LanParty NFII ULTRA B

Rev. A+
System Board
User's Manual

Copyright

This publication contains information that is protected by copyright. No part of it may be reproduced in any form or by any means or used to make any transformation/adaptation without the prior written permission from the copyright holders.

This publication is provided for informational purposes only. The manufacturer makes no representations or warranties with respect to the contents or use of this manual and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. The user will assume the entire risk of the use or the results of the use of this document. Further, the manufacturer reserves the right to revise this publication and make changes to its contents at any time, without obligation to notify any person or entity of such revisions or changes.

© 2003 All Rights Reserved.

Trademarks

Microsoft® MS-DOS®, Windows™, Windows® 95, Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000, Windows NT® 4.0 and Windows® XP are registered trademarks of Microsoft Corporation. AMD, Athlon™ XP and Athlon™ are registered trademarks of Advanced Micro Devices, Inc. nVIDIA® is a registered trademark of NVIDIA Corporation. Award is a registered trademark of Award Software, Inc. Other trademarks and registered trademarks of products appearing in this manual are the properties of their respective holders.

Caution

To avoid damage to the system:
• Use the correct AC input voltage range.

To reduce the risk of electric shock:
• Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

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

Joystick or MIDI port:
- Do not use any joystick or MIDI device that requires more than 10A current at 5V DC. There is a risk of fire for devices that exceed this limit.

FCC and DOC Statement on Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2. Shielded interface cables must be used in order to comply with the emission limits.

Notice

This user's manual contains detailed information about the system board. If, in some cases, some information doesn't match those shown in the multilingual manual, the multilingual manual should always be regarded as the most updated version. The multilingual manual is included in the system board package.

To view the user's manual, insert the CD into a CD-ROM drive. The autorun screen (Mainboard Utility CD) will appear. Click the "TOOLS" icon then click "Manual" on the main menu.

Table of Contents

Chapter 1 - Introduction

Chapter 2 - Hardware Installation

Chapter 3 - Award BIOS Setup Utility

Chapter 4 - Supported Softwares

Appendix A - Using the Suspend to RAM Function

Appendix B - System Error Messages

Appendix C - Troubleshooting

Chapter 1 - Introduction

1.1 Features and Specifications

1.1.1 Features

Chipset

- nVIDIA® nForce2 chipset
  - nForce2 Ultra 400
  - nForce2 MCP-T

Processor

The system board is equipped with Socket A for PGA processor. It is also equipped with a switching voltage regulator that automatically detects 1.100V to 1.850V.

- AMD Athlon™ XP 266/333/400MHz FSB
- AMD Athlon™ 200/266MHz FSB
- AMD Duron™ 200/266MHz FSB

> **Important:**
> *To ensure proper boot up and operation of your system, you must power-off the system then turn off the power supply's switch or unplug the AC power cord prior to replacing the CPU.*

System Memory

- Supports dual channel memory interface
- Supports up to 3GB memory (unbuffered DIMM)
- Supports PC1600 (DDR200), PC2100 (DDR266), PC2700 (DDR333) and PC 3200 (DDR 400) DDR SDRAM DIMM, 2.5V type
- Three 184-pin DDR SDRAM DIMM sockets

DIMMs	Memory Size	DIMMs	Memory Size
2MBx64	16MB	16MBx64	128MB
4MBx64	32MB	32MBx64	256MB
8MBx64	64MB	64MBx64	512MB

Introduction

Expansion Slots

- 1 AGP slot
- 5 PCI slots

AGP (Accelerated Graphics Port)

AGP is an interface designed to support high performance 3D graphics cards. It utilizes a dedicated pipeline to access system memory for texturing, z-buffering and alpha blending. The AGP slot supports AGP 8x with up to 2132MB/sec. bandwidth and AGP 4x with up to 1066MB/sec. bandwidth for 3D graphics applications. AGP in this system board will deliver faster and better graphics to your PC.

Onboard Audio Features

- Realtek ALC650
- AC'97 2.2 S/PDIF extension compliant codec
- Supports Microsoft® DirectSound/DirectSound 3D
- AC'97 supported with full duplex, independent sample rate converter for audio recording and playback
- S/PDIF-in/out interface
- 6-channel audio output

S/PDIF

S/PDIF is a standard audio file transfer format that transfers digital audio signals to a device without having to be converted first to an analog format. This prevents the quality of the audio signal from degrading whenever it is converted to analog. S/PDIF is usually found on digital audio equipment such as a DAT machine or audio processing device. The S/PDIF connector on the system board sends surround sound and 3D audio signal outputs to amplifiers and speakers and to digital recording devices like CD recorders.

6-channel Audio

The center/bass and rear out jacks which support four audio output signals: center channel, subwoofer, rear right channel and rear left channel; together with the line-out (2-channel) jack support 6-channel audio output.

Onboard Dual LAN Features

- nVIDIA® nForce2 MCP-T and ICS1893 Phy
  - Full duplex support at both 10 and 100 Mbps
- Realtek RTL8110S Gigabit LAN
  - Full duplex support at 10, 100 and 1000 Mbps
- Integrated IEEE 802.3, 10BASE-T and 100BASE-TX compatible PHY
- Integrated power management functions
- Supports IEEE 802.3u auto-negotiation

PCI Bus Master IDE Controller

- Supports ATA/33, ATA/66, ATA/100 and ATA/133 hard drives
- UDMA Modes 3, 4, 5 and 6 Enhanced IDE (data transfer rate up to 133MB/sec.)
- Bus mastering reduces CPU utilization during disk transfer
- Supports ATAPI CD-ROM, LS-120 and ZIP

SATA IDE/RAID Interface

- Silicon Image Sil3114 PCI to Serial ATA controller
- Supports four SATA (Serial ATA) interfaces which are compliant with SATA 1.0 specification (1.5Gbps interface)
- Supports RAID 0 and RAID 1

Serial ATA (SATA) is a storage interface that is compliant with SATA 1.0 specification. With speed of up to 1.5Gbps, it improves hard drive performance even in data intensive environments such as audio/video, consumer electronics and entry-level servers.

IEEE 1394 Interface

- nVIDIA® nForce2 MCP-T and Agere FW803 Phy chips
- Supports three 100/200/400 Mb/sec ports

IEEE 1394 is fully compliant with the 1394 OHCI (Open Host Controller Interface) 1.1 specification. It supports up to 63 devices that can run simultaneously on a system. 1394 is a fast external bus standard that supports data transfer rates of up to 400Mbps. In addition to its high speed, it also supports isochronous data transfer which is ideal for video devices that need to transfer high levels of data in real-time. 1394 supports both Plug-and-Play and hot plugging.

IrDA Interface

The system board is equipped with an IrDA connector for wireless connectivity between your computer and peripheral devices. The IRDA (Infrared Data Association) specification supports data transfers of 115K baud at a distance of 1 meter.

USB Ports

The system board supports USB 2.0 and USB 1.1 ports. USB 1.1 supports 12Mb/second bandwidth while USB 2.0 supports 480Mb/second bandwidth providing a marked improvement in device transfer speeds between your computer and a wide range of simultaneously accessible external Plug and Play peripherals..

BIOS

- Award BIOS, Windows® 95/98/2000/ME/XP Plug and Play compatible
- Genie BIOS provides:
   - CPU/DRAM/AGP overclocking
   - CPU/AGP/DRAM/Chipset overvoltage
- Supports SCSI sequential boot-up
- Flash EPROM for easy BIOS upgrades
- Supports DMI 2.0 function
- 4Mbit flash memory

Desktop Management Interface (DMI)

The system board comes with a DMI 2.0 built into the BIOS. The DMI utility in the BIOS automatically records various information about your system configuration and stores these information in the DMI pool, which is a part of the system board's Plug and Play BIOS. DMI, along with the appropriately networked software, is designed to make inventory, maintenance and troubleshooting of computer systems easier.

Rear Panel I/O Ports (PC 99 color-coded connectors)

- 1 PS/2 mouse port
- 1 PS/2 keyboard port
- 1 DB-9 serial port
- 1 DB-25 parallel port
- 4 USB 2.0/1.1 ports
- 2 RJ45 LAN ports
- 2 S/PDIF RCA jacks (S/PDIF-in and S/PDIF-out)
- 3 audio jacks: line-out, line-in and mic-in
- 2 audio jacks for center/bass and rear out

I/O Connectors

- 1 connector for 2 additional external USB 2.0/1.1 ports
- 3 connectors for 3 external IEEE 1394 ports
- 1 front audio connector for external line-out and mic-in jacks
- 2 internal audio connectors (AUX-in and CD-in)
- 1 S/PDIF connector for optical cable connection
- 1 connector for IrDA interface
- 4 Serial ATA connectors
- 2 IDE connectors
- 1 floppy connector
- 2 ATX power supply connectors
- 3 fan connectors for CPU fan, chassis fan and 2nd fan
- 4 diagnostic LEDs
- 1 diagnostic LED connector for external 4 diagnostic LEDs display
- EZ touch switches (power switch and reset switch)

1.1.2 System Health Monitor Functions

The system board is capable of monitoring the following "system health" conditions.

- Monitors CPU/system temperature
- Monitors ±12V/5V/3.3V/VBAT(V)/5VSB(V) voltages
- Monitors CPU/chassis fan speed
- Read back capability that displays temperature, voltage and fan speed

1.1.3   Intelligence

CPU Temperature Protection

The CPU Temperature Protection function has the capability of monitoring the CPU's temperature during system boot-up. To prevent CPU overheat and damage, the system will automatically shutdown once it has detected that the CPU's temperature exceeded the temperature limit pre-defined by the system.

Overvoltage

The Overvoltage function allows you to manually adjust to a higher core voltage that is supplied to the CPU, AGP, DRAM and/or chipset. Although this function is supported, we do not recommend that you use a higher voltage because unstable current may be supplied to the system board causing damage.

Overclocking

The Overclocking function allows you to adjust the CPU and DRAM clock. However, overclocking may result to the CPU's or system's instability and are not guaranteed to provide better system performance.

Dual Function Power Button

Depending on the setting in the "Soft-Off By PBTN" field of the Power Management Setup, this switch will allow the system to enter the Soft-Off or Suspend mode.

Wake-On-Ring

This feature allows the system that is in the Suspend mode or Soft Power Off mode to wake-up/power-on to respond to calls coming from an external modem or respond to calls from a modem PCI card that uses the PCI PME (Power Management Event) signal to remotely wake up the PC.

Important:
If you are using a modem add-in card, the 5VSB power source of your power supply must support a minimum of ≥720mA.

Wake-On-LAN

This feature allows the network to remotely wake up a Soft Power Down (Soft-Off) PC. It is supported via the onboard LAN port or via a PCI LAN card that uses the PCI PME (Power Management Event) signal. However, if your system is in the Suspend mode, you can power-on the system only through an IRQ or DMA interrupt.

Important:
The 5VSB power source of your power supply must support ≥720mA.

Wake-On-PS/2 Keyboard/Mouse

This function allows you to use the PS/2 keyboard or PS/2 mouse to power-on the system.

Important:
The 5VSB power source of your power supply must support ≥720mA.

Wake-On-USB

This function allows you to use a USB device to wake up a system from the S3 (STR - Suspend To RAM) state.

Important:
- *If you are using the Wake-On-USB function for 2 USB ports, the 5VSB power source of your power supply must support ≥1.5A.*
- *If you are using the Wake-On-USB function for 3 or more USB ports, the 5VSB power source of your power supply must support ≥2A.*

RTC Timer to Power-on the System

The RTC installed on the system board allows your system to automatically power-on on the set date and time.

ACPI

The system board is designed to meet the ACPI (Advanced Con-figuration and Power Interface) specification. ACPI has energy sav-ing features that enables PCs to implement Power Management and Plug-and-Play with operating systems that support OS Direct Power Management. Currently, only Windows**®** 98SE/2000/ME/XP supports the ACPI function. ACPI when enabled in the Power Management Setup will allow you to use the Suspend to RAM function.

With the Suspend to RAM function enabled, you can power-off the system at once by pressing the power button or selecting "Standby" when you shut down Windows**®** 98SE/2000/ME/XP without having to go through the sometimes tiresome process of closing files, applications and operating system. This is because the system is capable of storing all programs and data files during the entire operating session into RAM (Random Access Memory) when it powers-off. The operating session will resume exactly where you left off the next time you power-on the system.

> **Important:**
> *The 5VSB power source of your power supply must support ≥1A.*

AC Power Failure Recovery

When power returns after an AC power failure, you may choose to either power-on the system manually, let the system power-on automatically or return to the state where you left off before power failure occurs.

1.2 Package Checklist

The system board package contains the following items:

- ☑ One LANPARTY NFII ULTRA B system board
- ☑ One LANPARTY NFII ULTRA B user's manuals
- ☑ One LANPARTY NFII ULTRA B quick installation guide
- ☑ Two Serial ATA data cables
- ☑ One Serial ATA power cable
- ☑ One card-edge bracket mounted with 2 IEEE 1394 ports
- ☑ Two IDE round cables
- ☑ One FDD round cable
- ☑ One PC Transpo kit
- ☑ One FrontX device equipped with:
  - Two USB 2.0/1.1 ports
  - One IEEE 1394 port
  - One line-out jack
  - One mic-in jack
  - Four diagnostic LEDs
- ☑ One I/O shield
- ☑ One thermal paste
- ☑ One LANPARTY sticker
- ☑ One case badge
- ☑ One pack of jumper caps (five 2.54mm jumper caps)
- ☑ One "Silicon Image Sil3114 RAID Drivers" diskette
- ☑ One "Mainboard Utility" CD
- ☑ One "WinDVD/WinRIP Utility" CD

If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

Chapter 2 - Hardware Installation

2.1 System Board Layout
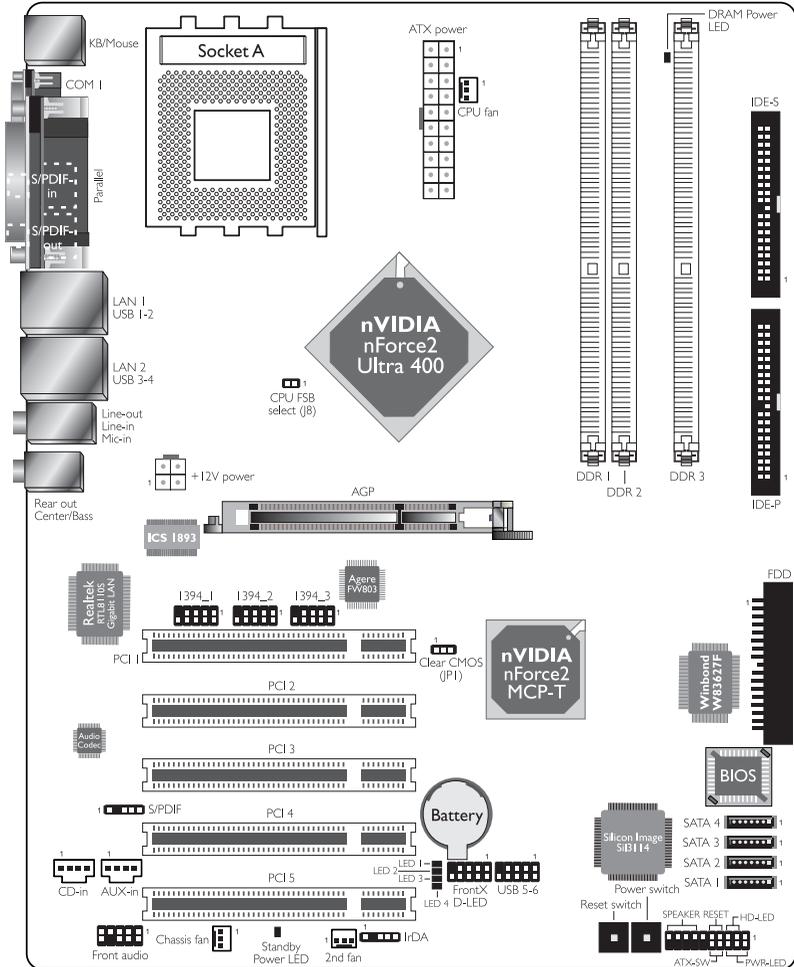
Warning:
*Electrostatic discharge (ESD) can damage your system board, proces-
sor, disk drives, add-in boards, and other components. Perform the
upgrade instruction procedures described at an ESD workstation only.
If such a station is not available, you can provide some ESD protection
by wearing an antistatic wrist strap and attaching it to a metal part
of the system chassis. If a wrist strap is unavailable, establish and
maintain contact with the system chassis throughout any procedures
requiring ESD protection.*

2.2 System Memory

DDR 1
DDR 2
DDR 3
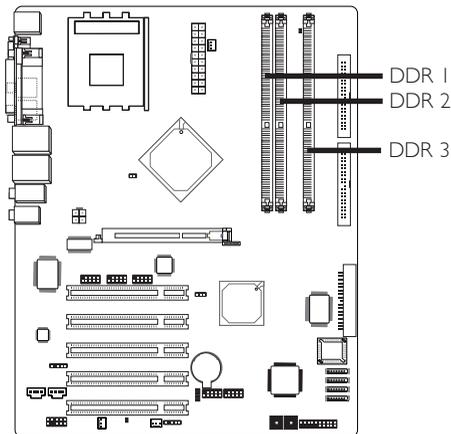
The system board supports DDR SDRAM DIMM. Double Data
Rate SDRAM (DDR SDRAM) is a type of SDRAM that doubles
the data rate through reading and writing at both the rising and
falling edge of each clock. This effectively doubles the speed of
operation therefore doubling the speed of data transfer.

Refer to chapter 1 (System Memory section) for detailed specifi-
cation of the memory supported by the system board.

The three DDR DIMM sockets on the system board are divided
into 2 channels:

1st channel - DDR 1 and DDR 2
2nd channel - DDR 3

17

The system board supports the following memory interface.

Single Channel (SC)
Data will be accessed in chunks of 64 bits (8B) from the memory channels.

Dual Channel (DC)
Dual channel provides better system performance because it doubles the data transfer rate.

Single Channel	• DIMMs are on the same channel. • DIMMs in a channel can be identical or completely different. However, we highly recommend using identical DIMMs. • Not all slots need to be populated.
Dual Channel	• DIMMs of the same memory configuration are on different channels.

2.2.1   Installing the DIM Module

A DIM module simply snaps into a DIMM socket on the system
board. Pin 1 of the DIM module must correspond with Pin 1 of
the socket.
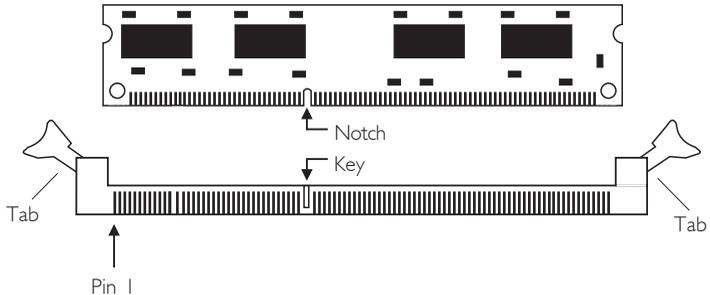
1. Pull the "tabs" which are at the ends of the socket to the
   side.

2. Position the DIMM above the socket with the "notch" in the
   module aligned with the "key" on the socket.

3. Seat the module vertically into the socket. Make sure it is
   completely seated. The tabs will hold the DIMM in place.

2.3 CPU

2.3.1 Overview

The system board is equipped with a surface mount Socket A CPU socket. This socket is exclusively designed for installing an AMD CPU.

2.3.2 Installing the CPU

1. Make sure the PC and all other peripheral devices connected to it has been powered down.

2. Disconnect all power cords and cables.

3. Locate Socket A on the system board.

4. Unlock the socket by pushing the lever sideways, away from the socket, then lifting it up to a 90° angle. Make sure the socket is lifted to at least this angle otherwise the CPU will not fit in properly.

Lever ——
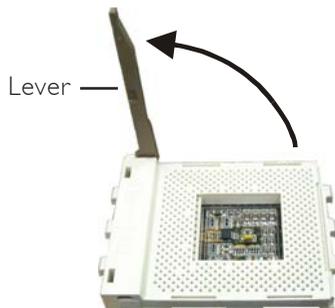
5. Position the CPU above the socket then align the gold mark on the corner of the CPU (designated as pin 1) with pin 1 of the socket.

> **Important:**
> *Handle the CPU by its edges and avoid touching the pins.*

Gold mark

Pin 1
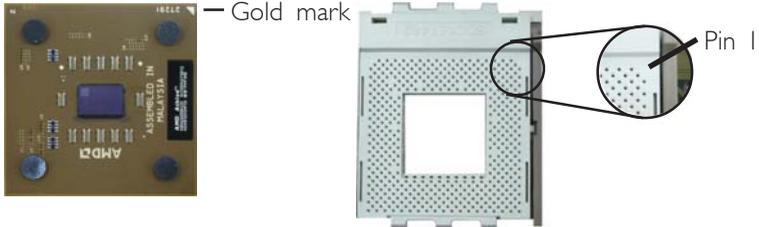
6. Insert the CPU into the socket until it is seated in place. The CPU will fit in only one orientation and can easily be inserted without exerting any force.

> **Important:**
> *Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.*
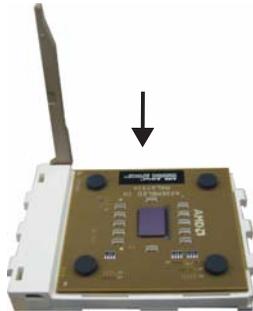
7. Once the CPU is in place, push down the lever to lock the socket. The lever should click on the side tab to indicate that the CPU is completely secured in the socket.

Lever lock
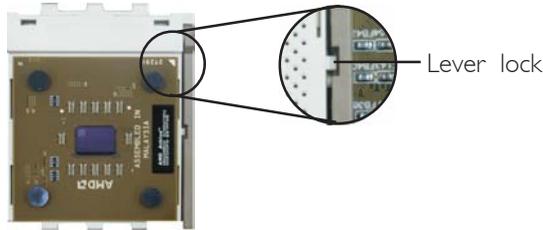
2.3.3 Installing the Fan and Heat Sink

The CPU must be kept cool by using a CPU fan with heat sink. Without sufficient air circulation across the CPU and heat sink, the CPU will overheat damaging both the CPU and system board.

1. Before you install the fan / heat sink, you must apply a thermal paste onto the top of the CPU. The thermal paste, which is usually supplied together with the CPU, looks somewhat similar to the one shown below. Do not spread the paste all over the surface. When you later place the heat sink on top of the CPU, the compound will disperse evenly.

Do not apply the paste if the fan / heat sink already has a patch of thermal paste on its underside. Peel the strip that covers the paste then place the fan / heat sink on top of the CPU.

Strip
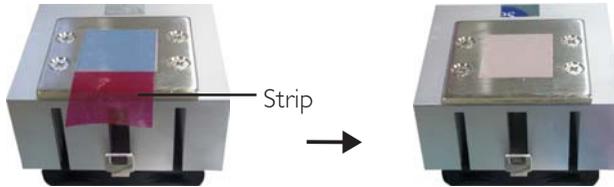
2. After placing the fan / heat sink on top of the CPU, latch the retaining clip on one side of the fan heat sink onto the protruding tab on the side of the socket.

Retaining clip

Tab
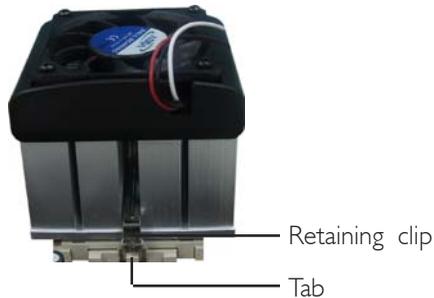
3. Push down the other retaining clip until it latches and lock onto the protruding tab on that side of the socket. Make sure there is sufficient air circulation across the CPU fan and heat sink.

4. Connect the CPU fan's cable connector to the CPU fan connector on the system board.

2.4 Jumper Settings

2.4.1 Jumper Settings for Clearing CMOS Data

JP1

1 2 3
1-2 On: Normal
(default)

1 2 3
2-3 On:
Clear CMOS Data
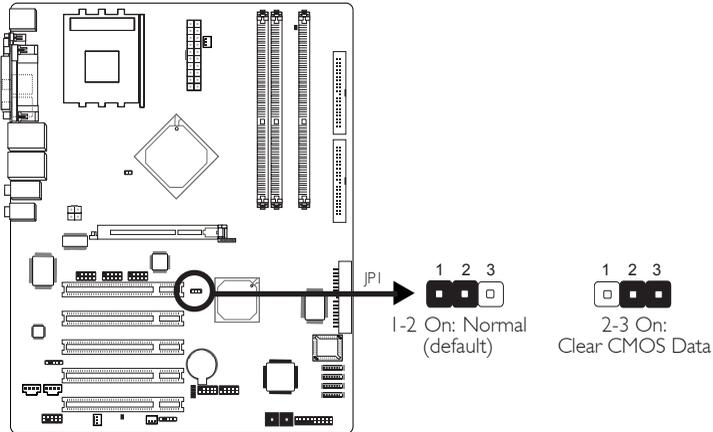
If you encounter the following,

a) *CMOS data becomes corrupted.*
b) *You forgot the keyboard, supervisor or user password.*
c) *You are unable to boot-up the computer system because the processor's clock/ratio was incorrectly set in the BIOS.*

you can reconfigure the system with the default values stored in the ROM BIOS.

To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system and unplug the power cord.

2. Set JP1 pins 2 and 3 to On. Wait for a few seconds and set JP1 back to its default setting, pins 1 and 2 On.

3. Plug the power cord and power-on the system.

   If your reason for clearing the CMOS data is due to incorrect setting of the processor's clock/ratio in the BIOS, please proceed to step 4.

4. After powering-on the system, press <Del> to enter the main menu of the BIOS.

5. Select the Genie BIOS Setting submenu and press <Enter>.

6. Set the "CPU Clock Setting" or "CPU Ratio" field to its default setting or an appropriate bus clock or frequency ratio. Refer to the Genie BIOS Setting section in chapter 3 for more information.

7. Press <Esc> to return to the main menu of the BIOS setup utility. Select "Save & Exit Setup" and press <Enter>.

8. Type <Y> and press <Enter>.

2.4.2 Jumper Settings for Selecting the CPU's FSB

J8   2 1   2 1

On: Other CPUs   Off: 100MHz
   (default)
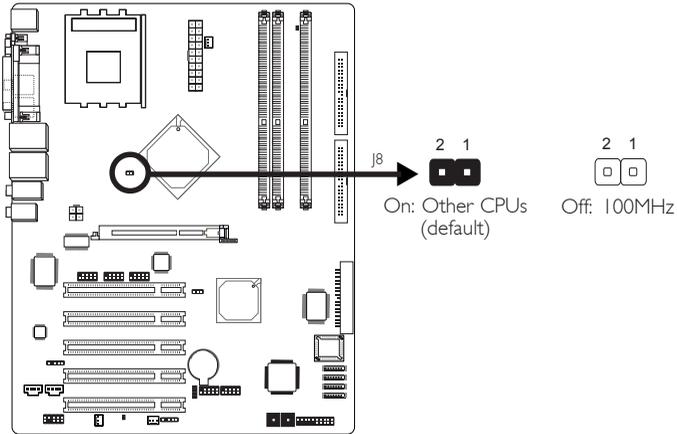
This jumper is used to select the front side bus of the CPU installed on the system board.

Warning:
To ensure proper boot up and operation of your system, you must power-off the system then turn off the power supply's switch or unplug the AC power cord prior to altering the setting of the jumper.

2.5 Rear Panel I/O Ports

The rear panel I/O ports consist of the following:

- PS/2 mouse port
- PS/2 keyboard port
- Parallel port
- COM port
- S/PDIF-in jack
- S/PDIF-out jack
- LAN ports
- USB ports
- Mic-in jack
- Line-in jack
- Line-out jack
- Center/Bass jack
- Rear out jack

2.5.1 PS/2 Mouse and PS/2 Keyboard Ports

PS/2 Mouse
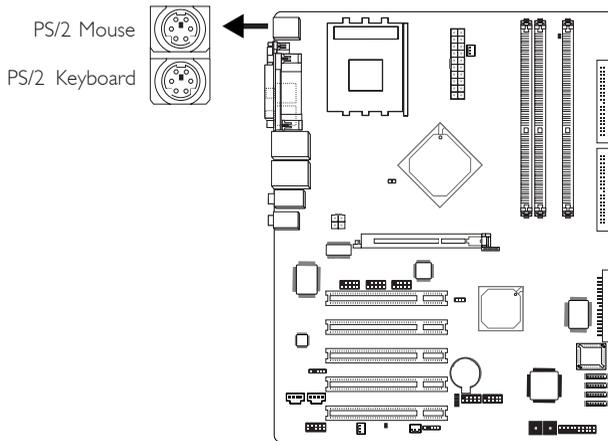
PS/2 Keyboard

The system board is equipped with an onboard PS/2 mouse (Green) and PS/2 keyboard (Purple) ports - both at location CN1 of the system board. The PS/2 mouse port uses IRQ12. If a mouse is not connected to this port, the system will reserve IRQ12 for other expansion cards.

Warning:
Make sure to turn off your computer prior to connecting or disconnecting a mouse or keyboard. Failure to do so may damage the system board.

Wake-On-PS/2 Keyboard/Mouse

The Wake-On-PS/2 Keyboard/Mouse function allows you to use the PS/2 keyboard or PS/2 mouse to power-on the system. To use this function:

- **BIOS Setting:**
  "Keyboard/Mouse Power On" in the Power Management Setup submenu of the BIOS must be set accordingly. Refer to chapter 3 for more information.

Important:
The 5VSB power source of your power supply must support ≥720mA.

2.5.2 Serial Port

COM
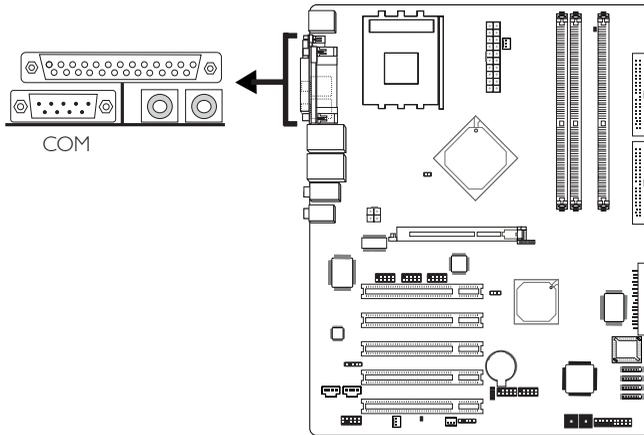
The system board is equipped with an onboard serial port (Teal/Turquoise) at location CN6 of the system board. It is a RS-232C asynchronous communication port with 16C550A-compatible UART that can be used with a modem, serial printer, remote display terminal or other serial devices.

BIOS Setting

Select the serial port's I/O address in the Integrated Peripherals submenu ("Super IO Device" section) of the BIOS. Refer to chapter 3 for more information.

2.5.3 Parallel Port
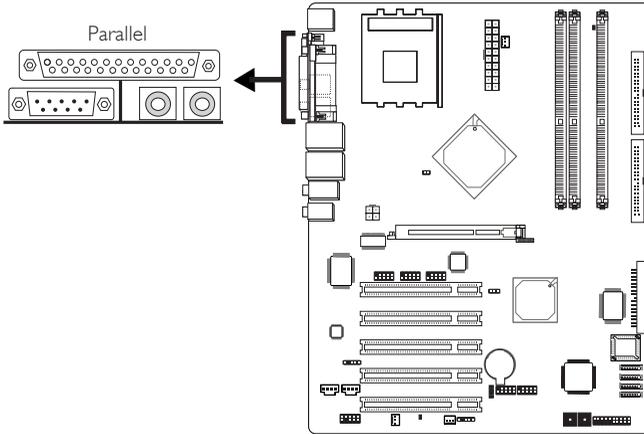
Parallel

The system board has a standard parallel port (Burgundy) at location CN9 for interfacing your PC to a parallel printer. It supports SPP, ECP and EPP.

Setting	Function
SPP (Standard Parallel Port)	Allows normal speed operation but in one direction only.
ECP (Extended Capabilities Port)	Allows parallel port to operate in bidirectional mode and at a speed faster than the SPP's data transfer rate.
EPP (Enhanced Parallel Port)	Allows bidirectional parallel port operation at maximum speed.

BIOS Setting

Select the parallel port's mode in the Integrated Peripherals submenu ("Super IO Device" section) of the BIOS. Refer to chapter 3 for more information.

2.5.4 S/PDIF-in/out Jacks

S/PDIF-in

S/PDIF-out

SPDIF out

Key | GND

VCC | SPDIF in

1 □ ■ ■ ■ 5   J2
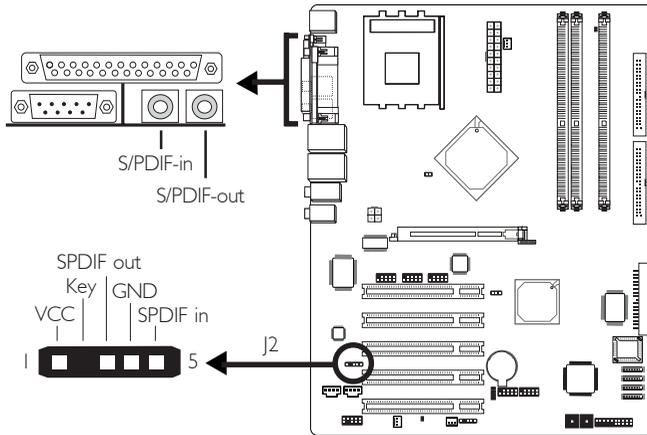
The system board is equipped with an onboard S/PDIF-in RCA jack (red) and a S/PDIF-out RCA jack (yellow) at locations CN2 and CN3 respectively.

The S/PDIF connector at location J2 is for optical S/PDIF cable connection. Connect the optical audio cable connector of your S/PDIF module to J2. Make sure pin 1 of the audio cable connector is aligned with pin 1 of J2.

DO NOT use RCA S/PDIF and optical S/PDIF at the same time.

2.5.5 RJ45 LAN Ports

RJ45 LAN 1

RJ45 LAN 2
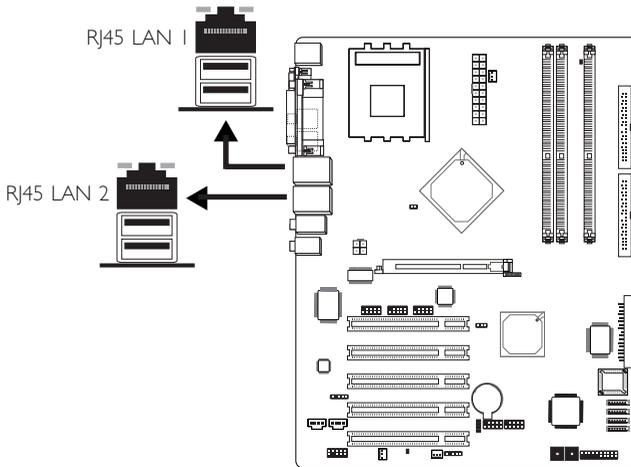
The system board is equipped with two onboard RJ45 fast-ethernet LAN ports - LAN 1 at location CN7 and LAN 2 at location CN8. These LAN ports allow the system board to connect to a local area network by means of a network hub.

The LAN 1 port is controlled by the nVIDIA® nForce2 MCP-T and ICS1893 Phy chips. The LAN 2 port is controlled by the Realtek RTL8110S Gigabit LAN chip.

BIOS Setting

Enable or disable these LAN ports in the Genie BIOS Setting of the BIOS. Refer to chapter 3 for more information.

2.5.6 Universal Serial Bus Ports

USB 2
USB 1

USB 4
USB 3

N. C.
Ground
+Data
-Data
VCC

Key
Ground
+Data
-Data
VCC

9
10

1
2
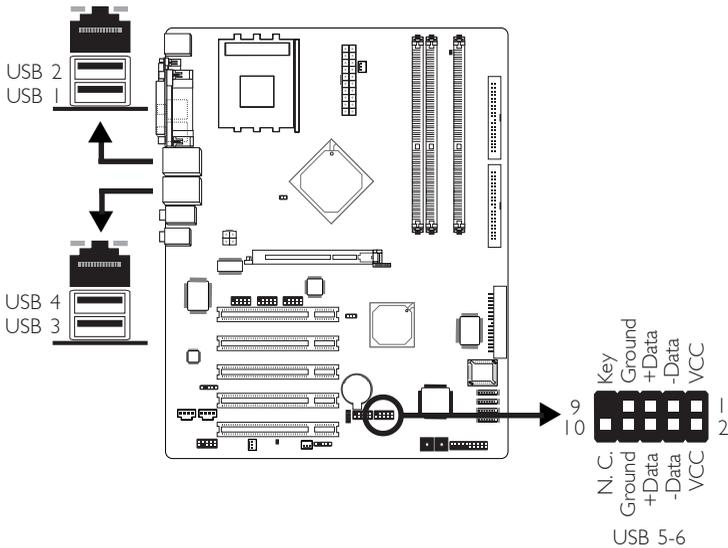
USB 5-6

Four onboard USB 2.0/1.1 ports (Black) are at locations CN7 (USB 1-2) and CN8 (USB 3-4) of the system board.

The J13 (USB 5-6) connector allows you to connect to the 2 USB ports that are on the FrontX device. (The FrontX device, which comes with LANPARTY series products, must be installed into a drive bay of the chassis.) Connect the USB cable connector from FrontX to J13. Make sure pin 1 of the cable connector is aligned with pin 1 of J13.

BIOS Setting

Configure the onboard USB in the Integrated Peripherals submenu of the BIOS. Refer to chapter 3 for more information.

Driver Installation

You may need to install the proper drivers in your operating system to use the USB device. Refer to your operating system's manual or documentation for more information.

Wake-On-USB

The Wake-On-USB function allows you to use a USB device to wake up a system from the S3 (STR - Suspend To RAM) state. To use this function:

• **BIOS Setting:**
"USB Resume From S3" in the Power Management Setup submenu of the BIOS must be set to Enabled. Refer to chapter 3 for more information.

Important:
• *If you are using the Wake-On-USB function for 2 USB ports, the 5VSB power source of your power supply must support ≥1.5A.*
• *If you are using the Wake-On-USB function for 3 or more USB ports, the 5VSB power source of your power supply must support ≥2A.*

2.5.7 Audio
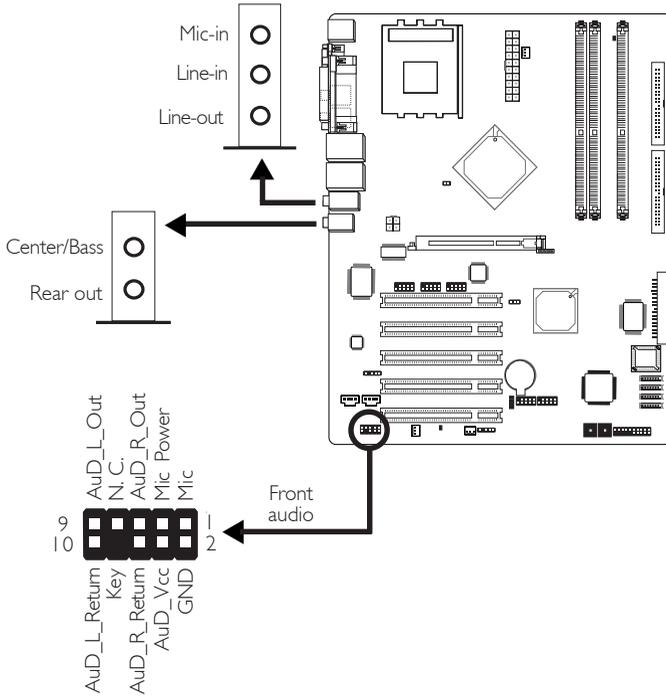
Mic-in, Line-in and Line-out

The mic-in, line-in and line-out jacks are at location CN5 of the system board. A jack is a one-hole connecting interface for inserting a plug.

- **Mic-in Jack (Pink)**

  This jack is used to connect an external microphone. Use the C-Media application software to select between using this jack and the front audio's mic-in jack.

- **Line-in Jack (Light Blue)**

  This jack can be connected to the line-out jack of any external audio devices such as Hi-fi set, CD player, AM/FM radio tuner, synthesizer, etc. Connect a stereo cable from the line-out jack of your external device to this line-in jack.

- **Line-out Jack (Lime)**

    This jack is used to connect external speakers for audio output from the system board. Using this jack disables the front audio's line-out function.

Center/Bass and Rear Out Jacks

Center/Bass and Rear Out Jacks (CN4) support 4 audio output signals: center channel, subwoofer, rear right channel and rear left channel. These 4 audio output signals together with the line-out (2-channel) jack support 6-channel audio output.

Front Audio

The front audio connector (J4) allows you to connect to the line-out and mic-in jacks that are on the FrontX device. Using the line-out and mic-in jacks will disable the rear audio's line-out and mic-in functions. (The FrontX device, which comes with LANPARTY series products, must be installed into a drive bay of the chassis.)

Remove the jumper caps from pins 5-6 and pins 9-10 of J4 prior to connecting the front audio cable connector. Make sure pin 1 of the cable connector is aligned with pin 1 of J4. If you are not using this connector, make sure to replace the jumper caps back to their original pin locations.

Pins 5-6 and 9-10 short (default)	The front audio is disabled. The rear audio is enabled.
Pins 5-6 and 9-10 open	The front audio is enabled. The rear audio is disabled.

2.6 I/O Connectors

2.6.1 Internal Audio Connectors

Ground ⌐ Ground   Ground ⌐ Ground
Left audio │ Right audio   Left audio │ Right audio
channel │ channel   channel │ channel

1 [■ ■ ■ ■] 4   1 [■ ■ ■ ■] 4

CD-in   AUX-in
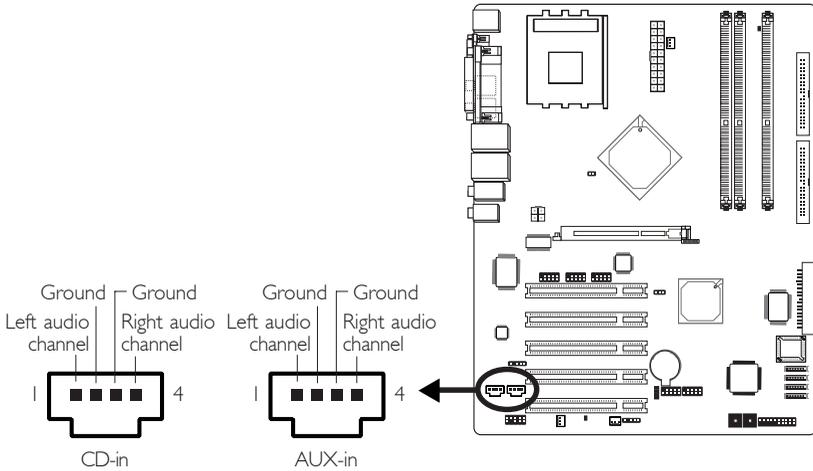
The CD-in (J1) and AUX-in (J3) connectors are used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

2.6.2   IEEE 1394
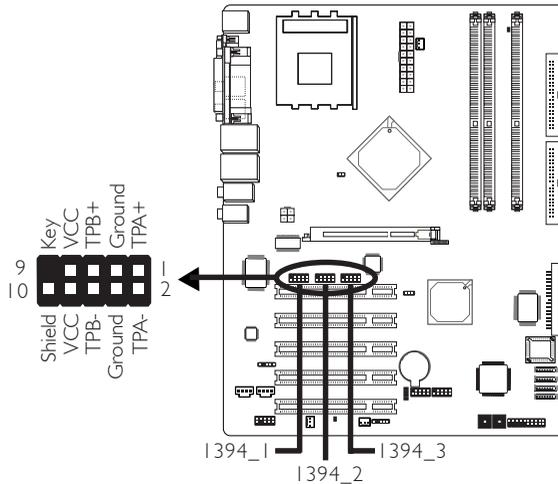
1394_1
1394_2
1394_3

The system board is equipped with three IEEE 1394 connectors at locations J5 (1394_1), J7 (1394_2) and J9 (1394_3) for connecting 1394 ports. One of these connectors allows you to connect to the IEEE 1394 port that is on the FrontX device. (The FrontX device, which comes with LANPARTY series products, must be installed into a drive bay of the chassis.) Connect the IEEE 1394 cable connector from FrontX to J5, J7 or J9. Make sure pin 1 of the cable connector is aligned with pin 1 of J5, J7 or J9.

One card-edge bracket, mounted with 2 IEEE 1394 ports, is included in the system board package. Install the card-edge bracket to the system chassis then connect the cable connector to the IEEE 1394 connector on the system board. Make sure pin 1 of the cable connector is aligned with pin 1 of J5, J7 or J9. Now connect your IEEE 1394 devices to the ports that are on the bracket.

BIOS Setting

Enable or disable the onboard IEEE 1394 in the Genie BIOS Setting of the BIOS. Refer to chapter 3 for more information.

2.6.3 Floppy Disk Drive Connector
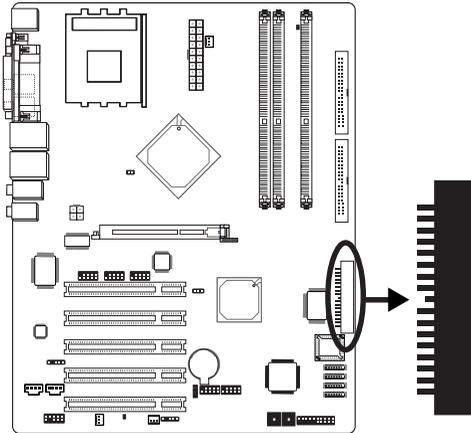
The system board is equipped with a 90° floppy disk drive con-
nector that supports two standard floppy disk drives. To prevent
improper floppy cable installation, the shrouded floppy disk
header has a keying mechanism. The 34-pin connector on the
floppy cable can be placed into the header only if pin 1 of the
connector is aligned with pin 1 of the header.

Connecting the Floppy Disk Drive Cable

Install one end of the floppy disk drive cable into the shrouded
floppy disk header (J21) on the system board and the other end-
most connector to the drive you want to designate as Drive A. If
you are connecting another drive (Drive B), install the middle
connector of the cable to the drive. The colored edge of the
daisy chained ribbon cable should be aligned with pin 1 of J21.

BIOS Setting

Enable or disable this function in the Integrated Peripherals
submenu ("Super I/O Device" section) of the BIOS. Refer to
chapter 3 for more information.

2.6.4 SATA (Serial ATA) Connectors

SATA 4
SATA 3
SATA 2
SATA 1

7 [● ● ● ● ● ● ●] 1

GND RXP RXN GND TXN TXP GND
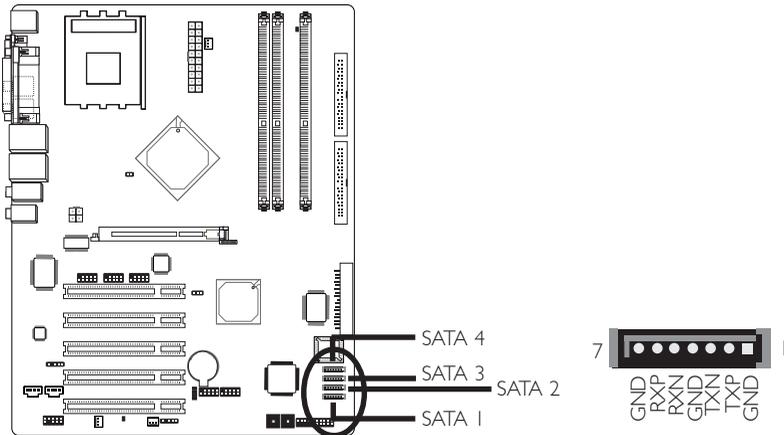
The system board is equipped with 4 SATA connectors at loca-
tions J18 (SATA 1), J17 (SATA 2), J16 (SATA 3) and J15 (SATA 4)
for connecting SATA devices. Connect one end of the SATA ca-
ble to a SATA connector and the other end to your SATA de-
vice.

The Silicon Image Sil3114 chip allows configuring RAID on SATA
drives. It supports RAID 0 and RAID 1. The following must be set
accordingly.

- **BIOS Setting**
  1. Enable the SATA function in the Genie BIOS Setting of
     the Award BIOS.
  2. The "S-ATA or SCSI Card Boot" field in the Advanced
     BIOS Features submenu of the Award BIOS must be prop-
     erly configured.
  3. Configure RAID (e.g. creating or deleting RAID) in the
     Sil3114 SataRAID BIOS. You can enter this utility by press-
     ing the <Ctrl-S> or <F4> key during system boot up.

     Refer to chapter 3 for more information.

- **Drivers and Utility**
  Install the Silicon Image RAID drivers and utility. Refer to
  chapter 4 for more information.

2.6.5 IDE Disk Drive Connector
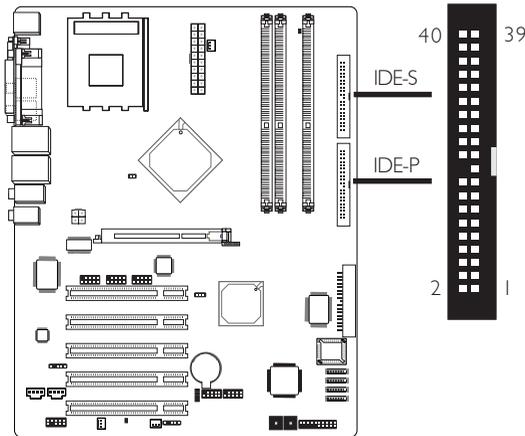
The system board is equipped with two shrouded PCI IDE head-ers that will interface four Enhanced IDE (Integrated Drive Elec-tronics) disk drives. To prevent improper IDE cable installation, each shrouded PCI IDE header has a keying mechanism. The 40-pin connector on the IDE cable can be placed into the header only if pin 1 of the connector is aligned with pin 1 of the header.

Each IDE connector supports 2 devices, a Master and a Slave. Use an IDE ribbon cable to connect the drives to the system board. An IDE ribbon cable have 3 connectors on them, one that plugs into an IDE connector on the system board and the other 2 connects to IDE devices. The connector at the end of the cable is for the Master drive and the connector in the middle of the cable is for the Slave drive.

Connecting the IDE Disk Drive Cable

Install one end of the IDE cable into the IDE-P header (J20) on the system board and the other connectors to the IDE devices.

If you are adding a third or fourth IDE device, use another IDE cable and install one end of the cable into the IDE-S header (J19) on the system board and the other connectors to the IDE devices.

Note:
Refer to your disk drive user's manual for information about selecting proper drive switch settings.

Adding a Second IDE Disk Drive

When using two IDE drives, one must be set as the master and the other as the slave. Follow the instructions provided by the drive manufacturer for setting the jumpers and/or switches on the drives.

The system board supports Enhanced IDE or ATA-2, ATA/33, ATA/66, ATA/100 or ATA/133 hard drives. We recommend that you use hard drives from the same manufacturer. In a few cases, drives from two different manufacturers will not function properly when used together. The problem lies in the hard drives, not the system board.

Important:
If you encountered problems while using an ATAPI CD-ROM drive that is set in Master mode, please set the CD-ROM drive to Slave mode. Some ATAPI CD-ROMs may not be recognized and cannot be used if incorrectly set in Master mode.

BIOS Setting

Enable or disable the onboard primary or secondary IDE in the Integrated Peripherals submenu ("nVidia OnChip IDE Device" section) of the BIOS. Refer to chapter 3 for more information.

2.6.6 IrDA Connector

IRRX
N. C. | Ground
VCC | | IRTX
1 | 5
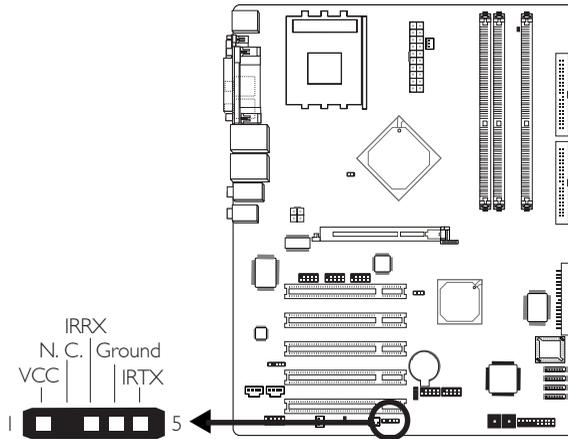
Connect your IrDA cable to connector J22 on the system board.

> **Note:**
> *The sequence of the pin functions on some IrDA cable may be reversed from the pin function defined on the system board. Make sure to connect the cable to the IrDA connector according to their pin functions.*

BIOS Setting

Configure your IrDA device in the Integrated Peripherals submenu ("Super IO Device" section) of the BIOS.

Driver Installation

You may need to install the proper drivers in your operating system to use the IrDA function. Refer to your operating system's manual or documentation for more information.

2.6.7 Cooling Fan Connectors
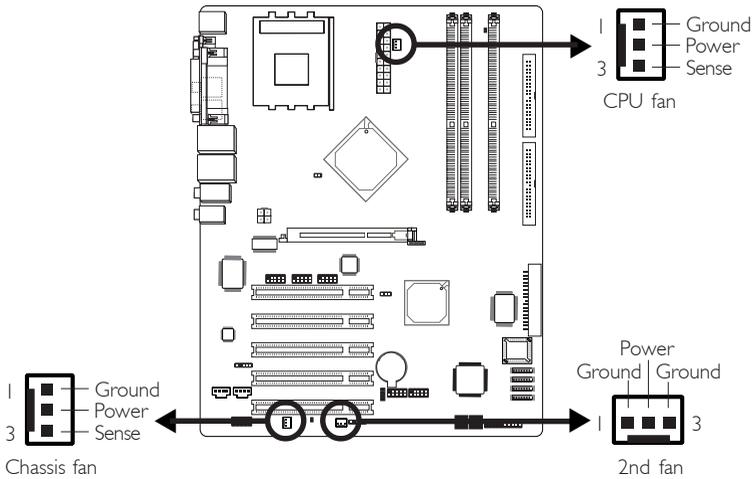
Connect the CPU fan's cable connector to the CPU fan connector (J11) on the system board. The chassis fan (J6) and 2nd fan (J10) connectors are used to connect additional cooling fans. The cooling fans will provide adequate airflow throughout the chassis to prevent overheating the CPU and system board components.

BIOS Setting

The system is capable of monitoring the speed of the CPU fan and chassis fan. The "PC Health Status" submenu of the BIOS will display the current speed of these cooling fans. Refer to chapter 3 for more information.

2.6.8 DRAM Power LED and Standby Power LED

DRAM Power LED
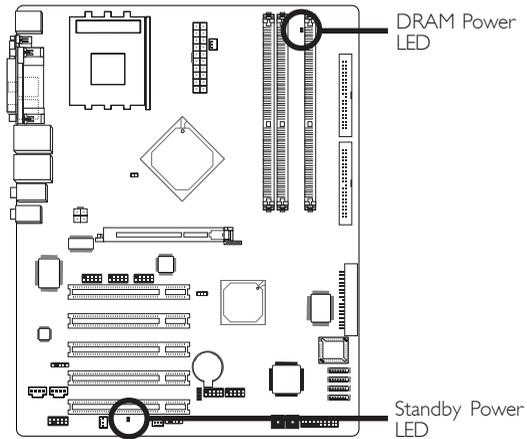
Standby Power LED

DRAM Power LED

This LED will light when the system's power is on.

Standby Power LED

This LED will light when the system is in the standby mode.

2.6.9   Diagnostic LEDs
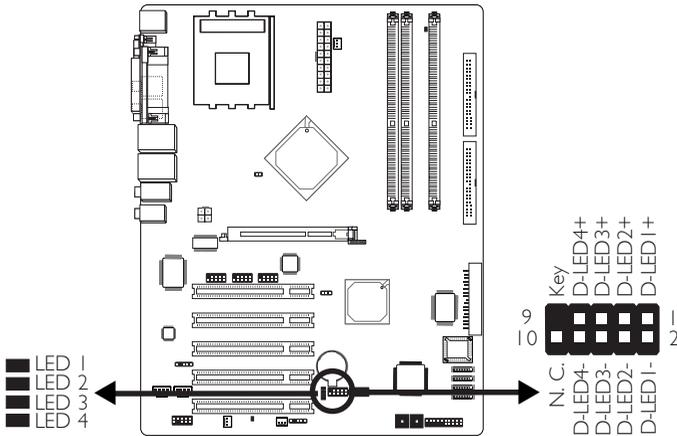
The 4 diagnostic LEDs on the system board are used to indicate the current condition of the system.

The 10-pin connector (J12) allows you to connect to the 4 LEDs that are on the FrontX device. (The FrontX device, which comes with LANPARTY series products, must be installed into a drive bay of the chassis.) Connect the Diagnostic LED cable connector from FrontX to J12.

Refer to the table on the next page for a list of LEDs status and their corresponding system condition.

Diagnostic LEDs

LED 1 to LED 4 are diagnostic LEDs. These LEDs will indicate the current condition of the system.

	LED 4	LED 3	LED 2	LED 1
Early program chipset register before POST.	On	Off	Off	Off
Testing memory presence.	Off	On	Off	Off
Initializing the DRAM controller (sizing).	On	On	Off	Off
Initializing the FSB frequency.	Off	Off	On	Off
Initializing the DRAM frequency.	On	Off	On	Off
Programming the DRAM timing.	Off	On	On	Off
Checking CMOS checksum and battery.	Off	Off	Off	On
Initializing the clock generator.	On	Off	Off	On
Initializing USB.	Off	On	Off	On
Testing all memory (cleared all extended memory to 0).	On	On	Off	On
Initializing the onboard Super IO.	Off	Off	On	On
Detecting and installing an IDE device.	On	Off	On	On
Final initialization.	Off	On	On	On
Booting the system.	On	On	On	On

Hardware Installation

2.6.10 Power Connectors

3.3V	•	•	3.3V
-12V	•	•	3.3V
Ground	•	•	Ground
PS-ON	•	•	+5V
Ground	•	•	Ground
Ground	•	•	+5V
Ground	•	•	Ground
-5V	•	•	PW-OK
+5V	•	•	5VSB
+5V	•	•	+12V

11 1

20 10

3 4

+12V	•	•	+12V
Ground	•	•	Ground

1 2
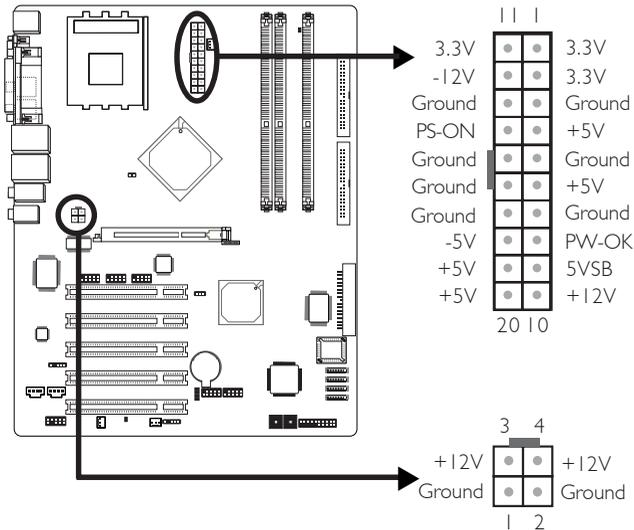
We recommend that you use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1. An ATX12V power supply has a standard 20-pin ATX main power connector and a 4-pin +12V power connector that must be inserted onto CN11 and CN10 connectors respectively.

The 4-pin +12V power connector enables the delivery of more +12VDC current to the processor's Voltage Regulator Module (VRM).

The system board requires a minimum of 250 Watt power supply to operate. Your system configuration (amount of memory, add-in cards, peripherals, etc.) may exceed the minimum power requirement. To ensure that adequate power is provided, use a 300 Watt (or greater) power supply.

2.6.11 Front Panel Connectors

SPEAKER   RESET   HD-LED

J14   19   1
      20   2

PWR-LED
ATX-SW
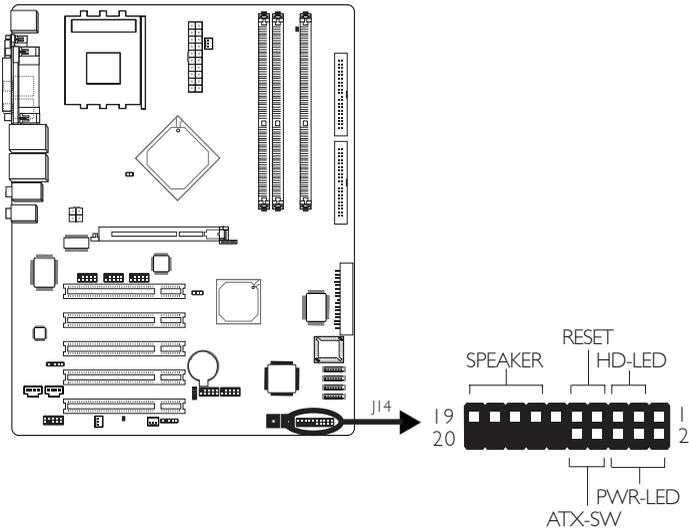
HD-LED: Primary/Secondary IDE LED
This LED will light when the hard drive is being accessed.

RESET: Reset Switch
This switch allows you to reboot without having to power off the system thus prolonging the life of the power supply or system.

SPEAKER: Speaker Connector
This connects to the speaker installed in the system chassis.

ATX-SW: ATX Power Switch
Depending on the setting in the BIOS setup, this switch is a "dual function power button" that will allow your system to enter the Soft-Off or Suspend mode. Refer to "Soft-Off By PBTN" in the Power Management Setup (Chapter 3).

PWR-LED: Power/Standby LED

When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) or S3 (STR - Suspend To RAM) state, it will blink every second.

> **Note:**
> *If a system did not boot-up and the Power/Standby LED did not light after it was powered-on, it may indicate that the CPU or memory module was not installed properly. Please make sure they are properly inserted into their corresponding socket.*

	Pin	Pin Assignment
HD-LED (Primary/Secondary IDE LED)	3 5	HDD LED Power HDD
Reserved	14 16	N. C. N. C.
ATX-SW (ATX power switch)	8 10	PWRBT+ PWRBT-
Reserved	18 20	N. C. N. C.
RESET (Reset switch)	7 9	Ground H/W Reset
SPEAKER (Speaker connector)	13 15 17 19	Speaker Data N. C. Ground Speaker Power
PWR-LED (Power/Standby LED)	2 4 6	LED Power (+) LED Power (+) LED Power (-) or Standby Signal

2.6.12 EZ Touch Switches (Reset Switch and Power Switch)

Reset Switch
Power Switch

Reset Switch
Power Switch
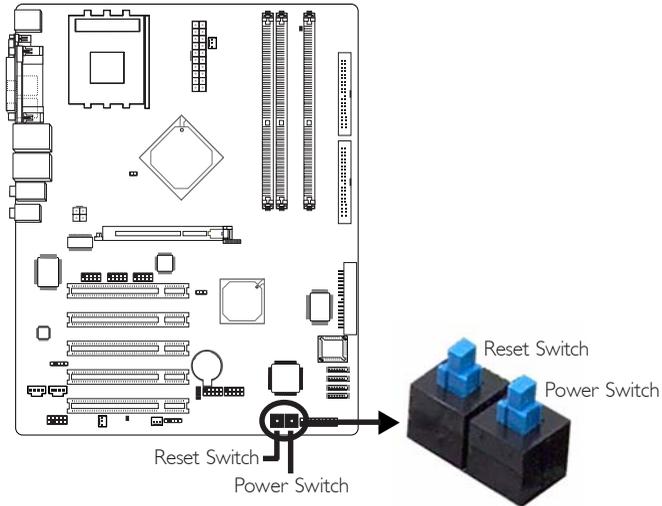
The presence of the reset switch and power switch on the system board are user-friendly especially to DIY users. They provide convenience in powering on and/or resetting the system while fine tuning the system board before it is installed into the system chassis.

Chapter 3 - BIOS Setup

3.1 Award BIOS Setup Utility

The Basic Input/Output System (BIOS) is a program that takes care of the basic level of communication between the processor and peripherals. In addition, the BIOS also contains codes for various advanced features found in this system board. This chapter explains the Setup Utility for the Award BIOS.

After you power up the system, the BIOS message appears on the screen and the memory count begins. After the memory test, the following message will appear on the screen:

<p style="text-align:center">Press DEL to enter setup</p>

If the message disappears before you respond, restart the system or press the "Reset" button. You may also restart the system by pressing the <Ctrl> <Alt> and <Del> keys simultaneously.

When you press <Del>, the main menu screen will appear.

```
            Phoenix - AwardBIOS CMOS Setup Utility

  ▶ Standard CMOS Features        ▶ Genie BIOS Setting
  ▶ Advanced BIOS Features        ▶ CMOS Reloaded
  ▶ Advanced Chipset Features        Load Optimized Defaults
  ▶ Integrated Peripherals           Set Supervisor Password
  ▶ Power Management Setup           Set User Password
  ▶ PnP/PCI Configurations           Save & Exit Setup
  ▶ PC Health Status                 Exit Without Saving

  Esc : Quit     F9 : Menu in BIOS    ↑ ↓ → ←   : Select Item
  F10 : Save & Exit Setup

              Time, Date, Hard Disk Type...
```

3.1.1   Standard CMOS Features

Use the arrow keys to highlight "Standard CMOS Features" and
press <Enter>. A screen similar to the one below will appear.

```
                   Phoenix - AwardBIOS CMOS Setup Utility
                          Standard CMOS Features

     Date (mm:dd:yy)            Thu, Aug 21 2003          Item Help
     Time (hh:mm:ss)            10 :  8 : 19
                                                    Menu Level    ▶
   ▶ IDE Primary Master
   ▶ IDE Primary Slave                              Change the day, month,
   ▶ IDE Secondary Master                           year and century
   ▶ IDE Secondary Slave

     Drive A                    1.44M, 3.5 in.
     Drive B                    None

     Video                      EGA/VGA
     Halt On                    All , But Keyboard

     Base Memory                     640K
     Extended Memory                1024K
     Total Memory                   2048K


  ↑↓→←:Move   Enter:Select  +/-/PU/PD:Value   F10:Save   ESC:Exit  F1:General Help
            F5:Previous Values              F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical
to this one.

3.1.1.1   Date

The date format is <day>, <month>, <date>, <year>. Day dis-
plays a day, from Sunday to Saturday. Month displays the month,
from January to December. Date displays the date, from 1 to 31.
Year displays the year, from 1994 to 2079.

3.1.1.2 Time

The time format is <hour>, <minute>, <second>. The time is
based on the 24-hour military-time clock. For example, 1 p.m. is
13:00:00. Hour displays hours from 00 to 23. Minute displays min-
utes from 00 to 59. Second displays seconds from 00 to 59.

3.1.1.3 IDE Primary Master, IDE Primary Slave, IDE Secondary Master and IDE Secondary Slave

Move the cursor to the "IDE Primary Master", "IDE Primary Slave", "IDE Secondary Master" or "IDE Secondary Slave" field, then press <Enter>. The following screen will appear.
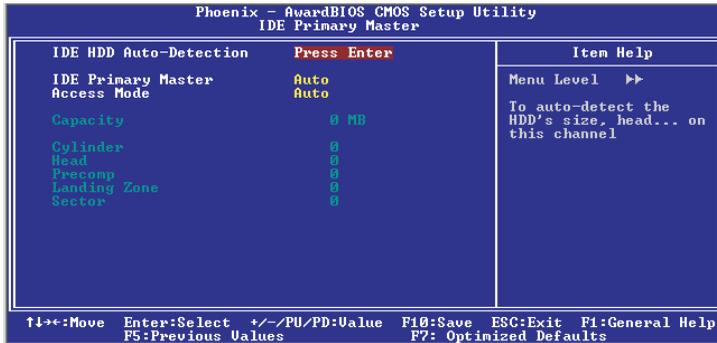
```
                Phoenix - AwardBIOS CMOS Setup Utility
                           IDE Primary Master

   IDE HDD Auto-Detection      Press Enter              Item Help

   IDE Primary Master          Auto            Menu Level   ▶▶
   Access Mode                 Auto
                                               To auto-detect the
   Capacity                    0 MB            HDD's size, head... on
                                               this channel
   Cylinder                    0
   Head                        0
   Precomp                     0
   Landing Zone                0
   Sector                      0




 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
           F5:Previous Values              F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

IDE HDD Auto-Detection

Detects the parameters of the drive. The parameters will automatically be shown on the screen.

IDE Primary Master/Slave and IDE Secondary Master/Slave

The drive type information should be included in the documentation from your hard disk vendor. If you select "Auto", the BIOS will auto-detect the HDD & CD-ROM drive at the POST stage and show the IDE for the HDD & CD-ROM drive. If a hard disk has not been installed, select "None".

Access Mode

For hard drives larger than 528MB, you would typically select the LBA type. Certain operating systems require that you select CHS or Large. Please check your operating system's manual or Help desk on which one to select.

Capacity

Displays the approximate capacity of the disk drive. Usually the size is slightly greater than the size of a formatted disk given by a disk checking program.

Cylinder

This field displays the number of cylinders.

Head

This field displays the number of read/write heads.

Precomp

This field displays the number of cylinders at which to change the write timing.

Landing Zone

This field displays the number of cylinders specified as the landing zone for the read/write heads.

Sector

This field displays the number sectors per track.

3.1.1.4 Drive A and Drive B

These fields identify the types of floppy disk drives installed.

None	No floppy drive is installed
360K, 5.25 in.	5-1/4 in. standard drive; 360KB capacity
1.2M, 5.25 in.	5-1/4 in. AT-type high-density drive; 1.2MB capacity
720K, 3.5 in.	3-1/2 in. double-sided drive; 720KB capacity
1.44M, 3.5 in.	3-1/2 in. double-sided drive; 1.44MB capacity
2.88M, 3.5 in.	3-1/2 in. double-sided drive; 2.88MB capacity

3.1.1.5 Video

This field selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type. The default setting is EGA/VGA.

EGA/VGA Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA and PGA monitor adapters.

CGA 40 Color Graphics Adapter. Power up in 40-column mode.

CGA 80 Color Graphics Adapter. Power up in 80-column mode.

Mono Monochrome adapter. Includes high resolution monochrome adapters.

3.1.1.6 Halt On

This field determines whether the system will stop if an error is detected during power up. The default setting is All Errors.

No Errors The system boot will not stop for any errors detected.

All Errors The system boot will stop whenever the BIOS detects a non-fatal error.

All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all other errors.

All, But Diskette The system boot will not stop for a disk error; it will stop for all other errors.

All, But Disk/Key The system boot will not stop for a disk or keyboard error; it will stop for all other errors.

3.1.1.7 Base Memory

Displays the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard or 640K for systems with 640K or more memory installed on the motherboard.

3.1.1.8 Extended Memory

Displays the amount of extended memory detected during boot-up.

3.1.1.9 Total Memory

Displays the total memory available in the system.

3.1.2 Advanced BIOS Features

The Advanced BIOS Features allows you to configure your sys-
tem for basic operation. Some entries are defaults required by
the system board, while others, if enabled, will improve the per-
formance of your system or let you set some features according
to your preference.

```
             Phoenix - AwardBIOS CMOS Setup Utility
                     Advanced BIOS Features
 ┌─────────────────────────────────────────┬───────────────────────┐
 │ Virus Warning              Disabled    ▲ │      Item Help        │
 │ CPU L1 Cache               Enabled       ├───────────────────────┤
 │ CPU L2 Cache               Enabled       │ Menu Level    ▶       │
 │ Quick Power On Self Test   Fast          │                       │
 │ S-ATA or SCSI Card Boot    S-ATA         │ Allows you to choose  │
 │ First Boot Device          Floppy        │ the VIRUS warning     │
 │ Second Boot Device         CDROM         │ feature for IDE Hard  │
 │ Third Boot Device          HDD-0         │ Disk boot sector      │
 │ Boot Other Device          Enabled       │ protection. If this   │
 │ Swap Floppy Drive          Disabled      │ function is enabled   │
 │ Boot Up Floppy Seek        Disabled      │ and someone attempt to│
 │ Boot Up NumLock Status     On            │ write data into this  │
 │ Typematic Rate Setting     Disabled      │ area ,  BIOS will show│
 │x Typematic Rate (Chars/Sec) 6            │ a warning message on  │
 │x Typematic Delay (Msec)    250           │ screen and alarm beep │
 │ Security Option            Setup         │                       │
 │ APIC Mode                  Enabled       │                       │
 │ MPS Version Control For OS 1.4           │                       │
 │ HDD S.M.A.R.T. Capability  Enabled       │                       │
 │ Delay For HDD (Secs)       0             │                       │
 │ Small Logo(EPA) Show       Enabled     ▼ │                       │
 ├──────────────────────────────────────────┴───────────────────────┤
 │↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
 │           F5:Previous Values            F7: Optimized Defaults     │
 └────────────────────────────────────────────────────────────────────┘
```

The screen above list all the fields available in the Advanced BIOS Features submenu,
for ease of reference in this manual. In the actual CMOS setup, you have to use the
scroll bar to view the fields. The settings on the screen are for reference only. Your
version may not be identical to this one.

3.1.2.1 Virus Warning

This field protects the boot sector and partition table of your
hard disk drive. When this field is enabled, the Award BIOS will
monitor the boot sector and partition table of the hard disk
drive. If an attempt is made to write to the boot sector or parti-
tion table of the hard disk drive, the BIOS will halt the system
and an error message will appear.

After seeing the error message, if necessary, you will be able to
run an anti-virus program to locate and remove the problem
before any damage is done.

Many disk diagnostic programs which attempt to access the boot
sector table will cause the warning message to appear. If you are
running such a program, we recommend that you first disable
this field. Also, disable this field if you are installing or running
certain operating systems like Windows® 95/98/2000/ME/XP or
the operating system may not install nor work.

3.1.2.2 CPU L1 Cache & CPU L2 Cache

These fields speed up the memory access.

3.1.2.3 Quick Power On Self Test

This field speeds up Power On Self Test (POST) whenever the system is powered on. The BIOS will shorten or skip some check items during POST. To attain the shortest POST time, select "Enabled".

3.1.2.4 S-ATA or SCSI Card Boot

This field is used to select the RAID device you want to boot.

S-ATA   The drive connected to the SATA connector.
SCSI Card   The drive connected to the SCSI add-in card that is installed in a PCI slot.

If only one type of interface is connected with RAID device(s), you don't need to particularly select an option in this field because the system will automatically detect for the existing drive.

3.1.2.5 First Boot Device, Second Boot Device, Third Boot Device and Boot Other Device

Select the drive to boot first, second and third in the "First Boot Device" "Second Boot Device" and "Third Boot Device" fields respectively. The BIOS will boot the operating system according to the sequence of the drive selected. Set "Boot Other Device" to Enabled if you wish to boot from another device.

3.1.2.6 Swap Floppy Drive

When this field is enabled and the system is booting from the floppy drive, the system will boot from drive B instead of drive A. When this field is disabled and the system is booting from the floppy drive, the system will boot from drive A. You must have two floppy drives to use this function.

3.1.2.7 Boot Up Floppy Seek

When enabled, the BIOS will check whether the floppy disk drive installed is 40 or 80 tracks. Note that the BIOS cannot distinguish between 720K, 1.2M, 1.44M and 2.88M drive types as they are all 80 tracks. When disabled, the BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360KB.

3.1.2.8 Boot Up NumLock Status

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

3.1.2.9 Typematic Rate Setting

Disabled Continually holding down a key on your keyboard will cause the BIOS to report that the key is down.

Enabled The BIOS will not only report that the key is down, but will first wait for a moment, and, if the key is still down, it will begin to report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys. You can then select the typematic rate and typematic delay in the "Typematic Rate (Chars/Sec)" and "Typematic Delay (Msec)" fields below.

3.1.2.10 Typematic Rate (Chars/Sec)

This field allows you to select the rate at which the keys are accelerated.

3.1.2.11 Typematic Delay (Msec)

This field allows you to select the delay between when the key was first depressed and when the acceleration begins.

3.1.2.12 Security Option

This field determines when the system will prompt for the password - everytime the system boots or only when you enter the BIOS setup. Set the password in the Set Supervisor/User Password submenu.

System The system will not boot and access to Setup will be denied unless the correct password is entered at the prompt.

Setup The system will boot, but access to Setup will be denied unless the correct password is entered at the prompt.

3.1.2.13 APIC Mode

Leave this field in its default setting.

3.1.2.14 MPS Version Control for OS

This field is used to select the MPS version that the system board is using.

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

The system board supports SMART (Self-Monitoring, Analysis and Reporting Technology) hard drives. SMART is a reliability prediction technology for ATA/IDE and SCSI drives. The drive will provide sufficient notice to the system or user to backup data prior to the drive's failure. The default is Disabled. If you are using hard drives that support S.M.A.R.T., set this field to Enabled. SMART is supported in ATA/33 or later hard drives.

3.1.2.16 Delay for HDD (Secs)

This field is used to select the time that would delay the HDD controller's initial time. This is specially useful for some HDDs which will not be ready at first boot when you power-on the system.

3.1.2.17 Small Logo(EPA) Show

Enabled The EPA logo will appear during system boot-up.
Disabled The EPA logo will not appear during system boot-up.

3.1.3   Advanced Chipset Features

```
                Phoenix - AwardBIOS CMOS Setup Utility
                       Advanced Chipset Features

    System Performance          Optimal          ▲        Item Help
    CPU Interface               Optimal
    Memory Timings              Optimal                Menu Level   ▶
    T<RAS>                      7
    T<RCD-Read>                 1                     [Optimal] - Use the
    T<RCD-Write>                2                     most stable settings.
    T<RP>                       1
    CAS Latency                 2.5                   [Aggressive/Turbo] -
    T<RC>                       13                    Use over clocked
    T<RFC>                      15                    settings for  higher
    SuperBypass                 Enabled               performance but with
    Sync Mode Memory Bypass     Auto                  higher risk of
    Data Scavenged Rate         Fast                  instability.
    DIMM1 Driving Strength      Auto
    DIMM1 Driving Slew Rate     Auto                  [Expert] - Allows
    DIMM2 Driving Strength      Auto                  full customization of
    DIMM2 Driving Slew Rate     Auto                  performance options.
    DIMM3 Driving Strength      Auto                  Advanced users only.
    DIMM3 Driving Slew Rate     Auto
    AGP Aperture Size <MB>      128M
    AGP 8X Support              Enabled
    AGP Fast Write Capability   Enabled
    CPU Thermal-Throttling      50.0 %
    System BIOS Cacheable       Disabled
    Video RAM Cacheable         Disabled         ▼

  ↑↓→←:Move   Enter:Select  +/-/PU/PD:Value  F10:Save   ESC:Exit   F1:General Help
              F5:Previous Values               F7: Optimized Defaults
```

The screen above list all the fields available in the Advanced Chipset Features submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources. **These items should not be altered unless necessary.** The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered some incompatibility or that data was being lost while using your system.

3.1.3.1   System Performance

This field is used to configure the system's performance.

Optimal   This option provides the most stable system per-
                 formance.

Aggressive   This option uses the overclock settings for higher
                 performance but with higher risk of instability.

Turbo   This option uses the overclock setting for higher
                 performance but with higher risk of instability.

Expert   This option provides full customization of system
                 performance.

3.1.3.2 CPU Interface

This field is used to configure the CPU's interface.

Optimal   Uses the most stable CPU/FSB parameters.
Aggressive   Uses the overclock CPU/FSB parameters.

3.1.3.3 Memory Timings

This field is used to select the memory timing of the DRAM. The options are Optimal, Aggressive, Turbo and Expert.. Select Expert to select the timings manually.

3.1.3.4 T(RAS)

Row to active delay. Set the "System Performance" field to Optimal if you want to use the delay time recommended by the DIMM manufacturer.

3.1.3.5 T(RCD-Read)

RAS-to-CAS read delay. Set the "System Performance" field to Optimal if you want to use the delay time recommended by the DIMM manufacturer.

3.1.3.6 T(RCD-Write)

RAS-to-CAS write delay. Set the "System Performance" field to Optimal if you want to use the delay time recommended by the DIMM manufacturer.

3.1.3.7 T(RP)

Row-precharge delay. Set the "System Performance" field to Optimal if you want to use the delay time recommended by the DIMM manufacturer.

3.1.3.8 CAS Latency

This field is used to select the clock cycle of the SDRAM CAS latency time. The option selected specifies the time before SDRAM starts a read command after receiving it. Set the "System Performance" field to Optimal if you want to use the delay time recommended by the DIMM manufacturer.

3.1.3.9 T(RC)

Row-Cycle delay. Set the "System Performance" field to Optimal if you want to use the delay time recommended by the DIMM manufacturer.

3.1.3.10 T(RFC)

Auto refresh cycle time. Set the "System Performance" field to Optimal if you want to use the delay time recommended by the DIMM manufacturer.

3.1.3.11 SuperBypass

If this field is set to Enabled, the chip allows low-latency accesses to memory. However, memory incompatibility may occur. If the system becomes unstable after enabling this function, set this field to Disabled.

3.1.3.12 Sync Mode Memory Bypass

The options are Auto, Enabled and Disabled.

3.1.3.13 Data Scavenged Rate

The options are Fast and Normal.

3.1.3.14 DIMM1 Driving Strength, DIMM2 Driving Strength and DIMM3 Driving Strength

This field is used to select the DRAM signal driving strength of DIMM 1, DIMM 2 and DIMM 3.

3.1.3.15 DIMM1 Driving Slew Rate, DIMM2 Driving Slew Rate and DIMM3 Driving Slew Rate

This field is used to select the speed of the DRAM signal slew rate from high to low or low to high.

3.1.3.16 AGP Aperture Size (MB)

This field is relevant to the memory-mapped graphics data of the AGP card installed in your system. Leave this in its default setting.

3.1.3.17 AGP 8X Support

This field is used to enable or disable the AGP 8X mode.

3.1.3.18 AGP Fast Write Capability

Select Enabled to support the AGP Fast Write function.

3.1.3.19 CPU Thermal-Throttling

Thermal throttling regulates the thermal environment by alternating between running the processor at full speed and placing the processor in a sleep state whenever the upper limits of the thermal envelop are reached.

3.1.3.20 System BIOS Cacheable

When this field is enabled, accesses to the system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enabled. The larger the range of the Cache RAM, the higher the efficiency of the system.

3.1.3.21 Video RAM Cacheable

When enabled, it allows the video RAM to be cacheable thus providing better video performance. If your graphics card does not support this function, leave this field in its default setting - Disabled.

3.1.4   Integrated Peripherals
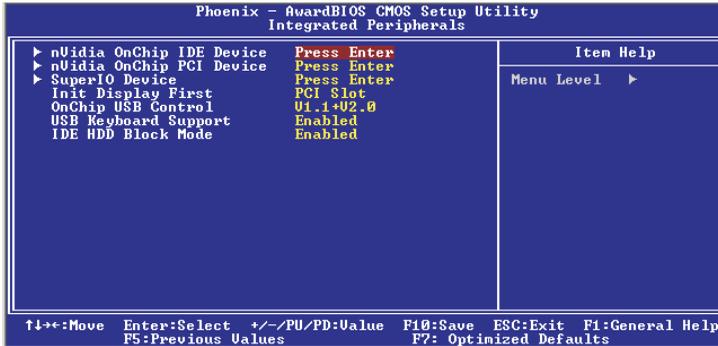
```
            Phoenix - AwardBIOS CMOS Setup Utility
                   Integrated Peripherals

 ▶ nVidia OnChip IDE Device    Press Enter        Item Help
 ▶ nVidia OnChip PCI Device    Press Enter
 ▶ SuperIO Device              Press Enter      Menu Level   ▶
   Init Display First          PCI Slot
   OnChip USB Control          V1.1+V2.0
   USB Keyboard Support        Enabled
   IDE HDD Block Mode          Enabled






 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values             F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

3.1.4.1   nVidia OnChip IDE Device

Move the cursor to this field and press <Enter>. The following screen will appear.

```
            Phoenix - AwardBIOS CMOS Setup Utility
                  nVidia OnChip IDE Device

   On-Chip Primary       IDE    Enabled          Item Help
   IDE Primary Master    PIO    Auto
   IDE Primary Slave     PIO    Auto           Menu Level   ▶▶
   IDE Primary Master    UDMA   Auto
   IDE Primary Slave     UDMA   Auto
   On-Chip Secondary     IDE    Enabled
   IDE Secondary Master  PIO    Auto
   IDE Secondary Slave   PIO    Auto
   IDE Secondary Master  UDMA   Auto
   IDE Secondary Slave   UDMA   Auto
   IDE Prefetch Mode            Enabled




 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values             F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

On-Chip Primary IDE and On-Chip Secondary IDE

These fields allow you to enable or disable the primary and secondary IDE controller. The default is Enabled. Select Disabled if you want to add a different hard drive controller.

IDE Primary Master/Slave PIO and IDE Secondary Master/Slave PIO

PIO means Programmed Input/Output. Rather than have the BIOS issue a series of commands to effect a transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by themselves. Your system supports five modes, 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode after checking your drive.

Auto   The BIOS will automatically set the system according to your hard disk drive's timing.
Mode 0-4 You can select a mode that matches your hard disk drive's timing. Caution: Do not use the wrong setting or you will have drive errors.

IDE Primary Master/Slave UDMA and IDE Secondary Master/Slave UDMA

These fields allow you to set the Ultra DMA in use. When Auto is selected, the BIOS will select the best available option after checking your hard drive or CD-ROM.

Auto   The BIOS will automatically detect the settings for you.
Disabled   The BIOS will not detect these categories.

IDE Prefetch Mode

This allows data and addresses to be stored in the internal buffer of the chip, thus reducing access time. Enable this field to achieve better performance.

BIOS Setup ▪▪▪ ▪

3.1.4.2 nVidia OnChip PCI Device

Move the cursor to this field and press <Enter>. The following screen will appear.
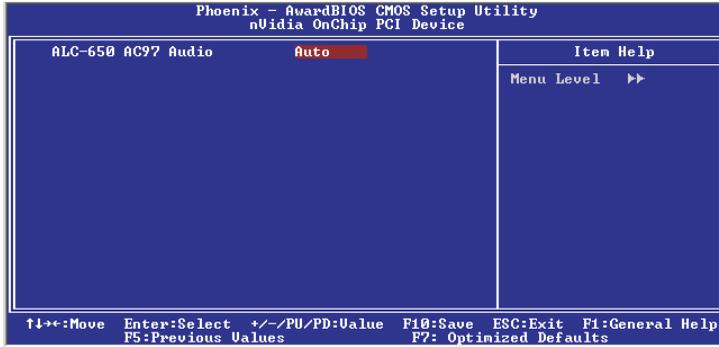
```
                    Phoenix - AwardBIOS CMOS Setup Utility
                          nVidia OnChip PCI Device

    ALC-650 AC97 Audio          Auto                      Item Help

                                                     Menu Level    ▶▶









  ↑↓→←:Move   Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
               F5:Previous Values                F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

ALC-650 AC97 Audio

Auto   Select this option when using the onboard audio codec.

Disabled   Select this option when using a PCI sound card.

3

3.1.4.3 Super IO Device

Move the cursor to this field and press <Enter>. The following screen will appear.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                          SuperIO Device
┌───────────────────────────────────────┬──────────────────────┐
│ Onboard FDC Controller      Enabled    │      Item Help       │
│ Onboard Serial Port 1       3F8/IRQ4   │                      │
│ Onboard IRDA Select         Auto       │  Menu Level    ▶▶    │
│ IRDA Mode Select            IrDA       │                      │
│ RxD , TxD Active            Hi,Lo      │                      │
│ IR Transmission Delay       Enabled    │                      │
│ Onboard Parallel Port       378/IRQ7   │                      │
│ Parallel Port Mode          SPP        │                      │
│ EPP Mode Select             EPP1.7     │                      │
│ ECP Mode Use DMA            3          │                      │
│                                        │                      │
│                                        │                      │
│                                        │                      │
│                                        │                      │
├────────────────────────────────────────┴──────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│           F5:Previous Values          F7: Optimized Defaults   │
└────────────────────────────────────────────────────────────────┘
```

The settings on the screen are for reference only. Your version may not be identical to this one.

Onboard FDC Controller

Enabled   Enables the onboard floppy disk controller.
Disabled   Disables the onboard floppy disk controller.

Onboard Serial Port 1

Auto   The system will automatically select an I/O address for the onboard serial port.
3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3   Allows you to manually select an I/O address for the onboard serial port.
Disabled   Disables the onboard serial port.

Onboard IRDA Select

Auto   Automatically detects the IrDA device.
Disabled   Disables the onboard IrDA.

IRDA Mode Select

This field is used to select the type of IrDA standard supported by your IrDA device. For better transmission of data, your IrDA peripheral device must be within a 30° angle and within a distance of 1 meter.

RxD, TxD Active

The options are Hi, Lo; Lo, Hi; Lo, Lo; and Hi, Hi.

IR Transmission Delay

If this field is Enabled, transmission of data will be slower. This is recommended when you encounter transmission problem with your device.

Onboard Parallel Port

378/IRQ7, 3BC/IRQ7, 278/IRQ5   Selects the I/O address and
                    IRQ for the onboard parallel port.
Disabled   Disables the onboard parallel port.

Parallel Port Mode

The options are SPP, EPP, ECP and ECP+EPP. These apply to a standard specification and will depend on the type and speed of your device. Refer to your peripheral's manual for the best option.

SPP
Allows normal speed operation but in one direction only.

ECP (Extended Capabilities Port)
Allows parallel port to operate in bidirectional mode and at a speed faster than the normal mode's data transfer rate.

EPP (Enhanced Parallel Port)
Allows bidirectional parallel port operation at maximum speed.

If you selected EPP, the "EPP Mode Select" field is configurable. If you selected ECP, the "ECP Mode Use DMA" field is configurable. If you selected ECP+EPP, both "EPP Mode Select" and "ECP Mode Use DMA" are configurable.

EPP Mode Select

This is used to select the EPP mode.

ECP Mode Use DMA

This is used to select the DMA channel of the parallel port.

3.1.4.4 Init Display First

This field is used to select whether to initialize the AGP or PCI first when the system boots.

Onboard/AGP   When the system boots, it will first initialize the AGP.

PCI Slot   When the system boots, it will first initialize PCI.

3.1.4.5 OnChip USB Control

This field is used to enable or disable USB 1.1 and/or USB 2.0.

3.1.4.6 USB Keyboard Support

By default, USB Keyboard Support is Disabled. However, if you are using a USB keyboard under DOS, make sure to enable this function.

3.1.4.7 IDE HDD Block Mode

Enabled   The IDE HDD uses the block mode. The system BIOS will check the hard disk drive for the maximum block size the system can transfer. The block size will depend on the type of hard disk drive.

Disabled   The IDE HDD uses the standard mode.

3.1.5 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                     Power Management Setup
  ┌─────────────────────────────────────────────┬──────────────────────┐
  │ ACPI function          Enabled               │      Item Help       │
  │ ACPI Suspend Type      S1(POS)               │                      │
  │ Power Management       User Define           │ Menu Level    ▶      │
  │ Video Off Method       DPMS Support          │                      │
  │ HDD Power Down         Disabled              │                      │
  │ Soft-Off by PBTN       Instant-Off           │                      │
  │ Wake On LAN From Soft-Off  Enabled           │                      │
  │ Wake On Ring From Soft-Off Enabled           │                      │
  │ USB Resume from S3     Disabled              │                      │
  │ Keyboard/Mouse Power On  Disabled            │                      │
  │ KB Power ON Password   Enter                 │                      │
  │ KB Power On Hot Key    Ctrl-F1               │                      │
  │ PWR Lost Resume State  Keep Off              │                      │
  │ Power-On by Alarm      Disabled              │                      │
  │ x Time(dd:hh:mm) of Alarm    2 : 0 : 4       │                      │
  │                                              │                      │
  ├──────────────────────────────────────────────┴──────────────────────┤
  │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
  │           F5:Previous Values              F7: Optimized Defaults     │
  └──────────────────────────────────────────────────────────────────────┘
```

The settings on the screen are for reference only. Your version may not be identical to this one.

3.1.5.1 ACPI Function

This function should be enabled only in operating systems that support ACPI. Currently, only Windows**®** 98SE/2000/ME/XP supports this function. When this field is enabled, the system will ignore the settings in the "HDD Power Down" field. If you want to use the Suspend to RAM function, make sure this field is enabled then select "S3(STR)" in the field below.

3.1.5.2 ACPI Suspend Type

This field is used to select the type of Suspend mode.

S1(POS)   Enables the Power On Suspend function.
S3(STR)   Enables the Suspend to RAM function.

3.1.5.3 Power Management

This field allows you to select the type (or degree) of power saving by changing the length of idle time that elapses before the "HDD Power Down" field is activated.

Min Saving   Minimum power saving time for the "HDD Power Down" = 15 min.
Max Saving   Maximum power saving time for the "HDD Power Down" = 1 min.
User Define   Allows you to set the power saving time in the "HDD Power Down" field.

3.1.5.4 Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC + Blank This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen   This option only writes blanks to the video buffer.
DPMS   Initializes display power management signaling. Use this option if your video board supports it.

3.1.5.5 HDD Power Down

This is selectable only when the Power Management field is set to User Define. When the system enters the HDD Power Down mode according to the power saving time selected, the hard disk drive will be powered down while all other devices remain active.

3.1.5.6 Soft-Off by PBTN

This field allows you to select the method of powering off your system.

Delay 4 Sec. Regardless of whether the Power Management function is enabled or disabled, if the power button is pushed and released in less than 4 sec, the system enters the Suspend mode. The purpose of this function is to prevent the system from powering off in case you accidentally "hit" or pushed the power button. Push and release again in less than 4 sec to restore. Pushing the power button for more than 4 seconds will power off the system.

Instant-Off Pressing and then releasing the power button at once will immediately power off your system.

3.1.5.7 Wake On LAN from Soft-Off

If you are using a LAN card that supports the remote wake up function, set this field to Enabled. The will allow the network to remotely wake up a Soft Power Down (Soft-Off) PC. However, if your system is in the Suspend mode, you can wake up the system only through an IRQ or DMA interrupt.

3.1.5.8 Wake On Ring from Soft-Off

When this field is set to Enabled, the system will power-on to respond to calls coming from an external modem.

3.1.5.9 USB Resume From S3

This field, when enabled, allows you to use a USB device to wake up a system that is in the S3 (STR - Suspend To RAM) state.

3.1.5.10 Keyboard/Mouse Power On

This field allows you to use the PS/2 keyboard or PS/2 mouse to power-on the system.

Disabled   Default setting. Uses the power button to power on the system.

Password   When this option is selected, set the password you would like to use to power-on the system in the "KB Power On Password" field.

Hot Key   When this option is selected, select the function key you would like to use to power-on the system in the "KB Power On Hot Key" field.

Any Key   Press any key to power-on the system.

Mouse Left   When this option is selected, double-click the left button of the mouse to power-on the system.

Mouse Right   When this option is selected, double-click the right button of the mouse to power-on the system.

Keyboard 98   When this option is selected, press the "wake up" key of the Windows® 98 compatible keyboard to power-on the system.

3.1.5.11 KB Power On Password

Move the cursor to this field and press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, then press <Enter>.

The power button will not function once a keyboard password has been set in this field. You must type the correct password to power-on the system. If you forgot the password, power-off the system and remove the battery. Wait for a few seconds and install it back before powering-on the system.

3.1.5.12 KB Power On Hot Key

This field is used to select a function key that you would like to use to power-on the system.

3.1.5.13 PWR Lost Resume State

Keep Off   When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

Turn On   When power returns after an AC power failure, the system will automatically power-on.

Last State   When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

3.1.5.14 Power-On By Alarm

Enabled   When Enabled, you can set the time you would like the Soft Power Down (Soft-Off) PC to power-on in the "Time (dd:hh:mm) of Alarm" field. However, if the system is being accessed by incoming calls or the network prior to the time set in the field, the system will give priority to the incoming calls or network.

Disabled   Disables the automatic power-on function. (default)

3.1.5.15 Time (hh:mm:ss) of Alarm

This is used to set the time you would like the system to power-on.

3.1.6 PnP/PCI Configurations

This section describes configuring the PCI bus system. It covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

```
            Phoenix - AwardBIOS CMOS Setup Utility
                    PnP/PCI Configurations

  Reset Configuration Data     Disabled              Item Help

  Resources Controlled By      Auto(ESCD)     Menu Level   ▶
x IRQ Resources                Press Enter
                                              Default is Disabled.
  PCI/VGA Palette Snoop         Disabled      Select Enabled to
                                              reset Extended System
  * PCI IRQ Assignment *                      Configuration Data
    Slot 1,5                    Auto          ESCD> when you exit
    Slot 2                      Auto          Setup if you have
    Slot 3                      Auto          installed a new add-on
    OnBoard USB/Slot 4          Auto          and the system
                                              reconfiguration has
                                              caused such a serious
                                              conflict that the OS
                                              cannot boot

↑↓→←:Move   Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values                    F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

3.1.6.1 Reset Configuration Data

Enabled   The BIOS will reset the Extended System Configuration Data (ESCD) once automatically. It will then recreate a new set of configuration data.

Disabled The BIOS will not reset the configuration data.

3.1.6.2 Resources Controlled By

The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices.

Auto(ESCD)   The system will automatically detect the settings for you.

Manual   Choose the specific IRQ in the "IRQ Resources" field.

3.1.6.3 IRQ Resources

Move the cursor to this field and press <Enter>. This field is used to set each system interrupt to either Reserved or PCI Device.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                         IRQ Resources

   IRQ-3   assigned to      PCI Device          │      Item Help
   IRQ-4   assigned to      PCI Device          │
   IRQ-5   assigned to      PCI Device          │  Menu Level    ▶▶
   IRQ-7   assigned to      PCI Device          │
   IRQ-9   assigned to      PCI Device          │  Legacy ISA for devices
   IRQ-10  assigned to      PCI Device          │  compliant with the
   IRQ-11  assigned to      PCI Device          │  original PC AT bus
   IRQ-12  assigned to      PCI Device          │  specification, PCI/ISA
   IRQ-14  assigned to      PCI Device          │  PnP for devices
   IRQ-15  assigned to      PCI Device          │  compliant with the
                                                │  Plug and Play standard
                                                │  whether designed for
                                                │  PCI or ISA bus
                                                │  architecture

 ↑↓→←:Move   Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
             F5:Previous Values                   F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

3.1.6.4 PCI/VGA Palette Snoop

This field determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not.

Enabled   MPEG ISA/VESA VGA cards work with PCI/VGA.
Disabled   MPEG ISA/VESA VGA cards does not work with PCI/VGA.

3.1.6.5 PCI IRQ Assignment

By default, an IRQ is automatically assigned to the PCI devices that are installed in the PCI slots. If a PCI device has not been assigned an IRQ, you must manually assign an IRQ for the device. During system boot-up, you will see "NA" for the device that does not have an IRQ assigned.

3

3.1.7   PC Health Status
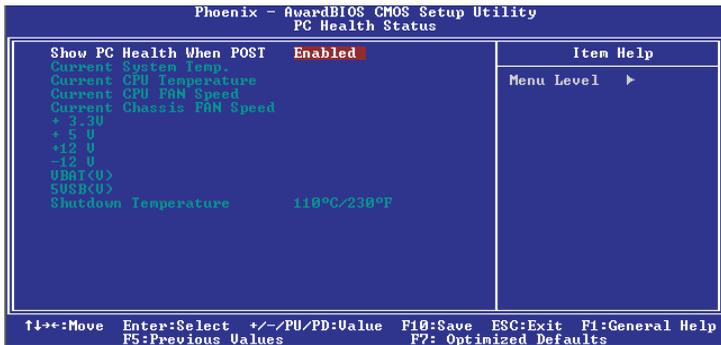
```
               Phoenix - AwardBIOS CMOS Setup Utility
                          PC Health Status

   Show PC Health When POST     Enabled                    Item Help
   Current System Temp.
   Current CPU Temperature                       Menu Level    ▶
   Current CPU FAN Speed
   Current Chassis FAN Speed
   + 3.3V
   + 5 V
   +12 V
   -12 V
   VBAT(V)
   5VSB(V)
   Shutdown Temperature        110°C/230°F




   ↑↓←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
             F5:Previous Values               F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

3.1.7.1 Show PC Health When POST

This field, when enabled, will display the temperature of the CPU and system, the fan speed of the CPU and chassis fans and ouput voltages when the system boots-up during POST.

3.1.7.2   Current System Temp., Current CPU Temperature, Current CPU Fan Speed and Current Chassis Fan Speed

These fields show the internal temperature of the system, current temperature of the CPU, and the current fan speed of the CPU and chassis fans in RPM (Revolutions Per Minute).

3.1.7.3 +3.3V, +5V, +12V, -12V, VBAT(V) and 5VSB(V)

These fields show the output voltage of the power supply.

3.1.7.4   Shutdown Temperature

You can prevent the system from overheating by selecting a tem-
perature in this field. If the system detected that its temperature
exceeded the one set in this field, it will automatically shutdown.
This function will work only when you enable this function in the
Winbond Hardware Monitor utility.

Note:
*The onboard hardware monitor function is capable of detecting
"system health" conditions but if you want a warning message
to pop-up or a warning alarm to sound when an abnormal
condition occurs, you must install the Winbond Hardware Moni-
tor utility. This utility is included in the CD that came with the
system board. Refer to the Winbond Hardware Monitor section
in chapter 4 for more information.*

3.1.8 Genie BIOS Setting


```
        Phoenix - AwardBIOS CMOS Setup Utility
                Genie BIOS Setting

  Current CPU Frequency is       0 MHz              |    Item Help

  ======= CPU/DRAM Clock Setting =======    | Menu Level   ▶
  CPU Clock Spread Spectrum   Disabled
  AGP Clock Spread Spectrum   Disabled
  CPU Clock Setting           100 MHz
  AGP Clock Setting           Auto
  CPU Ratio                   Default
  DDR DRAM Clock              By SPD
  Current DDR Frequency is

  ======= OverClocking Control =======
  Current CPU Voltage is
  Current DIMM Voltage is
  CPU Voltage Control         Auto
  AGP Voltage Control         Auto
  CHIPSET Voltage Control     Auto
  DRAM Voltage Control        Auto

  ======= Onboard Device Control =======
  BIOS Flash Protect          Disabled
  nVidia Lan Chip Control      Enabled
  nVidia Lan MAC Address      Disabled
 x MAC(NU) Address Input      Press Enter
  IEEE1394 Chip Control        Enabled
  RTM Lan Device Control       Enabled
  RTM Lan Boot ROM            Disabled
  Sil3114 S-ATA Control       SATA RAID

 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values              F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

3.1.8.1 Current CPU Frequency is

This field will show the current CPU frequency.

3.1.8.2 CPU Clock Spread Spectrum

Leave this field in its default setting. Do not alter this setting unless advised by an engineer or technician.

3.1.8.3 AGP Clock Spread Spectrum

Leave this field in its default setting. Do not alter this setting unless advised by an engineer or technician.

3.1.8.4 CPU Clock Setting

This field provides several options for selecting the external system bus clock of the processor. The available options allow you to adjust the processor's bus clock by 1MHz increment.

Important:
Selecting an external bus clock other than the default setting may result to the processor's or system's instability and are not guaranteed to provide better system performance.

81

3.1.8.5 AGP Clock Setting

This field is used to select the AGP clock.

3.1.8.6 CPU Ratio

This field is used to select the CPU's frequency ratio.

3.1.8.7 DDR DRAM Clock

This field is used to select the DRAM clock.

3.1.8.8 Current DDR Frenquency is

This field will show the current DDR frequency.

3.1.8.9 Current CPU Voltage is

This field will show the current CPU voltage.

3.1.8.10 Current DIMM Voltage is

This field will show the current DIMM voltage.

3.1.8.11 CPU Voltage Control

This field allows you to manually adjust to a higher core voltage that is supplied to the CPU. If you want to use the CPU's default core voltage, leave this field in its default setting. The CPU's Vcore will be generated according to the CPU VID configuration.

Important:
Although this function is supported, we do not recommend that you use a higher voltage because unstable current may be supplied to the system board causing damage.

3.1.8.12 AGP Voltage Control

This field allows you to manually select higher voltage supplied to the AGP. If you want to use the default voltage, leave this field in its default setting.

Important:
Although this function is supported, we do not recommend that you use a higher voltage because unstable current may be supplied to the system board causing damage.

3.1.8.13 Chipset Voltage Control

This field allows you to manually select higher voltage supplied to the chipset. If you want to use the default voltage, leave this field in its default setting.

Important:
Although this function is supported, we do not recommend that you use a higher voltage because unstable current may be supplied to the system board causing damage.

3.1.8.14 DRAM Voltage Control

This field allows you to manually select higher voltage supplied to the DRAM. If you want to use the DRAM's default voltage, leave this field in its default setting.

Important:
Although this function is supported, we do not recommend that you use a higher voltage because unstable current may be supplied to the system board causing damage.

3.1.8.15 BIOS Flash Protect

Enabled This option will protect the system from unnecessary updating or flashing of the BIOS. When enabled, it secures the BIOS therefore any updates to the BIOS will not take effect.

Disabled Disables the "BIOS flash lock" function, allowing you to update or flash the BIOS any time needed.

3.1.8.16 nVidia Lan Chip Control

This field is used to enable or disable the LAN function of the nVIDIA® nForce2 MCP-T chip that controls the LAN 1 port.

3.1.8.17 nVidia Lan MAC Address

This field is used to select the MAC address of the nVIDIA® nForce2 MCP-T chip.

83

3.1.8.18 MAC(NV) Address Input

Move the cursor to this field and press <Enter>, then enter the MAC address.

3.1.8.19 IEEE1394 Chip Control

This field is used to enable or disable the onboard IEEE 1394 function.

3.1.8.20 RTM Lan Device Control

This field is used to enable or disable the LAN function of the Realtek RTL8110S chip that controls the LAN 2 port.

3.1.8.21 RTM Lan Boot ROM

Enable this field if you wish to use the boot ROM (instead of a disk drive) to boot-up the system and access the local area network directly.
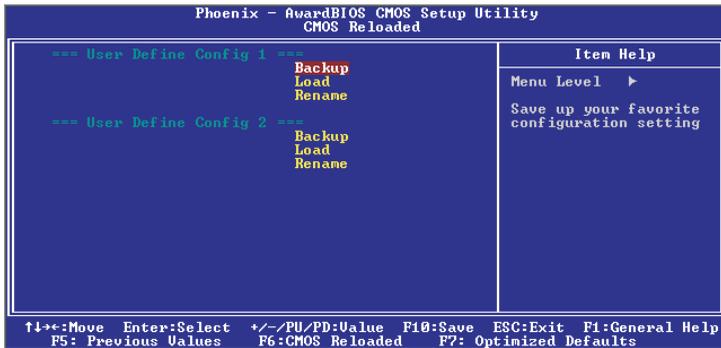
If you wish to change the boot ROM's settings, type the <Shift> and <F10> keys simultaneously when prompted during boot-up. Take note: you will be able to access the boot ROM's program (by typing <Shift> + <F10>) only when this field is enabled.

3.1.8.22 Sil3114 S-ATA Control

This field is used to enable or disable the onboard serial ATA function.

3.1.9 CMOS Reloaded

The CMOS Reloaded submenu allows you to save different con-
figurations and when needed, allows you to conveniently restore
one of these previously saved configurations. Highlight CMOS Re-
loaded in the main menu then press <Enter>.

```
                 Phoenix - AwardBIOS CMOS Setup Utility
                             CMOS Reloaded
┌─────────────────────────────────────────────┬───────────────────────┐
│ === User Define Config 1 ===                 │      Item Help        │
│                       Backup                 │                       │
│                       Load                   │ Menu Level    ▶       │
│                       Rename                 │                       │
│                                              │ Save up your favorite │
│ === User Define Config 2 ===                 │ configuration setting │
│                       Backup                 │                       │
│                       Load                   │                       │
│                       Rename                 │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
├──────────────────────────────────────────────────────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│     F5: Previous Values     F6:CMOS Reloaded    F7: Optimized Defaults │
└──────────────────────────────────────────────────────────────────────┘
```
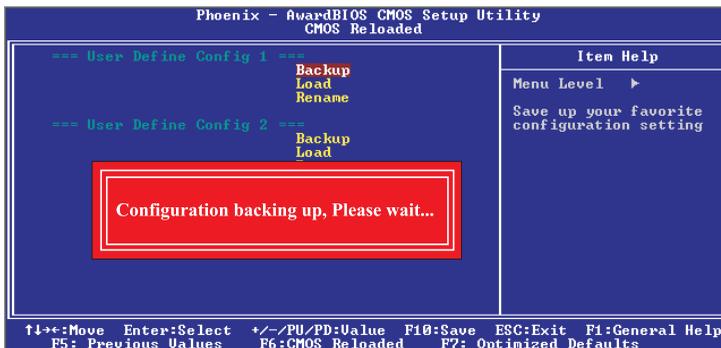
The settings on the screen are for reference only. Your version may not be identical
to this one.

You can save up to two configurations - in the "User Define
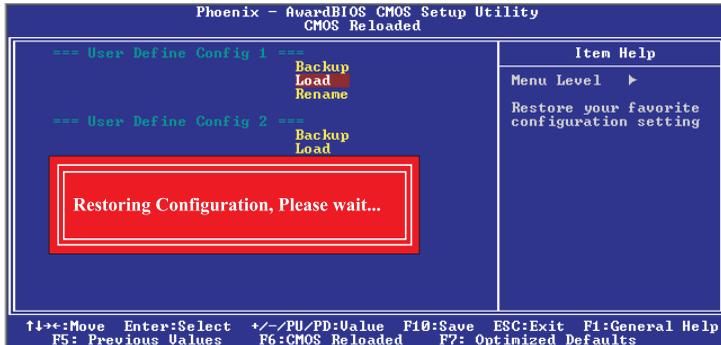Config 1" and "User Define Config 2" fields..

Saving a Configuration

After you have made the proper settings, move the cursor to
"Backup" of "User Define Config 1" then press <Enter>. The
message below will appear.

```
                 Phoenix - AwardBIOS CMOS Setup Utility
                             CMOS Reloaded
┌─────────────────────────────────────────────┬───────────────────────┐
│ === User Define Config 1 ===                 │      Item Help        │
│                       Backup                 │                       │
│                       Load                   │ Menu Level    ▶       │
│                       Rename                 │                       │
│                                              │ Save up your favorite │
│ === User Define Config 2 ===                 │ configuration setting │
│                       Backup                 │                       │
│                       Load                   │                       │
│  ┌──────────────────────────────────────┐   │                       │
│  │                                      │   │                       │
│  │  Configuration backing up, Please wait...│                       │
│  │                                      │   │                       │
│  └──────────────────────────────────────┘   │                       │
│                                              │                       │
├──────────────────────────────────────────────────────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│     F5: Previous Values     F6:CMOS Reloaded    F7: Optimized Defaults │
└──────────────────────────────────────────────────────────────────────┘
```

Restoring a Configuration

To restore one of the previously saved configurations, move the cursor to "Load" of "User Define Config 1" then press <Enter>. The message below will appear.

Renaming a Configuration

The default name given in the "User Define Config 1" field is "Config 1" and "Config 2" in the "User Define Config 2" field. To rename, move the cursor to "Rename" then press <Enter>. The message below will appear. You can enter up to 16 characters.
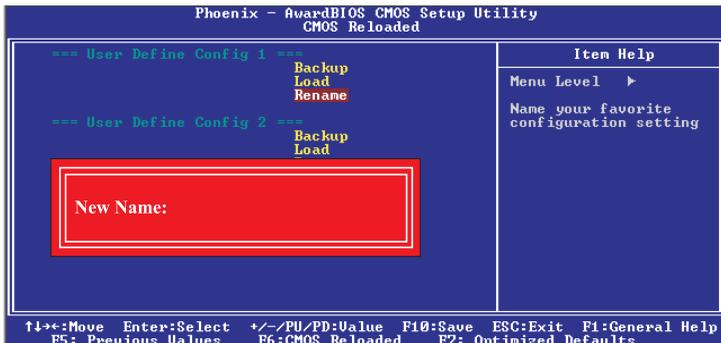
To save another configuration, repeat the procedures above but this time, in the "User Define Config 2" field.

3.1.10   Load Optimized Defaults

The "Load Optimized Defaults" option loads optimized settings from the BIOS ROM. Use the default values as standard values for your system. Highlight this option in the main menu and press <Enter>.
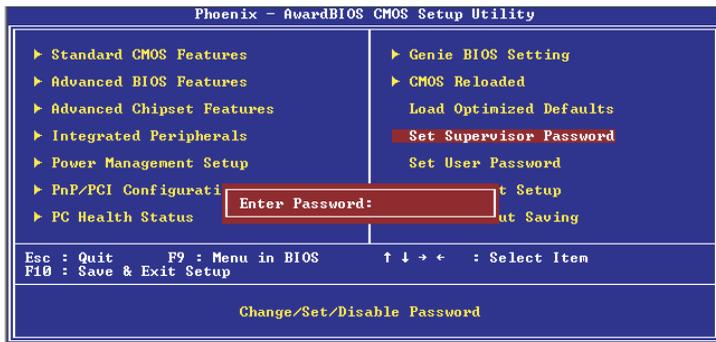
```
            Phoenix - AwardBIOS CMOS Setup Utility

  ▶ Standard CMOS Features        ▶ Genie BIOS Setting
  ▶ Advanced BIOS Features        ▶ CMOS Reloaded
  ▶ Advanced Chipset Features        Load Optimized Defaults
  ▶ Integrated Peripherals           Set Supervisor Password
  ▶ Power Management          ┌─────────────────────────┐ word
  ▶ PnP/PCI Configura         │ Load Optimized Defaults (Y/N)? N │ etup
  ▶ PC Health Status          └─────────────────────────┘ Saving

  Esc : Quit        F9 : Menu in BIOS      ↑ ↓ → ←   : Select Item
  F10 : Save & Exit Setup

                    Load Optimized Defaults
```

Type <Y> and press <Enter> to load the Setup default values.

3.1.11 Set Supervisor Password

If you want to protect your system and setup from unauthorized entry, set a supervisor's password with the "System" option selected in the Advanced BIOS Features. If you want to protect access to setup only, but not your system, set a supervisor's password with the "Setup" option selected in the Advanced BIOS Features. You will not be prompted for a password when you cold boot the system.

Use the arrow keys to highlight "Set Supervisor Password" and press <Enter>.

```
          Phoenix - AwardBIOS CMOS Setup Utility
┌───────────────────────────────┬───────────────────────────────┐
│ ▶ Standard CMOS Features       │ ▶ Genie BIOS Setting          │
│ ▶ Advanced BIOS Features       │ ▶ CMOS Reloaded               │
│ ▶ Advanced Chipset Features    │   Load Optimized Defaults     │
│ ▶ Integrated Peripherals       │   Set Supervisor Password     │
│ ▶ Power Management Setup        │   Set User Password           │
│ ▶ PnP/PCI Configurati┌───────────────────────┐t Setup        │
│ ▶ PC Health Status   │ Enter Password:        │ut Saving      │
│                       └───────────────────────┘               │
├───────────────────────────────────────────────────────────────┤
│ Esc : Quit       F9 : Menu in BIOS      ↑ ↓ → ←  : Select Item│
│ F10 : Save & Exit Setup                                       │
├───────────────────────────────────────────────────────────────┤
│             Change/Set/Disable Password                       │
└───────────────────────────────────────────────────────────────┘
```
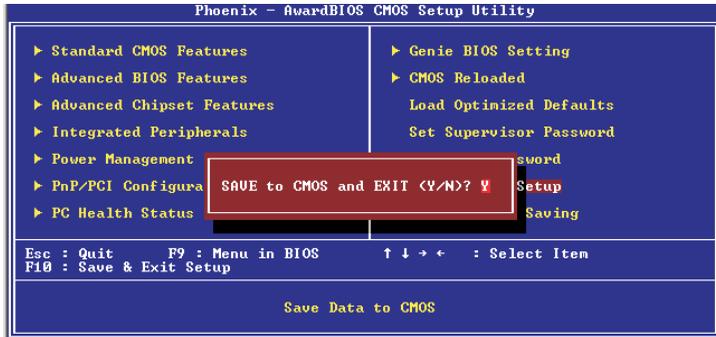
Type in the password. You are limited to eight characters. When done, the message below will appear:

Confirm Password:

You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight "Set Supervisor Password" and press <Enter>, instead of typing in a new password. Press the <Esc> key to return to the main menu.
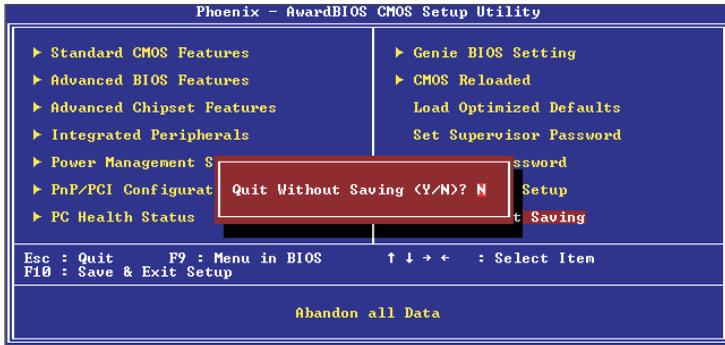
3.1.12   Set User Password

If you want another user to have access only to your system but not to setup, set a user's password with the "System" option selected in the Advanced BIOS Features. If you want a user to enter a password when trying to access setup, set a user's password with the "Setup" option selected in the Advanced BIOS Features.

Using user's password to enter Setup allows a user to access only "Set User Password" that appears in the main menu screen. Access to all other options is denied.

Use the arrow keys to highlight "Set User Password" and press <Enter>.

```
            Phoenix - AwardBIOS CMOS Setup Utility

    ▶ Standard CMOS Features          ▶ Genie BIOS Setting
    ▶ Advanced BIOS Features          ▶ CMOS Reloaded
    ▶ Advanced Chipset Features          Load Optimized Defaults
    ▶ Integrated Peripherals             Set Supervisor Password
    ▶ Power Management Setup           ▌ Set User Password
    ▶ PnP/PCI Configurati ┌─────────────────────────┐ t Setup
    ▶ PC Health Status    │  Enter Password:        │ ut Saving
                          └─────────────────────────┘
    Esc : Quit       F9 : Menu in BIOS      ↑ ↓ → ←   : Select Item
    F10 : Save & Exit Setup

                  Change/Set/Disable Password
```

Type in the password. You are limited to eight characters. When done, the message below will appear:

Confirm Password:

You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight "Set User Password" and press <Enter>, instead of typing in a new password. Press the <Esc> key to return to the main menu.

3.1.13 Save & Exit Setup

When all the changes have been made, highlight "Save & Exit Setup" and press <Enter>.

```
              Phoenix - AwardBIOS CMOS Setup Utility
  ┌──────────────────────────────────────────────────────────────┐
  │ ▶ Standard CMOS Features      ▶ Genie BIOS Setting            │
  │ ▶ Advanced BIOS Features      ▶ CMOS Reloaded                 │
  │ ▶ Advanced Chipset Features      Load Optimized Defaults      │
  │ ▶ Integrated Peripherals         Set Supervisor Password      │
  │ ▶ Power Management          ┌──────────────────────┐ sword    │
  │ ▶ PnP/PCI Configura         │ SAVE to CMOS and EXIT (Y/N)? Y │ Setup │
  │ ▶ PC Health Status          └──────────────────────┘ Saving   │
  ├──────────────────────────────────────────────────────────────┤
  │ Esc : Quit      F9 : Menu in BIOS      ↑ ↓ → ←  : Select Item │
  │ F10 : Save & Exit Setup                                       │
  ├──────────────────────────────────────────────────────────────┤
  │                   Save Data to CMOS                           │
  └──────────────────────────────────────────────────────────────┘
```

Type "Y" and press <Enter>. The modifications you have made will be written into the CMOS memory, and the system will reboot. You will once again see the initial diagnostics on the screen. If you wish to make additional changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or <Del> after memory testing is done.

3.1.14   Exit Without Saving

When you do not want to save the changes you have made, highlight "Exit Without Saving" and press <Enter>.

```
            Phoenix - AwardBIOS CMOS Setup Utility
  ▶ Standard CMOS Features        ▶ Genie BIOS Setting
  ▶ Advanced BIOS Features        ▶ CMOS Reloaded
  ▶ Advanced Chipset Features        Load Optimized Defaults
  ▶ Integrated Peripherals           Set Supervisor Password
  ▶ Power Management S ┌─────────────────────────┐ ssword
  ▶ PnP/PCI Configurat │ Quit Without Saving (Y/N)? N │ Setup
  ▶ PC Health Status   └─────────────────────────┘ Saving

  Esc : Quit        F9 : Menu in BIOS      ↑ ↓ → ←   : Select Item
  F10 : Save & Exit Setup

                        Abandon all Data
```

Type "Y" and press <Enter>. The system will reboot and you will once again see the initial diagnostics on the screen. If you wish to make any changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or <Del> after memory testing is done.

3.2 Sil3114 SataRAID BIOS

The Sil3114 SataRAID BIOS utility is used to configure and man-
age RAID on Serial ATA drives.

Important:

*Before you run the Sil3114 SataRAID BIOS utility, make sure
"Sil3114 S-ATA Control" in the Genie BIOS Setting submenu of
the Award BIOS is configured properly.*

After you power up the system and all hard disk drives have
been detected, the Sil3114 SataRAID BIOS status message screen
will appear. Press the <Ctrl-S> or <F4> key to enter the utility.
The utility allows you to build a RAID system using Serial ATA
(SATA) hard drives.

3.3 Selecting the First Boot Device During POST

The system board comes with a built-in program which you can
conveniently run during POST to select the device you want to
boot first; without having to enter the BIOS utility.

When you power-on the computer, press <Print Scrn> after the
memory test. The "Boot Menu" screen will appear. Select the de-
vice you want to boot first then press <Enter>. POST will then
continue with its test routines and boot up from the device you
have selected awhile ago.

Take note - the setting will not be stored in the CMOS RAM of
the firmware hub. The program is specially convenient when you
want to boot a device for certain purposes at that particular
time. The next time you boot up the computer and skip the
"Boot Menu" program, the system will boot according to the set-
tings in the BIOS.

3.4 Updating the BIOS

To update the BIOS, you will need the new BIOS file and a flash utility, AWDFLASH.EXE. You can download them from DFI's web site or contact technical support or your sales representative.

1. Save the new BIOS file along with the flash utility AWDFLASH.EXE to a floppy disk.

2. Reboot the system and enter the Award BIOS Setup Utility to set the first boot drive to "Floppy".

3. Save the setting and reboot the system.

4. After the system booted from the floppy disk, execute the flash utility by typing AWDFLASH.EXE. The following screen will appear.

```
              Award BIOS Flash Utility V.8.15B
         (C) Phoenix Technologies Ltd. All Rights Reserved.

  (The current BIOS information will appear in this area.)

  File Name to Program :  [                        ]
```
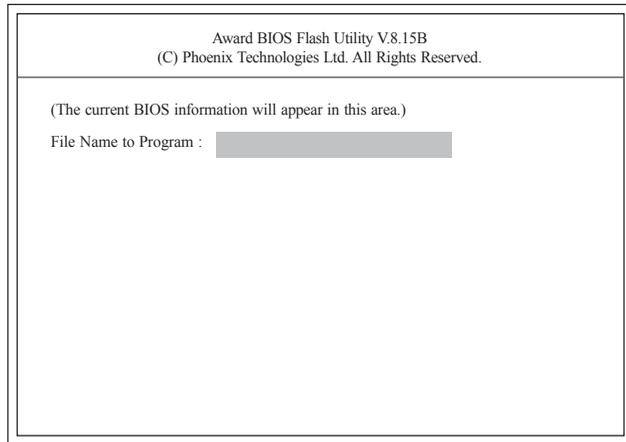
5. Type the new BIOS file name onto the gray area that is next to "File Name to Program" then press <Enter>.

6. The following will appear.

> Do You Want to Save BIOS (Y/N)

This question refers to the current existing BIOS in your sys-
tem. We recommend that you save the current BIOS and its
flash utility; just in case you need to reinstall the BIOS. To save
the current BIOS, press <Y> then enter the file name of the
current BIOS. Otherwise, press <N>.

7. The following will then appear.

> Press "Y" to Program or "N" to Exit

8. Press <Y> to flash the new BIOS.

Chapter 4 - Supported Software

4.1 Desktop Management Interface (DMI)

The mainboard comes with a DMI built into the BIOS. DMI, along with the appropriately networked software, is designed to make inventory, maintenance and troubleshooting of computer systems easier. With DMI, a network administrator or MIS engineer can remotely access some information about a particular computer system without physically going to it. Quite often a service call may be unnecessary as the problem can be solved remotely.

The DMI utility in the BIOS automatically records various information about your system configuration. Information about the type and speed of CPU, type and amount of memory for each memory slot, BIOS revision level, types of add-in PCI boards and components, certain revision numbers of hardware installed, etc. are automatically detected and stored in the DMI pool, which is a part of the mainboard's Plug and Play BIOS. Additional information, such as ISA based peripherals, which may not be automatically detected, can be manually recorded in the DMI pool by using the Add DMI menu. The DMI pool data is then verified or updated whenever the system hardware or setup is altered.

4.1.1   Running the DMI Utility

To run the DMI utility, type: DMICFG.EXE. You can download this utility from ftp.dfiusa.com - /utilities/DMI directory.

The DMI utility must run in real mode with at least 180K of base memory. Memory managers like HIMEM.SYS (required by Windows) must not be installed. You may do this by using one of the 3 methods listed below.

1. Boot up from a system diskette without the AUTOEXEC.BAT and CONFIG.SYS files,

2. "REM" HIMEM.SYS in the CONFIG.SYS, or

3. Press <F5> during bootup to bypass your AUTOEXEC.BAT and CONFIG.SYS files.

4.1.2 Using the DMI Utility

```
            Award DMI Configuration Utility Copyright Award Software Inc, 1996
      [Edit DMI]  [Add DMI]  [Load DMI File]  [Save DMI File]

 s         BIOS                        *** BIOS Auto Detect ***
 n        System
      Enclosure/Chassis        Type : BIOS Information
         Processor            Handle : 0000
     Memory Controller            Vendor Name  :
      Memory Module            BIOS Version :
      Memory Module            BIOS Starting Address Segment : E000
      Memory Module            BIOS Build Date :
      Memory Module            BIOS Characteristics :
          Cache                Size of BIOS ROM : 0256K
          Cache
       Port Connector
       Port Connector
       Port Connector
       Port Connector
       Port Connector
       Port Connector
       Port Connector
 s      System Slots

 ↑ ↓ ←  Move cursor  ENTER-Accept  DEL-Delete  ESC-Abort&Exit
```

The four menus located on top of the DMI Configuration Utility screen are Edit DMI, Add DMI, Load DMI File and Save DMI File. Use the ← or → (left or right) arrow keys to select a menu from the Menu bar.

On the left side of the screen is a list of the system configuration items. Use the ↑ or ↓ (up or down) arrow keys to select an item.

The commands at the bottom of the screen will allow you to navigate through the various setup menus.

Edit DMI

1. Use the ← or → arrow keys to select the Edit DMI menu.

2. Highlight the item on the left screen that you would like to edit by using the ↑ or ↓ arrow keys, then press <Enter>.

3. The cursor will move to the screen you select allowing you to edit information. The screen will also display the auto-detected information.

4. Press <F10> to update the edited information into the flash ROM.

Add DMI

1. Use the ← or → arrow keys to select the Add DMI menu.

2. Highlight the item on the left screen that you would like to add by using the ↑ or ↓ arrow keys, then press <Enter>.

3. The cursor will move to the screen you select allowing you to enter information about the added item.

4. Press <F10> to save information into the flash ROM.

To view information about the added items, go to the Edit DMI menu.

Load DMI File

1. Use the ← or → arrow keys to select the Load DMI File menu.

2. The following message will appear.

   Press [Enter] to select DMI file for load

   Press <Enter>.

3. The DMI files will appear on the screen. Select the file you would like to load and press <Enter>.

4. The following message will appear.

   Do you want to execute? (Y/N)

   Type <Y>. All previous DMI structures will be destroyed and the new file will be saved into the flash ROM.

Save DMI File

1. Use the ← or → arrow keys to select the Save DMI File menu.

2. The following message will appear.

   Press [Enter] to select DMI file for save

   Press <Enter>.

3. Enter the directory and filename under which you would like the DMI file saved.

4.2 Drivers, Utilities and Software Applications

The CD that came with the system board contains drivers, utilities and software applications required to enhance the performance of the system board.

Insert the CD into a CD-ROM drive. The autorun screen (Mainboard Utility CD) will appear. If after inserting the CD, "Autorun" did not automatically start (which is, the Mainboard Utility CD screen did not appear), please go directly to the root directory of the CD and double-click "Setup".
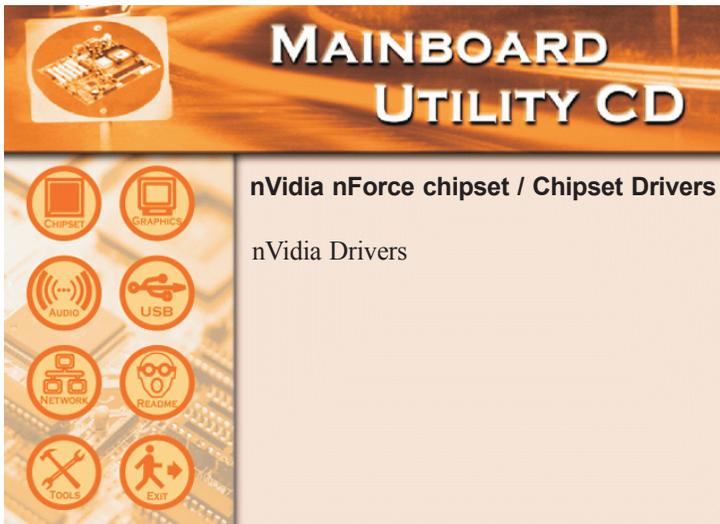
4.2.1   nVidia Drivers

nVidia Drivers contain the following.

• NVIDIA IDE SW Driver
• Ethernet Driver
• NV GART Driver
• NVIDIA Audio Driver

To install nVidia nForce drivers, please follow the steps below.

1. On the left side of the autorun screen, click the "CHIPSET" icon.

2. Click "nVidia Drivers" on the main menu. The following screen will appear.

3. Click "Next". Please read the "nVidia Drivers Readme" carefully before proceeding to step 4.

4. Follow the prompts on the screen to complete the installation.

5. Reboot the system for the drivers to take effect.

4.2.2 LAN Drivers

If you are using the LAN 2 port which is controlled by the Realtek RTL8110S chip, you must install the LAN drivers. The LAN drivers support autorun for the following operating systems: Windows® 98 SE, Windows® ME, Windows® 2000 and Windows® XP.

To install the driver, please follow the steps below.

1. On the left side of the autorun screen, click the "NETWORK" icon.

2. Click "LAN Drivers" on the main menu. The following screen will appear.
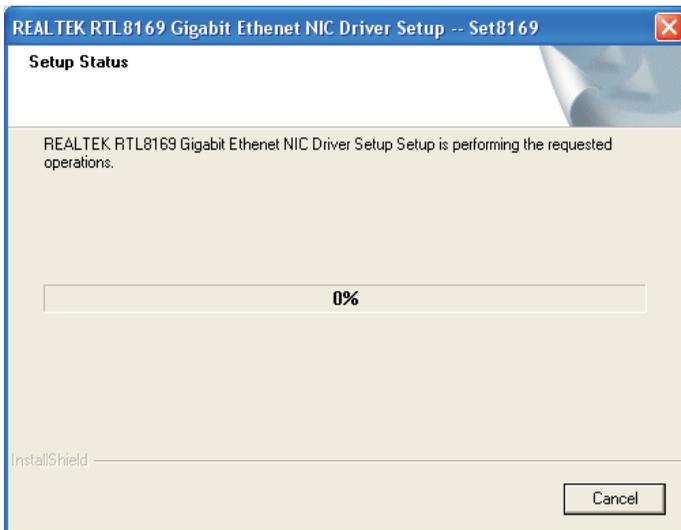
3. Follow the prompts on the screen to complete installation.

4. Reboot the system for the driver to take effect.

The LAN driver for Windows NT® 4.0 does not support "Autorun". Once the Windows NT® 4.0 system has detected the Realtek RTL8110S Gigabit LAN PCI controller, it will prompt you to install the driver. The driver is in the "RTL_GLAN\WINNT4" directory of the CD.

4.2.3 Silicon Image RAID Drivers

If the Serial ATA drives will be configured as RAID, you must install the Silicon Image RAID drivers.

1. On the left side of the autorun screen, click the "TOOLS" icon.

2. Click "Silicon Image RAID Drivers" on the main menu. A "readme" screen which contains the RAID drivers installation instructions will appear.

   The installation procedure will lead you to install the driver from a diskette. The diskette is included in the system board package.

To install the RAID drivers:

1. Insert the "Silicon Image Sil3114 RAID Drivers" diskette.

2. Follow the installation instructions shown on the screen.

3. Reboot the system for the driver to take effect.

Note:
Refer to the Silicon Image RAID User's Manual for more information about the RAID drivers. The manual is included in the CD.

4.2.4 Silicon Image RAID Utility

This utility is used to configure and manage RAID on drives connected to the SATA connectors.

To install the utility, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.

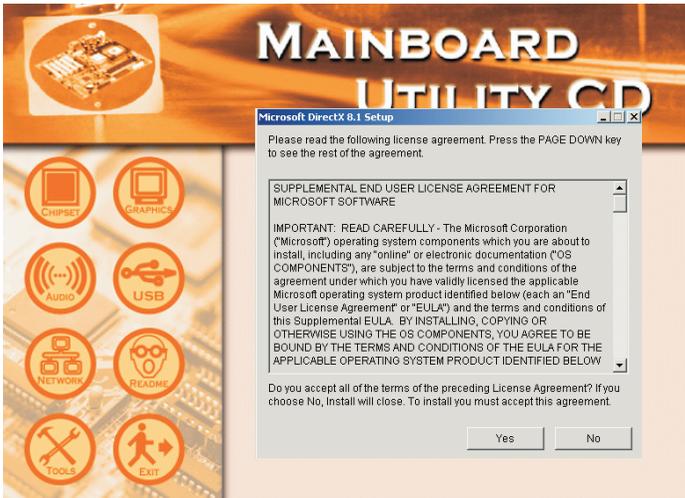2. Click "Silicon Image RAID Utility" on the main menu. The following screen will appear.
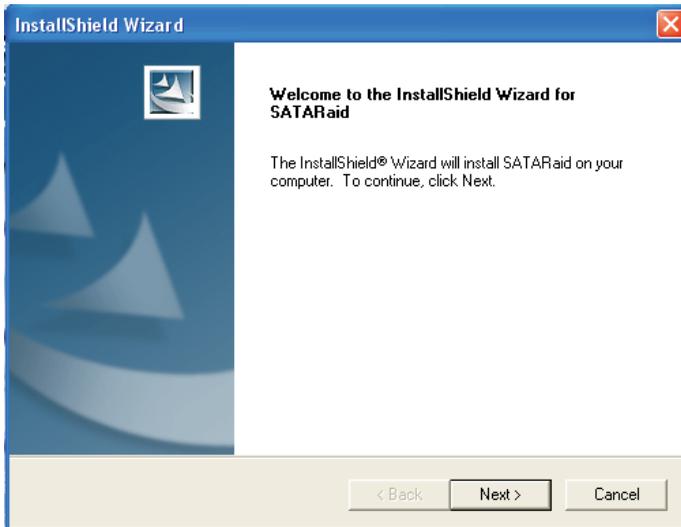
3. Follow the installation instructions shown on the screen.

4. Reboot the system for the driver to take effect.

Note:
Refer to the Silicon Image RAID User's Manual for more information about the utility. The manual is included in the CD.

4.2.5 Winbond Hardware Monitor

The system board comes with the Winbond Hardware Monitor utility contained in the provided CD. It is capable of monitoring the system's hardware conditions such as the temperature of the CPU and system, voltage, and speed of the CPU and system fans. It also allows you to manually set a range to the items being monitored. If the values are over or under the set range, a warning message will pop-up. The utility can also be configured so that a beeping alarm will sound whenever an error occurs. We recommend that you use the "Default Setting" which is the ideal setting that would keep the system in good working condition.

Note:
Use this utility only in Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000 or Windows® XP operating system.

To install Winbond Hardware Monitor, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.

2. Click "Winbond Hardware Monitor" on the main menu.
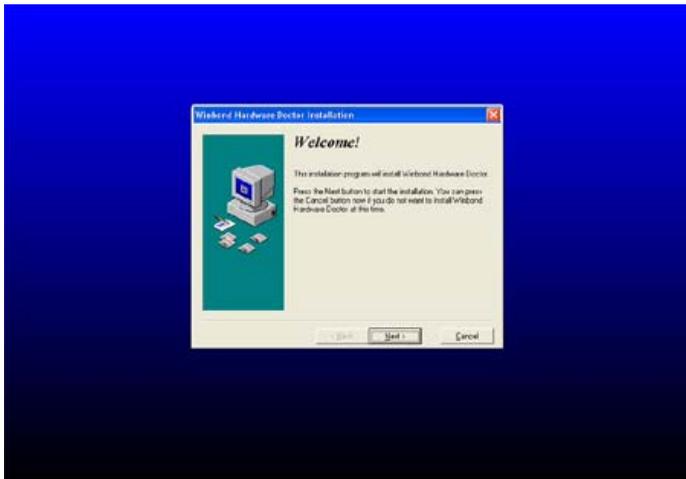
3. Follow the prompts on the screen to complete installation.

4. Restart the system.

103

4.2.6 Microsoft DirectX 8.1

To install Microsoft DirectX 8.1, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.

2. Click "Microsoft DirectX 8.1" on the main menu. The following screen will appear.

3. Click "Yes" to continue.

4. Follow the prompts on the screen to complete installation.

5. Reboot the system for the driver to take effect.

4.2.7 McAfee VirusScan Online (English OS only)

The McAfee VirusScan Online is the most reliable and conven- ient way of protecting your PC from computer viruses. When you install McAfee VirusScan Online, your computer is safe be- cause it automatically scans for viruses and checks for virus up- dates so that PC protection stays up-to-date.

To install, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.

2. Click "McAfee VirusScan Online" on the main menu. The fol- lowing screen will appear.
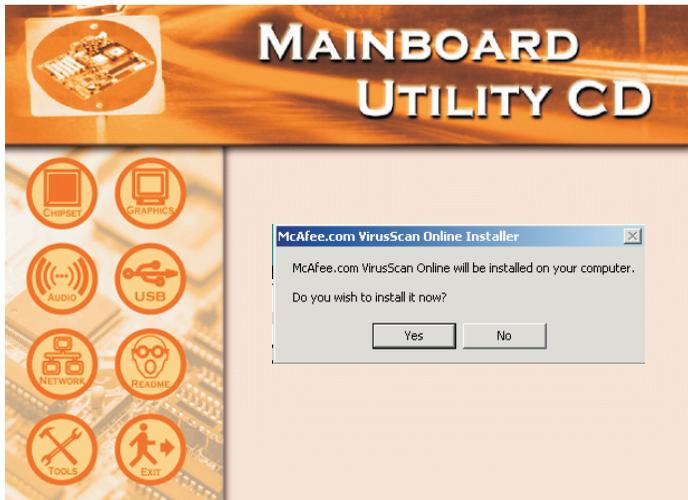
3. Click "Yes" to continue.

4. Follow the prompts on the screen to complete installation.

5. Restart the system.

4.2.8   RadarSync

RadarSync is a software utility that must be installed in your sys-
tem to allow online updates of the system's BIOS. It provides an
easy and fast way of accessing the website for downloading the
latest version of the BIOS. Using your existing Internet connec-
tion, the utility can automatically connect to the web server.

This section explains the basics of working with RadarSync soft-
ware and the incredible things it can do for you!

Think of RadarSync as a good little elf that works silently on
your computer to make sure all the different parts inside work
together effectively. How does it do that? Simple: by retrieving
updates of important files that the manufacturer of your compu-
ter thinks you need, and installing them for you.

Features

RadarSync sends you updates and fixes. When RadarSync is run-
ning and you are online, from time to time the Update Window
will pop up on your computer screen.

1. RadarSync Retrieves Important Manufacturer Authorized
   Updates

   This means RadarSync has found an update to an important
   file for your computer/component sent by the original manu-
   facturer.

2. RadarSync Gets the Updates You Need Before Something
   Goes Wrong

   The updates RadarSync finds are all designed to make your
   computer run better. It fixex problems of the installed files
   that are not working perfectly or it optimizes the perform-
   ance of the various components inside your computer.

3. RadarSync Saves You Time

   By finding these updates for you, then downloading and install-
   ing them, RadarSync saves you time (you don't have to do
   the job yourself), frustration (without the updates, your com-

puter might not work as well as it can), and money (prevents problems so you don't have to waste money calling a technician or tech support hotline).

Installing RadarSync

1. On the left side of the autorun screen, click the "TOOLS" icon.

2. Click "RadarSync" on the main menu. The following screen will appear:

3. Follow the prompts on the screen to complete installation.

4. Reboot the system for the driver to take effect.

Launching RadarSync

Click Start on your Windows desktop, point to Programs then click RadarSync. The RadarSync icon will appear on the taskbar .

If you are online, it will start to "radar" (rotate) looking for up-dates for your PC. If you are not online, RadarSync will be in sleep mode. If you want to customize or manage the options in RadarSync, double-click the icon to run the RadarSync software. The splash screen for RadarSync will appear, followed by the RadarSync software.

Updating the System

When RadarSync is running and you are online, the Update Win-dow will from time to time pop up on your computer screen. This means RadarSync has found an update file for the system's BIOS.

By finding the updates for you and downloading them, RadarSync saves you time.

To get an update once RadarSync notifies you about it, click "Download" on the Update Window.

Note:
Refer to the RadarSync User's Manual for more information. The manual is included in the CD.

4.2.9   WinFlash

WinFlash is a Windows-based program that allows you to flash the BIOS under an operating system.

To install, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.

2. Click "WinFlash" on the main menu. The following screen will appear.
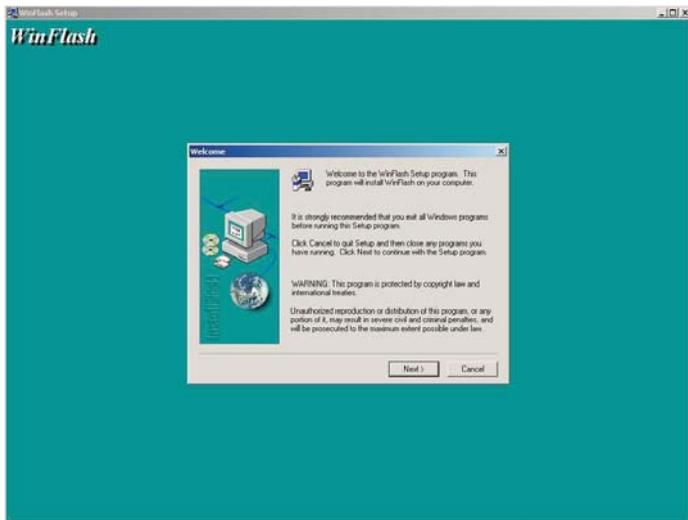
3. Follow the prompts on the screen to complete installation.

4. Restart the system.

To flash the BIOS, click Start on your Windows desktop, point to Programs then click WinFlash to run the WinFlash utility.

4.3 Installation Notes

1. "Autorun" ONLY supports the Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000 and Windows® XP operating systems. If after inserting the CD, "Autorun" did not automatically start (which is, the Main Board Utility CD screen did not appear), please go directly to the root directory of the CD and double-click "Setup".

2. All steps or procedures to install software drivers are subject to change without notice as the softwares are occassionally updated. Please go to DFI's web site at "http://www.dfi.com/support1/download2.asp" for the latest version of the drivers or software applications.

Appendix A - Using the Suspend to RAM Function

A.1 Using the Suspend to RAM Function

If you are using the Windows® 98 operating system, please follow the steps below.

1. Select "Power Management Setup" in the main menu screen and press <Enter>.

2. In the "ACPI Function" field, select "Enabled".

3. In the "ACPI Suspend Type" field, select "S3(STR)".

```
            Phoenix - AwardBIOS CMOS Setup Utility
                   Power Management Setup

   ACPI function                Enabled           Item Help
   ACPI Suspend Type            S1(POS)
   Power Management             User Define    Menu Level   ▶
   Video Off Method             DPMS Support
   HDD Power Down               Disabled
   Soft-Off by PBTN             Instant-Off
   Wake On LAN From Soft-Off    Enabled
   Wake On Ring From Soft-Off   Enabled
   USB Resume from S3           Disabled
   Keyboard/Mouse Power On      Disabled
   KB Power ON Password         Enter
   KB Power On Hot Key          Ctrl-F1
   PWR Lost Resume State        Keep Off
   Power-On by Alarm            Disabled
 x Time(dd:hh:mm) of Alarm        2 :  0 :  4



↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
           F5:Previous Values              F7: Optimized Defaults
```

The settings on the screen are for reference only. Your version may not be identical to this one.

4. Press <Esc> to return to the main menu.

5. Select "Save & Exit Setup" and press <Enter>. Type <Y> and press <Enter>.

6. Install Windows® 98 by typing the following parameter. This is to ensure that the ACPI function is supported.

    [drive]:>setup /p j

    If you have previously installed Windows® 98, you need to upgrade the system in order to support ACPI. Please contact Microsoft for upgrade information.

7. Boot Windows**®** 98. In the Windows**®** 98 desktop, click the Start button. Move the cursor to Settings, then click Control Panel.

To check whether ACPI was properly installed, double-click the System icon. In the System Properties dialog box, click the "Device Manager" tab. In "View devices by type", click "System devices".
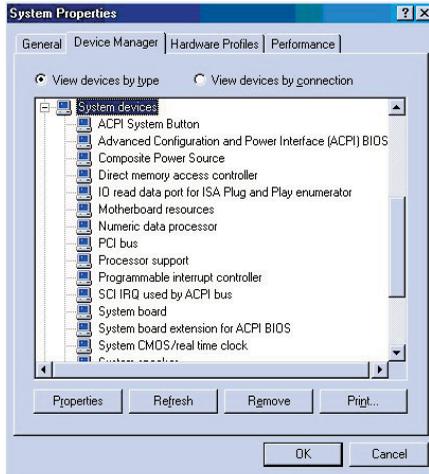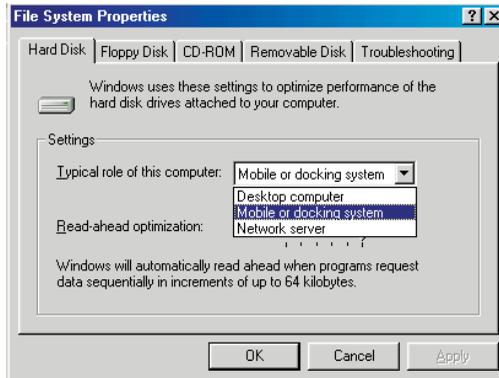

8. Double-click the System icon. In the System Properties dialog box, click the Performance tab.

9. Click File System. In the "Typical role of this computer" field, select "Mobile or docking system". Click Apply, then click OK. Restart the computer.

10. Repeat step 7 to open the Control Panel dialog box. Double-click the Power Management icon.

11. Click the Advanced tab. In the "When I press the power button on my computer" field, select "Standby".
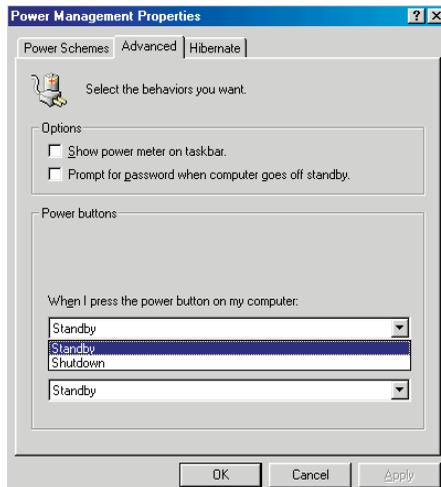
12. After completing the steps above and you want to power-off the computer, you do not need to go through the process of closing files, applications and operating system. You can power-off the computer at once by pressing the power button or selecting "Standby" when you shut down Windows**®** 98.

To power-on the computer, just press the power button. The operating session where you left off when you power-off the computer will resume in not more than 8 seconds.

If you have changed the color or resolution (in the Display Properties dialog box), do not apply the settings without restarting. You must restart the computer.

Shut Down Windows

What do you want the computer to do?

- ◉ Stand by
- ○ Shut down
- ○ Restart
- ○ Restart in MS-DOS mode

[OK]   [Cancel]   [Help]

Important:
*If you are unable to use the Suspend to RAM function (after performing the steps above in Windows**®** 98 or when you are in Windows**®** 2000/ME/XP), please check whether your add-in cards or devices support this function. If this function is not supported, you need to download the appropriate driver from their respective website.*

Appendix B - System Error Message

When the BIOS encounters an error that requires the user to correct something, either a beep code will sound or a message will be displayed in a box in the middle of the screen and the message, PRESS F1 TO CONTINUE, CTRL-ALT-ESC or DEL TO ENTER SETUP, will be shown in the information box at the bottom. Enter Setup to correct the error.

B.1 POST Beep

There are two kinds of beep codes in the BIOS. One code indicates that a video error has occured and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by three short beeps. The other code indicates that a DRAM error has occured. This beep code consists of a single long beep.

B.2 Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list indicates the error messages for all Awards BIOSes:

CMOS BATTERY HAS FAILED
The CMOS battery is no longer functional. It should be replaced.

> **Caution:**
> *Danger of explosion if battery incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the battery manufacturer's instructions.*

CMOS CHECKSUM ERROR
Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

DISPLAY SWITCH IS SET INCORRECTLY
The display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different

setting than indicated in Setup. Determine which setting is correct, either turn off the system and change the jumper or enter Setup and change the VIDEO selection.

FLOPPY DISK(S) fail (80)
Unable to reset floppy subsystem.

FLOPPY DISK(S) fail (40)
Floppy type mismatch.

Hard Disk(s) fail (80)
HDD reset failed.

Hard Disk(s) fail (40)
HDD controller diagnostics failed.

Hard Disk(s) fail (20)
HDD initialization error.

Hard Disk(s) fail (10)
Unable to recalibrate fixed disk.

Hard Disk(s) fail (08)
Sector Verify failed.

Keyboard is locked out - Unlock the key
The BIOS detects that the keyboard is locked. Keyboard controller is pulled low.

Keyboard error or no keyboard present
Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

Manufacturing POST loop
System will repeat POST procedure infinitely while the keyboard controller is pull low. This is also used for the M/B burn in test at the factory.

BIOS ROM checksum error - System halted
The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail
The BIOS reports memory test fail if the memory has error(s).

Appendix C - Troubleshooting

C.1 Troubleshooting Checklist

This chapter of the manual is designed to help you with problems that you may encounter with your personal computer. To efficiently troubleshoot your system, treat each problem individually. This is to ensure an accurate diagnosis of the problem in case a problem has multiple causes.

Some of the most common things to check when you encounter problems while using your system are listed below.

1. The power switch of each peripheral device is turned on.
2. All cables and power cords are tightly connected.
3. The electrical outlet to which your peripheral devices are connected is working. Test the outlet by plugging in a lamp or other electrical device.
4. The monitor is turned on.
5. The display's brightness and contrast controls are adjusted properly.
6. All add-in boards in the expansion slots are seated securely.
7. Any add-in board you have installed is designed for your system and is set up correctly.

Monitor/Display

If the display screen remains dark after the system is turned on:

1. Make sure that the monitor's power switch is on.
2. Check that one end of the monitor's power cord is properly attached to the monitor and the other end is plugged into a working AC outlet. If necessary, try another outlet.
3. Check that the video input cable is properly attached to the monitor and the system's display adapter.
4. Adjust the brightness of the display by turning the monitor's brightness control knob.

The picture seems to be constantly moving.

1. The monitor has lost its vertical sync. Adjust the monitor's vertical sync.
2. Move away any objects, such as another monitor or fan, that may be creating a magnetic field around the display.
3. Make sure your video card's output frequencies are supported by this monitor.

The screen seems to be constantly wavering.

1. If the monitor is close to another monitor, the adjacent monitor may need to be turned off. Fluorescent lights adjacent to the monitor may also cause screen wavering.

Power Supply

When the computer is turned on, nothing happens.

1. Check that one end of the AC power cord is plugged into a live outlet and the other end properly plugged into the back of the system.
2. Make sure that the voltage selection switch on the back panel is set for the correct type of voltage you are using.
3. The power cord may have a "short" or "open". Inspect the cord and install a new one if necessary.

Floppy Drive

The computer cannot access the floppy drive.

1. The floppy diskette may not be formatted. Format the diskette and try again.
2. The diskette may be write-protected. Use a diskette that is not write-protected.
3. You may be writing to the wrong drive. Check the path statement to make sure you are writing to the targeted drive.
4. There is not enough space left on the diskette. Use another diskette with adequate storage space.

Hard Drive

Hard disk failure.

1. Make sure the correct drive type for the hard disk drive has been entered in the BIOS.
2. If the system is configured with two hard drives, make sure the bootable (first) hard drive is configured as Master and the second hard drive is configured as Slave. The master hard drive must have an active/bootable partition.

Excessively long formatting period.

1. If your hard drive takes an excessively long period of time to format, it is likely a cable connection problem. However, if your hard drive has a large capacity, it will take a longer time to format.

Parallel Port

The parallel printer doesn't respond when you try to print.

1. Make sure that your printer is turned on and that the printer is on-line.
2. Make sure your software is configured for the right type of printer attached.
3. Verify that the onboard LPT port's I/O address and IRQ settings are configured correctly.
4. Verify that the attached device works by attaching it to a parallel port that is working and configured correctly. If it works, the printer can be assumed to be in good condition. If the printer remains inoperative, replace the printer cable and try again.

C

Troubleshooting ....

Serial Port

The serial device (modem, printer) doesn't output anything or is outputting garbled characters.

1. Make sure that the serial device's power is turned on and that the device is on-line.
2. Verify that the device is plugged into the correct serial port on the rear of the computer.
3. Verify that the attached serial device works by attaching it to a serial port that is working and configured correctly. If the serial device does not work, either the cable or the serial device has a problem. If the serial device works, the problem may be due to the onboard I/O or the address setting.
4. Make sure the COM settings and I/O address are configured correctly.

Keyboard

Nothing happens when a key on the keyboard was pressed.

1. Make sure the keyboard is properly connected.
2. Make sure there are no objects resting on the keyboard and that no keys are pressed during the booting process.

Mainboard

1. Make sure the add-in card is seated securely in the expansion slot. If the add-in card is loose, power off the system, re-install the card and power up the system.
2. Check the jumper settings to ensure that the jumpers are properly set.
3. Verify that all memory modules are seated securely into the memory sockets.
4. Make sure the memory modules are in the correct locations.
5. If the board fails to function, place the board on a flat surface and seat all socketed components. Gently press each component into the socket.
6. If you made changes to the BIOS settings, re-enter setup and load the BIOS defaults.