Declaration of conformity

CE

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

declares that the product

Pentium®II Motherboard
ZillioX 5

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 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 1998

Printed Name :   Anders Cheung   Position/ Title :   President
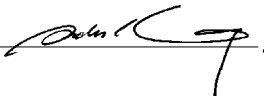
Declaration of conformity

FC

Trade Name:	QDI Computer (U. S . A.) Inc.
Model Name:	ZillioX 5
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

CONTENTS

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:

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 SpeedEasy

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

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 "SpeedEasy CPU SETUP" einstellen

⚠ **warnung:**

Bitte Setzen Sie die Taktfrequenz dor CPU nicht höber als die tats‰chliche freigegebene Taktfrequenz, ansonsten Kann QDI für rechtliche Ansprüche nicht herangezogen werden.

SpeedEasy Instalación rápida

Procedimiento:

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

2. Finalice 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:

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 "SpeedEasy CPU SETUP".

⚠️ **Aviso**

No es recommendable selecclonar una frecuencia de trabajo super• or a la cual esta dise¤ada su CPU. De otra manera, no seremos responsables de los da¤os que esto pudiera ocasionar.

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

Sŝlectionnez la rubrique <SpeedEasy CPU SETUP> dans le menu principal et entrez le sous-menu:

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

BIOS fournira un jeu de valeurs de base pour votre s, lection de CPU au lieu de positions cavaliers. Vous pouvez s, lectionner manuellement la vitesse de CPU dans l' affichage du menu "SpeedEasy CPU SETUP ".

⚠ **Avertissement:**

Ne vous laissez pas aller à installer une fr, uence à l' unité centrale sup**,** ieure à sa fr, uence de travail. Sinon nous d, linerons toutes responsabilit, s en ce qui concerne les d, g∫'s qui en r, sulteraient.

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:
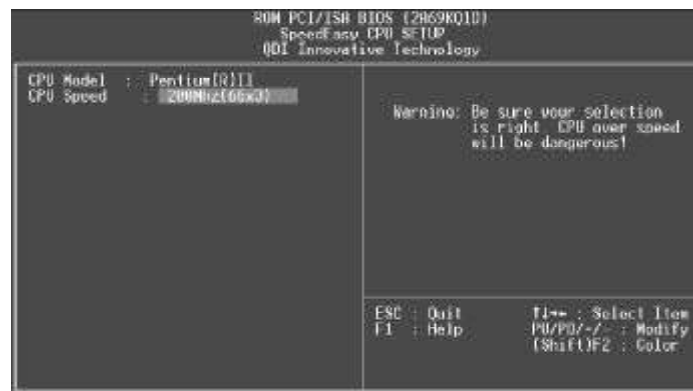
Figure -1 Menu del Setup del Microprocessore SpeedEasy

I1 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 pi— alta di quella predisposa, altrimenti la casa produttrice non si farà carico di eventuali danni al micorprocessore.

SpeedEasy ¿ Ë Ù ⅍ Ö Ä Ï

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´ÓÖ÷ÉèÖÃ²Ëµ¥ÖÐ¡ Ôñ<SpeedEasy CPU SETUP>Ïî£¬È»áá½øËë´Î²Ëµ¥£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
```

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Ï β ÄCPU » Ò Ò 00 Õ ¼ ÕÐ Ð 66 Õ ¼ ÕÜ β ÄCPU » Ò Ó 33 Õ ¼ ÕÐ Ð¡ £

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```
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
```

Í ¼4-1 SpeedEasyÖÑ ē À ÆÉ ¶ Ï Ä µ ¥

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Chapter 1
Introduction

Overview

The ZillioX 5 is a high-performance, cost-effective, microATX motherboard which is centered on the Intel®440ZX AGPset. It provides 66MHz and 100MHz system bus support for Intel Pentium®II and Celeron™ processors. Both 66MHz/100MHz SDRAM and 66MHz EDO DIMMs are supported. The maximum memory size is 512MB. It also provides advanced features such as wake-up on LAN, wake-up on internal/external modem, and keyboard password power-on function. The green function is in compliance with the ACPI specification. ManageEasy, our system management application is supplied to enable remote monitoring and configuration of the system. Together with the SecurityEasy function and integrated Creative ViBRA™16XV CT2511 ISA audio, you get a powerful state-of-the-art system.

Key Features

Form factor

- microATX form factor of 244mm x 200mm.
- Provides backward compatibility with standard ATX 2.01 chassis for easy integration.

Microprocessor

- Supports all Intel Pentium®II processors at 233/266/300/333MHz with 66MHz bus speed and at 350/400/450MHz with 100MHz bus speed.
- Supports Intel®Celeron™ processors at 266/300/333 MHz with 66MHz bus speed.
- Supports 66MHz and 100MHz host bus speed.
- CPU core frequency = Bus speed x3, x3.5, x4, x4.5, x5, x5.5
- CPU core supply voltage adjustable from 1.3V to 2.05V through on- board switching voltage regulator with VID(Voltage ID).

Chipset

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

System memory

- Provides two 168 pin 3.3V unbuffered DIMM sockets.
- Supports both 66MHz/100MHz SDRAM and 66MHz EDO DIMMs.
- Minimum memory size is 8MB, maximum memory size is 512MB.

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 ROM drives.
- 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

- Uses 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 , supporting MIDI mode.
- 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.

On-board Audio

- Based on the Creative ViBRA™16XV CT2511 sound chip.
- Compatible with Sound Blaster™, Sound Blaster Pro™and Windows Sound System™.
- Supports Software-based Wavetable Synthesizer.
- Stereo Enhancement Support.
- Provides on-board Line-in Jack, Microphone-in Jack, speaker/Line-out Jack and MIDI/Joystick Connector.

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 W83782D supports system monitoring (monitors the CPU & system temperature, system voltages, chassis intrusion and FAN speed) (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 DIP flash ROM BIOS with 2MB memory size, plug and play ready.
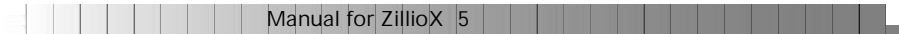- Supports IDE CD-ROM or SCSI boot up.

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
- 2 PCI slots and 1 ISA/PCI shared slot.
- 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 pins assignment 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.

External Connectors

PS/2 Keyboard Connector, PS/2 Mouse Connector

PS/2 keyboard connector is for the usage of PS/2 keyboard. If you choose to use 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.
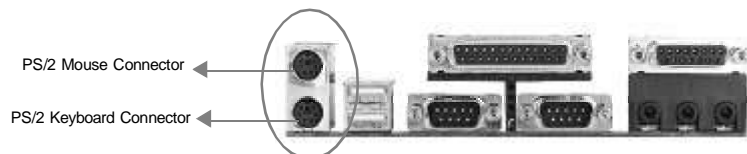

USB1, USB2

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.
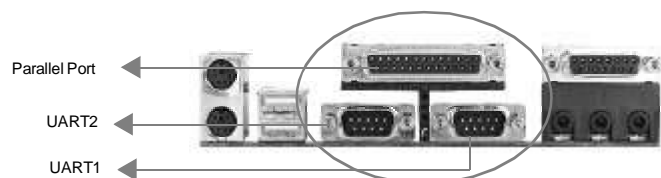
## Line-in jack, Microphone-in jack and Line/Speaker-out jack
MIDI/Joystick Connector

The Line-in jack can be connected to devices such as a cassette or Minidisc player for playback or recording.

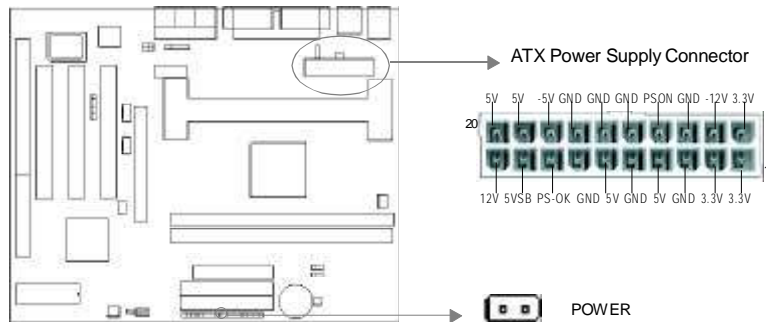The Microphone-in jack can be connected to a microphone for voice input.

The Line/Speaker-out jack is controlled by the jumper JP10 & JP11 (refer to **Jumper Settings** below for details). If set as Line out, this allows you to bypass the built-in power amplifier to connect powered speakers or an external amplifier for audio output. If set as Speaker out, this allows you to connect speakers or headphones for audio output from the internal amplifier.

The MIDI/Joystick connector allows you to connect a game joystick or a MIDI device.

MIDI/Joystick

Line out/Speaker out

Line in

Microphone in
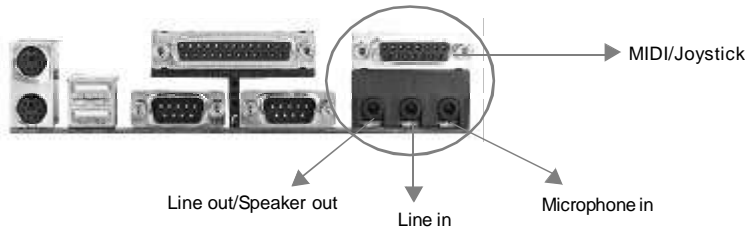
ATX Power Supply Connector & Power Switch (POWER)

ATX/SFX power supply can both be used on this system. 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 button of the momentary switch. When powering off the system, you needn't turn off the mechanical switch, just *__Push once__*[*] the button of the momentary switch.

ATX Power Supply Connector

5V   5V   -5V GND GND GND PS-ON GND -12V 3.3V

20

1

12V 5VSB PS-OK GND 5V GND 5V GND 3.3V 3.3V

POWER

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 to show 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 cabinet 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 is present.
On	Power-up status.
Flashing at a frequency of about 1.5Hz	Soft power-down status.
Flashing at a frequency of about 0.5Hz	Green Mode.
Flashing at a frequency of about 1/6Hz	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.
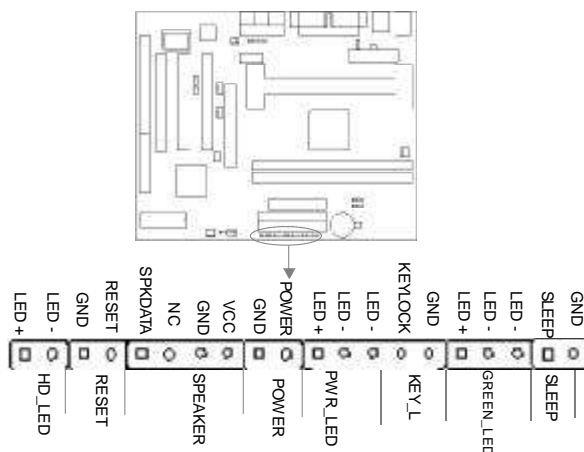
Infrared Header (IrDA)

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

NC   GND   VCC
VCC   IRRX   IRTX
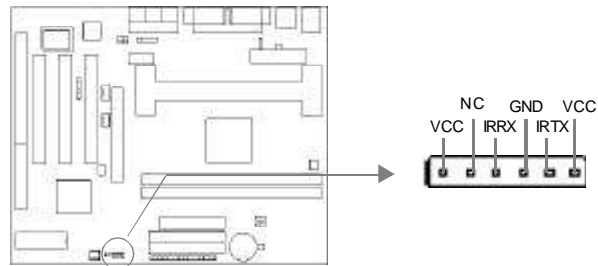
Fan Connector (CPUFAN, CHSFAN)

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
Tachometer Signal

FAN GND   +12V   Tachometer Signal
CHSFAN
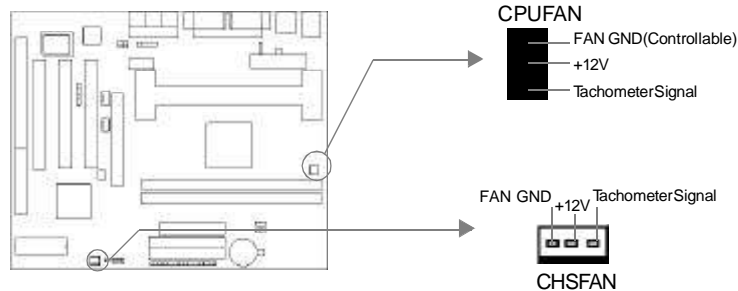
Wake-Up On LAN (WOL)

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.

1
+5V standby
GND
Signal for waking up (active high)
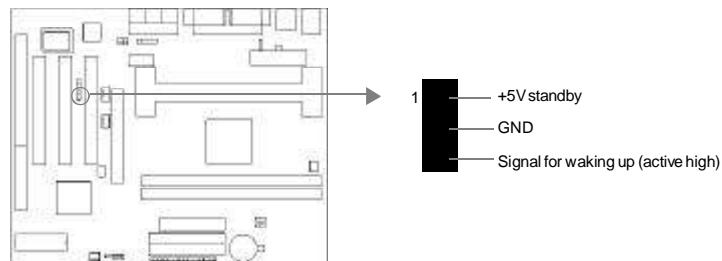
Wake-Up On Internal Modem (WOM)

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.

1 — +5V standby
— Signal for waking up (active low)
— GND
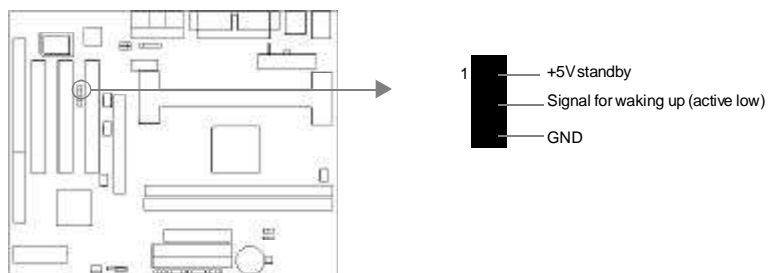
Chassis Security Switch (CHSSEC)

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

GND   Indicate signal
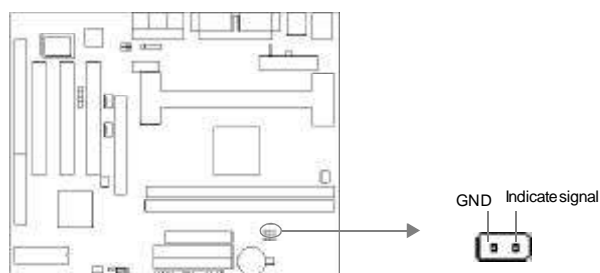
Digital Audio Connector (CDLIN, AUXIN)

CDLIN is a CD audio connector which can be connected to a CD-ROM drive (Sony standard) through a CD audio cable. AUXIN is an auxiliary audio connector. With the speakers connected to Line/Speaker-out jack, you can listen to audio from the CD-ROM drive.

CDLIN(Sony)
— CD Right Channel
— GND
— GND
— CD Left Channel

AUXIN
— AUX Right Channel
— GND
— GND
— AUX Left Channel
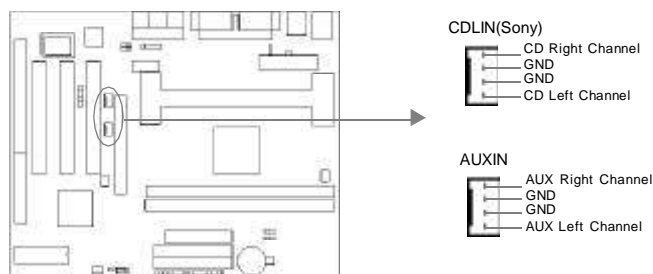
Microphone-in and Line-in Connector (BLSND)(manufacturing option)

This connector allows you to connect the audio devices or microphone with cable.

GND GND GND

Mic In   Line in (L)   Line in (R)
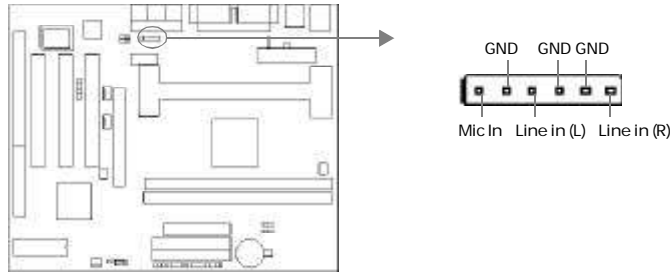
First COM Port Connector (1STCOM)(manufacturing option)

This connector allows you to connect the COM port device inside the cabinet. If this COM port is already occupied, note the other one located on the back panel (UART1) can' t be used.

1
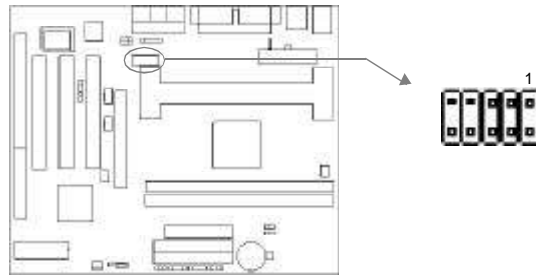
Sound Connector (PC-PCI)(manufacturing option)

This connector is for the usage of PCI sound card.

SERIAL INTERRUPT REQUEST-6   5-GND

PC/PCI DMA REQUEST-4   3-NC

GND-2   1-PC/PCI DMA ACKNOWLEDGE
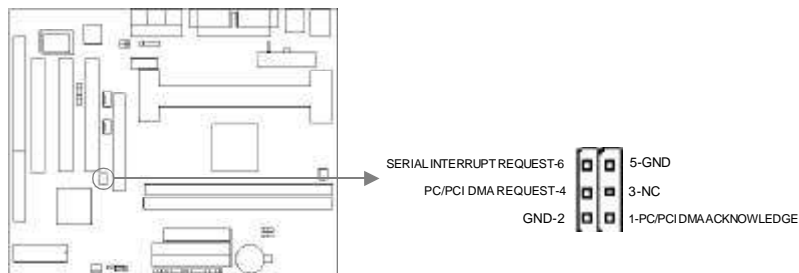
Expansion Slots & I/O Ports description

Slot / Port	Description
ISA 1	ISA slot.
PCI1	First PCI slot.
PCI2	Second PCI slot.
PCI3	Third PCI slot.
IDE1	Primary IDE port.
IDE2	Secondary IDE port.
FLOPPY	Floppy Driver Port.
AGP	Accelerated Graphics Port

<u>Jumper Settings</u>
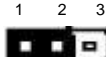
Jumpers are located on the motherboard, they represent, clear CMOS jumper JCC, enable keyboard password power-on function jumper JP2 and Speaker/Line-out selection jumper JP10 & JP11. Pin 1 for all jumpers are located on the side with a thick white line (Pin1→

), 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.
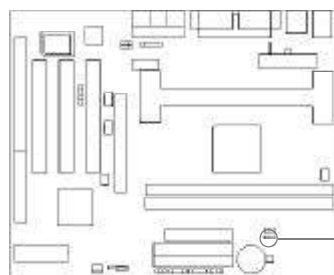
Normal status: JCC

Clear CMOS: JCC
(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 closed for disabling this function.

Disable
1   JP2

Enable
1   JP2
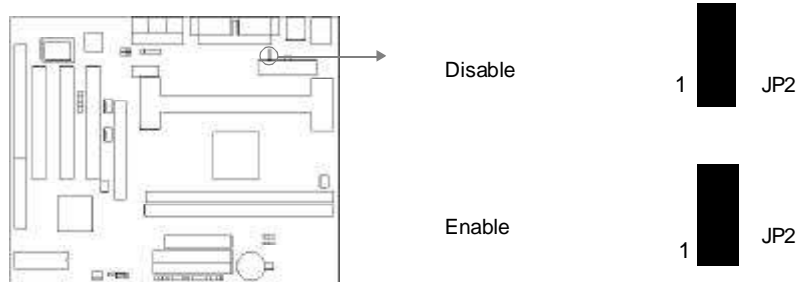
In order to implement this function, set "POWER ON Function" to **Password** and enter the keyboard power-on password in the "INTEGRATED PERIPHERALS" section of the BIOS. Save and exit, then power off your system. In this case, the power button's power-on function has been disabled. The only way to power 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 46 for detail information.

Note: 1.If wanting to use this function, 5VSB line of the power supply should be capable of delivering 200mA, or the system can't be powered up.
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.

Speaker/Line out selection (JP10, JP11)

If you want to set the Line-out/Speaker-out jack as Line out, set JP10 & JP11 with pin2&pin3 closed. Otherwise, set JP10 & JP11 with pin1& pin2 closed for Speaker out.

3 2 1
JP10

Set as Line-out
JP11

3 2 1
JP10

Set as Speaker-out
JP11
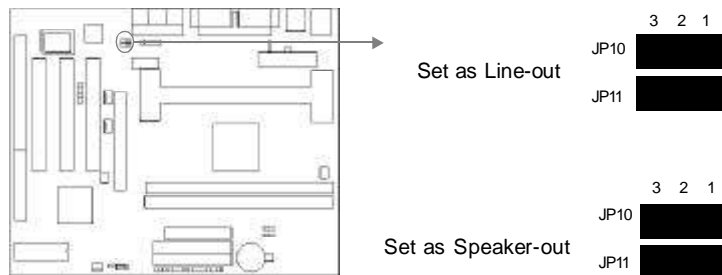
Memory Configuration

This motherboard provides two 168 pin 3.3V un-buffered DIMM sockets to support a flexible memory size ranging from 8MB/256MB for SDRAM or from 8MB/512MB for EDO memory. Both 66MHz/100MHz SDRAM and 66MHz EDO DIMMs are supported. The following set of rules allows for optimum configurations.

Rules for populating a 440ZX memory array:

- Pentium II 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.

- NO registered DIMM support.

- 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 DIMM socket.

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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 CMOS Setup. If the "Password Setting" is set as "Setup", you will be prompted for the password only when entering CMOS Setup.

SecurityEasy

The ZillioX 5 provides additional SecurityEasy function to protect the system from unauthorized entry or use.

- Push once the button connected to the two-pin header SLEEP. If the lock function is disabled, this button is used as SLEEP button.

- When "Keyboard Inactive Timer" is counted to the preset value-from 1 minute to 1 hour.

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 the SecurityEasy Password with 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.

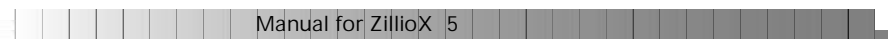**Note 2**: If the lock function is enabled, you must set the SecurityEasy password no more than 6 characters.

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 5: See also chater 4 "BIOS Description".

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Chapter 4
BIOS Description

Utility Support:

FLASH.EXE

This is a flash memory write/read utility which can be 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, type 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 note the checksum of this BIOS which is located in readme file.

5. Reboot the system from the bootable diskette 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 copy 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) will appear 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.

Figure-1 Main Menu

Note:The "System Monitor SETUP" item will not be displayed if there is no W83782D chip 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.

Figure-2 Standard CMOS Setup Menu

Hard Disk

Primary Master/Primary Slave/Secondary Master/Secondary Slave

The 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 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 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 category displays only what is determined by POST (Power On Self Test) of the BIOS

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

SpeedEasy CPU Setup

Figure-3 SpeedEasy CPU Setup

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

Item	Option	Description
● CPU Model		BIOS can automatically detect 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™ 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

Figure-4   BIOS Features Setup Menu

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

Item	Option	Description
l 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.
l CPU L1/L2 Cache	Enabled	Enables CPU internal Level1/Level2 cache.
	Disabled	Disables CPU internal Level1/Level2 cache.
l CPU L2 Cache ECC	Enabled	Enables CPU L2 Cache ECC (Error Checking and Correction) function.
	Disabled	Disables CPU L2 Cache ECC function.
l 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.
l 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.
l Boot Sequence	C,A,SCSI,... C,CDROM,A LS/ZIP, C	Any search sequency can be chosen for booting.

l Swap Floppy Drive	Enabled	Exchanges the assignment of A&B floppy drives.
	Disabled	The assignment of A&B floppy drives are normal.
l Boot Up Numlock Status	On	Keypad is used as number keys.
	Off	Keypad is used as arrow keys.
l 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.
l Password Setting	System	The system will not boot and access to Setup will be denied if the correct password is not entered when prompted.
	Setup	The system will boot up, but access to Setup will be denied if the correct password is not entered when prompted.
l 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.
l HDD S.M.A.R.T Capability	Enabled	Enables S.M.A.R.T hard disk support.
	Disabled	Invalidates this feature.
l Video BIOS Shadow	Enabled	Video BIOS will be copied to RAM. Video Shadow will increase the video speed.
	Disabled	Video shadow is disabled.
l 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.
l Show Bootup Logo	Enabled	Enables the logo when system boots up.
	Disabled	Logo will not be shown when system boots up.

Chipset Features Setup

Figure-5   Chipset Features Setup Menu

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

Item	Option	Description
l Auto Configuration	Enabled	Automatically configures DRAM Timing according to the value of "DRAM Speed Selection".
	Disabled	Manually configures. *Note: It is recommended that the "Enabled" option be chosen by common users.
l EDO 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 60ns should be selected.
l 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.
l 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.

l SDRAM CAS Latency Time	2	Defines the CLT timing parameter of SDRAM. Latency Time=2x system clocks.
	3	Latency Time=3x system clocks.
l SDRAM Percharge Control	Enabled	Default setting is suggested.
	Disabled	
l Video BIOS Cacheable	Enabled	Beside conventional memory, video BIOS area is also cacheable.
	Disabled	Video BIOS area is not cacheable.
l Video RAM Cacheable	Enabled	Besides Conventional memory, Video RAM area is also cacheable.
	Disabled	Video RAM area is not cacheable.
l 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.
l 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.
l Memory Hole at 15m-16m	Enabled	Memory hole at 15-16m is reserved for expamded
l Passive Release	Enabled	Default setting is suggested.
	Disabled	
l Delayed Transaction	Enabled	Default setting is suggested.
	Disabled	
l AGP Aperture Size (MB)	4~256	Sets the effective size of the Graphics Aperture to be used in the particular PAC Configuration.
l Clock Spread Spectrum	Enabled	Enables Clock Spread Spectrum to reduce EMI.
	Disabled	Disables Clock Spread Spectrum.
l 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

Figure-6 Power Management Setup Menu

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

Item	Option	Description
l ACPI function	Disabled	Invalidates ACPI function.
	Enabled	Validates ACPI function.
l 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.
l 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 enterring any PM mode e.g. Standby or Suspend. 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.
l 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. Note: When the green monitor detects the V/H-SYNC signals, the electron gun will be turned off.
l Video Off After	N/A	System BIOS will never turn 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.
l MODEM Use IRQ	3,7,5,7,9, 10,11	Special wake-up event for the Modem.
	NA	Invalidates this feature.
l 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 "Wake Up Events In Doze & Suspend" are On and activated, the system will be woken up.
l Standby Mode	Disabled 1 Min ~ 1Hr	The system never enters Standby mode. Defines the continuous idle time before the system enters Standby mode. If any items defined in "Wake Up Events In Doze & Suspend" are On and activated, the system will be woken up.
l Suspend Mode	Disabled Min ~ 1Hr	The system will never enter Suspend mode. Defines the continuous idle time before the system enters Suspend mode. If any items defined in " Wake Up Events In Suspend " are On and activated, the system will be woken up.
l HDD Power Down	Disabled 1 ~15 Min	HDD's motor will not be off. Defines the continuous HDD idle time before the HDD enters the power saving mode (motor off)
l HDD Down When suspend		
l Throttle Duty Cycle	12.5% 25% 37.5% 50 % 62.5% 75% 87.5%	Selects the duty cycle of the STPCLK# signal , slowing down the CPU speed when the system enters the green mode.

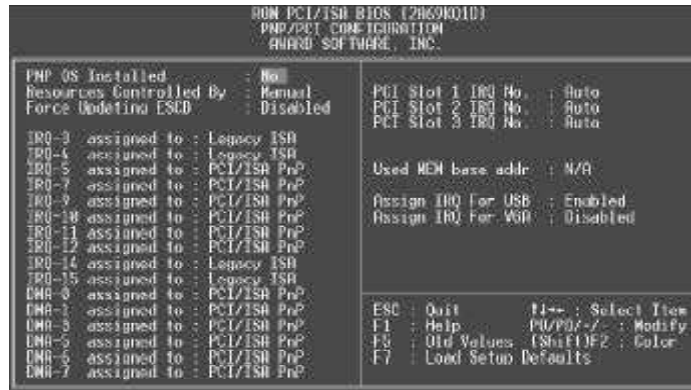|		
∎ VGA Active Monitor	Enabled	VGA active reloads global timer.
	Disabled	VGA active has no influence to global timer.
∎ Soft-Off by PWR-BTTN	Instant-Off	The system will power off immediately once the "Power" button is pressed.
	Delay 4 Secs	The system will not power off until the "Power" button is 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 or 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 waker-up signal comes up to the WOL header from LAN adapter.
	Disabled	Does not allow wake-up on LAN.
∎ IRQ 8 Break Suspend	Enabled	Generates 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

Figure-7   PNP/PCI Configuration Setup Menu

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

Item	Option	Description
ι PNP OS Installed	Yes	Device resources assigned by PnP OS.
	No	Device resources assigned by BIOS.
ι Resources Controlled by	Manual	Assigns the system resources (IRQ and DMA) manually .
	Auto	Assigns system resources (IRQ and DMA) automatically by BIOS.
ι Force Update ESCD	Enabled	The system BIOS will force updating ESCD once, then automatically set this item as Disabled.
	Disabled	Disables the forced update ESCD function.
ι 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.
ι 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.
ι PCI Slot 1/2/3 IRQ No.	Auto,3,4,5,7,9 10,11,12,14,15	Assigns an IRQ for PCI slot1/2/3 manually or automatically.
ι Used MEM base address	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.

l 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 USB device isn't used, disabling this item can release the IRQ.
l 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

Figure-8 Integrated Peripherals Menu

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

Item	Option	Description
ı IDE HDD Block Mode	Enabled	Allows IDE HDD to read/write several sectors at once.
	Disabled	IDE HDD only reads/writes a sector once.
ı 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.
ı IDE Primary/ Secondary Master/Slave UDMA	Auto	Ultra DMA mode will be enabled if ultra DMA device is detected.
	Disabled	Disables this function.
ı 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.
ı USB Keyboard Support	Enabled	USB Keyboard Support is enabled.
	Disabled	USB Keyboard Support is disabled.
ı 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.

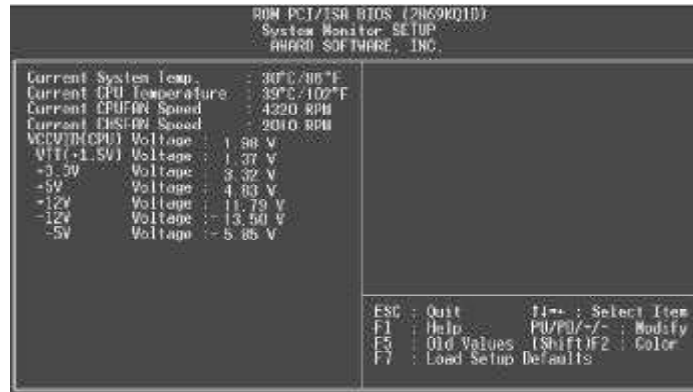|		
		Note: If this option(Password) is chosen, the jumperJP2 must be set as PIN1&PIN 2 closed, or this will prevent you from powering up your system.
l Onboard FDC Controller	Enabled	Onboard floppy disk controller is enabled.
	Disabled	Onboard floppy disk controller is disabled.
l Onboard Serial 1/2	3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 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.
l 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.
l Onboard Parallel Port	378/IRQ7, 278/IRQ5, 3BC/IRQ7	Defines onboard parallel port address and IRQ channel.
	Disabled	Onboard parallel port is disabled.
l Parallel Port Mode	SPP EPP ECP, ECP+EPP	Defines the parallel port mode as Standard Parallel Port (SPP), Enhanced Parallel Port (EPP), or Extended Capabilities Port (ECP).
l 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 Setup

Figure-9 System Monitor Setup Menu

The following describes the meaning of each item.

Item	Current Data Shown	Description
l Current System Temp.	30^{0}C/ 86^{0}C	The temperature inside the chassis.
l Current CPU Temperature	39 ^{0}C/102^{0}F	The temperature of the CPU core.
l Current CPUFAN Speed Current CHSFAN Speed	4320 RPM 2010 RPM	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.
l VCCVID(CPU) Voltage VTT (+1.5) Voltage, + 3.3V + 5V + 12V, - 12V, - 5V.	1.98V 1.37V 3.32V 4.83V 11.79V -13.50V -5.85V	Displays current Voltage values including all significant 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.

SecurityEasy Setup

Figure-10 SecurityEasy Setup Menu

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

Item	Current Data Shown	Description
l Lock Function Select	Enabled	Enables the LOCK function
	Disabled	The system will never enter the LOCK mode.
l SecurityEasy Password	Enter	To type in the SecurityEasy password is the only way to exit the 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 to 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>.
l Keyboard Inactive Timer	Disabled	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.
l Video Blanking Control	Enabled	Video is blank in the LOCK mode.
	Disabled	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 Setup freely.

PASSWORD DISABLED

If you have selected "System" at "Password Setting" 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 have selected "Setup" at "Password Setting" of "BIOS Features Setup" menu, you will be prompted for the password only when you try to enter "CMOS Setup".

IDE HDD Auto Detection

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

```
          ROM  PCI/ISA BIOS (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

<u>With auto-detection</u>
- 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 .

<u>With Standard CMOS Setup</u>

	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) 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 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.

Power - On Boot

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

Chapter 5
Creative Audio Description

On-board audio system is based on the high performance Creative ViBRA™16XV CT2511 chip that integrates 3D stereo enhancement technology. It incorporates the best features of Sound Blaster™, Sound Blaster™Pro, Microsoft Windows Sound System and MPU-401 for all multimedia applications, entertainment, educational sound and business audio.

Features

Analog Audio

- Analog mixing of 7 audio sources: Digital Audio (Stereo), CD Audio (Stereo), Synthesised Music (Stereo), Line Level Audio (Stereo), Auxiliary Level Audio (Stereo), Microphone Level Audio (Mono), and Mono Audio (Mono).
- Individual software programmable volume controls.

Digital Audio

- Variable sampling rates from 5KHz to 48KHz.
- Full-duplex record and playback.
- 8/16 bit stereo/mono digital audio playback and recording.
- FIFO' s for digital audio playback and recording for optimum Windows operations.

Mixer

- 32-level volume control mixer.

Music Synthesizer and DAC

- Creative Music synthesizer.

Stereo Enhancement

- Built-in Creative Stereo Enhancement.
- Supports enhancement effect on all inputs to the mixer.
- CD audio, Line-in, Auxiliary, VOC, Midi, Mic or Mono.

PnP Support

- Built-in PnP interface.
- Supports direct connection to ISA bus.

Joystick Port
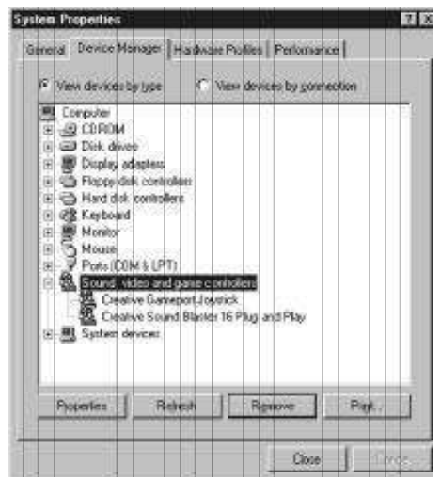
- Built-in Analog Joystick quad timer.

Creative Software Installation

I. Installation of Windows 95 driver

· While running Window95, insert the QDI Motherboard Utility CD into the CD-ROM drive.

· Direct the path to D:\ DevDrv\ Sound \ CT2511\ Win 95 and run setup.exe. The Creative software installation will guide you through the setup process.

· Restart the computer when prompted.

· After completing installation, the sound , video and game controllers should be listed in Device Manager from System Properties as shown below.

II . Installing Driver in DOS/ Windows 3.1X

Before installing the audio card' s software from the CD-ROM, a CD-ROM drive must be installed and working properly in your system . If you have not yet installed a CD-ROM drive and associated drivers, refer to your CD-ROM drive' s documentation for instructions. Use the diskette provided with the CD-ROM to install the needed drivers.
To install the audio card' s software from the CD-ROM:
1. Start your system.
2. Insert the QDI Motherboard Utility CD into your CD-ROM drive.
3. At the DOS prompt, change to the drive containing your CD-ROM. For example, type D:
4. Change to the directory D:\DevDrv\ Sound\ CT2511\ Win31
5. Type INSTALL then press <Enter>.
6. Follow the instructions presented to complete the installation.
Note: The installation will be unsuccessful if installed from the Windows DOS prompt.

III. Installation of Windows NT 4.0 Driver

Installing Audio Drivers in Windows NT4.0

1. Installing PNPISA.INF
· In Windows NT4.0, insert the Windows NT 4.0 CD-ROM into the CD-ROM drive.
· Locate the file PNPISA.INF in the CD directory \DRVLIB\PNPISA\X86 .
· If this file can not be located, click Options on the View menu of Windows NT Explorer, select the Show All Files option and clear the Hide Extensions For Known File Types check box, then click the OK button.
· The file PNPISA.INF will be now displayed. Right-click on this file and select Install.
· Restart your computer when prompted.

2. Installing Creative Audio Drivers
· When the system restarts, the New Hardware Found message boxes for the various devices will appear.
· If you have previously installed Windows NT 4.0 Service Pack 3, the system might prompt for the Service Pack 3 CD to install sound driver, click the cancel button.
·   However, if WindosNT 4.0 service pack 3 is not installed, When prompted for the driver, click the Cancel button.
· Insert the QDI Motherboard Utility CD into the CD-ROM drive.
· Run UPDPNPNT.EXE in the directory \DevDrv\Sound\CT2511\Winnt40 .
· Click the OK button If the Sound Blaster 16 Configuration box appears with no conflicts.
· If you are prompted for the Windows NT CD-ROM to install the Joystick port enabler, insert the Windows NT4.0 CD-ROM into the drive, direct the path to \DRVLIB\AUDIO\SBPNP\i386 and click the OK button.
· Restart the computer when prompted.
Please refer to the readme file in the directory

D:\ DevDrv \ Sound\ CT2511\ Winnt 40 for detailed information on installing Windows NT 4.0 driver.
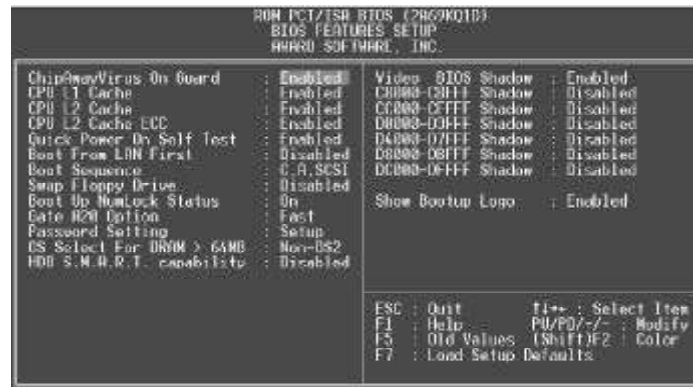
BIOS Features Setup

Figure-4 BIOS Features Setup Menu

The following indicates the options of 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,... C,CDROM,A LS/ZIP, C	Any search sequency can be chosen for booting.

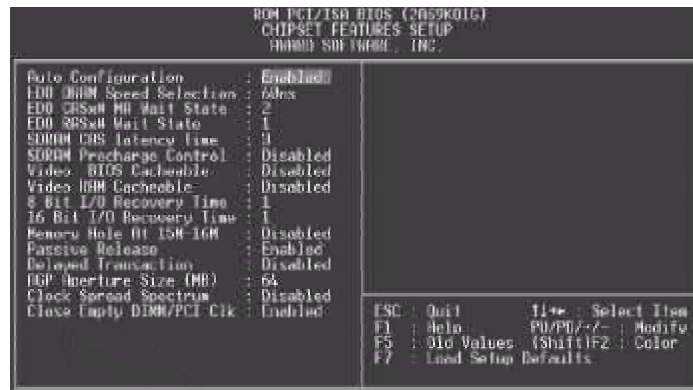|		
● Swap Floppy Drive	*Enabled*	Exchanges the assignment of A&B floppy drives.
	Disabled	The assignment of A&B floppy drives are normal.
● Boot Up Numlock Status	*On*	Keypad is used as number keys.
	Off	Keypad is used as arrow keys.
● Gate A20 Option	*Normal*	The A20 signal is controlled by the keyboard 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 Setup will be denied if the correct password is not entered when prompted.
	Setup	The system will boot up, but access to Setup will be denied if the correct password is not entered when prompted.
● 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~CBFFF 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

Figure-5   Chipset Features Setup Menu

The following indicates the options of 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.
		*Note: It is recommended that the "Enabled" option be chosen by common users.
● EDO 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 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	
● 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 RAM area is also cacheable.
	Disabled	Video RAM 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 expamded
● 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

Figure-6 Power Management Setup Menu

The following indicates the options of 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 enterring any PM mode e.g. Standby or Suspend. **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. **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 will never turn 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 the Modem.
	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 "Wake Up Events In Doze & Suspend" are On and activated, the system will be woken up.
● Standby Mode	Disabled 1 Min ~ 1Hr	The system never enters Standby mode. Defines the continuous idle time before the system enters Standby mode. If any items defined in "Wake Up Events In Doze & Suspend" are On and activated, the system will be woken up.
● Suspend Mode	Disabled Min ~ 1Hr	The system will never enter Suspend mode. Defines the continuous idle time before the system enters Suspend mode. If any items defined in " Wake Up Events In Suspend " are On and activated, the system will be woken up.
● HDD Power Down	Disabled 1 ~15 Min	HDD' s motor will not be off. Defines the continuous HDD idle time before the HDD enters the power saving mode (motor off)
● HDD Down When suspend		
● Throttle Duty Cycle	12.5% 25% 37.5% 50 % 62.5% 75% 87.5%	Selects the duty cycle of the STPCLK# signal , slowing down the CPU speed when the system enters the green mode.

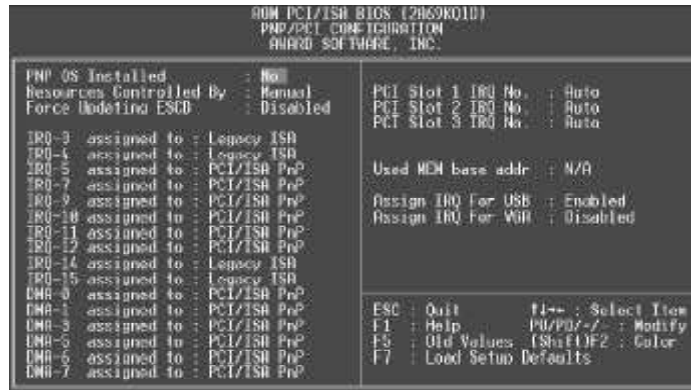|		
• VGA Active	*Enabled*	VGA active reloads global timer.
Monitor	*Disabled*	VGA active has no influence to global timer.
• Soft-Off by	*Instant-Off*	The system will power off immediately once
PWR-BTTN		the "Power" button is pressed.
	Delay 4 Secs	The system will not power off until the "Power" button is pressed continuously for more than 4 seconds.
• CPUFAN Off	*Enabled*	CPU FAN will be automatically turned off when
In Suspend		the system enters suspend mode.
	Disabled	CPU FAN remains on when the system enters suspend mode.
• Resume by	*Enabled*	Allows the system to be powered on when a ring
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	*Enabled*	RTC alarm can be used to generate a wake event
Alarm		to power up the system which is in power-off status. You can set any date or 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 waker-up signal comes up to the WOL header from LAN adapter .
	Disabled	Does not allow wake-up on LAN.
• IRQ 8 Break	*Enabled*	Generates a clock event.
Suspend	*Disabled*	Does not generate a clock event.
• IRQ [3-7, 9-15],	*Enabled*	Reloads global timer.
NMI	*Disabled*	Does not influence the global timer.
.....		
Parallel Port		

PNP/PCI Configuration Setup

Figure-7   PNP/PCI Configuration Setup Menu

The following indicates the options of 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 Update 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 IRQ No.	Auto,3,4,5,7,9 10,11,12,14,15	Assigns an IRQ for PCI slot1/2/3 manually or automatically.
● Used MEM base address	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 USB device isn' t 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

Figure-8 Integrated Peripherals Menu

The following indicates the options of 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.
● 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.

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.

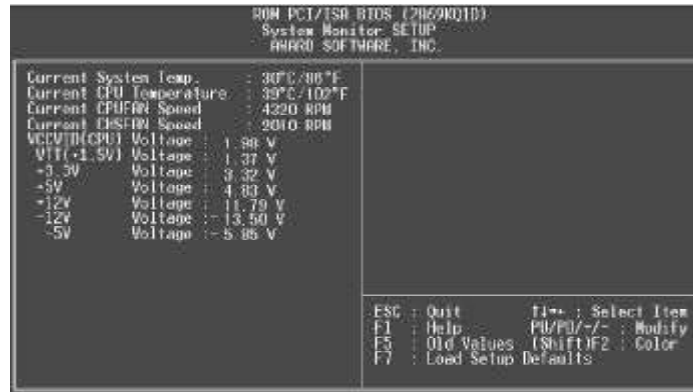|		
● Onboard FDC Controller	Enabled	Onboard floppy disk controller is enabled.
	Disabled	Onboard floppy disk controller is disabled.
● Onboard Serial 1/2	3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3,	Defines the onboard serial port address and required interrupt number.
	Auto	Onboard serial port address and 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, 278/IRQ5, 3BC/IRQ7	Defines onboard parallel port address and IRQ channel.
	Disabled	Onboard parallel port is disabled.
● Parallel Port Mode	SPP EPP ECP, 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 Setup

Figure-9 System Monitor Setup Menu

The following describes the meaning of each item.

Item	Current Data Shown	Description
● Current System Temp.	$30^0C/86^0C$	The temperature inside the chassis.
● Current CPU Temperature	$39\ ^0C/102^0F$	The temperature of the CPU core.
● Current CPUFAN Speed Current CHSFAN Speed	4320 RPM 2010 RPM	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.
● VCCVID(CPU) Voltage VTT (+1.5) Voltage, + 3.3V + 5V + 12V, - 12V, - 5V.	1.98V 1.37V 3.32V 4.83V 11.79V -13.50V -5.85V	Displays current Voltage values including all significant 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.

SecurityEasy Setup

<p style="text-align:center">Figure-10 SecurityEasy Setup Menu</p>

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

Item	Current Data Shown	Description
● Lock Function Select	Enabled	Enables the LOCK function
	Disabled	The system will never enter the LOCK mode.
● SecurityEasy Password	Enter	To type in the SecurityEasy password is the only way to exit the 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 to 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	Disabled	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	Enabled	Video is blank in the LOCK mode.
	Disabled	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 Setup freely.

PASSWORD DISABLED

If you have selected "**System**" at "Password Setting" 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 have selected "**Setup**" at "Password Setting" of "BIOS Features Setup" menu, you will be prompted for the password only when you try to enter "CMOS Setup".

IDE HDD Auto Detection

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

```
               ROM  PCI/ISA BIOS (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) 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 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.

Power - On Boot

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

Chapter 5
Creative Audio Description

On-board audio system is based on the high performance Creative ViBRA™16XV CT2511 chip that integrates 3D stereo enhancement technology. It incorporates the best features of Sound Blaster™, Sound Blaster™Pro, Microsoft Windows Sound System and MPU-401 for all multimedia applications, entertainment, educational sound and business audio.

Features

Analog Audio
- Analog mixing of 7 audio sources: Digital Audio (Stereo), CD Audio (Stereo), Synthesised Music (Stereo), Line Level Audio (Stereo), Auxiliary Level Audio (Stereo), Microphone Level Audio (Mono), and Mono Audio (Mono).
- Individual software programmable volume controls.

Digital Audio
- Variable sampling rates from 5KHz to 48KHz.
- Full-duplex record and playback.
- 8/16 bit stereo/mono digital audio playback and recording.
- FIFO's for digital audio playback and recording for optimum Windows operations.

Mixer
- 32-level volume control mixer.

Music Synthesizer and DAC
- Creative Music synthesizer.

Stereo Enhancement
- Built-in Creative Stereo Enhancement.
- Supports enhancement effect on all inputs to the mixer.
- CD audio, Line-in, Auxiliary, VOC, Midi, Mic or Mono.

PnP Support
- Built-in PnP interface.
- Supports direct connection to ISA bus.

Joystick Port
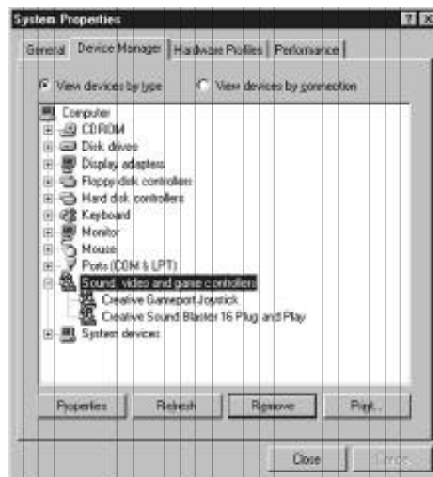- Built-in Analog Joystick quad timer.

Creative Software Installation
I. Installation of Windows 95 driver

- While running Window95, insert the QDI Motherboard Utility CD into the CD-ROM drive.

- Direct the path to D:\ DevDrv\ Sound \ CT2511\ Win 95 and run setup.exe. The Creative software installation will guide you through the setup process.

- Restart the computer when prompted.

- After completing installation, the sound , video and game controllers should be listed in Device Manager from System Properties as shown below.

II . Installing Driver in DOS/ Windows 3.1X

Before installing the audio card's software from the CD-ROM, a CD-ROM drive must be installed and working properly in your system . If you have not yet installed a CD-ROM drive and associated drivers, refer to your CD-ROM drive's documentation for instructions. Use the diskette provided with the CD-ROM to install the needed drivers.

To install the audio card's software from the CD-ROM:

1. Start your system.
2. Insert the QDI Motherboard Utility CD into your CD-ROM drive.
3. At the DOS prompt, change to the drive containing your CD-ROM. For example, type D:
4. Change to the directory D:\DevDrv\ Sound\ CT2511\ Win31
5. Type **INSTALL** then press <Enter>.
6. Follow the instructions presented to complete the installation.

Note: The installation will be unsuccessful if installed from the Windows DOS prompt.

III. Installation of Windows NT 4.0 Driver

Installing Audio Drivers in Windows NT4.0

1. Installing PNPISA.INF

- In Windows NT4.0, insert the Windows NT 4.0 CD-ROM into the CD-ROM drive.
- Locate the file PNPISA.INF in the CD directory \DRVLIB\PNPISA\X86 .
- If this file can not be located, click Options on the View menu of Windows NT Explorer, select the Show All Files option and clear the Hide Extensions For Known File Types check box, then click the OK button.
- The file PNPISA.INF will be now displayed. Right-click on this file and select Install.
- Restart your computer when prompted.

2. Installing Creative Audio Drivers

- When the system restarts, the New Hardware Found message boxes for the various devices will appear.
- If you have previously installed Windows NT 4.0 Service Pack 3, the system might prompt for the Service Pack 3 CD to install sound driver, click the cancel button.
- However, if WindosNT 4.0 service pack 3 is not installed, When prompted for the driver, click the Cancel button.
- Insert the QDI Motherboard Utility CD into the CD-ROM drive.
- Run UPDPNPNT.EXE in the directory \DevDrv\Sound\CT2511\Winnt40 .
- Click the OK button If the Sound Blaster 16 Configuration box appears with no conflicts.
- If you are prompted for the Windows NT CD-ROM to install the Joystick port enabler, insert the Windows NT4.0 CD-ROM into the drive, direct the path to \DRVLIB\AUDIO\SBPNP\i386 and click the OK button.
- Restart the computer when prompted.

Please refer to the readme file in the directory

D:\ DevDrv \ Sound\ CT2511\ Winnt 40 for detailed information on installing Windows NT 4.0 driver.

IV. Enabling/ Disabling the Creative 3D Stereo Enhancement Effect

The Creative 3D Stereo Enhancement effect allows you to eliminate speaker crosstalk when two speakers are placed close together. The results are sounds with increased depth and breadth, thereby giving you enhanced mono and stereo output from the speakers.
The Creative 3D Stereo Enhancement effect can be enabled or disabled in DOS and Windows95.

In DOS

To enable or disable the effect in DOS:
1. At the DOS prompt, change to the directory containing your audio card's software.
2. Type CT3DSE ON to enable the effect or CT3DSE OFF to disable the effect.

In Windows 95

To enable or disable the effect in Windows 95:
1. Click Start button in the task bar.
2. Select Settings and then Control Panel. The Control Panel group box appears.
3. Double-click the System icon. The System Properties dialog box appears.
4. Click the Device Manager tab. A list of devices found on your system appears.
5. Double-click Sound, video and game controllers. The audio card's name appears.
6. Select your audio card and choose Properties. The audio card's properties dialog box appears.
7. Click the Settings tab. The dialog box as shown below appears.

8. Click on the Enable/ Disable check box to enable/ disable the Creative 3D Stereo Enhancement effect.
9. Choose OK.

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 other than what would normally be expected from a PC.

Installation Instructions (in Windows95)

- During Windows 95, insert the QDI Motherboard Utility CD into the CD-ROM drive.

- Direct the path to D:\ DevDrv\ Sound \ CT2511\ Wavesynt and run setup.exe. The Creative software installation will guide you through the setup process.

- Restart Windows when prompted.

Select the WaveSynth MIDI as your default MIDI device

- Double click the Multimedia icon in Control Panel.

- Select the MIDI tab.

- In the single instrument window, highlight " WaveSynth MIDI " in the device list.

- Click < Apply >, then press < OK>.

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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.
   Run \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 440ZX chipset or other ultimate chipset.
   Run \ChipDrv\Intel\BMIDE\Setup.exe for installation.

2. On-board Device Drivers
   The sound drivers included in the directory \DevDrv\Sound\CT2511 are for the on-board audio Creative ViBRA™ 16XV CT2511.
   Run Setup.exe from the corresponding subdirectory under DevDrv\Sound\CT2511\ to install CT2511 driver, according to your OS type. In addition, run \DevDrv\sound\CT2511\ Wavesynt\setup.exe to install CT2511 wavetable.
   Note: NT4_CDROM_DRIVE: \Drvlib\pnpisa\x86\PNPISA.INF must be installed first! If not, the onboard sound card driver will be unable to function accordingly under Windows NT 4.0 because of the DMA channel conflic-tion.

3. PC-cillin Anti-Virus software:
   For Windows 95/98 English version, it is located in the directory \Pccillin\Win9X. Run Setup.exe for installation.
   For Windows NT English version, it is located in the directory \Pccillin\WinNT4.0. Run Setup.exe for installation. S/N is PNEF-9991-6558-5857-5535.

4. QDI ManageEasy:
   Run 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.

5. 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 manu-
    facturing option.

6. QDI Motherboard Utility:
    The utilities located in the directory \Utility are:
    FLASH.EXE
    CBLOGO.EXE
    LF.EXE
    Refer to the online help for information on how to use these utilities.

7. 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.
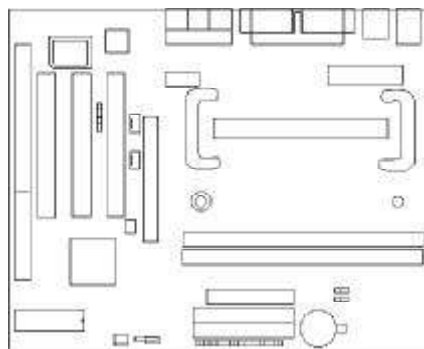
Plastic Guide with four nuts
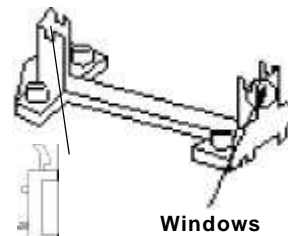
Windows

Celeron fittings

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 the motherboard, then insert the two plastic pins through the HSSBASE to secure it to the motherboard.
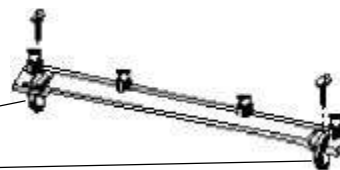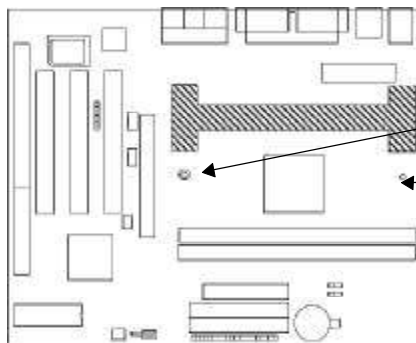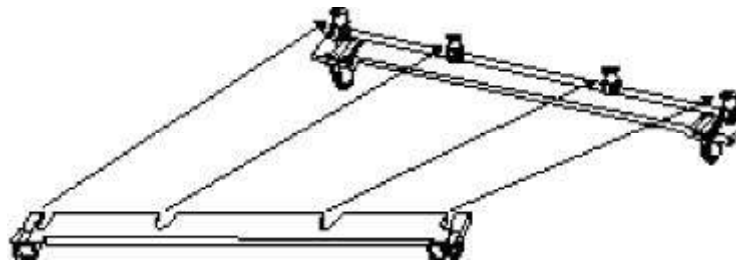
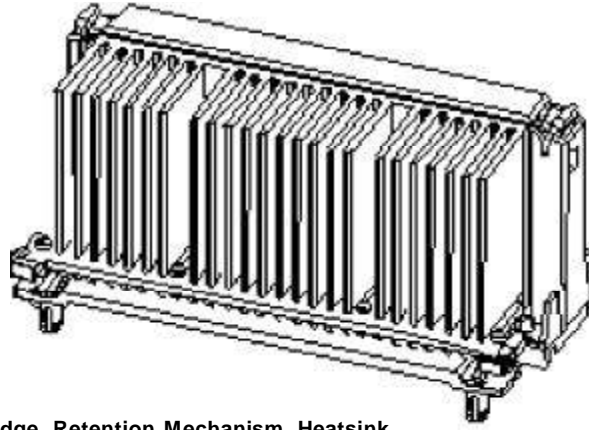3. Insert Pentium® II or Celeron^{TM} Processor in Slot1.
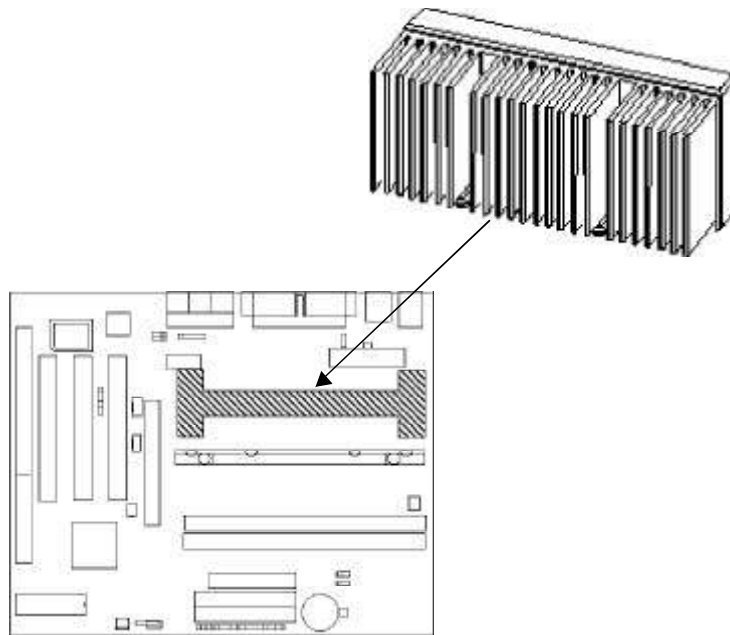
4. Clip Plastic Bar onto the HSSBASE through the fins on the processors' heatsink.

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 displayed below will appear on the screen.

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.

Item Checklist

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

- ☑ ZillioX 5 motherboard
- ☑ QDI Motherboard Utility CD-ROM
- ☑ Retention Module
- ☑ I/O shield
- ☑ 1 IDE ribbon cable
- ☑ 1 floppy ribbon cable
- ☑ User's manual

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Board Laybout of
ZillioX 5 V1.0