Declaration of conformity

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

declares that the product

LegenX 9 Motherboard

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

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Equipment Classification:	FCC Class B Subassembly
Type of Product:	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 LegenX 9 green motherboard utilizes the Intel®440LX AGPset and provides a highly integrated solution for fully compatible, high performance PC/ATX platform. It provides 66MHz system bus support for Intel Celeron™ PPGA 370 processors. Both 66MHz SDRAM and 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 system management application is supplied to enable remote monitoring and configuration of the system.The green function is in compliance with the ACPI specification.

Key Features

Form factor

- ATX form factor of 305mm x 178mm.

Microprocessor

- Supports Intel®Celeron™ PPGA 370 processors at 300/333/366/400 MHz.
- Supports 66MHz host bus speed.
- CPU core supply voltage adjustable from 1.3V to 2.05V through on- board switching voltage regulator with VID(Voltage ID).

Chipset

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

System memory

- Provides three 168 pin 3.3V unbuffered DIMM sockets.
- Supports both 66MHz SDRAMs and EDO DIMMs.
- Minimum memory size is 8MB, maximum memory size is 768MB.
- SDRAM 64 bit data interface with ECC support.

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

- 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 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

- Provides Trend ChipAwayVirus®On Guard.
- Provides on-board PS/2 mouse and PS/2 keyboard ports.
- Two USB ports supported.
- Provides infrared interface.
- Supports Windows 95/98 software power-down.
- Supports external modem ring power-on.
- Supports wake-up on LAN and wake-up on internal modem.
- Supports auto fan off when the system enters suspend mode.
- On-board W83782D supports system monitoring (monitors CPU and system temperature,voltages, chassis intrusion and fan speed) (manufacturing option).
- Provides management application such as ManageEasy and LDCM(LANDesk® Client Manager) (manufacturing option).
- Supports keyboard password power-on function.

BIOS

- Licensed advanced AWARD BIOS, supports flash ROM BIOS with 2MB memory size, plug and play ready.
- Supports IDE CD-ROM or SCSI boot up.

Green function

- Supports ACPI (Advanced Configuration and Power Interface) 2.2 and ODPM (OS Directed Power Management).
- Supports three green modes: Doze, Standby and Suspend.

Expansion slots

- 3 ISA slots and 4 PCI slots.
- 1 AGP Slot

Chapter 2

Installation Instructions

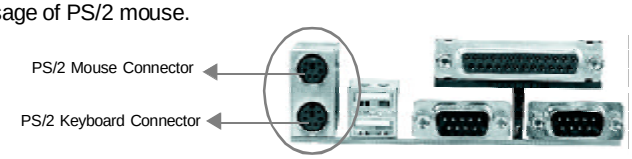
This section covers External Connectors, Jumper Settings and Memory Configuration. Refer to the motherboard layout chart for locations of all the jumpers, external connectors, slots and I/O ports. Furthermore, this section lists all necessary connector pin assignments for your reference. The particular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

External Connectors

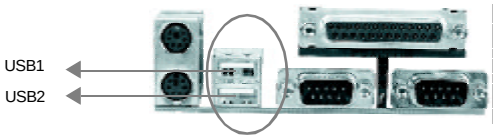
PS/2 Keyboard Connector & PS/2 Mouse Connector

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.



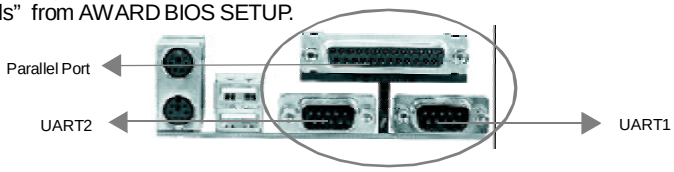
USB1 & USB2

Two USB ports are available for connecting USB devices.



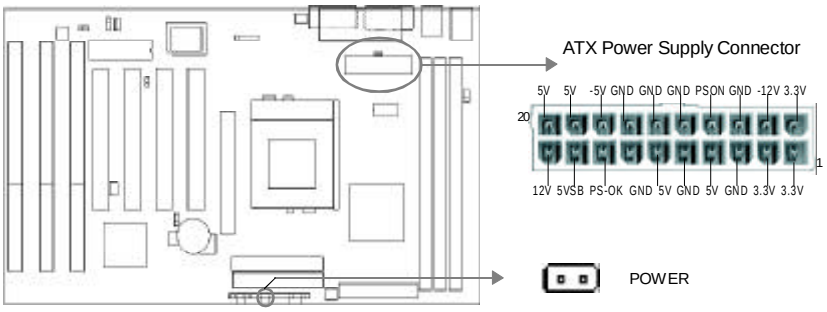
Parallel Port Connector & Serial Port Connector (UART1, UART2)

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. 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.

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)

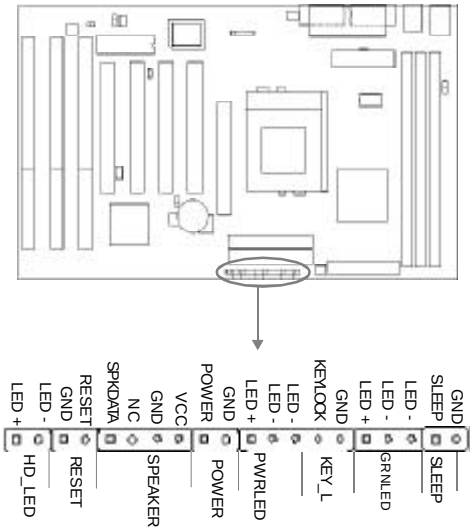
The connector can be connected to the keyboard lock switch on the case for locking the keyboard.

ACPI LED Connector (GRNLED)

The ACPI LED has four 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. When the system enters suspend mode, the LED will flash.

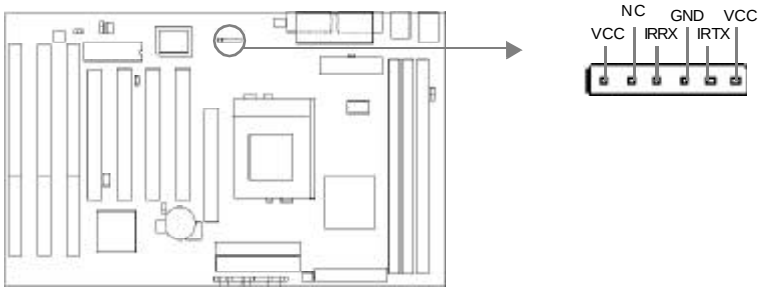
Hardware Green Connector (SLEEP)

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



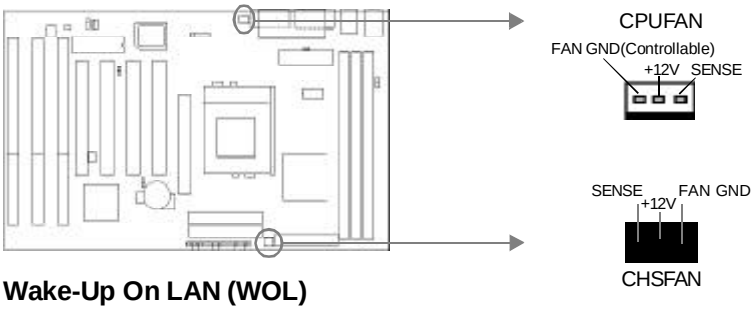
Infrared Header (IrDA)

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.



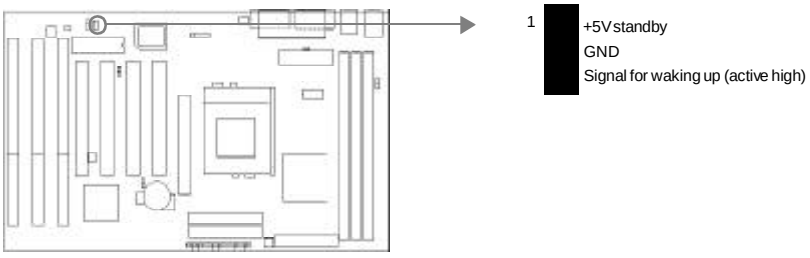
Fan Connector (CPUFAN & CHSFAN)

These two fans are controllable. They will be automatically turned off after the system enters suspend mode. You also can choose not to turn the CPUFAN off by setting "CPUFAN Off In Suspend" as Disabled in the "POWER MANAGEMENT SETUP" section of the BIOS. If the system monitor hardware is integrated on the motherboard, the system detects the fan speed, which can be viewed in "System Monitor" of the BIOS.



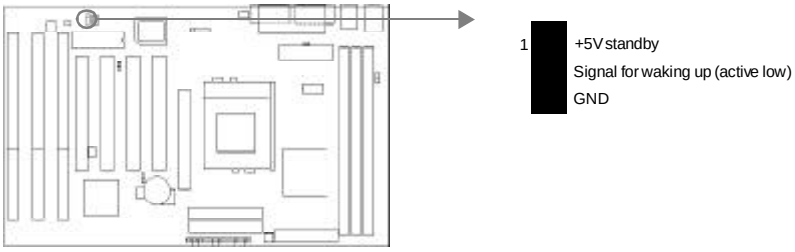
Wake-Up On LAN (WOL)

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 "Resume 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.



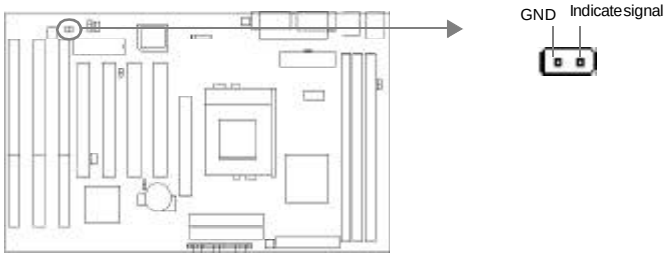
Wake-Up On Internal Modem (WOM)

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 "Resume by Ring/ LAN" to Enabled in the "POWER MANAGEMENT SETUP" section of the BIOS. Save & exit, then boot the operating system once to make sure this function takes effect.



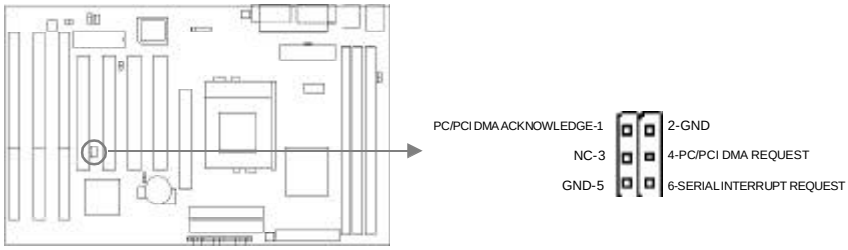
Chassis Security Switch (CHSSEC)

The connector connects to the chassis security switch on the case. The system can detect the chassis intrusion through the status of this connector. If the connector has been closed once, the system will record the status and indicate to the customer that the chassis has been opened. You can either get this information from "System Monitor" of the BIOS (optional) or QDI ManageEasy software.



Sound Connector (PC-PCI)

The PCI sound card utilizes this connector.



Expansion Slots & I/O Ports description

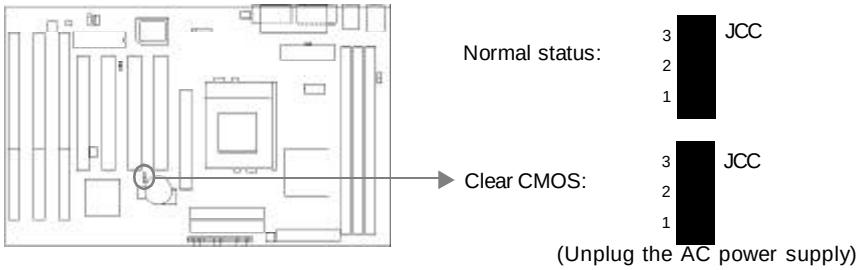
Slot / Port	Description
ISA 1	First ISA slot.
ISA 2	Second ISA slot.
ISA 3	Third ISA slot.
PCI1	First PCI slot.
PCI2	Second PCI slot.
PCI3	Third PCI slot.
PCI4	Fourth PCI slot.
IDE1	Primary IDE port.
IDE2	Secondary IDE port.
FLOPPY	Floppy Drive Port.
AGP	Accelerated Graphics Port.

Jumper Settings

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

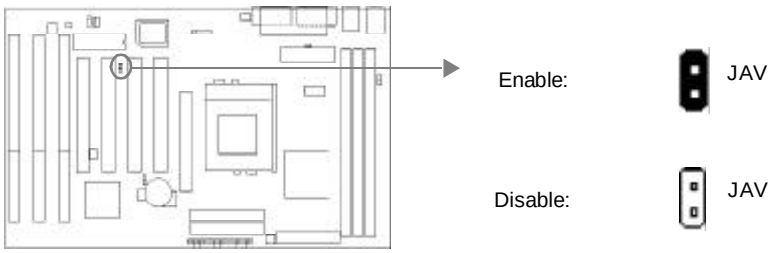
Clear CMOS (JCC)

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



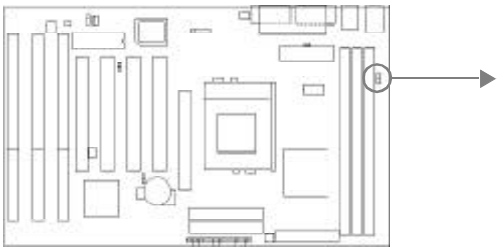
Flash BIOS jumper (JAV)

Disabling flash BIOS function can protect the system BIOS from being attacked by CIH virus. Therefore enable this function only when wanting to flash BIOS. Set JAV closed when flashing the BIOS, afterwards set it as normal, status open.



Enable keyboard password power-on function (JKB)

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



Disable: JKB 3 2 1

Enable: JKB 3 2 1

In order to implement this function, set "POWER ON Function" to **KB Only** or **KB & Button** then set the keyboard power-on password in the "INTEGRATED PERIPHERALS" section of the BIOS. Refer to BIOS description on page 25 for detailed information.

Please 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 the devices connected to the keyboard port, or you can't power up the system using the keyboard.
2.If you set JKB with pin2 & pin3 closed, set "POWER ON Function" to "Button Only" or "KB & Button", don't set it to "KB Only" or you will be unable to power up the system.
3. If you encounter problems above or forget the password, clear CMOS and set the jumper and BIOS option properly again.

Memory Configuration

This motherboard provides three 168 pin 3.3V un-buffered DIMM sockets to support a flexible memory size ranging from 8MB/384MB for SDRAM or from 8MB/768MB for EDO memory. The following set of rules allow optimum configuration.

Rules for populating a 440LX memory array:

- The DRAM Timing register, which provides the DRAM speed grade control for the entire memory array, must be programmed to use the timing of the slowest DRAMs installed.
- Possible SDRAM DIMM memory sizes are 8MB, 16MB, 32MB, 64MB, 128MB in each DIMM socket.
- Possible EDO DIMM memory sizes are 8MB, 16MB, 32MB, 64MB, 128MB, 256MB in each DIMM socket.

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Chapter 3
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, 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 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 located on the QDI Motherboard Utility CD onto your new bootable diskette.
3. Download the updated BIOS file from the Website (http://www.qdigrp.com). Please be sure to download the suitable BIOS file for your motherboard.
4. Uncompress the file download, copy the BIOS file (xx.bin) onto the bootable diskette, and note the checksum of this BIOS which is found in readme file.
5. Reboot the system from the bootable diskette created.
6. Then run the FLASH utility at the **A:** prompt. During the process, the system will prompt : ' Do you want to save the BIOS(Y/N)' . If you type ' Y' , the system will prompt for the BIOS name. The system will also display the checksum which should be exactly the same as the checksum viewed in the readme file. Don't turn off power or reset the system until the BIOS upgrade has been completed.

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

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

FLASH [BIOSfile] [/g]

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

<command> function definition:

c: clear CMOS;

p: clear PnP;

d: clear DMI.

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

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

/g: Retrieves BIOS file from BIOS ROM.

Examples:

A:\FLASH.EXE BIOSfile.bin

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

A:\FLASH.EXE BIOSfile.bin /g

Note: FLASH utility runs incorrectly at Windows DOS prompt.

AWARD BIOS Description

Entering Setup

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

Press <Del> to enter SETUP

Once you have entered, the Main Menu (Figure 1) 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.

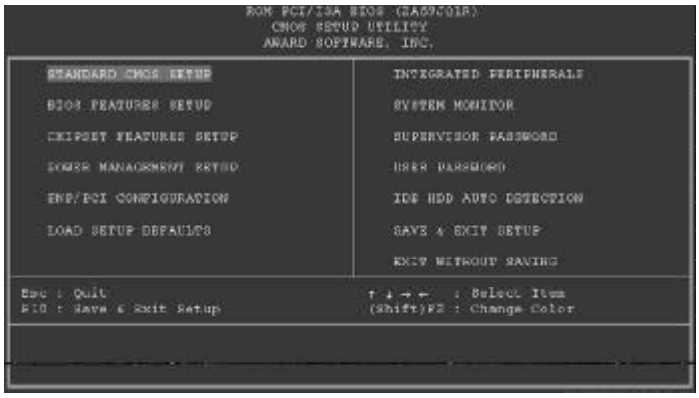

Figure-1 Main Menu

Note:The ‘System Monitor’ item will not be displayed if there is no W83782D system monitor supporting chip on the motherboard.

Load Setup Defaults

The Setup Defaults are common and efficient. It is recommended that users load the setup defaults first, then modify the needed configuration settings.

Standard CMOS Setup

The basic CMOS settings included in ‘Standard CMOS Setup’ are Date, Time, Hard Disk Drive Types, Floppy Disk Drive Types, and VGA etc. Use the arrow keys to highlight the item, then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Figure-2 Standard CMOS Setup Menu

Hard Disk

Primary Master/Primary Slave/Secondary Master/Secondary Slave

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 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 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.

BIOS Features Setup

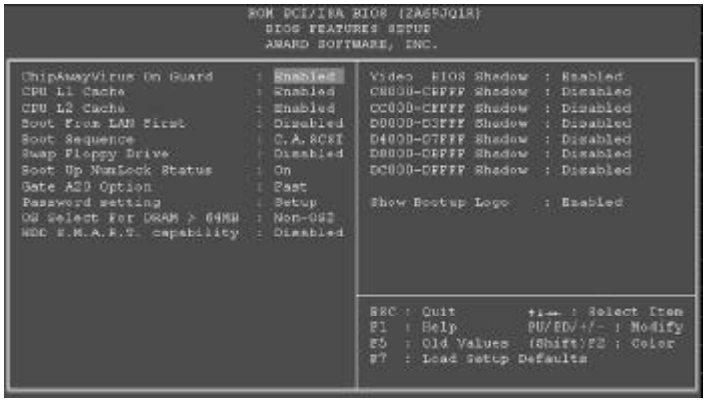

Figure-3 BIOS Features Setup Menu

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

Item	Option	Description
● ChipAway Virus On Guard	*Enabled*	Guards against boot virus threats early in the boot cycle, before they have a chance to load into your system, ensuring your computer boots to a clean operating system.
	Disabled	Invalidates this function.
● CPU L1/L2 Cache	*Enabled*	Enables CPU internal Level1/Level2 cache.
	Disabled	Disables CPU internal Level1/Level2 cache.
● Boot From LAN First	*Enabled*	Boot from LAN is ahead of any boot sequence selection (LAN Adapter must support this function).
	Disabled	Does not boot from LAN first.
● Boot Sequence	*C,A,SCSI,... C,CDROM,A LS/ZIP, C*	Any search sequency can be chosen for booting
● Swap Floppy Drive	*Enabled*	Exchanges the assignment of A&B floppy drives.
	Disabled	The assignment of A&B floppy drives are normal.
● Boot Up Numlock Status	*On*	Keypad is used as number keys.
	Off	Keypad is used as arrow keys.
● Gate A20 Option	*Normal*	The A20 signal is controlled by the keyboard controller or chipset hardware.
	Fast	Default setting. The A20 signal is controlled by Port 92 or the chipset specific method.

● Password Setting	*System*	The system will not boot and access to BIOS Setup will be denied if the correct password is not entered when prompted.
	Setup	The system will boot up, but access to BIOS Setup will be denied if the correct password is not entered when prompted.
● OS Select For DRAM>64MB	*Non-OS2*	If your operating system is not OS/2, please select this item.
	OS2	If system DRAM is more than 64MB and the operating system is OS/2, please select this item.
● HDD S.M.A.R.T Capability	Enabled	Enables S.M.A.R.T hard disk support.
	Disabled	Invalidates this feature.
● Video BIOS Shadow	*Enabled*	Video BIOS will be copied to RAM. Video Shadow will increase the video speed.
	Disabled	Video shadow is disabled.
● C8000~CBFFF Shadow:	*Enabled*	Optional ROM will be copied to RAM by 16K bytes per unit.
DC000-DFFFF Shadow:	*Disabled*	The shadow function is disabled.
● Show Bootup Logo	*Enabled*	Enables the logo when system boots up
	Disabled	Logo will not be shown when system boots up.

Chipset Features Setup

Figure-4 Chipset Features Setup Menu

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

Item	Option	Description
● Auto Configuration	*Enabled*	Automatically configures DRAM Timing according to the value of ' DRAM Speed Selection' .
	Disabled	Manually configures. ***Note: It is recommended that the ' Enabled' option be chosen by common users.**
● 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 .
● MA Wait State	*Slow*	One additional wait state is inserted before the assertion of the first MA and CAS#/RAS# during DRAM read or write leadoff cycles. This affects page hit, row miss and page miss cases.
	Fast	Without additional wait state.
● EDO RAS# To CAS# Delay	*2*	Adds a delay time between the assertion of RAS# and CAS#.
	3	Without additional delay time.
● EDO RAS# Precharge Time	*3*	DRAM RAS# Precharge time=3xSystem Clocks.
	4	DRAM RAS# Precharge time=4xSystem Clocks.
● EDO DRAM Read Burst	*x333* *x222*	The DRAM read burst timing depends on the type of DRAM on a per-row basis. Slower rates may be required to support slower DRAM.
● EDO DRAM Write Burst	*x222* *x333*	The DRAM write burst timing depends on the type of DRAM on a per-row basis. Slower rates may be required to support slower DRAM.

● DRAM ECC Select	*ECC*	Provides ECC (Error Checking and Correction) function.
	Non-ECC	Disables ECC function.
● CPU-To-PCI IDE Posting	*Enabled*	Enable CPU-To-PCI write posting.
	Disabled	Disable CPU-To-PCI write cycles to IDE.
● Video BIOS Cacheable	*Enabled*	Beside conventional memory, video BIOS area is also cacheable.
	Disabled	Video BIOS area is not cacheable.
● Video RAM Cacheable	*Enabled*	Besides conventional memory, video RAM area is also cacheable.
	Disabled	Video RAM area is not cacheable.
● 8 Bit I/ O Recovery Time.	*1~ 8*	Defines the ISA Bus 8 bit I/O operating recovery time.
	NA	8 bit I/O recovery time does not exist.
● 16 Bit I / O Recovery Time	*1~ 4*	Defines the ISA Bus 16 bit I/O operating recovery time.
	NA	16 bit I/O recovery time does not exist.
● Memory hole at 15M-16M	*Enabled*	Memory hole at 15-16M is reserved for expanded ISA card.
	Disabled	Does not set this memory hole.
● Passive Release	*Enabled*	Default setting is suggested.
	Disabled	
● Delayed Transaction	*Enabled*	Default setting is suggested.
	Disabled	
● AGP Aperture Size (MB)	*4~256*	Sets the effective size of the Graphics Aperture to be used in the particular PAC Configuration.
● SDRAM RAS-To CAS Delay	*Slow*	RAS-To-CAS Delay Time = 3 x System Clocks.
	Fast	RAS-To-CAS Delay Time = 2 x System Clocks.
● SDRAM RAS Precharge Time	*Slow*	RAS Precharge Time = 3 x System Clocks.
	Fast	RAS Precharge time = 2 x System Clocks.
● SDRAM CAS Latency Time	*2*	Defines the CLT timing parameter of SDRAM. Latency Time = 2xSystem Clocks.
	3	Latency Time = 3xSystem Clocks.
● Close Empty PCI/ AGP Clock	*Enabled*	Closes empty PCI/AGP Clock to reduce EMI.
	Disabled	Does not close empty PCI/AGP Clock.
● Close Empty DIMM Clock	*Enabled*	Close empty DIMM Clock to reduce EMI.
	Disabled	Does not close DIMM Clock.
● Spread Spectrum Modulated	*Enabled*	Enables Spread Spectrum Modulated to reduce EMI.
	Disabled	Disables Spread Spectrum Modulated.
● CPU Host Clock	*66/83*	The external frequency of the CPU.
	68/75MHz	

Power Management Setup

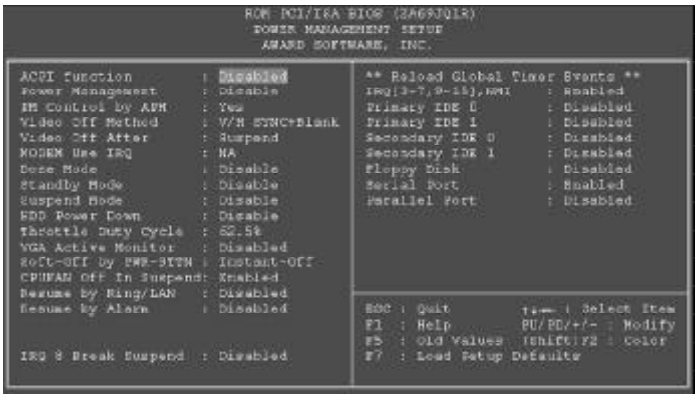

Figure-5 Power Management Setup Menu

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

Item	Option	Description
● ACPI function	*Disabled*	Invalidates ACPI function.
	Enabled	Validates ACPI function.
● Power Management	*Disabled*	Global Power Management (PM) will be disabled.
	User Define	Users can configure their own Power Management Timer.
	Min Saving	Pre - defined timer values are used. All timers are in their MAX values.
	Max Saving	Pre - defined timer values are used. All timers are in their MIN values.
● PM Control by APM	No	System BIOS will ignore APM when Power Management is enabled.
	Yes	System BIOS will wait for APM' s prompt before entering any PM mode e.g. Standby or Suspend. **Note: If APM is installed, and there is a task running, even when the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode. But if APM is not installed, this option has no effect.**
● Video Off Method	*Blank Screen*	The system BIOS will only blank off the screen when disabling video.
	V / H SYNC + Blank	In addition to Blank Screen, BIOS will also turn off the V-SYNC & H - SYNC signals from VGA

		cards to monitor.
	DPMS	This function is enabled only for the VGA card supporting DPMS. **Note: When the green monitor can' t detect the V/H-SYNC signals, the electron gun will be turned off.**
● Video Off After	*N/A*	System BIOS never turns off the screen.
	Suspend	Screen blanks after the system enters Suspend mode.
	Standby	Screen blanks after the system enters Standby mode.
	Doze	Screen blanks after the system enters Doze mode.
● MODEM Use IRQ	*3,7,5,7,9, 10,11*	Special wake-up event for Modems.
	NA	Invalidates this feature.
● Doze mode	*Disabled*	The system never enters Doze mode.
	1Min ~ 1 Hr	Defines the continuous idle time before the system enters Doze mode. If any items defined in ' Reload Global Timer Events' are On and activated, the system will be woken up.
● Standby Mode	*Disabled 1 Min ~ 1Hr*	The system never enters Standby mode. Defines the continuous idle time before the system enters Standby mode. If any items defined in ' Reload Global Timer Events' are On and activated, the system will be woken up.
● Suspend Mode	*Disabled*	The system never enters Suspend mode.
	Min ~ 1Hr	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	*Disabled*	HDD' s motor will not be off.
	1 ~15 Min	Defines the continuous HDD idle time before the HDD enters the power saving mode (motor off).
● Throttle Duty Cycle	*12.5%*	Selects the duty cycle of the STPCLK# signal , slowing down the CPU speed when the system enters the green mode.
	25%	
	37.5%	
	50 %	
	62.5%	
	75%	
	Disabled	Does not slow down the CPU Speed.
● 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/LAN	*Enabled*	Allows the system to be powered on when a ring indicator signal comes up to UART1 or UART2 from an external modem or comes up to WOM header from an internal modem card, or when a remote wake up signal comes up to the WOL header from LAN adapter.
	Disabled	Does not allow wake up on LAN or wake up from internal/external modem.
● Resume by Alarm	*Enabled*	RTC alarm can be used to generate a wake event to power up the system which is in power-off status. You can set any date, any time to power up the system.
	Disabled	RTC has no alarm function.
● IRQ8 Break suspend	*Enabled*	Genertes a clock event.
	Disabled	Does not generate a clock event.
● IRQ [3-7, 9-15], NMI	*Enabled*	Reloads global timer.
	Disabled	Does not influence the global timer.
.....		
Parallel Port		

PNP/PCI Configuration Setup

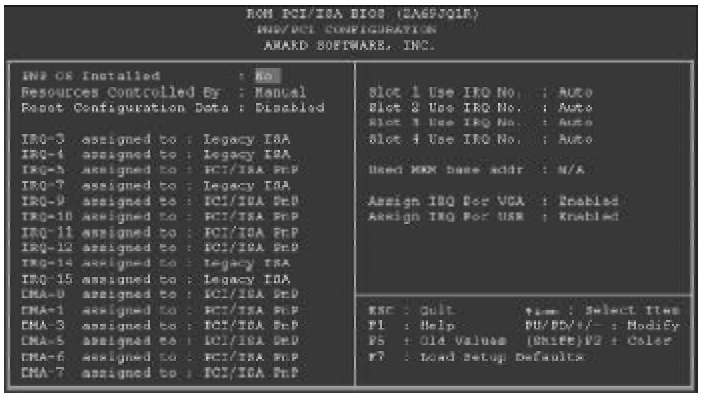

Figure-6 PNP/PCI Configuration Setup Menu

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

Item	Option	Description
● PNP OS Installed	*Yes*	Device resources assigned by PnP OS.
	No	Device resources assigned by BIOS.
● Resources Controlled By	*Manual*	Assigns the system resources (IRQ and DMA) manually .
	Auto	Assigns system resources (IRQ and DMA) automatically by BIOS.
● Reset Configuration Data	*Enabled*	The system BIOS will reset configuration data once, then automatically set this item as Disabled.
	Disabled	Disables the configuration data function.
● IRQ-3~IRQ-15 assigned to	*Legacy ISA*	The specified IRQ-x will be assigned to ISA only.
	PCI/ISA PnP	The specified IRQ-x will be assigned to ISA or PCI.
● DMA-0~DMA-7 assigned to	*Legacy ISA*	The specified DMA-x will be assigned to ISA only.
	PCI/ISA PnP	The specified DMA-x will be assigned to ISA or PCI.
● Slot 1/2/3/4 use IRQ No.	*Auto,3,4,5,7,9 10,11,12,14,15*	Assigns an IRQ for slot1/2/3/4 manually or automatically.
● Used MEM base addr	*C800/8 ~ 64K*	Claims a memory space to be occupied by legacy ISA card. The memory address and the memory size (8/16/32/64K) can be chosen from the options.
	N/A	Invalidates this feature.

● Assign IRQ for VGA	*Enabled*	Assigns the needed IRQ for the VGA Card.
	Disabled	Does not assign an IRQ for the VGA card, in order to release the IRQ.
● Assign IRQ for USB	*Enabled*	Assigns an IRQ for USB. If an USB device is used, enable this item.
	Disabled	Does not assign an IRQ for USB. If no USB device is used, disabling this item can release the IRQ.

Integrated Peripherals

Figure-7 Integrated Peripherals Menu

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

Item	Option	Description
● IDE HDD Block Mode	*Enabled*	Allows IDE HDD to read/write several sectors at once.
	Disabled	IDE HDD only reads/writes a sector once.
● IDE Primary/ Secondary Master/Slave PIO	*Mode 0 - 4*	Defines the IDE primary/secondary master/ slave PIO mode.
	Auto	The IDE PIO mode is defined by auto -detection.
● IDE Primary/ Secondary Master/Slave UDMA	*Auto*	Ultra DMA mode will be enabled if ultra DMA device is detected.
	Disabled	Disables this function.
● On-chip Primary/Secondary PCI IDE	*Enabled*	On-chip primary/secondary PCI IDE port is enabled.
	Disabled	On-chip primary/secondary PCI IDE port is disabled.
● USB Keyboard Support	*Enabled*	USB Keyboard Support is enabled.
	Disabled	USB Keyboard Support is disabled.
● Init Display First	*PCI SLOT*	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.
	AGP	Initializes the AGP first.
● POWER ON Function	*Button Only*	Use the power button to power up the system.
	KB Only	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 set to implement this function.
	KB & Button	Either the keyboard or the power button can be used to power on the system. Other than choosing this option, the password should be set to implement this function. **Note:If the option (KB Only) is chosen, the jumper JKB must be set as PIN1 & PIN2 closed, or you will be unable to power up the system.**
● Onboard FDC Controller	*Enabled*	Onboard floppy disk controller is enabled.
	Disabled	Onboard floppy disk controller is disabled.
● Onboard Serial 1/2	*3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3,*	Defines the onboard serial port address and required interrupt number.
	Auto	Onboard serial port address and IRQ are automatically assigned.
	Disabled	Onboard serial port is disabled.
● Serial Port 2 Mode	*Normal*	Defines Serial Port 2 as standard serial port.
	ASKIR	Supports SHARP ASK-IR protocol with maximum baud rate up to 57600bps.
	IrDA	Supports IrDA version1.0 SIR protocol with maxiumum baud rate up to 115.2Kbps.
● Onboard Parallel Port	*378/IRQ7, 278/IRQ5, 3BC/IRQ7*	Defines onboard parallel port address and IRQ channel.
	Disabled	Onboard parallel port is disabled.
● Parallel Port Mode	*SPP*	Defines the parallel port mode as,
	EPP	Standard Parallel Port (SPP), Enhanced
	ECP,	Parallel Port (EPP), or Extended
	ECP+EPP	Capabilities Port (ECP).

System Monitor

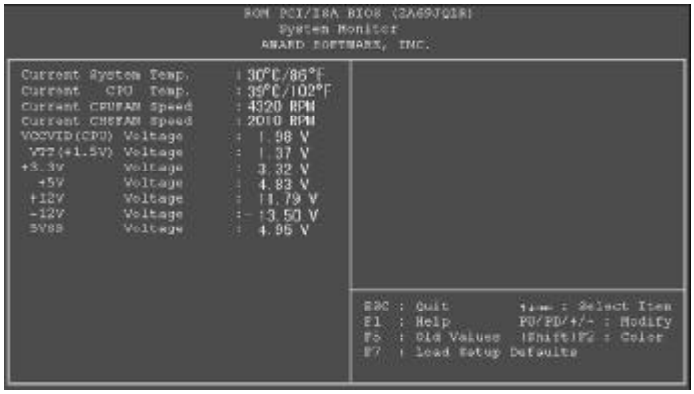

Figure-8 System Monitor Menu

The following describes the meaning of each item.

Item	Current Data Shown	Description
● Current System Temp.	*30^{0}C/ 86^{0}C*	The temperature inside the chassis.
● Current CPU Temp.	*39^{0}C/ 102^{0}C*	The temperature of the CPU core.
● Current CPUFAN Speed Current CHSFAN Speed	*4320RPM* *2010RPM*	RPM(Revolution Per Minute) speed of fan connected to the fan header CPUFAN or PSFAN. Fan speed value is based on an assumption that tachometer signal is two pulses per revolution; In other cases, you should regard it relatively.
● VCCVID (CPU) Voltage VTT (+1.5) Voltage, +3.3V Voltage, + 5V +12V -12V	*1.98V* *1.37V* *3.32V* *4.83V* *11.79V* *-13.50V*	Displays current Voltage values including all significant voltages of the motherboard. +3.3V, +5V, +12V, -12V, -5V are voltages from an ATX power supply, VTT (+1.5) Voltage is GTL Termination Voltage from the on-board regulator.
● 5VSB Voltage	*4.95V*	The voltage of 5V standby of the power supply.

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 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 whenever 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.

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

IDE HDD Auto Detection

The Enhanced IDE features 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 ZONE	SECTOR	MODE
Drive C: User(516MB)	1120	16	65535	1119	59	Normal
Drive D: None(203MB)	684	16	65535	685	38	--------

When HDD type is in ' user' type, the ' MODE' option will be available for users to select their own HDD mode.

2. **HDD Modes**

The Award BIOS supports 3 HDD modes: NORMAL, LBA and LARGE, also Auto detect.

NORMAL

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

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

LBA (Logical Block Addressing) mode

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

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

LARGE mode

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

BIOS tricks DOS (or other OS) 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.

Auto detect

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

3. **Remark**

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

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.

Appendix A

QDI Motherboard Utility CD-ROM

A QDI Motherboard Utility CD-ROM is supplied with each motherboard. The contents used for this motherboard are:

1. Chipset Dispatches:
   Intel Chipset Drivers included in the directory \ChipDrv\Intel can be used for this motherboard.

   a. Intel PIIX4 Driver, included in directory \ChipDrv\Intel\PIIX4
   This driver is for Windows 95/OSR2 which supports the latest Intel PCI devices such as the PCI IDE hard disk controller, PCI USB device etc. It can also remove the yellow question mark in the Device Manage of Windows 95 after installation.
   Run \ChipDrv\Intel\PIIX4\Setup.exe for installation.

   b. Intel Bus Master Driver, included in directory \ChipDrv\Intel\BMIDE
   It' s Intel Bus Master Driver for Windows 95, which can enhance the capability of IDE data transaction up to Ultra DMA/33MB supported by 440LX chipset or other ultimate chipset.
   Run \ChipDrv\Intel\BMIDE\Setup.exe for installation.

2. 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.

3. 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.

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

5. 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.
Boot Logo

When you power on or reset your system, the picture displayed below will appear on the screen.

If you press <**Esc**>, it switches to the booting message screen. Otherwise, it enters operating system directly. You can use ‘ **cblogo.exe**’ (included on the QDI Motherboard Utility CD) to replace it by any other logo prefered. 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 : 430-01015-501-00
Manual LegenX 9 Ver 1.0

Item Checklist

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

- ☑ LegenX 9 motherboard
- ☑ QDI Motherboard Utility CD-ROM
- ☑ Retention Module
- ☑ I/O shield
- ☑ 1 IDE ribbon cable
- ☑ 1 floppy ribbon cable
- ☑ User' s manual

Notice

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If you need any further information, please visit our web-site: "www.qdigrp.com".

Board Layout of
LegenX 9 V1.0