

Item Checklist

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

- ZillioX 6 motherboard
- QDI Motherboard Utility CD-ROM
- Retention Module
- I/O shield (manufacturing option)
- 1 IDE ribbon cable
- 1 serial port ribbon cable (25-pin connector)with bracket (manufacturing option)
- 1 floppy ribbon cable
- User' s manual

Notice

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For further information, please visit our web-site: "www.qdigrp.com".

Declaration of conformity



(EC conformity marking)

QUANTUM DESIGNS(HK) LTD.

**5/F Somerset House, TaiKoo Place 979 Kings Road,
Quarry Bay, Hong Kong**

declares that the product

**Pentium®II Motherboard
ZillioX 6**

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

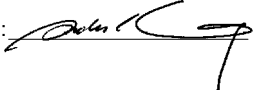
QDI COMPUTER (NETHERLANDS) B. V.

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



Trade Name: QDI Computer (U. S . A.) Inc.
Model Name: ZillioX 6
Responsible Party: QDI Computer (U. S. A.) Inc.
Address: 41456 Christy Street
Fremont, CA 94538
Telephone: (510) 668-4933
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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



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Chapter 1

Introduction

Overview

The ZillioX 6 is a highly integrated, 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 SDRAMs and 66MHz EDO DIMMs are supported. It also provides advanced features such as wake-up on LAN, wake-up on internal/external modem and keyboard password power-on function. ManageEasy, our management application is supplied to enable remote monitoring and configuring of the system. Together with its integrated Creative CT2511SBT audio and integrated ATI Rage IIC(or ATI Rage Pro) AGP video, you get a state-of-the-art corporate system.

Key Features

Form factor

- microATX form factor of 244mm x 210mm.
- 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 350/400/450MHz with 100MHz bus speed.
- Supports Intel®Celeron™ processors at 266/300/333MHz 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 voltage can be selected from 1.3V to 3.5V automatically 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 SDRAMs 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.
- | Two fast IDE interfaces supporting four IDE devices including IDE hard disks and CD-ROM drives.
- | Supports up to PIO mode 4 timing.
- | Supports "Ultra DMA/33" Synchronous DMA mode, transferring up to 33Mbytes/sec.
- | Integrated 16x32bit buffer for IDE PCI Burst Transfers.

On-board I/O

- | Use Winbond W83977EF super I/O chip.
- | One floppy port supporting up to two 3.5" or 5.25" floppy drives with 360K/720K/1.2M/1.44M/2.88M format.
- | Two high speed 16550 fast compatible UARTs (COM1 /COM2 /COM3 /COM4 selective) with 16-byte send/receive FIFOs.
- | One enabled parallel port at the I/O address 378H/278H/3BCH with additional bi-direction I/O capability and multi-mode as SPP/EPP/ECP (IEEE 1284 compliant).
- | Circuit protection provided, preventing damages 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 FM Music Synthesizer and Software-based Wavetable Synthesizer.
- | Stereo Enhancement Support.
- | Provides on-board Line-in Jack, Microphone-in Jack, Speaker-out/Line-out Jack and MIDI/Joystick Connector.

On-board AGP

- | Based on the ATI Rage IIC (or ATI Rage Pro) AGP graphics controller.
- | Integrated 3D, 2D and video accelerators with palette DAC and quadruple clock synthesizer.
- | 2MB/4MB SGRAM on board and a SO-DIMM socket for extension use (manufacturing option).
- | Supports a maximum resolution of 1600x1200 at 76Hz.



Advanced Features

- Provides Trend ChipAway Virus®On Guard.
- Provides on-board PS/2 mouse and PS/2 keyboard ports.
- Provides two USB ports.
- 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 Winbond W83782D supports system monitoring (monitors the CPU & system temperature, system voltages, chassis intrusion and fan speed).
- Provides management application such as ManageEasy and LDCM (LANDesk® Client Manager). (manufacturing option).
- Supports keyboard password and PS/2 mouse power-on function.
- System status resumes(selectable) after AC power supply failure.

BIOS

- Licensed advanced AWARD BIOS, supports DIP flash ROM 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.
- The Green LED will flash when the system is in the green status.

Expansion slots

- 1 ISA slot and 2 PCI slots.



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



Chapter 2

Installation Instructions

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

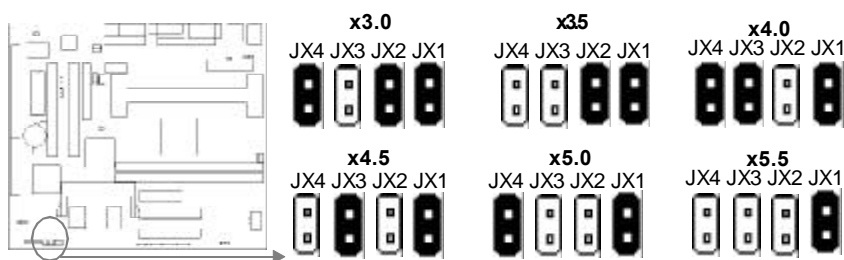
Be sure to unplug the AC power supply before adding or removing expansion cards or other system peripherals, otherwise your motherboard and expansion cards might be severely damaged.

Jumper Settings

Jumper settings are located on the motherboard. Pin 1 of all jumpers are located on the side with a thick white line (Pin 1 \rightarrow ) , referring to the motherboard silkscreen. Jumpers with two pins will be shown graphically as  for close and  for open. Jumpers with three pins will be shown as  to represent pin1&pin2 connected and  to represent pin2 & pin3 connected.

Clock Multiple Selection (JX4,JX3,JX2,JX1)

These jumpers set the frequency ratio between the Internal frequency of the CPU and the external frequency (namely the Bus Clock). The system can determine the external frequency (Bus Clock) of the CPU automatically. The Bus Clock multiplied by the Clock Multiple equals the CPU' s frequency.





Carefully set the Clock Multiple by referring to the CPU list.

CPU Model	Freq. (MHz)	SC (MHz)	Ratio	JX1	JX2	JX3	JX4
Intel Pentium II (or Celeron™)	233	66	3.5	Close	Close	Open	Open
	266	66	4.0	Close	Open	Close	Close
	300	66	4.5	Close	Open	Close	Open
	333	66	5.0	Close	Open	Open	Close
	350	100	3.5	Close	Close	Open	Open
	400	100	4.0	Close	Open	Close	Close
	450	100	4.5	Close	Open	Close	Open
500	100	5.0	Close	Open	Open	Close	

Clear CMOS (JCC)

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



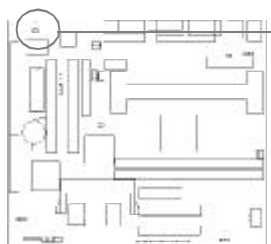
Normal status:  JCC

Clear CMOS:  JCC

(Unplug the AC power supply)

Enable/Disable on-board audio (JP7)

If you want to use the on-board audio, close JP7(default). Otherwise, set JP7 open to disable the on-board audio.



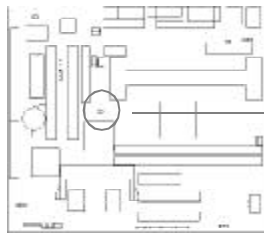
Enable on-board audio  JP7

Disable on-board audio  JP7



Enable/Disable on-board VGA(JP10)

If you want to use on-board VGA, close JP10(default). Otherwise, set JP10 open for disabling the on-board VGA.



Enable on-board VGA



JP10

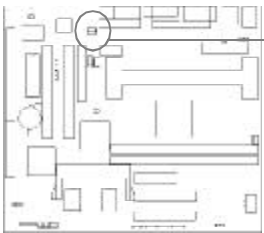
Disable on-board VGA



JP10

Speaker-out/Line-out Selection(JP8, JP9)

If you want to set the Speaker-out/Line-out Jack as Speaker out, set JP8 & JP9 with pin1& pin2 closed(default). Otherwise, set JP8 & JP9 with pin2 & pin3 closed for Line out.



Speaker out

3 2 1



JP9



JP8

Line out

3 2 1



JP9



JP8

Enable keyboard password and PS/2 mouse power-on function

The motherboard provides advanced keyboard password and PS/2 mouse power-on function. To use these functions, set JP3 with pin1& pin2 closed(default). Otherwise, set JP3 with pin2 & pin3 closed for disabling these two functions.



Enable

3 2 1



JP3

Disable

3 2 1



JP3

In order to implement these functions, you need to set "POWER ON Function" as **Password/Mouse Left/Mouse Right** accordingly in the "INTEGRATED PERIPHERALS" section of CMOS Setup. If set as **Password**, the keyboard



power-on password must be set also. Then save and exit, power off the system. The system can be powered up by entering the correct password from the keyboard or double clicking the PS/2 mouse button (Left/Right), according to your previous settings in CMOS Setup. Refer to BIOS description for detailed information.

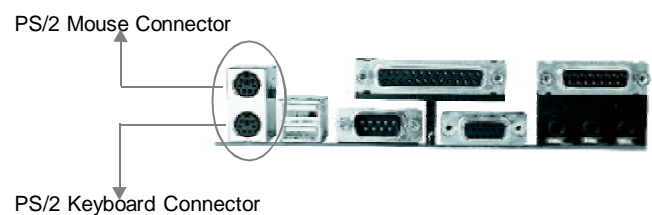
Note:

1. **If wanting to use keyboard or PS/2 mouse to power up the system, make sure 5VSB line of the power supply is capable of delivering enough current(eg. 200mA) for all devices connected to the keyboard port, or you will be unable to power up the system by using the keyboard or PS/2 mouse.**
2. **The power button s power-on function is disabled when keyboard password power-on function is enabled.**
3. **A PS/2 mouse is required to power up the system, rather than a serial port mouse.**
4. **If you set JP3 with pin2 & pin3 closed, you should set POWER ON Function as BUTTON ONLY, do not set it as Password/Mouse Left/Mouse Right, or this will prevent you from powering up the system.**
5. **If you encounter the above problems (the system can t be powered up), or you forgot the password, clear CMOS, reset the jumper and BIOS option.**

External Connectors

PS/2 Keyboard Connector, PS/2 Mouse Connector

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



USB1, USB2

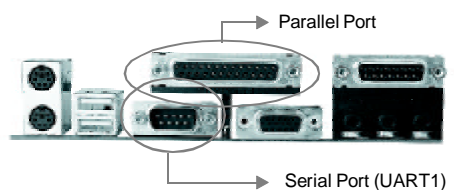
Two USB ports are available for connecting USB devices.



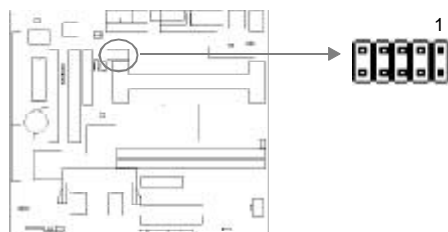


Parallel Port Connector and Serial Port Connector (UART1, UART2)

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

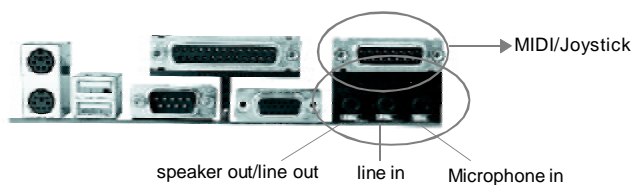


The serial port UART2 is not located on the back panel. Therefore, we provide a 25-pin ribbon cable with bracket for UART2 port. (manufacturing option)



Line-in Jack, Microphone-in Jack and Speaker-out/Line-out Jack

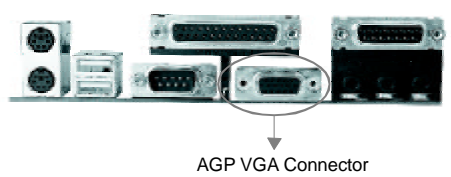
The Line-in jack can be connected to devices such as a cassette or Minidisc player for playback or recording. The Microphone-in jack can be connected to a microphone for voice input. The Speaker-out/Line-out jack is determined by the jumpers JP8 & JP9 (refer to **Jumper Settings** for details). If set as Line-out, it allows you to bypass the built-in amplifier to connect powered speakers or an external amplifier for audio output. If set as Speaker-out, it allows you to connect speakers or headphones for audio output from the internal amplifier. MIDI/Joystick connector allows you to connect a game joystick or a MIDI device.





AGP VGA Connector

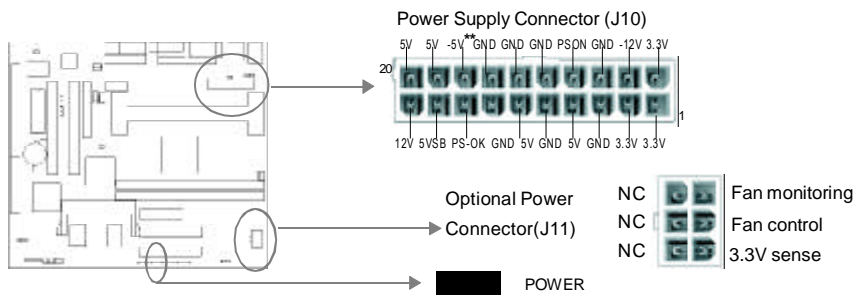
This connector should be connected to a standard monitor if the on-board AGP VGA is used (refer to **Jumper Settings** for detailed information on enabling/disabling AGP).



Power Supply Connector(J10,J11) & Power Switch (POWER)

ATX/SFX power supply can both be used on this system. Be sure to connect the power supply plug to connector J10 in the 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 power switch. When powering off the system, you needn't turn off the mechanical switch, just **push once** the button of the power switch.

J11 is an optional 6-pin power connector used for the power supply which has an identical connector. The pin assignment and the location of the connectors are as shown below:



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

****This optional signal (-5V) is not available in the SFX power supply.**

Hard Disk LED Connector (HDLED)

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



Reset Switch (RESET)

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

Speaker Connector (SPEAKER)

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

Power LED Connector (PWRLED)

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

Key-Lock Connector (KEY_L)

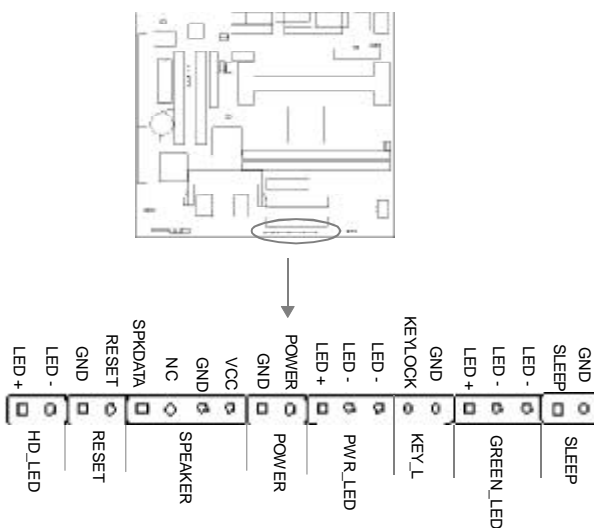
The connector can be connected to the keyboard lock switch on the case for locking the keyboard.

Green LED Connector (GRNLED)

The Green LED has four status. When no AC power supply is present, the LED is off. When the system is in power-off status, the LED is glows dimly. When the system is powered up, the LED is on. When the system enters green mode, the LED will flash.

Hardware Green Connector (SLEEP)

Push once the switch connected to this connector, the system enters suspend mode.





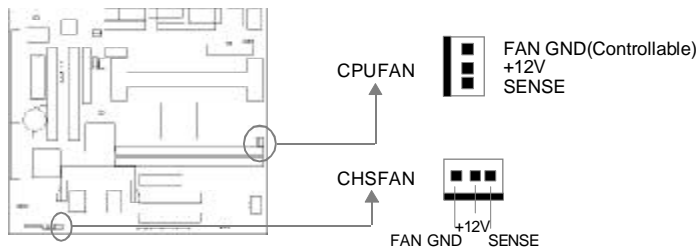
Infrared Header (IRDA)

This connector supports wireless transmitting and receiving. You must set “Serial Port 2 Mode” to **IrDA** or **ASKIR** and configure the settings in the “INTEGRATED PERIPHERALS” section of the BIOS.



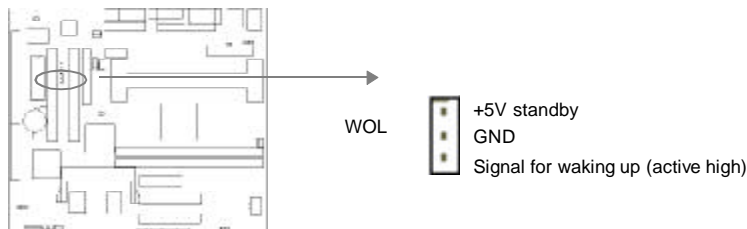
Fan Connector (CPUFAN, CHSFAN)

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



Wake-Up On LAN (WOL)

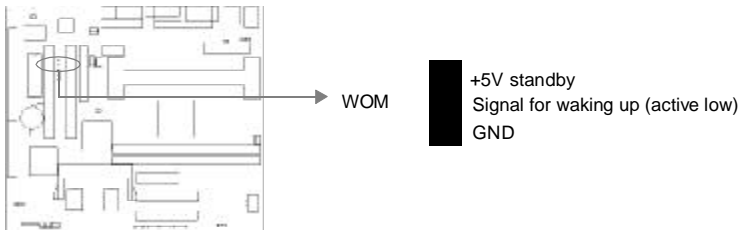
Through Wake-up On LAN function, a wake event occurring from network can wake up the system. If this function is to be used, please be sure an ATX 2.01 power supply of which 5VSB line is capable of delivering 720mA, and a LAN adapter which supports this function are used. Then connect this header to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





Wake-Up On Internal Modem (WOM)

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



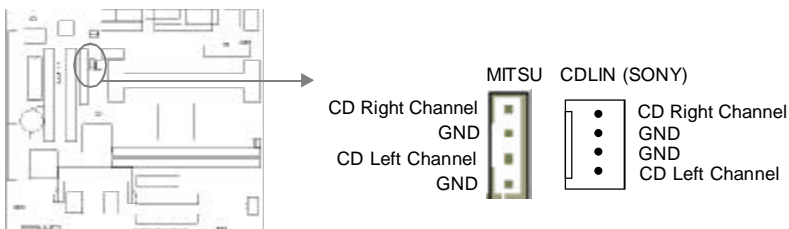
Chassis Security (CHSSEC)

The connector can be connected to the chassis security switch on the case. When using QDI's ManageEasy software, the system can detect the status of the chassis. For detailed information, refer to the ManageEasy manual located in the path \Doc from the QDI motherboard utility CD.



CD Audio Connector (CDLIN, MITSU)

The CD Audio Connector can be connected to a CD-ROM drive through a CD audio cable. With the speakers connected to Speaker-out/Line-out jack, audio can be heard from the CD-ROM drive.





VESA Feature Connector (VFC)



Expansion Slots & I/O Ports description

Slot / Port	Description
ISA	ISA slot
PCI 1	First PCI slot
PCI 2	Second PCI slot
IDE 1	Primary IDE port
IDE 2	Secondary IDE port
FLOPPY	Floppy Drive Port

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 optimum configurations.

Rules for populating a 440ZX memory array:

- EDO/SDRAM DIMMs can not be used on the same system, it is advised you use only one kind of DIMM.
- 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 SDRAM/EDO 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 EDO DIMM memory sizes are 8MB, 16MB, 32MB, 64MB, 128MB, 256MB in each DIMM socket.
- Possible SDRAM DIMM memory sizes are 8MB, 16MB, 32MB, 64MB, 128MB in each DIMM socket.



Chapter 3

BIOS Description

Utility Support:

FLASH.EXE

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

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

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

Follow the steps exactly for a successful upgrade.

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

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

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

FLASH [BIOSfile] [/g]

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

<command> function definition:

c: clear CMOS;

p: clear PnP;

d: clear DMI.



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

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

/g: Retrieves BIOS file from BIOS ROM.

Examples:

A:\FLASH.EXE BIOSfile.bin

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

A:\FLASH.EXE BIOSfile.bin /g

Note: FLASH utility runs incorrectly at Windows DOS prompt.



AWARD BIOS Description

Entering Setup

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

Press to enter SETUP

Once you have entered, the Main Menu (Figure 1) appears on the screen. The main menu allows you to select from ten 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. The <ESC> key is used to exit the sub-menu.

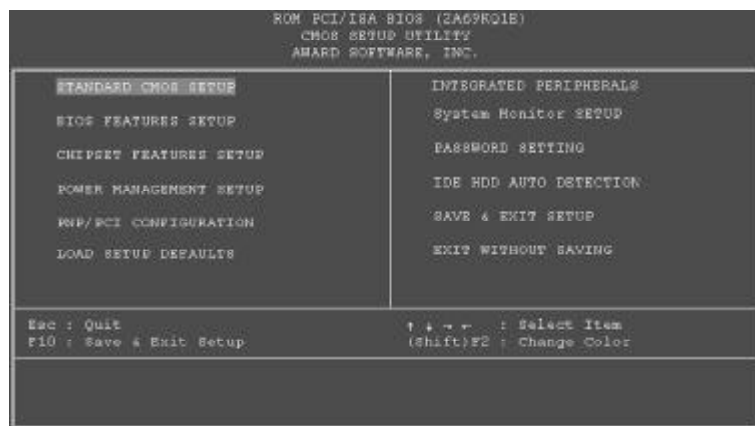


Figure-1 Main Menu

Note: The **System Monitor SETUP** item will not be displayed if there is no hardware monitor 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 Video etc. Use the arrow keys to highlight the item, then use the <PgUp> or <PgDn> keys to select the value preferred in each item.

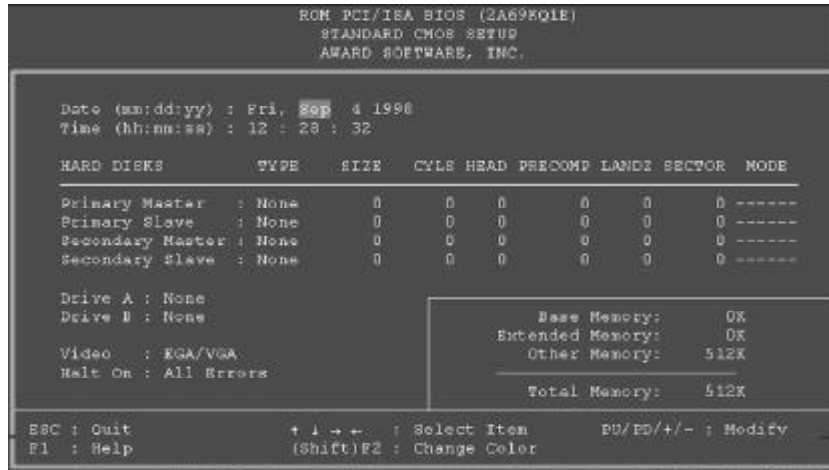


Figure-2 Standard CMOS Setup Menu

Hard Disk

Primary Master/Primary Slave/Secondary Master/Secondary Slave

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

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

Video

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

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



Halt On

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

No errors	The system boot will not stop for any 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 is a Display-Only category determined by POST (Power On SelfTest) of the BIOS.

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



BIOS Features Setup

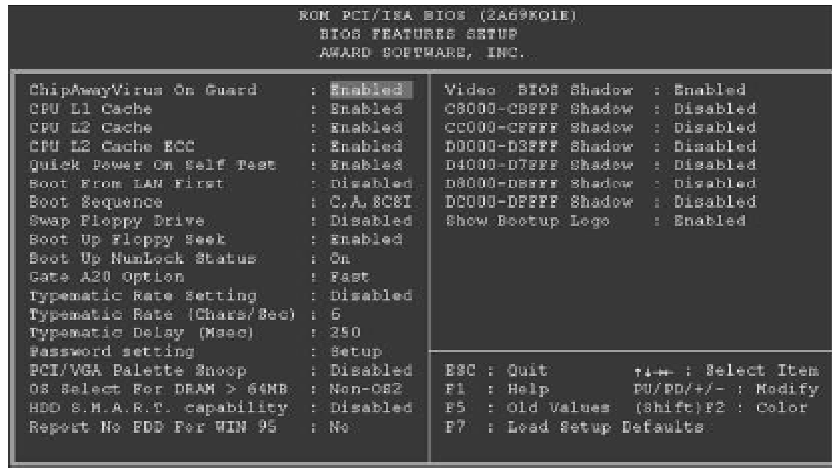


Figure-3 BIOS Features Setup Menu

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

<u>Item</u>	<u>Option</u>	<u>Description</u>
• ChipAway Virus On Guard	<i>Enabled</i>	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.
	<i>Disabled</i>	Invalidates this function.
• CPU L1/L2 Cache	<i>Enabled</i>	Enables CPU internal Level1/Level2 cache.
	<i>Disabled</i>	Disables CPU internal Level1/Level2 cache.
• CPU L2 Cache ECC	<i>Enabled</i>	Enables CPU L2 Cache ECC (Error Checking and Correction) function.
	<i>Disabled</i>	Disables CPU L2 Cache ECC function.
• Quick Power On Self Test	<i>Enabled</i>	Enables quick POST. BIOS will shorten or skip some check items during POST to speed up POST after you power on the computer.
	<i>Disabled</i>	Normal POST.
• Boot From LAN First	<i>Enabled</i>	Boot from LAN is ahead of any boot sequence selection (LAN Adapter must support this function).
	<i>Disabled</i>	Does not boot from LAN first.
• Boot Sequence booting.	<i>C,A,SCSI,... LS/ZIP, C</i>	Any of these search sequence can be chosen for C,CDROM,A



• Swap Floppy Drive	<i>Enabled</i>	Exchanges the assignment of A&B floppy drives.
	<i>Disabled</i>	The assignment of A&B floppy drives are normal.
• Boot up Floppy Seek	<i>Enabled</i>	BIOS searches for the floppy disk drive to determine if the drive is ready for diskette read/write during booting.
	<i>Disabled</i>	Skips the drive seeking to speed up system booting.
• Boot Up Numlock Status	<i>On</i>	Keypad is used as number keys.
	<i>Off</i>	Keypad is used as arrow keys.
• Gate A20 Option	<i>Normal</i>	The A20 signal is controlled by the keyboard controller or chipset hardware.
	<i>Fast</i>	Default setting. The A20 signal is controlled by Port 92 or the chipset specific method.
• Typematic Rate Setting	<i>Enabled</i>	Enables typematic rate and typematic delay programming.
	<i>Disabled</i>	Disables typematic rate and typematic delay programming. The system BIOS will use the default value of these two items.
• Typematic Rate (Chars/Sec)	<i>6-30</i>	Sets the speed of the typematic rate (characters per second).
• Typematic Delay (Msec)	<i>250-1000</i>	Sets the time of the typematic delay.
• Password Setting	<i>System</i>	The system will not boot and access to BIOS Setup will be denied if the correct password is not entered when prompted.
	<i>Setup</i>	The system will boot up, but access to BIOS Setup will be denied if the correct password is not entered when prompted.
• PCI/VGA Palette Snoop	<i>Enabled</i>	Non-standard VGA cards such as graphics accelerators or MPEG video cards may not show colors properly. Enabling this item can solve this problem.
	<i>Disabled</i>	Default setting.
• OS Select For DRAM>64MB	<i>Non-OS2</i>	If your operating system is not OS/2, please select this item.
	<i>OS2</i>	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	<i>Enabled</i>	Enables S.M.A.R.T hard disk support.
• Report NO FDD For WIN95	<i>Disabled</i>	Invalidates this feature.
	<i>Yes</i>	Reports ' No Floppy Disk Drive' for WIN95 to release IRQ6.
• Video BIOS Shadow	<i>No</i>	Does not report ' No Floppy Disk Drive' for WIN95.
	<i>Enabled</i>	Video BIOS will be copied to RAM. Video Shadow will increase the video speed.
	<i>Disabled</i>	Video shadow is disabled.



- C8000-CBFFF Shadow: DC000-DFFFF
Shadow: *Enabled* Optional ROM will be copied to RAM by 16K bytes per unit.
- Show Bootup Logo
Shadow: *Disabled* The shadow function is disabled.
- Show Bootup Logo
Shadow: *Enabled* Enables the logo when system boots up.
- Show Bootup Logo
Shadow: *Disabled* Logo will not be shown when system boots up.

Chipset Features Setup

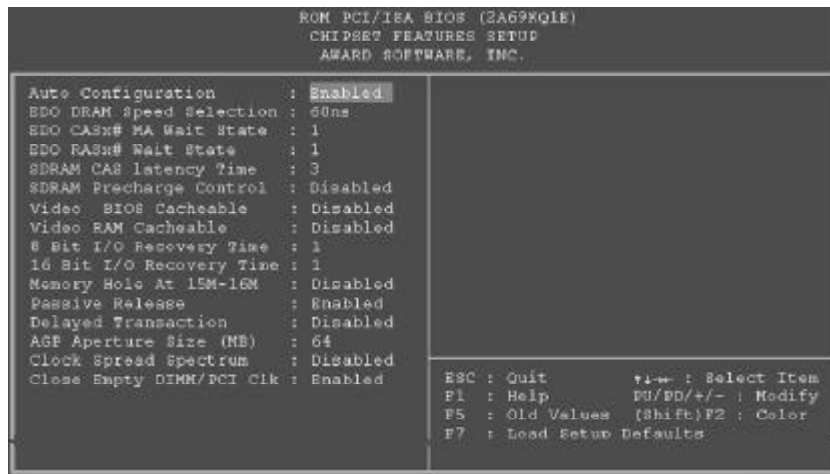


Figure-4 Chipset Features Setup Menu

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

<u>Item</u>	<u>Option</u>	<u>Description</u>
• Auto Configuration	<i>Enabled</i>	Automatically configures DRAM Timing according to the value of "DRAM Speed Selection".
	<i>Disabled</i>	Manually configure. *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 CAS# MA Wait State	2	One additional wait state is inserted before the assertion of the first CAS# for page hit cycles. This allows one additional clock of MA setup time to the CAS# for the leadoff page hit cycle. Page miss and row miss timing are not affected by this item.
	1	Without additional wait state.



• EDO RAS# Wait State	2	One additional wait state is inserted before RAS# is asserted for row misses. This provides one clock of additional MAX[13:0] setup time to RAS# assertion. This bit does not affect page misses since the MAX[13:0] lines are setup several clocks in advance of RAS# assertion for page misses. Without additional wait state.
• SDRAM CAS Latency Time	1	Defines the CLT timing parameter of SDRAM. Latency Time=2x system clocks.
	2	Latency Time=2x system clocks.
	3	Latency Time=3x system clocks.
• SDRAM Percharge Control	<i>Enabled</i> <i>Disabled</i>	Default setting is suggested.
• DRAM ECC Select	<i>ECC</i> <i>Non-ECC</i>	Provides ECC (Error Checking and Correction) function. Disables ECC function.
• Video BIOS Cacheable	<i>Enabled</i> <i>Disabled</i>	Beside conventional memory, video BIOS area is also cacheable. Video BIOS area is not cacheable.
• Video RAM Cacheable	<i>Enabled</i> <i>Disabled</i>	Besides conventional memory, video RAM area is also cacheable. 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	<i>Enabled</i>	Memory hole at 15-16M is reserved for expanded ISA card
	<i>Disabled</i>	Does not set this memory hole.
• Passive Release	<i>Enabled</i> <i>Disabled</i>	Default setting is suggested.
	<i>Enabled</i> <i>Disabled</i>	Default setting is suggested.
• 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	<i>Enabled</i> <i>Disabled</i>	Enables Clock Spread Spectrum to reduce EMI. Disables Clock Spread Spectrum.
	<i>Enabled</i> <i>Disabled</i>	Closes empty DIMM clock or PCI clock to reduce EMI. Does not close empty DIMM or PCI clock.



Power Management Setup

```

ROM PCI/ISA BIOS (2A69F01E)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI function      : Disabled
Power Management  : Min Saving
PM Control by APM : Yes
Video Off Method  : V/H SYNC+Blank
Video Off After   : Standby
MODEM Use IRQ     : NA
Doze Mode         : Disable
Standby Mode      : Disable
Suspend Mode      : Disable
HDD Power Down    : Disable
HDD Down When Suspend: Enabled
Throttle Duty Cycle : 50.0%
VGA Active Monitor : Disabled
Soft-Off by SWR-BT2N : Instant-Off
CPUFAN Off In Suspend: Enabled
Resume by Ring    : Disabled
Resume by Alarm   : Disabled

Wake Up On LAN    : Disabled

IRQ 8 Break Suspend : Disabled
** Reload Global Timer Events **
IRQ[3-7,9-15],NMI : Disabled
Primary IDE 0      : Disabled
Primary IDE 1      : Disabled
Secondary IDE 0    : Disabled
Secondary IDE 1    : Disabled
Floppy Disk        : Disabled
Serial Port        : Enabled
Parallel Port      : Disabled

ESC : Quit      +<-> : Select Item
F1  : Help      PU/PD/+/- : Modify
F5  : old values (shift)+F2 : Color
F7  : Load Setup Defaults

```

Figure-5 Power Management Setup Menu

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

<u>Item</u>	<u>Option</u>	<u>Description</u>
• ACPI function	<i>Disabled</i>	Invalidates ACPI function.
	<i>Enabled</i>	Validates ACPI function.
• Power Management	<i>User Define</i>	Users can configure their own Power Management Timer.
	<i>Min Saving</i>	Pre - defined timer values are used. All timers are in their MAX values.
	<i>Max Saving</i>	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 it enters 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	<i>Blank Screen</i>	The system BIOS will only blank off the screen when disabling video.
	<i>V / H SYNC + Blank</i>	In addition to Blank Screen, BIOS will also turn



	<i>DPMS</i>	off the V-SYNC & H - SYNC signals from VGA cards to monitor. This function is enabled only for the VGA card supporting DPMS. Note: When the green monitor can't detect the V/H-SYNC signals, the electron gun will be turned off.
• Video Off After	<i>N/A</i>	System BIOS will never turn off the screen.
	<i>Suspend</i>	Screen blanks after the system enters Suspend mode.
	<i>Standby</i>	Screen blanks after the system enters Standby mode.
• MODEM Use IRQ	<i>Doze</i>	Screen blanks after the system enters Doze mode.
	<i>3,7,5,7,9,10,11</i>	Special wake-up event for Modems.
	<i>NA</i>	Invalidates this feature.
• Doze mode	<i>Disabled</i>	The system never enters Doze mode.
	<i>1Min ~ 1 Hr</i>	Defines the continuous idle time before the system enters Doze mode. If any items defined in "Reload Global Timer Events" are On and activated, the system will be woken up.
• Standby Mode	<i>Disabled 1</i>	The system never enters Standby mode.
	<i>Min ~ 1Hr</i>	Defines the continuous idle time before the system enters Standby mode. If any items defined in "Reload Global Timer Events" are On and activated, the system will be woken up.
• Suspend Mode	<i>Disabled</i>	The system never enters Suspend mode.
	<i>Min ~ 1Hr</i>	Defines the continuous idle time before the system enters Suspend mode. If any items defined in "Reload Global Timer Events" is On and activated, the system will be woken up.
• HDD Power Down	<i>Disabled</i>	HDD' s motor remains on.
	<i>1 ~15 Min</i>	Defines the continuous HDD idle time before the HDD enters the power saving mode (motor off)
• HDD Down When suspend	<i>Enabled</i>	HDD' s motor will be off when the system enters suspend mode.
	<i>Disabled</i>	HDD' s motor remains on.
• Throttle Duty Cycle	<i>12.5%</i>	Selects the duty cycle of the STPCLK# signal, slowing down the CPU speed when the system enters the green mode.
	<i>25%</i>	
	<i>37.5%</i>	
	<i>50 %</i>	
	<i>62.5%</i>	



	75%	
• 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 external modem or comes up to WOM# 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 time or any date to power up the system.
	Disabled	RTC has no alarm function.
• Wake Up On LAN	Enabled	Allows the system to be powered on when a remote wake-up signal comes up to the WOL header from LAN adapter .
	Disabled	Does not allow wake-up on LAN.
• IRQ 8 Break Suspend	Enabled	Generates a clock event.
	Disabled	Does not generate a clock event.
• IRQ [3-7, 9-15], NMI	Enabled	Reload global timer.
	Disabled	Does not influence the global timer.
.....		
Parallel Port		



PNP/PCI Configuration Setup

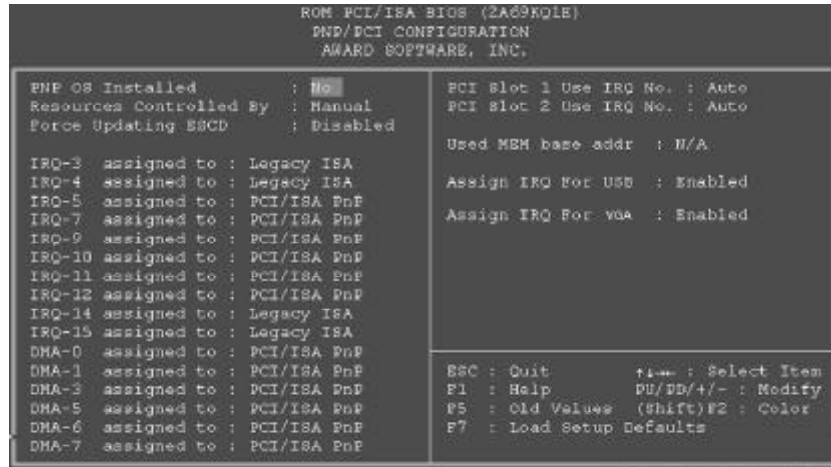


Figure-6 PNP/PCI Configuration Setup Menu

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

<u>Item</u>	<u>Option</u>	<u>Description</u>
• PNP OS Installed	Yes No	Device resources assigned by PnP OS. Device resources assigned by BIOS.
• Resources Controlled by	Manual Auto	Assigns the system resources (IRQ and DMA) manually. Assigns system resources (IRQ and DMA) automatically by BIOS.
• Force Updating ESCD	Enabled Disabled	The system BIOS will force updating ESCD once, then automatically set this item as Disabled. Disables the forced update ESCD function.
• IRQ-3~IRQ-15 assigned to	Legacy ISA PCI/ISA PnP	The specified IRQ-x will be assigned to Legacy ISA. The specified IRQ-x will be assigned to ISA or PCI.
• DMA-0~DMA-7 assigned to	Legacy ISA PCI/ISA PnP	The specified DMA-x will be assigned to Legacy ISA. The specified DMA-x will be assigned to ISA or PCI.
• PCI Slot 1/2 use IRQ No.	Auto,3,4,5,7,9 10,11,12,14,15	Assigns an IRQ for PCI slot1/2 manually or automatically.
• Used MEM base	C800/8 ~ 64K N/A	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 this option. Invalidates this feature.
• Assign IRQ for USB	Enabled Disabled	Assigns an IRQ for USB. If an USB device is used, Enable this item. Does not assign any IRQ for USB. If no USB device is used, disabling this item can release the IRQ.
• Assign IRQ For VGA	Enabled Disabled	Assigns the needed IRQ for the VGA card. Does not assign an IRQ for the VGA Card, in order to release the IRQ.



Integrated Peripherals

```

ROM PCI/ISA BIOS (2A69KQ1E)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode      : Enabled
IDE Primary Master PIO  : Auto
IDE Primary Slave PIO   : Auto
IDE Secondary Master PIO : Auto
IDE Secondary Slave PIO : Auto
IDE Primary Master UDMA : Auto
IDE Primary Slave UDMA  : Auto
IDE Secondary Master UDMA: Auto
IDE Secondary Slave UDMA: Auto
On-Chip Primary PCI IDE: Enabled
On-Chip Secondary PCI IDE: Enabled
USB Keyboard Support    : Disabled
Init Display First     : PCI Slot
POWER ON Function      : BUTTON ONLY

Onboard FDC Controller : Enabled

Onboard Serial Port 1  : 3F8/IRQ4
Onboard Serial Port 2  : 2F8/IRQ3
Serial Port 2 Mode     : Normal

Onboard Parallel Port  : 378/IRQ7
Parallel Port Mode     : SPP

PWRCN After FWR-Fail  : Off

ESC : Quit          +< : Select Item
F1  : Help          F9/PD/*/- : Modify
F5  : Old Values   (Shift)F2 : Color
F7  : Load Setup Defaults

```

Figure-7 Integrated Peripherals Menu

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

<u>Item</u>	<u>Option</u>	<u>Description</u>
● IDE HDD Block Mode	<i>Enabled</i>	Allows IDE HDD to read/write several sectors at once.
	<i>Disabled</i>	IDE HDD only reads/writes a sector once.
● IDE Primary/ Secondary Master/Slave PIO	<i>Mode 0 - 4</i>	Defines the IDE primary/secondary master/ slave PIO mode.
	<i>Auto</i>	The IDE PIO mode is defined by auto -detection.
● IDE Primary/ Secondary Master/Slave UDMA	<i>Auto</i>	Ultra DMA mode will be enabled if ultra DMA device is detected.
	<i>Disabled</i>	Disables this function.
● On-chip Primary/Secondary PCI IDE	<i>Enabled</i>	On-chip primary/secondary PCI IDE port is enabled.
	<i>Disabled</i>	On-chip primary/secondary PCI IDE port is disabled.
● USB Keyboard Support	<i>Enabled</i>	USB Keyboard Support is enabled.
	<i>Disabled</i>	USB Keyboard Support is disabled.
● Init Display First Support	<i>PCI Slot</i>	Initializes the PCI VGA first. If a PCI VGA is installed and the onboard AGP is enabled on the system, the first one initialized functions.
	<i>AGP</i>	Initializes the AGP first.
	<i>BUTTON Only</i>	Uses the power button to power up the system.
● POWER ON Function	<i>Password</i>	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.
	<i>Mouse Left</i>	The system can be powered up by double clicking the left mouse button.
	<i>Mouse Right</i>	The system can be powered up by double clicking the right mouse button. Note: If the option (Password/Mouse Left/ Mouse Right) is chosen, the jumper JP3 must be set as PIN1&PIN 2 closed, or it will prevent you from powering up your system.
• Onboard FDC Controller	<i>Enabled</i> <i>Disabled</i>	Onboard floppy disk controller is enabled. Onboard floppy disk controller is disabled.
• Onboard Serial port 1/2	<i>3F8/IRQ4,</i> <i>2F8/IRQ3,</i> <i>3E8/IRQ4,</i> <i>2E8/IRQ3,</i> <i>Auto</i>	Defines the onboard serial port address and required interrupt number.
• Serial Port 2 Mode	<i>Disabled,</i> <i>Normal</i> <i>ASKIR</i> <i>IrDA</i>	Onboard serial port is disabled. Defines Serial Port 2 as standard serial port. Supports SHARP ASK-IR protocol with maximum baud rate up to 57600bps. Supports IrDA version 1.0 SIR protocol with maximum baud rate up to 115.2Kbps.
• Onboard Parallel Port	<i>378/IRQ7,</i> <i>278/IRQ5,</i> <i>3BC/IRQ7</i> <i>Disabled</i>	Defines onboard parallel port address and IRQ channel. Onboard parallel port is disabled.
• Parallel Port Mode	<i>SPP</i> <i>EPP</i> <i>ECP,</i> <i>ECP+EPP</i>	Defines the parallel port mode as Standard Parallel Port (SPP), Enhanced Parallel Port (EPP), or Extended Capabilities Port (ECP).
• PWRON After PWR-Fail	<i>Off</i> <i>On</i> <i>Former-Sts</i>	The system remains OFF when the AC power supply resumes. The system will be powered up when the AC power supply resumes. Whatever the system status is, before the AC power supply cuts off, the system resumes in the previous status (ON/OFF) when the AC power supply resumes.



System Monitor

```

ROM PCI/ISA BIOS (2A69KQ1E)
System Monitor SETUP
AWARD SOFTWARE, INC.

Current System Temp.      : 30°C/86°F
Current CPU Temperature  : 39°C/102°F
Current CPUFAN Speed     : 4320 RPM
Current PSFAN Speed     : 2150 RPM
Current CHSFAN Speed    : 2010 RPM
VCCVID(CPU) Voltage     : 1.98 V
VTT(+1.5V) Voltage      : 1.37 V
+3.3V Voltage           : 3.32 V
+5V Voltage             : 4.83 V
+12V Voltage            : 11.79 V
-12V Voltage            : -13.50 V
-5V Voltage             : -5.85 V

ESC : Quit      +I+ : Select Item
F1  : Help     BU/PD/+/- : Modify
F5  : old values (Shift)F2 : Color
F7  : Load Setup Defaults

```

Figure-8 System Monitor Menu

The following describes the meaning of each item.

<u>Item</u>	<u>Current Data Shown</u>	<u>Description</u>
• Current System Temp.	30°C/ 86°C	The temperature inside the chassis.
Current CPU Temperature	39°C/ 102°C	The temperature of the CPU core.
• Current CPUFAN Speed	4320RPM	RPM(Revolution Per Minute)-speed of fan connected to the fan header CPUFAN or
Current PSFAN Speed	2150RPM	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.
Current CHSFAN Speed	2010RPM	
• VCCVID(CPU) Voltage	1.98V	Displays current Voltage values including all significant voltages of the mainboard.
VTT (+1.5) Voltage,	1.37V	
+ 3.3V Voltage	3.32V	+3.3V, +5V, +12V, -12V, -5V are voltages from the ATX power supply, VTT (+1.5)
+ 5V	4.83V	Voltage is GTL Termination Voltage from the on-board regulator, and VCCVID (CPU)
+12V	11.79V	Voltage is CPU Core Voltage from the on board switching Power Supply.
-12V	-13.50V	
- 5V	-5.85V	



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 CMOS Setup freely.

PASSWORD DISABLED

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

If you have selected '**Setup**' at 'Password Setting' from 'BIOS Features Setup' menu, you will be prompted for the password only when you enter 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-9 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	SECTOR	MODE
	ZONE					
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.

NORMAL

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

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

LBA (Logical Block Addressing) mode

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

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

LARGE mode

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

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

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

3. Remark

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

Boot with BIOS defaults

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



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Chapter 4

ATI Rage IIC/Pro AGP Graphics Description

The onboard AGP VGA is based on ATI Rage IIC/Pro Graphics Accelerator which brings excellent 2D graphics acceleration, high 3D performance and superior video quality for business and multimedia applications.

Features :

- AGP Bus, AGP V1.0 compliant.
- ATI Rage IIC/Pro 2D/3D/ Video acceleration chip.
- 2MB/4MB SGRAM on board and a SO-DIMM socket for extension use (manufacturing option).
- Excellent 2D Graphics for business applications.
- 3D performance unmatched in its class.
- High quality full screen and full speed video playback.
Supports multi-stream video for video conference.
- Integrated 200 MHz internal DAC, supports resolutions up to 1600x1200 at 76 Hz, true color operation up to 1280x1024 at 85 Hz(depend on video memory size).
- VGA Fully compatible, DPMS for power management support.
- DDC2B for monitoring plug and play support.
- Drivers for major operation systems and APIs including Windows 95/98, Windows NT /4.0, DirectX 5.0, etc.
- Drivers meet Microsoft rigorous WHQL criteria.
- Driver Auto-installation for Windows 95/98/NT.
- Popular games supported.

System Requirements:

Please refer to Chapter2 for information on connecting the VGA monitor on page 10, and how to disable/enable the onboard VGA on page 7. The system requirements are as stated below:

Monitor: Standard VGA monitor. For receiving all benefits from the graphics card, a high resolution multi-frequency monitor is needed.

Operating: Windows 95; Windows 98, Windows NT 4.0 etc.

System



Installation of ATI Rage IIC Display Drivers for Windows 95/98/NT

Before you begin

Note: If your onboard VGA is based on ATI Rage Pro, from the QDI motherboard utility CD, manually direct the path to DevDrv\VGA\Rage Pro for installation.

For all AGP features benefits, use Windows 95 OSR2.1 or the later version. To install Windows 95 OSR2.1, first install OSR2.0 then upgrade to OSR2.1 by installing USB supplement which is provided by Microsoft. You can contact the distributor of Windows 95 OSR2 for USB supplement. If your OS is Windows NT 4.0, Service Pack 3 should be installed before the actual installation of the AGP driver.

1. Installing Standard VGA Driver

It is recommended that you first install Windows 95/98/NT with this motherboard. After the installation of Windows 95/98/NT, the default standard VGA driver should have been installed.

If Windows 95(OSR2) has been installed previously on another system, when you first start up Windows 95 with this motherboard, the **Update Device Driver Wizard** window appears, click **next** (Do not click **Cancel**, or your system will hang!). Then click **finish** to install the standard VGA driver, direct the installation path to your \windows\system directory if Windows 95 CD is requested. Follow the prompt, it is not necessary to restart Windows 95, then proceed to step 2. Under Windows 98/NT, this incident will not occur.



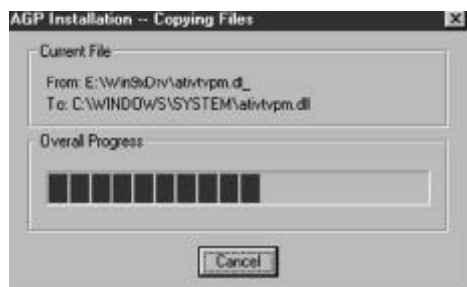


2. Installing the ATI Rage IIC display driver

Insert the QDI Motherboard Utility CD into the CD-ROM drive, run Auto.exe in the CD directory\DevDrv\VGA\Rage2C, a dialog box pops up as shown below:



Select '**Install Display Driver**', the ATI Rage IIC driver will be automatically installed. When completed, a message box pops up, prompting you to restart the computer. Press OK to restart the computer.





3. Installing DirectX

Under Windows 95, run auto.exe in the CD-ROM directory \DevDrv\VGA\Rage2C and select '**Install DirectX**' from the dialog box, then follow the prompts to install DirectX.



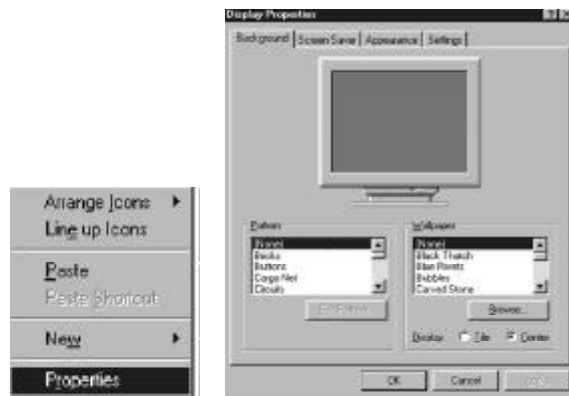
Note: If you try to install DirectX under Windows 98 or NT, a message box will popup, informing you that it is unnecessary to install them in these two operation systems. Please take note that the DirectX can only be auto-installed in Windows English, Simplified and Tradition Chinese versions. For the other language versions, please direct the path to **\DevDrv\VGA\Rage2C** and install the correspondent language version manually. You can read the Readme file in this path to receive the name of corresponding installation program.

Configuring Windows 95 Driver

To receive optimum visual display and performance, configure your Windows 95 driver once it is installed.

Click the right mouse button while the mouse is pointing at an empty area of Windows 95 desktop and select **Properties** from **Display Properties** Window, you can adjust screen resolution, color depth, monitor setting, refresh rate etc.

Refer to the sections below for a complete description of what options are available for each configuration tab. After making your changes, follow the on-screen prompts to complete the configuration.

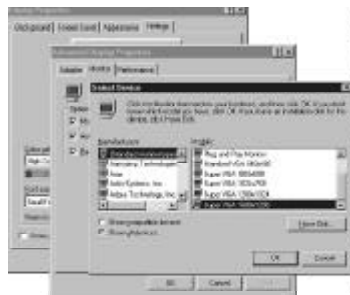




If you want to change the screen resolution or color depth, click on the **Settings** tab at the top of the screen. The below panel will now be displayed. Change the screen resolution using the “Desktop area” slider on the right side of the window. To change the color depth of the screen use the “Color palette” selector on the left side of the window.

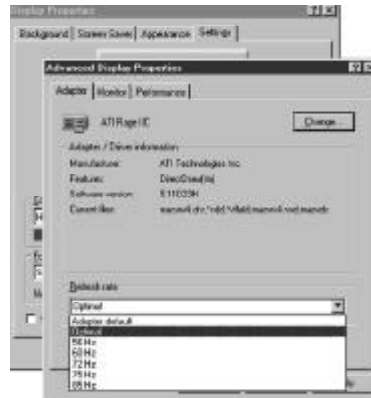


If you are unable to choose a resolution supported by your monitor, you may need to change your monitor settings by clicking the **Advanced Properties** button and clicking the **Monitor** tab. Click **Change** button for Monitor Type. Click the Manufacturer and Model that matches your monitor. If your monitor brand is not available, choose Standard monitor and VGA model.





If you want to change the refresh rate, click **Advanced Properties** button in the **Setting** panel, click the down arrow button on the Adapter active screen and click the number of refresh rate you hope to select, then click **OK** button. In general, the higher the refresh rate, the better the display quality. Be sure your monitor can support the refresh rate you choose!



Configuring Windows NT 4.0 Driver

To configure your Windows NT 4.0 driver once it is installed, follow the procedures listed below.

1. Right click on the Windows NT desktop and select **Properties**.
2. From the Display Properties dialog box, you can change your driver and monitor configurations. Click on the **Settings** tab located at the top of the dialog box, adjust the settings using the drop-down boxes and slider bars.
3. Follow the on-screen prompts for completing configuration.

Note: The picture which appears on your screen might be different from the chart above, this is the result of the driver updating.



Chapter 5

Creative Audio Description

On-board audio system is based on the high performance Creative ViBRA™ 6XV 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), 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, Midi, Mic or Mono.

PnP Support

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

Joystick Port

- Built-in Analog Joystick quad timer.



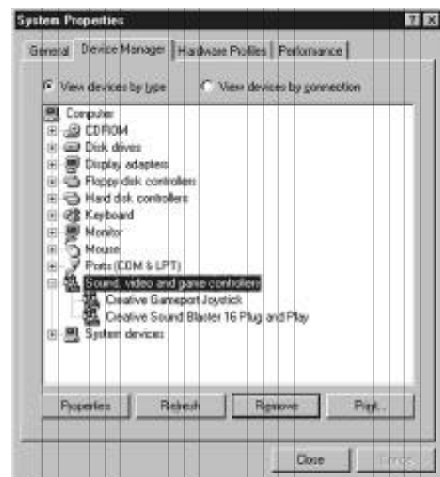
Creative Software Installation

I. Installation of Windows 95 driver

- Under Windows95, 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 the 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 drivers needed by your CD-ROM drive. 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 on the screen to complete the installation.

Note: The installation will not work 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 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 Windows NT 4.0 service park 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 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)

- Under Windows 95, insert the QDI Motherboard Utility CD into the CD-ROM drive.
- Direct the path to D:\DevDr\ 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 ” from 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 Manager 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. Onboard Device Drivers:
 - a. The ATI Rage IIC AGP drivers included in the directory \DevDrv\VGA\Rage2C are for the onboard VGA.
Run \DevDrv\VGA\Rage2C\Auto.exe for installation, referring to the installation guide in Chapter 4.
Note: If your onboard AGP is based on ATI Rage Pro, direct the path to \DevDrv\VGA\RagePro for installation, according to your OS.
 - b. The sound drivers included in the directory \DevDrv\Sound\CT2511 are for the onboard audio creative CT2511.
Find the proper driver for your OS in \DevDrv\Sound\CT2511, referring to the installation guide in Chapter 5.
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. Users can still use the ManageEasy application to configure the system if no monitor hardware is contained on the motherboard.



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

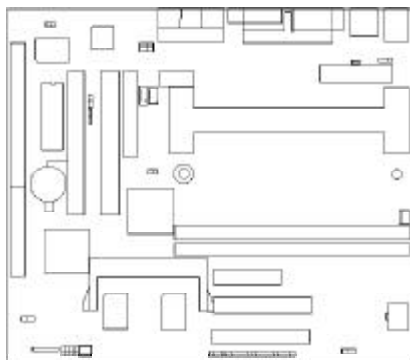
6. Documents for QDI Motherboard:
The files included in the directory \Doc are:
Adobe Acrobat Reader V3.0 —ar32e301.exe
ManageEasy Manuals —QMEV12.PDF.



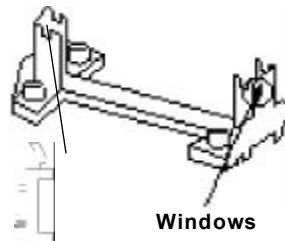
Appendix B.

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

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



Plastic Guide with
four nuts

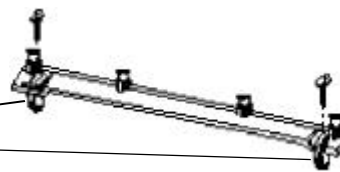
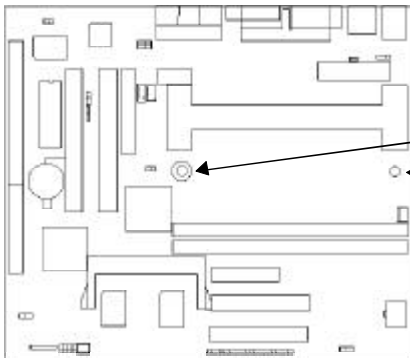


Windows

Celeron fittings

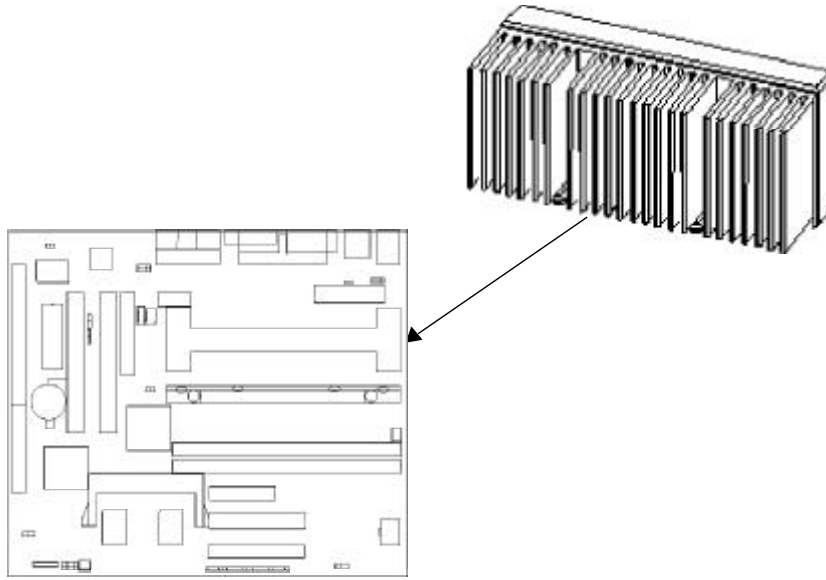
- Note: 1. Please choose four caps which match the motherboard.
2. If choosing to use Celeron™ Processor, snap-on Celeron fittings onto the Plastic Guide.
 3. Please note the Plastic Guide has one orientation. If one way doesn't fit, change the direction to the other way. Do not forcefully press the Plastic Guide onto the motherboard.

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

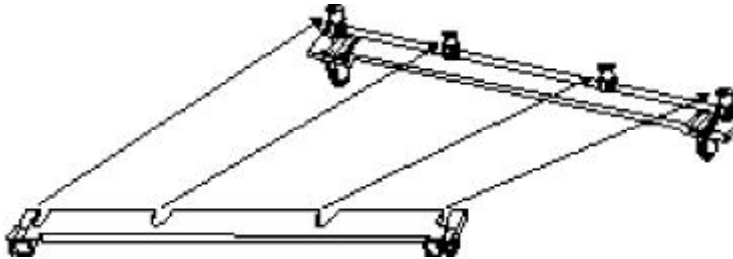




3. Insert Pentium® II or Celeron™ Processor in Slot1.

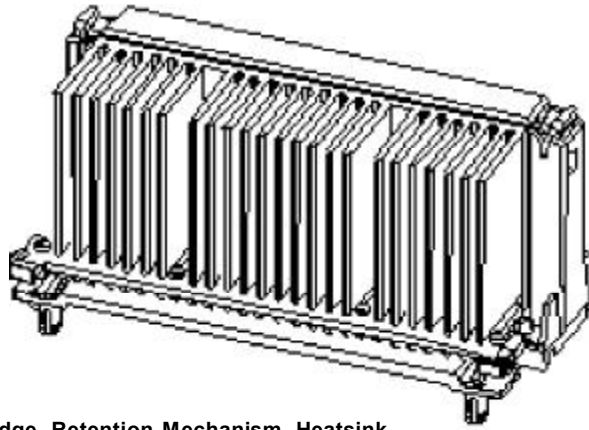


4. Clip Plastic Bar onto the HSSBASE through the fins on the processors' heatsink.





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



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

Remark:

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



Appendix C. Boot Logo

When you power on or reset your system, the picture shown 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.**



P/N : 430-01015-901-00
Manual ZillioX 6 Ver 1.0

**Board Layout of
ZillioX 6 V1.0**