

# ACP-Q45DV

Intel® Q45 LGA775 socket for Intel® Core™ 2 Quad Micro  
ATX Motherboard

## User's Manual

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Ver. 1.01

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# Safety Information

## Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

## Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.



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The symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

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## Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance. Visit the Avalue website:

<http://www.Avalue.com.tw>

## Conventions Used in This Guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



**DANGER/WARNING:** Information to prevent injury to yourself when trying to complete a task.



**CAUTION:** Information to prevent damage to the components when trying to complete a task.



**IMPORTANT:** Instructions that you **MUST** follow to complete a task.



**NOTE:** Tips and additional information to help you complete a task.

## Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- ✓ 1 x Intel Q45 Micro ATX Main board
- ✓ 1 x CD-ROM contains the followings:
  - User's manual (this manual in PDF file)
  - Drivers
- ✓ 1 x COM 1 Cable (9P/260mm)
- ✓ 1 x ATA66 IDE Cable (40P)
- ✓ 3 x SATA Cable Kit (SATA/Power)
- ✓ 1 x I/O Shield



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If any of the above items is damaged or missing, please contact your retailer.

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## Revision History

Revision	Revision History	Date
V 1.00	First release for PCB 1.00	February 15, 2009



## Specifications Summary

<b>Features</b>	<b>CPU</b>	Intel® Q45 LGA775 socket for Intel® Core™2 Quad / Core™2 Duo Processors Compatible with Intel® 06 processors Support Intel® next generation 45nm Multi-Core CPU, TDP 95W
	<b>Chipset</b>	Intel® Q45 / ICH10DO support Intel® AMT5.0 & vPro
	<b>Memory</b>	Support four DIMM, max. 8GB, DDR2 800 / 667 MHz, non-ECC, un-buffered memory. Dual channel memory architecture
	<b>Display</b>	Intel® Graphics Media Accelerator 4500 integrated
	<b>Audio</b>	Realtek® ALC888, 5.1 with Multiple Streaming HD Audio
	<b>LAN</b>	Intel® 82567-LM PCI-E Gigabit LAN
	<b>Expansion</b>	1 x PCI-E 2.0 x16, 1 x PCI-E x1, 2 x PCI 2.3
	<b>I/O</b>	2 x COM with power(1F/1R), 12 x USB 2.0(8F/4R), 6 x SATA/SATAII, 1 x IDE, 1 x LPT port, 1 x PS2 KB/MS
<b>Others</b>	S/PDIF Out Header	

### System

<b>CPU</b>	Intel® Q45 LGA775 socket for Intel® Core™2 Quad / Core™2 Duo Processors Compatible with Intel® 06 processors Support Intel® next generation 45nm Multi-Core CPU
<b>FSB</b>	1333 / 1066 / 800 MHz
<b>BIOS</b>	Award 32 Mb SPI BIOS
<b>System Chipset</b>	Intel Q45 GMCH/ICH10DO
<b>I/O Chipset</b>	Winbond W83627DHG-A
<b>Memory</b>	Four 240-pin DIMM sockets support up to 8 GB Dual Channel DDR2 800 / 667 MHz
<b>Watchdog Timer</b>	Reset: 1 sec.~255 min. and 1 sec. or 1 min./step
<b>H/W Status Monitor</b>	Monitoring temperatures, voltages, and cooling fan status. Auto throttling control when CPU overheats
<b>Expansion Slots</b>	1 x PCI Express 2.0 X16, 1 X PCIe_X1 , 2 x PCI (PCI Rev. 2.3 compliant)
<b>DIO</b>	16Bit (8 in 8out)
<b>S3 / S4</b>	Yes
<b>TPM</b>	Intel Integrated TPM1.2
<b>Wake up on LAN or Ring</b>	LAN (PXE / RPL)
<b>Smart Fan Control</b>	Yes

## Specifications Summary

Display	
Chipset	Intel® Graphics Media Accelerator 4500 integrated
Display Memory	Intel DVMT 4.0 supports up to 352 MB video memory
Max. Resolution	2048 x 1536 bpp(@ 75Hz)
VGA	Yes , on board GMA 4500
LVDS / DVI / HDMI	Yes , through ADD2 card
Secondary VGA	Yes , through ADD2 card
Audio	
Audio Codec	Realtek® ALC888, 5.1 +2 with two independent Streaming
Audio Interface	Line-out, Line-in, Mic-in, SPDIF header
Ethernet	
LAN1	Intel® 82567-LM PCI-E Gigabit LAN
Back I/O Port	
Back Panel	<ul style="list-style-type: none"> <li>1 x PS/2 Keyboard</li> <li>1 x PS/2 Mouse</li> <li>1 x VGA Port</li> <li>1 x Parallel Port</li> <li>1 x COM Port</li> <li>1 x RJ45 Port</li> <li>4 x USB 2.0/1.1</li> <li>1 x Audio Jack (6 ports)</li> </ul>
Internal I/O Connector	
Internal I/O	<ul style="list-style-type: none"> <li>4 x USB connectors support additional 8 USB Ports</li> <li>1 x IDE Connector</li> <li>6 x SATA Connectors</li> <li>1 x CPU Fan Connector</li> <li>1 x Chassis Fan Connector</li> <li>1 x Power Fan Connector</li> <li>1 x Front panel Header</li> <li>1 x S/PDIF Out Header</li> <li>1 x Chassis Intrusion Header</li> <li>1 x 24-pin ATX Power Connector</li> <li>1 x 4-pin ATX 12V Power Connector</li> <li>1 x 4-pin Audio Amp.</li> </ul>

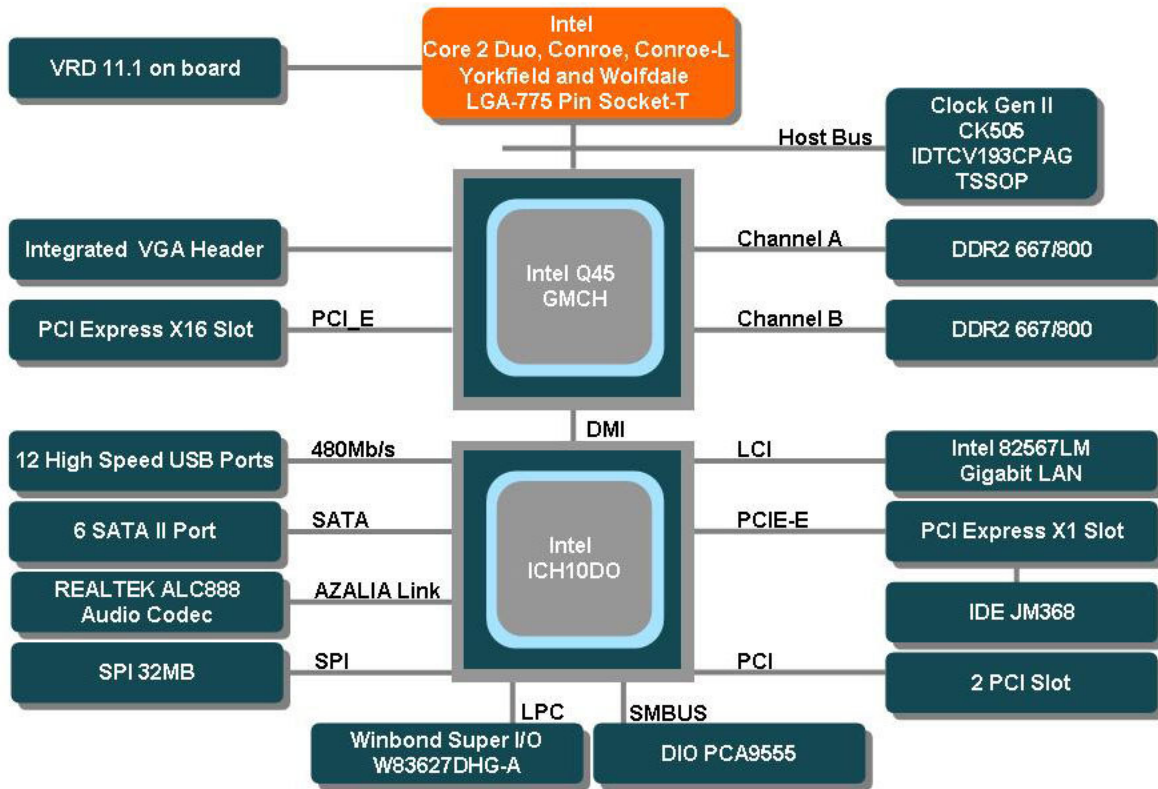
## Specifications Summary

### Mechanical & Environmental

<b>Power Type</b>	ATX
<b>Operating Temperature</b>	0~60°C (32~140°F)
<b>Operating Humidity</b>	0%~90% relative humidity, non-condensing
<b>Size (L x W)</b>	9.6" x 9.6" (243.84 mm x 243.84 mm)
<b>Weight</b>	1.40 lbs (0.64 Kg)

\* Specifications are subject to change without notice.

# Block Diagram



This chapter describes the main board features and the new technologies it supports.

# 1 Product introduction

# Production Introduction

## 1.1 Before you Proceed

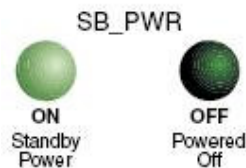
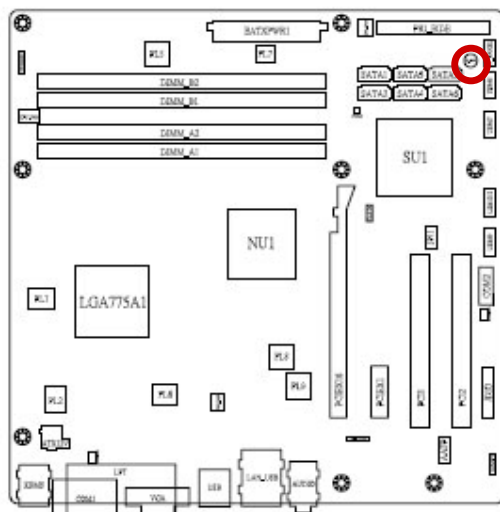
Take note of the following precautions before you install motherboard components or change any motherboard settings.



- Unplug the power cord from the wall socket before touching any component.
- Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

### Onboard LED

The motherboard comes with a standby power LED that lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED.



## 1.2 Motherboard Overview

Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it. Refer to the chassis documentation before installing the motherboard.



Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage motherboard components.

### 1.2.1 Placement Direction

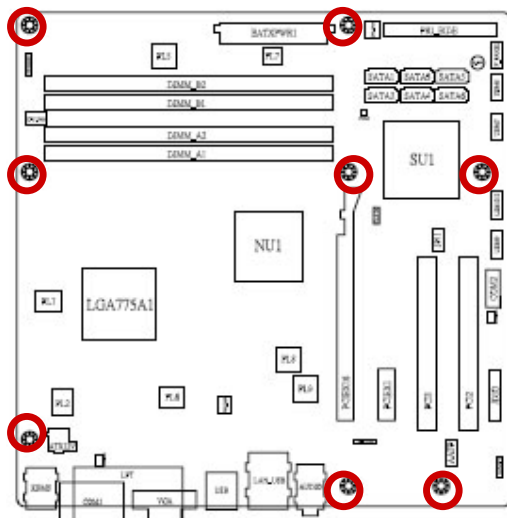
When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

### 1.2.2 Screw Holes

Place eight (8) screws into the holes indicated by circles to secure the motherboard to the chassis.

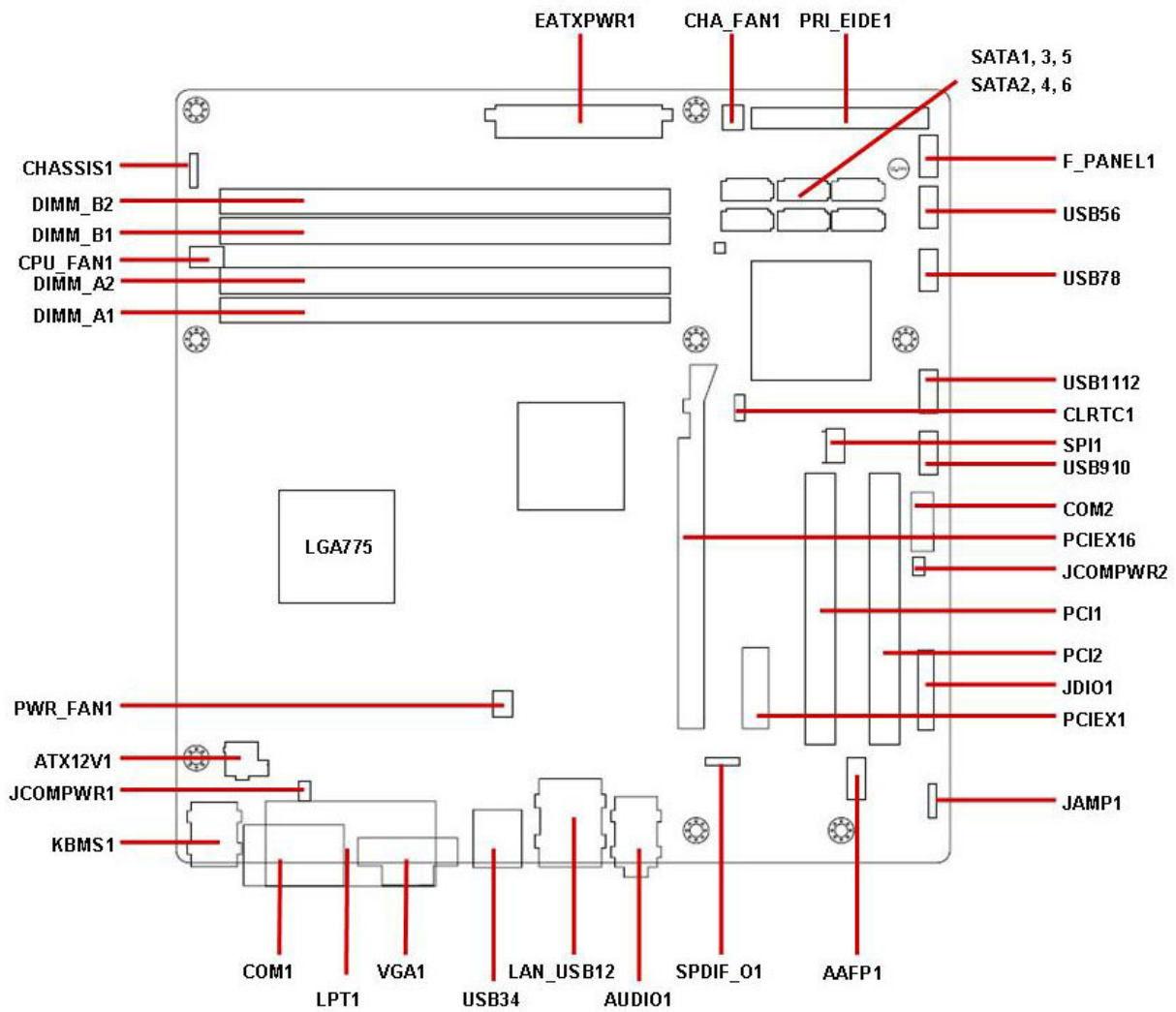


Do not over tighten the screws! Doing so can damage the motherboard.



Place this side towards the rear of the chassis

### 1.3 Motherboard Layout





### 1.3.1 Layout Content List

Slots			
Label	Function	Note	Page
DIMM_A1	240-pin SODIMM slot 1		N/A
DIMM_A2	240-pin SODIMM slot 2		N/A
DIMM_B1	240-pin SODIMM slot 3		N/A
DIMM_B2	240-pin SODIMM slot 4		N/A
PCIEX1	PCI express x1 slot		N/A
PCIEX16	PCI express x16 slot		N/A
PCI1, PCI2	PCI slot		N/A

Jumpers			
Label	Function	Note	Page
CLRTC1	Clear CMOS	3 x 1 header, pitch 2.54mm	32
CHASSIS1	Chassis Intrusion Connector	4 x 1 header, pitch 2.54mm	33
JCOMPWR1,2	COM1, COM2 RI/+5V/+12V Select	3 x 2 header, pitch 2.54mm	33

Rear Panel Connector			
Label	Function	Note	Page
KBMS1	PS/2 keyboard and mouse	6-pin Mini-Din	34,35
COM1	Serial Port Connector	D-sub 9-pin, male	35
LPT1	Parallel Port	D-sub 25-pin, female	34
VGA1	VGA Connector	D-sub 15-pin, female	35
USB34	USB Connector x 2		35
LAN_USB12	RJ-45 Ethernet Connector x 1 USB Connector x 2		34,35
AUDIO1	Line-in Port, Line-out Port, Microphone Port,	5.1 Channel Audio I/O (3 jacks)	34,35

Internal Connector			
Label	Function	Note	Page
AAFP1	Front Panel Audio Connector	5 x 2 header, pitch 2.54mm	36
ATX12V1	ATX Power Connector	2 x 2 header	37
CHA_FAN1	Chassis Fan Connector	3 x 1 wafer, pitch 2.54mm	38
CPU_FAN1	CPU Fan Connector	4 x 1 wafer, pitch 2.54mm	38
COM2	Serial Port Connector 2	5 x 2 header, pitch 2.54mm	39
EATXPWR1	ATX Power Connector	12 x 2 header	37
F_PANEL1	System Panel Connector	5 x 2 header, pitch 2.54mm	40
JAMP1	Amplifier Connector	4 x 1 header, pitch 2.54mm	41
JDIO1	Digital I/O Connector	10 x 2 header, pitch 2.54mm	41
PRI_EIDE1	Primary EIDE(RAID) Connector	20 x 2 header, pitch 2.54mm	42
PWR_FAN1	Power Fan Connector	3 x 1 wafer, pitch 2.54mm	42
SATA1~6	Serial ATA Connectors 1~6	7-pin header	43
SPDIF_O1	Digital Audio Connector	4 x 1 header, pitch 2.54mm	44
SPI1	SPI pin header	4 x 2 header, pitch 2.54mm	44
USB56	USB 2.0 Connector	5 x 2 header, pitch 2.54mm	45
USB78	USB 2.0 Connector	5 x 2 header, pitch 2.54mm	45
USB910	USB 2.0 Connector	5 x 2 header, pitch 2.54mm	45
USB1112	USB 2.0 Connector	5 x 2 header, pitch 2.54mm	45

## 1.4 Central Processing Unit (CPU)

The motherboard comes with a surface mount LGA775 socket designed for the Intel® Q45 LGA775 socket for Intel® Core™2 Quad / Core™2 Duo CPU processors.



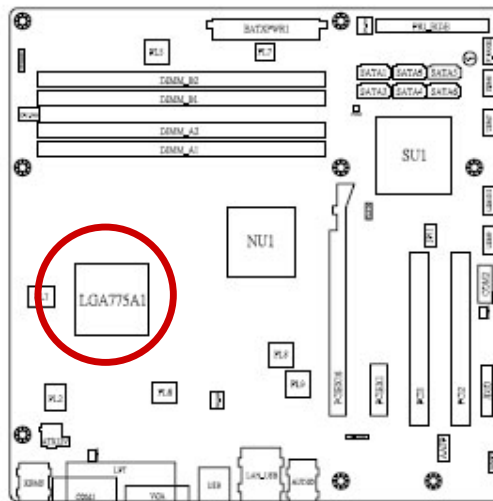
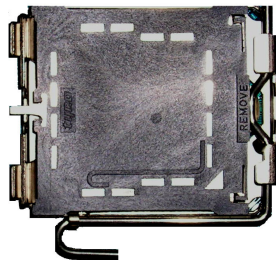
- 
- Make sure the AC power is off before you install the CPU.
  - If installing a dual-core CPU, connect the CPU fan cable to the **CPU\_FAN1** connector to ensure system stability.
- 



- 
- Your boxed Intel® Q45 LGA775 socket for Intel® Core™2 Quad / Core™2 Duo CPU processors package should come with installation instructions for the CPU, heatsink, and the retention mechanism. If the instructions in this section do not match the CPU documentation, follow the latter.
  - Upon purchase of the motherboard, make sure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. Your place of purchase or local distributor will shoulder the cost of repair only if the damage is shipment/transit-related.
  - Keep the cap after installing the motherboard. Your place of purchase or local distributor will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA775 socket.
  - The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/ incorrect removal of the PnP cap..
-

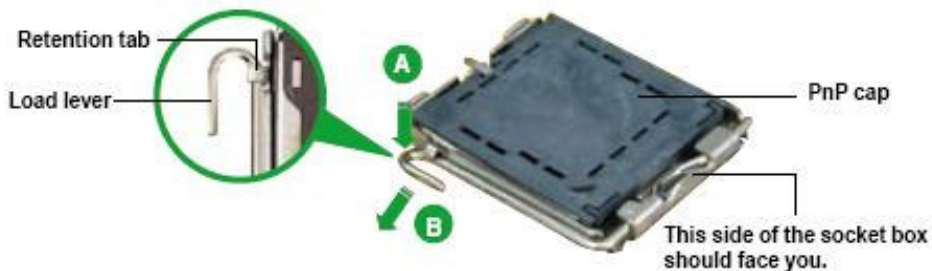
### 1.4.1 Installing the CPU

1. Locate the CPU socket on the motherboard.



Before installing the CPU, make sure that the socket box is facing towards you and the load lever is on your left.

2. Press the load lever with your thumb (A), then move it to the left (B) until it is released from the retention tab.

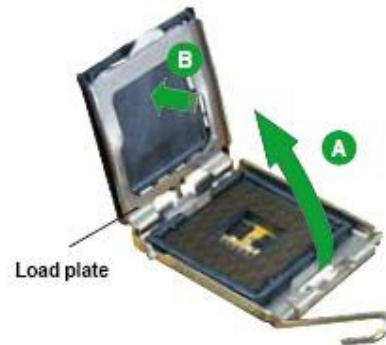


To prevent damage to the socket pins, do not remove the PnP cap unless you are installing a CPU.

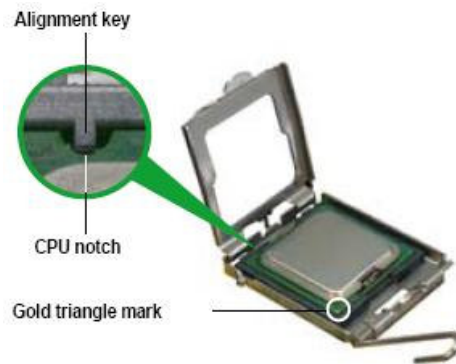
3. Lift the load lever in the direction of the arrow to a 135° angle.



- Lift the load plate with your thumb and forefinger to a 100° angle (A), then push the PnP cap from the load plate window to remove (B).



- Position the CPU over the socket, making sure that the gold triangle is on the bottom-left corner of the socket then fit the socket alignment key into the CPU notch.



- Close the load plate (A), then push the load lever (B) until it snaps into the retention tab.
- If installing a dual-core CPU, connect the chassis fan cable to the CHA\_FAN1 connector to ensure system stability.



The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the connectors on the socket and damaging the CPU!



The motherboard supports Intel® LGA775 processors with the Intel® Enhanced Memory 64 Technology (EM64T), Enhanced Intel SpeedStep® Technology (EIST), and Hyper-Threading Technology.



After installation, make sure to plug-in the ATX power cable to the motherboard.

### 1.4.2 Installing the CPU Heatsink and Fan

The Intel® Q45 LGA775 socket for Intel® Core™2 Quad / Core™2 Duo CPU processors require a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance.



- 
- Install the motherboard to the chassis before you install the CPU fan and heatsink assembly.
  - When you buy a boxed Intel® processor, the package includes the CPU fan and heatsink assembly. If you buy a CPU separately, make sure that you use only Intel®-certified multi-directional heatsink and fan.
- 



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If you purchased a separate CPU heatsink and fan assembly, make sure that you have properly applied Thermal Interface Material to the CPU heatsink or CPU before you install the heatsink and fan assembly.

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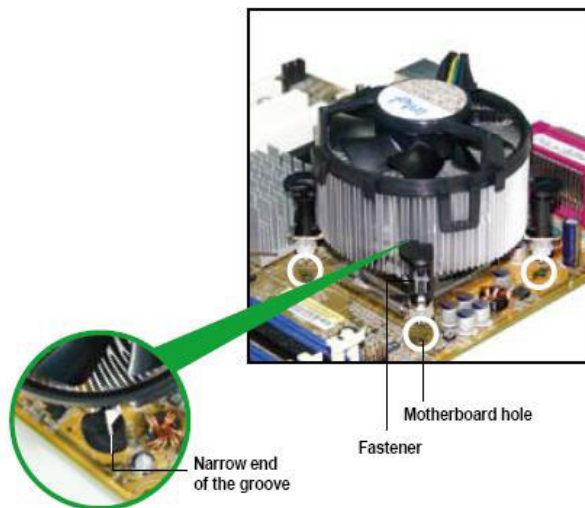
1. Place the heatsink on top of the installed CPU, making sure that the four fasteners match the holes on the motherboard.



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Orient the heatsink and fan assembly such that the CPU fan cable is closest to the CPU fan connector.

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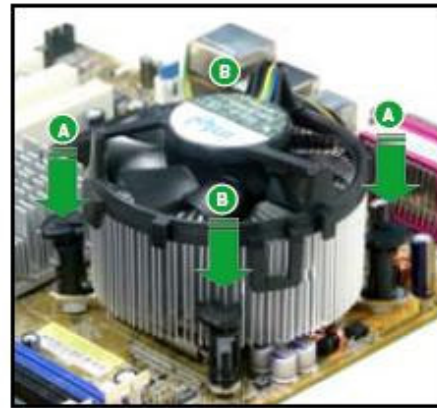
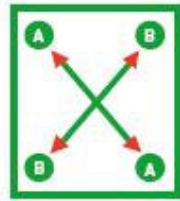


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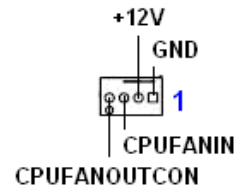
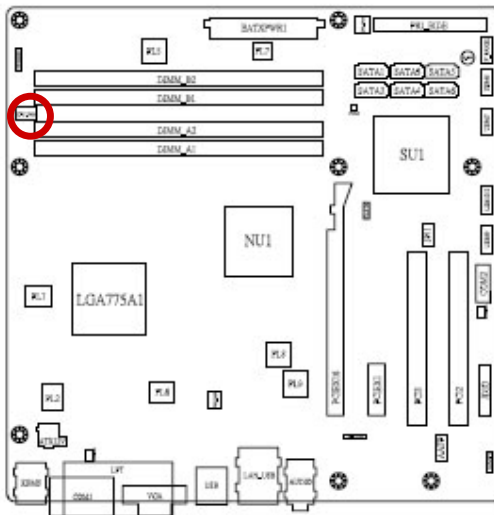
Make sure each fastener is oriented as shown, with the narrow groove directed outward.

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2. Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place.



3. Connect the CPU fan cable to the connector on the motherboard labelled **CPU\_FAN1**.



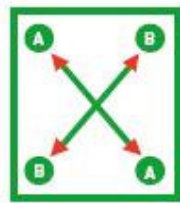
- Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components, and hardware monitoring errors can occur if you fail to plug this connector.
- These are not jumpers! DO NOT place jumper caps on the fan connectors.

### 1.4.3 Uninstalling the CPU Heatsink and Fan

1. Disconnect the CPU fan cable from the connector on the motherboard.
2. Rotate each fastener counter-clockwise.



3. Pull up two fasteners at a time in a diagonal sequence to disengage the heatsink and fan assembly from the motherboard

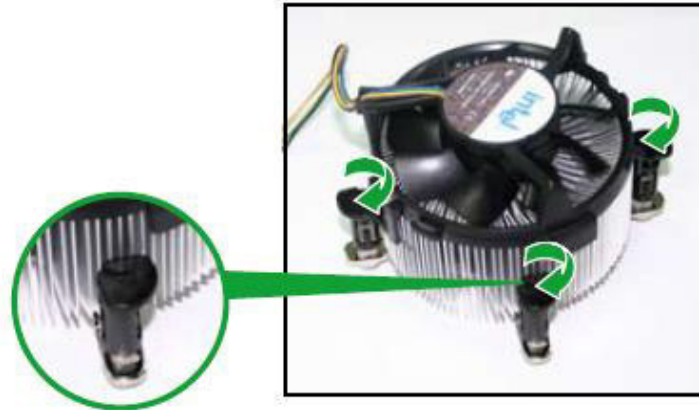


4. Carefully remove the heatsink and fan assembly from the motherboard.





5. Rotate each fastener clockwise to ensure correct orientation when reinstalling.



---

The narrow end of the groove should point outward after resetting. (The photo shows the groove shaded for emphasis.)

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Narrow end of the groove



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Refer to the documentation in the boxed or stand-alone CPU fan package for detailed information on CPU fan installation.

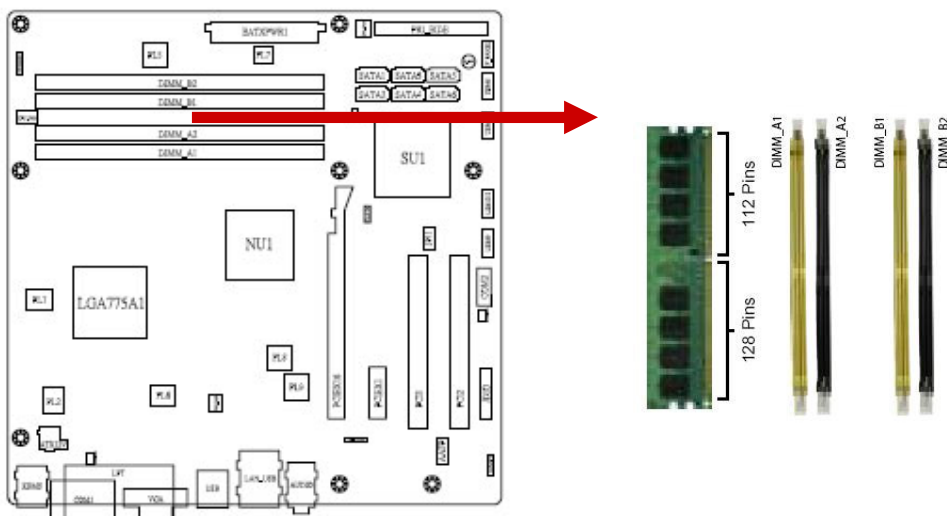
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## 1.5 System Memory

### 1.5.1 DIMM Sockets Location

The motherboard comes with four 240-pin Double Data Rate 2 (DDR2) Dual Inline Memory Modules (DIMM) sockets.

A DDR2 module has the same physical dimensions as a DDR DIMM but has a 240-pin footprint compared to the 184-pin DDR DIMM. DDR2 DIMMs are notched differently to prevent installation on a DDR DIMM socket. The following figure illustrates the location of the sockets:



## 1.5.2 Memory Configurations

You can install 128MB, 256MB, 512MB, 1GB and 2GB DDR2 SDRAM DIMMs into the DIMM sockets using the memory configurations in this section.



- 
- Installing DDR2 DIMM other than the recommended configurations may cause memory sizing error or system boot failure. Use any of the recommended configurations.
  - For dual-channel configuration, the total size of memory module(s) installed per channel must be the same (DIMM1 = DIMM2).
  - Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor.
  - Due to chipset resource allocation, the system may detect less than 1 GB system memory when you installed one 1 GB DDR2 memory modules.
  - This motherboard does not support memory modules made up of 128 Mb chips or double-sided x16 memory modules. Make sure that the memory frequency matches the CPU FSB (Front Side Bus). Refer to the Memory frequency/CPU FSB synchronization table.
- 



- Recommended memory configuration

Channel	Socket
Channel A	DIMM_A1 and DIMM_A2
Channel B	DIMM_B1 and DIMM_B2

- Memory frequency/CPU FSB synchronization

CPU FSB	DDR2	Single Ch.	Dual Ch.
	DIMM Type	Peak Bandwidth	Peak Bandwidth
800/1066/	667	5.32GB/s	10.6GB/s
1333MHz	800	6.4GB/s	12.8GB/s

---

### 1.5.3 Installing a DDR2 DIMM

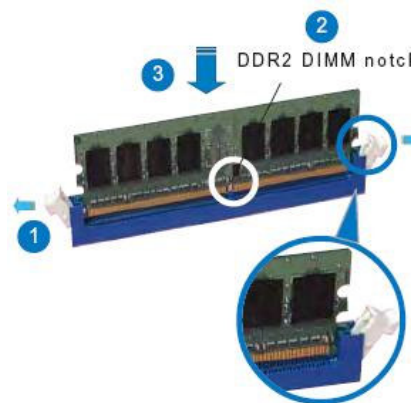



---

Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

---

1. Unlock a DIMM socket by pressing the retaining clips outward
2. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.
3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM.



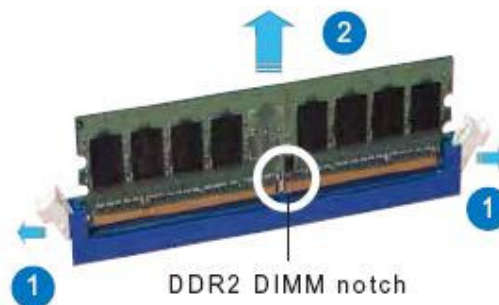
Unlocked retaining clip



- 
- A DDR2 DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.
  - The DDR2 DIMM sockets do not support DDR DIMMs. DO NOT install DDR DIMMs to the DDR2 DIMM socket.
- 

### 1.5.4 Removing a DDR2 DIMM

1. Simultaneously press the retaining clips outward to unlock the DIMM.
2. Remove the DIMM from the socket.




---

Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

---

## 1.6 Expansion Slots

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.



---

Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

---

### 1.6.1 Installing an Expansion Card

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

### 1.6.2 Configuring an Expansion Card

After installing the expansion card, configure it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings if any.
2. Assign an IRQ to the card if needed. Refer to the tables on the next page.
3. Install the software drivers for the expansion card.

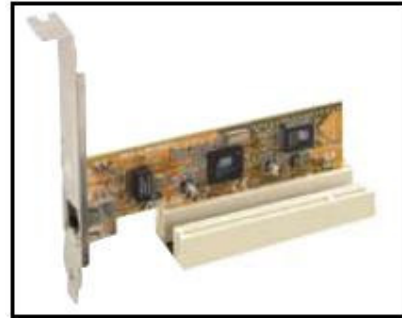
**1.6.3 Standard Interrupt Assignments**

IRQ	Priority	Standard Function
0	1	System Timer
1	2	Keyboard Controller
2	-	Redirect to IRQ#9
3	11	IRQ holder for PCI steering*
4	12	Communications Port (COM1)*
5	13	IRQ holder for PCI steering*
6	14	Floppy Disk Controller
7	15	Printer Port (LPT)*
8	3	System CMOS/Rear Time
9	4	IRQ holder for PCI steering*
10	5	IRQ holder for PCI steering*
11	6	IRQ holder for PCI steering*
12	7	PS/2 Compatible Mouse Port*
13	8	Numeric Data Processor
14	9	Primary IDE Channel
15	10	Secondary IDE Channel

\* These IRQs are usually available for ISA or PCI device.

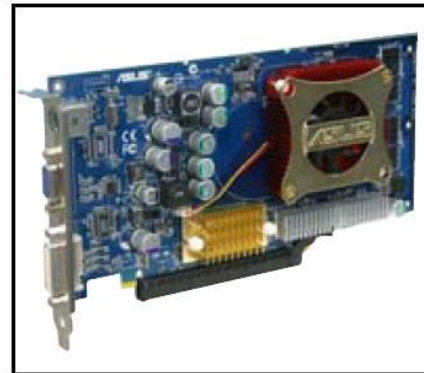
#### 1.6.4 PCI Slot

This motherboard has two PCI slots. The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications. The figure shows a LAN card installed on a PCI slot.



#### 1.6.5 PCI Express X16 Slot

This motherboard supports one PCI Express x16 graphic cards that comply with the PCI Express specifications. The following figure shows a graphics card installed on the PCI Express x16 slot.



## 1.7 Jumpers

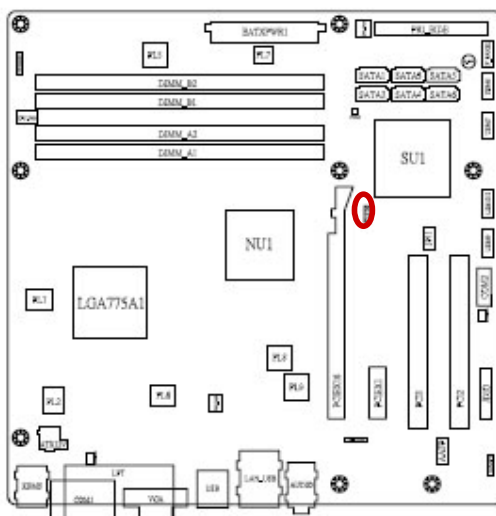
### 1.7.1 Clear CMOS (CLRRTC1)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords. To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Remove the onboard battery.
3. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.
4. Re-install the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data.



Except when clearing the CMOS, never remove the cap on CLRRTC jumper default position. Removing the cap will cause system boot failure!



**Normal (Default)**

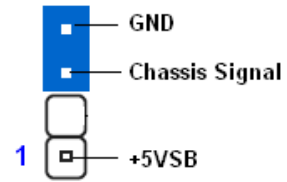
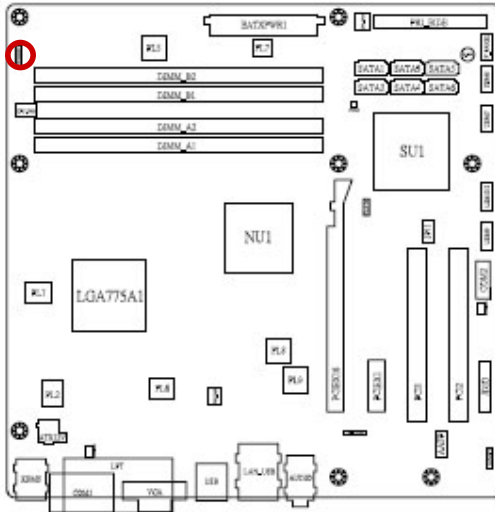


**Clear RTC**

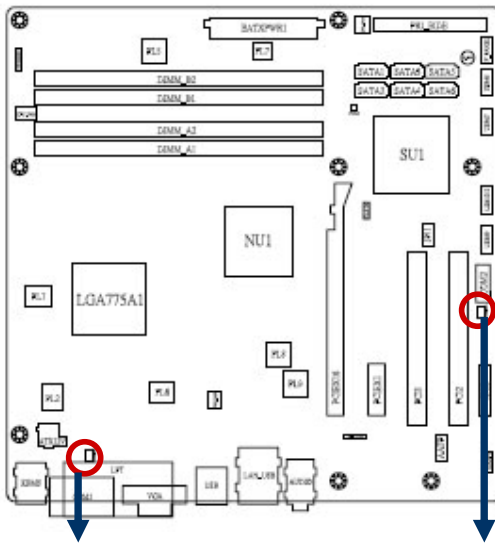




### 1.7.2 Chassis Intrusion Connector (CHSSIS1)



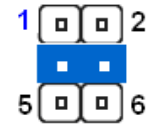
### 1.7.3 COM1, COM2 RI/+5V/+12V Select (JCOMPWR1, JCOMPWR2)



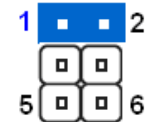
JCOMPWR1

JCOMPWR2

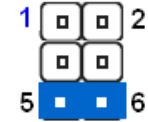
RI (Default)



+12V

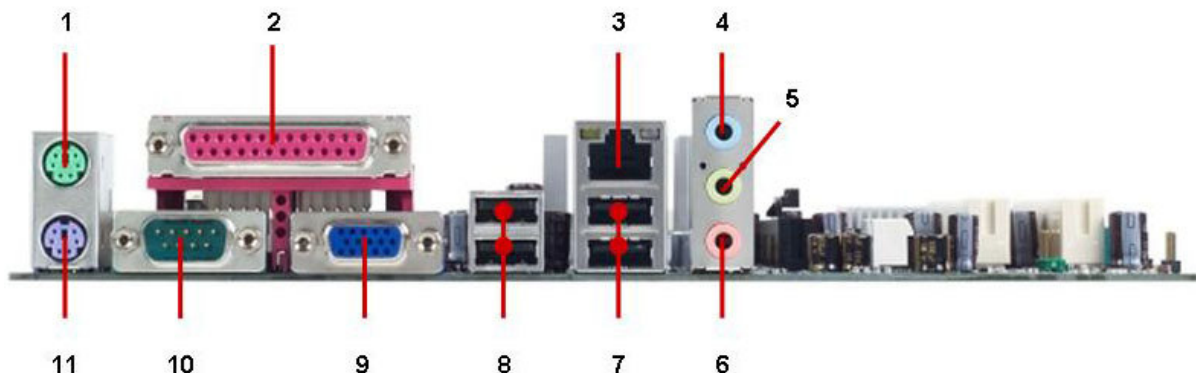


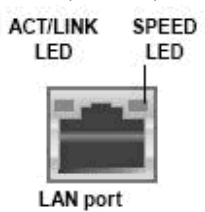
+5V

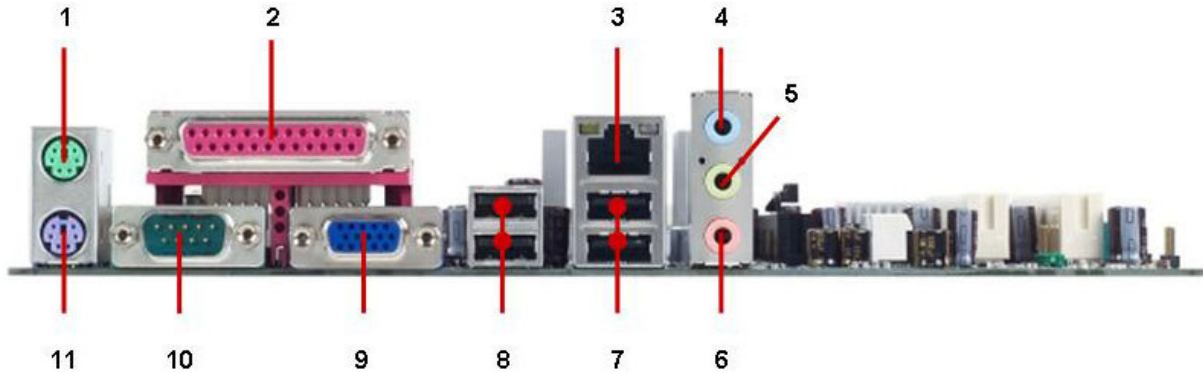


## 1.8 Connectors

### 1.8.1 Rear Panel Connectors



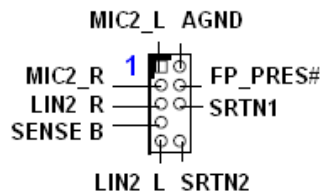
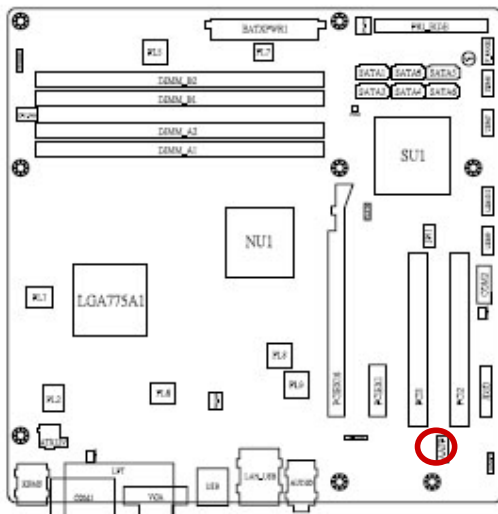
No	Label	Function	Description																				
1	KBMS1	PS/2 mouse connector	The standard PS/2 mouse DIN connector is for a PS/2 mouse.																				
2	LPT1	Parallel port connector	This 25-pin parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode																				
3	LAN_USB12	LAN (RJ-45) connector	This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications. The optional 10/100 Mbps LAN controller allows 10/100 Mbps connection to a Local Area Network (LAN) through a network hub.																				
		 <p>ACT/LINK LED    SPEED LED</p> <p>LAN port</p>																					
<table border="1"> <thead> <tr> <th colspan="2">ACT / LINK LED</th> <th colspan="2">SPEED LED</th> </tr> <tr> <th>Status</th> <th>Description</th> <th>Status</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>No link</td> <td>OFF</td> <td>10Mbps connection</td> </tr> <tr> <td>Orange</td> <td>Linked</td> <td>ORANGE</td> <td>100Mbps connection</td> </tr> <tr> <td>Blinking</td> <td>Data activity</td> <td>GREEN</td> <td>1Gbps connection</td> </tr> </tbody> </table>				ACT / LINK LED		SPEED LED		Status	Description	Status	Description	OFF	No link	OFF	10Mbps connection	Orange	Linked	ORANGE	100Mbps connection	Blinking	Data activity	GREEN	1Gbps connection
ACT / LINK LED		SPEED LED																					
Status	Description	Status	Description																				
OFF	No link	OFF	10Mbps connection																				
Orange	Linked	ORANGE	100Mbps connection																				
Blinking	Data activity	GREEN	1Gbps connection																				
4	AUDIO1	Line-In port (Light Blue).	This port connects a tape, CD, DVD player, or other audio sources.																				



No	Label	Function	Description
5	AUDIO1	Line-Out port (Lime)	This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.
6	AUDIO1	Microphone port (Pink)	This port connects a microphone.
7	LAN_USB12	USB 2.0 connector	These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
8	USB34	USB 2.0 connector	These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
9	VGA1	VGA port	This 15-pin port is for a VGA monitor or other VGA-compatible devices.
10	COM1	Serial port connector	D-Sub 9-pin, male
11	KBMS1	PS/2 KB connector	This port is for a PS/2 keyboard

### 1.8.2 Front Panel Audio Connector (AAFP1)

This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC '97 (optional) audio standard. Connect one end of the front panel audio I/O module cable to this connector.



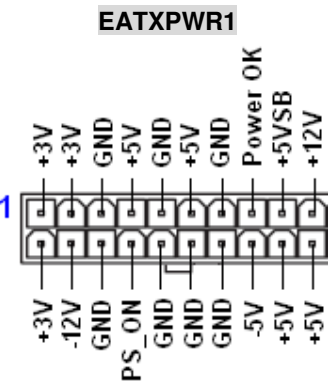
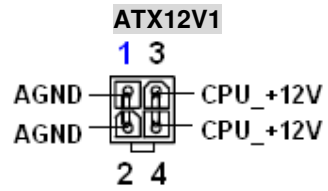
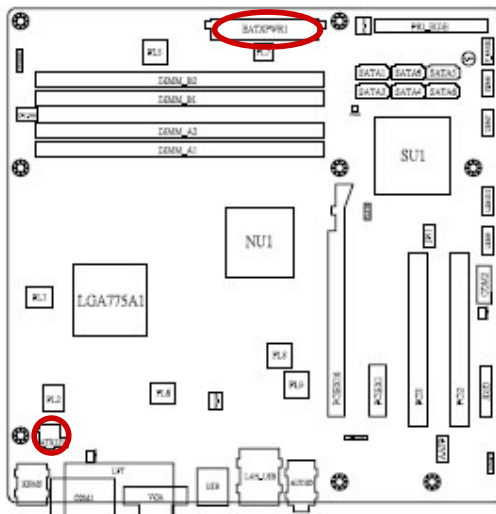

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For motherboards with the optional HD Audio feature, we recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.

---

### 1.8.3 ATX Power Connector (ATX12V1, EATXPWR1)

These connectors are for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

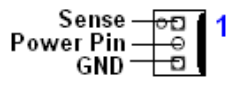
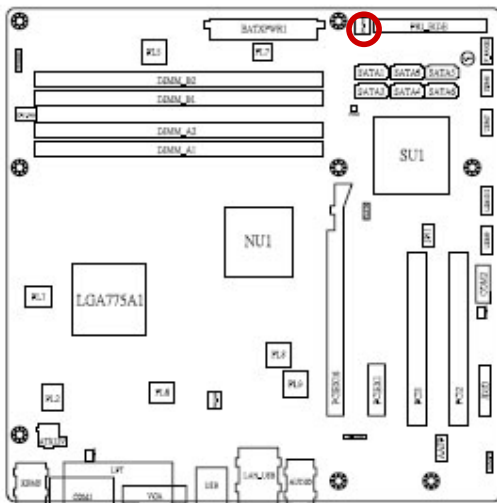


#### Important notes on the Motherboard Power Requirements

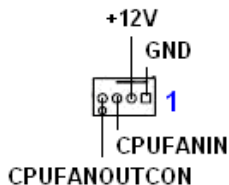
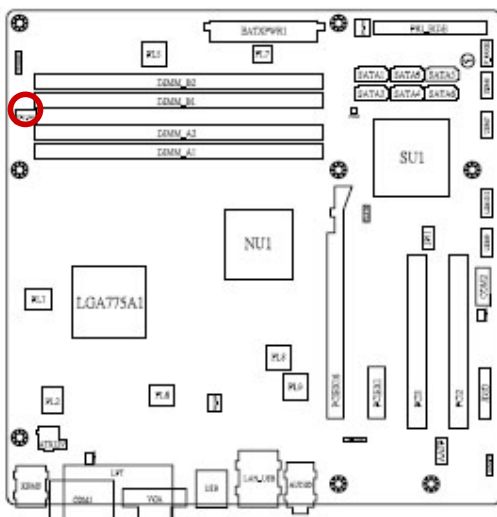


- Make sure that your ATX 12V power supply can provide 8A on the +12V lead and at least 1A on the +5-volt standby lead (+5VSB). The minimum recommended wattage is 230W, or 300W for a fully configured system. The system can become unstable and might experience difficulty powering up if the power supply is inadequate.
- You must install a PSU with a higher power rating if you intend to install additional devices.

### 1.8.4 Chassis Fan Connector (CHA\_FAN1)

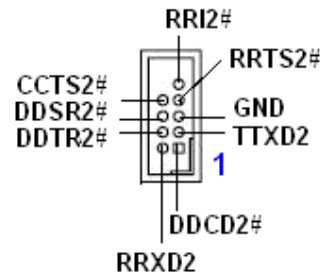
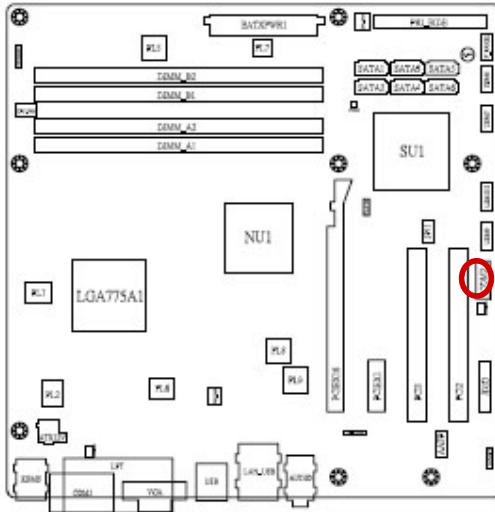


### 1.8.5 CPU Fan Connector (CPU\_FAN1)



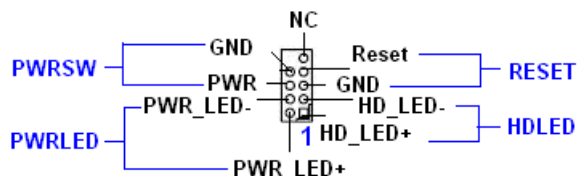
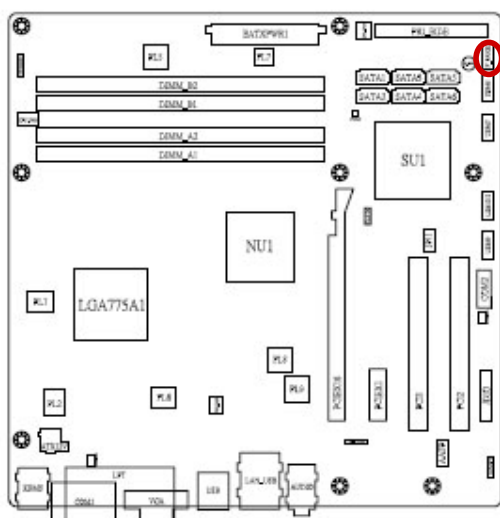
- Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components, and hardware monitoring errors can occur if you fail to plug this connector.
- These are not jumpers! DO NOT place jumper caps on the fan connectors.

### 1.8.6 Serial Port Connector 2 (COM2)



### 1.8.7 System Panel Connector (F\_PANEL1)

This connector supports several chassis-mounted functions.



- **System Power LED (2-pin PWRLED)**

This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **ATX Power Button/Soft-off Button (2-pin PWRSW)**

This connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.

- **Hard Disk Drive Activity LED (2-pin HDLED)**

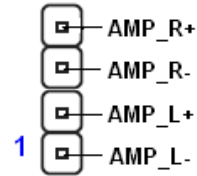
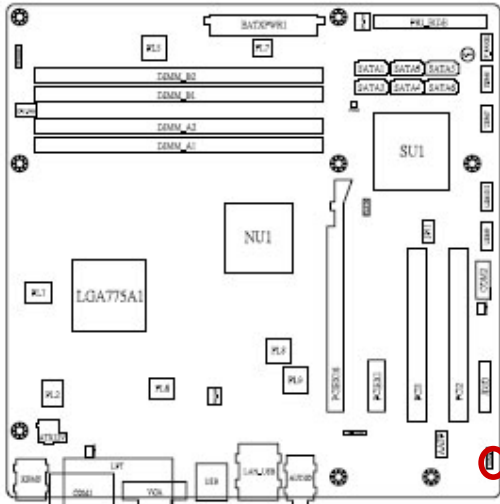
This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

- **Reset Button (2-pin RESET)**

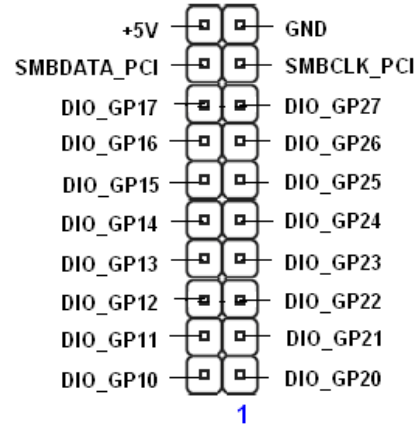
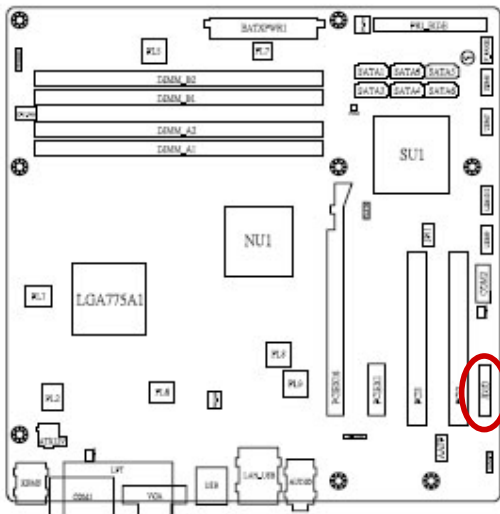
This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.



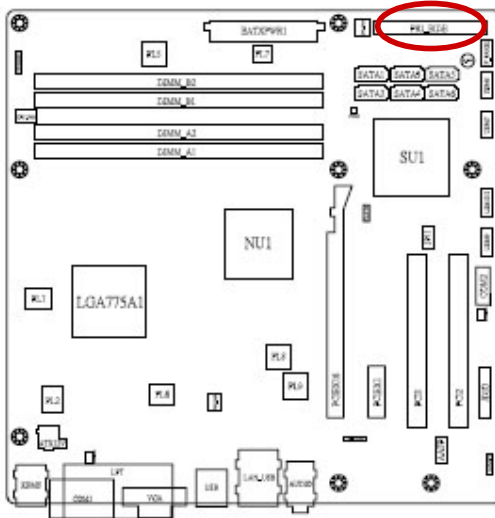
### 1.8.8 Amplifier Connector (JAMP1)



### 1.8.9 Digital I/O Connector (JDIO1)

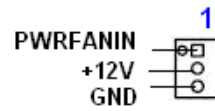
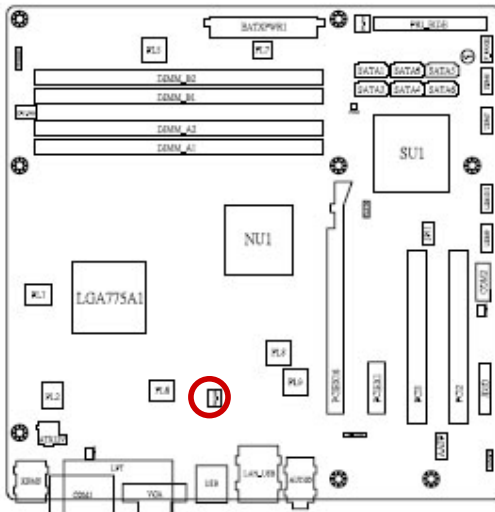


### 1.8.10 Primary EIDE Connector (PRE\_EIDE1)



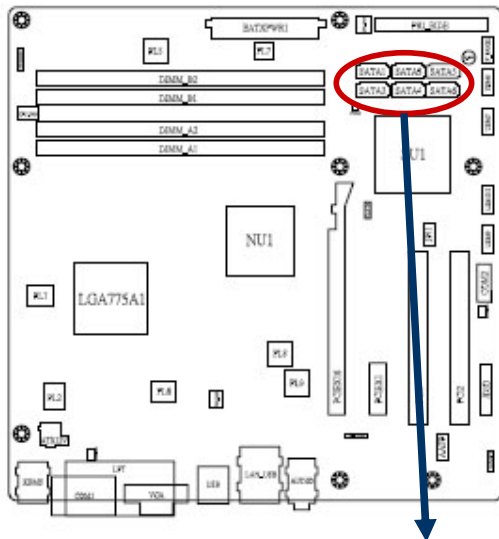
- Orient the red markings (usually zigzag) on the IDE cable to Pin 1.

### 1.8.11 Power Fan Connector (PWR\_FAN1)



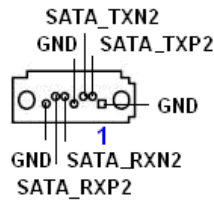
### 1.8.12 Serial ATA Connector (SATA1~6)

These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.

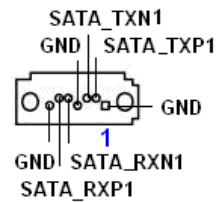


SATA1, 3, 5  
SATA2, 4, 6

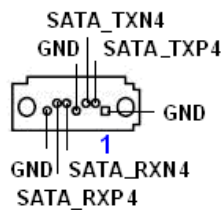
#### SATA2



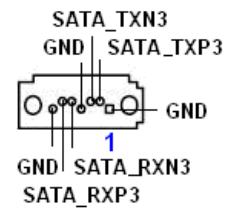
#### SATA1



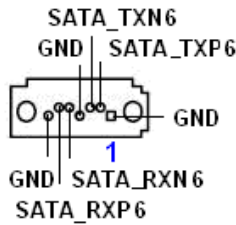
#### SATA4



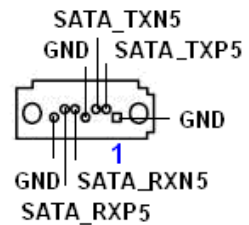
#### SATA3



#### SATA6

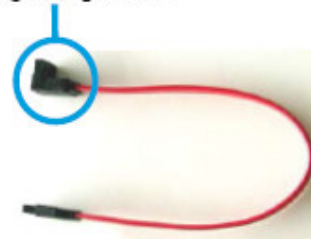


#### SATA5



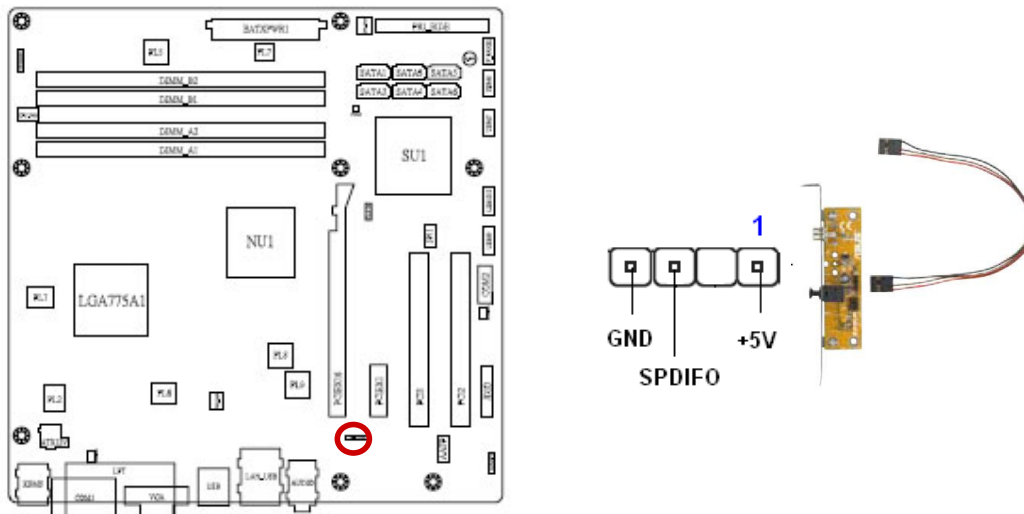
Connect the right-angle side of SATA signal cable to SATA device. Or you may connect the right-angle side of SATA cable to the onboard SATA port to avoid mechanical conflict with huge graphics cards.

right angle side



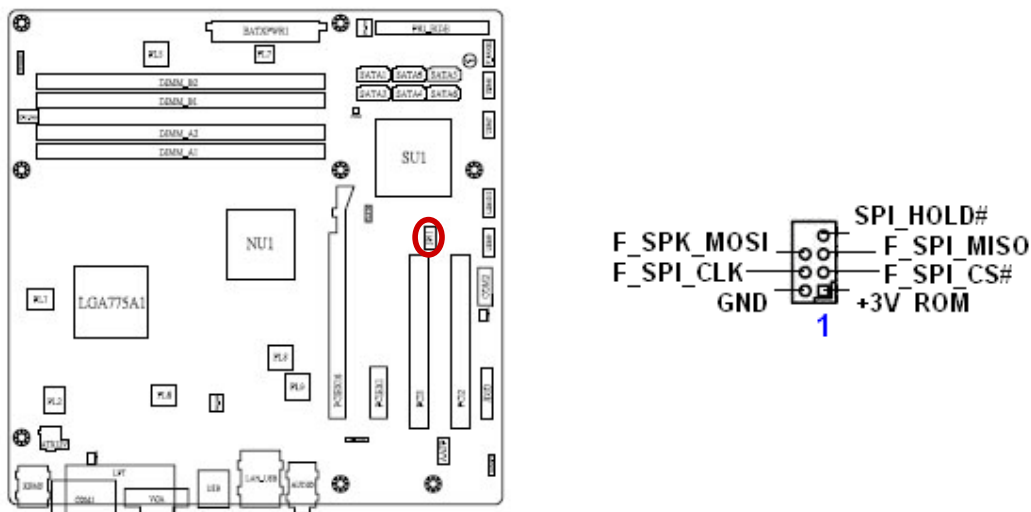
### 1.8.13 Digital Audio Connector (SPDIF\_O1)

This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port(s). Connect the S/PDIF module cable to this connector, then install the module to a slot opening at the back of the system chassis.



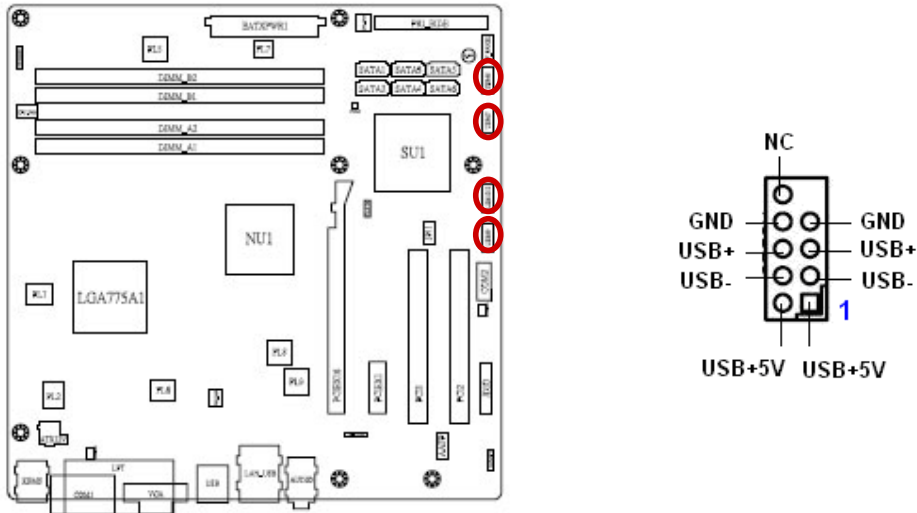
The S/PDIF module is purchased separately.

### 1.8.14 SPI Pin Header (SPI1)



### 1.8.15 USB 2.0 Connector (USB56, USB78, USB910, USB1112)

These connectors are for USB 2.0 ports. Connect the USB/GAME module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.



Never connect a **1394 cable** to the USB connectors. Doing so will damage the motherboard!



The USB module is purchased separately.

This chapter tells how to change the system setting through the BIOS setup menus. Detailed descriptions of the BIOS parameters are also provided.

## BIOS setup *2*

# BIOS Setup

## 2.1 BIOS Setup Program

This motherboard supports a programmable firmware chip that you can update using the provided utility. Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to “Run Setup.” This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware hub.

The firmware hub on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> during the Power-On-Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, restart the system by pressing <Ctrl+Alt+Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.



- 
- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Setup Defaults** from the BIOS menu screen.
  - The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
  - Visit the system builder's website to download the latest BIOS file for this motherboard
-

### 2.1.1 Legend Box


The keys in the legend bar allow you to navigate through the various setup menus

Key(s)	Function Description
↑ ↓ → ←	Move
Enter	Select
+ / - / PU / PD	Value
ESC	Exit
F1	General Help
F2	Item Help
F5	Previous Value
F7	Optimized Defaults
F9	Menu in BIOS
F10	Save

### 2.1.2 List Box

This box appears only in the opening screen. The box displays an initial list of configurable items in the menu you selected.

### 2.1.3 Sub-menu

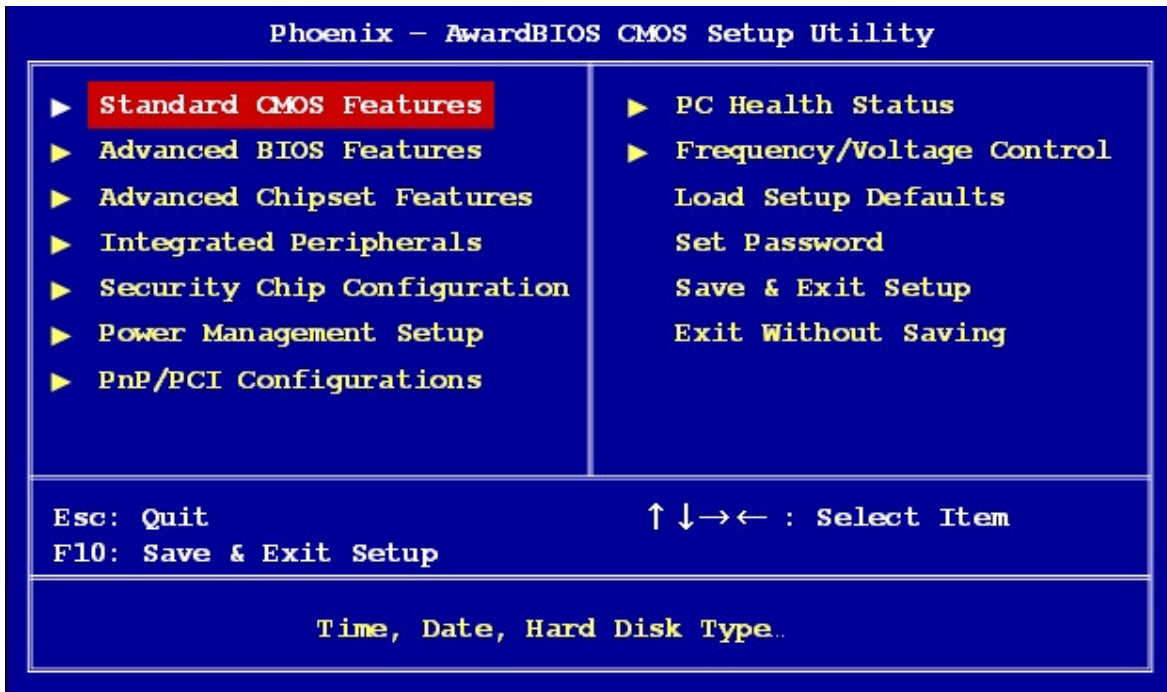
Note that a right pointer symbol  appears to the left of certain fields. This pointer indicates that you can display a sub-menu from this field. A sub-menu contains additional options for a field parameter. To display a sub-menu, move the highlight to the field and press <Enter>. The sub-menu appears. Use the legend keys to enter values and move from field to field within a sub-menu as you would within a menu. Use the <Esc> key to return to the main menu.

Take some time to familiarize yourself with the legend keys and their corresponding functions. Practice navigating through the various menus and submenus. If you accidentally make unwanted changes to any of the fields, press <F6> to load the fail-safe default values. While moving around through the Setup program, note that explanations appear in the Item Specific Help window located to the right of each menu. This window displays the help text for the currently highlighted field.



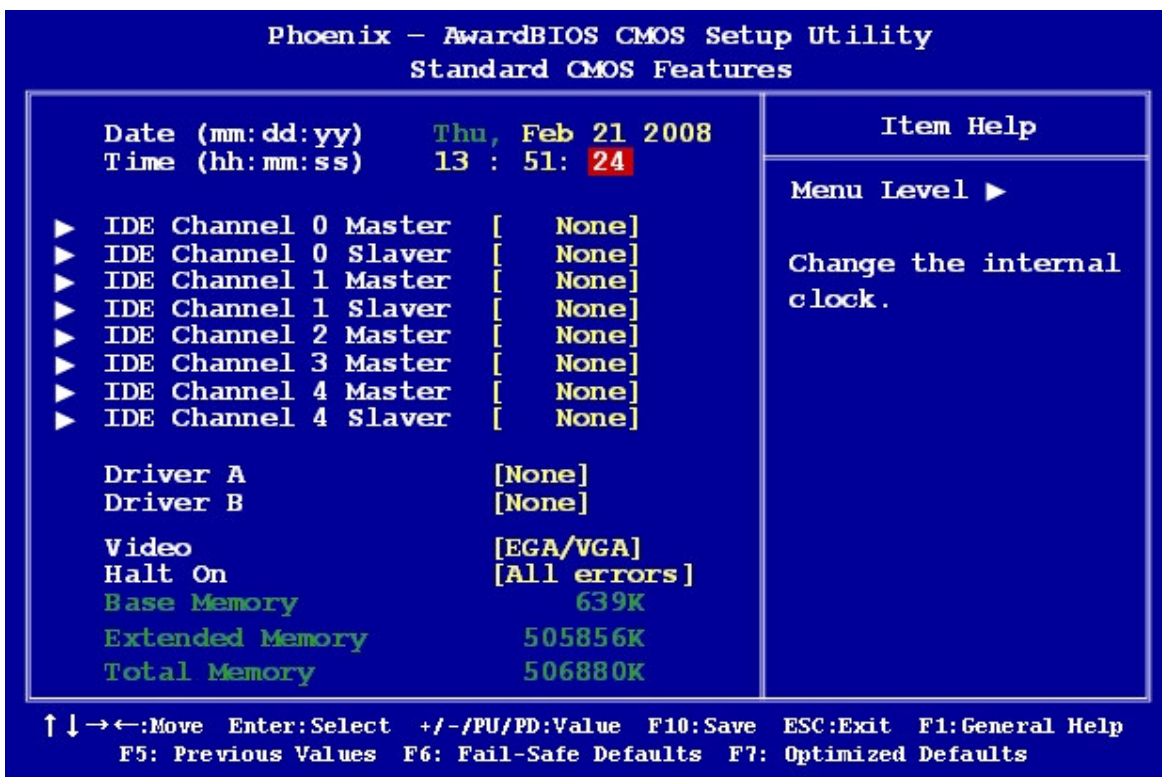
## 2.2 BIOS Menu Screen

When you enter the BIOS, the following screen appears. The BIOS menu screen displays the items that allow you to make changes to the system configuration. To access the menu items, press the up/down/right/left arrow key on the keyboard until the desired item is highlighted, then press [Enter] to open the specific menu.



### 2.2.1 Standard CMOS Features

The Standard CMOS Features screen gives you an overview of the basic system



#### 2.2.1.1 Date [Day, xx/xx/xxxx]

The date format is <week>, <month>, <day>, <year>.

#### 2.2.1.2 Time [xx:xx:xx]

The time format is <hour> <minute> <second>, based on the 24-hour clock.

#### 2.2.1.3 IDE Channel 0/1/2/3/4 Master / Slave

- **IDE HDD Auto-Detection**

[Press Enter] to select this option for automatic device detection.

- **IDE Device Setup**

[Auto]: Automatically detects IDE devices during POST

[None]: Select this when no IDE device is used. The system will skip the auto-detection setup to make system start up faster.

[Manual]: User can manually input the correct settings.

- ✓ Access Mode: The options are CHS/LBA/Large/Auto
- ✓ Capacity: Capacity of currently installed hard disk
- ✓ Cylinder: Number of cylinders
- ✓ Head: Number of heads
- ✓ Precomp: Write precomp
- ✓ Landing Zone: Landing zone
- ✓ Sector: Number of sectors

#### 2.2.1.4 Driver A/B

Specifies the capacity and physical size of diskette drive A/B. Do not select [None] if you are using a floppy disk drive. Configuration options: [None] [360K, 5.25 in.] [1.2M, 5.25 in.] [720K, 3.5 in.] [1.44M, 3.5 in.] [2.88M, 3.5 in.]

#### 2.2.1.5 Video

This category detects the type of adapter used for the primary monitor that must match your video display card and monitor.

- EGA / VGA: Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA, or PGA monitor adapters.
- CGA 40: Color Graphics Adapter, power up in 40 column mode.
- CGA 80: Color Graphics Adapter, power up in 80 column mode.
- MONO: Monochrome adapter, includes high resolution monochrome adapters.

#### 2.2.1.6 Halt On

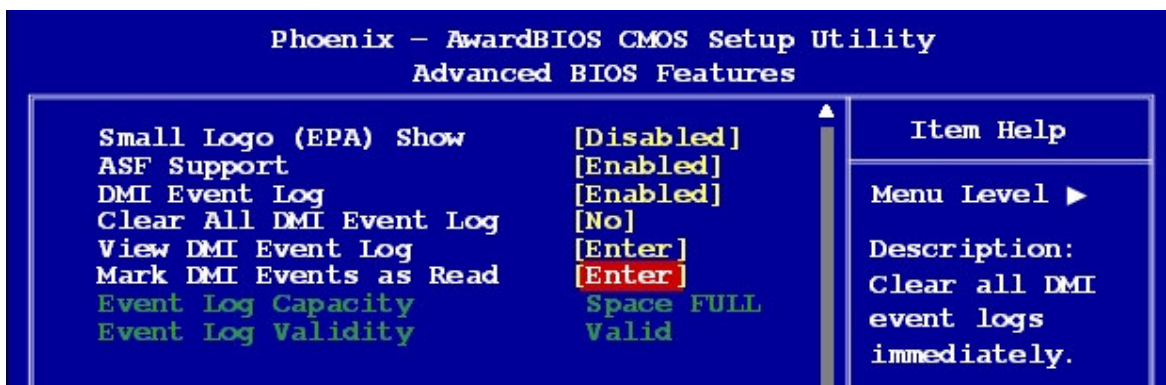
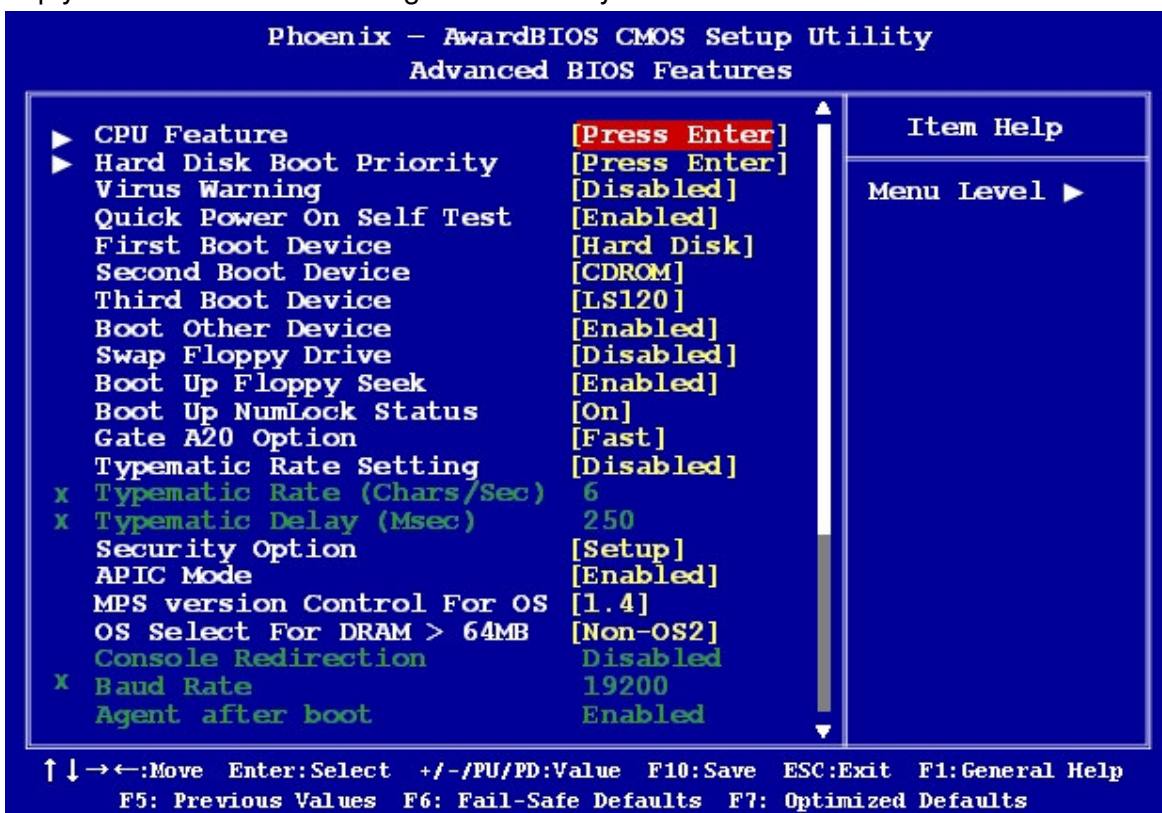
Set the system to halt on errors according to the system functions specified in each option. Configuration options: [All Errors] [No Errors] [All, But Keyboard] [All, But Diskette] [All, But Disk/Key]

#### 2.2.1.7 Memory

This category displays base memory, extended memory, and total memory detected during POST (Power On Self Test).

### 2.2.2 Advanced BIOS Features

The “Advanced BIOS Features” screen appears when choosing the “Advanced BIOS Features” item from the “Initial Setup Screen” menu. It allows the user to configure according to particular requirements. Below are some major items that are provided in the Advanced BIOS Features screen. A quick booting function is provided for your convenience. Simply enable the Quick Booting item to save yourself valuable time.



### 2.2.2.1 CPU Features



- PPM Mode

Configuration options: [Native Mode], [SMM Mode]

Native Mode - For Fully support ACPI OS (WinXP, VISTA)

SMM Mode - For Legacy OS (Win2K, Win9x)

- Limit CPUID MaxVal

Sets Limit CPUID MaxVal to 3. This should be disabled for WinXP.

The options: Enabled, Disabled

- C1E Function

CPU C1E function select.

The options: Auto, Disabled

- Execute Disable Bit

When disabled, forces the XD feature flag to always return 0

- Virtualization Technology

The options: Enabled, Disabled

- SWMRR

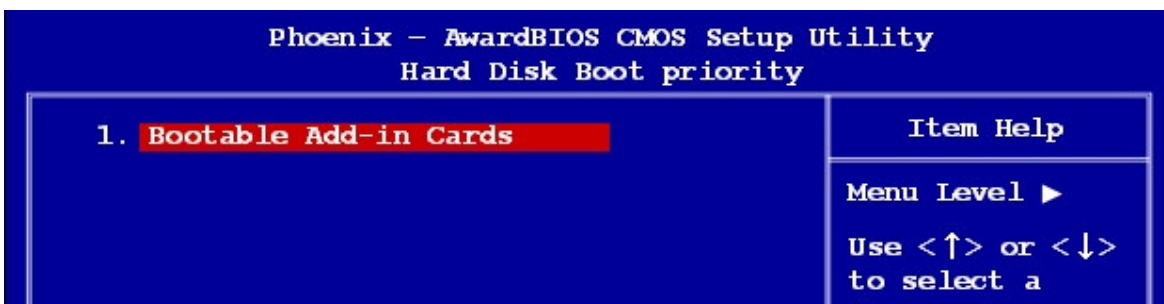
The options: Enabled, Disabled

- Core Multi-Processing

The options: Enabled, Disabled

### 2.2.2.2 Hard Disk Boot Priority

Set hard disk boot device priority.



### 2.2.2.3 Virus Warning

Enables or disables the virus warning.

Item	Description
Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

### 2.2.2.4 Quick Power On Self Test

This allows the system to skip certain tests to speed up the boot-up procedure.

Item	Description
Enabled	Enable quick POST
Disabled	Normal POST

### 2.2.2.5 First / Second / Third Boot Device

The BIOS tries to load the OS from the devices in the sequence set here. The options are:

Item	Description
Floppy	Floppy Device
LS120	LS120 Device
HDD	Hard Disk Device
CDROM	CDROM Device
ZIP100	ZIP-100 Device
USB-FDD	USB Floppy Device
USB-ZIP	USB ZIP Device
USB-CDROM	USB CDROM Device
IBA GE Slot 011	IBA GE Slot 011 Device
Legacy LAN	Network Device
Disabled	Disabled any boot device

### 2.2.2.6 Boot Other Device

Use this to boot another device. The options are "Enabled" and "Disabled".

### 2.2.2.7 Swap Floppy Drive

A useful feature for those machines that use two floppy drives, when enabled this swaps the A: and B: drives. This enables you to change the bootable floppy without having to open the case and switch the cable.

### 2.2.2.8 Boot Up Floppy Seek

Selection of the command "Disabled" will speed the boot up.

Item	Description
Enabled	Enable Floppy Seek
Disabled	Disable Floppy Seek

### 2.2.2.9 Boot Up NumLock Status

Set the boot up Num Lock status. The options are "On" and "Off".

Item	Description
On	Enable NumLock
Off	Disable NumLock

### 2.2.2.10 Gate A20 Option

Item	Description
Normal	A pin in the keyboard controller controls GateA20
Fast	Lets chipset control GateA20 (Default)

### 2.2.2.11 Typematic Rate Setting

The typematic rate is the rate key strokes repeat as determined by the keyboard controller. The commands are “Enabled” or “Disabled”. Enabling allows the typematic rate and delay to be selected.

### 2.2.2.12 Typematic Rate (Chars/Sec)

The BIOS accepts the following input values (characters/second) for typematic rate: 6, 8, 10, 12, 15, 20, 24, and 30.

### 2.2.2.13 Typematic Delay (Msec)

Typematic delay is the time interval between the appearances of two consecutive characters, when the key is continuously depressed. The input values for this category are: 250, 500, 750, and 1000 (ms).

### 2.2.2.14 Security Option

This category determines whether the password is required when the system boots up or only when entering setup. The options are:

Item	Description
System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.




---

To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

---

### 2.2.2.15 APIC Mode

This setting allows you to enable the APIC mode. The choices are “Disabled” or “Enabled.”



**2.2.2.16 MPS Version Control for OS**

This option is only valid for multiprocessor motherboards as it specifies the version of the Multiprocessor Specification (MPS) that the motherboard will use. The MPS is a specification by which PC manufacturers design and build Intel architecture systems with two or more processors.

MPS 1.1 was the original specification. MPS version 1.4 adds extended configuration tables for improved support of multiple PCI bus configurations and greater expandability in the future. In addition, MPS 1.4 introduces support for a secondary PCI bus without requiring a PCI bridge.

**2.2.2.17 OS Select for DRAM > 64MB**

Select the operating system that is running with greater than 64MB of RAM on the system. The choice: Non-OS2, OS2.

**2.2.2.18 Console Redirection**

The options: Disabled, Enabled.

**2.2.2.19 Baud Rate**

The default is 19200.

**2.2.2.20 Agent after Boot**

The options: Enabled, Disabled.

**2.2.2.21 Small Logo (EPA) Show**

This item allows you enabled/disabled the small EPA logo show on screen at the POST step.

Item	Description
Enabled	EPA Logo shows is enabled
Disabled	EPA Logo show is disabled

**2.2.2.22 ASF Support**

The default is [Enabled].

**2.2.2.23 DMI Event Log**

The options: Enabled, Disabled.

**2.2.2.24 Clear All DMT Event Log**

The options: Yes, No.

**2.2.2.25 View DMI Event Log**

Show the Event Log history.

The options: Yes, No.

**2.2.2.26 Mark DMI Events as Read**

The options: Yes, No.

**2.2.2.27 Event Log Capacity**

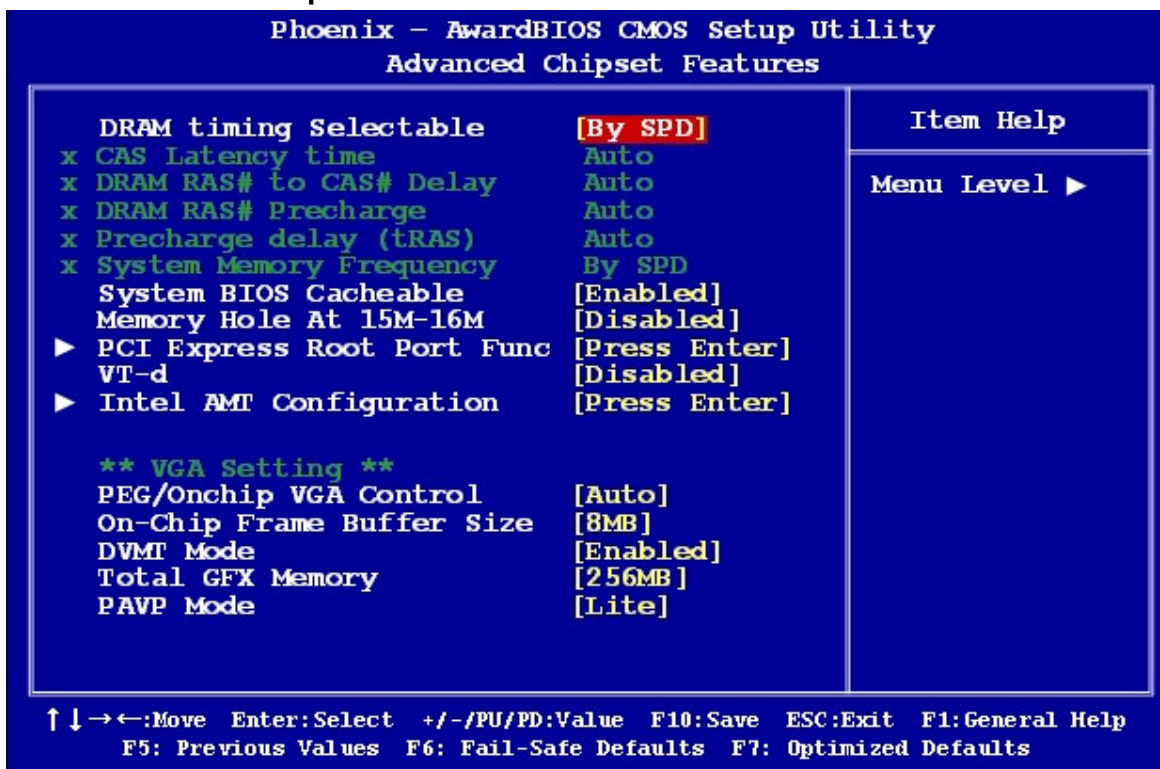
Shows the Capacity of the Event Log.

The options: Yes, No.

**2.2.2.28 Event Log Validity**

The default is [Validity].

### 2.2.3 Advanced Chipset Features



DRAM default timings have been carefully chosen and should ONLY be changed if data is being lost. Please first contact technical support

#### 2.2.3.1 DRAM Timing Selectable

The options: Manual, by SPD

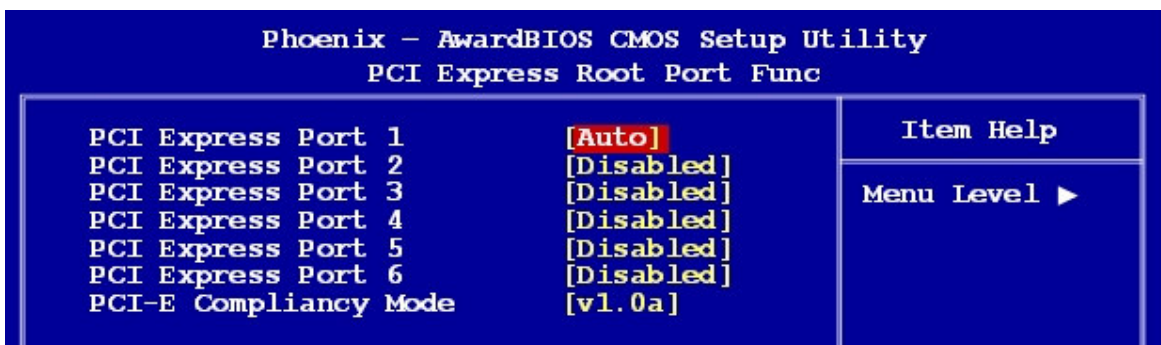
#### 2.2.3.2 System BIOS Cacheable

Selecting "Enabled" allows caching of the system BIOS ROM at F0000h- FFFFFh, resulting in better system performance. However, if any program writes data to this memory area, a system error may occur. The Choices are "Enabled", and "Disabled".

#### 2.2.3.3 Memory Hole at 15M-16M

Enabling this feature reserves 15 MB to 16 MB memory address space for ISA expansion cards that specifically require this setting. This makes memory from 15 MB and up unavailable to the system. Expansion cards can only access memory up to 16 MB. The default setting is "Disabled".

### 2.2.3.4 PCI Express Root Port Function

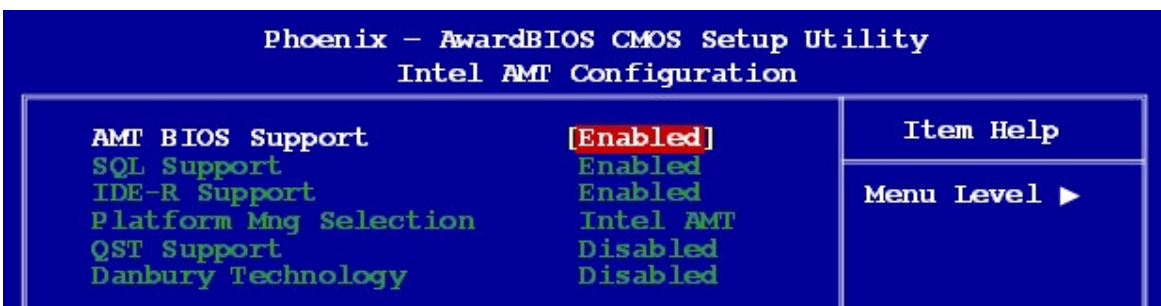


- PCI Express Port  
The choices: Auto, Enabled, Disabled.
- PCI-E Compliancy Mode  
The choices: V1.0a, V1.0.

### 2.2.3.5 VT-d

The options: Disabled, Enabled

### 2.2.3.6 Intel AMT Configuration



### 2.2.3.7 PEG/Onchip VGA Control

The selections are “Auto”, “Onchip VGA” or “PEG Port”.

### 2.2.3.8 On-Chip Frame Buffer Size

The On-Chip Frame Buffer Size can be set to 32MB, 64MB, 128MB. This memory is shared with the system memory.

### **2.2.3.9 DVMT Mode**

Use this field to select the memory to allocate for video memory. The choices are "Enabled", "Disabled".

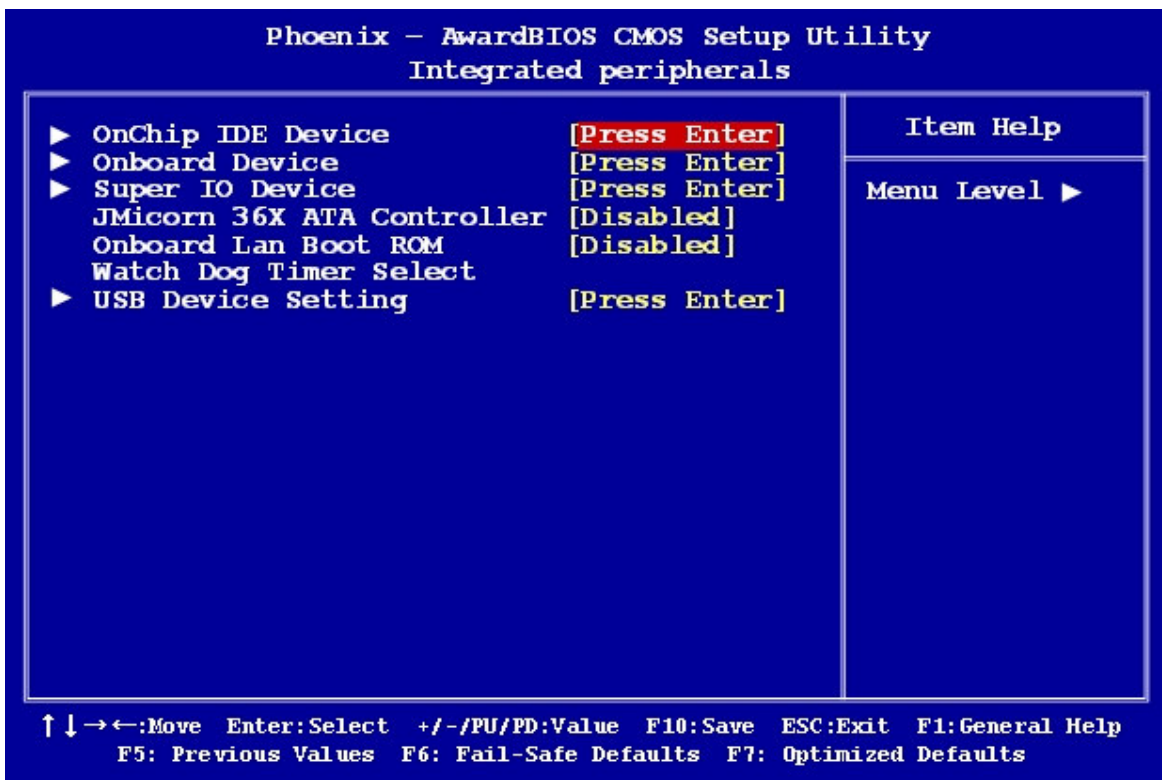
### **2.2.3.10 Total GFX Memory**

The options: 256MB

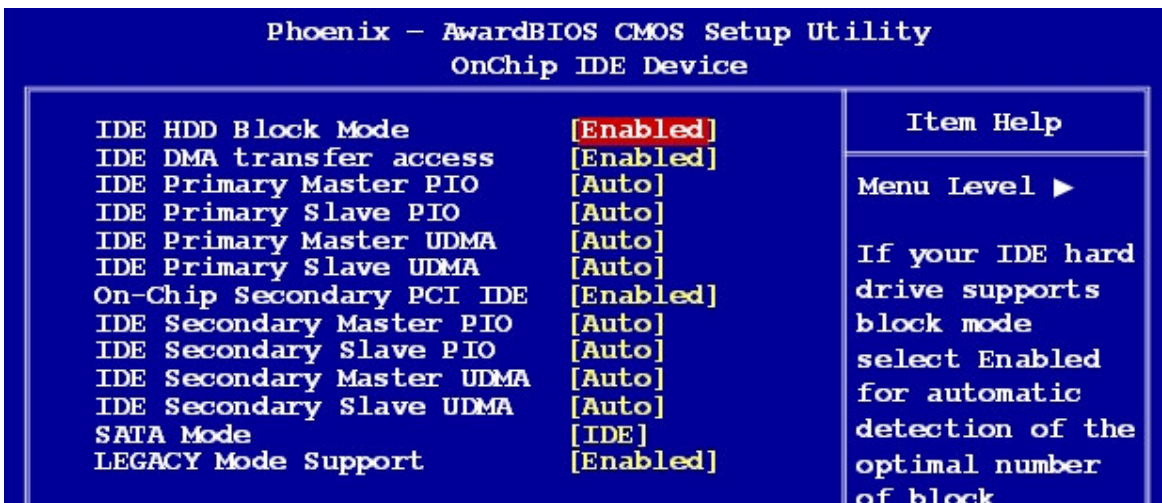
### **2.2.3.11 PAVP Mode**

The options: Disabled, Lite, Paranoid

## 2.2.4 Integrated Peripherals



### 2.2.4.1 OnChip IDE Device



- IDE HDD Block Model

If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

- IDE DMA Transfer Access

Use this field to enable or disable IDE DMA transfer access.

- IDE Primary/Secondary Master/Slave PIO/UDMA Mode

The channel has both a master and a slave, making four IDE devices possible. Because two IDE devices may have a different Mode timing (0, 1, 2, 3, 4), it is necessary for these to be independent. The default setting "Auto" will allow auto detection to ensure optimal performance.

- SATA Mode

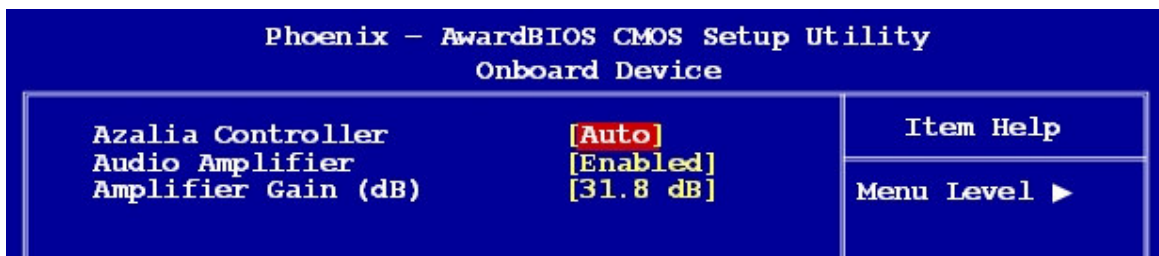
Choose the interface of SATA controller. The default setting is "IDE" which let SATA like parallel ATA controller. The "RAID" setting let SATA controller to support RAID.

The Advanced Host Controller Interface (AHCI) is a hardware mechanism that allows software to communicate with SATA devices, such as hot-plugging and Native Command Queuing (NCQ).

- LEGACY Mode Support

The choices: Disabled, Enabled.

#### 2.2.4.2 Onboard Device



- Azalia Controller

The choices: Auto, Disabled.

- Audio Amplifier

The choices: Enabled, Disabled.

- Amplifier Gain (dB)

The choices: 31.8dB, 27.2dB, 21.2dB, 15.3dB

## 2.2.4.3 Super I/O Device



- Power ON Function

This feature allows you to wake up the system using any of the listed options. The selections are “Hot KEY”, “Mouse Left”, “Mouse Right”, “Any KEY” and “BUTTON ONLY”.

- KB Power ON Password

Select this item to set or change the KB power on password.

- Hot Key Power ON

Awaken the system by pressing the hot key button. The choices are “Ctrl-F1”, “Ctrl-F2”, “Ctrl-F3” to “Ctrl-F8”.

- Onboard FDC Controller

When enabled, this field allows you to connect your floppy disk drives to the onboard floppy disk drive connector instead of a separate controller card. If you want to use a different controller card to connect the floppy disk drives, set this field to Disabled.

- Onboard Serial Port

The settings are “3F8/IRQ4”, “2F8/IRQ3”, “3E8/IRQ4”, “2E8/IRQ3”, “Disabled” and “Auto” for the on-board serial connector.

- Onboard Parallel Port

This field sets the address of the on-board parallel port connector. You can select “378/IRQ7”, “278/IRQ5”, “3BC/IRQ7”, or “Disabled”. If you install an I/O card with a parallel port, make sure there is no conflict in the address assignments. The single board computer can support up to three parallel ports.



- **Parallel Port Mode**

This field allows you to set the operation mode of the parallel port. The setting "Normal" allows normal speed operation, but in one direction only. "EPP" allows bidirectional parallel port operation at maximum speed. "ECP" allows the parallel port to operate in bidirectional mode and at a speed faster than the maximum data transfer rate. "ECP + EPP" allows normal speed operation in a two-way mode.

- **EPP Mode Select**

This field allows you to select EPP port type 1.7 or 1.9. The choices are "EPP1.9" and "EPP1.7".

- **ECP Mode Use DMA**

This selection is available only if you select "ECP" or "ECP + EPP" in the Parallel Port Mode field. In ECP Mode, you can select DMA channel 1 or DMA channel 3. Leave this field on the default setting.

- **Power After PWR-Fail**

Use this to set up the system after power failure. The "Off" setting keeps the system powered off after power failure, the "On" setting boots up the system after failure, and the "Former-Sts" returns the system to the status before power failure.

#### **2.2.4.4 JMicron 36X ATA Controller**

The options: Enabled, Disabled.

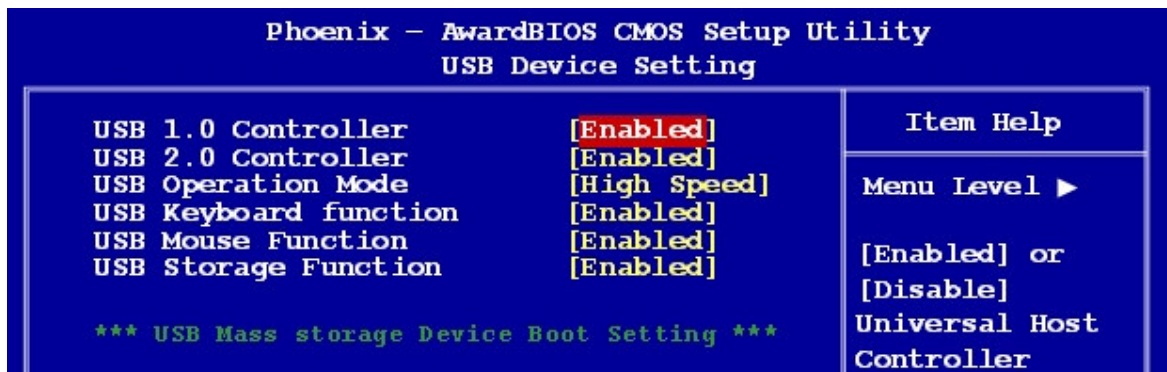
#### **2.2.4.5 Onboard LAN Boot ROM**

The options: Enabled, Disabled.

#### **2.2.4.6 Watch Dog Timer Selection**

The options: 0 ~ 255

### 2.2.4.7 USB Device Setting



- USB 1.0 / 2.0 Controller

The choices: Disabled, Enabled.

- USB Operation Mode

Allows you to configure the USB 2.0 controller in HiSpeed (480 Mbps) or Full Speed (12 Mbps). Configuration options: [Full/Low Speed] [HiSpeed]

- USB Keyboard Function

The choices: Disabled, Enabled.

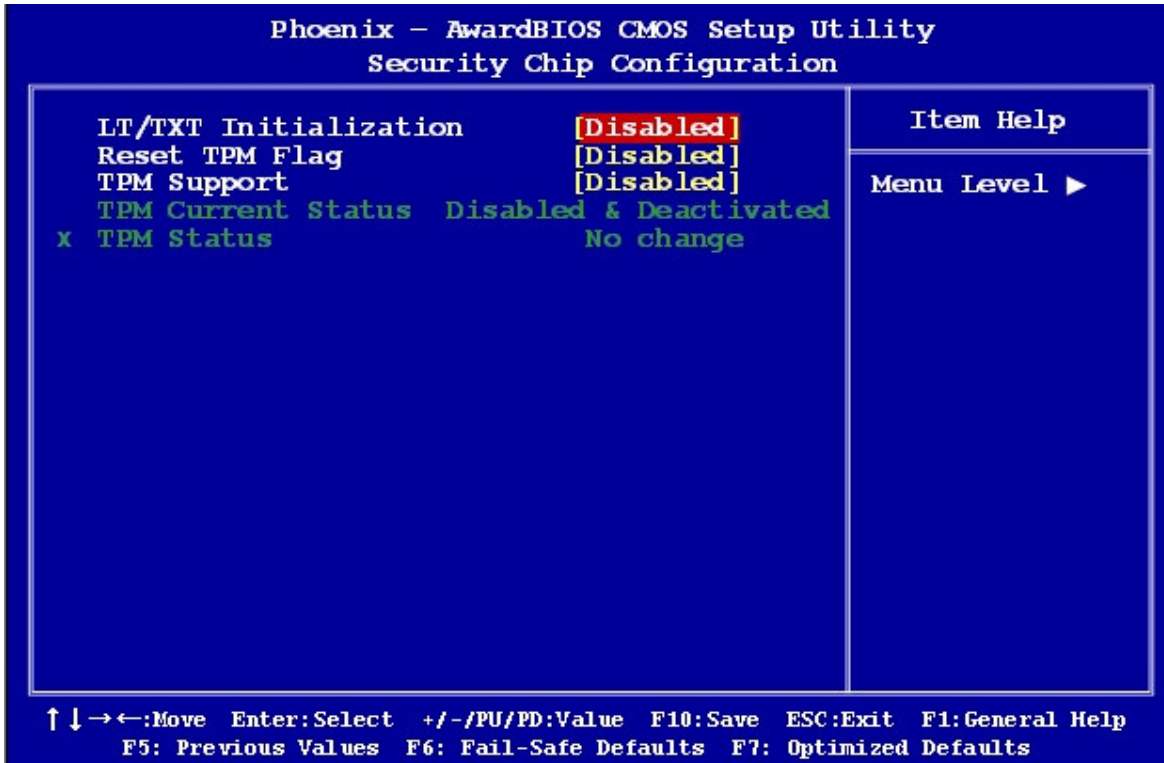
- USB Mouse Function

The choices: Disabled, Enabled.

- USB Storage Function

The choices: Disabled, Enabled.

## 2.2.5 Security Chip Configuration



### 2.2.5.1 LT/TXT Initialization

The options: Disabled, Enabled.

### 2.2.5.2 Reset TPM Flag

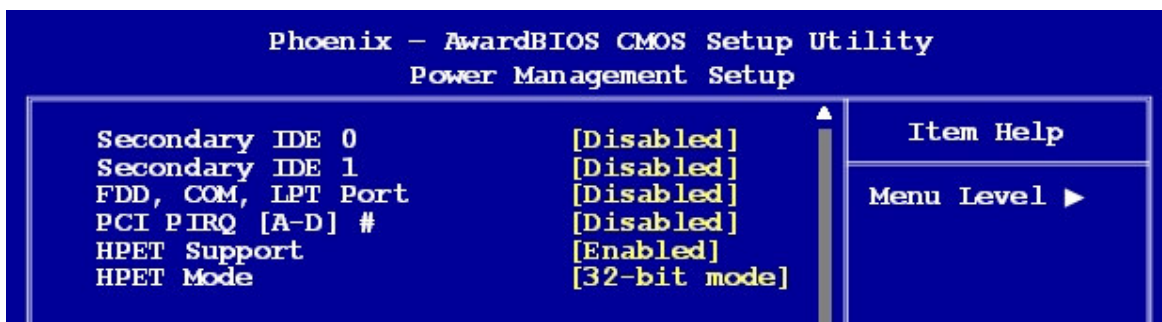
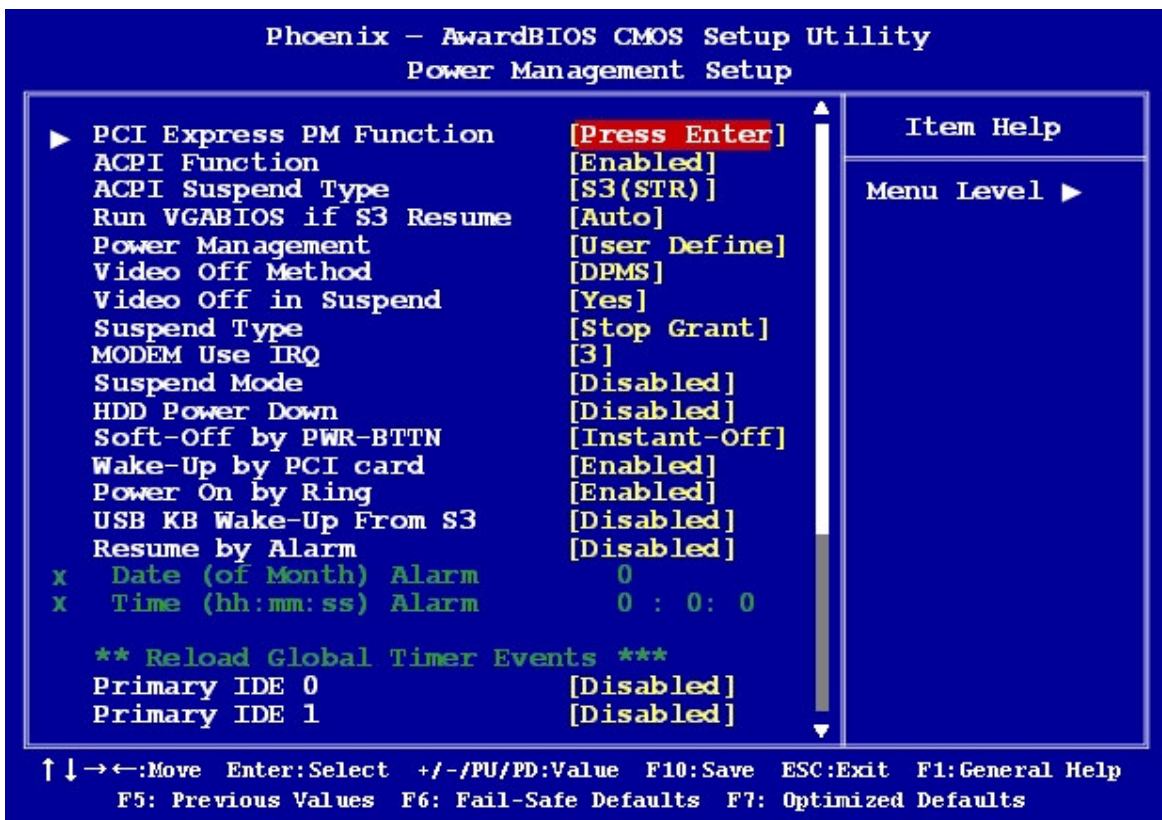
The options: Disabled, Enabled.

### 2.2.5.3 TPM Support

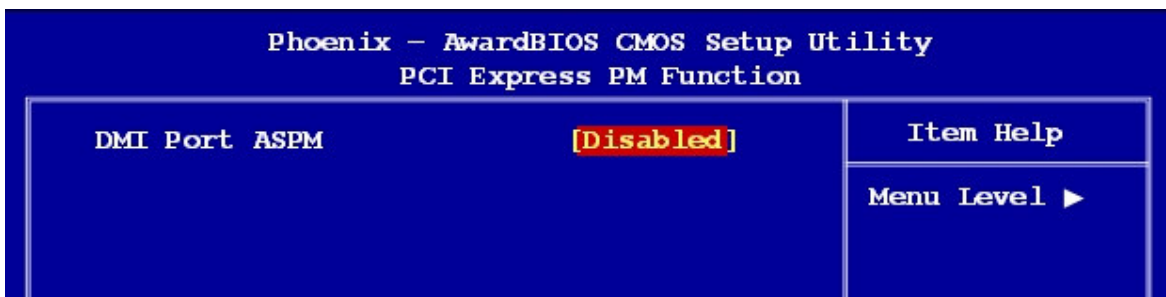
The options: Disabled, Enabled.

### 2.2.6 Power Management Setup

The power management setup controls the single board computer's "green" features to save power. The following screen shows the manufacturer's defaults.



### 2.2.6.1 PCI Express PM Function



- DMI Port ASPM

The choices: Disabled, L1

### 2.2.6.2 ACPI Function

The choices are "Enabled" and "Disabled".

### 2.2.6.3 ACPI Suspend Type

This item allows you to set ACPI suspend type to S1/POS(Power On Suspend) or S3/STR(Suspend To RAM).

### 2.2.6.4 Run VGABIOS if S3 Resume

Select "Auto" to run VGA BIOS if S3 resume automatically. The "Yes" enables running VGA BIOS if S3 resume. The "No" disables this function.

### 2.2.6.5 Power Management

There are three selections for Power Management, and each of them has fixed mode settings.

Item	Description
Min. Power Saving	Minimum power management, HDD Power Down = 15 Min,
Max. Power Saving	Maximum power management, HDD Power Down =1 Min
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

### 2.2.6.6 Video Off Method

Use this to select the method to turn off the video. The choices are "Blank Screen", "V/H SYNC+ Blank", and "DPMS".

**2.2.6.7 Video Off In Suspend**

When the system is in suspend mode, the video will turn off. The choices are “No” and “Yes”.

**2.2.6.8 Suspend Type**

Select the suspend type. The choice: Stop Grant, Pwron suspend.

**2.2.6.9 MODEM Use IRQ**

This determines the IRQ in which the MODEM can use. The choices: NA, 3, 4, 5, 7, 9, 10, 11.

**2.2.6.10 Suspend Mode**

Item	Description
Min. Power Saving	Minimum power management, HDD Power Down = 15 Min,
Max. Power Saving	Maximum power management, HDD Power Down =1 Min
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

**2.2.6.11 HDD Power Down**

Select “1-15 mins” to enable HDD Power Down mode between 1 to 15 mins. Select “Disabled” to disable HDD Power Down function.

**2.2.6.12 Soft-off by PWR-BTTN**

If you choose “Instant-Off”, then pushing the ATX soft power switch but- ton once will switch the system to “system off” power mode. You can choose “Delay 4 sec”. If you do, then pushing the button for more than 4 seconds will turn off the system, whereas pushing the button momentarily (for less than 4 seconds) will switch the system to “suspend” mode.

**2.2.6.13 Wake-Up by PCI card**

The choices are “Enabled” and “Disabled”.

**2.2.6.14 Power On by Ring**

Select “Enabled” to power on the system from a soft off state by an input signal on the serial Ring Indicator (RI) line. The choices are “Enabled” and “Disabled”.

#### **2.2.6.15 USB KB Wake-Up from S3**

When "Enabled", enter any key to wake up the system from S3 state. The choices are "Enabled" and "Disabled".

#### **2.2.6.16 Resume by Alarm**

When "Enabled", set the date and time at which the RTC (real-time clock) alarm awakens the system from suspend mode. The choices are "Enabled" and "Disabled".

#### **2.2.6.17 Primary / Secondary IDE**

The options: Disabled, Enabled.

#### **2.2.6.18 FDD, COM, LPT Port**

The options: Disabled, Enabled.

#### **2.2.6.19 PCI PIRQ [A-D] #**

The options: Disabled, Enabled.

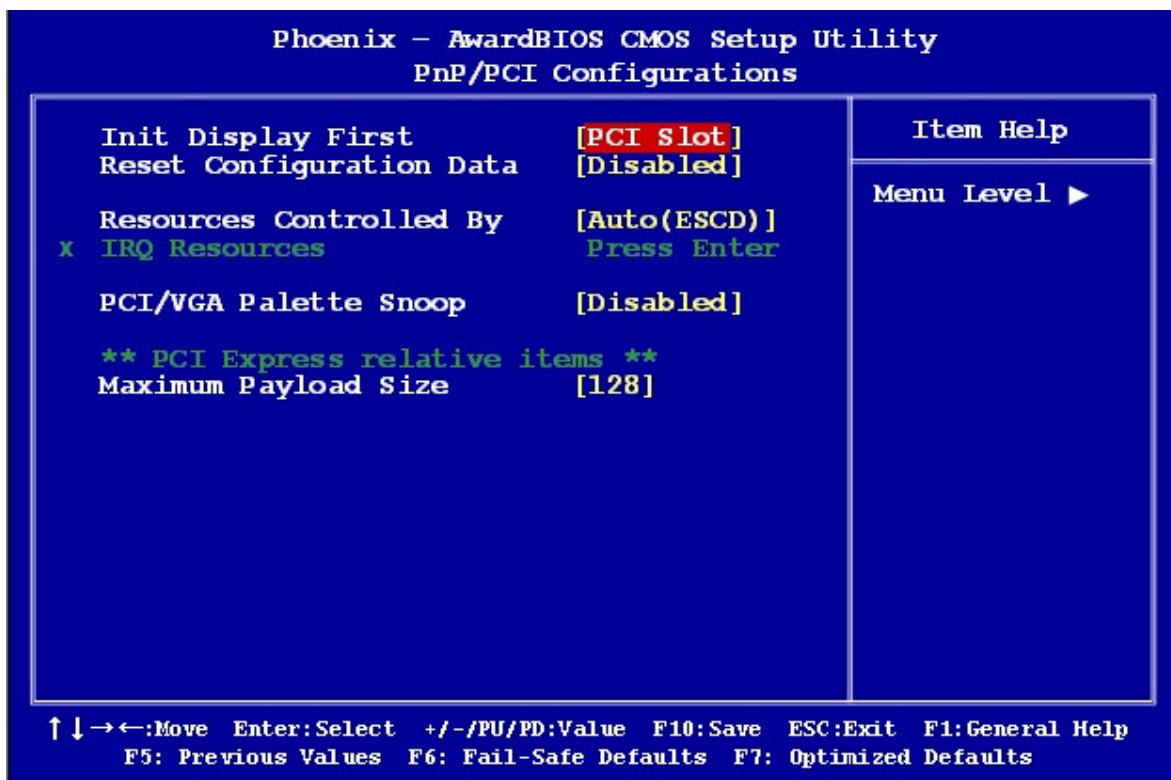
#### **2.2.6.20 HPET Support**

The options: Disabled, Enabled.

#### **2.2.6.21 HPET Mode**

The default is 32-bit mode.

## 2.2.7 PnP/PCI Configurations



### 2.2.7.1 Init Display First

This item allows you to choose the first display interface to initiate while booting. The choice is “PCI Slot” or “Onboard”.

### 2.2.7.2 Rest Configuration Data

The default is “Disabled”. Select Enabled to reset Extended System Configuration Data (ESCD) if you have installed a new add-on card, and system configuration is in such a state that the OS cannot boot.

### 2.2.7.3 Resource Controlled By

The commands here are “Auto(ESCD)” or “Manual”. Choosing “Manual” requires you to choose resources from the following sub-menu.

“Auto(ESCD)” automatically configures all of the boot and Plug and Play devices, but you must be using Windows 95 or above.



#### **2.2.7.4 PCI/VGA Palette Snoop**

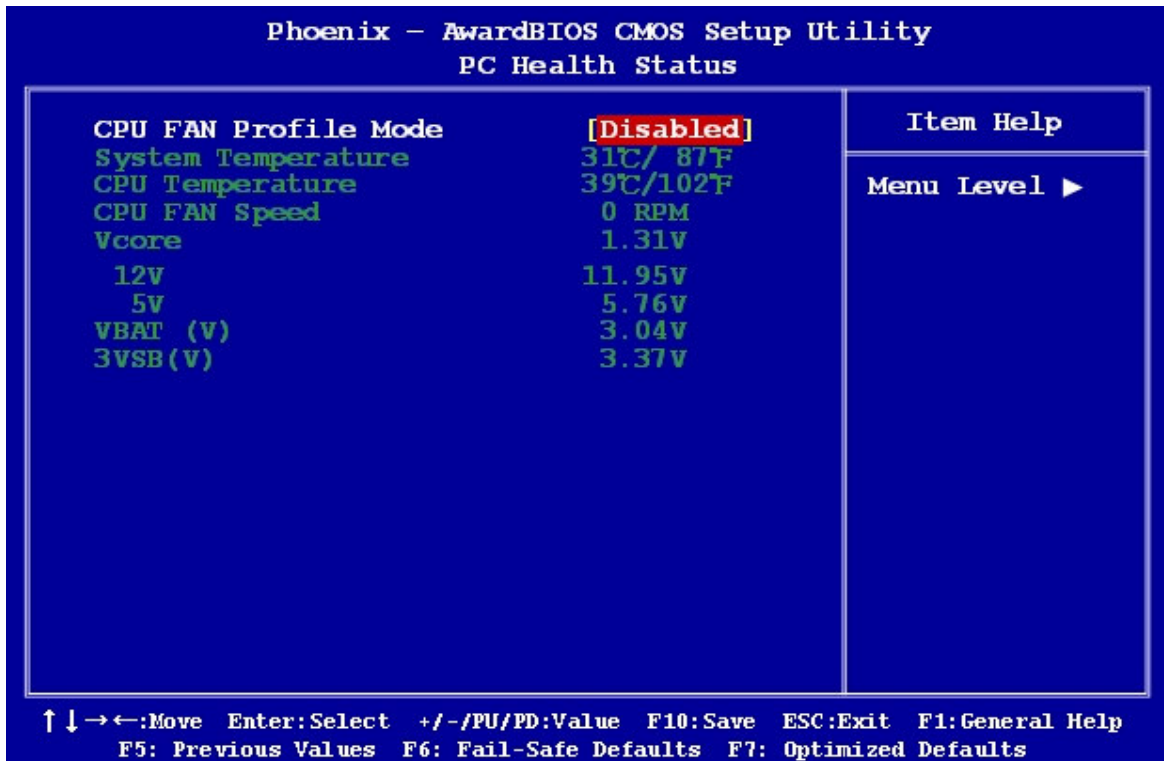
This is set to “Disabled” by default.

#### **2.2.7.5 Maximum Payload Size**

This allows you to set the maximum TLP payload size for PCI Express devices.

The options: [128 bytes], [256 bytes], [512 bytes], [1024 bytes], [2048 bytes], and [4096 bytes].

## 2.2.8 PC Health Status



### 2.2.8.1 CPU Fan Profile Mode

The options: Disabled, Optimal Mode, Silent Mode, and Performance Mode.

### 2.2.8.2 System Temperature

This shows you the current temperature of system.

### 2.2.8.3 CPU Temperature

This shows the current CPU temperature.

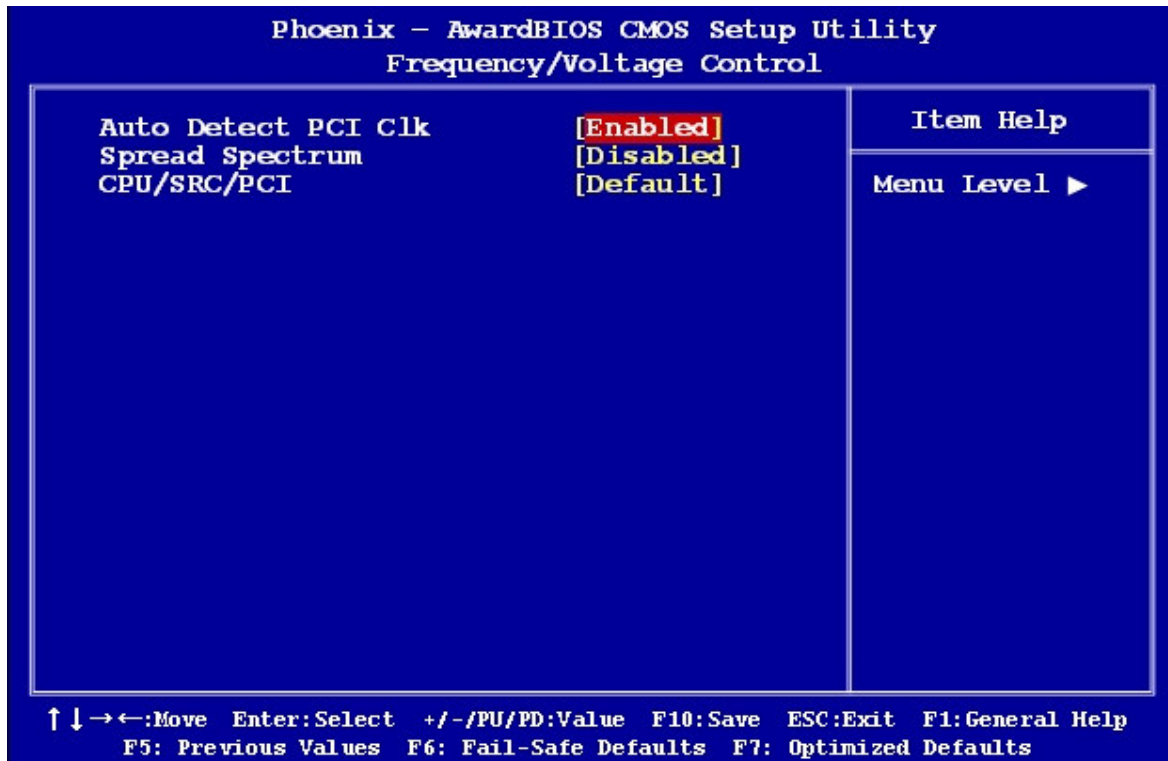
### 2.2.8.4 CPU FAN Speed

This shows the current CPU FAN operating speed.

### 2.2.8.5 Vcore and Others Voltage

This shows the voltage of VCORE, +5V, +12V, VBAT(V), and 3VSB(V).

## 2.2.9 Frequency/Voltage Control



### 2.2.9.1 Auto Detect PCI Clk

The options: Enabled, Disabled.

### 2.2.9.2 Spread Spectrum

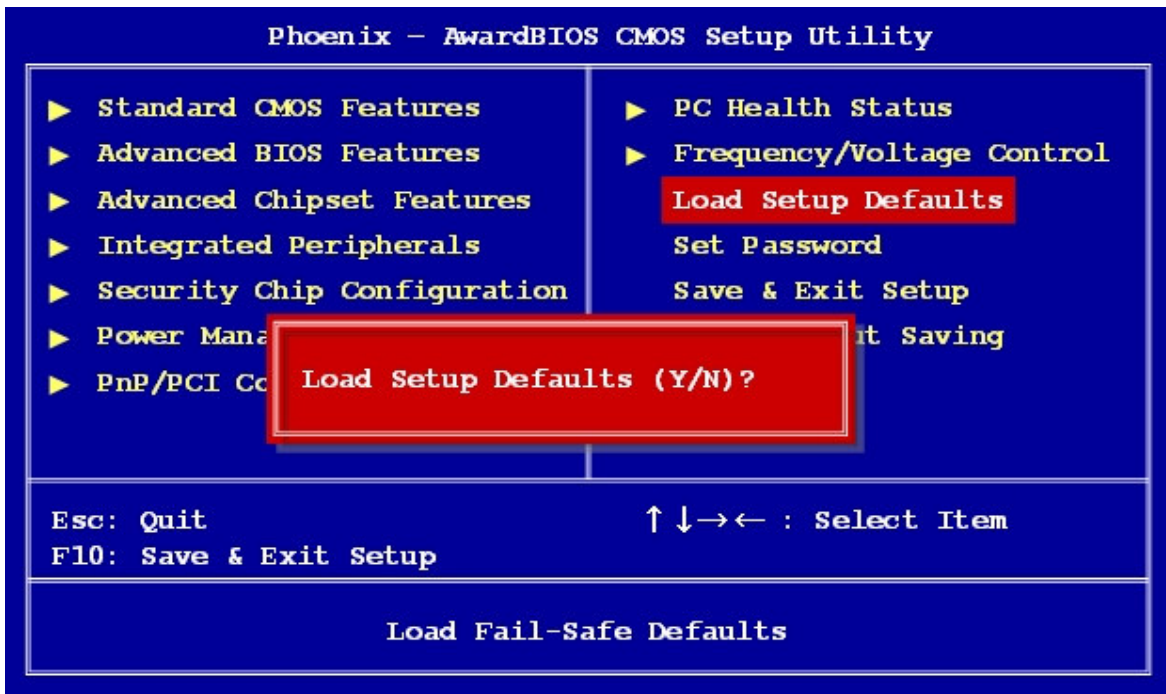
This setting allows you to reduce EMI by modulating the signals the CPU generates so that the spikes are reduced to flatter curves. This is achieved by varying the frequency slightly so that the signal does not use any particular frequency for more than a moment. The options: Disabled, N+0.3333, N+0.6666.

### 2.2.9.3 CPU/SRC/PCI

The options: Default, 100/100/33MHz, 133/100/33MHz, 200/100/33MHz, 266/100/33MHz, 333/100/33MHz.

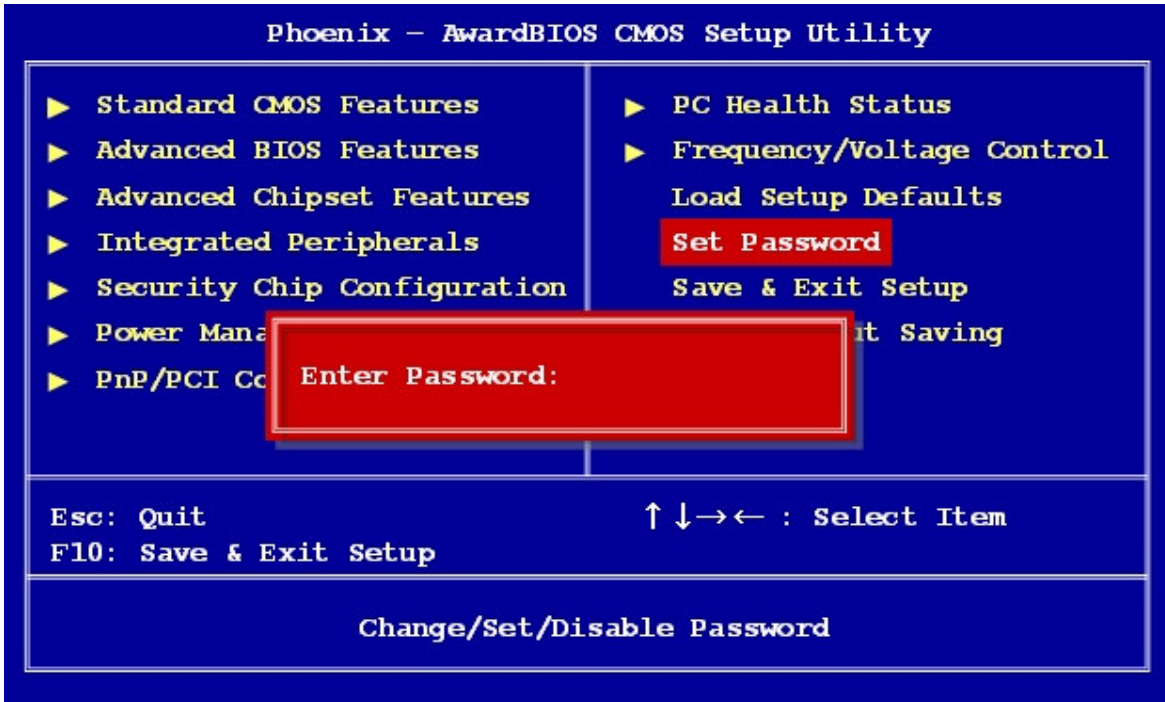
### 2.2.10 Load Setup Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate. Press <Y> to load the BIOS default values for the most stable, minimal-performance system operations.



### 2.2.11 Set Password

You can set password. Supervisor Password: able to enter/change the options of setup menus.



Follow these steps to change the password.

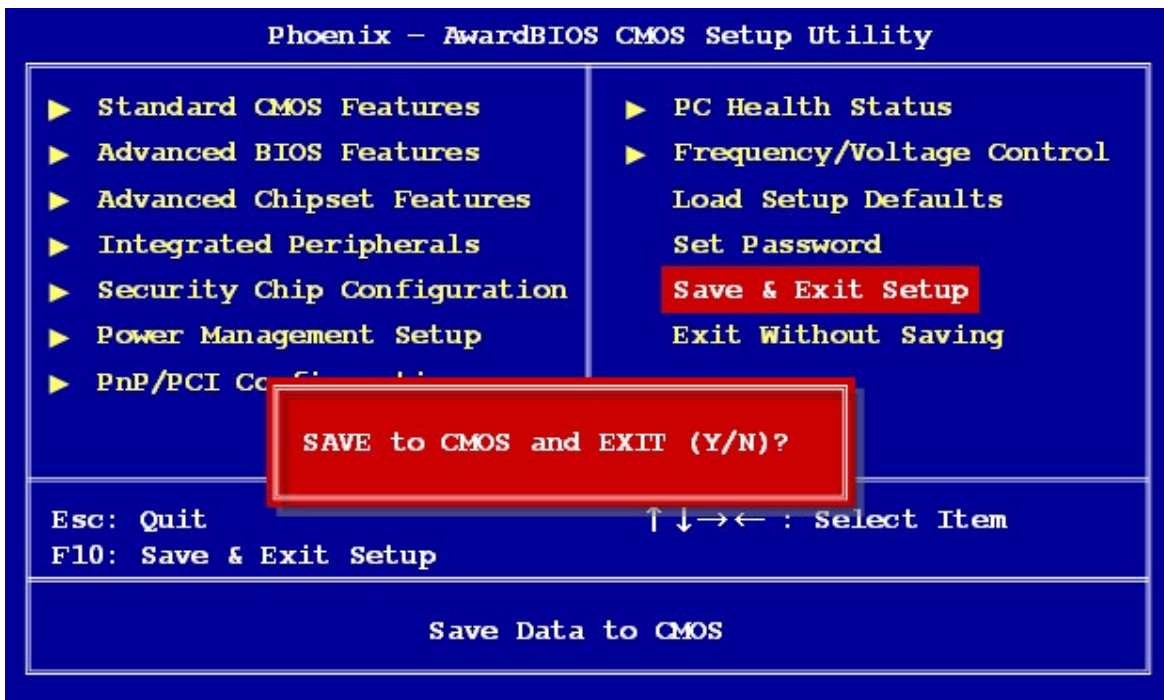
- Choose the "Set Password" option from the "Initial Setup Screen" menu and press <Enter>. The screen displays the following message:
- Please Enter Your Password
- Press <Enter>.
- If the CMOS is good and this option has been used to change the default password, the user is asked for the password stored in the CMOS. The screen displays the following message:

#### Please Confirm Your Password

- Type the current password and press <Enter>.
- After pressing <Enter> (ROM password) or the current password (user-defined), you can change the password stored in the CMOS. The password must be no longer than eight (8) characters. Remember, to enable the password setting feature, you must first select either "Setup" or "System" from the "Advanced BIOS Features" menu.

### 2.2.12 Save and Exit Setup

If you select this and press <Enter>, the values entered in the setup utilities will be recorded in the CMOS memory of the chipset. The processor will check this every time you turn your system on and compare this to what it finds as it checks the system. This record is required for the system to operate.



### 2.2.13 Exit Without Saving

Selecting this option and pressing <Enter> lets you exit the setup program without recording any new values or changing old ones.

