PENTIUM

# P5I430TX/IIB
# TITANIUM IIB

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# Declaration of conformity

(EC conformity marking)

**QUANTUM DESIGNS(HK) LTD.**
**5/F Somerset House, TaiKoo Place 979 Kings Road,**
**Quarry Bay, Hong Kong**

declares that the product

**Pentium Motherboard**
**P5I430TX/IIB TITANIUM IIB**

is in conformity with
(reference to the specification under which conformity is declared in accordance with 89/336 EEC-EMC Directive)

| | | |
|---|---|---|
| ☑ | EN 55022 | Limits and methods of measurements of radio disturbance characteristics of information technology equipment |
| ☑ | EN 50081-1 | Generic emission standard part 1: Residual, commercial and light industry |
| ☑ | EN 50082-1 | Genetic immunity standard Part 1: Residual, commercial and light industry |

European Representative:

| | |
|---|---|
| QDI COMPUTER ( UK ) LTD | QDI COMPUTER ( SCANDINAVIA ) A/S |
| QDI SYSTEM HANDEL GMBH | QDI COMPUTER ( NETHERLANDS) B. V. |
| QDI COMPUTER (FRANCE) SARL | QDI COMPUTER HANDELS GMBH |
| QDI COMPUTER (ESPANA) S.A. | QDI COMPUTER (SWEDEN) AB |

Signature: Place / Date : HONG KONG /1997

Printed Name: Anders Cheung Position/ Title : President

# Declaration of conformity

| | |
|---|---|
| Trade Name: | QDI Computer ( U. S . A. ) Inc. |
| Model Name: | P6I440LX/ATX Legend-I |
| Responsible Party: | QDI Computer ( U. S. A.) Inc. |
| Address: | 41456 Christy Street<br>Fremont, CA 94538 |
| Telephone: | (510) 668-4933 |
| Facsimile: | (510) 668-4966 |
| Equipment Classification: | FCC Class B Subassembly |
| Type of Product: | PCI Pentium Motherboard |
| **Manufacturer**: | **Quantum Designs (HK) Inc.** |
| Address: | 5/F, Somerset House, TaiKoo Place<br>979 Kings Road, Quarry Bay, HONG KONG |

Supplementary Information:

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

Signature : _____ Date : 1997

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# *CONTENTS*

# SpeedEasy Quick Setup

## Procedures:

1. Correctly insert the CPU.
2. Plug in other configurations and restore the system.
3. Press <Del> key and power on the system to enter BIOS Setup.
4. Enter “SpeedEasy CPU Setup” menu to set up CPU speed.

**Note: If CPU speed is not set, your system will run at the default setting (75MHz for Pentium and AMD CPU, 100MHz for Cyrix etc ).**

5. Save and exit BIOS Setup, your system will boot successfully as expected.

## SpeedEasy CPU Setup Menu

Select <SpeedEasy CPU Setup> item from the main menu and enter the sub-menu:

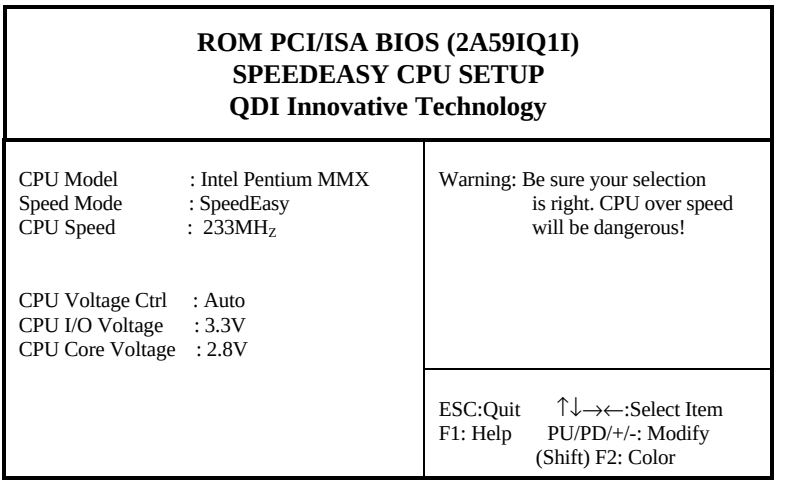


***Figure - 1 SpeedEasy CPU Setup Menu***

For *SpeedEasy* mainboard, BIOS provides a set of basic values for your CPU selection instead of the jumper settings. To make your system run as fast as possible, manually select CPU speed value in "CPU Speed" item on "*SpeedEasy* CPU Setup" menu screen.

Warning
Do not set the CPU frequency higher than its working frequency. We will not be responsible for any damages caused due to this.

**Note:** In addition, if your system can not reboot because of wrong CPU settings, hold down the hot-key<Del> while powering on the system, the system will reboot and run at basic values.

# Schneller Überblick über die Einstellungen:

## Vorgehensweise:

1. Setzen Sie die CPU richtig ein.

2. Stecken Sie weitere Komponenten ein und vervollständigen Sie das System.

3. Drücken < DEL > oder < ENTF > und schalten Sie das System ein, um in das BIOS-Setup zu gelangen.

4. Wählen Sie das Menü „Speed Easy CPU Setup“, um die CPU-Taktfrequenz einzustellen.

Anmerkung: Wenn Sie die CPU-Taktfrequenz nicht einstellen, wird Ihr System in der Grundeinstellung laufen (75 MHz bei Intel Pentium® und AMD CPUs, 100 Mhz bei Cyrix 6x86 CPUs usw.).

5. Wählen Sie die Option „Save and Exit BIOS Setup“, um die vorgenommen Änderungen abzuspeichern. Anschließend können Sie wie erwartet das System erfolgreich hochfahren.

# Menü für die SpeedEasy CPU-Einstellungen

Wählen Sie das Menü < SpeedEasy CPU Setup > aus und gehen Sie in das folgende Untermenü:

**ROM PCI/ISA BIOS (2A59IQ1I)**
**SPEEDEASY CPU SETUP**
**QDI Innovative Technology**

| | |
|---|---|
| CPU Model : Intel Pentium MMX<br>Speed Mode : SpeedEasy<br>CPU Speed : 233MHz<br><br>CPU Voltage Ctrl : Auto<br>CPU I/O Voltage : 3.3V<br>CPU Core Voltage : 2.8V | Warning: Be sure your selection is right. CPU over speed will be dangerous!<br><br>ESC:Quit ↑↓→←:Select Item<br>F1: Help PU/PD/+/-: Modify<br>(Shift) F2: Color |

*Bild 1 „SpeedEasy CPU Setup Menu“*

Beim den *SpeedEasy*-Mainboard stellt Ihnen das BIOS anstelle von Jumper-Einstellungen eine Auswahl von Grundeinstellungen zur Verfügung. Um Ihr System optimal zu betreiben, können Sie von Hand die Werte für die CPU-Taktfrequenz unter der Option „CPU-Taktfrequenz unter der Option „CPU Speed“ im „*SpeedEasy* CPU Setup“ Menü einstellen.

Warnung: Sie sollten die CPU-Taktfrequenz nicht höher als die angegebene Arbeitsgeschwindigkeit einstellen. Anderfalls sehen wir uns für irgendwelche hierdurch hervorgerufene Schäden nicht verantwortlich.

**Anmerkung:** Falls Ihr System aufgrund einer falschen CPU-Einstellung nicht mehr hochfahren kann, halten Sie beim inschalten des Rechners die Taste < DEL > bzw. < ENTF > gedrückt. Das System wird dann mit den Grundeinstellungen neu gestartet.

# Setup Rápido

## Procedimiento:

1. Insertar la CPU correctamente.

2. Insertar otros dispositivos en el sistema.

3. Presionar la tecla <Del> y arrancar el sistema para entrar en BIOS setup.

4. Seleccionar el menu “SpeedEasy CPU setup” para seleccionar la velocidad de la CPU.

Nota: si no selecciona la velocidad de la CPU, el sistema funcionará a la velocidad por defecto (75 Mhz para Pentium y AMD, 100 MHz para Cyrix 6x86, etc.)

5. Grabar y salir de BIOS Setup, entonces el sistema arrancará y funcionará como Ud. espera.

## Configuración de la CPU en el menu SpeedEasy

Seleccione <SpeedEasy CPU setup> en el menu principal para entrar en el siguiente menu:

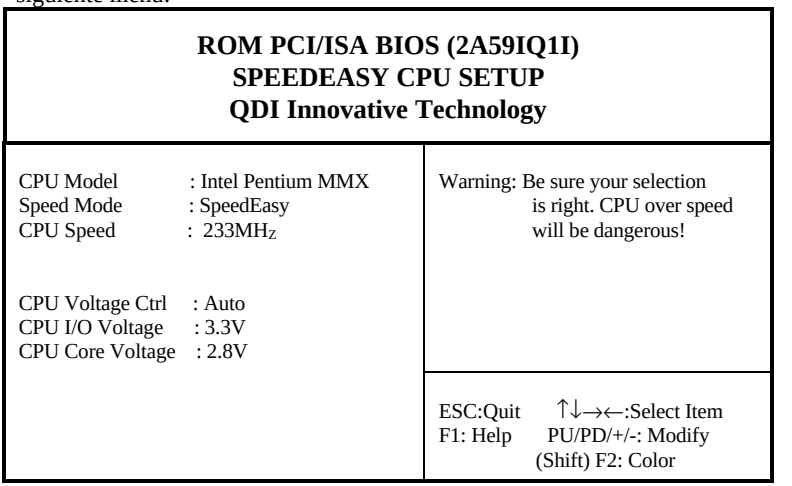


*Figure -1. SpeedEasy CPU Setup Menu*

Para la placa base *SpeedEasy*, la BIOS proporciona un juego de valores básicos para seleccionar el tipo de CPU, en lugar de los jumpers. Para hacer que su sistema funcione lo más rapidamente posible, Ud. puede manualmente aumentar el valor de la velocidad de frecuencia en "CPU Speed" en el menu <*SpeedEasy* CPU setup>.

Aviso: es recomendable no seleccionar una frecuencia superior para la CPU a la que esta fue diseñada. En caso contrario, no nos hacemos responsables de los posibles daños que esto pueda causar.

Nota: por lo tanto, si su sistema no puede rearrancar de nuevo tras haber variado la frecuencia de trabajo de la CPU por una incorrecta, Ud. puede arrancar manteniendo apretada la tecla <Del> mientras conecta su equipo. El sistema arrancará con los valores básicos.

# Mise en marche rapide

## Démarche à suivre:

1) Insérer correctement le Processeur.

2) Assembler les autres éléments et mettez le système en place.

3) Appuyer sur la touche <Del> (Efface) et mettre le système en marche afin d'accéder à la configuration du BIOS.

4) Accédez au menu "SpeedEasy CPU Setup " pour mettre au point la fréquence du processeur.

Remarque : Si vous ne réglez pas la vitesse du processeur, votre système va fonctionner à la fréquence par défaut, (75Mhz pour les processeurs Pentium d'Intel et d' AMD , 100Mhz pour les processeurs 6X86 de Cyrix etc... )

5) Sauvegarder la configuration et sortir du BIOS , alors votre système peut démarrer comme vous le voulez.

## Menu de configuration de processeur de SpeedEasy

Sélectionnez <SpeedEasy CPU Setup> du menu principal et accédez au sous-menu comme suit :

| **ROM PCI/ISA BIOS (2A59IQ1I)**<br>**SPEEDEASY CPU SETUP**<br>**QDI Innovative Technology** | |
|---|---|
| CPU Model : Intel Pentium MMX<br>Speed Mode : SpeedEasy<br>CPU Speed : 233MHz<br><br>CPU Voltage Ctrl : Auto<br>CPU I/O Voltage : 3.3V<br>CPU Core Voltage : 2.8V | Warning: Be sure your selection is right. CPU over speed will be dangerous!<br><br>ESC:Quit ↑↓→←:Select Item<br>F1: Help PU/PD/+/-: Modify<br>(Shift) F2: Color |

*Figure -1. SpeedEasy CPU Setup Menu*

Pour les cartes mère *SpeedEasy* , le BIOS va vous procurer un ensemble de paramètres de base pour le choix de votre processeur au lieu de placer des cavaliers ( Jumpers ). Pour faire fonctionner votre système à la plus haute fréquence possible , vous pouvez augmenter manuellement les valeurs de fréquence du processeur dans "CPU Speed" sur l'écran menu "*SpeedEasy* CPU Setup".

Avertissement : Vous avez intérêt à ne pas mettre la fréquence du processeur plus haute que celle indiquée par le manufacturier.Sinon, nous ne pourrions pas être tenu responsables des dégâts que cela peut causer.

Remarque : En plus si votre système ne peut pas redémarrer à cause du mauvais réglage du processeur, vous pouvez appuyer sur la touche clé <Del> ( ou Efface ) pendant que vous remettiez le système en marche. Le système va redémarrer et va fonctionner avec les paramètres de base.

# Setup Rapido

## Procedure:

1. Inserire la CPU correttamente.

2. Inserire gli altri componenti e ricomporre il systema.

3. Premere il tasto <Del> e accendere il sistema per entrare nel setup del Bios.

4. Entrare nel menu “SpeedEasy CPU Setup” per impostare la velocita` della CPU.

Nota: Se la velocita` di CPU non viene impostata, il sistema lavorera` alla velocita` di default (75Mhz per CPU Pentium e AMD, 100 Mhz per Cyrix 6 x 86 CPU ecc.).

5. Salvare e uscire dal Setup del Bios. Il sistema si riavviera` alla velocita` voluta.

## Menu SpeedEasy per l`impostazione della CPU

Selezionare <SpeedEasy CPU Setup> dal menu principale ed entrare nel seguente sottomenu:

**ROM PCI/ISA BIOS (2A59IQ1I)**
**SPEEDEASY CPU SETUP**
**QDI Innovative Technology**

| | |
|---|---|
| CPU Model : Intel Pentium MMX<br>Speed Mode : SpeedEasy<br>CPU Speed : 233MHz<br><br>CPU Voltage Ctrl : Auto<br>CPU I/O Voltage : 3.3V<br>CPU Core Voltage : 2.8V | Warning: Be sure your selection is right. CPU over speed will be dangerous!<br><br>ESC:Quit ↑↓→←:Select Item<br>F1: Help PU/PD/+/-: Modify<br>(Shift) F2: Color |

*Figura 1: Menu SpeedEasy per l`impostazione della CPU*

Per una mainboard *SpeedEasy*, il BIOS fornisce una serie di valore base per la specifica CPU, invece di dover impostarli via jumpers. Per far lavorare il sistema in modo ottimale, si puo` impostare la velocita` di CPU manualmente, alla voce "CPU Speed" del menu "*SpeedEasy* CPU Setup".

Attenzione: QDI declina ogni responsabilita` per eventuali danni causati alla CPU da una impostazione della velocita` piu` alta di quanto indicato dal produttore della CPU stessa.

Nota: Se il sistema non completa il boot per impostazioni errate della CPU, riaccendere tenendo premuto il tasto <Del>. Il sistema si riavviera` con I valori di base.

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## SpeedEasy CPU ÉèÖÃÄ¿Â¼

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| ROM PCI/ISA BIOS (2A59IQ1I)<br>SPEEDEASY CPU SETUP<br>QDI Innovative Technology | |
|---|---|
| CPU Model : Intel Pentium MMX<br>Speed Mode : SpeedEasy<br>CPU Speed : 233MHz<br><br>CPU Voltage Ctrl : Auto<br>CPU I/O Voltage : 3.3V<br>CPU Core Voltage : 2.8V | Warning: Be sure your selection is right. CPU over speed will be dangerous!<br><br>ESC:Quit ↑↓→←:Select Item<br>F1: Help PU/PD/+/-: Modify<br>(Shift) F2: Color |

Í¼£-1 SpeedEasy CPU ÉèÖÃÄ¿Â¼

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4¡¢½øÈë "SpeedEasy CPU Setup" Ä¿Â¼ÉèÖÃ CPU ËÙ¶È¡£

**×¢Òâ£ºÈç¹ûÓÃ»§²»ÉèÖÃCPUËÙ¶È£¬ÔòÏµÍ³¿ÉÓÃÔ-Éè¶¨Öµ ÔËÐÐ (Intel ±¼ÌÚºÍ AMD K5 CPU ¿ÉÓÃ 75HMz ÔËÐÐ£¬ Cyrix 6x86 CPU ¿ÉÓÃ 100MHz ÏÂÔËÐÐ)¡£**

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中文简体

## SpeedEasy CPU ÉèÖÃÄ¿Â¼

ÔÚ BIOS ÉèÖÃ³ÌÐòÖ÷Ä¿Â¼ÖÐÑ¡Ôñ <SpeedEasy CPU Setup> Ò»Ïî£¬½ø ÈëÈçÏÂ×ÓÄ¿Â¼£º

| ROM PCI/ISA BIOS (2A59IQ1I)<br>SPEEDEASY CPU SETUP<br>QDI Innovative Technology | |
|---|---|
| CPU Model : Intel Pentium MMX<br>Speed Mode : SpeedEasy<br>CPU Speed : 233MHz<br><br>CPU Voltage Ctrl : Auto<br>CPU I/O Voltage : 3.3V<br>CPU Core Voltage : 2.8V | Warning: Be sure your selection is right. CPU over speed will be dangerous!<br><br>ESC:Quit ↑↓→←:Select Item<br>F1: Help PU/PD/+/-: Modify<br>(Shift) F2: Color |

Í¼£-1 SpeedEasy CPU ÉèÖÃÄ¿Â¼

¶ÔÓÚ*SpeedEasy*Ö÷°å£¬BIOSÎªCPUÔ¤ÉèÁËÒ»Ì×»ù±¾²ÎÊý¶ØÌÐÐëÉèÖÃÈÎÎñ£ÎªÁËÊ¹ÏµÍ³ÔËÐÐÓÚCPU±êÊ¶µÄÆµÂÊ£¬ÓÃ»§ÄÜ¹»ÔÚ "*SpeedEasy* CPU Setup" Ä¿Â¼ÆÁÄ»ÉÏ×ÔÐÐÐÞ¸Ä CPU µÄËÙ¶È¡£

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**×¢Òâ£º**

**Èç¹ûÏµÍ³ÒòÎªÓÃ»§ÉèÖÃ´íÎóµ¼ÖÂÏµÍ³»ÄÜÔÙÆô¶¯£¬Ôò¿ÉÒÔ°´ÏÂÈÈ ¼ü <Del>±£³Ö²»¶¯£¬È»ºó¿ª»ú-ÏµÍ³¿ÉÒÔÔ¤ÉèµÄ»ù±¾²ÎÊýÆô¶¯¼°ÔËÐÐ¡£**

# Chapter 1
# Introduction

## Overview

P5I430TX-IIB TITANIUM IIB green mainboard provides a highly integrated solution for fully compatible, high performance PC/ATX platforms, and supports Intel Pentium, Cyrix 6x86, 6x86MX and AMD K5, K6 microprocessors. It features Write-Back Secondary Cache memory for 512KB in size. Flexible main memory size can be installed from 8MB up to 256MB DRAMs, so as to give full play to the advantages of the Pentium, Cyrix 6x86, 6x86MX and AMD K5, K6 CPUs. The mainboard offers a wide range of interfaces to support integrated on-board IDE and on-board I/O functions.

The current green function is compliant with ACPI specification and OS Directed Power Management.

## Key Features

**CPU**
- Supports Intel Pentium 75, 90, 100, 120, 133, 150, 166, 180, 200MHz, Intel Pentium Processor with MMX technology.
- Supports Cyrix 6x86 100MHz (P120 Plus), 110MHz (P133 Plus), 120MHz (P150 Plus), 133MHz (P166 Plus), 150MHz (P200 Plus)*, 6x86L and Cyrix 6x86MX CPUs
- Supports AMD K5 PR75, PR90, PR100, PR120, PR133, PR166, PR200 and AMD K6 CPUs.
- Switching regulator (2.0~3.5V circuit) on board.

**Chipset**
- Intel's 82439 TX, PIIX4, 324 Pin BGA package chipset.

**Clock Chip**
- Supports $I^2C$ clock chip on board and it is conducive to reduce EMI.

**Main memory**
- Supports 4x72 pin SIMM modules and 2x168 pin DIMM modules.
- 64-bit data path for flexible memory size expands from 8MB up to 256MB DRAMs for SIMM socket.
- Supports Fast Page mode DRAM and EDO DRAM for SIMM socket.
- Supports from 8MB to 64MB 3.3V unbuffered SDRAM DIMM or 3.3V unbuffered EDO DIMM for DIMM slot.

**Cache Memory**
- Provides 512KB L2 Pipelined Burst Cache or DRAM



**"*": The max speed of Intel PCIset specification is 66MHz only, it is recommended by Intel not to set system clock frequency over 66MHz.**

| | |
|---|---|
| | Cache on board.<br>- Provides 2 kinds of cache chips for users: 512KB cache on board. |
| **On-board IDE** | - Supports 2 PCI Bus Master (Bus Master works as DMA Mode 2 type) IDE ports.<br>- Supports PIO mode up to Mode 4 Timing<br>- Supports "Ultra DMA/33" synchronous DMA mode transfers up to 33mbytes/sec.<br>- Supports 2 Fast IDE interfaces for up to 4 IDE devices e.g. IDE hard disks and CD ROM drives. |
| **Green function** | - Support for advanced Configuration, Power Interface (ACPI) specification and OS Directed Power Management.<br>- Supports 3 green modes: Doze, Standby and Suspend. |
| **On-board I/O** | - 4 x ISA Slots and 4 x PCI Slots.<br>- Uses NS Plug & Play IO chip PC87309.<br>- Supports up to two 3.5" or 5.25" floppy drives 360K/720K/1.2M/1.44M/2.88M format.<br>- Supports 120MB floppy drive & ZIP drive.<br>- All I/O ports can be enabled or disabled in BIOS.<br>- Two high speed 16550 compatible UARTs (COM1/COM2/COM3/COM4 selectable) with 16-byte send/receive FIFOs supporting MIDI compliant).<br>- One parallel port at I/O address 378H/278H/3BCH with additional bi-direction I/O capability and multi-mode selection (SPP/EPP/ECP) (IEEE 1284 compliant).<br>- Provides protection circuit to prevent damages to the parallel port when a connected printer is powered up or operated at a higher voltage.<br>- Supports PS/2 mouse and PS/2 keyboard (optional).<br>- Supports IrDA TX/RX Header.<br>- Supports USB (Universal Serial Bus) in specification. |
| **Soft Power-Down** | - Supports Windows 95 Software Power-Down. |
| **Advanced Features** | - On board LM78 & LM75 supporting system monitoring (monitor system voltages, temperatures and FAN speed) (optional). |
| **BIOS** | - Licensed advanced AWARD BIOS. Supports Flash ROM BIOS, Plug and Play ready, DMI ready. Built-in NCR810 SCSI BIOS. |
| **Board size** | - 208mm x 305mm. |

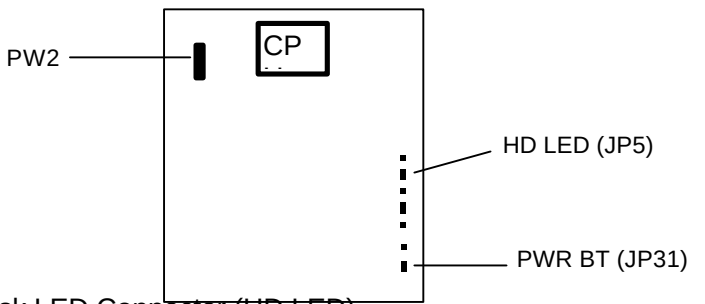
# Chapter 2
# Connector Configuration

This section lists all connector pin assignment and port description on the main-board. The situations of the connectors and ports are illustrated in the following figures. Before inserting these connectors, please note the directions.

## Power Switch (PWR BT)

Connect an ATX Power Supply connector to PW2 socket first.

1. If you want to power up your system, you should turn on the mechanical switch of the ATX power supply first, then push once the button connected to PWR BT connector.
2. If you want to power off your system, just push once again the button connected to PWR BT connector.




## Disk LED Connector (HD LED)

| PIN NUMBER | FUNCTION |
|---|---|
| 1 | LED ANODE |
| 2 | LED CATHODE |
| 3 | LED CATHODE |
| 4 | LED ANODE |

## Speaker Connector (SPEAKER)

| PIN NUMBER | FUNCTION |
|---|---|
| 1 | SPKDATA |
| 2 | NC |
| 3 | GND |
| 4 | VCC |

SLEEP LED Connector (SLEEP LED)

| PIN NUMBER | FUNCTION |
|---|---|
| 1 | LED ANODE |
| 2 | LED CATHODE |

Reset Switch (Reset)

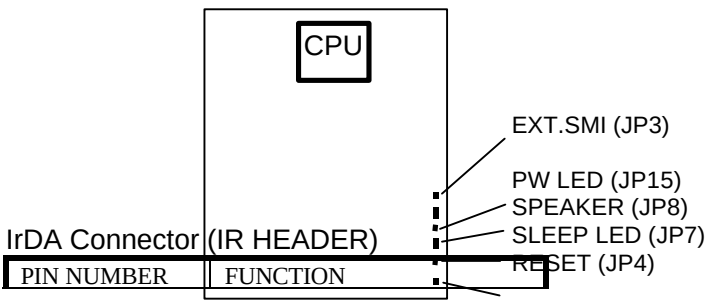
| SETTING | FUNCTION |
|---|---|
| CLOSE ONCE | RESET THE SYSTEM |
| OPEN | NORMAL |

Hardware Green (EXT.SMI)

| SETTING | FUNCTION |
|---|---|
| CLOSE ONCE | HARDWARE GREEN |
| OPEN | NORMAL |

Power LED (PW LED)

| SETTING | FUNCTION |
|---|---|
| 1 | VCC |
| 2 | NC |
| 3 | GND |



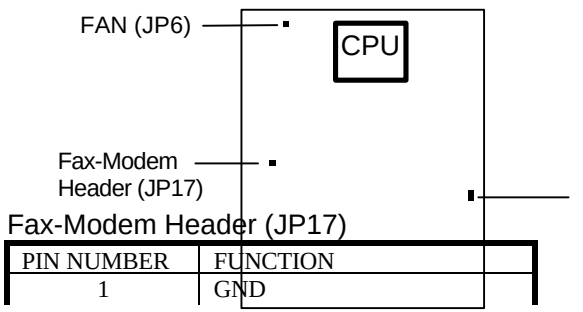
| | |
|---|---|
| 1 | VCC |
| 2 | NC |
| 3 | IRRX |
| 4 | GND |
| 5 | IRTX |
| 6 | VCC |

FAN Connector (FAN)

| PIN NUMBER | FUNCTION |
|---|---|
| 1 | GND |
| 2 | +12V |
| 3 | Control |

I/O Port Description

| CONNECTOR | FUNCTION |
|---|---|
| IDE1 | Primary IDE Port |
| IDE2 | Secondary IDE Port |
| FLOPPY | Floppy Drive Port |
| PRINTER | Parallel Port |
| UART1 | COM1/COM2/COM3/COM4 |
| UART2 | COM2/COM3/COM4/COM1 |
| USB1 | First USB Port |
| USB2 | Second USB Port |
| Mouse | PS/2 Mouse |
| KB | Keyboard |



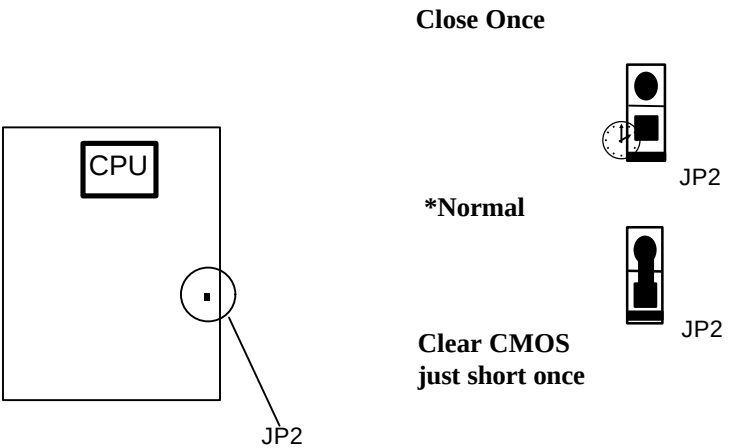

Fax-Modem Header (JP17)

| PIN NUMBER | FUNCTION |
|---|---|
| 1 | GND |

| | |
|---|---|
| 2 | RI- |
| 3 | 5VSB |

**Remark: The Fax-Modem header is for Fax-Modem wake up.**

## Clear CMOS (JP2)




"*": Represents default jumper settings.

Note: Power down the AC supply (110/220V) when you wanting to clear CMOS.

## Memory Configuration

The P5I430TX-IIB Titanium IIB mainboard provides 4 SIMM slots and 2 DIMM slots for providing a flexible memory size from 8MB up to 256MB main memory. Please do not plug two different brand of SIMM on a bank simultaneously.

If using DIMM together with SIMM, you must install the DIMM and SIMM as shown in the following table.

| DIMM1 | DIMM2 | SIMM1&2 | SIMM3&4 |
|---|---|---|---|
| None | Don't care | Single row or double row SIMM | Don't care |

| | | | |
|---|---|---|---|
| Single row DIMM | Don't care | Single row SIMM | Don't care |
| Double row DIMM | Don't care | None | Don't care |

If DIMM or SIMM only used, you can install the DIMM and SIMM as shown in the following table.

| Total Memory | SIMM1&2 | SIMM3&4 | DIMM1 | DIMM2 |
|---|---|---|---|---|
| 8MB | 4MB x 2 | ---- | ---- | ---- |
| | ---- | ---- | 8MB | ---- |
| 16MB | 8MB x 2 | ---- | ---- | ---- |
| | 4MB x 2 | 4MB x 2 | ---- | ---- |
| | ---- | ---- | 16MB | ---- |
| | ---- | ---- | 8MB | 8MB |
| 24MB | 8MB x 2 | 4MB x 2 | ---- | ---- |
| 32MB | 8MB x 2 | 8MB x 2 | ---- | ---- |
| | 16MB x 2 | ---- | ---- | ---- |
| | ---- | ---- | 16MB | 16MB |
| | ---- | ---- | 32MB | ---- |
| 48MB | 16MB x 2 | 8MB x 2 | ---- | ---- |
| | ---- | ---- | 32MB | 16MB |
| 64MB | 16MB x 2 | 16MB x 2 | ---- | ---- |
| | 32MB x 2 | ---- | ---- | ---- |
| | ---- | ---- | 32MB | 32MB |
| 72MB | 32MB x 2 | 4MB x 2 | ---- | ---- |
| 80MB | 32MB x 2 | 8MB x 2 | ---- | ---- |
| 96MB | 32MB x 2 | 16MB x 2 | ---- | ---- |
| 128MB | 32MB x 2 | 32MB x 2 | ---- | ---- |
| 256MB | 64MB x 2 | 64MB x 2 | ---- | ---- |

Remark

1. If DIMM1 and/or DIMM2 has 64MB or 128MB with 64bit SDRAM cell, SIMM1, 2, 3, 4 must be empty.
2. DRAM and SDRAM modules can be installed in a variety of configurations. Please note that not all possible combinations of installation are list here.

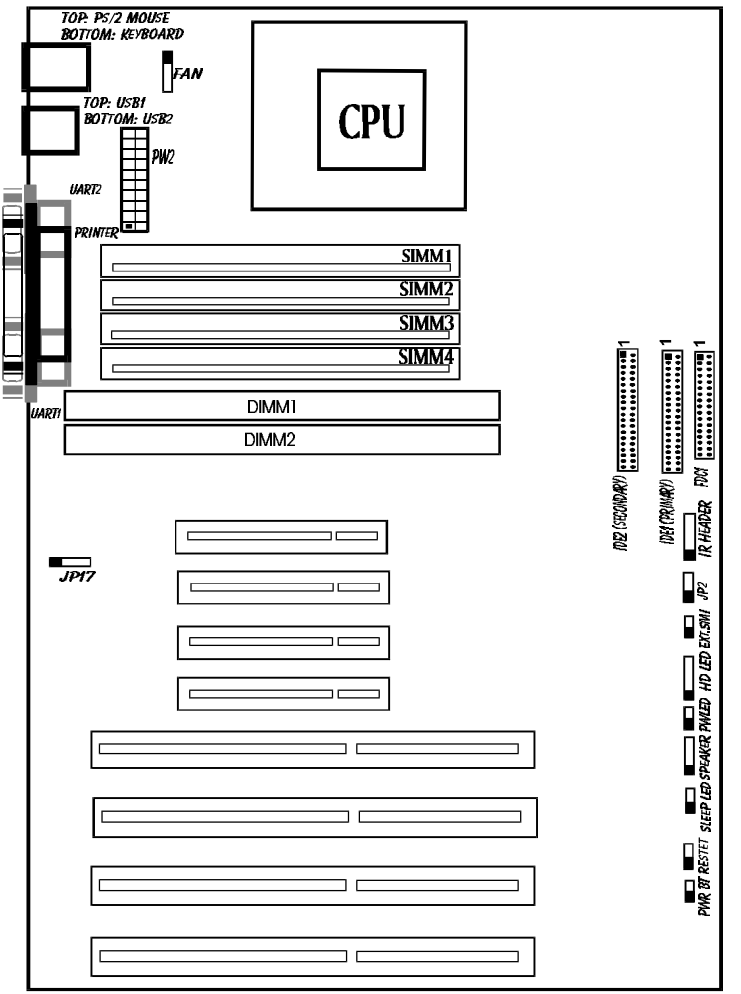



*Figure 2-1 Illustration of All Connectors on Board*

# Chapter 3
# AWARD BIOS Description

## Entering BIOS Setup

Power on the computer, when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl> + <Alt> + <Esc> keys.

***Press <Del> to enter SETUP***

Once you have entered the Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from eleven setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

| **ROM PCI/ISA BIOS (2A59IQ1I)**<br>**CMOS SETUP UTILITY**<br>**AWARD SOFTWARE, INC.** | |
|---|---|
| STANDARD CMOS SETUP | INTEGRATED PERIPHERALS |
| SpeedEasy CPU SETUP | System Monitor SETUP * |
| BIOS FEATURES SETUP | PASSWORD SETTING |
| CHIPSET FEATURES SETUP | IDE HDD AUTO DETECTION |
| POWER MANAGEMENT SETUP | SAVE & EXIT SETUP |
| PNP/PCI CONFIGURATION | EXIT WITHOUT SAVING |
| LOAD SETUP DEFAULTS | |
| Esc : Quit | ↑ ↓ → ← : Select Item |
| F10 : Save & Exit Setup | (Shift) F2 : Change Color |
| Time, Date, Hard Disk Type... | |

***Figure-1 Main Menu For BIOS Setup***

***: This item is blank for without LM78 and LM75 on board.**

## Standard CMOS Setup

Use the arrow keys to highlight the item, then use the < PgUp> or <PgDn> keys to select the value you want in each item.

**ROM PCI/ISA BIOS (2A59IQ1I)**
**CMOS SETUP UTILITY**
**AWARD SOFTWARE, INC.**

Date (mm:dd:yy) : Thu, Mar 6, 1997
Time (hh:mm:ss) : 00:00:00

| HARD DISKS | TYPE | SIZE | CYLS | HEAD | PRECOMP | LANDZ | SECTOR | MODE |
|---|---|---|---|---|---|---|---|---|
| Primary Master | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | Auto |
| Primary Slave | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | Auto |
| Secondary Master | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | Auto |
| Secondary Slave | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | Auto |

Drive A : 1.44M, 3.5 in.
Drive B : None

Video : EGA/VGA
Halt On : All Errors

Base Memory : 640K
Extended Memory : 7168K
Other Memory : 384K
Total Memory : 8192K

ESC : Quit ↑↓→← : Select Item PU/PD/+/- :Modify
F1 : Help (Shift)F2 : Change Color

***Figure-2 Standard CMOS Setup Menu***

Hard Disk
**Primary Master/Primary Slave/Secondary Master/Secondary Slave**

This category identify the types of 2 channels that have been installed in the computer. Type "User" is user-definable. If your hard disk drive type does not match with the drive table or listed in it, you can use Type "User" to define your own drive type manually.

If you select Type **"Auto"**, BIOS will Auto-Detect the HDD & CD-ROM drive at the POST stage and show the IDE for HDD & CD-ROM drive. If you select Type **"User"**, related information is asked to be entered into the following items. Enter the information directly from the keyboard and press **<Enter>**:

If an additional ESDI HDD Controller interface is ESDI, on-chip Primary and/or Secondary has to be disabled. If the controller of HDD interface is SCSI, the type should be set to "Auto" whatever the HDD interfaces are.

| | | | |
|---|---|---|---|
| CYLS | number of cylinders | HEAD | number of heads |

| | | | |
|---|---|---|---|
| PRECOMP | write precom | LANDZ | landing zone |
| SECTOR | number of sectors | MODE | HDD access mode |

Video

This category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

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

Error Halt

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

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

Memory

This category display-only what is determined by POST (Power On Self Test) of the BIOS.

| | |
|---|---|
| Base Memory | The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system. |
| Extended Memory | The BIOS determines how much extended memory is presented during the POST. |
| Other Memory | This is the memory that can be used for different applications. Shadow RAM is mostly used in this area. |
| Total Memory | Total memory of the system is the sum of the above memory. |

## SpeedEasy CPU Setup

**ROM PCI/ISA BIOS (2A59IQ1I)**
**SPEEDEASY CPU SETUP**
**QDI Innovative Technology**

| | | |
|---|---|---|
| CPU Mode | :Intel Pentium MMX | |
| Speed Mode | :SpeedEasy | Warning: Be Sure your selection |
| CPU Speed | :166MHz | is right. CPU over speed |
| | | will be dangerous! |
| CPU Voltage Ctrl | :Auto | ESC: Quit ↑↓→← : Select Item |
| CPU I/O Voltage | :3.3V | F1 : Help PU/PD/+/- : Modify |
| CPU Core Voltage | : 2.8V | (Shift) F2:Color |

***Figure-3 SpeedEasy CPU Setup***

The following pages indicates the options of each item and describe their meaning.

| Item | Option | Description |
|---|---|---|
| • CPU Model | | BIOS can automatically detect known CPU model, so this item is shown only. |
| • Speed Model | *SpeedEasy* | Select CPU speed according to your CPU brand and type. |
| | *Jumper Emulation* | This item is only for the users who understand all the CPU parameter. (such as CPU voltage, clock frequency and clock multiplier.) |
| • Bus Clock | *50 MHz*<br>*55 MHz*<br>*60 MHz*<br>*66 MHz*<br>*66+MHz*<br>*75 MHz* | |
| • Multiplier | *x1.5, BF1/BF0=1/1*<br>*x2, BF1/BF0=1/0*<br>*x2.5, BF1/BF0=0/0*<br>*x3, BF1/BF0=0/1* | Left table is only for Pentium CPU. The other CPU Manufacturers' definitions of BF1/BF0 should be referred from CPU Vendor. |
| • CPU Speed | *75MHz ~ 233MHz*<br>*P120+ ~ P200+*<br>*PR75 ~ PR200*<br>*166MHz ~ 233MHz* | For Intel Pentium CPU.<br>For Cyrix CPU.<br>For AMD K5 CPU.<br>For AMD K6 CPU. |
| • CPU Voltage Ctrl | *Auto*<br>*Manual* | BIOS can automatically set CPU voltage.<br>UserS can set CPU voltage according to CPU brand and type. |

**Warning: System may hang or your CPU may be damaged if you wrongly set CPU voltage. It is strongly recommended not to change "Auto" to "manual".**

## BIOS Features Setup

**ROM PCI/ISA BIOS (2A59IQ1I)**

| BIOS FEATURES SETUP<br>AWARD SOFTWARE, INC. | | | |
|---|---|---|---|
| Virus Warning | : Disabled | Video BIOS Shadow | : Enabled |
| CPU Internal Cache | : Enabled | C8000~CBFFF Shadow | : Disabled |
| External Cache | : Enabled | CC000~CFFFF Shadow | : Disabled |
| Quick Power On Self Test | : Disabled | D0000~D3FFF Shadow | : Disabled |
| Boot Sequence | : C,CDROM,A | D4000~D7FFF Shadow | : Disabled |
| Swap Floppy Drive | : Disabled | D8000~DBFFF Shadow | : Disabled |
| Boot Up Floppy Seek | : Enabled | DC000~DFFFF Shadow | : Disabled |
| Boot Up Numlock Status | : On | Delay for HDD (Secs) | : 0 |
| Typematic Rate Setting | : Disabled | | |
| TypematicRate (Chars/Sec) | : 6 | ESC: Quit | ↑↓→← : Select Item |
| Typematic Delay(Msec) | : 250 | F1 : Help | PU/PD/+/- : Modify |
| Security Option | : Setup | F5 : Old Values | (Shift)F2: Color |
| PCI/VGA Palette Snoop | : Disabled | F7 : Load Setup Defaults | |
| OS Select For DRAM>64MB | : Non-OS2 | | |
| Report No FDD ForWIN95 | : Yes | | |

***Figure-4 BIOS Features Setup***

The following pages indicates the options of each item and describe their meaning.

| **Item** | **Option** | **Description** |
|---|---|---|
| • Virus Warning | *Enabled* | Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table. |
| | *Disabled* | No warning message appears when anything attempts to access the boot sector or hard disk partition table.<br>**Note: This function is available only for DO and other OSes that do not trap INT13.** |
| • CPU L1/L2 Internal Cache | *Enabled* | Enables CPU internal Level1/ Level2 cache. |
| | *Disabled* | Disables CPU internal Level1/ Level2 cache. |
| • Quick Power On Self Test | *Enabled* | Enables quick POST. BIOS will shorten or skip some check items during POST to speed up POST after you power on the computer. |
| | *Disabled* | Normal POST. |
| • Boot Sequence | *C, CD-ROM,A ... SCSI, C, A* | Any search sequence can be chosen for bootup. |
| • Swap Floppy Drive | *Enabled* | Exchanges the assignment of A&B floppy drives. |
| | *Disabled* | The assignment of A&B floppy drives are normal. |

| | | |
|---|---|---|
| • Boot Up Floppy Seek | *Enabled* | BIOS searches for floppy disk drive to determine if drive is ready for diskette read/write during booting. |
| | *Disabled* | Skips drive seeking to speed up system booting. |
| • Boot Up Numlock Status | *On* | Keypad is used as number keys. |
| | *Off* | Keypad is used as arrow keys. |
| •Typematic Rate Setting | *Enabled* | Enables typematic rate and typematic delay programming. |
| | Disabled | Disables typematic rate and typematic delay programming. The system BIOS will the use default value of these two items. |
| • Typematic Rate Chars/Sec) | 6~30 | Set the speed of the typematic rate (characters per second). |
| • Typematic Delay (Msec) | *250~1000* | Set the time of the typematic delay. |
| • Security Option | *System* | The system will not boot and access to Setup will be denied if the correct password is not entered when prompted. |
| | *Setup* | The system will boot up, but access to Setup will be denied if the correct password is not entered when prompted. **Note: To disable security, select Password Setting at Main Menu then you will be requested to enter the password. Do not type anything just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.** |
| • PCI/VGA Palette Snoop | *Enabled* | Enables PCI/VGA palette snoop. |
| | *Disabled* | Disables PCI/VGA palette snoop. |
| • OS Select For DRAM>64MB | *Non-OS2* | If your operating system is not OS/2, please select this item. |
| | *OS2* | If system DRAM is more than 64MB and operating system is OS/2,please select this item. |
| • Report No FDD For WIN95 | *Yes* | Release IRQ6 to WIN95 if there is no FDD in connection. |
| | *No* | Does not release IRQ6 to WIN95. |
| • Video BIOS Shadow | *Enabled* | Video BIOS will be copied to RAM. Video Shadow will increase the video speed. |
| | *Disabled* | Video shadow is disabled. |
| • C8000~CBFFF Shadow ... DC000-DFFFF Shadow: | *Enabled* | Optional ROM will be copied to RAM by 16K bytes per unit. |
| | *Disabled* | The shadow function is disabled. |

| | | |
|---|---|---|
| • Delay For HDD (Secs) | *0 ~ 15* | This item allows you to set additional delay time (*0~15 seconds)* for HDD detection. If you encounter HDD detection problems, add delay time. |

## Chipset Features Setup

| ROM PCI/ISA BIOS (2A59IQ1I)<br>CHIPSET FEATURES SETUP<br>AWARD SOFTWARE, INC. | | | |
|---|---|---|---|
| Auto Configuration | : Enabled | Pipeline Cache Timing | : Faster |
| DRAM Timing | : 60ns | Chipset NA# Asserted | : Enabled |
| | | Mem Drive Str. (MA/RAS) | : Auto |
| DRAM Leadoff Timing | : 10/6/3 | DRAM Refresh Rate | : 15.6us |
| DRAM Read Burst (EDO/FP) | : x222/x333 | | |
| DRAM Write Burst Timing | : x222 | | |
| Fast EDO Leadoff | : Disabled | | |
| Refresh RAS# Assertion | : 4 Clks | | |
| Fast RAS To CAS Delay | : 3 | | |
| DRAM Page Idle Timing | : 2 Clks | | |
| DRAM Enhanced Paging | : Enabled | | |
| Fast MA to RAS# Delay | : 2 Clks | | |
| SDRAM Speculaive Read | : Disabled | | |
| System BIOS Cacheable | : Disabled | | |
| Video BIOS Cacheable | : Disabled | | |
| 8 Bit I/O Recovery Timing | : 1 | ESC: Quit | ↑↓→← : Select Item |
| 16 Bit I/O Recovery Timing | : 1 | F1 : Help | PU/PD/+/- : Modify |
| Memory Hole At 15M-16M | : Disabled | F5 : Old Values | (Shift)F2: Color |
| PCI 2.1 Compliance | : Disabled | F7 : Load Setup Defaults | |

***Figure-5 Chipset Features Setup Menu***

The following pages indicates the options of each item and describe their meaning.

| **Item** | **Option** | **Description** |
|---|---|---|
| • Auto Configuration | *Enabled*<br>*Disabled* | Enable auto configuration of DRAM timing<br>Manually set DRAM timing.<br>**Warning: Do not set DRAM timing too fast this may affect the stability of your system .** |
| • DRAM Timing | *60ns,*<br>*70ns* | This item is of selected DRAM read/write timing. Ensure your SIMMs are as fast as 60ns, otherwise you have to select 70ns. |
| • DRAM Leadoff Timing... Fast MA to RAS# Delay | | These items are regarding DRAM Timing configurations. |
| • SDRAM (CAS | | These items are reguarding SDRAM Timing |

| | | |
|---|---|---|
| Lat/RAS-to-CAS) & SDRAM Speculative Read | | configurations. |
| • System BIOS Cacheable | *Enabled* | Other than conventional memory, the system BIOS area is also cacheable. |
| | *Disabled* | The system BIOS area is not cacheable. |
| • Video BIOS Cacheable | *Enabled* | Other than conventional memory, video BIOS area is also cacheable. |
| | *Disabled* | Video BIOS area is not cacheable. |
| • 8 Bit I/ O Recovery Time | *1~4* | It is the ISA Bus 8 bit I/O operating recovery time. |
| | *NA* | 8 bit I/O recovery time does not exist. |
| • 16 Bit I / O Recovery Time | *1~4* | It is the ISA Bus 16 bit I/O operating recovery time. |
| | *NA* | 16 bit I/O recovery time does not exist. |
| • Memory Hole At 15M-16M | *Enabled* | Memory Hole at 15-16M is reserved for expanded PCI card.. |
| | *Disabled* | Do not set this memory hole. |
| • Pipeline Cache Tim-Fastening | *Fastest* | This item allows you to select two timing of pipeline cache, faster and fastest. |
| • Chipset NA# Asserted | *Enabled*<br>*Disabled* | This item allows you to select between two methods of chipset NA# asserted during CPU with cycles/CPU line fills Enabled or Disabled.. |
| • Mem Drive Str. (MA/RAS) | | This item allows you select memory drive Str. If high loading SIMM RAM is used (the number of memory chips more than 64), you should select 16mA/16mA. |
| • DRAM Refresh Rate | *15.6us* | For SDRAM and/or EDO/FPM memory subsystem.. |
| | *31.2us* | For EDO/FPM only memory subsystem.. |
| | *64.4us* | |
| | *125us* | |
| | *256us* | |
| | *Disabled* | Refresh disabled. |

## Power Management Setup

**ROM PCI/ISA BIOS (2A59IQ1I)**
**POWER MANAGEMENT SETUP**
**AWARD SOFTWARE, INC.**

| | | | |
|---|---|---|---|
| Power Management | : User Define | ** Reload Global Timer Events ** | |
| PM Control by APM | : Yes | IRQ [3-7, 9-15], NMI | : Enabled |
| Video Off Method | : V/H SYNC + Blank | Primary IDE 0 | : Disabled |
| Video Off After | : Standby | Primary IDE 1 | : Disabled |
| MODEM Use IRQ | : NA | Secondary IDE0 | : Disabled |

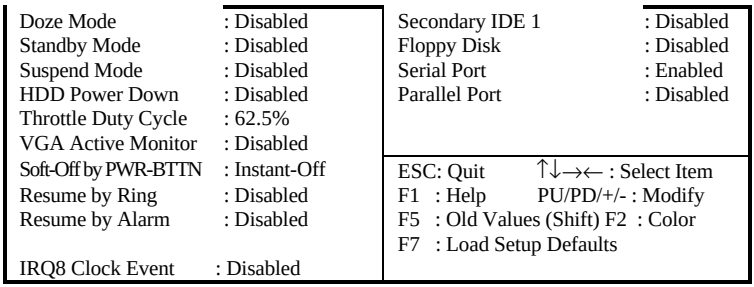



***Figure-6 Power Management Setup Menu***

The following pages indicates the options of each item and describe their meaning.

| **Item** | **Option** | **Description** |
|---|---|---|
| • Power Management | *Disabled* | Global Power Management (PM) will be disabled. |
| | *User Define* | Users can configure their own Power Management Timer. |
| | *Min Saving* | Pre - defined timer values are used so that all timers are in their MAX values. |
| | *Max Saving* | Pre - defined timer values are used so that all timers are in their MIN value. |
| • PM Control by APM | *No* | System BIOS will ignore APM when Power Management is enabled. |
| | *Yes* | System BIOS will wait for APM's prompt before it enters any PM mode e.g. Standby or Suspend. **Note: If APM is installed (choose "Yes"), and if there is a task running, and the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode. But if APM is not installed (choose "No"), this option has no effect.** |
| • Video Off Method | *Blank Screen* | The system BIOS will only blank off the screen when disabling video. |
| | *V / H SYNC + Blank* | In addition to Blank Screen, BIOS will also turn off the V-SYNC & H - SYNC signals from VGA cards to monitor. |
| | *DPMS* | This function is enabled only for the VGA card supporting DPMS. **Note: When the Green monitor detects the V/H-SYNC signal, the electron gun will be turned off.** |
| • Video Off After | *N/A* | System BIOS will never turn off the screen. |
| | *Suspend* | Screen off when system is in Suspend mode. |
| | *Standby* | Screen off when system is in Standby mode. |

| | | |
|---|---|---|
| | *Doze* | Screen off when system is in Doze mode. |
| • MODEM Use IRQ | *3, 4, 5, 7, 9, 10, 11* | Special wake-up event for Modem. |
| | *NA* | Invalidates this feature. |
| • Doze mode | *Disabled* | The system will never enter Doze mode. |
| | *1Min ~ 1 Hr* | Defines the continuous idle time before the system enters Doze mode. If any item defined in "***Wake Up Events In Doze & Suspend***" is On and activated, the system will be woken up. |
| • Standby Mode | *Disabled* | The system will never enter Standby mode. |
| | *1 Min ~ 1Hr* | Defines the continuous idle time before the system enters Standby mode. If any item defined in "***Wake Up Events In Doze & Suspend***" is On and activated, the system will be woken up. |
| • Suspend Mode | *Disabled* | The system will never enter Suspend mode. |
| | *1 Min ~ 1Hr* | Defines the continuous idle time before the system enters Suspend mode. If any item defined in "***Wake Up Events In Suspend***" is On and activated, the system will be waken up. |
| • HDD Power Down | *Disabled* | HDD's motor will not be off. |
| | *1Min~15 Min* | Defines the continuous HDD idle time before the HDD enters power saving mode (motor off). |
| • Throttle Duty Cycle | *Enabled* | Enables clock throttling. |
| | *Disabled* | Disables clock throttling. |
| • Soft-Off by PWR-BTTN | *Delay 4 Secs* | If the user presses the power button for more than four seconds while the system is in the working state, a hardware event is generated and the system will divert to the self off state. |
| | *Instant-Off* | If the user presses the power button, the system will power off immediately. |
| • Resume by Ring | *Enabled* | Allows the system to be powered on when a Ring indicator signal comes to UART1 or UART2 from external modem. |
| | *Disabled* | Does not allow Ring Power-On. |
| • Resume by Alarm | *Enabled* | RTC alarm can be used to generate a wake event when the system is in power off. |
| | *Disabled* | RTC no alarm function. |
| • IRQ8 Clock Event | *Enabled* | Generates a clock event. |
| | *Disabled* | Does not generate a clock event. **Note: IRQ8 Clock Event must be enabled when you want to use Resume By Ring and Alarm.** |
| • IRQ(3~7, 9~15), NMI... Parallel Port | *Enabled* | Reloads global timer. |
| | *Disabled* | Does not influence to global timer. |

## PNP/PCI Configuration Setup

**ROM PCI/ISA BIOS (2A59IQ1I)**
**PNP/PCI CONFIGURATION SETUP**
**AWARD SOFTWARE, INC**

| | | | |
|---|---|---|---|
| PNP OS Installed | : No | PCI IDE IRQ Map To | : PCI-AUTO |
| Resources Controlled By | : Manual | Primary IDE INT# | : A |
| Force Update ESCD | : Disabled | Secondary IDE INT# | : B |
| IRQ-3 assigned to | : Legacy ISA | Used MEM base addr | : N/A |
| IRQ-4 assigned to | : Legacy ISA | | |
| IRQ-5 assigned to | : PCI/ISA PnP | | |
| IRQ-7 assigned to | : PCI/ISA PnP | | |
| IRQ-9 assigned to | : PCI/ISA PnP | | |
| IRQ-10 assigned to | : PCI/ISA PnP | | |
| IRQ-11 assigned to | : PCI/ISA PnP | | |
| IRQ-12 assigned to | : PCI/ISA PnP | | |
| IRQ-14 assigned to | : Legacy ISA | | |
| IRQ-15 assigned to | : Legacy ISA | | |
| DMA-0 assigned to | : PCI/ISA PnP | | |
| DMA-1 assigned to | : PCI/ISA PnP | | |
| DMA-3 assigned to | : PCI/ISA PnP | | |
| DMA-4 assigned to | : PCI/ISA PnP | ESC: Quit | ↑↓→← : Select Item |
| DMA-5 assigned to | : PCI/ISA PnP | F1 : Help | PU/PD/+/- : Modify |
| DMA-6 assigned to | : PCI/ISA PnP | F5 : Old Values | (Shift)F2: Color |
| DMA -7 assigned to | : PCI/ISA PnP | F7 : Load Setup Defaults | |

***Figure-7 PNP/PCI Configuration Setup***

The following pages indicates the options of each item and describe their meaning.

| **Item** | **Option** | **Description** |
|---|---|---|
| • Resources Controlled By | *Manual* | Assigns system resources (IRQ and DMA) manually by users. |
| | *Auto* | Assigns system resources (IRQ and DMA) automatically by BIOS. |
| • Force Updating ESCD | *Enabled* | The system BIOS will force updating ESCD once, then automatically sets this item as Disable. |
| | *Disabled* | Disable forces updating ESCD function. |
| • IRQ-3 ~ IRQ-15 assigned to | *Legacy ISA* | The specified IRQ-x will be assigned to ISA only. |
| | *PCI/ISA PnP* | The specified IRQ-x will be assigned to ISA or PCI. |
| • DMA-0 ~ DMA-7 | *Legacy ISA* | The specified DMA-x will be assigned |

| | | |
|---|---|---|
| assigned to | | to ISA only. |
| | *PCI/ISA PnP* | The specified DMA-x will be assigned to ISA or PCI. |
| • PCI IDE IRQ Map To | *PCI-AUTO* | The BIOS will scan for PCI IDE devices and determine the location of the PCI IDE device. |
| | *PCI - SLOT5~1* | The BIOS will scan IRQ14 for primary IDE INT# and IRQ15 for secondary IDE INT# at the specified slot. |
| | *ISA* | The BIOS will not assign any IRQs even if PCI IDE card is found, because some IDE cards connect the IRQ14&15 directly from ISA slot through a card. |
| • Primary IDE INT# | *A ~ D* | Indicates which INT# the PCI IDE card uses for its interrupting 1st IDE channel. |
| • Secondary IDE INT# | *A ~ D* | Indicates which INT# the PCI IDE card uses for its interrupting 2nd IDE channel. |

## Load Setup Defaults

The Setup Default settings are common and efficient.

## Integrated Peripherals

| ROM PCI/ISA BIOS (2A59IQ1I)<br>INTEGRATED PERIPHERALS<br>AWARD SOFTWARE, INC. | | |
|---|---|---|
| IDE HDD Block Mode | : Enabled | |
| IDE Primary Master PIO | : Auto | |
| IDE Primary Slave PIO | : Auto | |
| IDE Secondary Master PIO | : Auto | |
| IDE Secondary Slave PIO | : Auto | |
| IDE Primary Master UDMA | : Auto | |
| IDE Primary Slave UDMA | : Auto | |
| IDE Secondary Master UDMA | : Auto | |
| IDE Secondary Slave UDMA | : Auto | |
| On-Chip Primary PCI IDE | : Enabled | |
| On-Chip Secondary PCI IDE | : Enabled | |

| | | |
|---|---|---|
| USB Keyboard Support | : Disabled | |
| Onboard FDC Controller | : Enabled | |
| Onboard Serial Port 1 | : Auto | ESC: Quit ↑↓→← : Select Item |
| Onboard Serial Port 2 | : Auto | F1 : Help PU/PD/+/- : Modify |
| UR2 Mode | : Standard | F5 : Old Values (Shift)F2: Color |
| Onboard Parallel Port | : 378/IRQ7 | F7 : Load Setup Defaults |
| Parallel Port Mode | : SPP | |

***Figure 8 Integrated Peripherals***

The following indicates the options of each item and describe their meaning.

| Item | Option | Description |
|---|---|---|
| • IDE HDD Block Mode | *Enabled* | Allows IDE HDD to read/write several sectors once. |
| | *Disabled* | IDE HDD only reads/writes a sector once. |
| • IDE Primary/Secondary Master/Slave PIO | *Mode 0-4* | Defines the IDE primary/secondary master/ slave PIO mode. |
| | *Auto* | The IDE PIO mode is defined according to auto - detect. |
| • On-chip Primary/Secondary PCI IDE | *Enabled* | On-chip primary/secondary PCI IDE port is enabled. |
| | *Disabled* | On-chip primary/secondary PCI IDE port is disabled. |
| • Onboard FDC Controller | *Enabled* | Onboard floppy disk controller is enabled. |
| | *Disabled* | Onboard floppy disk controller is disabled. |
| • Onboard Serial Port 1/2 | *Auto* | Sets address and interrupt number automatically. |
| | *COM1/3F8, COM2/2F8, COM3/3E8, COM4/2E8,* | Defines onboard serial port address. |
| | *Disabled,* | Onboard serial port is disabled. |
| • UR2 Mode | *Standard* | Traditional Serial port |
| | *Sharp IR* | Sharp IR mode |
| | *IrDA SIR* | IrDA SIR mode |
| • Onboard Parallel Port | *378/IRQ7, 3BC/IRQ7, 278/IRQ5, 378/IRQ5,* | Define onboard parallel port address and IRQ channel. |
| | *Disabled* | Onboard parallel port is disabled. |
| • Parallel Port mode | *SPP* | Defines the parallel port mode as Standard Parallel Port (SPP), Enhanced Parallel Port (EPP), or Extended Capabilities Port (ECP). |
| | *EPP1.7* | |
| | *EPP1.9* | |
| | *ECP* | |
| | *ECP+EPP* | |

## System Monitor Setup

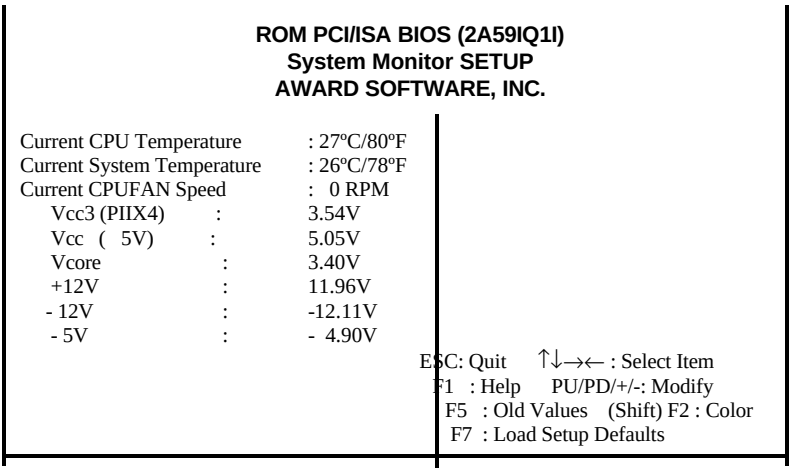



***Figure-9 System Monitor Setup Menu***

The following pages indicates the options of each item and describe their meaning.

| Item | Option | Description |
|---|---|---|
| • Current CPU Temperature | | Displays the current CPU temperature detected by the "LM75" chip. |
| • Current System Temperature | | Displays the current system temperature detected by the "LM78" chip. |
| • CPUFAN Speed | | RPM (Revolution Per Minute) Speed of fan which is connected to the fan header CPUFAN. Fan speed value is based on an assumption that tachometer signal is two pulses per revolution; In other cases, you should regard it relatively. |
| •Vcc3<br>VCC<br>Vcore<br>+12 V,<br>- 12 V,<br>- 5 V. | | Displays current Voltage values including all the most important voltages of the mainboard. Vcc3, Vcc, +12V, -12V, -5V are voltages from the ATX power supply, Vcore is CPU Core Voltage from the on board switching Power Supply. |

## Password Setting

When you select this function, the following message appears at the center of the screen to assist you in creating a password.

***ENTER PASSWORD***

Type the password, up to eight characters, and press <**Enter**>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <**Enter**>. You may also press <**Esc**> to abort the selection and not enter a password.

To disable password, press <**Enter**> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

***PASSWORD DISABLED***

If you select "**System**" at "Security Option" of "BIOS Features Setup" Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter "CMOS Setup".

If you select "**Setup**" at "Security Option" of "BIOS Features Setup" Menu, you will be prompted for the password only when you try to enter "CMOS Setup".

## IDE HDD Auto Detection

The Enhanced IDE features are included in all Award BIOS. Below is a brief description of these features.

**ROM/PCI/ISA BIOS (2A59IQ1I)**
**IDE HDD AUTO DETECTION**
**AWARD SOFTWARE, INC.**

HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Primary Master:

Select Primary Master Option (N=Skip): N

| Option | Size | Cyls | Heads | Precomp | Landzone | Sectors | Mode |
|---|---|---|---|---|---|---|---|
| 1(Y) | 516 | 1120 | 16 | 65535 | 1119 | 59 | NORMAL |
| 2 | 516 | 524 | 32 | 0 | 1119 | 63 | LBA |
| 3 | 516 | 560 | 32 | 65536 | 1119 | 59 | LARGE |

Note: Some OSes (like SCO-UNIX) must use "NORMAL" for installation

***Figure-10 IDE HDD Auto Detection***

1. Setup Changes

**With auto-detection**

- BIOS setup will display all possible modes supported by the HDD including NORMAL, LBA and LARGE.
- If HDD does not support LBA modes, no "LBA" option will be shown.
- If number of physical cylinders are less than or equal to 1024, "LARGE" option may not be shown.
- Users can select an appropriate mode.

**With Standard CMOS Setup**

| | CYLS | HEAD | PRECOMP | LAND ZONE | SECTOR | MODE |
|---|---|---|---|---|---|---|
| Drive C: User(516MB) | 1120 | 16 | 65535 | 1119 | 59 | Normal |
| Drive D: None(203MB) | 684 | 16 | 65535 | 685 | 38 | --------- |

When HDD type is in "user" type, the "MODE" option will be opened for users to select their own HDD mode.

2. HDD Modes

The Award BIOS supports 3 HDD modes: NORMAL, LBA and LARGE, also Auto detect.

**NORMAL**

Generic access mode in which neither the BIOS nor the IDE controller will make any transformation during accessing. The maximum number of cylinders, heads and sectors for NORMAL mode are 1024,16 and 63.

If user sets his HDD to NORMAL mode, the maximum accessible HDD size will be 528 megabytes even though its physical size may be greater than that.

**LBA (Logical Block Addressing) mode**

A new HDD accessing method overcoming the 528 Megabyte bottleneck. The number of cylinders, heads and sectors shown in setup may not be the number physically contained in the HDD.

During HDD accessing, the IDE controller will transform the logical address described by sector, head and cylinder number into its own physical address inside the HDD. The maximum HDD size supported by LBA mode is 8.4 Gigabytes.

**LARGE mode**

Some IDE HDDs contain more than 1024 cylinder without LBA support (in some cases, users do not want LBA). The Award BIOS provides another alternative to support these kinds of HDD.

BIOS tricks DOS (or other OS) so the number of cylinders are less than 1024 by dividing it by 2. At the same time, the number of heads are multiplied by 2. A reverse transformation process will be made inside INT13h in order to access the right HDD address.

**Auto detect**

If using Auto detect, the BIOS will automatically detect IDE hard disk mode and set it to one kind of HDD modes.

3. Remark

To support LBA or LARGE mode of HDDs, there must be some software involved which are located in Award HDD Service Routin (INT13h).It may fail to access a HDD with LBA (LARGE) mode selected if you are running under an Operating System which replaces the whole INT 13h.

## Power - On Boot

If you have made all the changes to CMOS values and the system can not boot with the CMOS values selected in Setup, restart the system by turning it OFF then ON or press the "RESET" button on the system case. You may also restart the system by simultaneously pressing < **Ctrl** >, < **Alt** > and < **Del** > keys.

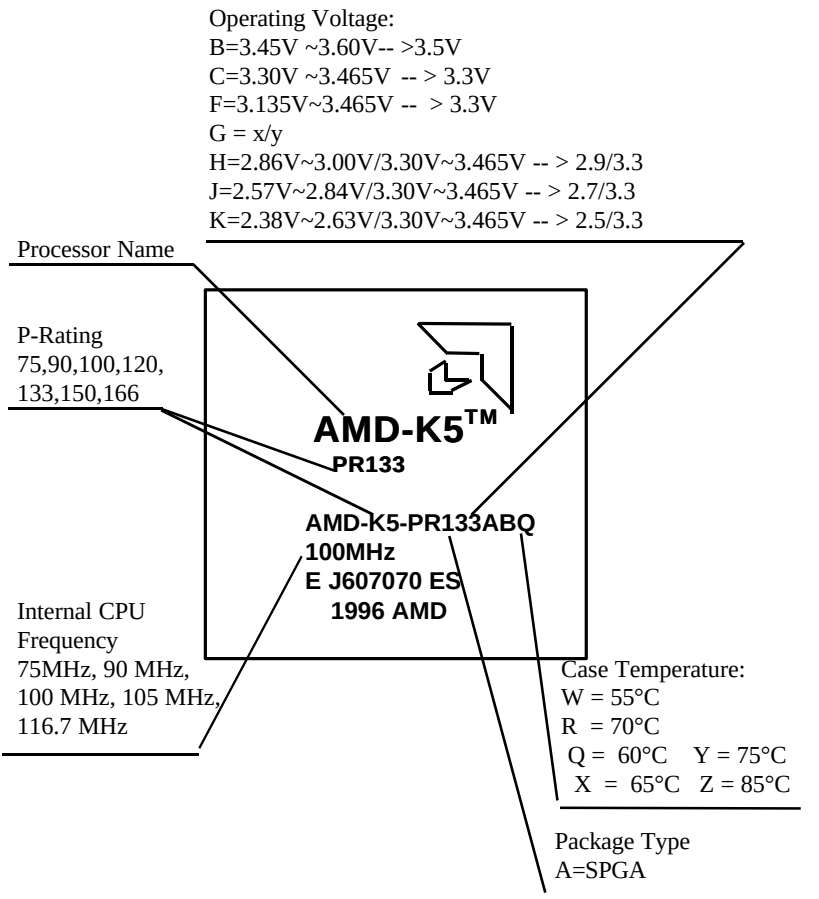
# Appendix A.
# **Utility Diskette**

Use this diskette to install drivers for Windows 95 and update your BIOS when necessary.

For more information, please refer to “README” file in “Utility Diskette”.

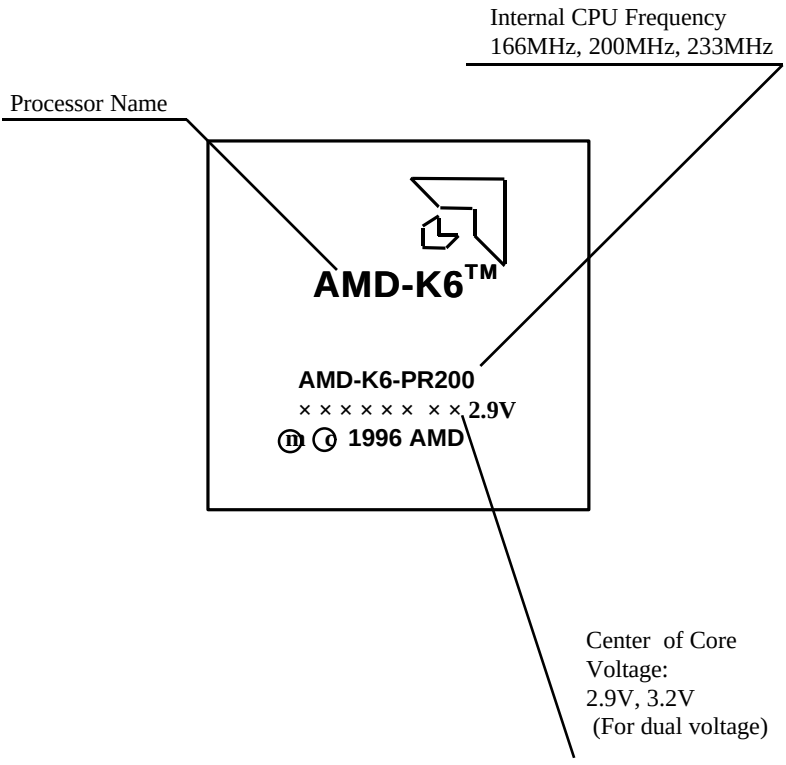
# Appendix B.

Introducing AMD-K5 CPU markings:



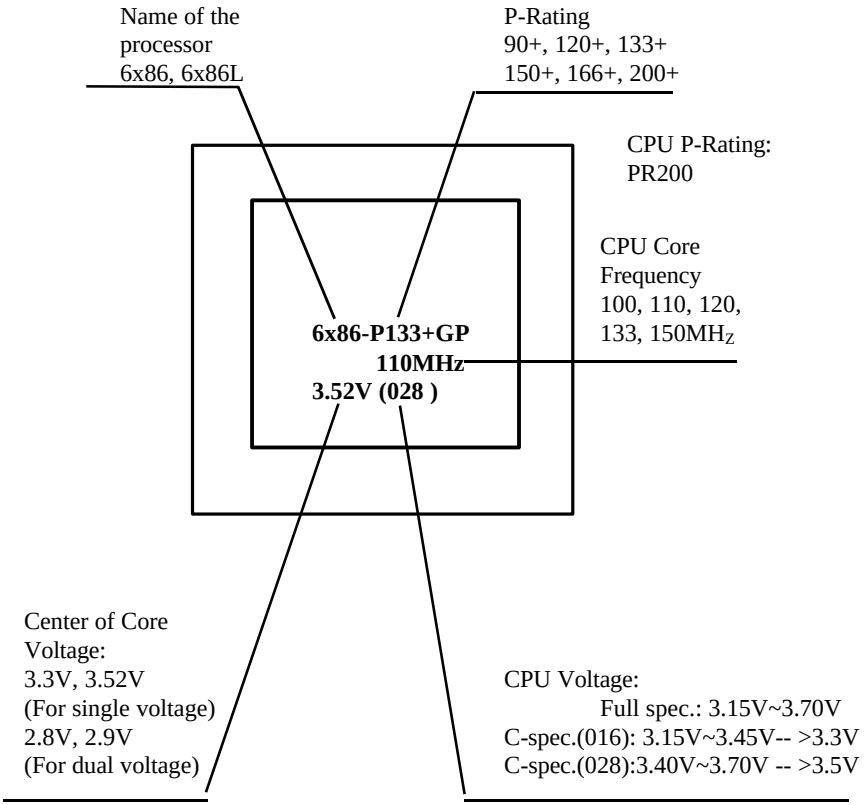

# Appendix C.

Introducing AMD-K6 CPU markings:



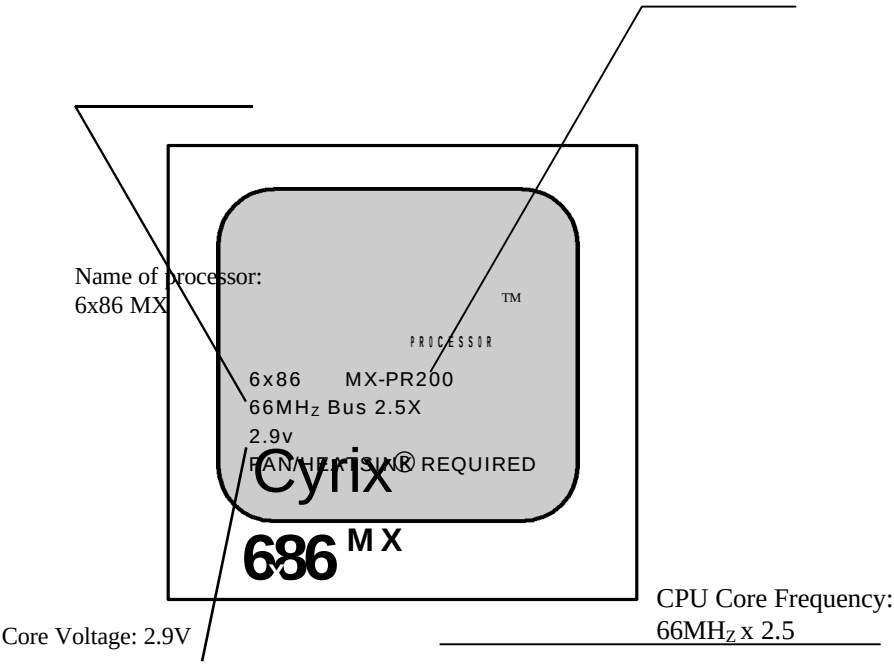

# Appendix D.

Introducing Cyrix 6x86 CPU markings:




# Appendix E.

Introducing Cyrix 6x86MX CPU markings:


Name of processor:
6x86 MX
TM
PROCESSOR
6x86 MX-PR200
66MHz Bus 2.5X
2.9v
FAN/HEATSINK REQUIRED
Cyrix®
6x86 MX
Core Voltage: 2.9V
CPU Core Frequency:
66MHz x 2.5

**P/N: 430-01011-102**
**Manual P5I430TX-ATXB TITANIUM IIB Ver 2.0**