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## CHAPTER 1: INTRODUCTION

### 1.1 MOTHERBOARD FEATURES

#### A. Hardware

##### CPU

- Supports LGA775.
- Supports Intel Pentium 4 processor.
- Supports Dual Code CPU (only for version 1.1).
- Front Side Bus at the following frequency ranges:
  - 533MT/s (133MHz Core Clock)
  - 800MT/s (200MHz Core Clock)
  - 1066MT/s (266MHz Core Clock)
- Supports Hyper-Threading Technology. (HT)
- Supports Execute Disable Bit Technology (XD).
- Supports Enhanced Intel SpeedStep® Technology (EIST).
- Supports Intel Extended Memory 64 Technology (Intel EM64T).

##### Chipset

- North Bridge: NF4-SLI-SPP.
- South Bridge: NF4-SLI-MCP.

##### Dimensions

- ATX Form Factor: 30.48cm (L) x 24.38cm (W)

##### Operating System Supporting

- Supports Windows 2000, and Windows XP.

##### System Memory

- Supports dual channel DDR2 up to 8 banks.
- Supports un-buffered non-ECC DIMMs.
- Supports DDR2 400 (200MHz) / 533 (266MHz) / 667 (333MHz) for a theoretical maximum bandwidth of 10.6 GB/s.
- Maximum DRAM space is up to 16GB.

DIMM Socket Location	DDR Module	Total Memory Size
DDR2_A1	256MB/512MB/1GB/2GB/4GB*1	Max is 16GB.
DDR2_A2	256MB/512MB/1GB/2GB/4GB*1	
DDR2_B1	256MB/512MB/1GB/2GB/4GB*1	
DDR2_B2	256MB/512MB/1GB/2GB/4GB*1	

### **Expansion Slots**

- Three 32bit PCI bus master slots.
- **Normal Mode PCI-Express slots:**
  - One PCI-Express x16 slot: PCI\_EX16-1.
  - Two PCI-Express x1 slots: PCI-EX1-1 and PCI-EX1-2.
- **SLI Mode PCI-Express slots:**
  - Two PCI-Express x8 slots: PCI-EX16-1 and PCI-EX16-2.
  - Two PCI-Express x1 slots: PCI-EX1-1 and PCI-EX1-2.

**Notice:**

Normal Mode and SLI Mode are switched by SLI-NF4T selector card.  
(Please read Chapter 5 for detail information.)

### **Gigabit Ethernet LAN**

- NVIDIA Gigabit MAC + VITESSE Gigabit PHY VSC8201.
- Supports 10Mb/s, 100Mb/s and 1GB/s auto-negotiation.
- Half/Full duplex capability.
- Supports personal Firewall setup.
- Supports ACPI power management.

### **On Board AC'97 Sound Codec**

- Chip: ALC850.
- Supports 8 channels.
- Supports SPDIF-Out and SPDIF-In (optional) functions.
- Compliant with AC'97 version 2.3 specification.

### **Super I/O**

- Chip: ITE IT8712F.
- Low Pin Count Interface.
- Provides the most commonly used legacy Super I/O functionality.
- Environment Control initiatives,
  - H/W Monitor
  - Fan Speed Controller
  - ITE's "Smart Guardian" function

### **IEEE 1394 Chip (optional)**

- Chip: VIA VT6307.
- Supports two 1394A Firewire ports up to 400Mb/s individually.

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### **Serial ATA II**

- Controller integrated in NF4-SLI-MCP.
- Supports RAID functions.
- Supports Serial ATA 2.0 specification.
- Supports 4 Serial ATA (SATA) devices.
- Data transfer rate up to 1.5GB/s or 3GB/s.

### **RAID Controller**

- Controller integrated in NF4-SLI-MCP.
- NVIDIA RAID Technology:
  - RAID 0 disk striping for highest system and application performance
  - RAID 1 disk mirroring support for fault toleranceSupport for both SATA and ATA-133 disk controller standards

### **On Board IDE**

- Two on-board connectors support 4 devices.
- Supports Ultra DMA Modes 6~0 (Ultra DMA –133/100/60/33).
- Supports standard PIO Modes 4~0.

### **Internal On-board I/O Connectors and Headers**

- 1 front panel header supports front panel facilities.
- 1 CD-in connector supports 1 CD-ROM audio-in device.
- 1 front audio header supports front panel audio-out function.
- 1 chassis open header supports PC case-opened warning function.
- 1 S/PDIF-out connector supports digital audio-out function
- 1 S/PDIF-in connector supports digital audio-in function (optional).
- 1 1394A header supports 1 1394A Firewire port at front panel (optional).
- 1 Floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
- 2 IDE connectors support 4 hard disk devices.
- 3 USB headers support 6 USB 2.0 ports.
- 4 serial ATA II connectors support 4 SATA III devices.

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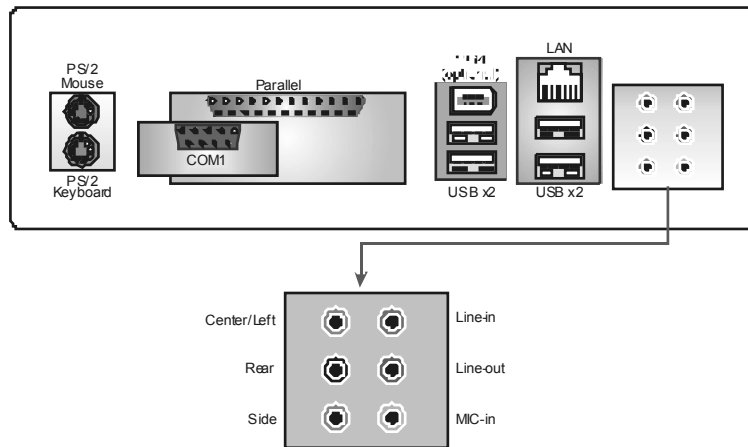
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### Back Panel I/O Connectors

- 1 Serial port.
- 1 Parallel port.
- 1RJ-45 LAN jack
- 1 PS/2 Mouse port.
- 1 PS/2 Keyboard port
- 1 1394A Firewire port (optional).
- 4 USB 2.0 ports.
- 6 audio ports support 8 channels audio-out facilities.



### B. BIOS & Software

#### BIOS

- Award legal BIOS.
- Supports APM1.2.
- Supports ACPI.
- Supports USB Function.

#### Software

- Supports Warpspeeder™, 9th Touch™, WINFLASHER™ and FLASHER™.

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### ***1.2 PACKAGE CHECKLIST***

- ✦ FDD Cable x 1
- ✦ HDD Cable x 1
- ✦ User's Manual x 1
- ✦ Serial ATA Cable x 1
- ✦ BRI-2 SLI Bridge x 1
- ✦ Fully Setup Driver CD x 1
- ✦ Rear I/O Panel for ATX Case x 1
- ✦ SLI-NF4T Selector Card x 1 (pre-installed)
- ✦ SPDIF Cable x 1 (optional)
- ✦ USB 2.0 Cable x 1 (optional)
- ✦ Retention Bracket x 1 (optional)
- ✦ IEEE 1394A Cable x 1 (optional)
- ✦ Serial ATA Power Switch Cable x 1 (optional)



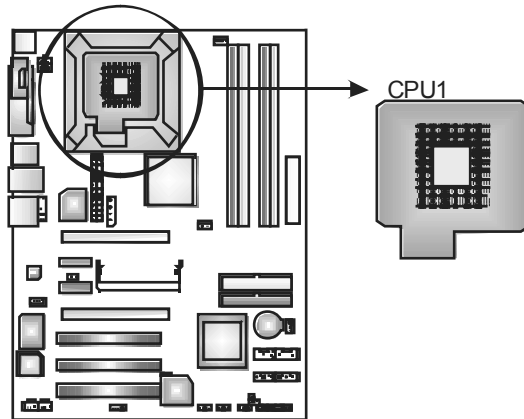


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## CHAPTER 2: HARDWARE INSTALLATION

### 2.1 INSTALLING CENTRAL PROCESSING UNIT (CPU)

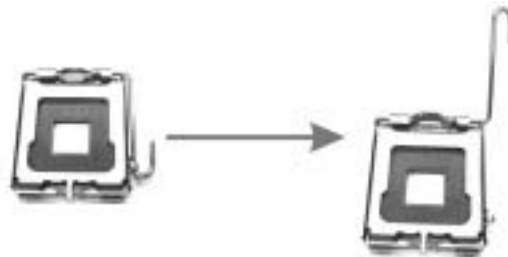


**Special Notice:**

*Remove Pin Cap before installation, and make good preservation for future use. When the CPU is removed, cover the Pin Cap on the empty socket to ensure pin legs won't be damaged.*



**Step 1:** Pull the lever sideways away from the socket and then raise the lever up to a 90-degree angle.



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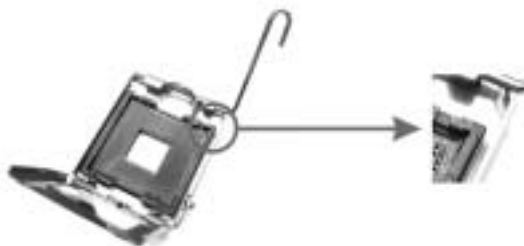
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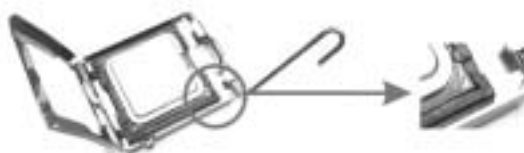
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**Step 2:** Look for the black cut edge on socket, and the white dot on CPU should point forwards this black cut edge. The CPU will fit only in the correct orientation.

*Step 2-1:*



*Step 2-2:*



**Step 3:** Hold the CPU down firmly, and then close the lever to complete the installation.

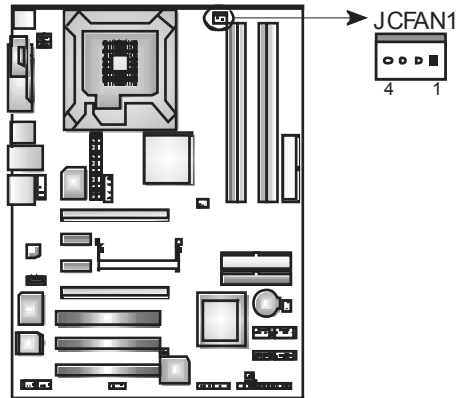


**Step 4:** Put the CPU Fan on the CPU and buckle it. Connect the CPU FAN power cable to the JCFAN1. This completes the installation.

## 2.2 FAN HEADERS

These fan headers support cooling-fans built in the computer. The fan wiring and plug may be different according to the fan manufacturer. Connect the fan cable to the connector while matching the black wire to pin#1.

### JCFAN1: CPU Fan Power Header



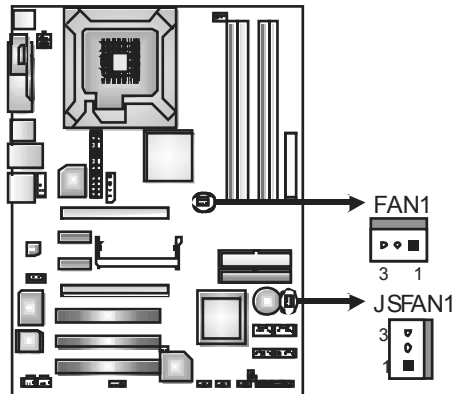
Pin	Assignment
1	Ground
2	+12V
3	FAN RPM rate sense
4	Smart Fan Control

#### Note:

The JCFAN1 supports system cooling fan with Smart Fan Control utility. It supports 4 pin head connector. When connecting with wires onto connectors, please note that the red wire is the positive and should be connected to pin#2, and the black wire is Ground and should be connected to GND.

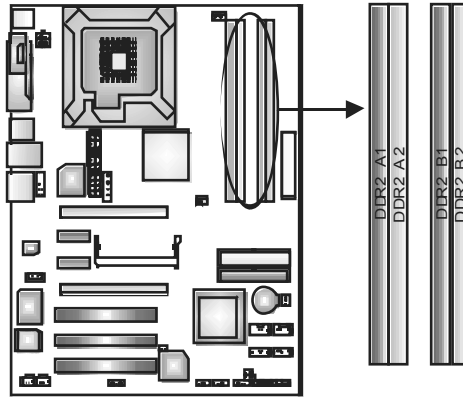
### FAN1: North Bridge Fan Power Header

### JSFAN1: System Fan Power Header

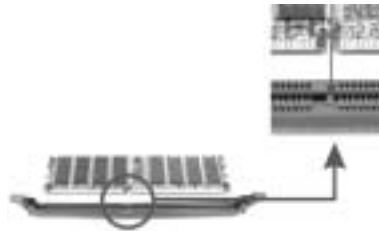


Pin	Assignment
1	Ground
2	+12V
3	FAN RPM rate sense (optional)

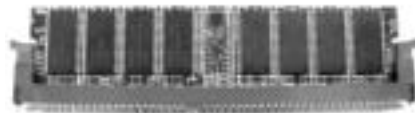
**2.3 INSTALLING SYSTEM MEMORY**



1. Unlock a DIMM slot by pressing the retaining dips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the Slot.



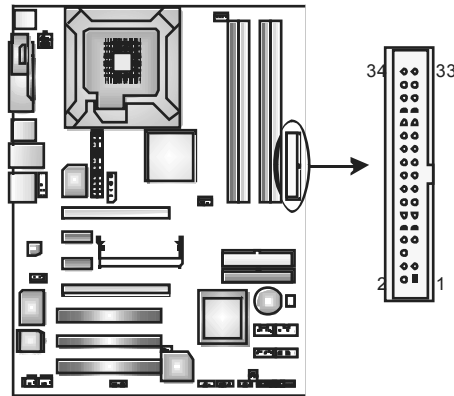
2. Insert the DIMM vertically and firmly into the slot until the retaining chip snap back in place and the DIMM is properly seated.



2.4 CONNECTORS AND SLOTS

**FDD1: Floppy Disk Connector**

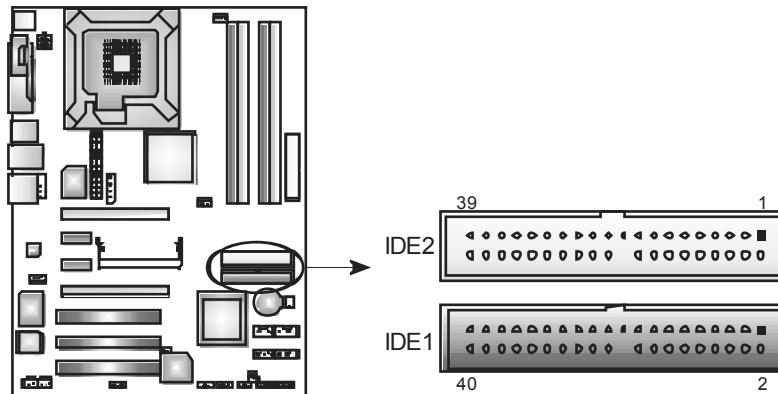
The motherboard provides a standard floppy disk connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.



**IDE1/IDE2: Hard Disk Connector**

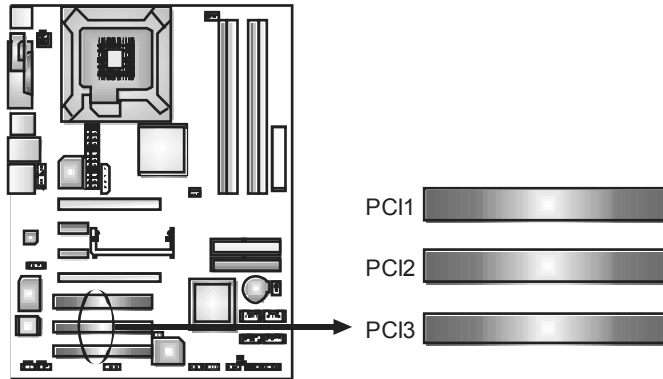
The motherboard has two 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~5, Bus Master, and Ultra DMA 33/66/100/133 functionality. It has two HDD connectors IDE1 (primary) and IDE2 (secondary).

The IDE connectors can connect a master and a slave drive, so you can connect up to four hard disk drives. The first hard drive should always be connected to IDE1.



**PCI1~PCI3: Peripheral Component Interconnect Slots**

This motherboard is equipped with three standard PCI slots. PCI stands for Peripheral Component Interconnect, and it is a bus standard for expansion cards. This PCI slot is designated as 32 bits.



**PCI-EX16-1/PCI-EX16-2/PCI-EX1-1/PCI-EX1-2:  
PCI-Express Slots**

**PCI-EX16-1 (Normal Mode):**

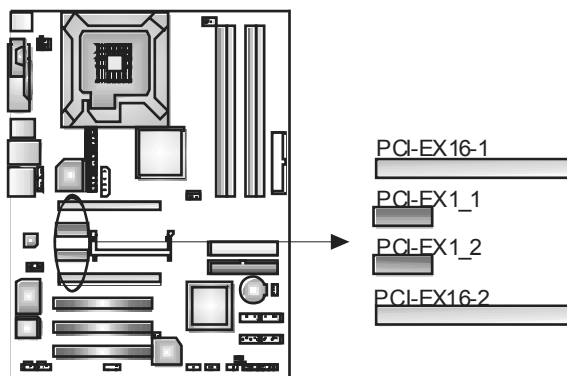
- PCI Express 1.0a compliant.
- Maximum bandwidth is up to 4GB/s per direction.

**PCI-EX1-1/PCI-EX1-2 (Normal Mode):**

- PCI Express 1.0a compliant.
- Maximum bandwidth is up to 250MB/s per direction.

**PCI-EX16-1/PCI-EX16-2 (SLI Mode):**

- PCI Express 1.0a compliant.
- Maximum bandwidth is up to 2GB/s per direction.



## CHAPTER 3: HEADERS & JUMPERS SETUP

### 3.1 HOW TO SETUP JUMPERS

The illustration shows how to set up jumpers. When the jumper cap is placed on pins, the jumper is “close”, if not, that means the jumper is “open”.



Pin opened



Pin closed

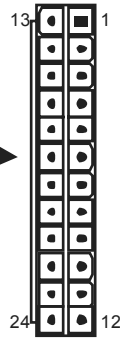
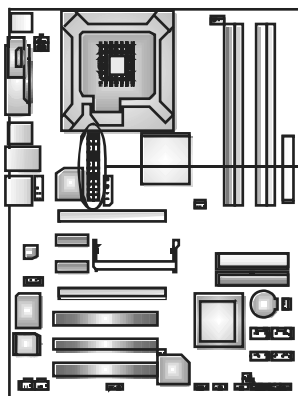


Pin1-2 closed

### 3.2 DETAIL SETTINGS

#### JATXPWR1: ATX Power Connector

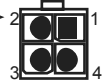
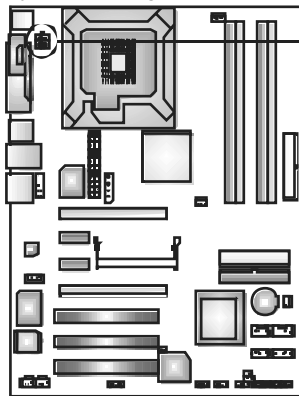
This connector allows user to connect 20-pin power connector on the ATX power supply.



Pin	Assignment
1	+3.3V
2	+3.3V
3	Ground
4	+5V
5	Ground
6	+5V
7	Ground
8	PW_OK
9	Standby Voltage+5V
10	+12V
11	+12V
12	+3.3V
13	+3.3V
14	-12V
15	Ground
16	PS_ON
17	Ground
18	Ground
19	Ground
20	NC
21	+5V
22	+5V
23	+5V
24	Ground

**JATXPWR2: ATX Power Source Connector**

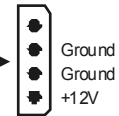
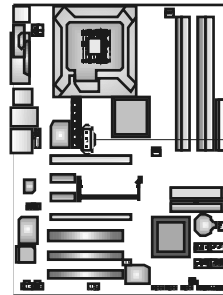
By connecting this connector, it will provide +12V to CPU power circuit.



Pin	Assignment
1	+12V
2	+12V
3	Ground
4	Ground

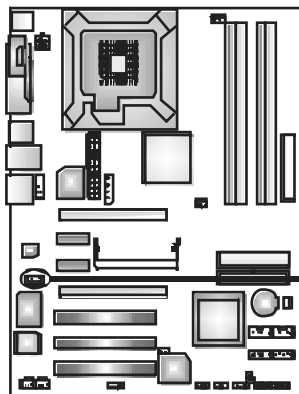
**JAUXPWR1:  
PCI-Express x16 Slot Power Source Connector**

When SLI mode is enabled, please plug in this PEX power source connector to make sure the system is working under a stable environment. Please read Chapter 5 for detail information.



**JCDIN1: CD-ROM Audio-in Connector**

This connector allows user to connect the audio source from the variety devices, like CD-ROM, DVD-ROM, PCI sound card, PCI TV turner card etc..

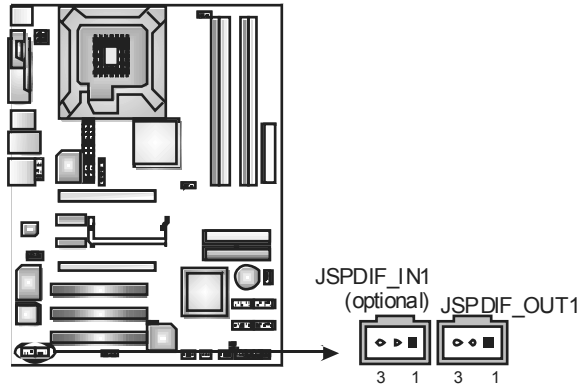


Pin	Assignment
1	Left channel input
2	Ground
3	Ground
4	Right channel input



**JSPDIF\_OUT/JSPDIF\_IN1: Digital Audio-out Connectors  
(JSPDIF\_IN1 is optional.)**

These connectors allow user to connect the PCI bracket SPDIF output or input header.

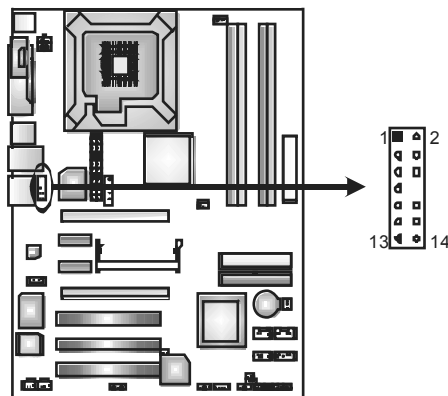


JSPDIF\_OUT:  
**Pin Assignment**  
1 +5V  
2 SPDIF OUT  
3 Ground

JSPDIF\_IN1 (optional):  
**Pin Assignment**  
1 +5V  
2 SPDIF IN  
3 Ground

**JAUDIO2: Front Panel Audio-out Header**

This connector will allow user to connect with the front audio out put headers on the PC case. It will disable the output on back panel audio connectors.



Pin	Assignment
1	MIC-in/ Stereo MIC-in R
2	Ground
3	Stereo MIC-in L
4	Audio power
5	Right line-out/ Speaker-out Right.
6	Right line-out/ Speaker-out Right
7	Reserved
8	Key
9	Left line-out/ Speaker-out Left
10	Left line-out/ Speaker-out Left
11	Right line-in
12	Right line-in
13	Left line-in
14	Left line-in

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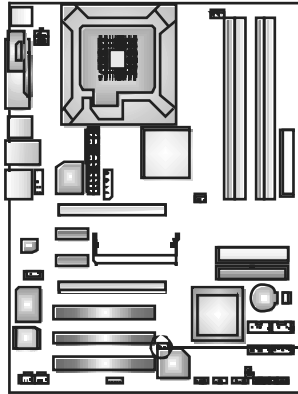
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### J1394PWR1 (optional): Power Source Header for 1394 Chip



**Pin 1-2 Close:**

+3.3V for 1394 chipset (default).

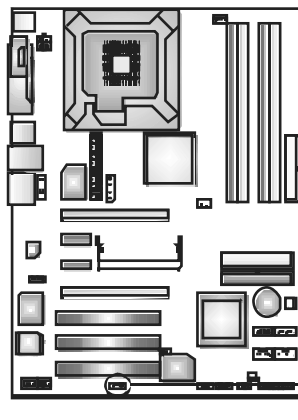


**Pin 2-3 Close:**

+3.3V SB for 1394 chipset.

### J1394A1 (optional): Header for 1394A Firewire Port at Front Panel

This connector allows user to connect the front 1394 port for digital image devices.



Pin	Assignment
-----	------------

1	A+
---	----

2	A-
---	----

3	Ground
---	--------

4	Ground
---	--------

5	B+
---	----

6	B-
---	----

7	+12V
---	------

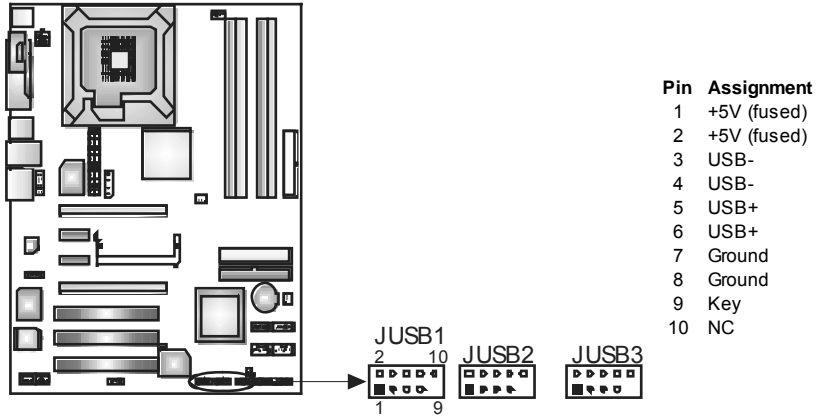
8	+12V
---	------

9	Key
---	-----

10	Ground
----	--------

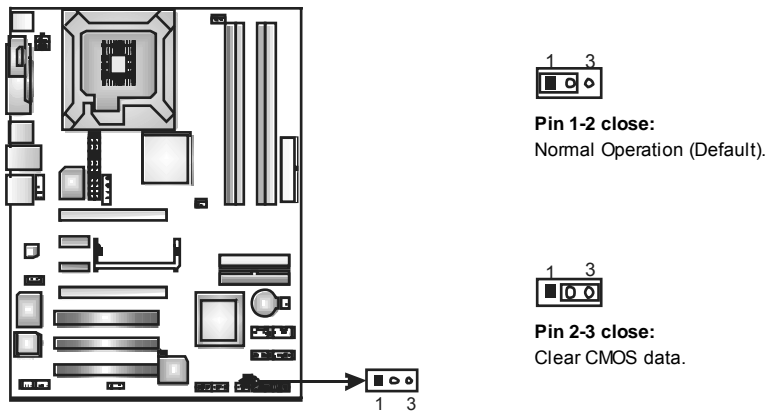
**JUSB1~JUSB3: Headers for USB Ports at Front Panel**

This connector allows user to connect additional USB cables at PC front panel, and also can be connected with internal USB devices, like USB card reader.



**JCMOS1: Clear CMOS Header**

By placing the jumper on pin2-3, it allows user to restore the BIOS safe setting and the CMOS data, please carefully follow the procedures to avoid damaging the motherboard.



**※ Clear CMOS Procedures:**

1. Remove AC power line.
2. Set the jumper to "Pin 2-3 close".
3. Wait for five seconds.
4. Set the jumper to "Pin 1-2 close".
5. Power on the AC.
6. Reset the desired password or clear the CMOS data.

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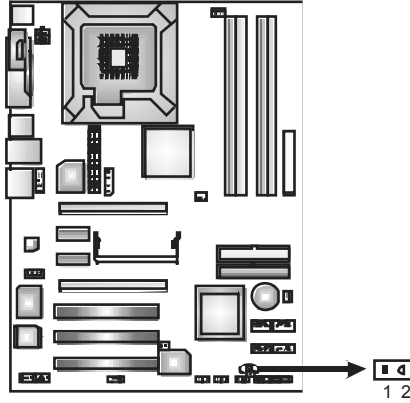
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### JCI1: Case Open Headers

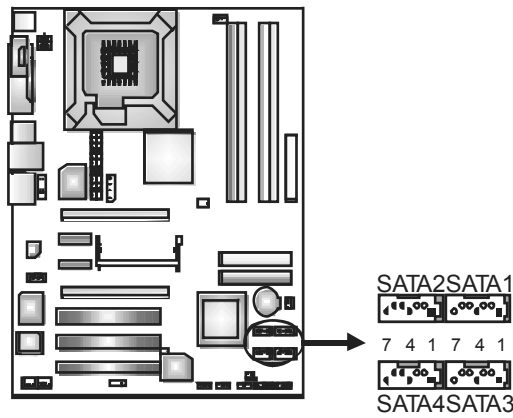
This connector allows system to monitor PC case open status. If the signal has been triggered, it will record to the CMOS and show the message on next boot-up.



Pin	Assignment
1	Case open signal
2	Ground

### JSATA1~JSATA4: Serial ATA Connectors

The motherboard has a SATA Controller in NVIDIA Crush19 with 4 channels SATA interface, it satisfies the SATA 2.0 spec and with transfer rate of 3.0Gb/s.

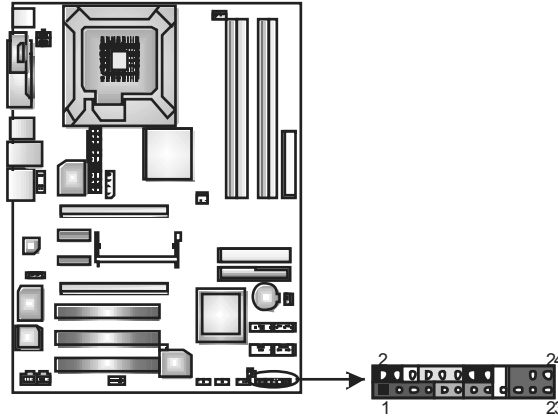


Pin	Assignment
1	Ground
2	TX+
3	TX-
4	Ground
5	RX-
6	RX+
7	Ground

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### JPANEL1: Header for Front Panel Facilities

This 24-pin connector includes Power-on, Reset, HDD LED, Power LED, Sleep button, speaker and IrDA Connection. It allows user to connect the PC case's front panel switch functions.



Pin	Assignment	Function	Pin	Assignment	Function
1	+5V	Speaker Connector	2	Sleep control	Sleep button
3	N/A		4	Ground	
5	N/A		6	N/A	N/A
7	Speaker	Hard drive LED	8	Power LED (+)	Power LED
9	HDD LED (+)		10	Power LED (+)	
11	HDD LED (-)		12	Power LED (-)	
13	Ground	Reset button	14	Power button	Power-on button
15	Reset control		16	Ground	
17	N/A	IrDA Connector	18	Key	IrDA Connector
19	N/A		20	Key	
21	+5V		22	Ground	
23	IRTX		24	IRRX	

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## CHAPTER 4: USEFUL HELP

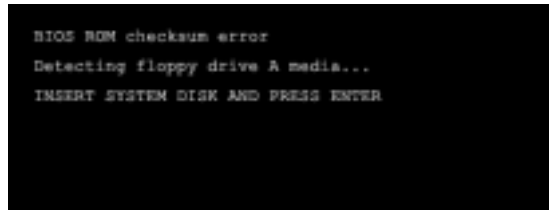
### 4.1 AWARD BIOS BEEP CODE

Beep Sound	Meaning
One long beep followed by two short beeps	Video card not found or video card memory bad
High-low siren sound	CPU overheated System will shut down automatically
One Short beep when system boot-up	No error found during POST
Long beeps every other second	No DRAM detected or install

### 4.2 EXTRA INFORMATION

#### A. BIOS Update

After you fail to update BIOS or BIOS is invaded by virus, the Boot-Block function will help to restore BIOS. If the following message is shown after boot-up the system, it means the BIOS contents are corrupted.



In this Case, please follow the procedure below to restore the BIOS:

1. Make a bootable floppy disk
2. Download the Flash Utility "AWDFLASH.exe" from the Biostar website: [www.biostar.com.tw](http://www.biostar.com.tw)
3. Confirm motherboard model and download the respectively BIOS from Biostar website.
4. Copy "AWDFLASH.exe" and respectively BIOS into floppy disk.
5. Insert the bootable disk into floppy drive and press Enter.
6. System will boot-up to DOS prompt.
7. Type "Awdflash xxxx.bf/sn/py/r" in DOS prompt.
8. System will update BIOS automatically and restart.
9. The BIOS has been recovered and will work properly.

**B. CPU Overheated**

If the system shutdown automatically after power on system for seconds, that means the CPU protection function has been activated.

When the CPU is over heated, the motherboard will shutdown automatically to avoid a damage of the CPU, and the system may not power on again.

In this case, please double check:

1. The CPU cooler surface is placed evenly with the CPU surface.
2. CPU fan is rotated normally.
3. CPU fan speed is fulfilling with the CPU speed.

After confirmed, please follow steps below to relief the CPU protection function.

1. Remove the power cord from power supply for seconds.
2. Wait for seconds.
3. Plug in the power cord and boot up the system.

Or you can:

1. Clear the CMOS data.  
(See "Close CMOS Header: JCMOS1" section)
2. Wait for seconds.
3. Power on the system again.

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**4.3 TROUBLESHOOTING**

<b>Probable</b>	<b>Solution</b>
<ol style="list-style-type: none"><li>1. No power to the system at all. Power light don't illuminate, fan inside power supply does not turn on.</li><li>2. Indicator light on key board does not turn on.</li></ol>	<ol style="list-style-type: none"><li>1. Make sure power cable is securely plugged in.</li><li>2. Replace cable.</li><li>3. Contact technical support.</li></ol>
System inoperative. Keyboard lights are on, power indicator lights are lit, and hard drive is spinning.	Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.
System does not boot from hard disk drive, can be booted from optical drive.	<ol style="list-style-type: none"><li>1. Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup.</li><li>2. Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.</li></ol>
System only boots from optical drive. Hard disk can be read and applications can be used but booting from hard disk is impossible.	<ol style="list-style-type: none"><li>1. Back up data and applications files.</li><li>2. Reformat the hard drive. Re-install applications and data using backup disks.</li></ol>
Screen message says "Invalid Configuration" or "CMOS Failure."	Review system's equipment. Make sure correct information is in setup.
Cannot boot system after installing second hard drive.	<ol style="list-style-type: none"><li>1. Set master/slave jumpers correctly.</li><li>2. Run SETUP program and select correct drive types. Call the drive manufacturers for compatibility with other drives.</li></ol>



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## CHAPTER 5: NVIDIA SLI FUNCTION

### 5.1 REQUIREMENTS

- Only Windows XP supports SLI (Dual Video) function.
- Two identical SLI-ready graphics cards that are NVIDIA certified.
- The graphics card driver should support NVIDIA SLI technology.
- The power supply unit must provide at least the minimum power required by the system, or the system will be unstable.

### 5.2 PLACING THE SLI-NF4T SELECTOR CARD

- There is a pre-installed SLI-NF4T selector card on the motherboard. The default setting is Normal Mode, only supports single graphics card.

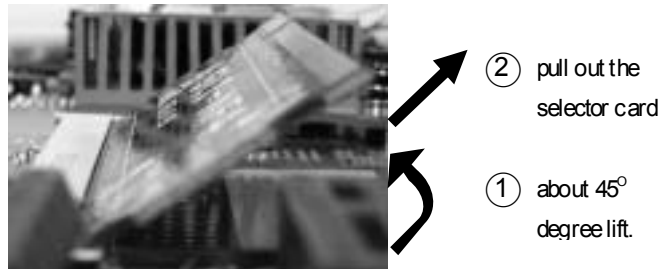


- To use two graphics cards, firstly, you have to set the selector card to SLI Mode, to support dual video cards.

Step 1: Push the retention dips outward to release SLI-NF4T selector card.



Step 2: Pull the selector card out of the slot.



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Step 3: Invert the selector card and insert the edge labeled “SLI MODE”.



Step 4: Push down the selector card until the retention clips snap into place.



① Insert the card with a degree about 45°.



② Push the selector card downward.

**Notice:** Make sure to insert the card into the slot completely.

**5.3 THINGS TO NOTICE**

■ **Normal Mode:**

- Only PEX16-1 slot supports PCI-Express x16 interface graphics card function.
- PEX1-1 and PEX1-2 slots provide PCI-Express x1 interface expansion card function.

■ **SLI Mode:**

- Use BRI-2 connector to link two SLI-ready PCI-E x16 interface graphics cards.
- Both PEX16-1 and PEX16-2 slots provide PCI-E x8 data transfer rate.
- PEX1-1 and PEX1-2 slots provide PCI-Express x1 interface expansion card function.
- Coordinate with graphics card driver to set Dual Video function.

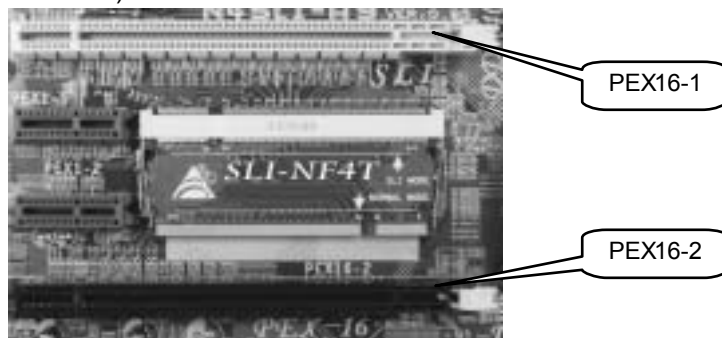
**5.4 INSTALLING SLI-READY GRAPHICS CARDS**

Step 1: Make sure the SLI-NF4T selector card is placed at SLI Mode.



Step 2: Prepare two graphics cards with PCI-E x16 interface.

Step 3: Insert the first one graphics card into the yellow slot (PCI-EX16-1). And then insert the second graphics card into the white slot (PCI-EX16-2).



**Notice:**  
Make sure both the graphics cards are seated into slots completely.

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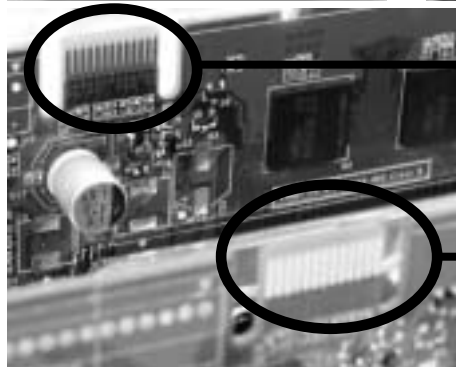
Step 5: Connect a 4-pin ATX power cable to AUX power connector (JAUXPWR1), this will ensure the stabilization of your system.

**Notice:**

When under SLI mode, please make sure the power supply is at least 500W (and above).



Step 6: Insert the SLI Bridge (BRI-2) connector on the gold-fingers of each graphics card.



Gold-fingers on  
two graphics

**Notice:**

Please make good preservation of this bridge for future use.

Step 7: To securely fix the connector between two graphics cards, a retention bracket must be installed.

Step 7-1: Remove any of the bracket cover between the two graphics cards.

Step 7-2: Align and insert the retention bracket into the slot and then fix it with a screw.

**Notice:**

Make sure the retention bracket supports the SLI Bridge (BRI-2) firmly.

**5.5 ENABLING MULTI-GPU FEATURE IN WINDOWS**

After the graphics cards are installed, enable the Multi-GPU feature in NVIDIA nView properties.

Step 1:  
Click NVIDIA Settings icon on the Windows taskbar.



Step 2:  
Select "nView Properties" in nView Desktop Manager pop-up menu.



Step 3:  
Click "Properties" icon in Desktop Management tab to display properties dialog box.



Step 4:  
Click "Advanced" icon in Settings tab.



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Step 5:

Select “NVIDIA GeForce” tab, and then click on “Multi-GPU” item on the left dialog box.



Step 6:

Check before “Enable SLI multi-GPU” item, and click on OK to complete the setting.



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## CHAPTER 6: NVIDIA RAID FUNCTIONS

### 6.1 OPERATION SYSTEM

- Supports Windows XP Home/Professional Edition, and Windows 2000 Professional.

### 6.2 RAID ARRAYS

NVRAID supports the following types of RAID arrays:

**RAID 0:** RAID 0 defines a disk striping scheme that improves disk read and writes times for many applications.

**RAID 1:** RAID 1 defines techniques for mirroring data.

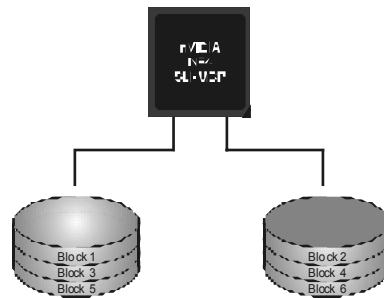
**RAID 0+1:** RAID 0+1 combines the techniques used in RAID 0 and RAID 1.

**Spanning (JBOD):** JBOD provides a method for combining drives of different sizes in to one large disk.

### 6.3 HOW RAID WORKS

#### RAID 0:

The controller “stripes” data across multiple drives in a RAID 0 array system. It breaks up a large file into smaller blocks and performs disk reads and writes across multiple drives in parallel. The size of each block is determined by the strip size parameter, which you set during the creation of the RAID set based on the system environment. This technique reduces overall disk access time and offers high bandwidth.



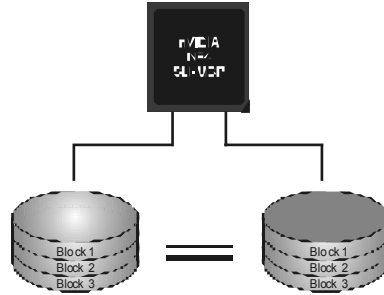
#### Features and Benefits

- **Drives:** Minimum 1, and maximum is up to 6 or 8. Depending on the platform.
- **Uses:** Intended for non-critical data requiring high data throughput, or any environment that does not require fault tolerance.
- **Benefits:** provides increased data throughput, especially for large files. No capacity loss penalty for parity.
- **Drawbacks:** Does not deliver any fault tolerance. If any drive in the array fails, all data is lost.
- **Fault Tolerance:** No.

**RAID 1:**

Every read and write is actually carried out in parallel across 2 disk drives in a RAID 1 array system. The mirrored (backup) copy of the data can reside on the same disk or on a second redundant drive in the array. RAID 1 provides a hot-standby copy of data if the active volume or drive is corrupted or becomes unavailable because of a hardware failure.

RAID techniques can be applied for high-availability solutions, or as a form of automatic backup that eliminates tedious manual backups to more expensive and less reliable media.

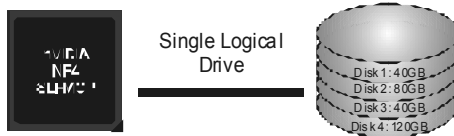


**Features and Benefits**

- **Drives:** Minimum 2, and maximum is 2.
- **Uses:** RAID 1 is ideal for small databases or any other application that requires fault tolerance and minimal capacity.
- **Benefits:** Provides 100% data redundancy. Should one drive fail, the controller switches to the other drive.
- **Drawbacks:** Requires 2 drives for the storage space of one drive. Performance is impaired during drive rebuilds.
- **Fault Tolerance:** Yes.

**Spanning (JBOD):**

JBOD stands for “Just a Bunch of Disks”. Each drive is accessed as if it were on a standard SCSI host bus adapter. This is useful when a single drive configuration is needed, but it offers no speed improvement or fault tolerance.



**Features and Benefits**

- **Uses:** JBOD works best if you have odd sized drives and you want to combine them to make one big drive.
- **Benefits:** JBOD provides the ability to combine odd size drives using all of the capacity of the drives.
- **Drawbacks:** Decreases performance because of the difficulty in using drives concurrently.
- **Fault Tolerance:** Yes.

※ For more detailed setup information, please refer to the Driver CD, or go to [http://www.nvidia.com/page/pg\\_20011106217193.html](http://www.nvidia.com/page/pg_20011106217193.html) to download NVIDIA nForce Tutorial Flash.



## **CHAPTER 7: WARPSPEEDER™**



### **7.1 INTRODUCTION**

[WarpSpeeder™], a new powerful control utility, features three user-friendly functions including Overclock Manager, Overvoltage Manager, and Hardware Monitor.

With the Overclock Manager, users can easily adjust the frequency they prefer or they can get the best CPU performance with just one click. The Overvoltage Manager, on the other hand, helps to power up CPU core voltage and Memory voltage. The cool Hardware Monitor smartly indicates the temperatures, voltage and CPU fan speed as well as the chipset information. Also, in the About panel, you can get detail descriptions about BIOS model and chipsets. In addition, the frequency status of CPU, memory, AGP and PCI along with the CPU speed are synchronically shown on our main panel.

Moreover, to protect users' computer systems if the setting is not appropriate when testing and results in system fail or hang, [WarpSpeeder™] technology assures the system stability by automatically rebooting the computer and then restart to a speed that is either the original system speed or a suitable one.

### **7.2 SYSTEM REQUIREMENT**

OS Support: Windows 98 SE, Windows Me, Windows 2000, Windows XP  
DirectX: DirectX 8.1 or above. (The Windows XP operating system includes DirectX 8.1. If you use Windows XP, you do not need to install DirectX 8.1.)

**7.3 INSTALLATION**

1. Execute the setup execution file, and then the following dialog will pop up. Please click “Next” button and follow the default procedure to install.



2. When you see the following dialog in setup procedure, it means setup is completed. If the “Launch the WarpSpeeder Tray Utility” checkbox is checked, the Tray Icon utility and [WarpSpeeder™] utility will be automatically and immediately launched after you click “Finish” button.



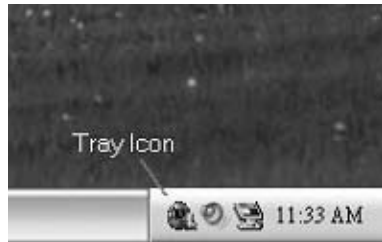
**Usage:**

The following figures are just only for reference, the screen printed in this user manual will change according to your motherboard on hand.

**7.4 [WARPSPEEDER™] INCLUDES 1 TRAY ICON AND 5 PANELS**

**1. Tray Icon:**

Whenever the Tray Icon utility is launched, it will display a little tray icon on the right side of Windows Taskbar.



This utility is responsible for conveniently invoking [WarpSpeeder™] Utility. You can use the mouse by clicking the left button in order to invoke [WarpSpeeder™] directly from the little tray icon or you can right-click the little tray icon to pop up a popup menu as following figure. The "Launch Utility" item in the popup menu has the same function as mouse left-click on tray icon and "Exit" item will close Tray Icon utility if selected.

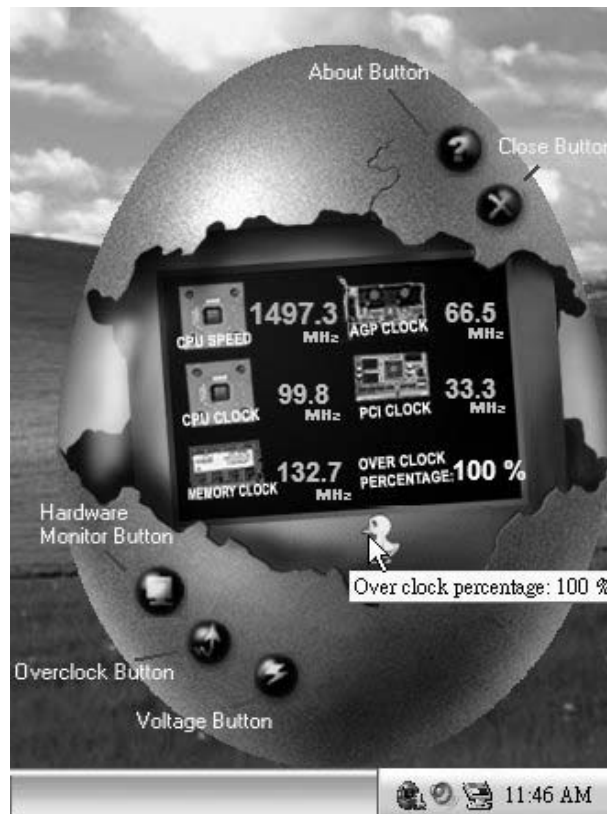


**2. Main Panel**

If you click the tray icon, [WarpSpeeder™] utility will be invoked. Please refer to the following figure; the utility's first window you will see is Main Panel.

**Main Panel contains features as follows:**

- a. Display the CPU Speed, CPU external clock, Memory dock, AGP dock, and PCI dock information.
- b. Contains About, Voltage, Overclock, and Hardware Monitor Buttons for invoking respective panels.
- c. With a user-friendly Status Animation, it can represent 3 overclock percentage stages:  
Man walking → overclock percentage from 100% ~ 110 %  
Panther running → overclock percentage from 110% ~ 120%  
Car racing → overclock percentage from 120% ~ above



**3. Voltage Panel**

Click the Voltage button in Main Panel, the button will be highlighted and the Voltage Panel will slide out to up as the following figure.

In this panel, you can decide to increase CPU core voltage and Memory voltage or not. The default setting is “No”. If you want to get the best performance of overlocking, we recommend you dick the option “Yes”.



**4. Overclock Panel**

Click the Overclock button in Main Panel, the button will be highlighted and the Overclock Panel will slide out to left as the following figure.



**Overclock Panel contains the these features:**

- a. “-3MHz button”, “-1MHz button”, “+1MHz button”, and “+3MHz button”: provide user the ability to do real-time overclock adjustment.

**Warning:**

Manually overclock is potentially dangerous, especially when the overlocking percentage is over 110 %. We strongly recommend you verify every speed you overclock by click the Verify button. Or, you can just click Auto overclock button and let [WarpSpeeder™] automatically gets the best result for you.

- b. “Recovery Dialog button”: Pop up the following dialog. Let user select a restoring way if system need to do a fail-safe reboot.



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- c. “Auto-overclock button”: User can click this button and [WarpSpeeder™] will set the best and stable performance and frequency automatically. [WarpSpeeder™] utility will execute a series of testing until system fail. Then system will do fail-safe reboot by using Watchdog function. After reboot, the [WarpSpeeder™] utility will restore to the hardware default setting or load the verified best and stable frequency according to the Recovery Dialog’s setting.
- d. “Verify button”: User can click this button and [WarpSpeeder™] will proceed a testing for current frequency. If the testing is ok, then the current frequency will be saved into system registry. If the testing fail, system will do a fail-safe rebooting. After reboot, the [WarpSpeeder™] utility will restore to the hardware default setting or load the verified best and stable frequency according to the Recovery Dialog’s setting.

**Note:**

Because the testing programs, invoked in Auto-overclock and Verify, include DirectDraw, Direct3D and DirectShow tests, the DirectX 8.1 or newer runtime library is required. And please make sure your display card’s color depth is High color (16 bit) or True color( 24/32 bit ) that is required for Direct3D rendering.

### **5. Hardware Monitor Panel**

Click the Hardware Monitor button in Main Panel, the button will be highlighted and the Hardware Monitor panel will slide out to left as the following figure.

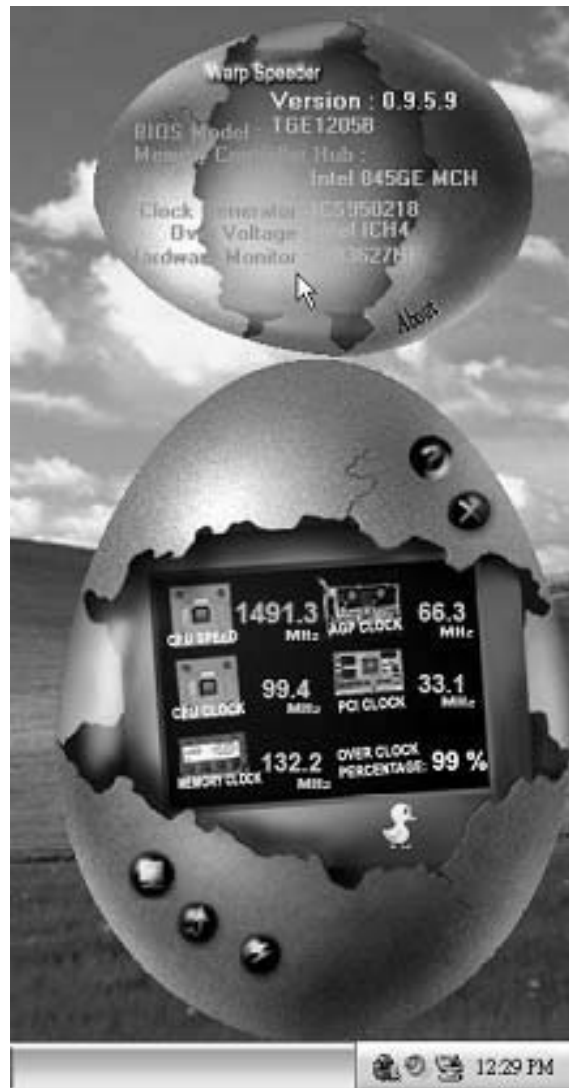
In this panel, you can get the real-time status information of your system. The information will be refreshed every 1 second.



**6. About Panel**

Click the “about” button in Main Panel, the button will be highlighted and the About Panel will slide out to up as the following figure.

In this panel, you can get model name and detail information in hints of all the chipset that are related to overclocking. You can also get the mainboard’s BIOS model and the Version number of [WarpSpeeder™] utility.





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**Note:**

Because the overclock, overvoltage, and hardware monitor features are controlled by several separate chipset, [WarpSpeeder™] divide these features to separate panels. If one chipset is not on board, the correlative button in Main panel will be disabled, but will not interfere other panels' functions. This property can make [WarpSpeeder™] utility more robust.

*05/31, 2005*

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# N4SIE-A7 BIOS Setup

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<b>BIOS Setup</b> .....	<b>1</b>
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## BIOS Setup

### Introduction

This manual discussed Award™ Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The Award BIOS™ installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports Intel Pentium® 4 processor input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

Adding important has customized the Award BIOS™, but nonstandard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

### Plug and Play Support

These AWARD BIOS supports the Plug and Play Version 1.0A specification. ESCD (Extended System Configuration Data) write is supported.

### EPA Green PC Support

This AWARD BIOS supports Version 1.03 of the EPA Green PC specification.

### APM Support

These AWARD BIOS supports Version 1.1&1.2 of the Advanced Power Management (APM) specification. Power management features are implemented via the System Management Interrupt (SMI). Sleep and Suspend power management modes are supported. Power to the hard disk drives and video monitors can be managed by this AWARD BIOS.

### ACPI Support

Award ACPI BIOS support Version 1.0 of Advanced Configuration and Power interface specification (ACPI). It provides ASL code for power management and device configuration capabilities as defined in the ACPI specification, developed by Microsoft, Intel and Toshiba.

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## PCI Bus Support

This AWARD BIOS also supports Version 2.1 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

## DRAM Support

DDR SDRAM (Double Data Rate Synchronous DRAM) are supported.

## Supported CPUs

This AWARD BIOS supports the Intel CPU.

## Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program by using the keyboard.

Keystroke	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left (menu bar)
Right arrow	Move to the item on the right (menu bar)
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ Key	Increase the numeric value or make changes
- Key	Decrease the numeric value or make changes
Esc key	Main Menu – Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu – Exit Current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

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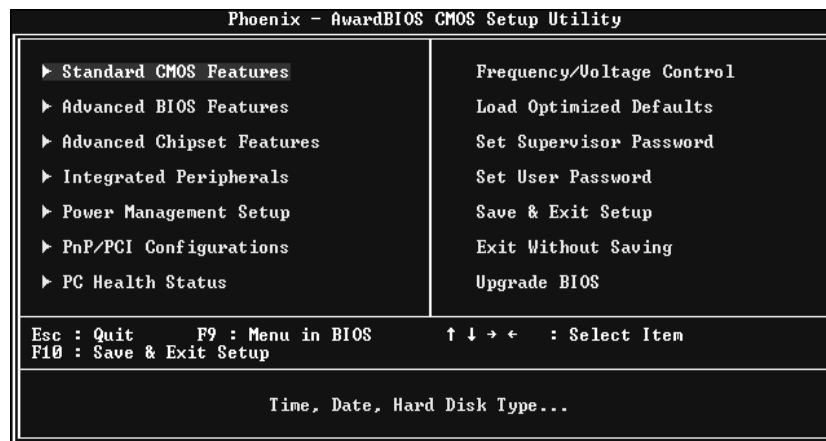
## 1 Main Menu

Once you enter Award BIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

**!! WARNING !!**

The information about BIOS defaults on manual (**Figure 1,2,3,4,5,6,7,8,9**) is just for reference, please refer to the BIOS installed on board, for update information.

■ **Figure 1. Main Menu**



### Standard CMOS Features

This submenu contains industry standard configurable options.

### Advanced BIOS Features

This submenu allows you to configure enhanced features of the BIOS.

### Advanced Chipset Features

This submenu allows you to configure special chipset features.

### Integrated Peripherals

This submenu allows you to configure certain IDE hard drive options and Programmed Input/ Output features.

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## Power Management Setup

This submenu allows you to configure the power management features.

## PnP/PCI Configurations

This submenu allows you to configure certain “Plug and Play” and PCI options.

## PC Health Status

This submenu allows you to monitor the hardware of your system.

## Voltage Control

This submenu allows you to change CPU Vcore Voltage and CPU/PCI clock. **(However, this function is strongly recommended not to use. Not properly change the voltage and clock may cause the CPU or M/B damage!)**

## Load Optimized Defaults

This selection allows you to reload the BIOS when the system is having problems particularly with the boot sequence. These configurations are factory settings optimized for this system. A confirmation message will be displayed before defaults are set.

```
Load Optimized Defaults (Y/N)? N
```

## Set Supervisor Password

Setting the supervisor password will prohibit everyone except the supervisor from making changes using the CMOS Setup Utility. You will be prompted with to enter a password.

```
Enter Password:
```

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### Set User Password

If the Supervisor Password is not set, then the User Password will function in the same way as the Supervisor Password. If the Supervisor Password is set and the User Password is set, the "User" will only be able to view configurations but will not be able to change them.

```
Enter Password:
```

### Save & Exit Setup

Save all configuration changes to CMOS(memory) and exit setup. Confirmation message will be displayed before proceeding

```
SAVE to CMOS and EXIT (Y/N)? Y
```

### Exit Without Saving

Abandon all changes made during the current session and exit setup. Confirmation message will be displayed before proceeding.

```
Quit Without Saving (Y/N)? N
```

### Upgrade BIOS

This submenu allows you to upgrade bios.

```
BIOS UPDATE UTILITY (Y/N)? N
```

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## 2 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

■ Figure 2. Standard CMOS Setup





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### Main Menu Selections

This table shows the selections that you can make on the Main Menu.

<b>Item</b>	<b>Options</b>	<b>Description</b>
Date	mm : dd : yy	Set the system date. Note that the 'Day' automatically changes when you set the date.
Time	hh : mm : ss	Set the system internal clock.
IDE Primary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
Drive A Drive B	360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in None	Select the type of floppy disk drive installed in your system.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.

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<b>Item</b>	<b>Options</b>	<b>Description</b>
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/ Key	Select the situation in which you want the BIOS to stop the POST process and notify you.
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.

## 3 Advanced BIOS Features

■ Figure 3. Advanced BIOS Setup



### Boot Seq & Floppy Setup

#### **Hard Disk Boot Priority**

These BIOS attempt to load the operating system from the device in the sequence selected in these items.

**The Choices:** Pri. Master, Pri. Slave, Sec. Master, Sec. Slave, USBHDD0, USB HDD1, USB HDD2, and Bootable Add-in Cards.

#### **First/ Second/ Third/ Boot Other Device**

These BIOS attempt to load the operating system from the devices in the sequence selected in these items.

**The Choices:** Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, LAN, Disabled.

#### **Swap Floppy Drive**

For systems with two floppy drives, this option allows you to swap logical drive assignments.

**The Choices:** Disabled (default), Enabled.

#### **Boot Up Floppy Seek**

Enabling this option will test the floppy drives to determine if they have 40 or 80 tracks. Disabling this option reduces the time it takes to boot-up.

**The Choices:** Enabled (default), Disabled.

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## Cache Setup

These BIOS attempt to load the operating system from the device in the sequence selected in these items.

### **CPU L1&L2 Cache**

Depending on the CPU/chipset in use, you may be able to increase memory access time with this option.

**Enabled** (default)    Enable cache.  
Disabled                Disable cache.

### **CPU L3 Cache**

Depending on the CPU/chipset in use, you may be able to increase memory access time with this option.

**Enabled** (default)    Enable cache.  
Disabled                Disable cache.

## CPU Feature

### **Thermal Management**

This option allows you to select the way to control the “Thermal Management.”

**The Choices: Thermal Monitor 1** (Default), Thermal Monitor 2.

### **TM2 Bus Ratio**

This option represents the frequency (bus ratio of the throttled performance state that will be initiated when the on-diesensor goes from not hot to hot.)

Min= 0    Max= 255

Key in a DEC number=

**The Choices: 0 X** (Default)

### **TM2 Bus VID**

This option represents the voltage of the throttled performance state that will be initiated when the on-diesensor goes from not hot to hot.

**The Choices: 0.8375V** (Default), 0.8375-1.6000.

### **Limit CUID MaxVal**

Set Limit CUID MaxVal to 3, it should be “Disabled” for WinXP.

**The Choices: Disabled** (Default), Enabled

### **C1E Function**

CPU C1E Function select.

**The Choices:Auto** (Default)

### **Execute Disable Bit**

**The Choices: Enabled** (Default), Disabled.

### **Virtualization Technology**

When enabled, a VMM can utilize the additional hardware capabilities provided by vanderpool Technology.

**The Choices: Enabled** (Default), Disabled.

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### Virus Warning

This option allows you to choose the Virus Warning feature that is used to protect the IDE Hard Disk boot sector. If this function is enabled and an attempt is made to write to the boot sector, BIOS will display a warning message on the screen and sound an alarm beep.

<b>Disabled</b> (default)	Virus protection is disabled.
Enabled	Virus protection is activated.

### Hyper-Threading Technology

This option allows you to enable or disabled CPU Hyper-Threading. Enabled for Windows XP and Linux 2.4.x (OS optimized for Hyper Threading Technology). Disabled for other OS (OS not optimized for Hyper Threading Technology).

**The Choices:** Enabled (Default), Disabled.

### Quick Power On Self Test

Enabling this option will cause an abridged version of the Power On Self-Test (POST) to execute after you power up the computer.

<b>Enabled</b> (default)	Enable quick POST.
Disabled	Normal POST.

### Boot Up NumLock Status

Selects the NumLock. State after power on.

<b>On</b> (default)	Numpad is number keys.
Off	Numpad is arrow keys.

### Gate A20 Option

Select if chipset or keyboard controller should control Gate A20.

Normal	A pin in the keyboard controller controls Gate A20.
<b>Fast</b> (default)	Lets chipset control Gate A20.

### Typematic Rate Setting

When a key is held down, the keystroke will repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be configured.

<b>Disabled</b> (default)
Enabled

### Typematic Rate (Chars/Sec)

Sets the rate at which a keystroke is repeated when you hold the key down.

**The Choices:** 6 (default), 8,10,12,15,20,24,30.

### Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

**The Choices:** 250 (default), 500,750,1000.

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### Security Option

This option will enable only individuals with passwords to bring the system online and/or to use the CMOS Setup Utility.

System	A password is required for the system to boot and is also required to access the Setup Utility.
Setup (default)	A password is required to access the Setup Utility only.

This will only apply if passwords are set from the Setup main menu.

### APIC MODE

Selecting Enabled enables APIC device mode reporting from the BIOS to the operating system.

**The Choices:** Enabled (default), Disabled.

### MPS Version Control For OS

The BIOS supports version 1.1 and 1.4 of the Intel multiprocessor specification. Select version supported by the operation system running on this computer.

**The Choices:** 1.4 (default), 1.1.

### OS Select For DRAM > 64MB

A choice other than Non-OS2 is only used for OS2 systems with memory exceeding 64MB.

**The Choices:** Non-OS2 (default), OS2.

### Small Logo (EPA) Show

This item allows you to select whether the "Small Logo" shows.

**Enabled** (default) "Small Logo" shows when system boot up.

**Disabled** No "Small Logo" shows when system boots up.

### Summary Screen Show

This item allows you to enable/ disable display the Summary Screen Show.

**The Choices:** Disabled (default), Enabled.

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## 4 Advanced Chipset Features

This submenu allows you to configure the specific features of the chipset installed on your system. This chipset manage bus speeds and access to system memory resources, such as DRAM. It also coordinates communications with the PCI bus. The default settings that came with your system have been optimized and therefore should not be changed unless you are suspicious that the settings have been changed incorrectly.

■ Figure 4. Advanced Chipset Setup



### Performance Options



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### **PCIE Frequency**

This item allows you to select the PCIE Frequency.

**The Choices:** 100 (default).

### **CPU Clock Ratio**

This item allows you to select the CPU Ratio.

**The Choices:** 8X (default),

**Min= 8 Max= 50**

### **CPU Core Unlock**

Default multiplier and CPU core frequency.

**The choices:** Disabled (default), Enabled.

### **FSB Turbo Mode**

**The choices:** Disabled (default), Enabled.

### **System Clock Mode**

Set FSB and memory speed automatically.

**The choices:** Optimal (default).

### **New FSB Speed<QDR>**

Type in a new FSB speed or use +/- keys.

**The choices:** 400 (default).

### **Memory Timings**

Select [Expert] to enter timing manually.

**The choices:** Optimal (default).

### **T<CAS>**

Set memory timings to [optimal] to use the DIMM's manufacturer.

**The choices:** Auto (default).

### **T<RCD>**

Set memory timings to [optimal] to use the delay recommended by the DIMM's manufacturer.

**The choices:** Auto (default).

### **T<RP>**

Set memory timings to [optimal] to use the delay recommended by the DIMM's manufacturer.

**The choices:** Auto (default).

### **T<RAS>**

Set memory timings to [optimal] to use the delay recommended by the DIMM's manufacturer.

**The choices:** Auto (default).



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### T<RC>

Set memory timings to [optimal] to use the delay recommended by the DIMM's manufacturer.

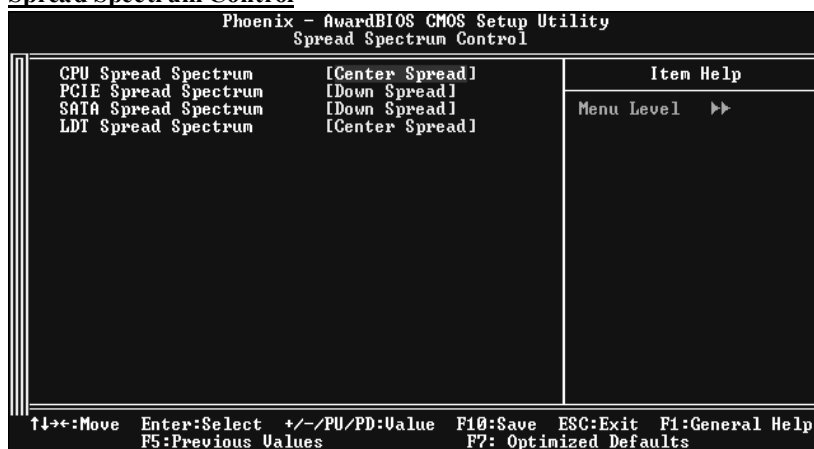
**The choices:** Auto (default).

### Addressing Mode

Set memory timings to [optimal] to use the delay recommended value.

**The choices:** Auto (default).

### Spread Spectrum Control



#### CPU Spread Spectrum

This item allows you to disable \ enable the CPU spread spectrum function.  
**The choices:** Center Spread (default).

#### PCIE Spread Spectrum

This item allows you to disable \ enable the PCIE spread spectrum function.  
**The choices:** Down Spread (default).

#### SATA Spread Spectrum

This item allows you to disable \ enable the SATA spread spectrum function.  
**The choices:** Down Spread (default).

#### LDT Spread Spectrum

This item allows you to disable \ enable the LDT spread spectrum function.  
**The choices:** Center Spread (default).

#### SLI Broadcast Aperture

**The choices:** Auto (default), Disabled.

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### LDT Frequency

This item allows you to select the LDT Frequency.

**The Choices:** 4 X(default).

### System BIOS Cacheable

Selecting the “Disabled ” option allows caching of the system BIOS ROM at F0000h-FFFFFh which can improve system performance. However, any programs writing to this area of memory will cause conflicts and result in system errors.

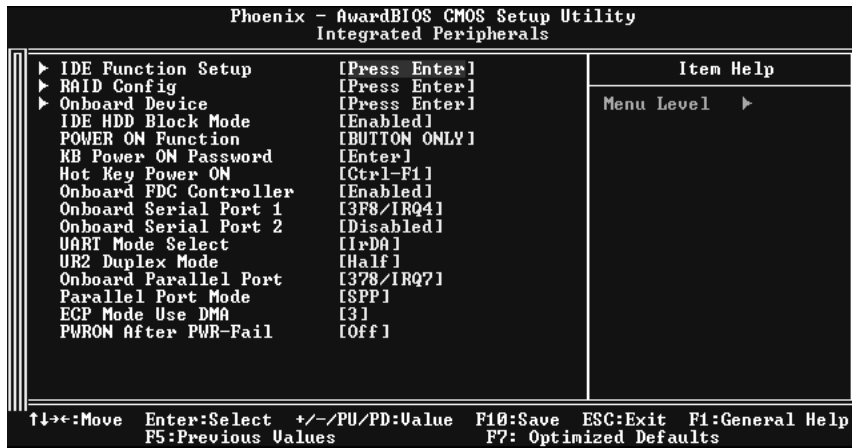
**The Choices:** Disabled (default), Enabled.

### Video RAM C Cacheable

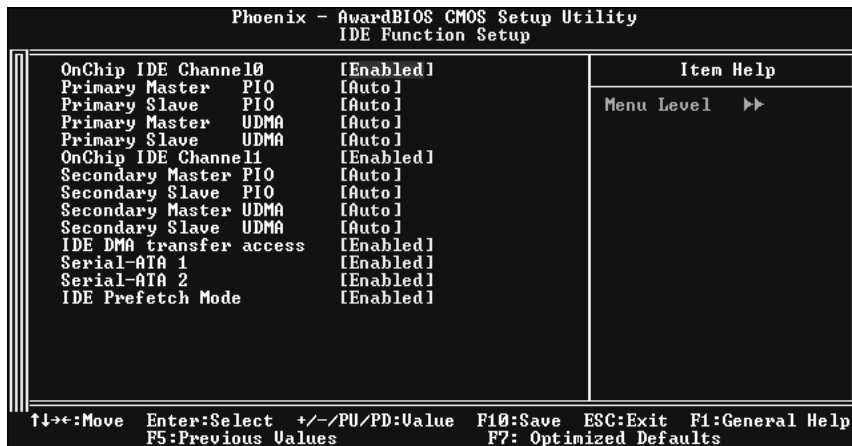
**The Choices:** Disabled (default), Enabled.

## 5 Integrated Peripherals

■ Figure 5. Integrated Peripherals



### IDE Function Setup



If you highlight the literal “Press Enter” next to the “IDE Function Setup” label and then press the enter key, it will take you a submenu with the following options:

#### OnChip IDE Channel 0/1

The motherboard chipset contains a PCI IDE interface with support for two IDE channels. Select “Enabled” to activate the first and/or second IDE interface. Select “Disabled” to deactivate an interface if you are going to install a primary and/or secondary add-in IDE interface.

**The Choices:** Enabled (default), Disabled.

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### Primary / Secondary / Master / Slave PIO

The IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the IDE devices that the onboard IDE interface supports. Modes 0 to 4 will increase performance progressively. In Auto mode, the system automatically determines the best mode for each device.

**The Choices:** Auto (default), Mode0, Mode1, Mode2, Mode3, Mode4.

### Primary / Secondary / Master / Slave UDMA

Ultra DMA/100 functionality can be implemented if it is supported by the IDE hard drives in your system. As well, your operating environment requires a DMA driver (Windows 95 OSR2 or a third party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/100, select Auto to enable BIOS support.

**The Choices:** Auto (default), Disabled.

### IDE DMA Transfer Access

**The Choices:** Enabled (default), Disabled.

### Serial-ATA 1

Enables support for Serial-ATA1.

**The Choices:** Enabled (default), Disabled

### Serial-ATA 2

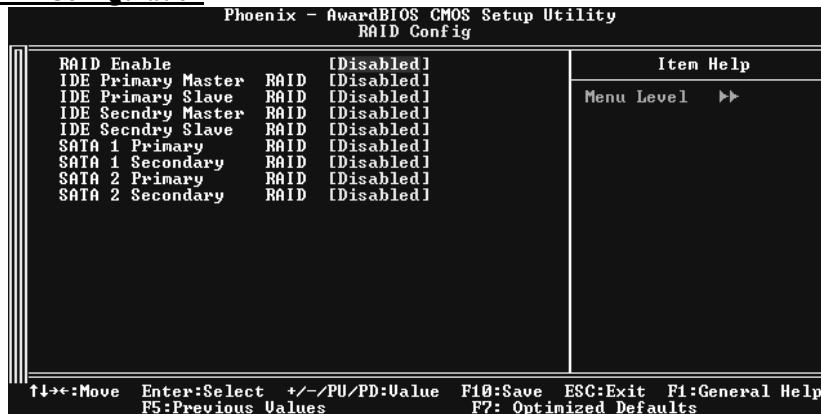
Enables support for Serial-ATA2.

**The Choices:** Enabled (default), Disabled

### IDE Prefetch Mode

**The Choices:** Enabled (default), Disabled.

## RAID Configuration



### RAID Enable

The choices: **Disabled** (default), enable.

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### ONBOARD DEVICE

Phoenix - AwardBIOS CMOS Setup Utility	
Onboard Device	
OnChip USB	[V1.1+V2.0]
USB Memory Type	[SHADOW]
USB Keyboard Support	[Disabled]
AC97 Audio	[Auto]
MAC Lan	[Auto]
MAC Media Interface	[Pin Strap]
Onboard Lan Boot ROM	[Enabled]

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

#### OnChip USB

This option should be enabled if your system has a USB installed on the system board. You will need to disable this feature if you add a higher performance controller.

**The Choices:** V1. 1+V2. 0 (default), Disabled, V1.1

#### USB Memory Type

**The Choices:** SHADOW (default).

#### USB keyboard Support

Enables support for USB attached keyboard.

**The Choices:** Disabled (default), Enabled

#### AC97 Audio

This option allows you to control the onboard AC97 audio.

**The Choices:** Auto (default), Disabled.

#### MAC LAN

This option allows you to change the state of the onboard MAC LAN.

**The Choices:** Auto (Default), Disabled.

#### MAC Media Interface

**The Choices:** Pin Strap (default).

#### Onboard LAN Boot ROM

This item allows you to enable or disable Onboard LAN Boot ROM.

**The Choices:** Disabled (default), Enabled.

# N4SIE-A7

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## **IDE HDD Block Mode**

Block mode is also called block transfer, multiple commands, or multiple sector read / write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read / write per sector where the drive can support.

**The Choices:** Enabled (default), Disabled.

## **Power on Function**

This option allows you to choose the different function to power on the computer.

**The Choices:** Button Only (default), Password, Hot Key, Mouse Move, Mouse Click, Any, Keyboard 98.

## **KB Power ON Password**

Input password and press Enter to set the Keyboard power on password.

## **Hot Key Power on**

This option allows you to choose a hot key to power on.

**The Choices:** Ctrl-F1 (default), Ctrl-F2, Ctrl-F3, Ctrl-F4, Ctrl-F5, Ctrl-F6, Ctrl-F7, Ctrl-F8

## **Onboard FDC Controller**

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If install and FDC or the system has no floppy drive, select Disabled in this field.

**The Choices:** Enabled (default), Disabled.

## **Onboard Serial Port 1**

Select an address and corresponding interrupt for the first and second serial ports.

**The Choices:** Disabled, 3F8/IRQ4 (default), 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto.

## **Onboard Serial Port 2**

Select an address and corresponding interrupt for the first and second serial ports.

**The Choices:** Disabled (default), 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto.

## **UART Mode Select**

This item allows you to determine which Infra Red (IR) function of onboard I/O chip.

**The Choices:** Normal, AS KIR, IrDA (default).

## N4SIE-A7

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### **UR2 Duplex Mode**

Select the value required by the IR device connected to the IR port. Full-duplex Mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

**The Choices:** Half (default), Full.

### **Onboard Parallel Port**

This item allows you to determine access onboard parallel port controller with which I/O Address.

**The Choices:** 378/IRQ7 (default), 278/IRQ5, 3BC/IRQ7, Disabled.

### **Parallel Port Mode**

The default value is SPP.

**The Choices:**

SPP(default)	Using Parallel port as Standard Printer Port.
EPP	Using Parallel Port as Enhanced Parallel Port.
ECP	Using Parallel port as Extended Capabilities Port.
ECP+EPP	Using Parallel port as ECP & EPP mode.

### **ECP Mode Use DMA**

Select a DMA Channel for the port.

**The Choices:** 3 (default), 1.

### **POWER After PWR-Fail**

This setting specifies whether your system will reboot after a power fail or interrupts occurs.

**Off** Leaves the computer in the power off state. On Reboots the computer.

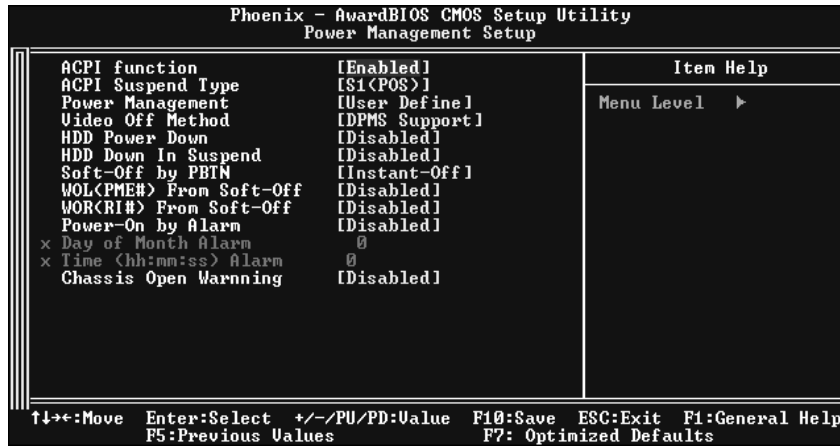
**Former-Sts** Restores the system to the status before power failure or interrupt occurs.

**The Choices:** Off (default), On, Former-Sts.

## 6 Power Management Setup

The Power Management Setup Menu allows you to configure your system to utilize energy conservation and power up/power down features.

■ **Figure 6. Power Management Setup**



### ACPI function

This item displays the status of the Advanced Configuration and Power Management (ACPI).

**The Choices:** Enabled (default), Disabled.

### ACPI Suspend Type

The item allows you to select the suspend type under the ACPI operating system.

**The Choices:** S1 (POS) (default) Power on Suspend  
S3 (STR) Suspend to RAM  
S1+S3 POS+STR

### Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

- 1.HDD Power Down.
- 2.Suspend Mode.

There are four options of Power Management, three of which have fixed mode settings

Min. Power Saving

Minimum power management.

Suspend Mode = 1 hr.

HDD Power Down = 15 min



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### Max. Power Saving

Maximum power management only available for sl CPU's.  
Suspend Mode = 1 min.  
HDD Power Down = 1 min.

### User Define (default)

Allows you to set each mode individually.  
When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

### Video Off Method

This option determines the manner in which the monitor is goes blank.  
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(default)

Initial display power management signaling  
The Choices: Stop Grant, PwrOn Suspend.

### HDD Power Down

When enabled, the hard disk drive will power down and after a set time of system inactivity.  
All other devices remain active.

**The Choices:** Disabled (default), 1 Min, 2 Min, 3 Min, 4 Min, 5 Min, 6 Min, 7 Min, 8 Min, 9 Min, 10 Min, 11 Min, 12 Min, 13 Min, 14 Min, 15Min.

### HDD Down In Suspend

**The Choices:** Disabled (default), Enabled.

### Soft-Off by PBTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung."

**The Choices:** Delay 4 Sec, Instant-Off (default).

### WOL (PME#) From Soft-Off

**The Choices:** Disabled (default), Enabled.

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### **WOR (RI#) From Soft-Off**

**The Choices:** Disabled (default), Enabled.

### **USB Resume from S3**

**The Choices:** Disabled (default), Enabled.

### **Power-On by Alarm**

When you select Enabled, an alarm returns the system to Full ON state.

**The Choices:** Disabled (default), Enabled.

### **Chassis Open Warning**

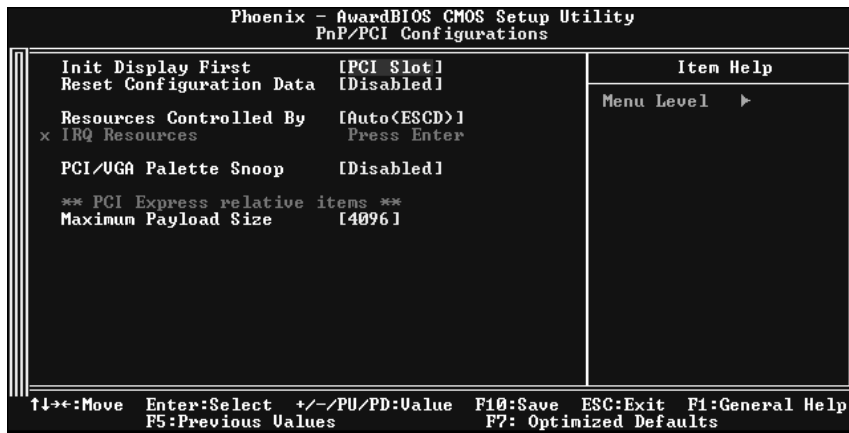
This item allows you to enable or disable Chassis Open Warning beep.

**The Choices:** Disabled (Default), Enabled.

## 7 PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

■ **Figure 7. PnP/PCI Configurations**



### Init Display First

With systems that have multiple video cards, this option determines whether the primary display uses a PCI Slot or an AGP Slot.

**The Choices:** PCI Slot (default), AGP.

### Reset Configuration Data

The system BIOS supports the PnP feature which requires the system to record which resources are assigned and protects resources from conflict. Every peripheral device has a node, which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved in the system BIOS. If the Disabled (default) option is chosen, the system's ESCD will update only when the new configuration varies from the last one. If the Enabled option is chosen, the system is forced to update ESCDs and then is automatically set to the "Disabled" mode. The above settings will be shown on the screen only if "Manual" is chosen for the resources controlled by function. Legacy is the term, which signifies that a resource is assigned to the ISA Bus and provides non-PnP ISA add-on cards. PCI / ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

**The Choices:** Disabled (default), Enabled.

## N4SIE-A7

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### Resources Controlled By

By Choosing “**Auto(ESCD)**” (default), the system BIOS will detect the system resources and automatically assign the relative IRQ and DMA channel for each peripheral. By Choosing “Manual”, the user will need to assign IRQ & DMA for add-on cards. Be sure that there are no IRQ/DMA and I/O port conflicts.

### IRQ Resources

This submenu will allow you to assign each system interrupt a type, depending on the type of device using the interrupt. When you press the “Press Enter” tag, you will be directed to a submenu that will allow you to configure the system interrupts. This is only configurable when “Resources Controlled By” is set to “Manual”.

IRQ-3	assigned to	PCI Device
IRQ-4	assigned to	PCI Device
IRQ-5	assigned to	PCI Device
IRQ-7	assigned to	PCI Device
IRQ-9	assigned to	PCI Device
IRQ-10	assigned to	PCI Device
IRQ-11	assigned to	PCI Device
IRQ-12	assigned to	PCI Device
IRQ-14	assigned to	PCI Device
IRQ-15	assigned to	PCI Device

### PCI/ VGA Palette Snoop

Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide boot information and VGA compatibility.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Write.

In this case, the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

<b>Disabled</b> (default)	Disables the function.
Enabled	Enables the function.

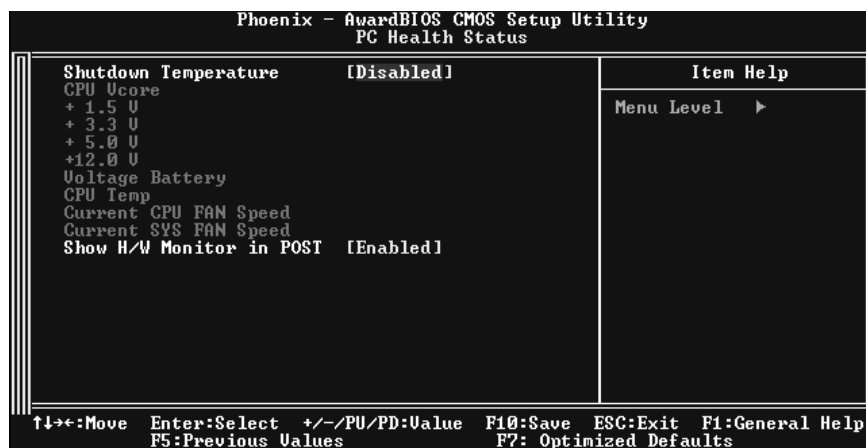
### Maximum Payload Size

Set the maximum payload size for Transaction packets (TLP).

**The Choice: 4096** (default.)

## 8 PC Health Status

■ Figure 8. PC Health Status



### Shutdown Temperature

This item allows you to set up the CPU shutdown Temperature. This item only effective under Windows 98 ACPI mode.

**The Choices:** Disabled (default), 60°C /140F, 65°C /149F, 70°C /158F, 75°C /167F.

### CPU Vcore/ +1.5V+3.3V/ +5.0V/ +12.0V/Voltage Battery

Detect the system's voltage status automatically.

### CPU Temperature

This field displays the current temperature of the CPU.

### Current CPU FAN Speed

This field displays the current speed of CPU fan.

### Current SYS FAN Speed

This field displays the current speed SYSTEM fan.

### Show H/W Monitor in POST

If your computer contains a monitoring system, it will show PC health status during POST stage. The item offers several delay time for you to choose.

**The Choices:** Enabled (default), Disabled.