GA-2CEWH

AMD Socket 940 Dual Processor Motherboard

USER'S MANUAL

AMD Opteron™ Socket 940 Dual Processor Motherboard

Rev. 1003

Table of Content

Item Checklist

- ☑ The GA-2CEWH motherboard
- ☑ SATA Cable x 4
- ☑ CD for motherboard driver & utility
- ☑ GA-2CEWH user's manual
- ☑ I/O shield x 1
- ☑ FDD Cable x 1

WARNING!

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Installing the motherboard to the chassis...

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, do not become alarmed you can still attach the spacers to the mounting holes. Just cut the bottom portion of the spacers (the spacer may be a little hard to cut off, so be careful of your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any printed circuit write or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

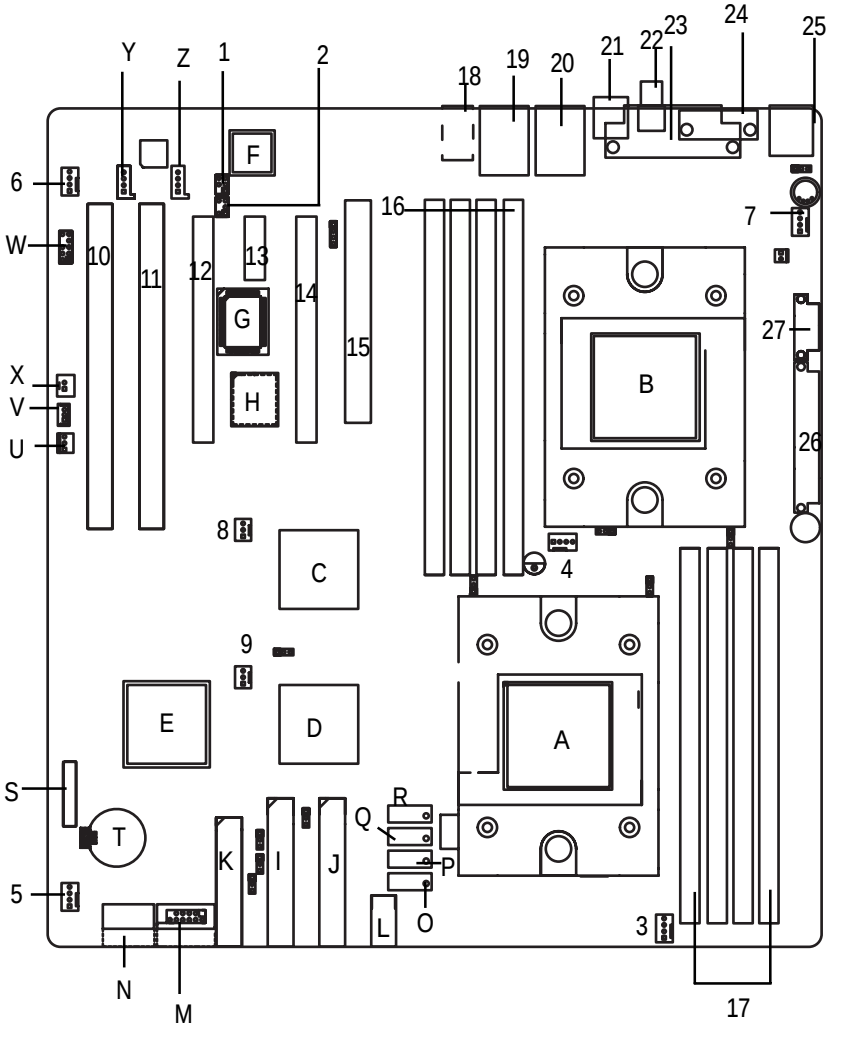
Chapter 1 Introduction

Summary of Features

Form Factor	• 30.4cm x 33.0cm EATX size form factor, 8 layers PCB.
Motherboard	• GA-2CEWH Motherboard
CPU	• Support Dual Opteron processors (Sledge Hammer) • The HyperTransport link of the AMD Opteron processor is capable of operating at 400, 800, 1200, and 1600 MT/s. • Supports L2/3 Cache with 1MB/2MB
Chipset	• AMD-8132 Bridge HyperTransport PCI-X chipset provides two independent, high-performance PCI-X bus bridges, interated with a high-speed HyperTransport technology tunnel. • NVIDIA nForce Pro 2200 enhance Hyper-Transport PCI-E interface • NVIDIAnForce Pro 2050 combined with nForce Pro 2200 to provide SLI feature
Memory	• Supports 4 * DDR socket slots for Primary CPU • Supports 4 * DDR socket slots for Secondary CPU • 1 CPU supports memory capacity up to 8GB • 2 CPU supports memory capacity up to 16GB • Supports registered ECC DDR-400
I/O Control	• ITE 8712F
Expansion Slots	• Supports 2 x PCI-E x16 slots • Supports 1 x PCI-E x1 slot • Supports 2 x PCI-X 64Bit/133MHz Slots • Supports 1 x PCI 32Bit/33MHz Slot
On-Board IDE	• 2 IDE controllers on the NVIDIA nForce Pro 2200 Controller Hub provides IDE HDD/CD-ROM (IDE1, IDE2) with PIO, Bus Master (ATA133) operation modes.

On-Board Peripherals	•	1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes.
	•	1 Parallel port supports Normal/EPP/ECP mode
	•	1 Serial port (COM)
	•	8 x USB 2.0
	•	2 x RJ45 LAN port
	•	2 x IEEE 1394a
	•	2 x PS/2 Connector
RAID Supported	•	Supports RAID 0, 1, 10
Hardware Monitor	•	SMSC EMC6W201
	•	CPU/System Fan Revolution detect
	•	CPU/System temperature detect
	•	System Voltage Detect
	•	Power Management Support
Power Managerment Features	•	Wake-on-LAN (WOL), USB, PCI, mouse
	•	Supports ACPI S1/S3/S4/S5 functions
IEEE1394A	•	TI TSB43AB23
Audio	•	ALC 850
On-Board LAN	•	Boradcom BCM 5751T & 5011U phy
PS/2 Connector	•	PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	•	Phoenix BIOS on 8Mb flash RAM
Additional Features	•	SMBus Support
	•	IOAPIC Support
	•	Serial IRQ Support
	•	AC Recovery

GA-2CEWH Motherboard Layout



A.	CPU0	1.	SPDIF_IO_IN_OUT
B.	CPU1	2.	CENTER_SOUOUND
C.	NVIDIA nForce Profession 2050	3.	FAN1 (CPU0 Fan)
D.	NVIDIA nForce Profession 2220	4.	FAN5 (CPU1 Fan)
E.	AMD8132	5.	FAN4 (Front Fan)
F.	Broadcom BCM5751T	6.	FAN3 (Rear Fan)
G.	ITE IT8712F-A	7.	FAN2 (System Fan)
H.	BIOS	8.	IO4_FAN
I.	IDE1	9.	CK-804_FAN
J.	IDE2	10.	SLOT1
K.	FDD	11.	SLOT2
L.	F_1394	12.	SLOT3
M.	F_USB2	13.	SLOT4
N.	F_USB1	14.	SLOT5
O.	SATA2	15.	SLOT6
P.	SATA3	16.	DIMM4~7
Q.	SATA0	17.	DIMM 0~3
R.	SATA1	18.	AUDIO
S.	F_Panel	19.	USB_LAN2
T.	Battery	20.	USB_LAN1
U.	CI	21.	REAR_1394
V.	WOL (Wake On LAN)	22.	SPDIF_OUT
W.	F_AUDIO	23.	LPT
X.	WOR (Wake On Ring)	24.	COM
Y.	AUX_IN	25.	KB_MS (Keyboard/Mouse)
Z.	CD_IN1	26.	ATX1 (SSI power connector)
		27.	ATX2 (SSI power connector)

Chapter 2 Hardware Installation Process

To set up your computer, you must complete the following steps:

Step 1- Install the Central Processing Unit (CPU)

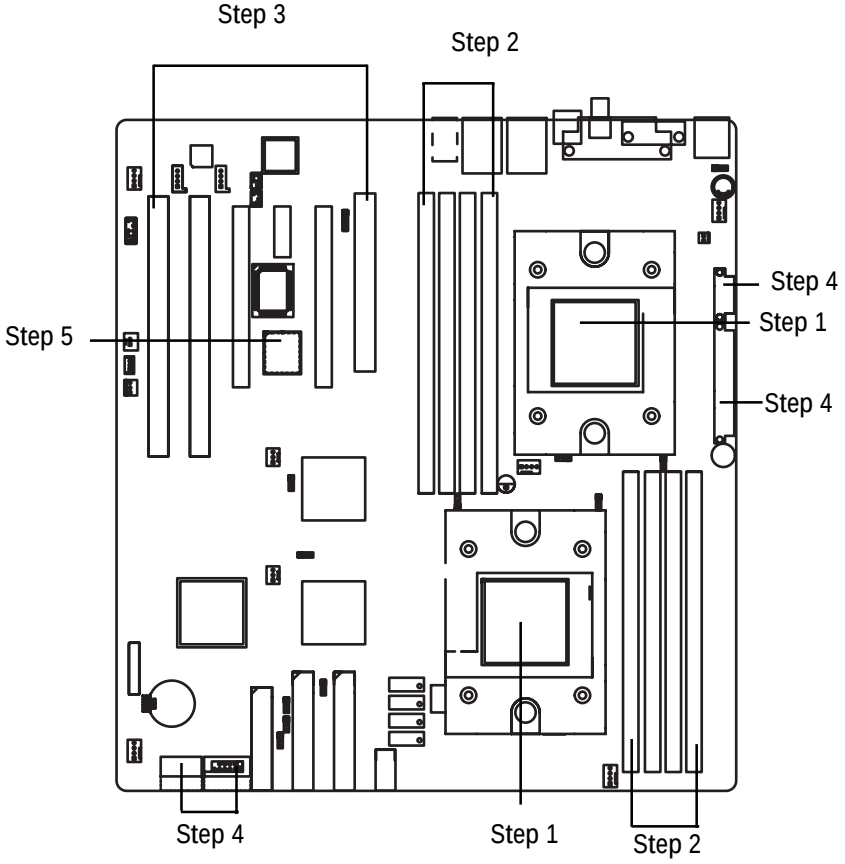
Step 2- Install memory modules

Step 3- Install expansion cards

Step 4- Connect ribbon cables, cabinet wires, and power supply

Step 5- Setup BIOS software

Step 6- Install supporting software tools



Step 1: Installing Processor and CPU Cooling Fan

Before installing the processor and cooling fan, adhere to the following cautions:

CAUTION

1. The processor will overheat without the heatsink and/or fan, resulting in permanent irreparable damage.
2. Never force the processor into the socket.
3. Apply thermal grease on the processor before placing cooling fan.
4. Please make sure the CPU type is supported by the motherboard.
5. If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation. Please use AMD approved cooling fan.

Step1-1: Installing CPU

Step 1. Rise the lever bar on the socket.

Step 2. Aligning the pins of the processor with the socket, insert the processor into the socket.

Step 3 Close the lever completely.

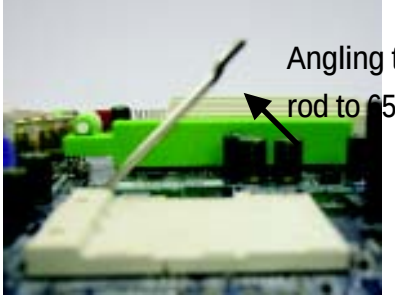


Figure 1. Angling the rod to 65-degree maybe feel a kind of tight , and then continue pull the rod to 90-degree when a noise “cough” made.

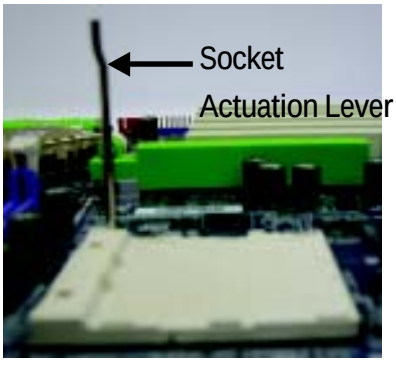


Figure 2. Pull the rod to the 90-degree directly.

Figure 3. A1 pin location on the Socket and Processor.Move the socket lever to the locked position while holding pressure on the center of the processor.

Step 4. When the processor installation is completed, apply thermal grease to the processor(as shown in Figure 4) prior to installing the heatsink. AMD recommends using a high thermal conductivity grease for the thermal interface material rather than a phase change material. Phase change materials develop strong adhesive forces between the heatsink and processor.

Removing the heatsink under such conditions can cause the processor to be removed from the socket without moving the socket lever to the unlocked position and then damage the processor pins or socket contacts.

** We recommend you to apply the thermal tape to provide better heat conduction between your CPU and heatsink. (The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket alone with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape instead of thermal paste, or remove the cooling fan with extreme caution.)

iFigure 4. Application of Thermal Grease to the processor.

Step1-2: Installing Cooling Fan

Step 1. Attach th cooling fan clip to the processor scoket. Align the heatsink assembly with the support frame mating with the backer plate standoffs as shown in Figure 5&6.

Step 2. Coonect the processor fan cable to the processor fan connector.

Note: ** We recommend you to buy the kind of cooling fan which is shown in Figure 8. This type of cooling fan will provide the best performance for heat releasing.

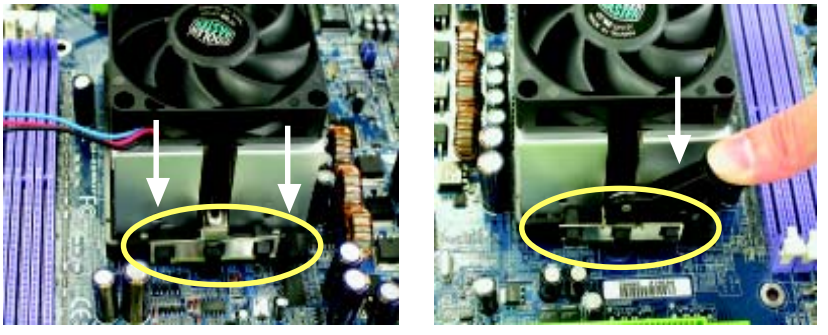


Figure 5&6 Alignment of Heatsink Assembly with Standoffs

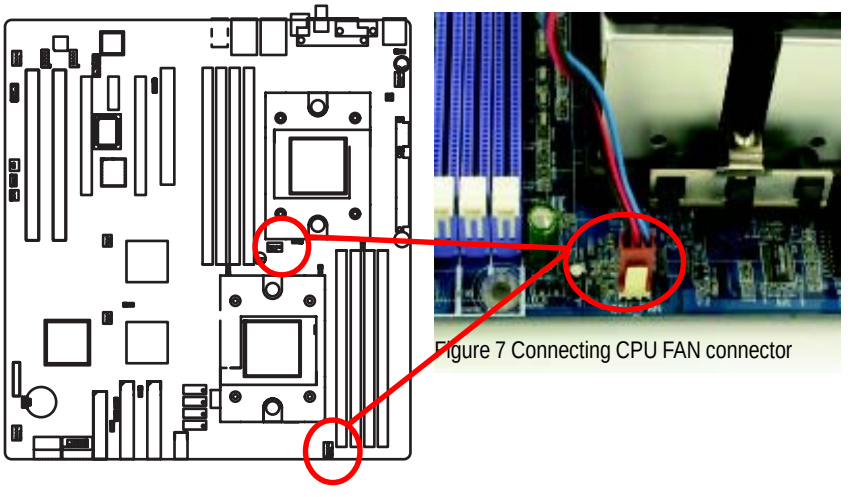


Figure 7 Connecting CPU FAN connector

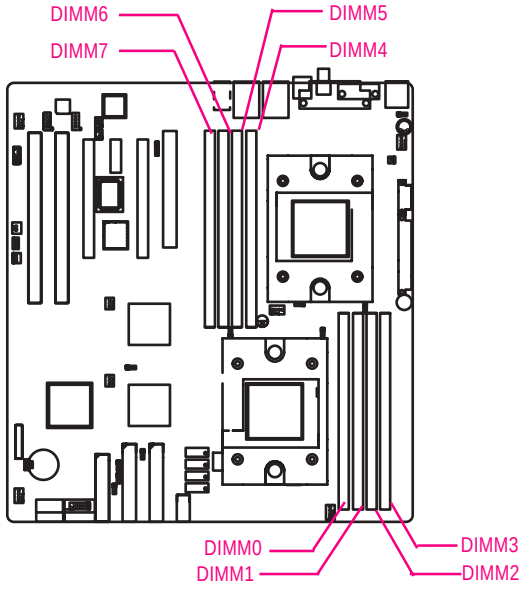
Step 2: Install memory modules

CAUTION

Before installing the processor and heatsink, adhere to the following warning:

Please note that the DIMM module can only fit in one direction due to the one notches. Wrong orientation will cause improper installation. Please change the insert orientation.

The motherboard has 8 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket .The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.



Total Memory Sizes With Registered DDR DIMM

Devices used on DIMM	1 DIMMx64/x72	2 DIMMsx64/x72	3 DIMMsx64/x72	4 DIMMsx64/x72
64 Mbit (4Mx4x4 banks)	256 MBytes	512 MBytes	768 MBytes	1 GBytes
64 Mbit (2Mx8x4 banks)	128 MBytes	256 MBytes	384 MBytes	512 MBytes
64 Mbit (1Mx16x4 banks)	64 MBytes	128 MBytes	192 MBytes	256 MBytes
128 Mbit(8Mx4x4 banks)	512 MBytes	1 GBytes	1.5 GBytes	2 GBytes
128 Mbit(4Mx8x4 banks)	256 MBytes	512 MBytes	768 MBytes	1 GBytes
128 Mbit(2Mx16x4 banks)	128 MBytes	256 MBytes	384 MBytes	512 MBytes
256 Mbit(16Mx4x4 banks)	1 GBytes	2 GBytes	3 GBytes	4 GBytes
256 Mbit(8Mx8x4 banks)	512 MBytes	1 GBytes	1.5 GBytes	2 GBytes
256 Mbit(4Mx16x4 banks)	256 MBytes	512 MBytes	768 MBytes	1 GBytes
512 Mbit(32Mx4x4 banks)	2 GBytes	4 GBytes	4 GBytes	4 GBytes
512 Mbit(16Mx8x4 banks)	1 GBytes	2 GBytes	3 GBytes	4 GBytes
512 Mbit(8Mx16x4 banks)	512 MBytes	1 GBytes	1.5 GBytes	2 GBytes

Installation Step:

1. Unlock a DIMM socket by pressing the retaining clips outwards.
2. Aling a DIMM on the socket such that the notch on the DIMM exactly match the notches in the socket. Firmly insert the DIMMinto the socket until the retaining clips snap back in place.
3. The processor supports 64-bit mode and 128-bit mode configuration of the DIMMs. In 64 bit mode, only DIMM 0 and 2 can be populated. Possible combinations of DIMMs in 64 bit mode are listed in Table 1. In 128 bit mode, minimum of two DIMMs is required to create the 128 bit bus; therefore, DIMMs can only be populated in even numbered pairs in slot 0 & 1, and 2& 3. Each logical DIMM must be madeof two identical DIMMs having the same device size on each and the same DIMM size. Regardless of mode, DIMM must be populated in order starting at the farest slotfrom the processor. Table 2 & 3 shows the possible combination of DIMMs for 128 mode. Not all possbile combinations are listed in the tables.
4. Installed DIMMs must be the same speed and must all be registered. For a list of suuported memrory, please refer to the table of previous page.
5. Reverse the installation steps when you wish to remove the DIMM module.

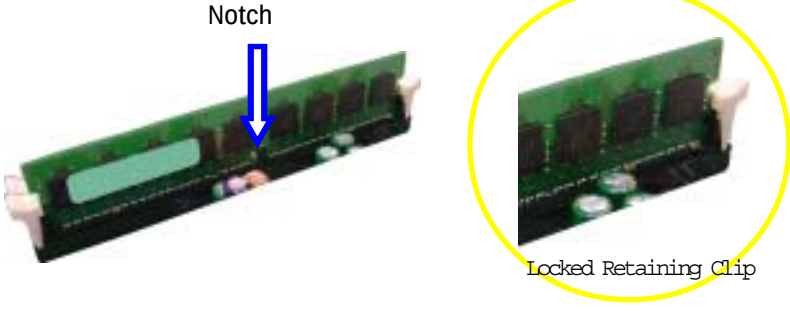


Table 1. Vaild DIMM Configuration for 64 bit Mode

DIMM 0 (MB)	DIMM 2 (MB)
X	256
256	256
X	512
512	512
X	1024
1024	1024
X	2048
2048	2048
X	4096
4096	4096
Note: X = Do not populate	

Table 2. Vaild DIMM Configuration for 128 bit Mode

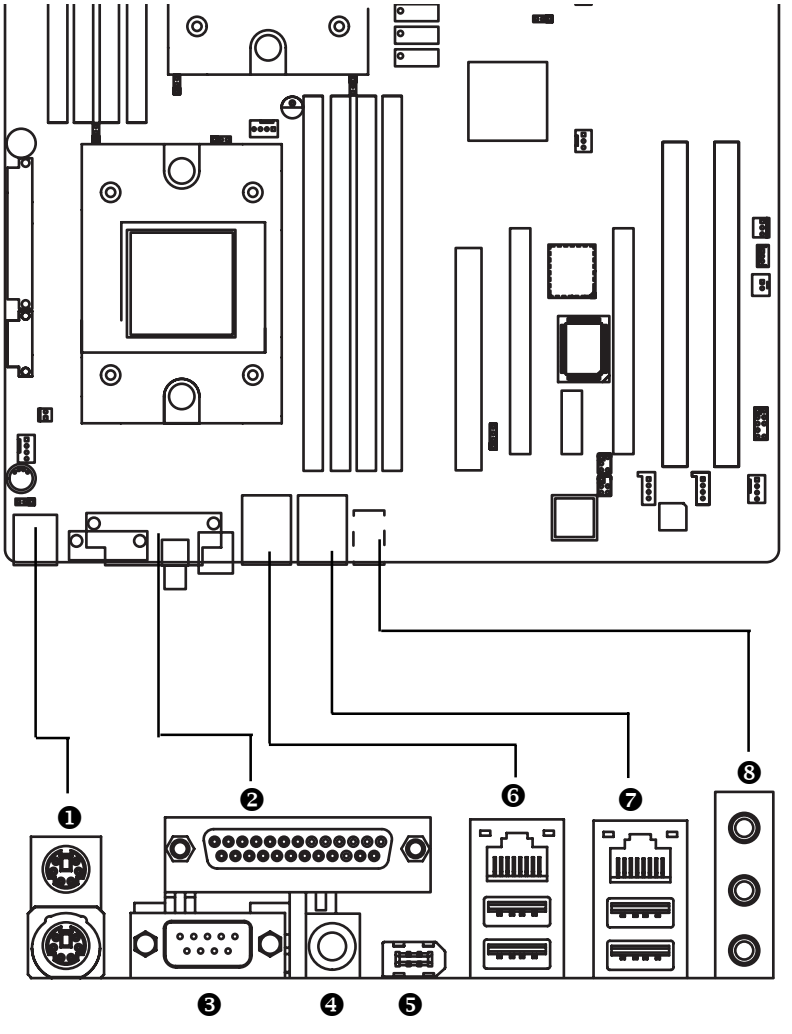
Logical DIMM 0		Ligical DIMM1	
DIMM 0 (MB)	DIMM 1 (MB)	DIMM 2 (MB)	DIMM 3 (MB)
X	X	256	256
256	256	256	256
X	X	512	512
512	512	512	512
X	X	1024	1024
1024	1024	1024	1024
X	X	2048	2048
2048	2048	2048	2048
X	X	4096	4096
4096	4096	4096	4096
Note: X = Do Not populate			

Step 3: Install expansion cards

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.

Step 4: Connect ribbon cables, cabinet wires, and power supply

Step4-1:I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector

To install a PS/2 port keyboard and mouse, plug the mouse to the upper port (green) and the keyboard to the lower port (purple).

❷❸ Parallel Port / Serial Port

This connector supports 1 standard COM port and 1 Parallel port. Device like printer can be connected to Parallel port ; mouse and modem etc can be connected to Serial port.

❹/❺ SPDIF IN / 1394 Connectors

❻/❼ USB / LAN Ports

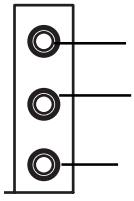
Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. have a standard USB interface.
Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver updated. For more information please contact your OS or device(s) vendors.

LAN ports provided Internet connection is Gigabit Ethernet, providing data transfer speeds of 10/100/1000Mbps.

LAN LED Description

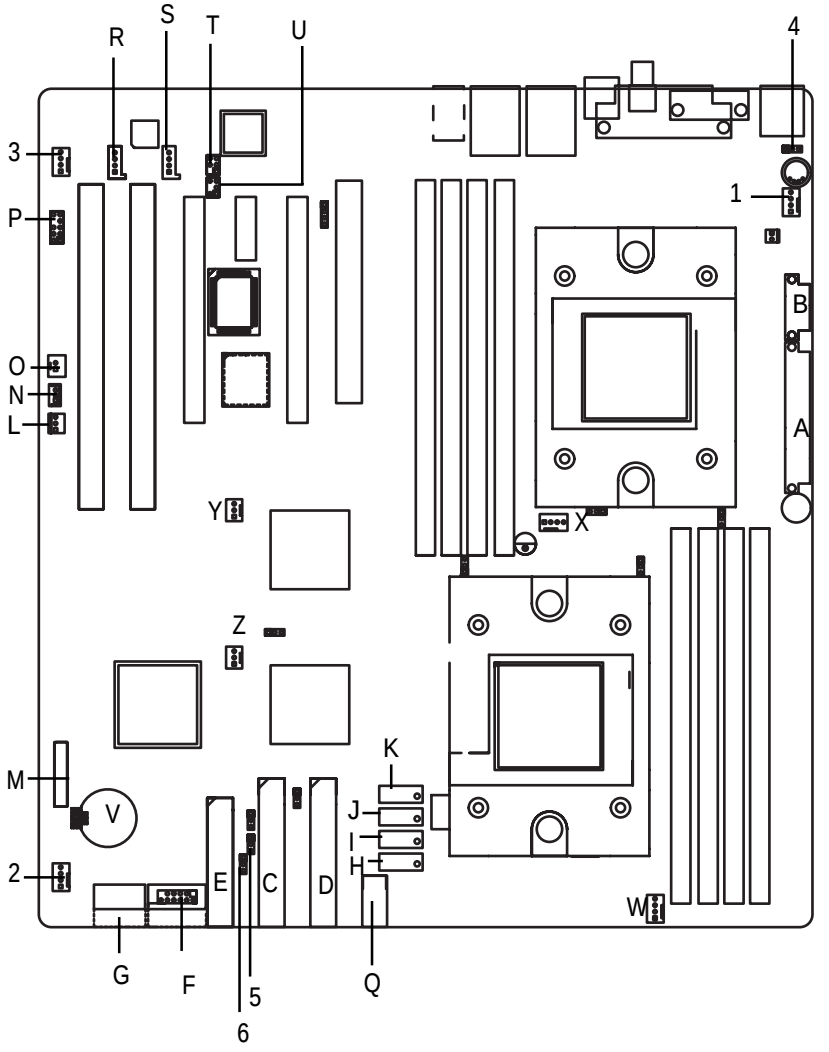
Name	Color	Condition	Description
LAN Link/Activity	Green	ON	LAN Link / no Access
	Green	BLINK	LAN Access
	-	OFF	Idle
10/100 LAN Speed	Green	ON	100Mbps connection
	-	OFF	10Mbps connection
GbE LAN Speed	Yellow	ON	1Gbps connection
	Yellow	BLINK	Port identification with 1Gbps connection
	Green	ON	100Mbps connection
	Green	BLINK	Port identification with 10 or 100Mbps connection
	-	OFF	10Mbps connection

❽ Audio Connectors



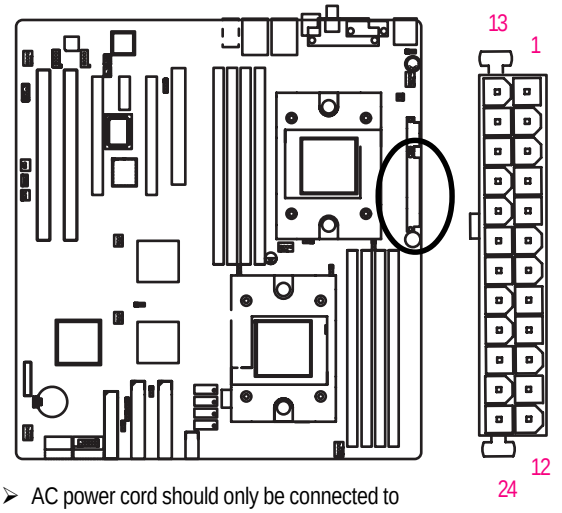
➢ After install onboard audio driver, you may connect speaker to Line Out jack, micro phone to MIC In jack.
Device like CD-ROM , walkman etc can be connected to Line-In jack.
Please note:
You are able to use 2-/4-/6- channel audio feature by S/W selection.
If you want to enable 6-channel function, you have 2 choose for hardware connection.
Method1:
Connect “Front Speaker” to “Line Out”
Connect “Rear Speaker” to “Line In”
Connect “Center and Subwooferr” to “MIC In “.

Step4-2: Connectors Introduction



A) AXT2	R) AUX_IN
B) ATX1	S) CD_IN1
C) IDE1	T) SPDIF_IO
D) IDE2	U) SUR_CEN1
E) FDD	V) BT
F) F_USB2	W) FAN1
G) F_USB1	X) FAN5
H) SATA0	Y) IO4_FAN
I) SATA1	Z) CK804_FAN
J) SATA2	1) FAN2
K) SATA3	2) FAN4
L) CI	3) FAN3
M) F_Panel	4) PWR_JP
N) WOL	5) CLR_BIOS
O) WOR	6) BIOS_RE
P) F_Audio	
Q) F_1394	

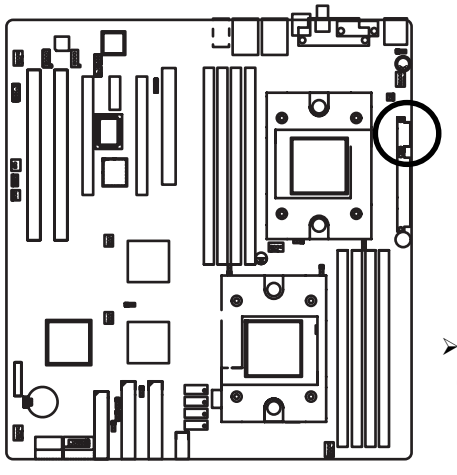
A) ATX2



➢ AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

PIN No.	Definition
1	+3.3V
2	+3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	POK
9	5VSB
10	+12V
11	+12V
12	+3.3V
13	+3.3V
14	-12V
15	GND
16	PSON
17	GND
18	GND
19	GND
20	-5V
21	+5V
22	+5V
23	+5V
24	GND

B) ATX1

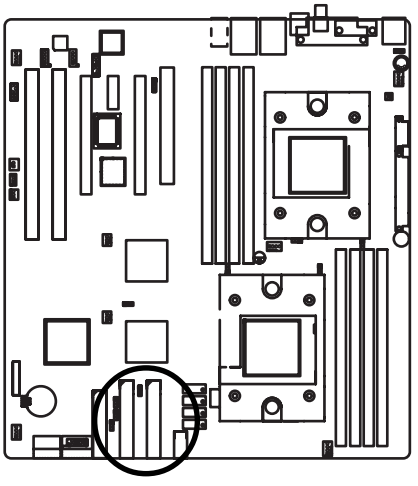


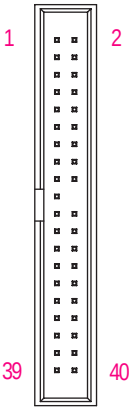
Pin No.	Definition
1	GND
2	+12v
3	GND
4	+12V
5	GND
6	+12V
7	GND
8	+12V

➢ This connector (ATX +12V) is used only for CPU Core Voltage.

C / D) IDE 1/2

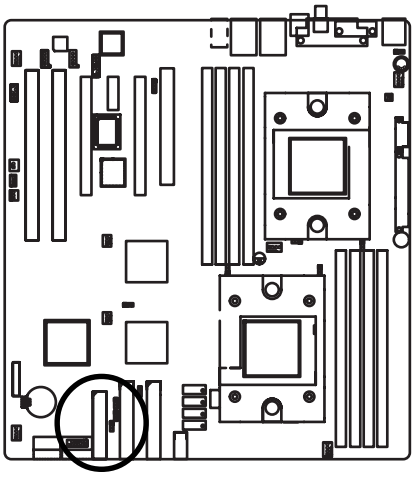
Please connect first harddisk to IDE1 and connect CDROM to IDE2. The red stripe of the ribbon cable must be the same side with the Pin1.

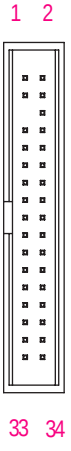




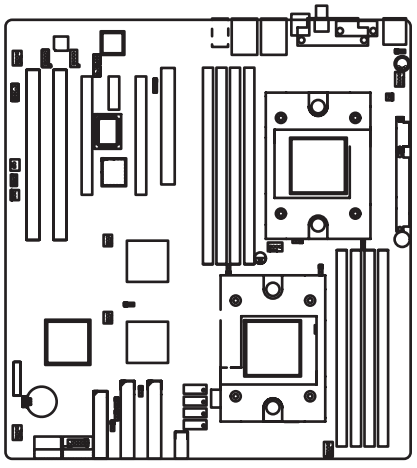
E) FDD1 (Floppy Connector)

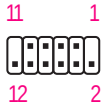
Please connect the floppy drive ribbon cables to FDD. It supports 360K,720K,1.2M,1.44M and 2.88Mbytes floppy disk types. The red stripe of the ribbon cable must be the same side with the Pin1.





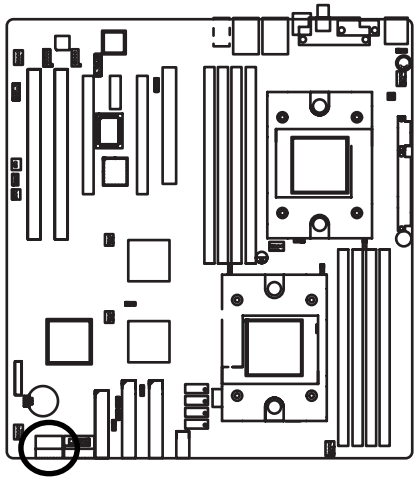
F) F_ USB2 (Front USB Connector)

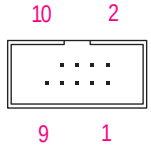




PIN No.	Definition
1	Do Not Connect
2	Do Not Connect
3	Power
4	Power
5	Data-
6	Data-
7	Data+
8	Data+
9	GND
10	GND
11	Key
12	NC

G) F_ USB1 (Front USB Connector)

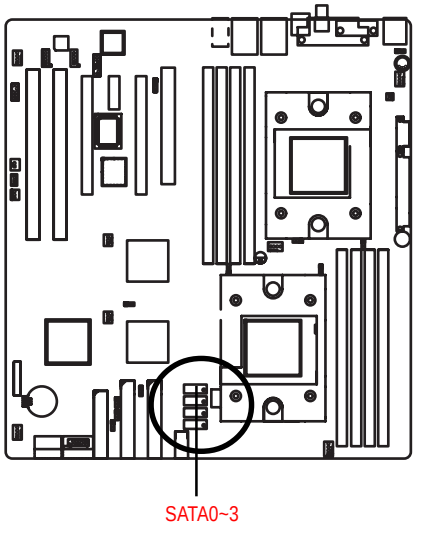


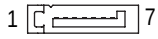


PIN No.	Definition
1	Power
2	Power
3	Data-
4	Data-
5	Data+
6	Data+
7	GND
8	GND
9	Key
10	NC

➢ Be careful with the polarity of the front panel USB connector. Check the pin assignment while you connect the front panel USB cable. Please contact your nearest dealer for optional front panel USB cable.

H / I / J / K) SATA0/1/2/3 (Serial ATA Connector)



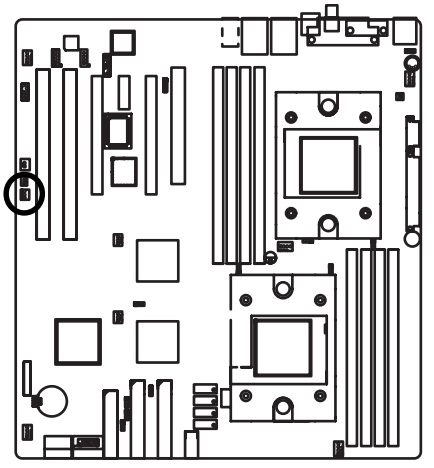


SATA0~3

Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

L) CI (CASE OPEN)

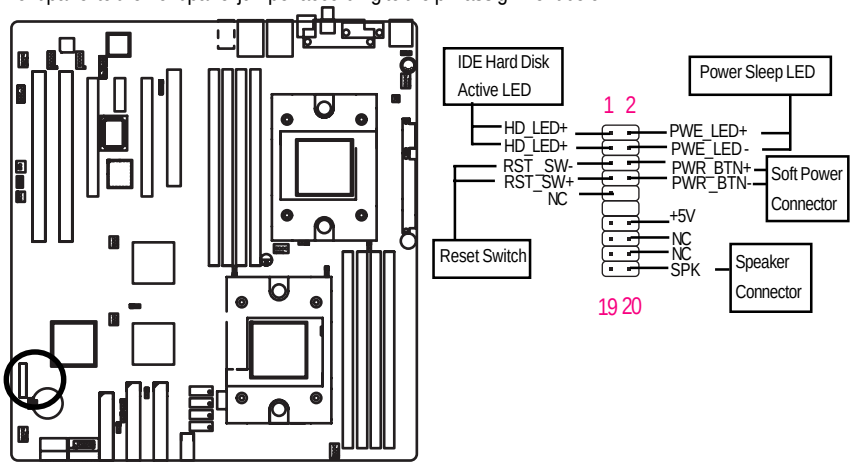
This 3 pin connector allows your system to enable or disable the “case open” item in BIOS if the system case begin remove.



Pin No.	Definition
1	GND
2	INTRUDER#
3	NC

M) F_Panel1 (2X10 Pins)

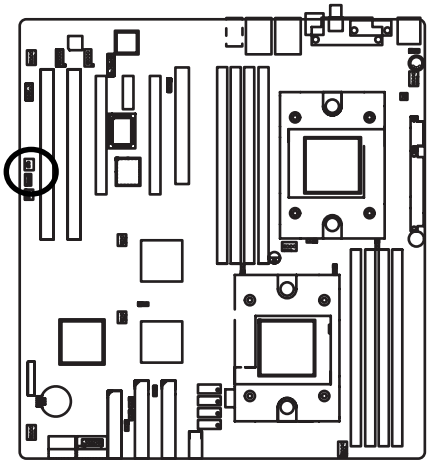
Please connect the power LED, PC speaker, reset switch and power switch etc of your chassis front panel to the front panel jumper according to the pin assignment below.



Pin No	Signal Name	Description
1	HD_LED+	Hard Disk LED pull up (330 ohm)
2	PWE_LED-	Power Sleep LED (Pull up 330 ohm)
3	HD_LED-	Hard Disk Active LED Signal
4	PWE_LED-	Suspend LED Button(Blinking)
5	RST_SW-	Reset Switch
6	PWR_BTN+	Front Panel Power On/Off Button Signal
7	RST_SW+	Reset Switch
8	PWR_BTN-	Front Panel Power On/Off Button Signal(GND)
9	NC	No Connect
10	KEY	KEY
11	KEY	KEY Pin
12	KEY	KEY
13	KEY	KEY
14	+5V	Speaker connector (5V Standby)
15	NC	No Connect
16	NC	No Connect
17	NC	No Connect
18	NC	No Connect
19	NC	No Connect
20	SPEAK-	Speaker connector

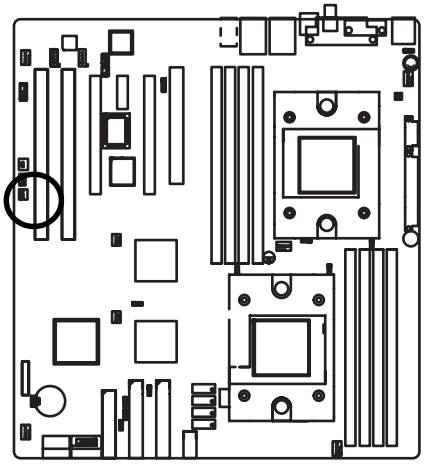
N) WOL (Wake On LAN Connector)

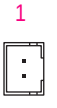
This connector allows the remove servers to manage the system that installed this mainboard via your network adapter which also supports WOL.



Pin No.	Definition
1	+5V SB
2	GND
3	Signal

O) WOR (Wake on Ring Connector)

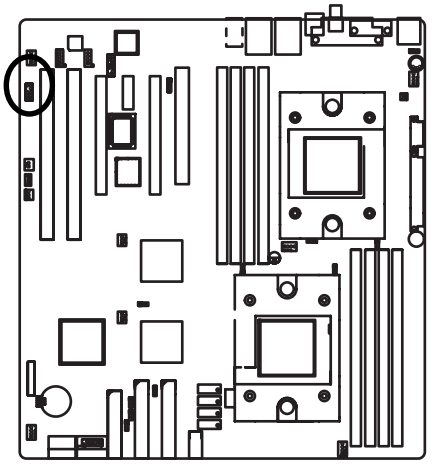


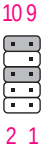


Pin No.	Definition
1	Ring
2	GND

P) F_Audio (Front Audio connector)

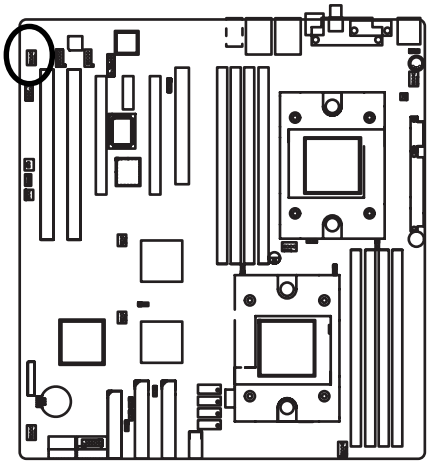
If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer.

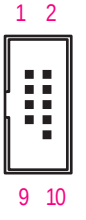




Pin No.	Definition
1	MIC
2	GND
3	REF
4	POWER
5	FrontAudio(R)
6	RearAudio(R)
7	Reserved
8	No Pin
9	FrontAudio (L)
10	RearAudio(L)

Q)F_1394 (Front IEEE 1394 connector)

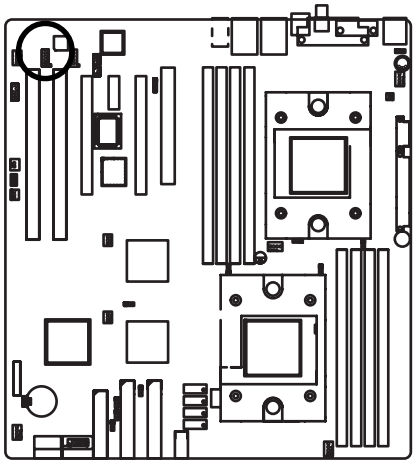


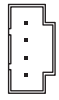


Pin No.	Definition
1	TPA+
2	TPA-
3	GND
4	GND
5	TPB+
6	TPB-
7	Power
8	Power
9	Key
10	NC

R) AUX_IN (AUX In Connector)

Connect other device(such as PCI TV Tunner audio out)to the connector.



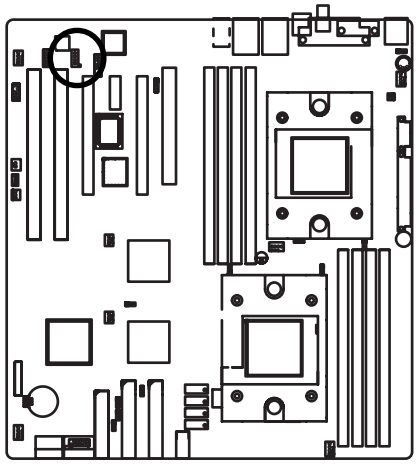


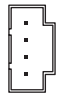
1

Pin No.	Definition
1	AUX-L
2	GND
3	GND
4	AUX-R

S) CD_IN (CD IN,Black)

Connect CD-ROM or DVD-ROM audio out to the connector.



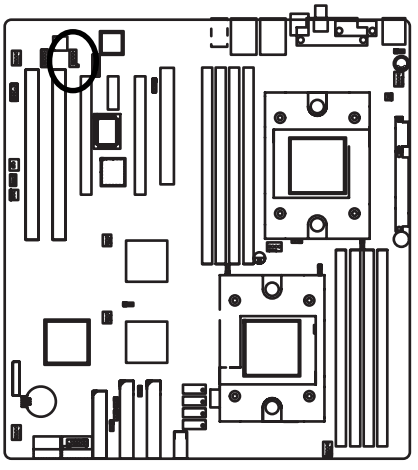


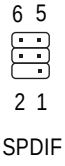
1

Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD_R

T)SPDIF_IO (Red Connector)

The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function.

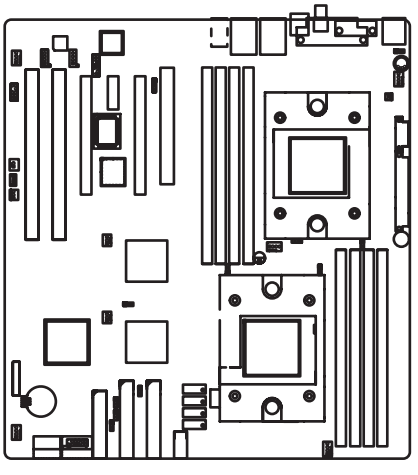




Pin No.	Definition
1	P5V
2	Pin Removed
3	SPDIFO
4	SPDIFI
5	GND
6	GND

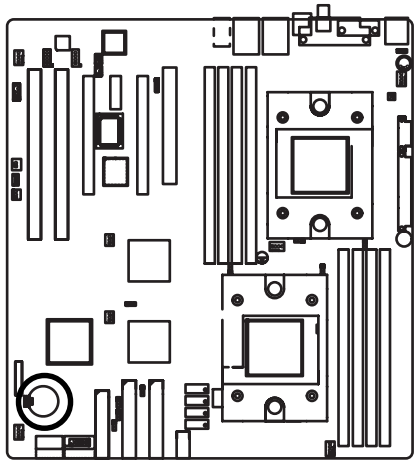
U) SUR_CEN1 (Center Suround Connector)

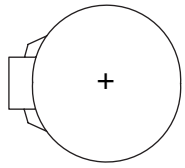
Please contact your nearest dealer for optional SUR_CEN cable.



Pin No.	Definition
1	SURR_OUT_L
2	SURR_OUT_R
3	AUDGND
4	Pin Removed
5	CENTER_OUT
6	LFE_OUT

V) BT (Battery)





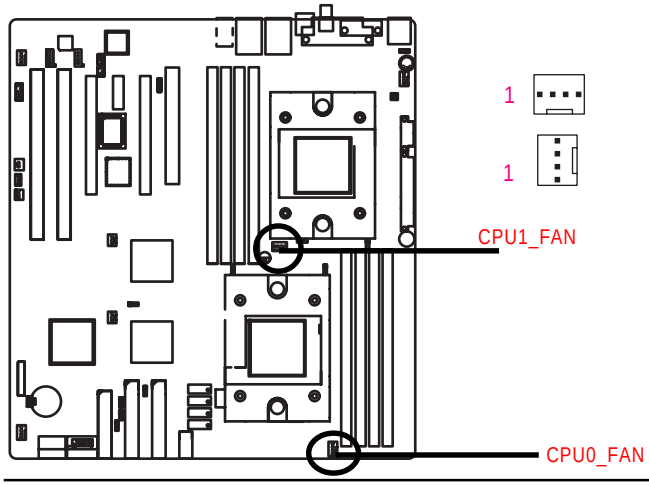
CAUTION

- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

If you want to erase CMOS...
1.Turn OFF the computer and unplug the power cord.
2.Remove the battery, wait for 30 second.
3.Re-install the battery.
4.Plug the power cord and turn ON the computer.

W / X) FAN1 /FAN 5 (CPU 0/1 Fan Connectors)

Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating.The CPU fan connector supports Max. current up to 600 mA.

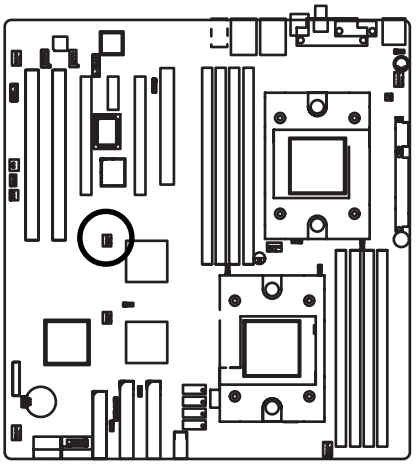


Note: Pin 4 is reserved for 4-pins Fan connector

Pin No.	Definition
1	GND
2	+12V
3	Sense
4	Control

Y) IO4_FAN (NVIDIA IO-4 Chipset FAN connector)

If you installed wrong direction, the Chip Fan will not work. Sometimes will damage the Chip Fan.

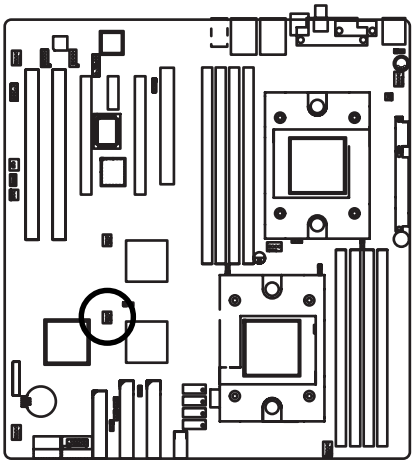


1

Pin No.	Definition
1	GND
2	12V
3	Sense

Z) CK804_FAN (NVIDIA CK804 Chipset FAN connector)

If you installed wrong direction, the Chip Fan will not work. Sometimes will damage the Chip Fan.

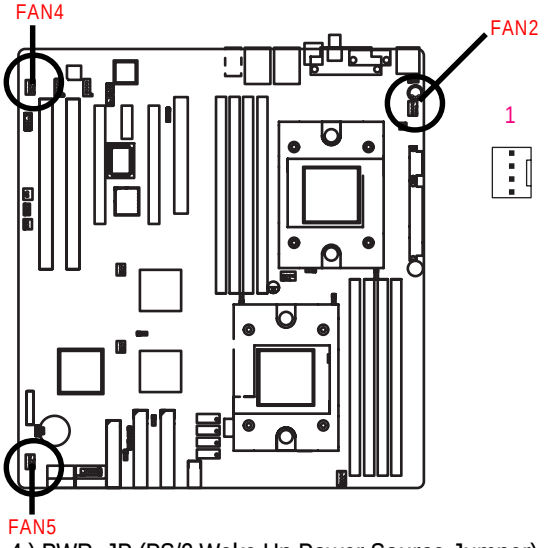


1

Pin No.	Definition
1	GND
2	12V
3	Sense

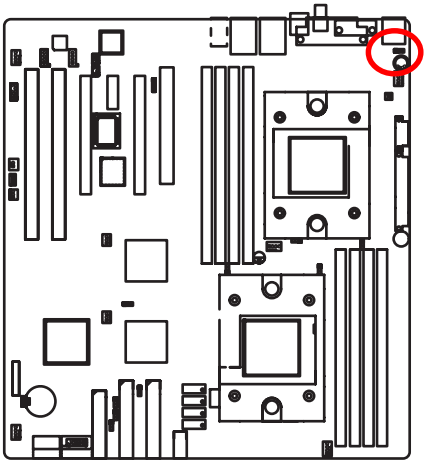
1 / 2 / 3) FAN2 / 4 / 3 (Front Fan / Rear Fam / System FAN)

This connector allows you to link with the cooling fan on the system case to lower the system temperature.



Pin No.	Definition
1	GND
2	12V
3	Sense
4	Control

4) PWR_JP (PS/2 Wake Up Power Source Jumper)



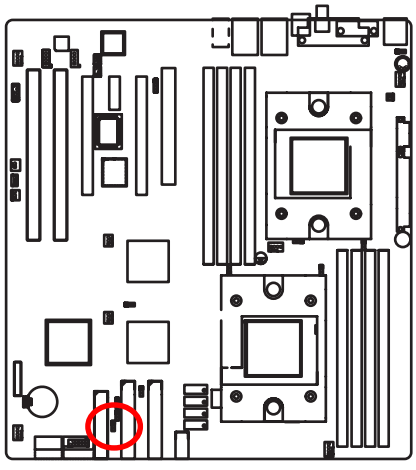
1-2 close:support PS2 wake up from S3 (Default)

2-3 close: Disable this function

5) CLR_CMOS1 (Clear CMOS Function)

You may clear the CMOS data to its default values by this jumper.

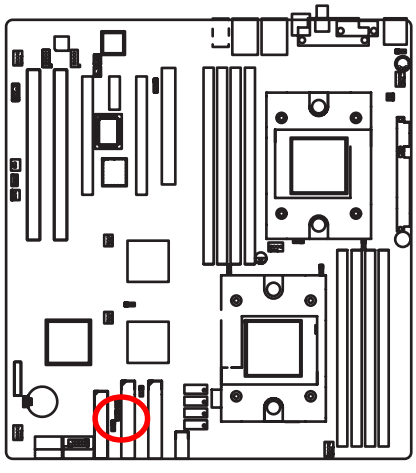
Default value doesn't include the "Shunter" to prevent from improper use this jumper. To clear CMOS, temporarily short 1-2 pin.



1 1-2 close: Clear CMOS

1 2-3 close: Normal (Default)

6) BIOS_RE (BIOS Recovery Function)



1 1-2 close: Enable BIOS Recovery function

1 2-3 close: Disable BIOS Recovery function(Default)

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERINGSETUP

Power ON the computer and press <F2> immediately will allow you to enter Setup.

CONTROLKEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Reserved
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Reserved
<F7>	Load the Optimized Defaults
<F8>	Reserved
<F9>	Reserved
<F10>	Save all the CMOS changes, only for Main Menu

GETTINGHELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

- **Main**

  This setup page includes all the items in standard compatible BIOS.

- **Advanced**

  This setup page includes all the items of AMI special enhanced features.

  (ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

- **Security**

  Change, set, or disable password. It allows you to limit access the system and setup.

- **Power**

  This setup page includes all the items of Green function features.

- **Boot**

  This setup page include all the items of first boot function features.

- **Exit**

  There are five optionsin this selection: Exit Saving Changes, Exit Discarding Changes, Load Optimal Defaults, Load Failsafe Defaults, and Discard Changes.

Main

Once you enter Phoenix BIOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

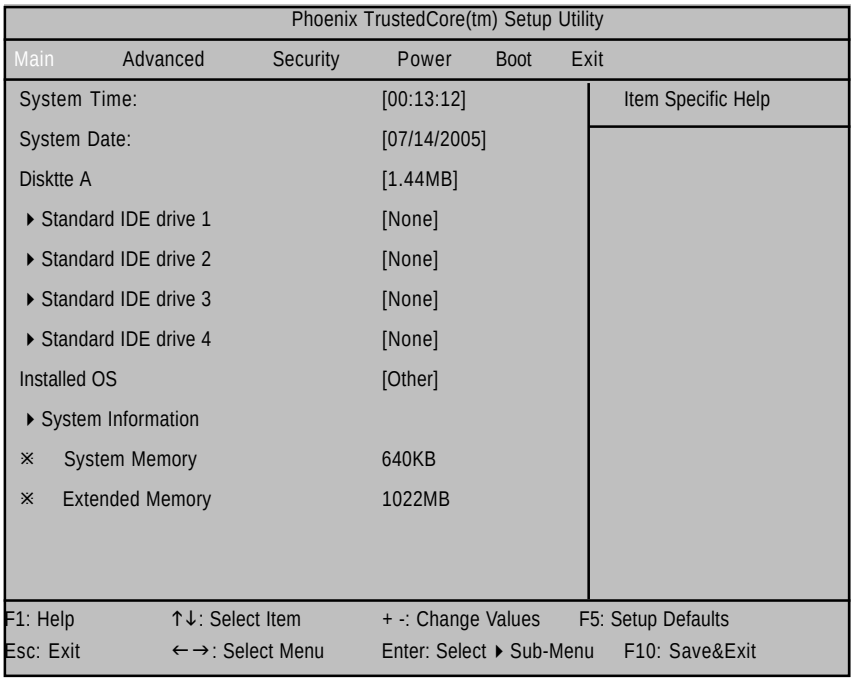


Figure 1: Main

☞ System Time

The time is calculated based on the 24-hour military time clock. Set the System Time (HH:MM:SS)

☞ System Date

Set the System Date. Note that the "Day" automatically changed after you set the date.
(Weekend: DD: MM: YY) (YY: 1099~2099)

Note!! "※"Indicates DISPLAY ONLY

☞ Diskette A

This category identifies the type of floppy disk drive A that has been installed in the computer.

⏩ Disabled	Disable this device.
⏩ 360KB	$5^{1/4}$ inch AT-type high-density drive; 360K byte capacity
⏩ 1.2MB	$3^{1/2}$ inch AT-type high-density drive; 1.2M byte capacity
⏩ 720K	$3^{1/2}$ inch double-sided drive; 720K byte capacity
⏩ 1.44M	$3^{1/2}$ inch double-sided drive; 1.44M byte capacity.

☝ Note: The 1.25MB,$3^{1/2}$ reference a 1024 byte/sector Japanese media format. The 1.25MB,$3^{1/2}$ diskette requires 3-Mode floppy-disk drive.

☞ Standard IDE Drive 1 /2 /3 /4

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

⏩ TYPE

1-39: Predefined types.

Users: Set parameters by User.

Auto: Set parameters automatically. (Default Vaules)

CD-ROM: Use for ATAPI CD-ROM drives or double click [Auto] to set all HDD parameters automatically.

ATAPI Removable: Removable disk drive is installed here.

- Multi-Sector Transfer

This field displays the information of Multi-Sector Transfer Mode.

Disabled: The data transfer from and to the device occurs one sector at a time.

Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.

- Maximum Capacity

This field displays the maximum capacity of primary IDE master.

- LBA Mode — This field shows if the device type in the specific IDE channel support LBA Mode.
- 32-Bit I/O — Enable this function to max imize the IDE data transfer rate.
- Transfer Mode — This field shows the information of Teansfer Mode.
- Ultra DMA Mode — This filed displays the DMA mode of the device in the specific IDE channel.

Installed OS

This category allows you to select the operating system which you will use commonly.

- Other — Select 'Other' if your operating system is not on the item list.
- Windows 32bit — Select Windows 32 bit as the operating system that you use commonly .
- Windows 64bit — Select Windows 64 bit as the operating system that you use commonly .
- Linux — Select Linux as the operating system that you use commonly .

System Information

This category includes the information of BIOS Version, BIOS Date,and MAC address.

System Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640 K for sy stems with 640K or more memory installed on the motherboard.

ExtendedMemory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1 MB in the C PU's memory address map.

Advanced

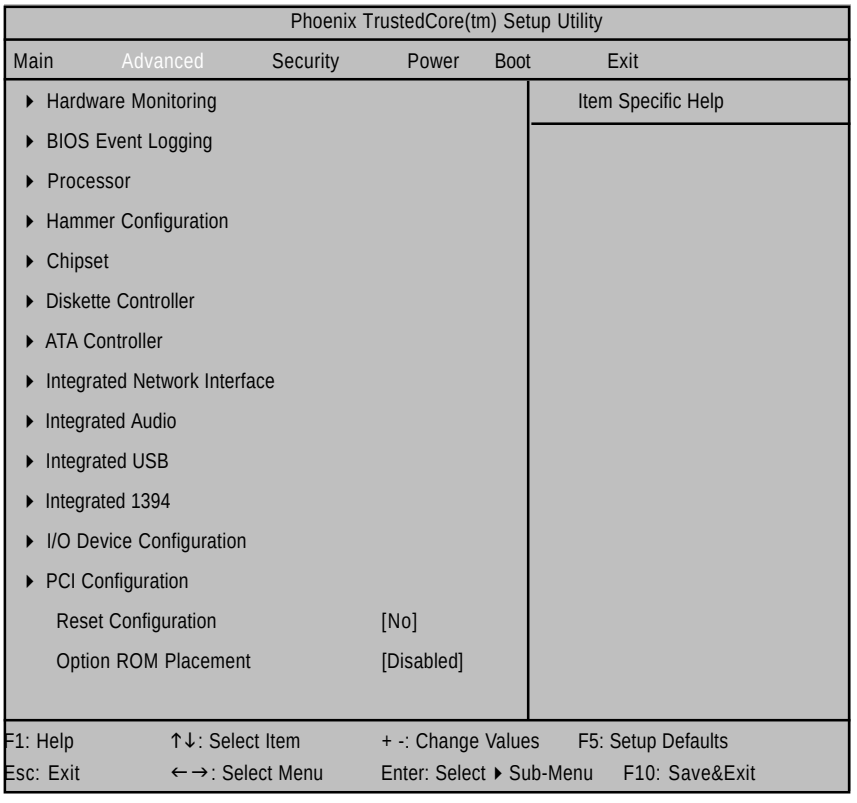


Figure 2: Advanced

About This Section: Advanced

With this section, allowing user to configure your system for basic operation. User can change the system's default boot-up sequence, keyboard operation, chipset configuration, PCI configuration and System Hardware health monitoring.

Hardware Monitoring

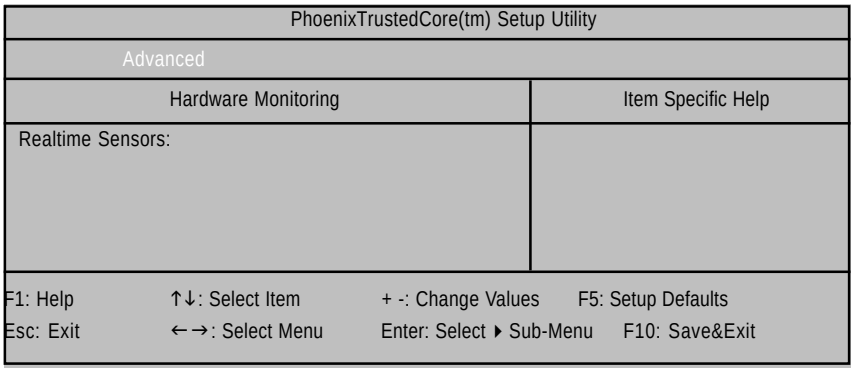


Figure 2-1: Hardware Monitoring

☞Realtime Sensors

This category displays system health information and voltage detection.

System health information includes CPU0/1 Temperature, Rear Temperature, FAN1/2/3/4/5.

Voltage detection includes information of 12V, 5V, 5VSB, 3.3V, and Battery.

BIOS Event Logging

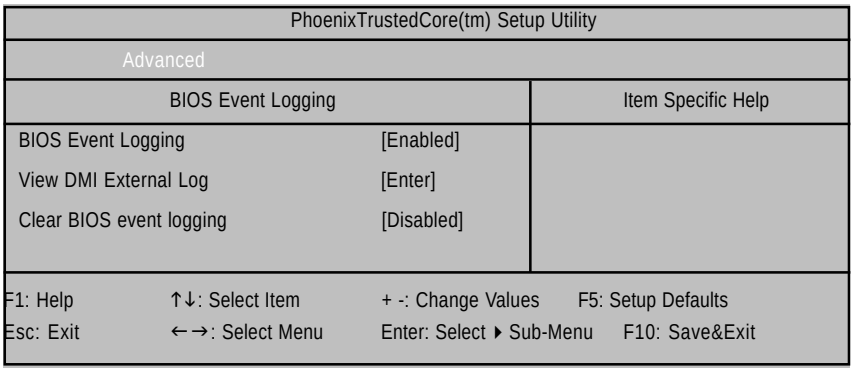


Figure 2-2: BIOS Event Logging

Boot Event Logging

- Enabled — When this item is set to enabld, all system errors will be logged to BIOS event log. (Default vaule)
- Disabled — Error will not be logged to the BIOS event log.

View DMI external Log

Press [Enter] to view the contents of the DMI Event Log.

Clear BIOS event log

- Enabled — Setting to enabled, system will clear BIOS event log after rebooting system.
- Disabled — Disable this function.

Processor

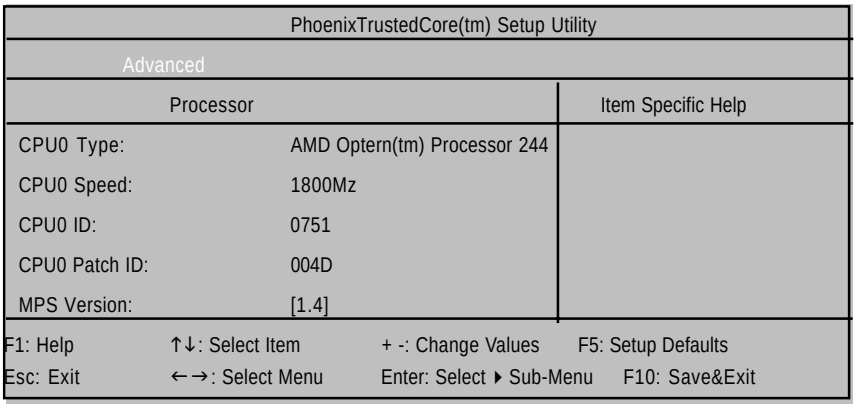


Figure 2-3: Processor

☞CPU Type/ Speed / ID / Patch ID

All items on this menu cannot be modified. This displays the installed CPU physical information.

☞MPS Version

This option allows user to configure the multiprocessor(MP) specification revision level. Some operating system will require 1.1 for compatibility reasons.

- 1.4 Support MPS Version 1.4 . (Default)
- 1.1 Support M PS Version 1.1.

Hammer Configuration

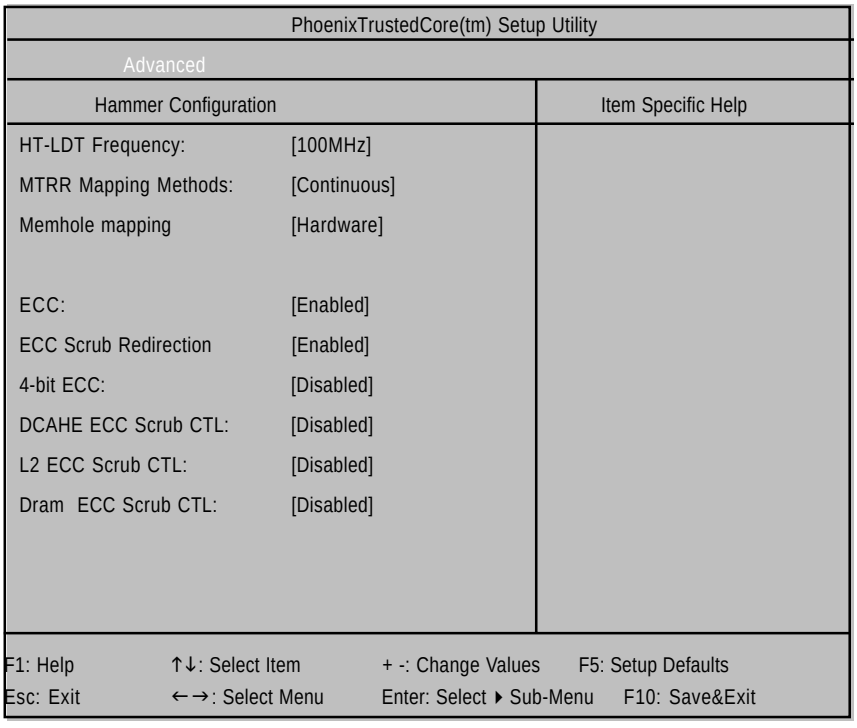


Figure 2-4: Hammer Configuration

☞HT-LDT Frequency

Manually select HT-LINK frequency.

- Options 200MHz, 400MHz, 600MHz, 800MHz, and 1000MHz (Default values)

MTRR Mapping Method

Select the CPU Memory Type Range Register (MTRR) mapping method.

- Continuous Default method. (Default value)
- Dicrete Compatible with Linux AGP.

Memhole mapping

Remapping scheme of PCI memory hole.

- Hardware Select Hardware as the PCI memory hole. (Default value)
- Software Select Software as the PCI memory hole.
- Disabled Disable this function.

ECC

ECC check / correct mode. This is a global enable function for all blocks within CPU core and north bridge. Note that after loading setup defaults, restart and enter setup to access DRAM ECC setup option.

- Enabled Enable ECC function. (Default value)
- Disabled Disable this function.

ECC Scrub Redirection

Enabling ECC Scrubber to correct errors detected in Dram during normal CPU request (Foreground scrubbing).

- Enabled Enable ECC Scrub Redirection function. (Default)
- Disabled Disable this function.

4-bit ECC

This option provide user to function Chip-Kill ECC on nodes without all x4 ECC capable DIMMs.

- Enabled Enable 4-bit ECC mode on Nodes with ECC capable DIMMs.
- Disabled Disable this function. (Default value)

DCACHE ECC Scrub CTL

This option allows user to set the rates of background scrubbing for DCACHE lines.

- Enabled Set the rates of background scrubbing for DCACHE lines.
- Disabled Disable this function. (Default value)

L2 ECC Scrub CTL

This option allows user to set the rates of background scrubbing for L2 cache lines.

- Enabled Set the rates of background scrubbing for L2 cache lines.
- Disabled Disable this function. (Default value)

Dram ECC Scrub CTL

This option allows user to set the rates of background scrubbing for Dram.

(In addition to normal ECC scrubbing for system request)

Note that background agent works independently of CPU requests and bus master, but cannot be enabled without first enabling Dram ECC.

- Options 1.31 ms (Default value), 2.62 ms, 5.24 ms, 10.49 ms, 20.97 ms, 42.0 ms, 84.0 ms.
- Disabled Disable this function.

Chipset

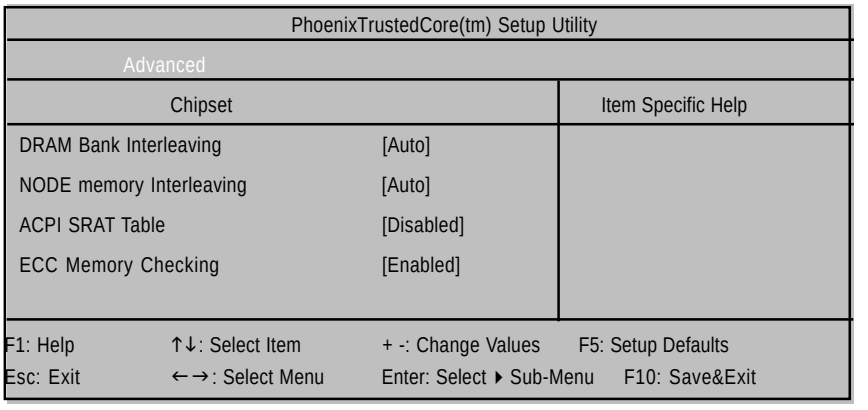


Figure 2-5: Chipset

☞DRAM Bank Interleaving

- Auto BIOS will automatically detect capability on each node. (Default value)
- Disabled Disable this function.

☞NODE Memory Interleaving

- Auto BIOS will automatically detect capability on each node. (Default value)
- Disabled Disable this function.

☞ACPI SRAT Table

- Enabled Enable ACPI 2.0 static resources affinity table or NUMA system. (Default value)
- Disabled Disable this function.

☞ECC Memory Checking

- Enabled All memory modules in the system support parity ECC mode.
- Disabled Disable this function. (Default value)

Diskette Controller

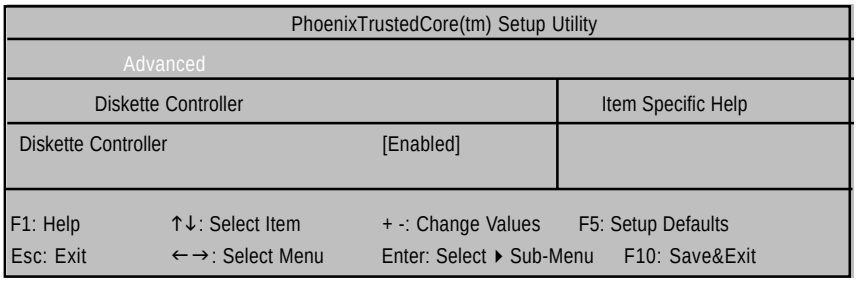


Figure 2-6: Diskette Controller

☞Diskette Controller

- Auto — BIOS will automatically start configuration for floppy diskette controller. (Default value)
- Enabled — Enable floppy diskette controller.
- Disabled — Disable this function.

ATA Controller

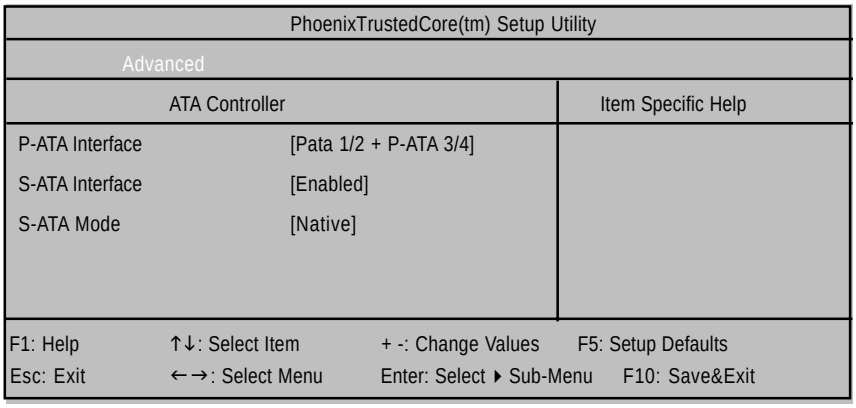


Figure 2-7: ATA Controller

P-ATA Interface

- PATA1/2 — Specify the Parallel ATA Channel to PATA 1/2.
- PATA 3/4 — Specify the Parallel ATA Channel to PATA 3/4.
- PATA1/2 + PATA3/4 — Enable both the Parallel ATA Channel.
- Disabled — Disable the device.

SATA Interface

- Enabled — Enable first serial ATA device.
- Disabled — Disable this device.

SATA Mode

- Native — Serial ATA configured in native mode.Some operating systems do not support native IDE devices.
- RAID — This option requires two identical SATA devices.

Integrated Network Interface

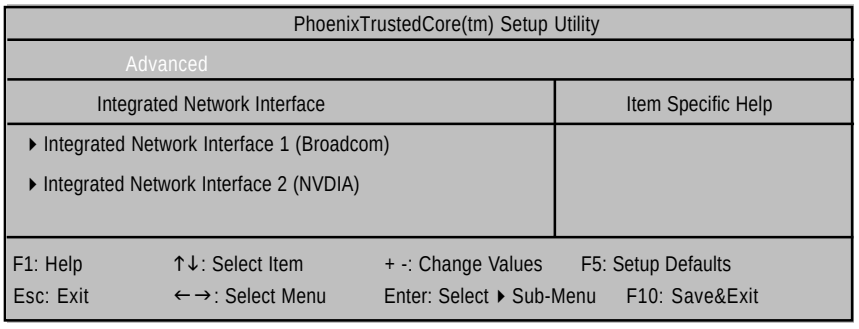


Figure 2-8: Integrated Network Interface

☞Integrated Network Interface 1 (Broadcom)

▸ Integrated Network Interface

▸▸Enabled	Enable onboard LAN (Broadcom) controller. (Default value)
▸▸Disabled	Disable this function.

▸ Option ROM Scan

▸▸Enabled	Enableing this item to initialize device expansion ROM. (Defualt value)
▸▸Disabled	Disable this function.

▸ Latency Timer

▸▸Default	Minimum guaranteed time slice allotted for bus master units of PCI bus clocks. (Defualt value)
▸▸Options	0020h, 0040h, 0060h, 0080h, 00A0h, 00C0h, 00Eh.

Integrated Network Interface 2 (NVDIA)

- Integrated Network Interface

Enabled	Enable onboard LAN (NVDIA) controller. (Default value)
Disabled	Disable this function.

- Latency Timer

Default	Minimum guaranteed time slice allotted for bus master units of PCI bus clocks. (Defualt value)
Options	0020h, 0040h, 0060h, 0080h, 00A0h, 00C0h, 00Eh.

Integrated Audio

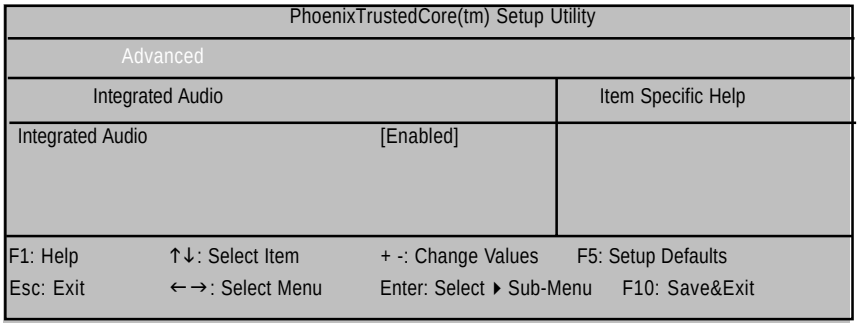


Figure 2-9: Integrated Audio

☞Integrated Audio

- ⏩Enable — EnableAC97 Audio interface. (Default value)
- ⏩Disabled — Disable AC97 Audio.

Integrated USB

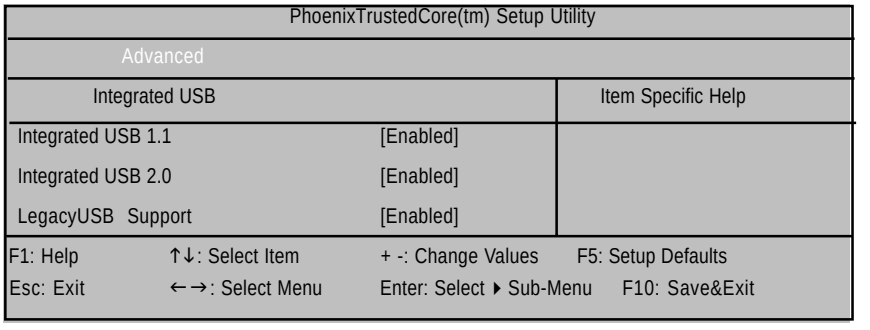


Figure 2-10: Integrated USB

Integrated USB 1.1

This item allows users to enable or disable the USB 1.1 device by setting item to the desired value.

- Enabled — Enable USB 1.1 controller. (Default value)
- Disabled — Disbale this function.

Integrated USB 2.0

This item allows users to enable or disable the USB 2.0 device by setting item to the desired value.

- Enabled — Enable USB 2.0 controller. (Default value)
- Disabled — Disbale this function.

Legacy USB Support

- Enabled — Enables USB keyboard and mice. (Default value)
- Disabled — Disables support for legacy USB

Integrated 1394

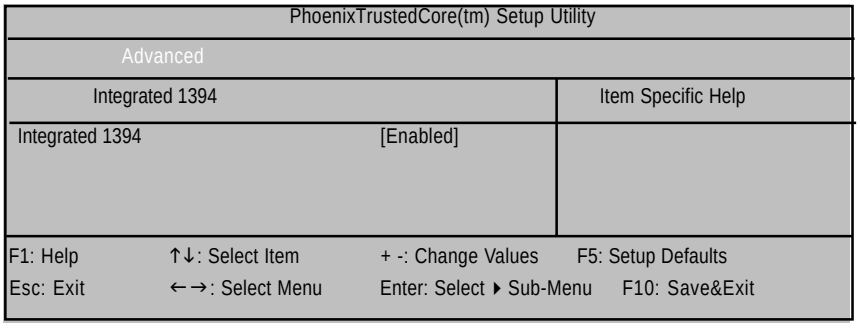


Figure 2-11: Integrated Audio

☞Integrated 1394

- ⏩Enabled — Enable integrated 1394 controller. (Default value)
- ⏩Disabled — Disable this function.

I/O Device Configuration

PhoenixTrustedCore(tm) Setup Utility			
Advanced			
I/O Device Configuration			Item Specific Help
Serial Port A	[Auto]		
Parallel Port	[Auto]		
Mode:	[ECP]		
Base I/O address:	[378]		
Interrupt	[IRQ7]		
DMA Channel	[DAM3]		
F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 2-12: I/O Device Configuration

☞I/O Device Configuration

☞Serial Port A

This allows users to configure serial prot A by using this option.

- ⏩Disabled Disable the configuration.
- ⏩Enabled Enable the configuration
- ⏩Auto BIOS or O.S will select the configuration automatically. (Default value)

Parallel Port

This allows users to configure parallel port by using this option.

Enabled	Enable the configuration. (Default value)
Disabled	Disable the configuration.

- Mode

This option allows user to set Parallel Port transfer mode.

EPP	Using Parallel port as Enhanced Parallel Port. (Default)
Bi-directional	Use this setting to support bi-directional transfers on the parallel port.
ECP	Using Parallel port as Extended Capabilities Port.

- Base I/O Address

378	Set IO address to 378. (Default value)
278	Set IO address to 278.
3BC	Set IO address to 3BC.

- Interrupt

IRQ5	Set the Interrupt to IRQ5.
IRQ7	Set the Interrupt to IRQ7. (Default value)

- DMA Channel

DMA1	Select DMA1 as DMA channel.
DMA3	Select DMA3 as DMA channel.

PCI Configuration

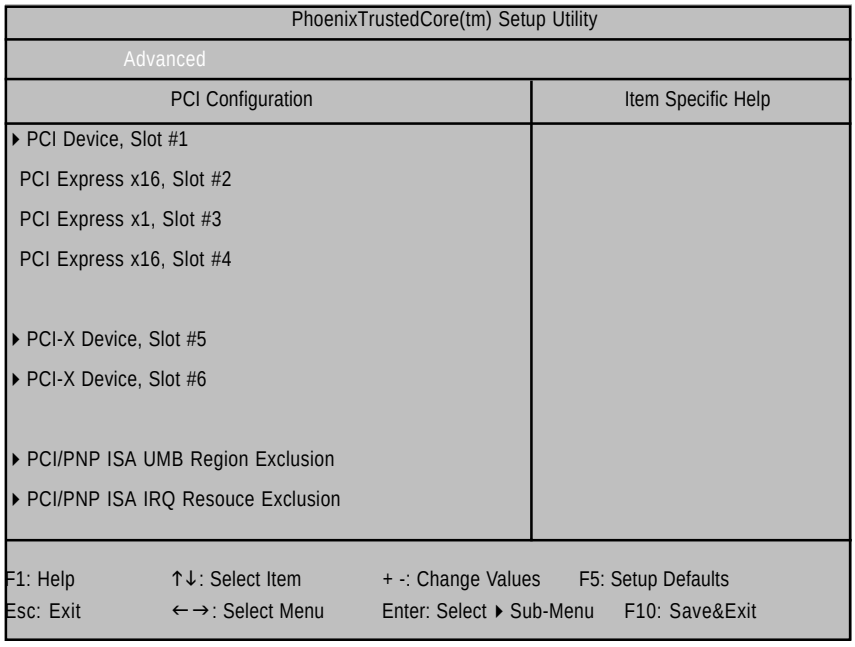


Figure 2-13: PCI Configuration

☞PCI Device, Slot #1

- Option ROM Scan

Initialize device expansion ROM.

▸▸Enabled	Enable device expansion ROM. (Default)
▸▸Disabled	Disable this function.

- Latency Timer

▸▸Defaults	Minimum guaranteed time slice allotted for bus master in units of PCI bus clocks. (Default)
▸▸Disabled	Disable this function.

☞PCI-Express x16, Slot#2

⏩Enabled	Enable the specify device.
⏩Disabled	Disable the specify device.
⏩Auto	Auto detection. (Default value)

☞PCI-Express x1, Slot#3

⏩Enabled	Enable the specify device.
⏩Disabled	Disable the specify device.
⏩Auto	Auto detection. (Default value)

☞PCI-Express x16, Slot#4

⏩Enabled	Enable the specify device.
⏩Disabled	Disable the specify device.
⏩Auto	Auto detection. (Default value)

☞PCI-X Device, Slot #5/6

▸ Option ROM Scan

Initialize device expansion ROM.

⏩Enabled	Enable device expansion ROM. (Default)
⏩Disabled	Disable this function.

▸ Latency Timer

⏩Defaults	Minimum guaranteed time slice allotted for bus master in units of PCI bus clocks. (Default)
⏩Disabled	Disable this function.

PCI / PNP UMB Exclusion

Reserve specific upper memory blocks for use by legacy ISA devices.

- C800-CBFF/ CC00-CFFF/ D000-D3FF/ D400 -D7FF/ D800-DBFF/ DC00-DFFF

PCI / PNP IRQ Resource Exclusion

Reserve specific IRQs for use by legacy ISA devices.

- IRQ3/ IRQ4/ IRQ5/ IRQ7/ IRQ10/ IRQ11

Reset Configuration Data

Yes	Clear the Extended System Configuration Data (ESCD) area.
No	Disable this function. (Default value)

Option ROM Placement

You can choose to apply option ROM placement feature, while you knew it as risky. If the system hangs during boot, please restart and enter this setup menu to change the setting.

E000 Extension by PFA	Select E000 Extension by PFA as Option ROM Placement feature.
Temporary Relocation by PFA	Select Temporary Relocation by PFA as Option ROM Placement feature.
E000 Extension by Size	Select E000 Extension by Size as Option ROM Placement feature.
Temporary Relocation by Size	Select Temporary Relocation by Size as Option ROM Placement feature.
Disabled	Disable the configuration.

Security

PhoenixTrustedCore(tm) Setup Utility					
Main	Advanced	Security	Power	Boot	Exit

Setup Password	not installed	Item Specific Help
User Password	not installed	
Set Supervisor Password	[Enter]	
Set User Password	[Enter]	
Password on boot	[Disabled]	
Start from Floppy	[Enabled]	
Start from IDE HDD	[Enabled]	
Start from IDE CD-ROM	[Enabled]	
BIOS Write protect	[Disabled]	
Fixed disk boot sector	[Normal]	
Write on flexible disks	[Unlocked]	
Setup prompt	[Enabled]	
Cabinent Monitoring	[Disabled]	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 3: Security

About This Section: Security

In this section, user can set either supervisor or user passwords, or both for different level of password securities. In addition, user also can set the virus protection for boot sector.

☞Set Supervisor Password

You can install and change this options for the setup menus. Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password or press <Enter> key to disable this option.

☞Set User Password

You can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password.

☞Password on boot

Password entering will be required when system on boot.

- ⏩ Enabled — Requries entering password when system on boot.
- ⏩ Disabled — Disable this function. (Default value)

☞Start From Floppy

- ⏩ Enabled — Enable Start from floppy. (Default value)
- ⏩ Disabled — Disable this device.

☞Start From IDE HDD

- ⏩ Enabled — Enable Start from IDE HDD. (Default value)
- ⏩ Disabled — Disable this device.

Start From IDE CD-ROM

- Enabled — Enable Start from IDE CD-ROM. (Default value)
- Disabled — Disable this device.

BIOS Write Protect

This option allows a user to set if enable device write protection. This will be effective only if the device is accessed through BIOS.

- Enabled — Enable BIOS Write Protect.
- Disabled — Disable this function. (Default value)

Fixed disk boot sector

- Write Protect — Write protects boot sector on harddisk to protect against virus.
- Normal — Set the fixed disk boot sector at Normal state. (Default value)

Write on flexible disk

- Unlocked — Data can be written to floppy disk . (Default value)
- Locked — Data cannot be written to floppy disk .

Setup Prompt

- Enabled — Display Setup entry prompt on boot. (Default value)
- Disabed — Disable the setup entry prompt.

Cabinent Monitoring

- Enabled — When this item is set to enabled, the system 's housing is monitored.
- Disabled — Disable this function. (Default value)

Power

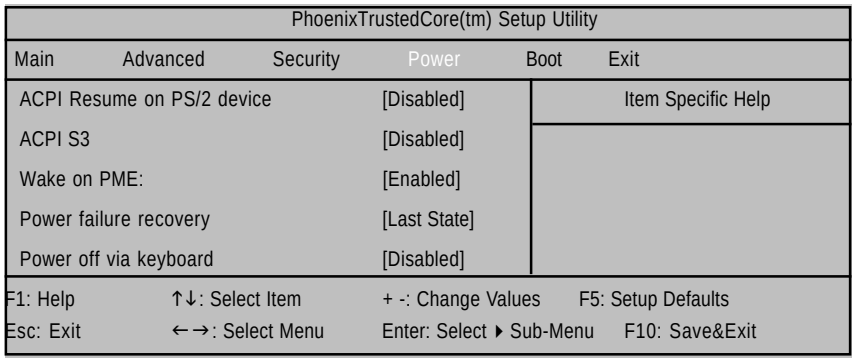


Figure 4: Power

ACPI Resume on PS/2 Device

- Enabled — This option allow user to wake up by PS/2 device from ACPI S3
- Disabled — Disable this function. (Default value)

ACPI S3

This switch only available if less than 4GB memory is installed at the system.

- Enabled — Enable the S3 ACPI (Save to RAM) power mode.
- Disabled — Disable this function. (Default value)

Wake On PME

- Enabled — Enable PME wake up function. (Default value)
- Disabled — Disable this function.

Power Failure Recovery

This option provides user to set the mode of operation if an AC / power loss occurs.

- Power On — System power state when AC cord is re-plugged.
- Off State — Do not power on system when AC power is back.
- Last State — Set system to the last sate when AC power is removed. Do not power on system when AC power is back. (Default value)

Power off via Keyboard

- Enabled — Allows the system to be switched off via power button on the keyboard.
- Disabled — Disable this function. (Default value)

Boot

PhoenixTrustedCore(tm) Setup Utility					
Main	Advanced	Security	Power	Boot	Exit
Halt on POST Errors			[Enabled]	Item Specific Help	
Fast Boot			[Enabled]		
Quiet Boot			[Enabled]		
F12 Boot Menu			[Enabled]		
Primary Display			[PCI-E VGA]		
▸ Boot Device Priority					
F1: Help	↑↓: Select Item		+ -: Change Values		F5: Setup Defaults
Esc: Exit	←→: Select Menu		Enter: Select ▸ Sub-Menu		F10: Save&Exit

Figure 5: Boot

About This Section: Boot

The "Boot" menu allows user to select among four possible types of boot devices listed using the up and down arrow keys. By applying <+> and <Space> key, you can promote devices and by using the <-> key, you can demote devices. Promotion or demotion of devices alerts the priority that the system uses to search for boot device on system power on.

Halt On POST Errors

- Enabled — Pause and displays setup entry or resume boot prompt if error occurs at boot. (Default value)
- Disabled — System always attempts to boot.

Fast Boot

- Enabled — Allow system to skip certain tests while booting. This will descrese the time needed to boot the system. (Default value)
- Disabled — Disable this function.

Quiet Boot

- Enabled — Minimal startup display during boot. (Default value)
- Disabled — Normal system boot.

F12 Boot Menu

- Enabled — Allow user to bypass the normal equence of boot device. Before loading the OS press <F12> and select an alternate boot device from the muen.
- Disabled — Disable this function.

Boot Device Priority

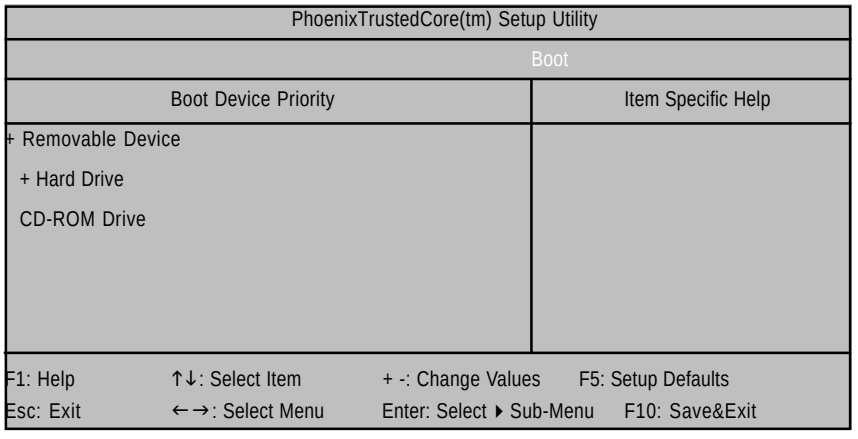


Figure 5-1: Boot

Primary Display

- PCI-E VGA Select PCI-E VGA as the primary display device.
- PCI VGA Select PCI VGA as primary display device.

Boot Device Priority

- Removable Device / Hard Drive / CD-ROM Drive

  These three fields determines which type of device the system attempt to boot from after PhoenixBIOS Post completed. Specifies the boot sequence from the available devices. If the first device is not a bootable device, the system will seek for next available device.

Exit

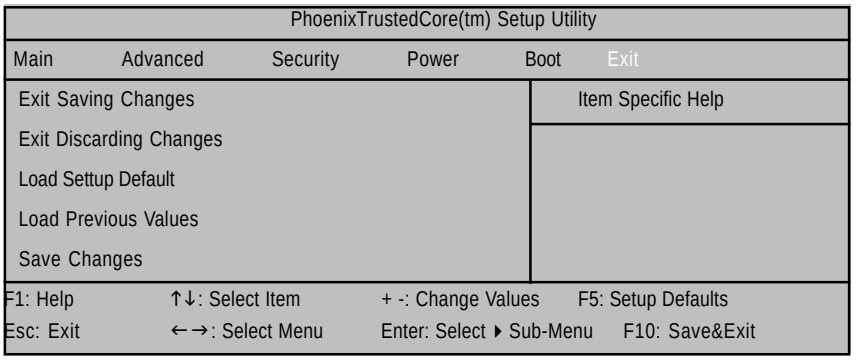


Figure 6: Exit

About This Section: Exit

Once you have changed all of the set values in the BIOS setup, you should save your chnages and exit BIOS setup program. Select "Exit" from the menu bar, to display the following sub-menu.

- Exit Saving Changes
- Exit Discarding Changes
- Load Settup Default
- Load Previous Values
- Save Changes

Exit Saving Changes

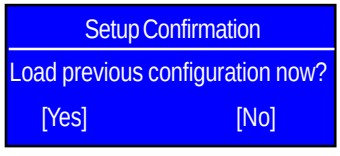
This option allows user to exit system setup with saving the changes.

Press <Enter> on this item to ask for the following confirmation message:

Pressing 'Y' to store all the present setting values tha user made in this time into CMOS.

Therefore, whenyou boot up your computer next time, the BIOS will

re-configure your system according data in CMOS.

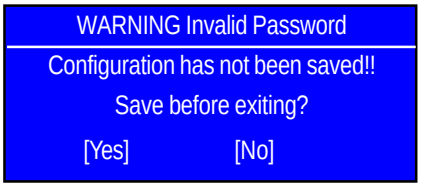


Exit Discarding Changes

This option allows user to exit system setup without changing any previous settings values in CMOS. The previous selection remain in effect.

This will exit the Setup Utility and restart your compuetr when selecting this option.

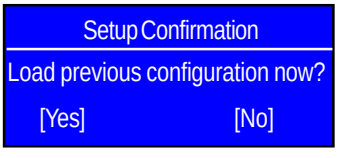
Press <Enter> on this item to ask for confirmation message.



Load Setup Default

This option allows user to load default values for all setup items.

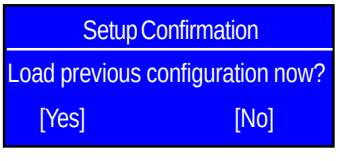
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Load Previous Values

This option allows user to load previos values from CMOS for all setup item.

When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:

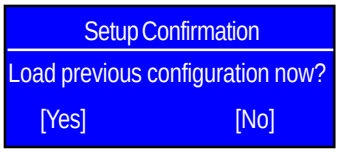


Press [Yes] to load the previos values from CMOS for all setup item.

☞Save Changes

This option allows user to save setup daya to CMOS.

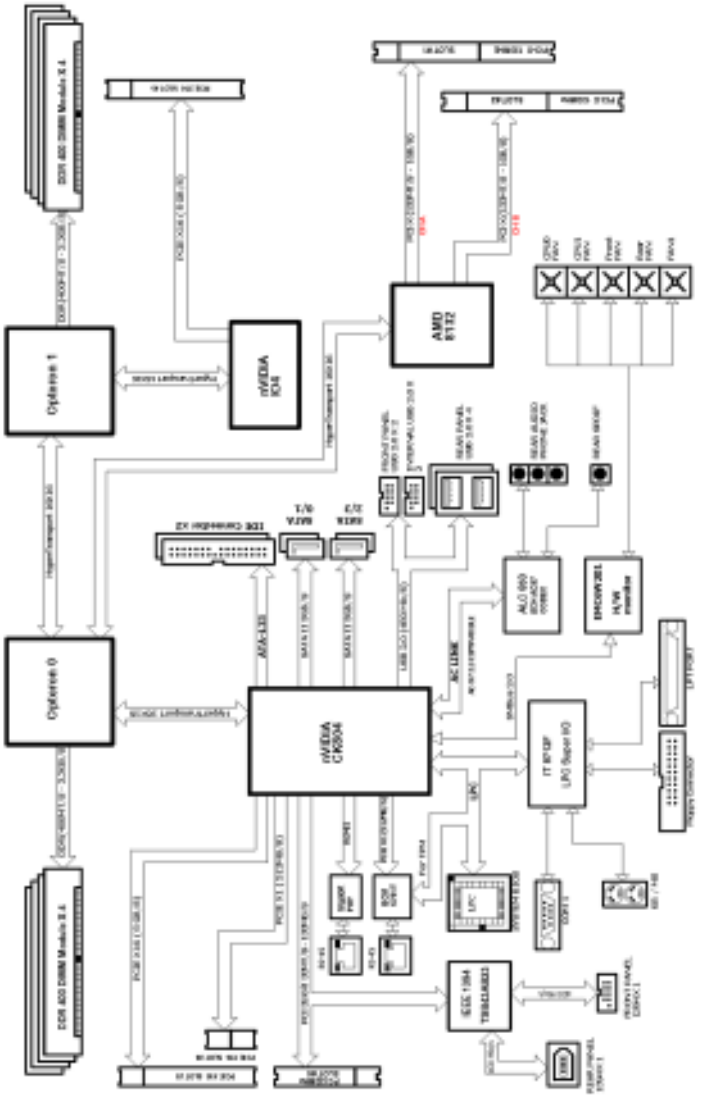
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Press [Yes] to save setup daya to CMOS.

Chapter 4 Technical Reference

Block Diagram



Chapter 5 Application Driver Installation

A. NVDIA Chipset Driver Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

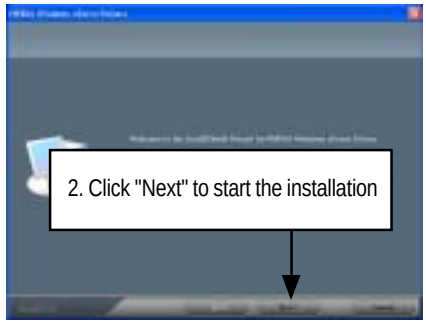
Installation Procedures:

1. The CD auto run program starts, Click on "nVDIA Chipset Driver" to start the installation.
2. Then, a series of installation wizards appear. Follow up the wizards to install the drivers.
3.Setup completed, click "Finish" to restart your computer.

Autorun

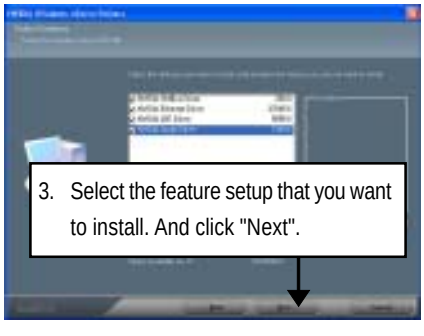
(1)

InstallShield Wizard Welcome Window



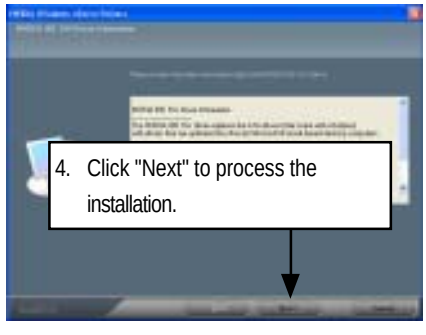
(2)

Select Features



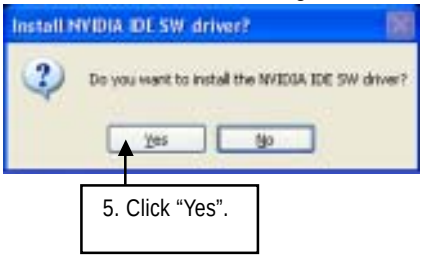
(3)

NVDIA IDE SW Driver Information



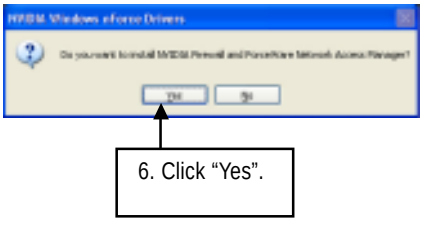
(4)

IDE SW Driver Installation Confirmation Dialog



(5)

Firewall and ForceWare Network Access Manager Installation Confirmation Dialog

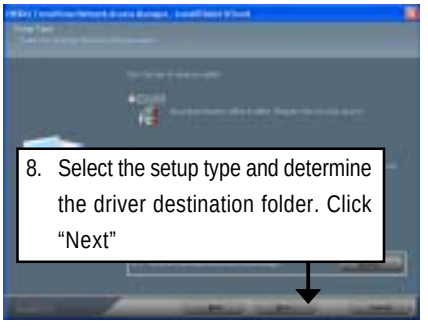


(6)

Network Access Manager Installation

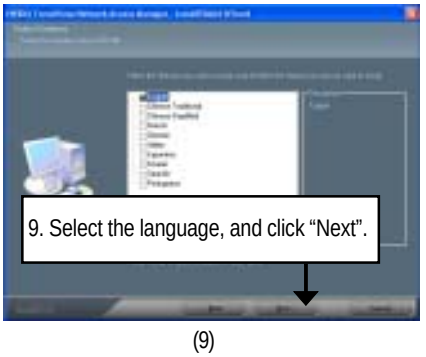
(7)

Network Access Manager Setup Type Selection



(8)

Network Access Manager Installation Language Preference



(9)

B. Broadcom LAN Driver Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show a series of Setup Wizard dialog boxes. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

Installation Procedures:

1. The CD auto run program starts, **Click** on “BROADCOM LAN Driver” to start the installation.
2. Then, a series of installation wizards appear. Follow up the wizards to install the applications.

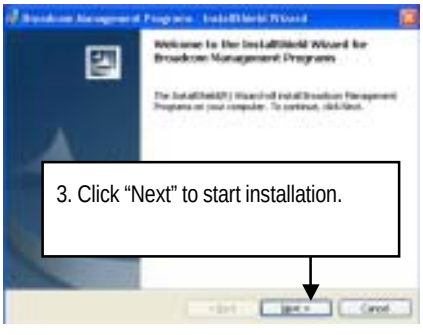
Autorun

(1)

BROADCOM LAN Driver

(2)

InstallShield Wizard Welcome Window

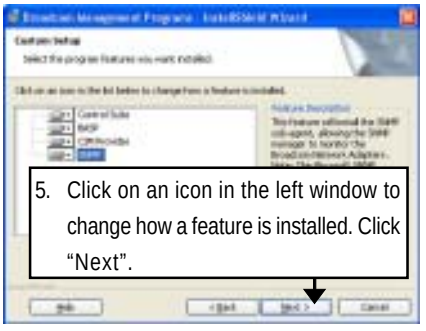


(3)

License Agreement

(4)

CUSTOM Setup



(5)

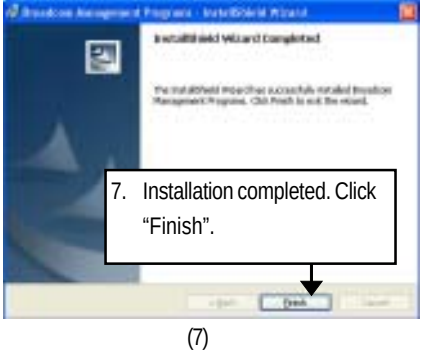
Ready to Install

(6)

CUSTOM Setup Features

Control Suite	This feature will install Broadcom Advanced Control Suite graphical user interface. This application contains a set of utilities supporting diagnostic, monitoring, and configuration for Broadcom network adapters.
BASP	This feature will install Broadcom Advanced Server Program. This NDIS intermediates driver software allow for load balancing and failover, and VLAN capabilities.
SNMP	This feature will install SNMP sub-agent, allowing he SNMP manager to monitor the Broadcom Network Adapters. Note that the the Microsoft SNMP Service must be running for this feature to function properly.
CIM Provider	This feature will install Commond Information Model provider that presents network adapter information to WMI based management applications.

Installaiton Wizard Completed



(7)

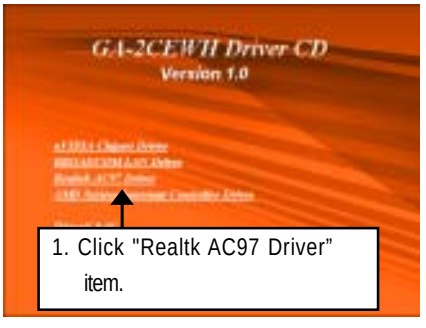
C. Realtek AC97 Driver Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

Installation Procedures:

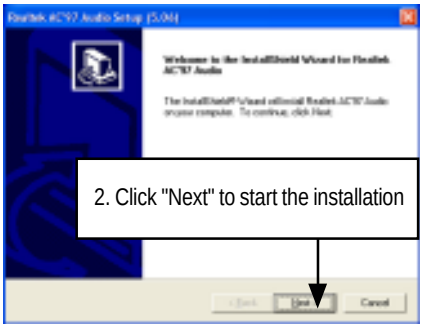
1. The CD auto run program starts, Click on "Realtek AC97 Driver" to start the installation.
2. Then, a series of installation wizards appear. Follow up the wizards to install the drivers.
3.Setup completed, click "Finish" to restart your computer.

Autorun



(1)

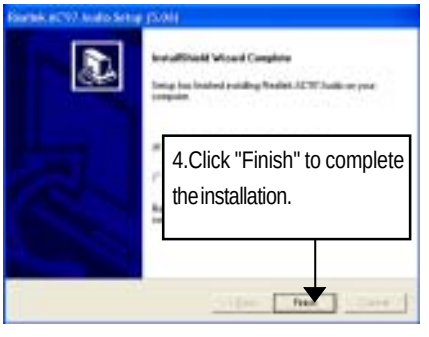
InstallShield Wizard Welcom Window



(2)

Starting Installaiton

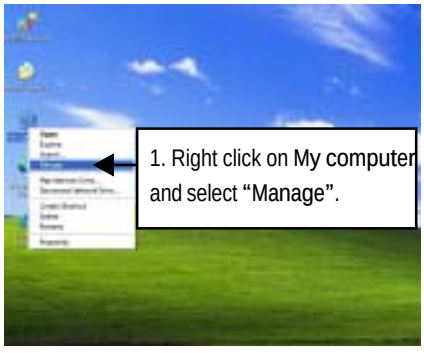
Installaiton Wizard Completed

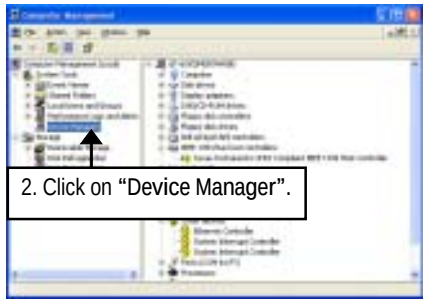


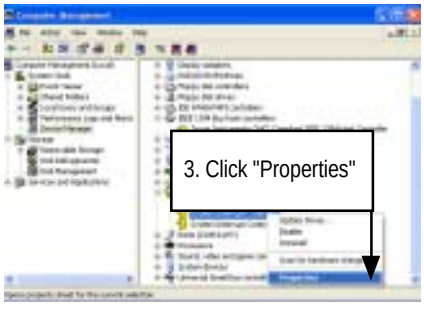
D. AMD System Interrupt Controller Driver Installation

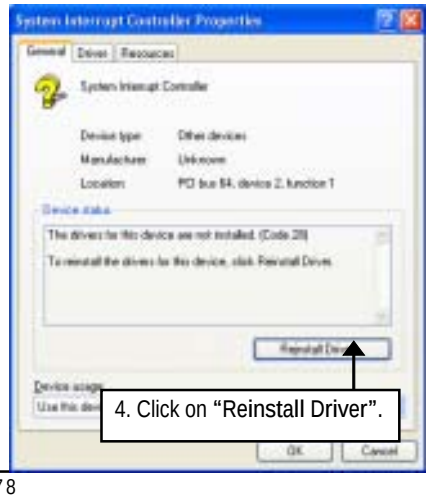
Installation Procedures:

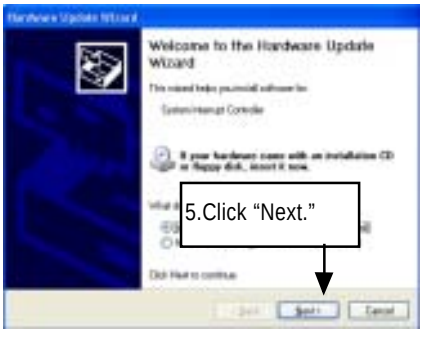
1. Insert the driver CD-title that came with your motherboard into your CD-ROM driver.
2. Right click My Computer and select Manage.
3. Click on Device Manager.
4. On the right side of the windows, right click on System Interrupt Controller and select Properties.
5. Select Driver Tab, and click on Update Driver tab.
6. Select Install the software automatically, then click Next.
7. Hardware Update Wizard widow pops up. Click Next.
8. Installation completed, click Finish.

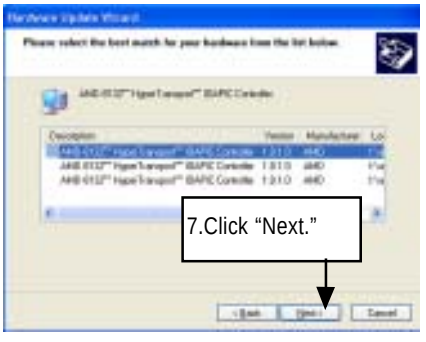


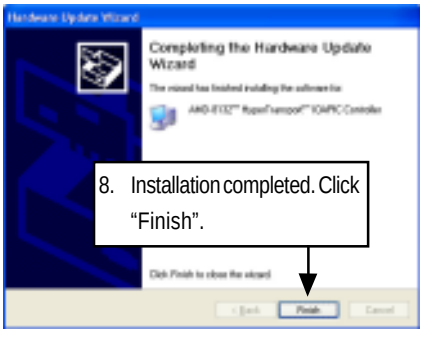







Welcome to the Hardware Update Wizard
5.Click “Next.”


7.Click “Next.”


Completing the Hardware Update Wizard
8. Installation completed. Click “Finish”.

E. DirectX 9.0 Driver Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

Installation Procedures:

1. The CD auto run program starts, **Double click** on "Directx9.0" to start the installation.
2. Then, a series of installation wizards appear. Follow up the wizards to install the drivers.
3.Setup completed, click "Finish" to restart your computer.

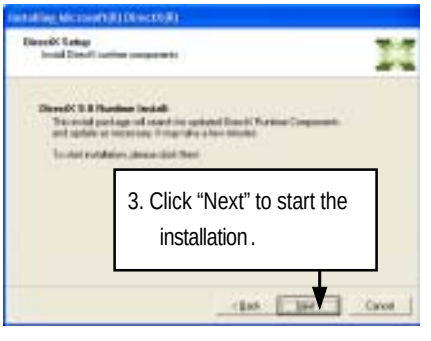
Autorun

(1)

License Agreement

(2)

Starting Installaiton



(3)

Installaiton Wizard completed

(4)

Chapter 6 Appendix

Appendix : Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BBS	BIOS Boot Specification
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request

to be continued.....

Acronyms	Meaning
I/O	Input / Output
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory
SMP	Symmetric Multi-Processing
SMI	System Management Interrupt
USB	Universal Serial Bus
VID	Voltage ID