name
1	AGPIO1	2	GROUND

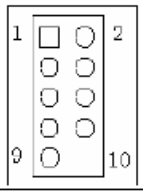
J4(for requested)

Pin	Signal Name	Pin	Signal Name
1	AGPIO2	2	GROUND

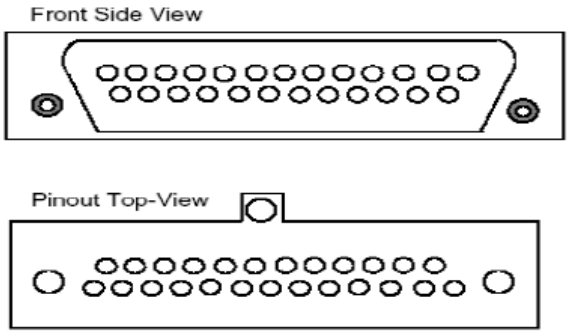
SPDIF_OUT

Illustration	Pin	Signal Name	Pin	Signal Name
	1	5V_SYS	2	KEY
	3	SPDIF_OUT	4	GND

IRDA(Reserved)

Illustration	Pin	Signal Name	Pin	Signal Name
	1	5V_SB	2	IR_26
	3	SIO_RSMRSTJ	4	RESETCONJ
	5	IR_20	6	IR_27
	7	IR_RE	8	IR_21
	9	GND	10	KEY

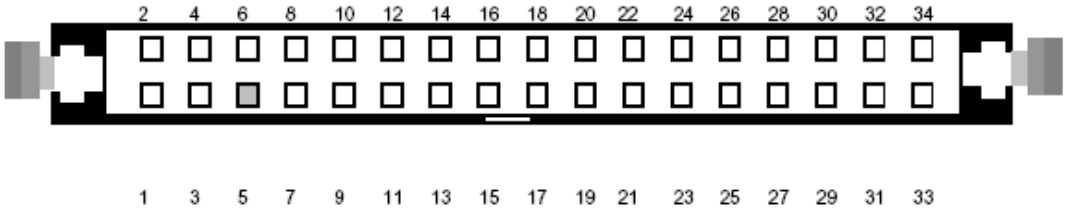
LPT



Pin	Signal Name	Pin	Signal Name
1	STROBE	14	ALF
2	PD0	15	ERROR
3	PD1	16	INIT
4	PD2	17	SLCTIN
5	PD3	18	GROUND
6	PD4	19	GROUND
7	PD5	20	GROUND
8	PD6	21	GROUND
9	PD7	22	GROUND
10	ACK	23	GROUND
11	BUSY	24	GROUND
12	PE	25	GROUND
13	SLCT		

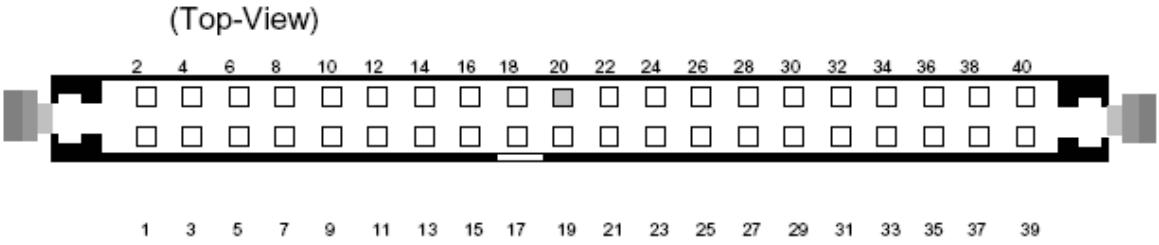
FDD

(Top-View)



Pin	Signal Name	Pin	Signal Name
1	Ground	2	DRVDEN0
3	Ground	4	HDL-
5	Keypin	6	DS3-
7	Ground	8	INDEX-
9	Ground	10	MTR0-
11	Ground	12	DS0-
13	Ground	14	DS1-
15	Ground	16	MTR1-
17	Ground	18	DIR-
19	Ground	20	STEP-
21	Ground	22	WDATA
23	Ground	24	WGATE-
25	Ground	26	TRK0-
27	Ground	28	WP-
29	Ground	30	RDATA
31	Ground	32	HDSEL-
33	Ground	34	DSKCHG-

IDE1



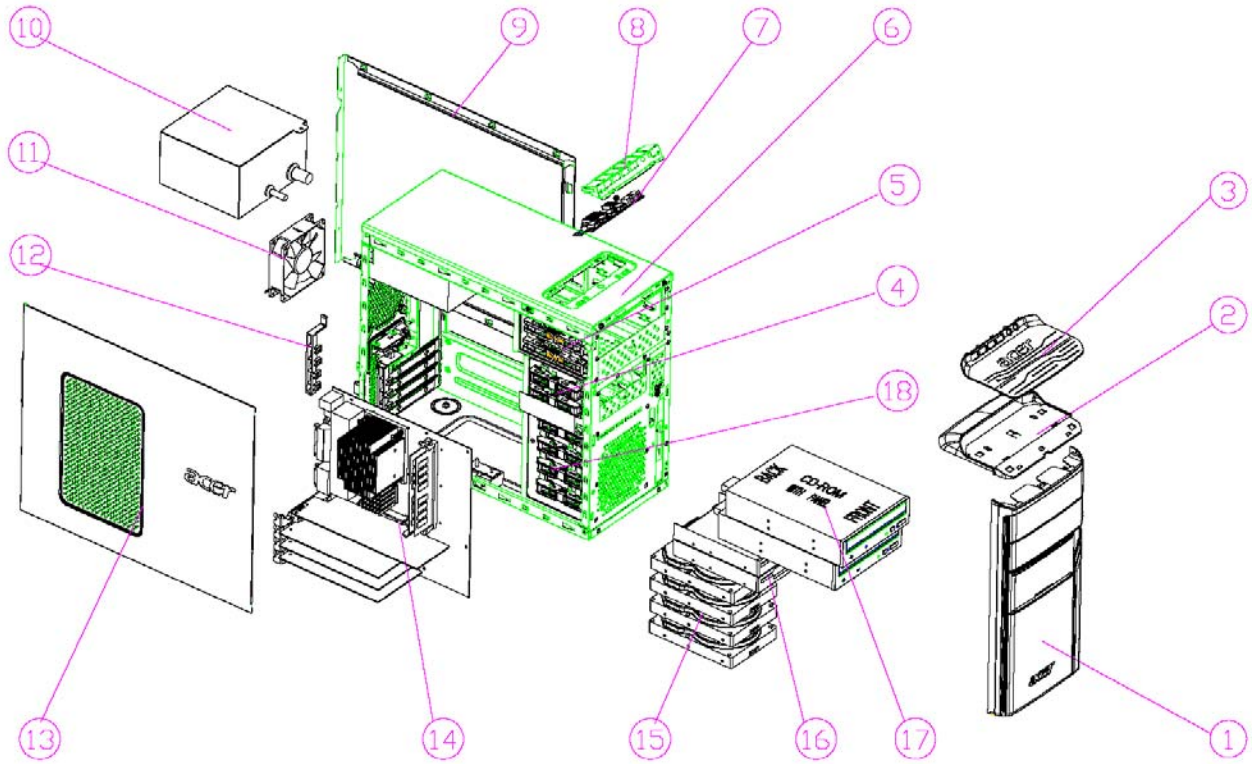
Pin	Signal Name	Pin	Signal Name
1	RESET-	2	Ground
3	DD7	4	DD8
5	DD6	6	DD9
7	DD5	8	DD10
9	DD4	10	DD11
11	DD3	12	DD12
13	DD2	14	DD13
15	DD1	16	DD14
17	DD0	18	DD15
19	Ground	20	Keypin
21	DMARQ	22	Ground
23	DIOW-	24	Ground
25	DIOR-	26	Ground
27	IORDY	28	PSYNC:CSEL
29	DMACK-	30	Ground
31	INTRQ	32	IOCS16-
33	DA1	34	PDIAG-
35	DA0	36	DA2
37	CS1FX-	38	CS3FX-
39	DASP-	40	Ground

FRU (Field Replaceable Unit) List

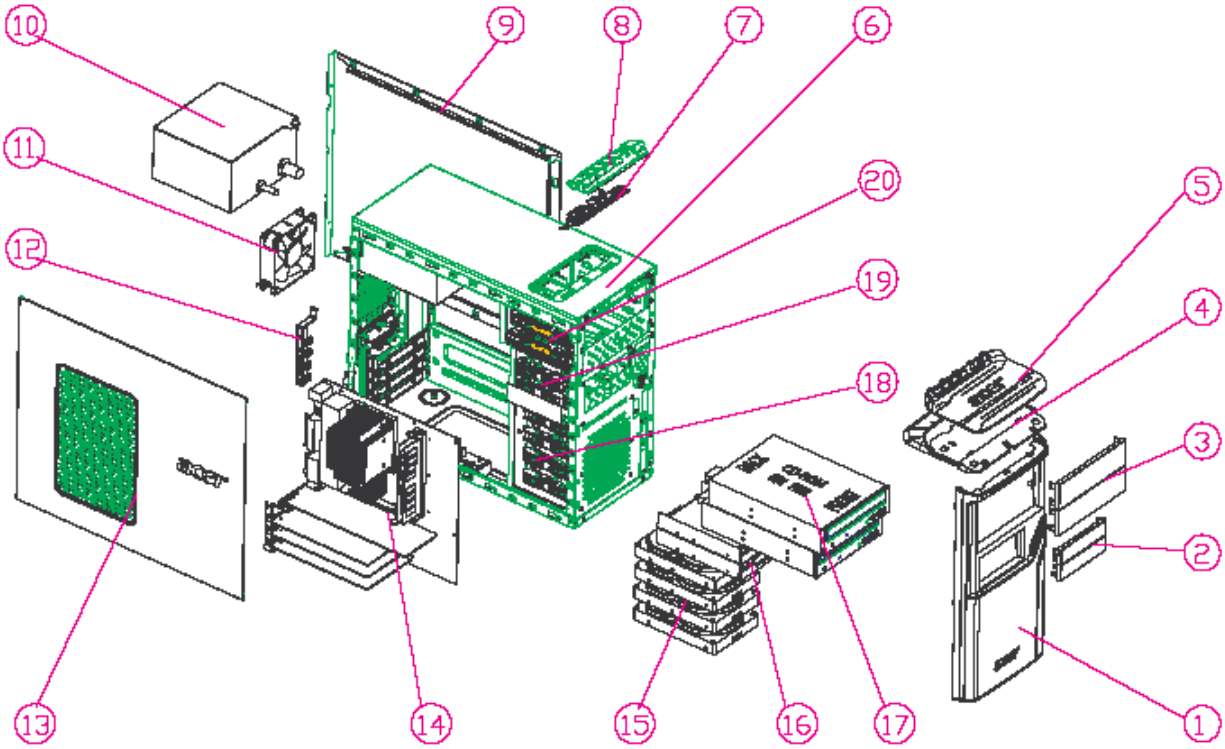
This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of **Aspire M5640/3640/1640**. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

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.

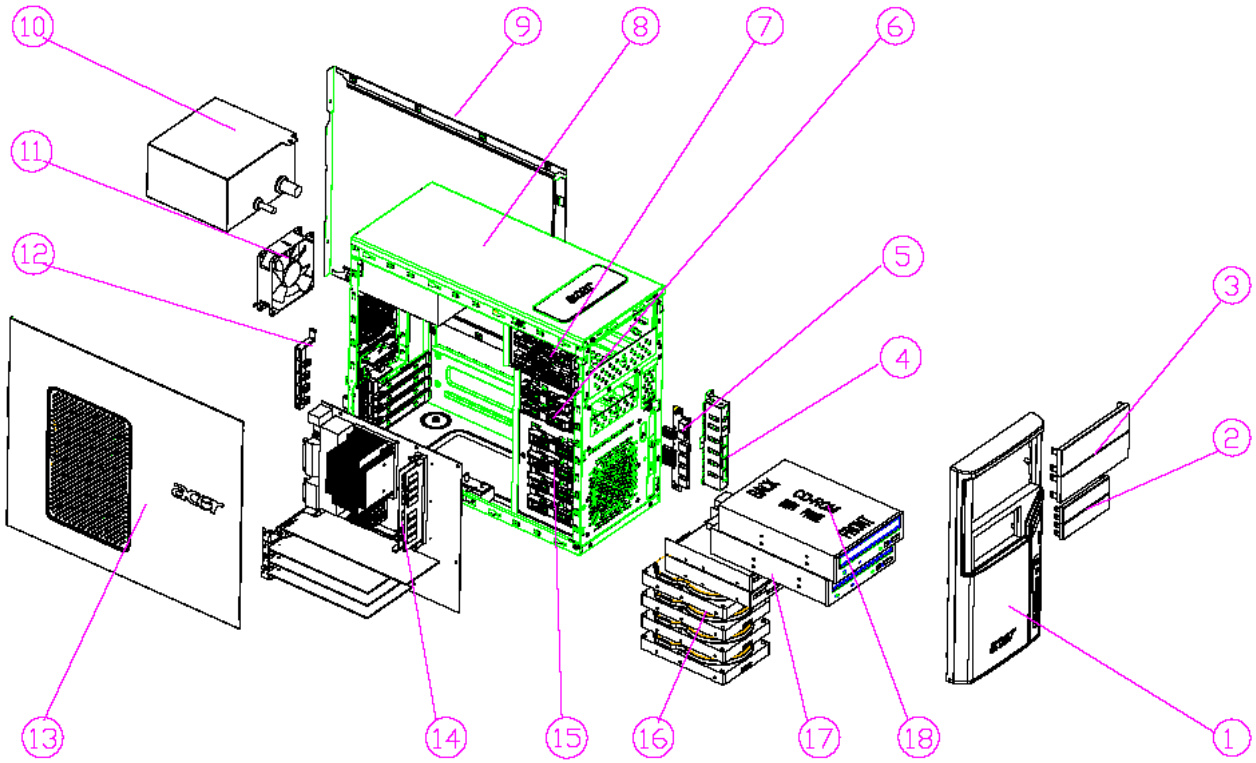
Exploded Diagram



NO	DESCRIPTION	NO	DESCRIPTION
1	AM50_MAIN_BEZEL	10	POWER SUPPLY
2	AM50_USB	11	FAN
3	AM50_USB_PANEL	12	PCI-BRACKET
4	FDD_LOCK_SLIDE	13	LEFT SIDE DOOR
5	CD_ROM LOCK SLIDE	14	HOTHER BOARD
6	CHASSIS	15	HDD
7	USB_PCB_ASN	16	3.5 DEVICE
8	USB-SHIELDING	17	CD-ROM
9	RIGHT SIDE DOCR	18	HDD-LOCK-SLIDE



NO	DESCRIPTION	NO	DESCRIPTION
1	AM30-MAIN-BEZEL	11	FAN
2	3-25-COVER	12	PCI-BRACKET
3	5-25-COVER	13	LEFT SIDE DOOR
4	AM30-USB	14	NOTHERBOARD
5	AM30-USB-PENEL	15	HDD
6	CHASSIS	16	3.5' DEVICE
7	USB-PCE-ASN	17	CD-ROM
8	USB-SHTELDING	18	HDD-LOCK-SLIDE
9	RIGHT SIDE DOOR	19	FDD-LOCK-SLTDE
10	POWER SUPPLY	20	CD-ROM LOCK SLIDE



NO	DESCRIPTION	NO	DESCRIPTION
1	AM10_MAIN_BEZEL	11	FAN
2	3.25-COVER	12	PCI-BRACKET
3	5.25-COVER	13	LEFT SIDE DOOR
4	USB-SHIELDING	14	MOTHERBOARD
5	USB-PCB-ASM	15	HDD-LOCK-SLIDE
6	FDD-LOCK-SLIDE	16	HDD
7	CD-ROM LOCK SLIDE	17	3.5’ DEVICE
8	CHASSIS	18	CD-ROM
9	RIGHT SIDE DOOR	19	
10	POWER SUPPLY	20	