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PACKAGE CHECKLIST

-  FDD Cable x 1
-  HDD Cable x 1
-  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)
-  SPDIF Cable x 1 (optional)

PACKAGE CHECKLIST..... 1

CHAPTER 1: INTRODUCTION..... 1

 1.1 *MOTHERBOARD FEATURES*..... 1

 1.2 *LAYOUT AND COMPONENTS*..... 3

CHAPTER 2: HARDWARE INSTALLATION 5

 2.1 *INSTALLING CENTRAL PROCESSING UNIT (CPU)*..... 5

 2.2 *SYSTEM MEMORY* 7

 2.3 *PERIPHERALS*..... 9

CHAPTER 3: OVERCLOCK QUICK GUIDE 20

 3.1: *T-POWER INTRODUCTION* 20

 3.2: *T-POWER BIOS FEATURE* 21

 3.3 *T-POWER WINDOWS FEATURE*..... 27

CHAPTER 4: USEFUL HELP 36

 4.1 *DRIVER INSTALLATION NOTE*..... 36

 4.2 *AWARD BIOS BEEP CODE*..... 37

 4.3 *EXTRA INFORMATION* 38

 4.4 *TROUBLESHOOTING*..... 40

GERMAN 41

FRENCH 42

ITALIAN..... 45

SPANISH 47

PORTUGUESE 49

POLAND 51

RUSSIAN..... 53

ARABIC..... 55

JAPANESE 57

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 Core2Duo (For Ver 2.0 only)
- Front Side Bus at the following frequency ranges:
 - 533MT/s (133MHzCore Clock)
 - 800MT/s (200MHzCore Clock)
 - 1066MT/s (266MHzCore 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: Intel 945P
- South Bridge: Intel ICH7.

Operating Systems

- Supports Windows 2000 and Windows XP.

Dimensions

- ATX Form Factor: 20.5cm (L) x 30.5cm (W)

System Memory

- Supports Dual Channel DDR2.
- Supports DDR2 400/533/667.
- 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

- Controller integrated in ICH7, supports SATA 2.0 specification, with data transfer rates up to 3Gb/s.

AC'97 Audio Sound Codec

- Chip: REALTEK ALC655, supports 6 channels audio output.

IDE

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

Gigabit Ethernet LAN

- PHY: RTL 8110S-32 / 8110SC. Supports 10Mb/s, 100Mb/s and 1GB/s auto-negotiation.

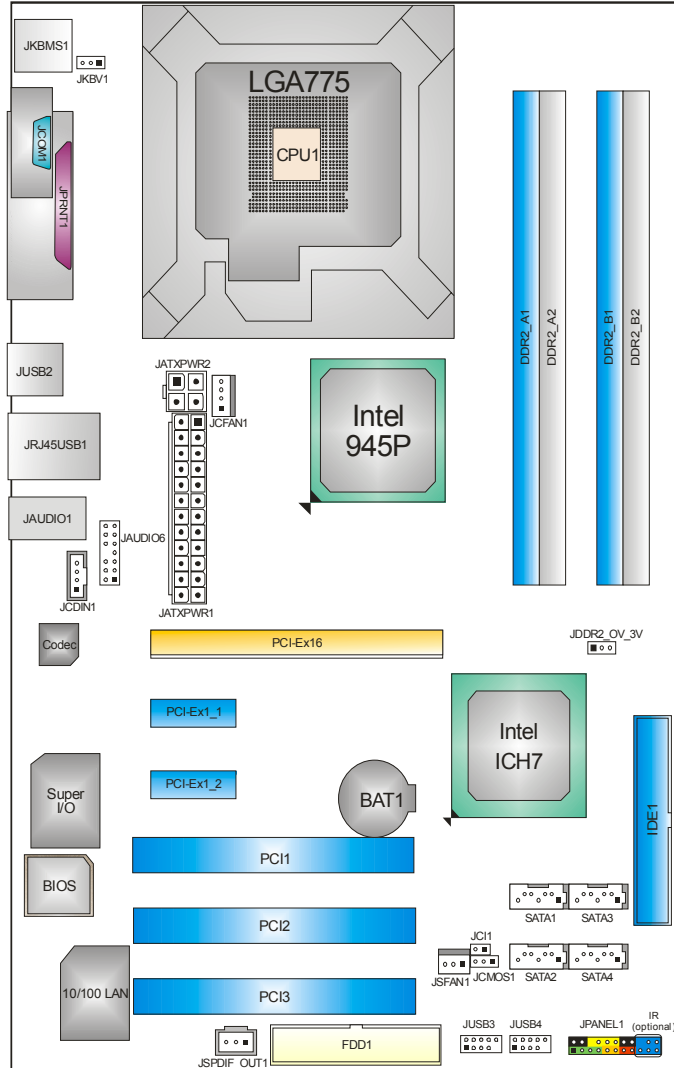
Internal On-board Slots and Connectors

- 1 floppy connector.
- 1 PCI-Express x16 slot.
- 2 PCI-Express x1 slots.
- 1 CD-ROM audio-in connector.
- 1 SPDIF-Out connector.
- 1 Ultra DMA 100/66/33 IDE connectors.
- 3 PCI slots.
- 4 SATA II ports.
- 2 USB headers support 4 USB 2.0 ports at front panel.
- 1 front panel header supports front panel facilities

Back Panel I/O Connectors and Ports

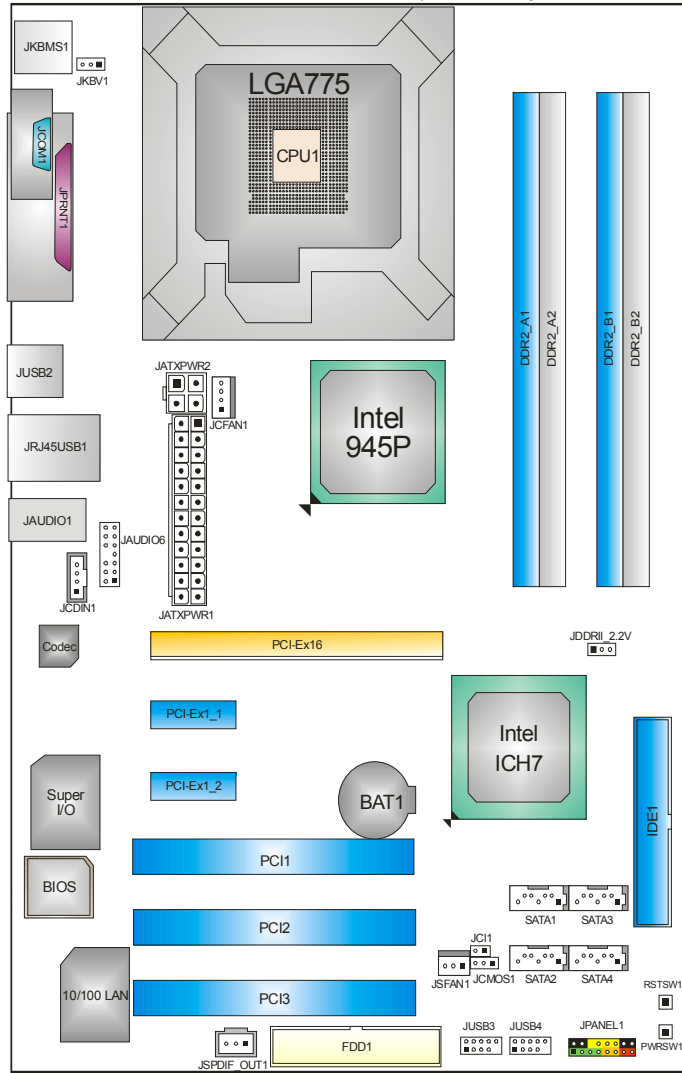
- 1 Serial Port.
- 1 Printer Port.
- 1 RJ-45 LAN jack.
- 1 PS/2 Mouse Port.
- 1 PS/2 Keyboard Port.
- 4 USB 2.0 Ports.
- 3 audio ports support 6 channels audio-out facilities.

1.2 LAYOUT AND COMPONENTS (VER 1.X)



Note: ■ represents the 1st pin.

1.3 LAYOUT AND COMPONENTS (VER 2.X)



Note: ■ represents the 1st pin.

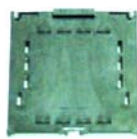
CHAPTER 2: HARDWARE INSTALLATION

2.1 INSTALLING CENTRAL PROCESSING UNIT (CPU)

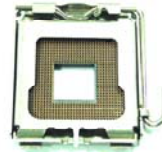
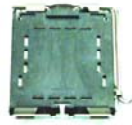
A. Central Processing Unit (CPU)

Special Notice:

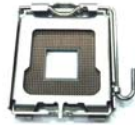
Remove Pin Cap before installation, and make good preservation for future use. When the CPU is removed, cover the Pin Cap on the empty socket to ensure pin legs won't be damaged.



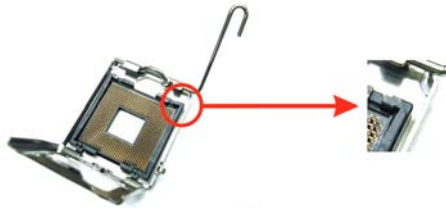
pin cap

**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.

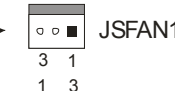
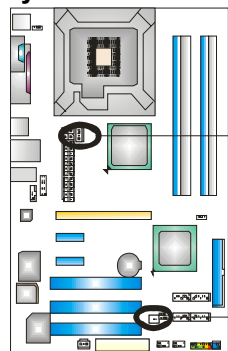


Step 4: Put the CPU Fan and heatsink assembly on the CPU and buckle it on the retention frame. Connect the CPU FAN power cable into the JCFAN1. This completes the installation.

B. About FAN Headers

CPU FAN Power Header: JCFAN1

System Fan Power Headers: JSFAN1



JCFAN1:

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

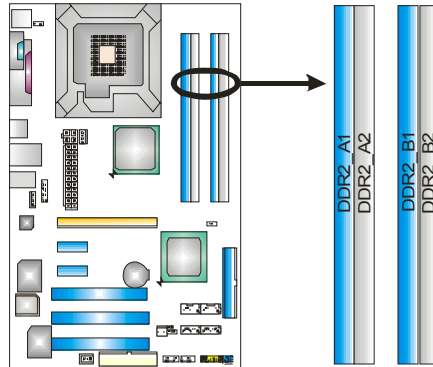
JSFAN1:

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

Note:

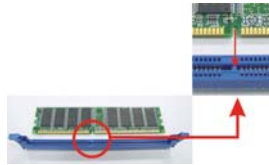
JCFAN1 reserves system cooling fan with Smart Fan Control utilities. It supports 4 pin head connector. When connecting with wires onto connectors, please note that the red wire is the positive and should be connected to pin#2, and the black wire is Ground and should be connected to GND.

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	Max is 4GB.
DDR2_A2	256MB/512MB/1GB *1	
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)

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

Notes:

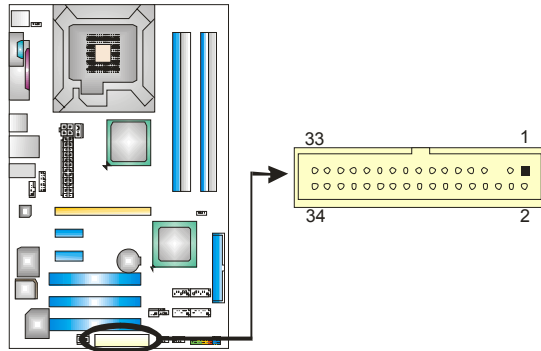
Using different memory chips on dual channel memory modules will result in unstable system performance.

2.3 PERIPHERALS

A. Card and I/O Slots:

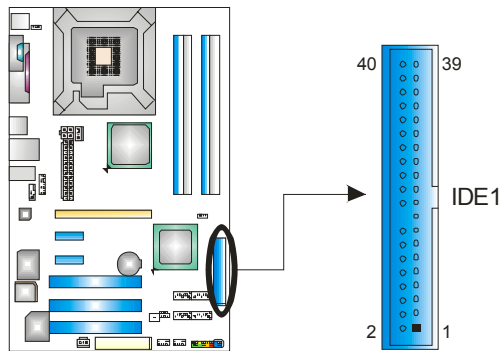
Floppy Disk Connector: FDD1

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.



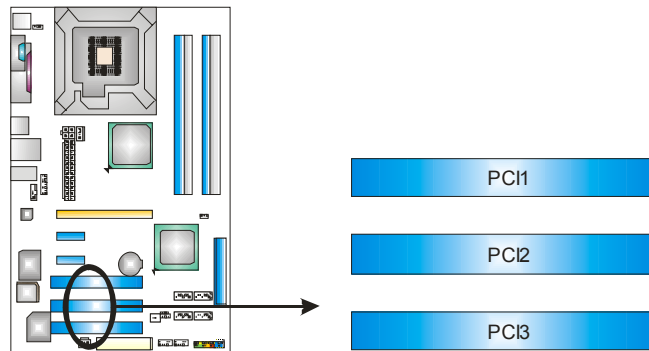
Hard Disk Connectors: IDE1

The motherboard has one 32-bit Enhanced PCI IDE Controllers that provide PIO Mode 0~5, Bus Master, and Ultra DMA 33/66/100/133 functionality. The IDE connectors can connect a master and a slave drive, so you can connect 2 hard disk drives.



Peripheral Component Interconnect Slots: PCI1~PCI3

This motherboard is equipped with 3 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.



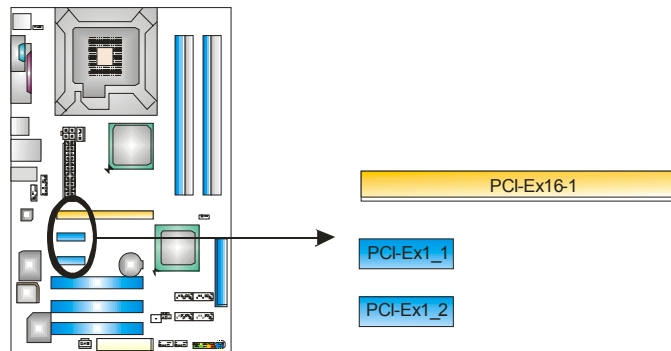
PCI-Express Slots: PCI-Ex16-1/PCI-Ex1_1/PCI-Ex1_2

PCI-Ex16-1:

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

PCI-Ex1_1/PCI-Ex1_2:

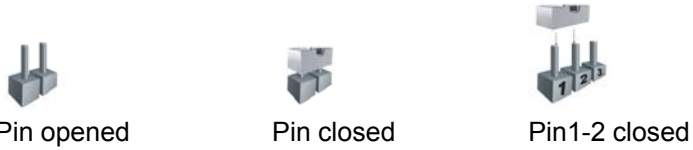
PCI Express 1.0a compliant.
Maximum bandwidth is up to 250MB/s per direction.



B. Connectors and Headers:

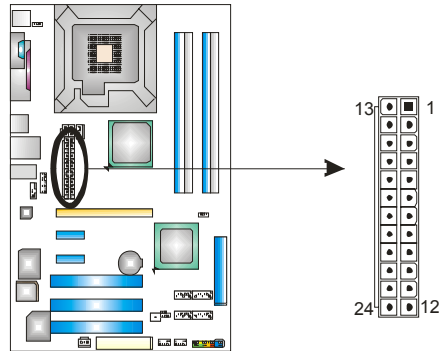
How to setup Jumpers

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”.



ATX Power Source Connector: JATXPWR1

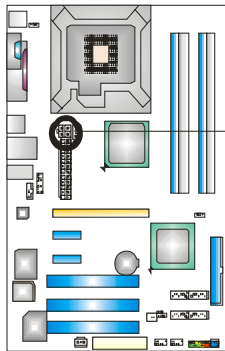
JATXPWR1 allows user to connect 24-pin power connector on the ATX power supply.



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.

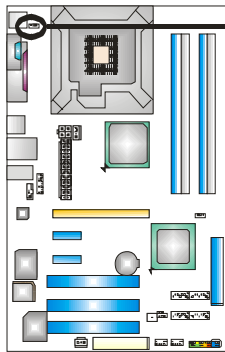


Pin	Assignment
1	+12V
2	+12V
3	Ground
4	Ground

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

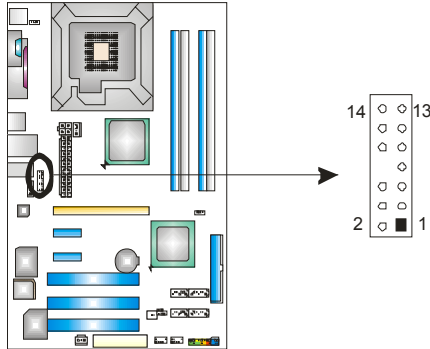


Pin 2-3 close

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: JAUDIO6

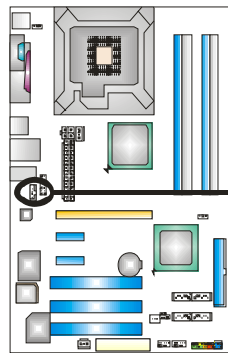
This connector will allow user to connect with the front audio output headers on the PC case. It will disable the output on back panel audio connectors.



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

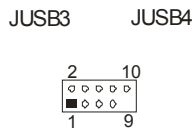
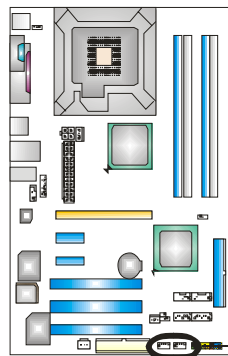
This connector allows user to connect the audio source from a variety of devices, like CD-ROM, DVD-ROM, PCI sound card, PCI TV tuner card etc..



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

Headers for USB Ports at Front Panel: JUSB3~JUSB4

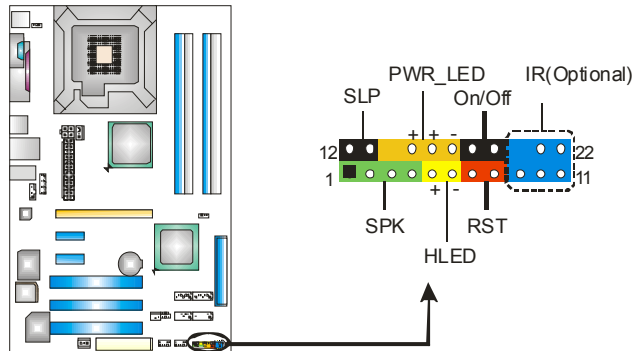
This connector allows user to connect additional USB cables at PC front panel, and also can be connected with internal USB devices, like USB card reader.



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

JPANEL1: Header for Front Panel Facilities

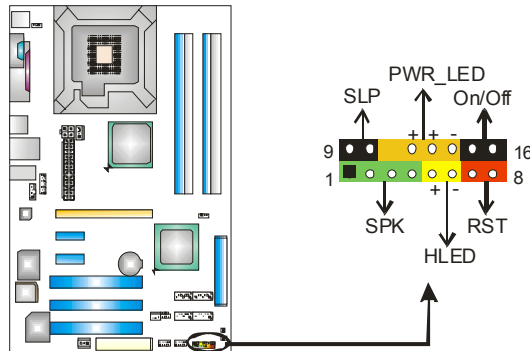
This 16-pin connector includes Power-on, Reset, HDD LED, Power LED, Sleep button, speaker Connection. It allows user to connect the PC case's front panel switch functions.



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

JPANEL1: Header for Front Panel Facilities (Ver 2.0 only)

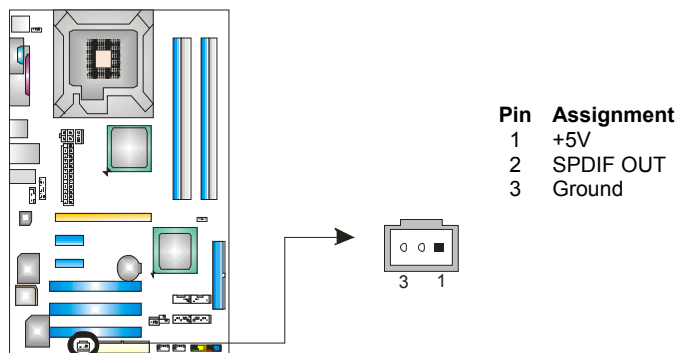
This 16-pin connector includes Power-on, Reset, HDD LED, Power LED, Sleep button, speaker Connection. It allows user to connect the PC case's front panel switch functions.



Pin	Assignment	Function	Pin	Assignment	Function
1	+5V	Speaker nector	9	Sleep control	Sleep button
2	N/A		10	Ground	
3	N/A		11	N/A	N/A
4	Speaker	Hard drive LED	12	Power LED (+)	Power LED
5	HDD LED (+)		13	Power LED (+)	
6	HDD LED (-)		14	Power LED (-)	
7	Ground	Reset button	15	Power button	Power-on button
8	Reset control		16	Ground	

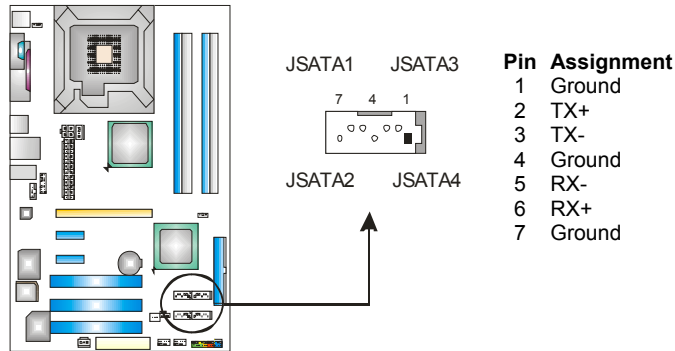
Digital Audio-out Connector: JSPDIF_OUT1

This connector allows users to connect the PCI bracket SPDIF output header.



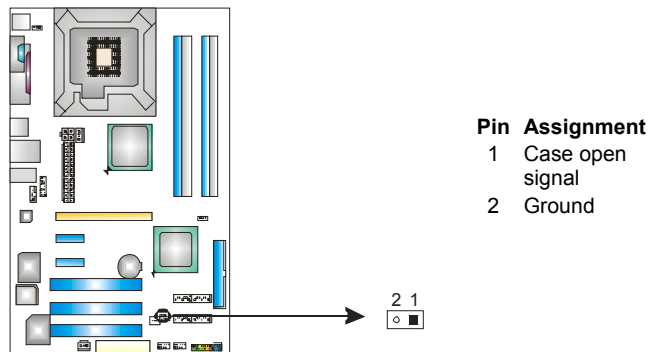
Serial ATA Connectors: JSATA1~JSATA4

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.



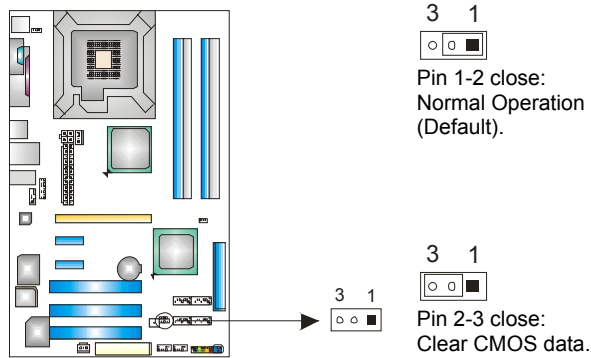
Case Open Header: JCI1

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.



Clear CMOS Header: JCMOS1

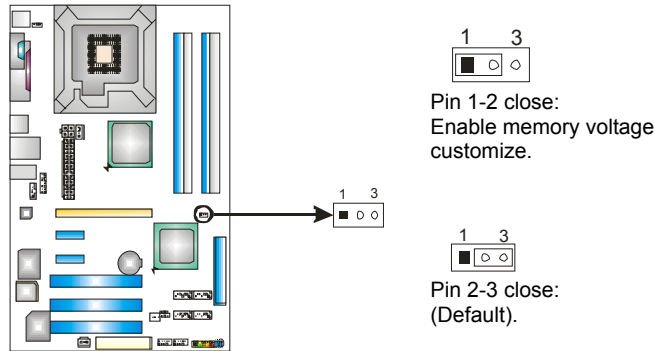
By placing the jumper on pin 2-3, it allows user to restore the BIOS safe setting and the CMOS data, please carefully follow the procedures to avoid damaging the motherboard.

**※ 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 = 2.3V
(JDDR1_2.2V in Ver 2.0)**

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



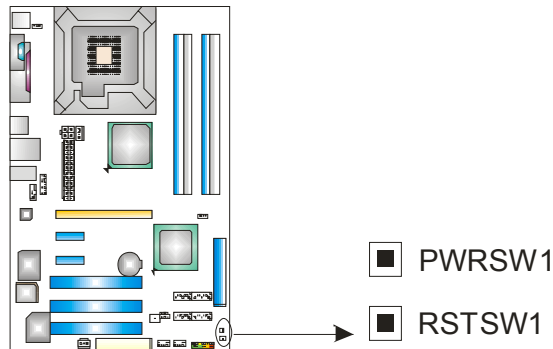
Note:

1. When “JDDR =2.3V” jumper cap is placed on Pin 1-2, memory voltage will be fixed at 2.3V automatically, and can’t be adjusted under COMS setup.
2. When “JDDR =2.3V” jumper cap is placed on Pin 2-3, memory voltage can be manually adjusted under CMOS setup.

Before setting memory voltage overclocking, please make sure that your DDR supports up to 2.3V. (Consult your DDR memory module supplier)

On-board buttons (Ver 2.0 only)

There are 2 on-board buttons



PWR SW1:

This is an on-board Power Switch button

RST SW1:

This is an on-board Reset button

CHAPTER 3: OVERCLOCK QUICK GUIDE

3.1: 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)

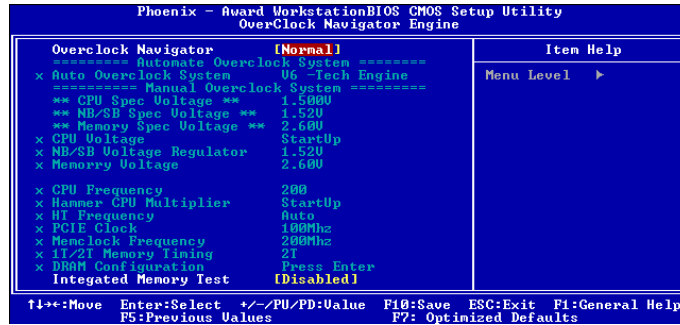
T-Power Windows Feature:

- Hardware Monitor
- Overclock Engine
- Smart Fan Function
- Life Update

3.2: T-POWER BIOS FEATURE

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

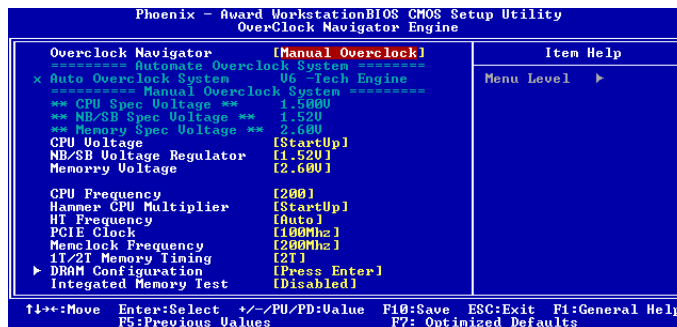
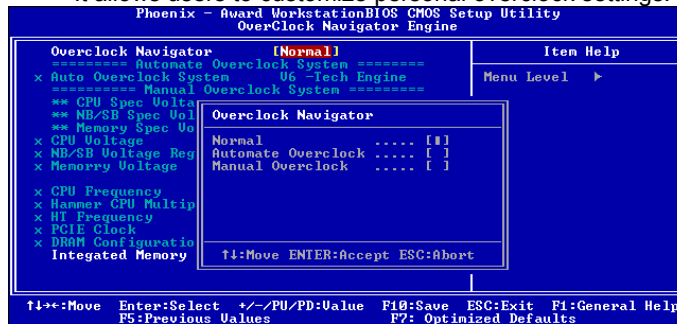
ONE provides two powerful overclocking engines: MOS and AOS for both Elite and Casual overclockers.



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 item allows you to select CPU Voltage Control.

The Choices: StartUp (default)

(Min=1.1000V, Max=2.0000V, with an interval of 0.0250V).

FSB Termination Voltage

The Choices: 1.2V (default), 1.3V, 1.4V, 1.5V.

NB/SB Voltage

The Choices: 1.5V (default), 1.6V, 1.7V, 1.8V.

Memory Voltage

The Choices: 1.8V (default), 2.0V, 2.1V, 2.2V.

CPU Clock Ratio

This item allows you to select the CPU Ratio.

Min= 8 Max= 50 Key in a DEC number.

The Choices: 8X (default).

CPU CLOCK

This item allows you to select CPU Clock, and CPU over clocking.

Min= 133 Max= 400 Key in a DEC number.

The Choices: default value varies with CPU installed.

Memory Overclock Setting:**System Memory Frequency**

This item allows you to select the HT Frequency.

The Choices: 400MHz, 533MHz, 667MHz, Auto (default).

PCI-Express Overclock Setting:**PCI Clock Mode**

The Choices: 33.33MHz, 33.80MHz, 34.28MHz, 34.78

MHz, 35.29MHz, 35.82 MHz, 36.36 MHz, 36.92 MHz, **33.33**

MHz (default).

PCI-E Frequency

This item allows you to select the PCI-E Frequency.

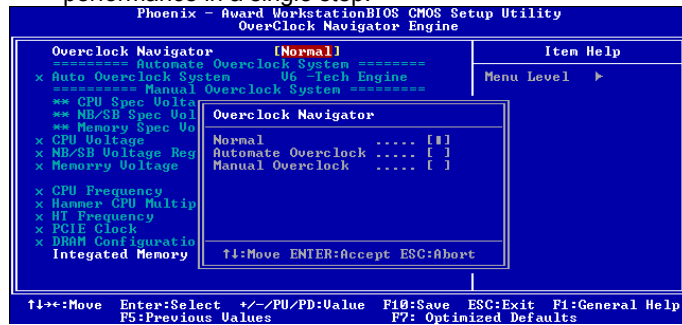
The Choices: Auto (default), 100MHz

150MHz. (Min=100MHz, Max=150MHz).

Automatic Overclock System (A.O.S.)

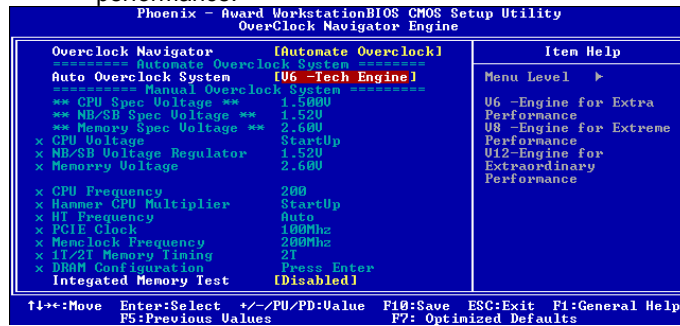
For beginners in overclock field, BET had developed an easy, fast, and powerful feature to increase the system performance, named A.O.S.

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.



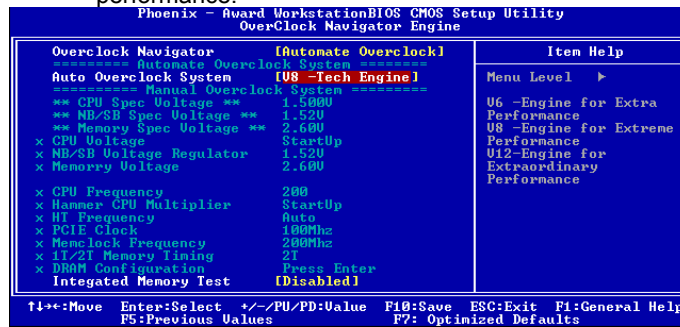
V6 Tech Engine:

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



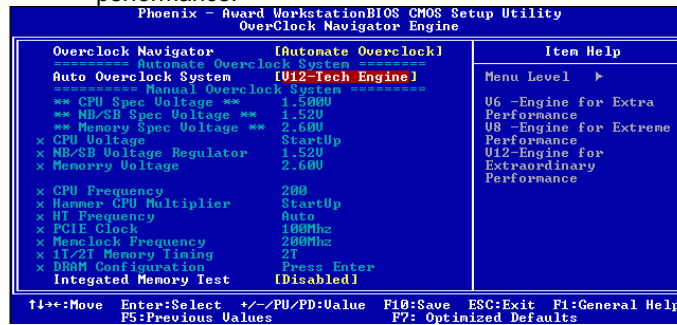
V8 Tech Engine:

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



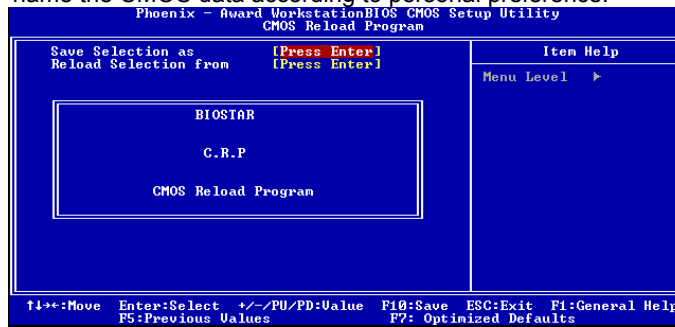
V12 Tech Engine:

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.

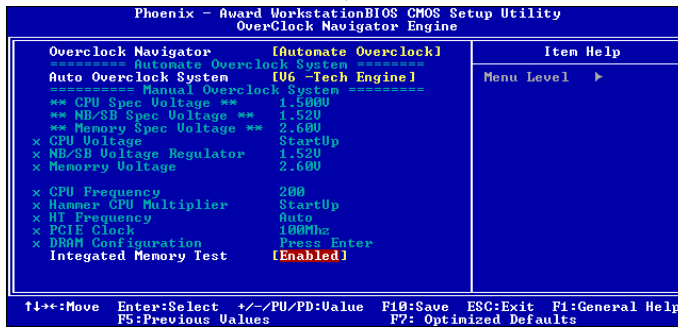
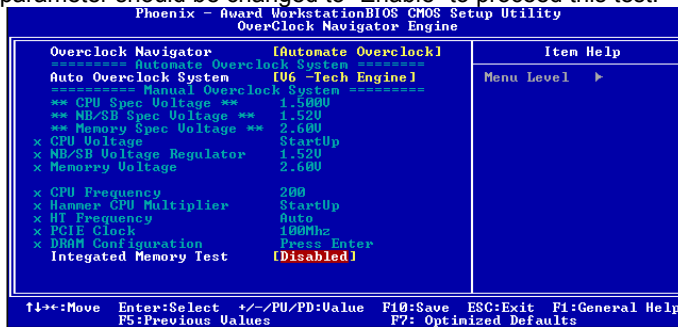


C. Memory Integration Test (M.I.T.):

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.

3.3 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.

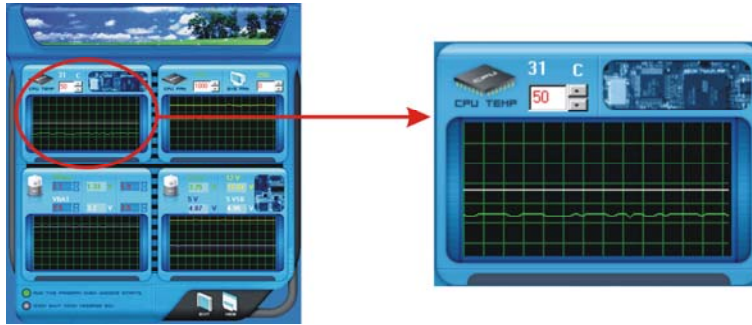
iv. Hide

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.

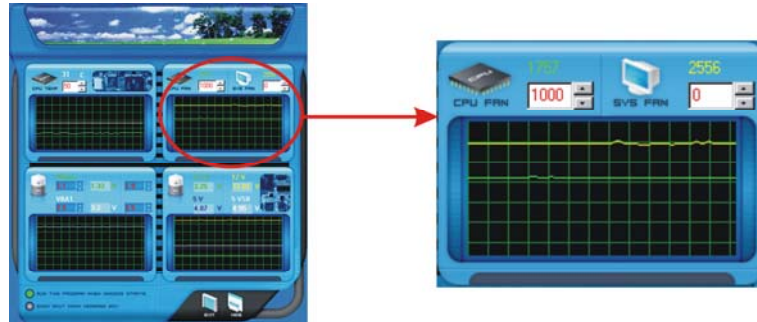


By adjusting , users can easily configure the upper limit of CPU temperature for system operating.

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  would change to .

FAN Speed



By adjusting , 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  would change to .



CPU/Battery Voltage



i. VCore


This item displays the CPU voltage, represented by a light blue line.



Users can set the upper and lower limit by adjusting  to monitor the CPU operating voltage.

If CPU voltage is higher or lower than the set value, the status line will change into a red warning line, and a warning sound will alert you. Also, the system tray icon  will change to .

ii. VBAT

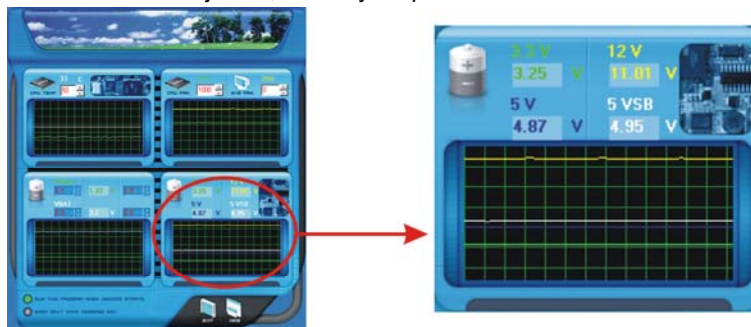
This item displays the CMOS battery voltage, represented by a light green line.

Users can set the upper and lower limit by adjusting  to monitor the status of battery voltage.

If battery voltage is higher or lower than the set value, the status line will change to a red warning line, and a warning sound will alert you. Also, the system tray icon  will change to .

Reference data

This column represents the status of power supply voltage and cannot be adjusted, it is only for present status reference.



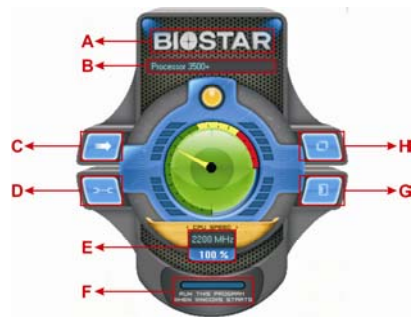
B. Overclocking Configurations

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 1



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  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  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  can configure VGA card overclocking. And this function helps to increase VGA card performance.

Range: 100MHz~150MHz.

Interval: 1MHz.

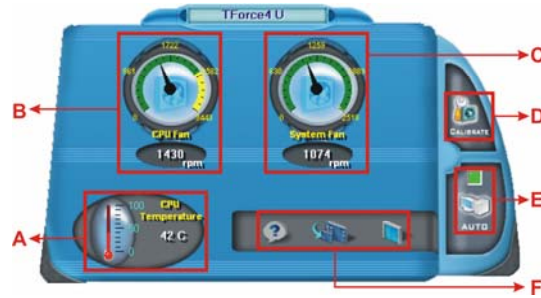
PCI Overclocking Setting:



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, click 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).

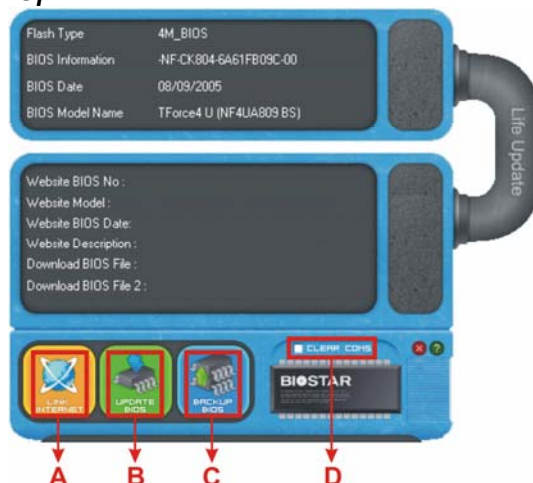
Click on this button again to close Smart Fan Function, and a screen as below would pop-up.

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 4: USEFUL HELP

4.1 DRIVER INSTALLATION NOTE

After you installed your operating system, please insert the Fully Setup Driver CD into your optical drive and install the driver for better system performance.

You will see the following window after you insert the CD



The setup guide will auto detect your motherboard and operating system.

Note:

If this window didn't show up after you insert the Driver CD, please use file browser to locate and execute the file **SETUP.EXE** under your optical drive.



Driver Installation

To install the driver, please click on the Driver icon. The setup guide will list the compatible driver for your motherboard and operating system. Click on each device driver to launch the installation program.



Software Installation

To install the software, please click on the Software icon. The setup guide will list the software available for your system, click on each software title to launch the installation program.



Manual

Aside from the paperback manual, we also provide manual in the Driver CD. Click on the Manual icon to browse for available manual.

Note:

You will need Acrobat Reader to open the manual file. Please download the latest version of Acrobat Reader software from <http://www.adobe.com/products/acrobat/readstep2.html>

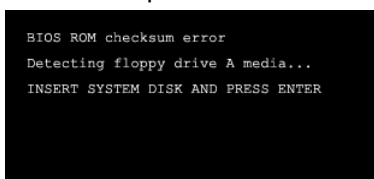
4.2 AWARD BIOS BEEP CODE

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

4.3 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.



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 download 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.

4.4 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 Core2Duo (nur für Ver 2.0)
- 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: Intel 945P.
- South Bridge: Intel ICH7

Betriebssystemunterstützung

- Unterstützt Windows 2000 und Windows XP.

Abmessungen

- ATX-Formfaktor: 20.5cm (L) x 30.5cm (B)

Systemspeicher

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

Serial ATA II

- Intel ICH7 unterstützt die Serial ATA 2.0-Spezifikation, datentransferrate von bis zu 3GB/s.

IDE

- 1 integrierte Anschlüsse für 2 Geräte.
- Unterstützt PIO-Modus 0-4, Blockmodus und Ultra DMA 33/66/100 Bus-Mastermodus.

Super E/A

- Chip: ITE IT8712F.
- Systemumgebungskontrolle:
 - Hardwareüberwachung
 - Lüfterdrehzahl-Controller
 - "Smart Guardian"-Funktion von ITE

AC'97 Sound-Codec

- Chip: ALC655, unterstützt 6 Kanäle.

10/100/1000 LAN

- Realtek 8110S-32 / 8110SC, Unterstützt 10Mb/s, 100Mb/s und 1GB/s Auto-Negotiation.

Interne integrierte Steckplätze und Anschlüsse

- 1 Diskettenlaufwerkanschluss.
- 1 PCI-Express x16-Steckplatz.
- 2 PCI-Express x1-Steckplätze.
- 1 CD-ROM-Audioeingang
- 1 S/PDIF-Ausgangsanschluss
- 1 Ultra DMA 100/66/33 IDE-Anschlüsse
- 3 PCI-Steckplätze
- 4 Serial ATA –Anschlüsse
- 2 USB-Anschlussleisten unterstützen 6 USB 2.0-Ports an der Frontseite
- 1 Frontseitenanschlussleiste zur Unterstützung von Bedienelementen an der Frontseite.

1 Frontseitenanschlussleiste zur Unterstützung von Bedienelementen an der Frontseite.

Rücktafel-E/A-Anschlüsse

- 1 serieller Anschluss
- 1 drucker Anschluss
- 1 RJ-45 LAN-Anschluss
- 1 PS/2-Mausanschluss
- 1 PS/2-Tastaturanschluss
- 4 USB 2.0-Anschlüsse
- 3 Audioanschlüsse für 6-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 Core2Duo (Seulement pour Ver 2.0)
- Bus front-side aux fréquences suivantes :
 - 533MT/s (Horloge cœur 133MHz)
 - 800MT/s (Horloge cœur 200MHz)
 - 1066MT/s (Horloge cœur 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: Intel 945P.
- South Bridge: Intel ICH7.

Systèmes d'exploitation pris en charge

- Prise en charge de Windows 2000 et Windows XP.

Dimensions

- Facteur de forme ATX: 20.5cm (Long) x 30.5cm (Larg)

Mémoire système

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

Codec audio AC'97

- Chip: ALC655, prise en charge 6 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

- Intel ICH7 prise en charge des spécifications ATA 2.0 Série, débit de transfert des données jusqu'à 3 Go/s.

IDE

- 1 connecteurs sur carte permettant la prise en charge de 2 périphériques.
- Prise en charge PIO mode 0-4, Block Mode et mode bus maître Ultra DMA 33/66/100.

10/100/1000 LAN

- RTL 8110S-32 / 8110SC, Prise en charge de l'auto-négociation 10Mo/s, 100Mo/s et 1Go/s.

Emplacements et connecteurs sur carte internes

- 1 connecteur pour le lecteur de disquette
- 1 emplacement PCI-Express x16.
- 2 emplacements PCI-Express x1.
- 1 connecteur d'entrée CD-ROM audio-in
- 1 connecteur de sortie SPDIF-Out
- 1 connecteurs IDE Ultra DMA 100/66/33
- 3 emplacements PCI
- 4 ports série ATA
- 2 connecteurs USB prennent en charge 6 ports USB 2.0 sur le panneau avant
- 1 connecteur sur le panneau avant prend en charge les fonctions du panneau avant

Connecteurs E/S panneau arrière

- 1 port série
- 1 port imprimieur
- 1 prise LAN RJ-45
- 1 port souris PS/2
- 1 port clavier PS/2
- 1 ports USB 2.0
- 3 ports audio prenant en charge les équipements de sortie audio 6 voies.

ITALIAN

CPU

- Supporto LGA 775.
- Supporto processore Intel Pentium 4 ed Celeron D.
- CPU Dual Core.
 - Supporto Pentium D
 - Supporto Core2Duo (solo per Ver 2.0)
- 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: Intel 945P.
- South Bridge: Intel ICH7.

Portati

- Supporto di Windows 2000 e Windows XP.

Dimensioni

- Fattore di forma ATX: 20.5 cm (L) x 30.5 cm (P)

Memoria di sistema

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

Serial ATA II

- Intel ICH7 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

- 1 connettori integrati supportano 2 dispositivi.
- Modalità: PIO 0-4, bus master Block e Ultra DMA 33/66/100.

Audio Codec AC'97

- Chip: ALC655, supporto di 6 canali.

10/100/1000 LAN

- Realtek RTL 8110S-32 / 8110SC, Supporto negoziazione automatica a 10Mb/s, 100Mb/s e 1GB/s.

Connettori e alloggiamenti interni integrato

- 1 connettore floppy
- 1 alloggiamento PCI-Express x16.
- 2 alloggiamenti PCI-Express x1.
- 1 connettore SPDIF-Out.
- 1 connettore ingresso audio CD-ROM
- 1 connettori Ultra DMA 100/66/33 IDE
- 3 alloggiamenti PCI
- 4 porte Serial ATA.
- 2 connettori USB supportano 6 porte USB 2.0 sul pannello frontale.
- 1 connettore sul pannello frontale supporta i dispositivi del pannello frontale.

Connettori I/O del pannello posteriore

- 1 porta seriale
- 1 porta stampatore
- 1 connettore LAN RJ-45
- 1 porta mouse PS/2
- 1 porta tastiera PS/2
- 4 porte USB 2.0
- 3 porte audio supportano 6 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 Core2Duo (solamente para Ver 2.0)
- 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: Intel 945P.
- South Bridge: Intel ICH7.

Sistemas operativos compatibles

- Compatible con Windows 2000 y Windows XP.

Dimensiones

- Formato ATX: 20.5 cm (LA) x 30.5 cm (AN)

Memoria del sistema

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

Serial ATA II

- Intel ICH7 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.

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: ALC655, admite 6 canales.

10/100/1000 LAN

- Realtek RTL 8110S-32 / 8110SC, Admite negociación automática a 10 Mb/s, 100 Mb/s y 1 GB/s.

Conectores y ranuras integrados e internos

- 1 conector de disco extraíble.
- 1 ranura 16X PCI-Express.
- 2 ranuras PCI-Express 1X.
- 1 conector de entrada de audio en CD-ROM
- 1 conector de salida SPDIF
- 1 conectores Ultra DMA 100/66/33 IDE
- 3 ranuras PCI
- 4 puertos Serial ATA.
- 2 cabezales USB soportan 6 puertos USB 2.0 en el panel frontal.
- 1 cabezal del panel frontal soporta funciones de panel frontal.

Conectores de E/S del panel posterior

- 1 puerto serie
- 1 puerto impresora
- 1 conector de red LAN RJ-45
- 1 puerto para ratón PS/2
- 1 puerto para teclado PS/2
- 4 puertos USB 2.0
- 3 puertos de audio que admiten 6 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 Core2Duo (apenas para os modelos Ver 2.0)
- 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: Intel 945P.
- Ponte Sul: Intel ICH7.

Sistemas operativos suportados:

- Suporta o Windows 2000 e o Windows XP.

Dimensões

- Factor de forma ATX: 20.5 cm (C) x 30.5 cm (L)

Memória do sistema

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

Serial ATA II

- Intel ICH7 suporta a especificação Serial ATA 2.0, velocidade de transferência de dados até 3 GB/s.

IDE

- 1 conector na placa para 2 dispositivos.
- Suporta o modo PIO 0-4, o modo Block e o modo bus master Ultra DMA 33/66/100.

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: ALC655, suporta 6 canais.

10/100/1000 LAN

- Realtek RTL 8110S-32 / 8110SC, Suporta a especificação de auto negociação de 10Mb/s, 100Mb/s e 1GB/s.

Conectores e ranhuras internos na placa

- Existência de um conector para unidade de disquetes.
- 1 ranhura PCI Express x16.
- 2 ranhuras PCI Express x1.
- 1 conector S/PDIF-Out
- 1 conector CD-ROM para entrada de áudio
- 1 conectores Ultra DMA 100/66/33 IDE
- 3 ranhuras PCI
- 4 portas Serial ATA.
- 2 conectores USB suportam 6 portas USB 2.0 no painel frontal.
- Existência de um conector no painel frontal para uma maior facilidade de ligação.

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
- 4 portas USB 2.0
- 3 portas de áudio para saída de 6 canais de áudio.

POLAND

PROCESOR

- Obsługa LGA 775.
- Obsługa procesorów Intel Pentium 4 i Celeron D.
- Procesor dwurdzeniowy (Dual Core).
 - Obsługa Pentium D
 - Obsługa Core2Duo (wyłącznie dla Ver 2.0)
- 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: Intel 945P.
- Mostek południowy: Intel ICH7.

Obsługiwane systemy operacyjne

- Obsługa Windows 2000 oraz Windows XP.

Wymiary

- Obudowa ATX: 20.5cm (D) x 30.5cm (S)

Pamięć systemowa

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

IDE

- 1 wbudowane złącza z możliwością obsługi 2 urządzeń.
- Obsługa trybu PIO 0-4, Block Mode (tryb Blok) oraz tryb magistrali głównej Ultra DMA 33/66/100.

Serial ATA II

- Intel ICH7. 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: ALC655, obsługa 6 kanałów.

10/100/1000 LAN

- Realtek RTL 8110S-32 / 8110SC S, Obsługa szybkości 10Mb/s, 100Mb/s oraz 1GB/s z automatyczną negocjacją.

Wewnętrzne, wbudowane gniazda oraz złącza

- Jedno napędu złącze dyskietyk elastycznych.
- 1 gniazdo PCI-Express x16.
- 2 gniazda PCI-Express x1.
- 1 złącze wyjścia SPDIF
- 1 wejścia audio CD-ROM
- 1 złącza Ultra DMA 133/100/66/33 IDE
- 3 gniazda PCI
- 4 porty Serial ATA.
- 2 złącza główkowe USB obsługujące 6 portów USB 2.0 na panelu przednim.
- Jedno złącze główkowe panela przedniego, obsługujące urządzenia panela przedniego.

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
- 4 porty USB 2.0
- 3 portów audio obsługujące 6 kanałów wyjścia audio.

RUSSIAN

Процессор

- Поддерживает LGA 775.
- Поддерживает процессоры Intel Pentium 4 и Celeron D.
- Поддержка двухъядерных процессоров
 - Поддерживает Pentium D
 - Поддерживает Core2Duo (только для Ver 2.0)
- 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: Intel 945P.
- Южный мост: Intel ICH7.

Поддерживаемые операционные системы

- Поддерживает Windows 2000 и Windows XP.

Размеры

- Форм-фактор ATX: 20.5 x 30.5cm (Д x Ш)

Системная память

- Поддержка двухканальной памяти DDR2.
- Поддерживает DDR2 4533/ 667.
- Максимальный объем памяти 4 Гб в 4 гнездах DIMM.

Звуковой кодек AC'97

- Контроллер::ALC655, поддерживает 6-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

- Intel ICH7 поддерживает спецификацию Serial ATA 2.0, скорость передачи данных до или 3 Гб/с.

IDE

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

10/100/1000 LAN

- Realtek 8110S-32 / 8110SC, Поддерживает автоматическое определение скорости 10 Мбит/с, 100 Мбит/с и 1 Гбит/с.

Встроенные разъемы ввода-вывода

- 1 разъем для дисководов гибких дисков.
- 1 слот PCI Express x16.
- 2 слота PCI Express x1
- 1 входной разъем звукового сигнала с привода для компакт-дисков
- 1 разъем SPDIF-Out
- 1 разъем Ultra DMA 133/100/66/33 IDE
- 3 слота PCI
- 4 порта Serial ATA
- 2 разъема USB поддерживают 6 портов USB 2.0 на передней панели
- 1 разъем для интерфейсов передней панели поддерживает порты на передней панели.

Разъемы 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
- 4 порта USB 2.0
- 3 звуковых портов поддерживают подключение 6 каналов аудиовыхода.

ARABIC

وحدة المعالجة المركزية (CPU)

- تدعم LGA 775.
- تدعم معالج Intel Pentium 4 و Celeron D.
- دعم وحدات المعالجة المركزية ذات اللب المزدوج.
- تدعم Pentium D
- تدعم Core2Duo (في 2.0 فقط)
- ناقل الجانب الأمامي عند نطاقات التردد التالية:
- MT/S 533 (133 ميغا هرتز في الساعة الرئيسية)
- MT/S 800 (200 ميغا هرتز في الساعة الرئيسية)
- MT/S 1066 (266 ميغا هرتز في الساعة الرئيسية)
- تدعم تقنية مؤشرات الترابط التشعبية (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: Intel 945P.
- الجسر الجنوبي: Intel ICH7.

نظم التشغيل المدعومة

- يدعم Windows XP و Windows 2000.

الأبعاد

- عامل نموذج ATX: 30.5 سم (الطول) × 20.5 سم (العرض)

ذاكرة النظام

- دعم الذاكرة DDR2 ثنائية القناة.
- تدعم DDR2 667/533.
- أقصى مساحة للذاكرة 4 جيجابايت، مع دعم 4 منافذ DIMM.

سلسلة ATA II

- وحدة تحكم متكاملة مع Intel ICH7.
- 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
- ITE وظيفية "الواقي الذكي" من

IDE

- موصلان على اللوحة يدعمان أربعة أجهزة.
- دعم وضع الدخل/الخرج المبرمج (PIO) 0-4، ووضع القفل والأوضاع الرئيسية للنقل من خلال الوصول الفائق للذاكرة مباشرة (Ultra DMA 33/66/100).

شفرة صوت AC'97

■ الشريحة: ALC655 , يدعم ثماني قنوات. ميغا بايت/الثانية.

توصيل شبكي بسرعة نقل 10/100 /1000

■ Realtek 8110S-32 / 8110SC تدعم التفاوض التلقائي بقدرة 10 ميغا بايت/ثانية و 100 ميغا بايت/ثانية و 1 جيجا بايت/ثانية.

منافذ توصيل وفتحات اللوحة الداخلية

- 1 وحدة توصيل قرص مرن.
- 1 PCI-Express × 16 فتحة: .
- 2 PCI-Express × 1 فتحات: .
- 1 منفذ توصيل خرج SPDIF-Out واحد
- 1 منفذ توصيل دخل صوت CD-ROM واحد
- 1 منفذ توصيل Ultra DMA 133/100/66/33 IDE
- 3 فتحتان PCI
- 4 منفذان SATA II .
- 2 ثلاثة رؤوس USB تدعم 4 منافذ USB 2.0 باللوحة الأمامية رأس باللوحة الأمامية يدعم ملحقات اللوحة الأمامية.

موصلات المدخلات/المخرجات باللوحة الخلفية

- 1 منفذ تسلسلي
- 1 منفذ طباعة
- 1 قابس RJ-45 LAN
- 1 منفذ ماوس PS/2
- 1 منفذ لوحة مفاتيح PS/2
- 4 منافذ USB 2.0
- 3 منافذ صوتية تدعم تسهيلات خرج صوت 6 قنوات.

JAPANESE

CPU

- LGA 775 をサポート。
- Intel Pentium 4 プロセッサをサポート。
- デュアルコア CPU をサポート。
 - Pentium D をサポート。
 - Core2Duo をサポート。(Ver 2.0 のみ)
- 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ー(HT)をサポート。
- エグゼキュート・ディスエーブル・ビット・テクノロジー(XD)をサポート。
- エンハンスド・Intel SpeedStep®テクノロジー (EIST)をサポート。
- インテル・エクステンデッド・メモリ 64 テクノロジー (Intel EM64T) をサポート。

チップセット

- ノースブリッジ: Intel 945P。
- サウスブリッジ: Intel ICH7。

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: 30.5cm (長さ) x 20.5cm (幅)

システムメモリ

- デュアルチャンネル DDR2 をサポート。
- DDR2 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

- 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

- 1 つのオンボードコネクタが 2 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 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・コーデック

- チップ: ALC655, 6チャンネルをサポート。

10/100/1000 LAN

- Realtek 8110S-32 / 8110SC, 10Mb/秒・100Mb/秒と 1GB/秒オートネゴシエーションをサポート。

内部オンボードスロットとコネクタ

- 1つのフロッピーコネクタ。
- PCI-Express x16 スロット(x1)。
- 2 PCI-Express x1 スロット(x2)。
- CD-ROM オーディオインコネクタ(x1)
- S/PDIF アウト(x1) コネクタ
- Ultra DMA 133/100/66/33 IDE コネクタ(x1)
- PCI スロット(x3)
- シリアル ATA ポート(x4)
- 2つの USB ヘッドがフロントパネルの 4つの USB 2.0 ポートをサポート。
- 1つのフロントパネルヘッドがフロントパネル機能をサポート。

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)
- 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。

06/14, 2006

TForce 945P

BIOS Setup.....	1
1 Main Menu	3
2 Standard CMOS Features	6
3 Advanced BIOS Features	9
4 Advanced Chipset Features	16
5 Integrated Peripherals.....	18
6 Power Management Setup.....	25
7 PnP/PCI Configurations	31
8 PC Health Status.....	33
9 Over Clock Navigator Engine	35
10 CMOS Reload Program.....	42

TForce 945P BIOS Manual

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.

TForce 945P BIOS Manual

PCI Bus Support

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

DRAM Support

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

Supported CPUs

This AWARD BIOS supports the Intel CPU.

Using Setup

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

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

TForce 945P BIOS Manual

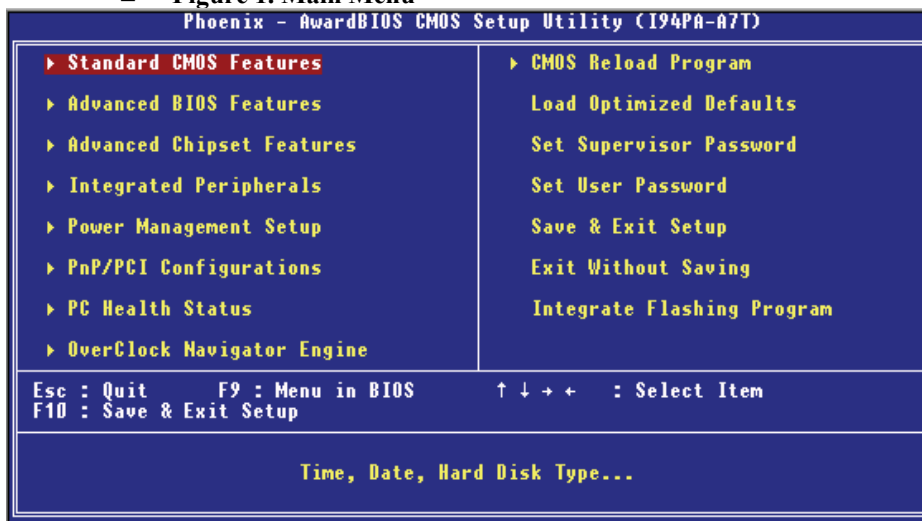
1 Main Menu

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.

TForce 945P BIOS Manual

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 (O.N.E.)

ONE provides two powerful overclock engines, MOS & AOS for both overclock experts 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:

TForce 945P BIOS Manual

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.

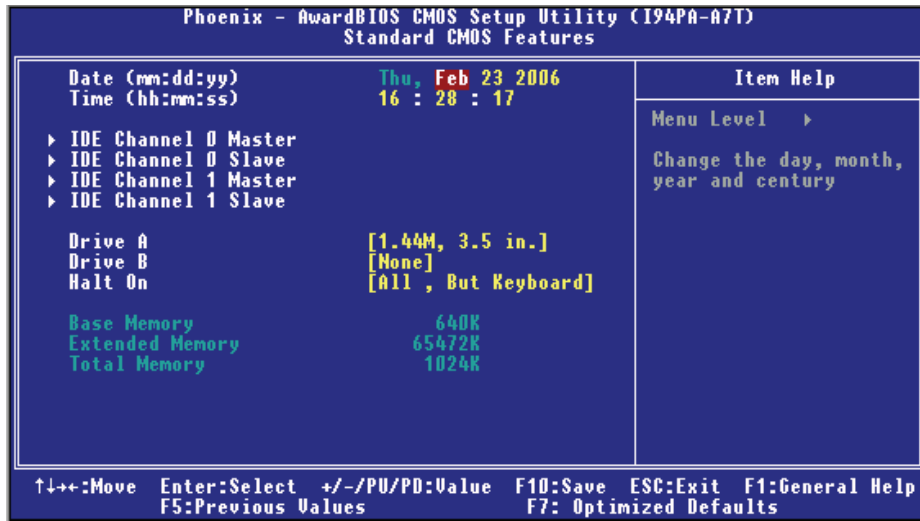
```
BIOS UPDATE UTILITY <Y/N>? Y
```

TForce 945P BIOS Manual

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



TForce 945P BIOS Manual

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.

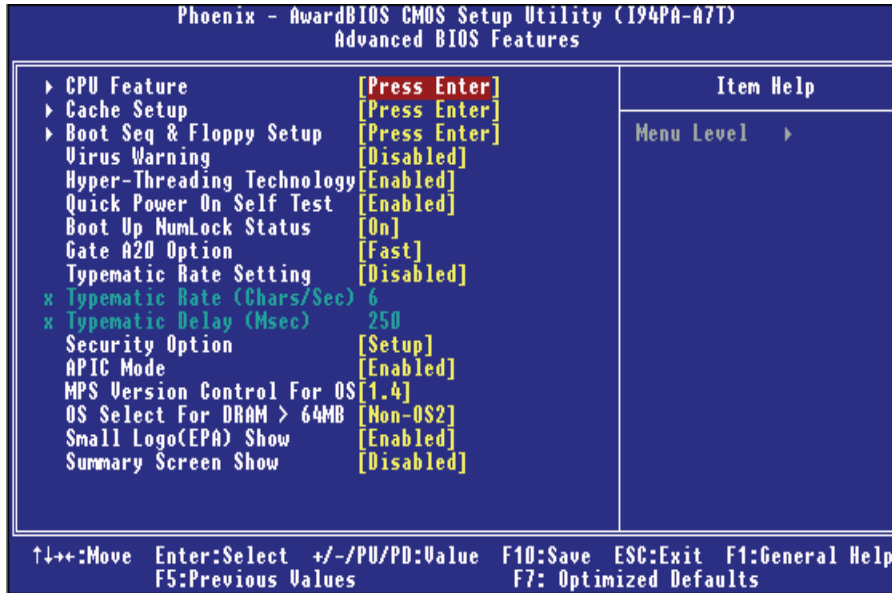
TForce 945P BIOS Manual

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.

TForce 945P BIOS Manual

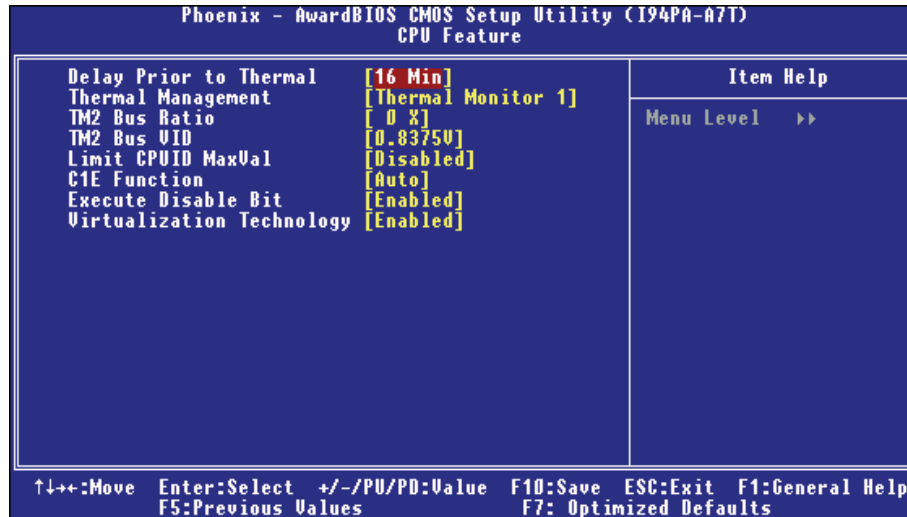
3 Advanced BIOS Features

■ Figure 3. Advanced BIOS Setup



TForce 945P BIOS Manual

CPU Feature



Delay Prior to Thermal

Set this item to enable the CPU Thermal function to engage after the specified time.

The Choices: 4Min, 8Min, **16Min** (default), 32Min.

Thermal Management

Allow you to choose the thermal management method of your monitor.

The Choices: **Thermal Monitor 1** (default), Thermal Monitor2.

Notes: The choices will be different according to your CPU features.

TM2 Bus Ratio

Represents the frequency. Bus ratio of the throttled performance state that will be initiated when the on-die sensor goes from not hot to hot.

Min= 0, Max= 255, Key in a DEC number.

The Choices: **0X** (default).

TM2 Bus VID

Represents the voltage of the throttled performance state that will be initiated when the on-die sensor goes from not hot to hot.

Min= 0.8375V, Max= 1.6000, Key in a DEC number.

The Choices: **0.8375V** (default).

Limit CPU ID MaxVal

Set limit CPU ID maximum vale to 3, it should be disabled for Win XP.

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

TForce 945P BIOS Manual

C1E Function

CPU C1E Function select.

The Choices: Auto (default), Disabled

Execute Disable Bit

When disabled, forces the XD feature flag to always return 0.

The Choices: Enabled (default), Disabled.

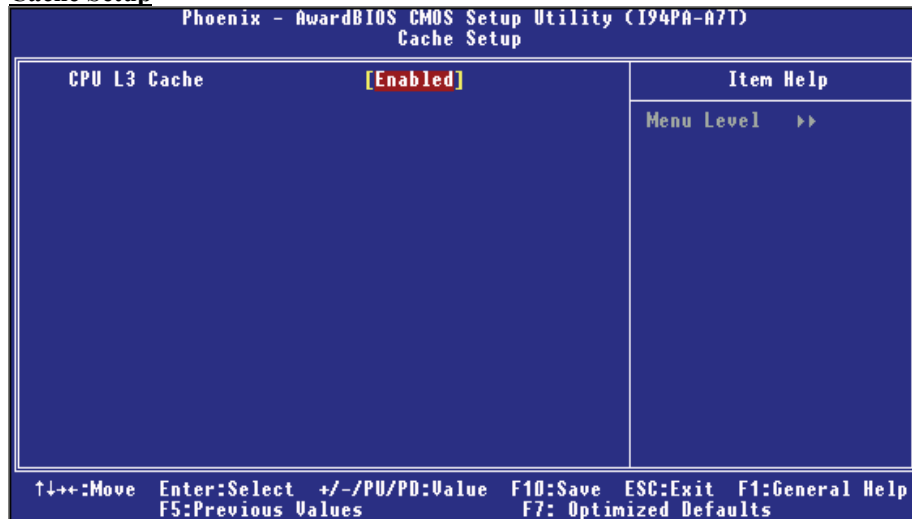
Virtualization Technology

When enabled, a VMM can utilize the additional hardware

Capabilities provided by vanderpool Technology.

The Choices: Enabled (default), Disabled

Cache Setup



CPU L3 Cache

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

Enabled (default)

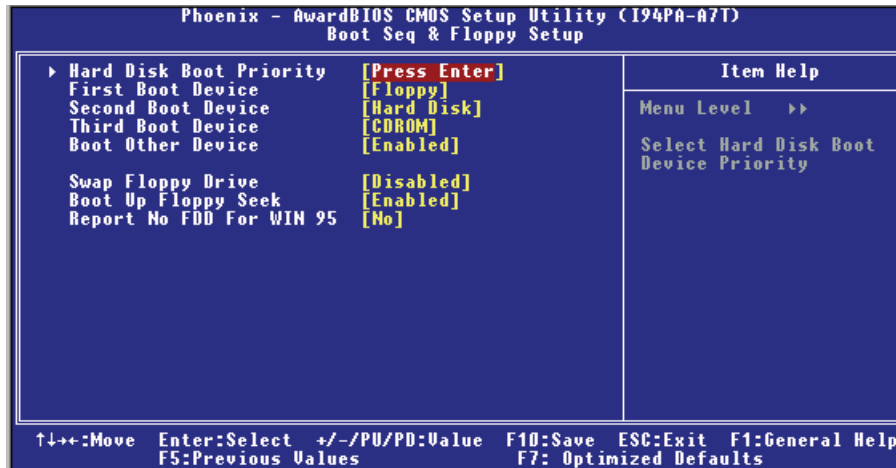
Enable cache.

Disabled

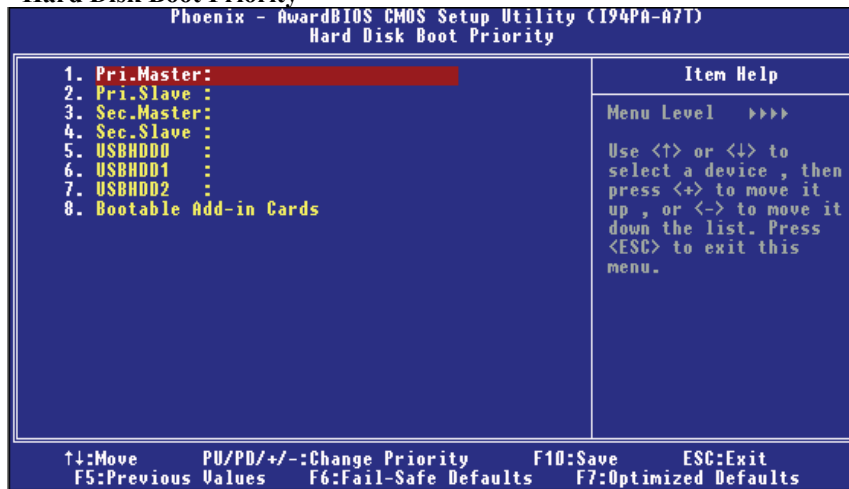
Disable cache.

TForce 945P BIOS Manual

Boot Seq & Floppy Setup



Hard Disk Boot Priority



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

The Choices: Pri. Master, Pri.Slave, Sec.Master, Sec. Slave, USBHDD0, USBHDD1, USBHDD2 and Bootable Add-in Carde.

TForce 945P BIOS Manual

First/Second/Third/Boot Other Device

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

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

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: Disabled, Enabled (default).

Report NO FDD for Win95

This item allows you to select YES/NO to Report NO FDD for Win95.

The Choices: NO (default), YES.

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.

Hyper-Threading Technology

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

The Choices: Enabled (default), Disabled.

Quick Power On Self Test

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

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

Boot Up NumLock Status

Selects the NumLock. State after power on.

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

TForce 945P BIOS Manual

Gate A20 Option

Select if chipset or keyboard controller should control Gate A20.

Normal A pin in the keyboard controller controls GateA20.

Fast (default) Lets chipset control Gate A20.

Typematic Rate Setting

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

The Choices: Disabled (default), Enabled.

Typematic Rate (Chars/Sec)

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

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, and 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.

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.

TForce 945P BIOS Manual

Full Logo Display

This item allows you to select whether the “Full Logo” shows.

Enabled (default) “Small Logo” shows when system boot up.
Disabled No “Small Logo” shows when system boots up.

Small Logo (EPA) Show

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

Enabled (default) “Small Logo” shows when system boot up.
Disabled No “Small Logo” shows when system boots up.

Summary Screen Show

This item allows you to enable/disable the summary screen. Summary screen means system configuration and PCI device listing.

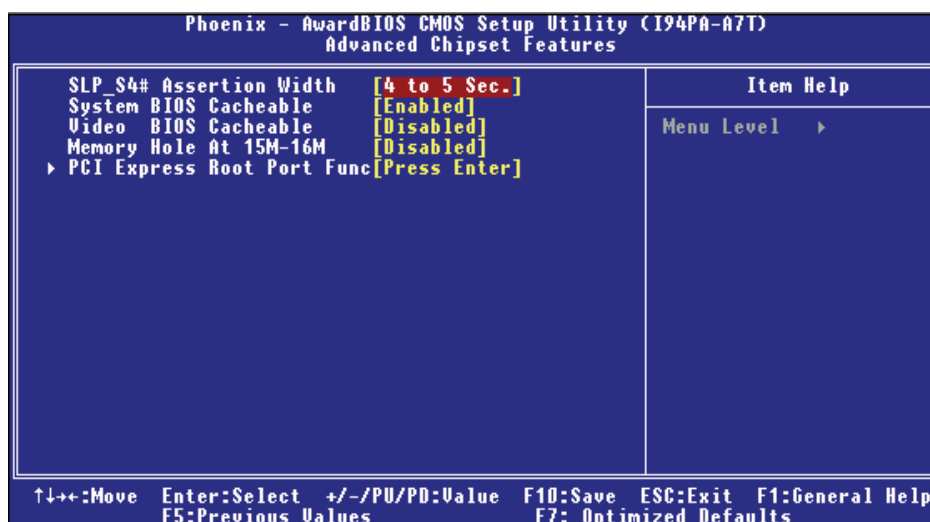
The choices: Enabled, **Disabled** (default).

TForce 945P BIOS Manual

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



SLP_S4# Assertion Width

This item sets the minimum assertion width of the SLP-S4# signal to guarantee the DRAM has been safely power-cycled.

The Choices: 4 to 5 Sec (default), 3 to 4 Sec, 2 to 3 Sec ,1 to 2Sec.

System BIOS Cacheable

Selecting Enabled allows you caching of the system BIOS ROM at F0000h~FFFFFh, resulting a better system performance. However, if any program writes to this memory area, a system error may result.

The Choices: Enabled (default), Disabled.

Video BIOS Cacheable

Select Enabled allows caching of the video BIOS, resulting a better system performance. However, if any program writes to this memory area, a system error may result.

TForce 945P BIOS Manual

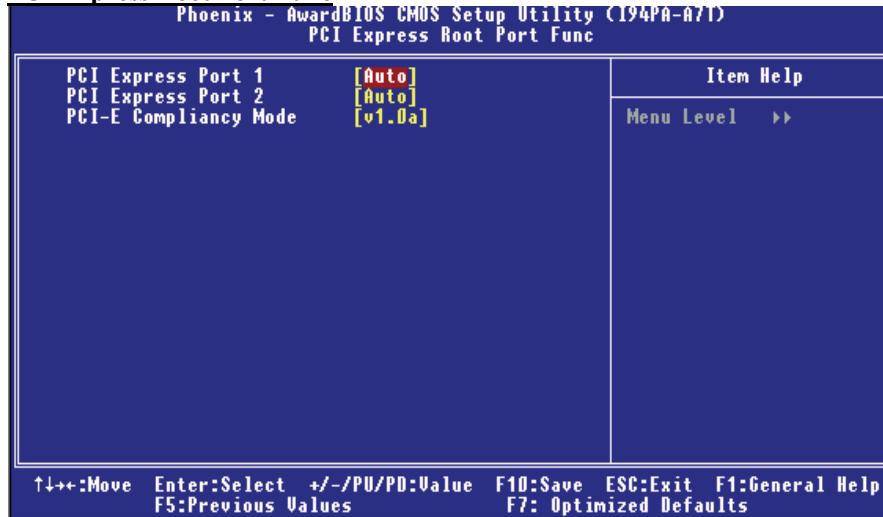
The Choices: Disabled (default), Enabled.

Memory Hole At 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved it cannot be cached. The user information of peripherals that need to use this area of system memory usually discussed their memory requirements.

The Choices: Disabled (default), Enabled.

PCI Express Root Port Func



PCI Express Port 1/ 2

This item allows you to select the PCI Express Port.

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

PCI-E Compliancy Mode

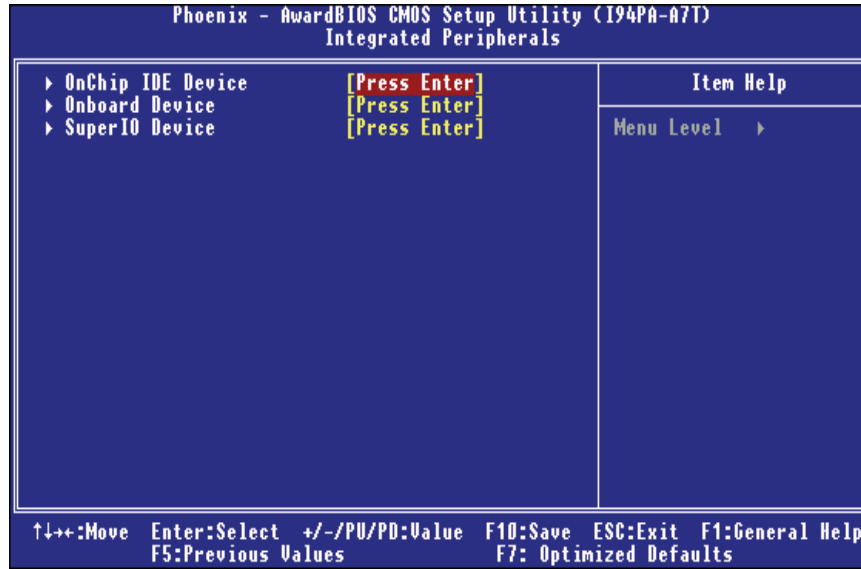
This item allows you to select the PCI-E Compliancy Mode.

The Choices: v1.0a (default), v1.0.

TForce 945P BIOS Manual

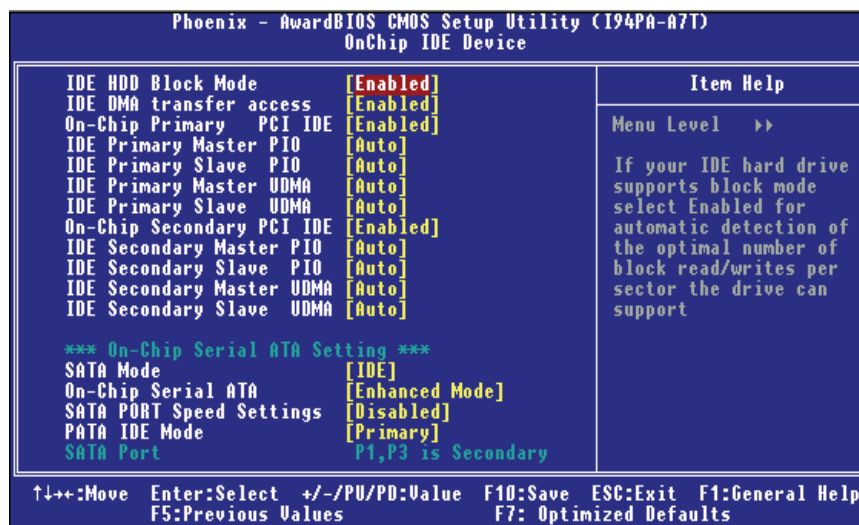
5 Integrated Peripherals

■ Figure 5. Integrated Peripherals



TForce 945P BIOS Manual

Onchip IDE Device



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.

IDE DMA Transfer Access

This item allows you to enable or disable the IDE transfer access.

The Choices: Enabled (default), Disabled.

On-chip Primary PCI IDE

This item allows you to enable or disable the primary/ secondary IDE Channel.

The Choices: Enabled (default), Disabled.

IDE Primary/Secondary/Master/Slave PIO

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

The Choices: Auto (default), Mode0, Mode1, Mode2, Mode3, and

TForce 945P BIOS Manual

Mode4.

On-chip Secondary PCI IDE

This item allows you to enable or disable the primary/ secondary IDE Channel.

The Choices: Enabled (default), Disabled.

IDE 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.

SATA Mode

This item allows you to choose SATA Mode.

The Choices: IDE (default),RAID,AHCI.

On-Chip Serial ATA

This item allows you to choose:

Disabled: disabled SATA Controller

Combined Mode: PATA and SATA are combined max of 2 IDE drivers in each channel.

Enhanced Mode: enabled both SATA and PATA max of 6 IDE drivers are supported.

SATA Only: SATA is operating in legacy mode.

The Choices: Default (default), Auto, Combined Mode, Enhanced Mode, and SATA only.

SATA PORT Speed Settings

This item allows you to set SATA PORT Speed.

The Choices: Disabled (default),Force GEN I, Force GEN II.

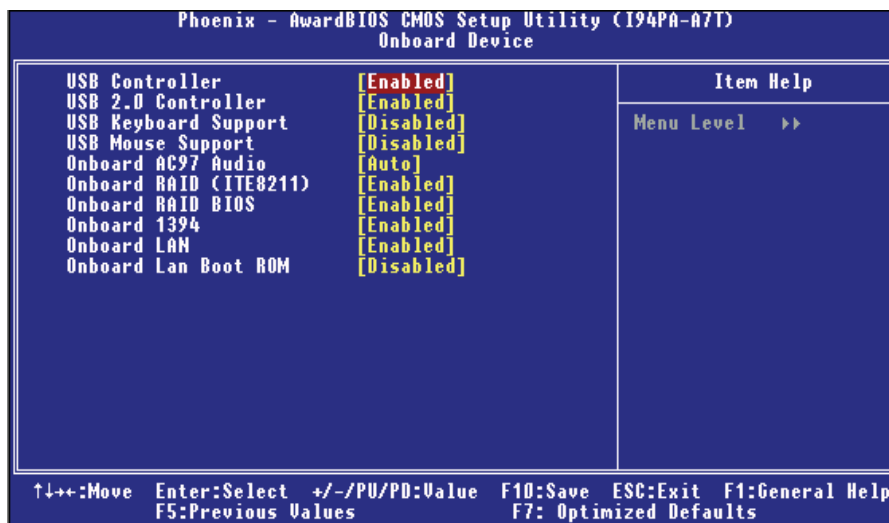
PATA IDE Mode

This item allows you to choose PATA IDE Mode.

The Choices: Primary (default), Secondary.

TForce 945P BIOS Manual

Onboard Device



USB Controller

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

The Choices: Enabled (default), Disabled

USB 2.0 Controller

This entry is to enable/ disabled EHCI controller only. This BIOS itself may/ may not have high speed USB support. If the BIOS has high speed USB support built in, the support will automatically turn on, when high speed device were attached.

The Choices: Enabled (default), Disabled.

USB Keyboard Support

This item allows you to enable or disable the USB Keyboard Legacy Support.

Enabled Enable USB Keyboard Support.

Disabled (default) Disable USB Keyboard Support.

USB Mouse Support

This item allows you to enable or disable the USB Mouse Legacy Support.

Enabled Enable USB Mouse Support.

Disabled (default) Disable USB Mouse Support.

Onboard AC97 Audio

This item allows you to enable or disable to support Onboard AC97 Audio.

The Choices: Auto (default), Disabled.

TForce 945P BIOS Manual

Onboard RAID <ITE8211>

This item allows you to enable or disable to support Onboard RAID (ITE8211).

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

Onboard RAID BIOS

This item allows you to enable or disable to Onboard RAID BIOS.

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

Onboard 1394

This item allows you to enable or disable to support Onboard 1394 contrller.

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

Onboard LAN

This item allows you to enable or disable the Onboard LAN.

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

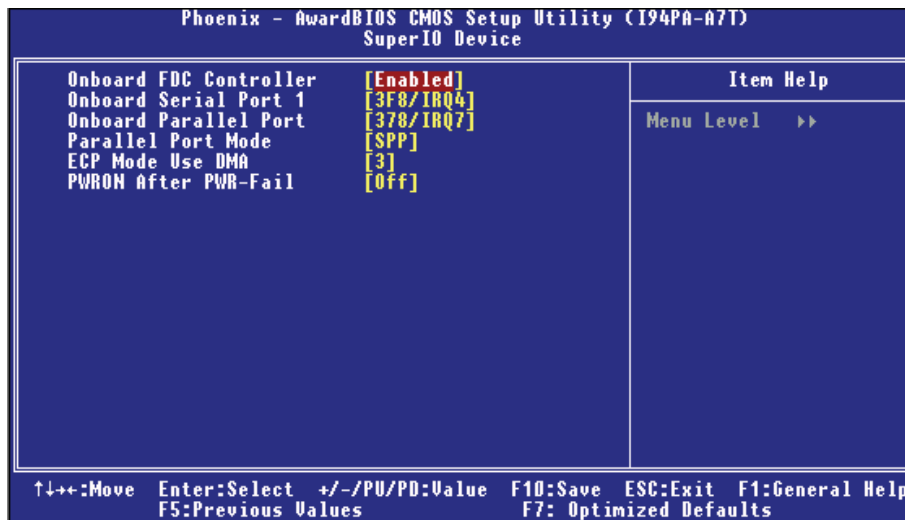
Onboard LAN Boot ROM

Decide whether to invoke the boot ROM of the onboard LAN chip.

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

TForce 945P BIOS Manual

Super I/O Device



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

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+EPP Using Parallel port as ECP & EPP mode.
- ECP Using Parallel port as Extended Capabilities Port.

TForce 945P BIOS Manual

ECP Mode Use DMA

Select a DMA Channel for the port.

The Choices: 3 (default), 1.

POWER After PWR-Fail

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

Off Leaves the computer in the power off state.

On Reboots the computer.

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

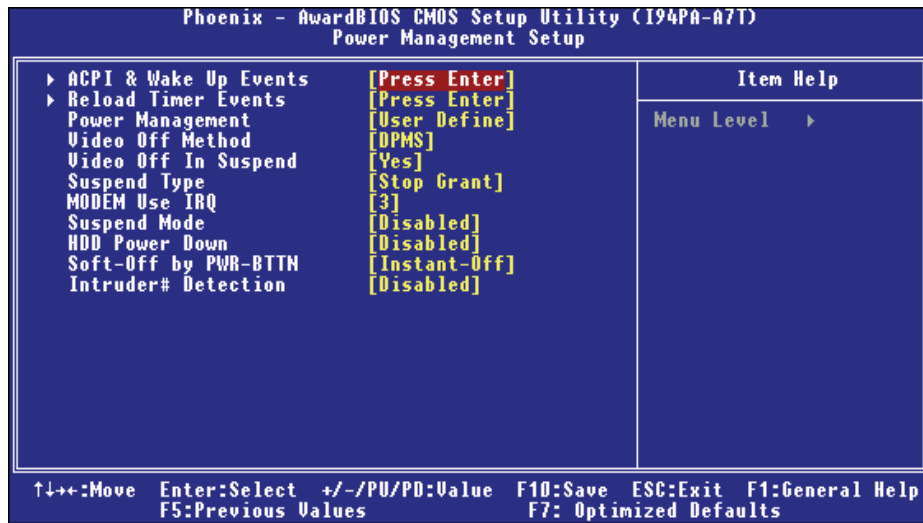
The Choices: Off (default), On, Former-Sts.

TForce 945P BIOS Manual

6 Power Management Setup

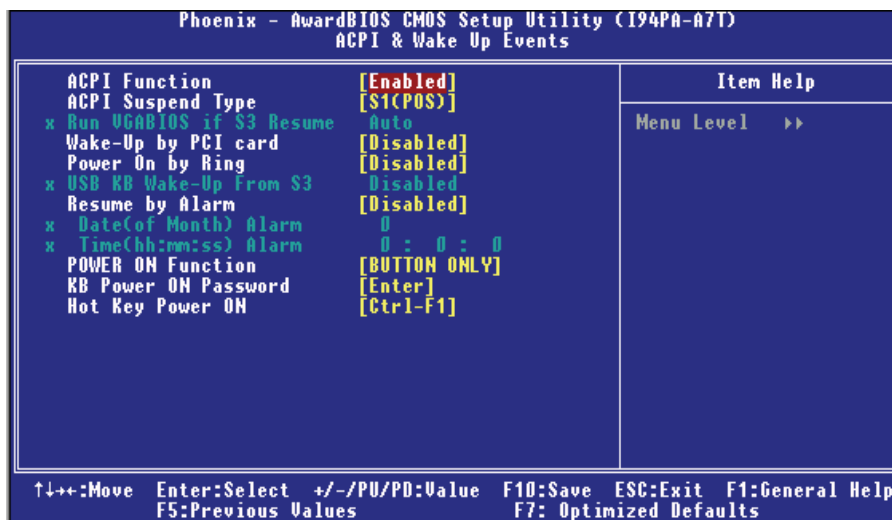
The Power Management Setup Menu allows you to configure your system to utilize energy conservation and power up/power down features.

■ **Figure 6. Power Management Setup**



TForce 945P BIOS Manual

ACPI & Wake Up Events



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

Run VGABIOS if S3 Resume

Choosing Enabled will make BIOS run VGA BIOS to initialize the VGA card when system wakes up from S3 state. The system time is shortened if you disable the function, but system will need AGP driver to initialize the card. So, if the AGP driver of the VGA card does not support the initialization feature, the display may work abnormally or not function after S3.

The Choices: Auto (default), Yes, No.

TForce 945P BIOS Manual

Wake-Up by PCI card

When you select “Enable”, a PME signal from PCI card returns the system to Full On state.

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

Power On by Ring

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

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

USB KB Wake-Up From S3

This item allows you to enable or disabled USB keyboard wake up from S3.

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

Resume by Alarm

This function is for setting date and time for your computer to boot up.

During Disabled, you cannot use this function. During Enabled,

Choose the Date and Time.

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

Date (of Month) Alarm

You can choose which month the system will boot up.

Time (hh:mm:ss) Alarm

You can choose what hour, minute and second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

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.

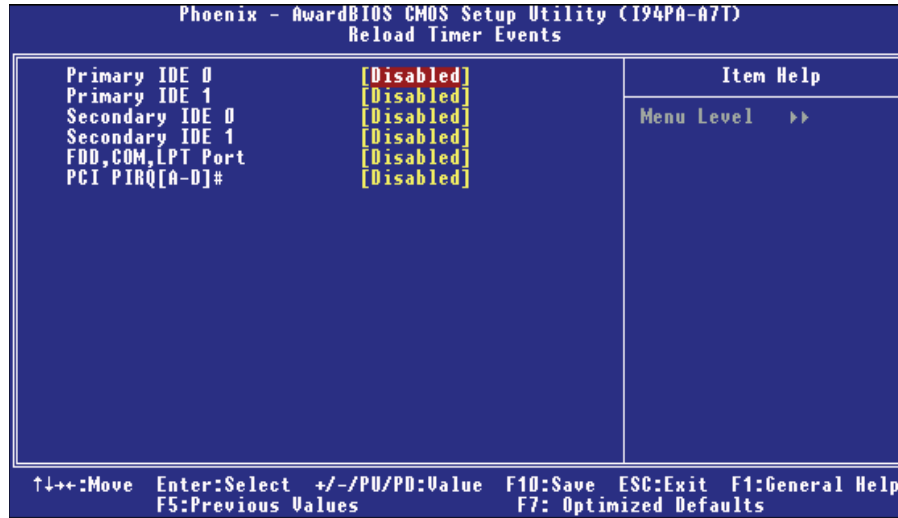
Hot Key Power ON

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.

TForce 945P BIOS Manual

Reload Timer Events



Primary/Secondary IDE 0/1

You can select to enable or disable Primary or Secondary RAID 0 or RAID 1 function under this item.

The Choices: Disabled (default), Enabled.

FDD, COM, LPT Port

You can select to enable or disable FDD, COM, and LPT port under this item.

The Choices: Disabled (default), Enabled.

PCI PIRQ [A-D]#

You can select to enable or disable PCI PIRQ [A-D]# under this item.

The Choices: Disabled (default), Enabled.

TForce 945P BIOS Manual

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 is 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.

This determines the manner in which the monitor is blanked.

The Choices: Yes (default), No.

Suspend Type

Select the Suspend Type.

The Choices: Stop Grant (default), PwrOn Suspend.

TForce 945P BIOS Manual

Modem Use IRQ

This determines the IRQ, which can be applied in MODEM use.

The Choices: 3 (default), 4 / 5 / 7 / 9 / 10 / 11 / NA.

Suspend Mode

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

The Choices: Disabled (default), 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 10 Min, 20 Min, 30 Min, 40 Min, 1 Hour.

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-BTN

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).

Intruder # Detection

This item allows you to enable or disable intruder# detection.

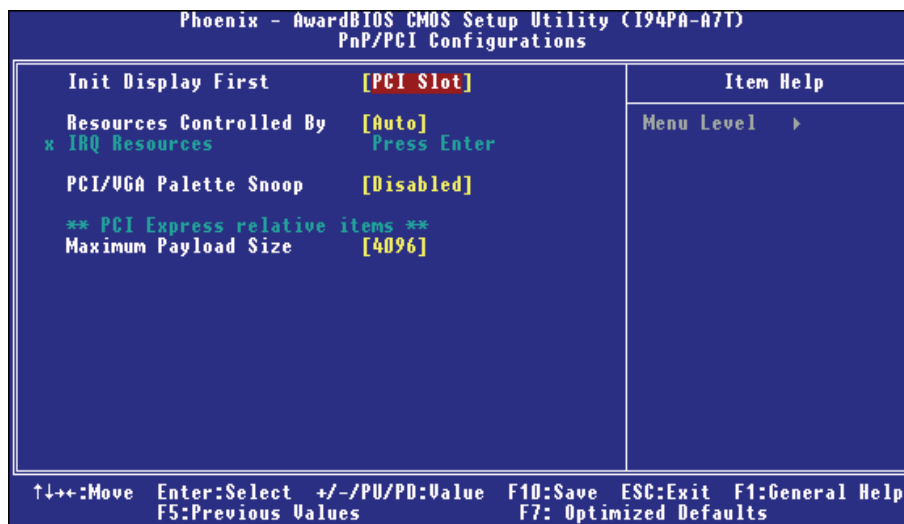
The Choices: Disabled (default), Enabled.

TForce 945P BIOS Manual

7 PnP/PCI Configurations

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

■ Figure 7. PnP/PCI Configurations



Init Display First

This item allows you to decide to active whether PCI Slot or on-chip VGA first.
The Choices: PCI Slot (default), PCIEx.

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.
The Choices: Auto (default), Manual.

IRQ Resources

TForce 945P BIOS Manual

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 that 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 watch 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)	disable the function.
Enabled	enable the function.

Maximum Payload Size

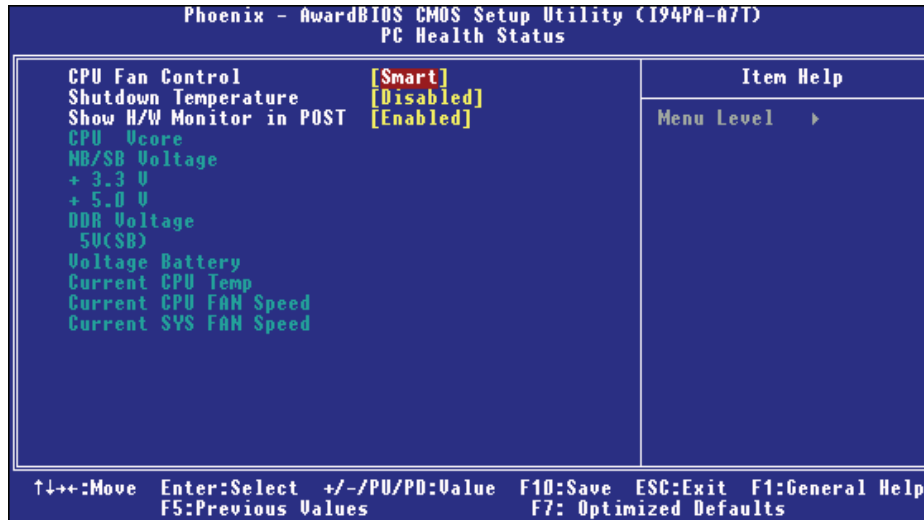
Set the maximum TLP payload size for the PCI Express device. The unit is byte.

The Choice: 4096 (default),128,256,512,1024,2048.

TForce 945P BIOS Manual

8 PC Health Status

■ Figure 8. PC Health Status



CPU Fan Control

The Choice “smart” can make your CPU FAN to reduce noise.

The Choices: Smart (default), Always On.

Shutdown Temperature

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

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

Show H/W Monitor in POST

If you computer contain a monitoring system, it will show PC health status during POST stage. The item offers several delay time to select you want.

The Choices: Enabled (default), Disabled.

CPU Vcore,NB/SB Voltage, +3.3V,+5.0V, DDR Voltage,5V(SB),Voltage Battery

Detect the system’s voltage status automatically.

TForce 945P BIOS Manual

Current CPU Temp

This field displays the current temperature of CPU.

Current CPU FAN Speed

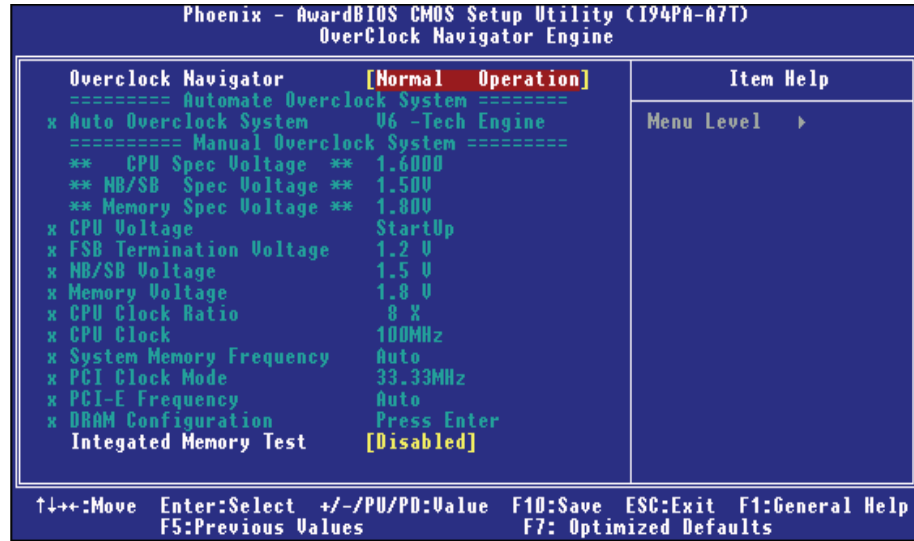
This field displays the current speed of CPU fan.

Current SYS FAN Speed

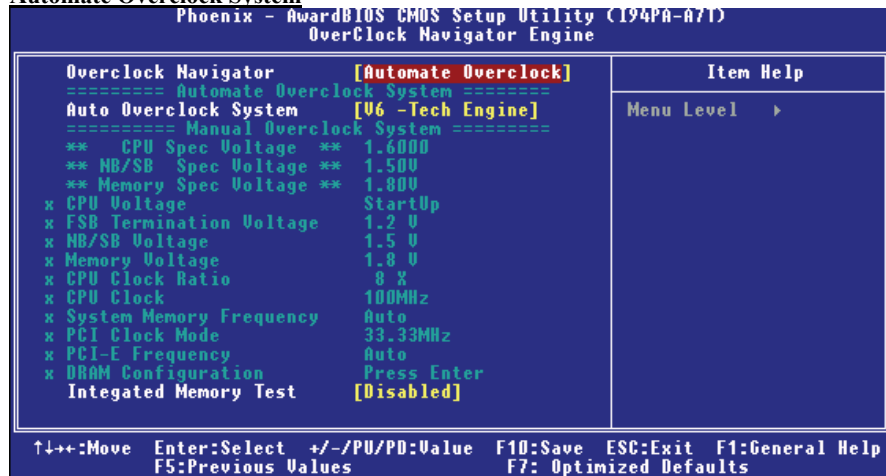
This field displays the current speed SYSTEM fan.

TForce 945P BIOS Manual

9 Over Clock Navigator Engine



Automate Overclock System



A.O.S. is designed for beginners in overclock field.

Based on many test and experiments from BET, A.O.S. provide 3 default overclock configurations that are able to raise the system performance.

- **V6 Tech Engine:**

TForce 945P BIOS Manual

```

Phoenix - AwardBIOS CMOS Setup Utility (I94PA-A7T)
OverClock Navigator Engine

Overclock Navigator [Automate Overclock]
===== Automate Overclock System =====
Auto Overclock System [U6 -Tech Engine]
===== Manual Overclock System =====
** CPU Spec Voltage ** 1.6000
** NB/SB Spec Voltage ** 1.500
** Memory Spec Voltage ** 1.800
x CPU Voltage StartUp
x FSB Termination Voltage 1.2 V
x NB/SB Voltage 1.5 V
x Memory Voltage 1.8 V
x CPU Clock Ratio 8 %
x CPU Clock 100MHz
x System Memory Frequency Auto
x PCI Clock Mode 33.33MHz
x PCI-E Frequency Auto
x DRAM Configuration Press Enter
Integated Memory Test [Disabled]

Item Help
Menu Level >
U6 -Engine for Extra Performance
U8 -Engine for Extreme Performance
U12-Engine for Extraordinary Performance

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

- **V8 Tech Engine**

```

Phoenix - AwardBIOS CMOS Setup Utility (I94PA-A7T)
OverClock Navigator Engine

Overclock Navigator [Automate Overclock]
===== Automate Overclock System =====
Auto Overclock System [U8 -Tech Engine]
===== Manual Overclock System =====
** CPU Spec Voltage ** 1.6000
** NB/SB Spec Voltage ** 1.500
** Memory Spec Voltage ** 1.800
x CPU Voltage StartUp
x FSB Termination Voltage 1.2 V
x NB/SB Voltage 1.5 V
x Memory Voltage 1.8 V
x CPU Clock Ratio 8 %
x CPU Clock 100MHz
x System Memory Frequency Auto
x PCI Clock Mode 33.33MHz
x PCI-E Frequency Auto
x DRAM Configuration Press Enter
Integated Memory Test [Disabled]

Item Help
Menu Level >
U6 -Engine for Extra Performance
U8 -Engine for Extreme Performance
U12-Engine for Extraordinary Performance

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

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

TForce 945P BIOS Manual

- V12 Tech Engine

```
Phoenix - AwardBIOS CMOS Setup Utility (I94PA-A7T)
OverClock Navigator Engine

Overclock Navigator      [Automate Overclock]
===== Automate Overclock System =====
Auto Overclock System   [U12-Tech Engine]
===== Manual Overclock System =====
** CPU Spec Voltage **  1.6000
** NB/SB Spec Voltage ** 1.500
** Memory Spec Voltage ** 1.800
x CPU Voltage           StartUp
x FSB Termination Voltage 1.2 V
x NB/SB Voltage         1.5 V
x Memory Voltage        1.8 V
x CPU Clock Ratio       8 X
x CPU Clock             100MHz
x System Memory Frequency Auto
x PCI Clock Mode        33.33MHz
x PCI-E Frequency       Auto
x DRAM Configuration    Press Enter
Integated Memory Test   [Disabled]

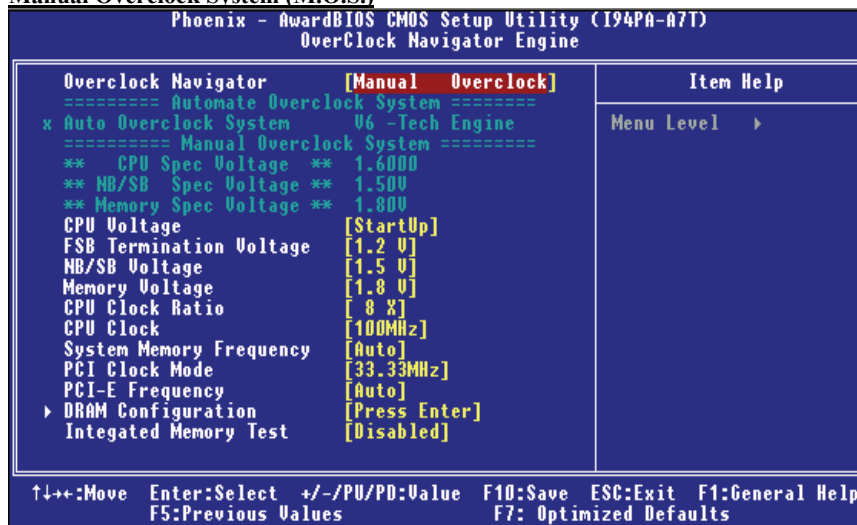
Item Help
Menu Level  >
U6 -Engine for Extra Performance
U8 -Engine for Extreme Performance
U12-Engine for Extraordinary Performance

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

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

TForce 945P BIOS Manual

Manual Overclock System (M.O.S.)



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

CPU Voltage

This item allows you to select CPU Voltage Control.
The Choices: StartUp (default)
(Min=1.1000V, Max=2.0000V, with an interval of 0.0250V).

FSB Termination Voltage

The Choices: 1.2V (default), 1.3V, 1.4V, 1.5V.

NB/SB Voltage

The Choices: 1.5V (default), 1.6V, 1.7V, 1.8V.

Memory Voltage

The Choices: 1.8V (default), 2.0V, 2.1V, 2.2V.

CPU Clock Ratio

This item allows you to select the CPU Ratio.
Min= 8 Max= 50 Key in a DEC number.
The Choices: 8X (default).

CPU CLOCK

This item allows you to select CPU Clock, and CPU over clocking.
Min= 133 Max= 400 Key in a DEC number.
The Choices: default value varies with CPU installed.

TForce 945P BIOS Manual

System Memory Frequency

This item allows you to select the HT Frequency.

The Choices: 400MHz, 533MHz, 667MHz, Auto (default).

PCI Clock Mode

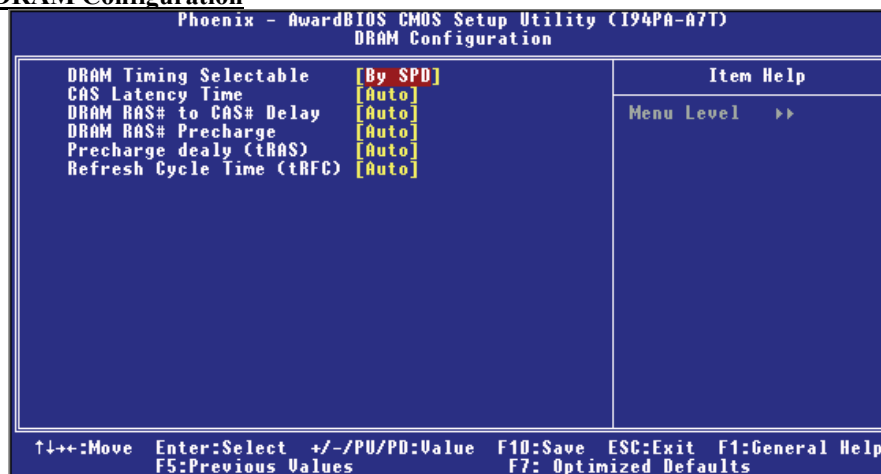
The Choices: 33.33MHz, 33.80MHz, 34.28MHz, 34.78 MHz, 35.29MHz, 35.82 MHz, 36.36 MHz, 36.92 MHz, **33.33 MHz** (default).

PCI-E Frequency

This item allows you to select the PCI-E Frequency.

The Choices: Auto (default), 100MHz, ..., 150MHz. (Min=100Mhz, Max=150MHz).

DRAM Configuration



DRAM Timing Selectable

When DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

The Choices: By SPD (default), Manual.

CAS Latency Time

When DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

The Choices: Auto (default), 3,4,5,6.

DRAM RAS# to CAS# Delay

This field let you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

TForce 945P BIOS Manual

The Choices: **Auto** (default), 2,3,4,5,6.

DRAM RAS# Precharge

If an insufficient number of cycle is allowed for RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete, and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

The Choices: **Auto** (default), 2,3,4,5,6.

Precharge dealy (tRAS)

This item controls the number of DRAM clocks to activate the precharge delay.

The Choices: **Auto** (default),4/5/6/7/8/9/10/11/12/13/14/15.

Refresh Cycle Time (tRFC)

This field specifies the Refresh Cycle Time.

The Choices: **Auto** (default),4-45.(Min=4,Max=45).

TForce 945P BIOS Manual

Integrated Memory Test

Integrated Memory Test allows users to test memory compatibilities, and no extra devices or software are needed.

Step 1:

The default setting under this item is “Disable”, the condition should be change into “Enable” to proceed this test.

```
Phoenix - AwardBIOS CMOS Setup Utility (I94PA-A7T)
OverClock Navigator Engine

Overclock Navigator [Normal Operation]
===== Automate Overclock System =====
x Auto Overclock System U6 -Tech Engine
===== Manual Overclock System =====
** CPU Spec Voltage ** 1.6000
** NB/SB Spec Voltage ** 1.500
** Memory Spec Voltage ** 1.800
x CPU Voltage StartUp
x FSB Termination Voltage 1.2 V
x NB/SB Voltage 1.5 V
x Memory Voltage 1.8 V
x CPU Clock Ratio 8 X
x CPU Clock 100MHz
x System Memory Frequency Auto
x PCI Clock Mode 33.33MHz
x PCI-E Frequency Auto
x DRAM Configuration Press Enter
Integrated Memory Test [Disabled]

Item Help
Menu Level >

↑↓←→: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 “Enable” to “Disable” to complete the test.

```
Phoenix - AwardBIOS CMOS Setup Utility (I94PA-A7T)
OverClock Navigator Engine

Overclock Navigator [Normal Operation]
===== Automate Overclock System =====
x Auto Overclock System U6 -Tech Engine
===== Manual Overclock System =====
** CPU Spec Voltage ** 1.6000
** NB/SB Spec Voltage ** 1.500
** Memory Spec Voltage ** 1.800
x CPU Voltage StartUp
x FSB Termination Voltage 1.2 V
x NB/SB Voltage 1.5 V
x Memory Voltage 1.8 V
x CPU Clock Ratio 8 X
x CPU Clock 100MHz
x System Memory Frequency Auto
x PCI Clock Mode 33.33MHz
x PCI-E Frequency Auto
x DRAM Configuration Press Enter
Integrated Memory Test [Enabled]

Item Help
Menu Level >

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

TForce 945P BIOS Manual

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.

