Declaration of conformity

CE

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

declares that the product

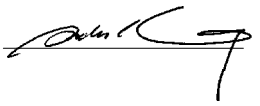
Pentium®II Mainboard
ZillioX 9

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.
Address:	41456 Christy Street Fremont, CA 94538
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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:

Dot 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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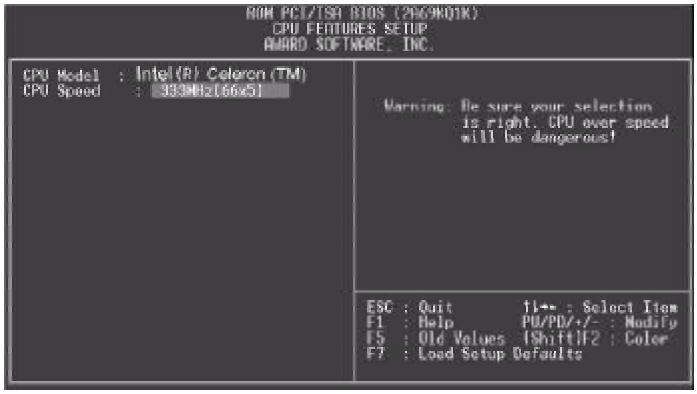

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Í ¹ ý "Jumper Emulation", Î Ã Ç ¸ Ó Ã $ á ©PU ³ Æ µ À Ü Ï Ú ª Ü Ë Ù È É Ò õ ö Ã 66/68/75/83/100/103/112MHz.± ¶ ê ¿ É ö Ã 2/2.5/3/3.5/4/4.5/5/5.5/6/6.5/7/7.5/8. È ¶ ¶ Ô ¼ ¶ ê ¿ ë à ÄPU, ´ Ë É ö Ã Ð § ± ¶ ê ¿ ö ¾ ö ¶ Ô Ë ë à ¶ ê ¿ ÄPUÓ Ð §

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

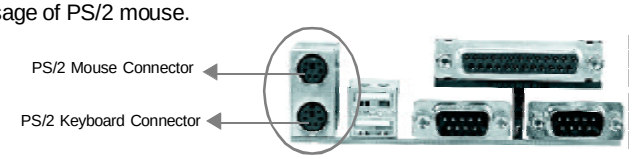
This section covers External Connectors, Jumper Settings and Memory Configuration. Refer to the mainboard layout chart for locations of all jumpers, external connectors, slots and I/O ports. Furthermore, this section lists all necessary connector pin assignments for your reference. The particular state 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

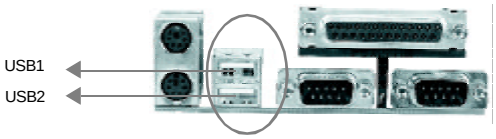
PS/2 Keyboard Connector, PS/2 Mouse Connector

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.



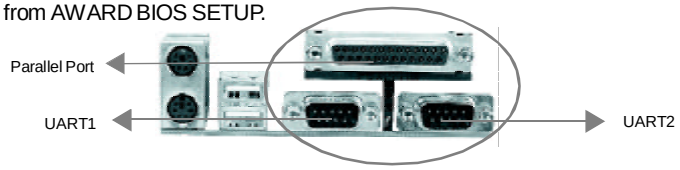
USB1, USB2

Two USB ports are available for connecting USB devices.



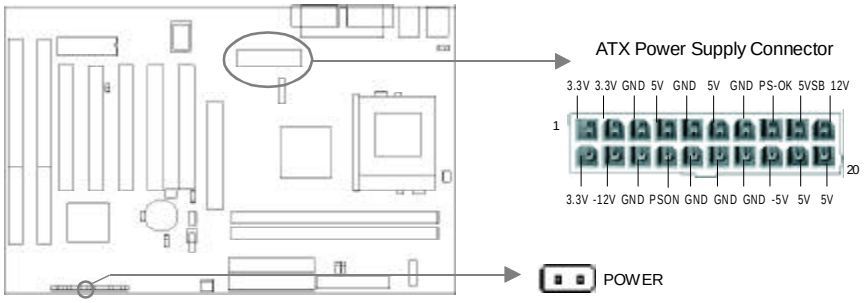
Parallel Port Connector and Serial Port Connector (UART1, UART2)

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)

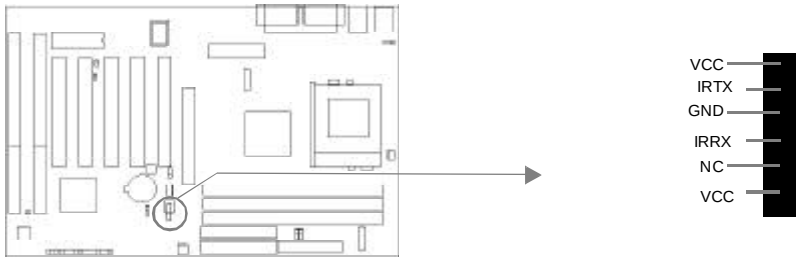
The ACPI LED has three status. When the system is in power-off status, the LED is off. When the system is powered up, the LED is on. When the system enters suspend mode, the LED will flash.

Hardware Green Connector (SLEEP)

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

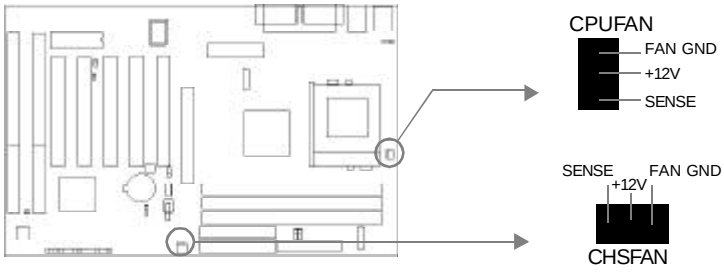
Infrared Header (IrDA)

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.



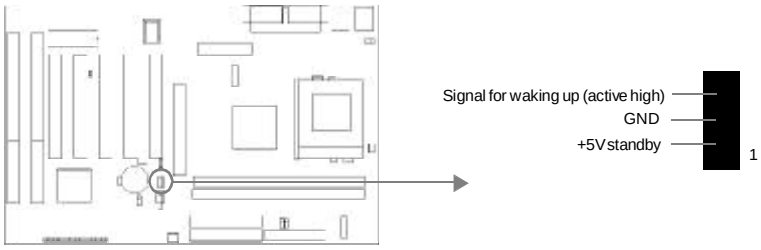
Fan Connector (CPUFAN, CHSFAN)

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.



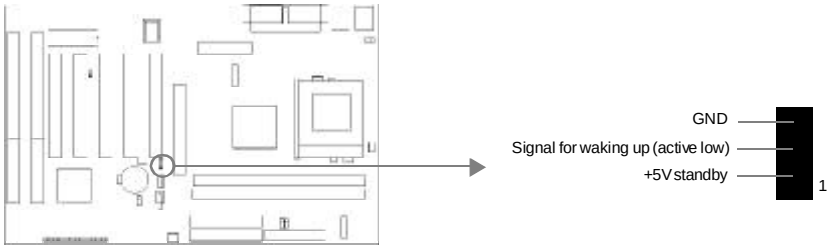
Wake-Up On LAN (WOL)

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.



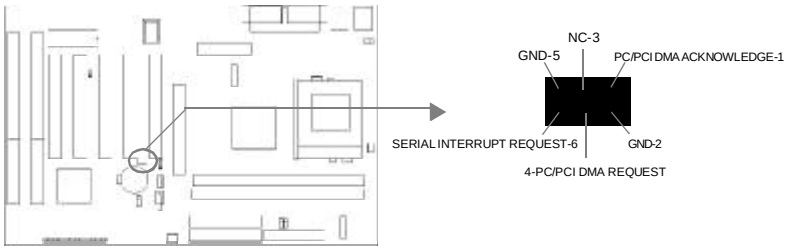
Wake-Up On Internal Modem (WOM)

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

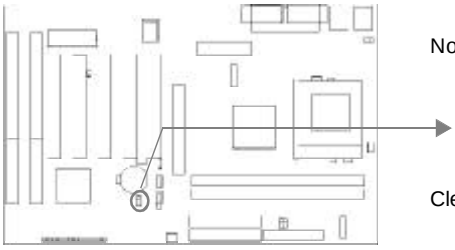
Slot / Port	Description
ISA 1	First ISA slot.
ISA 2	Second ISA slot.
PCI1	First PCI slot.
PCI2	Second PCI slot.
PCI3	Third PCI slot.
PCI4	Fourth PCI slot.
PCI5	Fifth PCI slot.
IDE1	Primary IDE port.
IDE2	Secondary IDE port.
FLOPPY	Floppy Drive Port.
AGP	Accelerated Graphics Port.

Jumper Settings

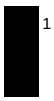
Jumpers are located on the mainboard, they represent, clear CMOS jumper JCC, enable keyboard password power-on function jumper JKB etc. Pin 1 for all jumpers are located on the side with a thick white line (Pin1→ ), refer to the mainboard' s silkscreen . Jumpers with three pins will be shown as  to represent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



Normal status:



JCC

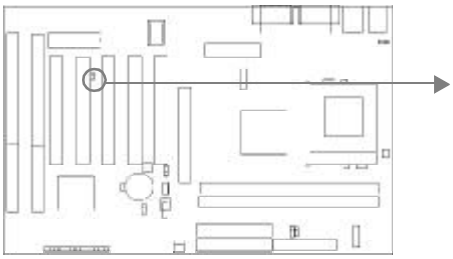
Clear CMOS:

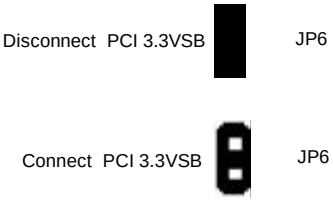
JCC

(Unplug the AC power supply)

Connect PCI 3.3VSB Voltage Jumper (JP6)

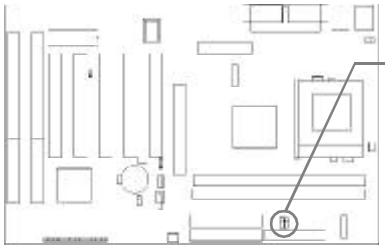
Setting JP6 open (default) can disconnect the 3.3VSB voltage to PCI slots. This can prevent the mainboard from being damaged if you add or remove expansion cards without unpluging the AC power supply. However, if you want to use the PCI 2.2 specification compliant expansion cards to wake up the system, 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.

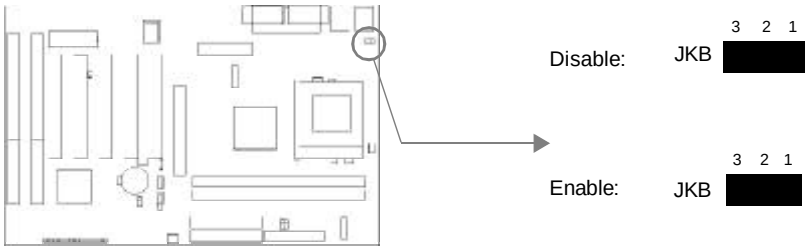


JFSB1	CPU FSB
Pin1 & Pin2 closed	Auto
Pin2 & Pin3 closed	66MHz FSB
All open	100MHz FSB

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.