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PACKAGE CHECKLIST

- FDD Cable x 1
- HDD Cable x 1
- SPDIF Cable x 1 (optional)
- User's Manual x 1
- Serial ATA Cable x 1
- Serial ATA Power cable x1
- Fully Setup Driver CD x 1
- Rear I/O Panel for ATX Case x 1
- USB 2.0 Cable x 1 (optional)
- Serial ATA Power Switch Cable x 4 (optional)

CHAPTER 1: INTRODUCTION

1.1   MOTHERBOARD FEATURES

CPU
- Supports LGA 775.
- Supports Intel Pentium 4 processor and Celeron D.
- Supports Dual Core CPU
  - Supports Pentium D
  - Supports Pentium EE
- 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: nForce4 SPP Ultra.
- South Bridge: nForce 430 / nForce 410.
  - Supports NVIDIA nTune Utility.
  - Supports NVIDIA Firewall.(nForce 430 Only)
  - Supports NVIDIA Secure Networking Processor. (nForce 430 Only)

Operating Systems
- Supports Windows 2000 and Windows XP.
  Note: Does not support Windows 98SE and Windows ME.

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

System Memory
- Supports Dual Channel DDR.
- Supports DDR2 533/667.
- Maximum memory capacity is 4GB, supporting 4 DIMM sockets.

Super I/O
- Chip: ITE IT8712F.
- Environment Control initiatives,
  - H/W Monitor
  - Fan Speed Controller
  - ITE's "Smart Guardian" function

Serial ATA II
- nForce 430 / nForce 410 supports SATA 2.0 specification, with data transfer rates up to 3Gb/s.

AC'97 Audio Sound Codec
- Chip: ALC850, supports 8 channels audio output.

IDE
- 2 on-board connectors support 4 IDE disk drives.
- Supports PIO mode 0-4, Block Mode and Ultra DMA 33/66/100/133 bus master mode.

10/100 LAN PHY
- PHY: Realtek 8201CL / Marvell 88E3016(optional). Supports ACPI power management.

Security
- NVIDIA Firewall technology (nForce 430 Only)
  - Native firewall solution protects the PC from intruders by filtering unauthorized traffic.
- NVIDIA Active Armor (nForce 430 Only)
  - Enhances network security, and provides users with an environment both fast and secure.

NVIDIA RAID Technology
- RAID 0 disk striping for highest system and application performance
- RAID 1 disk mirroring support for fault tolerance Support for both SATA and ATA-133 disk controller standards
- RAID 0+1 disk striping and mirroring for highest performance with fault tolerance. (nForce 430 only)
- RAID 5 offers smart data protection and optimal data access. (nForce 430 only)

Internal On-board Slots and Connectors
- One PCI-Express x16 slot: PCI-Ex16-1.
- Two PCI-Express x1 slots: PCI-Ex1_1 and PCI-Ex1_2 slots
- One SPDIF-Out connector and one SPDIF-In (optional) connector
- One CD-ROM audio-in connector.
- Two Ultra DMA 133/100/66/33 IDE connectors.
- Four PCI slots.
- Four SATA II ports. (nForce 410 comes with two SATA II Ports)

Back Panel I/O Connectors and Ports
- 1 Serial Port.
- 1 Printer Port.
- 1 RJ-45 LAN jack.
- 1 PS/2 Mouse Port.
- 1 PS/2 Keyboard Port.
- 4 USB 2.0 Ports.
- 6 audio ports support 8 channels audio-out facilities.

1.2 LAYOUT AND COMPONENTS
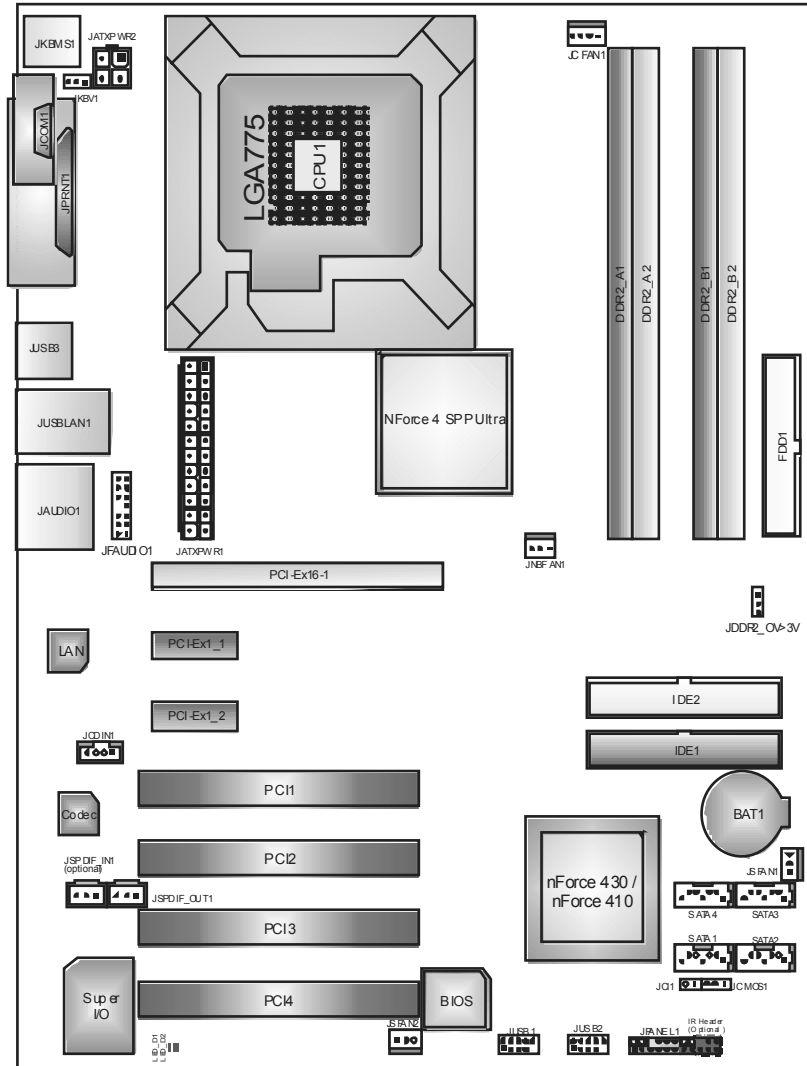
Note: ■ represents the 1st pin.

CHAPTER 2: HARDWARE INSTALLATION

2.1   INSTALLING CENTRAL PRIOCESSING UNIT (CPU)

A. 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.*
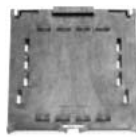
pin cap
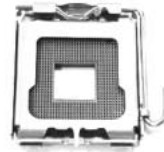
Step 1:
Pull the socket locking lever out from the socket and then raise the lever up to a 90-degree angle.

Step 2:
Look for the triangular cut edge on socket, and the golden dot on CPU should point towards this triangular cut edge. The CPU will fit only in the correct orientation.

Step 2-1:
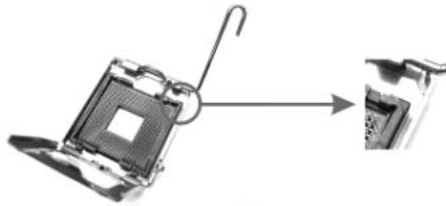
Step 2-2:

Step 3:
Hold the CPU down firmly, and then lower the lever to locked position to complete the installation.

Step 4: Put the CPU Fan and heatsink assembly on the CPU and buckle it on the retention frame. Connect the CPU FAN power cable into the JCFAN1. This completes the installation.

B. *About FAN Headers*

CPU FAN Power Header: JCFAN1
System Fan Power Headers: JSFAN2
North Bridge Fan Power Header: JNBFAN1

JCFAN1:

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

JNBFAN / JSFAN1.2

Pin	Assignment
1	Ground
2	+12V
3	FAN RPM rate sense
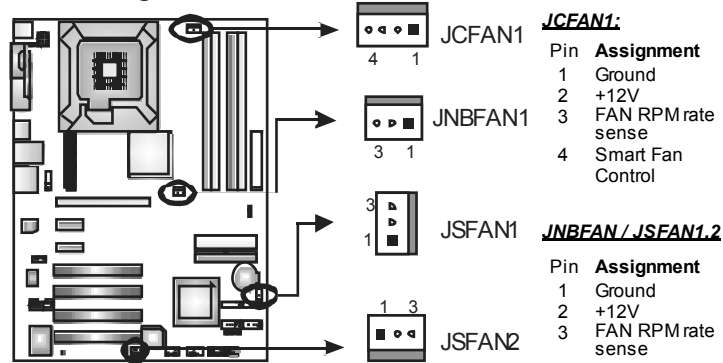
Note:

JCFAN1 reserves system cooling fan with Smart Fan Control utilities. 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.

2.2 SYSTEM MEMORY
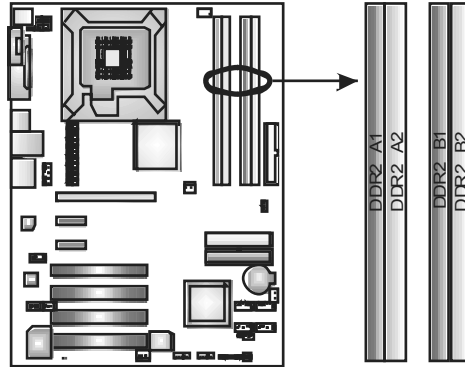
A. DDR 2 Modules

1. Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.
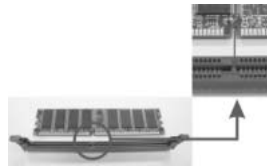
2. Insert the DIMM vertically and firmly into the slot until the retaining chip snaps back in place and the DIMM is properly seated.
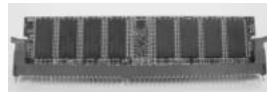
> **Notes:**
> *To remove the DDR modules, push the ejector tabs at both sides of the slot outward at the same time, and pull the modules out vertically.*

B. Memory Capacity

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

C. Dual Channel Memory installation

To trigger the Duo Channel function of the motherboard, the memory module must meet the following requirements:

Install Memory module of the same capacity in both channel 1 (DDR2_A1&DDR2_A2) and Channel 2 (DDR2_B1&DDR2_B2)

Install memory module of the same density in pairs, shown in the following table.

Duual Channel Status	DDR2_A1	DDR2_A2	DDR2_B1	DDR2_B2
Enabled	O	X	O	X
Enabled	X	O	X	O
Enabled	O	O	O	O

(O means memory installed, X means memory not installed.)

The DRAM bus width of the memory module must be the same (x8 or x16)

> **Notes:**
> *Using different memory chips on dual channel memory modules will result in unstable system performance.*

2.3   PERIPHERALS

A. Card and I/O Slots:

Floppy Disk Connector: FDD1

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.
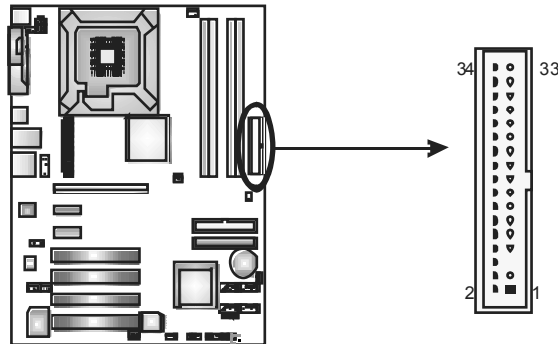
Hard Disk Connectors: IDE1/IDE2

The motherboard has two 32-bit Enhanced PCI IDE Controllers that provide 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.
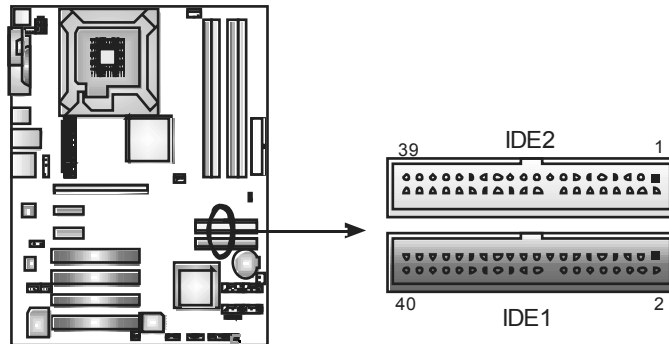
Peripheral Component Interconnect Slots: PCI1~PCI4

This motherboard is equipped with 4 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.
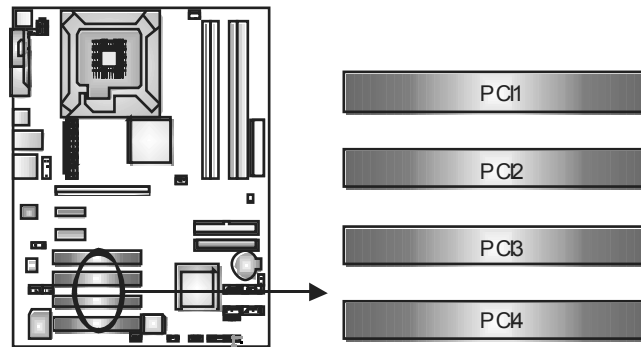
PCI-Express Slots: PCI-Ex16-1/PCI-Ex1_1/PCI-Ex1_2

PCI-Ex16-1:

PCI Express 1.0a compliant.

Maximum bandwidth is up to 4GB/s per direction.

PCI-Ex1_1/PCI-Ex1_2:

PCI Express 1.0a compliant.

Maximum bandwidth is up to 250MB/s per direction.
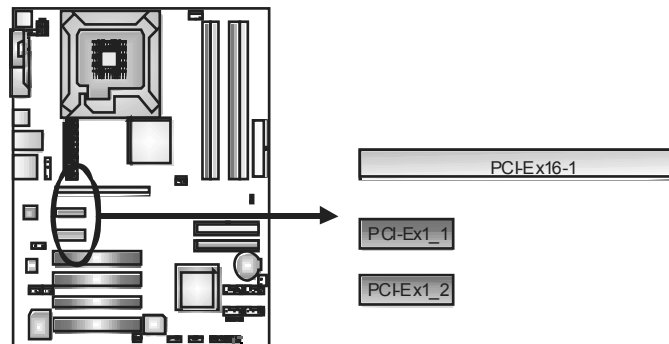
B. Connectors and Headers:

How to setup Jumpers

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

Pin opened   Pin closed   Pin1-2 closed

ATX Power Source Connector: JATXPWR1

JATXPWR1 allows user to connect 24-pin power connector on the ATX power supply.
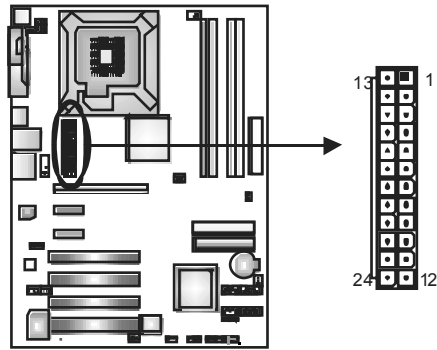
Pin	Assignment	Pin	Assignment
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	Ground	3	Ground
16	PS_ON	4	+5V
17	Ground	5	Ground
18	Ground	6	+5V
19	Ground	7	Ground
20	NC	8	PW_OK
21	+5V	9	Standby Voltage+5V
22	+5V	10	+12V
23	+5V	11	+12V
24	Ground	12	+3.3V

ATX Power Source Connector: JATXPWR2

By connecting JATXPWR2, it will provide +12V to CPU power circuit.
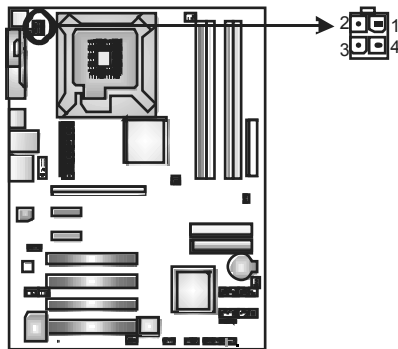
Pin	Assignment
1	+12V
2	+12V
3	Ground
4	Ground

Power Source Header for PS/2 Keyboard/Mouse: JKBV1

Pin 1-2 Close: +5V for PS/2 keyboard and mouse.

Pin 2-3 Close: PS/2 keyboard and mouse are powered with +5V standby voltage.

Pin 1-2 close

Pin 2-3 close
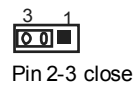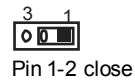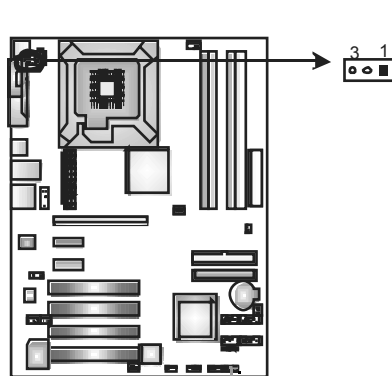
Note: In order to support this function "Power-on system via keyboard and mouse," JKBV1 jumper cap should be placed on Pin 2-3.

Front Panel Audio-out Header: JAUDIOF1

This connector will allow user to connect with the front audio output headers on the PC case. It will disable the output on back panel audio connectors.
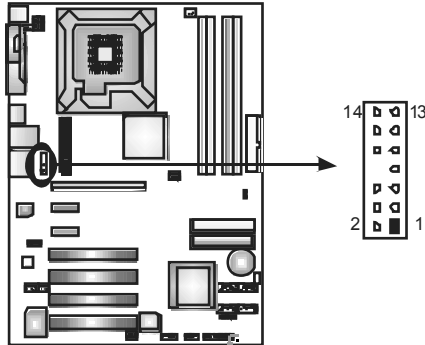
Pin	Assignment	Pin	Assignment
14	Left line in/ Rear speaker Left	13	Left line in/ Rear speaker Left
12	Right line in/ Rear speaker Right	11	Right line in/ Rear speaker Right
10	Left line out/ Speaker out Left	9	Left line out/ Speaker out Left
8	Key	7	Reserved
6	Right line out/ Speaker out Right	5	Right line out/ Speaker out Right
4	Audio power	3	Mic power/Bass
2	Ground	1	Mic in/center

CD-ROM Audio-in Connector: JCDIN1

This connector allows user to connect the audio source from a variety of devices, like CD-ROM, DVD-ROM, PCI sound card, PCI TV tuner card etc..
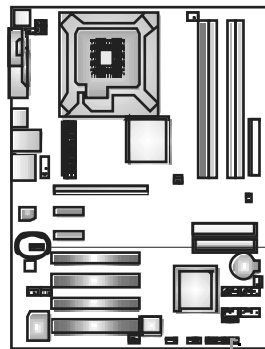
Pin	Assignment
1	Left channel input
2	Ground
3	Ground
4	Right channel input

4   1

Headers for USB Ports at Front Panel: JUSB1~JUSB2

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.

JUSB1   JUSB2

2   10

1   9
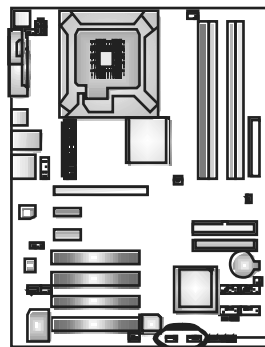
Pin	Assignment
1	+5V (fused)
2	+5V (fused)
3	USB-
4	USB-
5	USB+
6	USB+
7	Ground
8	Ground
9	Key
10	NC

Digital Audio-out Connector: JSPDIF_OUT1

This connector allows users to connect the PCI bracket SPDIF output header.
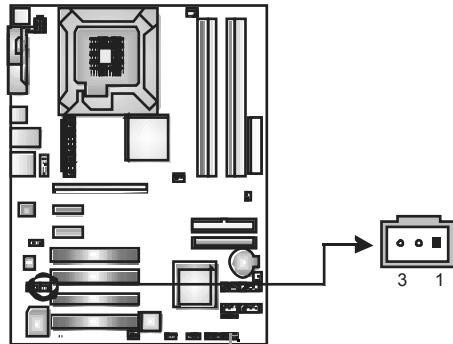
Pin	Assignment
1	+5V
2	SPDIF OUT
3	Ground

Digital Audio-out Connector: JSPDIF_IN1 (optional)

This connector allows users to connect the PCI bracket SPDIF input header.
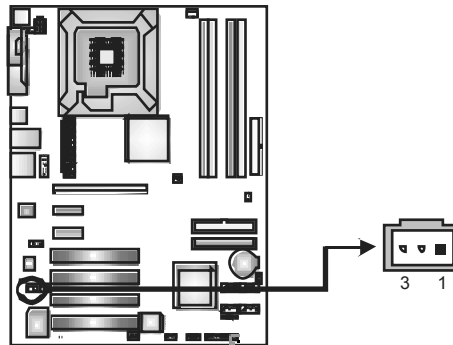
Pin	Assignment
1	+5V
2	SPDIF IN
3	Ground

JPANEL1: Header for Front Panel Facilities

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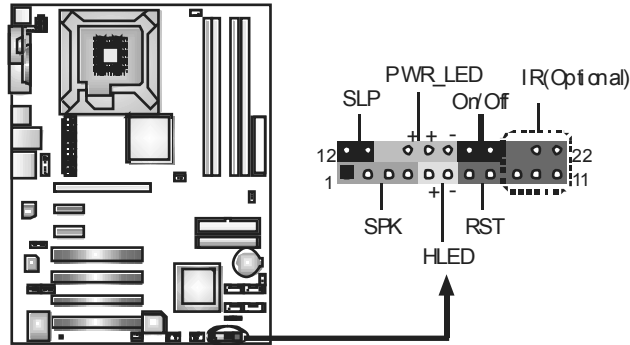
Pin	Assignment	Function	Pin	Assignment	Function
1	+5V		12	Sleep control	Sleep
2	N/A	Speaker	13	Ground	button
3	N/A	nector	14	N/A	N/A
4	Speaker		15	Power LED (+)	
5	HDD LED (+)	Hard drive	16	Power LED (+)	Power LED
6	HDD LED (-)	LED	17	Power LED (-)	
7	Ground	Reset	18	Power button	Power-on
8	Reset control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

Serial ATA Connectors: JSATA1~JSATA4

With the SATA Controller provided in the chipset, this motherboard supports 4 channel SATA II connectors. It satisfies the SATA 2.0 spec with transfer rate of 3.0 Gb/s.

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

JSATA3 JSATA4

JSATA1 JSATA2
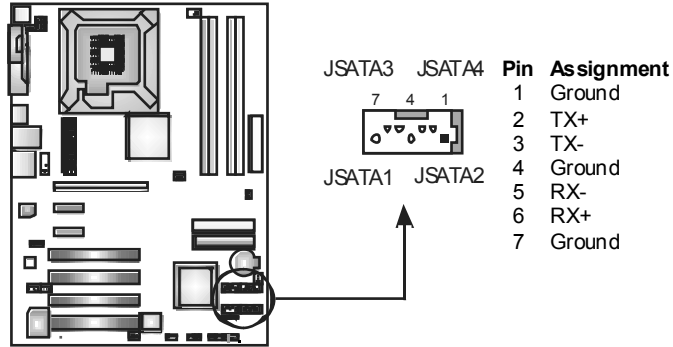
Case Open Header: JCI1

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
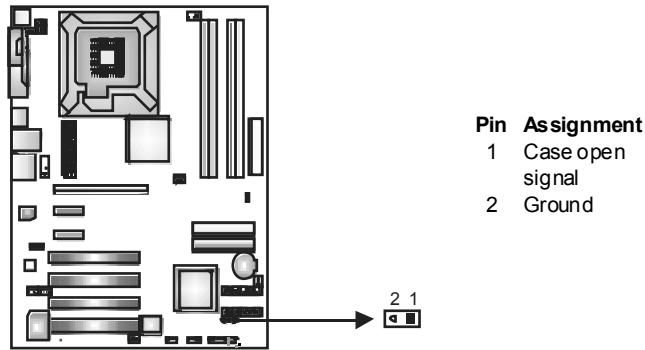
Clear CMOS Header: JCMOS1

By placing the jumper on pin 2-3, it allows user to restore the BIOS safe setting and the CMOS data, please carefully follow the procedures to avoid damaging the motherboard.

Pin 1-2 close:
Normal Operation
(Default).

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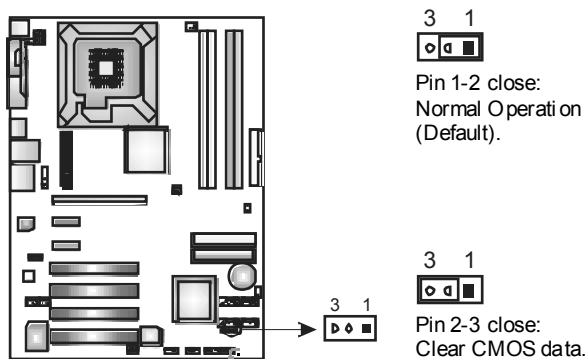
※ Clear CMOS Procedures:
1. Remove AC power line.
2. Set the jumper to "Pin 2-3 close".
3. Wait for five seconds.
4. Set the jumper to "Pin 1-2 close".
5. Power on the AC.
6. Reset your desired password or clear the CMOS data.

Header for Memory Voltage Customize: JDDR_OV>3V

When processing Memory Voltage Overclocking, please place the jumper to pin1-2 closed. The Default setting is Pin 2-3 Closed.

Pin 1-2 close:
Fixed memory voltage at
3.3V (Default).

Pin 2-3 close:
Enable memory voltage
customize.
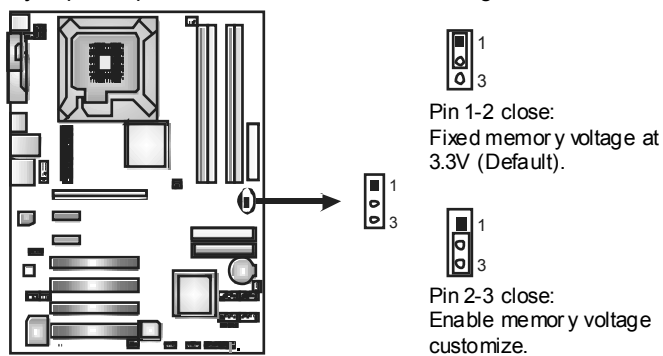
Note:

1. When "JDDR_OV>3V" jumper cap is placed on Pin 2-3, memory voltage can be manually adjusted under CMOS setup.

2. When "JDDR_OV>3V" jumper cap is placed on Pin 1-2, memory voltage will be fixed at 3.3V automatically, and can't be adjusted under COMS setup.

Before setting memory voltage overclocking, please make sure that your DDR supports up to 3V. (Consult your DDR memory module supplier)

On-Board LED Indicators

There are 4 LED indicators on the motherboard to show system status.
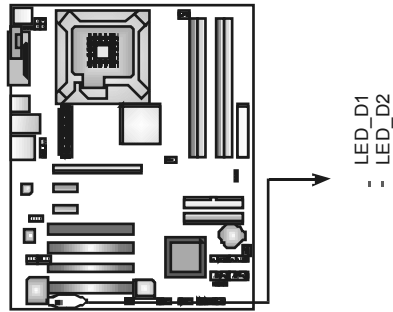
LED_D1 and LED_D2:

These 2 LED indicate system power on diagnostics.
Please refer to the table below for different messages:

LED D2	LED D1	Message
ON	ON	Normal
OFF	ON	Memory Error
ON	OFF	VGA Error
OFF	OFF	Abnormal: CPU / chipset error

CHAPTER 3: NVIDIA RAID FUNCTIONS

3.1 OPERATION SYSTEM

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

3.2 RAID ARRAYS

NVRAID supports the following types of RAID arrays:

RAID 0: RAID 0 defines a disk striping scheme that improves disk read and 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.

RAID 5: RAID 5 provides fault tolerance and better utilization of disk capacity.

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

3.3   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 stripe 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.
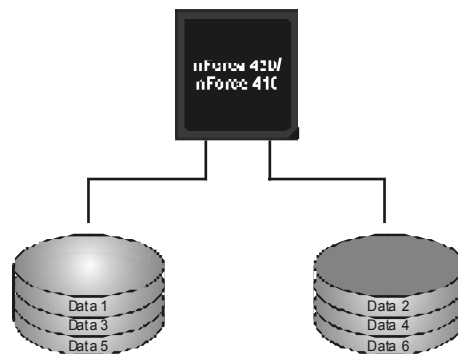
RAID 1:

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.
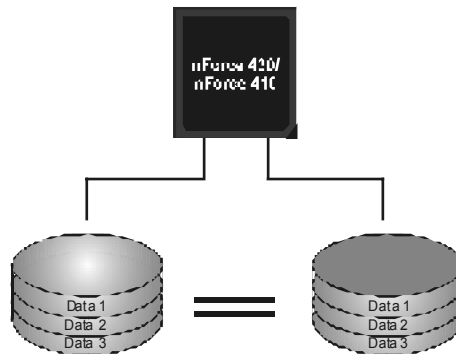
RAID 0+1:

RAID 0 drives can be mirrored using RAID 1 techniques. Resulting in a RAID 0+1 solution for improved performance plus resiliency.

Features and Benefits

- **Drives:** Minimum 4, and maximum is 6 or 8, depending on the platform.
- **Benefits:** Optimizes for both fault tolerance and performance, allowing for automatic redundancy. May be simultaneously used with other RAID levels in an array, and allows for spare disks.
- **Drawbacks:** Requires twice the available disk space for data redundancy, the same as RAID level 1.
- **Fault Tolerance:** Yes.
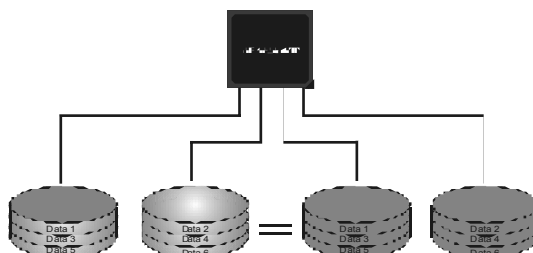
RAID 5:

RAID 5 stripes both data and parity information across three or more drives. It writes data and parity blocks across all the drives in the array. Fault tolerance is maintained by ensuring that the parity information for any given block of data is placed on a different drive from those used to store the data itself.

Features and Benefits

- **Drives:** Minimum 3.
- **Uses:** RAID 5 is recommended for transaction processing and general purpose service.
- **Benefits:** An ideal combination of good performance, good fault tolerance, and high capacity and storage efficiency.
- **Drawbacks:** Individual block data transfer rate same as a single disk. Write performance can be CPU intensive.
- **Fault Tolerance:** Yes.
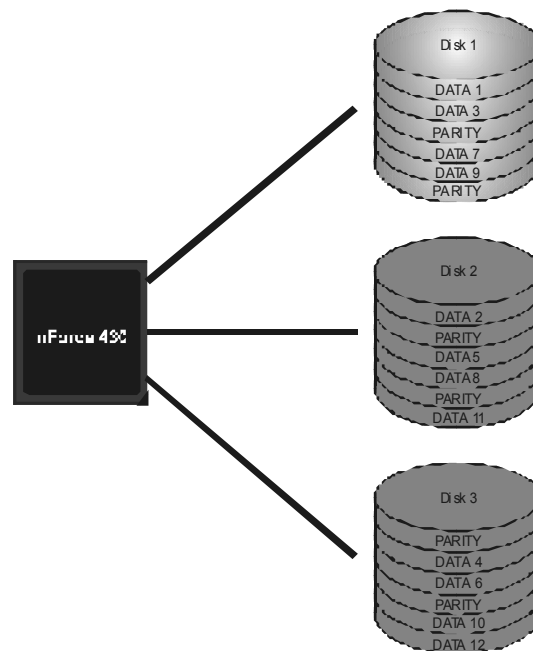
Spanning (JBOD):

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:** No.

Single Logical
Drive

Disk 1: 40GB
Disk 2: 80GB
Disk 3: 40GB
Disk 4: 120GB

nForce 430/
nForce 410
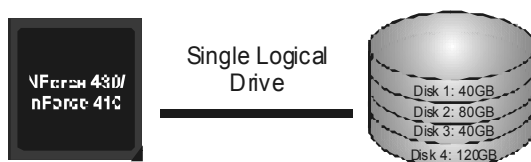
※ **For more detailed setup information, please refer to the Driver CD, or go to** http://www.nvidia.com/page/pg_20011106217193.html to download NVIDIA nForce Tutorial Flash.

CHAPTER 4: OVERCLOCK QUICK GUIDE

4.1: T-POWER INTRODUCTION

Biostar T-Power is a whole new utility that is designed for overclock users.

Based on many precise tests, *Biostar Engineering Team* (BET) has developed this ultimate overclock engine to raise system performance.

No matter whether under BIOS or Windows interface, *T-Power* is able to present the best system state according to users' overclock setting.

T-Power BIOS Features:
- Overclocking Navigator Engine (O.N.E.)
- CMOS Reloading Program (C.R.P.)
- Memory Integration Test (M.I.T., under Overclock Navigator Engine)
- Integrated Flash Program (I.F.P.)
- Smart Fan Function (under PC Health Status)
- Self Recovery System (S.R.S)

T-Power Windows Feature:
- Hardware Monitor
- Overclock Engine
- Smart Fan Function
- Life Update

4.2:   T-POWER BIOS FEATURE

A. Overclocking Navigator Engine (O.N.E.):

ONE provides two powerful overclocking engines: MOS and AOS for both Elite and Casual overclockers.

Manual Overclock System (M.O.S.)

MOS is designed for experienced overclock users.

It allows users to customize personal overclock settings.

CPU Overclock Setting:

CPU Voltage:
This function will increase CPU stability when overclocking. However, the CPU temperature will increase when CPU voltage is increased.
Choices: The range is from 1.2V to 1.725V, with an interval of 0.0.25V.

CPU Frequency:
CPU Frequency is directly in proportion to system performance. To maintain the system stability, CPU voltage needs to be increased also when raising CPU frequency.
Choices: This range is from 200 to 450, with an interval of 1MHz.

Hammer CPU Multiplier:
The MOS allows users to downgrade the CPU ratio when overclocking.
Choices: The lower limit is x4 (800MHz). The upper limit is decided by different CPU type. With an x1 (200MHz) interval.

Memory Overclock Setting:

Memory Voltage:
This function will increase memory stability when overclocking.
Choices: The range is from 2.6V to 2.9V, with an interval of 0.1V.

Memclock Frequency:
To get better system performance, sometimes downgrading the memory frequency is necessary when CPU frequency is adjusted over the upper limit.
Choices: 100, 133, 166, 200, 216, 233, 250 (MHz).

PCI-Express Overclock Setting:

PCIE Clock:
It helps to increase VGA card performance.
Choices: The range is from 100 to 145, with an interval of 1MHz.

Chipset Overclock Setting:

NB/SB Voltage Regulator:
This function will increase chipset stability when overclocking.
Choices: 1.52V, 1.60V, 1.68V, 1.76V.

HT Frequency:
We recommend users to set this item at "x4" when overclocking.
Choices: x1, x2, x3, x4, x5, Auto.

Automatic Overclock System (A.O.S.)

For beginners in overclock field, BET had developed an easy, fast, and powerful feature to increase the system performance, named A.O.S.

Based on many tests and experiments, A.O.S. provides 3 ideal overclock configurations that are able to raise the system performance in a single step.

V6 Tech Engine:

This setting will raise about 10%~15% of whole system performance.

V8 Tech Engine:

This setting will raise about 15%~25% of whole system performance.

V12 Tech Engine:

This setting will raise about 25%~30% of whole system performance.

B. CMOS Reloading Program (C.R.P.):

It allows users to save different CMOS settings into BIOS-ROM.

Users are able to reload any saved CMOS setting for customizing system configurations.

Moreover, users are able to save an ideal overclock setting during overclock operation.

There are 50 sets of record addresses in total, and users are able to name the CMOS data according to personal preference.
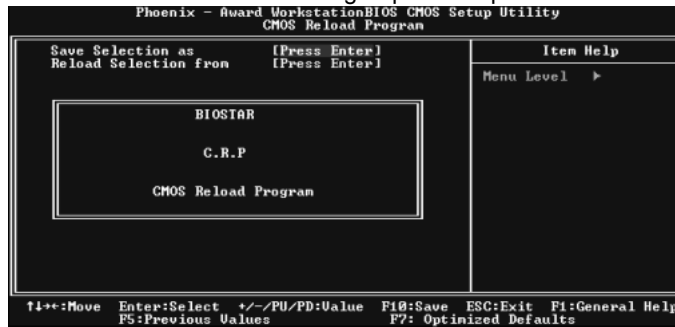
C. Memory Integration Test (M.I.T.):

This function is under "Overclocking Navigator Engine" item. MIT allows users to test memory compatibilities, and no extra devices or software are needed.

Step 1:

The default setting under this item is "Disabled"; the condition parameter should be changed to "Enable" to proceed this test.
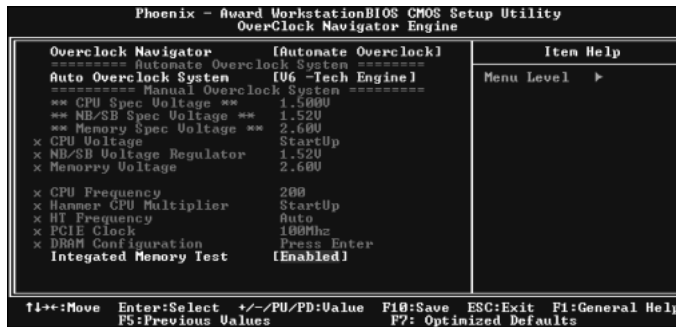
Step 2:

Save and Exit from CMOS setup and reboot the system to activate this test.

Run this test for 5 minutes (minimum) to ensure the memory stability.

Step 3:

When the process is done, change the setting back from "Enable" to "Disable" to complete the test.

D. Self Recovery System (S.R.S.):

This function can't be seen under T-Power BIOS setup; and is always on whenever the system starts up.

However, it can prevent system hang-up due to inappropriate overclock actions.

When the system hangs up, S.R.S. will automatically log in the default BIOS setting, and all overclock settings will be re-configured.

E. Integrated Flash Program (I.F.P.):

IFP is a safe and quick way to upgrade BIOS.

Step 1:

Go to Biostar website (http://www.biostar.com.tw) to download the latest BIOS file. Then, save the file into a floppy disk.

Step 2:

Insert the floppy disk and reboot the system to get into CMOS screen.

Step 3:

Select the item "Integrated Flash Program" to get the following frame and choose the BIOS file downloaded in step 1.

Step 4:

Press "Enter" key to start BIOS file loading, and BIOS updating will process automatically.

Step 5:

When the BIOS update is completed, press YES to the message "Flash done, Reset system", and the system will reboot automatically to finish the process.

Advise:

You can update the system BIOS by simply pressing "Enter" key for three times.

F. Smart Fan Function:

Smart Fan Function is under "PC Health Status".
This is a brilliant feature to control CPU Temperature vs. Fan speed.
When enabling Smart Fan function, Fan speed is controlled
automatically by CPU temperature.
This function will protect CPU from overheat problem and maintain
the system temperature at a safe level.
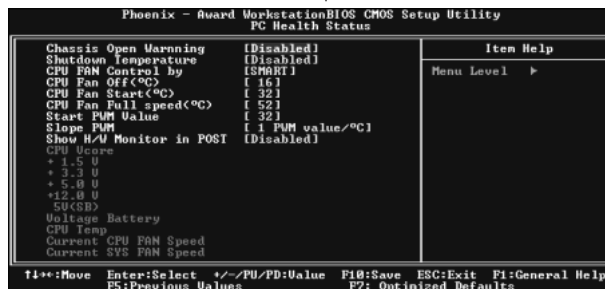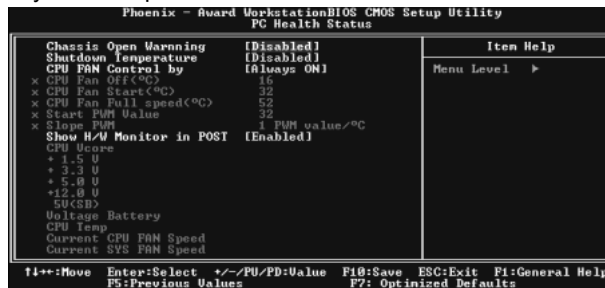
CPU Fan Off <℃>:

If the CPU temperature is lower than the set value, the CPU
fan will turn off. The range is from 0℃~127℃, with an interval
of 1℃.
Choices: 16℃ (default).

CPU Fan Start <℃>

The CPU fan starts to work when CPU temperature arrives to
this set value. The range is from 0℃~127℃, with an interval of
1℃.
Choices: 32℃ (default).

CPU Fan Full speed <℃>

When CPU temperature arrives to the set value, the CPU fan
will work under Full Speed. The range is from 0℃~127℃, with
an interval of 1℃.
Choices: 52℃ (default)**.**

Start PWM Value

When CPU temperature arrives to the set value, the CPU fan will work under Smart Fan Function mode. The range is from 0~127, with an interval of 1.
Choices: 32 (default).

Slope PWM

Choices: 1 PWM Value/℃ (default), 2 PWM Value/℃ , 4 PWM Value/℃, 8 PWM Value/℃, 16 PWM Value/℃, 32 PWM Value/℃, 64 PWM Value/℃ .
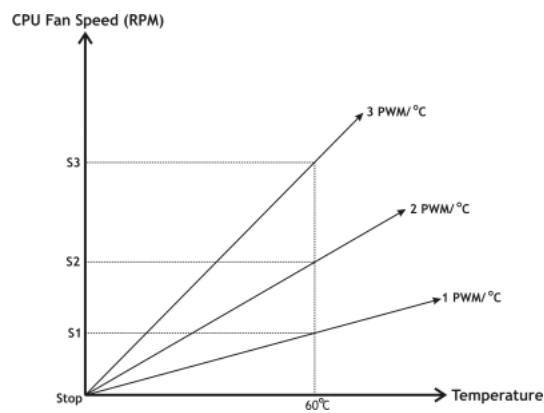
S1: CPU temperature is 60℃, and PWM value is 1 PWM/℃ .

S2: CPU temperature is 60℃, and PWM value is 2 PWM/℃ .

S3: CPU temperature is 60℃, and PWM value is 3 PWM/℃ .

Increasing the value of slope PWM will raise the speed of CPU fan.

As in above diagram, when the CPU temperature reaches 60℃, the CPU fan speed for 3 PWM/℃ is higher than 1 PWM/℃ (S1<S2<S3).

4.3   T-POWER WINDOWS FEATURE

A.Hardware Monitor:

T-Power Hardware monitor allows users to monitor system voltage, temperature and fan speed accordingly.

Additionally, a rescue action will be taken by the program automatically while the system faces an abnormal condition.

The program will trigger an alarm or shut down the system when unpredictable errors occur.

All the monitoring items are illustrated by a waveform diagram.
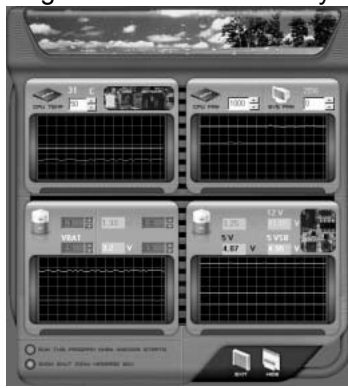
Hardware Monitor Toolbar

i.   Start-up Setting

Click on this item to run Hardware Monitor Program when the Windows starts-up.

ii.   Dialogue-Box Setting

Click on this item to pop-up warning dialogue-box when PC system is abnormal.

iii. Exit

Click on this item to exit Hardware Monitor Program.

iv. Hide

Click on this item to hide this program in system tray. When hiding the program, there will be a check icon in the system tray.

CPU Temperature

This column configures the CPU temperature. There is a waveform to represent the status of CPU temperature.
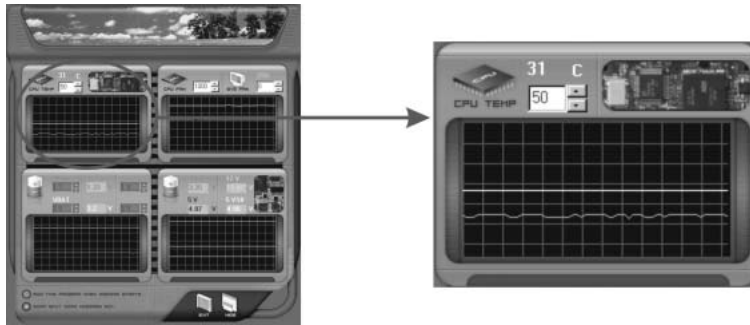
By adjusting [icon], users can easily configure the upper limit of CPU temperature for system operating.

In this diagram, the white line represents the upper limit which user-set for CPU temperature and the green line shows present CPU temperature.

If the CPU temperature is higher than the upper limit, the status line color will change from green to red, and a warning sound will alert you. Also, the system tray icon [icon] would change to [icon].
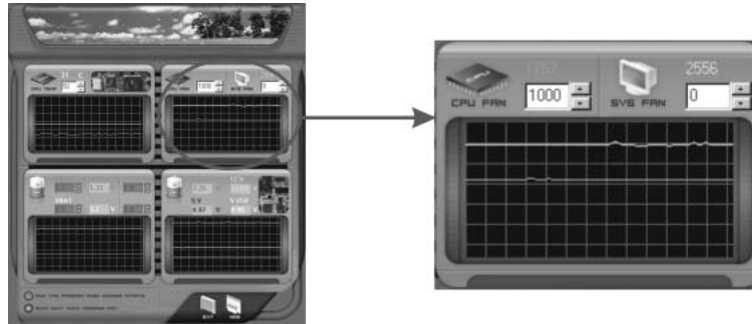
FAN Speed

By adjusting [icon], users can easily configure the lower limit of the fan speed.

In this diagram, the green line shows present CPU Fan speed, and the yellow line shows System Fan speed (if any).

If any one of the fans speeds is lower than the set value, the status line will change into a red warning line, and the program will trigger an alarm system automatically. Also, the system tray icon [icon] would change to [icon].

CPU/Battery Voltage
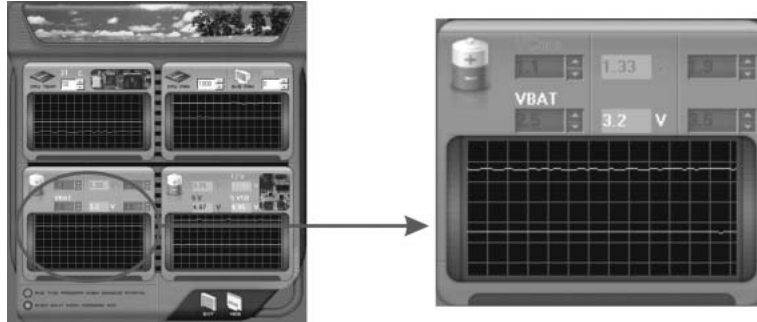
i.   VCore
This item displays the CPU v oltage, represented by a light blue line.

Users can set the upper and lower limit by adjusting [icon] to monitor the CPU operating v oltage.
If CPU v oltage is higher or lower than the set value, the status line will change into a red warning line, and a warning sound will alert y ou. Also, the system tray icon [icon] will change to [X].

ii. VBAT
This item displays the CMOS battery voltage, represented by a light green line.

Users can set the upper and lower limit by adjusting [icon] to monitor the status of battery voltage.
If battery voltage is higher or lower than the set v alue, the status line will change to a red warning line, and a warning sound will alert y ou. Also, the system tray icon [icon] will change to [X].

Reference data
This column represents the status of power supply voltage and cannot be adjusted, it is only f or present status reference.
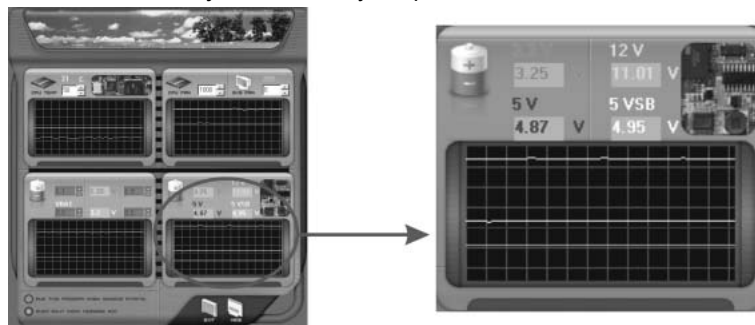
B. Overclocking Configurations

Graphic 1

This diagram is designed for T-series Overclocking utility. Friendly interface and solid overclock features are the major concept of this utility.

Graphic 1 will appear when activating this utility.
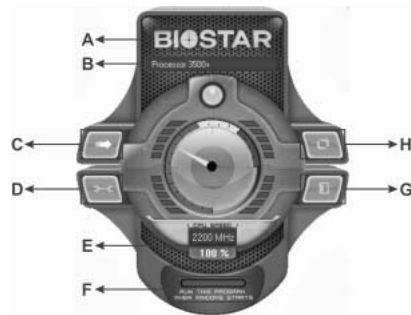
Graphic 2

A. Clicking on "Biostar" will lead you to the Biostar Homepage.
B. This column shows the CPU speed information.
C. Click on this button and the utility will pop-up 4 sub-screens (Please refers to Graphic 3).
D. Click on this button to minimize this program to taskbar.
E. This column shows present CPU speed and overclocking percentage.
F. Clicking on this button will make the program start up as soon as the Windows starts up.
G. Click on this button to exit this overclock utility.
H. Click on this button to reset all the overclock features to default setting.

By adjusting the overclocking features in 4 sub-screens, users can tune the system performance to an optimal level.

Graphic 3

CPU Overclocking Settings:

By adjusting [icon] can configure three items for CPU overclocking.

A.   *CPU Frequency*
  Range: 133MHz~450MHz.
  Interval: 1MHz.

B.   *CPU Ratio*
  Range: 4~25.
  Interval: 1.

C.   *CPU Voltage*
  Range: 1.175V~1.725V.
  Interval: 0.025V.

Memory Overclocking Settings:

By adjusting [icon] can configure two items for Memory overclocking.

A. *Memory Clock Frequency*
  Choices: 100, 133, 166, 200, 233, 250.

B. *Memory Voltage*
  Range: 2.5V~2.8V.
  Interval: 0.1V.

AGP/PCI-Express Overclocking Setting:

By adjusting [icon] can configure VGA card overclocking. And this function helps to increase VGA card performance.

  Range: 100MHz~150MHz.
  Interval: 1MHz.

PCI Overclocking Setting:

This diagram shows present PCI working status and helps to monitor PCI peripherals working status.

This item cannot be adjusted.

C. Smart Fan Function

When Smart Fan Function is activated, screens will pop-up to illustrate the fan speed information.

i. CPU Temperature:
Show current CPU temperature.

ii. CPU Fan speed:
Show current CPU Fan speed.

iii. System Fan speed:
Show current system Fan speed.

iv. Calibrate:
When changing CPU Fan or System Fan, dick on this button to re-calibrate the Fan speed.

Note:
1. When Smart Fan Function activates for the first time, this calibrate function would auto-run to get upper and lower limitation of CPU Fan and System Fan.
2. When calibrating process is done, the calibrating window will auto-close, and the main screen will show new fan speed data.

v.   Auto:

If the green indicator is lit up, the Smart Fan Function is "On" (Default Setting).

Click on this button again to close Smart Fan Function, and a screen as below would pop-up.

There will be pulling-meter besides the CPU Fan and System Fan, the CPU Fan and the System Fan speed can be adjusted by adjusting the Cursor Up or Down.
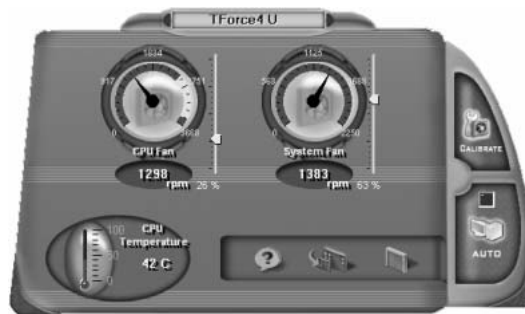
vi.   Program Tool Bar:

● *About:*

Click on this button to get program-related information.

● *Minimize:*

Click on this button to minimize the program to system tray

● *Exit:*

Click on this button to exit this program.

D. Live Update
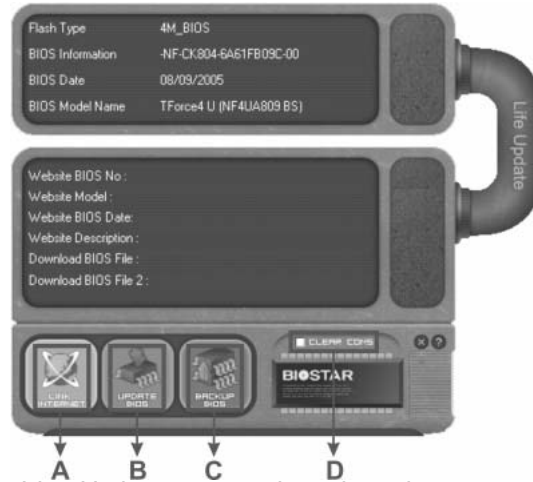
When Live Update program is activated, a screen will pop up to illustrate BIOS related information.

  i.   Link to Internet:
  Click on this button will link to Biostar website and BIOS file will be downloaded.

  ii. Update BIOS:
  Click on this button to run BIOS flashing process, and it's easy and safe.

  iii. Backup BIOS:
  Click on this button, and BIOS file will be saved into the user-selected folder.

  iv. Clear CMOS:
  Click on this item will clear the CMOS Data. When carrying this job, the previous CMOS data would be cleared and returned to default setting.

CHAPTER 5: USEFUL HELP

5.1 *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 boots-up	No error found during POST
Long beeps every other second	No DRAM detected or installed

5.2 *EXTRA INFORMATION*

A. BIOS Update

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

```
BIOS ROM checksum error
Detecting floppy drive A media...
INSERT SYSTEM DISK AND PRESS ENTER
```
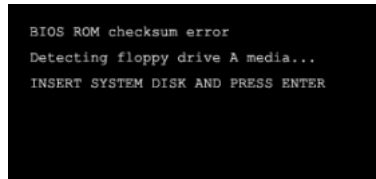
In this case, please follow the procedure below to restore the BIOS:

1. Make a bootable floppy disk.
2. Download the Flash Utility "AWDFLASH.exe" from the Biostar website: www.biostar.com.tw
3. Confirm motherboard model and downl7oad the respective BIOS from Biostar website.
4. Copy "AWDFLASH.exe" and respective BIOS onto 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 shuts down automatically after power on of system for a few seconds that means the CPU protection function has been activated.

When the CPU is overheated, the motherboard will shutdown automatically to avoid damaging the CPU, and the system will 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 rotating normally.
3. CPU fan speed is fulfilling the CPU speed.

After confirmation, please follow the steps below to relieve the CPU protection function.
1. Remove the power cord from power supply for a few seconds.
2. Wait for a few seconds.
3. Plug in the power cord and boot up the system.

Or you can:
1. Clear the CMOS data.
   (See "JCMOS1: Clear CMOS Header" section)
2. Wait for a few seconds.
3. Power on the system again.

5.3   TROUBLESHOOTING

Problem	Solution
1. No power to the system at all Power light don't illuminate, fan inside power supply does not turn on. 2. Indicator light on keyboard does not turn on.	1. Make sure power cable is securely plugged in. 2. Replace cable. 3. Contact technical support.
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.	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. 2. Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.
System only boots from optical drive. Hard disk can be read and applications can be used but booting from hard disk is impossible.	1. Back up data and application files. 2. Reformat the hard drive. Re-install applications and data using backup disks.
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.	1. Set master/slave jumpers correctly. 2. Run SETUP program and select correct drive types. Call the drive manufacturers for compatibility with other drives.

GERMAN

CPU
▉ Unterstützt LGA 775.
▉ Unterstützt Intel Pentium 4-Prozessoren und Celeron D.
▉ Unterstützt Dual-Core-CPU
  - Unterstützt Pentium D
  - Unterstützt Pentium EE
▉ Unterstützt die folgenden Front Side Bus-Frequenzen:
  - 533MT/s (133MHz Kerntakt)
  - 800MT/s (200MHz Kerntakt)
  - 1066MT/s (266MHz Kerntakt)
▉ Unterstützt die Hyper-Threading Technology (HT)
▉ Unterstützt die Execute Disable Bit Technology (XD).
▉ Unterstützt die Enhanced Intel SpeedStep® Technology (EIST).
▉ Unterstützt die Intel Extended Memory 64 Technology (Intel EM64T).

Chipsatz
▉ North Bridge: nForce4 SPP Ultra
▉ South Bridge: nForce 430 / nForce 410
  - Unterstützt NVIDIA Firewall. (nur für nForce4 Ultra)
  - Unterstützt NVIDIA nTune Utility.
  - Unterstützt NVIDIA Secure Networking Processor.. (nur für nForce4 Ultra)

Betriebssystemunterstützung
▉ Unterstützt Windows 2000 und Windows XP.

   Hinweis: Windows 98SE und Windows ME werden nicht unterstützt.

Abmessungen
▉ ATX-Formfaktor: 30.48cm (L) x 24.38cm (B)

Systemspeicher
▉ Unterstützt Dual-Kanal DDR2.
▉ Unterstützt DDR2 400/ 533/ 667.
▉ Unterstützt die Speichergröße von maximal 4GB mit 4 DIMM-Steckplätze

Serial ATA II
▉ nForce 430 / nForce 410 unterstützt die Serial ATA 2.0-Spezifikation, datentransferrate von bis zu 3GB/s.

IDE
▉ Zwei integrierte Anschlüsse für 4 Geräte.
▉ Unterstützt PIO-Modus 0-4, Blockmodus und Ultra DMA 33/66/100/133 Bus-Mastermodus.

Super E/A
▉ Chip: ITE IT8712F.
▉ Systemumgebungskontrolle:
  - Hardwareüberwachung

- Lüfterdrehzahl-Controller
- "Smart Guardian"-Funktion von ITE

AC'97 Sound-Codec
▓ Chip: ALC850, unterstützt 8 Kanäle.

10/100 LAN PHY
▓ PHY: Realtek 8201CL / Marvell 88E3016(optional), unterstützt die ACPI, PCI-Energieverwaltung.

Sicherheit
▓ NVIDIA Firewall-Technologie (nur für nForce4 Ultra)
- Native Firewall-Lösung, schützt den PC durch Filtern unautorisierten Datenverkehrs vor Eindringlingen.
▓ NVIDIA Active Armor (nur für nForce4 Ultra)
- Verbesserte Netzwerksicherheit bietet sowohl schnellere als auch sicherere Umgebung.

NVIDIA RAID Technologie
▓ RAID 0 Disk-Striping für die höchste System- und Applikationsleistung.
▓ RAID 1 Disk-Mirroring zur Erhöhung der Fehlertoleranz, unterstützt die SATA und ATA-133 Disk-Controller-Standards.
▓ RAID 0+1 Disk-Striping und -Mirroring für die höchste Leistung mit Fehlertoleranz. (nur für nForce4 Ultra)
▓ RAID 5 bietet einen smarten Datenschutz und optimalen Datenzugriff an.
(nur für nForce4 Ultra)

Interne integrierte Steckplätze und Anschlüsse
▓ Ein PCI-Express x16-Steckplatz: PCI-Ex16-1.
▓ Zwei PCI-Express x1-Steckplätze: PCI-Ex1_1 und PCI-Ex1_2.
▓ CD-ROM-Audioeingang
▓ 1 SPDIF-Ausgang und 1 SPDIF-Eingang (optional)
▓ Ultra DMA 133/100/66/33 IDE-Anschlüsse
▓ PCI-Steckplätze
▓ Serial ATA II-Anschlüsse(nForce 410 verfügt über zwei SATA II-Ports)

Rücktafel-E/A-Anschlüsse
▓ serieller Anschluss
▓ 1 drucker Anschluss
▓ 1 RJ-45 LAN-Anschluss
▓ 1 PS/2-Mausanschluss
▓ 1 PS/2-Tastaturanschluss
▓ 1 1394A Firewire-Anschluss
▓ 4 USB 2.0-Anschlüsse
▓ 6 Audioanschlüsse für 8-Kanal-Audioausgabefunktionen.

FRENCH

Processeur
- Prise en charge de LGA 775.
- Prise en charge des processeurs Intel Pentium 4 et Celeron D.
- Prise en charge CPU Dual Core.
  - Prise en charge de Pentium D
  - Prise en charge de Pentium EE
- Bus front-side aux fréquences suivantes :
  - 533MT/s (Horloge cœur 133MHz)
  - 800MT/s (Horloge coeur 200MHz)
  - 1066MT/s (Horloge coeur 266MHz)
- Prise en charge de la technologie Hyper-Threading. (HT)
- Prise en charge de la technologie Execute Disable Bit (XD).
- Prise en charge de la technologie Enhanced Intel SpeedStep® (EIST).
- Prise en charge de la technologie Intel Extended Memory 64 (Intel EM64T).

Chipset
- North Bridge: nForce4 SPP Ultra.
- South Bridge: nForce 430 / nForce 410.
  - Supporte le firewall NVIDIA. (Seulement pour nForce4 Ultra)
  - Supporte l'utilitaire NVIDIA "nTune Utility".
  - Supporte le processeur NVIDIA de réseau sécuritaire (Secure Networking). (Seulement pour nForce4 Ultra)

Systèmes d'exploitation pris en charge
- Prise en charge de Windows 2000 et Windows XP.
  - *Note: Windows 98SE et Windows ME ne sont pas pris en charge.*

Dimensions
- Facteur de forme ATX: 30.48cm (Long) x 24.38cm (Larg)

Mémoire système
- Prise en charge des DDR2 double canal.
- Prise en charge de DDR2 400/533/667.
- Espace mémoire maximum de 4GB, prenant en charge 4 barrettes DIMM.

Codec audio AC'97
- Chip: ALC850, prise en charge 8 canaux.

E/S disque
- Chip : ITE IT8712F.
- Initiatives Contrôle d'environnement,
  - Moniteur matériel
  - Contrôleur de vitesse de ventilateur
  - Fonction "Smart Guardian" d'ITE

ATA II Série
- nForce 430 / nForce 410 prise en charge des spécifications ATA

2.0 Série, débit de transfert des données jusqu'à 3 Go/s.

IDE
▐ Deux connecteurs sur carte permettant la prise en charge de 4 périphériques.
▐ Prise en charge PIO mode 0-4, Block Mode et mode bus maître Ultra DMA 33/66/100/133.

10/100 LAN PHY
▐ PHY: Realtek 8201CL / Marvell 88E3016(optional), prise en charge Gestion de l'alimentation ACPI, PCI.

Sécurité
▐ Technologie de Firewall NVIDIA (Seulement pour nForce4 Ultra)
- Solution de firewall natif, protégeant le PC des intrusions extérieures en filtrant le trafic non autorisé.
▐ NVIDIA Active Armor (Seulement pour nForce4 Ultra)
- Améliore la sécurité réseau et fournit à l'utilisateur un environnement à la fois rapide et sûr.

Technologie de NVIDIA RAID
▐ Stripping de disque RAID 0 pour des performances système et applications optimales.
▐ Prise en charge mirroring RAID 1 pour tolérance d'erreurs, prise en charge pour le4s normes contrôleurs de disque SATA et ATA-133.
▐ Disques RAID 0+1 en miroir ou en striping pour des performances plus élevées et une plus grande résistance aux pannes. (Seulement pour nForce4 Ultra)
▐ RAID 5 offrant une protection intelligente des données et un accès optimal aux données. (Seulement pour nForce4 Ultra)

Emplacements et connecteurs sur carte internes
▐ Un emplacement PCI-Express x16: PCI-Ex16-1.
▐ Deux emplacements PCI-Express x1: PCI-Ex1_1 et PCI-Ex1_2.
▐ connecteur d'entrée CD-ROM audio-in
▐ 1 connecteur de sortie SPDIF-Out et un connecteur d'entrée SPDIF-In (en option)
▐ connecteurs IDE Ultra DMA 133/100/66/33
▐ emplacements PCI
▐ ports série ATA II (nForce 410 possède 2 ports SATA II)

Connecteurs E/S panneau arrière
▐ port série
▐ 1 port imprimeur
▐ 1 prise LAN RJ-45
▐ 1 port souris PS/2
▐ 1 port clavier PS/2
▐ 1 port 1394A Firewire
▐ 4 ports USB 2.0
▐ 6 ports audio prenant en charge les équipements de sortie audio 8 voies.

ITALIAN

CPU

- Supporto LGA 775.
- Supporto processore Intel Pentium 4 ed Celeron D.
- CPU Dual Core.
    - Supporto Pentium D
    - Supporto Pentium EE
- FSB (Front Side Bus) alle seguenti portate di frequenza:
    - 533MT/s (133MHz Core Clock)
    - 800MT/s (200MHz Core Clock)
    - 1066MT/s (266MHz Core Clock)
- Supporto tecnologia HT (Hyper Threading).
- Supporto tecnologia XD (Execute Disable Bit).
- Supporto tecnologia EIST (Enhanced Intel SpeedStep® Technology).
- Supporto tecnologia Intel EM64T (Extended Memory 64 Technology).

Chipset

- North Bridge: nForce4 SPP Ultra.
- South Bridge: nForce 430 / nForce 410.
    - Supporto di NVIDIA Firewall. (solo per nForce4 Ultra)
    - Supporto di NVIDIA nTune Utility.
    - Supporto del processore NVIDIA Secure Networking. (solo per nForce4 Ultra)

ortati

- Supporto di Windows 2000 e Windows XP.
    Nota: *Non supporta Windows 98SE e Windows ME.*

Dimensioni

- Fattore di forma ATX: 30.48 cm (L) x 24.38 cm (P)

Memoria di sistema

- Supporto di moduli DDR2 a doppio canale.
- Supporto di DDR2 400/533/667.
- Lo spazio massimo di memoria è 4GB e supporta 4 prese DIMM.

Protezione

- Tecnologia Firewall NVIDIA (solo per nForce4 Ultra)
    - Soluzione Firewall Native protegge il PC da intrusioni filtrando il traffico non autorizzato.
- NVIDIA Active Armor (solo per nForce4 Ultra)
    - Migliore la protezione di rete e fornisce agli utenti un ambiente sia rapido sia protetto.

Serial ATA II

- nForce 430 / nForce 410 supporto specifiche Serial ATA 2.0, velocità di trasferimento dei dati fino 3GB/s.

Super I/O

- Chip: ITE IT8712F.
- Funzioni di controllo dell'ambiente:
  - Monitoraggio hardware
  - Controller velocità ventolina
  - Funzione "Smart Guardian" di ITE

IDE
- Due connettori integrati supportano 4 dispositivi.
- Modalità: PIO 0-4, bus master Block e Ultra DMA 33/66/100/133.

Audio Codec AC'97
- Chip: ALC850, supporto di 8 canali.

10/100 LAN PHY
- PHY: Realtek 8201CL / Marvell 88E3016(optional), supporto gestione energetica ACPI, PCI.

Tecnologia NVIDIA RAID
- Striping del disco RAID 0 per prestazioni superiori del sistema e delle applicazioni.
- Supporto mirroring del disco RAID 1 per la tolleranza errori, supporto di entrambi gli standard controller disco SATA e ATA-133.
- Stripinig e mirroring disco RAID 0+1 per le massime prestazioni con tolleranza agli errori. (solo per nForce4 Ultra)
- La tecnologia RAID 5 offre una protezione dei dati intuitiva e l'accesso ottimale ai dati. (solo per nForce4 Ultra)

Connettori e alloggiamenti interni integrato
- Un alloggiamento PCI-Express x16: PCI-Ex16-1.
- Due alloggiamenti PCI-Express x1: PCI-Ex1_1 e PCI-Ex1_2.
- connettore SPDIF-Out ed 1 connettore SPDIF-In (optional)
- 1 connettore ingresso audio CD-ROM
- connettori Ultra DMA 133/100/66/33 IDE
- alloggiamenti PCI
- porte Serial ATA II (nForce 410 presenta due porte SATA II)

Connettori I/O del pannello posteriore
- porta seriale
- 1 porta stampatore
- 1 connettore LAN RJ-45
- 1 porta mouse PS/2
- 1 porta tastiera PS/2
- 1 porta Firewire 1394A
- 4 porte USB 2.0
- 6 porte audio supportano 8 canali di servizio rendimento audio.

SPANISH

Procesador
- Compatible con LGA 775.
- Compatible con el procesador Intel Pentium 4 y Celeron D.
- Admite procesador de núcleo dual.
  - Compatible con Pentium D
  - Compatible con Pentium EE
- FSB (Front Side Bus) en los siguientes intervalos de frecuencia:
  - 533 MT/s (reloj principal a 133 MHz)
  - 800 MT/s (reloj principal a 200 MHz)
  - 1066 MT/s (reloj principal a 266 MHz)
- Compatible con la tecnología Hyper-Threading (HT).
- Compatible con la tecnología de bit para deshabilitar la ejecución (XD,
- Execute Disable).
- Compatible con la tecnología SpeedStep® de Intel mejorada (EIST).
- Compatible con la tecnología 64 de memoria extendida (Intel EM64T,
- Extended Memory 64 Technology)

Conjunto de chips
- North Bridge: nForce4 SPP Ultra.
- South Bridge: nForce 430 / nForce 410.
  - Soporta el Firewall NVIDIA. (solamente para nForce4 Ultra)
  - Suporta la Utilidad NVIDIA nTune.
  - Suporta el Procesador para Seguridad en Redes NVIDIA. (solamente para nForce4 Ultra)

Sistemas operativos compatibles
- Compatible con Windows 2000 y Windows XP.
  Nota: no compatible con Windows 98SE ni Windows ME.

Dimensiones
- Formato ATX: 30.48 cm (LA) x 24.38 cm (AN)

Memoria del sistema
- Compatible con admite DDR2 de canal dual.
- Compatible con admite DDR2 400/533/667.
- Espacio máximo de memoria de 4GB, que admite 4 zócalos DIMM.

Serial ATA II
- nForce 430 / nForce 410 compatible con la especificación Serial ATA 2.0, tasa de transferencia de datos de hasta 3 GB/s.

IDE
- Dos conectores integrados que admiten 4 dispositivos.
- Admite el modo PIO 0-4, el modo de bloque y el modo de bus maestro Ultra DMA 33/66/100/133.

Súper E/S

- Procesador: ITE IT8712F.
- Iniciativas de control medioambiental:
  - Supervisor H/W
  - Controlador de la velocidad del ventilador
  - Función "Guardián inteligente" de ITE

Códec de audio AC'97
- Procesador: ALC850, admite 8 canales.

10/100 LAN PHY
- PHY: Realtek 8201CL / Marvell 88E3016(optional), admite administración de energía ACPI.

Seguridad
- Tecnología de Firewall NVIDIA (solamente para nForce4 Ultra)
  - - Solución de firewall nativa, protege el computador personal de intrusos al filtrar el tráfico no autorizado.
- NVIDIA Active Armor (solamente para nForce4 Ultra)
  - Mejora la seguridad de la red y proporciona a los usuarios un entorno rápido y seguro.

Tecnología NVIDIA RAID
- Intercalación de disco RAID 0 disk para conseguir el mejor rendimiento del sistema y de las aplicaciones.
- Admite simetría de disco RAID 1 para tolerancia de errores, compatible con las normas de controlador de discos SATA y ATA-133.
- Doble escritura y grabación en disco RAID 0+1 para obtener un mayor rendimiento con tolerancia a fallos. (solamente para nForce4 Ultra)
- RAID 5, que ofrece una protección inteligente de datos y un óptimo acceso a datos. (solamente para nForce4 Ultra)

Conectores y ranuras integrados e internos
- Una ranura 16X PCI-Express: PCI-Ex16-1.
- Dos ranuras PCI-Express 1X: PCI-Ex1_1 y PCI-Ex1_2.
- conector de entrada de audio en CD-ROM
- 1 conector de salida SPDIF y un conector de entrada SPDIF (opcional)
- conectores Ultra DMA 133/100/66/33 IDE
- ranuras PCI
- puertos Serial ATA II (nForce 410 viene con dos Puertos SATA II)

Conectores de E/S del panel posterior
- puerto serie
- 1 puerto impresora
- 1 conector de red LAN RJ-45
- 1 puerto para ratón PS/2
- 1 puerto para teclado PS/2
- 1 puerto 1394A Firewire
- 4 puertos USB 2.0
- 6 puertos de audio que admiten 8 conexiones de salida de audio de 8 canales.

PORTUGUESE

CPU
- Suporta o socket LGA 775.
- Suporta um processador Intel Pentium 4 e Celeron D.
- Suporta uma CPU dual core.
  - Suporta um Pentium D
  - Suporta um Pentium EE
- FSB (Front Side Bus) com as seguintes frequências:
  - 533 MT/s (133 MHz)
  - 800 MT/s (200 MHz)
  - 1066 MT/s (266 MHz)
- Suporta a tecnologia Hyper-Threading (HT).
- Suporta a tecnologia Execute Disable Bit Technology (XD).
- Suporta a tecnologia Enhanced Intel SpeedStep® Technology (EIST).
- Suporta a tecnologia Intel Extended Memory 64 Technology (Intel EM64T).

Chipset
- Ponte Norte: nForce4 SPP Ultra.
- Ponte Sul: nForce 430 / nForce 410.
  - Suporta a firewall NVIDIA. (apenas para os modelos nForce4 Ultra)
  - Suporta o utilitário NVIDIA nTune.
  - Suporta o processador NVIDIA Secure Networkin. (apenas para os modelos nForce4 Ultra)

Sistemas operativos suportados:
- Suporta o Windows 2000 e o Windows XP.
  Nota: Não suporta o Windows 98SE e o Windows ME.

Dimensões
- Factor de forma ATX: 30.48 cm (C) x 24.38 cm (L)

Memória do sistema
- Suporta DDR2 de duplo canal.
- Suporta módulos DDR2 400 / 533/ 667.
- Capacidade máxima da memória: 4GB, suportando 4 sockets DIMM.

Serial ATA II
- nForce 430 / nForce 410 suporta a especificação Serial ATA 2.0, velocidade de transferência de dados até 3 GB/s.

IDE
- Dois conectores na placa para 4 dispositivos.
- Suporta o modo PIO 0-4, o modo Block e o modo bus master Ultra DMA 33/66/100/133.

Especificação Super I/O
- Chip: ITE IT8712F.
- Iniciativas para controlo do ambiente,

- Monitorização do hardware
- Controlador da velocidade da ventoinha
- Função "Smart Guardian" da ITE

Codec de som AC'97
▥ Chip: ALC850, suporta 8 canais.

10/100 LAN PHY
▥ PHY: Realtek 8201CL / Marvell 88E3016(optional), suporta a gestão de energia ACPI, PCI.

Segurança
▥ Tecnologia de firewall NVIDIA (apenas para os modelos nForce4 Ultra)
- Firewall nativa, para protecção do PC contra intrusos através da filtragem de tráfego não autorizado.
▥ NVIDIA Active Armor (apenas para os modelos nForce4 Ultra)
- Melhora a segurança da rede e proporciona aos utilizadores um ambiente rápido e seguro.

Tecnologia NVIDIA RAID
▥ RAID 0 função "disk striping" para um melhor desempenho por parte do sistema e das aplicações.
▥ RAID 1 suporta a função "disk mirroring" para tolerância de falhas, suporta as normas SATA e ATA-133 ao nível do controlador do disco.
▥ Suporta as funções RAID 0+1 "disk striping" e "mirroring" para um desempenho superior com tolerância de falhas. (apenas para os modelos nForce4 Ultra)
▥ Suporta a função RAID 5 para uma protecção inteligente dos dados e para um óptimo acesso aos dados. (apenas para os modelos nForce4 Ultra)

Conectores e ranhuras internos na placa
▥ Uma ranhura PCI Express x16:PCI-Ex16-1.
▥ Duas ranhuras PCI Express x1: PCI-Ex1_1 e PCI-Ex1_2.
▥ conector S/PDIF-Out e SPDIF-In (opcional)
▥ 1 conector CD-ROM para entrada de áudio
▥ conectores Ultra DMA 133/100/66/33 IDE
▥ ranhuras PCI
▥ portas Serial ATA II (nForce 410 jest dostarczana z dwoma portami SATA II)

Conectores I/O do painel traseiro
▥ porta série
▥ 1 porta impressora
▥ 1 tomada LAN RJ-45
▥ 1 porta para rato PS/2
▥ 1 porta para teclado PS/2
▥ 1 porta Firewire 1394A
▥ 4 portas USB 2.0
▥ 6 portas de áudio para saída de 8 canais de áudio.

POLAND

PROCESOR
- Obsługa LGA 775.
- Obsługa procesorów Intel Pentium 4 i Celeron D.
- Procesor dwurdzeniowy (Dual Core).
  - Obsługa Pentium D
  - Obsługa Pentium EE
- Magistrala Front Side Bus o następujących zakresach częstotliwości:
  - 533MT/s (zegar jądra 133MHz)
  - 800MT/s (zegar jądra 200MHz)
  - 1066MT/s (zegar jądra 266MHz)
- Obsługa technologii HT (Hyper-Threading)
- Obsługa technologii XD (Execute Disable Bit Technology).
- Obsługa technologii EIST (Enhanced Intel SpeedStep® Technology).
- Obsługa technologii Intel Extended Memory 64 Technology (Intel EM64T).

Chipset
- Mostek północny: nForce4 SPP Ultra.
- Mostek południowy: nForce 430 / nForce 410.
  - Obsługa firewalla NVIDIA. (wyłącznie dla nForce 430)
  - Obsługa programu narzędziowego NVIDIA nTune.
  - Obsługa procesora NVIDIA Secure Networking. (wyłącznie dla nForce 430)

Obsługiwane systemy operacyjne
- Obsługa Windows 2000 oraz Windows XP.
  Uwaga: Brak obsługi Windows 98SE oraz Windows ME.

Wymiary
- Obudowa ATX: 30.48cm (D) x 24.38cm (S)

Pamięć systemowa
- Obsługa DDR2 dual channel.
- Obsługa DDR2 400/533/667
- Maksymalna wielkość pamięci wynosi 4GB z obsługą 4 gniazd DIMM.

IDE
- Dwa wbudowane złącza z możliwością obsługi 4 urządzeń.
- Obsługa trybu PIO 0-4, Block Mode (tryb Blok) oraz tryb magistrali głównej Ultra DMA 33/66/100/133.

Serial ATA II
- nForce 430 / nForce 410. obsługa specyfikacji Serial ATA 2.0, transfer danych do 3GB/s.

Super I/O
- Chip: ITE IT8712F
- Inicjatywy kontroli środowiska,

- Monitor H/W
- Kontroler prędkości wentylatora
- Funkcja ITE "Smart Guardian"

Kodek dźwięku AC'97
- Chip: ALC850, obsługa 8 kanałów.

10/100 LAN PHY
- PHY: Realtek 8201CL / Marvell 88E3016(optional), obsługa zarządzania zasilaniem ACPI, PCI.

Bezpieczeństwo
- Technologia NVIDIA Firewall   (wyłącznie dla nForce 430)
  - - Własny firewall, zabezpieczający komputer przed intruzami poprzez filtrowanie nieautoryzowanego ruchu.
- NVIDIA Active Armor (wyłącznie dla nForce 430)
  - Zwiększa zabezpieczenia sieci i udostępnia użytkownikom szybkie i bezpieczne środowisko.

Technologii NVIDIA RAID
- RAID 0 striping dysku (paskowanie danych) w celu uzyskania najwyższej
- wydajności systemu i aplikacji.
- Obsługa RAID 1 mirroring dysku (lustrzane odbicie) dla zapewnienia tolerancji
- błędów, obsługa standardów kontrolera dysków SATA oraz ATA-133.
- RAID 0+1 z paskowaniem danych i mirroringiem celu zapewnienia najwyższej
- wydajności z tolerancją błędu. (wyłącznie dla nForce 430)
- RAID 5 oferuje inteligentne zabezpieczenie danych i optymalny dostęp do
- danych. (wyłącznie dla nForce 430)

Wewnętrzne, wbudowane gniazda oraz złącza
- Jedno gniazdo PCI-Express x16: PCI-Ex16-1.
- Dwa gniazda PCI-Express x1: PCI-Ex1_1 oraz PCI-Ex1_2.
- złącze wyjścia SPDIF i jedno złącze wejścia SPDIF (opcjonalne).1 złącze
- wejścia audio CD-ROM
- złącza Ultra DMA 133/100/66/33 IDE
- gniazda PCI
- porty Serial ATA II (nForce 410 inclui duas portas SATA II)

Złącza I/O na panelu tylnym
- port drukarki
- 1 port szeregowy
- 1 gniazdo LAN RJ-45
- 1 port myszy PS/2
- 1 port klawiatury PS/2
- 1 port Firewire 1394A
- 4 porty USB 2.0
- 6 portów audio obsługujące 8 kanałów wyjścia audio.

RUSSIAN

Процессор
- Поддерживает LGA 775.
- Поддерживает процессоры Intel Pentium 4 и Celeron D.
- Поддержка двуядерных процессоров
  - Поддерживает Pentium D
  - Поддерживает Pentium EE
- Поддерживаются следующие частоты системной шины:
  - 533 МГц (133 МГц базовая частота)
  - 800 МГц (200 МГц базовая частота)
  - 1066 МГц (266 МГц базовая частота)
- Поддерживает технологию Hyper-Threading (HT).
- Поддерживает технологию бита запрета исполнения (XD).
- Поддерживает улучшенную технологию Intel SpeedStep® (EIST).
- Поддерживает технологию Intel Extended Memory 64(Intel EM64T).

Набор микросхем
- Северный мост: nForce4 SPP Ultra.
- Южный мост: nForce 430 / nForce 410.
  - Поддерживает брандмауэр NVIDIA. (только для nForce 4$_{30}$)
  - Поддерживает программу NVIDIA nTune.
  - Поддерживает процессор NVIDIA Secure Networking Processor. (только для nForce 4$_{30}$)

Поддерживаемые операционные системы
- Поддерживает Windows 2000 и Windows XP.
  Примечание: не поддерживает Windows 98SE и Windows ME.

Размеры
- Форм-фактор ATX: 30.48 x 24.38cm (Д х Ш)

Системная память
- Поддержка двухканальной памяти DDR2.
- Поддерживает DDR2 400/ 533/ 667.
- Максимальный объем памяти 4 Гб в 4 гнездах DIMM.

Звуковой кодек AC'97
- Контроллер::ALC850, поддерживает 8-канальный звук.

Супер ввод-вывод
- Контроллер: ITE IT8712F.
- Функции управления режимом эксплуатации,
  - Монитор состояния оборудования
  - Контроллер скорости вентиляторов
  - Функция «Smart Guardian» компании ITE

Serial ATA II
- nForce 430 / nForce 410 поддерживает спецификацию Serial ATA 2.0, скорость передачи данных до или 3 Гб/с.

IDE
- Два встроенных разъема поддерживают подключение четырех жестких дисков IDE.
- Поддержка режимов PIO 0-4, Block Mode и Ultra DMA 33/66/100/133.

10/100 LAN PHY
- PHY: Realtek 8201CL / Marvell 88E3016(optional), Поддерживает управление питанием ACPI, PCI.

Безопасность
- Технология брандмауэра NVIDIA (только для nForce 4$_{30}$)
    - Встроены брандмауэр защищает ПК от взломщиков, отфильтровывая неразрешенный трафик.
- Межсетевой экран NVIDIA Active Armor (только для nForce 4$_{30}$)
    - Обеспечивает безопасность и скорость сетевых подключений.

Технологии NVIDIA RAID
- Чередование дисков RAID 0 обеспечивает самую высокую
- производительность системы и приложений.
- Зеркалирование дисков RAID 1 обеспечивает
- отказоустойчивость для дисков с интерфейсом SATA и ATA-133.
- Чередующиеся и зеркальные дисковые массивы RAID 0+1 обеспечивают максимальную производительность и отказоустойчивать. (только для nForce 4$_{30}$)
- RAID 5 обеспечивает интеллектуальную защиту данных и оптимизирует
- доступ к ним. (только для nForce 4$_{30}$)

Встроенные разьемы ввода-вывода
- Один слот PCI Express x16: PCI-Ex16-1.
- PCI Express x1: PCI-Ex1_1 и PCI-Ex1_2.
- Один входной разъем звукового сигнала с привода для компакт-дисков
- 1 разъем SPDIF-Out и 1 разъем SPDIF-In (в зависимости от
- комплектации)
- разъем Ultra DMA 133/100/66/33 IDE
- слота PCI
- порта Serial ATA II (nForce 410 оснащен двумя портами SATA II)

Разьемы ввода-вывода на задней панели
- последовательный порт
- 1 порт принтер
- 1 гнездо RJ-45 ЛВС
- 1 порт мыши PS/2
- 1 порт клавиатуры PS/2
- 1 порт 1394A Firewire
- 4 порта USB 2.0
- 6 звуковых портов поддерживают подключение 8 каналов аудиовыхода.

ARABIC

وحدة المعالجة المركزية (CPU)

■ تدعم LGA 775.

■ تدعم معلج Celeron D &. Intel Pentium 4

■ دعم وحدات المعلجة المركزية ذات اللب المزدوج.

- تدعم Pentium D

- تدعم Pentium EE

■ ناقل الجانب الأمامي عند نطاقات التردد التالية:

- 533 MT/S (133 ميجا هرتز في الساعة الرئيسية)

- 800 MT/S (200 ميجا هرتز في الساعة الرئيسية)

- 1066 MT/S (266 ميجا هرتز في الساعة الرئيسية)

■ تدعم تقنية مؤشرات الترابط التشعيبية (HT).

■ تدعم تقنية تنفيذ تعطيل البت (XD).

■ تدعم تقنية ®SpeedStep المحسنة من Intel (EIST)

■ تدعم تقنية الذاكرة الممتدة 64 من(Intel EM64T).

مجموعة الشرائح

■ الجسر الشمالي: nForce SPP Ultra.

■ الجسر الجنوبي: nForce 430 / nForce 410.

- **تدعم حائط لحماية عبر الإنترنت "NVIDIA".**(في nForce 430 فقط)

- **تدعم أداة المساعدة "NVIDIA nTune".**

- **تدعم معالج الشبكات المؤمنة "NVIDIA".**(في nForce 430 فقط)

نظم التشغيل المدعمة

■ يدعم Windows 2000 وWindows XP.

ملاحظة: لا يوجد دعم لنظامي تشغيل Windows 98SE وWindows ME.

الأبعاد

■ عامل نموذج ATX: 30.48 سم (الطول) × 24.38 سم (العرض)

ذاكرة النظم

■ دعم الذاكرة DDR2 ثنائية القناة.

■ تدعم DDR2 400/ 533/667.

■ **أقصى مساحة للذاكرة 4 جيجابايت، مع دعم 4 منافذ DIMM.**

سلسلة ATA II

■ وحدة تحكم متكاملة مع nForce 410 / nForce 430.

■ يتوافق NF4-SLI-CPM مع مواصفات SATA 2.0 وذلك بخصوص معدل نقل بيانات الذي يصل إلى 3 جيجا في الثانية.

دخل/خرج فائق

■ الشريحة: ITE IT8712F.

■ مبادرات التحكم في البيئة؛

- مراقبة H/W

- وحدة تحكم في سرعة المروحة

- وظيفة "الواقي الذكي" من ITE

IDE

▉ موصلان على اللوحة يدعملان أربعة أجهزة.

▉ دعم وضع الدخل/الخرج المبرمج (PIO) 4-0، ووضع القفل والأوضاع الرئيسية
للنقل من خلال الوصول الفائق للذاكرة مباشرة (Ultra DMA
.(33/66/100/133

شفرة صوت'97 AC

▉ الشريحة: ALC850 ,يدعم ثماني قنوات. ميجا بايت/الثانية.

توصيل شبكي بسرعة نقل 10/100

▉ PHY : Realtek 8201CL / Marvell 88E3016(optional) ودعم إدارة
الطاقة من خلال ACPI و PCI.

التأمين

▉ دعم تقنية NVIDIA Firewall(في nForce 430 فقط)

- **حل حائط الحماية الأصلي والتي تحمي الحاسب الشخصي من الدخلاء من
خلال تصفية المرور غير المصرح.**

▉ تقنية NVIDIA Active Armor (في nForce 430 فقط)

- تحسين مستوى سرية الشبكات مع توفير معدلات أعلى من السرعة والسرية
للمستخدم.

دعم تقنية NVIDIA RAID

▉ تقسيم قرص RAID لـ 0 إلى شرائط لتحقيق أفضل أداء للنظام والتطبيق.

▉ دعم عمل نسخة مطابقة من القرص RAID لـ 1 لدعم التسامح مع الخطأ بالنسبة لكل
من معايير جهاز التحكم في الأقراص SATA و ATA-133.

▉ RAID 0+1 **تخطيط وعكس الأقراص مع نسبة تسامح في وجود أخطاء. (**في
nForce 430 فقط)

▉ RAID 5 **حماية ذكية للبيانات وأفضل وصول للبيانات. (**في nForce 430 فقط)

منافذ توصيل وفتحات اللوحة الداخلية

▉ PCI-Express 1 × 16 فتحة: PCI-Ex16-1.

▉ PCI-Express 2 × 1 فتحات: PCI-Ex1_1 و PCI-Ex1_2.

▉ 1 منفذ توصيل خرج SPDIF-Out واحد ودخل SPDIF-In واحد (اختياري)

▉ 1 منفذ توصيل دخل صوت CD-ROM واحد

▉ 2 منفذا توصيل Ultra DMA 133/100/66/33 IDE

▉ 4 فتحتان PCI

▉ 4 منفذان SATA II (يأتي nForce 410 بمنفذين SATA II)

موصلات المدخلات/المخرجات باللوحة الخلفية

▉ 1 منفذ تسلسي

▉ 1 منفذ طابعة

▉ 1 قابس RJ-45 LAN

▉ 1 منفذ ماوس PS/2

▉ 1 منفذ لوحة مفاتيح PS/2

▉ 1 منفذ 1394A Firewire

▉ 4 منافذ USB 2.0

▉ 6 منافذ صوتية تدعم تسهيلات خرج صوت 8 قنوات.

JAPANESE

CPU
▨ LGA 775 をサポート。
▨ Intel Pentium 4 プロセッサをサポート。
▨ デュアコア CPU をサポート。
 - Pentium D をサポート。
 - Pentium EE をサポート。
▨ 次の周波数範囲でフロントサイドバス:
 - 533MT/s (133MHz コアクロック)
 - 800MT/s (200MHz コアクロック)
 - 1066MT/s (266MHz コアクロック)
▨ ハイパースレッドテクノロジ(HT)をサポート。
▨ エギュゼキュート・ディスエーブル・ビット・テクノロジ(XD)をサポート。
▨ エンハンスト・Intel SpeedStep®テクノロジ (EIST)をサポート。
▨ インテル・エクステンデッド・メモリ 64 テクノロジ (Intel EM64T) をサポート・

チップセット
▨ ノースブリッジ: nForce4 SPP Ultra。
▨ サウスブリッジ: nForce 430 / nForce 410。
 - NVIDIA ファイアウォールをサポート。
 - NVIDIA nTune ユーティリティをサポート。 (nForce 430 のみ)
 - NVIDIA セキュアネットワーキングプロセッサをサポート。 (nForce 430 のみ)

サポートするオペレーティングシステム
▨ Windows 2000、Windows XP をサポート。
 注: Windows 98SE と Windows ME では対応していません。

サイズ
▨ ATX フォームファクタ: 30.48cm (長さ) x 24.38cm (幅)

システムメモリ
▨ デュアルチャンネル DDR2 をサポート。
▨ DDR2 400/533/667 をサポート。
▨ 最大メモリ容量 4GB、4 つの DIMM ソケットをサポート。

シリアル ATA II
▨ nForce 430 / nForce 410 シリアル ATA 2.0 仕様をサポート、最大 3GB/秒のデータ転送速度。

IDE
▨ 2 つのオンボードコネクタが 4 つのデバイスをサポート。
▨ PIO モード 0-4、ブロックモード、ウルトラ DMA 33/66/100/133 バス・マス

■ ターモードに対応。

スーパー I/O

■ チップ: ITE IT8712F。
■ 環境コントロールイニシアチブ、
  - H/W モニタ
  - ファン速度コントローラ
  - ITE「スマート・ガーディアン」機能

AC'97 オーディオ サウンド・コデック

■ チップ: ALC850, 8 チャンネルをサポート。

10/100 LAN PHY

■ PHY：Realtek 8201CL / Marvell 88E3016(optional), ACPI, PCI 電源
  管理をサポート。

Security セキュリティ

■ NVIDIA ファイアウォールテクノロジ(nForce 430 のみ)
  - - ネーティブなファイアウォールソリューションが、不正ト
    ラヒックのフィルタリングによる侵入から PC を保護します。
■ NVIDIA Active Armor に対応 (nForce 430 のみ)
  - ネットワークのセキュリティを強化し、ユーザに速くて安全な
    環境を提供。

NVIDIA RAID テクノロジ

■ RAID 0 ディスクストライピングで最高のシステムおよびアプリ
  ケーション
  パフォーマンスを実現。
■ RAID 1 ディスクミラーリングがフォールトトレランスをサポー
  ト,
■ SATA と ATA-133 ディスクコントローラ標準を共にサポート。
■ フォールト トレランスのある最高性能を実現するための RAID
  0+1 ディスク ストライピングおよびミラーリング機能。(nForce
  430 のみ)
■ スマートなデータ保護および最適なデータ アクセスを提供する
  RAID 5。(nForce 430 のみ)

内部オンボードスロットとコネクタ

■ PCI-Express x16 スロット(x1): PCI-Ex16-1。
■ PCI-Express x1 スロット(x2): PCI-Ex1_1 と PCI-Ex1_2。
■ CD-ROM オーディオインコネクタ(x1)
■ S/PDIF アウ(x1) と S/PDIF イン(x1) (オプション) コネクタ
■ Ultra DMA 133/100/66/33 IDE コネクタ(x2)
■ PCI スロット(x4)
■ シリアル ATA II ポート(x4) (nForce 410 には SATA II ポートが 2
  つ搭載されています)

背面パネル I/O コネクタ

- シリアルポート(x1)
- プリンター ポート (x1)
- RJ-45 LAN ジャック(x1)
- PS/2 マウスポート(x1)
- PS/2 キーボードポート(x1)
- 1394A Firewire ポート(x1)
- USB 2.0 ポート(x4)
- 6 つのオーディオポートが 8 つのチャンネルオーディオアウト機能をサポート。

01/24, 2006

TForce4 U 775 BIOS Setup

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.

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 AMD 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

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**
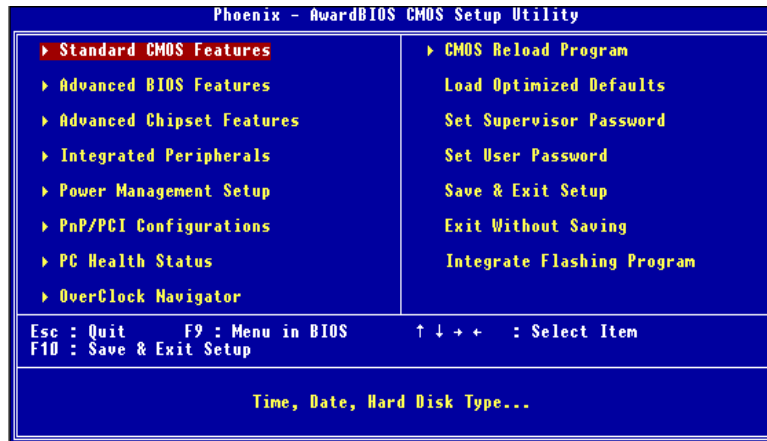
Standard CMOS Features

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.

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.

OverClock Navigator Engine

ONE provides two powerful overclock engines, MOS & AOS for both
overclock expertises and beginners.

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:
```

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
```

Integrate Flashing Program

This is a very safe way to upgrade BIOS.

By pressing "Enter" key for three times, and the upgrading process will be completed easily.

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

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**
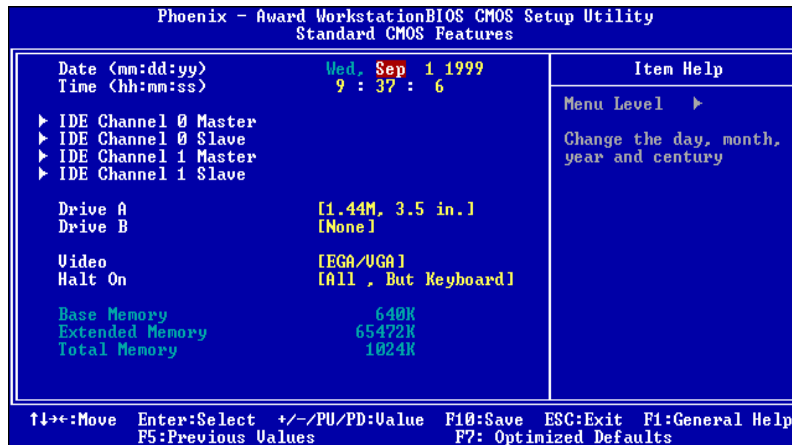
Main Menu Selections

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

Item	Options	Description
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.

Item	Options	Description
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**
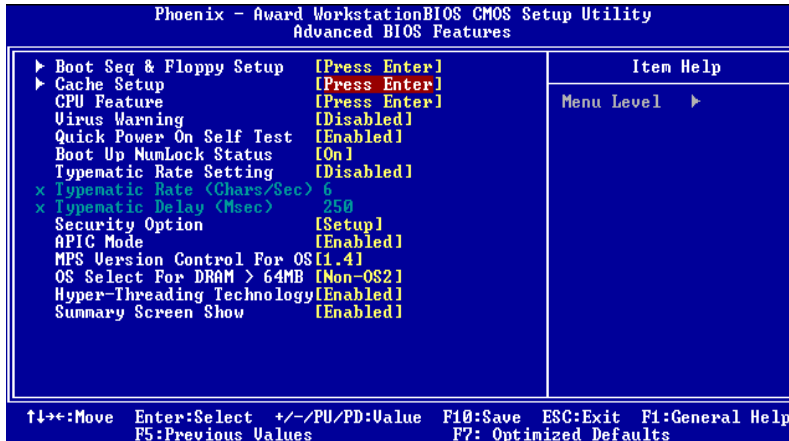
Boot Seq & Floppy Setup
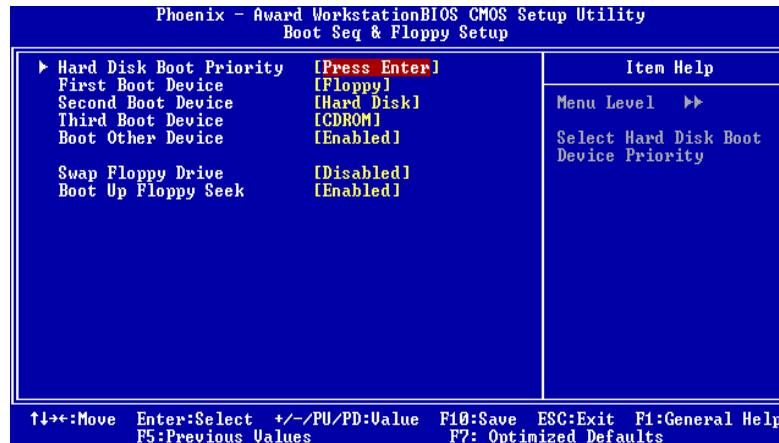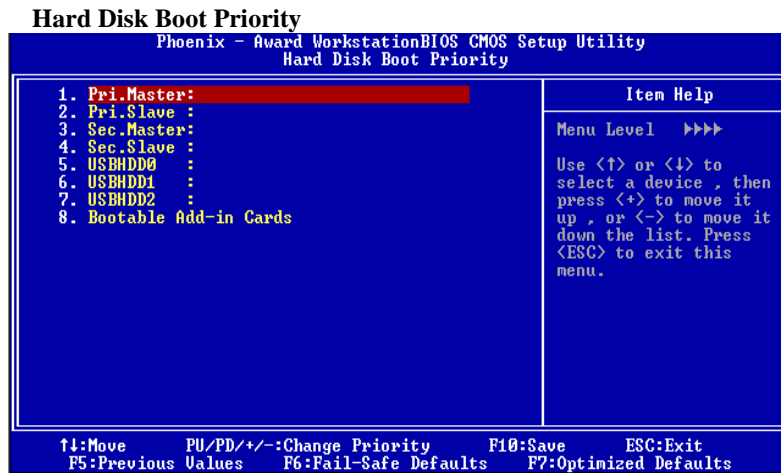
Hard Disk Boot Priority

```
       Phoenix - Award WorkstationBIOS CMOS Setup Utility
                    Hard Disk Boot Priority

   1. Pri.Master:                              Item Help
   2. Pri.Slave :
   3. Sec.Master:                          Menu Level   ▶▶▶▶
   4. Sec.Slave :
   5. USBHDD0   :                          Use <↑> or <↓> to
   6. USBHDD1   :                          select a device , then
   7. USBHDD2   :                          press <+> to move it
   8. Bootable Add-in Cards                up , or <-> to move it
                                           down the list. Press
                                           <ESC> to exit this
                                           menu.




   ↑↓:Move     PU/PD/+/-:Change Priority     F10:Save     ESC:Exit
   F5:Previous Values    F6:Fail-Safe Defaults    F7:Optimized Defaults
```

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.
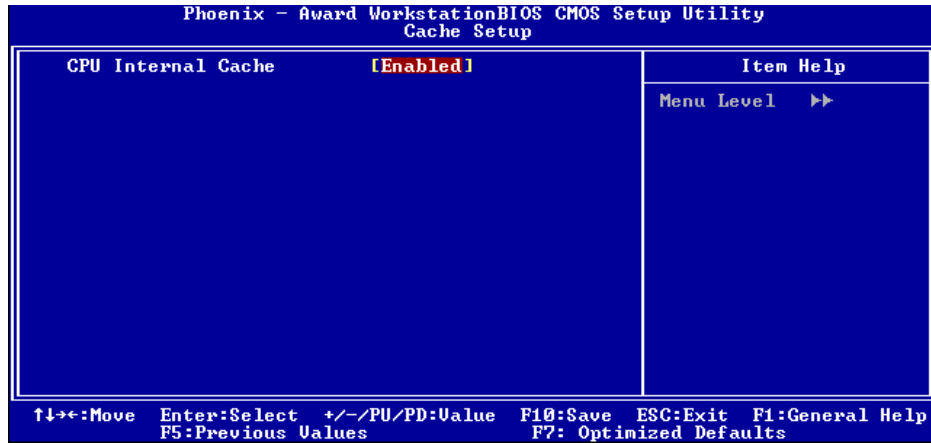
Cache Setup

```
         Phoenix - Award WorkstationBIOS CMOS Setup Utility
                            Cache Setup
┌──────────────────────────────────────────┬─────────────────────┐
│  CPU Internal Cache       [Enabled]       │      Item Help      │
│                                           │                     │
│                                           │ Menu Level    ▶▶    │
│                                           │                     │
│                                           │                     │
│                                           │                     │
│                                           │                     │
│                                           │                     │
│                                           │                     │
│                                           │                     │
│                                           │                     │
├──────────────────────────────────────────┴─────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│         F5:Previous Values          F7: Optimized Defaults      │
└─────────────────────────────────────────────────────────────────┘
```

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

CPU Internal 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

```
        Phoenix - AwardBIOS CMOS Setup Utility
                       CPU Feature

 Delay Prior to Thermal      [16 Min]              Item Help
 Thermal Management          [Thermal Monitor 1]
 TM2 Bus Ratio               [ 0 X]             Menu Level    ▶▶
 TM2 Bus VID                 [0.8375V]
 Limit CPUID MaxVal          [Disabled]
 C1E Function                [Auto]
 Execute Disable Bit         [Enabled]
 Virtualization Technology   [Enabled]




 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
           F5:Previous Values              F7: Optimized Defaults
```
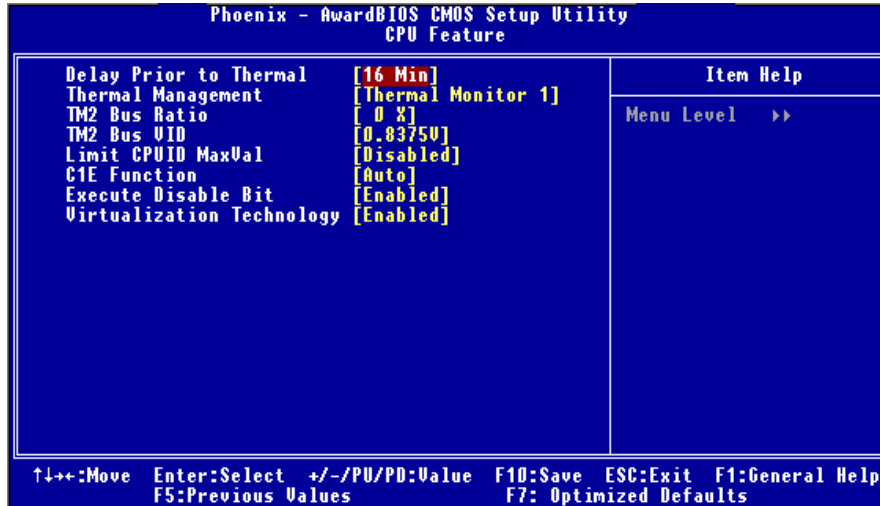
Delay Prior to Thermal
Set this item to enable the CPU Thermal function to engage after the specified time.
The Choices: 4 Min, 8 Min, **16Min** (default), 32 Min.

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-die sensor detects temperature increase.
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-die sensor detects temperature increase.
The Choices: 0.8375V (default), 0.8375-1.6000.

Limit CPUID MaxVal
Set Limit CPUID MaxVal to 3, it should be "Disabled" for Windows XP.
The Choices: Disabled (default), Enabled.

C1E Function
This item allow you to configure the Enhanced Halt State (C1E) function, which may reduce the power consumption of your system when the system is idle.
The Choices: Auto (default), Disabled.

Execute Disable Bit
This item allows you to configure the Execute Disabled Bit function, which protects your system from buffer overflow attacks.
The Choices: Enabled (default), Disabled.

Virtualization Technology
Virtualization Technology can virtually separate your system resource into several parts, thus enhance the performance when running virtual machines or multi interface systems.
The Choices: Enabled (default), Disabled.

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.

Disabled (default)	Virus protection is disabled.
Enabled	Virus protection is activated.

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.

Enabled (default)	Enable quick POST.
Disabled	Normal POST.

Boot Up NumLock Status

Selects the NumLock. State after power on.

On (default)	Numpad is number keys.
Off	Numpad is arrow keys.

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.
Disabled (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.

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.
Note: If the CPU type is AMD 939 Dual Core, this item will be always "Enabled".

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.

Hyper Threading Technology

This item allows you to enable / disable the Hyperthreading Technology

The Choices: Disabled, Enabled

Summary Screen Show

This item allows you to enable/ disable display the Summary Screen Show.
The Choices: Enabled (default), Disabled.

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**
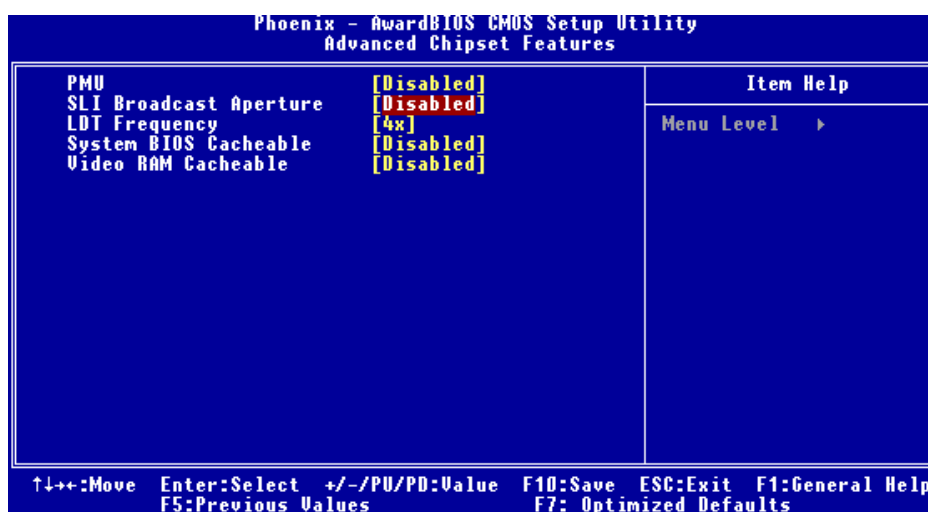
PMU
   The Choices: Auto (default), Enabled.

SLI Broadcast Aperture
Increase performance and reduce CPU bus traffic during SLI operation.
   The Choices: Auto (default), Enabled.

LDT Frequency
   The Choices: 4X (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 Cacheable
   The Choices: Disabled (default), Enabled.

5 Integrated Peripherals

■ **Figure 5. Integrated Peripherals**

```
         Phoenix - Award WorkstationBIOS CMOS Setup Utility
                     Integrated Peripherals
 ┌──────────────────────────────────────────┬──────────────────────┐
 │ ▶ IDE Function Setup       [Press Enter]  │      Item Help        │
 │ ▶ RAID Config              [Press Enter]  │                       │
 │ ▶ Onboard Device           [Press Enter]  │  Menu Level   ▶       │
 │   IDE HDD Block Mode       [Enabled]      │                       │
 │   POWER ON Function        [BUTTON ONLY]  │                       │
 │ x KB Power On Password      Enter         │                       │
 │ x Hot Key Power ON          Ctrl-F1       │                       │
 │   Onboard FDC Controller   [Enabled]      │                       │
 │   Onboard Serial Port 1    [3F8/IRQ4]     │                       │
 │   Onboard Parallel Port    [378/IRQ7]     │                       │
 │   Pararrel Port Mode       [SPP]          │                       │
 │ x ECP Mode Use DMA          3             │                       │
 │   PWRON After PWR-Fail     [Off]          │                       │
 │                                           │                       │
 │                                           │                       │
 │                                           │                       │
 ├──────────────────────────────────────────┴──────────────────────┤
 │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
 │        F5:Previous Values                 F7: Optimized Defaults  │
 └──────────────────────────────────────────────────────────────────┘
```

IDE Function Setup

```
         Phoenix - Award WorkstationBIOS CMOS Setup Utility
                       IDE Function Setup
 ┌──────────────────────────────────────────┬──────────────────────┐
 │   OnChip IDE Channel0      [Enabled]      │      Item Help        │
 │   Primary Master   PIO     [Auto]         │                       │
 │   Primary Slave    PIO     [Auto]         │  Menu Level   ▶▶      │
 │   Primary Master   UDMA    [Auto]         │                       │
 │   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 DMA transfer access  [Enabled]      │                       │
 │   Serial-ATA 1             [Enabled]      │                       │
 │   Serial-ATA 2             [Enabled]      │                       │
 │   IDE Prefetch Mode        [Enabled]      │                       │
 │                                           │                       │
 │                                           │                       │
 ├──────────────────────────────────────────┴──────────────────────┤
 │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
 │        F5:Previous Values                 F7: Optimized Defaults  │
 └──────────────────────────────────────────────────────────────────┘
```

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.

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 increased 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-ATA 1.
The Choices: Enabled (default), Disabled.

Serial-ATA 2
Enables support for Serial-ATA 2.
The Choices: Enabled (default), Disabled

IDE Prefetch Mode
The Choices: Enabled (default), Disabled.

RAID Config

Phoenix - Award WorkstationBIOS CMOS Setup Utility
RAID Config

				Item Help
RAID Enable		[Disabled]		
x SATA A Primary	RAID	Disabled		Menu Level ►►
x SATA A Secondary	RAID	Disabled		
x SATA B Primary	RAID	Disabled		
x SATA B Secondary	RAID	Disabled		

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values   F7: Optimized Defaults
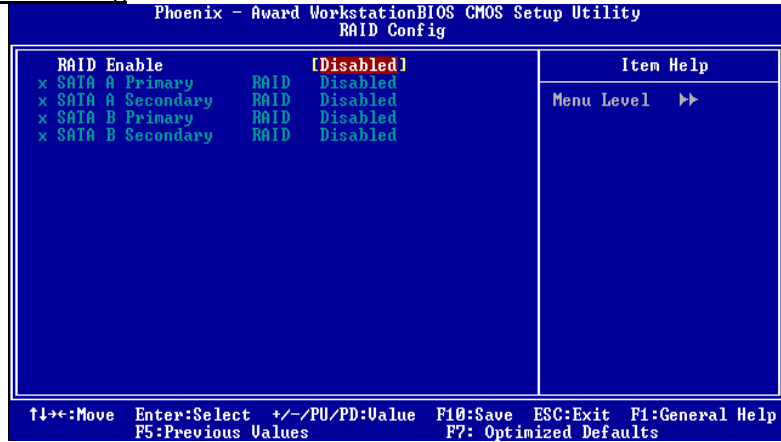
RAID Enable
The Choices: Disabled (default),Enabled.

ONBOARD DEVICE

Phoenix - Award WorkstationBIOS CMOS Setup Utility
Onboard Device

		Item Help
OnChip USB	[V1.1+V2.0]	
USB Keyboard Support	[Disabled]	Menu Level ►►
USB Mouse Support	[Disabled]	
AC97 Audio	[Auto]	
MAC Lan	[Auto]	
MAC Media Interface	[Pin Strap]	
Onboard Lan Boot ROM	[Disabled]	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values   F7: Optimized Defaults
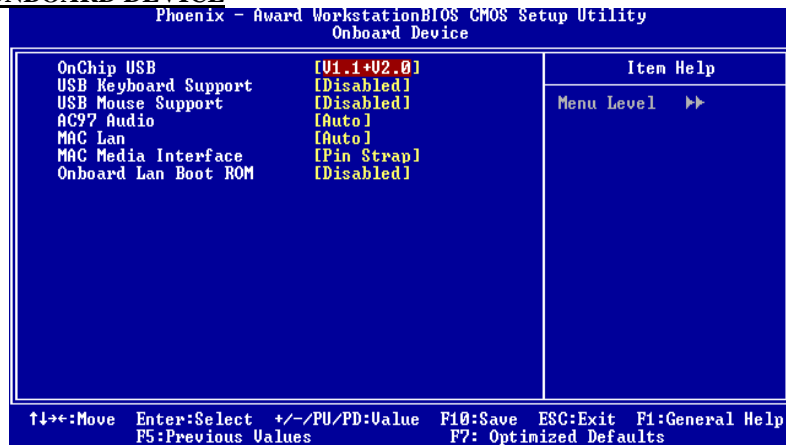
OnChip USB
This option should be enabled if your system has a USB installed on the system board. You will need to disable this feature if you add a higher performance controller.
The Choices: V1. 1+V2. 0 (default), Disabled, V1.1

USB keyboard Support
Enables support for USB attached keyboard.
The Choices: Disabled (default), Enabled

USB Mouse Support
Enables support for USB attached mouse.
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.

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 item allows you to choose the power on function.
The Choices: Button Only (default), Password, Hot Key, Mouse Left, Mouse Right, Any Key, Keyboard 98.

KB POWER ON Password

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

Hot Key Power ON

Input password and press Enter to set the Keyboard power on password.
The Choices: Ctrl-F1 (default), Ctrl-F2, Ctrl-F3, Ctrl-F4, Ctrl-F5, Ctrl-F6, Ctrl-F7, Ctrl-F8, Ctrl-F9, Ctrl-F10, Ctrl-F11, and Ctrl-F12.

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 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.

PWRON 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**

```
        Phoenix - Award WorkstationBIOS CMOS Setup Utility
                    Power Management Setup
  ┌────────────────────────────────────────────┬──────────────────────┐
  │ ACPI function            [Enabled]         │      Item Help       │
  │ ACPI Suspend Type        [S1(POS)]         │                      │
  │ Power Management         [User Define]     │ Menu Level    ▶      │
  │ Video Off Method         [DPMS Support]    │                      │
  │ HDD Power Down           [Disabled]        │                      │
  │ Soft-Off by PBTN         [Instant-Off]     │                      │
  │ WOL(PME#) From Soft-Off  [Disabled]        │                      │
  │ WOR(RI#) From Soft-Off   [Disabled]        │                      │
  │ USB Resume from S3       [Disabled]        │                      │
  │ Power-On by Alarm        [Disabled]        │                      │
  │ x Day of Month Alarm      0                │                      │
  │ x Time (hh:mm:ss) Alarm   14 : 0 : 17      │                      │
  │ Chassis Open Warning     [Disabled]        │                      │
  │                                            │                      │
  │                                            │                      │
  │                                            │                      │
  └────────────────────────────────────────────┴──────────────────────┘
  ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values          F7: Optimized Defaults
```

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

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.

Soft-Off by PWR-BTTN

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.

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**

```
        Phoenix - Award WorkstationBIOS CMOS Setup Utility
                      PnP/PCI Configurations
┌─────────────────────────────────────────────┬──────────────────────┐
│  Init Display First      [PCI Slot]          │     Item Help        │
│  Reset Configuration Data [Disabled]         │                      │
│                                              │  Menu Level    ►     │
│  Resources Controlled By  [Auto(ESCD)]       │                      │
│ x IRQ Resources             Press Enter      │                      │
│                                              │                      │
│  PCI/VGA Palette Snoop    [Disabled]         │                      │
│                                              │                      │
│  ** PCI Express relative items **            │                      │
│  Maximum Payload Size     [4096]             │                      │
│                                              │                      │
│                                              │                      │
│                                              │                      │
│                                              │                      │
│                                              │                      │
│                                              │                      │
├─────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│          F5:Previous Values              F7: Optimized Defaults      │
└─────────────────────────────────────────────────────────────────────┘
```

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.

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.

Disabled (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

■ **A、Figure 8. PC Health Status**
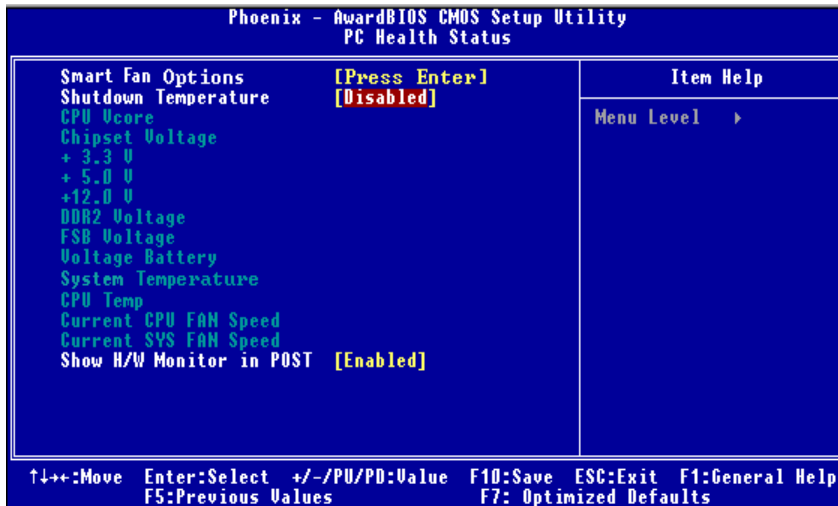
SmartFan Option
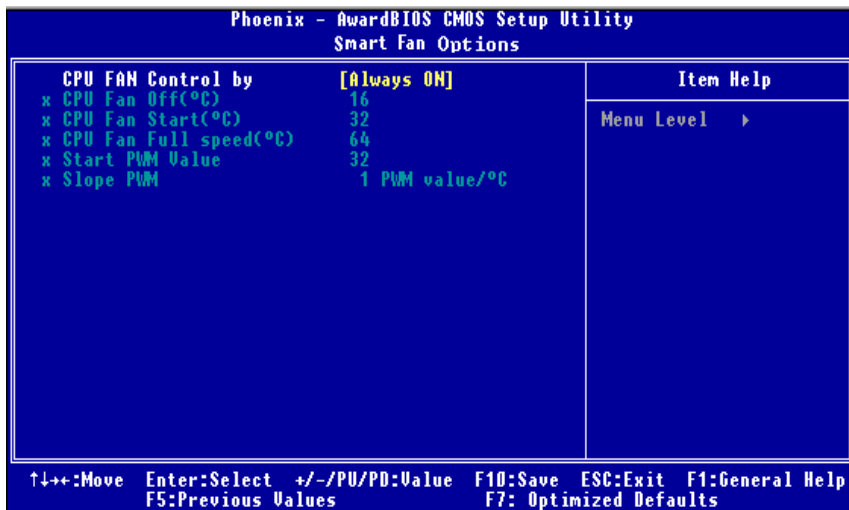
CPU Fan Control by
The Choice "smart" will reduce the noise of your CPU FAN.
The Choices: SMART, **Always On** (default).

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℃/140F, 65℃/149F, 70℃/158F, 75℃/167F.

CPU Vcore/ Chipset Voltage/+3.3V/ +5.0V/ +12.0V/ DDR2 Voltage / FSB Voltage/ Voltage Battery

Updates the system's voltage status automatically.

System Temp

This field displays the current temperature of the System.

CPU Temp

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

9 Over Clock Navigator

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                      OverClock Navigator Engine

     OverClock Navigator        [Normal]              Item Help
   x Auto Overclock System       V6-Tech Engine
   ===========================================       Menu Level    ▶
   x PCIE Frequency (MHz)        100.0000
   x FSB Turbo Mode              Disabled
   x System Clock Mode           Optimal
   x New FSB Speed (QDR)         Auto
     Current FSB Speed (QDR)     800.0 MHz
     Target FSB Speed (QDR)      800.0 MHz
   x New MEM Speed (DDR)         Auto
     Current MEM Speed (DDR)     533.3 MHz
     Target MEM Speed (DDR)      533.3 MHz
   x Performance Options         Press Enter
     ** CPU Spec Voltage **      1.3375V
     ** DDR2 Spec Voltage **     1.85V
     ** NB Spec Voltage **       1.40V
     CPU Voltage Regulator       [Default]
     DDR2 Voltage Regulator      [Default]
     NB Voltage Regulator        [Default]

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

OverClock Navigator

OverClock .Navigator is designed for beginners in overclock field.

Based on many test and experiments from BET, OverClock Navigator provides 3 default overclock configurations that are able to raise the system performance

The Choices: Normal (default), Autoate Overclock, Manual Overclock

Auto OverClock System

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                      OverClock Navigator Engine

     OverClock Navigator        [Automate Overclock]      Item Help
     Auto Overclock System      [ V6-Tech Engine]
   ===========================================        Menu Level    ▶
   x PCIE Frequency (MHz)        100.0000
   x FSB Turbo Mode              Disabled
   x System Clock Mode           Optimal
   x New FSB Speed (QDR)         Auto
     Current FSB Speed (QDR)     800.0 MHz
     Target FSB Speed (QDR)      800.0 MHz
   x New MEM Speed (DDR)         Auto
     Current MEM Speed (DDR)     533.3 MHz
     Target MEM Speed (DDR)      533.3 MHz
   x Performance Options         Press Enter
     ** CPU Spec Voltage **      1.3375V
     ** DDR2 Spec Voltage **     1.85V
     ** NB Spec Voltage **       1.40V
     CPU Voltage Regulator       [Default]
     DDR2 Voltage Regulator      [Default]
     NB Voltage Regulator        [Default]

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

The Overclock Navigator provides 3 different engines to help you overclock your system. These engines will boost your system performance to different level.

The Choices:

- **V6 Tech Engine**

  This setting will raise about 5%~10% of whole system performance.
- **V8 Tech Engine**

  This setting will raise about 15%~25% of whole system performance.
- **V12 Tech Engine**

  This setting will raise about 25%~30% of whole system performance.

Manual Overclock System (M.O.S.)

```
           Phoenix - Award WorkstationBIOS CMOS Setup Utility
                       OverClock Navigator Engine
 ┌─────────────────────────────────────────────────────┬──────────────────┐
 │   OverClock Navigator        [Manual Overclock]      │   Item Help      │
 │ x Auto Overclock System      V6-Tech Engine          │                  │
 │ ==================================================== │ Menu Level   ▶   │
 │   PCIE Frequency (MHz)        [100.0000]             │                  │
 │   FSB Turbo Mode             [Disabled]              │                  │
 │   System Clock Mode          [Optimal]              │                  │
 │ x New FSB Speed (QDR)          Auto                  │                  │
 │   Current FSB Speed (QDR)      800.0 MHz             │                  │
 │    Target FSB Speed (QDR)      800.0 MHz             │                  │
 │ x New MEM Speed (DDR)          Auto                  │                  │
 │   Current MEM Speed (DDR)      533.3 MHz             │                  │
 │    Target MEM Speed (DDR)      533.3 MHz             │                  │
 │   Performance Options        [Press Enter]           │                  │
 │   ** CPU Spec Voltage **       1.3375V               │                  │
 │   ** DDR2 Spec Voltage **      1.85V                 │                  │
 │   ** NB Spec Voltage **        1.40V                 │                  │
 │   CPU Voltage Regulator      [Default]              │                  │
 │   DDR2 Voltage Regulator     [Default]              │                  │
 │   NB Voltage Regulator       [Default]              │                  │
 └─────────────────────────────────────────────────────┴──────────────────┘
 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
           F5:Previous Values              F7: Optimized Defaults
```

MOS is designed for experienced overclock users.
It allows users to customize personal overclock setting.

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).

New MEM Speed<DDR>
Type in a new MEM speed or use +/- keys.
The choices: 400 (default).

Performance Options

Spread Spectrum Control

```
          Phoenix - AwardBIOS CMOS Setup Utility
                  Spread Spectrum Control
 ┌──────────────────────────────────────┬───────────────────────┐
 │  CPU Spread Spectrum    [Center Spread]│      Item Help        │
 │  PCIE Spread Spectrum   [Down Spread]  │                       │
 │  SATA Spread Spectrum   [Down Spread]  │   Menu Level    ▶▶▶   │
 │  LDT Spread Spectrum    [Center Spread]│                       │
 │                                        │                       │
 │                                        │                       │
 │                                        │                       │
 │                                        │                       │
 │                                        │                       │
 │                                        │                       │
 │                                        │                       │
 │                                        │                       │
 │                                        │                       │
 ├────────────────────────────────────────┴──────────────────────┤
 │ ↑↓←+:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
 │           F5:Previous Values          F7: Optimized Defaults   │
 └──────────────────────────────────────────────────────────────┘
```
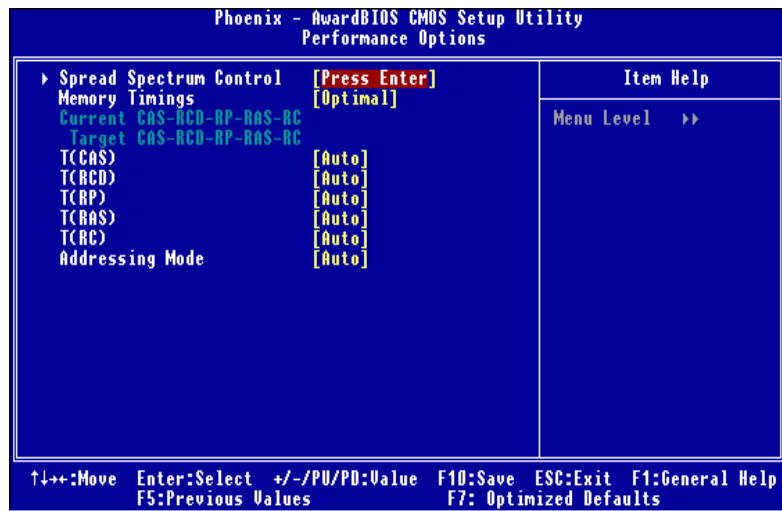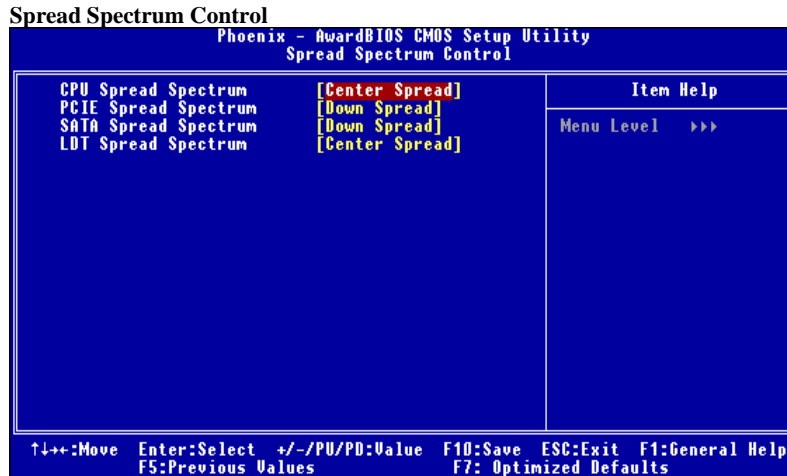
CPU Spread Spectrum
The Choices: Center Spread (default).

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
The Choices: Center Spread (default).

Memory Timings
The Choices: Optimal (default).

T (CAS)
The Choices: Auto (default).

T (RCD)
The Choices: Auto (default).

T (RP)
The Choices: Auto (default).

T (RAS)
The Choices: Auto (default).

T (RC)
The Choices: Auto (default).

Addressing Mode
The Choices: Auto (default).

CPU Voltage Regulator
This item allows you to select CPU Voltage Regulator.
The Choices: Default (default).

DDR2 Voltage Regulator
The Choices: Default (default).

NB Voltage Regulator
The Choices: Default (default).

FSB Voltage Regulator
The Choices: Default (default).

Integrated Memory Test

 Execute MEMTEST allows users to test memory compatibilities, and no extra devices or software are needed.

Step 1*:*

The default setting under this item is "Disabled", the condition should be change into "Enable" to proceed this test.

```
           Phoenix - Award WorkstationBIOS CMOS Setup Utility
                        OverClock Navigator Engine
┌─────────────────────────────────────────────┬────────────────────────┐
│   Overclock Navigator        [Normal]        │       Item Help        │
│   ========= Automate Overclock System ====== │                        │
│ x Auto Overclock System       V6 -Tech Engine│  Menu Level    ▶       │
│   ========== Manual Overclock System ======= │                        │
│   ** CPU Spec Voltage **       1.300V         │                        │
│   ** NB/SB Spec Voltage **     1.52V          │                        │
│   ** Memory Spec Voltage **    2.60V          │                        │
│ x CPU Voltage                  StartUp        │                        │
│ x NB/SB Voltage Regulator      1.52V          │                        │
│ x Memorry Voltage              2.60V          │                        │
│                                               │                        │
│ x CPU Frequency                200            │                        │
│ x Hammer CPU Multiplier        StartUp        │                        │
│ x HT Frequency                 Auto           │                        │
│ x PCIE Clock                   100Mhz         │                        │
│ x Memclock Frequency           200Mhz         │                        │
│ x 1T/2T Memory Timing          2T             │                        │
│ x DRAM Configuration           Press Enter    │                        │
│   Integated Memory Test       [Disabled]      │                        │
├─────────────────────────────────────────────┴────────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
│            F5:Previous Values              F7: Optimized Defaults       │
└───────────────────────────────────────────────────────────────────────┘
```

Step 2*:*

When the process is done, change the setting back from "Enabled" to "Disabled" to complete the test.

```
           Phoenix - Award WorkstationBIOS CMOS Setup Utility
                        OverClock Navigator Engine
┌─────────────────────────────────────────────┬────────────────────────┐
│   Overclock Navigator        [Normal]        │       Item Help        │
│   ========= Automate Overclock System ====== │                        │
│ x Auto Overclock System       V6 -Tech Engine│  Menu Level    ▶       │
│   ========== Manual Overclock System ======= │                        │
│   ** CPU Spec Voltage **       1.300V         │                        │
│   ** NB/SB Spec Voltage **     1.52V          │                        │
│   ** Memory Spec Voltage **    2.60V          │                        │
│ x CPU Voltage                  StartUp        │                        │
│ x NB/SB Voltage Regulator      1.52V          │                        │
│ x Memorry Voltage              2.60V          │                        │
│                                               │                        │
│ x CPU Frequency                200            │                        │
│ x Hammer CPU Multiplier        StartUp        │                        │
│ x HT Frequency                 Auto           │                        │
│ x PCIE Clock                   100Mhz         │                        │
│ x Memclock Frequency           200Mhz         │                        │
│ x 1T/2T Memory Timing          2T             │                        │
│ x DRAM Configuration           Press Enter    │                        │
│   Integated Memory Test       [Enabled]       │                        │
├─────────────────────────────────────────────┴────────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
│            F5:Previous Values              F7: Optimized Defaults       │
└───────────────────────────────────────────────────────────────────────┘
```

10 CMOS Reload Program (C.R.P.)

It allows users to save different CMOS settings into BIOS-ROM.

Users are able to reload any saved CMOS setting to change system configurations. Moreover, users are able to save ideal overclock setting when under overclock operation.There are 50 sets record addresses in total, and users are able to name the CMOS data

according to personal like.

```
        Phoenix - Award WorkstationBIOS CMOS Setup Utility
                       CMOS Reload Program
    Save Selection as        [Press Enter]        Item Help
    Reload Selection from    [Press Enter]
                                              Menu Level   ▶



                         BIOSTAR


                          C.R.P


                  CMOS Reload Program




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