Statement:

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Version:

User's Manual V1.1 in English for NF3250K8AA/NF3250GK8AA series motherboard.
P/N: 91-181-NF3-AA-1E

Symbol description:

Note: refers to important information that can help you to use motherboard better.

Attention: indicates that it may damage hardware or cause data loss, and tells you how to avoid such problems.

Warning: means that a potential risk of property damage or physical injury exists.

More information:

If you want more information about our products, please visit the following website: http://www.foxconnchannel.com

Declaration of conformity

$$C\!\in$$

HON HAI PRECISION INDUSTRY COMPANY LTD

66 , CHUNG SHAN RD., TU-CHENG INDUSTRIAL DISTRICT,

TAIPEI HSIEN, TAIWAN, R.O.C.

declares that the product

Motherboard

NF3250K8AA/NF3250GK8AA

is in conformity with

(reference to the specification under which conformity is declared in

accordance with 89/336 EEC-EMC Directive)

☑	EN 55022/A1: 2000	Limits and methods of measurements of radio disturbance characteristics of information technology equipment
☑	EN 61000-3-2/A14:2000	Electromagnetic compatibility (EMC) Part 3: Limits Section 2: Limits for harmonic current emissions (equipment input current <= 16A per phase)
☑	EN 61000-3-3/A1:2001	Electromagnetic compatibility (EMC) Part 3: Limits Section 2: Limits of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current <= 16A
☑	EN 55024/A1:2001	Information technology equipment-Immunity characteristics limits and methods of measurement

Signature : *James Liang*   Place / Date :   TAIPEI/2005

Printed Name :   James Liang   Position/ Title :   Assistant President

Declaration of conformity
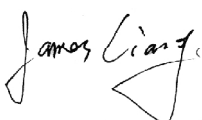
FCC

Trade Name:	WinFast
Model Name:	**NF3250K8AA/NF3250GK8AA**
Responsible Party:	PCE Industry Inc.
Address:	458 E. Lambert Rd.
	Fullerton, CA 92835
Telephone:	714-738-8868
Facsimile:	714-738-8838

Equipment Classification:	FCC Class B Subassembly
Type of Product:	Motherboard
Manufacturer:	**HON HAI PRECISION INDUSTRY COMPANY LTD**
Address:	66 , CHUNG SHAN RD., TU-CHENG INDUSTRIAL DISTRICT, TAIPEI HSIEN, TAIWAN, R.O.C.

Supplementary Information:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tested to comply with FCC standards.

Signature :　　　　　　　　　　　　　　Date :　　　　2005

Table of Contents

Table of Contents

Chapter **4**   Driver CD Introduction

Chapter **5**   NVIDIA RAID Introduction

⚠ Warning:

1. Attach the CPU and heatsink using silica gel to ensure full contact.
2. It is suggested to select high-quality, certified fans in order to avoid damage to the motherboard and CPU due to high temperature.
3. Never turn on the machine if the CPU fan is not properly installed.
4. Ensure that the DC power supply is turned off before inserting or removing expansion cards or other peripherals, especially when you insert or remove a memory module. Failure to switch off the DC power supply may result in serious damage to your system or memory module.

⚠ Warning:

We cannot guarantee that your system will operate normally while over-clocked. Normal operation depends on the over-clock capacity of your device.

ⓘ Attention:

Since BIOS programs are upgraded from time to time, the BIOS description in this manual is just for reference. We do not guarantee that the content of this manual will remain consistent with the actual BIOS version at any given time in the future.

ⓘ Attention:

The pictures of objects used in this manual are just for your reference. Please refer to the physical motherboard.

This manual is suitable for motherboard of NF3250K8AA/ NF3250GK8AA series. Each motherboard is carefully designed for the PC user who wants diverse features.

-L	with onboard 100M LAN
-K	with onboard 1G LAN
-6	with 6-channel audio
-8	with 8-channel audio
-E	with 1394
-S	with SATA
-R	with RAID

You can find PPID label on the motherboard. It indicates the functions that the motherboard has.

For example:

ULBA4160000B PC 865M01-PE-6ELS

On the blue mark of the PPID label, it means the motherboard supports 6-Channel Audio (-6), 1394 port (-E), onboard 100M LAN (-L), SATA function (-S).

Chapter 1

Thank you for buying WinFast NF3250K8AA/NF3250GK8AA series motherboard. This series of motherboard is one of our new products, and offers superior performance, reliability and quality, at a reasonable price. This motherboard adopts the advanced NVIDIA nForce3 250/nForce3 250Gb chipset, providing users a computer platform with a high integration-compatibility-performance price ratio.

This chapter includes the following information:
- ❖ Main Features
- ❖ Motherboard Layout

Main Features

Size:
- ATX form factor of 11.6" x 9.6"

Microprocessor:
- Supports socket 754 for Sempron™, Athlon™ 64 processors
- Supports HyperTransport™ Technology

Chipset:
- NVIDIA: nForce3 250/nForce3 250Gb

System Memory DDR400
- Three 184-pin DDR DIMM slots
- Supports PC3200/2700/2100 memory
- Supports 128/256/512/1024Mb technology up to 3GB

USB 2.0 Port
- Supports hot-plug
- Eight USB 2.0 ports (four rear panel ports, two onboard USB headers providing four extra ports)
- Supports wake-up from S1 and S3 mode
- Supports USB 2.0 protocol up to 480Mbps transmission rate

Onboard Serial ATA (optional)
- 150MBps transfer rate
- Two Serial ATA connectors (controlled by NVIDIA Chipset)
- Two Serial ATA connectors (controlled by Silicon 3112A) (optional)

NVIDIA RAID Technology
- Supports RAID 0, RAID 1, RAID 0+1 and JBOD
- Cross-controller RAID uniquely supports both SATA and PATA disk devices within a single array

Silicon 3112A RAID Technology (optional)
- Supports RAID 0, RAID 1

Onboard 1394 (optional)   IEEE 1394

- Supports hot-plug
- With rate of transmission at 400Mbps
- Self-configured addressing
- Supports two independent 1394 units synchronously at most

Onboard LAN (-L/-K) (optional)

- Supports10/100/1000 (-K optional) Mbps Ethernet
- LAN interface built-in on board

Onboard Audio

- AC' 97 2.3 Specification Compliant
- Supports S/PDIF output
- Onboard Line-in jack, Line-out jack, Microphone jack
- Supports 6-channel audio (setting via software)

BIOS

- Licensed advanced AWARD (Phoenix) BIOS, supports flash ROM, Plug-and-Play
- Supports IDE HDD, Floppy, CD-ROM, SCSI HDD or USB device boot up

Green Function

- Supports ACPI (Advanced Configuration and Power Interface)
- Supports S0 (normal), S1 (power on suspend), S3 (suspend to RAM), S4 (suspend to disk-depends on OS), and S5 (soft-off) ACPI state

Expansion Slots

- Five PCI slots
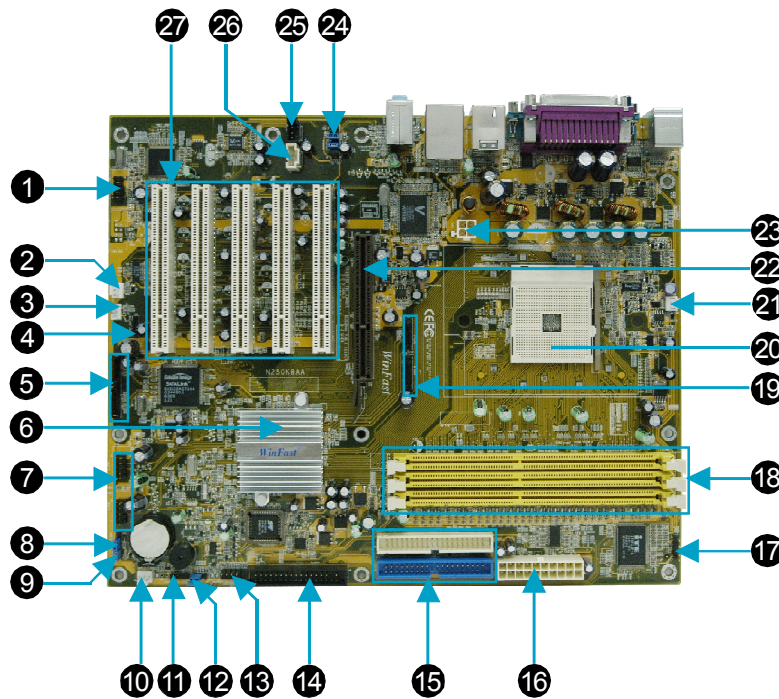- One AGP slot

AGP 8X support   AGP 8X

- Supports AGP 8X graphics cards

Advanced Features

- PCI 2.3 Specification Compliant
- Supports PC Health function (capable of monitoring system voltage, CPU/system temperature, and fan speed)

Motherboard Layout

1. Front 1394 Connector (optional)
2. System Fan Connector
3. Wake Up On Modem Connector
4. S/PDIF Out Connector
5. SATA Connectors (controlled by NVIDIA Chipset)
6. NVIDIA nForce3 250/nForce3 250Gb
7. Front USB Connectors
8. Clear CMOS Jumper
9. Chassis Intruder Connector
10. Chipset Fan Connector
11. Speaker Connector
12. BIOS TBL Jumper
13. Front Panel Connector
14. Floppy Disk Connector

15. IDE Connectors
16. ATX Power Connector
17. IrDA Connector
18. DDR DIMM Slots
19. SATA connectors (controlled by Silicon 3112A) (optional)
20.CPU Socket
21. CPU Fan Connector
22. AGP Slot
23. 12V ATX Power Connector
24. Front Audio Connector
25. CD_IN Connector
26. AUX_IN Connector
27. PCI Expansion slots

Note:The above motherboard layout is provided for reference only; please refer to the physical motherboard.

Chapter 2

This chapter introduces the hardware installation process, including the installation of the CPU and memory. It also addresses the connection of your power supply, use of the rear panel connectors, connection of hard drive and floppy drive data cables, and setting up various other feature of the motherboard. Caution should be exercised during the installation process. Please refer to the motherboard layout prior to any installation and read the contents in this chapter carefully.

This chapter includes the following information:

- ❖ CPU
- ❖ Memory
- ❖ Power Supply
- ❖ Rear Panel Connectors
- ❖ Other Connectors
- ❖ Expansion Slots
- ❖ Jumpers

Notes:

Take note of the following precautions before you install components or change settings.

1. Use a grounded wrist strap or touch a safely grounded object, such as an attached power supply, before handling components to avoid damaging them due to static electricity.

2. Unplug the power cord before opening your chassis or touching any components.

3. Hold components by their edges to avoid touching any exposed integrated circuits (ICs).

4. Whenever you uninstall a component, place it on a grounded anti-static pad or into the anti-static bag that it came in.

CPU

This motherboard supports Sempron™ or Athlon™ 64 processors and HyperTransport™ Technology.

ⓘ **Attention:**

The CPU pins must be properly aligned with the holes in the socket, otherwise the CPU may be damaged.

For the detailed CPU vendor list qualified on this motherboard, please visit the website: http://www.foxconnchannel.com

Installation of CPU

Follow these steps to install the CPU.

1. Unlock the socket by pressing the lever sideways, then lift it up to a 90° angle.

90°
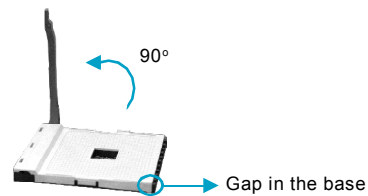
Gap in the base

2. Align the cut edge to the gap in the base of the socket. Carefully insert the CPU into the socket until it fits in place.

Cut edge
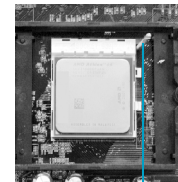
Push down the socket lever to secure the CPU.

3. When the CPU is in place, press it firmly on the socket while you push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.
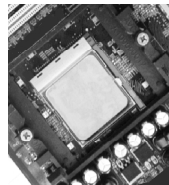
Installation of CPU Fan

New technology allows processors to run at higher and higher frequencies. To avoid problems arising from high-speed operation, for example, overheating, you need to install the proper fan. The following procedure is provided for reference only, please refer to your CPU fan user guide for the actual procedure.

CPU Fan

CPU Heatsink

CPU Retention Mechanism

CPU Retention Bracket
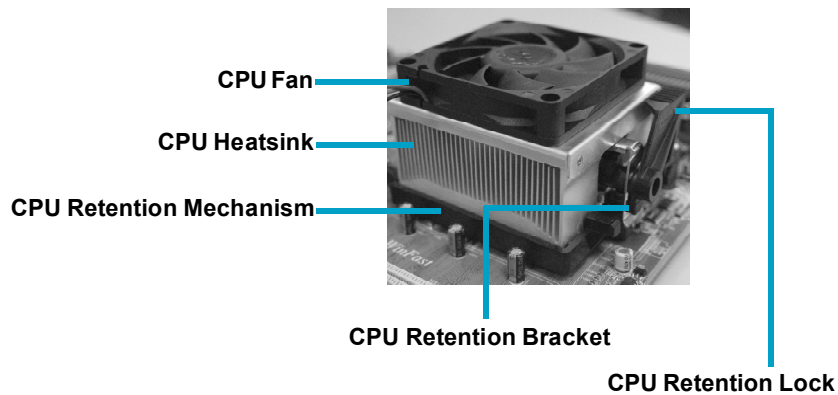
CPU Retention Lock

1. Locate the CPU retention mechanism base (surrounds the CPU socket) (If the rentention mechanism not be installed).

2. If required, apply a light coating of silica gel to the top of the CPU.
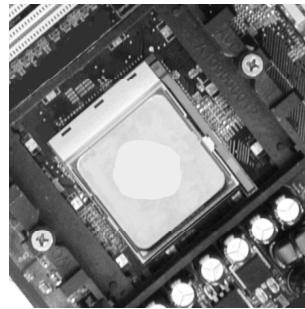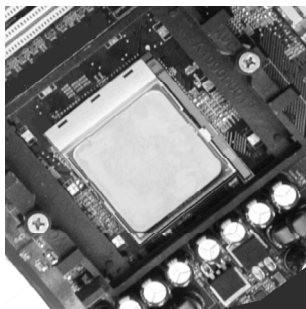
NOTE: The CPU heatsink may have a pre-applied thermal compound. In that case, the silica gel is not required.

3. Place the cooling set onto the re-
tention mechanism. Attach one end
of the retention bracket to retention
mechanism.
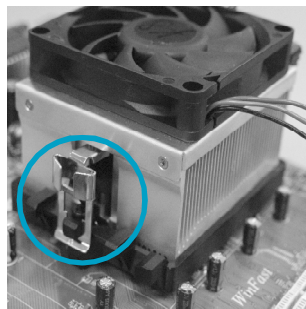
4. Align the other end of the reten-
tion bracket to fasten the cooling
set on the top of the retention
mechanism.
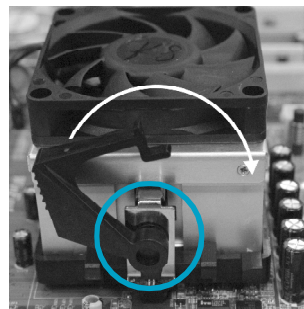
5. Push down the retention bracket lock on the retention mechanism to secure
the heatsink and fan to module base.
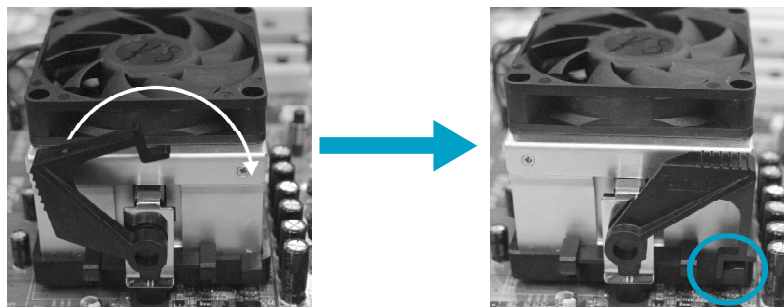
6. Connect the fan's power cable to the appropriate 3-pin terminal on the motherboard.
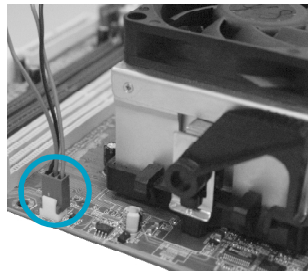
Memory

This motherboard includes three 184-pin slots with 266/333/400 MHz Single Channel DDR DRAM interface, If you install two or more modules, they must be the same speed. Mixing memory modules from different manufactures are not recommended.

For the lastest memory modules support list, please visit the website: http://www.foxconnchannel.com

Installation of DDR Memory

1. There is only one gap in the center of the DIMM slot, and the memory module can be fixed in one direction only.
2. Align the memory module to the DIMM slot, and insert the module vertically into the DIMM slot.

104 Pins   80 Pins
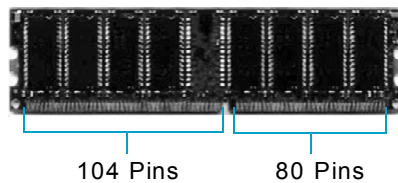
3. The plastic clips at both sides of the DIMM slot will lock automatically.
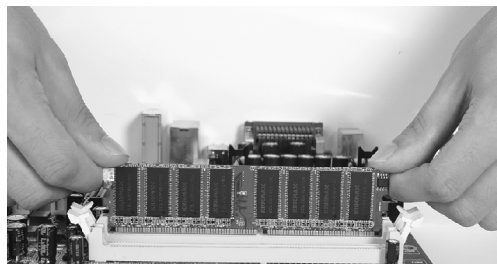
📧 **Note:**

Be sure to unplug the AC power supply before adding or re-moving expansion cards or other system peripherals, especially the memory devices, otherwise your motherboard or the system memory might be seriously damaged.

Power Supply

This motherboard uses an ATX power supply. In order to avoid damaging any devices, make sure that they have been installed properly prior to connecting the power supply.

ATX Power Connector: PWR1

PWR1 is the ATX power supply connector. Make sure that the power supply cable and pins are properly aligned with the connector on the motherboard. Firmly plug the power supply cable into the connector and make sure it is secure.

ATX 20-pin Power Connector
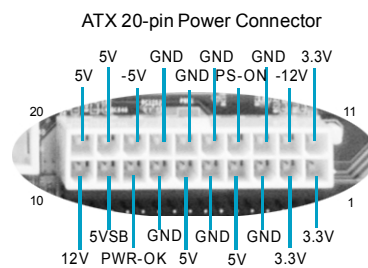
ATX 12V Power Connector: PWR2

The 4 pin ATX 12V power supply connects to PWR2 and provides power to the CPU.

ATX 12V Power Connector
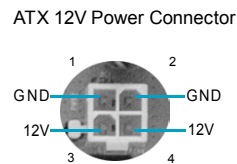
ⓘ **Attention:**

You have to press the power button for more than four seconds if you change the default Instant-off setting to "Delay 4 Sec" for the "Soft-Off by PBTN" option in the BIOS Power Management Setup.

Rear Panel Connectors

This motherboard provides the following ports as below:
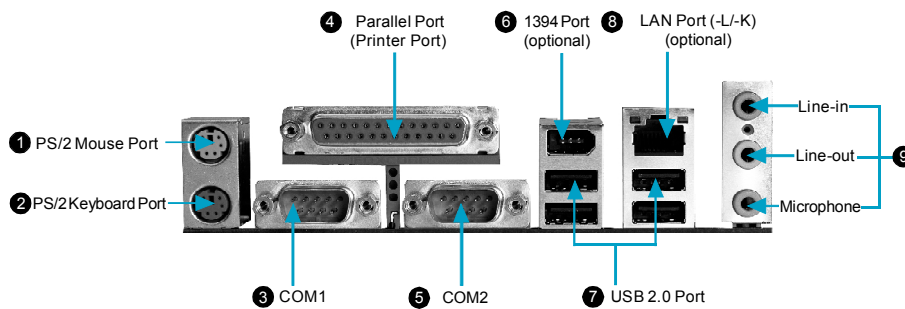
❶ PS/2 Mouse Port

This green 6-pin connector is for a PS/2 mouse.

❷ PS/2 Keyboard Port

This purple 6-pin connector is for a PS/2 keyboard.

❸ Serial Port: COM1

This 9-pin COM1 port is for pointing devices or other serial devices.

❹ Parallel Port: Printer Port

The 25-pin port connects a parallel printer, a scanner, or other devices.

❺ Serial Port: COM2

This 9-pin COM2 port is for pointing devices or other serial devices.

❻ 1394 Port (optional)

This digital interface supports electronic devices such as digital cameras, scanners, and printers.

❼ USB 2.0 Ports

These four Universal Serial Bus (USB) ports are available for connecting USB 2.0/1.1 devices.

❽ **LAN Port (-L/-K)(optional)**

This port allows connection to a Local Area Network (LAN) through a network hub.

Refer to the table below for the LAN port LED indications:

-L	Green LED	Yellow LED
10M Data activity	Blinking	—
10M Link	Blinking once	—
100M Data activity	—	Blinking
100M Link	—	Blinking once

-K	Green LED	Dual color LED	
		Green	Yellow
100M Data activity	Blinking	light	—
100M Link	—	light	—
Giga Data activity	Blinking	—	light
Giga Link	—	—	light

Green LED   Yellow LED/
                   Dual color LED
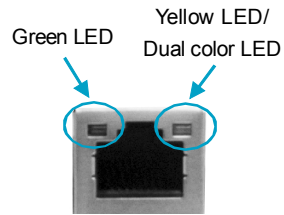
❾ **Line in, Line out, Microphone Jacks**

When using a 2-channel sound source, the Line out jack is used to connect to speaker or headphone; the Line in jack connects to an external CD player, tape player or other audio device. The Microphone jack is used to connect to the microphone.

When using a 6-channel sound source, connect the front speaker to the green audio output; connect the surround sound speaker to the blue audio output; connect the center speaker/subwoofer to the red Microphone output.

Blue

Green

Red

Center

Front Left   Front Right

Rear Left

Rear Right

Subwoofer
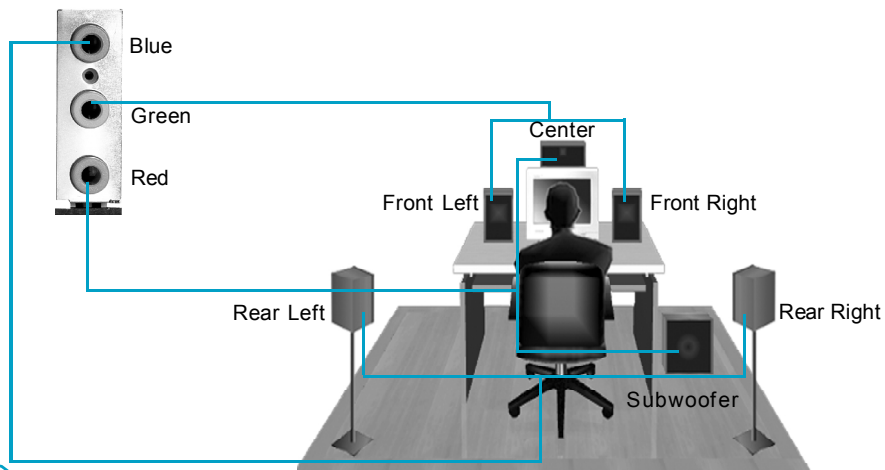
Other Connectors

This motherboard includes interfaces for FLOPPY, IDE devices, SATA devices, USB devices, 1394 devices, IR module, CPU fan, system fan, and others.

FLOPPY
This motherboard includes a standard FLOPPY interface, supporting 360 K, 720 K, 1.2 M, 1.44 M, and 2.88 M FDDs.

HDD connectors: PIDE & SIDE
These connectors support the provided UltraDMA 133/100/66/33 IDE hard disk ribbon cable. Connect the cable's blue connector to the primary (recommended) or secondary IDE connector, then connect the gray connector to the UltraDMA 133/100/66/33 slave device (hard disk drive) and the black connector to the UltraDMA 133/100/66/33 master device. If you install two hard disks, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings.

ⓘ Attention:

Ribbon cables are directional, therefore, make sure to always connect with the cable on the same side as pin 1 of the PIDE/SIDE or FLOPPY connector on the motherboard.

Front Panel Connector: FP1
This motherboard includes one connector for connecting the front panel switch and LED indicator.

PLED PWRBTN#

1

IDE_LED RESET NC

FP1
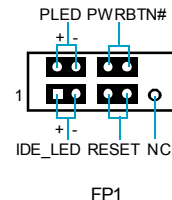
Hard Disk LED Connector (IDE_LED)
Attach the connector to the IDE_LED on the front panel of the case; the LED will flash while the HDD is in operation.
Reset Switch (RESET)
Attach the connector to the Reset switch on the front panel of the case; the system will restart when the switch is pressed.
Power LED Connector (PLED)
Attach the connector to the Power LED on the front panel of the case. The Power LED indicates the power supply status. When the system is in S0 status, the LED is on. When the system is in S1 status, the LED is blink. When the system is in S3, S4, S5 status, the LED is off.
Power Switch Connector (PWRBTN#)
Attach the connector to the power button of the case. Pushing this switch allows the system to be turned on and off rather than using the power supply button.

USB Connectors: F_USB 1, F_USB 2

Besides four USB ports on the rear panel, the series of motherboards also have two 10-pin headers on board which may connect to the front panel USB cable to provide additional four USB ports.
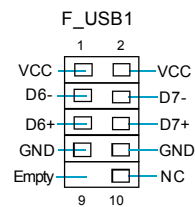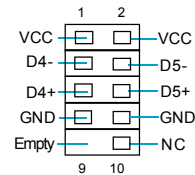
IrDA Connector: IR

The IrDA infrared transmission allows your computer to send and receive data via an infrared ray. The relevant parameters for the BIOS Integrated Peripherals should be set prior to using this function.
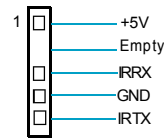
1394 Connector(optional): F_1394

The 1394 expansion cable can be connected to either the front (provided that the front panel of your chassis is equipped with the appropriate interface) or the rear panel of the chassis.
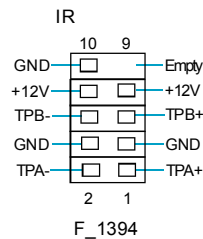
Fan Connectors: CPU_FAN, FAN_1, FAN_2

There are three fan connectors on this motherboard.

CPU_FAN — SENSE, +12V, GND

FAN_1 — GND, +12V, SENSE

FAN_2 — GND, +12V, SENSE
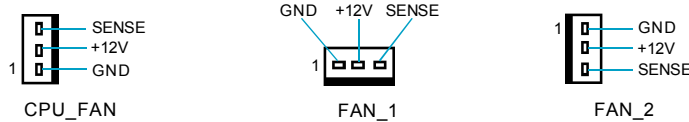
Audio Connectors: CD_IN, AUX_IN

CD_IN, AUX_IN is Sony standard CD audio connectors, to receive audio input from the CD-ROM, attach its audio connector to the CD_IN/AUX_IN audio connectors on the motherboard.

CD_IN — CD_R, GND, CD_L

AUX_IN — AUX_R, GND, AUX_L
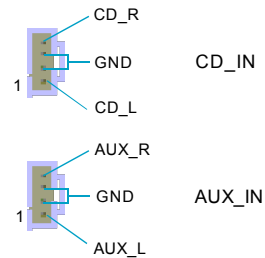
S-ATA Connectors: SATA_1, SATA_2, SATA_3 (optional), SATA_4 (optional)

The Serial ATA connectors are used to connect the S-ATA devices to the motherboard. These connectors support the thin Serial ATA cables for primary internal storage devices. The current S-ATA interface allows up to 150MB/s data transfer rate. SATA_1, SATA_2 are controlled by NVIDIA chipset, SATA_3, SATA_4 are controlled by Silicon 3112A (optional).

SATA_1 — GND, TX+, TX-, GND, RX-, RX+, GND

SATA_2/SATA_3/SATA_4 — GND, RX+, RX-, GND, TX-, TX+, GND
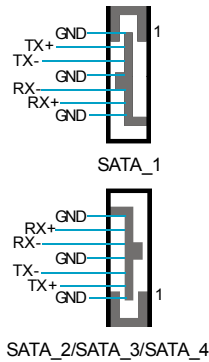
Front Audio Connector: F_AUDIO

The audio port includes two parts – the Front Audio and Rear Audio. Their priority is sequenced from high to low (Front Audio to Rear Audio). If headphones are plugged into the front panel of the chassis (using the Front Audio), then the Line Out (Rear Audio) on the rear panel will not work. If you do not want to use the Front Audio, pin 5 and 6, pin 9 and 10 must be short, and then the signal will be sent to the rear audio port.

F_AUDIO — MIC_IN, MIC_PWR, AUD_OUT_R, NC, AUD_OUT_L / MIC_GND, +5VAC, AUD_RET_R, EMPTY, AUD_RET_L
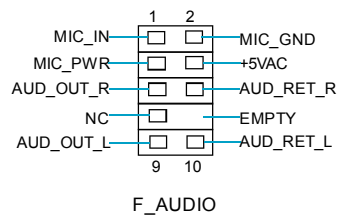
Speaker Connector: SPEAKER OUT

The speaker connector is used to connect speaker of the chassis.

```
        Empty
SPK(Pull high)  NC  SPKJ

     1
     SPEAKER OUT
```
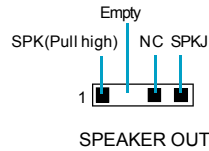
Chassis Intruder Connector (optional): INTR

The connector connects to the chassis security switch on the case. The system can detect the chassis intrusion through the status of this connector. To utilize this function, set "Case open Warning" to "Enabled" in the "PC Health Status Menu" section of the CMOS Setup.Save and exit, then boot the operating system once to make sure this function takes effect.

```
1    INTRUDERJ
     GND

     INTR
```
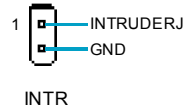
S/PDIF Out Connector: SPDIF_OUT

The S/PDIF out connector is capable of providing digital audio to external speaker or compressed AC3 data to an external Dolby digital decoder.

Note: The empty pin of SPDIF cable should be aligned to empty pin of S/PDIF out connector.

```
1    5V

     Empty
     SPDIF_OUT
     GND

     SPDIF_OUT
```
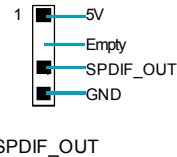
Wake Up On Modem Connector: WOM

Through this function, system in suspend or soft-off mode can be waken up by a ring signal received from the internal modem. When this function is used, be sure an internal modem card which supports this function is provided. Then connect the header to the relevant connector on the modem card, set "WOR(RI#) From Soft-Off" as "Enabled" in the "Power Management Setup" section of the CMOS Setup. Save and exit, then boot the operating system once to make sure this function takes effect.

```
1    Modem wake up
     GND
     5V_SB_SYS

     WOM
```
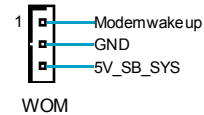
Expansion Slots

This motherboard includes five 32-bit Master PCI bus slots and one AGP slot.

PCI Slots

The expansion cards can be installed in the five PCI slots. When you install or remove such cards, please make sure that the power cord has been unplugged from the power supply. Please read carefully the instructions provided for such cards, then install and set the necessary hardware and software for such cards, such as the jumper or BIOS settings.

AGP Slot

This motherboard has an AGP slot that supports 1.5V AGP cards. AGP is an interfacing specification designed to display 3D images. It provides a specialized 66Mhz, 32-bit channel to allow the graphic controller to directly access the master memory and supports 4X and 8X speeds.

AGP Qualified Vendor List

The following table lists the AGP cards that have been tested and qualified for use with this motherboard.

For more details graphics card support list qualified on this motherboard, plsease visit the website: http://www.foxconnchannel.com

Jumpers

Users can change the jumper settings on this motherboard if necessary. This section explains how to use the various functions of this motherboard by changing the jumper settings. Users should read the following contents carefully prior to modifying any jumper settings.

Description of Jumpers

1. For the jumpers on this motherboard, pin 1 can be identified by the silk-screen printed "△" next to it. However, in this manual, pin 1 is simply labeled as "1".
2. The following table provides some explanations of the jumper pin settings. Users should refer to the table while adjusting jumper settings.

Jumper	Diagram	Definition	Description
	1	1-2	Set pin 1 and pin 2 closed
	1	2-3	Set pin 2 and pin 3 closed
	1	Closed	Set the pin closed
	1	Open	Set the pin opened

Clear CMOS Jumper: CLS_CMOS

This motherboard uses the CMOS RAM to store all the set parameters. The CMOS can be cleared by removing the CMOS jumper. Reference the following process.

1. Turn off the AC power supply and short pins 1 and 2 on the jumper.
2. Return the jumper to the normal setting (locking pins 2 and 3 together with the jumper cap).
3. Turn on the system. The BIOS is returned to the default settings.

Normal (default)
1
2
3

Clear
1
2
3

CLS_CMOS
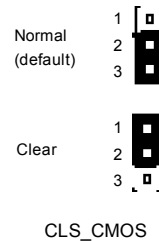
ⓦ Warning:

1. Disconnect the power cable before adjusting the jumper settings.
2. DO NOT clear the CMOS while the system is turned on.

BIOS TBL Jumper: TBL_EN

The system cannot boot, if flash the BIOS fail in conventional flash BIOS process. You will no such worry when you use the BIOS TBL function. It is used to protect BIOS "Top Boot Block". The system still can boot by using this function and show some information to recover the BIOS even if flash BIOS fail. To utilize this function, you just leave this jumper as pin 2 and 3 together with the jumper cap.

BIOS TBL Enable

3 2 1

BIOS TBL Disable

3 2 1

TBL_EN
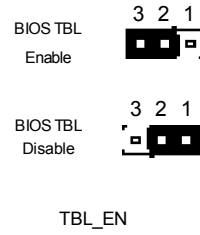
Starting up for the first time

1. After making all the connections, replace the system case cover.
2. Make sure that all switches are turned off.
3. Turn on the devices in the following order.
   a. Monitor
   b. External SCSI devices (starting with the last device on the chain)
   c. System power
4. After powering on, LED on the system front panel case lights up. For ATX power supplies, the system LED lights up when you press the ATX power switch. If your monitor complies with green standards or if it has a power standby feature, the monitor LED may light up or switch between orange and green after the system LED turns on. The system then enters the Power-On Self Test (POST) routines. While the tests are running, the BIOS beeps or additional messages appear on the screen. If you do not see anything within 30 seconds from the time you turned on the power, the system may have failed a power-on test. Check the jumper settings and connections or call your retailer for assistance.
5. After the POST routines are completed, press the <Del> key to access the BIOS Setup Utility. For detailed instructions, please refer to Chapter 3.

Powering off the computer

1. Using the OS shut down function
   If you use windows 98/ME/2000/XP, click Start and select Shut Down, then click the OK button to shut down the computer. The power supply should turn off after Windows shuts down.
2. Using the dual function power switch
   While the system is ON, pressing the power switch for less than 4 seconds puts the system in sleep mode or soft-off mode, depending on the BIOS setting. Pressing the power switch for more than 4 seconds lets the system enter the soft-off mode regardless of the BIOS setting.

Chapter 3

This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

You have to run the Setup Program when the following cases occur:

1. An error message appears on the screen during the system POST process.
2. You want to change the default CMOS settings.

This chapter includes the following information:

- ❖ Enter BIOS Setup
- ❖ Main Menu
- ❖ Standard CMOS Features
- ❖ BIOS Features
- ❖ Advanced BIOS Features
- ❖ Advanced Chipset Features
- ❖ Integrated Peripherals
- ❖ Power Management Setup
- ❖ PnP/PCI Configurations
- ❖ PC Health Status
- ❖ Load Fail-Safe Defaults
- ❖ Load Optimized Defaults
- ❖ Set Supervisor/User Password
- ❖ Save & Exit Setup
- ❖ Exit Without Saving

Enter BIOS Setup

The BIOS is the communication bridge between hardware and software, correctly setting up the BIOS parameters is critical to maintain optimal system performance. Power on the computer, when the following message briefly appears at the bottom of the screen during the POST (Power On Self Test), press the <Del> key to enter the Award BIOS CMOS Setup Utility.

Press TAB to show POST screen, DEL to enter SETUP, ESC to enter Boot Menu

📁 **Note:**

> We do not suggest that you change the default parameters in the BIOS Setup, and we shall not be responsible for any damage that results from any changes that you make.

Main Menu

The main menu allows you to select from the list of setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept or go to the sub-menu.
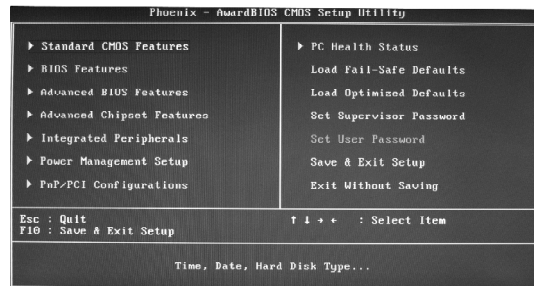
Main Menu

The items in the BIOS Setup main menu are explained below:

Standard CMOS Features

The basic system configuration can be set up through this menu.

BIOS Features

The general system features can be set up through this menu.

Advanced BIOS Features

The advanced system features can be set up through this menu.

Advanced Chipset Features

The values for the chipset can be changed through this menu, and the system performance can be optimized.

Integrated Peripherals

All onboard peripherals can be set up through this menu.

Power Management Setup

All the items of Green function features can be set up through this menu.

PnP/PCI Configurations

The system's PnP/PCI settings and parameters can be modified through this menu.

PC Health Status

This will display the current status of your PC.

Load Fail-Safe Defaults

The default BIOS settings can be loaded through this menu.

Load Optimized Defaults

The optimal performance settings can be loaded through this menu, however, the stable default values may be affected.

Set Supervisor/User Password

The supervisor/user password can be set up through this menu.

Save & Exit Setup

Save CMOS value settings to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Features

This sub-menu is used to set up the standard CMOS features, such as the date, time, HDD model and so on. Use the arrow keys select the item to set up, and then use the <PgUp> or <PgDn> key to choose the setting values.
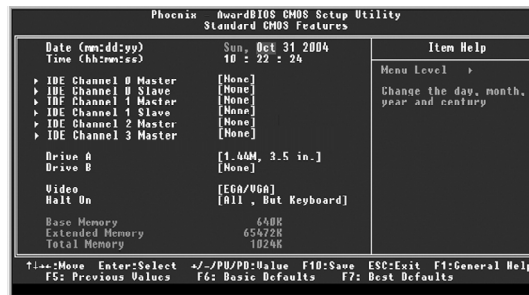
Standard CMOS Features Menu

Date

This option allows you to set the desired date (usually as the current date) with the <day><month><date><year> format.

day	weekday from Sun. to Sat., defined by BIOS (read-only).
month	month from Jan. to Dec.
date	date from 1st to 31st, can be changed by using the keyboard.
year	year, set up by users.

Time

This option allows you to set up the desired time (usually as the current time) with <hour><minute><second> format.

IDE Channel 0/1 Master/Slave and 2/3 Master

These categories identify the HDD types of 2 IDE channels installed in the computer system. There are three choices provided for the Enhanced IDE BIOS: None, Auto, and Manual. "None" means no HDD device is installed or set; "Auto" indicates the system can automatically detect and configure the hard disk when booting up; If it fails to find a device, choose "Manual" and change Access Mode to "CHS", then manually configure the drive by entering the characteristics of the drive directly from the keyboard and pressing <Enter>:

Cylinder	number of cylinders	Head	number of heads
Precomp	write pre-compensation	Landing Zone	Landing Zone
Sector	number of sectors		

Award (Phoenix) BIOS can support 4 HDD modes: CHS, LBA and Large or Auto mode.

CHS	For HDD<528MB
LBA	For HDD>528MB & supporting LBA (Logical Block Addressing)
Large	For HDD>528MB but not supporting LBA
Auto	Recommended mode

Drive A/B

This option allows you to select the kind of FDD to be installed, including [None], [360K, 5.25in], [1.2M, 5.25in], [720K, 3.5in], [1.44M, 3.5in] and [2.88 M, 3.5in].

Video

The following table is provided for your reference in setting the display mode for your system.

EGA/VGA	Enhanced Graphics Adapter / Video Graphic Array. For EGA, VGA, SEGA, SVGA, or PGA monitor adapters.
CGA 40	Color Graphic Adapter, powering up in 40 column mode.
CGA 80	Color Graphic Adapter, powering up in 80 column mode.
MONO	Monochrome adapter, including high resolution monochrome adapters.

Halt On

This category determines whether or not the computer will stop if an error is detected during powering up.

All Errors	Whenever the BIOS detects a nonfatal error, the system will stop and you will be prompted.
No Errors	The system boot will not stop for any errors that may be detected.
All, But Keyboard	The system boot will not stop for a keyboard error; but it will stop for all other errors.
All, But Diskette	The system boot will not stop for a diskette error; but it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or a disk error, but it will stop for all other errors.

Memory

This is a Displays-Only Category, determined by POST (Power On Self Test) of the BIOS.

Base Memory	The BIOS POST will determine the amount of base (or conventional) memory installed in the system.
Extended Memory	The BIOS determines how much extended memory is present during the POST.
Total Memory	Total memory of the system.

BIOS Features

```
                 Phoenix - AwardBIOS CMOS Setup Utility
                              BIOS Features
 [SuperBoot]                                         Item Help
 SuperBoot               [Disabled]
                                                  Menu Level  ▶
 [SuperBIOS-Protect]
 SuperBIOS-Protect       [Disabled]

 [SuperRecovery]
 SuperRecovery Hotkey    [LSHIFT+F12]

 [SuperSpeed]
▶SuperSpeed              [Press Enter]




 ↑↓←→:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
        F5: Previous Values    F6: Fail-Safe Defaults   F7: Optimized Defaults
```

BIOS Features Menu

❖ **[SuperBoot] SuperBoot (Default: Disabled)**
SuperBoot allows system-relevant information to be stored in CMOS upon the first normal startup of your PC, and the relevant parameters will be restored to help the system start up more quickly on each subsequent startup. The available setting values are: Disabled and Enabled.

❖ **[SuperBIOS-Protect] SuperBIOS-Protect (Default: Disabled)**
SuperBIOS-Protect function protects your PC from being affected by viruses, e.g. CIH. The available setting values are: Disabled and Enabled.

❖ **[SuperRecovery] SuperRecovery Hotkey (Default: LSHIFT+F12)**
SuperRecovery provides the users with an excellent data protection and HDD recovery function. There are 12 optional hotkey and the default hotkey is LSHIFT+F12.

❖ **[SuperSpeed] SuperSpeed**
Press <Enter> to set the items of SuperSpeed. Setting these items are good for overlock. Please refer to page 30.
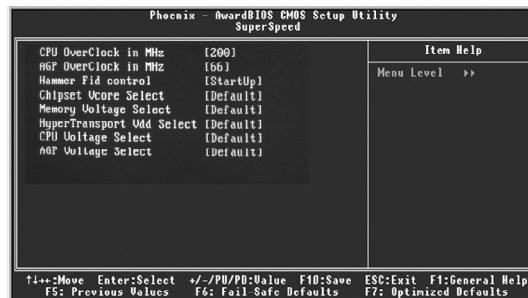
SuperSpeed Menu

Note: We suggest you set the following options as default.

❖**CPU/AGP OverClock in MHz (Default: Depend on CPU)**
  This option is used to set CPU/AGP overclock.

❖**Hammer Fid control (Default: StartUp)**
  This option is used to set hammer fid.

❖**Chipset Vcore Select (Default: Default)**
  This option is used to set chipset vcore.

❖**Memory Voltage Select (Default: Default)**
  This option is used to set memory voltage.

❖**HyperTransport Vdd Select (Default: Default)**
  This option is used to set HyperTransport vdd.

❖**CPU/AGP Voltage Select (Default: Default)**
  This option is used to set CPU/AGP voltage.

  ⚡ **Warning:**

  Make sure your selection is right. Overclocking CPU/AGP/Memory/
  HyperTransprot can adversely affect the reliability of the system
  and introduce errors into your system. We will not be responsible
  for any damage caused.

Advanced BIOS Features


```
              Phoenix - AwardBIOS CMOS Setup Utility
                       Advanced BIOS Features
   ┌──────────────────────────────────────────┬─────────────────────┐
   │ ▶ Hard Disk Boot Priority  [Press Enter]  │      Item Help      │
   │   Virus Warning            [Disabled]     │                     │
   │   CPU Internal Cache       [Enabled]      │  Menu Level   ▶     │
   │   External Cache           [Enabled]      │                     │
   │   Quick Power On Self Test [Enabled]      │  Select Your Boot   │
   │   First Boot Device        [Floppy]       │  Device Priority    │
   │   Second Boot Device       [Hard Disk]    │                     │
   │   Third Boot Device        [CDROM]        │                     │
   │   Boot Other Device        [Enabled]      │                     │
   │   Swap Floppy Drive        [Disabled]     │                     │
   │   Boot Up Floppy Seek      [Enabled]      │                     │
   │   Boot Up NumLock Status   [On]           │                     │
   │   Gate A20 Option          [Fast]         │                     │
   │   Typematic Rate Setting   [Disabled]     │                     │
   │ x Typematic Rate (Chars/Sec) 6            │                     │
   │ x Typematic Delay (Msec)     250          │                     │
   │   Security Option          [Setup]        │                     │
   │   APIC Mode                [Enabled]      │                     │
   │   MPS Version Control For OS[1.4]         │                     │
   ├──────────────────────────────────────────┴─────────────────────┤
   │↑↓→←:Move  Enter:Select +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
   │  F5: Previous Values    F6: Fail-Safe Defaults  F7: Optimized Defaults     │
   └──────────────────────────────────────────────────────────────────────────┘
```

Advanced BIOS Features Menu

❖**Hard Disk Boot Priority**

This option is used to select the priority for HDD startup. After pressing <Enter>, you can select the HDD using the <PageUp>/<PageDn> or Up/Down arrow keys, and change the HDD priority using <+> or <->. To exit this option, press <Esc>.

❖**Virus Warning (Default: Disabled)**

This option is used to set up the virus warning message for the IDE HDD boot sector. When enabled, a warning message will appear on the screen if any program intends to write information to the boot sector. The available setting values are: Disabled and Enabled.

Note: Such function provides protection to the startup sector only; it does not protect the entire hard disk.

❖**CPU Internal Cache (Default: Enabled)**

This option is used to turn on or off the CPU L1 and L2 cache. The available setting values are: Disabled and Enabled. Leave this item at the default value for better performance.

❖**External Cache (Default: Enabled)**

This option is used to turn on or off the CPU external cache. The available setting values are: Disabled and Enabled. Leave this item at the default value for better performance.

❖**Quick Power On Self Test (Default: Enabled)**

With this function enabled, the system will skip the normal test while starting up, therefore shortening the overall startup time. The available setting values are: Disabled and Enabled.

❖**First/Second/Third Boot Device (Default: Floppy/Hard Disk/CDROM/)**

This option allows you to set the boot device sequence. The available setting values are: Floppy, LS120, Hard Disk, CDROM, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, Legacy LAN, NVIDIA Boot Age and Disabled.

❖**Boot Other Device (Default: Enabled)**

With this item enabled, the system will search all other possible locations if it fails to find one in the devices specified under the first, second and third boot devices.

❖**Security Option (Default: Setup)**

When it is set to Setup, a password is required to enter the CMOS Setup screen; when it is set to System, a password is required not only to enter CMOS Setup, but also to start up your PC.

Advanced Chipset Features
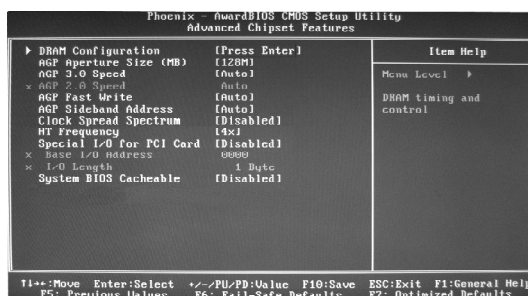
Advanced Chipset Features Menu

❖**DRAM Configuration (Default: Press Enter)**

Press <Enter> to set the items about DRAM Configuration. Please refer to page 34.

❖**AGP Aperture Size (Default: 128MB)**

This option defines the size of the aperture if you use an AGP graphic adapter. The aperture is a portion of the PCI memory address range dedicated for graphic memory address space.

❖**Clock Spread Spectrum (Default: Disabled)**

This option is used to enable or disable the clock spread spectrum. The available setting values are: Disabled and Enabled.

❖**Special I/O for PCI Card (Default: Disabled)**

This option is used enable or disable the special I/O for PCI card. The availabled setting values are: Disabled and Enabled.

❖**System BIOS Cacheable (Default: Disabled)**

Select "Enabled" to allow catching of the system BIOS which may improve performance. If any other program writes to this memory area, a system error may result. The available setting values are: Disabled and Enabled.
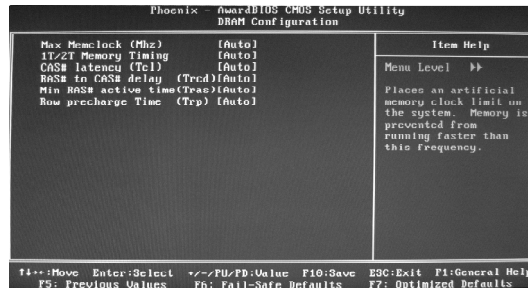
DRAM Configuration Menu

❖**Max Memclock (Default: Auto)**

When it is set to Manual in "DDR Timing Setting by", user can place an Artificial memory clock limit on the system. Memory is prevented from running faster than this frequancy. The available setting values are: 100, 133, 166, 200, Auto.

❖**1T/2T Memory Timing (Default: Auto) (optional)**

This setting controls the SDRAM command rate. Selecting [Auto] allows SDRAM signal controller to run at 1T (T=clock cycles) rate. Selecting [1T] makes SDRAM signal controller run at 2T rate. 1T is faster than 2T. The available setting values are: 1T, 2T, Auto.

❖**CAS# Latency (Default: Auto)**

This option controls the CAS latency, which determines the timing delay (in clock cycles) before SDRAM starts a read command after recerving it. The available setting values are: Auto, 2.0, 2.5, 3.0.

❖**RAS# to CAS# delay (Trcd) (Default: Auto)**

When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The less the clock cycles, the faster the DRAM performance. The available setting values are: Auto, 2-7.

Integrated Peripherals
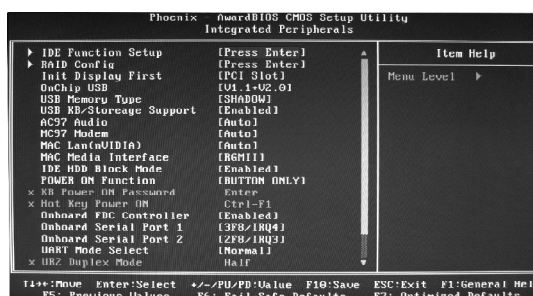
Integrated Peripherals Menu

❖**IDE Function Setup**

Press Enter to set the items about IDE Function. Please refer to page 37.

❖**RAID Config**

Press <Enter> to set the items of Raid configuration. Please refer to page 38.

❖**Init Display First (Default: PCI Slot)**

This option is used to set which display device will be used first when your PC starts up. The available setting values are: PCI Slot and Onboard/AGP.

❖**USB KB/Storage Support (Default: Enabled)**

This option is used to set USB keyboard/storage support. The available setting values are: Disabled and Enabled.

❖**IDE HDD Block Mode (Default: Enabled)**

This option is used to set whether the IDE HDD Block Mode is allowed. The available setting values are: Disabled and Enabled.

❖**POWER ON Function (Default: BUTTON ONLY)**

This option is used to set the power on method for your PC. Setting values include: Password, Hot KEY, Mouse Move, Mouse Click, Any KEY, BUTTON ONLY and Keyboard98.

❖**KB Power ON Password (Default: Enter)**
   When the POWER ON Function is set to Password, use this item to set the
   password.

❖**Hot Key Power ON (Default: Ctrl-F1)**
   When the POWER ON Function is set to Hot KEY, use this item to set the hot
   key combination that turns on the system. The available setting values are:
   Ctrl-F1-F12.

❖**Onboard Serial Port 1/2 (Default: 3F8/IRQ4/2F8/IRQ3)**
   This option is used to assign the I/O address and interrupt request (IRQ)
   for the onboard serial port 1/2.
   Note: Do not try to set the same values for serial port 1 and 2.

❖**UART Mode Select (Default: Normal)**
   Use this option to select the UART mode. The setting values include Normal,
   IrDA, ASKIR and SCR. The setting value is determined by the infrared module
   installed on the board.

❖**UR2 Duplex Mode (Default: Half)**
   This option is available when UART 2 mode is set to either ASKIR or IRDA. This
   option enables you to determine the infrared (IR) function of the onboard infra-
   red chip. The available setting values are: Half and Full.

❖**Onboard Parallel Port (Default: 378/IRQ7)**
   This option is used to assign the I/O address and interrupt request (IRQ) for
   onboard parallel port controller. The setting values include: Disabled, 378/
   IRQ7, 278/IRQ5 and 3BC/IRQ7.

❖**Parallel Port Mode (Default: SPP)**
   Select an address and corresponding interrupt for the onboard parallel port.
   The setting values include SPP, EPP, ECP, ECP+EPP.

❖**PWRON After PWR-Fail (Default: Off)**
   This option is used to set what action the PC will take with the power supply
   when it resumes after a sudden power failure. The available options are: Off
   (remain in turn off status). On (auto power on) and Former-Sts (resume with
   the previous status).

```
                Phoenix - AwardBIOS CMOS Setup Utility
                          IDE Function Setup

  OnChip IDE Channel0        [Enabled]          ┌─────────────────┐
  Primary Master   PIO       [Auto]             │    Item Help    │
  Primary Slave    PIO       [Auto]             ├─────────────────┤
  Primary Master   UDMA      [Auto]             │ Menu Level   ▶▶ │
  Primary Slave    UDMA      [Auto]             │                 │
  OnChip IDE Channel1        [Enabled]          │                 │
  Secondary Master PIO       [Auto]             │                 │
  Secondary Slave  PIO       [Auto]             │                 │
  Secondary Master UDMA      [Auto]             │                 │
  Secondary Slave  UDMA      [Auto]             │                 │
  IDE Prefetch Mode          [Enabled]          │                 │
  IDE DMA transfer access    [Enabled]          │                 │
  Serial-ATA 2(Internal PHY)[Enabled]           │                 │
  SATA DMA transfer          [Enabled]          │                 │
                                                └─────────────────┘

 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
 F5: Previous Values      F6: Fail-Safe Defaults      F7: Optimized Defaults
```

IDE Function Menu

❖**OnChip IDE Channel 0/1**

This option is used to set the onchip IDE channel 0/1. The available setting are: Disabled and Enabled.

❖**IDE Primary/Secondary Master/Slave PIO (Default: Auto)**

These four items let you assign which kind of PIO (Programmer Input/Output) is used by IDE devices. Choose "Auto" to let the system auto detect which PIO mode is best, or select a PIO mode from 0-4.

❖**Primary/Secondary Master/Slave UltraDMA (Default: Auto)**

UltraDMA technology provides faster access to IDE devices. If you install a device that supports UltraDMA, change the appropriate items on this list to Auto. The available setting values are: Disabled and Auto.

❖**IDE DMA Prefetch Mode (Default: Enabled)**

This option is used to enable or disable IDE DMA Prefetch Mode.

❖**IDE DMA transfer access (Default: Enabled)**

This option is used to enable or disable IDE DMA transfer access.

❖**Serial-ATA 2 (Internal PHY) (Default: Enabled)**

This option is used to enable or disable Serial-ATA 2.
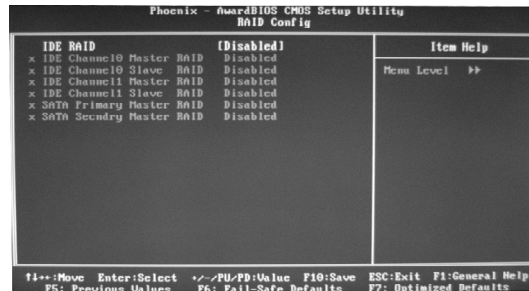
RAID Config Menu

❖**IDE RAID (Default: Disabled)**

This option is used to disable or enable the RAID function. When enabled, the following grayed items will be activated.

❖**IDE Channel 0/1 Master/Slave RAID (Default: Disabled)**

This feature allows users to enable or disable the RAID function for each IDE hard disk drive. The setting values are Enabled and Disabled.

❖**SATA Primary/Secondary Master RAID (Default: Disabled)**

This feature allows users to enable or disable the RAID function for each SATA hard disk drive. The setting values are Enabled and Disabled.

Power Management Setup

Power Management Setup Menu

❖**ACPI function (Default: Enabled)**
ACPI stands for "Advanced Configuration and Power Interface". ACPI is a standard that defines power and configuration management interfaces between an operating system and the BIOS. In other words, it is a standard that describes how computer components work together to manage system hardware. In order to use this function the ACPI specification must be supported by the OS (for example, Windows2000 or WindowsXP). The available setting values are: Enabled and Disabled.

❖**ACPI Suspend Type (Default: S1(POS))**
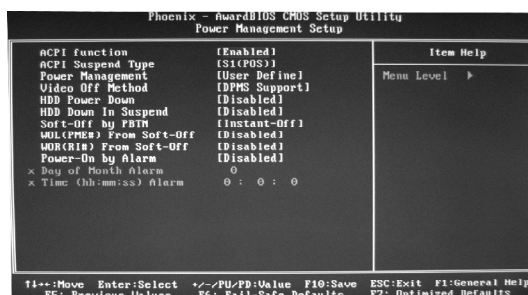This option is used to set the energy saving mode of the ACPI function. When you select "S1 (POS)" mode, the power will not shut off and the supply status will remain as it is, in S1 mode the computer can be resumed at any time. When you select "S3 (STR)" mode, the power will be cut off after a delay period. The status of the computer before it enters STR will be saved in memory, and the computer can quickly return to the previous status when the STR function wakes. When you select "S1 & S3" mode, the system will automatically select the delay time.

❖**Power Management (Default: User Define)**
This option is used to set the power management scheme. Available settings are: User Define, Min Saving and Max Saving.

❖**Video Off Method (Default: DPMS Supported)**
This option is used to define the video off method. "Blank Screen" mode means that after the computer enters power saving mode, only the monitor will close, however, the vertical and horizontal scanning movement of the screen

continues. When you select the "V/H SYNC + Blank" mode the vertical and horizontal scanning movement of screen stops when the computer enters power saving mode. "DPMS Supported" mode is a new screen power management system, and it needs to be supported by the monitor you're using.

❖**HDD Power Down (Default: Disabled)**
This option is used to turn off hard disk power if the hard disk is idle for a given period of time. The setting values are Disabled and 1Min-15Min.

❖**HDD Down In Suspend (Default: Disabled)**
This option is used to define the continuous HDD idle time before the HDD enters power saving mode. The setting values are Disabled and Enabled.

❖**Soft-Off by PBTN (Default: Instant-Off)**
This option is used to set the power down method. This function is only valid for systems using an ATX power supply. When "Instant-Off" is selected, press the power switch to immediately turn off power. When "Delay 4 Sec." is selected, press and hold the power button for four seconds to turn off power.

❖**Power-On by Alarm (Default: Disabled)**
This option is used to enable or disable the feature of booting up the system on a scheduled time/date. The setting values are Disabled and Enabled.

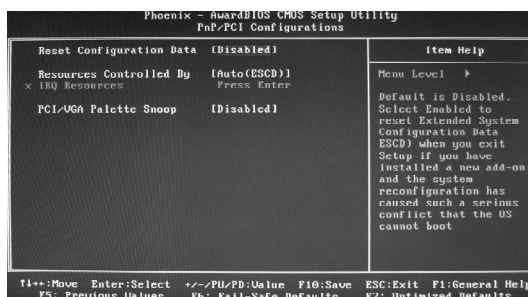❖**Date of Month Alarm**
When the Power-On by Alarm set as "Enabled", this option will be modified. It is used to set the timing for the start-up date. The setting values contain 0 - 31.

❖**Time (hh: mm: ss) Alarm**
When the Power-On by Alarm set as "Enabled", this option will be modified. It is used to set the timing for the start-up date. The setting values contain hh: 0-23; mm: 0-59; ss: 0-59.

PnP/PCI Configurations

```
                 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   │
 │                                           │ Configuration Data      │
 │                                           │ ESCD) when you exit     │
 │                                           │ Setup if you have       │
 │                                           │ installed a new add-on  │
 │                                           │ 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    F6: Fail-Safe Defaults    F7: Optimized Defaults │
 └─────────────────────────────────────────────────────────────────────┘
```

PnP/PCI Configurations Menu

❖ **Reset Configuration Data (Default: Disabled)**

This option is used to set whether the system is permitted to automatically distribute IRQ DMA and I/O addresses each time the machine is turned on. The setting values are: Disabled and Enabled.

❖ **Resources Controlled By (Default: Auto (ESCD))**

This option is used to define the system resource control scheme. If all cards you use support PnP, then select Auto (ESCD) and the BIOS will automatically distribute interruption resources. If the ISA cards you installed not support-ing PnP, you will need to select "Manual" and manually adjust interruption resources in the event of hardware conflicts. However, since this motherboard has no ISA slot, this option does not apply.
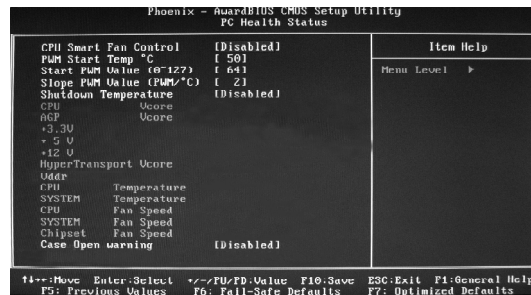
❖ **IRQ Resources**

Press the <Enter> key, then manually set IRQ resources.

❖ **PCI/VGA Palette Snoop (Default: Disabled)**

If you use a nonstandard VGA card, use this option to solve graphic accelera-tion card or MPEG audio card problems (e.g., colors not accurately displayed). The setting values are: Disabled and Enabled.

PC Health Status

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

  CPU Smart Fan Control      [Disabled]            Item Help
  PWM Start Temp °C          [ 50]
  Start PWM Value (0~127)    [ 64]         Menu Level    ►
  Slope PWM Value (PWM/°C)   [  2]
  Shutdown Temperature       [Disabled]
  CPU          Vcore
  AGP          Vcore
  +3.3V
  + 5 V
  +12 V
  HyperTransport Vcore
  Vddr
  CPU          Temperature
  SYSTEM       Temperature
  CPU          Fan Speed
  SYSTEM       Fan Speed
  Chipset      Fan Speed
  Case Open warning          [Disabled]

  ↑↓←→:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
       F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

PC Health Status Menu

❖**CPU Smart Fan Control (Default: Disabled)**

This option is used to enable or disable smart fan function. The setting values are Disabled and Enabled.

❖**Shutdown Temperature (Default: Disabled)**

This option is used to set the system temperature upper limit. When the temperature exceeds the setting value, the motherboard will automatically cut off power to the computer. The available setting values are: 60°C/140°F, 65°C/149°F, 70°C/158°F and Disabled.

❖**Case Open Warning (Default: Disabled)**

This optional is used to enable or disable case open warning function. The setting values are Disabled and Enabled.

Load Fail-Safe Defaults

Select this option and press <Enter>, it will pop up a dialogue box to allow you to install fail-safe defaults for all appropriate items in the Setup Utility. Select <Y> and press <Enter> to load the defaults. Select <N> and press <Enter> to not load. The defaults set by BIOS have set the basic functions of system in order to ensure the stability of system. But if your computer fails to properly work, you may load the default to make the system recover normal, then carry out failure testing in next step. If you only want to load the default for a specific option, you can select this option and press the <F6> key.

Load Optimized Defaults

Select this option and press <Enter>, it will open a dialogue box that lets you install the optimized defaults for all appropriate items in the Setup Utility. Select <Y> and press <Enter> to load the optimized defaults. Select <N> and press <Enter> to not install. The defaults set by BIOS have set the optimized performance parameters of system to improve the performances of system components. But if the optimized performance parameters to be set cannot be supported by your hardware devices, you can cause fatal errors or instability. If you only want to load the optimized defaults for a specific option, you can select this option and press the <F7> key.

Set Supervisor/User Password

The preferential grade of supervisor password is higher than user password. You can use supervisor password to start into system or enter into CMOS setting program to amend setting. You can also use user password to start into system, or enter into CMOS setting menu to check, but if you have set supervisor password, you cannot amend the setting.
Highlight the item Set Supervisor / User Password on the main menu and press <Enter>. The following password dialog box appears:

Enter Password:

Enter your password, not exceeding 8 characters, then press <Enter>, you will be prompted to confirm the password, type in the password again and press <Enter>.
If you are deleting a password that is already installed, just press <Enter> when the password dialog box appears, and the screen will show a message that indicates this password has been disabled. In this case, you can freely enter into system and CMOS setting program.

PASS WORD DISABLED!!!

Press any key to continue...

Under the menu "Advanced BIOS Features Setup", if you select "System" in Security Option, the screen will prompt you to enter password once the system is started or you want to enter CMOS setting program. If the password is wrong, it will refuse you to continue.

Under the menu "Advanced BIOS Features Setup", if you select "Setup" in Security Option, the screen will prompt you to enter password only when you enter CMOS setting program.

Save & Exit Setup

Select this option and press <Enter>, the following message will appear on the screen:

<div align="center">

SAVE to CMOS and EXIT (Y/N)?

</div>

Press <Y> to save the changes that you have made in the Setup Utility and exit the Setup Utility; press <N>/<ESC> to return to the main menu.

Exit Without Saving

Select this option and press <Enter>, it will show the following message on the screen:

<div align="center">

Quit Without Saving (Y/N)?

</div>

Press <Y> to discard any changes that you have made in the Setup Utility and exit the Setup Utility; press <N>/<ESC> to return to the main menu.

Chapter 4

The utility CD that came with the motherboard contains useful software and several utility drivers that enhance the motherboard features.

This chapter includes the following information:

❖ Utility CD content
❖ Start to install drivers

Utility CD content

This motherboard comes with one Utility CD. To begin using the CD, simply insert the CD into your CD-ROM driver. The CD will automatically display the main menu screen.

1. Install Driver

Using this option to install all the drivers for your motherboard. You should install the drivers sequentially, from first to last.

- A. nVIDIA nForce Chipset System
- B. Direct X 9.0b
- C. Audio Driver
- D. USB 2.0 Driver
- E. Silicon Image RAID Driver (optional)

2. Accessories

Use this option to install additional software programs.
- A. SuperUtility
  - a. SuperStep
  - Superstep is powerful and easy-to-operate tool for overclocking. You can quickly increase your CPU's working frequency through its user-friendly interface. It will enhance your CPU's performance and meet all kinds of DIY requirements.
  - b. SuperLogo
  - SuperLogo can display user-designed graphics and pictures, such as a company logo or personal photos, thus making your PC more personalized and friendly.
  - c. SuperUpdate
  - SuperUpdate function can help to update the BIOS through Internet
- B. Adobe Reader
- C. Norton Internet Security
- D. Word Perfect Office 12
- E. nTune (optional)

3. Browse CD

Click to browse the content of manual.

4. Browse CD

Click to browse this CD.

5. Homepage

Click here to visit Foxconn motherboard homepage.

Start to install drivers

Select <Install Driver> to enter the driver installation menu (as following pic). Click the relevant button to install nVIDIA nForce Chipset System, DirectX 9.0b, Audio Driver, USB2.0 Driver, Silicon Image RAID Driver (optional).

Please install the drives in sequence

Chapter **5**

NVIDIA brings Redundant Array of Independent Disks (RAID) technology—which is used by the world's leading businesses—to the common PC desktop. This technology uses multiple drivers to either increase total disk space or to offer data protection.

This chapter includes the following information:

- ❖ RAID Arrays
- ❖ Basic Configuration Instructions
- ❖ Setting up BIOS
- ❖ Entering the RAID BIOS Setup
- ❖ NVIDIA RAID Utility Installation
- ❖ Initializing and Using the Disk Array
- ❖ Win2K Limitation with Bootable RAID

NVIDIA RAID

RAID Arrays

This section describes the following types of RAID arrays that NVIDIA RAID supports:

• RAID 0

RAID 0 defines a disk striping scheme that improves the disk read and write times for many applications.

• RAID 1

RAID 1 defines techniques for mirroring data.

• RAID 0+1

RAID 0+1 combines the techniques used in RAID 0 and RAID 1 arrays.

• Spanning (JBOD)

JBOD provides a method for combining drives of different sizes into one large disk.

Summary of RAID Configurations

Array	Advantages	Drawbacks	# Hard Disks	Fault Tolerance
RAID 0	High data throughput.	No fault tolerance.	multiple	None
RAID 1	100% data redundancy.	Requires two drives for the storage space of one drive.	2	Yes
RAID 0+1	Optimized for both 100% data redundancy and performance. Allows spare disks.	Requires two drives for the storage space of one drive—the same as RAID level 1.	4+	Yes
JBOD	Combines and uses the capacity of odd size drives.	Decreases performance because of the difficulty in using drives concurrently or to optimize drives for different uses.	multiple	No

Basic Configuration Instructions

The following are the basic steps for configuring NVIDIA RAID:

Non-Bootable RAID Array

1. Choose the hard disks that are to be RAID enabled in the system BIOS.

2. Specify the RAID level, either Mirroring (RAID 1), Striping (RAID 0), Stripe Mirroring (RAID 0+1), or Spanning (JBOD) and create the desired RAID array.

3. Install the operating system on one hard disk, then reboot the computer.

4. Run the Windows nForce Setup application and install the RAID driver.

5. Initialize the NVRAID Array.

Bootable RAID Array

1. Choose the hard disks that are to be RAID enabled in the system BIOS.

2. Specify the RAID level, either Mirroring (RAID 1), Striping (RAID 0), Mirrored Striping (RAID 0+1), or Spanning (JBOD) and create the desired RAID array.

3. Boot from the Windows CD, then press F6 when the Windows Setup appears.

4. Insert the RAID driver floppy to Install the nForce RAID driver.

5. Initialize the NVRAID Array.

Setting Up the BIOS

1. Start up the computer, then press **Delete** to enter the BIOS setup. Use the arrow keys to select **Integrated Peripherals**, then press **Enter**.
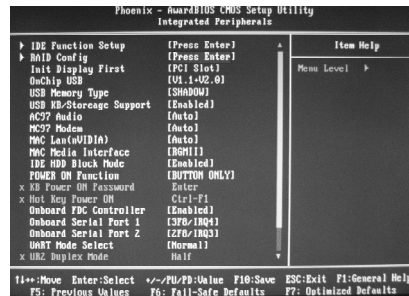

2. Use the arrow keys to select the **RAID Config**, then press **Enter**.
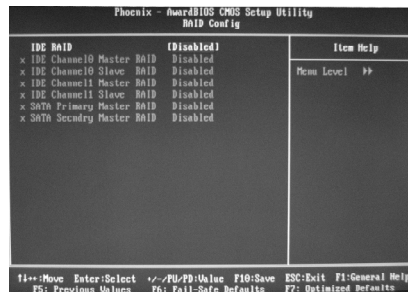
3. From the RAID Config window, enabled the IDE RAID, the other items would be light, then you can enable the disk that you want to use as RAID disks.

4. Press F10 to save the configuration and exit.

Entering the RAID BIOS Setup

1. After rebooting your PC, wait until you see the RAID software prompting you to press **F10**. The RAID prompt appears as part of the system POST and boot process prior to loading OS.

2. Press<**N**>, and the NVIDIA RAID Utility --- **Define a New Array** window will appear. The default **RAID Mode** is set to **Mirroring** and the default **Striping Block** is set to **Optimal**.
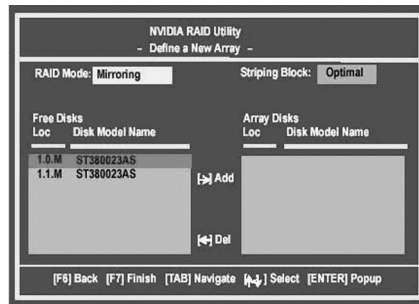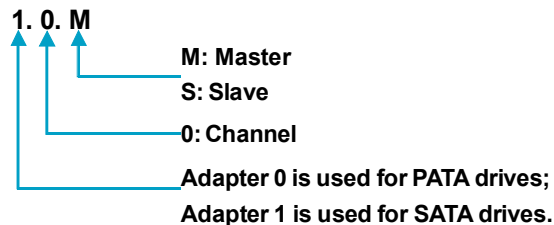

Understanding the "Define a New Array" Window

Use the Define a New Array window to

• Select the RAID Mode

• Set up the Striping Block

• Specify which disks to use for the RAID Array

Depending on the platform used, the system have one or more adapters. In a typical system there are usually one channel and multiple adapters, and each adapter have a slave and a master.

The adapter/channel/master/slave status of each hard disk is given in the Loc (location) columns of the Free Disks and Array Disks lists.

1. 0. M

M: Master
S: Slave

0: Channel

Adapter 0 is used for PATA drives;
Adapter 1 is used for SATA drives.

In the example above, 1.0.M means the hard drive is attached to Adapter 1, Channel 0, and the drive is set to Master. The following is a list of all possible combinations:

Parallel ATA
0.0.M   Adapter 0, Channel 0, Master
0.0.S   Adapter 0, Channel 0, Slave
0.1.M   Adapter 0, Channel 1, Master
0.1.S   Adapter 0, Channel 1, Slave

Serial ATA
1.0.M   Adapter 1, Channel 0, Master
1.1.M   Adapter 1, Channel 1, Slave

Note: There is no such thing as Slave drive in Serial ATA. All drives are considered to be Master since there is a one to one connection between the drive and the channel.

Using the Define a New Array Window
If necessary, press the tab key to move from field to field until the appropriate field is high lighted.

• Selecting the RAID Mode
By default, this is set to [Mirroring]. Change to a different RAID mode, press the down arrow keys until the mode that you want appears in the RAID Mode box— either [Mirroring], [Striping], [Spanning], or [Stripe Mirroring].

**• Selecting the Striping Block Size**
Striping Block size is given in kilobytes, and affects how data is arranged on the disk. It is recommended to leave this value at the default [Optimal], which is 32KB, but the values can be between [4 KB] and [128 KB].

• Assigning the Disks

The disks that you enabled from the RAID Config BIOS setup page appear in the **Free Disks** block. These are the drives that are available for use as RAID array.

To designate a free disk to be used as a RAID array:

1. Tab to the **Free Disks** section. The first disk in the list is selected.

2. Move it from the Free Disks block to the Array Disks block by pressing the right arrow key (→). The first disk in the list is moved, and the next disk in the list is selected and ready to be moved.

3. Continue pressing the right-arrow key (→) until all the disks that you want to use as RAID array appear in the **Array Disks** block.
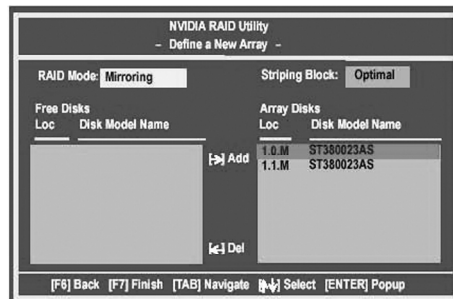

It shows that two disks have been assigned as RAID1 array disks in the figure above.

**Completing the RAID BIOS Setup**

1. After assigning your RAID array mode, press **F7.** The Clear disk data windows prompt appears.
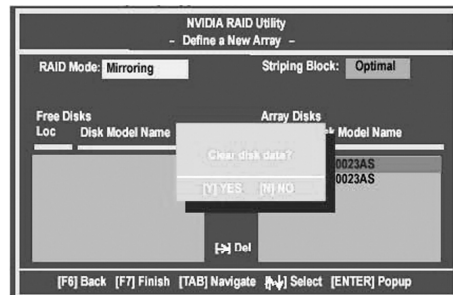
2. Press **Y** if you want to wipe out all the data from the RAID array, otherwise press
N. You must choose **Yes** if the drives were previously used as RAID drives.

The **Array List** window appears, where you can review the RAID arrays that you
have set up.
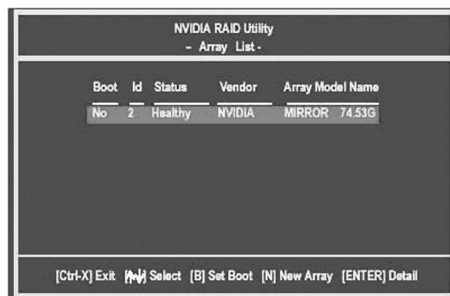
3. Use the arrow keys to select the array that you want to set up, then press **Enter.**
The **Array Detail** window appears.
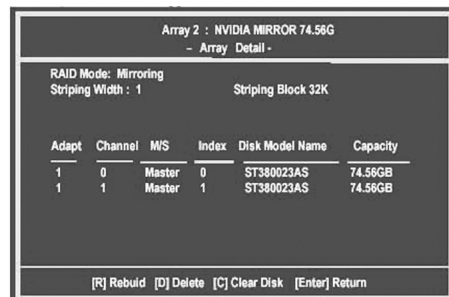
4. If you want to mark this disk as empty and wipe out all its contents then press **C**.

5. At the prompt, press **Y** to wipe out all the data, otherwise press **N**.

6. Press **Enter** again to go back to the previous window and then press **Ctrl+X** to exit
the RAID setup.

NVIDIA RAID Utility Installation

Installing the NVIDIA RAID Software Under Windows (for Non-bootable RAID Array)

This section describes how to setup the application and install the RAID software which will upgrade the Windows IDE driver and install the RAID driver.

1. Start the nForce Setup program to open the NVIDIA Windows nForce Drivers page.
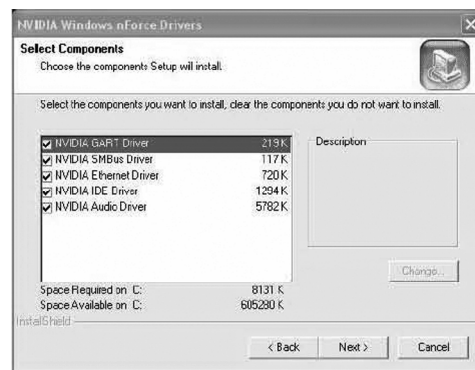
2. Select the modules that you want to install. Select the relative options that you have configured.

3. Click **Next** and then follow the instructions.

4. After the installation is completed, be sure to reboot the PC.

5. After the reboot, initialize the newly created array.

Installing the RAID Driver (for bootable RAID Array)

1. After you complete the RAID BIOS setup, boot from the Windows CD, and the Windows Setup program starts.

2. Press **F6** and wait for the Windows Setup screen to appear.
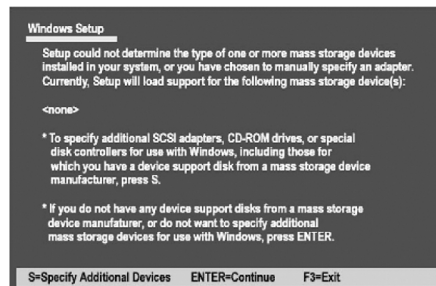
3. Specify the NVIDIA drivers:

(1) Insert the floppy that has the RAID driver, press **S**. The Windows Setup screen appears as below:
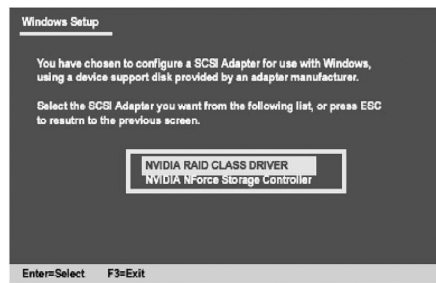
(2) Select "NVIDIA RAID CLASS DRIVER" and then press **Enter**.

(3) Press **S** again at the Specify Devices screen, then press **Enter.**

(4) Select "NVIDIA NForce Storage Controller" and then press **Enter.** The following Windows Setup screen appears listing both drivers:

4. Press Enter to continue with operating system Installation. Be sure to copy the files from the floppy is complete, then take out the floppy.

5. Follow the instructions on how to install operating system. During the GUI portion of the installation you might be prompted to click Yes to install the RAID driver. Click Yes as many times as needed in order to finish the installation. This will not be an issue with a signed driver.

Note: Each time you add a new hard drive to a RAID array, the RAID driver will have to be installed under Windows once for that hard drive. After that, the driver will not have to be installed.
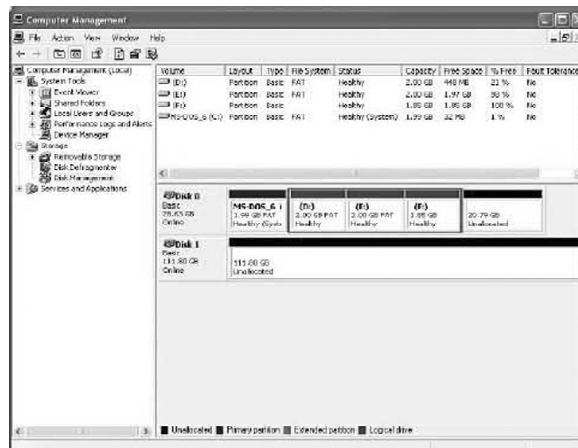
Initializing and Using the Disk Array

The RAID array is now ready to be initialized under Windows.

1. Launch Computer Management by clicking "Start" —> "Settings" —> "Control Panel" then open the "Administrative Tools" folder and double click on "Computer Management".

2. Follow screen instructions to install. While finished, the "Computer Management" window appears.

The actual disks listed will depend on your system, and the unallocated partition is the total combined storage of two hard disks. You must format the unallocated disk space in order to use it.

3**.** Format the unallocated disk space. Right click "Unallocated space", select "New Partition…" and follow the wizard. After the drive has been formatted, it is ready for use.

Win2K Limitation with Bootable RAID

In Windows 2000 (Service Pack 2 or previous versions), the end user cannot install this operating system to a bootable RAID volume.

There are two solutions to resolve this issue.

I) Use the NVRAID Tool to convert the boot volume to a RAID array.
Here are the detailed step by step instructions:

1. Install Windows 2000 on a selected hard drive.

2. Download and install Windows 2000 Service Pack 4 from Microsoft's website.

3. Reboot the system, press the **DEL** key as the system is rebooting to enter into the system BIOS.

4. Select **Integrated Peripherals** → **RAID Config**.

5. Enable RAID Config for the selected drive (the one containing the Windows 2000 operating system). Then press **F10** to exit and save settings in the system BIOS (This action reboots the System).

6. Press **F10** as the system is rebooting to go into the RAID ROM(The system directs you into the NVIDIA RAID Utility).

7. Select **Striping** under **RAID Mode.** Press **TAB** to go into the **Free Disk menu**. You can use the Right Arrow key to add the desired disk.

8. After that, Press **F7** to finish. Select **N** (NO) when asked to **Clear Disk Data**.

9. Then Press **Ctrl-X** to exit.The system reboots into Windows 2000.

10. Install the NVIDIA nForce Driver Package while in Windows 2000. Then reboot the system.

11. Go to **START>Programs>Nvidia Corporation** and select **NVRAID Manager**. You should see the single disk RAID array (in striping mode) that was created from the boot disk.

12. Select the single boot disk RAID Array by clicking on it.

13. Select **Convert Array** under the **System Tasks**. The **Convert Array** wizard is displayed. Then Select **Next**.

14. Select the desired type of RAID array you want to convert. Then Select **Next**.

15. You are prompted to select the desired **Free Disk(s)** to add to the bootable RAID array. Click **Finish**.

At this point, NVRAID starts converting the single disk RAID array into a multi-disk RAID array in a bootable format.

Note: Conversion may take 1-2 hours depending on disk size.

II) The user must create a combination installation CD that includes Windows 2000 and SP3 or SP4 fixes integrated in. To create the combination installation CD, refer to the following website:

http://www.microsoft.com/windows2000/downloads/servicepacks/sp4/HFdeploy.htm

Note: If the end user chooses not to install Windows 2000 Service Pack 3 or 4, RAID is still supported on Windows 2000. However, the end user will not be able to create a bootable RAID volume.

📑 **Note:**

Please follow the steps we have introduced to set RAID array, and **do not** use NVRAID tool to set RAID array under windows XP.