GA-4MXSV

Pentium Prescott 1066 Motherboard

USER'S MANUAL

Pentium® Prescott Processor Motherboard

Rev. 1002

12ME-4MXSV-1002

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- ☑ The GA-4MXSV motherboard
- ☑ IDE (ATA100) cable x 1 / Floppy cable x 1
- ☑ CD for motherboard driver & utility
- ☑ GA-4MXSV user's manual
- ☑ Serial ATA cable x 4
- ☑ I/O Shield Kit

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.

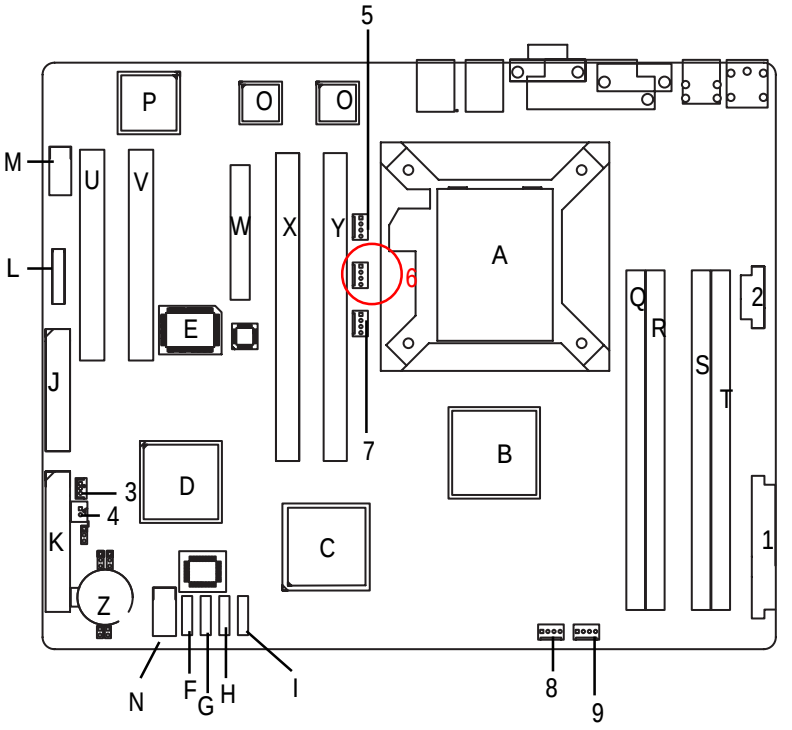
Chapter 1 Introduction

Features Summary

Form Factor	• 12" x 9.6" ATX size form factor, 6 layers PCB.
CPU	• Supports Intel® Pentium Prescot and Smithfieldprocessor • Intel® Prescott LGA 775 supports 800/1066MHz FSB • L2 cache on-die per processor from 1M
Chipset	• Intel® Mukilteo Chipset • Intel® ICH7R • Intel® 6702PXH-V
Memory	• 4 x DDRII socket up to 8 GB • Supports Dual Channel Un-buffered DDRII 533/667 • Support 256MB, 512MB, and 1GB memory • Single-bit Errors Correction, Multiple-bit Errors Detection
I/O Control	• ITE IT8712F-A Super I/O
Expansion Slots	• Supports 2 PCI slots 32-Bit/33MHz (5V) • Supports 2 PCI-X slots 64-Bit/133MHz • Supports 1 PCI-Express x8 slot
SATA RAID Controller	• ICH7R built in SATA RAID 0,1,5, 0+1 without Linux support • Supports 4 SATAII conntectors
On-Board Peripherals	• 1 IDE connector • 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes. • 2 PS/2 connectors • 1 Parallel port supports Normal/EPP/ECP mode • 1 Serial port (COM) • 4 x USB 2.0 • 1 VGA connector • 2 x LAN RJ45 • 4 x SATAII connectors
Hardware Monitor	• CPU/Power/System Fan Revolution Detect • CPU shutdown when overheat • System Voltage Detect

On-Board Graphic	• ATI ES1000 with 16Mb DDR SDRAM
On-Board LAN	• Dual Intel 82573V Gigabit Ethernet controllers
Hardware Monitor	• Winbond 83792D controller • Enhanced features with CPU Vcore, 1.5V reference, VCC3 (3.3V), VCC5V, +12V, 2.5V,VBAT3V, +5V SB, CPU Temperature, and System Temperature Values viewing by • Support basic ASF remote transaction through CSA Bus with hardware circuit
BIOS	• Phoenix BIOS on 8Mb flash RAM • Software mini BMC
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) • AC Recovery • Supports Console Redirection • Supports 4-pin Fan controller

GA-4MXSV Motherboard Layout



A.	CPU	U.	PCI_B
B.	Intel Mukilteo	V	PCI_A
C.	Intel 6702 PXH-V	W.	PCI-E x8
D.	Intel ICH7R	X.	PCI-X_2
E.	ITE IT8712F	Y.	PCI-X_1
F.	SATA1	Z.	BAT (Battery)
G.	SATA2	1.	ATX
H.	SATA3	2.	ATX12V
I.	SATA4	3.	WOR
J.	FDC	4.	WOL
K.	IDE	5.	UF1 (CPU FAN)
L.	F_Panel	6.	UF2 (System FAN)
M.	COM2	7.	UF3 (System FAN)
N.	USB2	8.	UF4 (System FAN)
O.	Intel 82573V GbE	9.	UF5 (System FAN)
P.	ATI RN50		
Q.	DDRII A1		
R.	DDRII A2		
S.	DDRII B1		
T.	DDRII B2		

Chapter 2 Hardware Installation Process

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

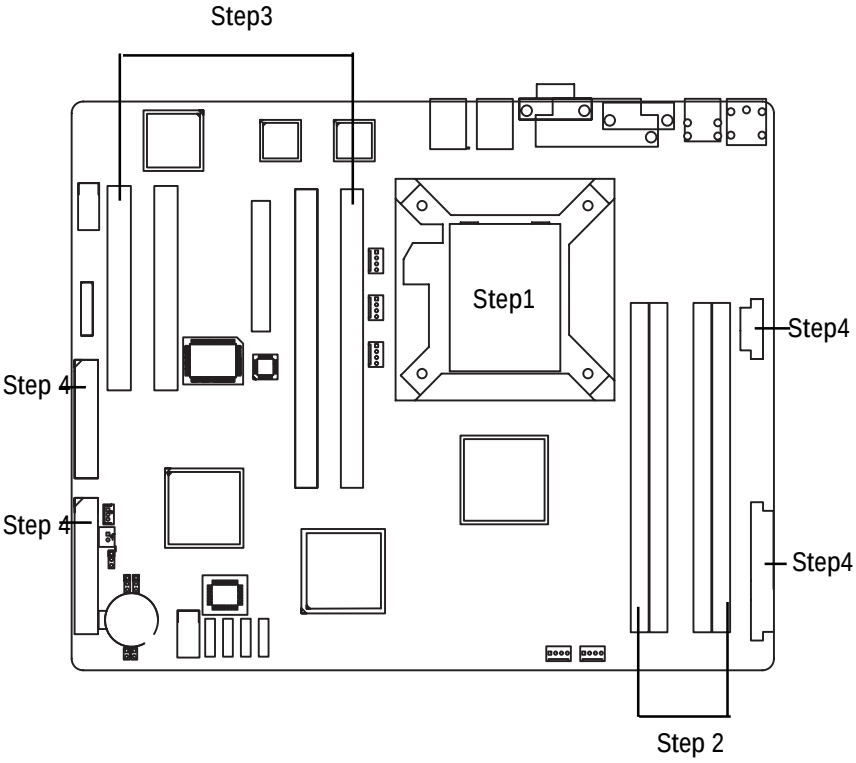
Step 1- Install the Central Processing Unit (CPU)

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 1: Installing Processor and CPU Haet Sink

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.

Step1-1: Installing CPU

Step 1 Gently lift the metal lever located on the CPU socket to the upper-right position.

Step 2 Remove the plastic covering on the CPU socket.

Step 3 Align the indented corner of the CPU with the triangle and gently insert the CPU into position. (Grasping the CPU firmly between your thumb and forefinger, carefully place it into the socket in a straight and downwards motion. Avoid twisting or bending motions that might cause damage to the CPU during installation.)

Step 4 Once the CPU is properly inserted, please replace the plastic covering and push the metal lever back into its original position.

Step 5 Close the lever, reverse step 1 & 2.

Step1-2: Installing Heat Sink

Fig.1

Please apply heatsink paste on the surface of the installed CPU.

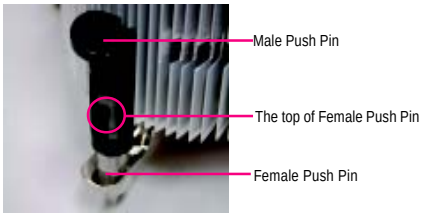


Fig. 2

(to remove the heatsink, turning the push pin along the direction of arrow; and reverse the previous step to install the heat sink.)

Please note the direction of arrow sign on the male push pin doesn't face inwards before installation. (This instruction is only for Intel boxed fan)

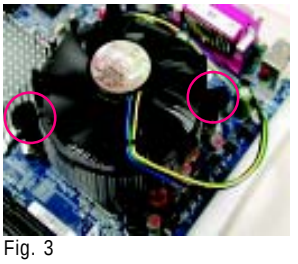


Fig. 3

Place the heatsink on top the CPU and make sure the push pins align to the pin hole on the motherboard.Push down the push pins diagonally.

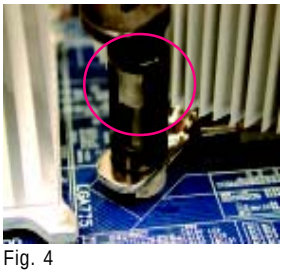


Fig. 4

Please make sure the Male and Female push pin are brought together. (for detailed installation instructions, please refer to the heatsink installation section of the user manual)

Fig. 5

Please check the back side of teh motherboard. Make sure the push pin is seated firmly as the picture shown. Installation completed.

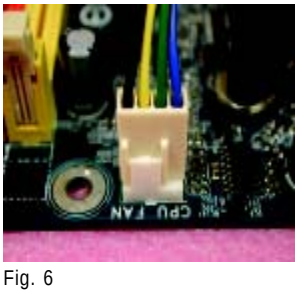


Fig. 6

Attach the power connector of the heatsink to the CPU fan header located on the motherboard.

Step 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.

GA-4MXSV has 4 dual inline memory module (DIMM) socets. It supports the Dual Channel Technology. The BIOS will automatically detects memory type and size during system boot. For detail DIMM installation, please refer to the following instructions.

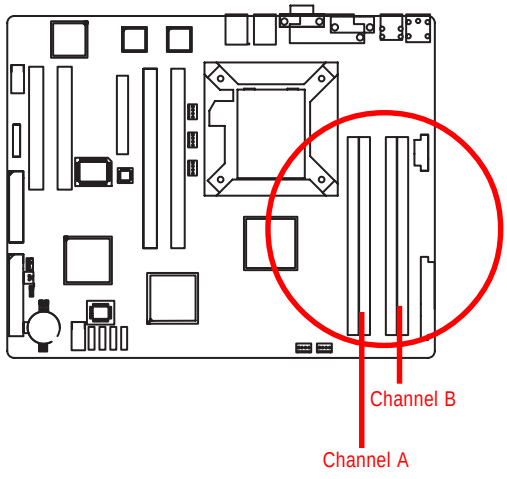


Table 1. Supported DIMM Module Type

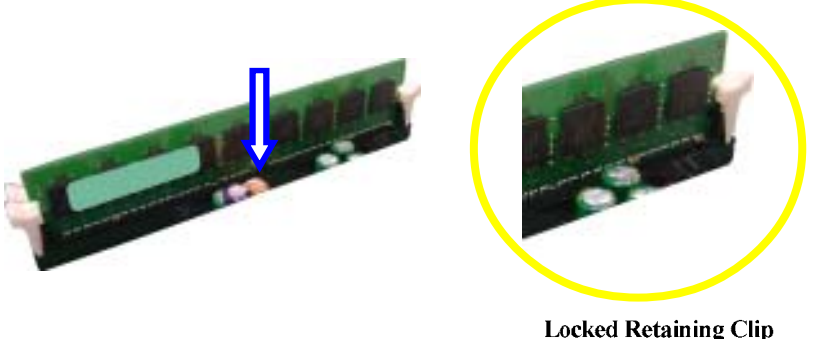
Technology	Organization	SDRAM Chips/DIMM
256MB	8MB x 8 x 4 bks	8
	16MB x 4 x 4bks	16
512MB	16MB x 8 x 4bks	8
	32MB x 4 x 4bks	16
1GB	32MB x 8 x 4bks	8
	64MB x 4 x 4bks	16

Table 2. DIMM Placement DDR2-533/667

DIMM Configuration	DIMM1	DIMM2
1 Single Rank	Empty	Empty
1 Dual Rank	Empty	Empty
2 Single Rank	Empty	Single Rank
1 Dual Rank, 1 Single Rank	Empty	Single Rank
2 Dual Rank	Empty	Dual Rank

Installation Steps:

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.
3. Firmly insert the DIMMinto the socket until the retaining clips snap back in place.
4. When installing the DIMM into the DIMM socket, we recommend to populate one DIMM in Channel A module and one in Channel B module for best performance.
   Please note that each logical DIMM must be made of two identical DIMMs having the same device size on each and the same DIMM size.
5. Reverse the installation steps when you wish to remove the DIMM module.



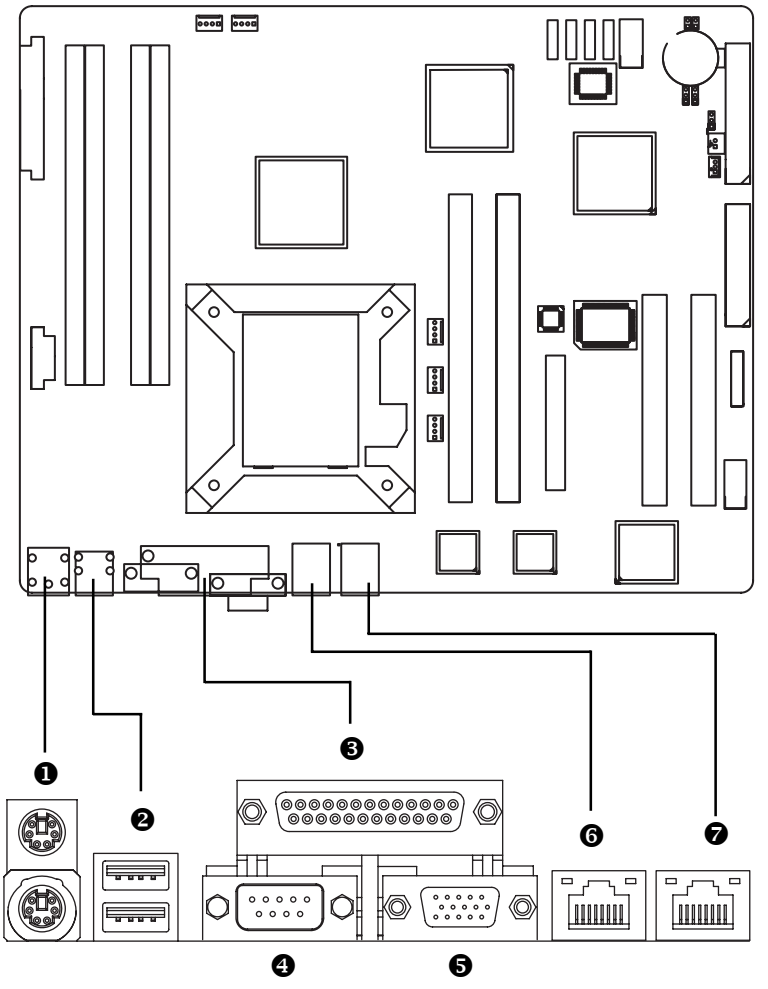
Locked Retaining Clip

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 server's chassis cover, necessary 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

Step 4-1 : 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).

❷ 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.

❸/❹/❺ Parallel Port / Serial Port / VGA 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.

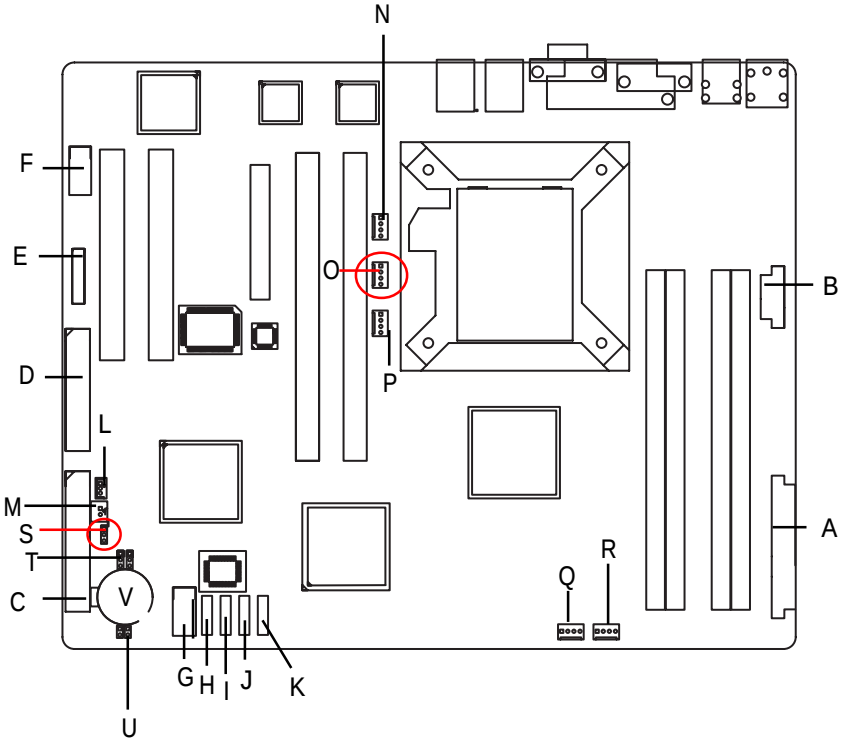
❻/❼ LAN Port

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

LAN LED Description

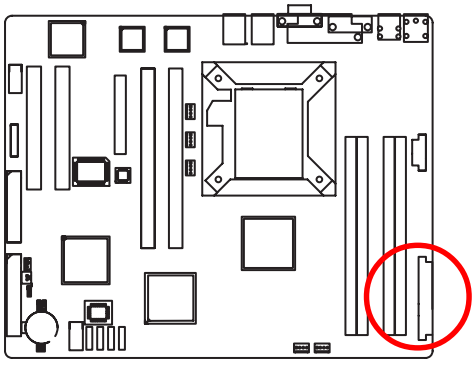
Name	Color	Condition	Description
LAN Link/Activity	Green	ON	LAN Link / no Access
	Green	BLINK	LAN Access
	-	OFF	Idle
10/100 LAN Speed	Green	ON	100Mbps connection
	-	OFF	10Mbps connection
GbE LAN Speed	Yellow	ON	1Gbps connection
	Yellow	BLINK	Port identification with 1Gbps connection
	Green	ON	100Mbps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

Step 4-2 :Connectors & Jumper Setting Introduction

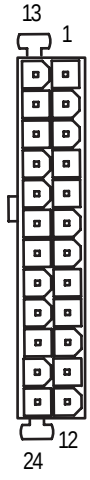


A) ATX	M) WOR1
B) ATX_12V	N) UF1 (CPU Fan)
C) IDE1	O) UF2 (System Fan)
D) FDC1	P) UF3 (System Fan)
E) F_Panel	Q) UF4 (System Fan)
F) COM2	R) UF5 (System Fan)
G) USB2	S) CLR_CMOS
H) S_ATA1	T) RECOVERY
I) S_ATA2	U) PASSWORD
J) S_ATA3	V) BAT (Battery)
K) S_ATA4	
L) WOL1	

A) ATX (ATX Power Connector)

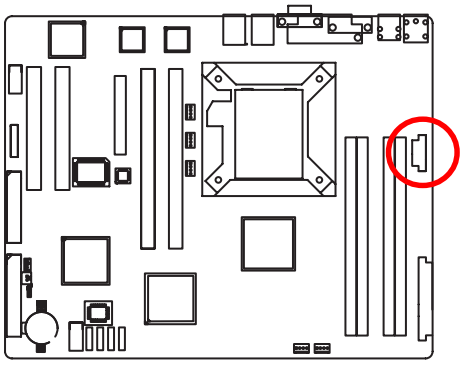


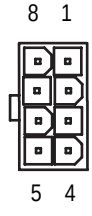
PIN No.	Definition
1	+3.3V
2	+3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	POK
9	5VSB
10	+12V
11	+12V
12	+3.3V
13	+3.3V
14	-12V
15	GND
16	PSON
17	GND
18	GND
19	GND
20	-5V
21	+5V
22	+5V
23	+5V
24	GND



➢ 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.

B) ATX_12V(+12V Power Connector)



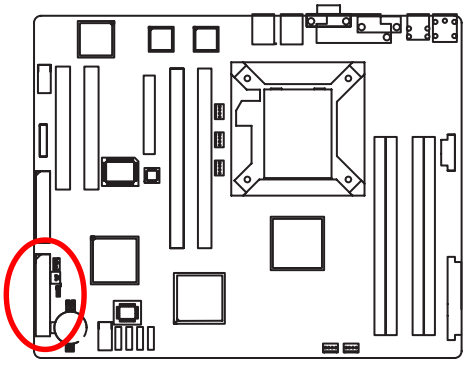


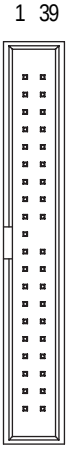
Pin No.	Definition
1	GND
2	GND
3	GND
4	GND
5	P12V_CPU
6	P12V_CPU
7	P12V_CPU
8	P12V_CPU

➢This connector (ATX +12V) is used only for CPU1 Core Voltage.

C) IDE1 (IDE Connector)

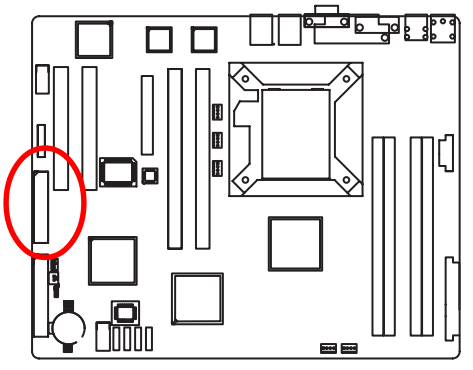
Please connect first harddisk to IDE1. The red stripe of the ribbon cable must be the same side with the Pin1.

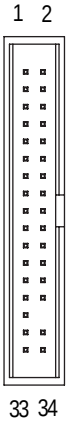




D) FDC1 (Floppy Connector)

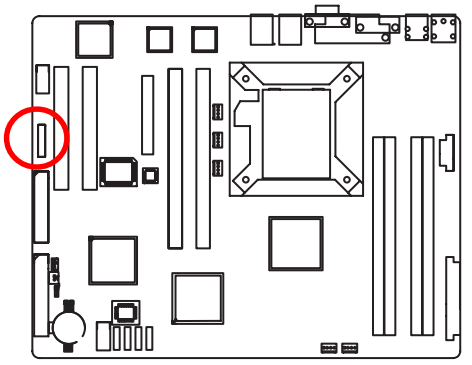
Please connect the floppy drive ribbon cables to FDD. It supports 720K,1.2M,1.44M and 2.88Mbytes floppy disk types. The red stripe of the ribbon cable must be the same side with the Pin1.





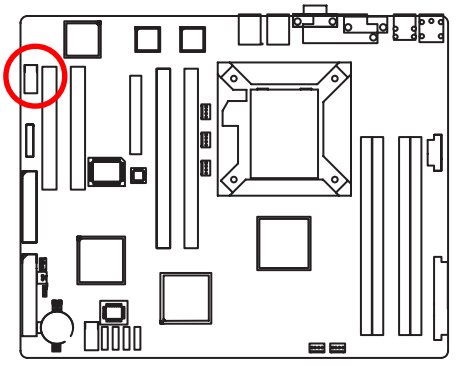
E) F_Panel1 (2X9 Pins Front Panel connector)

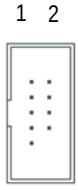
Please connect the power LED, PC speaker, reset switch and power switch of your chassis front panel to the F_PANEL connector according to the pin assignment above.



Pin No	Signal Name	Description
1	HD+	Hard Disk LED anode (+)
2	PWLED+	Power LED Signal anode (+)
3	HD-	Hard Disk LED cathode(-)
4	PWLED-	Power LED Signal cathode(-)
5	GND	Ground
6	PW+	Soft power connector anode (+)
7	RESET	Reset button
8	GND	Ground
9	N C	No Connect
10	N C	No Connect
11	N C	No Connect
12	LANA_LED-	LAN1 linked LED Signal cathode(-)
13	LANB_LED-	LAN2 linked LED Signal cathode(-)
14	N C	No connect
15	LANA_LED+	LAN1 linked LED Signal anode (+)
16	LANB_LED+	LAN2 linked LED Signal anode (+)
17	N C	No Connect
18	N C	No Connect

F) COM2

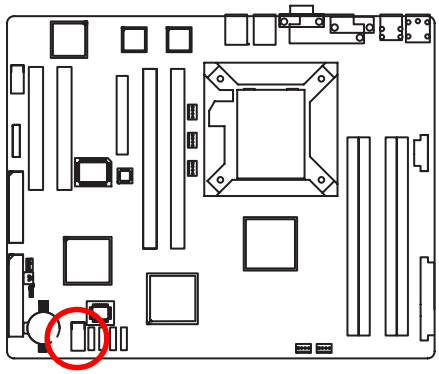


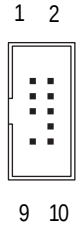


Pin No.	Definition
1	DCD-
2	SIN2
3	SOUT2
4	DTR2-
5	GND
6	DSR2-
7	RTS2-
8	CTS2-
9	RI2-
10	NC

G) USB2 (Front USB Connector)

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.

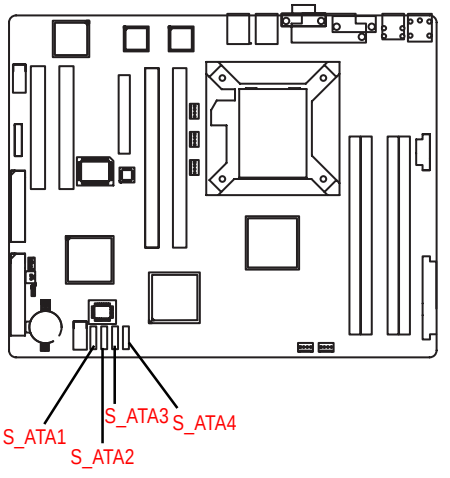




Pin No.	Definition
1	Power
2	GND
3	USB DX-
4	NC
5	USB DX+
6	USB Dy+
7	NC
8	USB Dy-
9	GND
10	Power

H / I / J / K) S_ATA1/ 2/ 3/ 4 (Serial ATA Connectors)

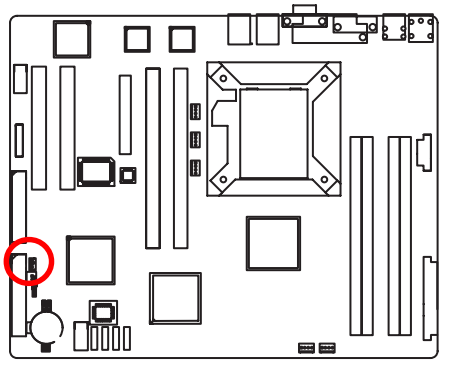
You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (150MB/sec).



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

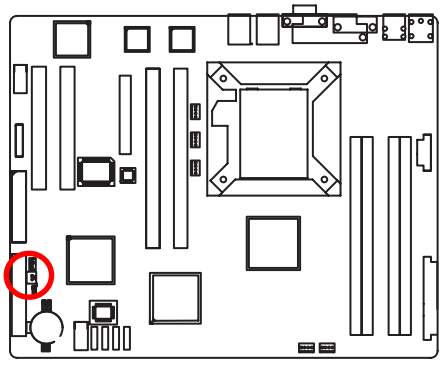
L) WOL1 (Wake on LAN)

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	Wake on Lan Signal

M) WOR1 (Wake on Ring)

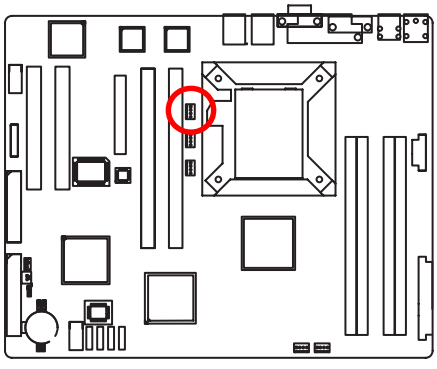


1

Pin No.	Definition
1	MODEM RING ON
2	GND

N) UF1 (CPU Fan Connector)

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 .

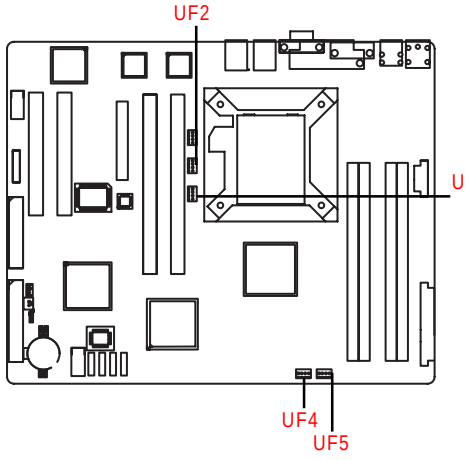


1

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

O / P / Q / R) UF2/3/4/5 (System Fan 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.

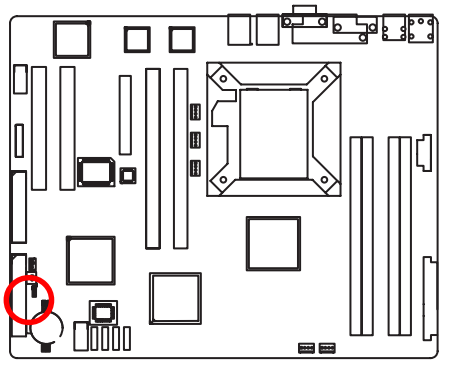


Pin No.	Definition
1	GND
2	12V
3	Sense
4	Control

S) CLR_CMOS (Clear CMOS Function)

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

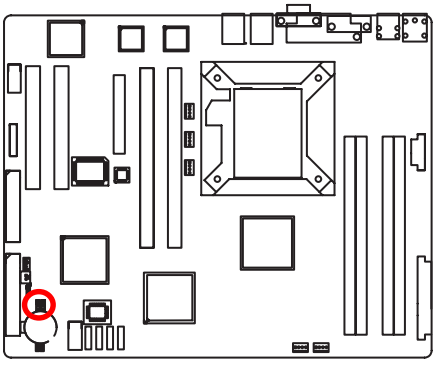
Default value doesn't include the "Shunter" to prevent from improper use this jumper. To clear CMOS, temporarily short 1-2 pin.



1 1-2 close: Clear CMOS

1 2-3 close: Normal (Default)

T) RECOVERY (BIOS Recovery Function)

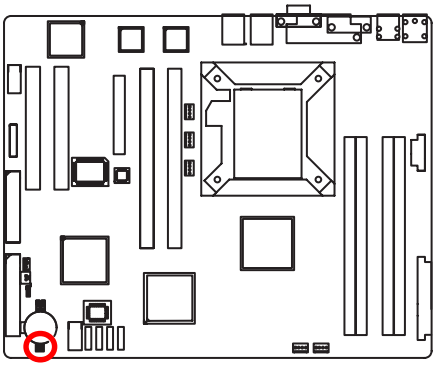


1 1-2 close: Enable BIOS Recovery function.

1 2-3 close: Disable this function. (Default value)

Please remove the jumper when system access recovery flopp disk.

U) PASSWORD (Clear CMOS Password Function)

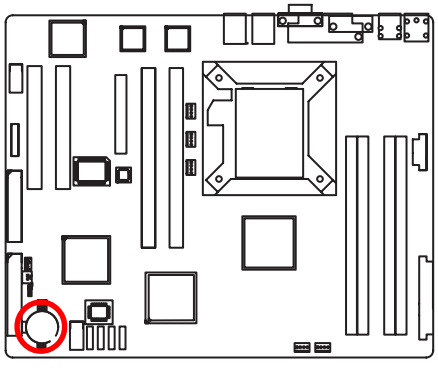


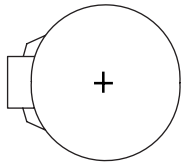
Open: Clear Password

Short: Normal (Default)

Please remove the jumper when system reboot next time.

V) BAT1 (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.

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)

Legacy Diskette A/B

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.

Hard Disk Pre-Delay

This item provides function for user to add a delay before the first access of a hard disk by BIOS. Some hard disks hang if accessed before they have initialized themselves. The delay ensures the hard disk initialized after powering up, prior to being accessed.

- Options — Disabled, 3 Seconds, 6 Seconds, 9 Seconds, 12 Seconds, 21 Seconds, 30Seconds. Default vaule is Disabled.

IDE Primary Master, Slave / Secondary Master, Slave, Parallel ATA

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.

- 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.

Advanced Processor Options

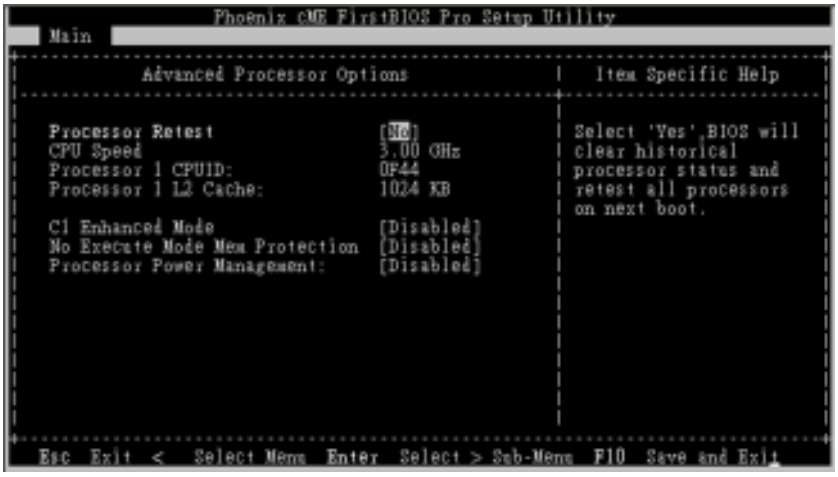


Figure 1-1: Advanced Processor Option

Advanced Processor Option

This category includes the information of CPU Speed, Processor ID, Processor L2 Cache. And setup menu for C1 Enhanced Mode, No Execute Mode Memory Protection, and Processor Power Management.

Processor Reset

Yes	Select 'Yes' BIOS will clear historical processor status and reset all processors on next boot.
No	Disables Processor Reset function. (Default value)

C1 Enhanced Mode

With enabling C1 Enhanced Mode, all loical processors in the physical processor have entered the C1 state, the processor will reduce the core clock frequency to system bus ratio and VID.

- Enabled — Enabled C1 Enhanced Mode.
- Disabled — Disables C1 Enhanced Mode. (Default value)

No Execute Mode Mem. Protection

- Enabled — Enable No Execute Mode Memory Protection function. (Default value)
- Disabled — Disables No Execute Mode Memory Protection function.

Processor Power Management

Select the Power Management desired:

- Enabled — C states and GV1/GV3 are enabled.
- C States Only — GV1/GV3 are disabled.
- GV1/GV3 Only — C states are disabled. (Default value)
- Disabled — C states and GV1/GV3 are disabled.

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

Memory Configuration

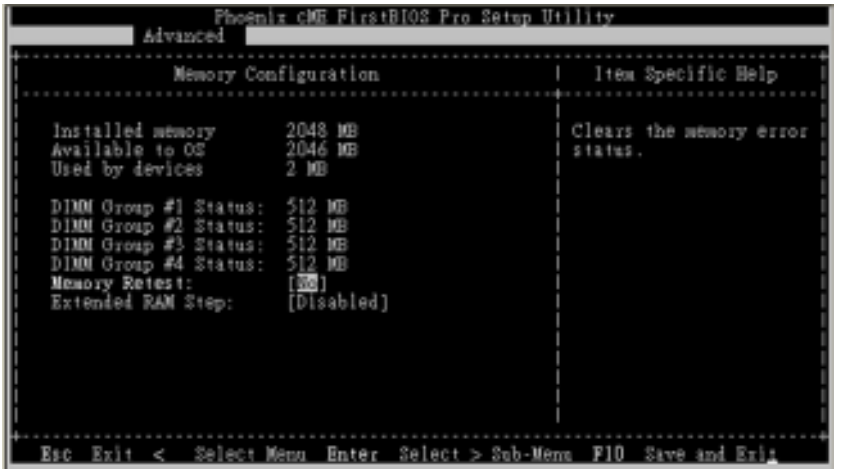


Figure 2-1: Memory Configuration

Installed Memory/Available to OS/DIMM Group 1,2,3,4 Status

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

Memory Reset

Yes	Select 'Yes', system will clear the memory error status. Save the changes and restart system. After rebooting system, the Memory Reset item will set to 'No' automatically.
No	Disable this function. (Default value)

Extend RAM Step

Enabled	Enable test extended memroy process.
Disabled	Disable this function. (Default value)

PCI Configuration

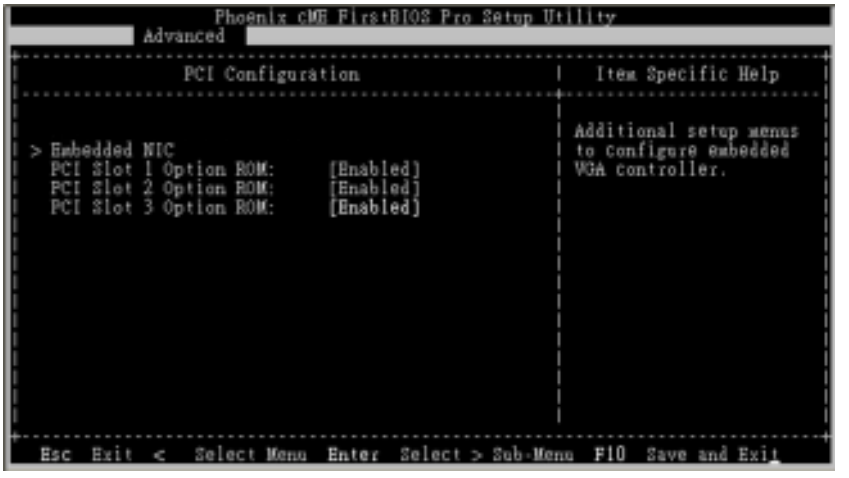


Figure 2-2: PCI Configuration

☞EmbeddedNIC#1

- Onboard LAN1 Control

▸▸Enabled	Enable onboard LAN1 device. (Default value)
▸▸Disabled	Disable this function.

- Option ROM Scan

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

PCI Slot 1/2/3/4/5 Option ROM

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

I/O Device Configuration

Figure 2-3: I/O Device Configuration

Serial Port A

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

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

- Base I/O Address/IRQ
  - 3F8 — Set IO address to 3F8. (Default value)
  - 2F8 — Set IO address to 2F8.
  - 3E8 — Set IO address to 3E8.
  - 2E8 — Set IO address to 2E8.

- IRQ
  - IRQ3 — Set Interrupt as IRQ3.
  - IRQ4 — Set Interrupt as IRQ4.(Default value)

Serial Port B

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

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

- Base I/O Address/IRQ
  - 3F8 — Set IO address to 3F8.
  - 2F8 — Set IO address to 2F8. (Default value)
  - 3E8 — Set IO address to 3E8.
  - 2E8 — Set IO address to 2E8.

- IRQ
  - IRQ3 — Set Interrupt as IRQ3. (Default value)
  - IRQ4 — Set Interrupt as IRQ4.

Parallel Port

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

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

▸ Mode

This option allows user to set Parallel Port transfer mode.

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

▸ Base I/O Address

- 378 — Set IO address to 378
- 278 — Set IO address to 278.

▸ IRQ

- IRQ5 — Set Interrupt as IRQ5. (Default value)
- IRQ7 — Set Interrupt as IRQ7. (Default value)

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 value)
- Disabled — 'Disabled' prevents any installed PS/2 mouse from functioning, but frees up IRQ12.

USB Controller

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

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

USB 2.0 Controller

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)
- Options — Disbale this function.

Legacy USB Support

This option allows user to function support for legacy USB.

- Enabled — Enables support for legacy USB (Default Value)
- Disabled — Disables support for legacy USB

Route Port 80h cycles to

Set route port 80h cycles to either PCI or LPC bus.

- PCI — Set Route Port 80h I/O cycles to the PCI bus. (Default Value)
- LPC — Set Route Port 80h I/O cycles to the LPC bus.

Parallel ATA

- Enabled — Enable Parallel ATA. (Default value)
- Disabled — Disable the device.

Serial ATA

- Enabled — Enables on-board serial ATA function. (Default Value)
- Disabled — Disables on-board serial ATA function.

Native Mode Operation

This option allows user to set the native mode for Serial ATA function.

- Auto — Auto detected. (Default value)
- Serial ATA — Set Native mode to Serial ATA.

SATA Controller Mode Option

- Compatible Mode — SATA and PATA drives are auto-detected and placed in Legacy mode. (Default value)
- Enhanced Mode — SATA and PATA drives are auto-detected and placed in Native mode.

Note: Pre-Win2000 operating system do not work in Enhanced mode.

SATA AHCI Enable

- Enabled — Set this item to enable SATA AHCI function for WinXP-SP1+IAA driver supports AHCI mode.
- Disabled — Disabled this function.

SATA RAID Enable

- Enabled — Enabled SATA RAID function.
- Disabled — Disable this function.

Advanced Chipset Control

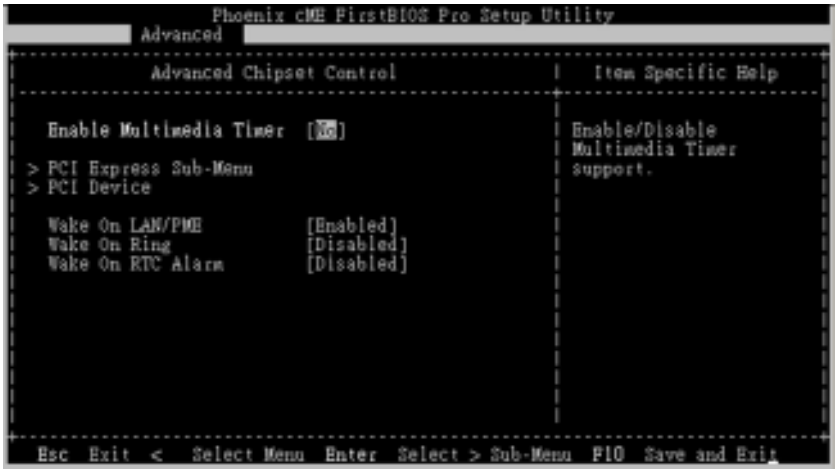


Figure 2-4: Advanced Chipset Control

Enable Multimedia Timer

▸▸Enabled	Enable Multimedia Timer support.
▸▸Disabled	Disable this function. (Default value)

PCI Express Sub-Menu

These items are for debugging the PCI-Express Ports.

PCI Device

▸ PCI IRQ Line 1/2/3/4/5

When ACPI device cannot use IRQs already in use by ISA or EISA devices. Use 'Auto Select' only if no ISA or EISA legacy cards are installed.

▸▸Auto Select	Auto selecting PCI IRQ lines. (Default value)
▸▸3,4,5,7,9,10,11,12,14,15	Selecting specify PCI IRQ lines.
▸▸Disabled	Disable this function..

Wake On LAN / PME

This option allow user to determine the action of the system when a LAN/PME wake up event occurs.

⏩Enabled	Enable Wake On LAN/PME. (Default value)
⏩Disabled	Disable this function.

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

Wake On Ring

This option allow user to determine the action of the system power is off and the modem is ringing.

⏩Enabled	Enable Wake On Ring. (Default value)
⏩Disabled	Disable this function.

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

Wake On RTC Alarm

When "RTC Alarm Resume" item is set to enabled, system will wakeup from RTC. (This item will be functionalized under ACPI OS)

⏩Enabled	Enable alarm function to POWER ON system. (Default value)
⏩Disabled	Disable this function.

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

Hardware Monitor

Figure 2-5: Hardware Monitor

- **CPU / Motherboard/ Ambit Temperature**

  ⏩ Display the current CPU temperature, Motherboard, and Ambient temperature.

- **Voltage Monitor: 3V Dual, VCC3, VCC, 12V2, 12V1, VBAT, 5VSB**

  ⏩ Detect system's voltage status automatically.

- **FAN Monitor: System 1/2/3/4/5/6/7/8 (RPM)**

  ⏩ Display the current System FAN 1/2/3/3/4/5/6/7/8 speed.

This Menu will disappear when BMC module is populated.

Boot -time Diagnostic

When this item is enabled, system will shows Diagnostic status when system boot.

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

Reset Configuration Data

- Yes — Reset all configuration data.
- No — Do not make any changes. (Default value)

NumLock

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

- On — Enable NumLock.
- Off — Disable this function.

Memory Processor Error

When Boot is selected, the system will attempt to boot after a memory or proocessor error occured.

- Boot — System attempts to boot if a memory or proocessor error cooured. (Default value)
- Halt — System will stop if an error is detected during power up.

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 value)
- 1.1 — Support M PS Version 1.1.

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.

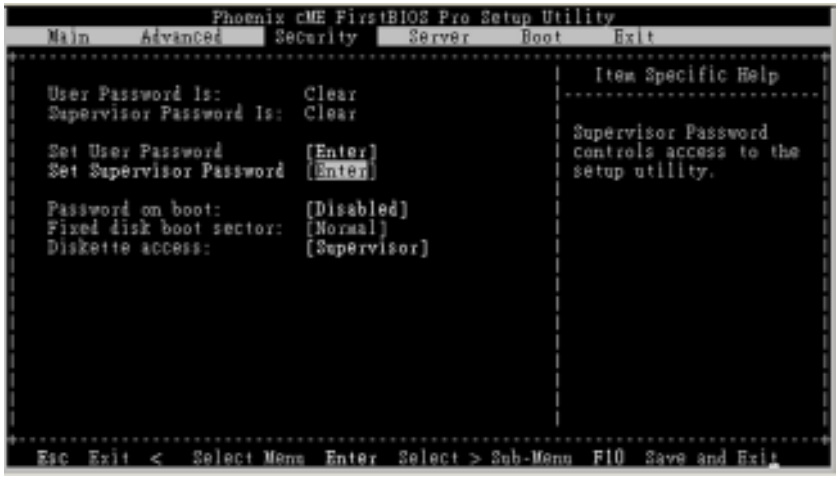


Figure 3: Security

Set 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.

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.

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)

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)

Diskette access

Control access to diskette drives.

- User — Requires user's password to access floppy drives.
- Supervisor — Requires supervisor's password to access floppy drives. (Default value)

Server

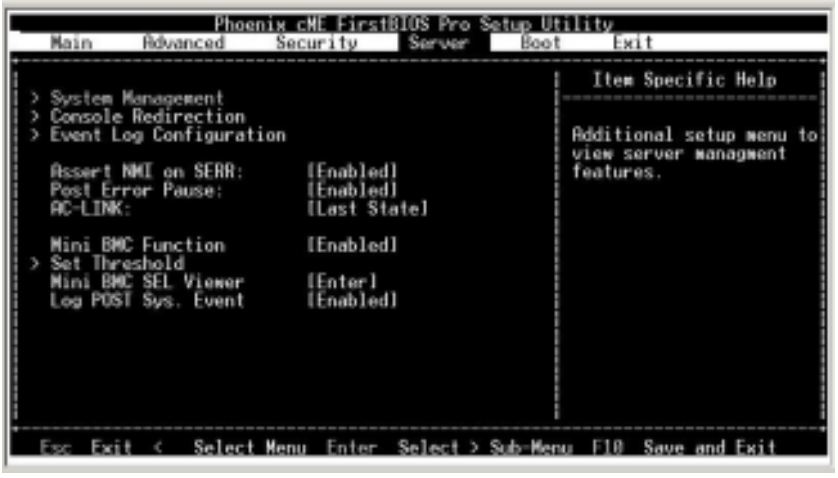


Figure 4: Server

System Management

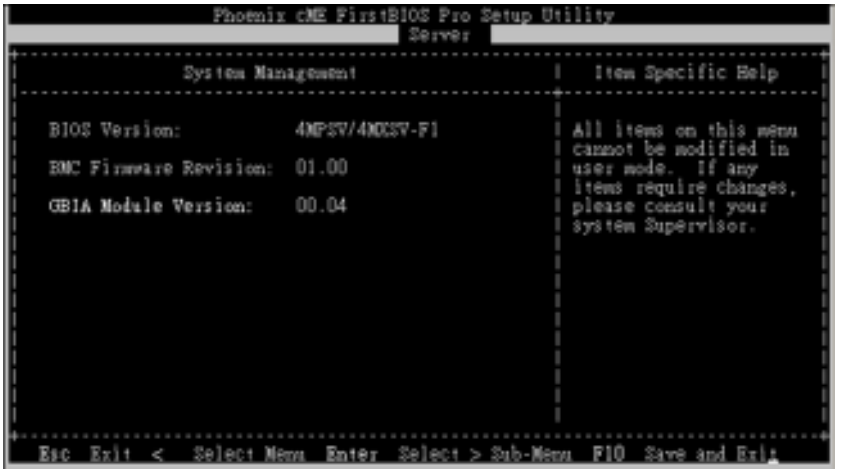


Figure 4-1: System Management

☞Server Management

This category allows user to view the server management features. Including information of BIOS Version. All items in this menu cannot be modified in user's mode. If any items require changes, please consult your system supervisor.

Console Redirection

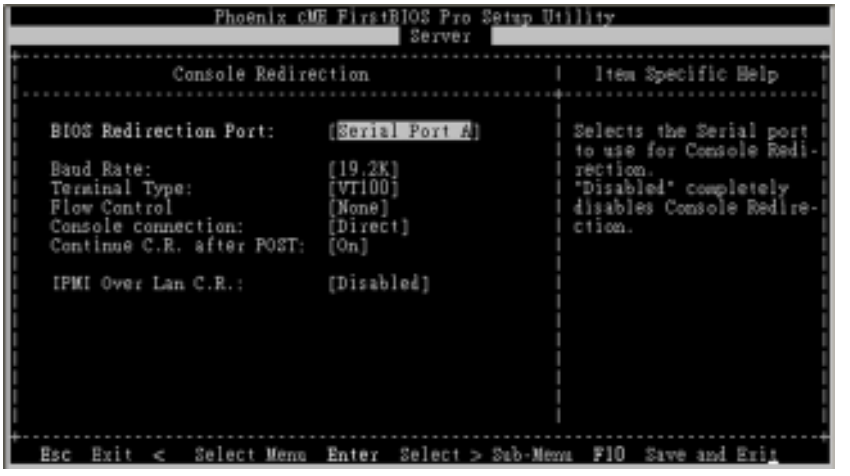


Figure 4-2: Console Redirection

BIOS Redirection Port

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

- On-board COMA — Use COMA as he COM port address.
- Disabled — Disable this function. (Default value)

Note: Tower has COMA and COMB.

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.

Terminal 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 value)

Console Connect

This field indicates whether the console is connected directly to the system or a modem is used to connect.

- Direct — Console is connected directly to the system. (Default)
- Disabled — Console is connected via the modem.

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 value)

Event Log Confuguration

This option contains additional setup menu to configure the Event Log Configuration.

- Clear all Event Logs
  - Enter — The system event log will be cleared if pressing Enter.

Assert NMI on SERR

If thisoption is set to enabled, PCI bus system error (SERR) is enabled and is routed to NMI.

- Enabled — Enable Assert NMI on SERR. (Default value)
- Disabled — Disable this function.

Post Error Pause

If this item is set to enabled, the system will wai for user intervention on critical POST errors. If this item is disabled, the system will boot with no intervention if possible.

- Enabled — Enable Post Error Pause. (Default value)
- Disabled — Disable this function.

AC-LINK

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 value)

Mini BMC Function

- Enabled — Enable Mini BMC function. (Default value)
- Disabled — Disable this function.


This option will disappear and disable when BMC module is populated.

Mini BMC SEL View

Press [Enter] to view the Mini BMC SEL.


This option will disappear and disable when BMC module is populated.

Log POST System Event

- Enabled — Enable Log POST System Event. (Default value)
- Disabled — Disable this function.

Event Log Viewer

Enabled	Enable Event Log Viewer function(Default value)
Disabled	Disable this function.

This option will disappear and disable when BMC module is populated.

Set Threshold

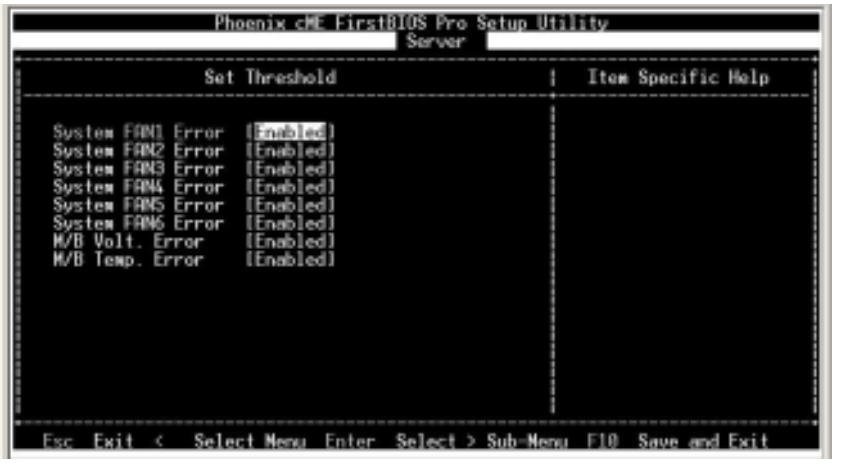


Figure 4-4: Set Threshold

☞ System Fan 1/2/3/4/5/6 Error

- ▸▸Enabled Enable System Fan 1/2/3/4/5/6 Fan Error. (Default value)
- ▸▸Disabled Disable this function.

☞ M/B Voltage Error

- ▸▸Enabled Motherboard Voltage Error. (Default value)
- ▸▸Disabled Disable this function.

☞ M/B Temperature Error

- ▸▸Enabled Motherboard Temperature Error. (Default value)
- ▸▸Disabled Disable this function.

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.

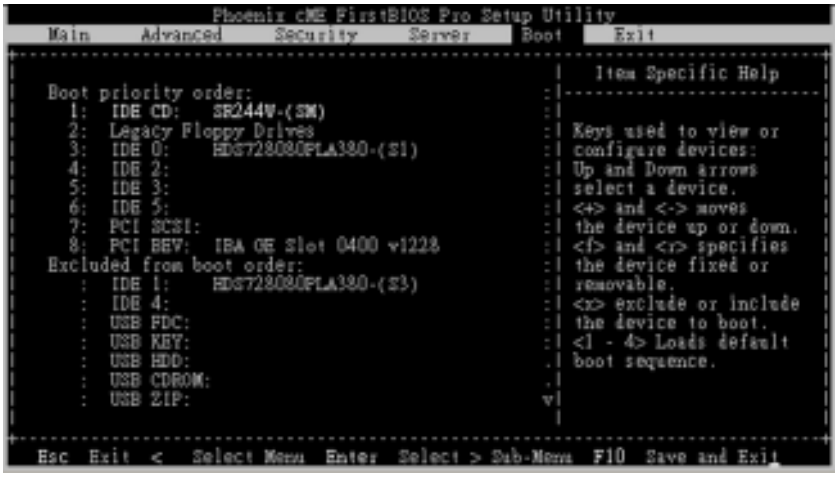


Figure 5: Boot

Boot Priority Order

This field 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.

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

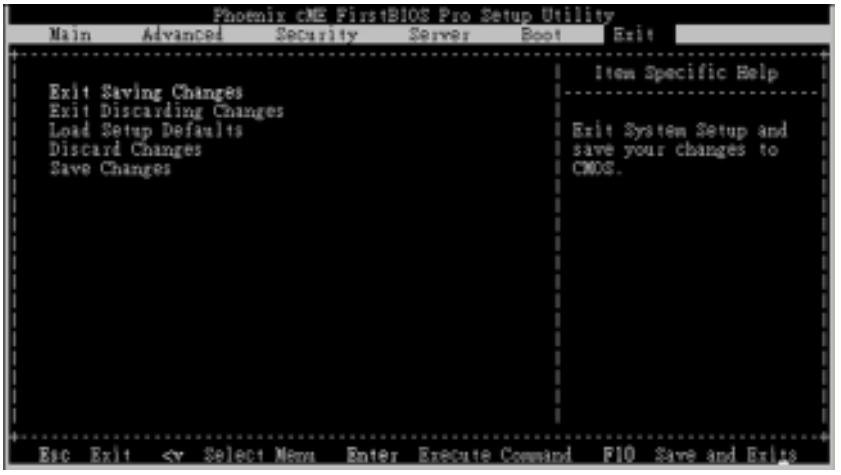


Figure 6: Exit

About This Section: Exit

Once you have 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
- Discard Change
- Save Changes

Exit Saving Changes

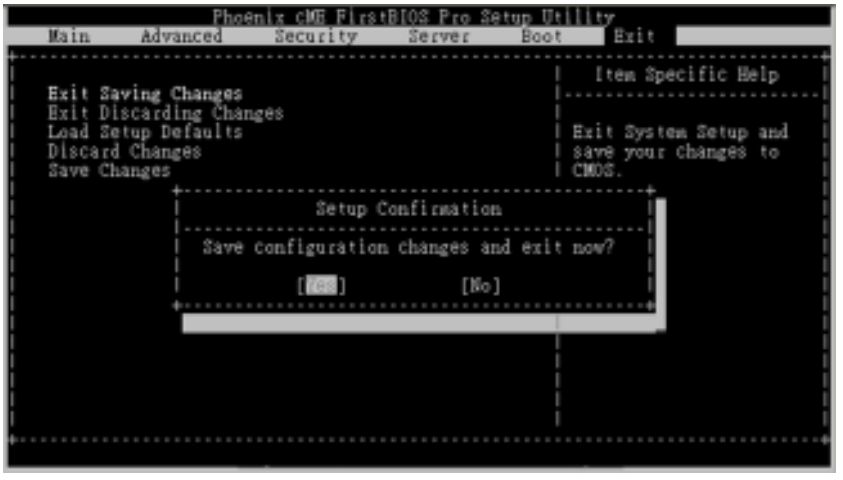
This option allows user to exit system setup with saving the changes.

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.

Load Settup 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 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:

Save Changes

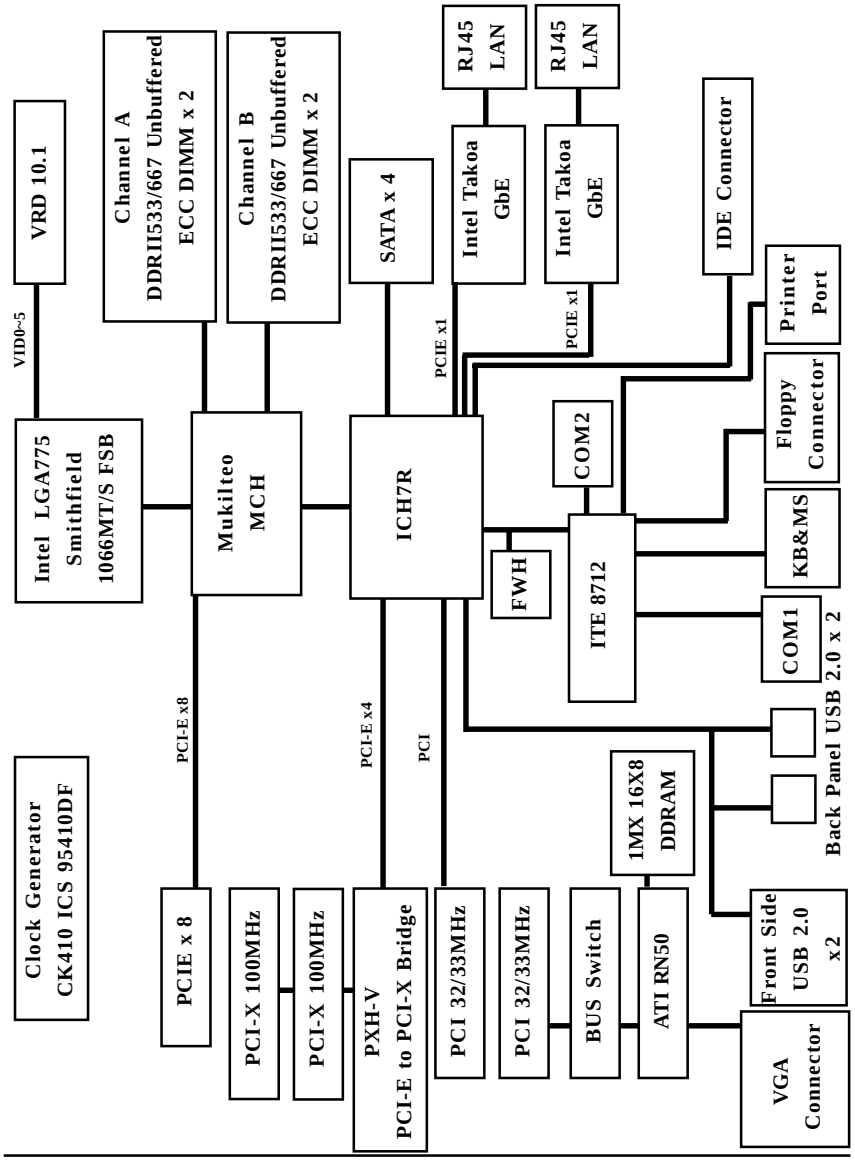
This option allows user to save setup dat ato CMOS.

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.

Chapter 4 Technical Reference

Block Diagram



Chapter 5 Driver Installation

A. Intel Chipset Software Installation Utilities

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.

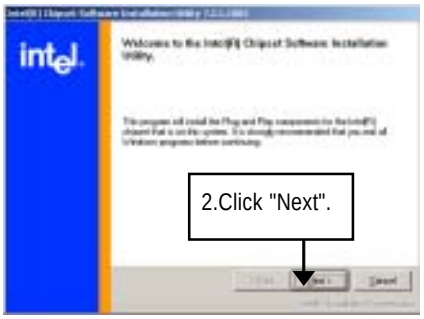
Installation Procedures:

1. The CD auto run program starts, **Double click** on "Intel Chipset Software Installation Utilities" 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.

Auto Run window

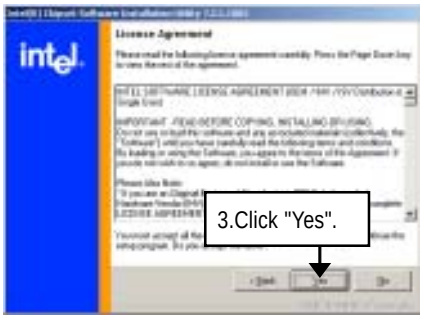
(1)

Setup Wizard



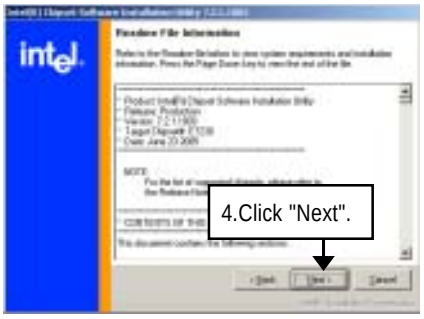
(2)

License Aggrement



(3)

Readme Information



(4)

Installation Completed

(5)

B. Intel 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, Double click on “Intel LAN Driver” to start the installation.
2. Select “Install Base Driver.
3. System starts to install the LAN Driver automatically.

Auto Run window

(1)

Intel LAN Drivers

(2)

Installation Wizard

(3)

License Agreement

(4)

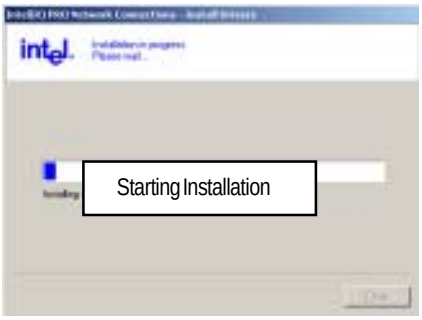
Install Option

(5)

Start Installation

(6)

Installation Progress



(7)

Installation Complete

(8)

C. Intel Host RAID Driver Installation

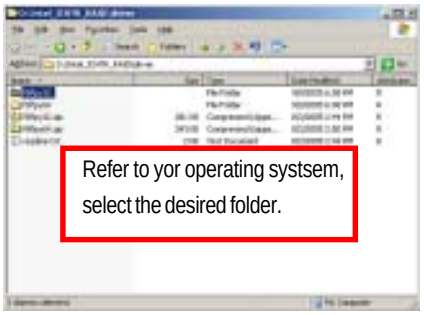
Installation Procedures:

1. The CD auto run program starts, **Double click** on "Intel Host RAID Driver" to make a driver disk.
2. Select a folder refering to your operating system.
3. Insert a flopp disk in the floppy drive.
4. Click on the self-extractor file.
5. System starts making a driver disk automatically.
6. Driver disk creation completed.

Auto Run window

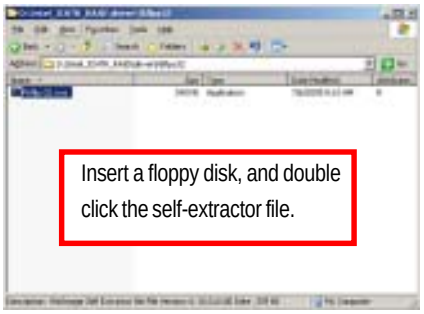
(1)

Host RAID Driver



(2)

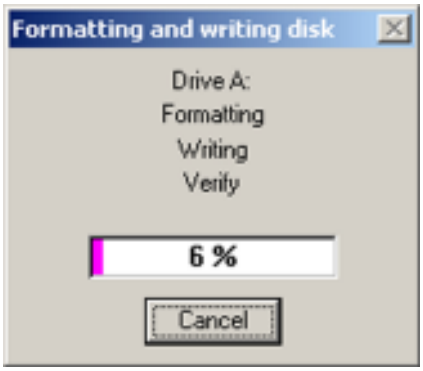
Starting make a driver disk



(3)

(4)

Formatting and writing in floppy sidk



(5)

D. VGA ES1000 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.

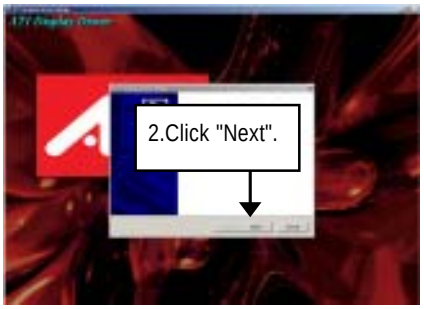
Installation Procedures:

1. The CD auto run program starts, **Double click** on "VGA ES1000 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.

Auto Run window

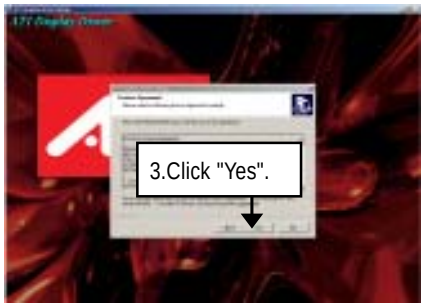
(1)

Setup Wizard



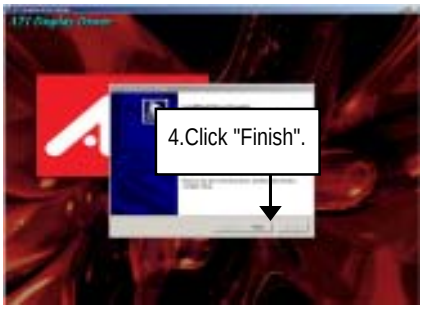
(2)

License Aggremment



(3)

Installation Complete



(4)

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.

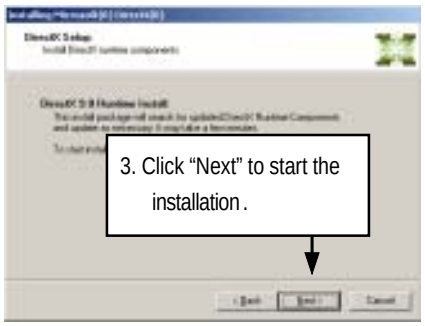
Auto Run window

(1)

License Agreement

(2)

Starting Installaiton



(3)

Installaiton Wizard completed

(4)

Chapter 6 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

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