GA-3CESL-RH

AMD Socket F Dual Processor Motherboard

USER'S MANUAL

AMD Opteron™ Socket F Dual Processor Motherboard
Rev. 1004

* The WEEE marking on the product indicates this product must not be disposed of with user's other household waste and must be handed over to a designated collection point for the recycling of waste electrical and electronic equipment!!

* The WEEE marking applies only in European Union's member states.

Table of Content

Item Checklist

- ☑ GA-3CESL-RH motherboard
- ☑ Serial ATA cable x 6
- ☑ IDE (ATA133) cable x 1 / Floppy cable x 1
- ☑ CD for motherboard driver & utility
- ☑ GA-3CESL-RH Quick Reference Guide
- ☑ I/O Shield Kit
- ☑ SATA Power cable x 3

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

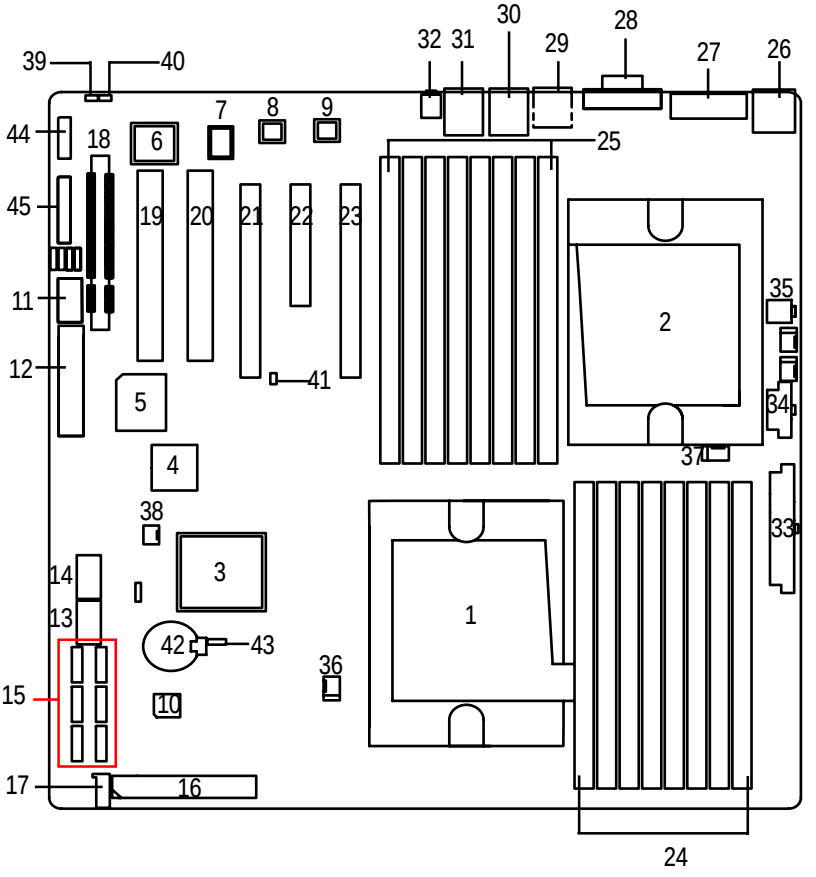
1.1 Features Summary

Form Factor	• 12"W x 13"D Extend ATX size form factor, 8 layers PCB.
CPU	• Support Dual AMD Opteron™ 2000 series Processors (Socket F) • Supports AMD Opteron™ Dual-Core/ Quad-Core (Barcelona) processors • Supports L2/3 Cache with 1MB/2MB
Chipset	• NVIDIA® nForce Professional 3600 MCP Chipset
Memory	• 16 x DDR2 DIMM sockets • Supports up to 64GB 533/667memory • Dual Channel memory bus • Registered DDR2 533/667 • Supports 512MB, 1GB, 2GB and 4GB memory
I/O Control	• ITE IT8716F-S
Expansion Slots	• 2 PCI slots 32-Bit/33MHz (3.3V) • 1 PCI-Express x8 slot (with x4 bandwidth) • 2 PCI-Express x16 slot (One with x8 bandwidth)
SATA RAID Controller	• Built in NVIDIA ® 3600 MCP with Software RAID 0,1,0+1, 5 • Supports 6 SATA 3.0 Gb/s connectors
On-Board Peripherals	• 1 ATA connector • 1 Floppy connector • 6 SATA 3.0 Gb/s connectors • 2 PS/2 connectors • 1 VGA • 1 Serial port (COM) • 6 x USB 2.0 (4 by cable) • 2 x LAN RJ45

Hardware Monitor	• Enhanced features with CPU Vcore, 1.5V reference, VCC3 (3.3V) , VBAT3V, +5VSB, CPUA/B Temperature, and System Temperature Values viewing • CPU/Power/System Fan Revolution Detect • CPU shutdown when overheat • System Voltage Detect
On-Board LAN	• Dual Marvell® 88E1116 GbE PHY • Supports WOL, PXE
BIOS	• Phoenix BIOS on 8Mb flash ROM
Additional Features	• PS/2 Mouse wake up from S1 under Windows Operating System • External Modem wake up • Supports S1, S4, S5 under Windows Operating System • Wake on LAN (WOL) • Wake on Ring (WOR) • AC Recovery • Supports Console Redirection • Supports 4-pin Fan controller

1.2 GA-3CESL-RH Motherboard Components

1. Processor 1 Socket
2. Processor 2 Socket
3. NVIDIA nForce Professional 3600
4. BIOS Flash ROM
5. ITE IT8716F-S I/O controller
6. XGI Z9s VGA controller
7. Video Memory
8. Marvell 88E1116 GbE
9. Marvell 88E1116 GbE
10. Winbond W83792G
11. Serial Port connector
12. Floppy cable connector
13. Front USB cable connector
14. Front USB cable connector
15. SATA cable connectors
16. IDE cable connector
17. I2C connector for power supply
18. BMC module slot
19. PCI Slot(32bit/33MHz)
20. PCI Slot(32bit/33MHz)
21. PCI-E x16 Slot
22. PCI-E x8 Slot
23. PCI-E x16 Slot
24. DDR2 sockets for processor1
25. DDR2 sockets for processor2
26. Keyboard Mouse port
27. Serial port
28. VGA port
29. USB2.0 port
30. RJ45 Lan Ports
31. RJ45 Lan Ports
32. ID switch
33. 24-pin Power connector
34. 8-pin Power connector
35. 4-pin Power connector
36. CPU 1 fan cable connector
37. CPU 2 fan cable connector
38. North Bridge chip fan cable connector
39. Buzz stop jumper for IPMI
40. Intrusion cable connector
41. PCI expansion card LED jumper
42. CMOS Battery
43. Clear CMOS jumper
44. Front panel LED connector
45. Front panel LED connector (For System Only)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Chapter 2 Hardware Installation Process

2-1: Installing Processor and CPU Haet Sink

CAUTION

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

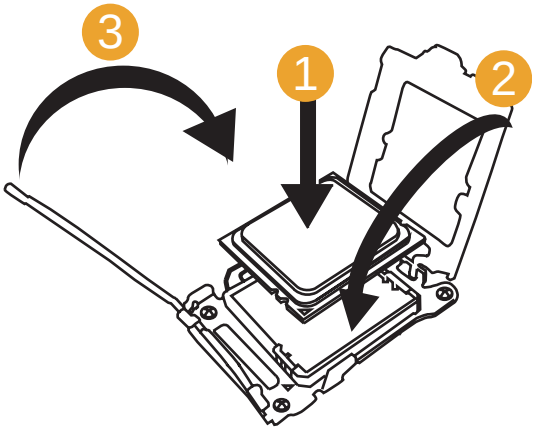
1. The processor will overheat without the heatsink and/or fan, resulting in permanent irreparable damage.
2. Never force the processor into the socket.
3. Apply thermal grease on the processor before placing cooling fan.
4. Please make sure the CPU type is supported by the motherboard.
5. If you do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

2-1-1: Installing CPU

Step 1 Raise the metal locking lever on the socket. Remove the plastic covering on the CPU socket.

Step 2 Insert the CPU with the correct orientation. The CPU only fits in one orientation.

Step 3 Once the CPU is properly placed, please replace the plastic covering and push the metal lever back into locked position.



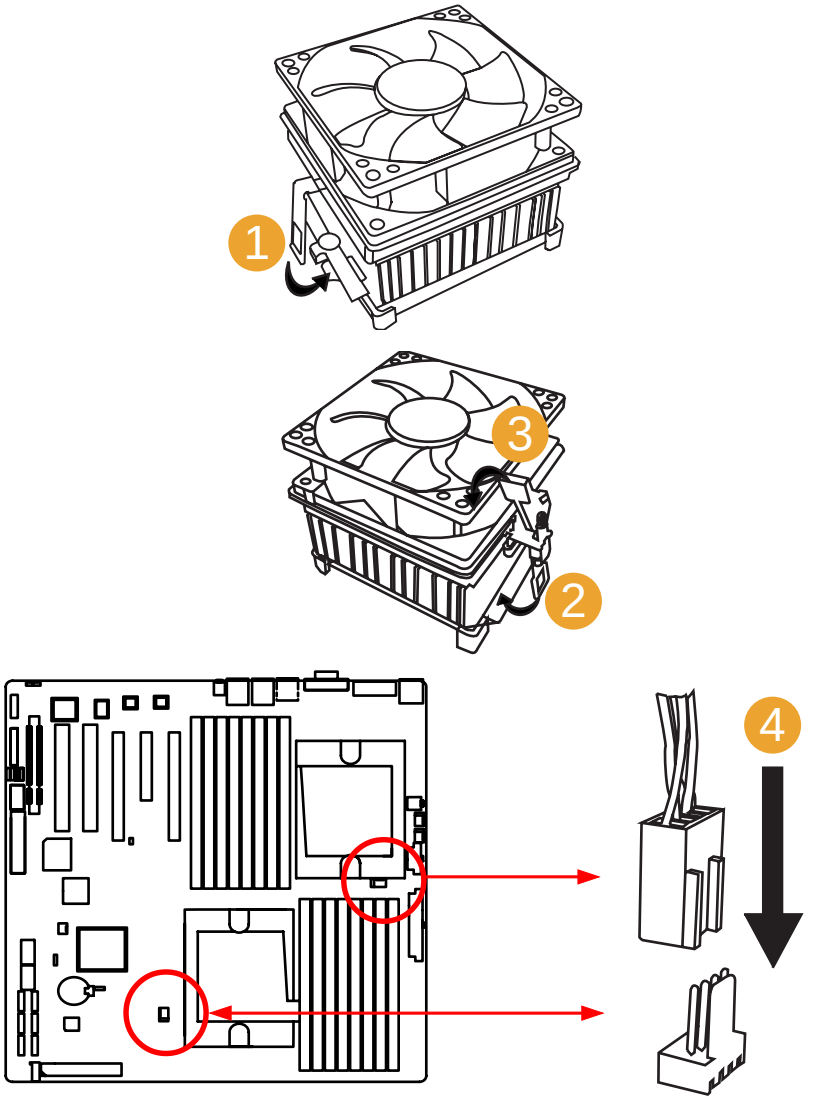
2-1-2: Installing Heat Sink

Step 1 Attach the heat sink clip to the processor socket. Hook the metal bracket into retention Module.

Step 2 Hook the other side of metal bracket into retention module.

Step 3 Push down the clip to the locked position.

Step 4 Connect processor fan can cable to the processor fan connector.

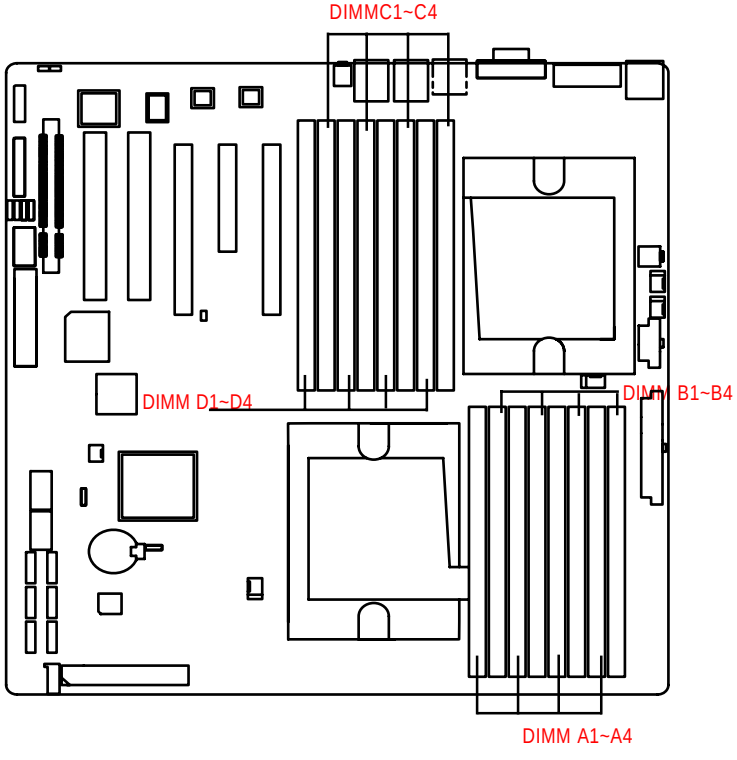


2-2: Install Memory Modules

CAUTION

Before installing the processor and heatsink, adhere to the following warning:
When DIMM LED is ON, do not install/remove DIMM from socket.

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.



Installation Step:

Step 1 Insert the DIMM memory module vertically into the DIMM slot, and push it down.

Step 2 Close the plastic clip at both edges of theDIMM slots to lock the DIMM module.

NOTE!! DIMM must be populated in order starting from B1/A1 DIMM sockets. Each logical DIMM must be made of two identical DIMMs having the same device size on each and the same DIMM size.

Step 3 Reverse the installation steps when you wish to remove the DIMM module.

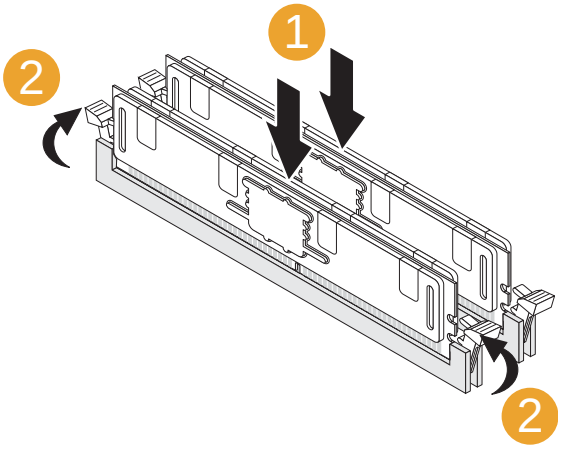


Table 1. Vaild DIMM Configuration for 64 bit Mode

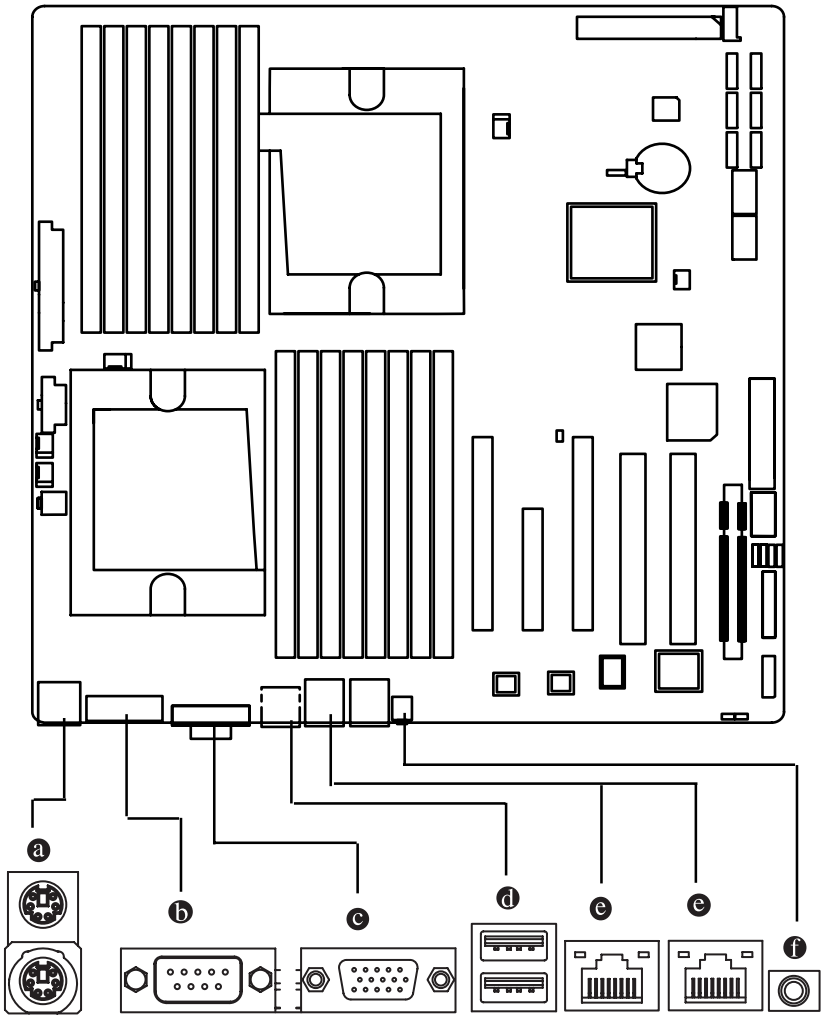
DIMM 0 (MB)	DIMM 2 (MB)
X	256
256	256
X	512
512	512
X	1024
1024	1024
X	2048
2048	2048
X	4096
4096	4096
Note: X = Do not populate	

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			

2-3: Connect ribbon cables, cabinet wires, and power supply

2-3-1 : I/O Back Panel Introduction



ⓐ 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).

ⓑ Serial Port

Modem can be connected to Serial port.

ⓒ VGA Port

Monitor can be connected to VGA port.

ⓓ USB Port

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.

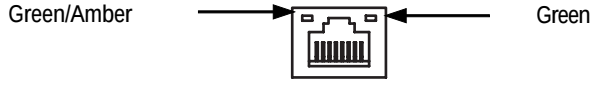
ⓔ LAN Port

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

ⓕ ID Switch

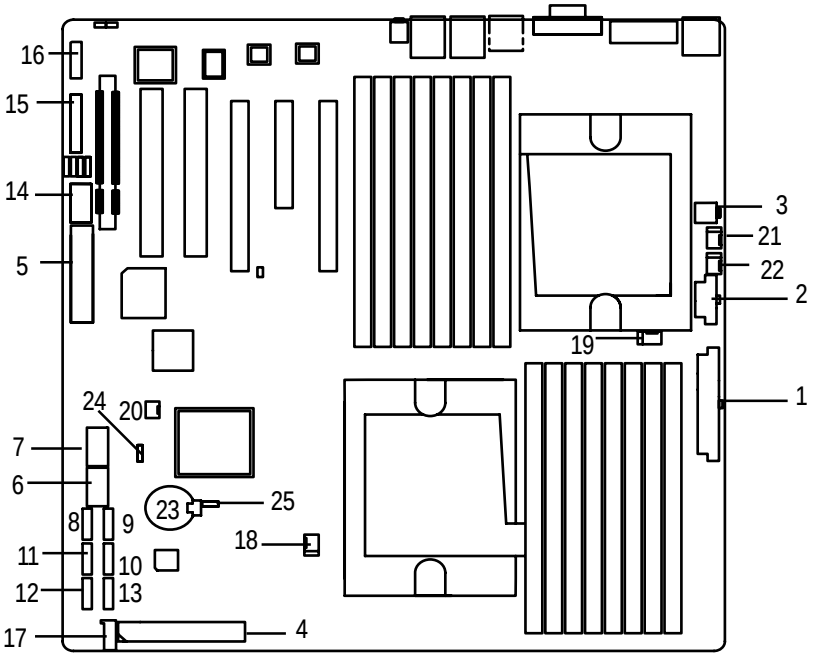
This is service LED buttun. For administraor to verify specified computers.

LAN LED Description



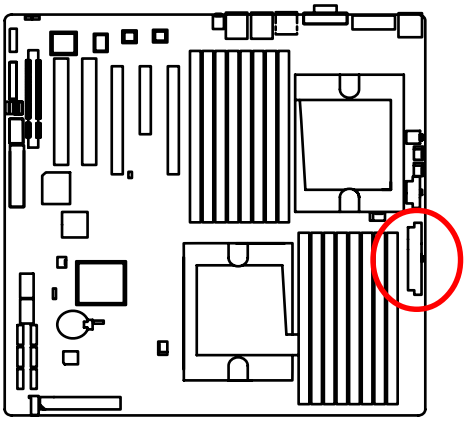
LED Color	Status	Description
Green/Amber (Left)	Off	10Mbps
	Green	100Mbps
	Amber	1000Mbps
Green (Right)	Off	Active connection
	Blinking	Transmit/receive activtiy

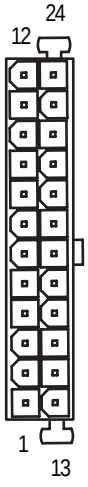
2-4: Connectors Introduction



1. ATX_L1
2. ATX_12V1
3. ATX_12V2
4. IDE1 (IDE cable connector)
5. FDD1 (Floppy cable connector)
6. F_USB1 (Front USB cable connector)
7. F_USB2 (Internal USB cable connector)
8. SATA0 (SATA data cable connector)
9. SATA1 (SATA data cable connector)
10. SATA2 (SATA data cable connector)
11. SATA3 (SATA data cable connector)
12. SATA4 (SATA data cable connector)
13. SATA5 (SATA data cable connector)
14. COMB1
15. F_Panel1
16. GBT_FP1
17. PS1
18. CPU1_FAN (CPU2 fan connector)
19. CPU2_FAN (CPU2 fan connector)
20. MCP55_FAN (NB fan connector)
21. SYS_FAN1 (System fan connector)
22. SYS_FAN2 (System fan connector)
23. BATTERY1
24. JP1
25. CLR_CMOS1

1) ATX_L1 (24-pin Auxiliary Power Connector)

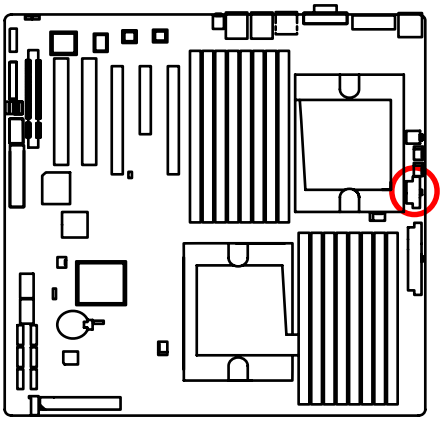


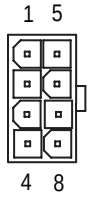


PIN No.	Definition
1	+3.3V
2	+3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	POK
9	5VSB
10	+12V
11	+12V
12	+3.3V
13	+3.3V
14	-12V
15	GND
16	PSON
17	GND
18	GND
19	GND
20	-5V
21	+5V
22	+5V
23	+5V
24	GND

- 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.

2) ATX_12V1 (8-pin Auxiliary Power Connector)

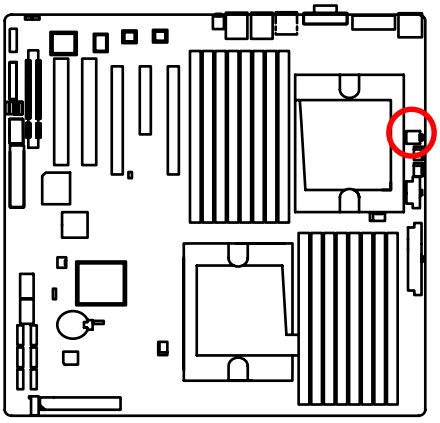


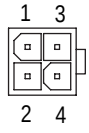


Pin No.	Definition
1	GND
2	GND
3	GND
4	GND
5	P12V_CPU1
6	P12V_CPU1
7	P12V_CPU0
8	P12V_CPU0

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

3) ATX_12V2 (4-pin Auxiliary Power Connector)

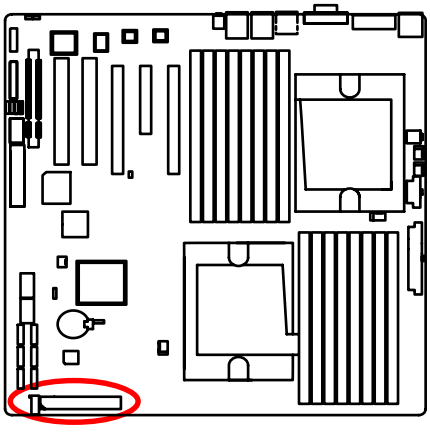


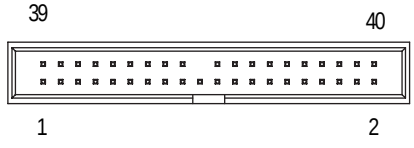


Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

4) IDE (IDE Connector)

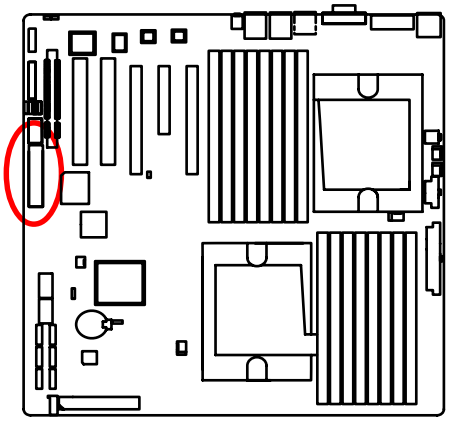
Please connect first harddisk to IDE1. The red stripe of the ribbon cable must be the same side with the Pin1.

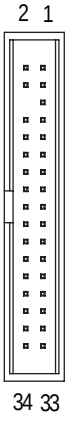




5) FDD (Floppy Connector)

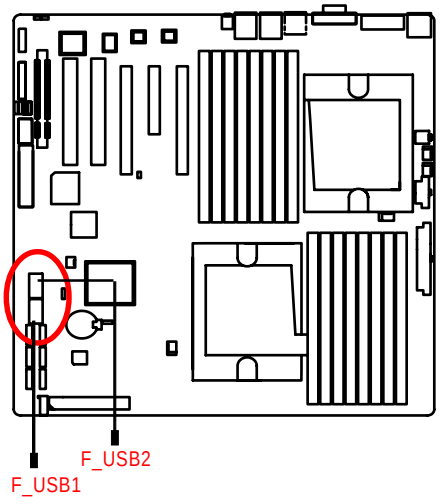
Please connect the floppy drive ribbon cables to FDD. It supports 720K,1.2M,1.44M and 2.88Mbytes floppy disk types. The red stripe of the ribbon cable must be the same side with the Pin1.

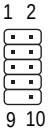




6/7) F_USB1/2/3 (Front USB Connectors)

Be careful with the polarity of the front USB connector. Check the pin assignment carefully while you connect the front USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional front USB cable, please contact your local dealer.

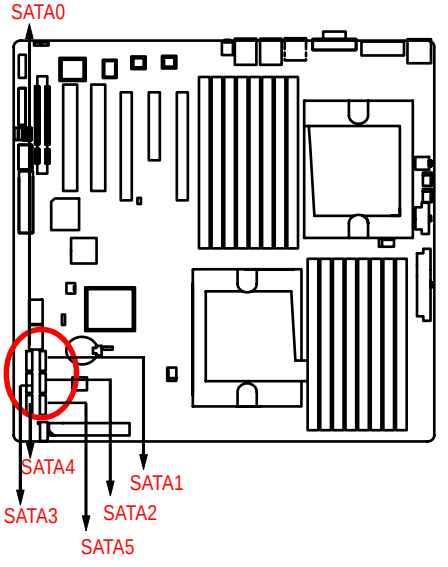




Pin No.	Definition
1	Power
2	Power
3	USB Dx-
4	USB Dy-
5	USB Dx+
6	USB Dy+
7	GND
8	GND
9	No Pin
10	NC

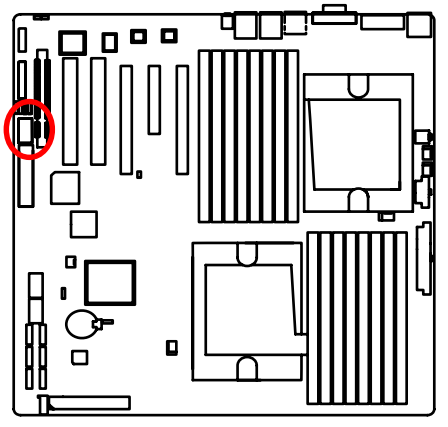
8/ 9/ 10/ 11/ 12/ 13) SATA 0~5 (Serial ATA Connectors)

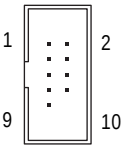
You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (3.0 Gb/sec).



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

14) COMB1 (Serial port connector)

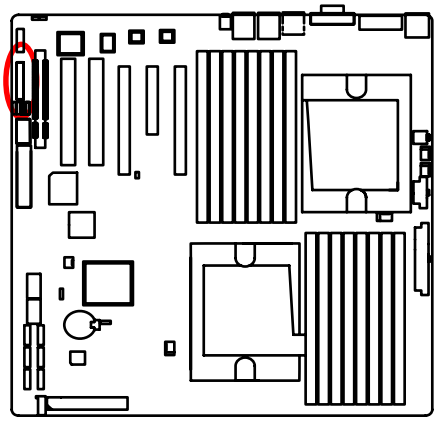


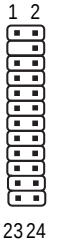


Pin No.	Definition
1	DCD-
2	SIN2
3	SOUT2
4	DTR2-
5	GND
6	DSR2-
7	RTS2-
8	CTS2-
9	RI2-
10	NC

15) F_Panel (2X12 Pins Front Panel connector)

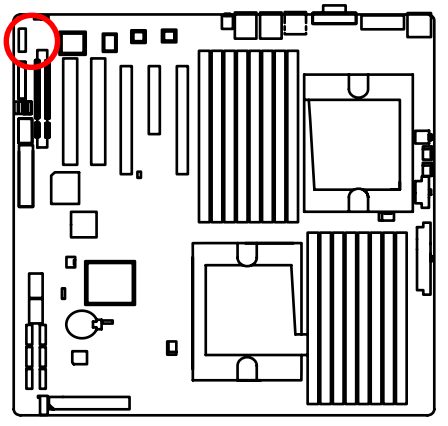
Please connect the power LED, PC speaker, reset switch and power switch of your chassis front panel to the F_PANEL connector according to the pin assignment above.





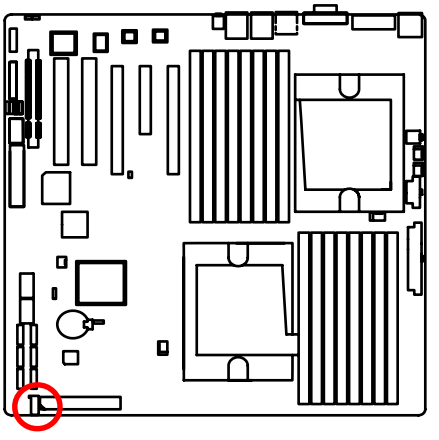
Pin No.	Signal Name	Description
1.	PWLED+	Power LED Signal anode (+)
2.	5VSB	P5V Stand By Power
3.	KEY	Pin Removed
4.	ID_LED+	ID LED Signal anode (+)
5.	PWLED-	Power LED Signal cathode(-)
6.	ID_LED-	ID LED Signal cathode(-)
7.	HD+	Hard Disk LED Signal anode (+)
8.	F_SYSRDY	System Fan Fail LED Signal
9.	HD-	Hard Disk LED Signal cathode(-)
10.	F_SYSTATUS	System Status LED Signal
11.	PWB+	Power Button Signal anode (+)
12.	L1_ACT	LAN1 access LED Signal
13.	PWB+_GND	Power Button Ground
14.	L1_LNK-	LAN1 linked LED Signal cathode(-)
15.	RST_BTN-	Reset Button cathode(-)
16.	SENSOR_SDA	SMBus Data
17.	RST_BTN_GND	Reset Button Ground
18.	SENSOR_SCL	SMBus Clock
19.	ID_SW-	ID Switch Signal cathode(-)
20.	CASE_OPEN-	Chassis intrusion Signal
21.	ID_SW-_GND	ID Switch Ground
22.	L2_ACT	LAN2 access LED Signal
23.	NMI_SW-	NMI Switch cathode(-)
24.	L2_LNK-	LAN2 linked LED Signal cathode(-)

16) GBT_FP1 (2X5 Pins Front Panel connector)



Pin No.	Signal Name	Description
1.	HD+	Hard Disk LED Signal anode (+)
2.	PWLED+	Power LED Signal anode (+)
3.	HD-	Hard Disk LED Signal cathode(-)
4.	PWLED-	Power LED Signal cathode(-)
5.	RST_BTN-	Reset Button cathode(-)
6.	PWB+	Power Button Signal anode (+)
7.	RST_BTN+	Reset Button anode (+)
8.	PWB-	Power Button Signal Signal cathode(-)
9.	NC	No pin
10.	KEY	Key pin

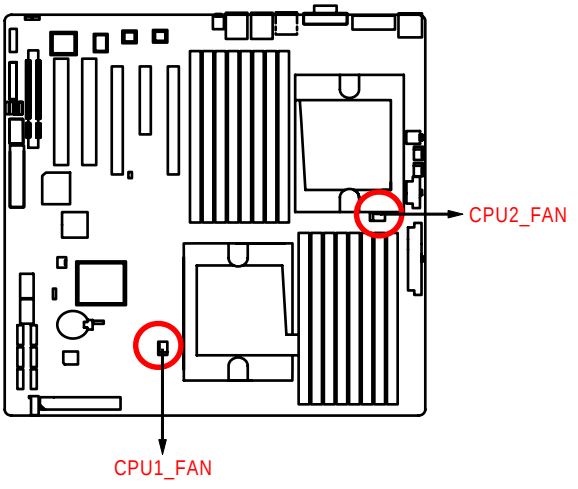
17) PS1 (SMBUS connector for power supply)

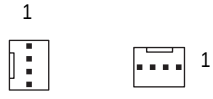


Pin No.	Definition
1	SMBus Clock
2	SMBUS Data
3	SMBUS Alert
4	GND
5	3.3V

18/19) CPU1_FAN/CPU2_FAN (CPU0/1 fan cable 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 1A .

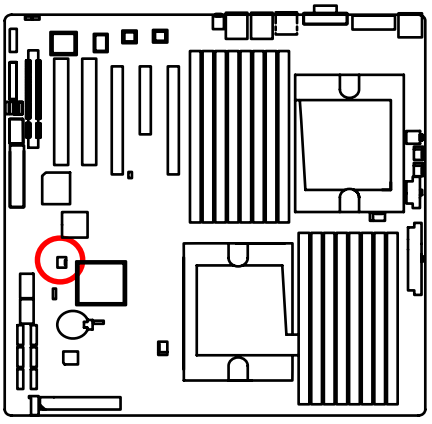


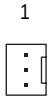


Pin No.	Definition
1	GND
2	12V
3	Sense
4	Control

20) MCP55_FAN (North Bridge Chipset Fan Connector)

If you install in wrong direction, the Chip Fan will not work. Sometimes will damage the Chip Fan. (Usually black cable is GND)

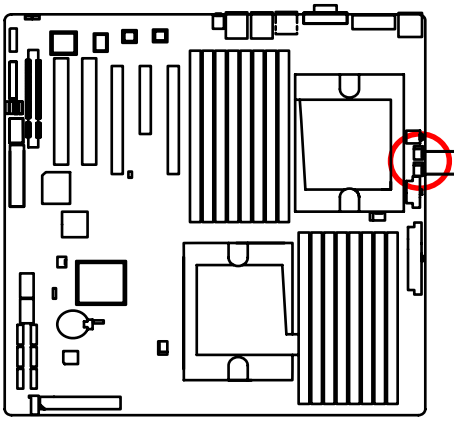




Pin No.	Definition
1	GND
2	+12V
3	Sense

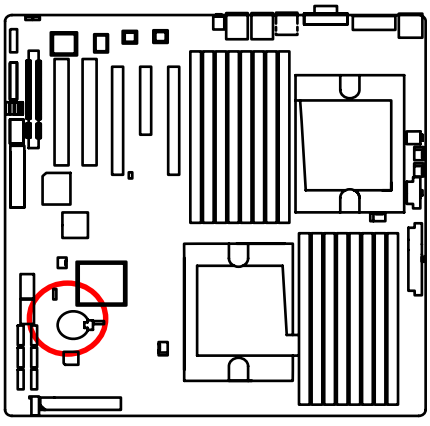
21/22) SYS_FAN1/SYS_FAN2 (System fan cable connectors)

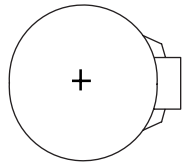
This connector allows you to link with the cooling fan on the system case to lower the system temperature. These connectors are for system use only.



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

23) BATTERY





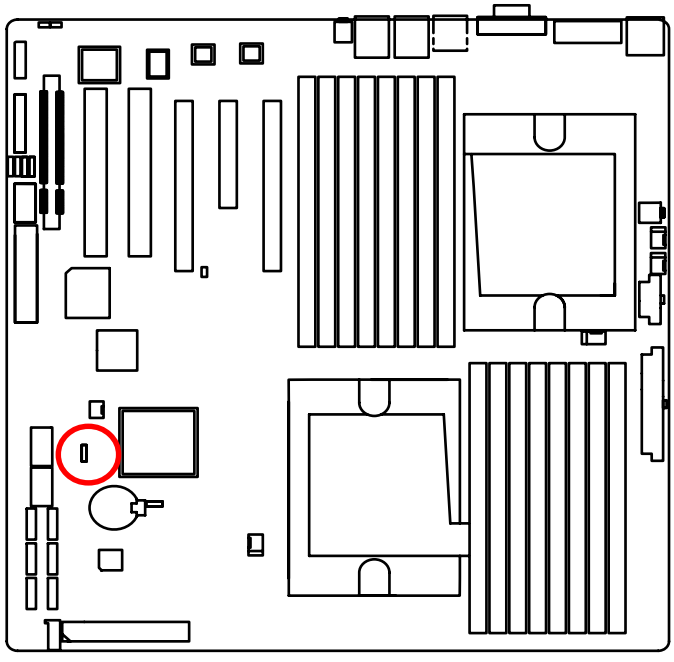
CAUTION

- ❖ 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.
5.Or, you can use CLR_CMOS jumper to erase CMOS data

24) JP1 (BIOS Recovery Jumper)



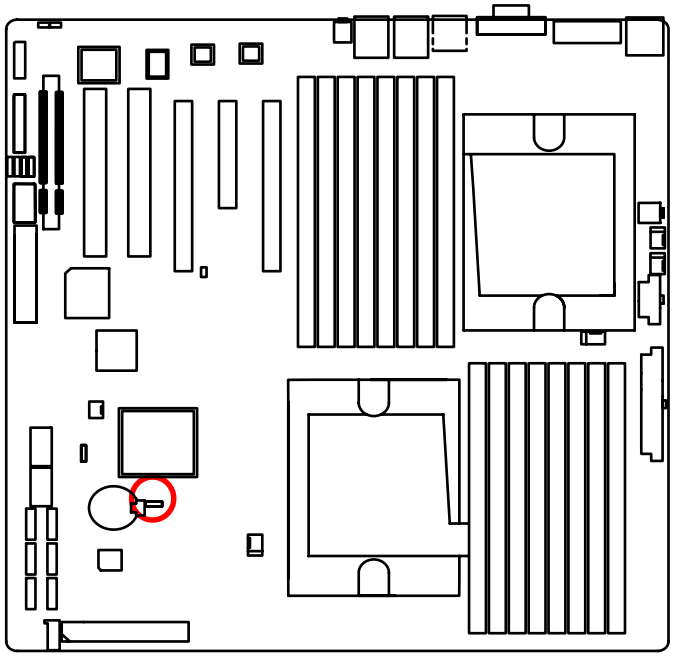
1  1-2 Close: Enable BIOS recovery function

1  2-3 Close: Disabe this function (Default setting)

25) CLR_CMOS1 (Clear CMOS Jumper)

You may clear the CMOS data to restore 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 2-3 pin.



1 1-2 Close: Clear CMOS

1 2-3 Close: Normal (Default setting)

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
<F6>	Reserved
<F7>	Reserved
<F8>	Reserved
<F9>	Load the Optimized Defaults
<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.

- **Server**

  Server additional features enabled/disabled setup menus.

- **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.

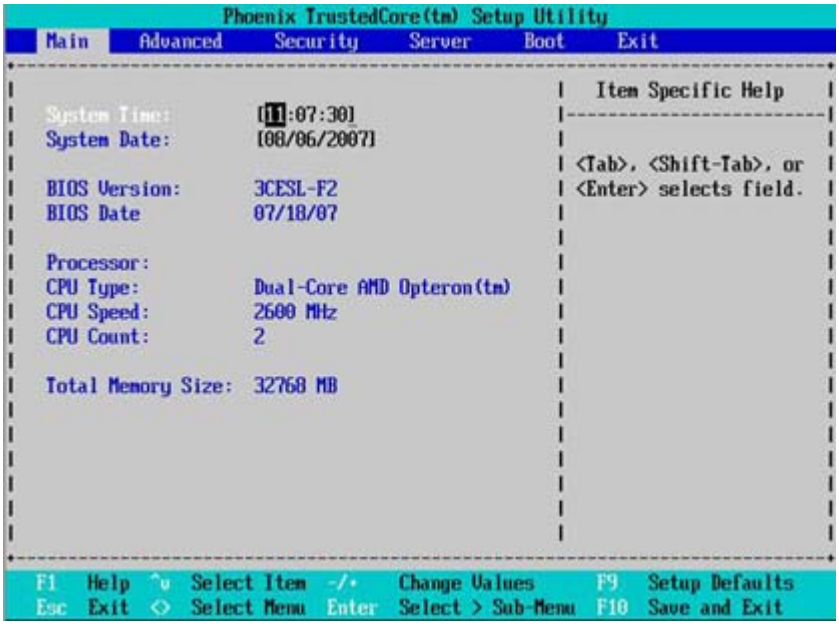


Figure 1: Main

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)

BIOS Verison/BIOS Date

These two fields indicate the main board BIOS version and release date.

Processor Information

These following items display all information of current CPU Type, CPU Speed, and CPU Count. These items are display-only which is determined by POST (Power On Self Test) of the BIOS.

Total Memory Size

This item identifies the total memory size.

Advanced

About This Section: Advanced

With this section, allowing user to configure your system for basic operation. User can change the processor options, chipset configuration, PCI configuration and chipset control.

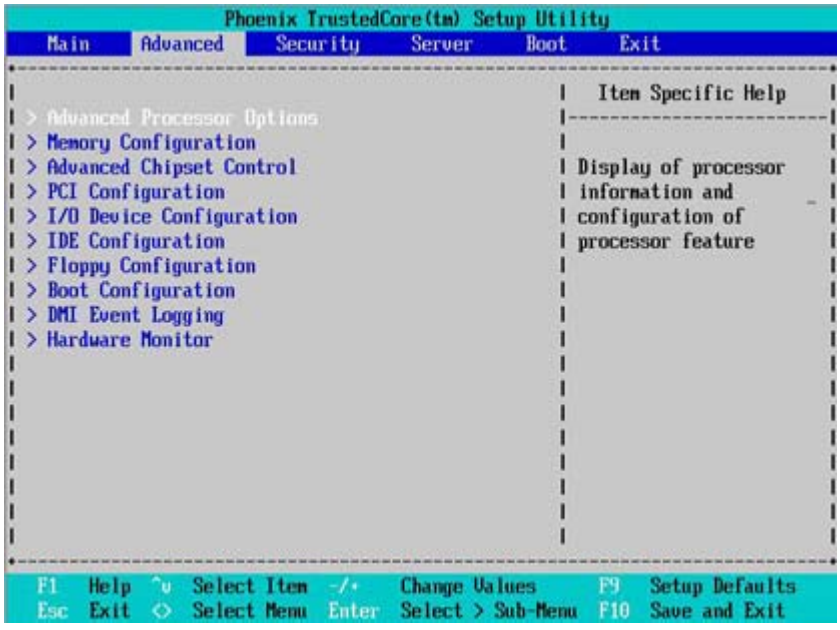


Figure 2: Advanced

Advanced Processor Options

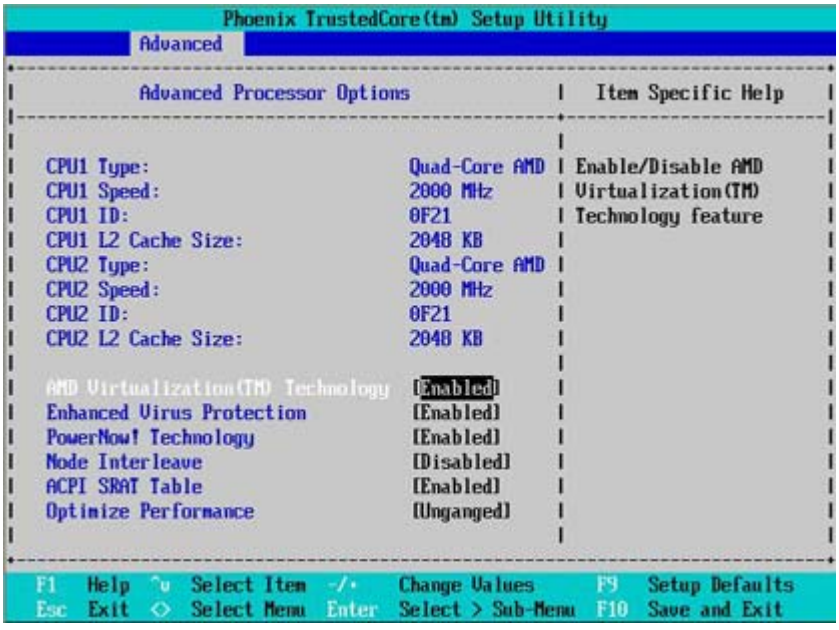


Figure 2-1: Advanced Processor Option

Advanced Processor Option

This category includes the information of CPU Type, CPU Speed, CPU1/CPU2 ID, CPU1/CPU2 L2 Cache, CPU Type, CPU Speed. Setup menu for AMD Virtualization (TM) Technology, Enhanced Virus Protection, Power Now Technology, Node Interleave, and ACPI SRAT Table.

AMD Virtualization (TM) Technology

AMD Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple "virtual" systems. With processor and I/O enhancements to Intel's various platforms, Intel Virtualization Technology can improve the performance and robustness of today's software-

only virtual machine solutions.

- ⏩Enabled — Enable AMD Virtualization Technology Feature.
- ⏩Disabled — Disable AMD Virtualization Technology Feature. (Default setting)

☞Enhanced Virtus Protection

- ⏩Enabled — Enabled AMD No-execute page protection feature. (Default setting)
- ⏩Disabled — Disables AMD No-execute page protection feature.

☞Power Now! Technology

AMD PowerNow!™ Technology allows the processor to dissipate less heat under normal operating conditions, providing a cooler and quieter-running system. It also provides performance on demand when required by the application.

- ⏩Enabled — Enable Power Now! Technology feature. (Default setting)
- ⏩Disabled — Disables Power Now! Technology feature.

☞Node Interleave

Interleave memory blocks across nodes.

- ⏩Auto — Enable node interleave function.
- ⏩Disabled — Disable this function. (Default setting)

☞ACPI SRAT Table

- ⏩Enabled — Enable ACPI 2.0 static resources affinity table for ccNUMA systems. (Default setting)
- ⏩Disabled — Disable this function.

☞Optimize Performance

- ⏩Unganged — Select Unganged mode as optimize performance. (Default setting)
- ⏩Ganged — Select Ganged mode as optimize performance.

Memory Configuration

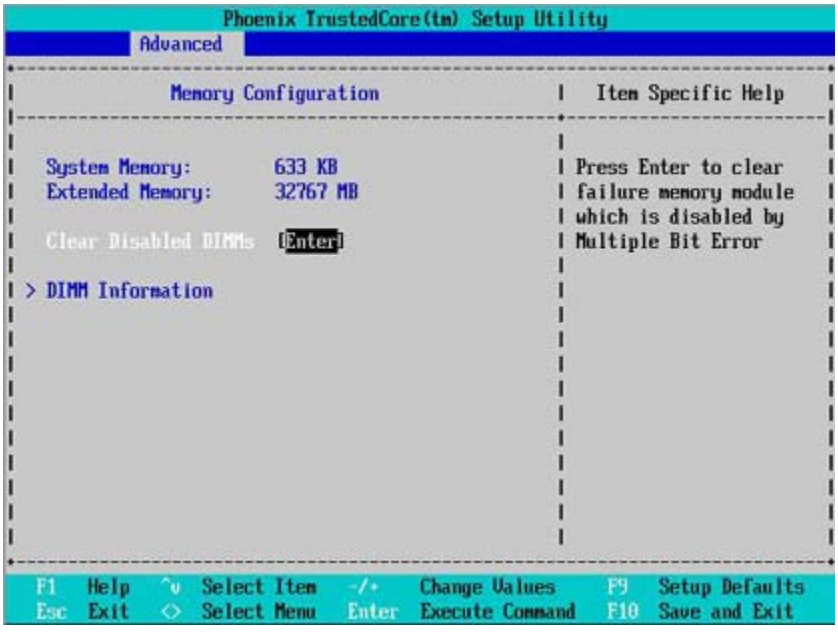


Figure 2-2: Memory Configuration

☞Syetem Memory/Extended Memory/DIMM Information

These category is display-only which is determined by POST (Power On Self Test) of the BIOS.

☞Clear Disabled DIMMs

Press [Enter] to clear the memory error status. Save the changes and restart system.

Advanced Chipset Control

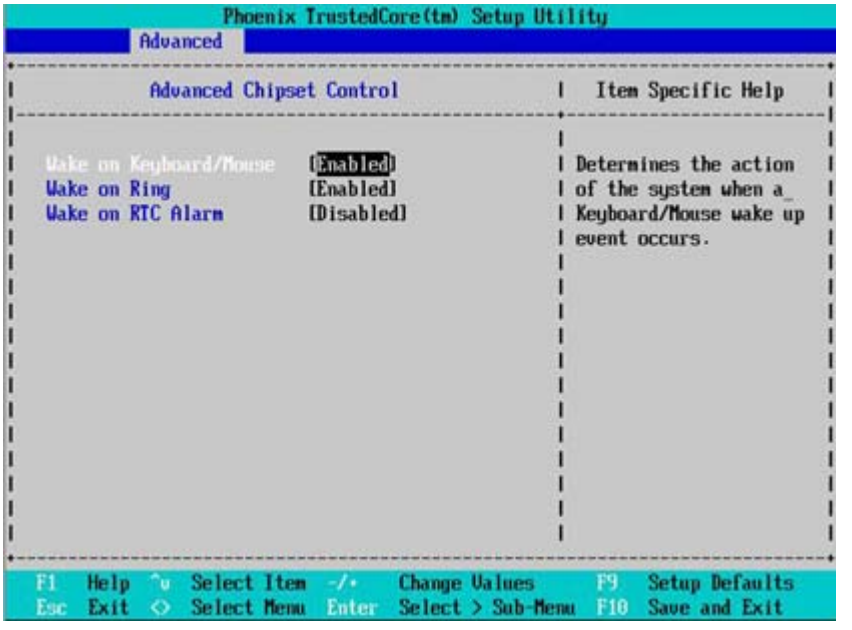


Figure 2-3: Advanced Chipset Control

☞Wake on Keyboard/Mouse

This item allows you to set the enable/disable for powering-on the system by keyboard and mouse.

▸▸Enabled	Wake on Keyboard/Mouse. (Default setting)
▸▸Disabled	Disable this function.

Note: This item must enabled if you're running under Windows operating system.

☞Wake On Ring

This item allow user to determine the action of the system power is off via modem.

▸▸Enabled	Enable Wake On Ring. (Default setting)
▸▸Disabled	Disable this function.

Note: This item must enabled if you're running under Windows operating system.

Wake On RTC Alarm

You can set "RTC" items to enabled and key in Data/time to power on system.

▶▶Disabled	Disable this function.
▶▶Enabled	Enable alarm function to POWER ON system. (Default setting)

PCI Configuration

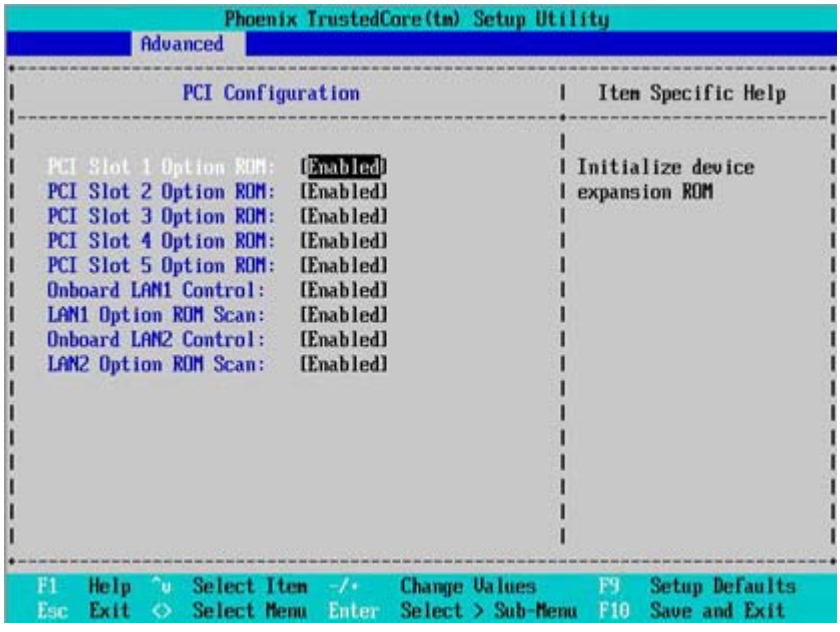


Figure 2-4: PCI Configuration

PCI Slot 1~5 Option ROM

- Enabled — Enable this item to initialize device expansion ROM. (Defualt setting)
- Disabled — Disable this function.

Onboard LAN1 Control

- Enabled — Enable onboard LAN1 device. (Defualt setting)
- Disabled — Disable this function.

LAN1 Optiona ROM Scan

- Enabled — Enableing this item to initialize device expansion ROM. (Defualt setting)
- Disabled — Disable this function.

Onboard LAN2 Control

Enabled	Enable onboard LAN1 device. (Defualt setting)
Disabled	Disable this function.

LAN2 Optiona ROM Scan

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

I/O Device Configuration

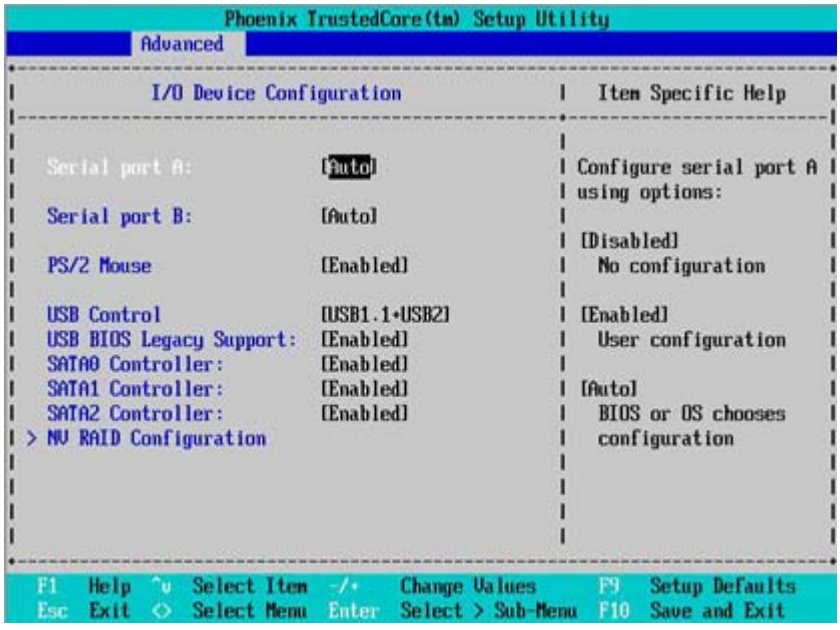


Figure 2-5: I/O Device Configuration

Serial Port A

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

- Enabled Set serial port A address to 3F8/IRQ4.
- Disabled No configuration.
- Auto Auto-detection. (Default setting)

Serial Port B

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

- Enabled — Set serial port 2 address to 2F8/IRQ3.
- Disabled — No configuration.
- Auto — Auto-detection. (Default setting)

PS/2 Mouse

Set this option 'Enabled' to allow BIOS support for a PS/2 - type mouse.

- Enabled — 'Enabled' forces the PS/2 mouse port to be enabled regardless if a mouse is present. (Default setting)
- Disabled — 'Disabled' prevents any installed PS/2 mouse from functioning, but frees up IRQ12.

USB Control

- USB1.1 — Enable the USB 1.1 device.
- USB1.1+USB2 — Enable the USB 1.1 and USB2 devices. (Default setting)
- Disabled — Disables both USB device.

USB BIOS Legacy Support

This option allows user to function support for legacy USB.

- Enabled — Enable the USB BIOS legacy support. (Default setting)
- Disabled — Disables support for legacy USB.

SATA0 Controller

- Enabled — Enable Serial ATA 0 device. (Default setting)
- Disabled — Disable the Serial ATA0 device.

SATA1 Controller

- Enabled — Enable Serial ATA 1 device. (Default setting)
- Disabled — Disable the Serial ATA0 device.

SATA2 Controller

Enabled	Enable Serial ATA 2 device. (Default setting)
Disabled	Disable the Serial ATA0 device.

NV RAID Configuration

Enabled	Enable nVIDIA RAID control. (Default setting)
Disabled	Disable the Serial ATA0 device.

SATA0~5

Enabled	Enable SATA 0~5 RAID control (Default setting)
Disabled	Disable SATA 0~5 RAID control.

IDE Configuration

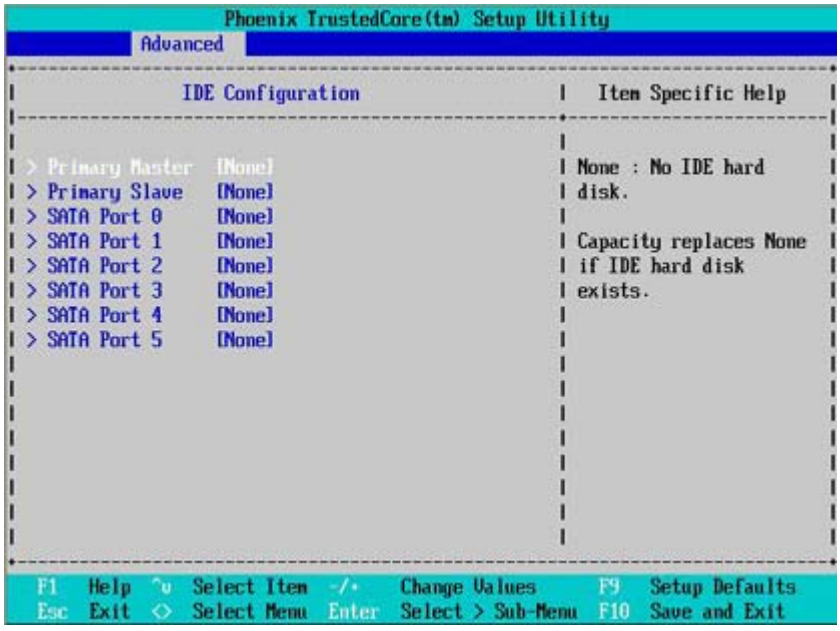


Figure 2-6: IDE Configuration

☞Primary Master, Slave/SATA0~5

The category identifies the types of hard disk from drive C to F and SATA 0~SATA 5 are installed in the computer. System 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

Auto: Set parameters automatically. (Default setting)

CD/DVD: Use fo CD/DVD ROM drives or double click [Auto] to set all HDD parameters automatically.

Clear: Removable disk drive is installed here.

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.

LBA/Large 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.

Floppy Configuration

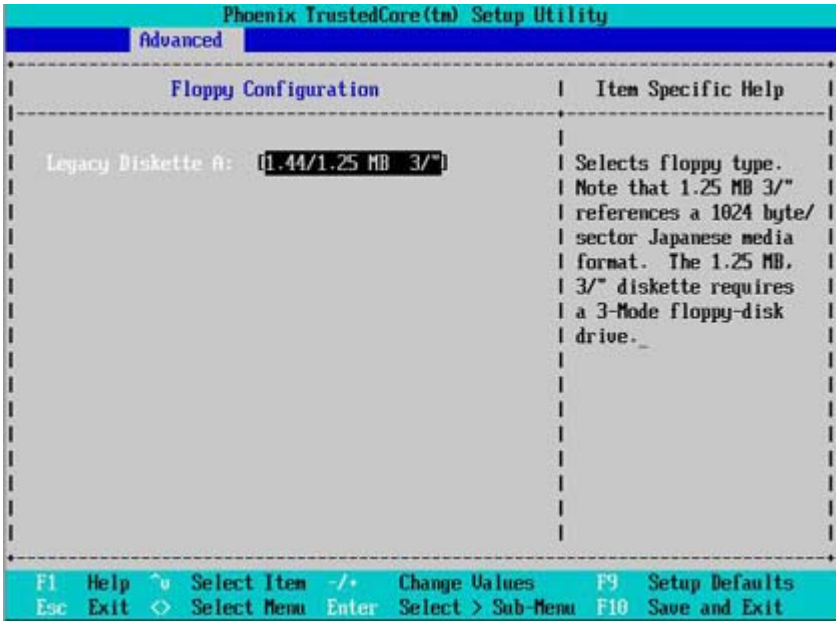


Figure 2-7: Floppy Configuration

Legacy Diskette A

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

- Disabled — Disable this device.
- 360KB, $5^{1/4}$ in. — $3^{1/2}$ inch AT-type high-density drive; 360K byte capacity
- 1.2MB, $3^{1/2}$ in. — $3^{1/2}$ inch AT-type high-density drive; 1.2M byte capacity
- 720K, $3^{1/2}$ in. — $3^{1/2}$ inch double-sided drive; 720K byte capacity
- 1.44M, $3^{1/2}$ in. — $3^{1/2}$ inch double-sided drive; 1.44M byte capacity.
- 2.88M, $3^{1/2}$ in. — $3^{1/2}$ inch double-sided drive; 2.88M 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.

Boot Configuration

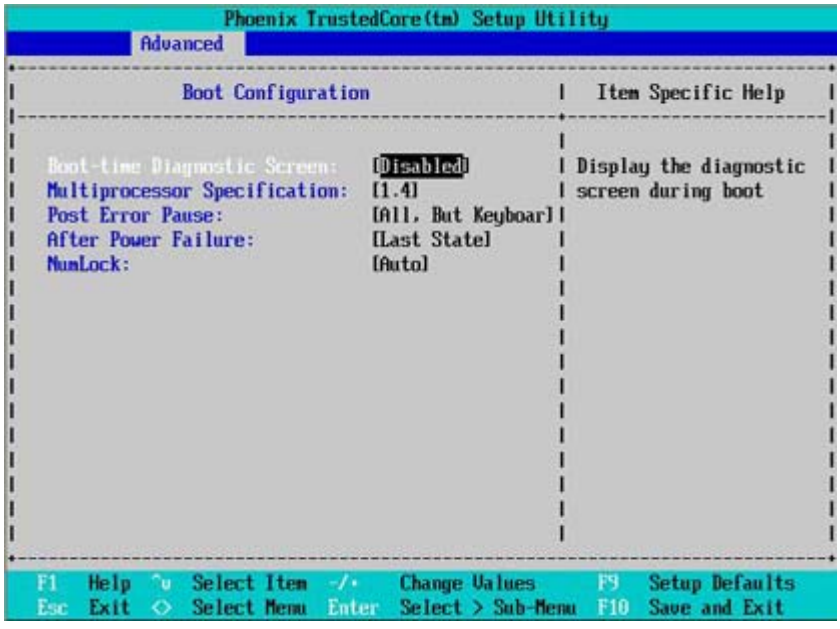


Figure 2-8: Boot Configuration

Boot -time Diagnostic Screen

When this item is enabled, allows BIOS to skip certain tests while booting.

- Enabled Enable Boot-time Diagnostic.
- Disabled Disable this function. (Default setting)

Multiprocessor Specification

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 setting)
- 1.1 Support M PS Version 1.1.

Post Error Pause

All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors. (Default setting)
No Errors	The system boot will not stop for any error that may be detected and you will be prompted.

After Power Failure

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.
Stay Off	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 setting)

NumLock

This option allows user to select power-on state for NumLock.

On	Enable NumLock. (Default setting)
Off	Disable this function.

DMI Event Logging

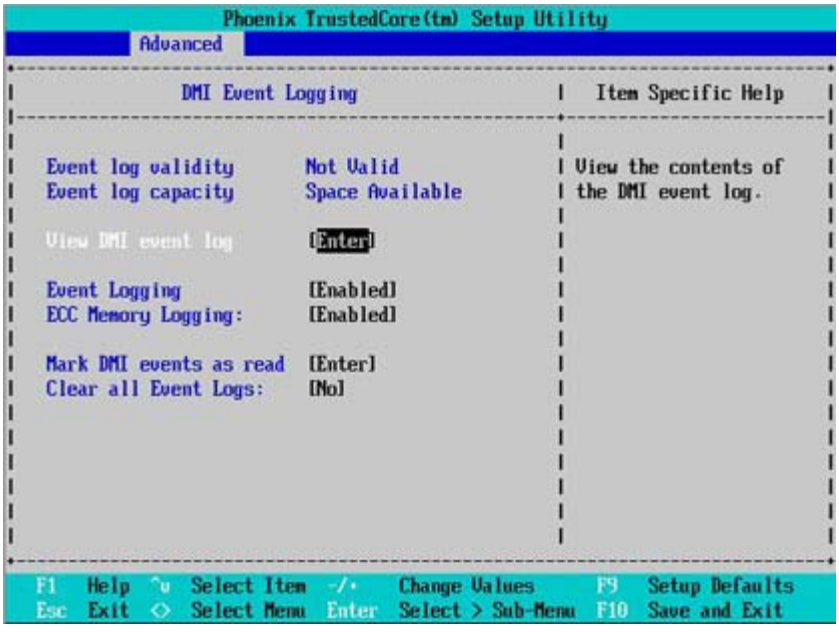


Figure 2-9: DMI Event Logging

Event log vaildity/Event log capacity

These two items display the current status of Event log vaildity and Event log capacity.

View DMI event log

Press [Enter] to view DMI event log.

Event Logging

- Enabled Select Enabled to allow logging of DMI events. (Default setting)
- Disabled Disable this function.

☞ECC Memory Logging

- Enabled — Select Enabled to allow logging of killed memory. (Default setting)
- Disabled — Disable this function.

☞Mark DMI events as read

Press [Enter] to mark all DMI events in the event log as read.

☞Clear all Event Logs

- Yes — Clear all event logs.
- No — Disable this function. (Default setting)

Hardware Monitor

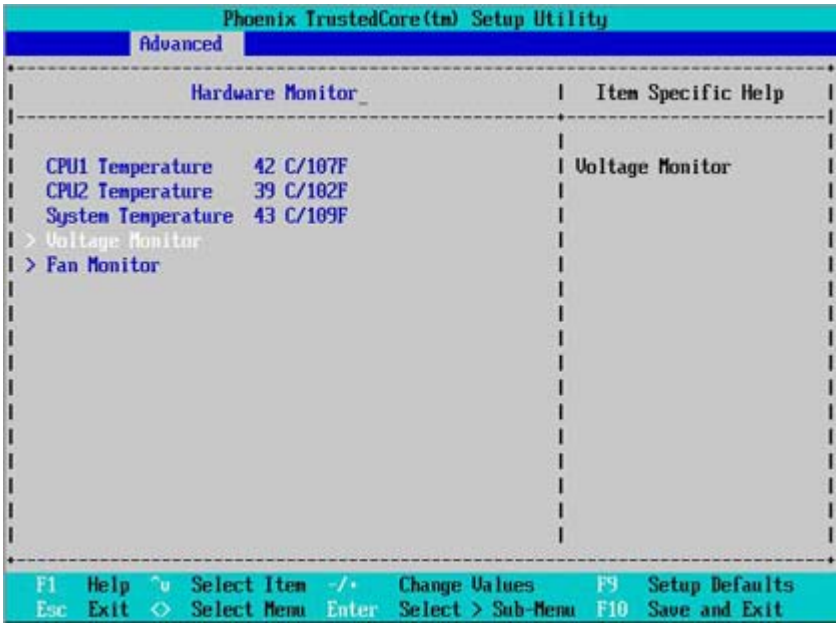
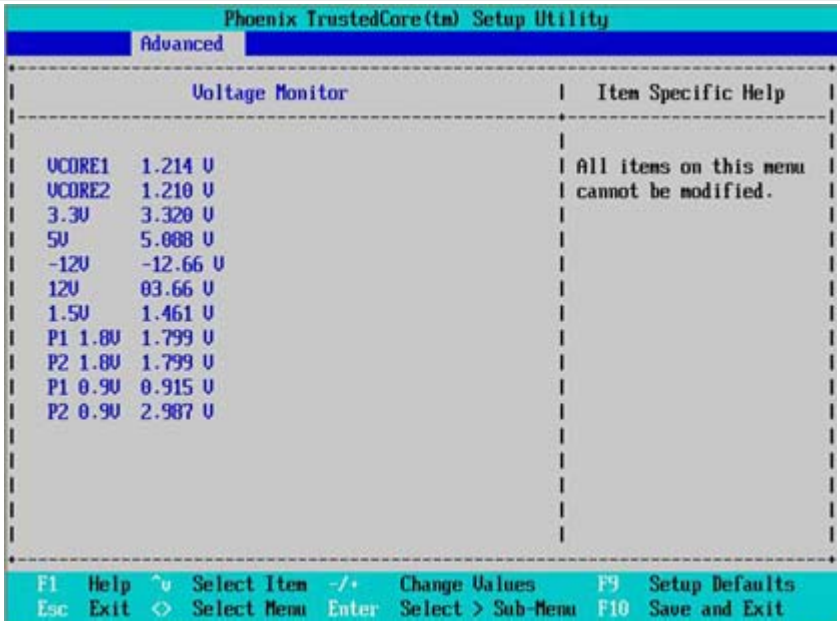
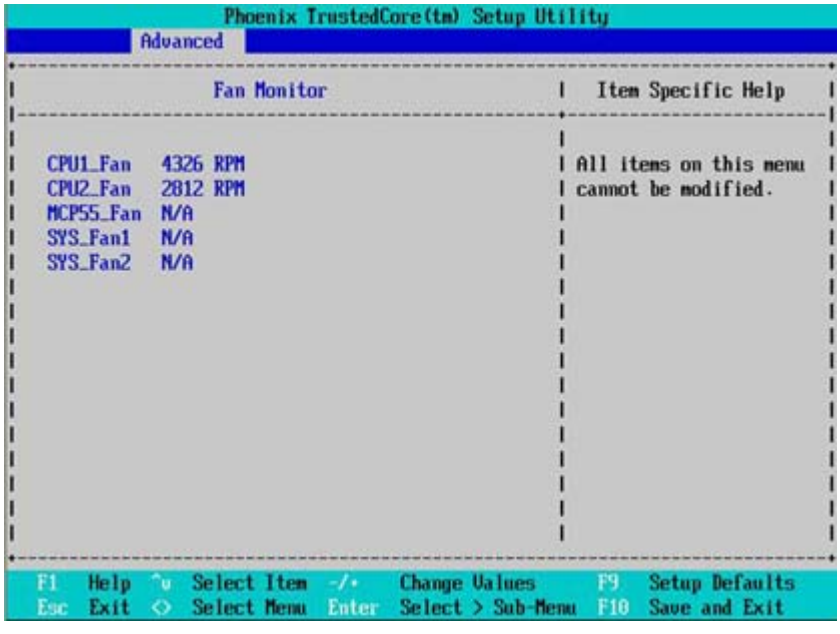


Figure 2-10: Hardware Monitor


Phoenix TrustedCore(tm) Setup Utility
Advanced
Voltage Monitor
VCORE1 1.214 V
VCORE2 1.210 V
3.3V 3.320 V
5V 5.088 V
-12V -12.66 V
12V 03.66 V
1.5V 1.461 V
P1 1.8V 1.799 V
P2 1.8V 1.799 V
P1 0.9V 0.915 V
P2 0.9V 2.987 V
Item Specific Help
All items on this menu cannot be modified.
F1 Help ^v Select Item -/+ Change Values F9 Setup Defaults
Esc Exit <> Select Menu Enter Select > Sub-Menu F10 Save and Exit


Phoenix TrustedCore(tm) Setup Utility
Advanced
Fan Monitor
CPU1_Fan 4326 RPM
CPU2_Fan 2812 RPM
MCP55_Fan N/A
SYS_Fan1 N/A
SYS_Fan2 N/A
Item Specific Help
All items on this menu cannot be modified.
F1 Help ^v Select Item -/+ Change Values F9 Setup Defaults
Esc Exit <> Select Menu Enter Select > Sub-Menu F10 Save and Exit

- **CPU1/CPU 2/ SystemTemperature**

  ⏩ Display the current CPU1/2 temperature and system temperature.

- **Voltage Monitor: VCORE1/2, 3.3V, 5V, -12V, +12V, 1.5V, P1 1.8V, P2 1.8V, P1 0.9V, P2 0.9V**

  ⏩ Detect system's voltage status automatically.

- **FAN Monitor: CPU1/2 FAN, MCP55 FAN, SYS1/2 FAN**

  ⏩ Display the current front fanspeed, rear fan speed, and CPU fan speed.

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.

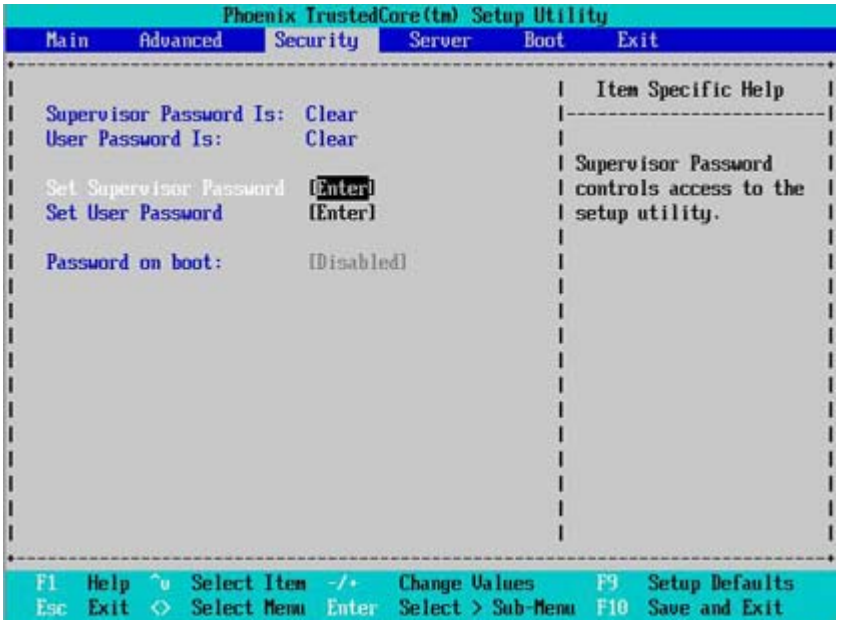


Figure 3: Security

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 setting)

Server

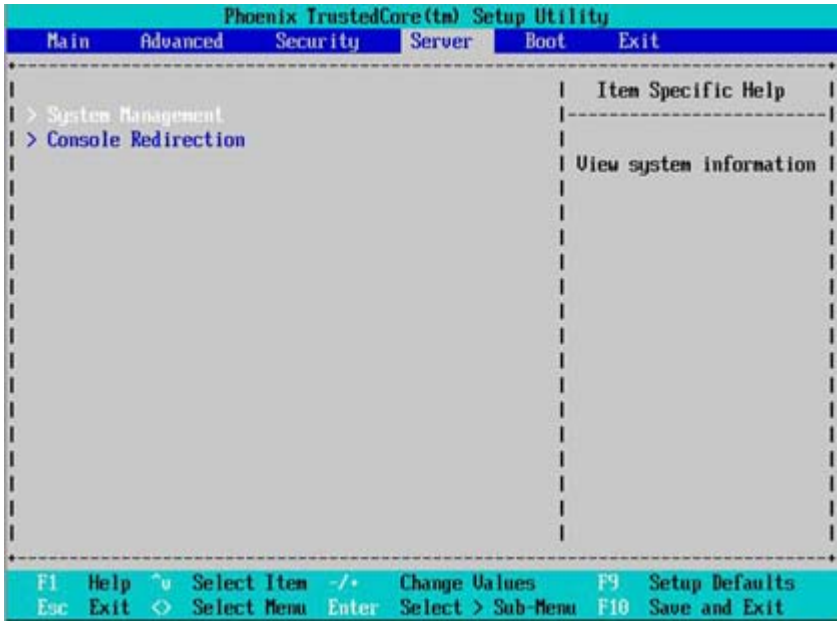


Figure 4: Server

System Management

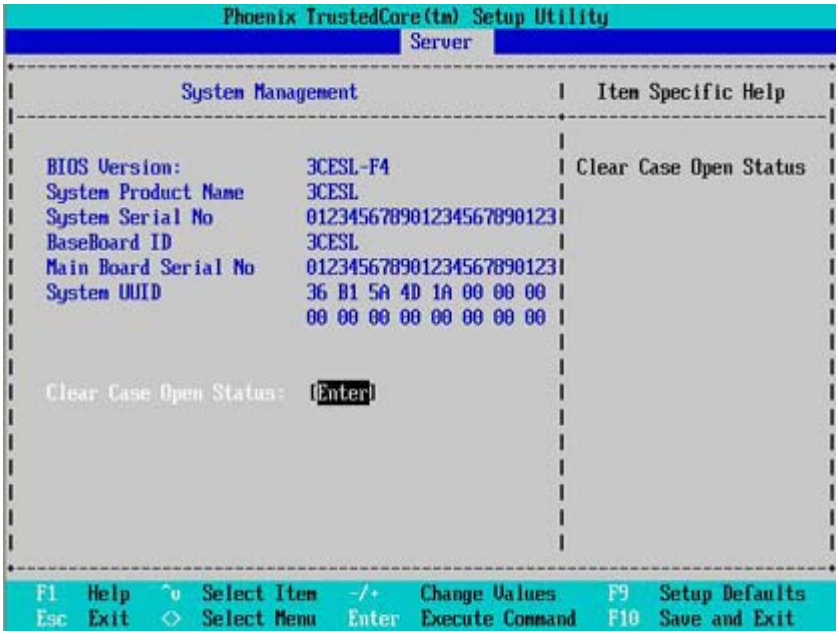


Figure 4-1: System Management

Server Management

This category allows user to view the server management features. Including information of BIOS Version, System Product Name, System Serial Number, BaseBoard ID, Main Board Serial Number, and, System ID. All items in this menu cannot be modified, display only.

Clear Case Open Status

Press [Enter] to clear the Case Open Status.

Console Redirection

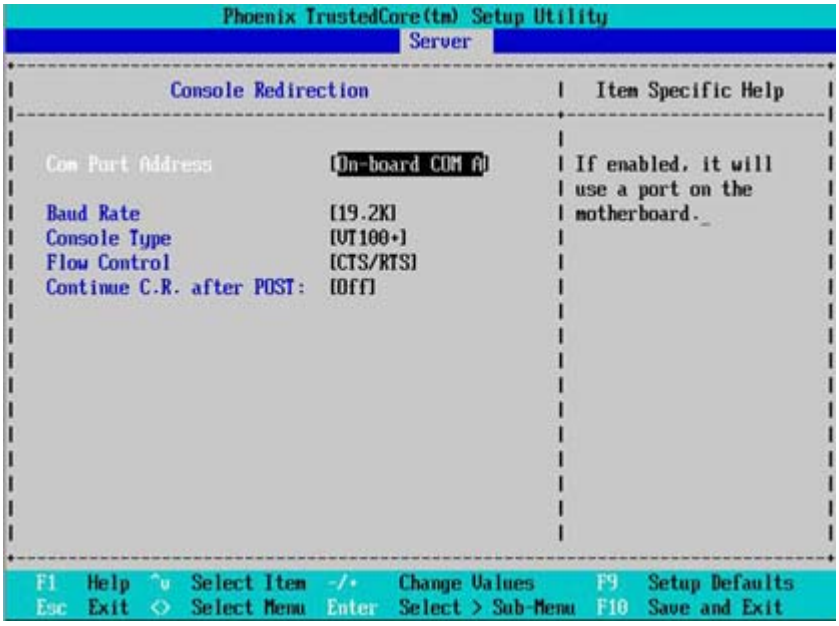


Figure 4-2: Remote Access Configuration

COM Port Adress

If this option is set to enabled, it will use a port on the motherboard.

- On-board COM A — Use Serial Port A as the COM port address.
- On-board COM B — Use Serial Port B as the COM port address.
- Disabled — Disable this function. (Default setting)

Baud Rate

This option allows user to set the specified baud rate.

- Options — 300, 1200, 2400, 9600, 19.2K, 38.4K, 57.6K, 115.2K.

Console Type

This option allows user to select the specified terminal type. This is defined by IEEE.

- Options — VT100, VT100 8bit, PC-ANSI 7bit, VT100+, VT-UTF8

Flow Control

This option provide user to enable the flow control function.

- None — Not supported.
- XON/OFF — Software control.
- CTS/RTS — Hardware control. (Default setting)

Continue C.R. after POST

This option allows user to enable console redirection after O.S has loaded.

- On — Enable console redirection after O.S has loaded.
- Off — Disable this function. (Default setting)

Boot

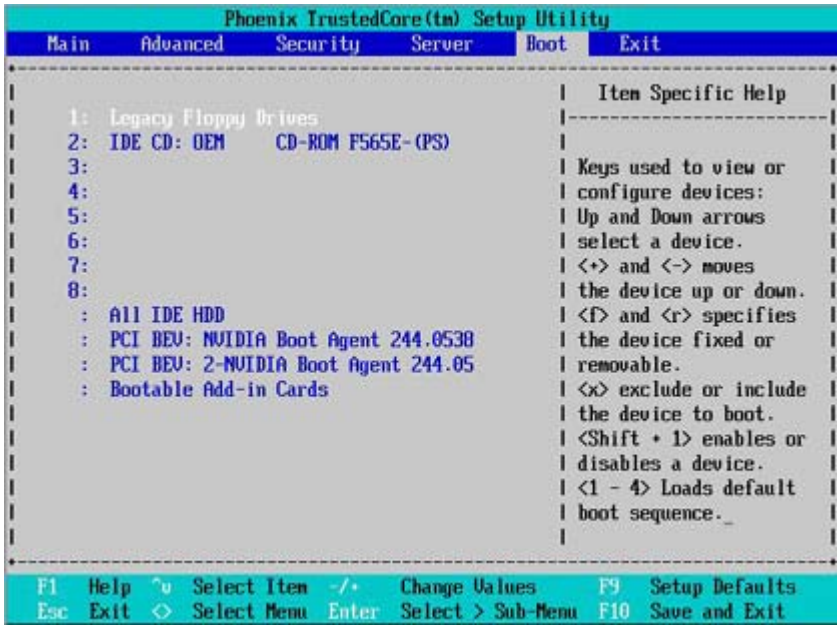


Figure 5: Boot

Boot Device Priority

This field determines which type of device the system attempt to boot from after BIOS 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.

Key used to view ot configure devices:

Up and Down arrows select a device.

<+> and <-> moves the device up or down.

<f> and <r> specifies the device fixed or removable.

<x> exclude or include the device to boot.

<1-4> Loads default boot secquence.

Exit

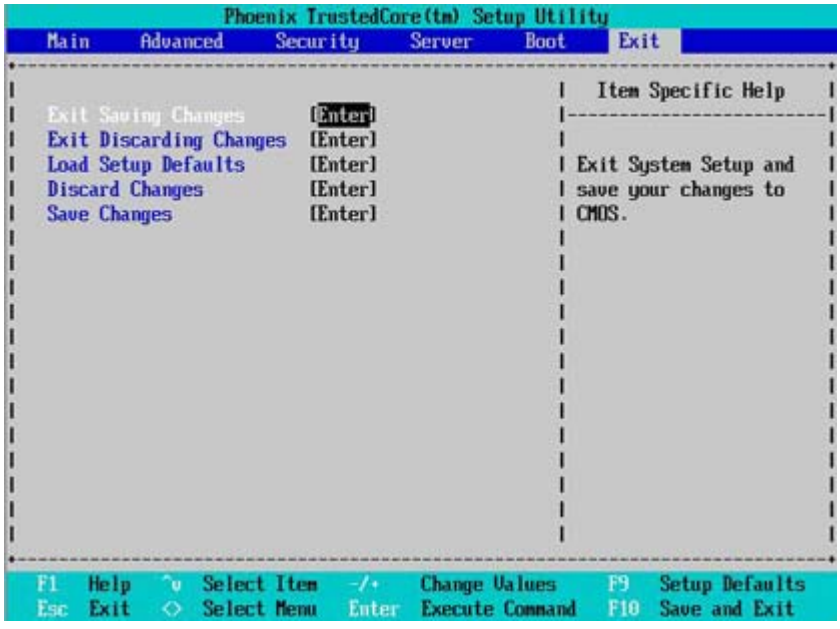


Figure 6: Exit

About This Section: Exit

Once you have made the changes in the BIOS setup items, you have to save your changes and exit BIOS setup program. Select **"Exit"** from the menu bar, to display the following sub-menu.

- Save Changes and Exit
- Discard Changes and Exit
- Discard Changes
- Load Optimal Defaults
- Load Failsafe Defaults

Exit Saving Changes

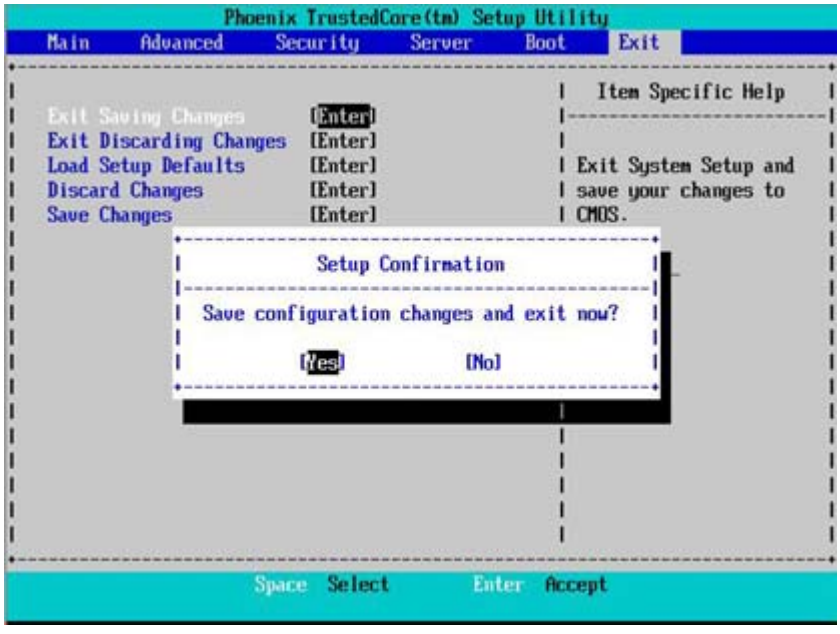
This option allows user to exit system setup with saving the changes.

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

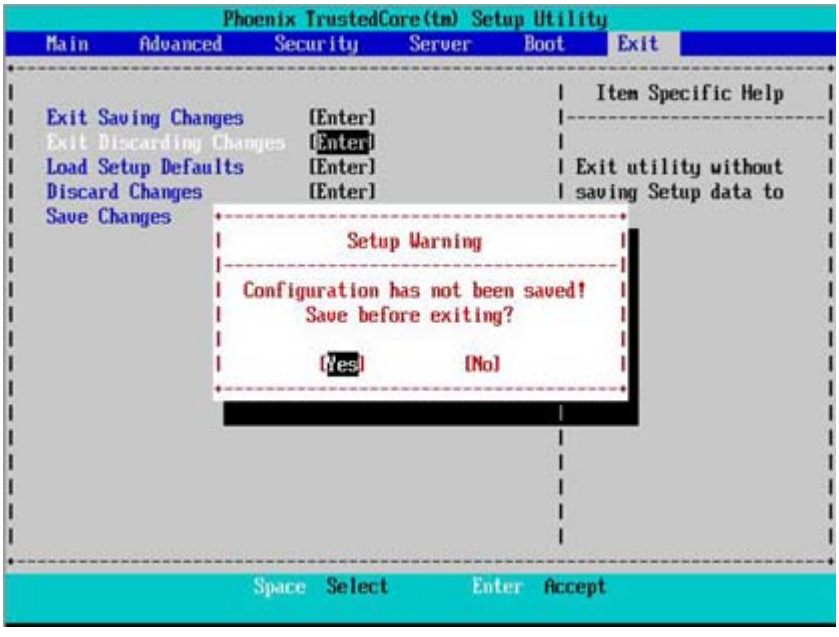
re-configure your system according data in CMOS.



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.

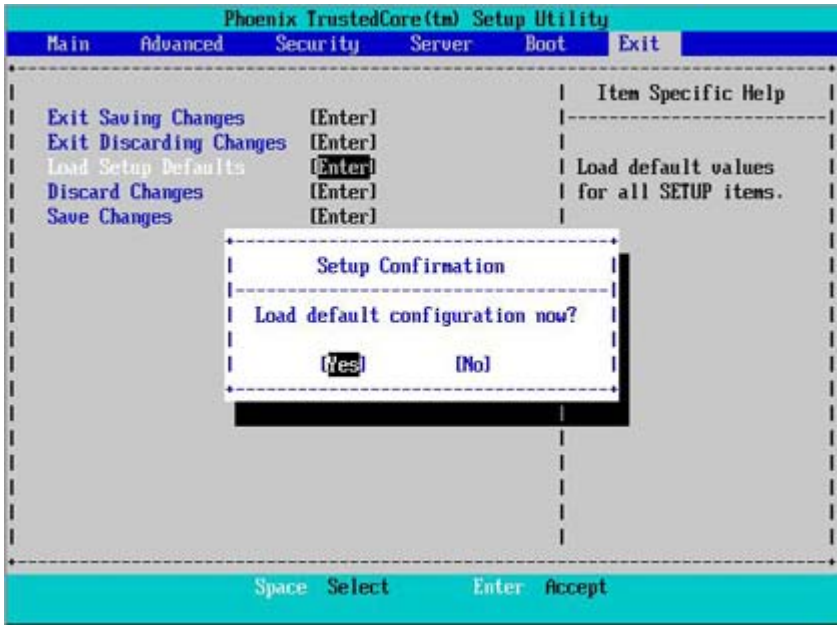
This will exit the Setup Utility and restart your compuetr when selecting this option.



Load Setup Default

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

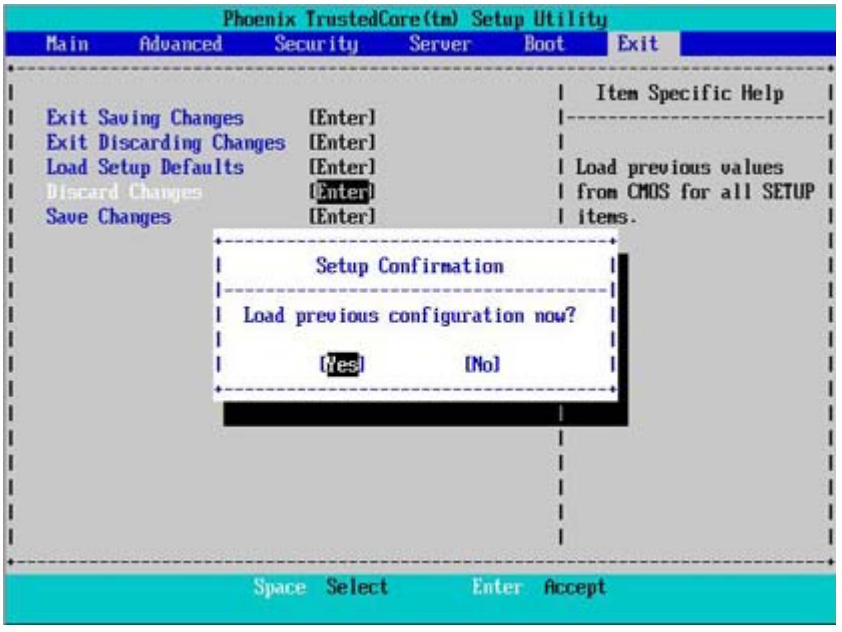
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Discard Changes

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

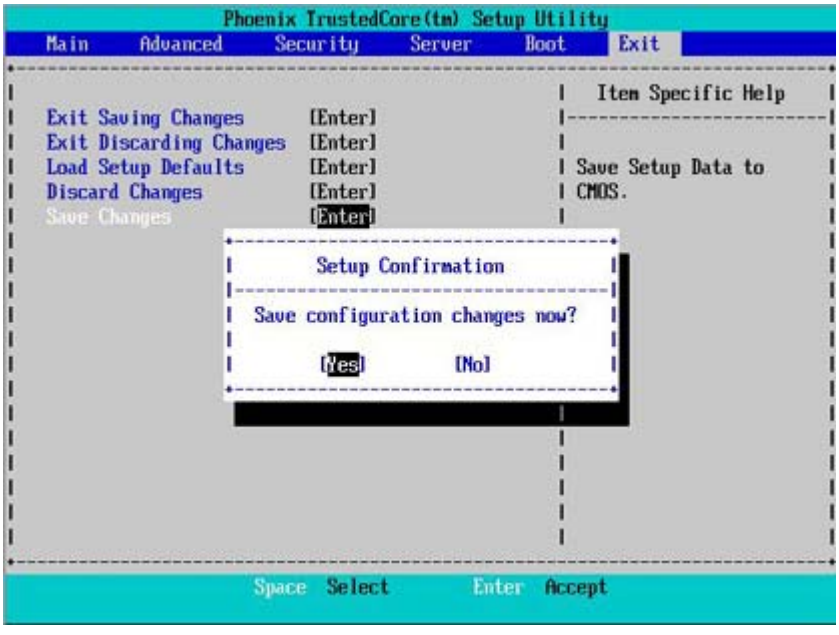
This will exit the Setup Utility and restart your compuetr when selecting this option.



Save Changes

This option allows user to save setup dat ato 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.