

VI39L

MAINBOARD MANUAL

DOC No.: M02705

Rev. : A0

Date : 8, 2002

Part No. : 25-12168-00

Handling Precautions

Warning:

1. Static electricity may cause damage to the integrated circuits on the motherboard. Before handling any motherboard outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.
4. Never run the processor without the heatsink properly and firmly attached. **PERMANENT DAMAGE WILL RESULT!**

Observe the following basic precautions when handling the motherboard or other computer components:

- n Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.
- n Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- n Avoid contacting the components on add-on cards, motherboards, and modules with the *golden fingers* connectors plugged into the expansion slot. It is best to handle system components by their mounting brackets.

The above methods prevent static build-up and cause it to be discharged properly.

Trademark

All trademarks mentioned in this manual are registered properly of the respective owners.

Handling Precautions

This manual may not, in whole or in part, be photocopied, reproduced, transcribed, translated, or transmitted in whatever form without the written consent of the manufacturer, except for copies retained by the purchaser for personal archival purposes.

Quick Reference (German)	G-1
Quick Reference (French)	F-1
Quick Reference (Spanish)	S-1
Quick Reference (Japanese)	J-1
Quick Reference (Chinese)	C-1
Quick Reference (Simplified Chinese)	SC-1

Chapter 1 Overview

Package Checklist	1-2
The VI39L Mainboard	1-3
Main Features	1-4
FIC Unique Innovation for Users (NOVUS) - Enhanced Mainboard Features and System Support	1-5

Chapter 2 Installation Procedures

Quick Reference (from Page 2-2 to 2-4)	2-2
Mainboard Layout	2-2
1). Clear CMOS, Clear Password	2-3
2). Front Panel Block Cable Connection	2-3
3). CPU Fan Installation	2-4
1). Set System Jumpers	2-4
Clear CMOS Jumper	2-4
Clear Password Jumper	2-5
2). Install Memory Modules	2-6
3). Install the CPU	2-6
4). Install Expansion Cards	2-7
5). Connect Devices	2-9
Floppy Diskette Drive Connector	2-9
IDE Device Connectors	2-9
Power Connectors	2-10
Fan Connectors	2-10
CD Audio-In Connector	2-11
SPDIF_OUT Connector	2-11
Wake-On-Lan Connector	2-12

Wake-On-Ring Connector	2-12
Front Panel Block and IR Connector	2-13
SIRQ Connector	2-14
Serial Port Connectors	2-14
PS/2 Keyboard and Mouse Connector	2-15
LAN Connector (mfg.optional)	2-15
Universal Serial Bus Connectors	2-16
Printer Connector	2-16
Audio I/O Jacks	2-17
Video Graphics Accelerator Connector	2-17

Chapter 3 BIOS Setup

CMOS Setup Utility	3-1
Standard CMOS Setup	3-2
Advanced BIOS Features	3-4
Advanced Chipset Features	3-7
Integrated Peripherals	3-9
Power Management Setup	3-12
PnP/PCI Configurations	3-16
PC Health Status	3-17
Frequency/Voltage Control	3-18
Load Fail-Safe Defaults	3-19
Load Optimized Defaults	3-19
Supervisor/User Password	3-19
Save and Exit Setup	3-19
Exit without Saving	3-19

Overview

The Micro ATX, 478-pin FC-PGA2 package, VI39L mainboard supports the latest generation Intel® P4 level processors that achieve from 1.4 to 2.53 GHz being with two DDR DIMM slots for total 2GB capacity.

The board is built around the new SiS651™ chip that provides integrated VGA solution for P4 with FSB533/400 and DDR333/DDR266/DDR200 SDRAM. SiS962L™ features ATA133 to ensure the high data transfer speeds especially for long sequential transfers required by audio/visual applications. The board also supports six USB 2.0 ports that allow to connect with advanced USB 2.0 peripheral devices in a more efficient way.

Add-on card expansion is provided by 1 AGP 4X/2X and 3 PCI slots. I/O connections include 2 COM ports (1 connector and 1 pinheader), 1 printer connector, 1 VGA connector, 1 SPDIF_OUT connector, 1 optional LAN, 1 PS/2 mouse and keyboard connector, 6 USB 2.0 ports (4 jacks and 1 pinheader) and 1 media connector (Line-In, Line-Out*, Mic-In, front audio pinheader).

** The audio features of this mainboard do not have an amplifier, an active speaker is a must.*

Other key features are Remote On/Off, Auto Power Failure Recovery, integrated temperature monitoring and system fan control. Included also is a CD with enhanced supporting drivers containing a few bundled soft-ware solutions.

Package Checklist

If you discover any item below was damaged or lost, please contact your vendor.

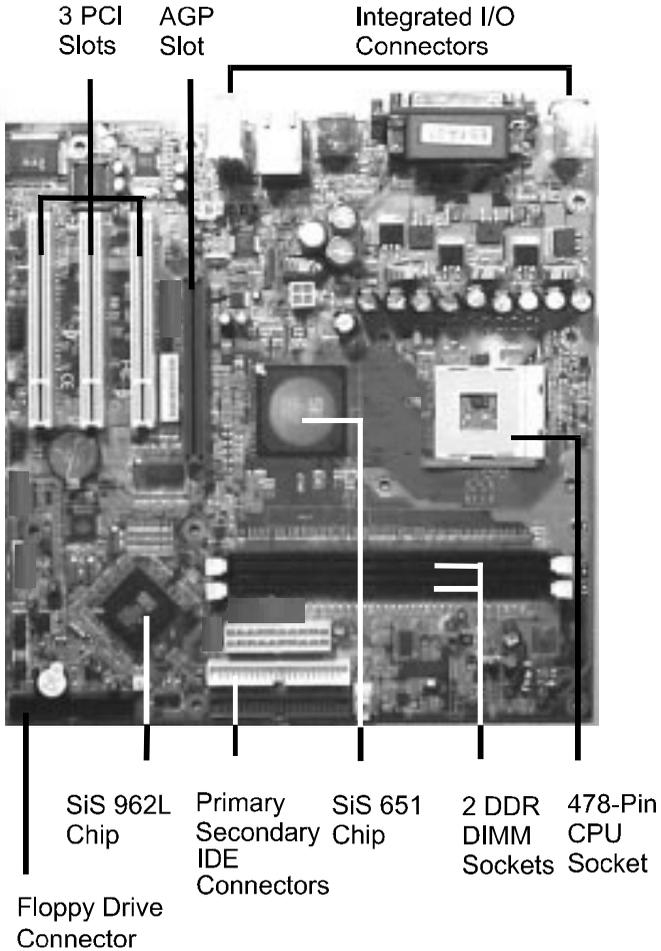
- ⌋ The mainboard
- ⌋ One FDD cable
- ⌋ One ATA/100 cable
- ⌋ This user manual
- ⌋ Software CD
- ⌋ I/O shielding



NOTE: Software driver/utility CD that contains patch files, onboard video/audio chip drivers, related online help and other useful information can be found in your mainboard package.

Please install it right after your Windows operating system installation is done. Place the CD in the drive, an operating menu will appear in your monitor. Please select *Auto Installation*. It will automatically detect which software tools (patch files, drivers) that the mainboard needs. Press **OK** button to go through the whole installation procedure in a very straight forward and easy way. It also provides you with a custom way to select wanted patch files and software drivers that for onboard chips use. **The top menu of the CD lists all the functions that allowed by this board.**

The VI39L Mainboard



Main Features

- Easy Installation
BIOS with support for Plug and Play, auto detection of IDE hard drives, LS-120 drives, IDE ZIP drives, Windows 98SE, Windows ME, Windows NT, Windows 2000, Windows XP, and OS/2.
- Leading Edge Chipset
SiS651 Chipset (651 + 962L) provides high-performance 2D/3D graphic engine and video accelerator, advanced hardware acceleration MPEGI/MPEGII video decoder, and memory controller, and AGP (2X/4X) interface.
- Advanced High Performance Memory Controller
Through two DDR DIMM sockets accepts up to 2 GB totally with support lightning-fast DDR333/DDR266/DDR200 SDRAM.
- Intel P4 Processors Support
Intel P4 478-pin FC-PGA2 package:
1.4 to 2.4GHz and up* (FSB 400) / 1.73 to 2.53 GHz and up* (FSB 533)
Celeron 1.7 to 1.9GHz and up* (FSB 400) (*: not tested yet)
- AGP and PCI Expansion Slots
One AGP Bus expansion slot and three PCI Bus expansion slots provided the room to install a full range of add-on cards.
- Enhanced PCI Bus Master IDE Controller with Ultra DMA 33/66/100/133 Support
Integrated Enhanced PCI Bus Master IDE controller features two dual-channel connectors that up to four Enhanced IDE devices, including CD-ROM and Tape Backup Drives, as well as Hard Disk Drives supporting the new Ultra DMA 133 protocol.

- Super Multi Input/Output (I/O) Support
SiS962L integrates the functionalities of AC97 interface, the Ethernet MAC, the dual USB controllers, the IDE master/slave controllers, the PCI-to-LPC bridge, I/O advanced programmable interrupt controller and legacy power management. It utilizes an universal interface supporting the asynchronous I/O of the X86 compatible CPUs, such as PIII, K7, P4.
- Convenient Rear Panel USB Connection Support
Four USB ports integrated in the rear I/O panel and two extra USB ports for either front or rear panel connection allow convenient and high-speed Plug and Play connections to the growing number of USB compliant peripheral devices on the market.

FIC Unique Innovation for Users (NOVUS) - Enhanced Mainboard Features and System Support

- BIOS Guardian
BIOS Guardian effectively acts as a fire-wall against viruses that can attack the BIOS while the system is running and by default is enabled.

**WARNING:**

BIOS Guardian must be disabled before reflash BIOS.

**NOTE:**

Please read Page 3-6 for detail information.

- Easy Key
Instead of completing the multi-layered BIOS setup process these 3 Easy Key functions provide direct access to Sub-Menu when completing BIOS settings adjustments.

Easy-Keys are as follows:

Ctrl + c: To enter clock settings menu.

Ctrl + p: To load Performance Default settings and restart.

Ctrl + f: To load Fail-Safe Default settings and restart.

This Page Left Blank for Note

Installation Procedures

The mainboard has several user-adjustable jumpers on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various jumper settings on your mainboard.

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

- n Step 1 - **Set system jumpers/switches**
- n Step 2 - **Install memory modules**
- n Step 3 - **Install the Central Processing Unit (CPU)**
- n Step 4 - **Install expansion cards**
- n Step 5 - **Connect ribbon cables, cabinet wires, and power supply**
- n Step 6 - **Set up BIOS software**
- n Step 7 - **Install supporting software tools**



WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm.

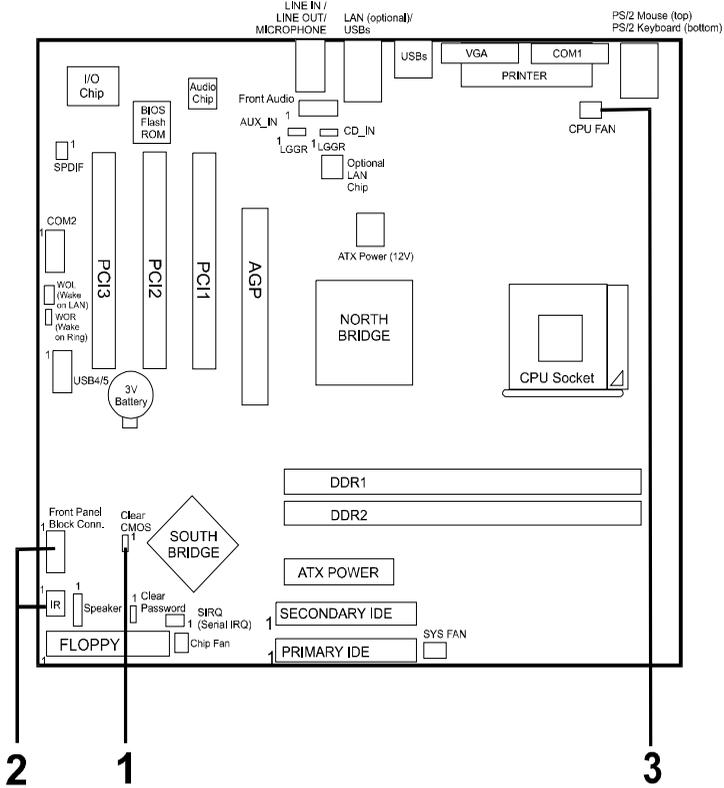
Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the sensitive components, you should follow the following precautions whenever working on the computer:

1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Wear an anti-static wrist strap which fits around the wrist.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

Quick Reference (from Page 2-2 to 2-4)

Mainboard Layout

Chapter 2
Installation
Procedures



*** When link to Line_Out jack, please use speakers with amplifier.**

1). Clear CMOS, Clear Password

Clear CMOS



Enable
(Clear CMOS)



Disable
(Default)

Clear Password



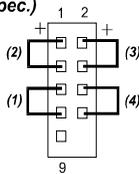
Enable
(Clear Password)



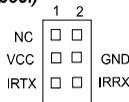
Disable
(Default)

2). Front Panel Block Cable Connection

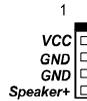
F_PNL (Intel spec.)



IR (Intel spec.)



Speaker



- (2). HDD LED (3). Dual Power LED
If use dual power LED,
green: Pin2, yellow: Pin4;
otherwise, Pin2 is positive,
Pin4 is negative.
- (1). Reset Button (4). Power Button

3). CPU Fan Installation

This connector is linked to the CPU fan. Without sufficient air circulation, the CPU may overheat resulting in damage to both the CPU and the mainboard.

Damage may occur to the mainboard and/or the CPU fan if these pins are used incorrectly. These are not jumpers, do not place jumper caps over these pins.

1). Set System Jumpers

Jumpers are used to select the operation modes for your system. To **set** a jumper, a black cap containing metal contacts is placed over the jumper pin/s according to the required configuration. A **1** is written besides pin 1 on jumpers with three pins.



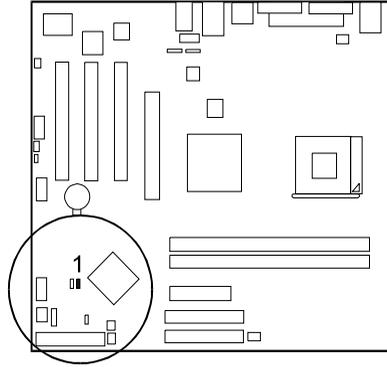
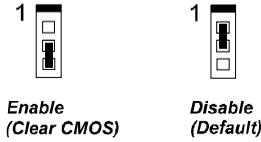
NOTE: Users are not encouraged to change the jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.

Clear CMOS Jumper

The CMOS RAM is powered by the onboard button cell battery.

To clear the RTC data:

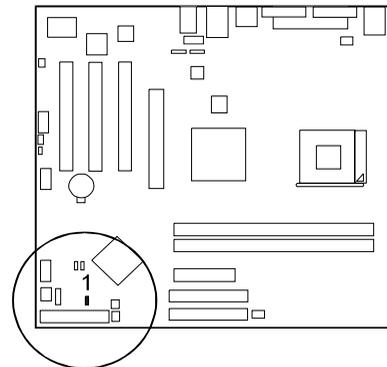
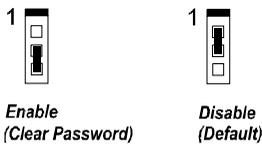
- (1) Turn off your computer
- (2) Place the jumper cap onto the pinpair 2-3 at least 6 seconds to clear CMOS
- (3) Place the jumper cap onto the pinpair 1-2 to Normal
- (4) Turn on your computer until *CMOS checksum error* appears
- (5) Hold down the **Delete** key when boots
- (6) Enter the BIOS Setup to re-enter user preferences.



Clear Password Jumper

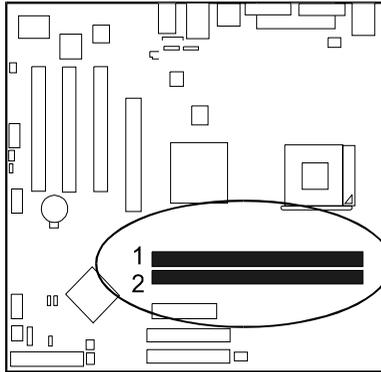
To clear the password setting:

- (1) Turn off your computer
- (2) Move the jumper cap pinpair 2-3
- (3) Turn on your computer
- (4) Hold down the **Delete** key during bootup and enter BIOS Setup to clear it.
- (5) Turn off your computer
- (6) Move the jumper cap pinpair 1-2 to disable this function
- (7) Turn on your computer for the new settings to take effect.



2). Install Memory Modules

1. Locate the DIMM slots on the mainboard.
2. Install the DIMM straight down into the DIMM slot using both hands.
3. The clip on both ends of the DIMM slot will close up to hold the DIMM in place when the DIMM reaches the slot bottom.



Press the clips with both hands to remove the DIMM.

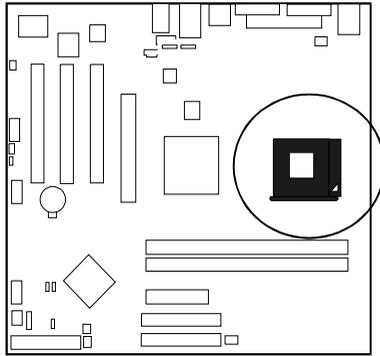
3). Install the CPU

The mainboard has built-in Switching Voltage Regulator to support CPU Vcore autodetection. That is, It has the ability to detect and recognize the CPU voltage, clock, ratio and enables users to set up the CPU frequency from the BIOS Setup Screen. Users can adjust the frequency through **Frequency / Voltage Control** of the BIOS Setup Screen.



CAUTION:

1. The heatsink and fan you installed must be approved by CPU manufacturers.
2. The mainboard must be placed on a solid place to avoid shaking while install the heatsink and fan on the board.
3. The heatsink must be contact with the CPU top tightly.
4. Never run the processor without the heatsink properly and firmly attached. **PERMANENT DAMAGE WILL RESULT!**



When you install the CPU on this mainboard, please use a power supply that designed and manufactured only for your CPUs use. Your CPU fansink combined with its retention module must be completely closed and firmly attached on the top of the processor.

To install the CPU, do the following:

1. Lift the lever on the side of the CPU socket.
2. Handle the chip by its edges and try not to touch any of the pins.
3. Place the CPU in the socket. Do not force the chip. The CPU should slide easily into the socket.
4. Swing the lever to the down position to lock the CPU in place.
5. Place the cooling fan with heatsink on top of the installed CPU.



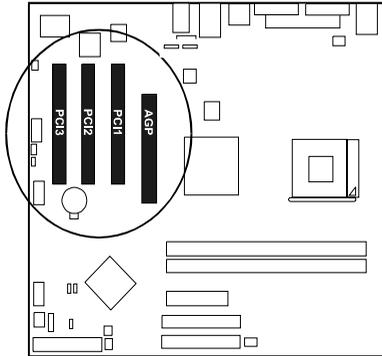
NOTE: Users The CPU installing procedures should be:

1. Insert the CPU (with its fansink and retention module) on the socket.
2. Connect the 20-pin plug of the power supply
3. Connect the 4-pin plug of the power supply.

To remove the processor, please do it in reverse order.

4). Install Expansion Cards

This section describes how to connect an expansion card to one of your system expansion slots. Expansion cards are printed circuit boards that, when connected to the mainboard, increase the capabilities of your system. For example, expansion cards can provide video and sound capabilities. The mainboard features one AGP and three PCI bus expansion slots.



CAUTION: Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansion cards.

Always observe static electricity precautions.

Please read **Handling Precautions** at the start of this manual.

To install an expansion card, follow the steps below:

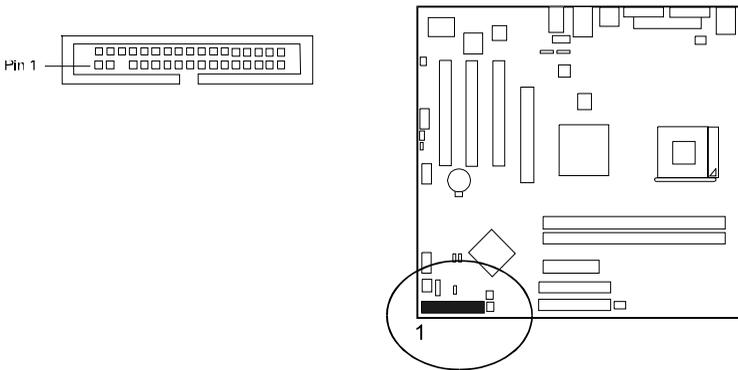
1. Remove the computer chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.
3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.
4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this rocking motion until the add-on card is firmly seated inside the expansion slot.
5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.

6. Replace the computer system cover.
7. Setup the BIOS if necessary.
8. Install the necessary software drivers for the expansion card.

5). Connect Devices

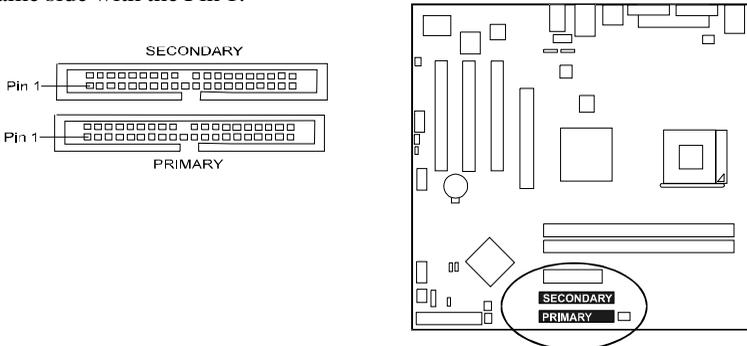
Floppy Diskette Drive Connector

This connector provides the connection with your floppy disk drive. The red stripe of the ribbon cable must be the same side with the Pin 1.



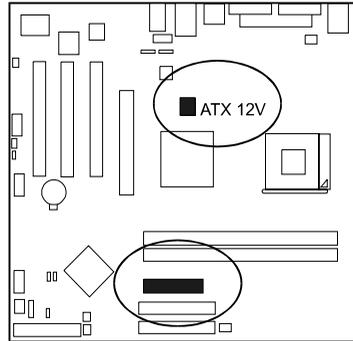
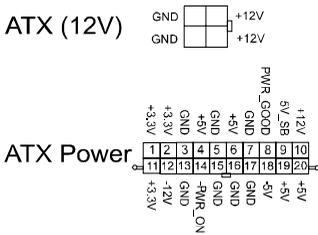
IDE Device Connectors

These two connectors are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives. The red stripe of the ribbon cable must be the same side with the Pin 1.



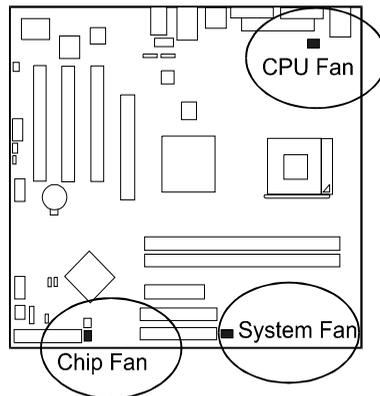
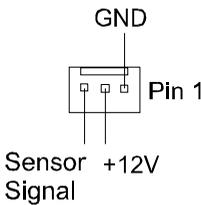
Power Connectors

The 20-pin male block connector is connected to the ATX power supply. The 4-pin male block connector is for the 12V power use. They are linked with your ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.



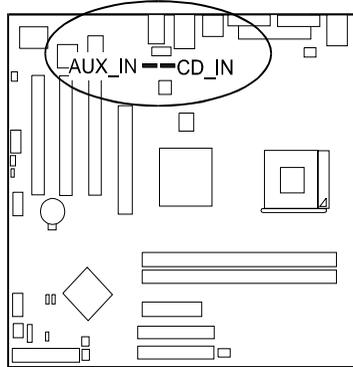
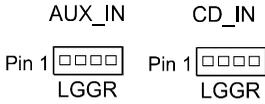
Fan Connectors

The two connectors, CPU_FAN and SYS_FAN, are linked to CPU fan and case fan respectively.



CD Audio-In Connectors

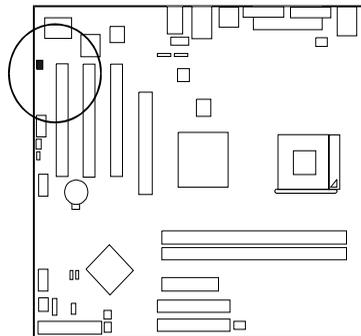
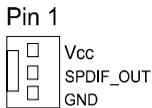
The two connectors are used for CD drive audio input.



**Chapter 2
Installation
Procedures**

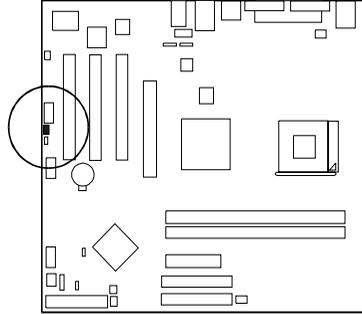
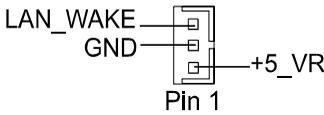
SPDIF_OUT Connector

The mainboard equipped a 1x3 pinhead. It is used for audio output that with SPDIF spec.



Wake-On-Lan Connector

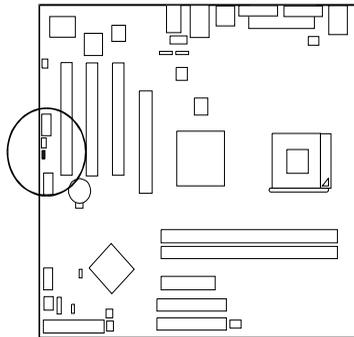
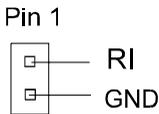
This 3-pin connector allows the remote servers to manage the system that installed this mainboard via your network adapter which also supports WOL. When you install such a LAN card, please read its installation guide for more information.



Chapter 2
Installation
Procedures

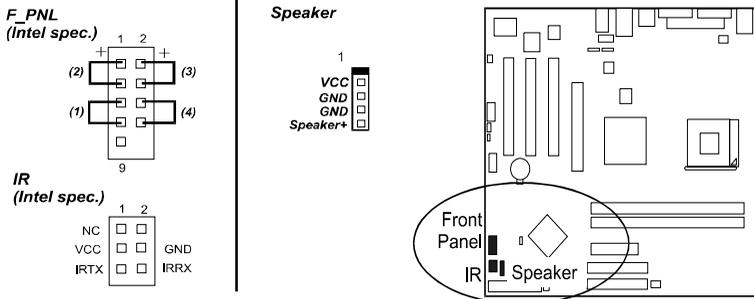
Wake-On-Ring Connector

The 2-pin connector allows you to link with your modem card which outputs a WOR signal; the system can be turned on from the power-off status by a remote phone call via the modem card.



Front Panel Block and IR Connector

This block connector includes the connectors for linking with HDD LED, power/sleep button, power/sleep LED, reset button on the front panel of the system case. Please identify polarities of plug wires for the case speaker and LEDs. Please ask vendor about this information when you buy them and install the system by yourself. The plug wires polarities of these buttons will not affect the function.



(1) **Reset Switch** is connected to the reset button. Push this switch to reboot the system instead of turning the power button off and on.

(2) **HDD LED** is connected to the IDE device indicator. This LED will blink when the hard disk drives are activated.

(3) Power/Sleep LED

Please refer to the tables below for the representations of LED states.

Dual-Color

LED	Meaning	State
Off	Off	S4/S5
Green	Full On	S0
Yellow	Sleep	S1/S3

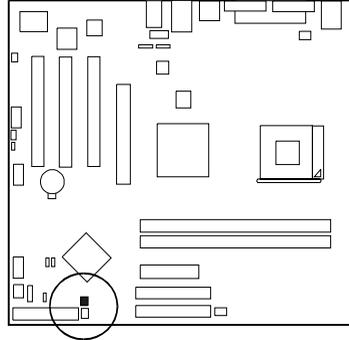
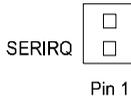
(4) **Power Button** is connected with power button. Push this switch allows the system to be turned on and off rather than using the power supply button.

IR is a pinheader that is used for linking with your ID device to allow transmission of data to another system that also supports the IR feature.

Speaker is a pinheader for connecting to speaker.

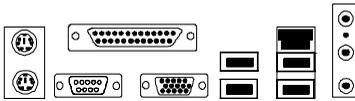
SIRQ Connector

The 2-pin connector provides with a connection for some add-on cards that require a serial IRQ linkage to the mainboard for the system operation use.

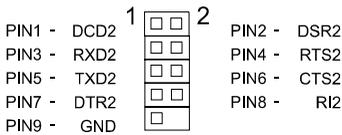


Serial Port Connectors

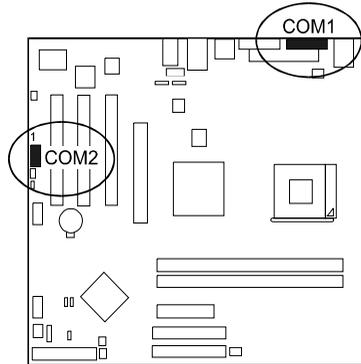
COM1 (9-pin D-sub male connector with teal color) and COM2 (9-pin male connector) allow you to connect with your devices that use serial ports, such as a serial mouse or an external modem.



COM1

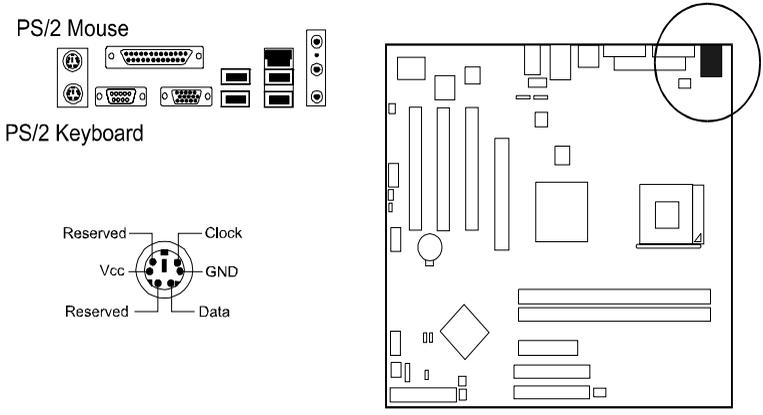


COM2



PS/2 Keyboard and Mouse Connector

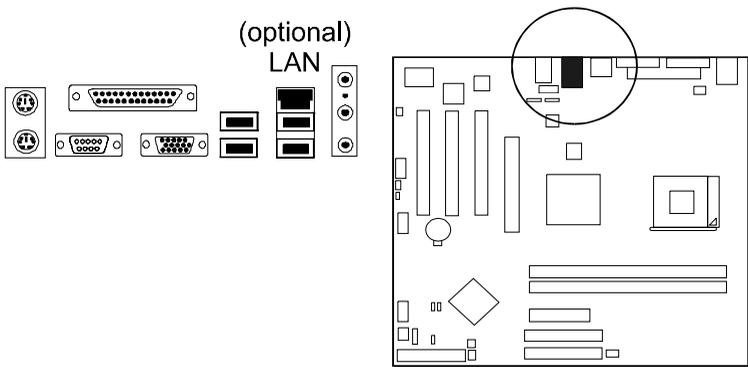
These two 6-pin female (PS/2 keyboard is purple color and PS/2 mouse is green color) connectors are used for your PS/2 keyboard and PS/2 mouse.



**Chapter 2
Installation
Procedures**

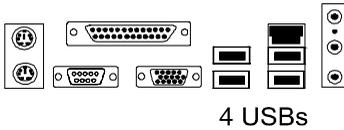
LAN Connector (mfg. optional)

The optional RJ45 LAN jack is used for the LAN cable plug.

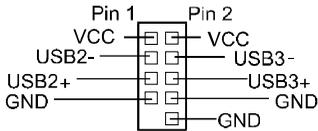


Universal Serial Bus Connectors

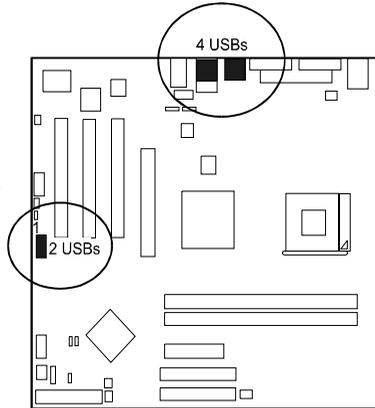
These four USB black jacks integrated on the edge of the board are used for linking with USB 2.0 peripheral devices. This board also provides one USB pinheader (two extra USB 2.0 ports) for either linking with some system cases. Please note that your operating system must support USB features.



The figure below is the pin assignment of the USB4/5 pinheader.



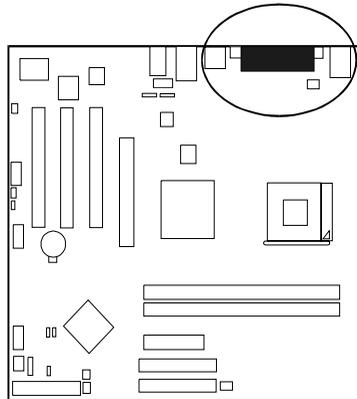
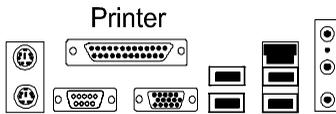
(Intel Spec.)



NOTE: The CD in the board package supports Windows XP/2000. For a user who installs Windows 98SE/ME, please contact your vender for support.

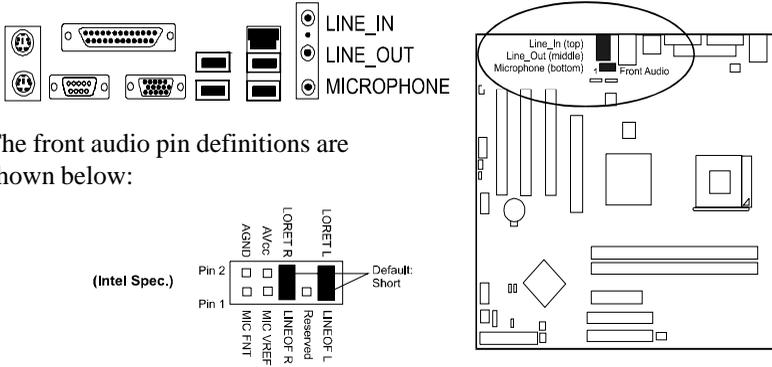
Printer Connector

This 25-pin D-Sub female burgundy-colored connector is attached to your printer.

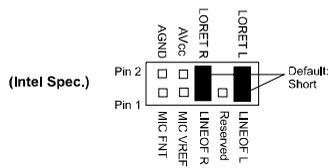


Audio I/O Jacks

LINE_IN (light blue) allows tape players or other audio sources to be recorded by your computer or played through the LINE_OUT. LINE_OUT (lime) can be connected to headphones or preferably powered speakers. MIC_IN (pink) allows microphones to be connected for audio input.



The front audio pin definitions are shown below:



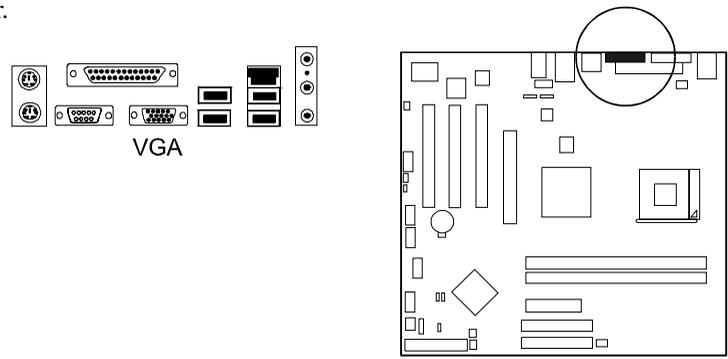
Chapter 2
Installation
Procedures



NOTE: When the front headphone is plugged in, the rear audio output will be disabled. If you do not use the front audio pinheader, please keep the pinpair 5-6, 9-10 short as default.

Video Graphics Accelerator Connector

This 15-pin female D-sub blue connector is connected to your display monitor.

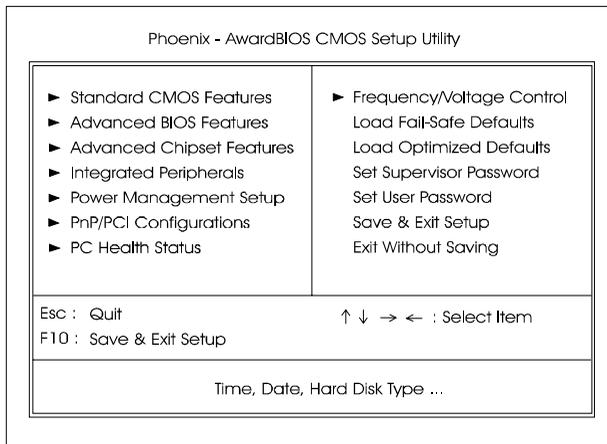


This Page Left Blank for Note

BIOS Setup

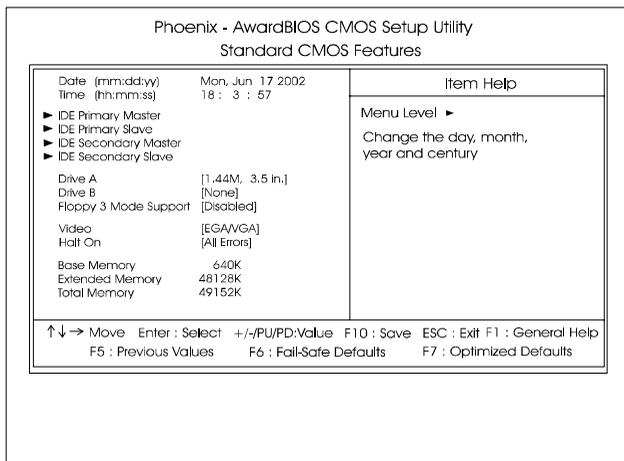
The mainboard comes with the chip that Award BIOS that contains the ROM Setup information of your system. (This chip serves as an interface between the processor and the rest of the mainboard components.) This section explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

CMOS Setup Utility



The Setup utility program allows updates to the mainboard configuration settings. The BIOS setup values will be saved in the CMOS. It is executed when the user changes system configuration; user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. Use the arrow keys to select and press **Enter** to run the selected program.

Standard CMOS Setup



The Standard CMOS Setup screen is displayed above. Each item may have one or more option settings. The system BIOS automatically detects memory size, thus no changes are necessary. Use the arrow keys to highlight the item and then use **PgUp** or **PgDn** keys to select the value you want in each item.

Date

To set the date, highlight the *Date* field and then press **Page Up/Page Down** or **+/-** keys to set the current date. Follow the month, day and year format.

Time

To set the time, highlight the *Time* field and then press **Page Up/Page Down** or **+/-** keys to set the current time. Follow the hour, minute, and second format.

Hard Disks

This field records the specifications for all non-SCSI hard drives installed in the system. The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks, the first of which is the *Master* and the second is the *Slave*.

Hard Disk Configurations

Capacity:	The hard disk size. The unit is Bytes.
Cylinder:	The cylinder number of the hard disk.
Head:	The read/write head number of hard disk.
Precomp:	The cylinder number at which the disk drive changes the write current.
Landing Zone:	The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.
Sector:	The sector number of each track defined on the hard disk.

Drive A/Drive B

This field records the types of floppy drives installed in the system. To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the **left-** or **right-arrow** key.

Floppy 3 Mode Support

This is a Japanese standard floppy type drive. The standard stores 1.2MB in a 3.5 inch diskette.

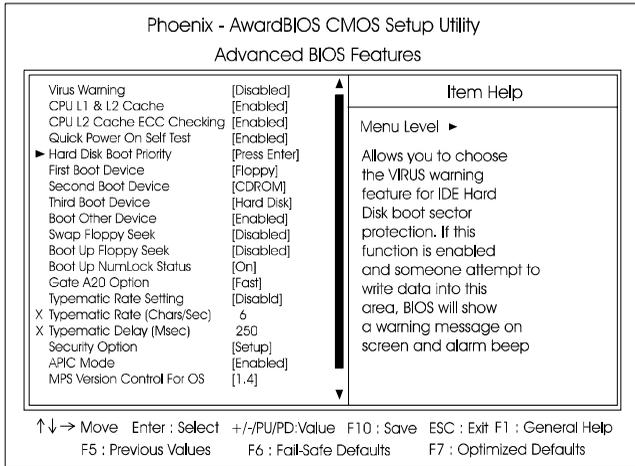
Video

Set this field to the type of video display card installed in the system.

Halt On

This field determines which types of errors will cause the system to halt.

Advanced BIOS Features



Virus Warning

This feature starts the virus scan tool to detect if boot virus in boot sector of the first hard disk drive when booting up.

The options are: Enabled, Disabled.

CPU L1 & L2 Cache

When enabled, improves the system performance. Disable this item when testing or trouble-shooting. The options are: Enabled, Disabled.

CPU L2 Cache ECC Checking

When enabled, it activates the CPU L2 cache check and error correction. The options are: Enabled, Disabled.

Quick Power On Self Test

When enabled, allows the BIOS to bypass the extensive memory test. The options are: Enabled, Disabled.

Hard Disk Boot Priority

This feature will auto detect all hard disks of bootable device on the system. It also allows users to select hard disk device booting priority.

First/Second/Third Boot Device

This feature allows user to select the boot device priority. The options are: Floppy, LS120, Hard Disk, CDROM, ZIP100, USB-HDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, Disabled.

Boot Other Device

This feature allows user to select the boot device priority. The options are: Enabled, Disabled.

Swap Floppy Drive

Allows you to switch the order in which the operating system accesses the floppy drives during boot up. Full Screen LOGO Show
It decides whether or not the full screen logo is shown during system booting up. The options are: Enabled, Disabled.

Boot Up Floppy Seek

When enabled, assigns the BIOS to perform floppy diskette drive tests by issuing the time-consuming seek commands. The options are: Enabled, Disabled.

Boot Up Numlock Status

When set to On, allows the BIOS to automatically enable the Num Lock Function when the system boots up. The options are: On, Off.

Gate A20 Option

When set at Fast, allows a faster access response under Protected mode. The options are: Fast, Normal.

Typematic Rate Setting

The term typematic means that when a keyboard key is held down, the character is repeatedly entered until the key is released. The options are: Disabled, Enabled.

Typematic Rate (Chars/Sec)

This feature is available only if the above item, Typematic Rate Setting, is set at Enabled. Sets the rate of a character repeat when the key is held down. The options are: 6, 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

This feature is available only if the item, Typematic Rate Setting, is set at Enabled. Sets the delay time before a character is repeated.

The options are: 250, 500, 750, 1000 millisecond.

Security Option

Allows to set the security level of the system. The options: Setup, System.

APIC Mode

Allows you to decide if the system enters the APIC (Advanced Programmable Interrupt Controller) mode or not for more IRQs can be released.

The options are: Enabled, Disabled.

MPS Version Control For OS

When two CPUs onboard (not this board) this feature allows you to select MPS (Multi-Processor Spec.) version control for OS when logo test executes. The options are: 1.1, 1.4.

OS Select For DRAM > 64MB

If your operating system (OS) is OS/2, select the option OS2. Otherwise, stay with the default setting Non-OS2. The options are: Non-OS2, OS2.

HDD S.M.A.R.T. Capability

S.M.A.R.T. stands for Self-Monitoring and Analysis Reporting Technology which allows your hard disk drive to report any read/write errors and issues a warning with LDCM installed. The options: Disabled, Enabled.

Video BIOS Shadow

Enabling this feature will copy the video BIOS to shadow RAM, it will improve the system performance.

The options are: Enabled, Disabled.

BIOS Guardian

It allows the system to prevent computer viruses. Users will need to disable it to update BIOS. The options are: Enabled, Disabled.



NOTE: Please disable this BIOS feature about BIOS Guardian before you start to reflash BIOS.

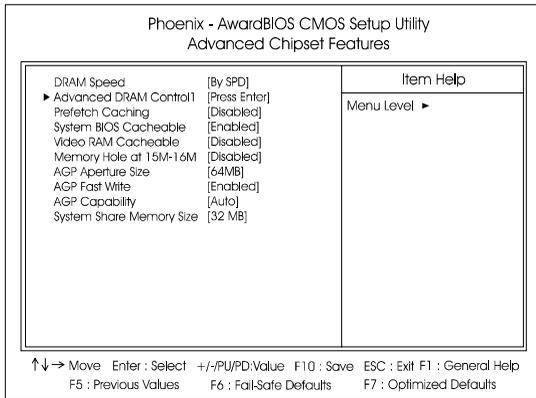
BIOS Guardian and Reflash BIOS

BIOS Guardian by default is enabled, thus effectively acts as a fire-wall against viruses that can attack the BIOS while the system is running. It must be disabled before reflash BIOS.

The steps below show you how to off and on BIOS Guardian when reflash BIOS:

1. Press **Del** key while booting. Go to *CMOS Setup Utility* menu.
2. Go to *Advanced BIOS Features* submenu.
3. Set the feature *BIOS Guardian* at Disabled.
4. Save the setting and exit. The system restarts.
5. POST screen holds. A message about BIOS Guardian shows.
6. Press Space bar.
7. Reflash BIOS. Restart the system after complete it.
8. POST screen holds. A message about BIOS Guardian shows.
9. Press **G** key. The feature BIOS Guardian will be enabled again.

Advanced Chipset Features



DRAM Speed

This feature allows user to select the way to set DRAM speed. The options are: DDR 200, DDR 266, DDR 333, By SPD.

Advanced DRAM Control 1

System Performance

This feature decides data access mode to system memory.

The options are: Safe Mode, Normal Mode, Fast Mode, Turbo Mode, Ultra Mode.

CAS Latency Time

This feature allows user to select the CAS latency time, when any SDRAM DIMM installed. The options are: 2T, 2.5T, 3T.

DRAM Addr/Cmd Rate

This item allows users to set Address Time After command.

The options are: AUTO Mode, 1T, 2T.

Prefetch Caching

The feature allows you to enable or disable the function of PCI slave prefetch caching. The options are: Disabled, Enabled.

System BIOS Cacheable

Setting at Enabled will allow the caching of the BIOS ROM F0000H-FFFFFH, resulting in better system performance. It may cause system error when some program try to access the memory area.

The options are: Disabled, Enabled.

Video RAM Cacheable

When enabled, allows the video RAM area to be cacheable.

The options are: Enabled, Disabled.

Memory Hole At 15M-16M

When set at Enabled, the memory hole at 15MB address will be relocated to the 15M-16MB address range of the ISA or PCI cycle when the CPU accesses the 15M-16MB address area. When set at Disabled, the memory hole at 15MB address will be treated as a DRAM cycle when the CPU accesses the 15M-16MB address area. The options are: Disabled, Enabled.

AGP Aperture Size

It decides the mapped size in system memory for AGP graphics data.

The options are: 4MB, 8MB, 16MB, 32MB, 64MB, 128MB, 256MB.

AGP Fast Write

This feature allows you to disabled AGP fast write mode.
The options are: Disabled, Enabled.

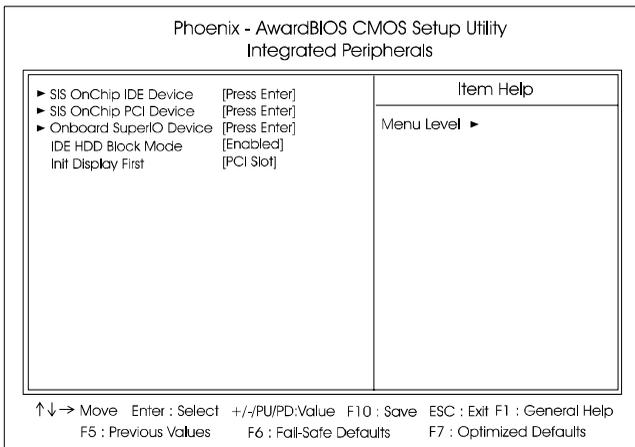
AGP Capability

This feature allows you to select the installed AGP card mode.
The options are: Auto, 2X, 4X.

System Share Memory Size

It allows user to select the frame buffer size of VGA share memory.
The options are: Disabled, 8MB, 16MB, 32MB.

Integrated Peripherals



SIS OnChip IDE Device

Internal PCI/IDE

It allows you to select the onboard primary/secondary PCI IDE.
The options are: Disabled, Primary, Secondary, Both.

IDE Primary Master/Slave PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard drive (master/slave) mode. The options are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Secondary Master/Slave PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard drive (master/slave) mode. The options are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary Master/Slave UltraDMA

Allows an automatic configuration of the PCI primary IDE hard drive (master/slave) mode if Ultra DMA is supported both on the motherboard and the hard disk. The options are: Auto, Disabled.

Secondary Master/Slave UltraDMA

Allows an automatic configuration of the PCI secondary IDE hard drive (master/slave) mode if Ultra DMA is supported both on the motherboard and the hard disk. The options are: Auto, Disabled.

IDE Burst Mode

Allows you to disable the IDE burst mode.
The options are: Enabled, Disabled.

SIS OnChip PCI Device

SIS USB Controller

Disable this option if you are not using the onboard USB feature.
The options are: Disabled, Enabled.

USB 2.0 Support

Allow users to disable the system USB 2.0 protocol support if necessary.
The options are: Disabled, Enabled.

USB Keyboard Support

When a USB keyboard is installed, please set at Enabled.
The options are: Disabled, Enabled.

SIS AC97 AUDIO

Allows you to disable the onboard SIS AC97 audio function.
The options are: Enabled, Disabled.

SIS 10/100M ETHERNET

Allows you to disable the onboard SIS 10/100 ethernet function.
The options are: Enabled, Disabled.

Onboard Lan Boot ROM

Allows you to enable or disable the onboard Lan boot ROM.
The options are: Enabled, Disabled.

Onboard SuperIO Device

Onboard FDC Controller

When enabled, the floppy diskette drive (FDD) controller is activated.
The options are: Enabled, Disabled.

Onboard Serial Port 1/2

If the serial port 1/2 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are: Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto.

UART Mode Select

Allows you to select the IR modes if the serial port 2 is used as an IR port. Set at Standard, if you use COM2 as the serial port, instead as an IR port. The options are: Normal, IrDA, ASKIR.

UR2 Duplex Mode

Allows you to select the IR modes.
The options are: Full, Half.

Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.
The options are: Disabled, 378/IRQ7, 278/IRQ5, 3BC/IRQ7.

Parallel Port Mode

Allows you to connect with an advanced printer via the port mode it supports. The options are: SPP, ECP, EPP, EPP+ECP.

ECP Mode Use DMA

This feature allows you to select Direct Memory Access (DMA) channel.
The options are: 1, 3.

IDE HDD Block Mode

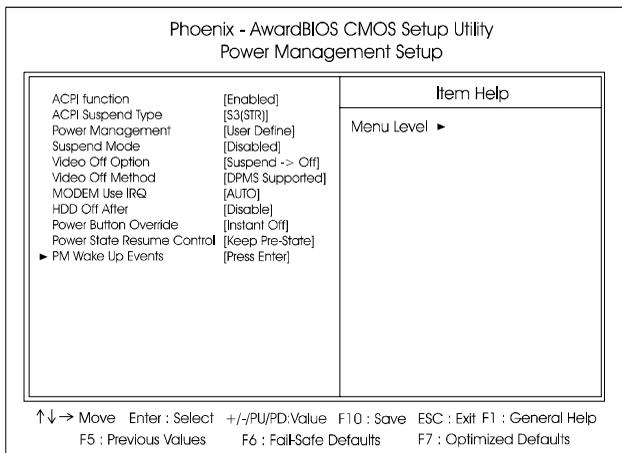
When enabled, the system executes read/write requests to hard disk in block mode. The options are: Enabled, Disabled.

Init Display First

When you install an AGP VGA card and a PCI VGA card on the board, this feature allows you to select the first initiation of the monitor display from which card. The options are: PCI Slot, AGP.

Power Management Setup

Chapter 3
BIOS Setup



ACPI function

This item allows you to disable the ACPI function. The options are: Enabled, Disabled.

ACPI Suspend Type

This item allows you to select suspend mode when the system in ACPI mode. The options are: S1(POS), S3 (STR), S1&S3.

Power Management

This item allows you to adjust the power management features.

Select User Define for configuring your own power management features.

Min Saving initiates all predefined timers in their minimum values. Max Saving, on the other hand, initiates maximum values.

The options are: User Define, Min Saving, Max Saving.

Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode. The options are: Disable, 1, 2, 4, 8, 10, 20, 30, 40 Min, 1 Hour.

Video Off Option

This feature provides the selections of the video display power saving mode. The options are: Always On; Suspend -> Off; Susp, Stby -> Off; All Modes-> Off.

Video Off Method

The option *Blank Screen* allows the BIOS to blank off screen display by turning off the red-green-blue signals. The option *V/H SYNC+Blank* allows the BIOS to blank off screen display by turning off the V-Sync and H-Sync signals sent from add-on VGA card. The option *DPMS Supported* allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling function). The options are: Blank Screen, V/H SYNC+Blank, DPMS Supported.

MODEM Use IRQ

This feature allows you to select the IRQ# to meet your modem IRQ#.

The options are: NA, 3, 4, 5, 7, 9, 10, 11.

HDD Off After

The option lets the BIOS turn the HDD motor off when system is in Suspend mode. Selecting 1 Min..15 Min allows you define the HDD idle time before the HDD enters the Power Saving Mode.

The options 1 Min..15 Min will not work concurrently. When HDD is in the Power Saving Mode, any access to the HDD will wake the HDD up.

The options are: Disable, 1 Min..15 Min.

Power Button Override

The selection Delay 4 Sec. will allow the system shut down after 4 seconds after the power button is pressed. The selection Instant-Off will allow the system shut down immediately once the power button is pressed.

The settings are: Delay 4 Sec, Instant-Off.

Power State Resume Control

This feature allows you to set the system back to which power status of the system when the system power is resumed.

The settings are: Always Off, Always On, Keep Pre-State.

PM Wake Up Events

IRQ[3-7,9-15], NMI

Enable this feature will keep the system not in the Suspend mode when IRQ3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, NMI.

The options are: Enabled, Disabled.

IRQ 8 Break Suspend

Enable this feature will make IRQ8 to resume the system from Suspend mode. The options are: Enabled, Disabled.

RING/LAN Wake Up Control

An incoming call via modem/MAC awakes the system from its soft-off mode. The options are Disabled, Enabled.

PCIPME Power Up Control

When set at Enabled, a Power Management Event (PME) come from PCI device will make the system from soft-off state.

The options are Disabled, Enabled.

USB Port Wake Up Control

When set at Enabled, it allows USB keyboard to activate the system from ACPI S3 power saving mode. The options are Disabled, Enabled.

Power Up by Alarm

Enabling it will make the system power on when real time clock (RTC) alarm happens. The options are: Enabled, Disabled.

Month Alarm/Day of Month Alarm/Time (hh:mm:ss) Alarm

This feature allows you to set the time of the alarm starts when the feature of **Power Up by Alarm** is set to be Enabled.

Reload Global Timer Events

Primary IDE

When the primary master/slave HDD is working, the system timer will be reloaded and the system will not be into the suspend mode.

The options are: Disabled , Enabled.

Secondary IDE

When the secondary master/slave HDD is working, the system timer will be reloaded and the system will not be into the suspend mode.

The options are: Disabled, Enabled.

FDD, COM, LPT Port

When FDD, COM, or LPT is working, the system timer will be reloaded and the system will not be into the suspend mode.

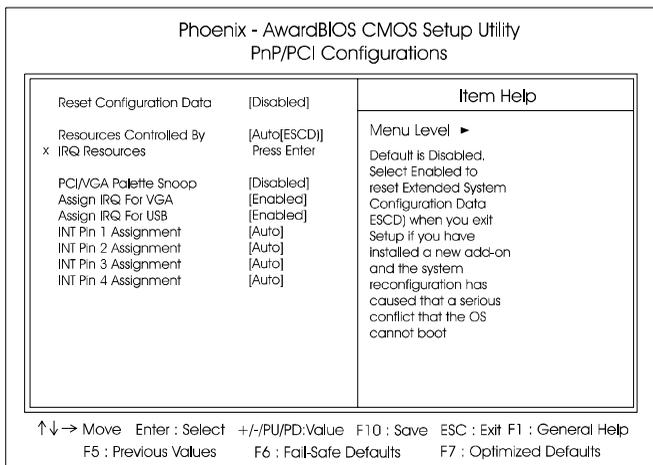
The options are: Disabled, Enabled.

PCI PIRQ[A-D]#

When the PCI PIRQ[A-D]# has been alerted, the system timer will be reloaded and the system will not be into the suspend mode.

The options are: Disabled, Enabled.

PnP/PCI Configurations



Reset Configuration Data

Enabling it to reset the system Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on card and the system reconfiguration has caused such a serious conflict that the operating system can not boot. The options are: Disabled, Enabled.

Resources Controlled By

If set at Auto, the BIOS arranges all system resources. If there exists conflict, select Manual. The options are: Auto (ESCD), Manual.

If the manual options, after the feature **IRQ Resources** being pressed, **IRQ- Assigned To** are: PCI Device, Reserved. When resources were controlled manually, assign each system interrupt a type, depending on each device type to use the interrupt.

PCI/VGA Palette Snoop

Set this feature to be enabled if any ISA adapter card installed in the system requires the VGA palette snoop function.

The options are: Disabled, Enabled.

Assign IRQ For VGA

If your PCI VGA card devices do not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use.
The options are: Enabled, Disabled.

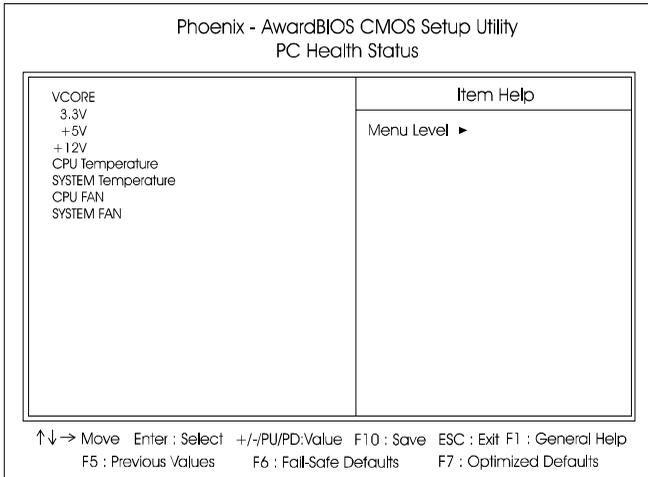
Assign IRQ For USB

If your USB devices do not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use.
The options are: Enabled, Disabled.

INT Pin 1/2/3/4 Assignment

This feature allows you to assign the PCI IRQ numbers for PCI slots. Selecting the default, Auto, allows the PCI controller to automatically allocate the IRQ numbers. The options are: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, 15.

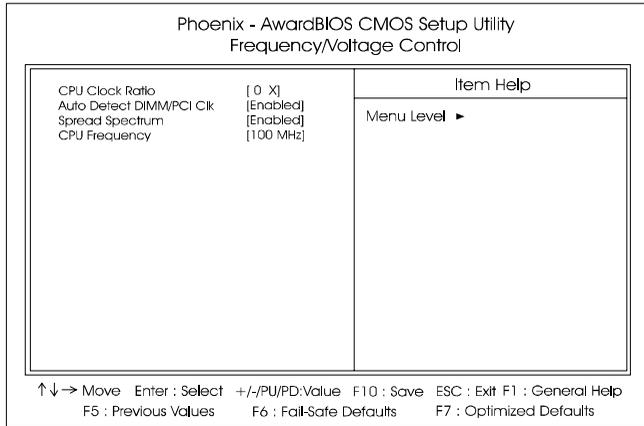
PC Health Status



VCORE / 3.3V / +5V / +12V / CPU Temperature / SYSTEM Temperature / CPU FAN / SYSTEM FAN

These items allow end users and technicians to monitor data provided by the BIOS on this mainboard. It is not user-configurable.

Frequency/Voltage Control



CPU Clock Ratio

This feature allows you to set the frequency multiplier for CPU host clock.

Auto Detect DIMM/PCI Clk

When enabled, BIOS will detect the PCI slot and DIMM slot. If no any device in, BIOS will auto disable its clock.

The options are: Enabled, Disabled.

Spread Spectrum

This feature is used to activate spread spectrum feature.

The options are: Disabled, Enabled.

CPU Frequency

This feature allows you to select the CPU clock frequency.

The options are: 100 MHz, 133 MHz.

Load Fail-Safe Defaults

This submenu is selected to diagnose the problem after the computer boots, if the computer will not boot. These settings do not give optimal performance.

Load Optimized Defaults

This submenu is selected for default settings which provide the best system performance.

Supervisor/User Password

To enable the Supervisor/User passwords, select the item from the Standard CMOS Setup. You will be prompted to create your own password. Type your password up to eight characters and press Enter. You will be asked to confirm the password. Type the password again and press Enter. To disable password, press Enter twice when you are prompted to enter a password. A message appears, confirming the password is disabled.

Under the BIOS Feature Setup, if *Setup* is selected under the Security Option field and the Supervisor/User Password is enabled, you will be prompted password every time you try to enter the CMOS Setup Utility. If *System* is selected and the Supervisor/User Password is enabled, you will be requested to enter the Password every time when you reboot the system or enter the CMOS Setup utility.

Save and Exit Setup

After you have made changes under Setup, press Esc to return to the main menu. Move cursor to Save and Exit Setup or press F10 and then press Y to change the CMOS Setup. If you did not change anything, press Esc again or move cursor to Exit Without Saving and press Y to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility: **SAVE to CMOS and EXIT (Y/N)?**

Exit without Saving

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications: **Quit Without Saving (Y/N)?**

This Page Left Blank for Note