

***VeritonM670G/M670/  
S670G/S670  
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

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## ***Revision History***

Please refer to the table below for the updates made on VeritonM670G/M670/S670G/S670 service guide.

| <b>Date</b> | <b>Chapter</b> | <b>Updates</b> |
|-------------|----------------|----------------|
|             |                |                |
|             |                |                |
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## ***Conventions***

The following conventions are used in this manual:

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

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## ***Preface***

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

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

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## ***System Specifications***

### ***Features***

#### ***Operating System***

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

#### ***Processor***

- Socket Type: Intel® Socket T LGA 775 pin
- Processor Type:
  - Intel Conroe/Kensfield/Wolfdale/Yorkfield processor FSB  
1333/1066/800 MHz

#### ***Chipset***

- Intel Q45+ ICH10DO

#### ***PCB***

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

#### ***Memory***

- 512MB / 1GB / 2GB DDR3 /1066/800 Un-buffered Non-ECC DIMM support
- Support single channel 64 bit mode with maximum memory size up to 8GB
- Support un-buffered DIMM (Intel Q35/Q33)
- DIMM Slot: 4
- Memory Max: 512MB to 8GB DDR2 memory technologies

#### ***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

### ***SATA***

- Slot Type: SATA slot
- Slot Quantity: 6
- Storage Type support:
  - HDD/CD-ROM/CD-RW/DVD-ROM/DVD-RW/DVD+RW/DVD  
Dual/DVD SuperMulti Plus/

### ***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: ICH10DO



- 
- 10M/100M/1000M LAN
  - PHY: Intel Boazman 82567LM PCI-E Giga LAN

### ***USB***

- Controller Type: Intel ICH10DO
- Ports Quantity: 12
  - 6 back panel ports
  - On-board: 3 2\*5 headers
  - 4 ports for front daughter board
  - 2 ports reserved
  - Connector Pin: standard Intel FPIO pin definition
- Data transfer rate support:
  - USB 2.0/1.1

### ***BIOS***

- BIOS Type: Phoenix Award or AMI Kernel with Acer skin
- Size: 32Mb
- 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 8720 (F stepping or after; must full support Intel platform)

### ***Rear I/O Connector***

- 1 PS/2 Keyboard port,
- 1 PS/2 Mouse port
- 1 serial port
- 1 D-Sub VGA port

- 
- 1 DVI-D VGA port
  - 1 RJ45 LAN port
  - 6 USB ports
  - 7.1 channel phone jack (6 audio jacks)

### ***On-board connectors***

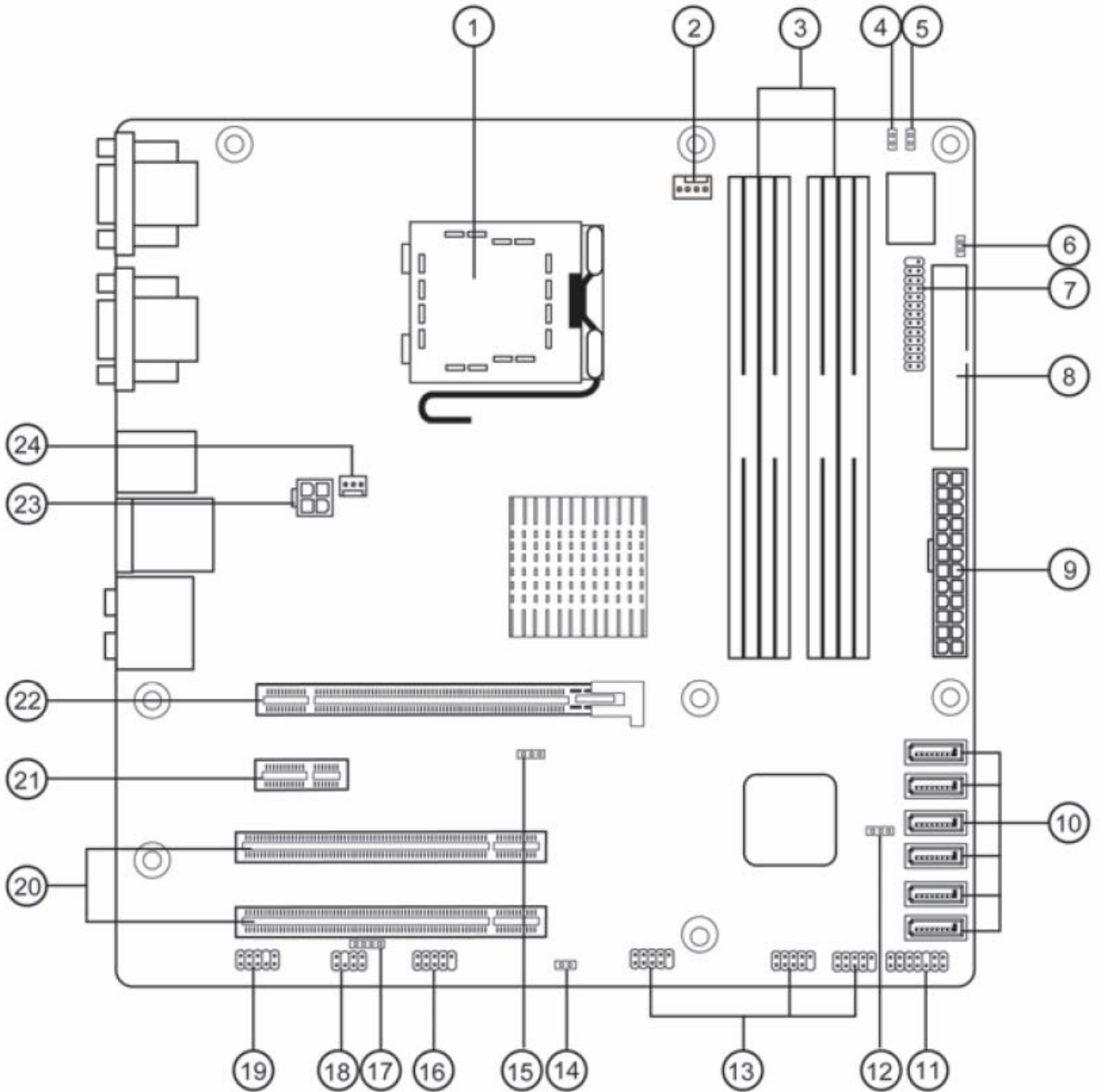
- 1 LGA 775 CPU socket
- 4 DDR3 memory sockets
- 1 PCI Express x16 slot
- 1 PCI Express x 1 slot
- 2 PCI slot
- 1 FDD slot
- 6 SATAII connectors
- 3 2\*5 pin Intel FPIO specification USB pin connectors (follow Intel FPIO standard Specification)
- 1 2\*5 pin Intel FPIO spec. Microphone In/ Headphone Out pin connectors
- 1 serial port 2\*5 pin connector (2nd serial port)
- 1 2\*4 pin internal speaker header
- 1 4 pin CPU Fan connector
- 1 3 pin System FAN connector with linear circuit
- 1 2pin Intrusion Alarm connector
- 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
- 1 2pin OBR header
- 2 reserved 2pin GPIO connector
- Color management for on board connector (pls refer to Acer spec)

- 
- 1 x LTP 2\*13pin header
  - 1 2x5pin Front Audio header
  - 1 3pin ME enable/disable connector (with 1 jumper)

### ***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

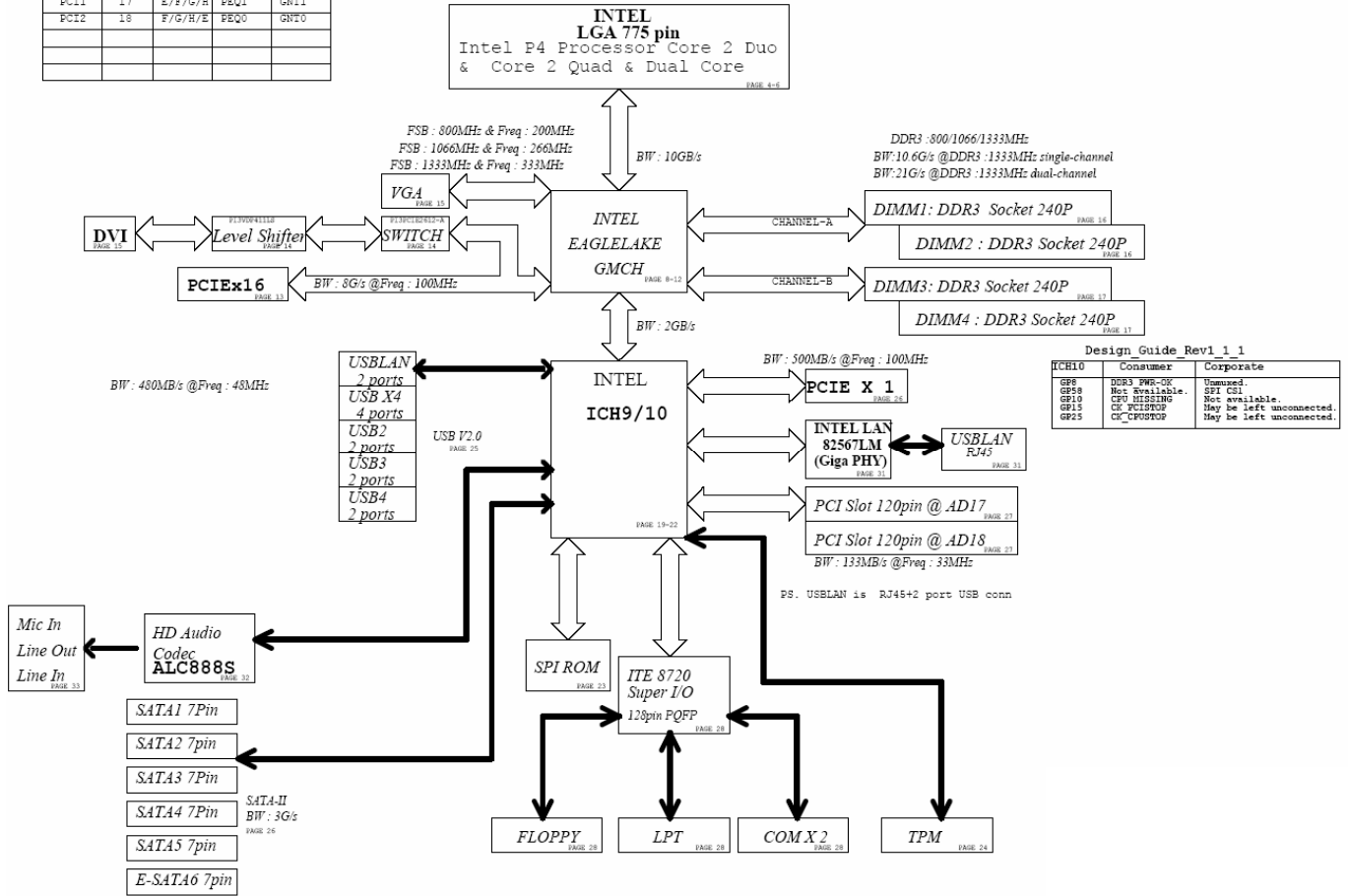


# Table of Motherboard Components

| LABEL           | COMPONENTS  |
|-----------------|---|
| 1. CPU Socket   | LGA775 socket for Intel <sup>®</sup> Kentsfield/<br>Yorkfield/Wolfdale/Core <sup>™</sup> 2 Duo CPUs |
| 2. CPU_FAN      | CPU cooling fan connector   |
| 3. DIMM1~4      | 240-Pin DDR3 SDRAM slots<br>(Channel A: DIMM1, DIMM2 Channel B: DIMM3, DIMM4)                       |
| 4. OBR          | One button recovery jumper  |
| 5. GPIO1        | General Purpose Input/Output 1  |
| 6. GPIO2        | General Purpose Input/Output 2  |
| 7. PRINTER      | Onboard parallel port header  |
| 8. FDD1         | Floppy disk drive connector   |
| 9. ATX POWER1   | Standard 24-pin ATX power connector   |
| 10. SATA1~6     | Serial ATA connectors   |
| 11. F_PANEL     | Front panel switch/LED header   |
| 12. ME_DISABLE  | ME Disable jumper   |
| 13. F_USB1~3    | Front panel USB headers   |
| 14. C_INTRUSION | Chassis detect header   |
| 15. CLR_CMOS    | Clear CMOS jumper   |
| 16. COM2        | Onboard serial port header  |
| 17. SPDIF_OUT   | SPDIF out header  |
| 18. INT_SPK     | Speaker header  |
| 19. F_AUDIO     | Front panel audio header  |
| 20. PCI1~2      | 32-bit add-on card slots  |
| 21. PCIEX1      | PCI Express x1 slot   |
| 22. PCIE1       | PCI Express slot for graphics interface   |
| 23. ATX12V1     | Auxiliary 4-pin power connector   |
| 24. SYS_FAN     | System cooling fan connector  |

# Block Diagram

| DEVICE | IDSEL | INT#    | REQ# | GN#  |
|--------|-------|---------|------|------|
| PCI1   | 17    | E/F/G/H | PEQ1 | GNF1 |
| PCI2   | 18    | F/G/H/E | PEQ0 | GNF0 |
|        |       |         |      |      |
|        |       |         |      |      |

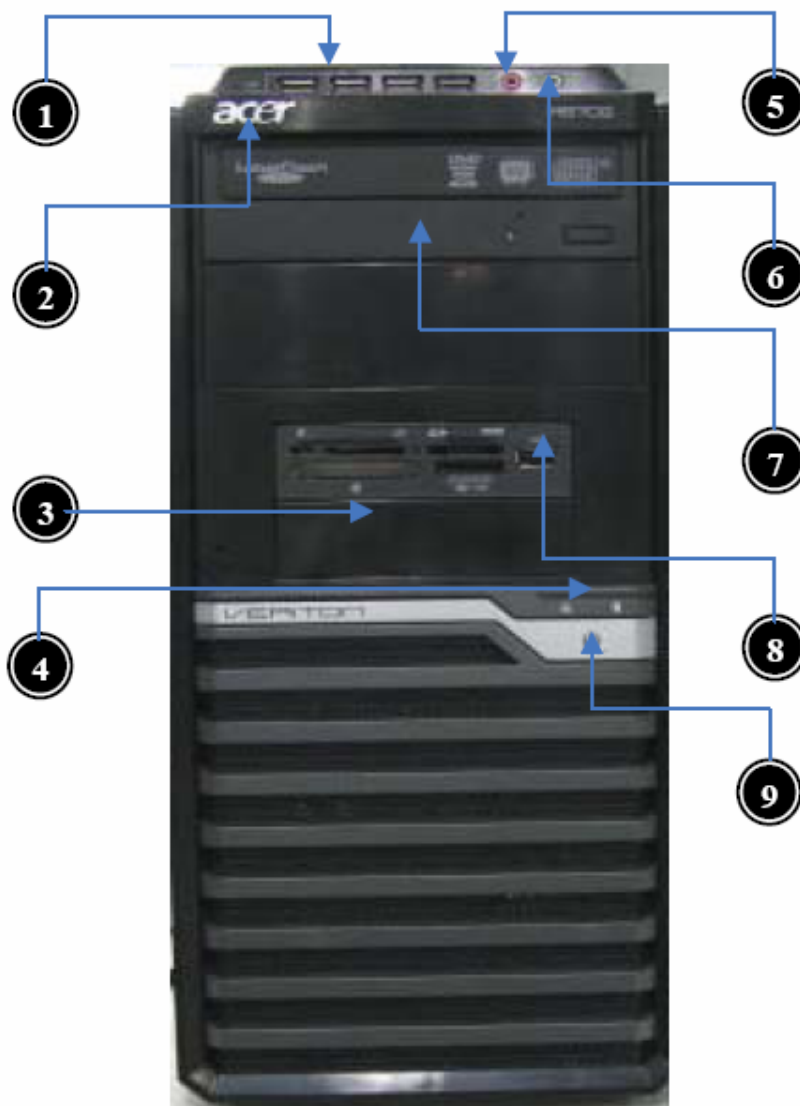


Design Guide Rev1.1.1

| ICH10 | Consumer       | Corporate                |
|-------|----------------|--------------------------|
| SPB   | DDR3 PWS-CR    | Unused                   |
| SP58  | Not Available. | SPI CS1                  |
| SP10  | CFU MISSING    | Not available            |
| SP15  | CK_WCISTOP     | May be left unconnected. |
| SP25  | CK_CPUSSTOP    | May be left unconnected. |

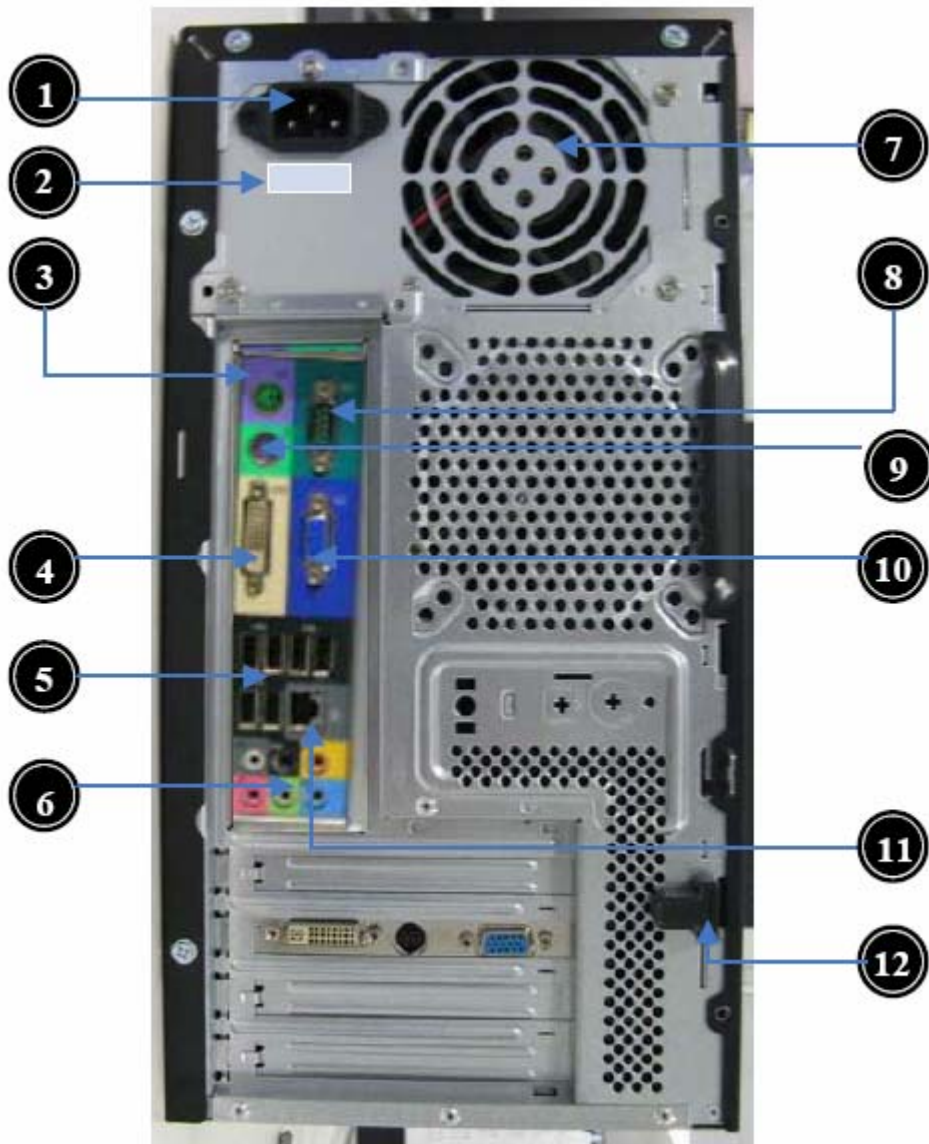
PCB : 244 x 244 x 1.6 mm ; 4 layers

## VeritonM670G/ M670 Front Panel



| Label | Description     |
|-------|-----------------|
| 1     | USB ports       |
| 2     | ACER Logo       |
| 3     | FDD cover       |
| 4     | LEDs            |
| 5     | MIC connector   |
| 6     | Audio connector |
| 7     | Optical drive   |
| 8     | Card reader     |
| 9     | Power Button    |

## VeritonM670G/ M670 Rear Panel

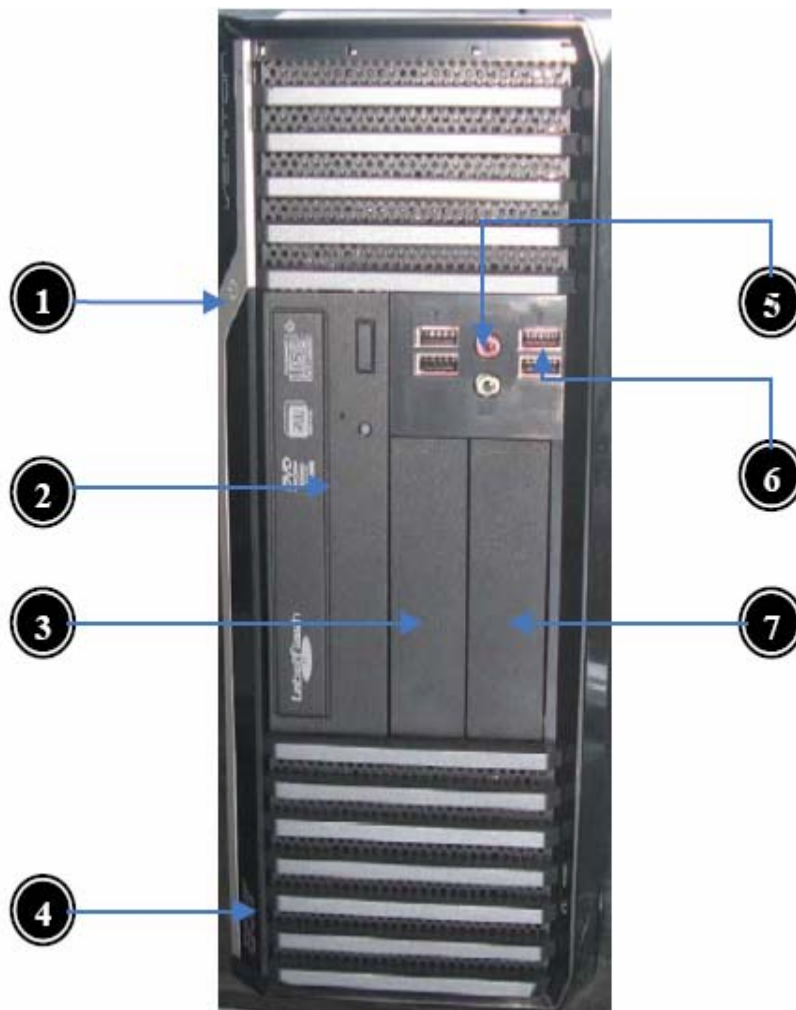


| Label | Description             | Label | Description          |
|-------|-------------------------|-------|----------------------|
| 1     | Power card socket       | 8     | Printer connector    |
| 2     | Voltage selector switch | 9     | PS/2 mouse connector |
| 3     | PS/2 keyboard connector | 10    | Monitor connector    |
| 4     | DVI port                | 11    | LAN connector        |
| 5     | USB 2.0 ports           | 12    | Lock Handle          |
| 6     | Audio connector         |       |                      |
| 7     | Fan aperture            |       |                      |



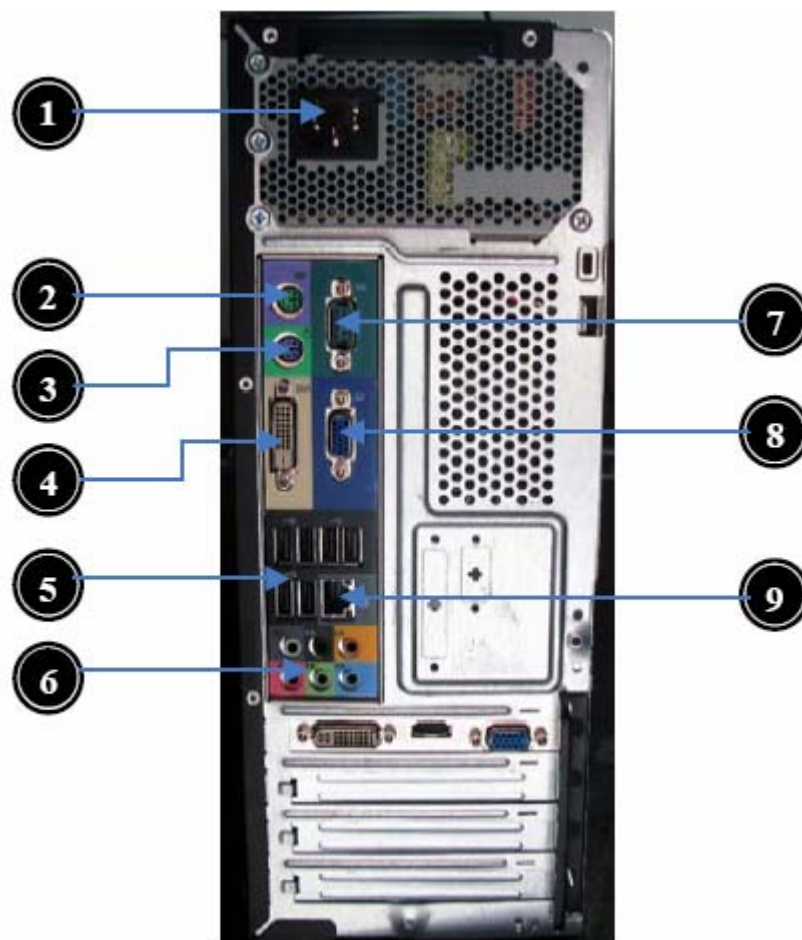
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## ***VeritonS670G/S670 Front Panel***



| <b>Label</b> | <b>Description</b> |
|--------------|--------------------|
| 1            | Power Button       |
| 2            | Optical drive      |
| 3            | FDD cover          |
| 4            | ACER Logo          |
| 5            | Audio connector    |
| 6            | USB ports          |
| 7            | Card reader        |

## VeritonS670G/S670 Rear Panel



| Label | Description             | Label | Description       |
|-------|-------------------------|-------|-------------------|
| 1     | Power card socket       | 6     | Audio connector   |
| 2     | PS/2 keyboard connector | 7     | Com connector     |
| 3     | PS/2 mouse connector    | 8     | Monitor connector |
| 4     | DVI port                | 9     | LAN connector     |
| 5     | USB 2.0 ports           | 10    |                   |

---

# ***Hardware Specifications and Configurations***

## ***Processor***

| <b>Item</b>             | <b>Specification</b>  |
|-------------------------|---|
| Type                    | Processor Type: Intel Conroe /Kensfield /Wolfdale /Yorkfield processor FSB 1333/1066/800 MHz CPUs |
| Socket                  | LGA 775 pin   |
| FSB                     | 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***

| <b>Item</b>                        | <b>Specification</b>   |
|------------------------------------|--|
| BIOS code programmer               | Phoenix Award or AMI Kernel with Acer skin   |
| BIOS version                       | V6.0   |
| BIOS ROM type                      | SPI Flash  |
| BIOS ROM size                      | 32Mb   |
| Support protocol                   | SMBIOS (DMI) 2.4/DMI 2.0 (log file)  |
| Device Boot Support                | - 1st priority: SATA HDD<br>- 2nd priority: CD-ROM<br>- 3rd priority: FDD<br>- 4th priority: LAN<br>- 5th priority: USB device |
| Support to LS-120 drive            | YES  |
| Support to BIOS boot block feature | YES  |

## ***BIOS Hotkey List***

| <b>Hotkey</b> | <b>Function</b>          | <b>Description</b>   |
|---------------|--------------------------|--|
| Del           | Enter BIOS Setup Utility | Press while the system is booting to enter BIOS Setup Utility. |

---

## ***Main Board Major Chips***

| <b>Item</b>          | <b>Specification</b>                                    |
|----------------------|---|
| North Bridge         | Intel Q35 and Q33                                       |
| South Bridge         | Intel ICH9DO/ICH9                                       |
| APG controller       | Intel Q45   |
| Super I/O controller | ITE 8718  |
| Audio controller     | HD audio codec ALC888S HD codec 7.1 (co-lay with LC888) |
| LAN controller       | Intel Boazman 82567LM PCI-E Giga LAN                    |
| HDD controller       | Intel ICH10DO   |
| Keyboard controller  | Super I/O ITE 8720                                      |

## ***Memory Combinations***

| <b>Slot</b>                     | <b>Memory</b>   | <b>Total Memory</b> |
|---------------------------------|-----------------|---------------------|
| Slot 1                          | 512MB, 1GB, 2GB | 512MB~2GB           |
| Slot 2                          | 512MB, 1GB, 2GB | 512MB~2GB           |
| Maximum System Memory Supported |                 | 512MB~8GB           |

## ***System Memory***

| <b>Item</b>                                    | <b>Specification</b>  |
|--|---|
| Memory slot number                             | 4 slot  |
| Support Memory size per socket                 | 512MB/1GB/2GB   |
| Support memory type                            | DDR3  |
| Support memory interface                       | DDR3 800/1066MHz  |
| Support memory voltage                         | 1.8V  |
| Support memory module package                  | 240-pin DDR3  |
| 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***

| <b>Item</b>            | <b>Specification</b>  |
|------------------------|---|
| Audio controller       | Intel ICH9DO/ICH9   |
| 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***

| <b>Item</b>                  | <b>Specification</b> |
|------------------------------|----------------------|
| SATA controller              | Intel ICH10DO        |
| SATA controller resident bus | PCI bus              |
| Number of SATA channel       | SATA X 6             |
| Support bootable CD-ROM      | YES                  |

---

## ***Floppy disk drive Interface***

| <b>Item</b>                               | <b>Specification</b>                |
|---|-------------------------------------|
| Floppy disk drive controller              | Super I/O ITE 8720                  |
| Floppy disk drive controller resident bus | ISA bus                             |
| Support FDD format                        | 360KB, 720KB, 1.2MB, 1.44MB, 2.88MB |

## ***USB Port***

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

## ***Environmental Requirements***

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

---

## ***Power Management***

| <b>Devices</b>     | <b>S1</b> | <b>S3</b> | <b>S4</b> | <b>S5</b> |
|--------------------|-----------|-----------|-----------|-----------|
| 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

---

## ***Power Management Function (ACPI support function)***

### ***Device Standby Mode***

- Independent power management timer for hard disk drive devices (0-15 minutes, time step=1 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: 3-5 sec.

### ***Global Standby Mode***

- Global power management timer (2-120 minutes, time step=10 minute).
- 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: 7-10 sec.

### ***Suspend Mode***

- Independent power management timer (2-120 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 colour.
- 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.
- On board device power management support.
- On board device configuration support.



---

# 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.

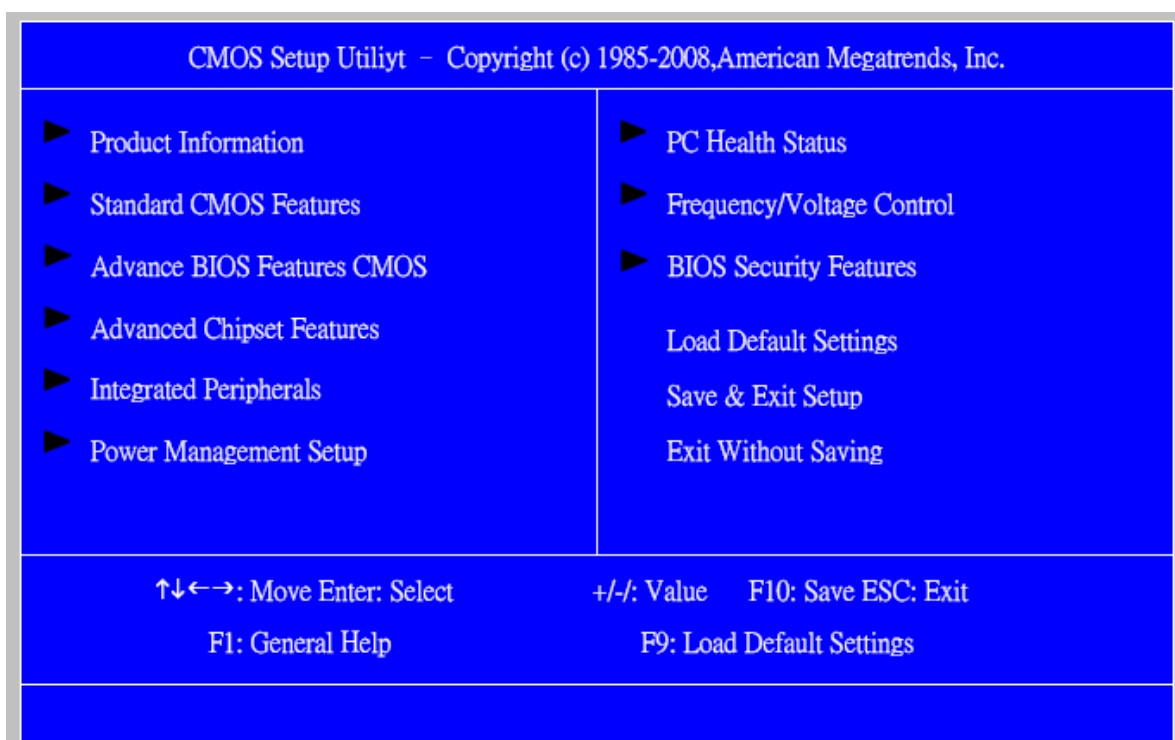
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## Entering Setup

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:



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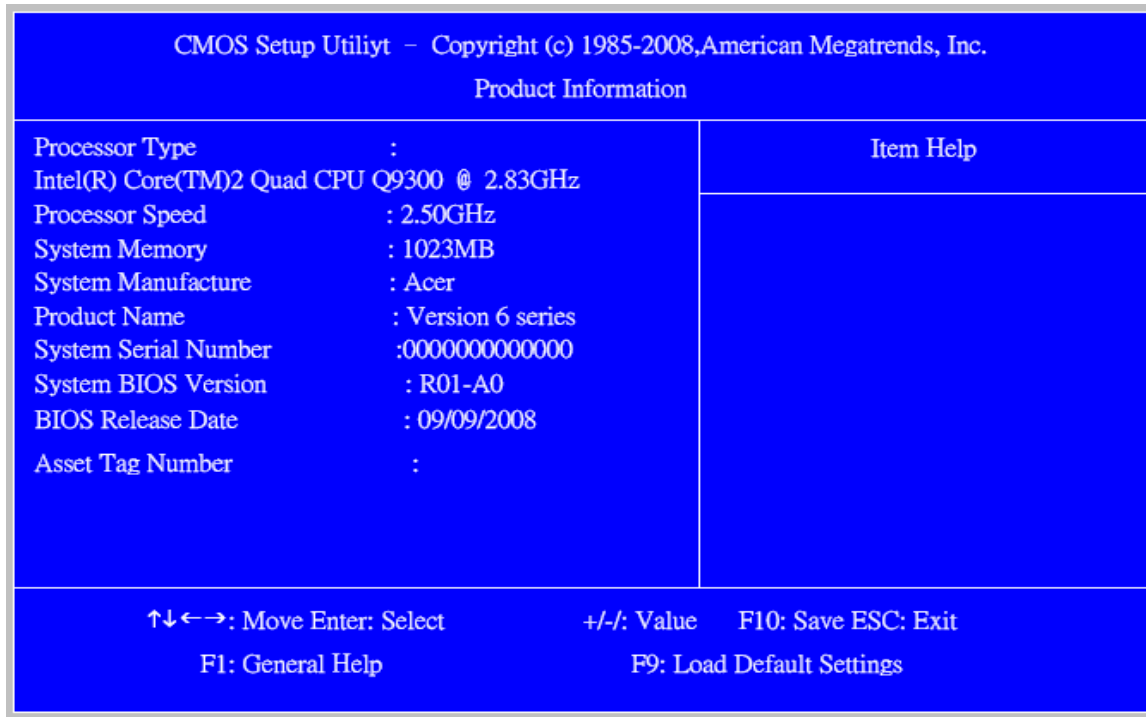
The items in the main menu are explained below:

| <b>Parameter</b>          | <b>Description</b>  |
|---------------------------|---|
| 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   |
| PC Health Status          | This setup page is the System auto detect Temperature, voltage, and fan speed   |
| Frequency/Voltage Control | This setup page is the System Frequency/Voltage setup   |
| BIOS Security Features    | Change, set or disable password. It allows you to limit access to the System  |
| Load Optimized Defaults   | Load Optimized Settings Default Settings indicates the value of the system parameters which the system would be in best performance configuration |
| 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).

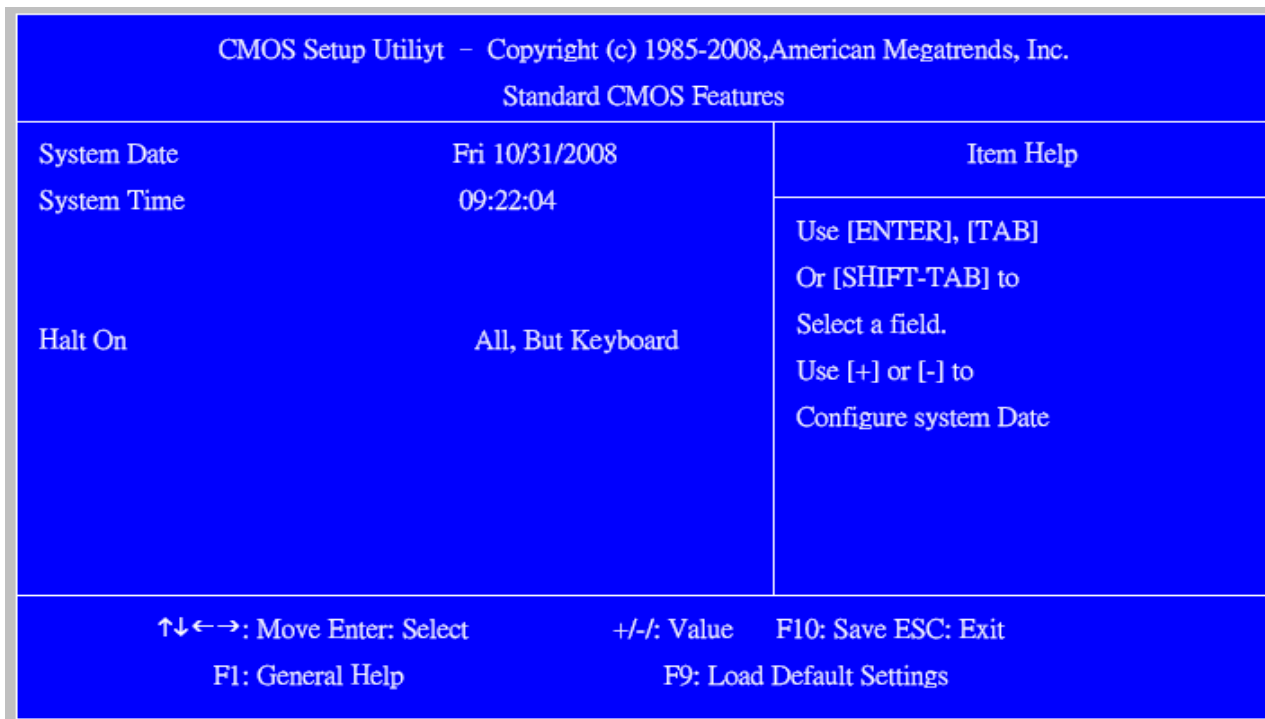


The following table describes the parameters found in this menu:

| Parameter            | Description  |
|----------------------|--|
| Processor Type       | This item lists the product processor model            |
| Processor Speed      | This item lists the processor frequency for the system |
| System Memory        | Total memory size for the system                       |
| Product Name         | This item lists the product name                       |
| Product Name         | This item lists the system BIOS version                |
| System Serial Number | This item lists the system serial number               |
| System BIOS Version  | This item lists the system BIOS version                |
| 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:

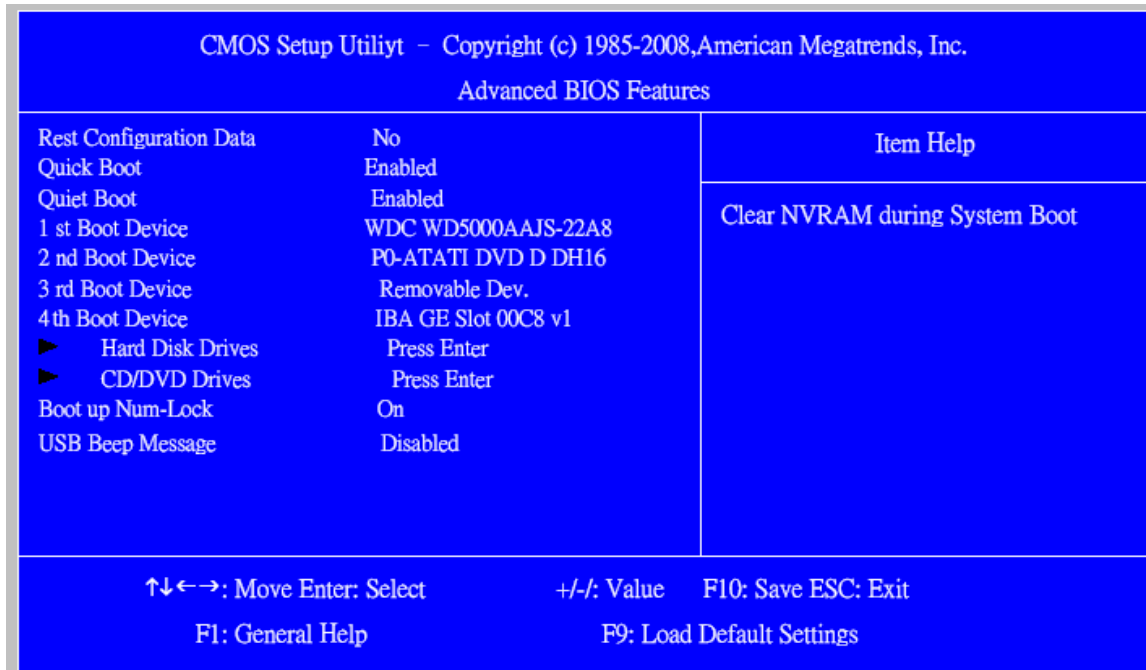


The following table describes the parameters found in this menu.

| Parameter   | Description   | Options  |
|-------------|---|--|
| System Date | To set the date following the weekday-month-date-year format  | Week: From [Sun.] to [Sat.]. determined by BIOS and is display only<br>Day: from [1] to [31] (or the maximum allowed in the month).<br>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.   |
| Halt On     | This item enables use to select the situation if the BIOS stops the POST process and the notification | All Errors<br>No Errors<br>All, But Keyboard<br>All, But Diskette<br>All, But Disk/Key   |

# Advanced Setup

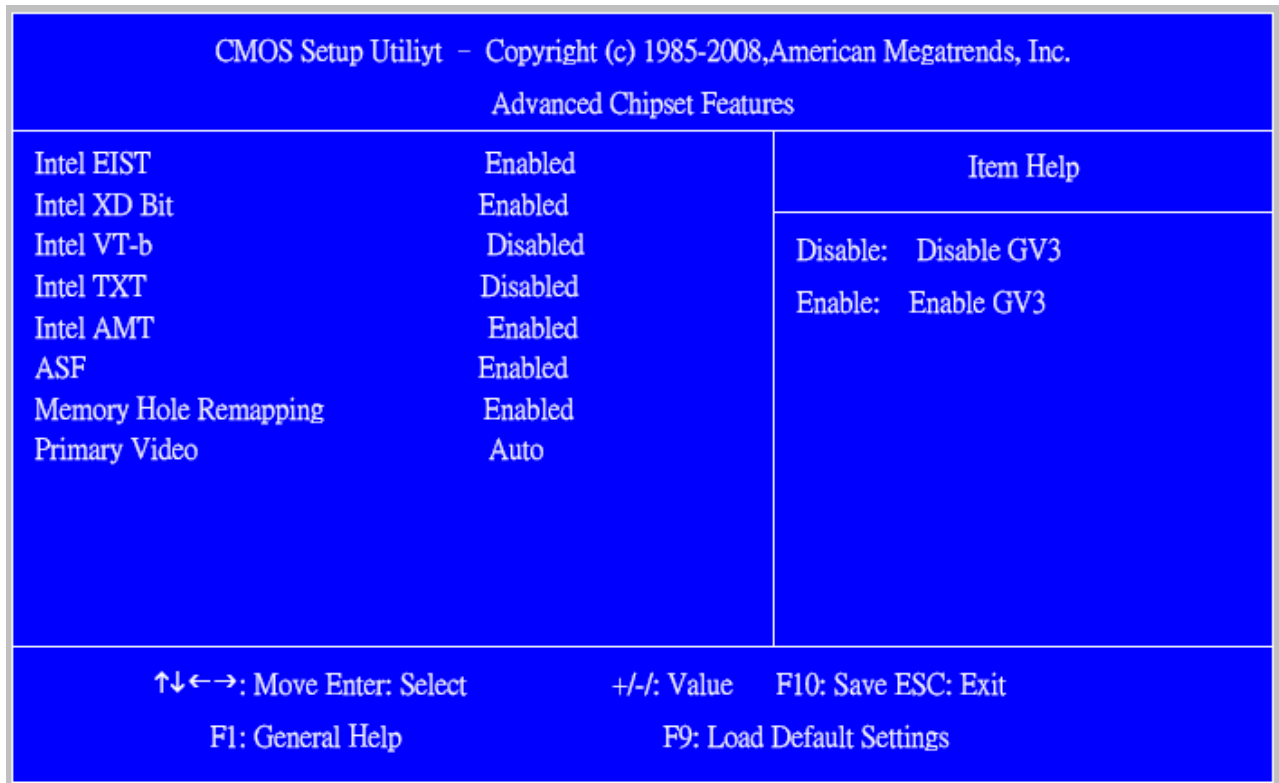
The following screen shows the Advanced Setup:



The following table describes the parameters found in this menu.

| Parameter                    | Description   | Options               |
|------------------------------|---|-----------------------|
| Quick Boot                   | Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system  | [Enabled], [Disabled] |
| 1 st Boot Device             | The item allows you to see the sequence of boot device where BIOS attempts to load the disk operation system.   |                       |
| 2 nd Boot Device             |   |                       |
| 3 rd Boot Device             |   |                       |
| Hard Disk Drives             | Specifies the boot device. Priority sequence from available Hard Drives   |                       |
| CD/DVD Drives                |   |                       |
| Boot up Num-Lock On          | Select Power-on state for Numlock   | On, Off               |
| Boot Sector Virus Protection | This feature allows you to enable the VIRUS warning function for Hard Disk boot sector protection. If this function is enabled and there is someone attempt to write data to this area, BIOS will show a warning message on screen and the alarm will beep. | [Enabled], [Disabled] |
| USB Beep Message             | Enables the beep during USB device enumeration  | [Enabled], [Disabled] |

# Advanced Chipset Setup



The following table describes the parameters found in this menu.

| Parameter             | Description   | Options               |
|-----------------------|---|-----------------------|
| Intel EIST            | For Intel platform  | Disabled/Enabled      |
| Intel XD Bit          | For Intel platform  | Disabled/Enabled      |
| Intel VT-b            | For Intel platform  | Disabled/Enabled      |
| Intel TXT             | For Intel platform  | Disabled/Enabled      |
| Intel AMT             | For Intel platform  | Disabled/Enabled      |
| ASF                   | For Veriton series with vPro or DASH solution   | Disabled/Enabled      |
| Memory Hole Remapping | You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discuss their memory requirements. | Disabled/Enabled      |
| Primary Video         | Priority for Auto : PCIE -> Onboard -> PCI  | Auto/PCIE/Onboard/PCI |

# Integrated Peripherals

| CMOS Setup Utility - Copyright (c) 1985-2008, American Megatrends, Inc.  |          |            |
|--|----------|------------|
| Integrated Peripherals   |          |            |
| Onboard SATA Controller  | Enabled  | Item Help  |
| Onboard SATA Mode  | RAID     |            |
| Onboard USB Controller   | Enabled  | Options    |
| Legacy USB Support   | Enabled  |            |
| Onboard Audio Controller   | Enabled  | Native IDE |
| Onboard LAN Controller   | Enabled  | RAID       |
| Onboard LAN Option ROM   | Enabled  | AHCI       |
| Onboard Floppy Controller  | Enabled  |            |
| Serial Port1 Address   | 3F8/IRQ4 |            |
| Serial Port2 Address   | 2F8/IRQ3 |            |
| Serial Port2 Mode  | Normal   |            |
| Parallel Port Address  | 378      |            |
| Parallel Port Mode   | Normal   |            |
| Parallel Port IRQ  | IRQ7     |            |
| ↑↓←→: Move Enter: Select      +/-: Value      F10: Save ESC: Exit<br>F1: General Help                      F9: Load Default Settings |          |            |

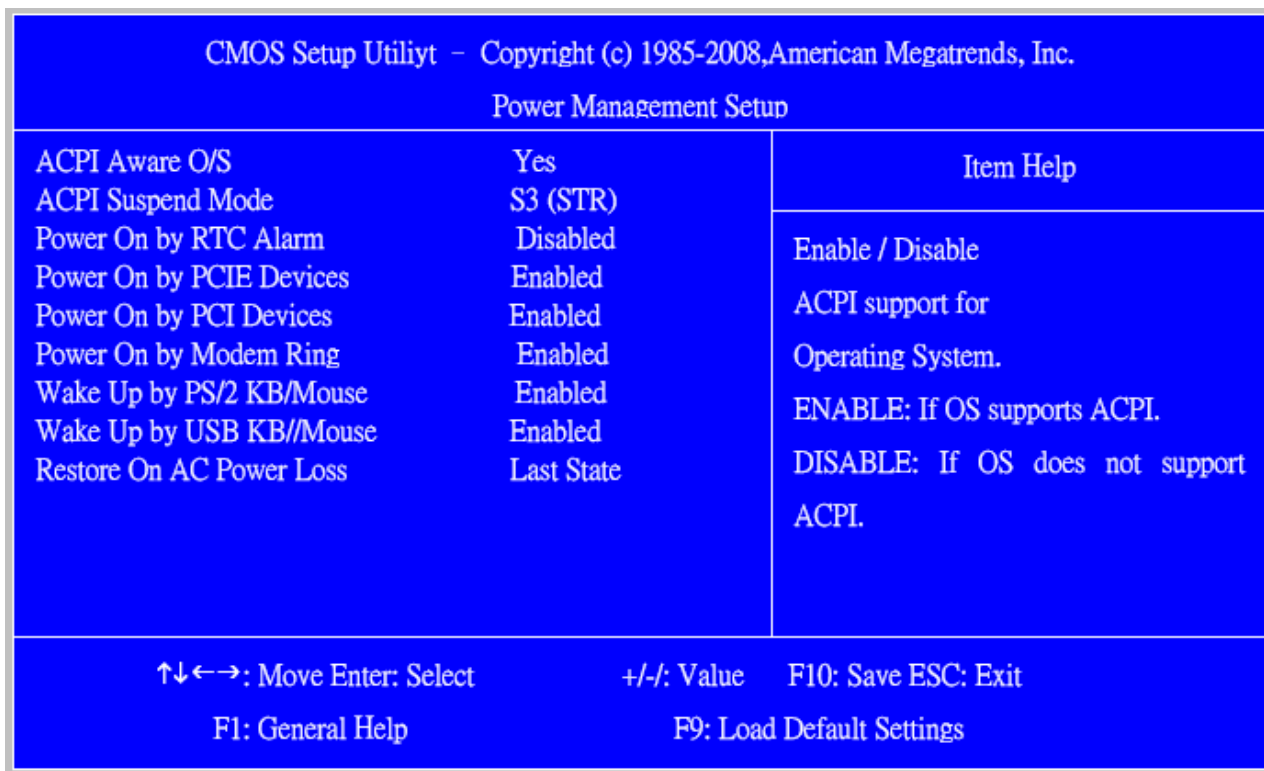


The following table describes the parameters found in this menu.

| <b>Parameter</b>          | <b>Description</b>   | <b>Options</b>   |
|---------------------------|--|--|
| Onboard SATA Mode         | This item is only available when onboard SATA controller is enabled  | Native<br>IDE/RAID/AHCI  |
| Onboard USB Controller    | Always enabled USB keyboard during POST no matter what option is set | Disabled/Enabled   |
| Legacy USB Support        | This item is only available when on board USB controller is enabled  | Disabled/Enabled   |
| Onboard Audio Controller  | Always enabled Audio POST no matter what option is set               | Disabled/Enabled   |
| Onboard LAN Controller    | Always enabled Audio POST no matter what option is set               | Disabled/Enabled   |
| Onboard LAN Option ROM    | This item is only available when onboard LAN controller is enabled   | Disabled/Enabled   |
| Onboard Floppy Controller | Always enabled FloppyOST no matter what option is set                | Disabled/Enabled   |
| Serial Port1 Address      | Allows BIOS to select serial port1 base addresses                    | Disabled /<br>3F8/IRQ4 /<br>2F8/IRQ3 /<br>3E8/IRQ4 /<br>2E8/IRQ3 |
| Serial Port2 Address      | Allows BIOS to select serial port1 base addresses                    | Disabled /<br>3F8/IRQ4 /<br>2F8/IRQ3 /<br>3E8/IRQ4 /<br>2E8/IRQ3 |
| Serial Port2 Mode         | Allows BIOS to select serial port1 base Mode                         | Normal/IrDA/ASK<br>IR  |
| Parallel Port Address     | Allows BIOS to select parallel port base addresses                   | Parallel Port<br>Address   |
| Parallel Port Mode        | Allows BIOS to select parallel port base Mode                        | Normal//EPP/ECP<br>/EPP+ECP                                      |
| Parallel Port IRQ         | Allows BIOS to select parallel port base IRQ                         |  |

# 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 Aware O/S           | Control wake up event for | No/Yes                    |
| ACPI Suspend Mode        |                           | S1(S3)/S3 (STR)           |
| Power On by RTC Alarm    |                           | Disabled/Enabled          |
| Power On by PCIE Devices |                           | Disabled/Enabled          |
| Power On by PCI Devices  |                           | Disabled/Enabled          |
| Power On by Modem Ring   |                           | Disabled/Enabled          |
| Wake Up by PS/2 KB/Mouse | Control wake up event for | Disabled/Enabled          |
| Wake Up by USB KB//Mouse |                           | S1/S3<br>Disabled/Enabled |

## PC Health Status

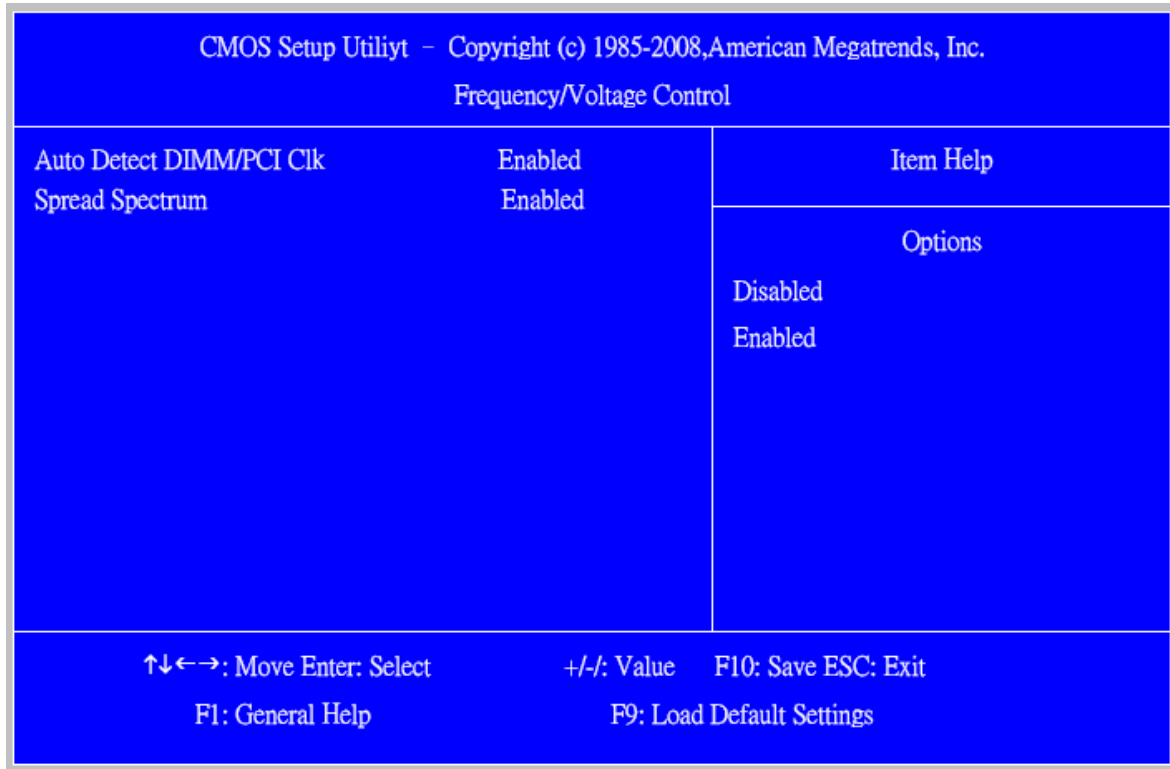
| CMOS Setup Utility - Copyright (c) 1985-2008, American Megatrends, Inc. |              |           |
|---|--------------|-----------|
| PC Health Status  |              |           |
| CPU Temperature (PECI Mode)   | : 40         | Item Help |
| System Temperature  | : 36°C/100°F |           |
| CPU Fan Speed   | : 904 RPM    |           |
| System Fan Speed  | : 1790       |           |
| CPU Core  | : 1.184V     |           |
| +1.1V   | : 1.088V     |           |
| +3.30V  | : 3.296V     |           |
| +12.0V  | : 11.968V    |           |
| 5VSB  | : 4.999V     |           |
| VBAT  | : 3.200V     |           |
| Smart Fan   | Enabled      |           |

↑↓←→: Move Enter: Select      +/-: Value    F10: Save ESC: Exit  
 F1: General Help                      F9: Load Default Settings

The following table describes the parameters found in this menu:

| Parameter                  | Description   | Options |
|----------------------------|---|---------|
| CPU/System 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. |         |

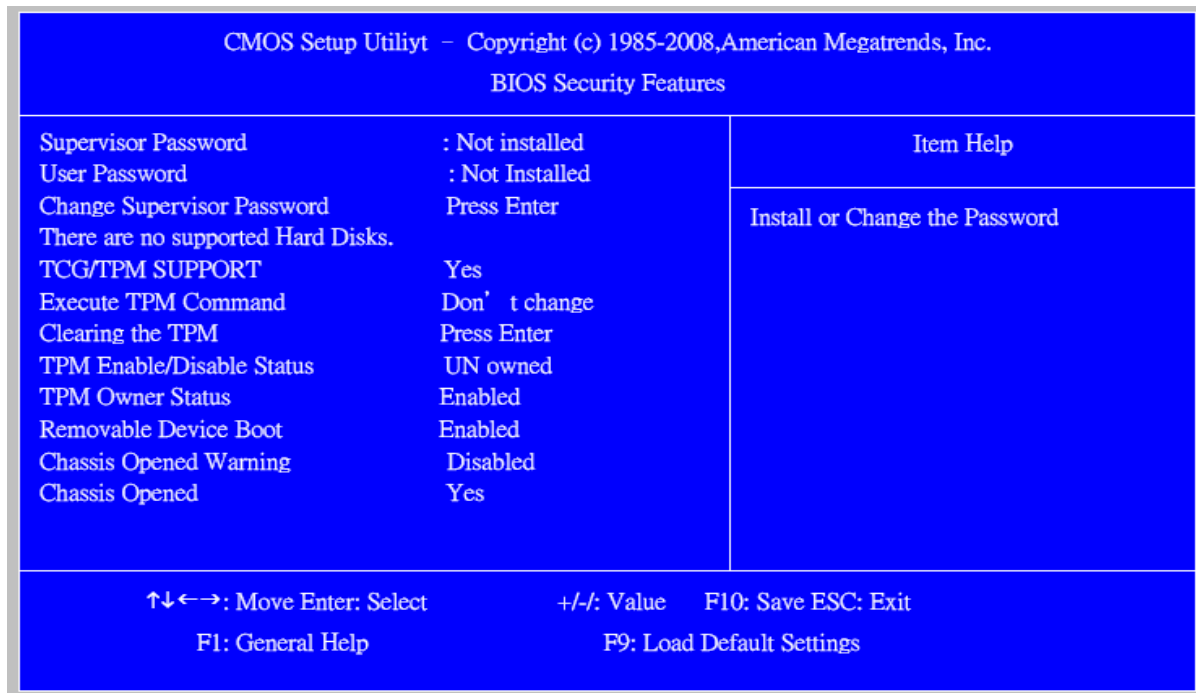
# Frequency/Voltage Control



The following table describes the parameters found in this menu:

| Parameter                | Description                        | Options          |
|--------------------------|------------------------------------|------------------|
| Auto Detect DIMM/PCI Clk | Always auto detect DIMM/PCI Clk    | Disabled/Enabled |
| Spread Spectrum          | Always auto detect Spread Spectrum | Disabled/Enabled |

# BIOS Security Features

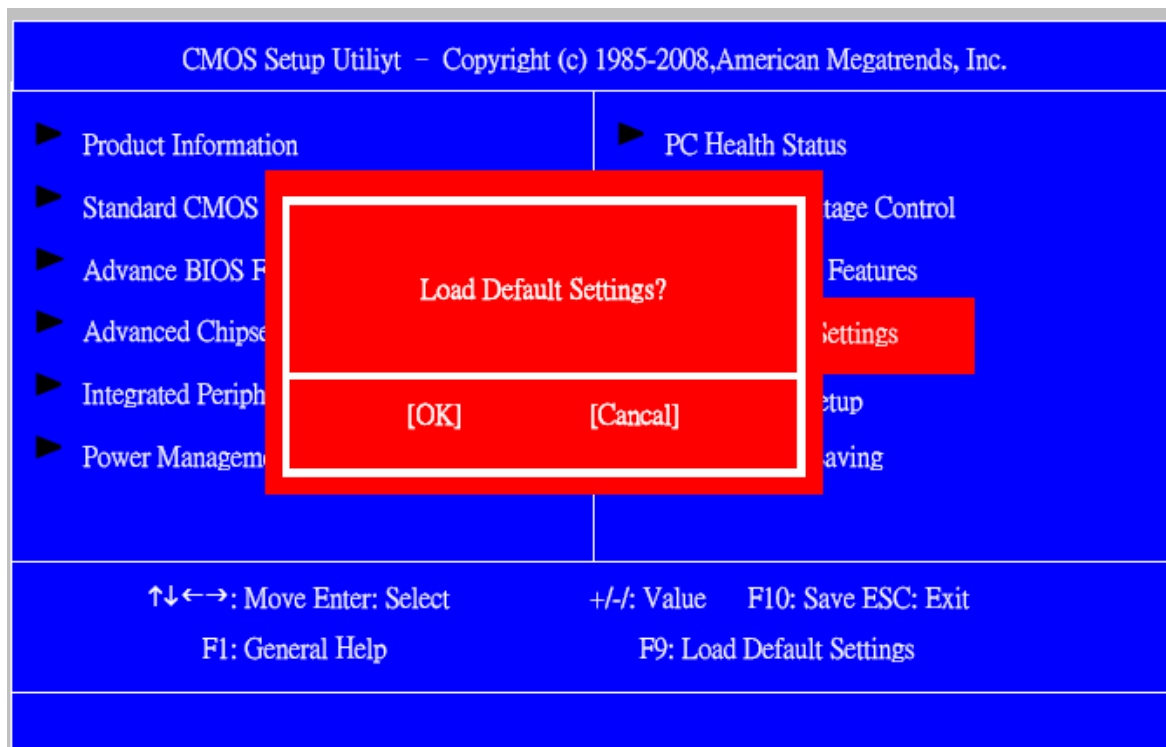


The following table describes the parameters found in this menu:

| Parameter                  | Description  | Options                       |
|----------------------------|--|-------------------------------|
| Change Supervisor Password | This item is only available when supervisor password is installed, If clear supervisor password, user password should also be cleared. All setup items will be view-only except user password item when login with user password | Press Enter                   |
| TCG/TPM SUPPORT            | This item is only available when TPM controller/module is installed  | No/Yes                        |
| Execute TPM Command        | This item is only available when TPM controller/module is installed and TCG/TPM support is yes   | Don't Change/Disabled/Enabled |
| Removable Device Boot      | Control system booting from floppy, USB handy drive, or memory card  | Disabled/Enabled              |
| Chassis Opened Warning     | For Veriton series electron lock,  | Disabled/Enabled/Clear        |

## Load Default Settings

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

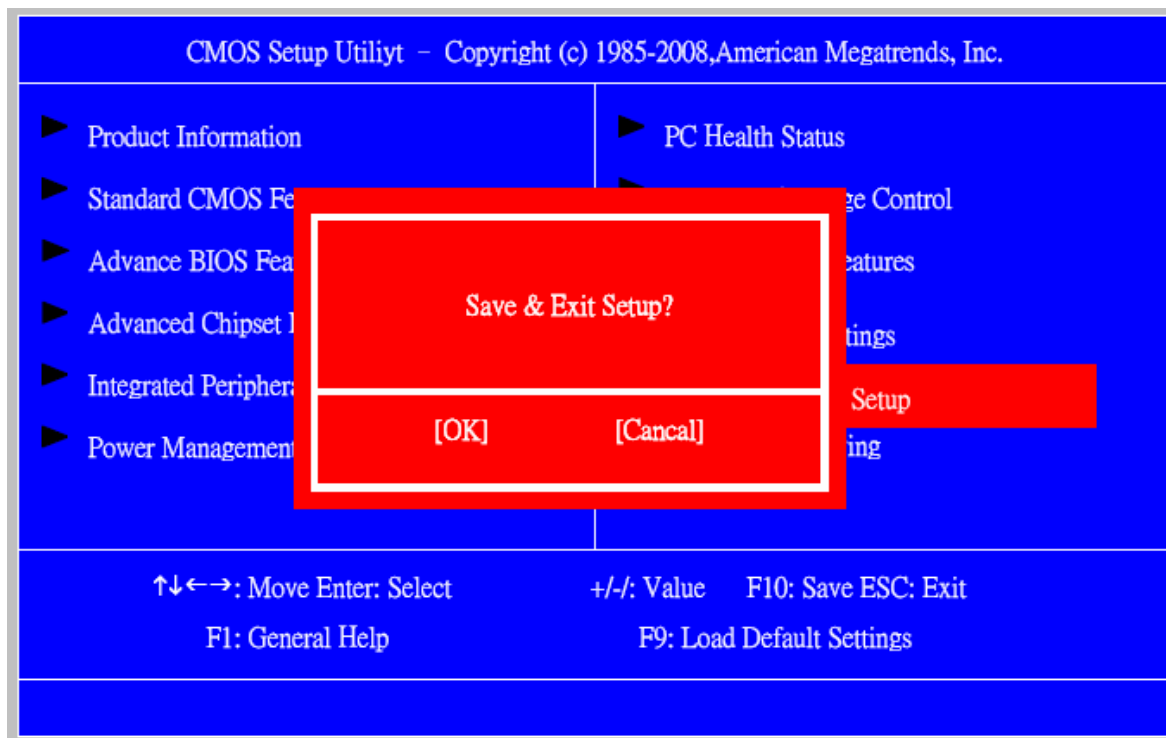


The following table describes the parameters found in this menu:

| 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. |         |

## 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.



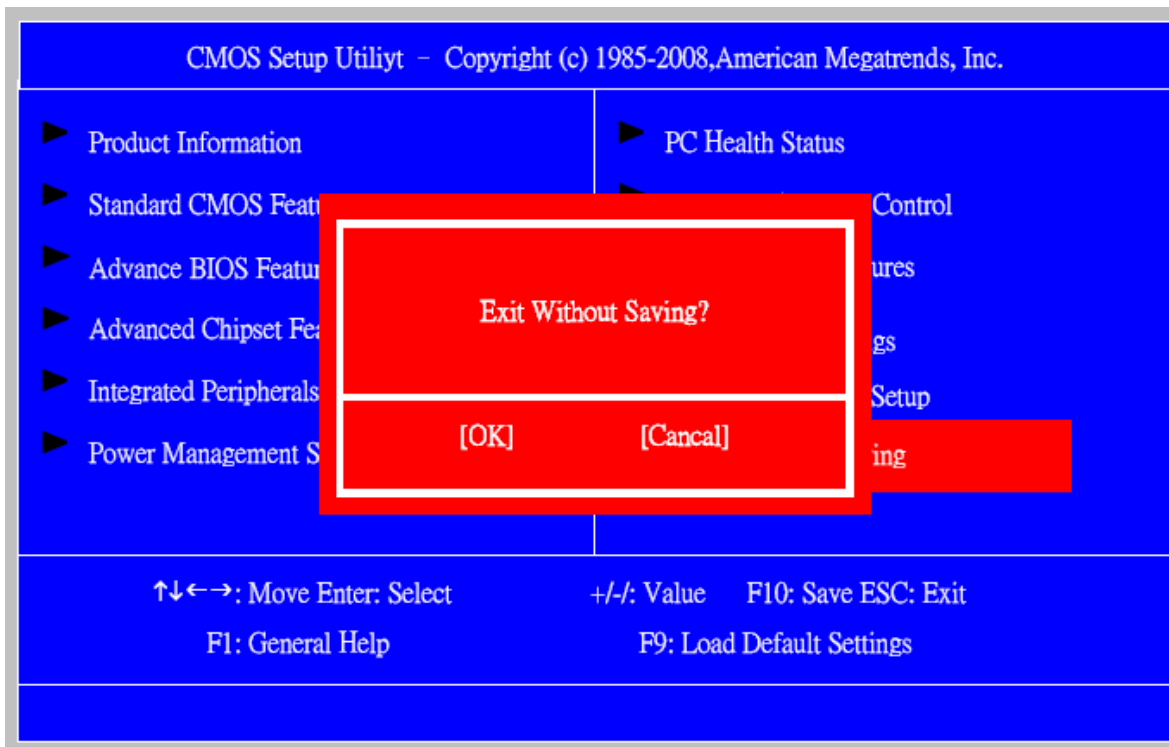
The following table describes the parameters found in this menu:

| Parameter         | Description   | Options |
|-------------------|---|---------|
| Save & Exit Setup | Press <Enter> to save the changes that have made in the Setup Utility and exit the Setup Utility.<br>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.



| <b>Parameter</b>    | <b>Description</b>   | <b>Options</b> |
|---------------------|--|----------------|
| 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. 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.

---

# ***VeritonM670G/M670/S670G/S670 Standard Disassembly***

## ***Process***

### ***Bezel***

#### ***Process:***

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

#### ***VeritonM670G/M670***



#### ***VeritonS670G/S670***

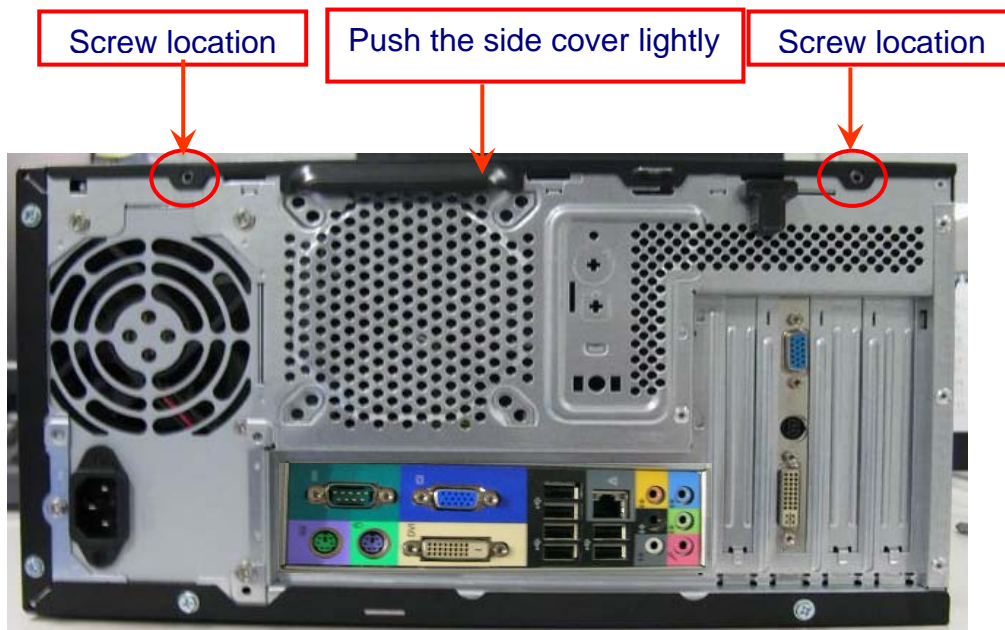


---

## ***Remove side cover***

### ***Process:***

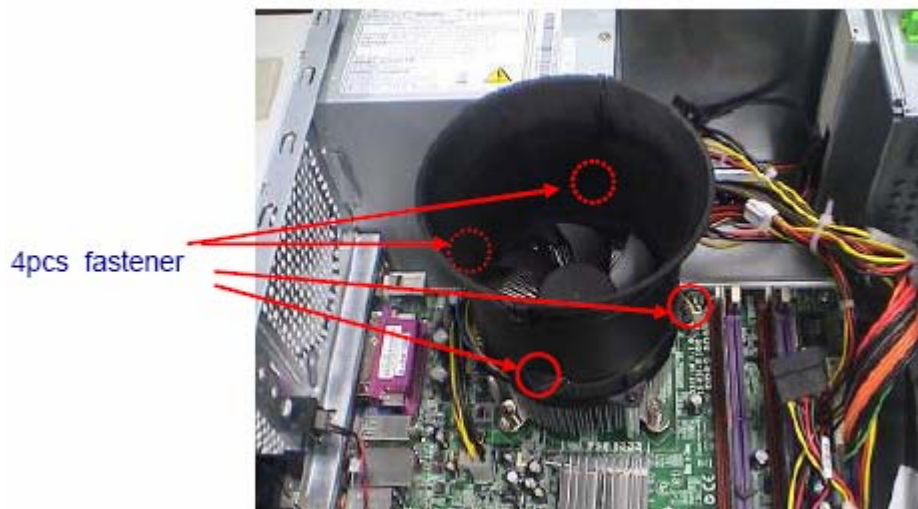
1. Put the Computer on the worktable lightly.
2. Release left side cover with 2 screws then remove left side cover.



## ***Remove CPU fan pipe***

### ***Process:***

1. Release the CPU fan pipe.

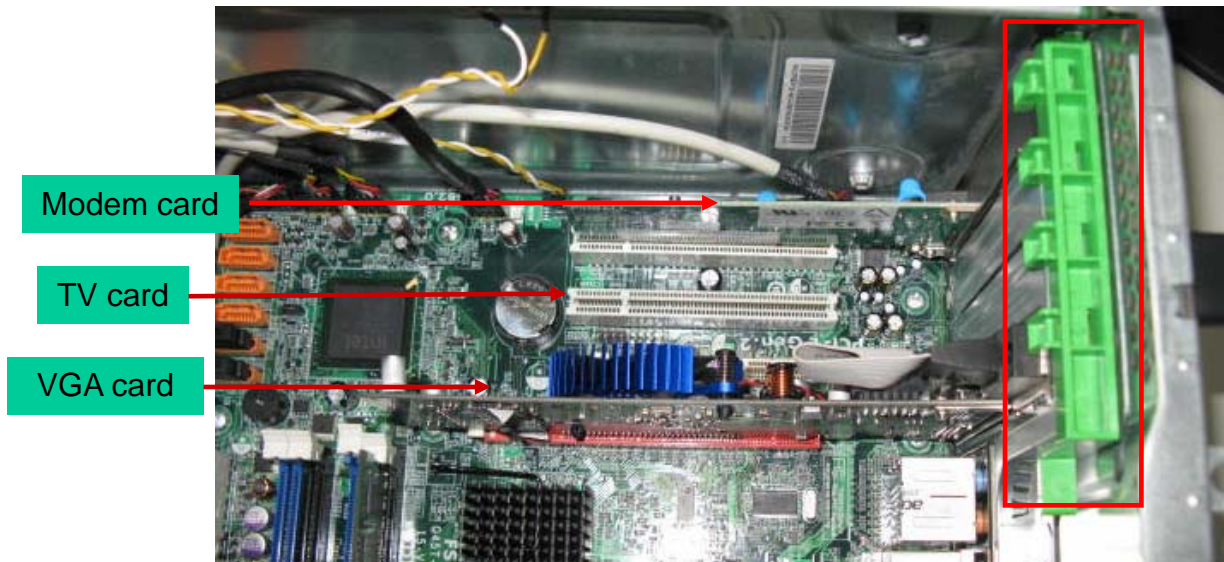


---

## Remove Cards

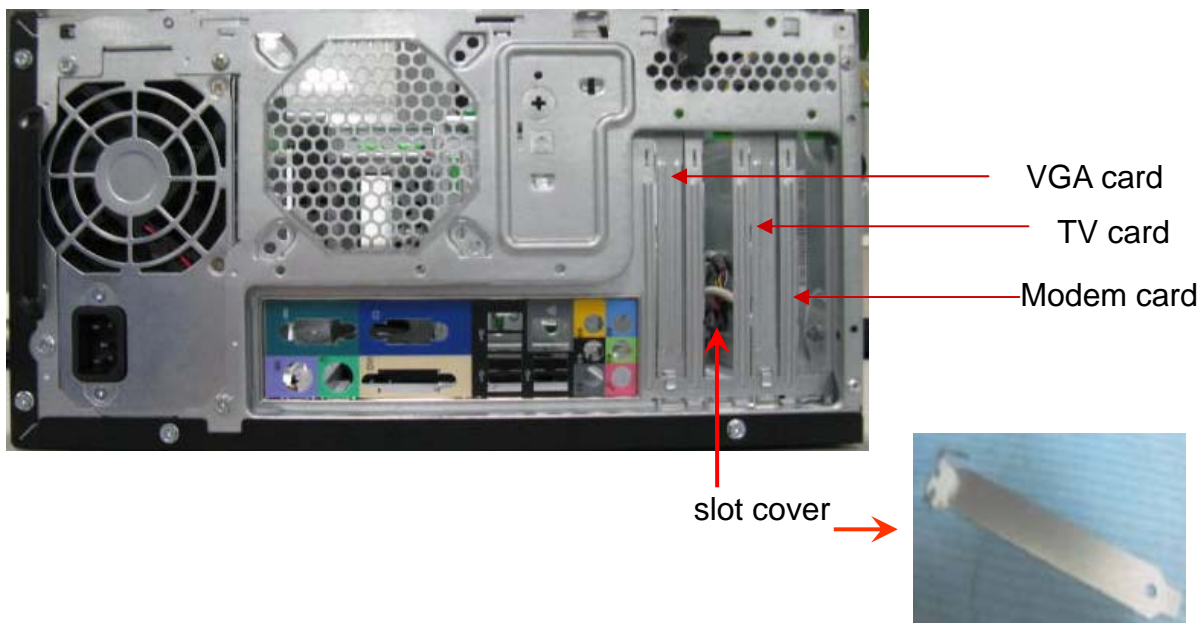
### Process:

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.



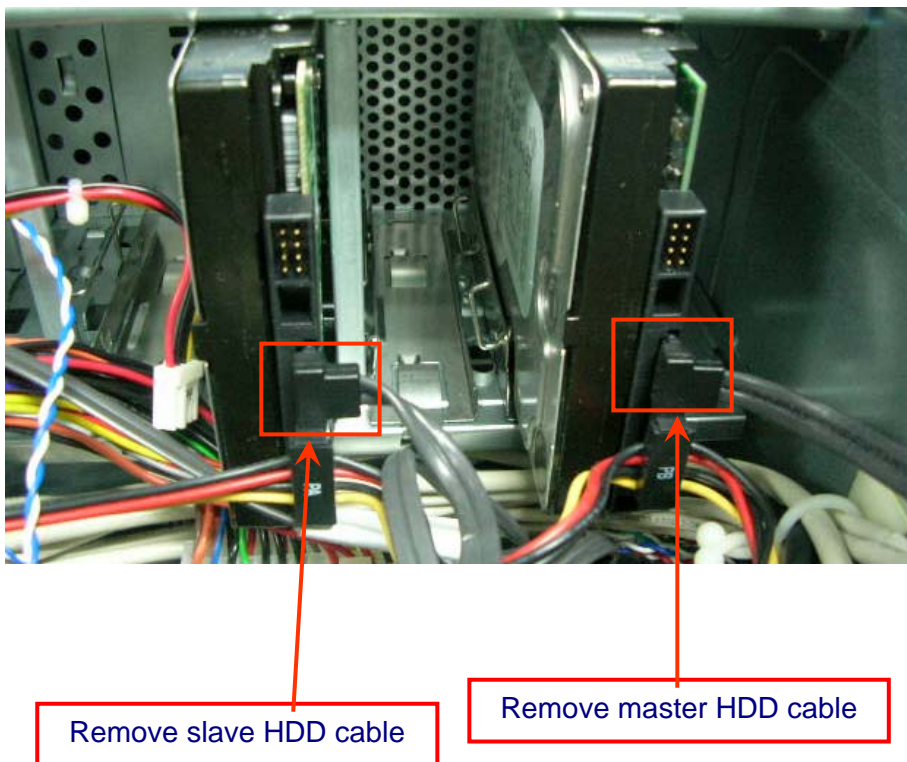
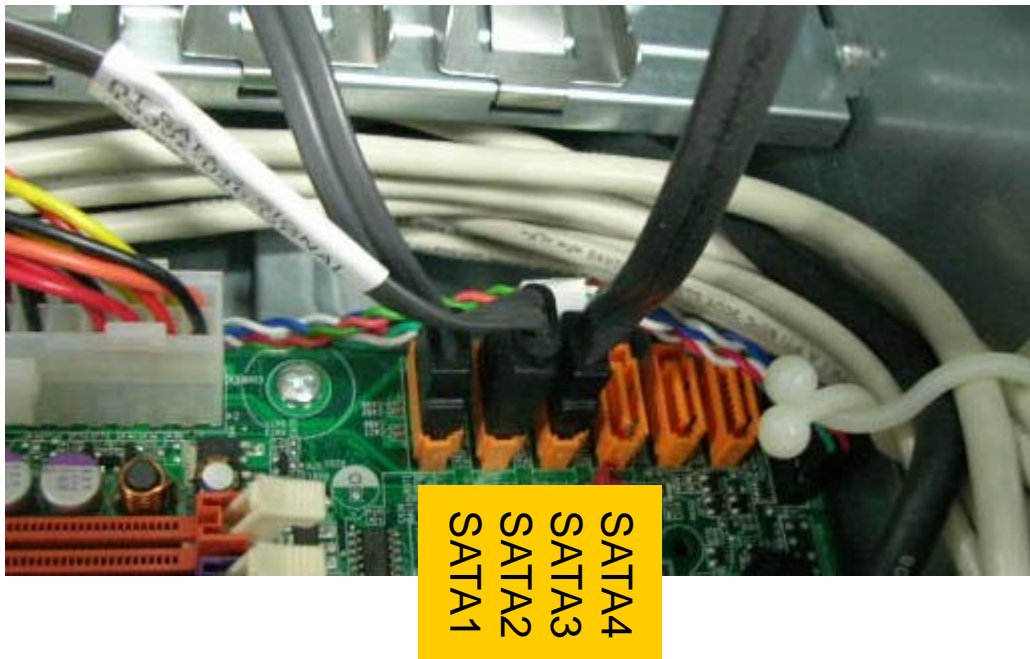


---

## ***Remove HDD Data Cables***

### ***Process:***

1. Remove master HDD data cable from M/B SATA1/SATA3.
2. Remove slave HDD data cable from M/B SATA2.



---

## ***Remove ODD DATA cable***

### ***Process:***

1. Remove master ODD data/power cable from Master ODD.



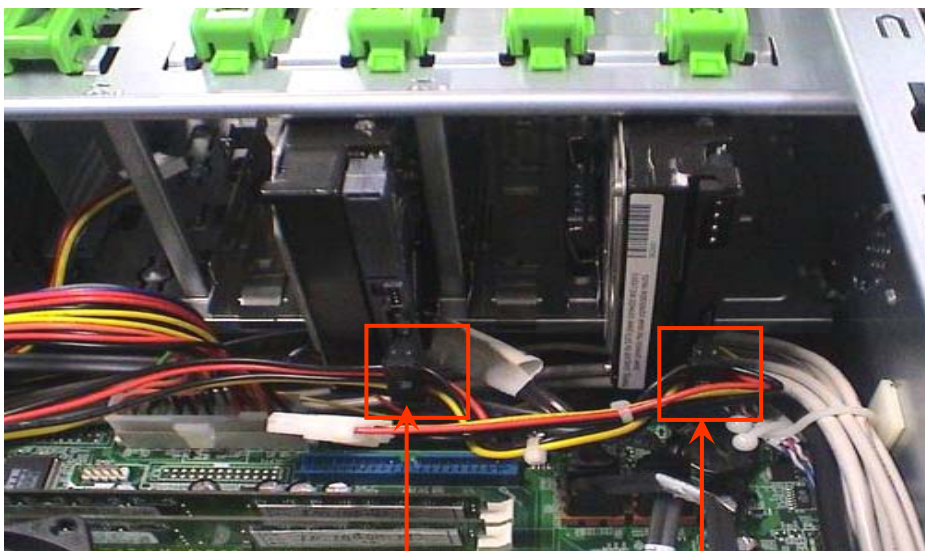
Remove master ODD  
Power Cable

Remove master  
ODD Data Cable

## ***Remove HDD power cable***

### ***Process:***

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



Remove slave HDD

Remove master HDD

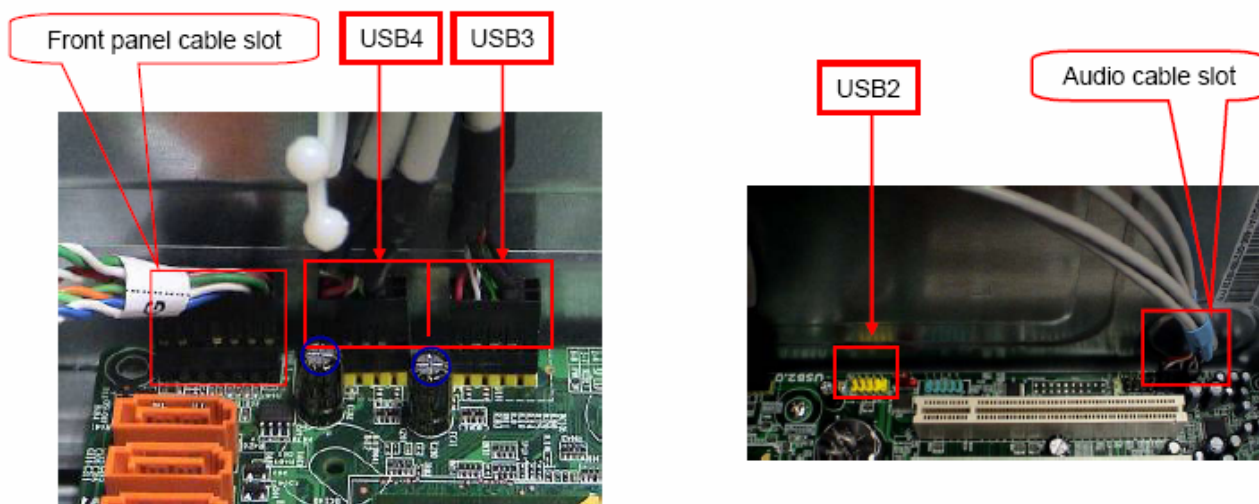


---

## ***Remove Cables***

### ***Process:***

1. Remove front panel light cable from “PANEL1” slot of M/B.
2. Remove USB1 cable from M/B” F\_ USB3” ◦
3. Remove USB2 cable from M/B”F\_ USB4” ◦
4. Remove Card reader cable from M/B” USB2”.
5. Remove audio cable from the “AUDIO” port on M/B.



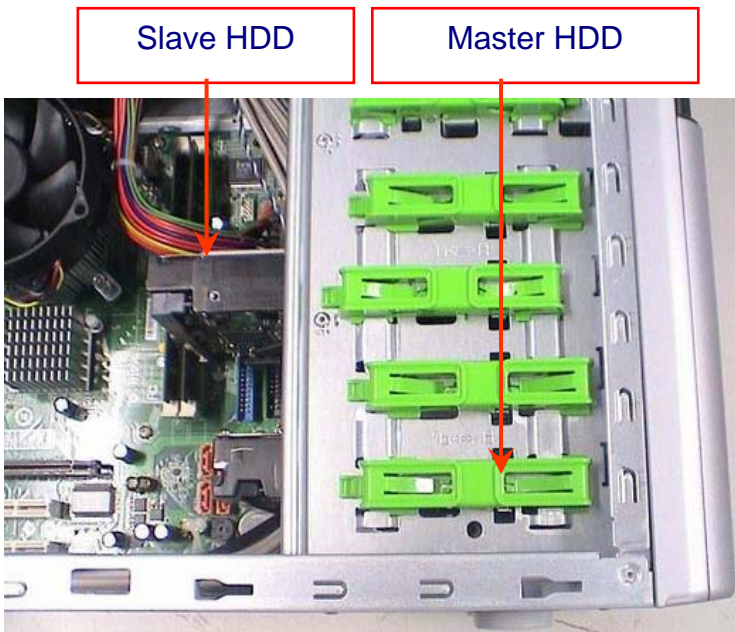
### ***Notice:***

- I. Recovery switch cable is next to FDD port, and the black cable face to the top of Chassis.
- II. Intrusion switches cable face to front bezel of chassis.

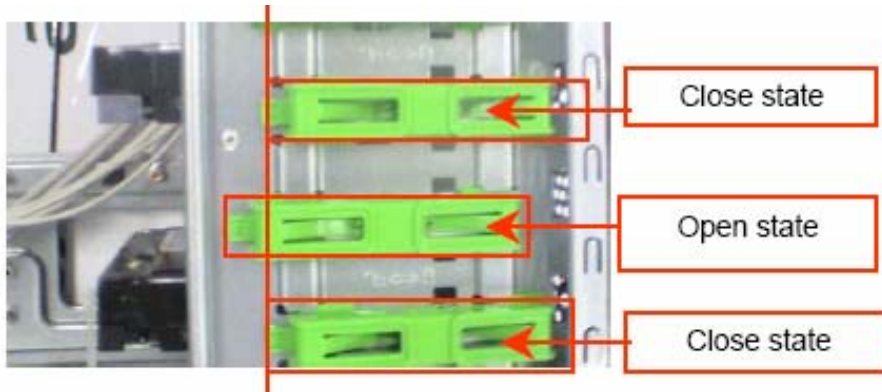
## ***Remove HDD***

### ***Process:***

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



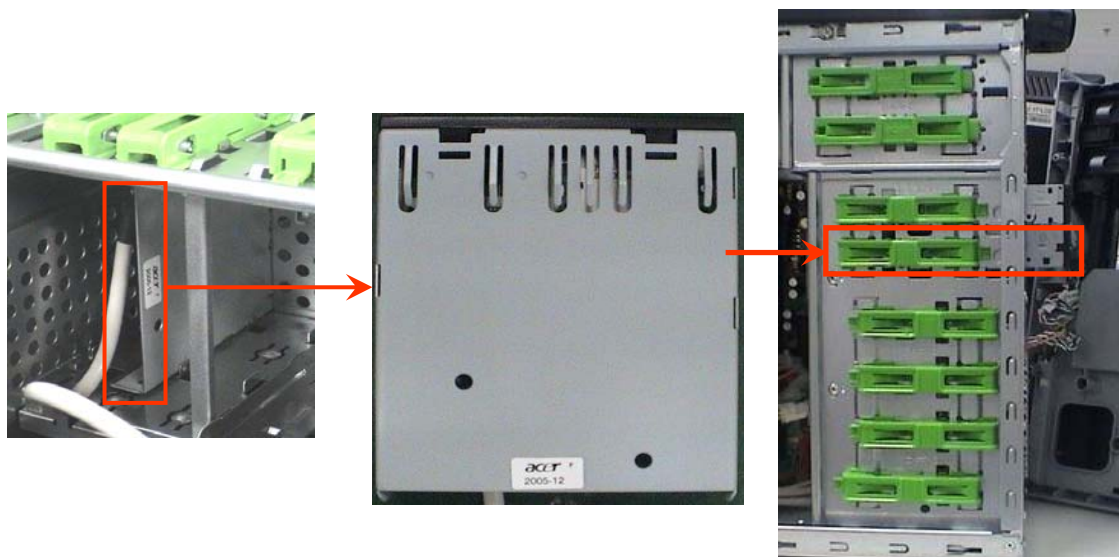
| Port Num | SATA1 | SATA2 | SATA3 | SATA4 |
|----------|-------|-------|-------|-------|
| 1HDD     | ✓     |       |       |       |
| 2HDDs    | ✓     |       | ✓     |       |
| 1ODD     |       | ✓     |       |       |
| 2ODDs    |       | ✓     |       | ✓     |



### ***Remove card reader***

***Process:***

1. Remove card reader from chassis.

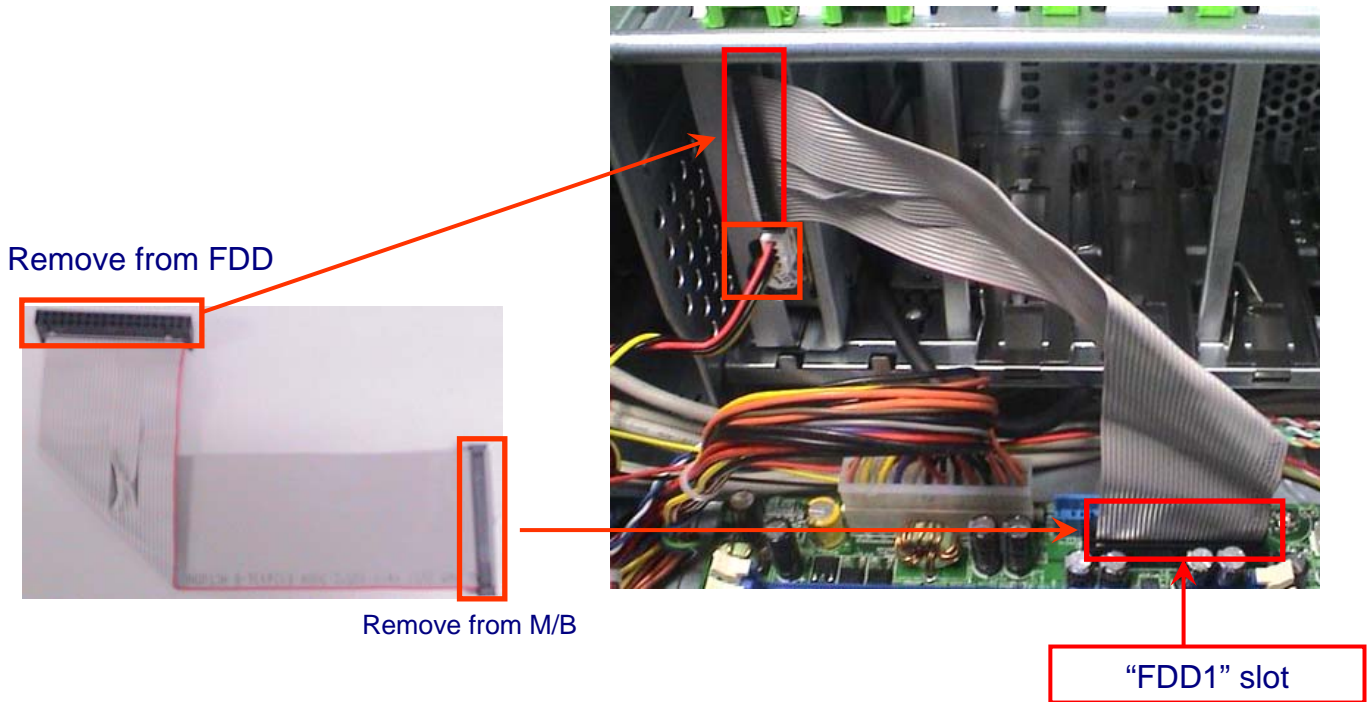


---

## ***Remove FDD Cable***

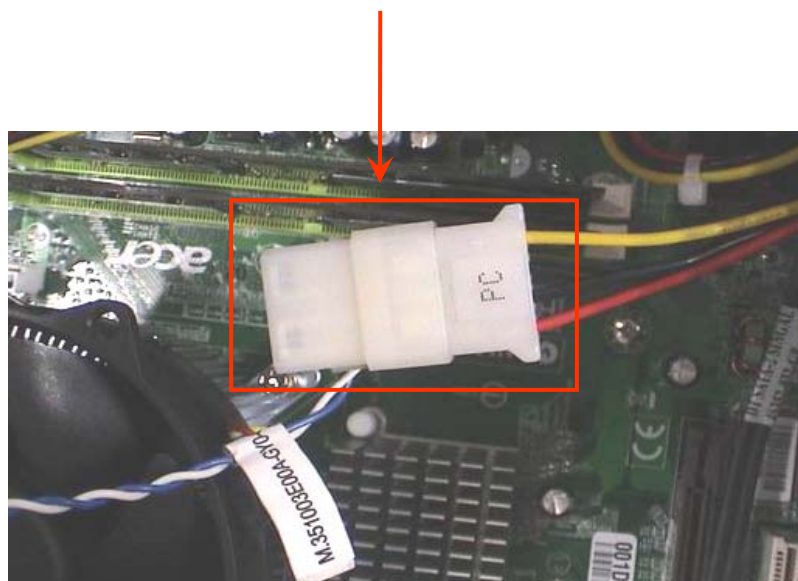
### ***Process:***

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 Front bezel light cable

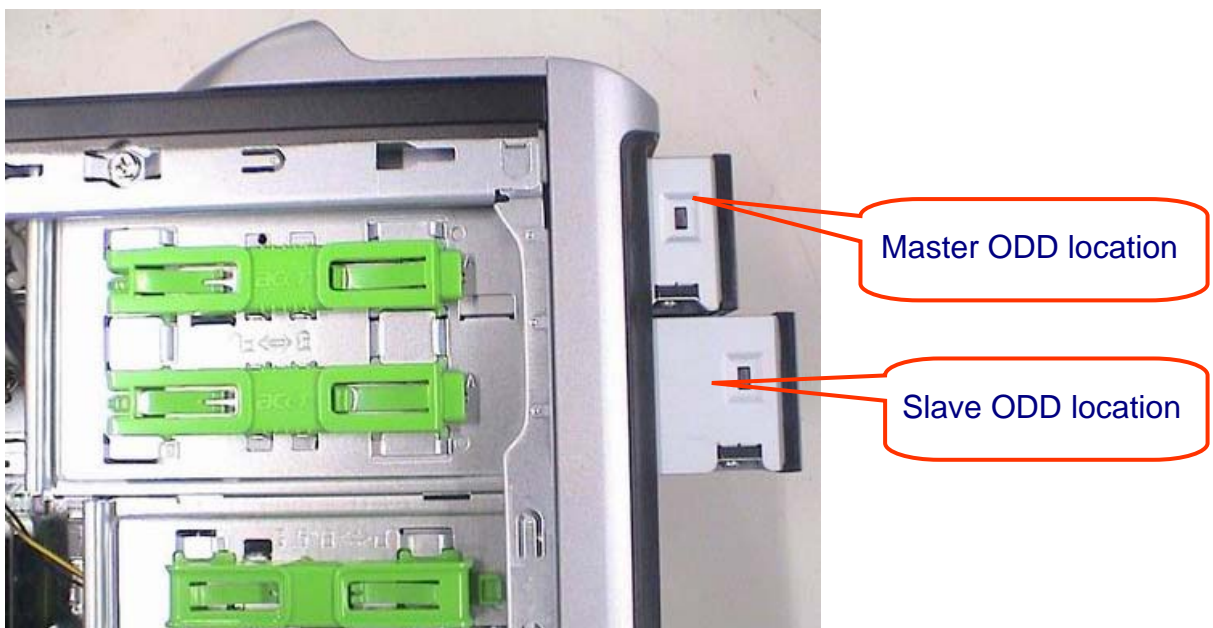
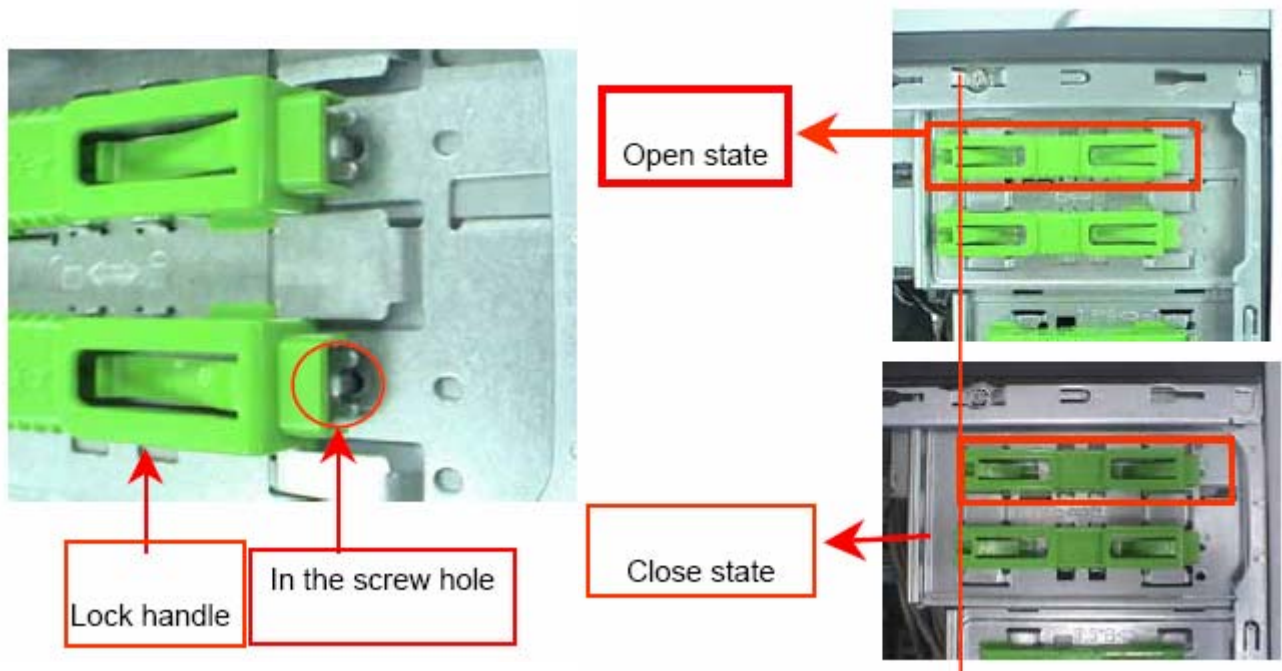




## Remove ODD

### 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)

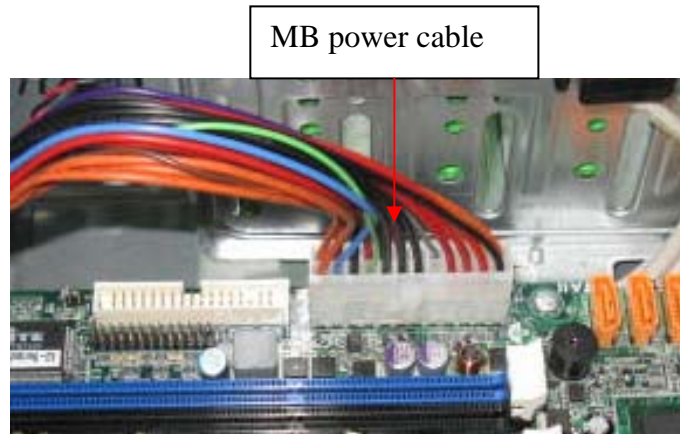


---

## ***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 System Fan cable from M/B”SYS-F2”.



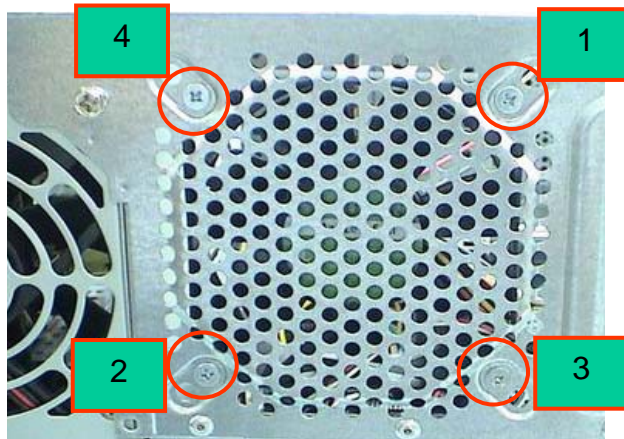
---

## ***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



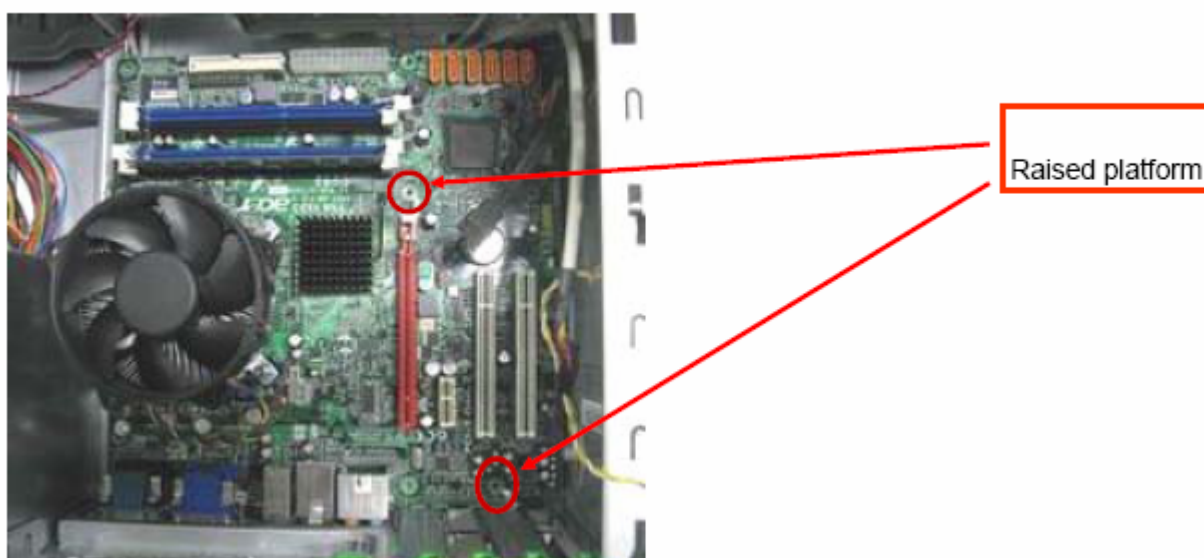
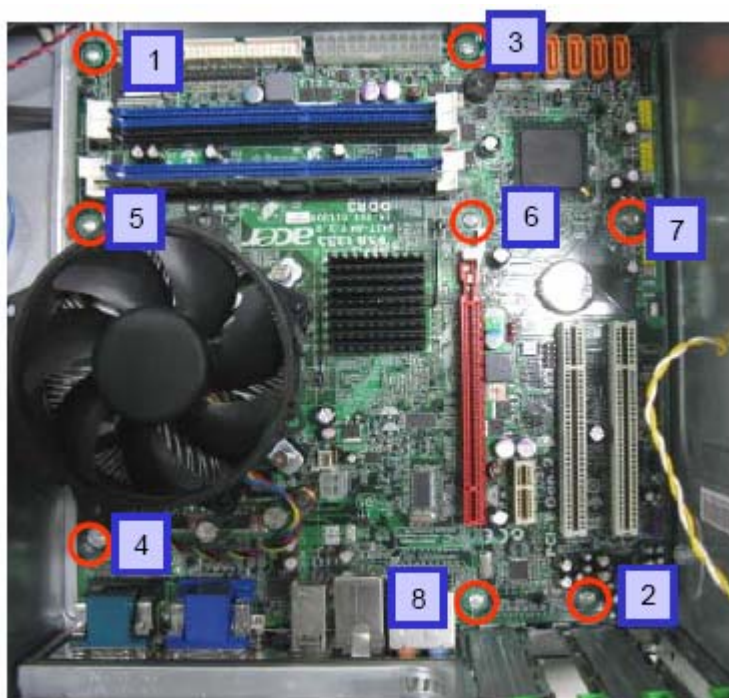


---

## ***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.





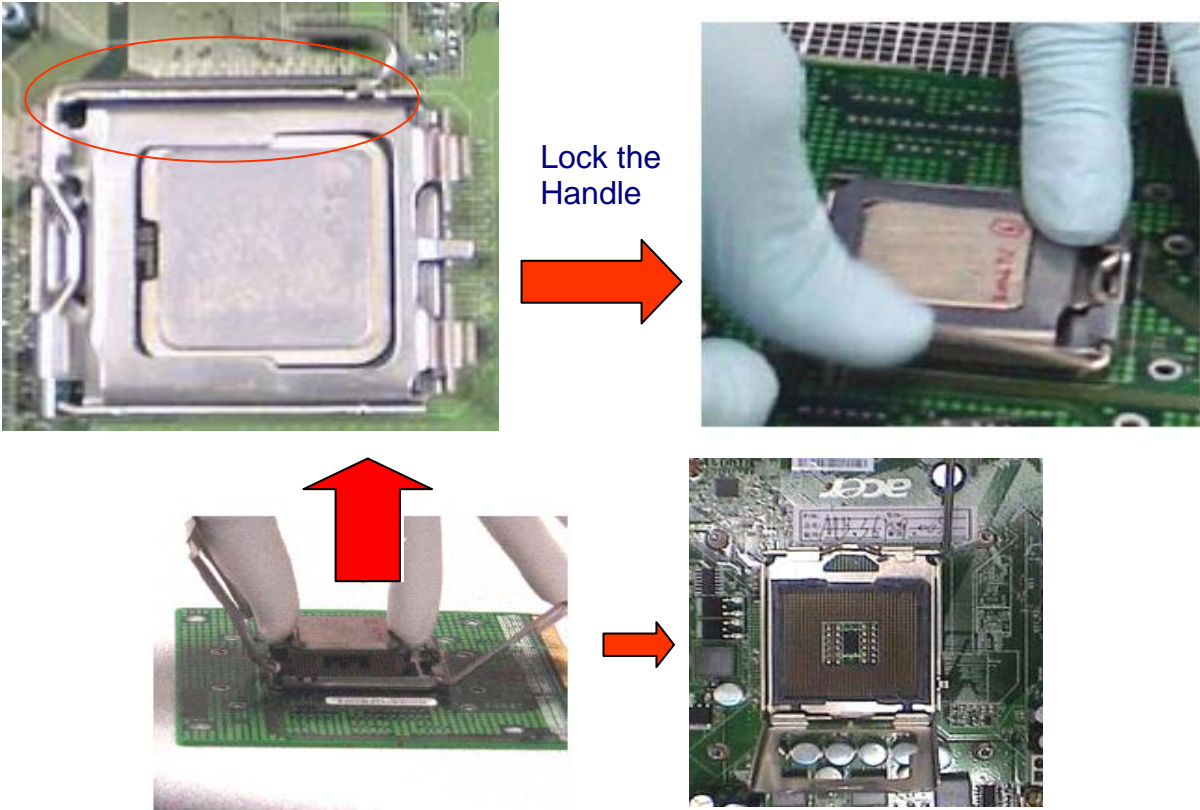


---

## ***Remove CPU***

### ***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


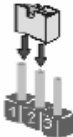
## Jumper and Connector Information

### 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  |
|---|---|
| <p>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.</p> |  <p style="text-align: center;">SHORT                  OPEN</p> |
| <p>This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT</p>   |   |

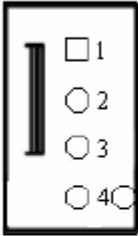
### Clear CMOS

| Jumper   | Type  | Description | Setting(Default)   | Illustration   |
|----------|-------|-------------|--|--|
| CLR_CMOS | 3-pin | CLEAR CMOS  | 1-2 : Clear<br>2-3 : Normal<br>Before clearing the CMOS,make sure to turn off the system | <p style="text-align: center;">Clear CMOS</p>  <p style="text-align: center;">1</p> |

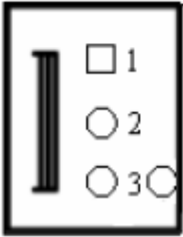
---

## 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

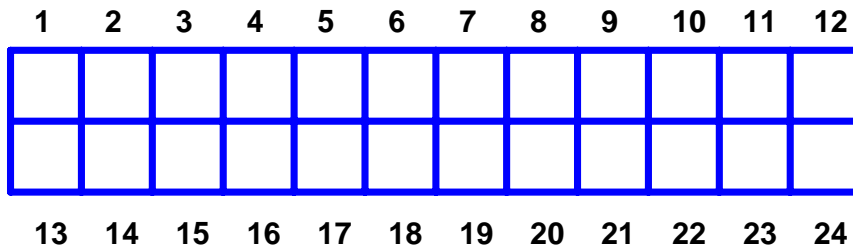
|  | Pin | Signal Name | Function      |
|--|-----|-------------|---------------|
|  | 1   | GND         | System Ground |
|  | 2   | +12V        | Power +12V    |
|  | 3   | Sense       | Sensor        |

### 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_RS<br>TJ | 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_U<br>SBPWR0 | Front panel USB<br>power(Ports 0,1)          | 2   | VREG_FP_U<br>SBPWR0 | Front panel USB<br>power(Ports 0,1)          |
|              | 3   | USB_FP_P0-          | Front panel USB<br>Port 0 Negative<br>Signal | 4   | USB_FP_P1-          | Front panel USB<br>Port 1 Negative<br>Signal |
|              | 5   | USB_FP_P0+          | Front panel USB<br>Port 0 Positive<br>Signal | 6   | USB_FP_P1+          | Front panel USB<br>Port 1 Positive<br>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       |

---

### ***Intruder***

| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1   | INTRUDERJ   | 2   | GROUND      |

### ***J3***(for requested)

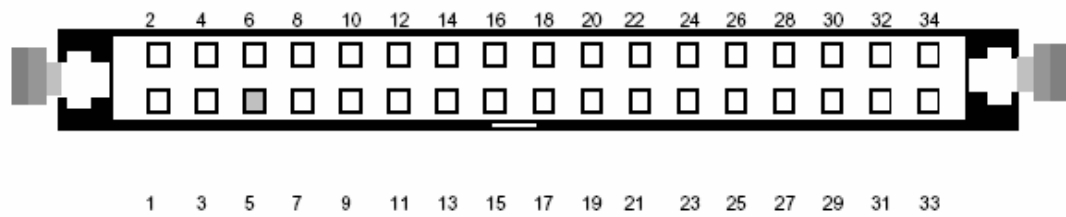
| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1   | AGPIO1      | 2   | GROUND      |

### ***J4***(for requested)

| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1   | AGPIO2      | 2   | GROUND      |

# FDD

(Top-View)



| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1   | Ground      | 2   | DRV DEN0    |
| 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-     |



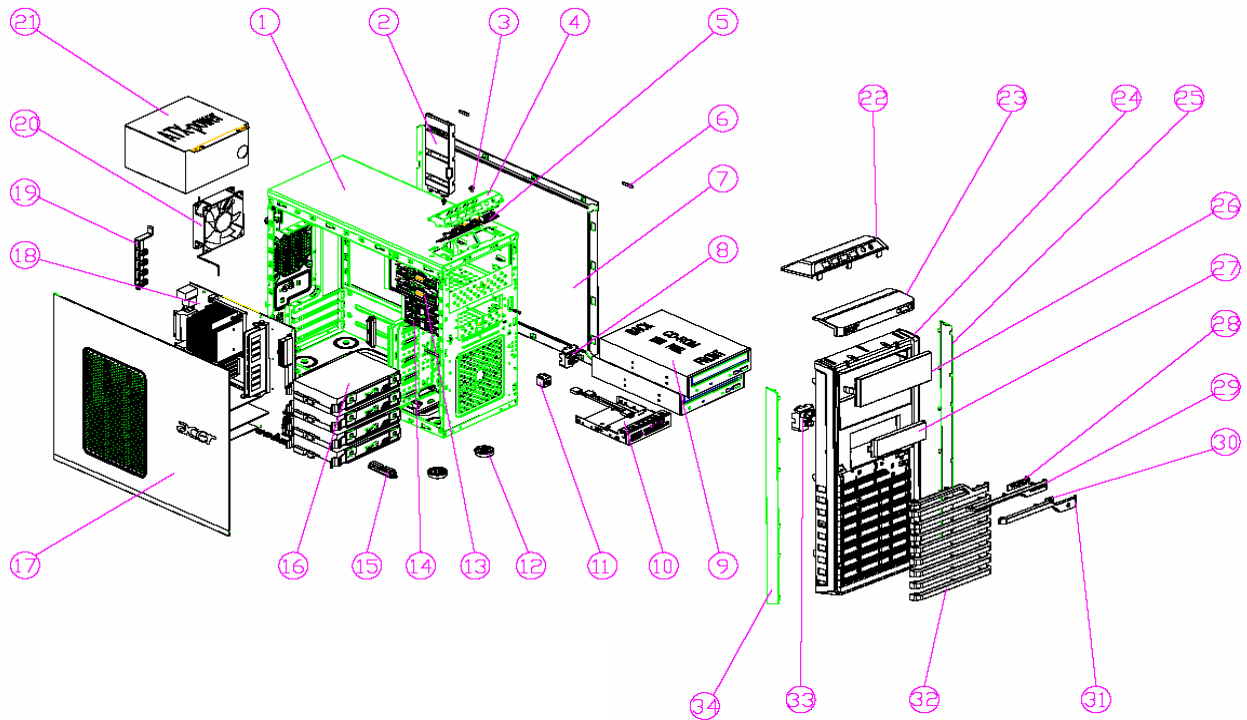
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## ***FRU (Field Replaceable Unit) List***

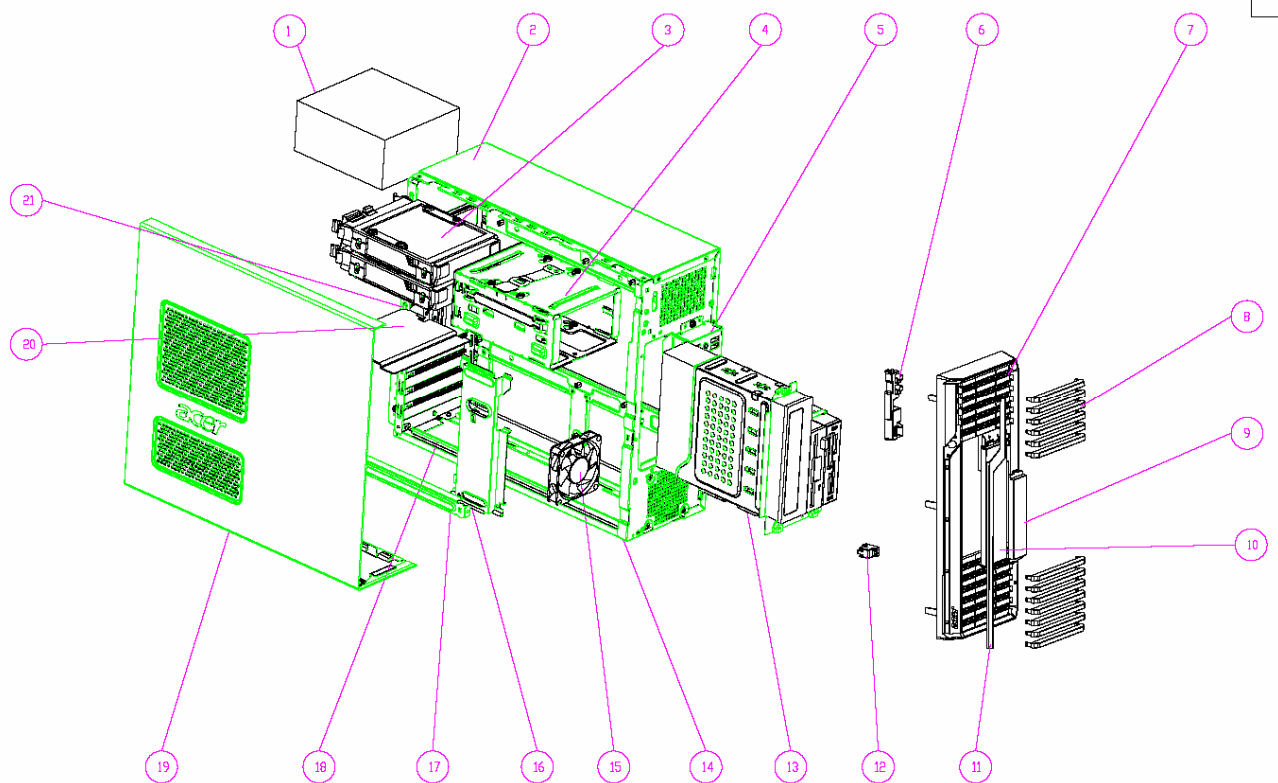
This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of **Veriton M670G/M670/S670G/S670**. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

**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  | CHASSIS              | 18 | MOTHERBOARD        |
| 2  | LINE-CLIP            | 19 | PCI-BRACKET        |
| 3  | USB-SHIELD NUT 6-32# | 20 | FAN                |
| 4  | USB-SHIELDING        | 21 | POWER SUPPLY       |
| 5  | USB PCB MODULE       | 22 | USB-TOP            |
| 6  | SIDE FOOT RUBBER     | 23 | LOGO-SUPPORT       |
| 7  | RIGHT SIDE PLATE     | 24 | MAIN-BEZEL         |
| 8  | LED/SWITCH HDLDER    | 25 | LEFT-WIRE-NETTING  |
| 9  | CD-ROM               | 26 | ODD-COVER          |
| 10 | CARDREADER DEVICE    | 27 | FDD-COVER          |
| 11 | OBR HOLDER           | 28 | HDD-LENS           |
| 12 | PLASTIC FOOT         | 29 | FRONT-LENS-STRIP   |
| 13 | CD-ROM LOCK SLIDE    | 30 | POWER-LENS         |
| 14 | FDD-LOCK-SLIDE       | 31 | POWER-BOTTON       |
| 15 | SMALL LINE CLIP      | 32 | FRONT-STRIP-MODULE |
| 16 | HDD MOVDLE           | 33 | SWITCH-HOLDER      |
| 17 | LEFT SIDE PLATE      | 34 | RIGHT-WIRE-NETTING |



| NO | DESCRIPTION   | NO | DESCRIPTION              |
|----|---------------|----|--------------------------|
| 1  | POWER SUPPLY  | 12 | HOLDER-SWITCH            |
| 2  | ACER_16L_BASE | 13 | ODD-CAGE                 |
| 3  | HDD-MOUDLE    | 14 | ACER_16L_CHASSIS         |
| 4  | HDD-CAGE      | 15 | 70X70X15FAN              |
| 5  | USB-MOUDLE    | 16 | ACER-16L-ODD-SUPPORT-BKT |
| 6  | LENS-HOLDER   | 17 | ACER-16L-SUPPORT         |
| 7  | MAIN-BEZEL    | 18 | ACER_16L_CHASSIS_SUPPORT |
| 8  | FRONT-STRIP   | 19 | ACER_16L_TOP_DUCK        |
| 9  | FDD-COVER     | 20 | ACER_16L_FAN_DUCK        |
| 10 | ODD-COVER     | 21 | ACER_16L_REAR_CHASSIS    |
| 11 | UPGBEZEL      | 22 |                          |

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