

PENTIUM

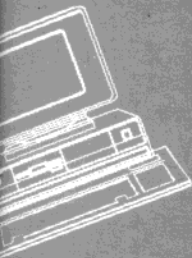
P5I430TX-250

TITANIUM I



User Manual

PC Main Board



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SpeedEasy Quick Setup

Procedures:

1. Insert the CPU correctly.
2. Plug in other configurations and restore the system.
3. Press key and power on the system to enter BIOS Setup.
4. Enter "SpeedEasy CPU Setup" menu to set up CPU speed.

Note: If you don't set CPU speed, your system will run at default setting (75MHz for Pentium and AMD CPU, 100MHz for Cyrix 6x86 CPU etc.).

5. Save and exit BIOS Setup, then your system can boot successfully as you expected.

SpeedEasy Type Introduction

SpeedEasy CPU Setup Menu

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

ROM PCU/ISA BIOS (2A59IQ19)	
SPEEDEASY CPU SETUP	
QDI Innovative Technology	
CPU Model : Intel Pentium MMX	Warning: Be sure your selection is right. CPU over speed will be dangerous!
Speed Mode : SpeedEasy	
CPU Speed : 166MHz	ESC: Quit ↑↓→← : Select Item F1: Help PU/PD/+/- : Modify (Shift) F2 : Color
CPU Voltage Ctrl : Auto	
CPU I/O Voltage : 3.3	
CPU Core Voltage : 2.8	

Figure -1 SpeedEasy CPU Setup Menu

For *SpeedEasy* main board, BIOS will provide you a set of basic values for your CPU selection instead of jumper setting. To make your system run as fast as possible, you can manually increase CPU Speed values in "CPU Speed" item on "*SpeedEasy* CPU Setup" menu screen.

Warning:

You'd better not to set CPU frequency higher than its working frequency. Otherwise, we will not be responsible for any damage it causes.

Note: In addition, if your system can not boot up again because of wrong CPU setting, you can hold down the hot-key while power on the system. The system will reboot and run at basic values.

Chapter 1

Introduction

Overview

P5I430TX TITANIUM I green main board provides a highly integrated solution for fully compatible, high performance PC/AT platforms, and supports Intel Pentium, Cyrix 6x86 and AMD K5, K6 microprocessors. It features Write-Back Secondary Cache memory for 256KB/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 and AMD K5, K6 CPUs. The main board offers a wide range of interface to support integrated on-board IDE and on-board I/O function.

The current Green function is compliant to ACPI specification and OS Directed power management.

Key Features

- CPU*
 - Supports Intel Pentium 75, 90, 100, 120, 133, 150, 166, 180, 200 MHz, Intel Pentium Processor with MMX technology
 - Supports Cyrix 6x86 100MHz (P120 Plus), 110MHz (P133 Plus), 120MHz (P150 Plus), 133MHz (P166 Plus), 150MHz (P200 Plus)* and 6x86L CPUs
 - Supports AMD K5 PR75, PR90, PR100, PR120, PR133, PR166 and K6 PR166, PR200 CPUs
 - 2.8/2.9/3.2V circuit on board, ready for Pentium MMX and Pentium MMX compatible CPU support
- Chipset*
 - Intel's 82439 TX, PIIX4, 324 Pin BGA package chipset
- Main memory*
 - Supports 4x72pin SIMM modules and 2x168 pin DIMM modules
 - 64-bit data path for flexible memory size expanded 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

*: The max speed of Intel PCset specification is 66MHz only, so it's not recommended by Intel to set system clock frequency up to 75MHz.

Introduction

- Cache memory* – Provides 256KB/512KB L2 Pipelined Burst Cache or DRAM Cache on board
 - Provides 2 kinds of cache sizes for user: 256KB/512KB cache on board
 - On-board IDE* – Supports 2 PCI Bus Master (Bus Master works as DMA Mode 2 type) IDE ports
 - Supports PIO mode up to Mode 4 Timing
 - Supports "Ultra DMA/33" synchronous DMA mode transfers up to 33MBytes/sec
 - Supports 2 Fast IDE interfaces for up to 4 IDE devices e.g. IDE hard disks and CD ROMs drives
 - Green function* – Supports Advanced Configuration and Power Interface (ACPI) specification and OS Directed Power Management.
 - Supports 3 green modes: Doze, Standby and Suspend
 - On-board I/O* – 3 x ISA Slots and 4 x PCI Slots
 - Use NS Plug & Play IO chip PC87336.
 - Supports up to two 3.5" or 5.25" floppy drives 360K/720K/1.2M/1.44M/ 2.88M format
 - Supports 120MB floppy drive
 - All I/O ports can be enabled or disabled in BIOS
 - Two high speed 16550 compatible UARTs (COM1/COM2/COM3/COM4 selectable) with 16-byte send/receive FIFOs and support MIDI mode
 - One parallel port at I/O address 378H/278H/ 3BCH with additional bi-direction I/O capability and multi-mode selection (SPP/EPP/ECP) (IEEE1284 compliant)
 - Provides protection circuit to prevent damage to the parallel port when a connected printer is powered up or operated at a higher voltage
 - Supports PS/2 mouse and PS/2 keyboard (optional)
 - Supports IrDA TX/RX Header
 - Supports USB (Universal Serial Bus) in specification
 - BIOS* – Licensed advanced AWARD BIOS. Supports Flash ROM BIOS, Plug and Play ready, DMI ready. Built-in NCR810 SCSI BIOS
 - Board size* – 220mm x 250mm
 - Power supply* – Standby Power supply support
-

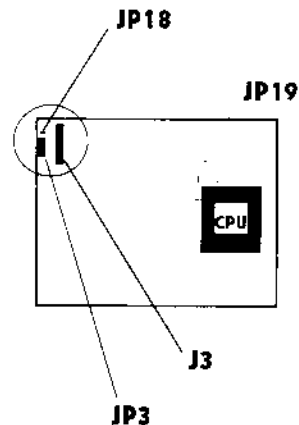
Chapter 2

Connector Configuration

This section lists all connector pin assignments and port descriptions on the main board. The situations of the connectors and ports are illustrated in the following figures. Before inserting these connectors, please pay attention to their directions.

Power Connector (J3)

PIN NUMBER	FUNCTION
1	POWER GOOD
2	+5V
3	+12V
4	-12V
5	GND
6	GND
7	GND
8	GND
9	-5V
10	+5V
11	+5V
12	+5V



Standby Power Connector (JP18)

PIN NUMBER	FUNCTION
1	5VSB
2	INST-ON
3	GND

Note:

If Standby Power supply is used, close JP19(2-3). If not, close JP19(1-2).

Connector Configuration

Power Switch (JP20)

If Standby Power supply is used, the Power Switch support the function as follows:

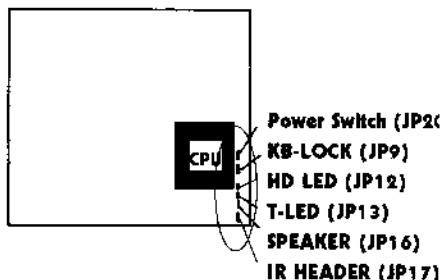
1. If you want to power up your system, you should turn on the mechanical switch of Standby Power supply first, then push once the button connected to Power Switch connector.
2. If you want to power off your system, you needn't to turn off the mechanical switch of Standby Power supply, just push the button connected to Power Switch connector for four seconds .

Keyboard Connector (JP3)

PIN NUMBER	FUNCTION
1	CLOCK
2	DATA
3	NC
4	GND
5	+5V

Hard Disk LED Connector (JP12)

PIN NUMBER	FUNCTION
1	VCC
2	IDE ACT
3	IDE ACT
4	VCC



Keylock Connector (JP9)

PIN NUMBER	FUNCTION
1	+5V
2	NC
3	GND
4	KEYLOCK
5	GND

Speaker Connector (JP16)

PIN NUMBER	FUNCTION
1	SPKDATA
2	NC
3	GND
4	VCC

IrDA Connector (JP17)

SETTING	FUNCTION
1	VCC
2	IRTX
3	GND
4	IRRX
5	NC
6	VCC

Turbo LED Connector (JP13)

PIN NUMBER	FUNCTION
1	GND
2	VCC

Connector Configuration

USB1/USB2 Connector (USB1/USB2)

PIN NUMBER	FUNCTION
1	VCC
2	Key
3	DATA -
4	DATA +
5	GND

FAN Connector (JP7)

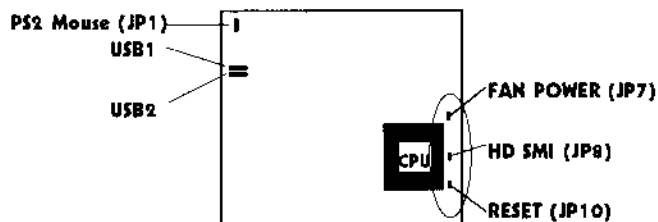
PIN NUMBER	FUNCTION
1	GND
2	+12V
3	GND

Hardware Green (JP8)

SETTING	FUNCTION
CLOSE	HARDWARE GREEN (Close once)
OPEN	NORMAL

Reset Switch (JP10)

SETTING	FUNCTION
CLOSE ONCE	RESET THE SYSTEM
OPEN	NORMAL



PS2 Mouse (JP1)

PIN NUMBER	FUNCTION
1	DATA
2	CLOCK
3	GND
4	NC
5	+5V

I/O Port Description

CONNECTOR	FUNCTION
IDE1	Primary IDE Port
IDE2	Secondary IDE Port
FLOPPY	Floppy Drive Port
PRINTER	Parallel Port
CN2	COM1/COM2/COM3/COM4
CN3	COM2/COM3/COM4/COM1

Clear CMOS

	CLEAR CMOS	NORMAL
JP6	1-2(Close once)	2-3

Memory Configuration

The PS1430TX-250 TITANIUM I main board 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 in two different brands of SIMM on a bank simultaneously.

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

Connector Configuration

DIMM 1	DIMM 2	SIMM 1&2	SIMM 3&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

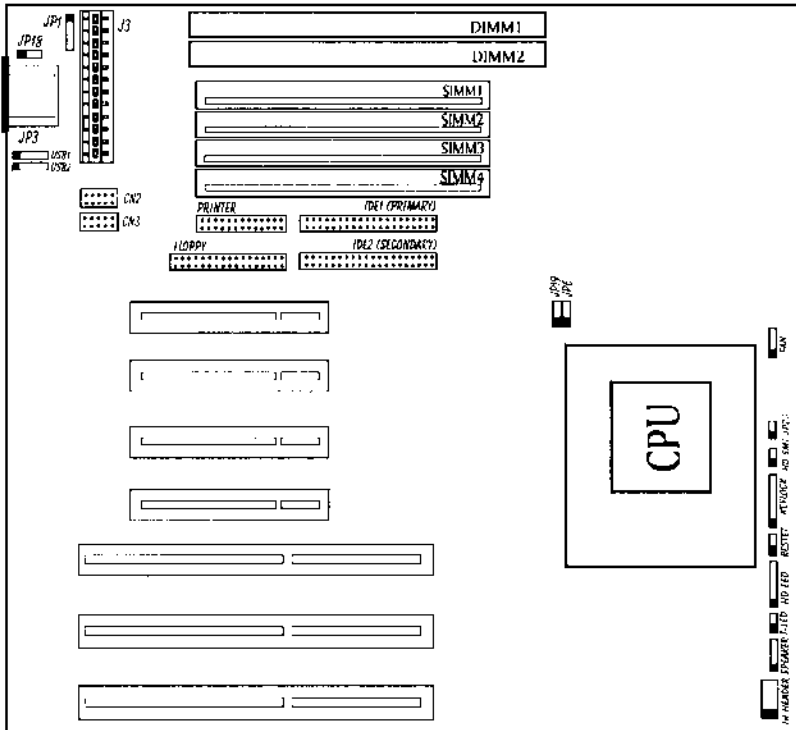
If using DIMM or SIMM only, you can install the DIMM and SIMM as following table.

Total Memory	SIMM 1 & 2	SIMM 3 & 4	DIMM1	DIMM2
8 MB	4 MB x 2	---	---	---
	---	---	8 MB	---
16 MB	8 MB x 2	---	---	---
	4 MB x 2	4 MB x 2	---	---
24 MB	---	---	16 MB	---
	---	---	8 MB	8 MB
32 MB	8 MB x 2	4 MB x 2	---	---
	8 MB x 2	8 MB x 2	---	---
48 MB	16 MB x 2	---	---	---
	---	---	16 MB	16 MB
64 MB	---	---	32 MB	---
	16 MB x 2	16 MB x 2	---	---
72 MB	32 MB x 2	---	---	---
	32 MB x 2	---	32 MB	16 MB
80 MB	---	---	---	---
	32 MB x 2	---	32 MB	32 MB
96 MB	32 MB x 2	4 MB x 2	---	---
128 MB	32 MB x 2	8 MB x 2	---	---
256 MB	32 MB x 2	16 MB x 2	---	---
	64 MB x 2	32 MB x 2	---	---
	64 MB x 2	64 MB x 2	---	---

Remark:

DRAM and SDRAM modules can be installed in a variety of configurations. Since all possible combinations of installation are too many here; it is not necessary to list them all.

Illustration of Connectors on board



Chapter 3

AWARD BIOS Description

Entering BIOS Setup

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

Press to enter SETUP

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

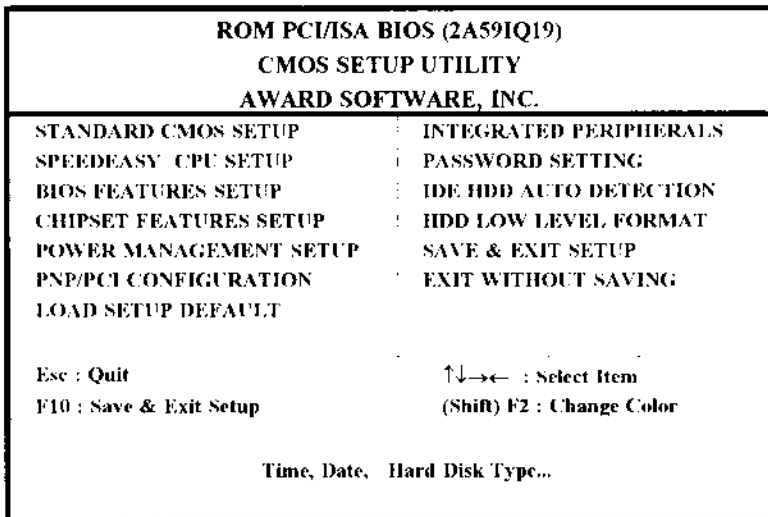


Figure 1 Main Menu For BIOS Setup

AWARD BIOS Description

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.

Date (mm:dd:yy) : Thu, Mar 6 1996								
Time (hh:mm:ss) : 00:00:00								
<u>HARD DISKS</u>	<u>TYPE</u>	<u>SIZE</u>	<u>CYLS</u>	<u>HEAD</u>	<u>PRECOMP</u>	<u>LANDZ</u>	<u>SECTOR</u>	<u>MODE</u>
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.				Base Memory : 640K			
Drive B	: None				Extended Memory : 7168K			
					Other Memory : 384K			
Video	: EGA/VGA				Total Memory : 8192K			
Halt On	: All Errors							
ESC: Quit	↑↓→←	: Select Item			PUPD/+/- : Modify			
F1 : Help	(Shift) F2	: Change Color						

Figure 2 Standard CMOS Setup Menu

Hard Disk

Primary Master/Primary Slave/Secondary Master/Secondary Slave

The categories identify the types of 2 channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are used for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type "User" is user-definable. If your hard disk drive type is not matched with 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 to the following items. Enter the information directly from the keyboard and press <Enter> :

If the controller of HDD interface is ESDI, On-Chip Primary/Secondary has to be disabled. If the controller of HDD interface is SCSI, the type shall be set to "Auto" whatever the HDD interface is.

CYLIS	number of cylinders	HEAD	number of heads
PRECOMP	write precom	LANDZ	landing zone
SECTOR	number of sectors	MODE	HDD access mode

Video

The 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, or PGA monitor adapters.
CGA 40	Color Graphic Adapter, power up in 40 column mode.
CGA 80	Color Graphic Adapter, power up in 80 column mode.
MONO	Monochrome adapter, includes high resolution monochrome adapters.

Error Halt

The category determines whether the computer will stop if an error is detected during power up.

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

Memory

The category is display-only which 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 memory that can be used for different applications. Most use for this area is Shadow RAM.
Total Memory	The system total memory is the sum of above memory.

AWARD BIOS Description

SpeedEasy CPU Setup

ROM PCI/ISA BIOS (2A59IQ19)		
SPEEDEASY CPU SETUP		
QDI Innovative Technology		
CPU Model	: Intel Pentium MMX	
Speed Mode	: SpeedEasy	Warning : Be Sure your selection is right. CPU over speed will be dangerous !
CPU Speed	: 166MHz	
CPU Voltage Ctrl	: Auto	
CPU I/O Voltage	: 3.3V	
CPU Core Voltage	: 2.8V	
	ESC: Quit	↑↓→← : Select Item
	F1 : Help	PU/PD/+/- : Modify
		(Shift) F2 : Color

Figure 3 SpeedEasy CPU Setup

The following pages tell you the options of each item and describe the meaning of each option.

CPU Model		BIOS can automatically detect known CPU model, so this item is shown only.
Speed Model	<i>SpeedEasy</i>	You should select CPU speed according to your CPU brand and type.
	<i>Jumper Emulation</i>	This item is only for the user who understand all the CPU parameter.(such as CPU voltage, clock frequency and clock multiplier.)
Bus Clock	<i>50MHz</i> <i>55MHz</i> <i>60MHz</i> <i>66MHz</i> <i>75MHz</i>	
Multiplier	<i>x 1.5, BF1/BF0=1/1</i> <i>x 2, BF1/BF0=1/0</i> <i>x 2.5, BF1/BF0=0/0</i> <i>x 3, BF1/BF0=0/1</i>	Left table is only for Pentium CPU. The other CPU Manufacturers' definitions of BF1/BF0 should be referred to your CPU Vendor.
CPU Speed	<i>75MHz~200MHz</i> <i>P120+~P200+</i> <i>PR75~PR200</i> <i>K6 CPU</i> <i>M2 CPU</i>	It is for Pentium CPU. It is for Cyrix CPU. It is for AMD CPU.

CPU Voltage Ctrl *Auto*
Manual

BIOS can automatically set CPU voltage.
User can set CPU voltage according to
CPU brand and type.

BIOS Features Setup

ROM PCI/ISA BIOS (2A59IQ19)			
BIOS FEATURES SETUP			
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:DR0M1A	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DEFFF Shadow	: Disabled
Boot Up Numlock Status	: On		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled	ESC: Quit	↑↓→← : Select Item
OS Select For DRAM>64MB	: Non-OS2	F1 : Help	PU/PD/+/ : Modify
		F5 : Old Values (Shift) F2 : Color	
		F7 : Load Setup Default	

Figure 4 BIOS Features Setup

The following pages tell you the options of each item and describe the meaning of each option.

Item	Option	Description
Virus Warning	<i>Enabled</i>	Activate 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.
	<i>Disabled</i>	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.
<p>Note: This function is available only for DOS and other OSes that do not trap INT13.</p>		

AWARD BIOS Description

CPU Internal Cache	<i>Enabled, Disabled</i>	This item speeds up memory access. However, it depends on CPU/chipset design. The default value is enabled.
External Cache	<i>Enabled Disabled</i>	Enable external cache. Disable external cache.
Quick Power On Self Test	<i>Enabled Disabled</i>	Enable quick POST. BIOS will shorten or skip some check items during POST to speed up POST after you power on the computer. Normal POST.
Boot Sequence	<i>C,CD-ROM,A A,CD-ROM,C</i>	The system will firstly search for hard disk drive then CD-ROM then floppy disk drive. The system will firstly search for floppy disk drive then CDROM then hard disk drive.
Swap Floppy Drive	<i>Enabled Disabled</i>	It will exchange the assignment of A&B floppy drives. The assignment of A&B floppy drives are normal.
Boot Up Floppy Seek	<i>Enabled Disabled</i>	BIOS searches for floppy disk drive to determine if drive is ready for diskette read/write during booting. Skip drive seeking to speed up system booting.
Boot Up Numlock Status	<i>On Off</i>	Keypad is used as number keys. Keypad is used as arrow keys.
Gate A20 Option	<i>Normal Fast</i>	The A20 signal is controlled by keyboard controller or chipset hardware. It is default. The A20 signal is controlled by Port 92 or chipset specific method.
Typematic Rate Setting	<i>Enabled Disabled</i>	Enable typematic rate and typematic delay programming. Disable typematic rate and typematic delay programming. The system BIOS will use default value of these two items.
Typematic Rate (Chars/Sec)	<i>6 ~ 30</i>	Set the speed of the typematic rate (characters per second).
Typematic Delay (Msec)	<i>250~1000</i>	Set the time of the typematic delay
Security Option	<i>System Setup</i>	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt. The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and 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	<i>Enabled</i>	Enable PCI/VGA palette snoop.
	<i>Disabled</i>	Disable PCI/VGA palette snoop.
OS Select For DRAM>64MB	<i>Non-OS2</i>	If your operating system is not OS/2, please select this item.
	<i>OS/2</i>	If system DRAM is more than 64MB and operating system is OS/2, please select this item.
Video BIOS Shadow	<i>Enabled</i>	Video BIOS will be copied to RAM. Video Shadow will increase the video speed.
	<i>Disabled</i>	Video shadow is disabled.
C8000_CBFFF Shadow /	<i>Enabled</i>	Option shadow is enabled. Optional ROM will be copied to RAM by 16K byte per unit.
DC000_DFFFF Shadow	<i>Disabled</i>	The shadow function is disabled.

Chipset Features Setup

ROM PCI/ISA BIOS (2A59IQ19)			
CHIPSET FEATURES SETUP			
AWARD SOFTWARE, INC.			
Auto Configuration	: Enabled	Pipeline Cache Timing	: Faster
DRAM Timing	: 60ns	Chipset NA# Asserted	: Enabled
		Mem Drive Str. (MA/RAS)	: 10mA/16mA
DRAM Leadoff Timing	: 10/6/3		
DRAM Read Burst (EDO/FP)	: x444/x444		
DRAM Write Burst Timing	: x222		
Fast EDO Leadoff	: Disabled		
Refresh RAS# Assertion	: 4 Clks		
Fast RAS To CAS Delay	: 3		
DRAM Page Idle Timer	: 2 Clks		
DRAM Enhanced Paging	: Enabled		
Fast MA to RAS# Delay	: 2 Clks		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1	ESC: Quit	↑↓←→ : Select Item
Memory Hole At 15M-16M	: Disabled	F1 : Help	PU/PD/+/=: Modify
PCI 2.1 Compliance	: Enabled	F5 : Old Values (Shift)	F2 : Color
		F7 : Load Setup Default	

Figure 5 Chipset Features Setup

AWARD BIOS Description

The following pages tell you the options of each item and describe the meanings of each option.

Item	Option	Description
Auto Configuration	<i>Enabled</i>	Enable auto configuration of DRAM timing
	<i>Disabled</i>	Manually set DRAM timing. Warning: You'd better not set DRAM timing too fast which may affect your system stability
DRAM Timing	<i>60ns</i>	This item is of selected DRAM read/write timing. You must ensure that your SIMMs is as fast as 60ns, otherwise you have to select 70ns.
	<i>70ns</i>	

DRAM Leadoff Timing SDRAM Speculative Read:

All these items are about DRAM Timing configuration.

System BIOS Cacheable	<i>Enabled</i>	Beside conventional memory, the system BIOS area is also cacheable.
	<i>Disabled</i>	The system BIOS area is not cacheable.
Video BIOS Cacheable	<i>Enabled</i>	Beside conventional memory, video BIOS area is also cacheable.
	<i>Disabled</i>	Video BIOS area is not cacheable.
8 Bit I/O Recovery Time	<i>1_4</i>	It is the ISA Bus 8 bit I/O operating recovery time.
	<i>NA</i>	8 bit I/O recovery time is not exist.
16 Bit I/O Recovery Time	<i>1_8</i>	It is the ISA Bus 16 bit I/O operating recovery time.
	<i>NA</i>	16 bit I/O recovery time is not exist.
Memory Hole at 15M-16M	<i>Enabled</i>	Memory Hole at 15M_16M is reserved for expanded PCI card.
	<i>Disabled</i>	Do not set this memory hole.
Pipeline Cache Timing	<i>Faster Fastest</i>	This item allows you to select two timing of pipeline cache, faster and fastest.
Chipset NA# Asserted	<i>Enabled</i>	This item allows you to select between two methods of chipset NA# asserted during CPU with cycles/CPU line fills Enabled or Disabled.
	<i>Disabled</i>	
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.

Power Management Setup

ROM PCI/ISA BIOS (2A59IQ19)		
POWER MANAGEMENT SETUP		
AWARD SOFTWARE, INC.		
Power Management	: Disable	** 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	: Suspend	Primary IDE 1 : Disabled
		Secondary IDE 0 : Disabled
Doze Mode	: Disabled	Secondary IDE 1 : Disabled
Standby Mode	: Disabled	Floppy Disk : Disabled
Suspend Mode	: Disabled	Serial Port : Enabled
HDD Power Down	: Disabled	Parallel Port : Disabled
Throttle Duty Cycle	: 62.5%	
VGA Active Monitor	: Disabled	
Power Button Override	: Enabled	
** Wake up Events From Suspend **	: ESC: Quit	↑↓→← : Select Item
IRQ8 Clock Event	: Disabled	.F1 : Help PU/PD/+/- : Modify
		.F5 : Old Values (Shift)F2 : Color
		.F7 : Load Setup Default

Figure 6 Power Management Setup

The following pages tell you the options of each item and describe the meanings of each option.

Item	Option	Description
Power Management	<i>Disabled</i>	Global Power Management will be disabled.
	<i>User Define</i>	Users can configure their own Power Management Timer.
	<i>Min Saving</i>	Pre-defined timer values are used such that all timers are in their MAX values.
	<i>Max Saving</i>	Pre-defined timer values are used such that all timers are in their MIN values.
PM Control by APM	<i>No</i>	System BIOS will ignore APM when power managing the system.

AWARD BIOS Description

	<i>Yes</i>	System BIOS will wait for APM's prompt before it enter any PM mode, such as Standby or Suspend. Note: If APM is installed (choose "Yes"), and if there is a task running, even 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	<i>Blank Screen</i>	The system BIOS will only blank off the screen when disabling video.
	<i>V/H SYN C+ Blank</i>	In addition to Blank Screen, BIOS will also turn off the V-SYNC & H-SYNC signals from VGA cards to monitor.
	<i>DPMS</i>	This function is enabled for only the VGA card supporting DPMS. Note: Green monitors detect the V/H-SYNC signals to turn off its electron gun.
Video Off After	<i>N/A</i>	System BIOS will never turn off the screen.
	<i>Suspend</i>	Screen off when system is in Suspend mode.
	<i>Standby</i>	Screen off when system is in Standby mode.
	<i>Doze</i>	Screen off when system is in Doze mode.
Doze Mode	<i>Disabled</i>	The system will never enter Doze mode.
	<i>1 Min ~ 1 Hr</i>	Define the continuous idle time before the system entering Doze mode. If any item defined in "Wake Up Events In Doze & Suspend" is On and activated, the system will be waken up.
Standby Mode	<i>Disabled</i>	The system will never enter Standby mode.
	<i>1 Min ~ 1 Hr</i>	Define the continuous idle time before the system entering Standby mode. If any item defined in "Wake Up Events In Doze & Standby" is On and activated, the system will be waken up.
Suspend Mode	<i>Disabled</i>	The system will never enter Suspend mode.
	<i>1 Min ~ 1 Hr</i>	Define the continuous idle time before the system entering 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	<i>Disabled</i>	HDD's motor will not be off.
	<i>1Min_15Min</i>	Define the continuous HDD idle time before the HDD entering power saving mode (motor off).
Throttle Duty Cycle		Enable clock throttling.

Power Button Override	<i>Enabled</i>	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 transition to the self off state.
	<i>Disabled</i>	If the user presses the power button, the system will power off immediately.
IRQ8 Clock Event	<i>Enabled</i>	Generate a clock event.
	<i>Disabled</i>	Not generate a clock event.
IRQ9-7D-15), NMI	<i>Enabled</i>	Reload global timer.
	<i>Disabled</i>	No Influence to global timer.

PNP/PCI Configuration

ROM PCI/ISA BIOS (2A59IQ19)			
PNP/PCI CONFIGURATION			
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 Default	

Figure 7 PNP/PCI Configuration Setup

AWARD BIOS Description

The following pages tell you the options of each item and describe the meaning of each option.

Item	Option	Description
Resources Controlled By	<i>Manual</i>	Assign system resources (IRQ and DMA) manually by user.
	<i>Auto</i>	Assign system resources (IRQ and DMA) automatically by BIOS.
Force Updating ESCD	<i>Enabled</i>	The system BIOS will force updating ESCD once, then automatically set this item Disable.
	<i>Disabled</i>	Disable force update ESCD function.
IRQ-3 ~ IRQ-15 assigned to	<i>Legacy ISA</i>	The specified IRQ-x will be assigned to ISA only.
	<i>PCI/ISA PnP</i>	The specified IRQ-x will be assigned to ISA or PCI.
DMA-0 ~ DMA-7 assigned to	<i>Legacy ISA</i>	The specified DMA-x will be assigned to ISA only.
	<i>PCI/ISA PnP</i>	The specified DMA-x will be assigned to ISA or PCI.
PCI IDE IRQ Map To	<i>PCI-AUTO</i>	The BIOS will scan for PCI IDE devices and determine the location of the PCI IDE device.
	<i>PCI-SLOT 1-4</i>	The BIOS will assign IRQ 14 for primary IDE INT# and IRQ15 for secondary IDE INT# for the specified slot.
	<i>ISA</i>	The BIOS will not assign any IRQs even if PCI IDE card is found. Because some IDE cards connect the IRQ 14&15 directly from ISA slot through a card.
Primary IDE INT#	<i>A~D</i>	To tell which INT# the PCI IDE card is used for its interrupt of 1st IDE channel.
Secondary IDE INT#	<i>A~D</i>	To tell which INT# the PCI IDE card is used for its interrupt of 2nd IDE channel.

Load Setup Defaults

The Setup Defaults is common and efficient setting.

Integrated Peripherals

ROM PCI/ISA BIOS (2A59IQ19)		
INTEGRATED PERIPHERALS		
AWARD SOFTWARE, INC.		
IDE HDD Block Mode	: Enabled	InfraRed Duplex Type : Disabled
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	
Onboard Serial Port 2	: Auto	ESC: Quit ↑↓→←: Select Item
Onboard Parallel Port	: 378/IRQ7	F1 : Help PU/PD/+/- : Modify
Parallel Port Mode	: Compatible	F5 : Old Values (Shift)F2 : Color F7 : Load Setup Default

Figure 8 Integrated Peripherals

The following pages tell you the options of each item and describe the meaning of each option.

Item	Option	Description
IDE HDD Block Mode	<i>Enabled</i>	Allow IDE HDD read/write several sectors one time.
	<i>Disabled</i>	IDE HDD only reads/writes a sector one time.
IDE Primary /Secondary Master/Slave PIO/UDMA	<i>Mode 0-4</i>	Define the IDE primary/secondary master/slave PIO mode.
	<i>Auto</i>	The IDE PIO mode is defined according to auto-detect.
On-chip Primary /Secondary PCI IDE	<i>Enabled</i>	On-chip primary/secondary PCI IDE port is enabled.
	<i>Disabled</i>	On-chip primary/secondary PCI IDE port is disabled.
Onboard FDC Controller	<i>Enabled</i>	Onboard floppy disk is enabled.

AWARD BIOS Description

	<i>Disabled</i>	Onboard floppy disk is disabled.
Onboard Serial Port 1/2	<i>COM1/3F8, COM2/2F8, COM3/3E8, COM4/2E8</i>	Define onboard serial port address.
	<i>Disabled</i>	Onboard serial port is disabled.
Onboard Parallel Port	<i>378/IRQ7, 3BC/IRQ7, 278/IRQ5, 378/IRQ5</i>	Define onboard parallel port address and IRQ channel.
	<i>Disabled</i>	Onboard parallel port is disabled.
ECP Mode Use DMA	<i>1,</i>	Define channel 1 used for DMA.
EPP Version	<i>1.7, 1.9</i>	Define EPP version.
Infrared Duplex Type	<i>Disabled, Half, Full</i>	Define Infrared communication mode: disabled, half-duplex, or full-duplex.

Password Setting

When you select password setting function, the following message will appear 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, just press <Enter> when you are prompted to enter password. The following message will confirm the password being disabled. If Password is disabled, the system will boot and you can enter CMOS 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 only when you try to enter "CMOS Setup".

IDE HDD Auto Detection

The Enhance IDE features was included in all Award BIOS. Below is a brief description of this features.

ROM/PCI/ISA BIOS (2A59IQ19)							
CMOS SETUP UTILITY							
AWARD SOFTWARE, INC.							
HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE							
Primary Master:							
Select Primary Master Option (N = Skip) : N							
OPTIONS	SIZE	CYLS	HEADS	PRECOMP	LANDZ	SECTOR	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 9 IDE HDD Auto Detection

1. Setup Changes

With auto-detection

- BIOS setup will display all possible modes that is supported by the HDD including NORMAL, LBA & LARGE.
- If HDD does not support LBA modes, no "LBA" option will be shown.
- If number of cylinders is less than or equal to 1024, no "LARGE" option will be shown.
- Users can select a mode which is appropriate for them.

With Standard CMOS Setup

	CYLS	HEADS	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 user to select their own HDD mode.

AWARD BIOS Description

2. HDD Modes

The Award BIOS supports 3 HDD modes: NORMAL, LBA and LARGE, and 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 cylinder, head and sectors for NORMAL mode are 1024, 16 and 63.

If user set 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 to overcome the 528 Megabyte bottleneck. The number of cylinders, head 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, user do not wait LBA). The Award BIOS provides another alternative to support these kinds of HDD.

BIOS tricks DOS (or other OS) that the number of cylinders is less than 1024 by dividing it by 2. At the same time, the number of heads is 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 auto 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. All these software are located in the Award HDD Service Routine (INT 13h). It may be failed to access a HDD with LBA (LARGE) mode selected if you are running under a Operating System which replaces the whole INT 13h.

Hard Disk Low Level Format Utility

This Award Low-Level-Format Utility is designed as a tool to save your time formatting your disk. The Utility automatically looks for the necessary information of the drive you selected. Utility also searches for bad tracks and list them for your reference.

Shown below is the Main Menu after you enter into the Award Low-Level-Format Utility.

Hard Disk Low-Level-Format Utility				NO. CYLS HEAD			
SELECT DRIVE							
BAD TRACK LIST							
PREFORMAT							
Current select drive is : C							
DRIVE : C CYLINDER : 0 HEAD : 0							
	SIZE	CYL	HEAD	PRECOMP	LANDZ	SECTORS	MODE
Primary Master	: 40MB	977	5	300	977	17	NORMAL
Primary Slave	: None	0	0	0	0	0	AUTO
Secondary Master	: None	0	0	0	0	0	AUTO
Secondary Slave	: None	0	0	0	0	0	AUTO
Up/Down - Select item		Enter - Accept		ESC - Exit/Abort			
Copyright (c) Award Software, Inc. 1992-1994 All Rights Reserved							

Figure 10 Hard Disk Low Level Format Utility

SELECT DRIVE

Select from installed hard disk drive C: or D:. List at the bottom of the screen is the drive automatically detected by the utility.

BAD TRACK LIST

Auto scan bad track

The utility will automatically scan bad tracks and list the bad tracks in the window at the right side of the screen.

Add bad track

Directly type in the information of the known bad tracks in the window at the right side of the screen.

AWARD BIOS Description

Modify bad track

Modify the information of the added bad tracks in the window at the right side of the screen.

Delete bad track

Delete the added bad tracks in the window at the right side of the screen.

Clear bad track table

Clear the whole bad track list in the window at the right side of the screen.

PREFORMAT

Interleave

Select the interleave number of the hard disk drive you wish to perform low level format. You must select from 1 to 8. Check the documentation that came with the drive for the correct interleave number, or select 0 for utility automatic detection.

Auto scan bad track

This allows the utility to scan bad track or not.

Start

Press <Y> to start low level format.

Power-On Boot

If you have made all the changes to CMOS values and the system cannot boot with the CMOS values selected in Setup, restart the system by turning it OFF then ON or pressing the "RESET" button on the system case.

You may also restart by simultaneously press <Ctrl>, <Alt>, and <Delete> keys.

Appendix A.

BIOS Upgrade Diskette

You can use this diskette to update your BIOS when necessary.

For the most update and additional information about BIOS upgrade, please refer to "README" in the "BIOS Upgrade Diskette".

Warning: Before you update your BIOS, you should look over the "README" file to avoid making mistake.

Appendix B.

Introduce AMD-K5 CPU mark:

Operating Voltage:
B=3.45V-3.60V-->3.5V
C=3.30V-3.465V-->3.3V
F=3.135V-3.465V-->3.3V
G=x/y
H=2.86V-3.00V/3.30V-3.465V-->2.9/3.3
J=2.57V-2.84V/3.30V-3.465V-->2.7/3.3
K=2.38V-2.63V/3.30V-3.465V-->2.5/3.3

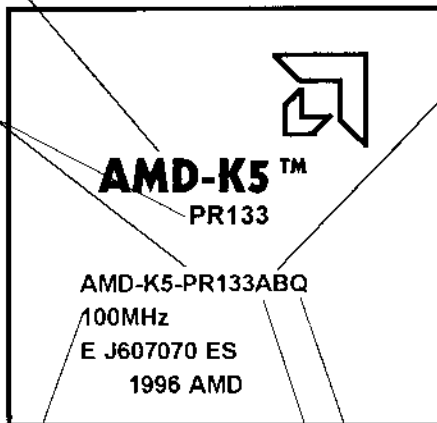
Processor Name

P-Rating

75, 90, 100, 120,
133, 150, 166

Internal CPU
Frequency

75MHz, 90MHz,
100MHz, 105MHz,
116.7MHz



Case Temperature:

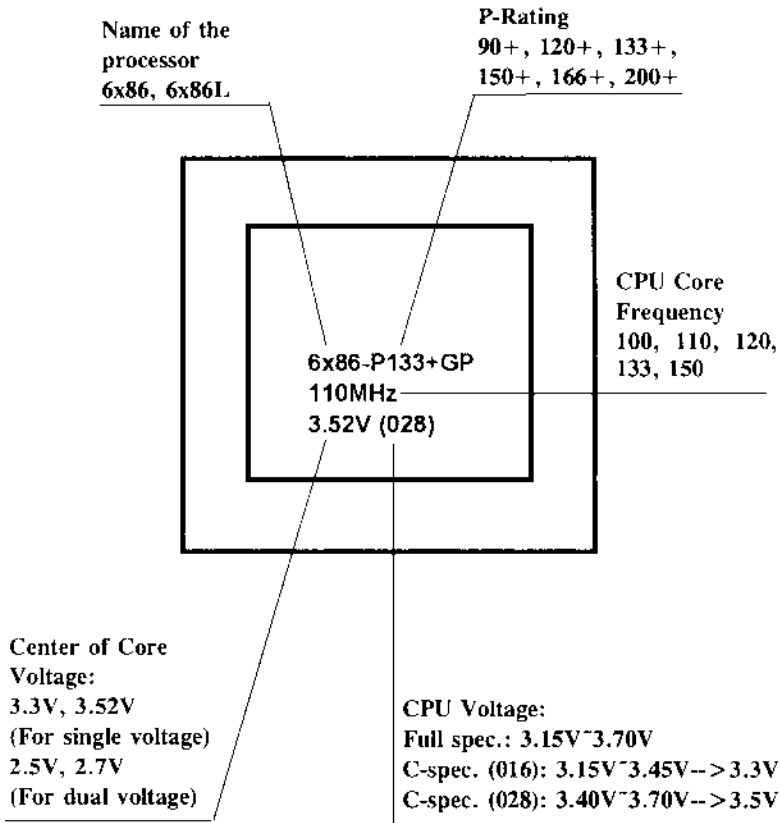
W=55°C
R=70°C
Q=60°C Y=75°C
X=65°C Z=85°C

Package Type

A=SPGA

Appendix C.

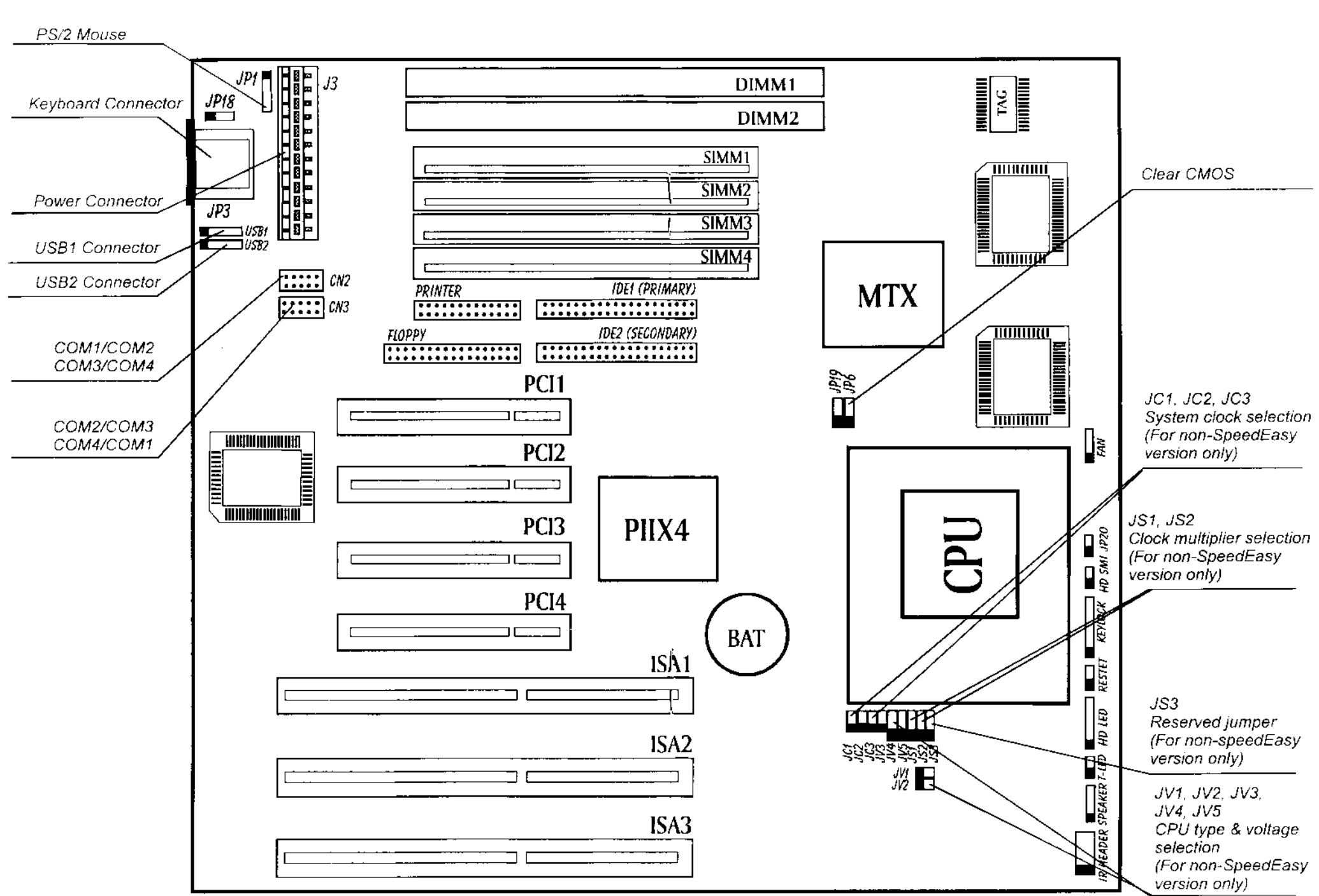
Introduce Cyrix 6x86 CPU mark:





P/N: 430-01009-702

Manual PS1430TX TITANIUM I Ver 2.0



PS/2 Mouse

Keyboard Connector

Power Connector

USB1 Connector

USB2 Connector

COM1/COM2
COM3/COM4

COM2/COM3
COM4/COM1

DIMM1

DIMM2

SIMM1

SIMM2

SIMM3

SIMM4

PRINTER

IDE1 (PRIMARY)

FLOPPY

IDE2 (SECONDARY)

PCI1

PCI2

PCI3

PCI4

PIIX4

BAT

ISA1

ISA2

ISA3

MTX

CPU

Clear CMOS

JC1, JC2, JC3
System clock selection
(For non-SpeedEasy
version only)

JS1, JS2
Clock multiplier selection
(For non-SpeedEasy
version only)

JS3
Reserved jumper
(For non-speedEasy
version only)

JV1, JV2, JV3,
JV4, JV5
CPU type & voltage
selection
(For non-SpeedEasy
version only)

