PENTIUM® II

P6I440LX/AV
Legend-III

Notice

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Declaration of conformity


(EC conformity marking)

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

declare that the product

Pentium® II Motherboard
P6I440LX/AV Legend-III

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

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

European Representative:

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

Signature : Place / Date : HONG KONG /1997

Printed Name : Anders Cheung Position/ Title : President

Declaration of conformity

Trade Name:	QDI Computer (U. S . A.) Inc.
Model Name:	P6I440LX/AV Legend-III
Responsible Party:	QDI Computer (U. S. A.) Inc.
Address:	41456 Christy Street Fremont, CA 94538
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Equipment Classification:	FCC Class B Subassembly
Type of Product:	PCI Pentium 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 : 1997

Contents

ENGLISH

SpeedEasy Quick Setup

Procedures :

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

Note: If you do not set CPU speed, your system will run at the default setting (233MH$_Z$ for Pentium®II).

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

SpeedEasy CPU Setup Menu

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

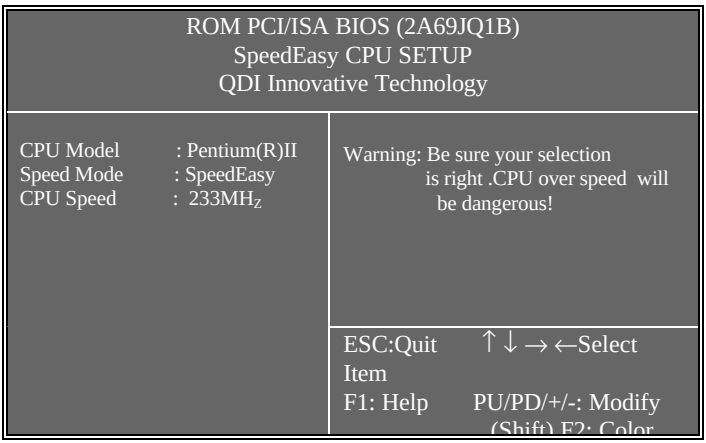

Figure -1 SpeedEasy CPU Setup Menu

BIOS will provide you with a set of basic values for your Pentium®II selection instead of the jumper setting. You can manually select Pentium®II speed on "SpeedEasy CPU Setup" menu screen.

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

Note: ***If your system does not boot up again because of wrong CPU setting, you can hold down the hot-key <Del>at startup/restart (i.e. power on). The system will reboot and run at basic values.***

DEUTSCH

Schnell-Installation durch SpeadEasy

Vorgehensweise der Installation:

1. Legen sie die Pentium® II 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. Bei der Pentium® II sind das 233MHz).

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

SpeedEasy CPU Installationsmenü

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

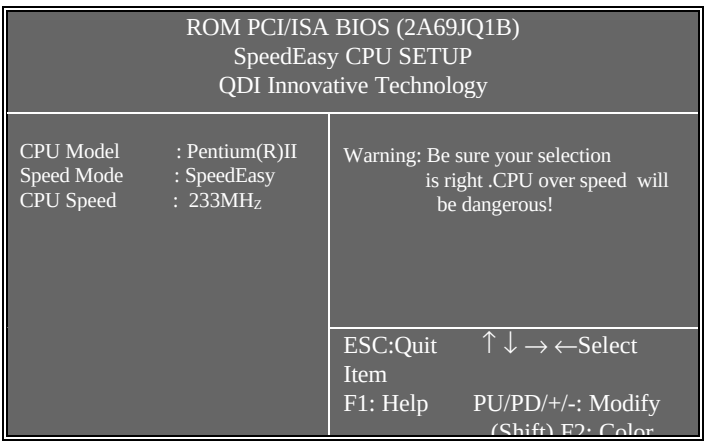

Abb.1 SpeedEasy CPU Installationsmenü

Das BIOS stellt lhnen eine Reihe von Grundeinstellungen fur lhren Pentium® II zur Verfügung, anstelle von "Jumper Setting". Sie können manuell die Geschwindigkeit der Pentium® II innerhalb des "SpeedEasy CPU Installationmenus " einstellen.

Warnung:
Bitte setzen Sie die Taktfrequenz der CPU nicht höher als die tatsächliche freigegebene Taktfrequenz, ansonten kann QDI für rechtliche Anspruche nicht herangezogen werden.

Achtung : Sollte sich lhr System wegen falscher CPU Einstellung nicht starten lassen, drüken, Sie die Taste <Del> und gleichzeitig die Power On Taste. Das System startet neu und läuft mit den vorgegebenen Grundeinstellungen.

SpeedEasy Instalación rápida

Procedimiento:

1. Introduzca correctamente el Pentium® II.

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 (233MH$_z$ para Pentium®II)

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:

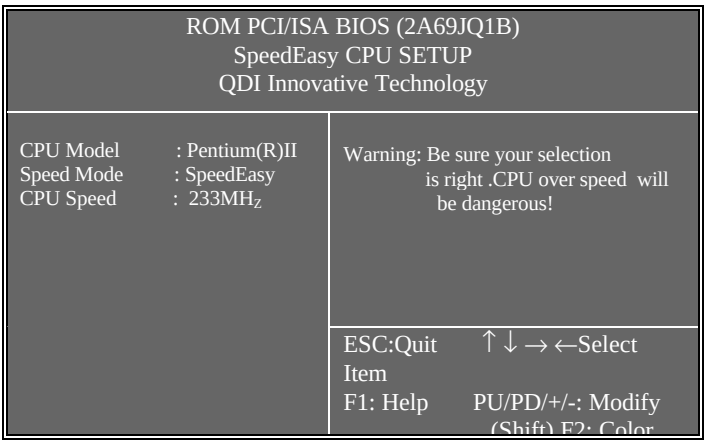

Figura-1 Menu del CPU SpeedEasy

BIOS le proporcionará unos valores básicos para la elección de su Pentium®II, en vez de tener que cofigurar jumpers. Ud. puede seleccionar manulmente la velocidad de Pentium®II en el Menu "SpeedEasy CPU Setup".

Aviso

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

Nota: adicionalmente, si su sistema no puede arrancar debido a un error en la configuración de la velocidad de su CPU, Ud. siempre tiene la opción de arrancar manteniendo presionada la tecla<Supr>, con lo que el sistema le arrancará nuevamente a la velocidad mínima por defecto.

Facilité de vitesse Initialisation

Procédure:

1. Insérez le Pentium® II correctement.
2. Connectez les autres configurations et restaurez le système.
3. Appuyez sur la touche <Del> et mettez le système sous tension pour entrer dans l'initialisation BIOS.
4. Entrez le menu "SpeedEasy CPU Setup" (=initialisation de la facilité de vitesse dans l'unité centrale) pour déterminer la vitesse de l'unite centrale.

Note: Si vous ne déterminez pas la vitesse de votre unité centrale, votre système fonctionnera par défaut (233MHz pour Pentium ® II).

5. Sauvegardez et sortez de la position BIOS. Le système pourra alors démarrer avec le succès auquel vous vous attendez.

Menu d'initialisation de "SpeedEasy" dans l'unité centrale.

Sélectionnez la rubrique <SpeedEasy CPU Setup> dans le menu principal et entrez le sous-menu:

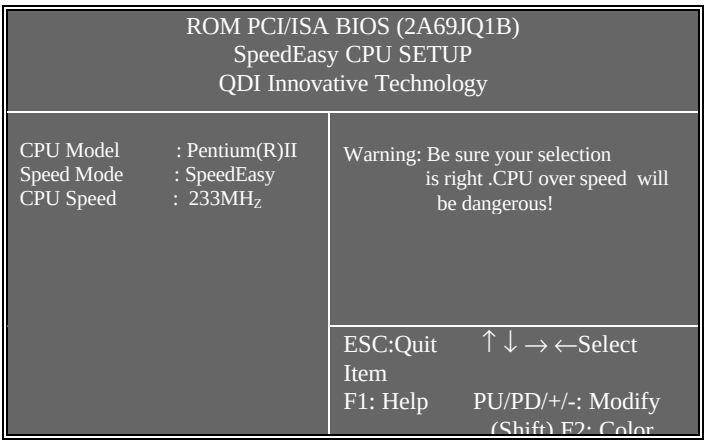

Figure-1 Menu d'initialisation de "SpeedEasy" dans l'unité centrale

BIOS fournira un jeu de valeurs de base pour votre sélection de Pentium ®II au lieu de positions cavaliers. Vous pouvez sélectionner manuellement la vitesse de Pentium® II dans l'affichage du menu "SpeedEasy CPU Setup".

Avertissement:
Ne vous laissez pas aller à installer une fréquence à l'unité centrale supérieure à sa fréquence de travail. Sinon nous déclinerons toutes responsabilités en ce qui concerne les dégâts qui en résulteraient.

Note: De plus, si votre système ne peut pas redémarrer à cause d'une mise à "1" erronée, vous pouvez maintenir la pression sur la touche à grande activité <Del> tout en mettant le système sous tension. Ce dernier alors redémarrera et fonctionnera sur des valeurs de base.

SETUP DELLA SCHEDA SPEEDEASY

Procedura di installazione:

1. Inserite il microprocessore Pentium®II 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 velocità del microprocessore. [1]

Nota: se non regolate la velocità del microprocessore, il sistema funzionerà con le regolazioni standard (233MHz per il Pentium® II).

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:

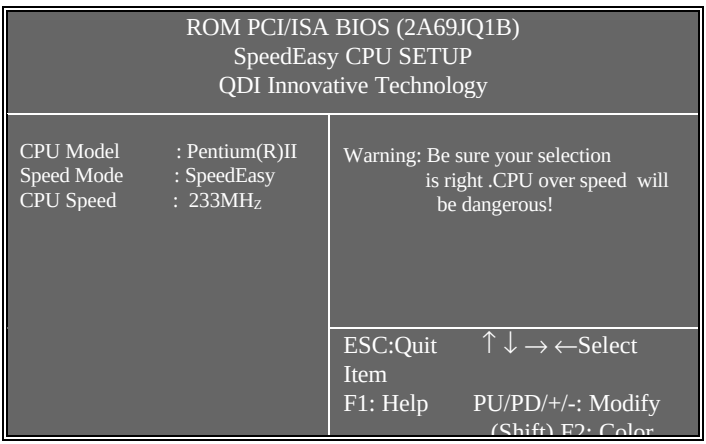

Figure -1 Menu del Setup del Microprocessore SpeedEasy

I1 sistema BIOS Vi fornirà una serie di valori base per la selezione del microprocessore Pentium®II al posto della regolazione jumper (dell'accoppiamento). Potete selezionare manualmente la velocità del Pentium® II sulla schermata "SpeedEasy CPU Setup".

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

regolazioni del microprocessore, potete tenere premuto il tasto <Del> mentre accendete la macchina, ed il sistema ripartirà e funzionerà con le regolazioni originali.

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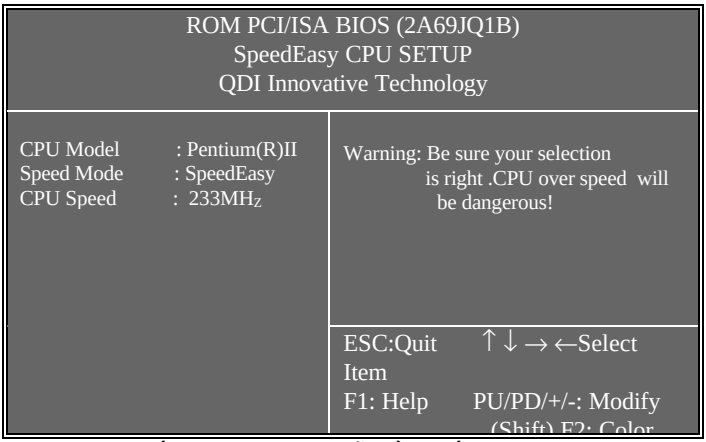

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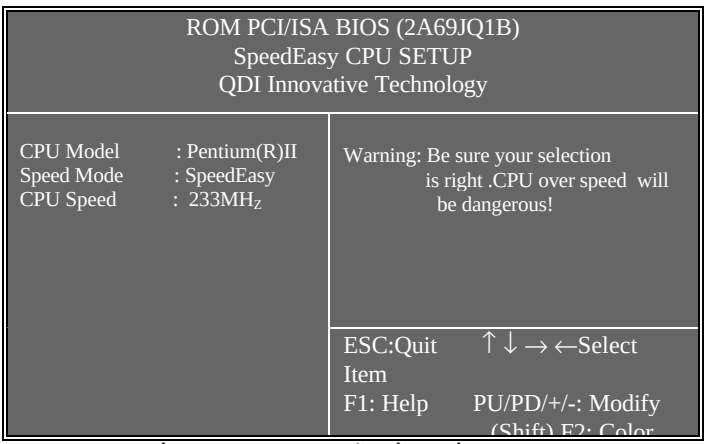

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BIOSÎªÄãµÄ Pentium® II Ìá¹©Ò» ×é»ù±¾Éè¶¨ Ñ¡ÏîÎ£¬ ÒÔ´úÌæ ´«Í³µÄ ÌøÏßÃ±(Jumper) ·½Ê½, ´Ó¶øÊ¹Äã¿ÉÒÔÔÚ (SpeedEasyÖÐÑë´¦ÀíÆ÷Éè¶¨) ÎîÄ¿µ¥ µÄÓ«Ä»ÉÏÎ£¬×ÔÐÐÑ¡Ôñ Pentium® II µÄËÙ¶È¡£

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Chapter 1
Introduction

Overview

P6I440LX/AV Legend-III green motherboard provides a highly integrated solution for fully compatible, high performance PC/ATX platforms, and supports Pentium®II processors, flexible main memory size can be installed from 8MB up to 512MB SDRAM or 8MB up to 1GB EDO DIMM, so as to give full play to the advantages of Pentium®II processors. The motherboard offers a wide range of interface to support integrated on-board IDE and on-board I/O function.

ATI's 3D Rage Pro® AGP VGA (with TV-out) and Crystal CS4237B 3D audio system are built-in on board.

The current green function is divided into three phases: Doze, Standby and Suspend.

Key Features

Pentium®II	-	Supports Pentium®II processors at 233/266/ 300/333MHz
	-	66MHz bus speed
	-	Pentium®II core frequency = System Clock x2.5, x3, x3.5, x4, x4.5, x5, x5.5
	-	On board switching voltage regulator with VID(Voltage ID), and Pentium®II core supply voltage can be selected from 1.3V to 3.5V automatically.
Chipset	-	Intel® 440LX (82443LX, 82371AB PIIX4)
	-	ATI®3D Rage Pro® AGP graphics controller
	-	Crystal CS4237B audio chip
System memory	-	Four 168 pin 3.3V unbuffered DIMM sockets
	-	For up to 512MB SDRAM memory or up to 1GB EDO memory.
	-	Supports memory ECC(Error Checking and Correction) function.

On-board IDE	-	Supports two PCI PIO and Bus Master IDE ports.
	-	supports up to Mode 4 Timing
	-	Supports 2 Fast IDE interfaces for up to 4 IDE devices including IDE hard disks and CD ROMs
	-	Supports "Ultra DMA/33" Synchronous DMA mode transfers up to 33 Mbytes/sec.
	-	Integrated 8x32bit buffer for IDE PCI Burst Transfers.
Green function	-	Supports Advanced Configuration and Power Interface (ACPI) specification and OS Directed Power Management.
	-	Supports three green modes: Doze, Standby and Suspend.
	-	Green LED will blink when the system is in green status.
On-board I/O	-	Use NS Plug & Play I/O chip PCXX307
	-	One floppy port supports up to two 3.5"or 5.25" floppy drives 360K/720K/1.2M/1.44M/2.88M format.
	-	Supports LS-120 and ZIP floppy disk drive
	-	All I/O port can be enabled/disabled by BIOS setup
	-	Two high speed 16550 fast compatible UARTs (COM1/COM2/COM3/COM4 selective) with 16-byte send/receive FIFOs and support MIDI mode.
	-	One enabled parallel port at I/O address 378H/278H/3BCH with additional bi-direction I/O capability and multi-mode (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.
On-board AGP	-	Integrated 3D, 2D Video accelerators

VGA	-	Comprehensive AGP support
	-	DDC1 and DDC2B Plug-and-Play monitor support
	-	2MB or 4MB SGRAM memory
	-	Support C-Video and S-Video TV-out
On-board Audio	-	Integrated 3D Sound technology
	-	Compatible with Sound Blaser®, Sound Blaster Pro™ and Windows Sound System™
	-	Enhanced Digital Gameport
	-	On board Line-in, microphone-in, speaker-out/Line-out and MIDI/Joystick socket
Advanced Feature	-	On board LM78 to support system monitoring (monitor system voltages, temperature, chassis intrusion and FAN speed) (Optional)
	-	Supports LDCM(LanDesk Client Manager) software (Optional)
	-	On board PS/2 mouse and PS/2 keyboard socket
	-	Two USB ports
	-	On board switching voltage regulator with VID (support 1.3V to 3.5V)
	-	Provides Anti-Virus function
	-	Provides Infrared interface
	-	Supports Windows 95 Software Power-Down
	-	Supports External Modem and LAN adapter Ring Power-on
	-	Supports Auto Fan off when system entering suspend mode
BIOS	-	Licensed advanced AWARD BIOS, Supports Flash ROM BIOS, Plug and Play ready. Built-in NCR®53C810 BIOS
	-	Supports IDE CD-ROM or SCSI bootup
Expansion slots	-	2 x ISA slots and 4 x PCI slots
Board size	-	305 mm x 244mm

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Chapter 2
Connector Configuration

This section lists all connector pin assignment and port description on the motherboard. The situations of the connectors and ports are illustrated in the following figures. Before inserting these connectors, please pay attention to the directions.(1  The black block indicates connector pin 1)

Green LED

PIN NUMBER	FUNCTION
1	LED ANODE
2	LED CATHODE

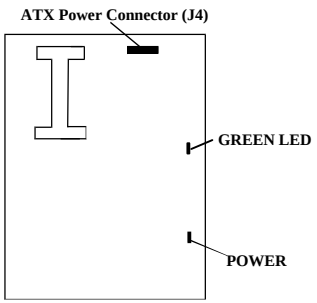
The LED connected to this header will blink when system is in green status.

Power Switch (POWER)

Connect ATX Power Supply connector to socket J4 first.

1. If you want to power up your system, you should turn on the mechanical switch of ATX power supply first, then push once the button connected to the two pin header (POWER).

2. If you want to power off your system, you need not turn off the mechanical switch of ATX power supply , just ***push once**** again the button connected to the two pin header(POWER). The location of connector is shown as below figure:



Note: ***If you change "soft-off by PWR-BTTN" from default "Instant-off" to "Delay 4 Secs", you will have to press the power button for more than 4 seconds before the system power down. For details, please refer to Page 3-12.***

Hard Disk LED Connector (HD.LED)

PIN NUMBER	FUNCTION
1	LED ANODE
2	LED CATHODE

Speaker connector (SPEAKER)

PIN NUMBER	FUNCTION
1	SPKDATA
2	NC
3	GND
4	VCC

LED Connector (LED)

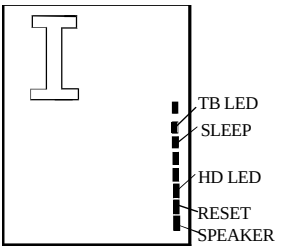
PIN NUMBER	FUNCTION
1	LED ANODE
2	LED CATHODE

Reset Switch (Reset)

SETTING	FUNCTION
CLOSE ONCE	RESET THE
OPEN	NORMAL

Hardware Green Connector (SLEEP)

SETTING	FUNCTION
CLOSE ONCE	HARDWARE GREEN
OPEN	NORMAL



Keylock/Power LED Connector (PW.LED)

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

"*": You could use Pin1-Pin3 as Power LED Connector .

Infrared Header (IrDA)

PIN NUMBER	FUNCTION	
	Intel spec.	SMC spec.
1	VCC	---
2	NC	---
3	IRRX	IRRX
4	GND	GND
5	IRTX	IRTX
6	---	VCC

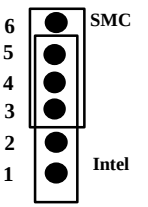


Illustration of IrDA Header Connector

Controlled Fan Connector (CPU FAN, BAKE FAN)

PIN NUMBER	FUNCTION
1	Controlled-GND
2	+12V
3	SENSE

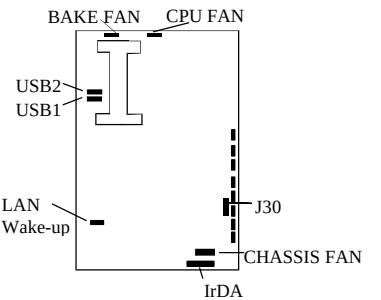
Note: These two fans are set as “ON” as default.

Standard Fan Connector (CHASSIS FAN)

PIN NUMBER	FUNCTION
1	GND
2	+12V
3	SENSE

LAN Wake-up Header:

PIN NUMBER	FUNCTION
1	Standby Power(+5V)
2	GND
3	Wake-up signal



Chassis Security Header (J30):
Opened if chassis is closed.
Closed if chassis is opened.

USB(USB1, USB2) Connector

PIN NUMBER	FUNCTION
1	VCC (+5V)
2	NC
3	DATA-
4	DATA+
5	GND

I/O Port Description

CONNECTOR	FUNCTION
IDE1	Primary IDE Port
IDE2	Secondary IDE Port
FLOPPY	Floppy Drive Port
PRINTER	Parallel Port
UART1	COM1/COM2/COM3/COM4
UART2	COM2/COM3/COM4/COM1
USB1	First USB Port
USB2	Second USB Port
VESA	VGA Feature Connector

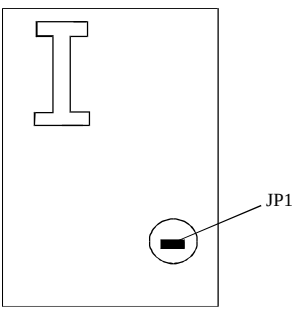
Memory Configuration

The P6I440LX/AV Legend-III motherboard supports up to four 168PIN 3.3V un-buffered DIMM, provides a flexible size from 8MB up to 512MB SDRAM memory or from 8MB up to 1GB EDO memory. The following set of rules allows for optimum configurations.

Rules for populating a 440LX memory array:

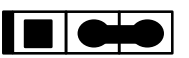
- DIMM modules can be populated in any order. However, it is recommended to populate modules in order.
- SDRAM and EDO DIMMs can be mixed within the memory array.
- The DRAM Speed Selection in CMOS Chipset Features Setup, which provides the DRAM speed grade control for the entire memory array, must be programmed to use the timings of the slowest DRAMs installed.
- Possible EDO DIMM memory size is 8MB, 16MB, 32MB, 64MB, 128MB, 256MB in each DIMM socket.
- Possible SDRAM memory size is 8MB, 16MB, 32MB, 64MB, 128MB in each DIMM socket.

Clear CMOS



Close Once

Clear CMOS :  **JP1**

Normal:  **JP1**

Note: You must power down the AC supply(110/220V) when you want to clear CMOS.

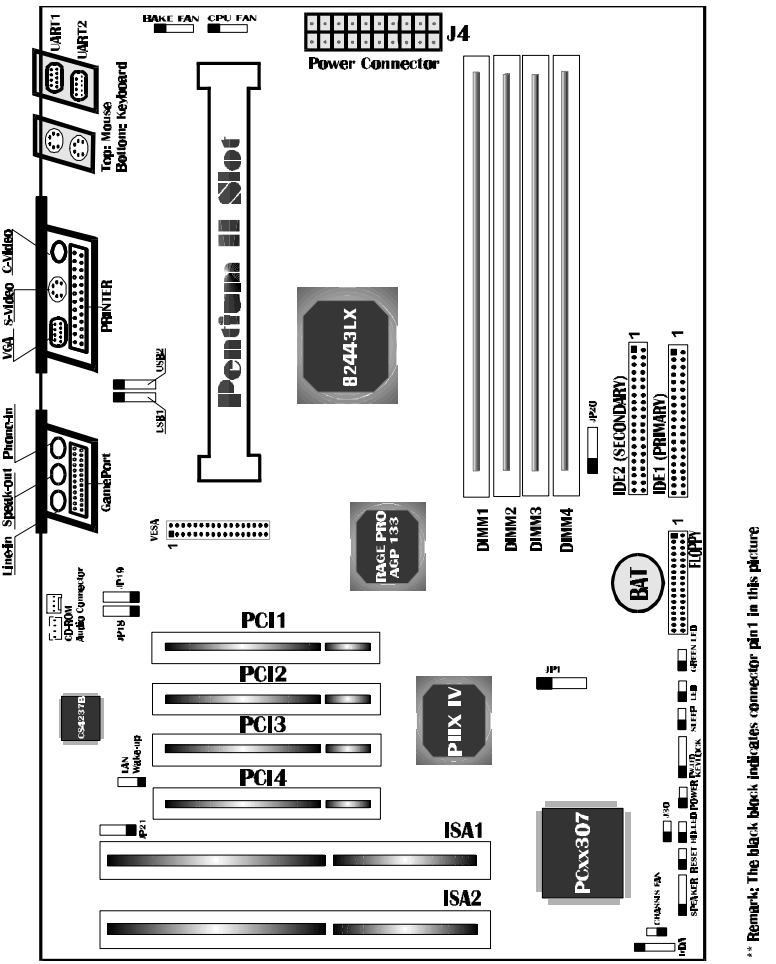


Figure 2-01 Illustration of All Connectors on Board

Chapter 3
AWARD BIOS Description

Entering Setup

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

Press <Del> to enter SETUP

Once you 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 twelve setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

ROM PCI/ISA BIOS (2A69JQ1B) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
SpeedEasy CPU SETUP	System Monitor SETUP
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
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
Time, Date, Hard Disk Type ...	

Figure-1 Main Menu

Note: The item of " System Monitor SETUP" will not be displayed if there is no LM78 on the motherboard

Load Setup Defaults

The Setup Defaults is common and efficient setting.

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.

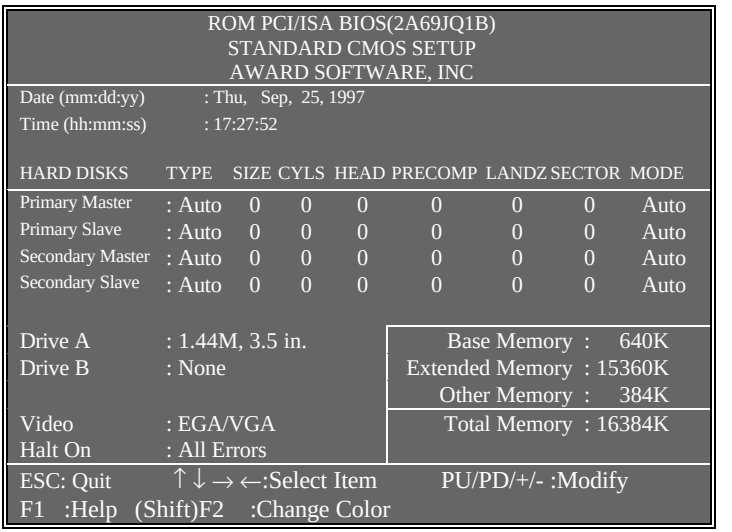


Figure-2 Standard CMOS Setup Menu

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

The categories identify the types of 2 IDE 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"**, that means the system can autodetect your hard disk when boots up. If you select Type **"User"**, related information is asked to be entered into the following items. Enter the information directly from the keyboard and press **<Enter>**:

CYLS	number of cylinders	HEAD	number of heads
PRECOMP	write precom	LANDZ	landing zone

SECTOR	number of sectors	MODE	HDD access mode

Video

You have two ways to boot up the system:

I. When VGA is used as primary and monochrome is used as secondary, the selection of the video type is **"EGA/VGA"** mode.

II. When monochrome is used as primary and VGA is used as secondary, the selection of the video type is **"Mono"** mode.

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

Error Halt

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

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

Memory

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 that how much extended memory is presented during the POST.
Other Memory	This is the memory that can be used for different applications. Most use for this area is Shadow RAM.
Total Memory	Total memory of the system is the sum of the above memory.

SpeedEasy CPU Setup

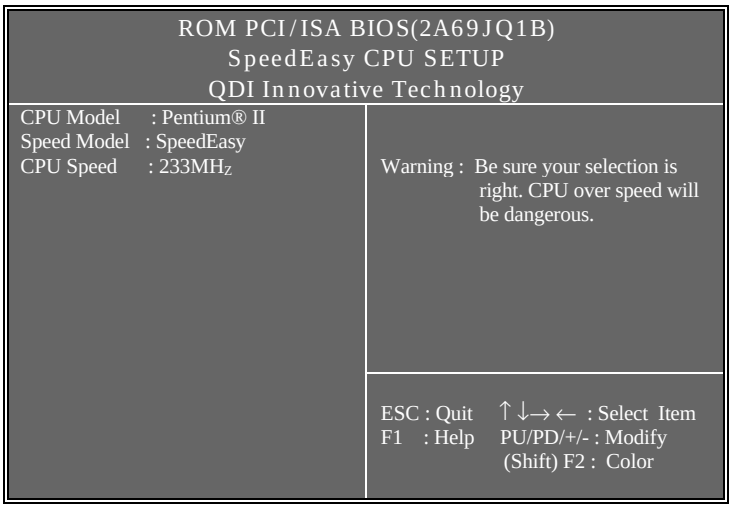


Figure-3 SpeedEasy CPU Setup

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

Item	**Option**	**Description**
• CPU Model		BIOS can automatically detect CPU model, so this item is shown only.
• Speed Mode	*SpeedEasy*	You should select CPU speed according to your CPU brand and type.
	Jumper Emulation	This item is only for the user who understand the CPU parameters, i.e. multiplication of Processor Core frequency to System Bus frequency "×2.5, ×3, ×3.5, ×4, ×4.5, ×5, ×5.5".

BIOS Features Setup

ROM PCI/ISA BIOS (2A69JQ1B)
BIOS FEATURES SETUP

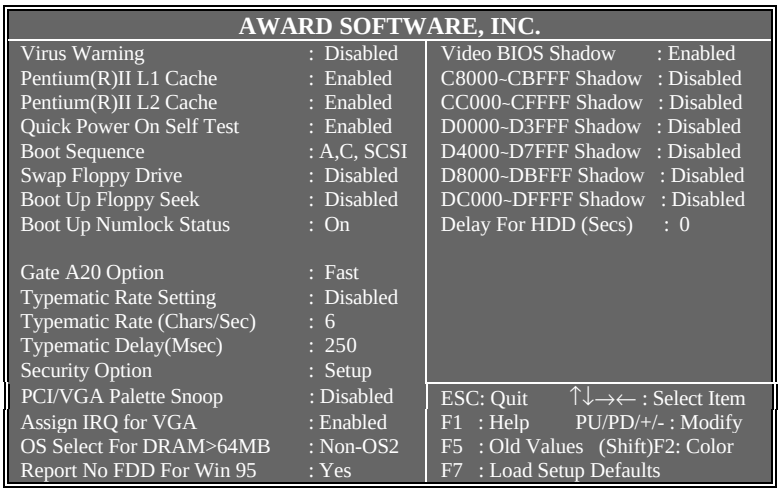


Figure-4 BIOS Features Setup Menu

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

Item	**Option**	**Description**
• Virus Warning	*Enabled*	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.
	Disabled	No warning message appears when anything attempts to access the boot sector or hard disk partition table. **Note: This function is available only for DOS and other OS that do not trap INT13.**
• Pentium(R)II L1/L2 Cache	*Enabled*	Enable Pentium® II internal Level1/Level2 cache.
	Disabled	Disable Pentium® II internal Level1/Level2 cache.
• Quick Power On Self Test	*Enabled*	Enable quick POST. BIOS will shorten or skip some check items during POST to speed up POST after you power on the computer.
	Disabled	Normal POST.
• Boot Sequence	*A,C,SCSI, ... C, CDROM,A*	You can choose any search sequence for bootup.
• Swap Floppy Drive	*Enabled*	It will exchange the assignment of A&B floppy drives.
	Disabled	The assignment of A&B floppy drives are normal.
• Boot Up Floppy Seek	*Enabled*	BIOS searches for floppy disk drive to determine if drive is ready for diskette read/write during booting.
	Disabled	skip drive seeking to speed up system booting.
• Boot Up	*On*	Keypad is used as number keys.

Numlock Status	*Off*	Keypad is used as arrow keys.
• Gate A20 Option	*Normal*	The A20 signal is controlled by keyboard controller or chipset hardware.
	Fast	It is default. The A20 signal is controlled by Port 92 or chipset specific method.
•Typematic Rate Setting	*Enabled*	Enable typematic rate and typematic delay programming.
	Disabled	Disable typematic rate and typematic delay programming. The system BIOS will use default value of these two items.
• Typematic Rate Chars/Sec)	6~30	Set the speed of the typematic rate (characters per second).
• Typematic Delay (Msec)	*250 ~ 1000*	Set the time of the typematic delay.
• Security Option	*System*	The system will not boot and access to Setup will be denied if the correct password is not entered when prompting.
	Setup	The system will boot up, but access to Setup will be denied if the correct password is not entered when prompting.
• PCI/VGA Palette Snoop	*Enabled*	Enable PCI/VGA palette snoop.
	Disabled	Disable PCI/VGA palette snoop.
• Assign IRQ for VGA	*Enabled*	AGP VGA shares the same IRQ resource with PCI1 slot. If you have to reserve IRQ for PCI1 slot, you could disable VGA IRQ. In most cases, VGA IRQ is not necessary.
	Disabled	
• OS Select For DRAM>64MB	*Non-OS2*	If your operating system is not OS/2, please select this item.
	OS2	If system DRAM is more than 64MB and operating system is OS/2, please select this item.
• Video BIOS Shadow	*Enabled*	Video BIOS will be copied to RAM. Video Shadow will increase the video speed.
	Disabled	Video shadow is disabled.
• C8000~CBFFF Shadow ... DC000-DFFFF Shadow:	*Enabled*	Optional ROM will be copied to RAM by 16K bytes per unit.
	Disabled	The shadow function is disabled.
• Delay For HDD (Secs):	0~15	Set the predelay time for hard disk to be ready to be accessed by the system.

Chipset Features Setup

ROM PCI/ISA BIOS (2A69JQ1B) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.			
Auto Configuration	: Enabled	SDRAM CAS latency Time	: 3
DRAM Timing	: 60ns		
MA WAIT State	: Slow		

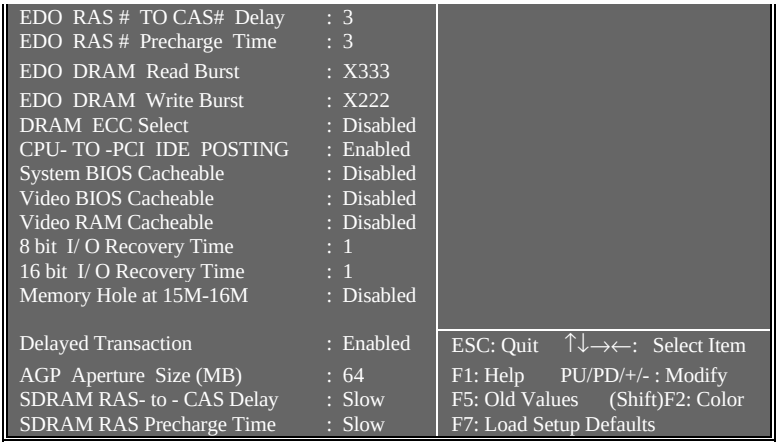


Figure-5 Chipset Features Setup Menu

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

Item	**Option**	**Description**
• Auto Configuration	*Enabled*	Automatically configure DRAM Timing according to the value of "DRAM Speed Selection".
	Disabled	Manually configure. **Note: It is recommended to choose "Enabled" option for common users.**
• DRAM Speed Selection	*50ns, 60ns*	This item is of selected EDO DRAM read/write timing. You must ensure that your DIMMs are as fast as 50ns, otherwise you have to select 60ns.
• MA Wait State	*Slow*	One additional wait state is inserted before the assertion of the first MA and CAS#/RAS# during DRAM read or write leadoff cycles. This affects page hit, row miss and page miss cases.
	Fast	Without additional wait state.
• EDO RAS# To CAS#	*2*	Add a delay time between the assertion of

Delay		RAS# and CAS#
	3	Without additional delay time.
• EDO RAS# Precharge Time	*3*	DRAM RAS# Precharge time=3x system clocks.
	4	DRAM RAS# Precharge time=4x system clocks.
• EDO DRAM Read Burst	· *3 3 3,* · *2 2 2,*	The DRAM read burst timing depends on the type of DRAM on a per-row basis. Slower rates may be required to support slower DRAM.
• EDO DRAM Write Burst	· *2 2 2,* · *3 3 3,*	The DRAM write burst timing depends on the type of DRAM on a per-row basis. Slower rates may be required to support slower DRAM.
• DRAM ECC Select	*ECC*	Provide ECC (Error Checking and Correction) function.
	Disabled	Disable ECC function.
• CPU-To-PCI IDE Posting	*Enabled*	Enable CPU-To-PCI write posting.
	Disabled	Disable CPU-To-PCI write cycles to IDE.
• Burst Write Combining	*Enabled*	Enable PCI burst write combining.
	Disabled	Disable PCI burst write combining.
• PCI-To-DRAM Pipeline	*Enabled*	Provide PCI-To-DRAM pipeline operating.
	Disabled	Disabled PCI-To-DRAM pipeline operating.
• System BIOS Cacheable	*Enabled*	Besides conventional memory, the system BIOS area is also cacheable.
	Disabled	The system BIOS area is not cacheable.
• Video BIOS Cacheable	*Enabled*	Besides 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*	Define the ISA Bus 8 bit I/O operating recovery time.
	NA	8 bit I/O recovery time is not exist.
• 16 Bit I / O Recovery Time	*1~4*	Define the ISA Bus 16 bit I/O operating recovery time.
	NA	16 bit I/O recovery time is not exist.
• Memory Hole At 15M-16M	*Enabled*	Memory Hole at 15-16M is reserved for expanded PCI card.
	Disabled	Do not set this memory hole.
• Delayed Transaction		
• AGP Aperture Size (MB)	*4~256*	Set the effective size of the Graphics Aperture to be used in the particular PAC Configuration.
• SDRAM RAS-To-CAS Delay	*Fast* *Slow*	RAS-To-CAS Delay time=2 HCLK RAS-To-CAS Delay time=3 HCLK
• SDRAM RAS	*Fast*	RAS Precharge Time=2 HCLK

Precharge Time	*Slow*	RAS Precharge Time=3 HCLK
• SDRAM CAS	*Fast*	Latency Time=2 clocks
Latency Time	*Slow*	Latency Time=3 clocks

Power Management Setup

ROM PCI/ISA BIOS (2A69JQ1B) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.			
Power Management	:Disabled	** Reload Global Timer Events **	
PM Control by APM	:Yes	IRQ [3-7, 9-15], NMI	:Enabled
Video Off Method	:V/H SYNC+Blank	Primary IDE 0	:Disabled
Video Off After	:Standby	Primary IDE 1	:Disabled
MODEM Use IRQ	:NA	Secondary IDE 0	:Disabled
		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		
VGA Active Monitor	:Enabled		
Soft-off by PWR-BTTN	:Instant - off		
Resume by LAN/Ring	:Disabled	ESC: Quit	↑↓→←: Select Item
Resume by Alarm	:Disabled	F1: Help	PU/PD/+/- : Modify

IRQ 8 Break Suspend :Disabled	F5: Old Values (Shift)F2: Color F7: Load Setup Defaults

Figure-6 Power Management Setup Menu

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

Item	Option	Description
• Power Management	*Disabled*	Global Power Management (PM) will be disabled.
	User Define	Users can configure their own Power Management Timer.
	Min Saving	Pre - defined timer value are used such that all timers are in their MAX values
	Max Saving	Pre - defined timer value are used such that all timers are in their MIN value
• PM Control by APM	*No*	System BIOS will ignore APM when Power Management is enabled.
	Yes	System BIOS will wait for APM's prompt before it enters any PM mode e.g. Standby or Suspend.
		Note: If APM is installed, 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, this option has no effect.
• Video Off Method	*Blank Screen*	The system BIOS will only blank off the screen when disabling video.
	V / H SYNC + Blank	In addition to Blank Screen, BIOS will also turn off the V-SYNC & H - SYNC signals from VGA cards to monitor.
	DPMS	This function is enabled only for the VGA card supporting DPMS. **Note: Green monitors detect the V/H-SYNC signals to turn off its electron gun .**
• Video Off After	*N/A*	System BIOS will never turn off the screen.
	Suspend	Screen off after system enters into Suspend mode.
	Standby	Screen off after system enters into Standby mode.
	Doze	Screen off after system enters into Doze mode.

• Doze mode	*Disabled*	The system will never enter Doze mode.
	1Min ~ 1 Hr	Define the continuous idle time before the system entering Doze mode. If any item defined in "Reload Global Timer Events" is On and activated, the system will be waken up.
• Standby Mode	*Disabled*	The system will never enter Standby mode.
	1 Min ~ 1Hr	Define the continuous idle time before the system entering Standby mode. If any item defined in "Reload Global Timer Events" is On and activated, the system will be waken up.
• Suspend Mode	*Disabled*	The system will never enter Suspend mode.
	1 Min ~ 1Hr	Define the continuous idle time before the system entering Suspend mode. If any item defined in "Reload Global Timer Events" is On and activated, the system will be waken up.
• HDD Power Down	*Disabled*	HDD's motor will not be off.
	1 ~15 Min	Define the continuous HDD idle time before the HDD entering power saving mode (motor off).
• Soft-off by PWR-BTTN	*Instant-off*	Power-down immediately.
	Delay 4 sec.	Enter Suspend status, then power-down after 4 seconds.

• Resume by LAN/Ring	*Enabled*	Allow the system to be powered on when a Ring Indicator signal comes up to UART1 or UART2 from external modem, or to LAN Wake-up Header from LAN adapter.
	Disabled	Do not allow Ring Power-On.
• Resume by Alarm	*Enabled*	RTC alarm can be used to generate a wake event when the system is in a sleeping.
	Disabled	RTC no alarm function.
• IRQ 8 Clock Event	*Enabled*	Generate a clock event.
	Disabled	Do not generate a clock event.
		Note: IRQ8 Clock Event must be enabled when you want to use Resume By Ring and Alarm.
• IRQ [3-7, 9-15], NMI …… Parallel Port	*Enabled*	Reload global timer.
	Disabled	No influence to global timer.

PNP/PCI Configuration Setup

ROM PCI/ISA BIOS (2A69JQ1B) PNP/PCI CONFIGURATION SETUP AWARD SOFTWARE, INC.		
PNP OS Installed	: No	PCI IDE IRQ Map To : PCI-AUTO
Resources Controlled By	: Manual	Primary IDE INT# : A
Force Update ESCD	: Disabled	Secondary IDE INT#: : B
IRQ-3 assigned to	: Legacy ISA	Used MEM base addr : N/A
IRQ-4 assigned to	: Legacy ISA	
IRQ-5 assigned to	: PCI/ISA PnP	
IRQ-7 assigned to	: PCI/ISA PnP	
IRQ-9 assigned to	: PCI/ISA PnP	
IRQ-10 assigned to	: PCI/ISA PnP	
IRQ-11 assigned to	: PCI/ISA PnP	
IRQ-12 assigned to	: PCI/ISA PnP	
IRQ-14 assigned to	: Legacy ISA	
IRQ-15 assigned to	: Legacy ISA	
DMA-0 assigned to	: PCI/ISA PnP	
DMA-1 assigned to	: PCI/ISA PnP	
DMA-3 assigned to	: PCI/ISA PnP	
DMA-4 assigned to	: PCI/ISA PnP	ESC: Quit ↑↓→← :Select Item
DMA-5 assigned to	: PCI/ISA PnP	F1 : Help PU/PD/+/- : Modify
DMA-6 assigned to	: PCI/ISA PnP	F5 : Old Values (Shift)F2 : Color

DMA-7 assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults

Figure-7 PNP/PCI Configuration Setup Menu

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

Item	**Option**	**Description**
• PNP OS Installed	*Yes*	Device resource assigned by PnP OS.
	No	Device resource assigned by BIOS.
• Resources Controlled By	*Manual*	Assign system resources (IRQ and DMA) manually by user.
	Auto	Assign system resources (IRQ and DMA) automatically by BIOS.
• Force Update ESCD	*Enabled*	The system BIOS will force updating ESCD once, then automatically set this item Disable.
	Disabled	Disable force 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 IDE IRQ Map To	*PCI-AUTO*	The BIOS will scan for PCI IDE devices and determine the location of the PCI IDE device.
	PCI - SLOT4~1	The BIOS will scan IRQ14 for primary IDE INT# and IRQ15 for secondary IDE INT# at the specified slot.
	ISA	The BIOS will not assign any IRQs even if PCI IDE card is found. Because some IDE cards connect the IRQ14&15 directly from ISA slot through a card.
• Primary IDE INT#	*A ~ D*	Tell which INT# the PCI IDE card uses for its interrupt of 1st IDE channel.
• Secondary IDE INT#	*A ~ D*	Tell which INT# the PCI IDE card uses for its interrupt of 2nd IDE channel.
• Used MEM base address	*C800/8 ~ 64K*	Claim a memory space occupied by legacy ISA card.
	N/A	Invalidate this feature.

Integrated Peripherals

ROM PCI/ISA BIOS (2A69JQ1B) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.		
IDE HDD Block Mod	: Enabled	
IDE Primary Master PIO	: Auto	TV Output System : PAL
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	: 3F8/IRQ4	ESC: Quit ↑↓→← : Select Item
Onboard Serial Port 2	: 2F8/IRQ3	F1 : Help PU/PD/+/-: Modify
Serial Port 2 Mode	: Standard	F5 : Old Values (Shift) F2 : Color
Onboard Parallel Port	: 378/IRQ7	F7 : Load Setup Default
Parallel Port Mode	: SPP	

Figure-8 Integrated Peripherals Menu

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

Item	**Option**	**Description**
• IDE HDD Block Mode	*Enabled*	Allow IDE HDD read/write several sectors one time.
	Disabled	IDE HDD only reads/writes a sector for one time.
• IDE Primary/Secondary Master/Slave PIO (UDMA)	*Mode 0 - 4*	Define the IDE primary/secondary master/ slave PIO mode.
	Auto	The IDE PIO mode is defined according to auto - detect.
• On-chip Primary/Secondary PCI IDE	*Enabled*	On-chip primary/secondary PCI IDE port is enabled.
	Disabled	On-chip primary/secondary PCI IDE port is disabled.
• USB Keyboard Support	*Enabled*	USB Keyboard Support enabled.
	Disabled	USB Keyboard Support disabled.
• Onboard FDC Controller	*Enabled*	Onboard floppy disk controller is enabled.
	Disabled	Onboard floppy disk controller is disabled.
• Onboard Serial Port 1/2	*3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3,*	Define onboard serial port address and required interrupt number.
	Disabled,	Onboard serial port is disabled.
	Auto	Set address and interrupt number automatically.
• Serial Port 2 Mode	*Standard,*	Define Serial Port 2 as standard serial port
	Sharp IR,	This mode provides bi-directional communication by transmitting and receiving infrared radiation. In this mode, infrared I/O circuits receive the serial UART output signal. The rate of the signal is 38.4K Baud in half-duplex, and it uses normal UART serial data formats with physical ASKIR modulation.
	IrDA SIR	The system function is the same as in Sharp-IR mode, but at 115.2K Baud.
• Onboard Parallel Port	*378/IRQ7, 278/IRQ5,*	Define onboard parallel port address and IRQ channel.
• Parallel Port Mode	*SPP*	Define the parallel port mode as

EPP1.7	Standard Parallel Port (SPP), Enhanced
EPP1.9	Parallel Port (EPP), or Extended
ECP,	Capabilities Port (ECP).
ECP+EPP	

System Monitor Setup

ROM PCI/ISA BIOS (2A69JQ1B)
System Monitor SETUP
AWARD SOFTWARE , INC.

MB Temperature		:31°C/87°F
Fan Speed (CPUFAN)		: 0 RPM
Fan Speed (CHSFAN)		: 0 RPM
Fan Speed (BAKFAN)		: 0 RPM
+3.3V	Voltage	: 3.32V
VTT (+1.5V)	Voltage	: 1.53V`
+5V	Voltage	: 5.02V
VCCVID (CPU)	Voltage	: 2.81V
+12V	Voltage	: 11.96V
-12V	Voltage	: -12.03V
-5V	Voltage	: -6.37
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 Setup Menu

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

Item	**Option**	**Description**
• MB Temperature		Display the current motherboard temperature detected by "LM78"chip.
• CPUFAN Speed BAKFAN CHSFAN		RPM (Revolution Per Minute) Speed of fan which is connected to the fan header CPU FAN, BAKE FAN or CHASSIS FAN. 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, VTT (+1.5) Voltage, + 5V, VCCVID (CPU) Voltage, +12 V, - 12 V, - 5 V.		Display current Voltage value including all the most important voltages of the motherboard. +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* *Opened*	The chassis is closed currently. The chassis is opened currently.

Supervisor/User Password

When you select this 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. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED

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

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

Supervisor Password has higher priority than *User Password*. You can *use Supervisor Password* when booting system or entering "CMOS Setup" to modify all settings. Also you can use *User Password* when booting system or entering "CMOS Setup" but can not modify any setting if *Supervisor Password* is enabled.

IDE HDD Auto Detection

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

ROM/PCI/ISA BIOS (2A69JQ1B)
IDE HDD AUTO DETECTION
AWARD SOFTWARE, INC.

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

Select Primary Master Option (N=Skip): N

Option	SIZE	CYLS	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	LARGE

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

Figure-10 IDE HDD Auto Detection Menu

1. Setup Changes

- BIOS setup will display all possible modes that is supported by the HDD including NORMAL, LBA and LARGE.
- If HDD does not support LBA modes, no “LBA” option will be shown.
- If number of physical cylinders is less than or equal to 1024,“LARGE” option may not be shown.

- Users can select a mode which is appropriate for them.

Change to Standard CMOS Setup

	SIZE	CYLS	HEADS	PRECOMP	LANDZ	SECTOR	MODE
Drive C: User(516MB)	1120	16	65535	1119	59	Normal	
Drive D: User(203MB)	684	16	65535	685	38	Normal	

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

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 cylinders, heads and sectors for NORMAL mode are 1024,16 and 63.

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

LBA (Logical Block Addressing) mode

A new HDD accessing method 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, user do not want 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 automatically detect IDE hard disk mode and set it to one kind of HDD modes.

3. **Remark**

To support LBA or LARGE mode of HDDs, there must be some software involved which are located in Award HDD Service Routine(INT13h).It maybe 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 defaults setting.

Chapter 4
VGA and TV-out Description

ATI's 3D Rage Pro® AGP graphics system with TV-out function is available on motherboard. They are the most advanced on the market today.

C-Video socket **S-Video socket** **VGA Connector**

Preparing your computer

Connect your monitor cable and video cable (if you need TV-out) to their sockets on motherboard respectively before power-on. If video cable is not connected when power-on, video signal is not available so as to enhance VGA performance. Video signal could be PAL or NTSC mode. You should set up the right mode in **Integrated Peripherals** of BIOS SETUP with correspondent to your television system. Video effort is best in 640 x 480 resolution.

If you are using other VGA cards' drivers that are not 640 x 480 x 16 mode and an operating system that is not Windows 95, you may encounter conflicts with the motherboard. It is recommended that you first reconfigure your operating system to use a VGA driver supplied with your operating system. For more information about changing your operating system configuration, please refer to your operating system documentation accordingly.

Note: If you don't want to use our on-board Rage Pro® AGP graphics system but an additional add-on VGA card, you'd better close JP20(Pin1-2) with a jumper cap.

Install Enhanced Driver for Windows 95

ATI's enhanced driver takes advantage of on-board graphics system's higher performance, resolutions and special features.

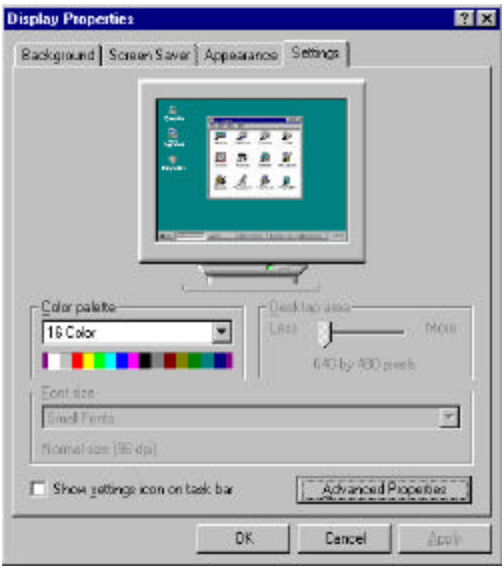
To facility fully AGP advantage, Microsoft Windows 95 OSR2.1 and Microsoft DirectX5 (or DirectDraw)* are necessary. For Windows 95 OSR2.0, Microsoft's USB Supplement should be installed before install DirectX5. At last, install Rage Pro Windows 95 driver.
"*": You might get DirectX5 from Microsoft Web-site.

I. If Windows 95 prompts you to insert a disk from the hardware manufacturer ------

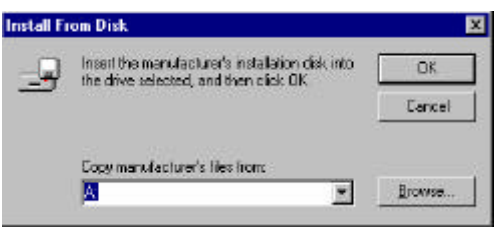
Insert the floppy disk labelled "Rage Pro Windows 95 driver #1" into your 3.5" floppy drive (we assume it's drive A: following)
Click <OK>.
Type the following:
A:
Click <OK>
When prompted to insert the disk labelled "Mach 64 Windows 95 drive disk #2", insert the disk labelled "Rage Pro Windows 95 driver #2"
Click <OK>
Click <Yes> to restart your computer.

II. If Windows 95 does not prompt you to insert a disk ------

Boot Windows 95
Right-click on the desktop and select properties.

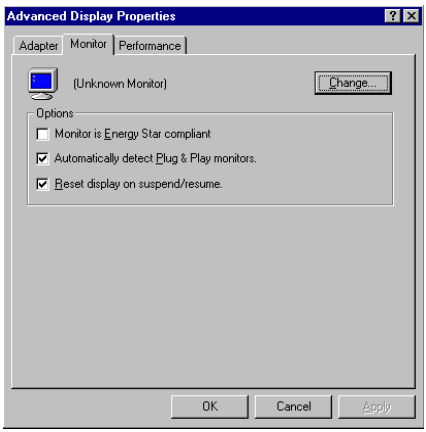


Click the Settings tab
Click <Advanced Properties>
Click <Change>
Click <Have Disk>
Insert the floppy disk labelled "Rage Pro Windows 95 driver #1" into your floppy drive, and type "A:"



Double-click <OK>
When prompted to insert the disk labelled “Mach 64 Windows 95 driver disk #2”,insert the disk labelled “Rage Pro Windows 95 driver #2”
Click <OK>
After the files have been copied to your system, click <Apply>
Click <OK>

Click <Close>, then click <Yes> to restart Windows
After reboot, Right-click on the desktop and select Properties
Click the Settings tab
Click <Advanced Properties>
Click the Monitor tab, then click <Change>

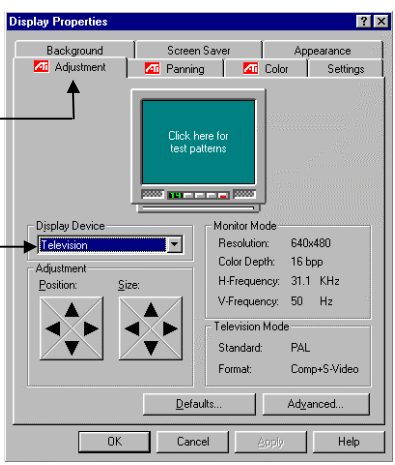


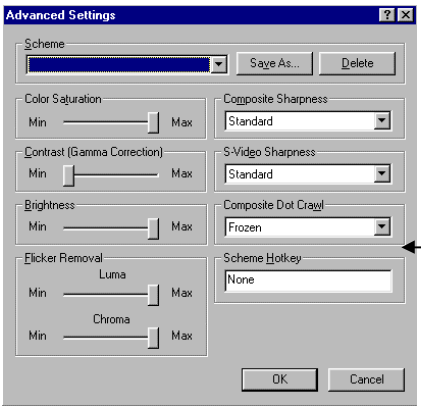
Select a property monitor type (such as Super VGA 1024x768,etc.)
Click <Close>

Select a desired display mode, then click <OK> twice to restart system. For more details of changing your display mode, click Help.

After driver installation, you could click Adjustment tab in Display Properties to adjust VGA or Television effect.

Choose Television in Display Device scroll bar, then click Advanced... to adjust TV image.





Install Enhanced Driver for Windows NT 4.0

! It is necessary to install Microsoft's Service Park 3 before install Rage Pro Windows NT 4.0 drive.

Boot Windows NT
Right-click on the desktop and select Properties.
Click the Settings tab
Click <Display type>
Click <Change>
Click <Have Disk>
Insert the floppy disk labelled "Rage Pro Windows NT4.0 driver" into your floppy drive, and type "A:"
Click <OK>
Choose "ATI Technologies Inc. 3D Rage Pro" in the Change Display dialogue box, click <OK>.
When the Third-party Drivers Window appears, Click <Yes>
After the files have been copied to your system, click <OK>
Click <Close>
Click <Close>, then click <Yes> to restart Windows
After reboot, the invalid display settings Window appears
Click <OK>
The display properties dialogue appears
Select a desired display mode, then click <Test>, and so on.
For more details of changing your display mode, click Help.

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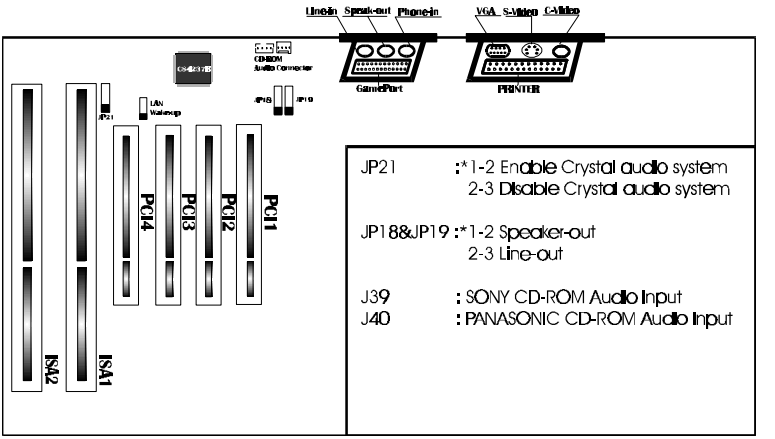
Chapter 5
Crystal Audio Description

On-board audio system is based on the Crystal CS4237B single chip multimedia audio system controller that integrated 3D sound technology. It provides SRS® 3D audio solution for multimedia applications, entertainment, educational sound and business audio. It incorporates the best feature of Sound Blaster, Sound Blaster Pro, Microsoft Windows Sound System, AdLib, MPU401 and more.

Features

3D Sound	SRS® 3D sound feature provides a "space" and "centre" control which allows users to adjust the 3D sound effect and by pass.
Software Wavetable	Support Wave Stream General MIDI compatible music synthesizer (Software music synthesizer) in Windows 95 environment.
Wave Audio	Maximum recording and playback sampling rate of up to 48KHz stereo, 16-bit digital-to-analog and analog-to-digital converter, 16-bit and 8-bit digitising in stereo and mono mode.
20-voice FM Music Synthesizer	play up to 20 instruments simultaneously to deliver a high quality of rich and crisp music.
Digital / Analog Mixer	Stereo analog mixing from CD Audio, Line-in, FM Music & Digital voice, Stereo Digital Mixing from Microphone, Line-in, CD-Audio and Master Volume control
Microsoft Plug & Play and Direct Sound standard	Support Microsoft plug & play and directsound in Windows 95
Full Duplex	For concurrent recording and playback such as Internet phone.
MIDI Interface/Joystick Port	Built-in integrated MIDI UART interface with MPU 401, joystick / gameport

Layout of audio system



Speaker-out : audio output to speaker or headphone
Line-out : audio output to Line-in of other audio system (Hi - Fi stereo, etc.)
Line-in : audio input from Line-out of other audio system
Phone-in : audio jack for microphone

Software Drivers Installation

I. Installation of Windows 95 driver

Start Windows 95, insert the floppy disk labelled with "CS4237B Windows 95 driver" into your floppy drive
In "Start" menu, click "Run", then type "A:\SETUP" and press <Enter> key
Select <Install Driver> to begin installation
Select <Restart> to restart Windows 95
After building up the driver's information database, click <OK> to select "Driver from disk provided by hardware manufacturer"
Type "A:\" then click <OK> to begin files installation from A: to Windows 95
After finishing files copies, click <Yes> to restart Windows 95.
When Windows 95 start up, it will automatically detect the crystal audio system and install the driver

After driver installed, you would look up four devices of “Sound, video and game controller” . If any of the four icon is yellow, you’d better adjust its resource in properties by clicking on it to get rid of resource conflict.

II. Installation of Windows NT driver

Turn PC on and start up Windows NT

NT 3.51:

Double click the Drivers icon in the control panel

NT 4.0:

Double click the Multimedia icon in the control panel and click on the Devices tab

Insert the disk labelled “CS4237B Windows NT driver” into floppy disk drive

Press the ADD button. Select “Unlisted or Updated Drivers” and press <OK>

A dialogue box will appear and request the path of the location of the driver files. You may search this path by clicking the BROWSE button or type “A:” directly

Another dialogue box will appear with the CrystalWare Audio Driver label. Press <OK> to continue with the installation

Press <Enter> twice during installation

Windows NT may ask you to restart your system. Even though it is not necessary to do so, we recommend that you click on the Restart Now button

For more information (such as un-installing…), please refer to README.

III. How to take effect of 3D sound

In Windows 95 or Windows NT 4.0, click (•) icon at the task bar (or select "Crystal 3D Audio Control" in Start Programmes Accessories Multimedia in Windows 95) to gain access to the 3D audio accessory. The 3D audio accessory provides two sliders which are labelled centre and space for controlling the sound effect of your 3D audio. Moving the slider toward the plus sign increases the effect. You can save up to 3 configurations using the three preset buttons. To activate the setting, click on the preset button with the left mouse button; to store your setting, or to restore the button to the factory defaults, click on the preset button with the right mouse button to see the menu of options.

IV. Install AudioStation

AudioStation Application

AudioStation's intuitive "home stereo component" interface offers you a familiar set of controls for working with sound on your PC. A full set of stereo components makes up the high-end stereo system right on your desktop.

Installation Instructions

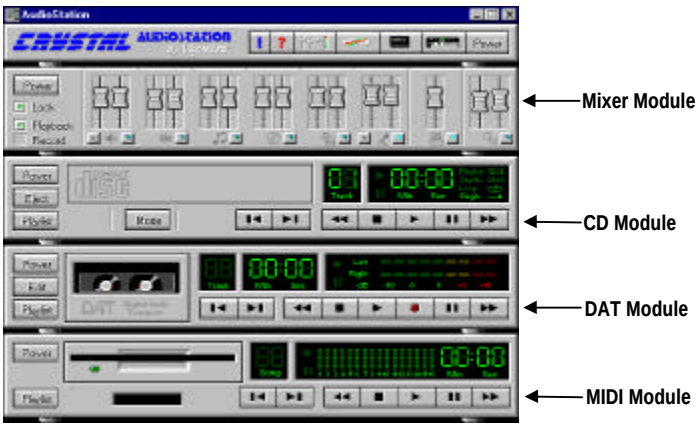
Make sure you have already installed CS4237B Windows driver before act following instructions:

Place the disk labelled "AudioStation Application" into floppy drive A.
In start menu, click "Run"
In the run dialogue box, type "A:\Setup" and click <OK>
Follow the AudioStation's installation instructions

Operating

In Start Programs Voyetra menu, click AudioStation

Power Bar	When you click a module button, the module is removed from or added to the screen. Click power button to quit AudioStation or ? button to activate help.
Mixer Module	Controls mixer functions for AudioStation and other Windows sound programs. Enables you to adjust the sound quality to produce the best output.
CD Module	The program let your CD-ROM not only play your multimedia CD titles, but also all the great Music CDs you have collected. Mode button lets you choose the play mode ------ playlist, shuffle, loop and single. The LCD screen on the right keeps you informed on the status of the play. Eject button ejects the CD tray, click it again to close the tray.
DAT Module	(Digital Audio Transport) Play and record digital audio (WAV and VOC) files. The edit button launches the wave editor, digital audio editor. It is an easy access to your system resource to do the digital audio editing, and to experience the professional sound making.
MIDI Module	Play and record the popular MIDI files on the CS4237B built-in synthesizer, and/or an external instrument via the MIDI connector, e.g. a synthesizer keyboard.



Recording Files

Prepare

Connect the audio source (microphone, CD player, tape deck, etc.) to the appropriate input jack on your motherboard audio system.

Use AudioStation's mixer to select an input source and set the recording volume level, select record mode by click the [Record] button.

Press [Edit] button on the DAT module to enter WinDAT window.

From WinDAT's Windows menu, choose setup.

Select the desired file format (WAV or VOC)

If you've selected WAV as the file format, select the desired data format from the data format combo box.

Choose a sample rate from the list. Higher sample rates give you better audio quality, but also create larger files

Select mono or stereo. The green indicator on the stereo button will be lit when stereo is enabled.

Make sure that Temp Directory and Work Directory are valid directories and that they have enough free space to accommodate the file you plan to record

Click <OK> to return to WinDAT's main Window.

To record and save a new file

Make sure that audio source is connected in.

Click on the record button. The blinking red light indicates that WinDAT is in Record Standby mode.
Click on the play button to start recording. The red light will stop blinking and remain lit, indicating that WinDAT is recording.
Speak into the microphone, or play the material you prepared earlier. To temporarily halt recording without losing already recorded material, click the pause button. Click the pause button again to resume.
Click on the stop button to stop recording.
Click the play button to hear what you've just recorded
Choose save from the file menu, type a new file name in dialogue box, and choose <OK>

Editing Files

With WinDAT's editing tools you can cut, paste, insert, or delete data within a file or among several files. You can run several instances of WinDAT simultaneously to simplify cutting and pasting between different files.

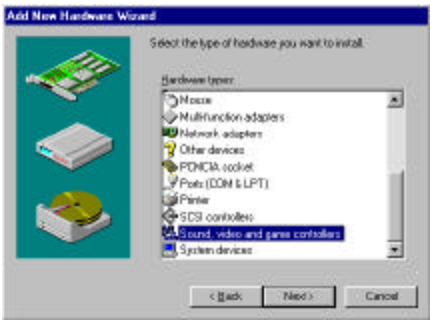
V. Software Wavetable Synthesis

Function

Wavetable Synthesizer uses digital samples of actual musical instruments to create the waveforms produced by those instruments. Software wavetable synthesis uses the power of the CPU to fetch and manipulate this data. While this does require the use of some processing power, it means that no additional hardware is required to obtain higher-quality sound than would normally be expected from a PC.

Installation Instructions (in Windows 95)

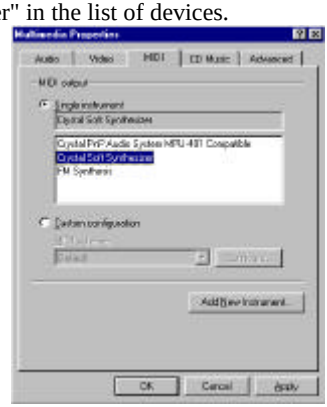
Start the "Add New Hardware" application in Start Setting Control Panel menu or My Computer window
Click <Next>
Select "No" when asked "Do you want Windows to search for new hardware?"
Click <Next>



Highlight "Sound, Video and game controllers" in the "Hardware types" list. Click <Next>
Click <Have Disk> and enter or browse to the drive where the disk labelled "Crystal Software Wavetable" are located.
Click several <OK>
Click <Finish>

Selecting the crystal software synthesizer as your default MIDI device

Start the "Multimedia" application located in Start Setting Control Panel menu
Select the MIDI tab
In the single instrument window, highlight "Crystal Software Synthesizer" in the list of devices.



Click either <Apply> or <OK>

Please read "Readme" in "Crystal Software Wavetable" disk for details.

Appendix A.
About Utility Diskette

Please refer to “README” in the diskette.

You could download new BIOS on QDI Web-site, and use FLASH UTILITY to upgrade it on your motherboard.

Command as following:

awdflash [path]******.bin

Warning:

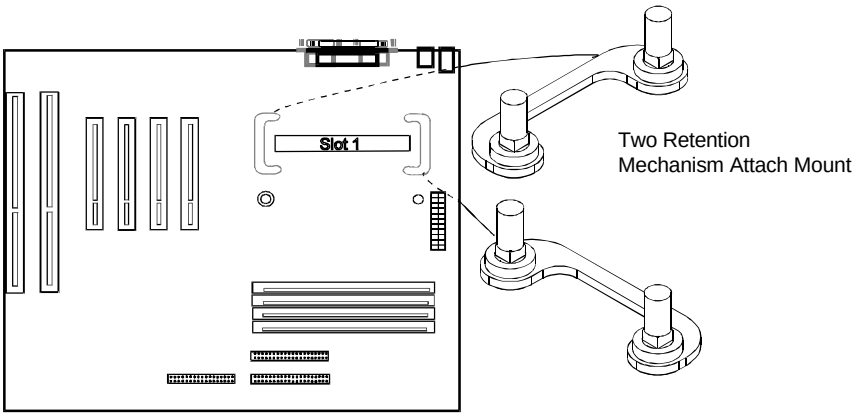
We strongly recommend that you only upgrade BIOS when in trouble.

Before you update your BIOS, you should look over the “README” file to avoid making mistakes.

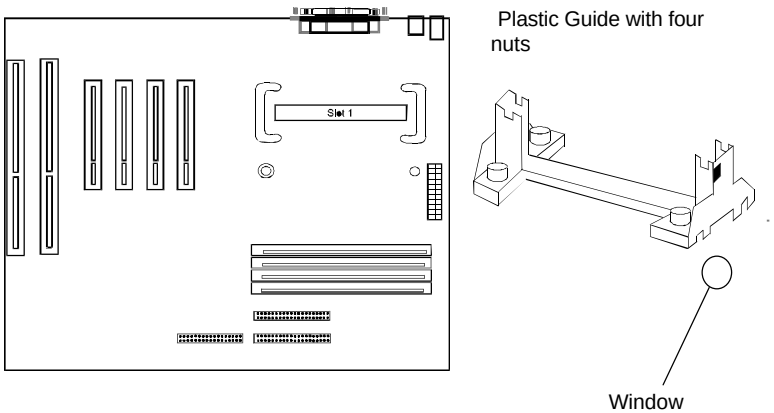
Appendix B.

Retention Mechanism & Pentium® II Processor Installation Procedures

1. Insert the two Retention Mechanism Attach Mount up through the bottom of the motherboard.

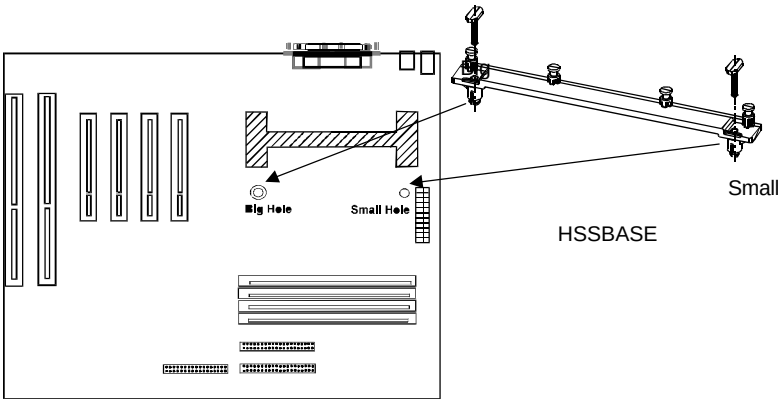


2. Place Plastic Guide with captive nuts on motherboard, then fasten all the four nuts.

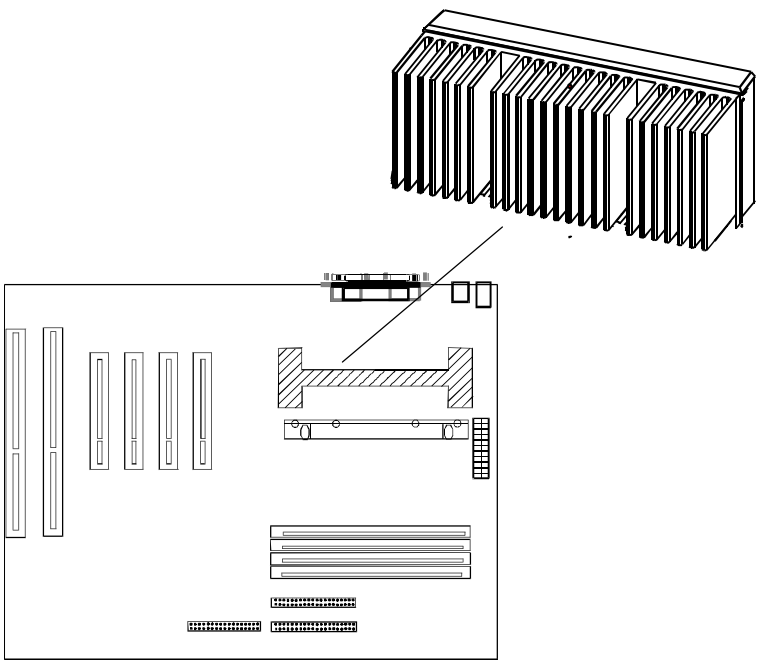


Note: Please pay attention to the direction of the window.

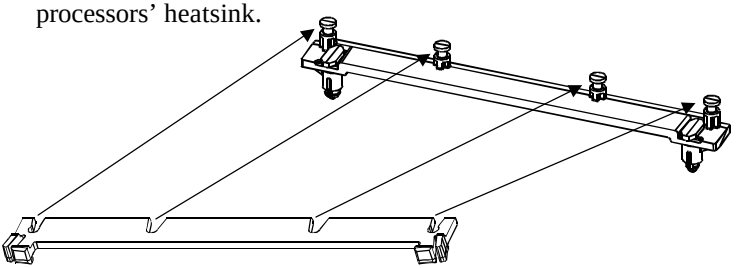
3. Install HSSBASE (Heatsink Support Base) on motherboard, then insert the two plastic pins through the HSSBASE to secure it to the motherboard.



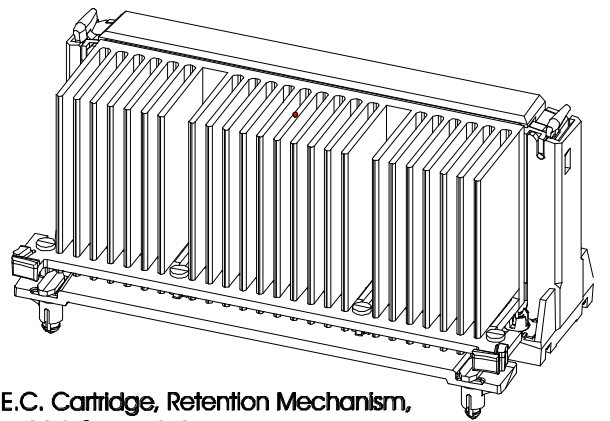
4. Insert Pentium® II Processor in Slot1.



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



6. The Retention Mechnism installation procedure is finished as below shown.



S.E.C. Cartridge, Retention Mechanism,
Heatsink Support, And ATX Form Factor Heatsink
Isometric View
Not To Scale

Remark:

Please skip step3 and step5 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.

If you press <**Esc**>, it will switch to the booting message screen. Otherwise, it enters operating system directly.

You can use "**cblogo.exe**" (See Utility Diskette 2) 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.

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

P/N:430-01011-501
Manual P6I440LX/AV Legend - III Ver 1.0