

# Declaration of conformity



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

declares that the product

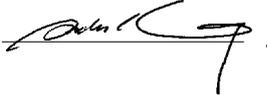
**Pentium®II Mainboard**  
**ZillioX 9**

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/1999

Printed Name : Anders Cheung Position/ Title : President

## Declaration of conformity



Trade Name: QDI Computer ( U . S . A . ) Inc.  
Model Name: ZillioX 9  
Responsible Party: QDI Computer ( U . S . A . ) Inc.  
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Equipment Classification: FCC Class B Subassembly  
Type of Product: AGP Pentium®II Mainboard  
**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 : 1999



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## SpeedEasy Quick Setup

### Procedures :

1. Correctly insert the Intel® Celeron™ PPGA370 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.
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:

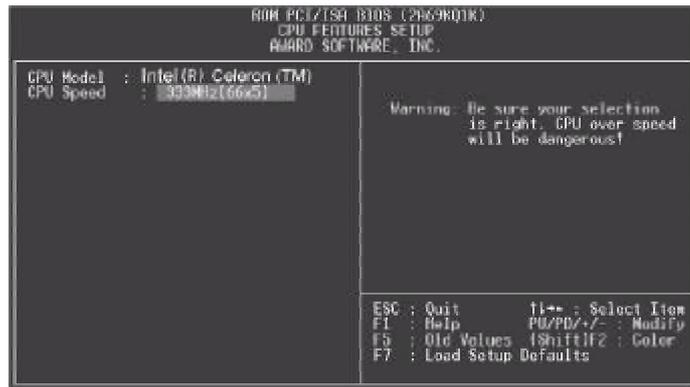


Figure - 1 SpeedEasy CPU Setup Menu

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 from the “SpeedEasy CPU SETUP” menu screen.

### **Warning:**

Do not set CPU frequency higher than its working frequency. If you do, we will not be responsible for any damages caused. Whether or not the system can be overclocked depends on the processor's capability. We do not guarantee the overclock system to be stable.

Users are provided with CPU overclock feature through “Jumper Emulation”. The host bus speed can be set as 66/68/75/83/100/103/112MHz. The multiplier can be chosen from 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8. However the multiplier setting will not function for bus ratio locked processor, only bus ratio unlocked processor.



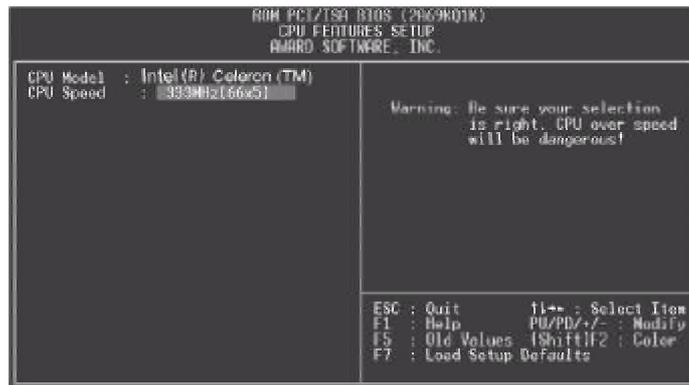
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# Chapter 1

## Introduction

### Overview

The ZillioX 9 green mainboard utilizes the Intel®440ZX AGPset and provides a highly integrated solution for fully compatible, high performance and cost-effective PC/ATX platform. It provides 66MHz and 100MHz system bus support for all Intel Celeron™ PPGA370 processors. Both 66MHz and 100MHz SDRAM 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. The green function is in compliance with the ACPI specification.

### Key Features

#### Form factor

- ATX form factor of 305mm x 193mm.

#### Microprocessor

- Supports all Intel®Celeron™ PPGA 370 processors at 300A/333/366/400/433/466 MHz or future processors.
- Supports 66MHz and 100MHz host bus speed.
- CPU core frequency = Bus speed x2, x2.5, x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8.
- 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 and 100MHz SDRAM 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 mode 4 timing.
- Supports "Ultra DMA/33" Synchronous DMA mode transferring up to 33 Mbytes/sec.
- Integrated 16x32bit buffer for IDE PCI Burst Transfers.

### On-board I/O

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

### Advanced features

- PCI 2.2 Specification compliant.
- Provides Anti-virus function.
- 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 wake-up on LAN and wake-up on internal/external modem.
- Supports auto fan off when the system enters suspend mode.
- On-board W83782D supports system monitoring (monitors CPU and system temperature, voltages and fan speed). (manufacturing option)
- Supports keyboard password power-on function.
- System status resumes after AC power failure.
- Protects the system BIOS from being attacked by severe virus such as CIH, by enabling "Flash Write Protect" in CMOS setup.

### BIOS

- Licensed advanced AWARD BIOS, supports 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.

**Expansion slots**

- 2 ISA slots and 5 PCI slots.
- 1 AGP Slot.



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## Chapter 2

### Installation Instructions

This section covers External Connectors, Jumper Settings and Memory Configuration. Refer to the mainboard layout chart for locations of all 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 mainboard and expansion cards might be seriously damaged.**

#### External Connectors

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

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



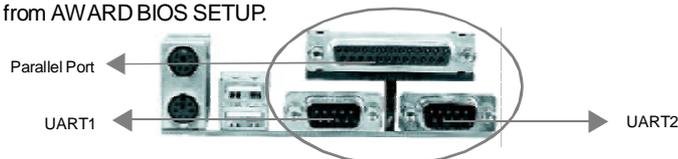
##### **USB1, USB2**

Two USB ports are available for connecting USB devices.



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

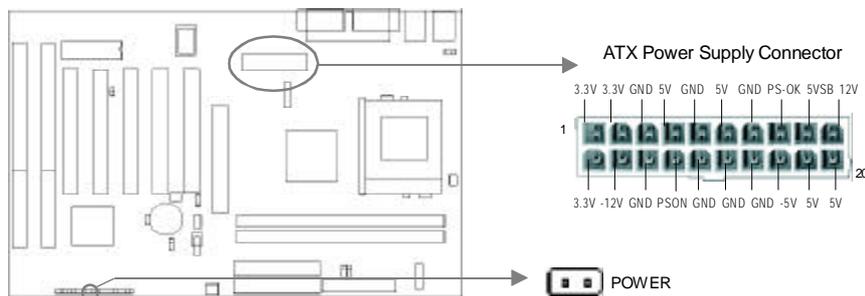
The parallel port connector can be connected to a parallel device such as a printer, while the serial port connectors can be connected to serial port devices such as a serial port mouse. You can enable/disable them and choose the IRQ or I/O address in "Integrated Peripherals" from AWARD BIOS SETUP.





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

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



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

### Hard Disk LED Connector (HD LED)

The connector connects to the case's IDE indicator LED indicating the activity status of IDE hard disk. The connector has an orientation. If one way doesn't work, try the other way.

### 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 two status. When the system is in power-off status, the LED is off. When the system is powered up, the LED is on. The connector has an orientation.

### Key-Lock Connector (KEY\_L)

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

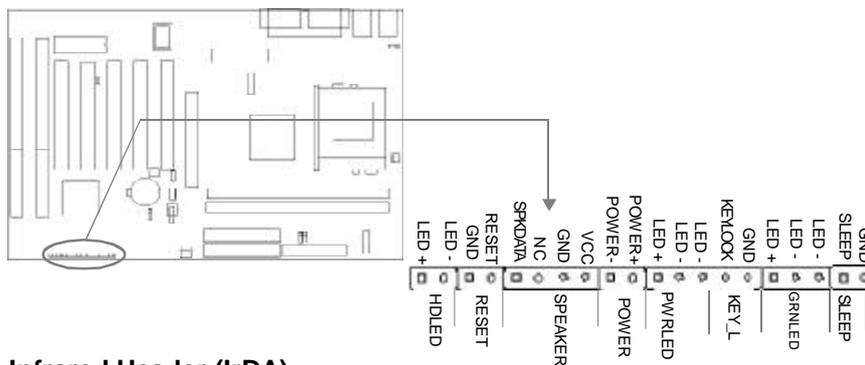


### ACPI LED Connector (GRNLED)

The ACPI LED has three status. When the system is in power-off status, the LED is off. When the system is powered up, the LED is on. When the system enters suspend mode, the LED will flash.

### Hardware Green Connector (SLEEP)

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



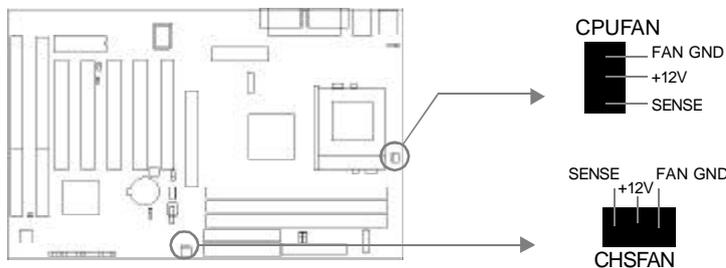
### Infrared Header (IrDA)

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



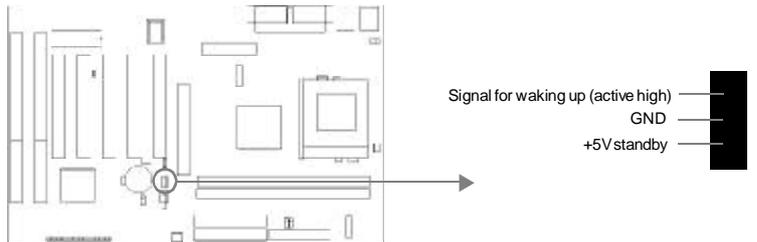
### Fan Connector (CPUFAN, CHSFAN)

The fan speed of these two fans can be detected and viewed in “System Monitor” section of the BIOS. They will be automatically turned off after the system enters suspend mode.



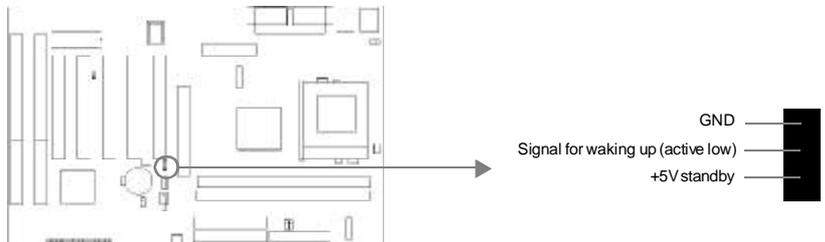
### Wake-Up On LAN (WOL)

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 "PowerOn by Ring/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.



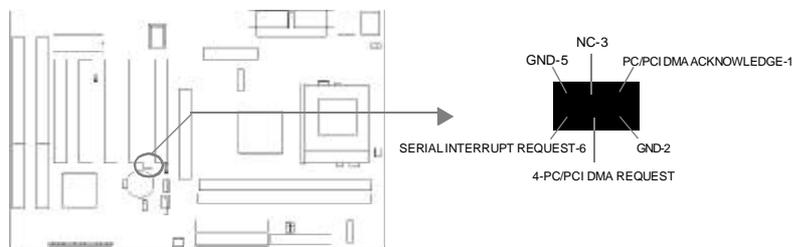
### Wake-Up On Internal Modem (WOM)

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 "PowerOn by Ring/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.



### Sound Connector (PC-PCI)

This connector is for the usage of PCI sound card.





### Expansion Slots & I/O Ports description

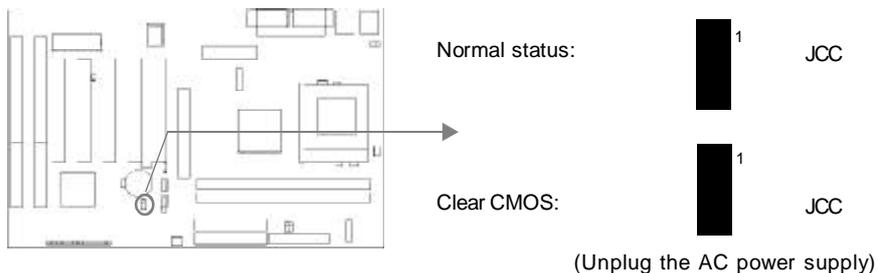
Slot / Port	Description
ISA 1	First ISA slot.
ISA 2	Second ISA slot.
PCI1	First PCI slot.
PCI2	Second PCI slot.
PCI3	Third PCI slot.
PCI4	Fourth PCI slot.
PCI5	Fifth PCI slot.
IDE1	Primary IDE port.
IDE2	Secondary IDE port.
FLOPPY	Floppy Drive Port.
AGP	Accelerated Graphics Port.

### Jumper Settings

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

### Clear CMOS (JCC)

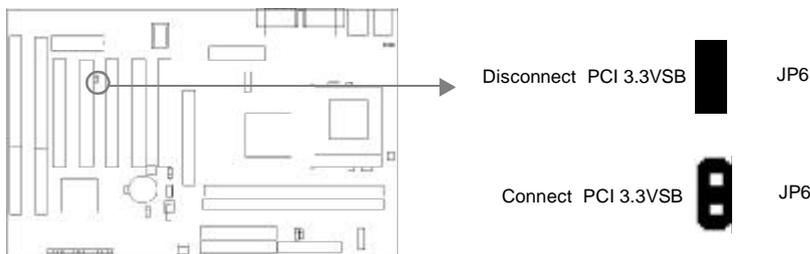
If you want to clear CMOS, unplug the AC power supply first, close JCC (pin1 & pin2) once, set JCC back to the normal status with pin2 & pin3 connected, then power on the system.





### Connect PCI 3.3VSB Voltage Jumper (JP6)

Setting JP6 open (default) can disconnect the 3.3VSB voltage to PCI slots. This can prevent the mainboard from being damaged if you add or remove expansion cards without unplugging the AC power supply. However, if you want to use the PCI 2.2 specification compliant expansion cards to wake up the system, for example, a network card which supports wake-up on LAN function but without the WOL header, you must set JP6 as closed. In order to implement this function, "Power On on PCI card" should also be enabled in "Power Management setup" section of the BIOS



### Selection of Front Side Bus (JFSB1, JFSB2)

There are two jumpers(JFSB1 and JFSB2) on the mainboard providing users with an option to select 66/100 MHz Front Side Bus. Refer to the chart below for the location of these two jumpers, and the table for information on how to set them.

JFSB2(reserved) JFSB1

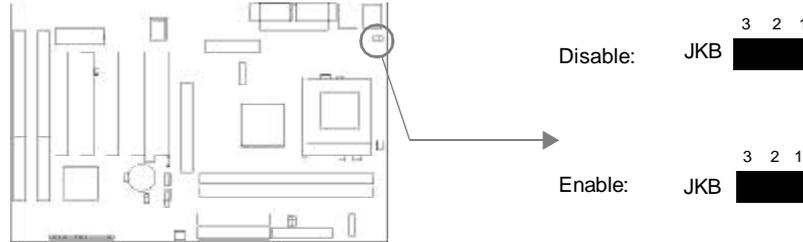
	1	1
	2	2
	3	3
JFSB1	CPU FSB	
Pin1 & Pin2 closed	Auto	
Pin2 & Pin3 closed	66MHz FSB	
All open	100MHz FSB	

If setting CPU FSB as Auto, the system detects the FSB automatically. If setting CPU FSB as 100MHz, the system will run at 100MHz FSB no matter what type of processor is used. With the system already using 100MHz FSB processor, setting CPU FSB as 100MHz enables the system to achieve higher performance. Please note, whether or not your system can be overclocked depends on your processor's capability. We do not guarantee the overclocking system to be stable.



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

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



In order to implement this function, set “POWER ON Function” to **Password/Button** or **Password** and set the keyboard power-on password in the “INTEGRATED PERIPHERALS” section of the BIOS. For detailed information, see the explanations in “INTERGATED PERIPHERALS” section of BIOS part.

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

### Memory Configuration

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

- Do not support registered memory.
- 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, 256MB in each DIMM socket.



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## Chapter 3

### BIOS Description

#### Utility Support:

##### FLASH.EXE

This is a flash memory write/read utility used for the purpose of upgrading 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, destroying the BIOS and resulting in 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 mainboard, you may therefore upgrade 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 Mainboard 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 mainboard.
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 mainboard. If not, the system will be damaged.

/g: Retrieves BIOS file from BIOS ROM.

Examples:

A:\FLASH.EXE BIOSfile.bin

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

A:\FLASH.EXE BIOSfile.bin /g

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



## AWARD BIOS Description

### Entering Setup

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

**Press <Del> to enter SETUP**

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



Figure-1 Main Menu

**Note:**The “System Monitor” item will not be displayed if there is no system monitor hardware on the mainboard.

### 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.

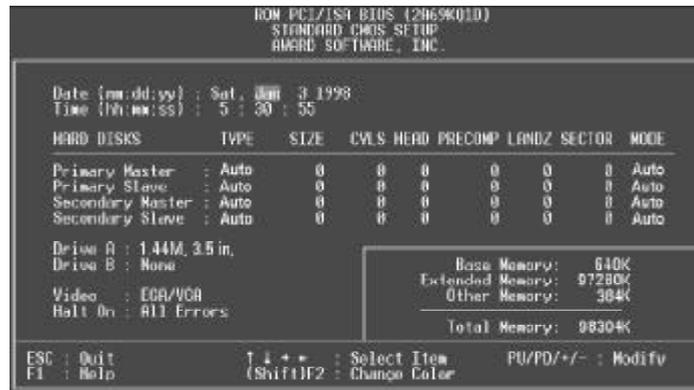


Figure-2 Standard CMOS Setup Menu

## Hard Disk

### Primary Master/Primary Slave/Secondary Master/Secondary Slave

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

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

## Video

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

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



## Halt On

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

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

## Memory

This is a Display-Only Category, determined by POST (Power On Self Test) of the BIOS.

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



### SpeedEasy CPU Setup

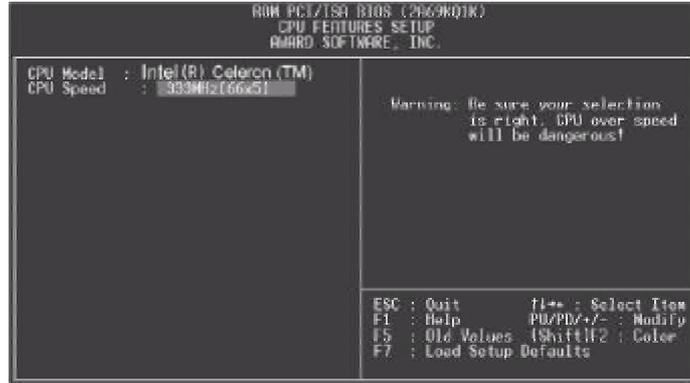


Figure-3 SpeedEasy CPU Setup

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

<u>Item</u>	<u>Option</u>	<u>Description</u>
• CPU Model	<i>Intel(R)</i> <i>Celeron(TM)</i>	BIOS can automatically detect the CPU model, therefore this item is shown only.
• CPU Speed	<i>200MHz (66x3)</i> .....  <i>Jumper</i>  <i>Emulation</i>	CPU frequency should be set according to the CPU type. For processors with 66MHz front-side bus you can choose from 200MHz (66X3), 233MHz(66X3.5), 266MHz (66x4), 300MHz(66X4.5), 333MHz (66X5), 366MHz(66x5.5), 400MHz(66x6), 433MHz(66x6.5), 466(66x7), or 500MHz(66x7.5). For processors with 100MHz front-side bus, you can select from 300MHz(100X3), 350MHz (100X3.5), 400MHz(100X4), 450MHz(100X4.5), or 500MHz(100X5).  This item is only for users who understand all the CPU parameters, i.e. Bus clock and Multiplier.  Users are provided with CPU overclock feature through "Jumper Emulation". The host bus speed can be set as 66/68/75/83/100/103/112MHz. The multiplier can be chosen from 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8. However the multiplier setting will not function for bus radio locked processor, only bus ratio unlocked processor.

**Warning:**

Do not set CPU frequency higher than its working frequency. If you do, we will not be responsible for any damages caused. Whether or not the system can be overclocked depends on the processor's capability. We do not guarantee the overclock system to be stable.



## BIOS Features Setup



Figure-4 BIOS Features Setup Menu

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

<u>Item</u>	<u>Option</u>	<u>Description</u>
• Anti-Virus Protection	<i>Enabled</i>	Activate automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
	<i>Disabled</i>	No warning message appears when anything attempts to access the boot sector or hard disk partition table. <b>Note: This function is available only for DOS and other OS that do not trap INT13.</b>
• 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 Checking	<i>Enabled</i>	Enables CPU L2 Cache ECC (Error Checking and Correction) function.
	<i>Disabled</i>	Disables CPU L2 Cache ECC function.
• 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	<i>C,A,SCSI,... C,CDROM,A LS/ZIP, C</i>	Any search sequence can be chosen for booting.
• Swap Floppy Drive	<i>Enabled</i>	Exchanges the assignment of A&B floppy drives.
• Boot Up Numlock Status	<i>Disabled</i>	The assignment of A&B floppy drives are normal.
	<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.
• Security Option	<i>System</i>	The system will not boot and access to Setup will be denied if the correct password is not entered when prompted.
	<i>Setup</i>	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	<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.
• Video BIOS Shadow	<i>Disabled</i>	Invalidates this feature.
	<i>Enabled</i>	Video BIOS will be copied to RAM. Video Shadow will increase the video speed.
• C8000~CBFFF Shadow: DC000~DFFFF Shadow:	<i>Disabled</i>	Video shadow is disabled.
	<i>Enabled</i>	Optional ROM will be copied to RAM by 16K bytes per unit.
• Delay For HDD 0~15 (Secs):	<i>Disabled</i>	The shadow function is disabled.
• Show Bootup Logo	<i>0~15</i>	Sets the pre-delay time for hard disk to be accessed by the system.
	<i>Disabled</i>	Enables the logo when system boots up.
• Flash Write Protect	<i>Enabled</i>	Logo will not be shown when system boots up.
	<i>Disabled</i>	Disabling this item allows you to upgrade the BIOS.
	<i>Enabled</i>	Does not allow you to upgrade the BIOS. Note: Enabling this item can protect the system BIOS from being attacked by severe virus such as CIH. Therefore disable this item only when wanting to flash BIOS, set this item Enabled (default) when completed.



## Chipset Features Setup



Figure-5 Chipset Features Setup Menu

The following indicates the options for 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 configures. <b>*Note: It is recommended that the "Enabled" option be chosen by common users.</b>
• EDO DRAM Speed Selection	50ns, 60ns	This item is of selected EDO DRAM read/write timing. Ensure 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 CAS# for the lead off page hit cycle. Page miss and row miss timing are not affected by this bit.
	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] line are setup several clocks in advance of RAS# assertion for page misses.
	1	Without additional wait state.
• SDRAM CAS Latency Time	2	Define the CLT timing parameter of SDRAM expressed in the bus speed.
	1	Latency Time=2 clocks
	3	Latency Time=3 clocks



• SDRAM Precharge Control	<i>Enabled</i>	Default setting is suggested.
	<i>Disabled</i>	
• Video BIOS Cacheable	<i>Enabled</i>	Beside conventional memory, video BIOS area is also cacheable.
	<i>Disabled</i>	Video BIOS area is not cacheable.
• Video RAM Cacheable	<i>Enabled</i>	Beside conventional memory, video RAM area is also cacheable.
	<i>Disabled</i>	Video RAM area is not cacheable.
• 8 Bit I / O Recovery Time.	<i>1~ 8</i>	Defines the ISA Bus 8 bit I/O operating recovery time.
	<i>NA</i>	8 bit I/O recovery time does not exist.
• 16 Bit I / O Recovery Time	<i>1~ 4</i>	Defines the ISA Bus 16 bit I/O operating recovery time.
	<i>NA</i>	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 PCI card.
• Passive Release	<i>Enabled</i>	Default setting is suggested.
	<i>Disabled</i>	
• Delayed Transaction	<i>Enabled</i>	Default setting is suggested.
	<i>Disabled</i>	
• AGP Aperture Size (MB)	<i>4~256</i>	Sets the effective size of the Graphics Aperture to be used in the particular PAC Configuration.
• Close Empty DIMM/PCI Clk	<i>Enabled</i>	Closes empty DIMM or PCI clock to reduce EMI.
	<i>Disabled</i>	Does not close empty DIMM or PCI clock.
• Spread Spectrum Modulated	<i>Enabled</i>	Enables Spread Spectrum Modulated to reduce EMI.
	<i>Disabled</i>	Disables Spread Spectrum Modulated.



## Power Management Setup



Figure-6 Power Management Setup Menu

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

<u>Item</u>	<u>Option</u>	<u>Description</u>
• ACPI function	<i>Enabled</i>	Validates ACPI function.
	<i>Disabled</i>	Invalidates 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 entering any PM mode e.g. Standby or Suspend.
• 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 off the V-SYNC & H - SYNC signals from VGA cards to monitor.
	<i>DPMS</i>	This function is enabled only for the VGA card supporting DPMS.
• 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 ~11</i>	Special Wake- up event for the Modem.
	<i>NA</i>	Invalidates this feature.



	Award BIOS	Description
• Doze Mode	<i>Disabled</i> <i>10Sec ~ 1 Hr</i>	The system never enters Doze mode. 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</i> <i>1 Min~ 1 Hr</i>	The system will never enter Standby mode. 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> <i>10Sec~ 1Hr</i>	The system never enters Suspend mode. Defines the continuous idle time before the system enters Suspend mode. If any items defined in "Reload Global Timer Events" are on and activated, the system will be woken up.
• HDD Power Down	<i>Disabled</i> <i>1~15 Min</i>	HDD' s motor remains on. 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.
• Throttle Duty Cycle	<i>Disabled</i> <i>12.5%</i> <i>25%</i> <i>37.5%</i> <i>50 %</i> <i>62.5%</i> <i>75%</i>	HDD' s motor remains on. Selects the duty cycle of the STPCLK# signal , slowing down the CPU speed when the system enters the green mode.
• PCI/VGA Act -Monitor	<i>Enabled</i>	VGA active reloads global timer.
• Soft-Off by PWR-BTTN	<i>Disabled</i> <i>Instant-Off</i> <i>Delay 4 Secs</i>	VGA active has no influence to global timer. The system will power off immediately once the "Power" button is pressed. The system will not power off until the "Power" button is pressed continuously for more than 4 seconds.
• PowerOn by Ring/LAN	<i>Enabled</i>	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, or when a remote wake up signal comes up to the WOL header from LAN adapter.
	<i>Disabled</i>	Does not allow wake up on LAN or wake up from internal/external modem.
• Power On on PCI Card	<i>Enabled</i>	By setting jumper JP6 close and simultaneously enabling this option, you can use the PCI 2.2 specification compaliant PCI card to wake up the system, for example, a network card which supports wake-up on LAN function but without the WOL header.



	<i>Disabled</i>	The PCI2.2 specification compliant PCI card can not be used to wake up the system if disabling this option.
• Resume by Alarm	<i>Enabled</i>	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.
	<i>Disabled</i>	RTC has no alarm function.
• IRQ 8 Break Suspend	<i>Enabled</i>	Generates a clock event.
• IRQ [3-7, 9-15], NMI	<i>Disabled</i>	Does not generate a clock event.
.....	<i>Enabled</i>	Reloads global timer.
Parallel Port	<i>Disabled</i>	Does not influence the global timer.



## PNP/PCI Configuration Setup

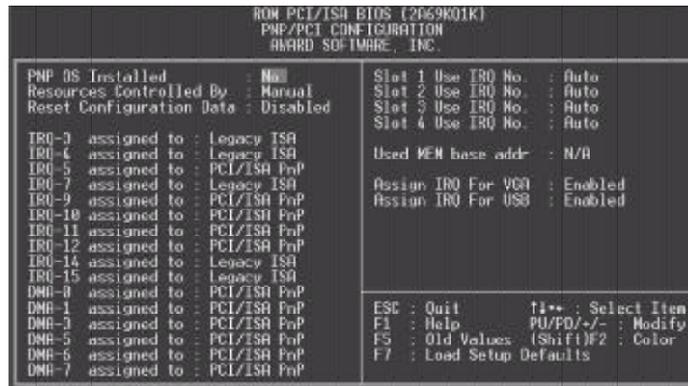


Figure-7 PNP/PCI Configuration Setup Menu

The following indicates the options for 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.
• Reset Configuration Data	Enabled Disabled	The system BIOS will reset configuration data once, then automatically set this item as Disabled. Disables the configuration data function.
• IRQ-3~IRQ-15 assigned to	Legacy ISA PCI/ISA PnP	The specified IRQ-x will be assigned to ISA only. The specified IRQ-x will be assigned to PNP ISA or PCI.
• DMA-0~DMA-7 assigned to	Legacy ISA PCI/ISA PnP	The specified DMA-x will be assigned to ISA only. The specified DMA-x will be assigned to PNP ISA or PCI.
• PCI Slot 1/2/3/4 IRQ No.	Auto,3,4,5,7,9 10,11,12,14,15	Assigns an IRQ for PCI slot1/2/3/4 manually or automatically.
• Used MEM base address	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 the options. Invalidates this feature.
• Assign IRQ for VGA	Enabled Disabled	Assigns an IRQ for USB. If an USB device is used, enable this item. Does not assign an IRQ for USB. If USB device isn' t used, disabling this item can release the IRQ.



- Assign IRQ for USB

*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



Figure-8 Integrated Peripherals Menu

The following indicates the options for 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	<i>PCI SLOT</i>	Initializes the PCI VGA first. If a PCI VGA card and an AGP card are installed together in the system, the one initialized first functions.
	<i>AGP</i>	Initializes the AGP first.
• POWER ON Function	<i>BUTTON ONLY</i>	Use the power button to power up the system.
	<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>Password/ Button</i>	Both the keyboard and the power button can be used to power up the system. <b>Note: If this option(Password) is chosen, the jumperJKB must be set as PIN1 &amp; PIN2 closed, or this will prevent you from powering up your system.</b>
• Onboard FDC Controller	<i>Enabled Disabled</i>	Onboard floppy disk controller is enabled. Onboard floppy disk controller is disabled.
• Onboard Serial 1/2	<i>3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto</i>	Defines the onboard serial port address and required interrupt number.  Onboard serial port address and IRQ are automatically assigned.
• Serial Port 2 Mode	<i>Disabled Normal ASKIR  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 version1.0 SIR protocol with maximum baud rate up to 115.2Kbps.
• Onboard Parallel Port	<i>378/IRQ7, 278/IRQ5, 3BC/IRQ7</i>	Defines onboard parallel port address and IRQ channel.
• Parallel Port Mode	<i>Disabled SPP EPP ECP, ECP+EPP</i>	Onboard parallel port is disabled. 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  On  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 remains in the previous status (ON/OFF) when the AC power supply resumes.

## System Monitor

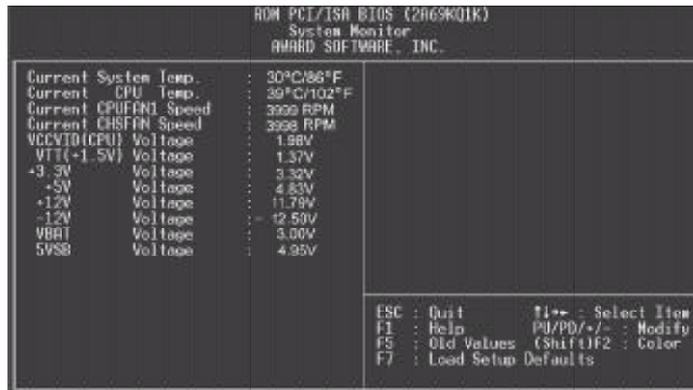


Figure-9 System Monitor Menu

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°F	Temperature inside the chassis.
• Current CPU Temp	39°C/102°C	Temperature of the CPU core.
• Current CPUFAN Speed	3999RPM	RPM( Revolution Per Minute) speed of fan connected to the fan header CPUFAN/ 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	3998RPM	
• VCCVID(CPU) Voltage	1.98V	Displays current Voltage values including all significant voltages of the mainboard. +3.3V, +5V, +12V, -12V and 5VSB 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 the CPU core voltage from the on board switching power supply. VBAT is the voltage of the onboard battery.
VTT(+1.5V) Voltage	1.37V	
+ 3.3V Voltage	3.32V	
+5V Voltage	4.83V	
+12V Voltage	11.79V	
-12V Voltage	-12.50V	
VBAT Voltage	3.00V	
5VSB Voltage	4.95V	



## Supervisor/ User Password

When this function is selected, the following message appears at the center of the screen to assist you in creating a password.

### ***ENTER PASSWORD***

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter BIOS Setup freely.

### ***PASSWORD DISABLED***

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

If you have selected "**Setup**" at "Security Option" from "BIOS Features Setup" menu, you will be prompted for the password only when you enter BIOS Setup.

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



## 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	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 set as "user", 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

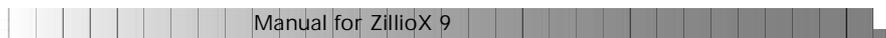
To support LBA or LARGE mode of HDDs, there must be some softwares involved which are located in Award HDD Service Routine(INT13h).It may fail to access a HDD with LBA (LARGE) mode selected if you are running under an Operating System which replaces the whole INT 13h.

## 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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## Appendix A

### QDI Mainboard Utility CD-ROM

A QDI Mainboard Utility CD-ROM is supplied with each mainboard. The contents used for this mainboard 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. PC-cillin Anti-Virus software:
  - Windows 95/98 English version is located in the directory \Pccillin\Win9x. Run Setup.exe for installation.
  - Windows 95/98 Chinese version is located in the directory \Pccillin\PWIn9x. Run Setup.exe for installation.
  - Windows NT English version is located in the directory \Pccillin\WinNT4.0. Run Setup.exe for installation. S/N is PNEF-9991-6558-5857-5535.
3. QDI Mainboard Utility:
  - The utilities located in the directory \Utility are:  
FLASH.EXE  
CBLOGO.EXE  
LFEXE  
Refer to the online help for information on how to use these utilities.
4. Documents for QDI Mainboard:
  - The files included in the directory \Doc are:  
Adobe Acrobat Reader V3.0 —ar32e301.exe  
ManageEasy Manuals —QMEV12.PDF.



## Appendix B. Boot Logo

When you power on or reset your system, the picture shown below will be displayed 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 Mainboard 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.**

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### **Item Checklist**

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

- ZillioX 9 mainboard
- QDI Mainboard Utility CD-ROM
- I/O shield
- 1 IDE ribbon cable
- 1 floppy ribbon cable
- User' s manual

### **Notice**

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**Board Layout of  
ZillioX 9 V1.0**