# Declaration of conformity

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

declares that the product

**Pentium® II Motherboard**
**P6I440BX/B1S**

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: Residential, commercial and light industry |
| ☑ | EN 50082-1 | Generic immunity standard Part 1: Residential, commercial and light industry |

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

Signature : . Place / Date : HONG KONG/1998

Printed Name : Anders Cheung Position/ Title : President

# Declaration of conformity

Trade Name: QDI Computer ( U. S . A. ) Inc.
Model Name: P6I440BX/B1S
Responsible Party: QDI Computer ( U. S. A.) Inc.
Address: 41456 Christy Street
Fremont, CA 94538
Telephone: (510) 668-4933
Facsimile: (510) 668-4966

Equipment Classification: FCC Class B Subassembly
Type of Product: AGP Pentium®II Motherboard
**Manufacturer**: **Quantum Designs (HK) Inc.**
Address: 5/F, Somerset House, TaiKoo Place
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 : 1998

# CONTENTS

SpeedEasy Quick Setup(English) ........................................................ 1
SpeedEasy Schnell-Installation(Deutsch) ............................................ 3
Fácil Y Veloz Rápida Instalación(Español) ........................................... 5
Facilité de vitesse Initialisation(Francais) ............................................ 7
Setup Della Scheda Speedeasy(Italiano) ............................................. 9
SpeedEasy ¿ Ë Ù × Ö Ą Ï(Ö Ð Ä Ì ą) .......................................... 11
SpeedEasy ¿ Ë Ù × Ö Ą Ï(Ö Ð Ä ò ą) ........................................... 13

**1. Introduction ............................................................ 15**
Overview ....................................................................................... 15
Key Features .................................................................................. 15

**2. Installation Instructions ........................................... 19**
**External Connectors ..........................................................** 19
PS/2 Keyboard & PS/2 Mouse Connector .......................................... 19
USB1&USB2 .................................................................................... 19
Parallel Port Connector and Serial Port Connector .............................. 19
ATX Power Supply Connector&Power Switch(POWER) .................... 20
Hard Disk LED Connector (HD_LED) ................................................. 20
Reset Switch (RESET) ..................................................................... 20
Speaker Connector (SPEAKER) ....................................................... 20
Power LED Connector(PWR_LED) ................................................... 20
Key_Lock Connector (KEY_L) ......................................................... 20
Green LED Connector(GREEN_LED) ................................................ 21
Hardware Green Connector(SLEEP) ................................................. 21
Infrared Header(IrDA) ..................................................................... 21
Fan Connector(CPUFAN&CHSFAN) ................................................. 22
Wake-Up On LAN (WOL) ................................................................. 22
Wake-Up On Internal Modem (WOM) ................................................ 22
Chassis Security Switch(CHSSEC) .................................................. 23
Sound Connector(PC-PCI) .............................................................. 23
Expansion Slots & I/O Ports description ............................................ 23

**Jumper Settings** ......................................................................... 24
ClearCMOS .................................................................................... 24
Enable keyboard password power-on function ................................ 24

# CONTENTS

**Memory Configuration** ........................................................ 25

## 3. SecurityEasy ........................................................ 27

## 4. BIOS Description ........................................................ 29

**Utility Support** ........................................................ 29

FLASH.EXE ........................................................ 29

**AWARD BIOS Description** ........................................................ 31

Entering Setup ........................................................ 31

Load Setup Defaults ........................................................ 31

Standard CMOS Setup ........................................................ 31

SpeedEasy CPU Setup ........................................................ 34

BIOS Features Setup ........................................................ 35

Chipset Features Setup ........................................................ 37

Power Management Setup ........................................................ 39

PNP/PCI Configuration Setup ........................................................ 42

Integrated Peripherals ........................................................ 44

System Monitor ........................................................ 46

SecurityEasy Setup ........................................................ 47

Password Setting ........................................................ 48

IDE HDD Auto Detection ........................................................ 49

Boot with BIOS defaults ........................................................ 50

**Appendix A** QDI Motherboard Utility CD-ROM ...................... 51

**Appendix B** Processor Installation Procedures ................... 52

**Appendix C** Boot Logo ........................................................ 55

# SpeedEasy Quick Setup

## Procedures :

1. Correctly insert the Pentium®II or Intel® Celeron™ processor.

2. Plug in other configurations and restore the system.

3. Switch on power to the system and press the <Del> key to enter BIOS Setup.

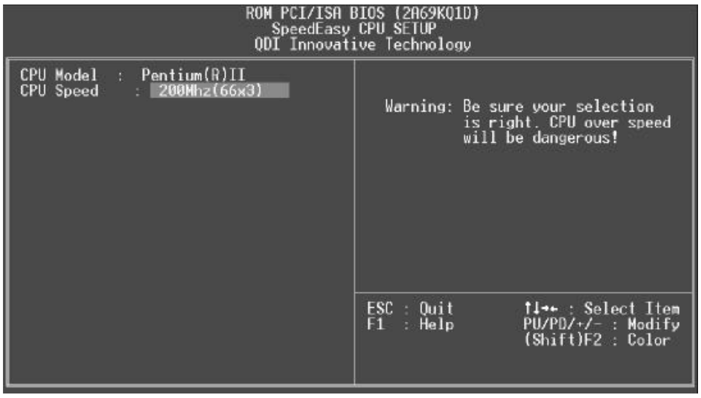
4. Enter " SpeedEasy CPU SETUP" menu to set up the CPU speed.

**Note: If you do not set the CPU speed, your system will run at the default setting ( 200MHz for processor with 100MHz host bus speed, 133MHz for processor with 66MHz host bus speed).**

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

## SpeedEasy CPU Setup Menu

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



```
                    ROM PCI/ISA BIOS (2A69KQ1D)
                        SpeedEasy CPU SETUP
                      QDI Innovative Technology

CPU Model   :  Pentium(R)II
CPU Speed    :  200Mhz(66x3)
                                  Warning: Be sure your selection
                                           is right. CPU over speed
                                           will be dangerous!

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

Figure - 1 SpeedEasy CPU Setup Menu

BIOS provides you with a set of basic values for your processor selection instead of the jumper settings. The processor speed can be manually selected on the " SpeedEasy CPU SETUP" menu screen.

⚠ **Warning:**

Dot not set CPU frequency higher than its working frequency. If you do, we will not be responsible for any damage caused.

# Schnell-Installation durch SpeadEasy

## Vorgehensweise der Installation:

1. Legen sie die Pentium®II/ Intel® Celeron™ im Slot 1 mit Hilfe der mitgelieferten halterung.

2. Vervollständigen Sie das System mit den weiteren erforderlichen Coputerkomponenten

3. Drücken Sie die Taste < Entf > und schalten Sie das System an um das BIOS-setup zu gelangen.

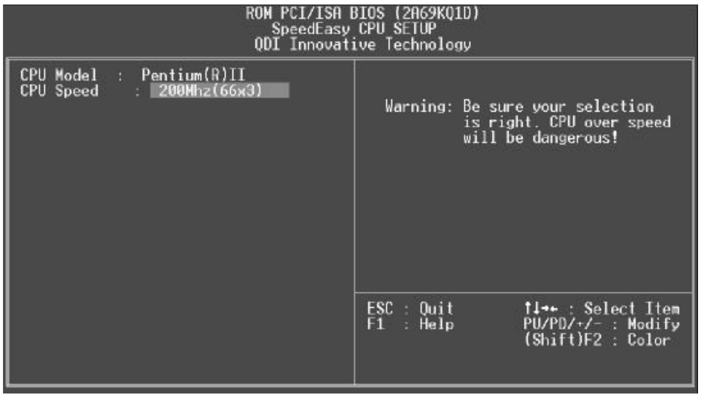
4. Steigen Sie in das Menü“ SpeedEasy CPU SETUP” ein, um die Geschwindigkeit einzustellen.

**ACHTUNG:Falls Sie die Taktfrequenz der CPU nicht setzen, arbeitet Ihr System mit den Standardwerten für die CPU. (200MHz für den CPU mit 100MHz Host Bus Speed, 133MHz für den CPU mit 66MHz Host Bus Speed).**

5. Speichern Sie die Einstellungen und verlassen Sie das BIOS, um die auvor eingestellte Taktfrequenz zu aktivieren.

## SpeedEasy CPU Installationsmenü

Wählen Sie < SpeedEasy CPU SETUP> aus dem Hauptmenü und öffnen Sie das untergeordnete Menü



```
                 ROM PCI/ISA BIOS (2A69KQ1D)
                     SpeedEasy CPU SETUP
                  QDI Innovative Technology

CPU Model   :  Pentium(R)II
CPU Speed     :  200Mhz(66x3)

                              Warning: Be sure your selection
                                       is right. CPU over speed
                                       will be dangerous!

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

Abb. 1 SpeedEasy CPU Installationsmenü

Das BIOS stellt Ihnen eine Reihe von Grundeinstellungen für Ihren CPU zur Verfügung, anstelle von " jumper setting" . Sie können manuell die Geschwindigkeit des CPU innerhalb des" SpeedEasyCPUSETUP" einstellen

**warnung:**

Bitte Setzen Sie die Taktfrequenz dor CPU nicht höber als die tatsëchliche freigegebene Taktfrequenz, ansonsten Kann QDI für rechtliche Anspruche nicht herangezogen werden.

# SpeedEasy Instalación rápida

## Procedimiento:

1. Introduzca correctamente el Pentium®II/ Intel® Celeron™

2. Finalize el proceso de ensamblaje de su equipo.

3. Presione la tecla <Supr> y encienda el sistema, para entrar en BIOS.

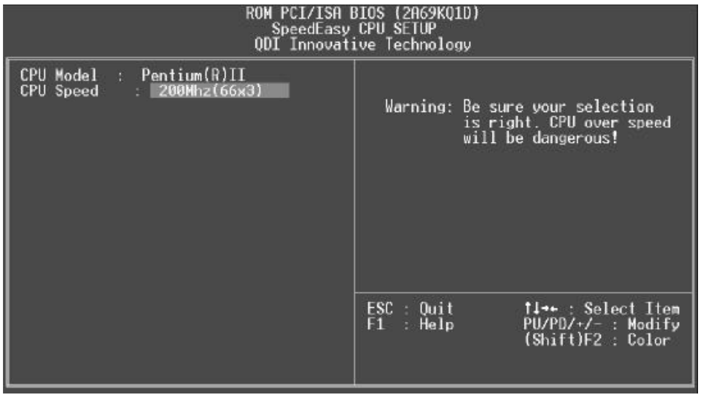
4. Entre al menu " SpeedEasy CPU SETUP" para establecer la velocidad de su CPU.

**Nota: Si no establece la velocidad del CPU, su sistema funcionará a la velocidad minima por defecto (200MHz para CPU con velocidad de bus de 100MHz, 133MHz para CPU con velocidad de bus de 66MHz )**

5. Salve y salga de BIOS, luego su sistema arrancará a la velocidad por Ud. seleccionada.

## Menu del SpeedEasy CPU

Seleccione el item <SpeedEasy CPU SETUP> desde el menu principal, y entre en el submenu:



```
                     ROM PCI/ISA BIOS (2A69KQ1D)
                        SpeedEasy CPU SETUP
                     QDI Innovative Technology

CPU Model   :  Pentium(R)II
CPU Speed   :  200Mhz(66x3)
                                     Warning: Be sure your selection
                                              is right. CPU over speed
                                              will be dangerous!

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

Figura-1 Menu del CPU SpeedEasy

BIOS le proporcionará unos valores básicos para la elección de su CPU, en vez de tener que configurar jumpers. Ud. puede seleccionar manulmente la velocidad de CPU en el menu“SpeedEasyCPUSETUP”.

**Aviso**

No es recommendable selecclonar una frecuencia de trabajo superior a la cual esta diseñada su CPU. De otra manera, no seremos responsables de los daños que esto pudiera ocasionar.

# SETUP DELLA SCHEDA SPEEDEASY

## Procedura di installazione:

1. Inserite il microprocessore Pentium® II/ Intel® Celeron™ come da istruzioni.

2. Modificate la configurazione del computer e ripristinate il sistema.

3. Premete il tasto <Del> e accendete il computer per entrare nel setup BIOS.

4. Entrate nel menu " SpeedEasy CPU* SETUP" per regolare la velocit..del microprocessore. [1]

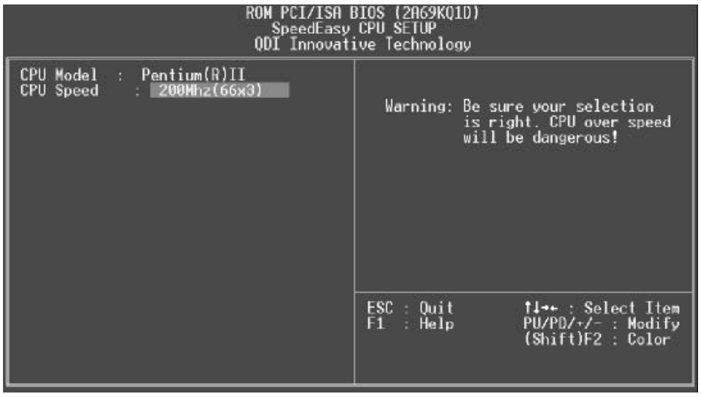
**Nota: se non regolate la velocità del microprocessore, il sistema funzionerà con le regolazioni standard (Microprocessore da 200MHz con velocità di "host bus" da 100MHz e microprocessore da 133MHz con velocità di "host bus" da 66MHz).**

5. Salvate e uscite dal Setup BIOS, e fate ripartire il computer.

*CPU= microprocessore

## Menu del Setup del Microprocessore SpeedEasy

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



```
                 ROM PCI/ISA BIOS (2A69KQ1D)
                    SpeedEasy CPU SETUP
                 QDI Innovative Technology

 CPU Model  :  Pentium(R)II
 CPU Speed    :  200Mhz(66x3)
                                  Warning: Be sure your selection
                                           is right. CPU over speed
                                           will be dangerous!

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

Figure -1 Menu del Setup del Microprocessore SpeedEasy

Il sistema BIOS Vi fornirà una serie di valori base per la selezione del microprocessore al posto della regolazione jumper (dell' accoppiamento). Potete selezionare manualmente la velocità del microprocessore sulla schermata " SpeedEasy CPU SETUP" .

Avvertenza:

non dovete regolare la frequenza del microprocessore più alta di quella predisposa, altrimenti la casa produttrice non si farà carico di eventuali danni al micorprocessore.

# SpeedEasy ¿ Ë Ù ² Ö Ä Ï

## [illegible] :

1. [illegible] Pentium®II»ò Intel® Celeron™[illegible]

2. [illegible] ,[illegible] .

3. [illegible] <Del>[illegible] [illegible] BIOS[illegible]

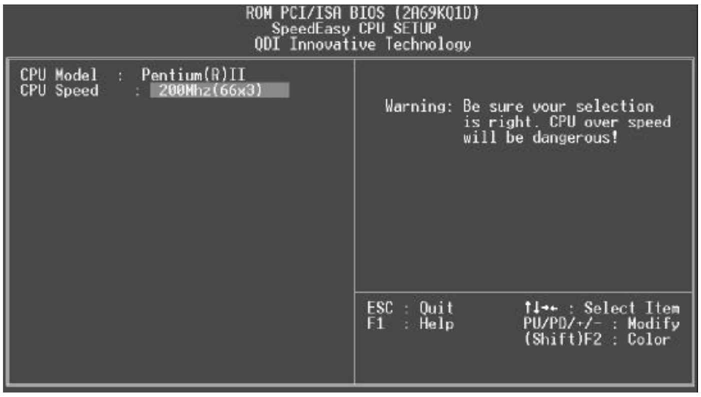
4. [illegible] ¡°SpeedEasy CPU SETUP¡±[illegible] [illegible]

Òâ :[illegible] [illegible] [illegible]
100MHzµÄCPU, Îª200MHz£»[illegible] 66MHzµÄCPU, Îª133MHz[illegible]

5. [illegible] [illegible] BIOS£[illegible]

## SpeedEasy Ö Ñ ê À Æ É ¶ ² µ ¥

´ Ó É Ô Ã µ Ø Ñ Ô ñ<SpeedEasy CPU SETUP>Ï £ È á á Ð ê Î µ ¥ º



```
                    ROM PCI/ISA BIOS (2A69KQ1D)
                       SpeedEasy CPU SETUP
                   QDI Innovative Technology

 CPU Model   :  Pentium(R)II
 CPU Speed   :  200Mhz(66x3)
                                   Warning: Be sure your selection
                                            is right. CPU over speed
                                            will be dangerous!

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

Í¼ 1 SpeedEasy Ñ¡µ¥

BIOSÎ Ä µ Ø Ñ ê À Æ Ì á Ó » é Ä Ñ Ï £ Ò¬Ô Ú á ¼ µ À Ø (jumper)· Ê £ Ê¬¹ Ä ã Ð Ô¡ÚSpeedEasy CPU SETUP¡²±µ ¥ £ Ï Ö Ñ ê À Æ Ñ Ô ñ Ê µ Ä ¤ Æ µ Â Ê £

⚠ ¾¯¸æ £º

Ç ê Ö Ö Ñ ê À Æ µ Ä Â µ ½ Ó Á ß ¶ ô Ý £ ¤ Æ Â Ê¬Ô Ò ¾ È ½ « ² » á Ô Ó É Ä ø Ä ú µ Ä Î Ê ò Ü £

# SpeedEasy ¿ Ë Ù ¸ ö Ã Ï

## Ðè £º

1. Pentium®II»ò Intel® Celeron™

2.

3. <Del>¼ü, BIOS

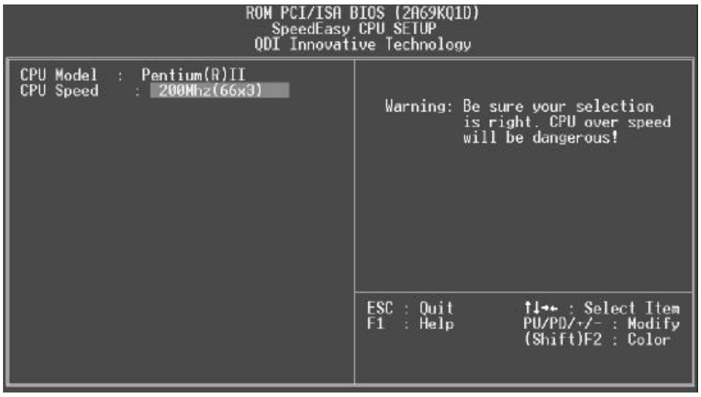
4. ¡°SpeedEasy CPU SETUP¡±

**£º ( 100 CPU 200 66 CPU 133 ) ¡£**

5. BIOS£

## SpeedEasy [illegible]

[illegible] <SpeedEasy CPU SETUP>[illegible] [illegible] £º



```
ROM PCI/ISA BIOS (2A69KQ1D)
SpeedEasy CPU SETUP
QDI Innovative Technology

CPU Model   :  Pentium(R)II
CPU Speed   :  200Mhz(66x3)

Warning: Be sure your selection
         is right. CPU over speed
         will be dangerous!

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

Í¼ 1 SpeedEasy[illegible]

BIOS[illegible] [illegible] (jumper)[illegible] Ê¹ [illegible] SpeedEasy CPU SETUP” [illegible] [illegible]

¾æ £º

[illegible] [illegible]

[illegible]

# Chapter 1
# Introduction

## Overview

The P6I440BX/B1S green motherboard utilizes the Intel®440BX AGPset and provides a highly integrated solution for fully compatible, high performance PC/ATX platform. It provides 66MHz and 100MHz system bus support for all Intel Pentium®II and Celeron™ processors. Both 66MHz/100MHz SDRAM with SPD and 66MHz EDO DIMMs are supported. It also provides advanced features such as wake-up on LAN, wake-up on internal/external modem and keyboard password power-on function. ManageEasy, our system management application is supplied to enable remote monitoring and configuration of the system.The green function is in compliance with the ACPI specification. With the everlasting innovations of QDI such as SpeedEasy, LogoEasy and SecurityEasy technologies, you get a powerful corporate system.

## Key Features

### Form factor

- ATX form factor of 305mm x 190mm.

### Microprocessor

- Supports all Intel Pentium®II processors at 233/266/300/333MHz with 66MHz bus speed and 350/400/450MHz with 100MHz bus speed.
- Supports all Intel®Celeron™ processors at 266/300/333 MHz with 66MHz bus speed.
- Supports 66MHz and 100MHz host bus speed.
- CPU core frequency = Bus speed x2.5, x3, x3.5, x4, x4.5, x5, x5.5
- CPU core supply voltage adjustable from 1.3V to 3.5V through on- board switching voltage regulator with VID(Voltage ID).

### Chipset

- Intel® 440BX AGPset: 82443BX, 82371EB (PIIX4E)

### System memory

- Provides three 168 pin 3.3V unbuffered DIMM sockets.
- Supports both 66MHz/100MHz SDRAMs with SPD and 66MHz EDO DIMMs.
- Minimum memory size is 8MB, maximum memory size is 768MB.
- SDRAM 64 bit data interface with ECC support.

## On-board IDE

- Supports two PCI PIO and Bus Master IDE ports.
- Two fast IDE interfaces supporting four IDE devices including IDE hard disks and CD - ROM drives.
- Supports up to mode 4 timing.
- Supports " Ultra DMA/33" Synchronous DMA mode transferring up to 33 Mbytes/sec.
- Integrated 16x32bit buffer for IDE PCI Burst Transfers.

## On-board I/O

- Use Winbond W83977EF super I/O chip.
- One floppy port supporting up to two 3.5' ' or 5.25" floppy drives with 360K/720K/1.2M/1.44M/2.88M format.
- Two high speed 16550 fast compatible UARTs(COM1/COM2/COM3/COM4 selective) with 16-byte send/receive FIFOs.
- One enabled parallel port at the I/O address 378H/278H/3BCH with additional bi-direction I/O capability and multi-mode as SPP/EPP/ECP (IEEE 1284 compliant).
- Circuit protection provided, preventing damage to the parallel port when a connected printer is powered up or operates at a higher voltage.
- Supports LS-120 floppy disk drive.
- All I/O ports can be enabled/disabled in the BIOS setup.

## Advanced features

- Provides Trend ChipAwayVirus®On Guard.
- Provides on-board PS/2 mouse and PS/2 keyboard ports.
- Two USB ports supported.
- Provides infrared interface.
- Supports Windows 95/98 software power-down.
- Supports external modem ring power-on.
- Supports wake-up on LAN and wake-up on internal modem.
- Supports auto fan off when the system enters suspend mode.
- On-board LM80 supports system monitoring (monitors system temperature,voltages, chassis intrusion and fan speed) (manufacturing option).
- On-board MAXIM1617 monitors the CPU temperature. (manufacturing option)
- Provides management application such as ManageEasy and LDCM(LANDesk® Client Manager) (manufacturing option).
- Supports keyboard password power-on function.
- Supports SecurityEasy function (manufacturing option)
- System status resumes after AC power failure.

### BIOS

- Licensed advanced AWARD BIOS, supports flash ROM BIOS with 2MB memory size, plug and play ready.
- Supports IDE CD-ROM or SCSI boot up.

### Green function

- Supports ACPI (Advanced Configuration and Power Interface) and ODPM (OS Directed Power Management).
- Supports three green modes: Doze, Standby and Suspend.

### Expansion slots

- 3 ISA slots and 4 PCI slots.
- 1 AGP Slot

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# Chapter 2

# Installation Instructions

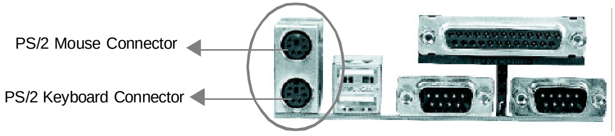
This section covers External Connectors, Jumper Settings and Memory Configuration. Refer to the motherboard layout chart for locations of all the jumpers, external connectors, slots and I/O ports. Furthermore, this section lists all necessary connector pin assignments for your reference. The particular state of the jumpers, connectors and ports are illustrated in the following figures. Before setting the jumpers or inserting these connectors, please pay attention to the directions.

**Be sure to unplug the AC power supply before adding or removing expansion cards or other system peripherals, otherwise your motherboard and expansion cards might be seriously damaged.**

## External Connectors

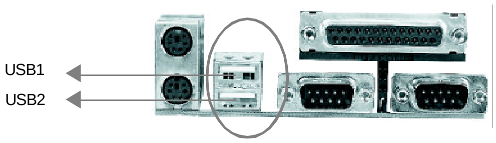
### PS/2 Keyboard Connector, PS/2 Mouse Connector

PS/2 keyboard connector is for the usage of PS/2 keyboard. If using a standard AT size keyboard, an adapter should be used to fit this connector. PS/2 mouse connector is for the usage of PS/2 mouse.



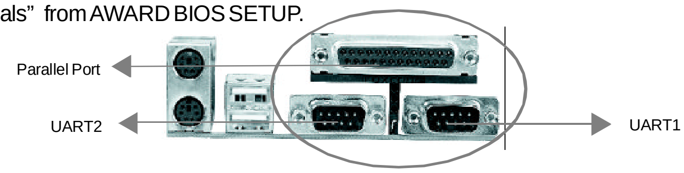
### USB1, USB2

Two USB ports are available for connecting USB devices.



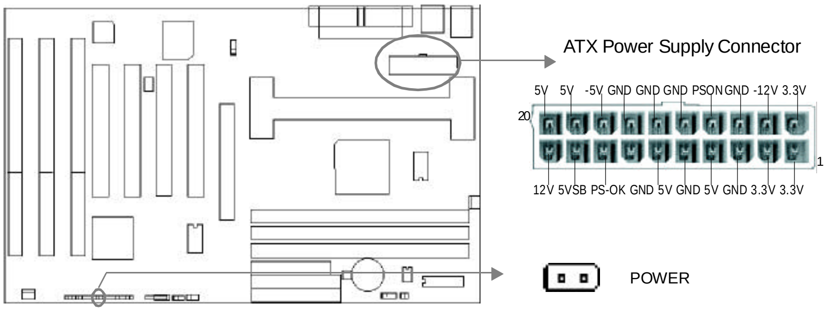
### Parallel Port Connector and Serial Port Connector (UART1, UART2)

The parallel port connector can be connected to a parallel device such as a printer, while the serial port connectors can be connected to serial port devices such as a serial port mouse. You can enable/disable them and choose the IRQ or I/O address in " Integrated Peripherals" from AWARD BIOS SETUP.



## ATX Power Supply Connector & Power Switch (POWER)

Be sure to connect the power supply plug to this connector in its proper orientation. The power switch (POWER) should be connected to a momentary switch. When powering up your system, first turn on the mechanical switch of the power supply (if one is provided), then push once the power button. When powering off the system, you needn' t turn off the mechanical switch, just ***Push once**** the power button.



**Note: * If you change "soft-off by PWR-BTTN" from default "Instant-off" to "Delay 4 Secs" in the "POWER MANAGEMENT SETUP" section of the BIOS, the power button should be pressed for more than 4 seconds before the system powers down.**

## Hard Disk LED Connector (HD_LED)

The connector connects to the case' s IDE indicator LED indicating the activity status of IDE hard disk.

## Reset Switch (RESET)

The connector connects to the case' s reset switch. Press the switch once, the system resets.

## Speaker Connector (SPEAKER)

The connector can be connected to the speaker on the case.

## Power LED Connector (PWR_LED)

The power LED has three status. When no AC power supply is present, the LED is off. When the system is in soft power-down status, the LED glows dimly. When the system is powered up, the LED is on.

## Key-Lock Connector (KEY_L)

The connector can be connected to the keyboard lock switch on the case for locking the keyboard.

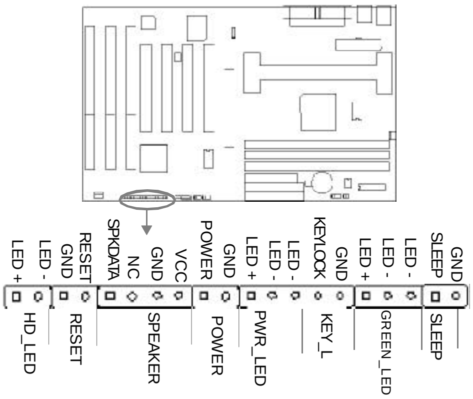
## Green LED Connector (GREEN_LED)

The LED connected to this header shows the status of the system as described below:

| LED Status | System Status |
|---|---|
| Off | No AC power supply. |
| On | The system is in power-up status. |
| Flashing at a frequency of about 1.5Hz | The system is in soft power-down status. |
| Flashing at a frequency of about 0.5Hz | The system is in Green Mode. |
| Flashing at a frequency of about 1/6Hz | The system is in Lock status. |

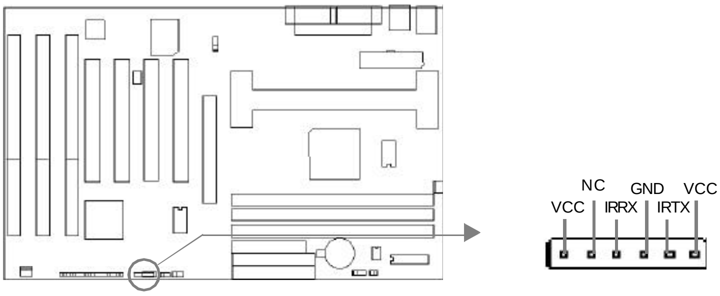
## Hardware Green Connector (SLEEP)

If the SecurityEasy function is enabled, push once the switch connected to this header and the system will enter lock status. If the lock function is disabled, push once the switch, the system enters suspend mode.


LED +
LED -
GND
RESET
SPKDATA
NC
GND
VCC
POWER
GND
LED +
LED -
LED -
KEYLOCK
GND
LED +
LED -
LED -
SLEEP
GND
HD_LED
RESET
SPEAKER
POWER
PWR_LED
KEY_L
GREEN_LED
SLEEP

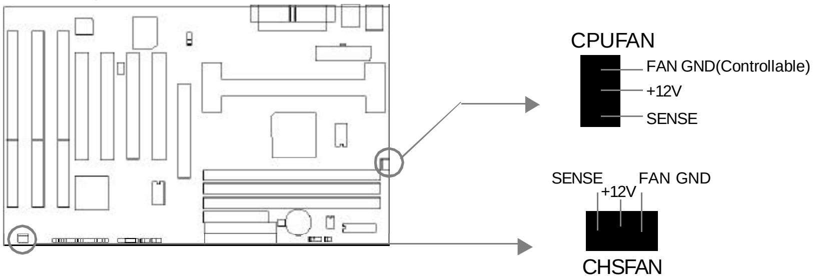
## Infrared Header (IrDA)

This connector supports wireless transmitting and receiving. If using this function, set ‘ Serial Port 2 Mode’ to IrDA or ASKIR and configure the settings from the ‘ INTEGRATED PERIPHERALS’ section of the BIOS.


NC
GND
VCC
VCC
IRRX
IRTX

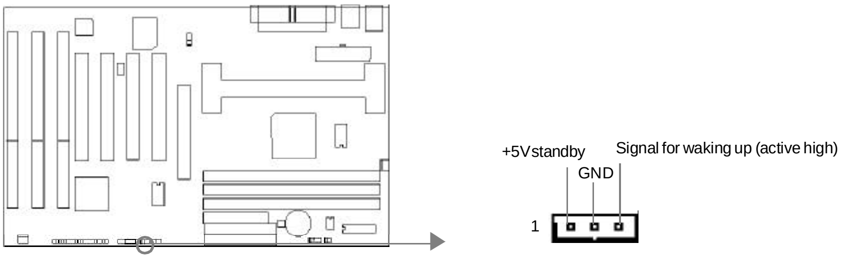
## Fan Connector (CPUFAN, CHSFAN)

These two fans are controllable. They will be automatically turned off after the system enters suspend mode. You also can choose not to turn the CPUFAN off by setting " CPUFAN Off In Suspend" as Disabled in the " POWER MANAGEMENT SETUP" section of the BIOS.


CPUFAN
FAN GND(Controllable)
+12V
SENSE
SENSE
+12V
FAN GND
CHSFAN

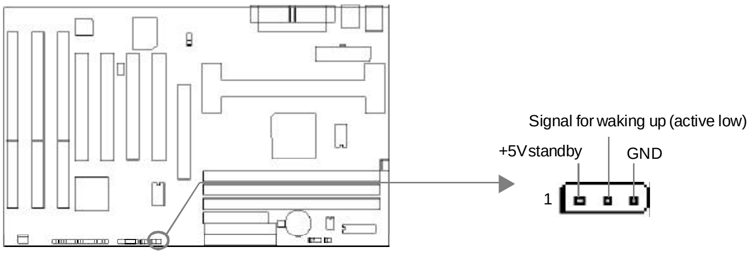
## Wake-Up On LAN (WOL)

Through the Wake-Up On LAN function, a wake event occurring from the network can wake up the system. If this function is to be used, please be sure an ATX 2.01 power supply of which 5VSB line is capable of delivering 720mA, and a LAN adapter which supports this function are used. Then connect this header to the relevant connector on the LAN adapter, set " Wake Up On LAN" as Enabled in the " POWER MANAGEMENT SETUP" section of the BIOS. Save & exit, then boot the operating system once to make sure this function takes effect.


+5V standby
Signal for waking up (active high)
GND
1

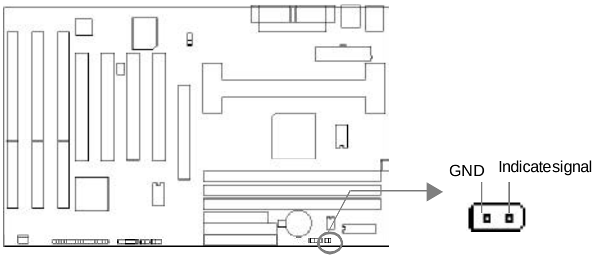
## Wake-Up On Internal Modem (WOM)

Through the Wake-Up On Internal Modem function, the system which is in the power-off status can be powered on by a ring signal received from the internal modem. If this function is to be used, be sure an internal modem card which supports the function is used. Then connect this header to the relevant connector on the modem card, set " Resume by Ring" to Enabled in the " POWER MANAGEMENT SETUP" section of the BIOS. Save & exit, then boot the operating system once to make sure this function takes effect.


Signal for waking up (active low)
+5V standby
GND
1

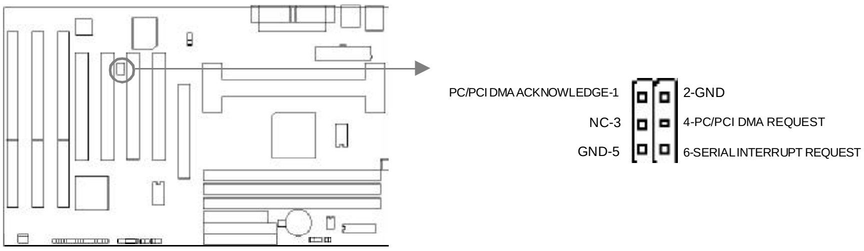
## Chassis Security Switch (CHSSEC)

If the switch is off, this indicates the chassis is closed. Otherwise, it indicates the chassis is opened.


GND
Indicatesignal

## Sound Connector (PC-PCI)

This connector is for the usage of PCI sound card.


PC/PCI DMA ACKNOWLEDGE-1
NC-3
GND-5
2-GND
4-PC/PCI DMA REQUEST
6-SERIAL INTERRUPT REQUEST

## Expansion Slots & I/O Ports description

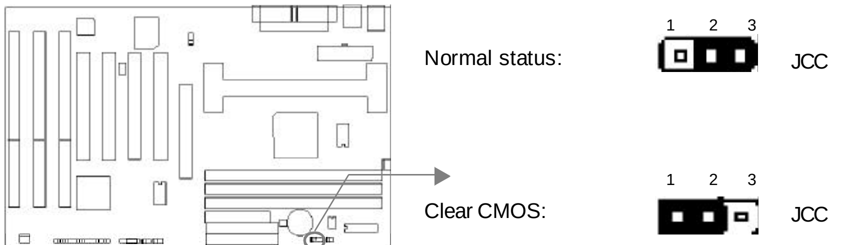
| Slot / Port | Description |
|---|---|
| ISA 1 | First ISA slot. |
| ISA 2 | Second ISA slot. |
| ISA 3 | Third ISA slot. |
| PCI1 | First PCI slot. |
| PCI2 | Second PCI slot. |
| PCI3 | Third PCI slot. |
| PCI4 | Fourth PCI slot. |
| IDE1 | Primary IDE port. |
| IDE2 | Secondary IDE port. |
| FLOPPY | Floppy Drive Port. |
| AGP | Accelerated Graphics Port |

## Jumper Settings

There are some jumpers on the motherboard, they represent, clear CMOS jumper JCC, enable keyboard password power-on function jumper JP2. Pin 1 for all jumpers are located on the side with a thick white line ( Pin1→ ▫▫▫ ), referring to the motherboard' s silkscreen . Jumpers with three pins will be shown as ■■▫ to represent pin1&pin2 connected and ▫■■ to represent pin2&pin3 connected.

### Clear CMOS (JCC)

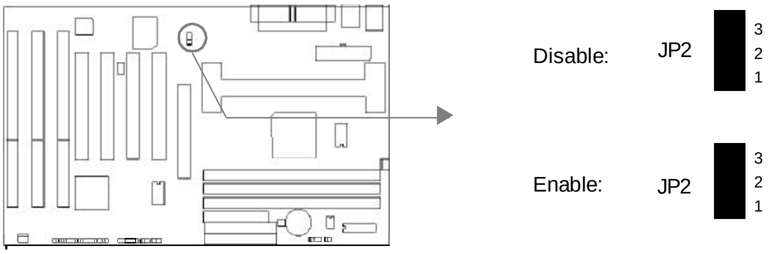
If you want to clear CMOS, unplug the AC power supply first, close JCC(pin1&pin2) once, set JCC back to the normal status with pin2&pin3 connected, then power on the system.



(Unplug the AC power supply)

### Enable keyboard password power-on function (JP2)

The motherboard provides the advanced keyboard password power-on function. When wanting to use this function, set JP2 with pin1& pin2 closed.Otherwise, set JP2 with pin2&pin3 shortened for disabling this function.



In order to implement this function, set " POWER ON Function" to **Password** and enter the keyboard power-on password in the " INTEGRATED PERIPHERALS" section of the BIOS. Save and exit, then power off your system. In this case, the power button' s power-on function has been disabled. The only way to power up the system is to enter the correct password. If you forget the password, clear CMOS and set it again. Refer to BIOS description on page 44 for detailed information.

**Note: 1.If wanting to use this function, 5VSB line of the power supply should be capable of delivering enough current (eg. 200mA) for all the devices connected to the keyboard port, or you can' t power up the system using the keyboard.**
**2.If you set JP2 with pin2&pin3 closed, set "POWER ON Function" to BUTTON ONLY, don' t set it to Password, or this will prevent you from powering up your system.**
**3. If you encounter problems above, clear CMOS and set the jumper and BIOS option properly again.**

## Memory Configuration

This motherboard provides three 168 pin 3.3V un-buffered DIMM sockets to support a flexible memory size ranging from 8MB/384MB for SDRAM or from 8MB/768MB for EDO memory. Both 66MHz/100MHz SDRAM with SPD and 66MHz EDO DIMMs are supported. The following set of rules allows for optimum configurations.

Rules for populating a 440BX memory array:

- Processors with 100MHz front-side bus should be paired only with 100MHz SDRAM. Processors with 66MHz front-side bus can be paired with either 66MHz or 100MHz SDRAM.
- Using the serial presence detect (SPD) data structure, programmed into an $E^2$PROM on the DIMM, the BIOS can determine the SDRAM' s size and speed.
- The DRAM Timing register, which provides the DRAM speed grade control for the entire memory array, must be programmed to use the timing of the slowest DRAMs installed.
- Possible SDRAM DIMM memory sizes are 8MB, 16MB, 32MB, 64MB, 128MB in each DIMM socket.
- Possible EDO DIMM memory sizes are 8MB, 16MB, 32MB, 64MB, 128MB, 256MB in each DIMMsocket.

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# Chapter 3
# SecurityEasy

There are two ways to prevent unauthorized entry or use of the system:
System Password and SecurityEasy.

## System Password

Set system password in the " PASSWORD SETTING" section of the BIOS, and set the " Password Setting" to **System** in the " BIOS FEATURES SETUP" section. You will be prompted for the password every time the system boots or any time you try to enter BIOS Setup. If the " Password Setting" is set as **Setup**, you will be prompted for the password only when entering BIOS Setup.

## SecurityEasy

The P6I440BX/ B1S provides additional SecurityEasy function to protect the system from unauthorized entry or use. There are two ways to enter the lock status.

- Push once the button connected to the two-pin header SLEEP after enabling the lock function in BIOS Setup. If the lock function is disabled, this button is used as SLEEP button.
- ' Keyboard Inactive Timer' is counted to the preset value-from 1 minute to 1 hour set in the BIOS Setup.

In the lock status, the power switch and reset buttons are unresponsive, PS/2 mouse is locked, and the keyboard is locked except for the SecurityEasy password entering. You can preset the Video as blank in the lock status. The only way to exit the lock status is to enter SecurityEasy password using the keyboard. This means if you set the lock function as enabled, you must also set the SecurityEasy password.

Please read the notes below thoroughly.

**Note 1**: The green function and the lock function can not be enabled at the same time.

**Note 2**: If lock function is enabled, the SecurityEasy password should be set, no more than six characters.

**Note 3**: When entering the SecurityEasy password to exit the lock status, use the <Enter> key located on the alphabetic pad and not the <Enter> key located on the numeric pad.

**Note 4:** If there is no SLEEP button on your case, your system still can enter lock status through our lock application. Refer to Appendix A (item 4) for details.

**Note 5**: See also chapter 4 ' BIOS Description' .

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# Chapter 4
# BIOS Description

## Utility Support:

### FLASH.EXE

This is a flash memory write/read utility used for the purpose of updating your BIOS when necessary. Before doing so, please note:

- **We strongly recommend you only upgrade BIOS when encountering problems.**
- **Before upgrading your BIOS, review the description below to avoid making mistakes, resulting in a destroyed BIOS and a non-working system.**

When you are encountering problems, for example, you find your system doesn’ t support the new CPU which is released after our current motherboard, you may therefore update the BIOS.

Follow the steps exactly for a successful upgrade.

1. Create a bootable system floppy diskette, by typing Format A:/s from the DOS prompt under DOS6.xx or Windows 9x environment.
2. Copy FLASH.EXE from the directory \Utility on the QDI Motherboard Utility CD onto your new bootable diskette.
3. Download the updated BIOS file from the Website (http://www.qdigrp.com). Please be sure to download the suitable BIOS file for your motherboard.
4. Uncompress the file download, copy the BIOS file (xx.bin) onto the bootable diskette, and write down the checksum of this BIOS which is included in readme file.
5. Reboot the system from the bootable diskette which you have created.
6. Then run the FLASH utility at the **A:\** prompt. During the process, the system will prompt : ‘ Do you want to save the BIOS(Y/N)’ . If you type ‘ Y’ , the system will prompt for the BIOS name. The system will also display the checksum which should be exactly the same as the checksum you copied from the readme file. Don’ t turn off power or reset the system until the BIOS upgrade has been completed.

Concerning how to run the FLASH utility, please refer to the following descriptions:

```
Usage:    FLASH [BIOSfile] [/c[<command...>]][/n]
          FLASH [BIOSfile] [/g]
```

/c: Flashing memory will clear previous settings. Default allows settings to remain.

<command> function definition:

c: clear CMOS;

p: clear PnP;

d: clear DMI.

/n: programs BIOS without prompting. If this option is chosen:

Be sure your new BIOS is compatible with your MB. If not, the system will be damaged.

/g: Retrieves BIOS file from BIOS ROM.

Examples:

```
A:\FLASH.EXE BIOSfile.bin
A:\FLASH.EXE BIOSfile.bin /cdpc/n
A:\FLASH.EXE BIOSfile.bin /g
```

**Note: FLASH utility runs incorrectly at Windows DOS prompt.**

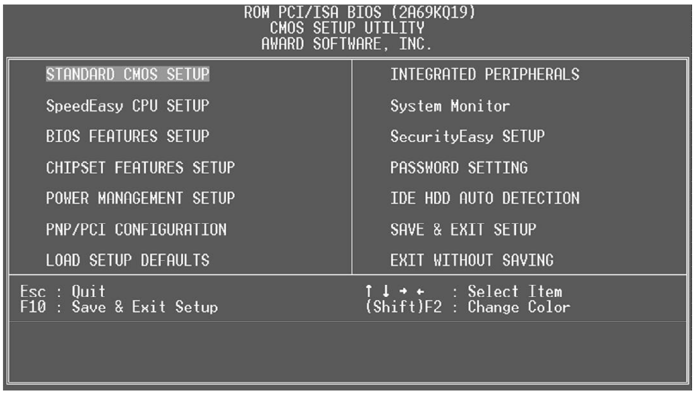
# AWARD BIOS Description

## Entering Setup

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

**Press <Del> to enter SETUP**

Once you have entered, the Main Menu (Figure 1) appears on the screen. The main menu allows you to select from twelve setup functions and two exit choices. Use the arrow keys to select among the items and press the <Enter> key to accept or enter the sub-menu.



```
                    ROM PCI/ISA BIOS (2A69KQ19)
                        CMOS SETUP UTILITY
                       AWARD SOFTWARE, INC.

    STANDARD CMOS SETUP              INTEGRATED PERIPHERALS
    SpeedEasy CPU SETUP              System Monitor
    BIOS FEATURES SETUP              SecurityEasy SETUP
    CHIPSET FEATURES SETUP           PASSWORD SETTING
    POWER MANAGEMENT SETUP           IDE HDD AUTO DETECTION
    PNP/PCI CONFIGURATION            SAVE & EXIT SETUP
    LOAD SETUP DEFAULTS              EXIT WITHOUT SAVING

 Esc : Quit                          ↑ ↓ → ←   : Select Item
 F10 : Save & Exit Setup             (Shift)F2 : Change Color
```

Figure-1 Main Menu

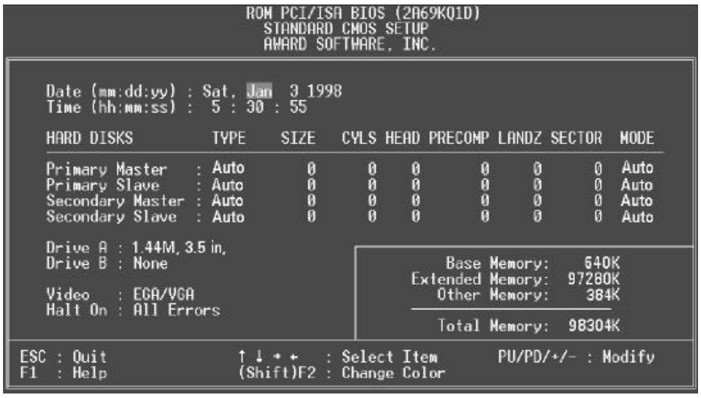
**Note:The ‘System Monitor’ item will not be displayed if there is no LDCM supporting chips on the motherboard.**

## Load Setup Defaults

The Setup Defaults are common and efficient. It is recommended that users load the setup defaults first, then modify the needed configuration settings.

## Standard CMOS Setup

The basic CMOS settings included in ‘Standard CMOS Setup’ are Date, Time, Hard Disk Drive Types, Floppy Disk Drive Types, and VGA etc. 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 (2A69KQ1D)
                            STANDARD CMOS SETUP
                            AWARD SOFTWARE, INC.

    Date (mm:dd:yy) : Sat, Jan  3 1998
    Time (hh:mm:ss) :  5 : 30 : 55

    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                               Base Memory:    640K
                                             Extended Memory:  97280K
    Video   : EGA/VGA                           Other Memory:     384K
    Halt On : All Errors
                                                Total Memory:  98304K

 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

These categories identify the HDD types of 2 IDE channels installed in the computer system. There are three choices provided for the Enhanced IDE BIOS: None, Auto, and User. ‘ None’ means no HDD is installed or set; ‘ Auto’ means the system can auto-detect the hard disk when booting up; by choosing ‘ user’ , the related information should be entered regarding the following items. Enter the information directly from the keyboard and press < Enter>:

| | | | |
|---|---|---|---|
| CYLS | number of cylinders | HEAD | number of heads |
| PRECOMP | write pre-compensation | LANDZ | landing zone |
| SECTOR | number of sectors | MODE | HDD access mode |

## Video

Set this field to the type of video display card installed in your system.

| | |
|---|---|
| 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. |

## Halt On

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

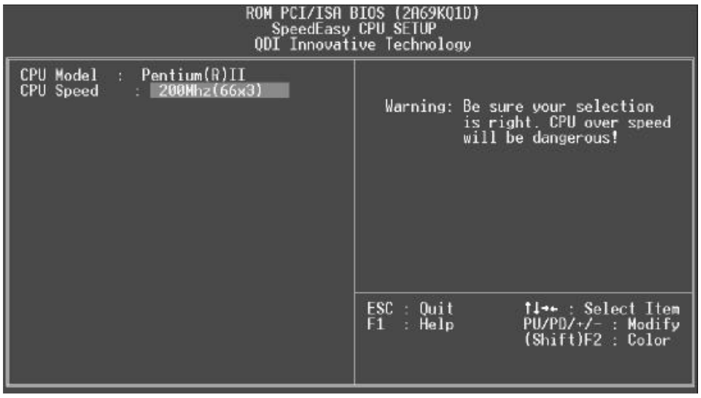
| | |
|---|---|
| No errors | The system boot will not stop for any errors that may be detected. |
| All errors | Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted. |
| All, But Keyboard | The system boot will not stop for a keyboard error; but it will stop for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

This is a Display-Only Category, 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 most used in this area. |
| Total Memory | Total memory of the system equals the sum of the above memory. |

## SpeedEasy CPU Setup



```
                    ROM PCI/ISA BIOS (2A69KQ1D)
                       SpeedEasy CPU SETUP
                     QDI Innovative Technology

 CPU Model  :  Pentium(R)II
 CPU Speed    :  200Mhz(66x3)
                                  Warning: Be sure your selection
                                           is right. CPU over speed
                                           will be dangerous!

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

Figure-3 SpeedEasy CPU Setup

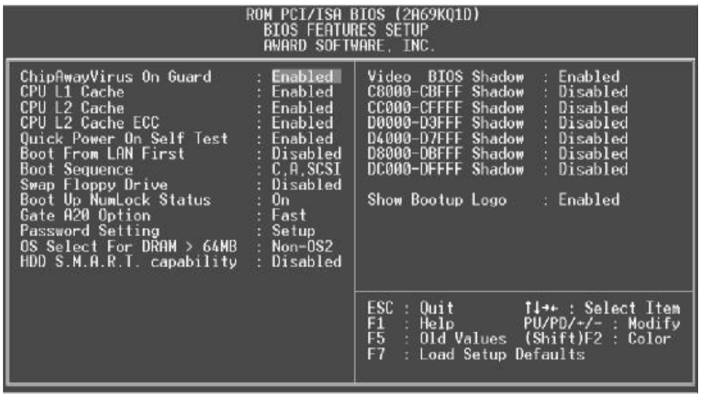
The following indicates the options for each item and describes their meanings .

| Item | Option | Description |
|---|---|---|
| ● CPU Model | | BIOS automatically detects the CPU model, therefore this item is shown only. It could be Pentium(R)II or Intel (R) Celeron(TM), depending on the processor chosen. |
| ● CPU Speed | *SpeedEasy* | CPU frequency should be set according to the CPU type. For Celeron$^{TM}$ or Pentium®II (66MHz front-side bus) processors, you can choose from 200MHz (66X3), 233MHz(66X3.5), 266MHz (66x4), 300MHz(66X4.5), or 333MHz (66X5). For Pentium®II processors with 100MHz front-side bus, you can select from 300MHz(100X3), 350MHz (100X3.5), 400MHz (100X4), 450MHz(100X4.5), or 500MHz(100X5). |
| | *Jumper Emulation* | This item is only for users who understand all the CPU parameters, i.e. System Bus Frequency ‘ 100MHz / 66MHz’ and multiplication of Processor Core Frequency to System Bus frequency “ x3, x3.5, x4, x4.5, x5, x5.5” . |

**Warning:**

**Do not set CPU frequency higher than its working frequency. If you do, we will not be responsible for any damages caused.**

## BIOS Features Setup



```
                    ROM PCI/ISA BIOS (2A69KQ1D)
                       BIOS FEATURES SETUP
                       AWARD SOFTWARE, INC.

ChipAwayVirus On Guard      : Enabled    Video  BIOS Shadow  : Enabled
CPU L1 Cache                : Enabled    C8000-CBFFF Shadow  : Disabled
CPU L2 Cache                : Enabled    CC000-CFFFF Shadow  : Disabled
CPU L2 Cache ECC            : Enabled    D0000-D3FFF Shadow  : Disabled
Quick Power On Self Test    : Enabled    D4000-D7FFF Shadow  : Disabled
Boot From LAN First         : Disabled   D8000-DBFFF Shadow  : Disabled
Boot Sequence               : C,A,SCSI   DC000-DFFFF Shadow  : Disabled
Swap Floppy Drive           : Disabled
Boot Up NumLock Status      : On         Show Bootup Logo    : Enabled
Gate A20 Option             : Fast
Password Setting            : Setup
OS Select For DRAM > 64MB   : Non-OS2
HDD S.M.A.R.T. capability   : Disabled

                                         ESC : Quit        ↑↓→← : Select Item
                                         F1  : Help        PU/PD/+/- : Modify
                                         F5  : Old Values  (Shift)F2 : Color
                                         F7  : Load Setup Defaults
```

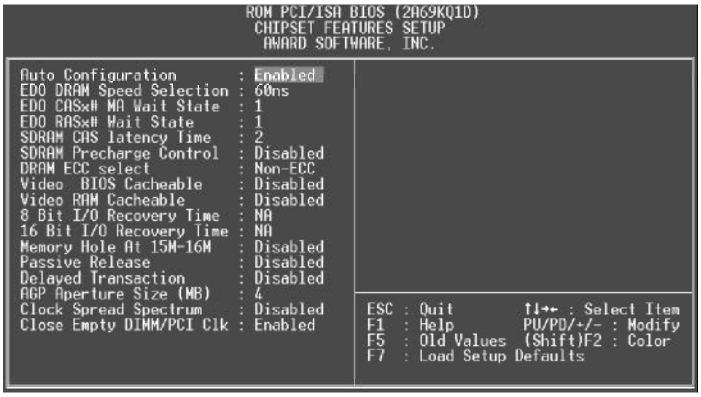
Figure-4   BIOS Features Setup Menu

The following indicates the options for each item and describes their meaning.

| Item | Option | Description |
|---|---|---|
| ● ChipAway Virus On Guard | *Enabled* | Guards against boot virus threats early in the boot cycle, before they have a chance to load into your system, ensuring your computer boots to a clean operating system. |
| | *Disabled* | Invalidates this function. |
| ● CPU L1/L2 Cache | *Enabled* | Enables CPU internal Level1/Level2 cache. |
| | *Disabled* | Disables CPU internal Level1/Level2 cache. |
| ● CPU L2 Cache ECC | *Enabled* | Enables CPU L2 Cache ECC (Error Checking and Correction) function. |
| | *Disabled* | Disables CPU L2 Cache ECC function. |
| ● 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 From LAN First | *Enabled* | Boot from LAN is ahead of any boot sequence selection (LAN Adapter must support this function). |
| | *Disabled* | Does not boot from LAN first. |
| ● Boot Sequence | *C,A,SCSI,...*<br>*C,CDROM,A*<br>*LS/ZIP, C* | Any search sequency can be chosen for booting |

| | | |
|---|---|---|
| ● Swap Floppy Drive | *Enabled* | Exchanges the assignment of A&B floppy drives. |
| | Disabled | The assignment of A&B floppy drives are normal. |
| ● Boot Up Numlock Status | *On* | Keypad is used as number keys. |
| | *Off* | Keypad is used as arrow keys. |
| ● Gate A20 Option | *Normal* | The A20 signal is controlled by the keyboard controller or chipset hardware. |
| | *Fast* | Default setting. The A20 signal is controlled by Port 92 or the chipset specific method. |
| ● Password Setting | *System* | The system will not boot and access to BIOS Setup will be denied if the correct password is not entered when prompted. |
| | *Setup* | The system will boot up, but access to BIOS Setup will be denied if the correct password is not entered when prompted. |
| ● 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 the operating system is OS/2, please select this item. |
| ● HDD S.M.A.R.T Capability | Enabled | Enables S.M.A.R.T hard disk support. |
| | Disabled | Invalidates this feature. |
| ● Video BIOS Shadow | *Enabled* | Video BIOS will be copied to RAM. Video Shadow will increase the video speed. |
| | *Disabled* | Video shadow is disabled. |
| ● C8000~CBFFFF Shadow: DC000-DFFFF Shadow: | *Enabled* | Optional ROM will be copied to RAM by 16K bytes per unit. |
| | *Disabled* | The shadow function is disabled. |
| ● Show Bootup Logo | *Enabled* | Enables the logo when system boots up |
| | *Disabled* | Logo will not be shown when system boots up. |

## Chipset Features Setup



```
                         ROM PCI/ISA BIOS (2A69KQ1D)
                           CHIPSET FEATURES SETUP
                            AWARD SOFTWARE, INC.

Auto Configuration        : Enabled
EDO DRAM Speed Selection  : 60ns
EDO CASx# MA Wait State   : 1
EDO RASx# Wait State      : 1
SDRAM CAS latency Time    : 2
SDRAM Precharge Control   : Disabled
DRAM ECC select           : Non-ECC
Video  BIOS Cacheable     : Disabled
Video RAM Cacheable       : Disabled
8 Bit I/O Recovery Time   : NA
16 Bit I/O Recovery Time  : NA
Memory Hole At 15M-16M    : Disabled
Passive Release           : Disabled
Delayed Transaction       : Disabled
AGP Aperture Size (MB)    : 4
Clock Spread Spectrum     : Disabled         ESC : Quit        ↑↓→← : Select Item
Close Empty DIMM/PCI Clk  : Enabled          F1  : Help        PU/PD/+/- : Modify
                                             F5  : Old Values  (Shift)F2 : Color
                                             F7  : Load Setup Defaults
```

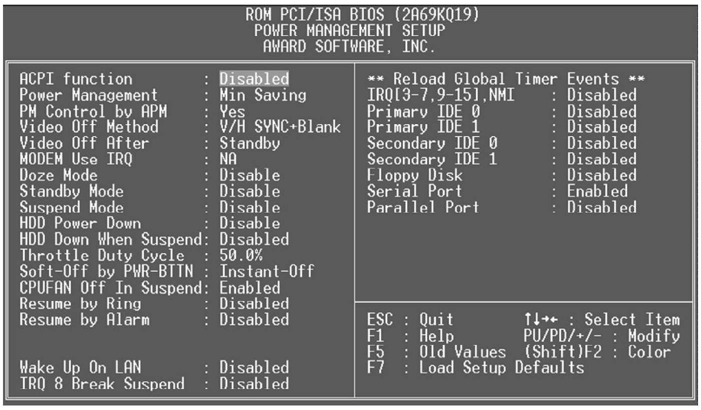
Figure-5 Chipset Features Setup Menu

The following indicates the options for each item and describes their meaning.

| **Item** | **Option** | **Description** |
|---|---|---|
| ● Auto Configuration | *Enabled* | Automatically configures DRAM Timing according to the value of ' DRAM Speed Selection' . |
| | *Disabled* | Manually configures.<br>***Note: It is recommended that the ' Enabled' option be chosen by common users.** |
| ● EDO DRAM Speed Selection | *50ns,*<br>*60ns* | This item is of selected EDO DRAM read/write timing. You must ensure that your DIMMs are as fast as 50ns, otherwise 60ns should be selected . |
| ● EDO CASx# MA Wait State | *2* | One additional wait state is inserted before the assertion of the first CASx# for page hit cycles. This allows one additional clock of MA setup time to the CASx# for the leadoff page hit cycle. Page miss and row miss timing are not affected by this bit. |
| | *1* | Without additional wait state. |
| ● EDO RASx# Wait State | *2* | One additional wait state is inserted before RASx# is asserted for row misses. This provides one clock of additional MAX[13:0] setup time to RASx# assertion. This bit does not affect page misses since the MAX[13:0] lines are setup several clocks in advance of RASx# assertion for page misses. |
| | *1* | Without additional wait state. |

| | | |
|---|---|---|
| ● SDRAM CAS Latency Time | *2* | Defines the CLT timing parameter of SDRAM. Latency Time=2x system clocks. |
| | *3* | Latency Time=3x system clocks. |
| ● SDRAM Percharge Control | *Enabled* | Default setting is suggested. |
| | *Disabled* | |
| ● DRAM ECC Select | *ECC* | Provides ECC (Error Checking and Correction) function. |
| | *Non-ECC* | Disables ECC function. |
| ● Video BIOS Cacheable | *Enabled* | Beside conventional memory, video BIOS area is also cacheable. |
| | *Disabled* | Video BIOS area is not cacheable. |
| ● Video RAM Cacheable | *Enabled* | Besides conventional memory, video BIOS area is also cacheable. |
| | *Disabled* | Video BIOS area is not cacheable. |
| ● 8 Bit I/ O Recovery Time. | *1~ 8* | Defines 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* | Defines 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 ISA card |
| | *Disabled* | Does not set this memory hole. |
| ● Passive Release | *Enabled* | Default setting is suggested. |
| | *Disabled* | |
| ● Delayed Transaction | *Enabled* | Default setting is suggested. |
| | *Disabled* | |
| ● AGP Aperture Size (MB) | *4~256* | Sets the effective size of the Graphics Aperture to be used in the particular PAC Configuration. |
| ● Clock Spread Spectrum | *Enabled* | Enables Clock Spread Spectrum to reduce EMI. |
| | *Disabled* | Disables Clock Spread Spectrum. |
| ● Close Empty DIMM/PCI Clk | *Enabled* | Closes empty DIMM clock or PCI clock to reduce EMI. |
| | *Disabled* | Does not close empty DIMM or PCI clock. |

## Power Management Setup



```
                       ROM PCI/ISA BIOS (2A69KQ19)
                         POWER MANAGEMENT SETUP
                          AWARD SOFTWARE, INC.

ACPI function          : Disabled          ** Reload Global Timer Events **
Power Management       : Min Saving        IRQ[3-7,9-15],NMI    : Disabled
PM Control by APM      : Yes               Primary IDE 0        : Disabled
Video Off Method       : V/H SYNC+Blank    Primary IDE 1        : Disabled
Video Off After        : Standby           Secondary IDE 0      : Disabled
MODEM Use IRQ          : NA                Secondary IDE 1      : Disabled
Doze Mode              : Disable           Floppy Disk          : Disabled
Standby Mode           : Disable           Serial Port          : Enabled
Suspend Mode           : Disable           Parallel Port        : Disabled
HDD Power Down         : Disable
HDD Down When Suspend: Disabled
Throttle Duty Cycle    : 50.0%
Soft-Off by PWR-BTTN   : Instant-Off
CPUFAN Off In Suspend: Enabled
Resume by Ring         : Disabled
Resume by Alarm        : Disabled          ESC : Quit          ↑↓→← : Select Item
                                           F1  : Help          PU/PD/+/- : Modify
                                           F5  : Old Values  (Shift)F2 : Color
Wake Up On LAN         : Disabled          F7  : Load Setup Defaults
IRQ 8 Break Suspend    : Disabled
```

Figure-6 Power Management Setup Menu

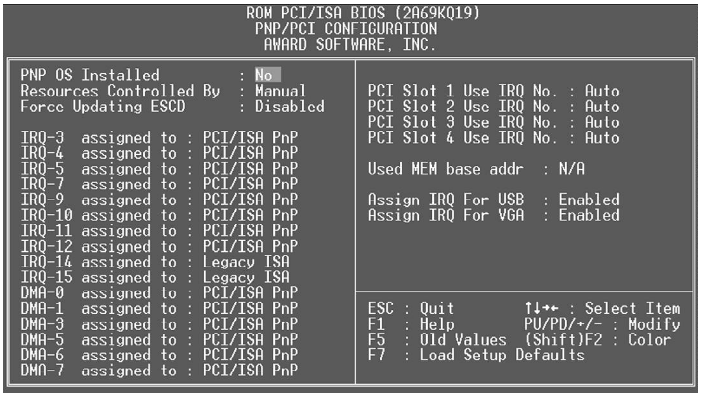
The following indicates the options for each item and describes their meaning.

| Item | Option | Description |
|---|---|---|
| ● ACPI function | *Disabled* | Invalidates ACPI function. |
| | *Enabled* | Validates ACPI function. |
| ● 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. All timers are in their MAX values. |
| | *Max Saving* | Pre - defined timer values are used. All timers are in their MIN values. |
| ● 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 entering any PM mode e.g. Standby or Suspend.<br>**Note: If APM is installed, and there is a task running, even when 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, 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 +* | 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.<br>**Note: When the green monitor detects the V/H-SYNC signals, the electron gun will be turned off.** |
| ● Video Off After | *N/A* | System BIOS never turns off the screen. |
| | *Suspend* | Screen blanks after the system enters Suspend mode. |
| | *Standby* | Screen blanks after the system enters Standby mode. |
| | *Doze* | Screen blanks after the system enters Doze mode. |
| ● MODEM Use IRQ | *3,7,5,7,9, 10,11* | Special wake-up event for Modems. |
| | *NA* | Invalidates this feature. |
| ● Doze mode | *Disabled* | The system never enters Doze mode. |
| | *1Min ~ 1 Hr* | Defines the continuous idle time before the system enters Doze mode. If any items defined in ' Reload Global Timer Events' are On and activated, the system will be woken up. |
| ● Standby Mode | *Disabled 1* | The system never enters Standby mode. |
| | *Min ~ 1Hr* | Defines the continuous idle time before the system enters Standby mode. If any items defined in ' Reload Global Timer Events' are On and activated, the system will be woken up. |
| ● Suspend Mode | *Disabled* | The system never enters Suspend mode. |
| | *Min ~ 1Hr* | Defines the continuous idle time before the system enters Suspend mode. If any items defined in ' Reload Global Timer Events' are On and activated, the system will be woken up. |
| ● HDD Power Down | *Disabled* | HDD' s motor will not be off. |
| | *1 ~15 Min* | Defines the continuous HDD idle time before the HDD enters the power saving mode (motor off). |
| ● HDD Down | *Enabled* | HDD' s motor will be off when the system enters suspend mode. |
| When suspend | *Disabled* | HDD' s motor will no be off. |
| ● Throttle Duty Cycle | *12.5%*<br>*25%*<br>*37.5%*<br>*50 %*<br>*62.5%* | Selects the duty cycle of the STPCLK# signal , slowing down the CPU speed when the system enters the green mode. |

| | | |
|---|---|---|
| | *75%* | |
| | *87.5%* | |
| ● Soft-Off by PWR-BTTN | *Instant-Off* | The system will power off immediately once the ‘ Power’ button is pressed. |
| | *Delay 4 Secs* | The system will not power off until the ‘ Power’ button is pressed continuously for more than 4 seconds. |
| ● CPUFAN Off In Suspend | *Enabled* | CPU fan will be automatically turned off when the system enters suspend mode. |
| | *Disabled* | CPU fan remains on when the system enters suspend mode. |
| ● Resume by Ring | *Enabled* | Allows the system to be powered on when a ring indicator signal comes up to UART1 or UART2 from an external modem or comes up to WOM header from an internal modem card. |
| | *Disabled* | Does not allow Ring Power-On. |
| ● Resume by Alarm | *Enabled* | RTC alarm can be used to generate a wake event to power up the system which is in power-off status. You can set any date, any time to power up the system. |
| | *Disabled* | RTC has no alarm function. |
| ● Wake Up On LAN | *Enabled* | Allows the system to be powered on when a remote wake up signal comes up to the WOL header from LAN adapter . |
| | *Disabled* | Does not allow wake-up on LAN. |
| ● IRQ8 Break suspend | *Enabled* | Genertes a clock event. |
| | *Disabled* | Does not generate a clock event. |
| ● IRQ [3-7, 9-15], NMI | *Enabled* | Reloads global timer. |
| | *Disabled* | Does not influence the global timer. |
| ….. | | |
| Parallel Port | | |

## PNP/PCI Configuration Setup



```
                    ROM PCI/ISA BIOS (2A69KQ19)
                      PNP/PCI CONFIGURATION
                       AWARD SOFTWARE, INC.

PNP OS Installed         : No
Resources Controlled By  : Manual      PCI Slot 1 Use IRQ No. : Auto
Force Updating ESCD      : Disabled    PCI Slot 2 Use IRQ No. : Auto
                                       PCI Slot 3 Use IRQ No. : Auto
IRQ-3  assigned to : PCI/ISA PnP       PCI Slot 4 Use IRQ No. : Auto
IRQ-4  assigned to : PCI/ISA PnP
IRQ-5  assigned to : PCI/ISA PnP       Used MEM base addr  : N/A
IRQ-7  assigned to : PCI/ISA PnP
IRQ-9  assigned to : PCI/ISA PnP       Assign IRQ For USB  : Enabled
IRQ-10 assigned to : PCI/ISA PnP       Assign IRQ For VGA  : Enabled
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       ESC : Quit        ↑↓→← : Select Item
DMA-3  assigned to : PCI/ISA PnP       F1  : Help        PU/PD/+/- : Modify
DMA-5  assigned to : PCI/ISA PnP       F5  : Old Values  (Shift)F2 : Color
DMA-6  assigned to : PCI/ISA PnP       F7  : Load Setup Defaults
DMA-7  assigned to : PCI/ISA PnP
```

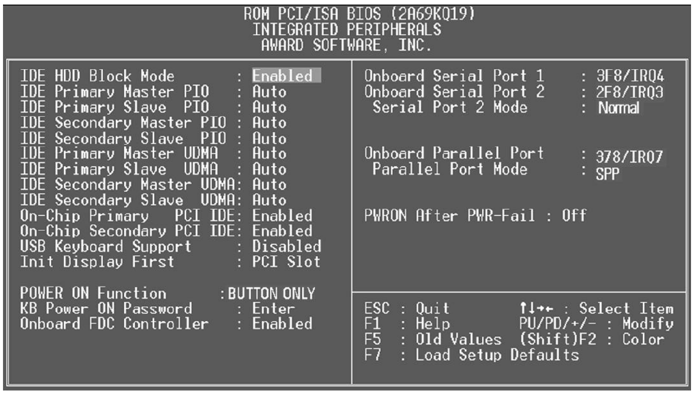
Figure-7   PNP/PCI Configuration Setup Menu

The following indicates the options for each item and describes their meaning.

| Item | Option | Description |
|---|---|---|
| ● PNP OS Installed | *Yes* | Device resources assigned by PnP OS. |
| | *No* | Device resources assigned by BIOS. |
| ● Resources Controlled By | *Manual* | Assigns the system resources ( IRQ and DMA) manually . |
| | *Auto* | Assigns system resources (IRQ and DMA) automatically by BIOS. |
| ● Force Updating ESCD | *Enabled* | The system BIOS will force updating ESCD once, then automatically set this item as Disabled. |
| | *Disabled* | Disables the forced update 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 assigned to | *Legacy ISA* | The specified DMA-x will be assigned to ISA only. |
| | *PCI/ISA PnP* | The specified DMA-x will be assigned to ISA or PCI. |
| ● PCI Slot 1/2/3/4 use IRQ No. | *Auto,3,4,5,7,9 10,11,12,14,15* | Assigns an IRQ for PCI slot1/2/3/4 manually or automatically. |
| ● Used MEM base addr | *C800/8 ~ 64K* | Claims a memory space to be occupied by legacy ISA card. The memory address and the memory size (8/16/32/64K) can be chosen from the options. |
| | *N/A* | Invalidates this feature. |

| | | |
|---|---|---|
| ● Assign IRQ for USB | *Enabled* | Assigns an IRQ for USB. If an USB device is used, enable this item. |
| | *Disabled* | Does not assign an IRQ for USB. If no USB device used, disabling this item can release the IRQ. |
| ● Assign IRQ for VGA | *Enabled* | Assigns the needed IRQ for the VGA Card. |
| | *Disabled* | Does not assign an IRQ for the VGA card, in order to release the IRQ. |

## Integrated Peripherals



```
                        ROM PCI/ISA BIOS (2A69KQ19)
                         INTEGRATED PERIPHERALS
                          AWARD SOFTWARE, INC.

IDE HDD Block Mode        : Enabled     Onboard Serial Port 1    : 3F8/IRQ4
IDE Primary Master PIO    : Auto        Onboard Serial Port 2    : 2F8/IRQ3
IDE Primary Slave  PIO    : Auto         Serial Port 2 Mode      : Normal
IDE Secondary Master PIO  : Auto
IDE Secondary Slave  PIO  : Auto
IDE Primary Master UDMA   : Auto        Onboard Parallel Port    : 378/IRQ7
IDE Primary Slave  UDMA   : Auto         Parallel Port Mode      : SPP
IDE Secondary Master UDMA: Auto
IDE Secondary Slave  UDMA: Auto
On-Chip Primary   PCI IDE: Enabled      PWRON After PWR-Fail : Off
On-Chip Secondary PCI IDE: Enabled
USB Keyboard Support      : Disabled
Init Display First        : PCI Slot

POWER ON Function        :BUTTON ONLY
KB Power ON Password      : Enter       ESC : Quit        ↑↓→← : Select Item
Onboard FDC Controller    : Enabled     F1  : Help        PU/PD/+/- : Modify
                                        F5  : Old Values  (Shift)F2 : Color
                                        F7  : Load Setup Defaults
```

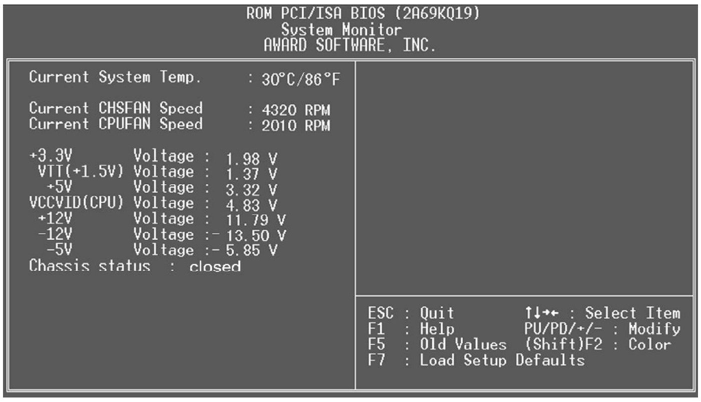
Figure-8 Integrated Peripherals Menu

The following indicates the options for each item and describes their meaning.

| Item | Option | Description |
|---|---|---|
| ● IDE HDD Block Mode | *Enabled* | Allows IDE HDD to read/write several sectors at 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 by auto -detection. |
| ● IDE Primary/ Secondary Master/Slave UDMA | *Auto* | Ultra DMA mode will be enabled if ultra DMA device is detected. |
| | *Disabled* | Disables this function. |
| ● 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. |
| ● USB Keyboard Support | *Enabled* | USB Keyboard Support is enabled. |
| | *Disabled* | USB Keyboard Support is disabled. |
| ● Init Display First | *PCI SLOT* | Initializes the PCI VGA first. If a PCI VGA card and an AGP card are installed together in the system, the one initialized first functions. |
| | *AGP* | Initializes the AGP first. |
| ● POWER ON Function | *BUTTON ONLY* | Use the power button to power up the system. |
| | *Password* | Enables the Keyboard Password Power-on function and disables the power button’ s power- |

| | | |
|---|---|---|
| | | on function. Other than choosing this option, the password should be entered to implement this function.<br>**Note: If this option(Password) is chosen, the jumperJP2 must be set as PIN1&PIN 2 closed, or this will prevent you from powering up your system.** |
| ● Onboard FDC Controller | *Enabled* | Onboard floppy disk controller is enabled. |
| | *Disabled* | Onboard floppy disk controller is disabled. |
| ● Onboard Serial 1/2 | *3F8/IRQ4,*<br>*2F8/IRQ3,*<br>*3E8/IRQ4,*<br>*2E8/IRQ3,* | Defines the onboard serial port address and required interrupt number. |
| | *Auto* | Onboard serial port address and IRQ are automatically assigned. |
| | *Disabled* | Onboard serial port is disabled. |
| ● Serial Port 2 Mode | *Normal* | Defines Serial Port 2 as standard serial port. |
| | *ASKIR* | Supports SHARP ASK-IR protocol with maximum baud rate up to 57600bps. |
| | *IrDA* | Supports IrDA version1.0 SIR protocol with maxiumum baud rate up to 115.2Kbps. |
| ● Onboard Parallel Port | *378/IRQ7,*<br>*278/IRQ5,*<br>*3BC/IRQ7* | Defines onboard parallel port address and IRQ channel. |
| | *Disabled* | Onboard parallel port is disabled. |
| ● Parallel Port Mode | *SPP*<br>*EPP*<br>*ECP,*<br>*ECP+EPP* | Defines the parallel port mode as Standard Parallel Port (SPP), Enhanced Parallel Port (EPP), or Extended Capabilities Port (ECP). |
| ● PWRON After PWR-Fail | *Off* | The system resumes OFF when the AC power supply powers on. |
| | *On* | The system will be powered up when the AC power supply powers on. |
| | *Former-Sts* | Whatever the system status is, before the AC power supply powers down, the system resumes in the previous status (ON/OFF) when the AC power supply powers on. |

## System Monitor



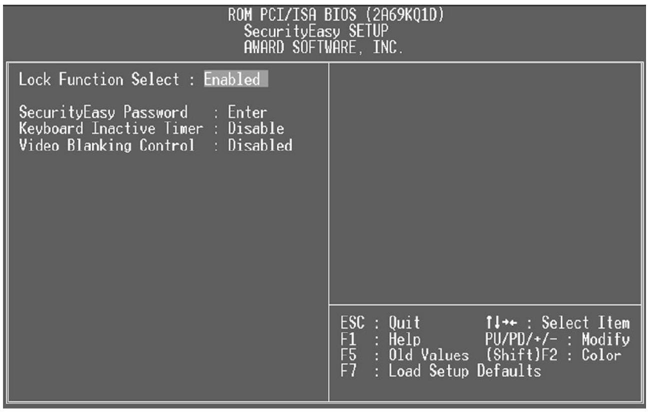
```
                    ROM PCI/ISA BIOS (2A69KQ19)
                          System Monitor
                        AWARD SOFTWARE, INC.

 Current System Temp.      : 30°C/86°F

 Current CHSFAN Speed      : 4320 RPM
 Current CPUFAN Speed      : 2010 RPM

 +3.3V        Voltage :  1.98 V
  VTT(+1.5V)  Voltage :  1.37 V
   +5V        Voltage :  3.32 V
 VCCVID(CPU)  Voltage :  4.83 V
  +12V        Voltage :  11.79 V
  -12V        Voltage :- 13.50 V
   -5V        Voltage :- 5.85 V
 Chassis status   :  closed

                                  ESC : Quit        ↑↓→← : Select Item
                                  F1  : Help        PU/PD/+/- : Modify
                                  F5  : Old Values  (Shift)F2 : Color
                                  F7  : Load Setup Defaults
```

Figure-9  System Monitor Menu

The following describes the meaning of each item.

| **Item** | **Current Data Shown** | **Description** |
|---|---|---|
| ● Current System Temp. | *$30^0$C/ $86^0$C* | The temperature inside the chassis. |
| ● Current CHSFAN Speed<br>Current CPUFAN Speed | *2010RPM*<br>*4320RPM* | RPM( Revolution Per Minute) speed of fan connected to the fan header CPUFAN or CHSFAN. Fan speed value is based on an assumption that tachometer signal is two pulses per revolution; In other cases, you should regard it relatively. |
| ● + 3.3V Voltage<br>VTT (+1.5) Voltage,<br>+ 5V<br>VCCVID(CPU) Voltage<br>+12V<br>-12V<br>- 5V | *1.98V*<br>*1.37V*<br>*4.83V*<br><br>*11.79V*<br>*-13.50V*<br>*-5.85V* | Displays current Voltage values including all the most important voltages of the mainboard. +3.3V, +5V, +12V, -12V, -5V are voltages from the ATX power supply, VTT (+1.5) Voltage is GTL Termination Voltage from the on-board regulator, and VCCVID (CPU) Voltage is CPU Core Voltage from the on board switching Power Supply. |
| ● Chassis Status: | *Closed* | Indicates status of chassis is closed. |
| | *Opened* | Indicates status of chassis is opend. |

## SecurityEasy Setup



```
                 ROM PCI/ISA BIOS (2A69KQ1D)
                   SecurityEasy SETUP
                   AWARD SOFTWARE, INC.

Lock Function Select : Enabled

SecurityEasy Password   : Enter
Keyboard Inactive Timer : Disable
Video Blanking Control  : Disabled

                              ESC : Quit        ↑↓→← : Select Item
                              F1  : Help        PU/PD/+/- : Modify
                              F5  : Old Values  (Shift)F2 : Color
                              F7  : Load Setup Defaults
```

Figure-10 SecurityEasy Setup Menu

The following describes the options for each item and describes their meaning

| **Item** | **Current Data Shown** | **Description** |
|---|---|---|
| ● Lock Function Select | *Enable* | Enables the LOCK function. |
| | *Disable* | The system never enters LOCK mode. |
| ● SecurityEasy Password | *Enter* | The SecurityEasy password is the only option to exit LOCK mode. When you select this function. The following message ' ENTER PASSWORD' appears at the center of the screen to assist you in creating a password. Type the SecurityEasy Password no more than six characters, then 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>. |
| ● Keyboard Inactive Timer | *Disable* | The system will not enter the LOCK mode due to the Keyboard Inactive Timer. |
| | *1Min~ 1 Hour* | Set the continuous idle time of the keyboard before the system enters the LOCK mode. |
| ● Video Blanking Control | *Enable* | Video is blank in the LOCK mode. |
| | *Disable* | Video is normal in the LOCK mode. |

Note: See also Chapter 3

## Password Setting

When this function is selected, 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.

To disable password, just 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 BIOS Setup freely.

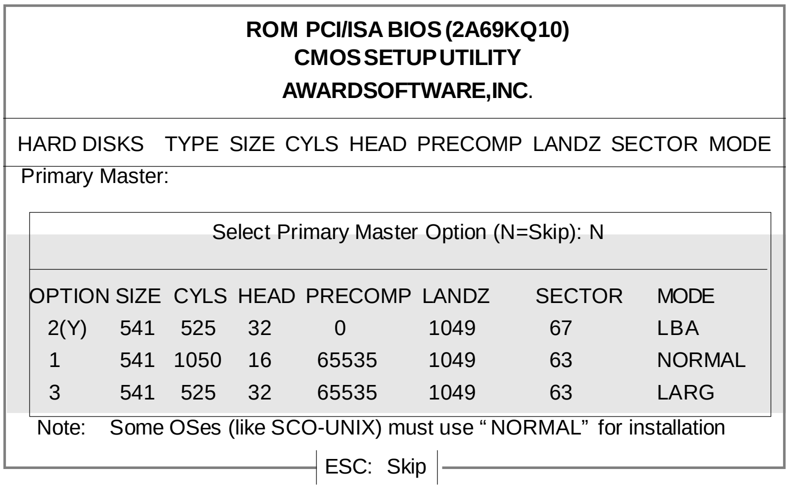
***PASSWORD DISABLED***

If you have selected ‘ **System**’ in‘ Password Setting’ of‘ BIOS Features Setup’ menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup.

If you have selected ‘ **Setup**’ at‘ Password Setting’ from‘ BIOS Features Setup’ menu, you will be prompted for the password only when you enter BIOS 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 (2A69KQ10)
                         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

OPTION SIZE  CYLS  HEAD  PRECOMP  LANDZ      SECTOR      MODE
  2(Y)    541   525    32       0       1049        67        LBA
  1       541  1050    16    65535      1049        63        NORMAL
  3       541   525    32    65535      1049        63        LARG
 Note:   Some OSes (like SCO-UNIX) must use "NORMAL" for installation
                            ESC:  Skip
```

Figure-11  IDE HDD Auto Detection Menu

## 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 cylinder is less than or equal to 1024,' LARGE' option may not be shown.
- Users can select their appropriate mode .

**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 available 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 the 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 to overcome 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) into recognizing 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 automatically detect the IDE hard disk mode and set it as one of the three modes.

## 3. **Remark**

To support LBA or LARGE mode of HDDs, there must be some softwares involved which are located in Award HDD Service Routine(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.

## Boot with BIOS defaults

If you have made all the changes to CMOS values and the system can not boot with the CMOS values selected in setup, clear CMOS after power-down, then power on again. System will boot with BIOS default settings.

# Appendix A

## QDI Motherboard Utility CD-ROM

A QDI Motherboard Utility CD-ROM is supplied with each motherboard. The contents used for this motherboard are:

1. Chipset Dispatches:
   Intel Chipset Drivers included in the directory \ChipDrv\Intel can be used for this motherboard.
   **a.** Intel PIIX4 Driver, included in directory \ChipDrv\Intel\PIIX4
   This driver is for Windows 95/OSR2 which supports the latest Intel PCI devices such as the PCI IDE hard disk controller, PCI USB device etc. It can also remove the yellow question mark in the Device Manage of Windows 95 after installation.
   Running \ChipDrv\Intel\PIIX4\Setup.exe for installation.

   **b.** Intel Bus Master Driver, included in directory \ChipDrv\Intel\BMIDE
   It' s Intel Bus Master Driver for Windows 95, which can enhance the capability of IDE data transaction up to Ultra DMA/33MB supported by 440BX chipset or other ultimate chipset.

   Running \ChipDrv\Intel\BMIDE\Setup.exe for installation.

2. PC-cillin Anti-Virus software:
   Windows 95 English version is located in the directory \Pccillin\Win95. Running Setup.exe for installation.
   Windows NT English version is located in the directory \Pccillin\WinNT4.0. Running Setup.exe for installation. S/N is PNEF-9991-6558-5857-5535.

3. QDI ManageEasy:
   Running Setup.exe from the directory \QME to install the ManageEasy. For detailed information about QDI ManageEasy, refer to the ManageEasy Manual included in the directory \Doc. Please note, hardware is a manufacturing option.

4. QDI SecurityEasy:
   This software provides a convenient access method to activate SecurityEasy. Other than pushing the SLEEP button, clicking the watchdog icon on the task bar also allows the system to enter Lock Status. Running \QSE\lock.exe for Windows 95 and Windows NT installation. (After installation refer to readme file for details by clicking Start/Programs/Security Easy Access). Please note, hardware is a manufacturing option.

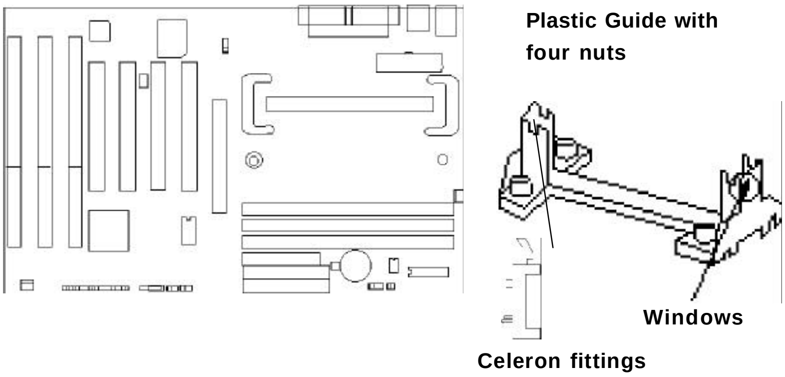
5. QDI Motherboard Utility:
   FLASH.EXE
   CBLOGO.EXE
   LF.EXE
   Refer to the online help for information on how to use these utilities.

6. Documents for QDI Motherboard:
   The files included in the directory \Doc are:
   Adobe Acrobat Reader V3.0 —ar32e301.exe
   ManageEasy Manuals—QMEV12.PDF.

# Appendix B.

## Retention Mechanism & Pentium® II/ Celeron™ Processor Installation Procedures

1. Place Plastic Guide with plastic caps on the motherboard, and secure all four caps.

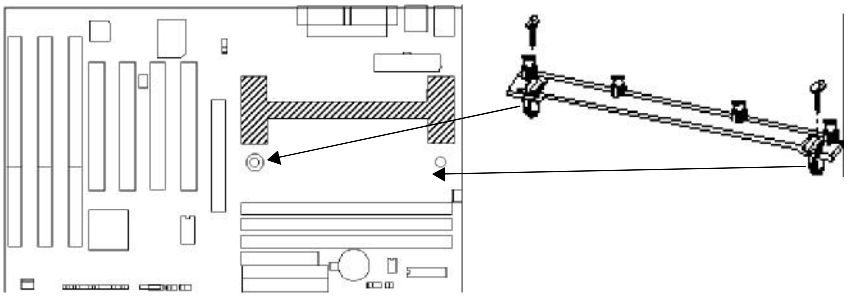


Note: 1. Please choose four caps which match the motherboard.

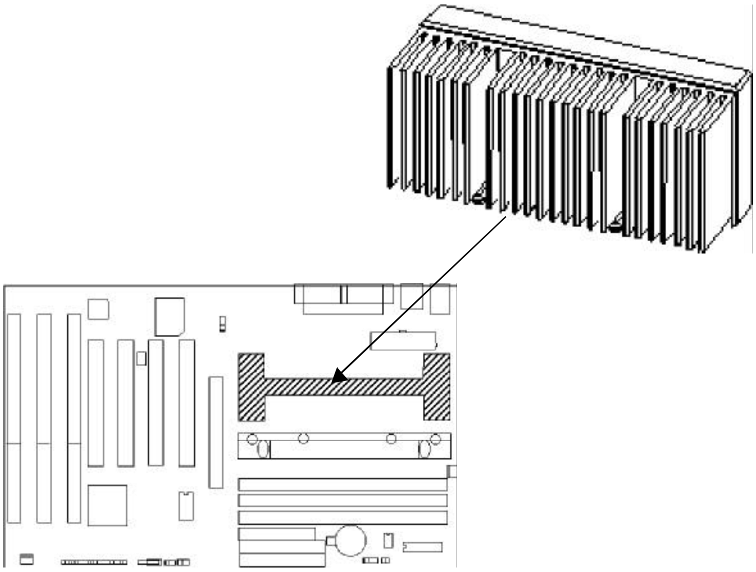
2. If choosing to use Celeron™ Processor, snap-on Celeron fittings onto the Plastic Guide.

3. Please note the Plastic Guide has one orientation. If one way doesn' t fit, change the direction to the other way. Do not forcefully press the Plastic Guide onto the motherboard.

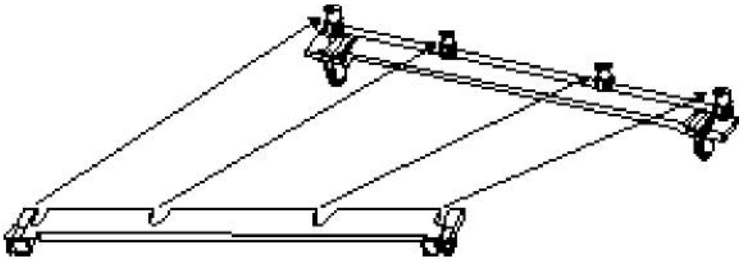
2. Install HSSBASE (Heatsink Support Base) on motherboard, then insert the two plastic pins through the HSSBASE securing it to the motherboard.



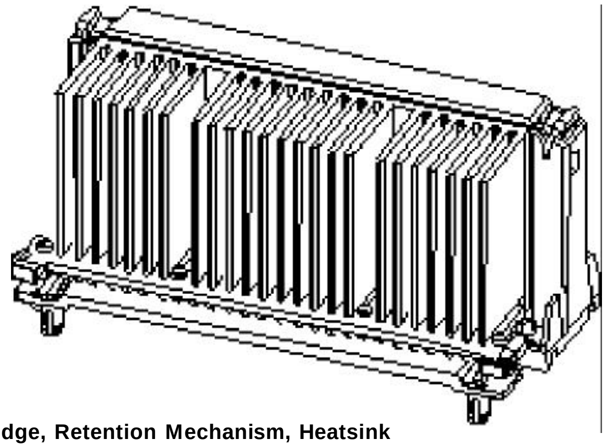
3. Insert Pentium® II or Celeron™ Processor in Slot1.



4. Clip Plastic Bar onto the HSSBASE through the fins on the processors' heatsink.



5. The Retention Mechanism installation procedure is completed as shown below.



**S.E.C Cartridge, Retention Mechanism, Heatsink support, and ATX Form Factor Headsink Isometric View Not To Scale**

***Remark:***

***Please skip step2 and step4 for Boxed Pentium® II Processor and refer to relevant details of this kind of processor for your installation.***

# Appendix C.
# Boot Logo

When you power on or reset your system, the picture listed below will be shown on the screen.

Quality • Design • Innovation
QDI

If you press <**Esc**>, it switches to the booting message screen. Otherwise, it enters operating system directly. You can use ' **cblogo.exe**' ( included on the QDI Motherboard Utility CD) to replace it by any other logo which you prefer. Regarding the method of using **cblogo.exe** utility, please refer to it' s online help. If you don' t prefer the logo displayed on the screen during boot up, set the ' Show Bootup Logo' option as Disabled in the ' BIOS FEATURES SETUP' section of the BIOS

*** We reserve the right of modifying the default full-logo of QDI without further notification.**

P/N : 430-01014-201-00
Manual P6I440BX/B1S Ver 1.0

## Item Checklist

Completely check your package. If you discover damaged or missing items, contact your retailer.

- ☑ P6I440BX/B1S motherboard
- ☑ QDI Motherboard Utility CD-ROM
- ☑ Retention Module
- ☑ I/O shield
- ☑ 1 IDE ribbon cable
- ☑ 1 floppy ribbon cable
- ☑ User’ s manual

## Notice

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# Board Layout of
# P6I440BX/B1S V1.0