Declaration of conformity

$$C\;E$$

QUANTUM DESIGNS(HK) LTD.
20th Floor, Devon House, TaiKoo Place 979 Kings Road,
Quarry Bay, Hong Kong

declares that the product

Mainboard
KinetiZ 7B

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
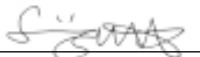
Signature : _____   Place / Date : __HONG KONG/2000__

Printed Name : ___Lv Yan___   Position/ Title : __Assistant President__

Declaration of conformity
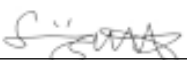
FC

Trade Name:	QDI Computer (U. S . A.) Inc.
Model Name:	KinetiZ 7B
Responsible Party:	QDI Computer (U. S. A.) Inc.
Address:	41456 Christy Street
	Fremont, CA 94538
Telephone:	(510) 668-4933
Facsimile:	(510) 668-4966

Equipment Classification:	FCC Class B Subassembly
Type of Product:	Mainboard
Manufacturer:	**Quantum Designs (HK) Inc.**
Address:	20/F, Devon 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 : _____2000_____

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⚠ **Caution**

1. Be sure to add some Silicone Grease between the Socket A processor and FAN to keep them fully contact, meanwhile to meet the heat sink requirement.

2. because the processor could overheat and damage both the processor and the motherboard, we recommend that you should have an AMD authorized fan to prevent overheating.

3. Never run the processor without the heatsink properly and firmly attached.

4. The AC power status of the system is indicated by the red LED under the three DIMM sockets. If the LED is on , adding or removing device like SDRAM memory is porhibited.

Installation de la carte mère KinetiZ 7B

1. Assurez-vous que votre ensemble est complet: carte mère, câbles IDE et FLOPPY, notice d'utilisation et CD-ROM d'installation.
2. Vérifiez que l'alimentation est débranchée et reliez-vous à la terre par une courroie à votre poignet. A défaut, maintenez le contact de vos deux mains avec un objet lui-même relié à la terre, ou une partie en métal de votre système.
3. Fixez la carte mère dans le boîtier grâce aux vis fournies avec celui-ci.
4. Si votre carte mère est munie de cavaliers, placez les en fonction des options que vous souhaitez utiliser: réglage de la fréquence du processeur si votre carte n'est pas SpeedEasy, fonction allumage par saisie du mot de passe…(voir le manuel, rubrique «configuration des cavaliers» pages 13 à 17)
5. Insérez le processeur dans son logement avec son ventilateur que vous brancherez au connecteur «CPUFAN».
6. Insérez la/les barrette(s) mémoire dans les slots DIMM.
7. Installez vos éventuelles cartes PCI et AMR dans les slots prévus à cet effet (voir page centrale du manuel).
8. Branchez vos périphériques IDE et FLOPPY sur les connecteurs prévus à cet effet grâce aux nappes fournies avec la carte. Vérifiez que le sens de branchement est correct (liseré rouge du câble sur la broche 1 du connecteur).
9. Reliez les câbles du boîtier aux connecteurs prévus à cet effet (Connecteur d'alimentation, LED de marche/arrêt, disque dur, haut-parleur…voir manuel pages 9 à 12). Refermez le boîtier.
10. Branchez les périphériques externes sur les sorties du fond de panier: clavier, souris PS/2, périphériques USB, moniteur, imprimante…(voir manuel pages 7-8)
11. Lorsque tous les éléments du système sont installés physiquement, rebranchez l'unité centrale.

Installation du système.

1. Démarrez votre système en pressant le bouton «POWER».
2. Pressez la touche «Suppr» pour entrer dans le setup du BIOS.
3. Dans le menu «SpeedEasy CPU Setup», réglez la vitesse de votre processeur (ATTENTION: il est recommandé de ne pas sélectionner une fréquence supérieure à celle de votre processeur, nous déclinons toute responsabilité pour les dommages qui en résulteraient)
4. Effectuez les autres réglages du BIOS selon votre configuration (nous vous conseillons fortement de maintenir les réglages par défaut afin d'éviter toute manipulation hasardeuse pouvant résulter en un dysfonctionnement). Pour plus d'informations sur les fonctions du BIOS, vous pouvez consulter la version française du manuel sur le CD-ROM.
5. Pressez la touche F10 ou choisissez «Save and exit» pour enregistrer vos paramètres et relancer la machine.

6.   Installez votre système d'exploitation

7.   Après installation, assurez-vous qu'il ne subsiste aucun conflit ou périphérique inconnu dans votre système.

8.   Installation des pilotes:

1.   Express install

Il est recommandé que les utilisateurs installent ce programme avec les options de base

A.   Pilote du chipset

B.   Pilote Audio codec AC97

C.   Pilote son PCI

Note: si le CT5880 est intégré, le CD2000 le détectera et l'option «PCI Sound Driver» apparaîtra à l'écran, cliquez sur cette option pour installer le pilote SoundBlaster PCI128 pour CT5880. Si seul le Codec AC97 est intégré, le CD2000 le détectera et l'option «Audio Codec Driver» apparaîtra à l'écran, cliquez sur cette option pour installer le pilote.

2.   Accessory

Les logiciels contenus dans ce répertoire sont :

A.   DirectX 7.0

B.   QDI ManageEasy

C.   PC-Cillin

3.   Browse CD

Vous pouvez voir le contenu du CD-ROM

Dans le répertoire Utility :

A.   AWDFLASH.EXE

B.   LF.EXE

Dans le répertoire Documents :

A.   Adobe Acrobat Reader V3.0 – Ar32e301.exe

B.   Manuels français *.doc

PC-Cillin 98

De nouveaux virus apparaissent régulièrement, accroissant les chances que votre PC soit infecté, aussi les anti-virus deviennent-ils essentiels. PC-Cillin 98 vous offre une protection active permanente ainsi que des possibilités de scan manuel et de nettoyage de virus. Rester à jour en terme de protection reste une partie cruciale de la défense contre les virus, PC-Cillin vous offre la possibilité de mises à jour régulières des listes de virus connus à partir du site de Trend Micro: http://www.trend.com/download.pattern.htm ou http://www.antivirus.com/download/pattern.htm

Installation de PC-Cillin 98

Pour Windows 95/98, lancer Setup.exe depuis le répertoire du CD-ROM \Pccillin\Win9x

Pour Windows NT 4.0, lancez Setup.exe depuis le répertoire du CD-ROM \Pccillin\WinNT4.0

Le numéro de série du produit est PN EF-9991-6558-5857-5535

QDI ManageEasy

Il est bien connu que garantir la sécurité et la fiabilité du PC est essentiel. Spécialement de nos jours, gérer et surveiller le matériel est encore plus important car les opérations et les échanges de données critiques entre ordinateurs et réseaux sont monnaie courante.

Avec le développement de l'ordinateur, le système devient de plus en plus complexe, en même temps le contrôle du matériel doit être renforcé. Aujourd'hui il est possible de surveiller et contrôler votre matériel sous Windows 9x ou NT. QDI ManageEasy est un outil système, comme un pont entre l'OS et le matériel, utilisé pour accéder au statut du matériel et exécuter des fonctions de contrôle. Ces fonctions vous permettent de voir plus d'une centaine d'informations basiques sur votre ordinateur et de surveiller des données clés sur la santé du PC en temps réel. QDI ManageEasy vous aide également à contrôler à distance des machines sous réseau local. Avec QDI ManageEasy, vous améliorez votre niveau de gestion.

Installation de QDI ManageEasy v2.0

Lancez Setup.exe depuis le répertoire du CD-ROM \QME2 pour installer QDI ManageEasy 2.0. L'assistant d'installation vous guidera pour le reste de l'installation.

Pour plus d'informations sur l'utilisation de QDI ManageEasy v2.0, référez-vous à l'aide en ligne de QDI ManageEasy v2.0.

Chapter 1
Introduction

Overview

The KinetiZ 7B green mainboard utilizes the VIA Apollo KT-133 chipset, providing a cost-effective PC/ATX platform with perfect capability and high performance to support Socket A AMD®Duron™/Athlon™ processors. The VIA®VT686B chipset integrates software configurable AC'97 audio and supports ATA/100 technology, also the KinetiZ 7B mainboard integrates Creative CT5880 PCI hardware sound(Optional) to provide high quality 3D surrounding sound effect. The VIA®KT-133 chipset provides some new features such as AGP 4X mode and Ultra-Fast 200MHz FSB. Equipped with three memory module sockets, 1.5GB PC100/133MHz SDRAM can be supported. It also provides advanced features such as wake-up on LAN and wake-up on internal/external modem function. Suspend to RAM, the optimal implementation of the Advanced Configuration and Power Interface(ACPI) specification, makes the PC's power consumption drop to the lowest possible level and enable quick wakeup. ManageEasy, our system management application is also supplied to enable remote monitoring and configuration of the system.

Key Features

Form factor
- ATX form factor of 305mm x225mm.

Microprocessor
- Supports AMD Socket A Athlon™ processors at 700/750/800/850/900/950MHz/ 1GHz and further processors.
- Supports AMD Socket A Duron™ processors at 600/650/700MHz and further processors.
- Supports 200MHz FSB
- On-board VDDQ(for AGP).
- Three channel power regulators for AMD Socket A Athlon™/Duron™ Processors.

Chipset
- Apollo KT-133 chipset: VT8363, VT82C686B.

System memory
- Provides three 3.3V 168 pin DIMM sockets, supports 1.5G PC100/133 SDRAM, VCM SDRAM.
- Minimum memory size is 8MB, maximum memory size is 1.5GB.

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 "Ultra DMA/66"Synchronous DMA mode transferring up to 66 Mbytes/sec.
- Supports "Ultra DMA/100"Synchronous DMA mode transferring up to 100 Mbytes/sec.
- Integrated 16x32bit buffer for IDE PCI Burst Transfers.

On-chip I/O
- 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 operated at a high voltage.
- Supports LS-120 floppy disk drive and Zip drive.
- All I/O ports can be enabled/disabled in the BIOS setup.

On-chip Audio
- Build in VT82C686B
- Direct Sound AC97 Audio
- AC97 2.1 Compliant

Creative® CT5880 PCI Hardware Sound(Optional)
- PCI 2.2 compliant
- 3D audio effects.
- 32-voice XG wavetable synthesizer
- Direct Sound/Music Hardware Accelerator
- Full-Duplex stereo
- Supports four speakers output based on Speaker-out jack and Line-in jack.

AGP SLOT
- Supports 4X mode & AGP 2.0 compliant.

Advanced features
- PCI 2.2 Specification compliant.
- Supports 3.3V/5V PCI bus interface.
- Provides Trend ChipAwayVirus® On Guard and PC-Cillin software with killing virus function.
- Provides four USB ports, on-board PS/2 mouse and PS/2 keyboard ports.
- Provides infrared interface.
- Support PC99 color- coding connector Specification.
- Supports software power-down (eg. Windows 98/Windows 2000)
- Supports wake-up on LAN and wake-up on internal/external modem.
- Supports auto fan off when the system enters suspend mode.
- supports system monitoring (monitors system temperature, CPU temperature, voltages, and fan speeds).

● Protects the system BIOS from being attacked by severe virus such as CIH, by enabling "BIOS-ProtectEasy" in CMOS setup or closing the Jumper "JAV".

BIOS
● Licensed advanced AWARD BIOS, supports flash ROM with 2M bit 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.
● Supports ACPI power status: S0, S1, S3(STR), S4, S5(Soft-off).

Expansion slots
● 1 ISA slot
● 5 PCI slots
● 1 AGP
● 1 AMR

Introduction to New Features

BIOS-ProtectEasy
The BIOS of the mainboard is contained inside the Flash ROM. Severe viruses such as CIH virus are so dangerous that it may overwrite the BIOS of the mainboard. If the BIOS has been damaged, the system will be unable to boot. We provide the following solution which protects the system BIOS from being attacked by such viruses.

There are two choices which can implement this function.
1. Set the jumper (JAV) as closed, the BIOS can not be overwritten.
2. Set the jumper (JAV) as open, meanwhile set "BIOS-ProtectEasy" as Enabled in AWARD BIOS CMOS Setup. In this way, the BIOS can not be overwritten, but the DMI information can be updated.

Ultra ATA/100
According to the previous ATA/IDE hard drive data transfer protocol, the signaling way to send data was in synchronous strobe mode by using the rising edge of the strobe signal. The Ultra ATA/33 protocol doubles the burst transfer rate from 16.6MB/s to 33.3MB/s, by using both the rising and falling edges of the strobe signal, and Ultra ATA/66 doubles the Ultra ATA burst transfer rate once again (from 33.3MB/s to 66.6MB/s) by reducing setup times and increasing the strobe rate. In the same way, the burst transfer rate of Ultra ATA/100 is higher than ATA/66 (from 66.6MB/s to 100MB/s)by reducing the pulse width from 30ns to 20ns and increasing the strobe rate.

It can be added into existing systems without the need for termination devices, new cable, or other hardware changes, industry implementation of ATA/100 will provide an inexpensive, simple, non-proprietary, high-speed method of host to storage access.

The 80-conductor, 40-pin cable standard in ATA/66 has enhanced reliability and bee carried forward to ATA/100. of course, backwards compatible with ATA/33.

PC-133 Memory

PC133 SDRAM Unbuffered DIMM defines the electrical and mechanical requirements for 168-pin, 3.3 Volt, 133MHz, 64/72-bit wide, Unbuffered Synchronous DRAM Dual In-Line Memory Modules (SDRAM DIMMs). Relatively , the peak bandwidth of PC-133 memory is the 33% higher than PC-100 memory. These latest SDRAMs are necessary to meet the enhanced 133MHz bus speed requirement.

Suspend to RAM

Suspend to RAM is a cost-effective, optimal implementation of the Advanced Configuration and Power Interface (ACPI) 1.0 specification, which makes a PC's power consumption drop to the lowest possible level and enables quick wakeup. When the system is in Suspend-to-RAM status, the system context is maintained in system memory, the system consumes only a small fraction of the power used for full operation. Instead of shutting down the system to save power when not in use and then having to reboot later, Suspend-to-RAM solution enables the system to quickly wake up, restoring all applications and features, enabling operation in a few seconds.

To implement this function, the following requirments are essential:

1. Power supply requirements: The current of 5VSB line of the power supply should be more than 0.75A.
2. Set the Jumper J12 with pin1&pin2 closed.
3. The BIOS option "ACPI function" should be enabled, and "ACPI Suspend Type" should be set as S3 in AWARD BIOS CMOS setup. Refer to page 28 for detailed information.
4. An ACPI-enabled operating system such as Windows 98 or Windows 2000 family is needed. Navigate to the CD-ROM drive from the MS-DOS Command Prompt and enter the following from the Win98 directory on the CD:

    D:\SETUP /P J

    (This manual assumes that your CD-ROM device driver letter is D:)
    Windows 98 will be installed with ACPI enabled.
    For Windows 98 SE and Windows 2000, just install them directly.
5. Three ways to enter Suspend-to-RAM status under ACPI-enabled Windows 98:
    - Click Start -> Shut down -> Standby to enable the system to enter Suspend-to-RAM status.
    - Click Start -> Setup -> Control Panel -> Power Management -> Advanced and choose Standby item, the system will enter Suspend-to-RAM status when you press power button.
    - From Power Management Properties in Control Panel, set the latency time in System Standby, the system will enter Suspend-to-RAM status when time out.

The same ways used to power up the system can be used to wake up the system from Suspend-to-RAM status. For example, pushing the power button, through the Wake-on-LAN, Wake-on-Modem function or RTC Alarm.

Creative CT5880 chipset (optional)

The CT5880 provides high-quality audio performance and low CPU utilization for you. Featuring 128-voice wave-table synthesis with very high sample rate converters. In addition, CT5880 supports localized three-dimensional sound immersion in headphone and four-speaker environments. The four-speaker based on speaker-out and line-in jack. the CT5880 also supports multiple algorithm levels of reverb and chorus effects on the wave-table sounds as well as spatial sound enhancement on MIDI and wave sounds in two speakers. Full duplex operation also allows simultaneous audio recording and play-back.

The KinetiZ 7B mainboard has two solution for on-board sound.

Soft-sound(AC'97codec)

Hardware-sound(CT5880)
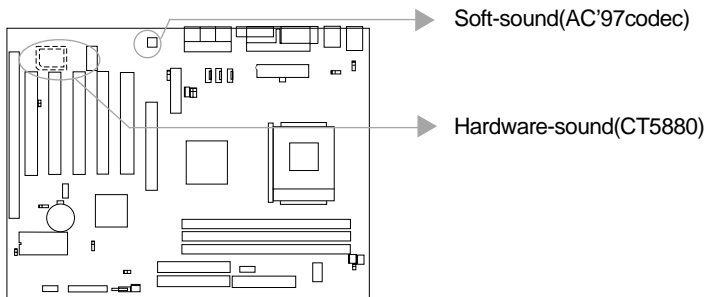
Note: If Creative® CT5880 chip is onboard, the first PCI only accept the slave card and the AMR slot only accept Primary MR card.

Installation of CT5880 driver

Before you install CT5880 chipset driver, please make sure that CT5880 chipset is onboard.

1. If CT5880 chipset is onboard, the CD2000 will detected it and the option " PCI Sound Driver" will appear on screen, you click this option to install CT5880 chipset driver .

2. If CT5880 is not onboard, the CD 2000 will detected AC97codec and the option " Audio Codec Driver" will appear on screen, you click this option to complete the installation
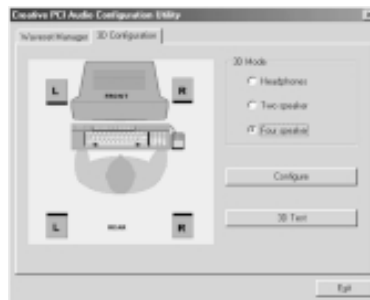
Note : After installation of CT5880dirver, you can select four speaker output function

Chapter 2

Installation Instructions

This section covers External Connectors and Jumper Settings. 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.

PS/2 Mouse Connector ◄

PS/2 Keyboard Connector ◄
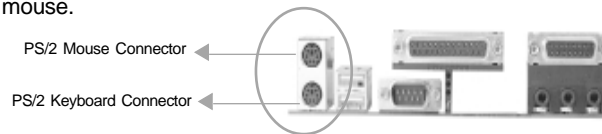
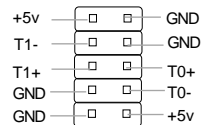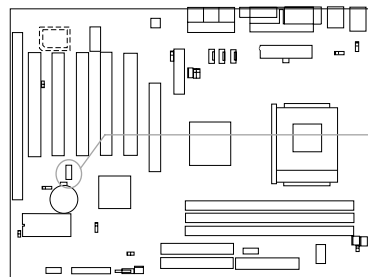### USB1, USB2

Two USB ports are available for connecting USB devices.

USB1 ◄
USB2 ◄

USB3, USB4

Two USB ports are not available on the back panel. Therefore, we provide a 10-pin ribbon cable with bracket to connect Built-in on-board USB header. (manufacturing option)

+5v	□ □	GND
T1-	□ □	GND
T1+	□ □	T0+
GND	□ □	T0-
GND	□ □	+5v

Parallel Port Connector and Serial Port Connector (UART1)

The parallel port connector can be connected to a parallel device such as a printer, while the serial port connector can be connected to a serial port device 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.

Parallel Port

UART1
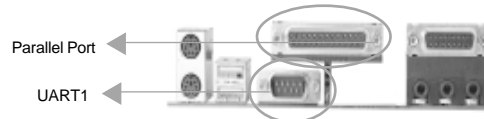
UART2

The serial port UART2 is not available on the back panel. Therefore, we provide a 9-pin ribbon cable with bracket for UART2 port. (manufacturing option)

1

UART2
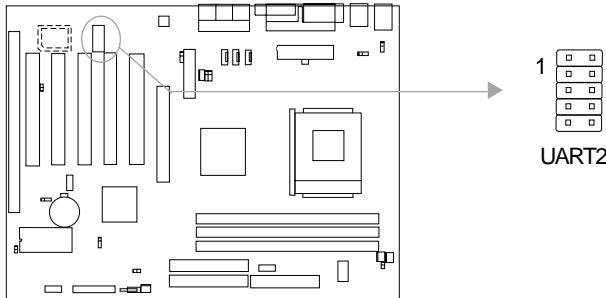
Line-in jack(or Rear out jack), Microphone-in jack, Speaker-out jack and

MIDI/Joystick connector

The Line-in jack can be connected to devices such as a cassette or minidisc player for playback or recording. The Microphone-in jack can be connected to a microphone for voice input. The Speaker-out jack allows you to connect speakers or headphones for audio output from the internal amplifier.

Note: if you choose four speaker output in CT5880 configuration, the Rear out jack replaces Line-in jack to connect powered speakers for audio output.

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

MIDI/Joystick

Speaker out

Line in(or Rear out) jact

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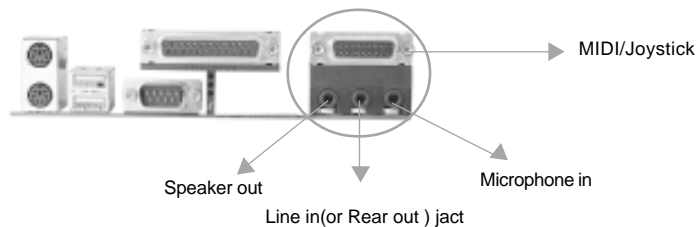
ATX Power Supply Connector & Power Switch (POWER SW)

Be sure to connect the power supply plug to this connector in its proper orientation. The power switch (POWER SW) 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.

ATX Power Supply Connector

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

1

20

3.3V -12V GND PSON GND GND GND -5V 5V 5V

POWER SW

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)

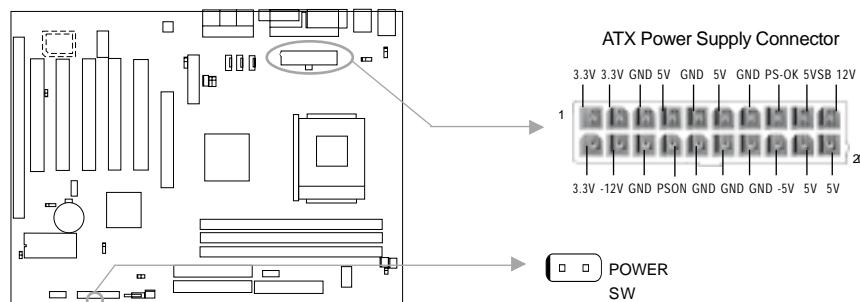The connector connects to the case's IDE indicator LED indicating the activity status of IDE hard disk. The connector has an orientation. If one way doesn't work, try the other way.

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.

ACPI LED Connector (ACPI_LED)(Reserved)

The ACPI LED is double-color lights with three pins. Pin1&Pin2 drive different color lights. If Pin1 drives the yellow light , Pin2 drives the green light, the following status will come out. When the system is in power up status, the LED is green on. When the system is in suspend status, the LED is green blink. When the system is in suspend to RAM status, the LED is orange on. When the system is in soft-off status, the LED is off.

GREEN LED Connector (GREEN_LED)

The GREEN LED has five status. When the system is in three status (including power up, ACPI suspend, soft-off), the LED is off. When the system is in suspend to RAM status, the LED is on. When the system is in APM(advanced power management) suspend, the LED is on.

Hardware Green Connector (SLEEP)

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

Power LED Connector (PWRLED)

The power LED has four status. When the system is in power up status, the LED is on. When the system is in suspend status, the LED is blink. When the system is in Suspend to RAM, the LED is off. When the system is in Soft-Off status, the LED is off. 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.

		SPEAKER			RESET			Green_LED		KEY_L	
HDDLED	HDDLED	VCC	GND	NC	SP/DATA	RE-	GND	EMPTY	LED	LED	GND	KEYLOCK
	HDDLED +	LED1-	LED2-	LED+(VCC)	POWER	GND	EMPTY	EMPTY	SLEEP	GND	LED-
		ACPI LED			Power				SLEEP	POWER LED	
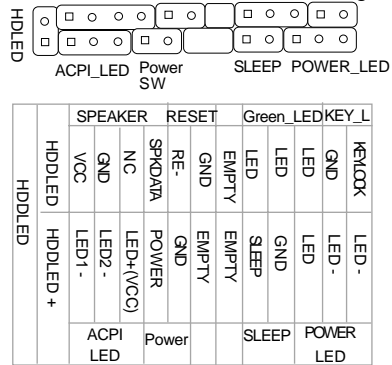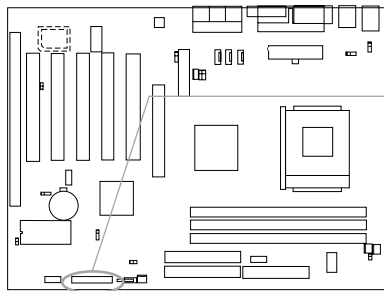
Fan Connector (CPUFAN, CHSFAN, FAN3)

Besides speed of the FAN3, The speeds of the CPU fan and chassis fan can be detected and viewed in "PC Health Status" section of the BIOS.

FNA3
- FAN GND
- +12V
- NC

CPUFAN
- FAN GND
- +12V
- SENSE

SENSE FAN GND
+12V
CHSFAN
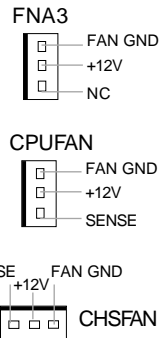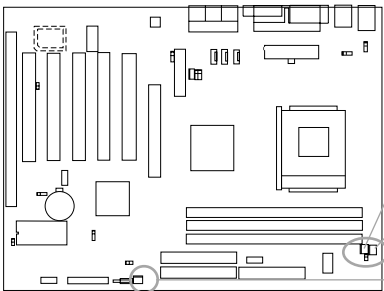
Internal Audio Connectors (AUX, CDLIN, MODEM)

AUX and CDLIN connectors allow you to receive stereo audio input from such sound sources as a CD-ROM, TV tuner, or MPEG card. The MODEM connector allows the onboard audio to interface with a voice modem card with a similar connector. It also allows the sharing of mono_in (such as a phone) and mono_out (such as a speaker) between the onboard audio and the voice modem card.

CDLIN

CD Right Channel | CD Left Channel
Common

MODEM

Mono-Out (to Modem) GND Phone-In (from Modem)

AUX

Right Audio Channel | Left Audio Channel
GND
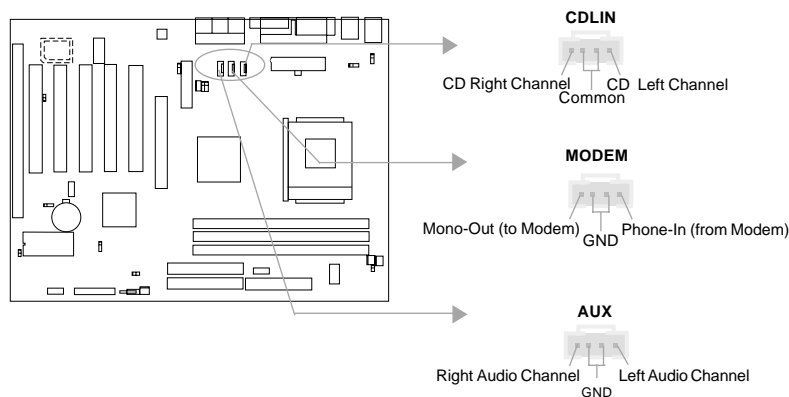
Audio/Modem Riser Interface Connector (AMR)

The AMR Interface Connector is the interface between the mainboard and the Audio/Modem Riser card. The connector provides all necessary signals which supports several different configurations of audio and modem in the system, such as audio and modem on the Riser, audio on the mainboard and modem on the Riser, or no audio with modem on the Riser Either AMR (Audio/Modem Riser) card or MR (Modem Riser) card can be used on this system. This software configurable AC'97 audio and modem system gives customers an advanced, multimedia solution at an extremely low price. The AC'97 audio and modem system can be enabled/disabled in "Advance Chipset Feature Setup" in AWARD BIOS CMOS Setup.

AMR Interface Connector
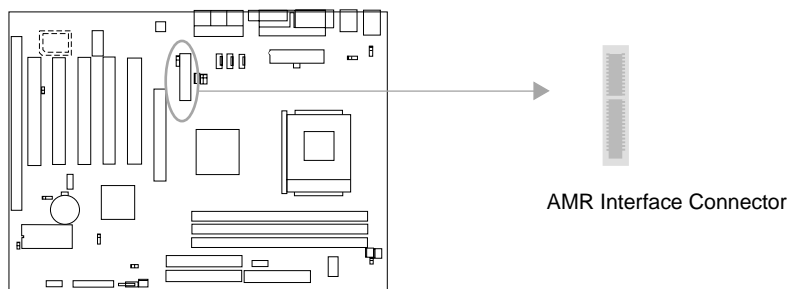
Wake-Up On Internal Modem (WOM)

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 "Modem Ring Resume" 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.

+5V standby — 1
Signal for waking up (active low)
GND
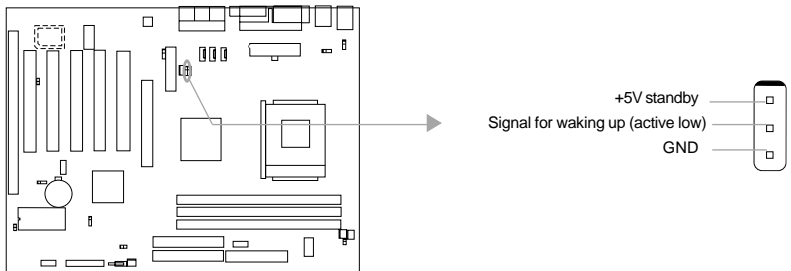
Wake-Up On LAN (WOL)

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 "Power on by PCI card" 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.

Signal for waking up (active high)
GND
+5V standby — 1
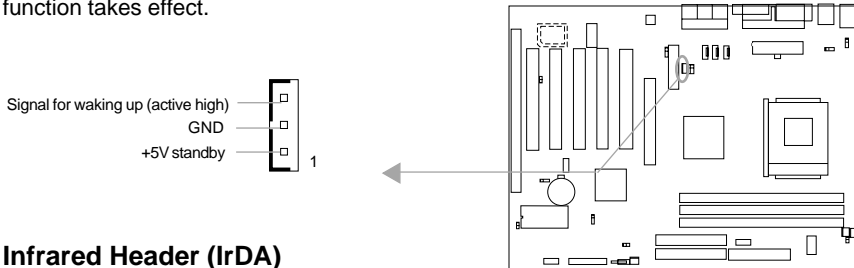
Infrared Header (IrDA)

This connector supports wireless transmitting and receiving. If using this function, set "UART 2 Mode" to HPSIR or ASKIR and configure the settings from the "INTEGRATED PERIPHERALS" section of the BIOS.

VCC
NC
IRRX
GND
IRTX
VCC
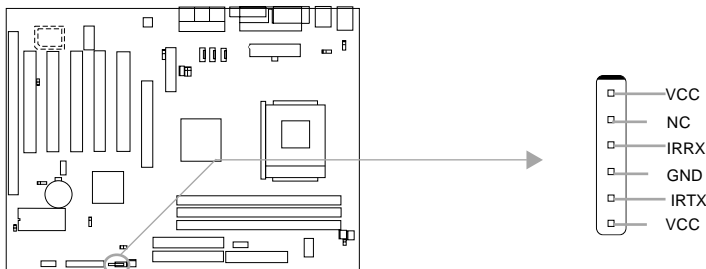
Expansion Slots & I/O Ports description

Slot / Port	Description
PCI 1	First PCI slot.
PCI 2	Second PCI slot.
PCI 3	Third PCI slot.
PCI 4	Fourth PCI slot.
PCI 5	Fifth PCI slot.
DIMM1	First DIMM slot.
DIMM2	Second DIMM slot.
DIMM3	Third DIMM slot.
IDE 1	Primary IDE port.
IDE 2	Secondary IDE port.
AMR	AMR slot.
AGP	AGP slot.
FLOPPY	Floppy Drive Port.

Jumper Settings

Jumpers are located on the mainboard. 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.

Suspend to RAM Switch (J12)

If you want to Disable Suspend to RAM function, set J12 with pin2&pin3 closed, meanwhile, set "ACPI Suspend Type" to S1 in "Power Management Setup" section of the BIOS. Otherwise, set J12 with pin1&pin2 closed for implementing this function.

Warning: If you set J12 with pin2&pin3 closed and set "ACPI Suspend Type" to S3 in "Power Management Setup" section of the BIOS, the blank screen will come out, in this case when system enter S3 status., just clear CMOS and boot up the system once again.

Disable STR   1   J12

Enable STR   1   J12
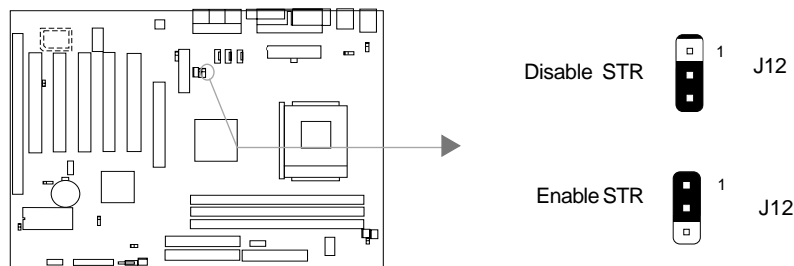
Enable/Disable on-board audio(JSD)

If you want to use the on-board audio, set JSD with pin2 & pin3 closed (default). Other-wise, set JSD with pin1 & pin2 closed for disabling this function. The onboard audio should be disabled when using a PCI/ISA sound card.

Enable on-board audio: JSD

Disable on-board audio: JSD
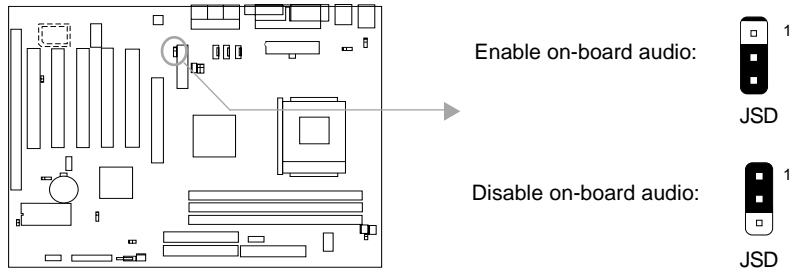
BIOS-ProtectEasy Jumper (JAV)

The BIOS of the mainboard is contained inside the Flash ROM. If the jumper JAV is set as closed, you will be unable to flash the BIOS to the mainboard. However in this status, the system BIOS is protected from being attacked by serious virus such as CIH virus.

Flash Write Enabled JAV

Flash Write Disabled JAV
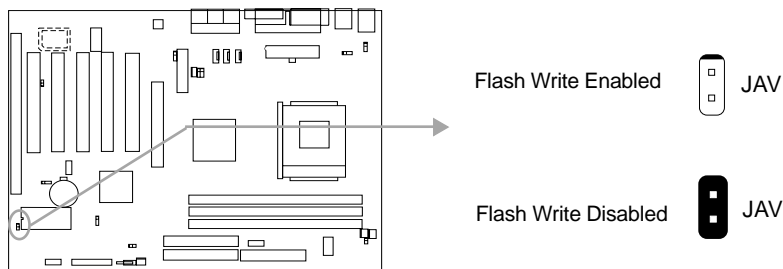
Setting the jumper JAV as open(default), meanwhile disabling the "BIOS_ProtectEasy" item from "Advanced BIOS Features" in AWARD BIOS CMOS Setup, allows you to flash the BIOS to the Flash ROM.

The DMI (Desktop Management Interface) system information such as the CPU type/speed, memory size, and expansion cards will be detected by the onboard BIOS and stored in the flash ROM. Whenever the system hardware configuration is changed, DMI information will be updated automatically. However, setting jumper JAV as closed makes flashing BIOS and updating DMI information impossible. Therefore, set JAV as closed when changing the system hardware configuration, or the error message "Unkown Flash Type" will be dis-played on the screen, and DMI information update will be fail.

Overclocking Jumper Setting (JFSB)

Jumpers labeled JFSB is located on the mainboard providing users with CPU overclocking feature. The host bus speed can be set as 100/133MHz. Refer to the chart below for the location of these jumpers, and the table for information on how to set them.

JFSB	HCLK
CLOSE	100
OPEN	133
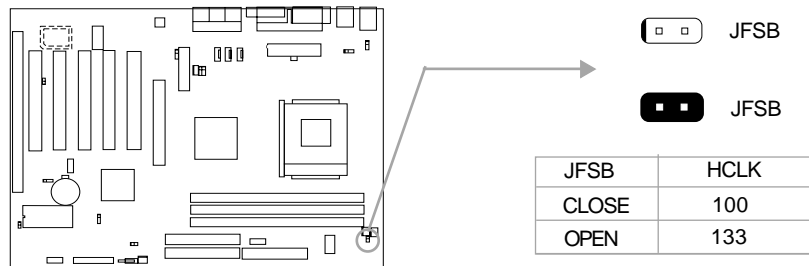
AMD Athlon™ CPU FSB is 100MHz, but delivering twice the throughput of 100MHz Pentium III-based systems(Ultra -Fast 200MHz). So setting up to 133MHz FSB is also supported. However, whether or not your system can be overclocked depends on your processor's capability. Whether the processor is bus ratio locked or unlocked should also be taken into account. We do not guarantee the overclocking system to be stable.

Warning: Do not set CPU frequency higher than its working frequency. If you do, we will not be responsible for any damages caused.

Enable USB KeyDevice Wake-up Function (JUSB1, JUSB2)

The mainboard provides the advanced USB keyDevice wake-up function. The system can be waken up from its power saving status including ACPI S3 by activating USB keyDevice. When using this function, set JUSB1&JUSB2 with pin1 & pin2 closed. Otherwise, set JUSB1&JUSB2 with pin2 & pin3 closed for disabling.

Disable:

JUSB1   JUSB2

Enable:

JUSB1   JUSB2
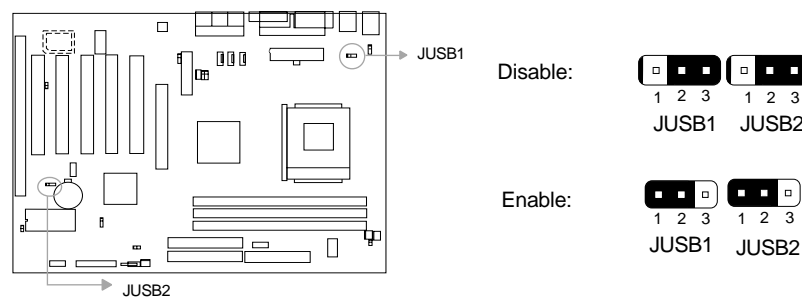
CPU bus ratio selection (J19&JP9)

The Host Bus speed by the CPU bus ratio equals the CPU's internal frequency (CPU speed)

If Host Bus speed = 100MHz, CPU bus ratio =4

then CPU speed= 100MHz x 4= 400MHz

please setup CPU bus ratio according to the following table.
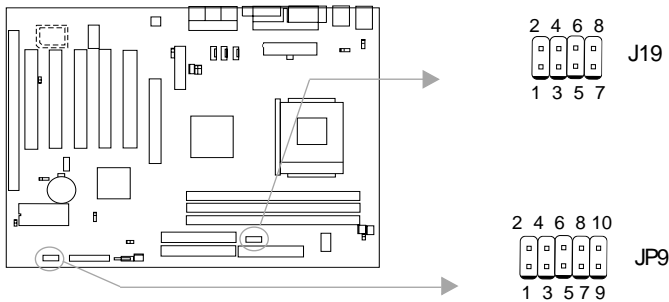
Jumper	JP9					JP19			
RATIO	Pin(1-2)	Pin(3-4)	Pin(5-6)	Pin(7-8)	Pin(9-10)	Pin(1-2)	Pin(3-4)	Pin(5-6)	Pin(7-8)
5	close	close	open	close	open	close	close	open	close
5.5	open	close	open	close	open	open	close	open	close
6	close	open	open	close	open	close	open	open	close
6.5	open	open	open	close	open	open	open	open	close
7	close	close	close	open	open	close	close	close	open
7.5	open	close	close	open	open	open	close	close	open
8	close	open	close	open	open	close	open	close	open
8.5	open	open	close	open	open	open	open	close	open
9	close	close	open	open	open	close	close	open	open
9.5	open	close	open	open	open	open	close	open	open
10	close	open	open	open	open	close	open	open	open
10.5	open	open	open	open	open	open	open	open	open
11	close	close	close	close	open	close	close	close	close
11.5	open	close	close	close	open	open	close	close	close
12	close	open	close	close	open	close	open	close	close
12.5	open	open	close	close	open	open	open	close	close
Auto	open	open	open	open	close	open	open	open	open

Note: The Most of Socket A processors have locked bus ratio. In this case, it's not necessary to setup the bus ratio by Jumper setting. So only unlocked Socket A processpors can adjust specified bus ratio through hardware jumper setting .

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
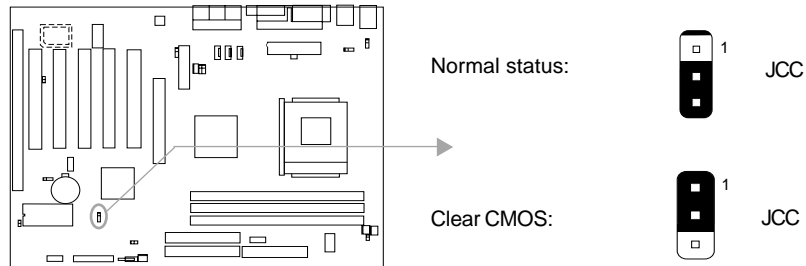
(Unplug the AC power supply)

Memory Configuration

This mainboard provides three 168 pin 3.3V PC133 un-buffered DIMM sockets to support a flexible memory size ranging from 8MB up to 1.5GB for SDRAM . PC100/PC133MHz SDRAM and later memory VCM (Virtual Channel Memory) SDRAM are supported, The following set of rules allows optimum configurations.

● Possible SDRAM DIMM memory sizes are 16MB, 32MB, 64MB, 128MB, 256MB, 512MB in each DIMM socket.

● supports Suspend to RAM.

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Chapter 3
BIOS Description

Utility Support:

AWDFLASH.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 encounter 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 encounter problems, for example, you find your system does not support the latest CPU released on our current mainboard, you may therefore upgrade the BIOS, please don't forget to set JAV as open and disable the "Flash Write Protect" item in AWARD BIOS CMOS Setup first .

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. Click "Browse CD" option under QDI Driver CD 2000, copy Awdflash.exe (version 7.73) from the directory \Utility 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. Decompress the file downloaded, copy the BIOS file (xx.bin) onto the bootable diskette, and note the checksum of this BIOS which is located in readme file.
5. Reboot the system from the bootable diskette created.
6. Then run the Awdflash utility at the **A:** prompt as shown below:

    A:\Awdflash   xxxx.bin

    Follow the instruction through the process. Don't turn off power or reset the system until the BIOS upgrade has been completed.

If you require more detailed information concerning Awdflash Utility, for example, the different usage of parameters, please type A:\>Awdflash /?

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.

```
        CMOS Setup Utility - Copyright (C) 1984-2000 Award Software

     ► Standard CMOS Features           ► PC Health Status

     ► Frequency/Voltage Control          Load Fail-Safe Defaults

     ► Advanced BIOS Features             Load Optimized Defaults

     ► Advanced Chipset Features          Set Supervisor Password

     ► Power Management Setup             Set User Password

     ► PnP/PCI Configurations             Save & Exit Setup

     ► Integrated Peripherals             Exit Without Saving


     Esc : Quit                    ↑ ↓ → ←  : Select Item
     F10 : Save & Exit Setup

                       Change CPU's Clock & Voltage
```

Figure-1 Main Menu

Load Fail-Safe Defaults
The Fail-Safe Defaults are secure and useful for system. It is recommended that users load the Fail -Safe Defaults when the system is in trouble.

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

Standard CMOS Features Setup
The basic CMOS settings included in "Standard CMOS Features" 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 desired in each item.

Figure-2   Standard CMOS Setup Menu

For the items marked, press enter, a window will pop up as shown below. You can view detailed information or make modifications.

Figure-2-1   IDE Primary Master 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

The Award BIOS supports 3 HDD modes: CHS, LBA and LARGE.

CHS

Generic access mode in which neither the BIOS nor the IDE controller will make any transformation during accessing.

If the user sets his HDD to CHS 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.

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 divising 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.

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.

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.
Total Memory	Total memory of the system equals the sum of the above memory.

Frequency/Voltage Control
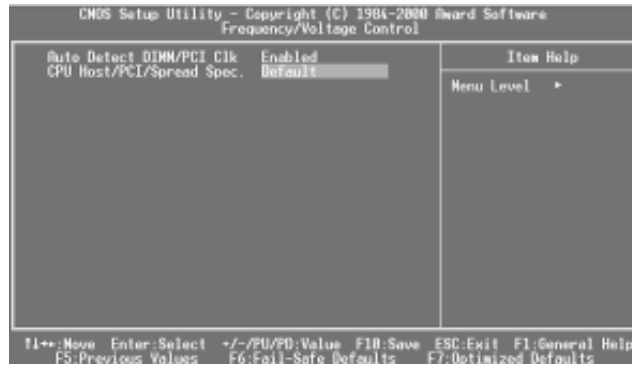
Figure-1 Frequency/Voltage Control Menu

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

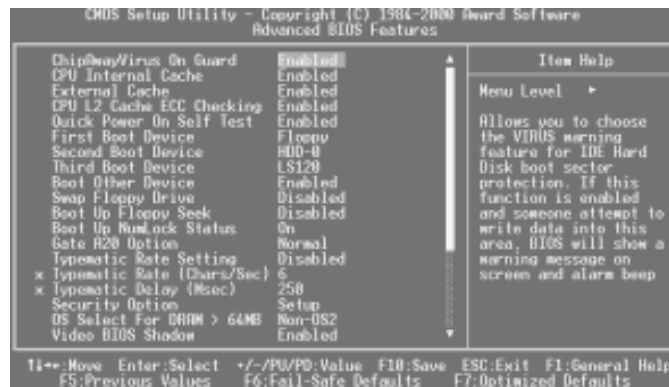| Item	Option	Description
● Auto Detect DIMM/ PCI Clk	*Enabled* *Disabled*	Closes the CLK signal if no PCI or DIMM plug in.
● CPU Host/PCI/ spread spec.	*Default* *100/33Mhz/-0.5%* *100/33Mhz/± 0.25%* *100/33Mhz/± 0.5%* *102/34Mhz/off* ...... *133/33Mhz/-0.5%* *133/33Mhz/± 0.25%* *100/33Mhz/± 0.5%* *136/34MHz/off*	These items are of selected CPU FSB and PCI clock.Default setting is recommended. ± 0.5%,± 0.25%,-0.5% means enable clock Spread Spectrum 0.5%, ± 0.25%, -0.5% to reduce EMI. Off means disable clock spread specturm to reduce EMI.

Advanced BIOS Features Setup

Figure-2   Advanced BIOS Features Setup Menu

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

Item	Option	Description
● ChipAway Virus on Guard	*Enabled*	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.
	Disabled	Invalidates this function.
● CPU Internal Cache	*Enabled*	Enables CPU internal Level1/Level2 cache.
	Disabled	Disables CPU internal Level1/Level2 cache.
● External Cache	*Enabled*	Enables external L2 cache. this allows better performance.
	Disabled	Disable external cache.
● CPU L2 Cache ECC Checking	*Enabled*	Enables CPU L2 Cache ECC function.
	Disabled	Disables CPU L2 Cache ECC function.
● Quick Power On Self Test	*Enabled*	Enables quick POST. BIOS will shorten or skip some check items during POST to speed up POST after you power on the computer.
	Disabled	Normal POST.
● First (Second, Third) Boot Device Boot other Device	*Disabled* *Floppy*	Selects your Boot Device Priority. It could be Disabled, Floppy, LS/ZIP, HDD-0, HDD-1, HDD-2, HDD-3, SCSI, CDROM, LAN.
● Swap Floppy Drive	*Enabled*	Exchanges the assignment of A&B floppy drives.
	Disabled	The assignment of A&B floppy drives are normal.

|		
● Boot Up Floppy Seek	*Enabled* *Disabled*	Tests floppy drives to determine whether they have 40 or 80 tracks.
● Boot Up Numlock Status	*On* *Off*	Keypad is used as number keys. 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.
● Typematic Rate Setting	*Enabled* *Disabled*	Keystrokes repeat at a rate determined by the keyboard controller - when enabled, the typematic rate and typematic delay can be selected.
● Typematic Rate (Chars/Sec)	*6-30*	The rate at which character repeats when you hold down a key.
● Typermatic Delay (Msec)	*250-1000*	The delay before keystrokes begin to repeat.
● Security Option	*System* *Setup*	Selects whether the password is required every time the system boots or only when you enter setup.
● 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.
● Video BIOS Shadow	*Enabled*	Video BIOS will be copied to RAM. Video Shadow will increase the video speed.
	Disabled	Video shadow is disabled.
● C8000~CBFFF Shadow: DC000-DFFFF	*Enabled*	Optional ROM will be copied to RAM by 16K bytes per unit.
Shadow:	*Disabled*	The shadow function is disabled.
● Show Bootup Logo	*Enabled* *Disabled*	Enables the logo when system boots up. Logo will not be shown when system boots up.
● Flash Write Protect	*Enabled*	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 item only when wanting to flash BIOS, afterwards set this item as Enabled (default).**
	Disabled	Disabling this item allows you to upgrade the BIOS.

Advanced Chipset Features Setup
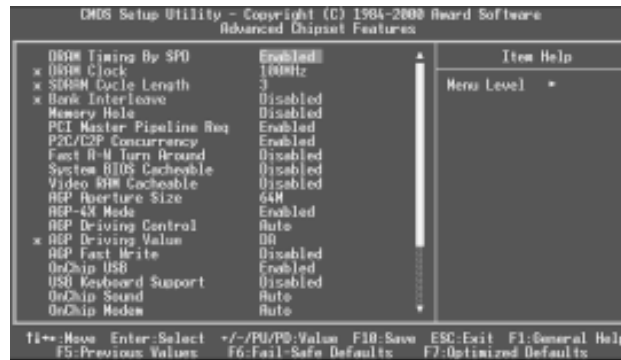
Figure-3 Advanced Chipset Features Setup Menu

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

Item	Option	Description
• DRAM Timing By SPD	*Enabled* *Disabled*	Select Enabled for setting SDRAM timing by SPD.
• DRAM Clock	*100MHz* *133MHz*	Sets DRAM operation clock.
• SDRAM Cycle Length	*2/3*	Defines the CLT timing parameter of SDRAM Latency Time = 2 clocks. Latency Time = 3 clocks.
• Bank Interleave	*2 Bank* *4 Bank* *Disabled*	Allows you to set how many banks of SDRAM support in your mainboard.
• Memory Hole	*15-16M*	Memory Hole at 15-16M is reserved for expanded ISA card.
• PCI master Pipeline Req	*Enabled* *Disabled*	Enables PCI master pipeline request. Disables PCI master pipeline request.
• P2C/C2P Concurrency	*Enabled* *Disabled*	Enables P2C/C2P concurrency. Disables P2C/C2P concurrency. P2C means PCI to CPU, C2P means CPU to PCI.
• Fast R-W Turn Around	*Enabled* *Disabled*	Enables Fast R-W Turn Around. Disables Fast R-W Turn Around. R-W means Read to Write.
• System BIOS Cacheable	*Enabled* *Disabled*	Besides conventioal memory, system BIOS area is also cacheable. System BIOS area is not cacheable.
• Video RAM Cacheable	*Enabled* *Disabled*	Besides conventional memory, video RAM is also also cacheable. Video RAM area is not cacheable.

● AGP Aperture Size (MB)	*4~128*	Sets the effective size of the Graphics Aperture to be used in the particular GART Configuration.
● AGP-4X Mode	*Enabled*	Supports 4X mode.
	Disabled	Does not support 4X mode.
● AGP Driving Control	*Auto*	The default setting is suggested.
	manual	
● AGP Driving Value	*00 - FF*	Sets the AGP Driving Value when AGP Driving Control is set as manual.
● Onchip USB	*Enabled*	Enables the onchip USB controller.
	Disabled	Disables the onchip USB controller.
● USB Keyboard Support	*Enabled*	Legacy USB keyboard support is enabled.
	Disabled	Legacy USB keyboard support is disabled.
● Onchip Sound*	*Auto*	Enables AC97 function.
	Disabled	Disables AC97 function.
● Onchip Modem*	*Auto*	Enables MC97 function.
	Disabled	Disables MC97 function.
● CPU to PCI Write Buffer	*Enabled*	Enables CPU to PCI Write Buffer.
	Disabled	Disables CPU to PCI Write Buffer.
● PCI Dynamic Bursting	*Enabled*	Enables PCI Dynamci Bursting.
	Disabled	Disables PCI Dynamci Bursting.
● PCI Master 0 WS Write	*Enabled*	Enables PCI Master 0 WS Write.
	Disabled	Disables PCI Master0 WS Write.
● PCI Delay Transaction	*Enabled*	Enables PCI Delay Transaction.
	Disabled	Disables PCI Delay Transaction.
● PCI#2 Access #1 Retry	*Enabled*	Enables PCI#2 Access #1 Retry.
	Disabled	Disables PCI#2 Access #1 Retry.
● AGP Master 1 WS Write	*Enabled*	Enables AGP Master 1 WS Write.
	Disabled	Disables AGP Master 1 WS Write.
● AGP Master 1 WS Read	*Enabled*	Enables AGP Master 1 WS Read.
	Disabled	Disables AGP Master 1 WS Read.

Note: If Creative Ct5880 chipset is onboard, the item marked "* "will not appear.

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	Enabled	Validates ACPI function.
	Disabled	Invalidates ACPI function.
● Power Management	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.
● ACPI Suspend Type	S1	Selects the suspend type.
	S3	S1 is power on suspend, S3 is Suspend to RAM.
● PM Control by APM	N O	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 Option	Suspend -> Off	Screen blanks after the system enters either standby mode or suspend mode.
	All Modes -> Off	Screen blanks after the system enters all modes.
	Always On	Screen is always on.
● 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.
● Modem Use IRQ	3,5,7,9,10,11 NA	Special Wake-up event for Modem.

|		
● Soft-off by PWRBTN	*Instant-off*	The system will power off immediately once the power button is pressed.
	Delay 4 Sec	The system will not power off until the power button has been pressed continuously for more than 4 seconds.
● CPU fan in suspend	*On*	When system enters S1, CPU fan will be on always.
	Off	When system enters S1, CPU fan will be off automatically.
● Wake Up Events	*Press Enter*	sets the following items.
● VGA	*On*	VGA active reloads global timer.
	Off	VGA active has no influence to global timer.
● LPT&COM	*NONE*	Disables this function.
	LPT	When select COM/LPT, any activity from one of the
	COM	listed system perpheral devices or IRQs wakes up
	LPT/COM	the system.
● HDD&FDD	*ON*	When on of HDD&FDD, any activity from one of the listed system peripheral devices wakes up the system.
	OFF	Disables this function.
● PCI Master	*ON*	When on of PCI master, any activity from one of the listed system peripheral devices wakes up the system.
	OFF	Disables this function.
● PowerOn by PCI Card	*Enable*	Allows any event occurring to the DMA controller will awaken a system which has been powered down.
	Disable	Disables power-on by PCI card.
● Modem Ring Resume	*Enabled*	Allows the system to be powered on when a ring indicator signal comes up to UART1 or UART2 from an external modem or comes up to WOM header from an internal modem card,
	Disabled	Does not allow wake up from internal/external modem.
● RTC Alarm Resume	*Enabled*	RTC alarm can be used to generate a wake event to power up the system which is in power-off status. You can set any date or any time to power up the system.
	Disabled	RTC has no alarm function.
● Primary INTR	*On*	Allows wake up from IRQ.
	Off	Does not Allows wake up from IRQ.
● IRQs Activity Monitoring	*Press Enter*	Reloads global timer.

PnP/PCI Configurations Setup
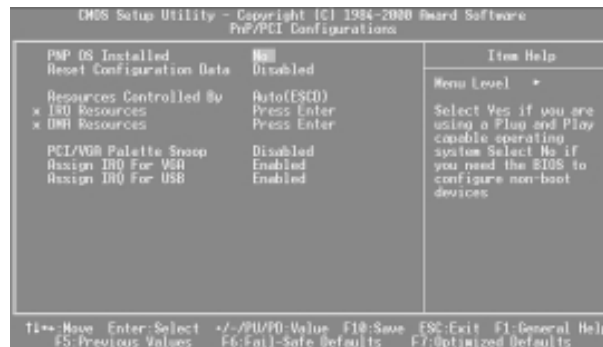
Figure-6 PnP/PCI Configurations Setup Menu

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.
● 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.
● Resources Controlled By	Manual	Assigns the system resources (IRQ and DMA) manually .
	Auto (ESCD)	Assigns system resources (IRQ and DMA) auto-matically by BIOS.
● PCI/VGA Palette Snoop	Enabled	Enables PCI/VGA Palette Snoop.
	Disabled	Disables PCI/VGA Palette Snoop.
● 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 enables this item.
	Disabled	Does not assign an IRQ for USB.

Integrated Peripherals

Figure-4 Integrated Peripherals Menu

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

Item	Option	Description
● OnChip IDE channel 0/1	Enabled	Enables OnChip IDE First/Second Channel.
	Disabled	Disables OnChip IDE First/Second Channel.
● IDE Prefetch Mode	Enabled	Enables IDE Prefetch Mode.
	Disabled	Disables IDE Prefetch Mode.
● 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 an ultra DMA device is detected.
	Disabled	Disables this function.
● 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.
● IDE HDD Block Mode	Enabled	Allows IDE HDD to read/write several sectors at once.
● Onboard FDD Controller	Enabled	Onboard floppy disk controller is enabled.
	Disabled	Onboard floppy disk controller is disabled.
● Onboard Serial Port 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 auto- matically assigned
	Disabled	Onboard serial port is disabled.

● UART 2 Mode	*Standard*	Defines Serial Port 2 as standard serial port.
	HPSIR	Supports IRD mode.
	ASKIR	Supports SHARP ASK-IR protocol with maximum baud rate up to 57600bps.
● Onboard Parallel Port	*378/IRQ7,* *278/IRQ5,* *3BC/IRQ7*	Defines onboard parallel port address and IRQ channel.
	Disabled	Onboard parallel port is disabled.
● Parallel Port Mode	*SPP* *EPP* *ECP,* *ECP+EPP*	Defines the parallel port mode as Standard Parallel Port (SPP), Enhanced Parallel Port (EPP), or Extended Capabilities Port (ECP).
● ECP mode use DMA	*1. 3*	
● Parallel Port EPP Type	*EPP1.9* *EPP1.7*	Selects parallel port EPP type.

Note: If Creative CT5880 chipset is onboard, the following item will not appear.

● Onboard Legacy Audio	*Enabled*	Enables onboard legacy audio.
	Disabled	Disables onboard legacy audio.
● Sound Blaster	*Enabled*	Enables Sound Blaster.
	Disabled	Disables Sound Blaster.
● SB I/O Base Address	*220H/240H* *260H/280H*	Defines SB I/O Base Address.
● SB IRQ Select	*IRQ5~10*	Selects SB IRQ.
● SB DMA Select	*DMA0~DMA3*	Selects SB DMA .
● MPU-401	*Enabled*	Enables MPU-401
	Disabled	Disables MPU-401
● MPU-401 I/O Address	*300/303H~* *330-333H*	Defines MPU-401 I/O address.
● Game port (200-207H)	*Enabled*	Enables game port.
	Disabled	Disables game port.

PC Health Status

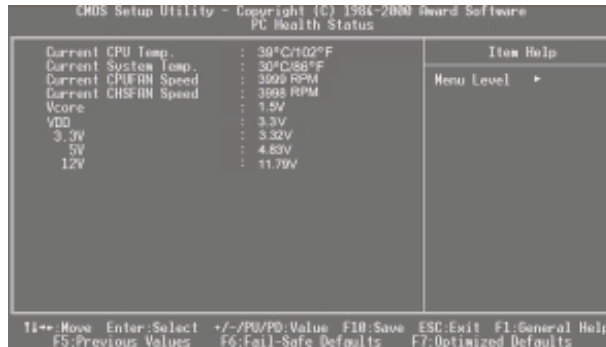
Figure-7 PC Health Status Menu

The following describes the meaning of each item.

Item	Current Data Shown	Description
● Current CPU Temp	$39^0C/102^0C$	Temperature of the CPU core.
● Current System Temp.	$30^0C/86^0F$	Temperature inside the chassis.
Current CPUFAN Speed	3999RPM	RPM(Revolution Per Minute) speed of fan
Current CHSFAN Speed	3998RPM	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.
● Vcore	1.65V	Displays current Voltage values including all
VDD	3.36V	significant voltages of the mainboard. Vcore
3.3V	3.32V	Voltage is the CPU core voltage from the
5V	4.83V	on board switching power supply. Vsram
12V	11.79V	is the Northbridge voltage from the onboard
		switching power supply. 3.3V, 5V and 12V
		are voltages from the ATX power supply.

Set 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.

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 Driver CD 2000

A QDI Driver CD 2000 is supplied with this mainboard. Insert CD 2000 that came with your mainboard into your CD-ROM drive to bring up the screen, click the options to install. The contents contained in it are showed as below:

1. Express Install

It's recommended for most users that program will be installed with the most common options.

A. Chipset Driver   B. Audio Codec Driver

C. PCI sound Driver

Note: If CT5880 chipset is onboard, the CD2000 will detected it and the option " PCI Sound Driver" will appear on screen, you click this option to install Sound Blaster PCI 128 driver for CT5880. If only AC97 code is onboard, the CD 2000 will detected it and the option " Audio   Codec Driver" will appear on screen, you click this option to complete the installation

2.   Accessory

The softwares contained in this directory are:

A. DirectX 7.0a   B. QDI ManageEasy

C. PC-cillin

3.   Browse CD

You could read all the contents contained in this CD, including Utility and Documents.

The files included in **Utility** are:

A. Awdflash.exe   B. Lf.exe

The files included in **Documents** are:

A. Adobe Acrobat Reader V3.0 - Ar32e301.exe

B. French Manual - K7A FR.doc, ect.

PC-cillin 98

New viruses are appearing frequently; the chance of your PC being infected increases; antivirus softwares are becoming a must. PC-cillin 98 offers you full-time active virus protection as well as manual scans, plus virus clean capability. Keeping up to date on the latest threats and updating significant files are crucial in keeping antivirus software effective. PC-cillin 98 provides Free Virus Pattern File Updates from the Trend Micro Website:

http://www.trend.com/download/pattern.htm or

http://www.antivirus.com/download/pattern.htm.

QDI ManageEasy V2.0

It is well known that guaranteeing the computer's security and reliability is essential. Especially today, effectively managing and monitoring the computer's hardware is even more important; because processing and exchanging critical data through computer and network are happening everyday.

Moving with the computer's development, the system of the computer will become more and more complex; at the same time, the control computer's hardware will be strengthened. Today, it is possible to monitor and manage your complex hardware from Windows 9X and Windows NT. QDI ManageEasy is a system tool, a bridge between the complex hardware and OS, used to access hardware status and to execute control functions. It supports stronger functions for Windows 9X and Windows NT. These functions enables you to view more than one hundred of the basic information about the system and monitor some key reference data concerning computer health in real time. QDI ManageEasy also helps you to use remote access and control computers in your local area network. With QDI ManageEasy, you can improve your management level.

Appendix B.
Boot Logo

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

You can use "**CBLOGO.EXE**" (included on the QDI Mainboard Utility CD) to replace it by any other logo which you prefer.

Please you follow these steps to use CBLOGO.EXE Utility:

1. Copy "CBLOGO.EXE"and "AWDFLASH.EXE" from the directory \Utility located on QDI Mainboard Utility CD onto your hard disk.

2. Get the BIOS file from "AWDFLASH.EXE" or Download the BIOS file from the Website (http://www.qdigrp.com). and copy the BIOS file(xxxxxx.bin) onto your hard disk.

3. Boot the system into DOS environment, Put your favor picture into BIOS file by "CBLOGO.EXE" command. For example: CBLOGO.EXE xxxxxx.bin myphoto.bmp

4. Flash the BIOS into mainboard by "AWDFLASH.EXE". For example: AWDFLASH xxxxxx.bin

Reboot the system,. You can see the new picture displayed on the screen. If you require more parameters information concerning "CDLOGO.EXE". Please you refer to it's on_line 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.

RecoveryEasy

Introduction:

RecoveryEasy™, the latest QDI innovation, is able to protect the system from being destroyed, by creating a so-called "mirror partition" for a current hard disk partition and backuping all the data to the mirror area. This ideal utility provides disk partition, disk data backup/recovery, CMOS settings backup/recovery and multi-boot functions. RecoveryEasy is also able to prevent the system from being attacked by different kinds of boot virus or other severe virus such as CIH. In case the system is ruined either by mistake or virus, the system can be recovered from the mirror partition. It applies the build-in BIOS technology that does not occupy either the hard disk space or the system memory. It's the best choice for both corporations and PC users.

Operation Process:

There are two hotkeys – Ctrl+Bksp and F12 for RecoveryEasy to enter "Partition" and "Recovery" user interfaces accordingly during BIOS booting up. If two or more hard disks are installed, use F5 key to choose the hard disk.

1. Partition Interface (see figure-1)

Users can create and delete partitions/mirror partitions, activate partitions, and uninstall RecoveryEasy in Partition User Interface.
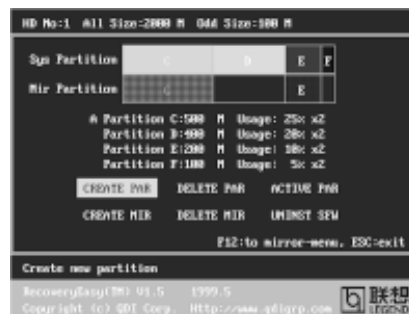

figure-1 Partition Interface

1.0 Install RecoveryEasy for the first time

a. The utility checks the previous disk partition at first, and displays the status of the first four partitions. If there are more than four disk partitions, users will be asked to delete the redundant disk partitions, since only four partitions that can be activated are allowed to exist. However, if there're only four or fewer partitions, users can follow the system prompt and choose to install RecoveryEasy based on the previous disk partitions. In this way, the original extension partitions will be changed to normal ones, and probably the sequence of the partitions will be changed also, but the contents contained in each partition will remain the same.

b. If choosing to install RecoveryEasy on an absolutely clear disk, the utility will delete all
the previous partitions.

c. The password is set as default setting "qdiqdi" after installing RecoveryEasy.

1.1 CREATE PAR

Function : Creates a new partition.

Limitation : When no disk space remains or 4 partitions already exist, this button is
disabled.

Steps : After pressing the "CREATE PAR" button.

a. The system will prompt whether users want to create a mirror partition for it or
not.

b. If answering "Y", input the new partition size in Megabyte. Notice that the
maximum partition size that can be assigned is half of the left disk space, which
is also displayed in the status line. Another half is for the mirror partition. If
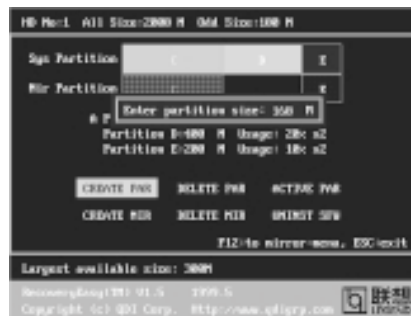answering "N", the whole disk space left can be assigned. See figure-2.

figure-2 Create Partition

Note:

a. The system will prompt "Insert system floppy, then reset" when the first
partition on the first hard disk is created.

b. After using DOS6.xx boot disk to format C partition, the system should be reset in order
to access the partition.

c. In Windows system 1,048,576 bytes equal 1 Megabyte, while in RecoveryEasy 1,000,000
bytes equal 1 Megabyte, therefore a smaller size will be displayed in Windows system
compared with the size displayed in RecoveryEasy.

1.2 DELETE PAR

Function : Deletes the last partition and its mirror partition.

Limitation : When no partition exists, this button is disabled.

Steps : After choosing this function, only the final partition can be deleted in order to
keep the continuous disk space. If the warning message is confirmed, the
partition will be deleted. By pressing "N" or "ESC" key, the system quits.

1.3 ACTIVE PAR

Function **:** Implements multi-boot function by activating one of the partitions.

Limitation : When no partition exists, this button is disabled.

Steps   **:** If there're two or more partitions, choose one of them by pressing F5 key.

Note   **:** After setting active partition, a letter "A" will be shown in front of this partition.

1.4 CREATE MIR

Function **:** Adds mirror partition for the disk partition that has no mirror.

Limitation : This function should be performed by order, for example, from partition 1 to 4. If no disk space remains or the last partition has its mirror partition already, this button is disabled.

Steps   **:** After pressing the "CREATE MIR" button, use F5 key to choose the partition to create mirror. The partition of which the size is bigger than the left disk space will be ignored.

1.5 DELETE MIR

Function **:** Deletes the mirror partition.

Limitation : If there is no mirror partition, this button is disabled. This function should be performed in reverse order, for example, from partition 4 to 1.

Steps   **:** After pressing the "DELETE MIR" button, only the final mirror partition can be deleted in order to keep the continuous disk space. If the warning message is confirmed, the mirror partition will be deleted. By pressing "N" or "ESC" key, the system quits.

1.6 UNINST SFW

Function **:** Uninstall RecoveryEasy.

Limitation : None.

Steps   **:** After pressing the "UNINST SFW" button and the warning message is confirmed, RecoveryEasy will be uninstalled. By answering "N", the system quits.

Note   **:** After RecoveryEasy is uninstalled, all the mirror areas have been disconnected with the relate partitions. If no partition is deleted or changed in size, or no other partition is created, users have chance to "Recover existing RecoveryEasy settings" when next time entering RecoveryEasy partition interface, meanwhile the password will be set as default setting "qdiqdi".

1.7 OTHERS

F12 **:** Switches to Recovery User Interface.

ESC **:** Exits from the Partition User Interface. If users made some mistakes, for example, wrongly delete a partition, do not press the "ESC" key, press the reset button on your system at once, in this way users can save their system.

F5:

a. When two or more than two hard disks are installed on the system, use F5
   key to choose the hard disk. Every time users use F5 key to switch the hard disk, the
   operation result for the previous hard disk is saved. When processing a certain hard
   disk, F5 key can be used to choose the partition.

b. In addition, when two or more than two hard disks are installed, the sign of
   partitions will be changed from C, D, E, F to 1, 2, 3, 4 accordingly.

2.   Recovery Interface (see figure-3)

Users can backup the partition to its mirror area, and recover the partition from its mirror
area from Recovery User Interface. This interface also provides users with CMOS
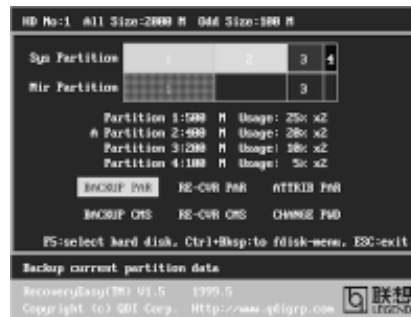settings backup or recovery, and changing password functions.

figure-3 Recovery User Interface

2.1   BACKUP PAR

Function   : Backups the content of the partition to its mirror area.

Limitation : If no mirror partition exists, this button is disabled.

Steps:

a. Use F5 key to choose the partition with mirror area existed.

b. If the partition chosen has been backuped before, a warning message will be shown,
   and the time when last backup was done will be displayed in the status line. After
   confirming the warning message, the system performs the backup. By pressing "N" or
   "ESC" key, the system quits.

2.2   RE-CVR PAR

Function   : Recovers the content from the mirror area to the relate partition.

Limitation : If users didn't backup any partitions before, this button is disabled.

Steps:

a. Use F5 key to choose the backuped partition.

b. The time when the latest backup was done will be displayed in the status line. After
   confirming the warning message, the system performs the content recovery. By
   pressing "N" or "ESC" key, the system quits.

Note:

a. During the process of partition backup or recovery, a guage will be shown as below,
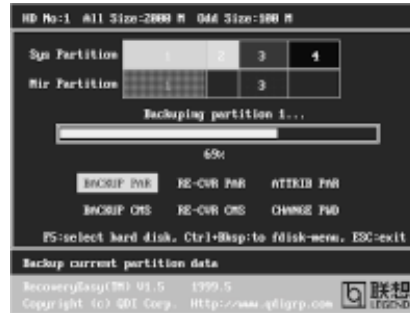   the backup or recovery speed is about 4-5Mbyte/s. See figure-4.

figure-4 Backup Partition

b. If a disk I/O error occurs during the process of partition backup or recovery, this
   means there's physical damage on the hard disk, however users can ignore it and
   continue the process.

2.3 ATTRIB PAR

Function : Allows users to modify the properties of the partition (eg. FAT16 -> FAT32)
           after entering OS.

Limitation : None.

Steps : After pressing this button, turn on/off the switch.

Note:

a. The switch resets to the default setting "disable" every time the system reboots.

b. In order to implement this function, users need to enable the switch when installing the
   OS or modifying the partition properties. Please note: Do not create or delete partitions or
   change the partition size when modifying the partition properties.

2.4 BACKUP CMS

Function : Backups all CMOS settings.

Limitation : None.

Steps : After choosing this function, the current CMOS settings will be saved.

2.5 RE-CVR CMS

Function : Recovers all CMOS settings.

Limitation : None.

Steps : After choosing this function, the latest backup of the CMOS settings will be
           recovered. The system needs reboot in order to validate the new CMOS
           settings.

Note : If users have never backuped the CMOS settings, a wrong message
           will be shown after choosing this function.

2.6   CHANGE PWD

Function   : Changes the password to enter RecoveryEasy Partition or Recovery User
Interface.

Limitation : None.

Steps   : Follow the system prompt, input the password no more than 6 characters
twice. To delete the password, follow the system prompt and press the
"Enter" key twice.

Note:

a. The password should be no more than 6 characters, only digital and alphabetic letters
are valid.

b. Once the password is enabled, users will be asked to input the password every time
they try to enter the RecoveryEasy user interfaces, and up to 3 times try is permitted.

2.7   Others

Ctrl+Bksp : Switches to Partition User Interface.

ESC   : Exits from the Partition User Interface.

F5   : When two or more than two hard disks are installed on the system, use F5
key to choose the hard disk. When processing a certain hard disk, F5 key
can be used to choose the partition.

FAQ:

1.   What does RecoveryEasy do?

RecoveryEasy creates a so-called "mirror partition" with same size for the hard disk
partition on the same hard disk, and then completely backups all the data sector by
sector to the mirror area. This mirror partition is reserved to OS. When the OS ruins
either by mistakes or virus, users can recover the partition from its mirror.

2.   Does RecoveryEasy occupy the system resources?

Although some hard disk data protection applications can automatically protect the
disk data in runtime, it lowers the system performance. Unlike these applications,
RecoveryEasy need users to backup or restore data manually when needed, but it
DOES NOT lower the system performance when the system is running. It does not
occupy either hard disk space or system memory, additional floppy disk or ISA/PCI
cards are unnecessary.

3.   RecoveryEasy utilizes Build-in BIOS skill, what is build-in BIOS?

RecoveryEasy build-in BIOS means all functions of RecoveryEasy including creating
partition, backuping and restoring partition are built in BIOS. Users just need to down
load the latest BIOS from our Website (http://www.qdigrp.com) when wanting to
upgrade (It's free!).

4. **Are there any hard disk limitations of RecoveryEasy?**

RecoveryEasy supports all kinds of current IDE hard disks and has no limitation on the hard disk capacity. RecoveryEasy can not provide its function for some special hard disk types such as SCSI, but it will not affect their usage.

5. **Are there any OS limitations of RecoveryEasy?**

RecoveryEasy supports current operating systems such as DOS, Windows 95/98. However in Windows NT, Windows 2000, Unix and OS2 systems, users should notice that the disk tools bundled in the OS could change the mirror partition. On the other hand, since users can create partition with RecoveryEasy, it is unnecessary to use other disk tools.

6. **Why does the system halt when HDD access mode is changed (eg. LBA->LARGE)?**

This is a way to protect the system from the errors of data accessing caused by changing HDD access mode. When RecoveryEasy detects such things, the system will be locked, users could reboot the system and set the HDD access mode as the original one in BIOS SETUP.

7. **Why does the remainder size plus partitions size not match the total size shown in RecoveryEasy sometimes?**

When the location of partitions is not continuous, the above problem exists.

8. **Are there any other disk partition tools that can modify the partition table made by RecoveryEasy?**

RecoveryEasy provides a write-protect function, so the disk tools such as Fdisk, Partition Magic, BootMenu, SmartDisk and BootStar can not modify the partition table created by RecoveryEasy. Some of the applications even terminate during operation. However the disk tools bundled in the OS such as Windows NT, Windows 2000, Unix and OS2 could change the mirror partition.

9. **Why does it happen that a prompt *"installation can not continue"* pops up when installing Windows98 or a yellow exclamation mark shown beside IDE device in system properties?**

During Windows 98 installation, the installation program will write to MBR (Master Boot Record) which is protected by RecoveryEasy, therefore the installation will be terminated. To avoid this problem, a "ATTRIB PAR" button is provided in Recovery User Interface. Enable this switch before installing Windows 98, then the installation will be successfully completed. In order to remove the yellow question mark before IDE devices in Device Manager, enable this switch once more after system reboot.

10. **Why does the converting of FAT16->FAT32 in PQ Magic go wrong?**

MBR will be accessed when converting FAT16 to FAT32 with PQ Magic, which is protected by RecoveryEasy, therefore the conversion will be invalidate. Enabling the " ATTRIB PAR" switch from Recovery User Interface

before converting can avoid this problem. It's the same situation as "FAT32 Converter" provided in Windows98.

11. What if partitions be wrongly deleted in RecoveryEasy?

If users delete a partition in RecoveryEasy by mistake, they can save it by pressing the Reset button on their system at once. Do not press the "ESC" key to quit RecoveryEasy, this will save the change. Do not try to create the partition again, since creating partition will clear all the content of the partition.

12. What is multi-boot?

RecoveryEasy can implement the multi-boot function by activating different partition. For example on the hard disk, partition C contains DOS, partition D contains Windows 95 version, partition E contains Windows 98 version, when activating partition C in RecoveryEasy, the system enters DOS, when activating partition E, the system enters Windows 98 version. At the same time, the sequence of the partitions is adjusted accordingly, partition E becomes C:, partition C becomes D: and partition D becomes E:. This function is the same as that of fdisk.exe, but the system needs reboot in order to make the change validate for fdisk.exe.

13. What if computer accidentally power off when backuping (recovering)?

The partition should be completely backuped or recovered. If the computer accidentally powers off, the partition should be backuped or recovered once again.

14. What if users lose the password?

To make sure the security, the password is saved in the hard disk. **It's very important for users to remember the password.** If forgetting the password, contact us, clearing CMOS is useless.

15. Does RecoveryEasy protect hard disk against CIH?

RecoveryEasy can strongly protect the hard disk from boot-virus, as well as the attack of CIH. If the system is attacked by CIH, RecoveryEasy will automatically recover the MBR and each partition boot record before system boots up, and try to recover the FAT. In this way the system can basically boot up, then users can use some anti-virus application to kill the virus. However this depends on how CIH virus affects the system. CIH normally outbreaks on 26th every month, if the system cannot boot up that day, power off the computer instantly, and use the second safe way to recover the system, that is, recover the partition from its mirror area from Recovery User Interface. Remember to create a mirror partition and backup before virus attacks the system.

Item Checklist

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

- ☑ KinetiZ 7B mainboard
- ☑ QDI Driver CD 2000
- ☑ I/O shield
- ☑ 1 IDE ribbon cable
- ☑ 1 floppy ribbon cable
- ☐ 1 10-pin ribbon cable with bracket for USB3 and USB4(manufacturing option)
- ☑ 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
KinetiZ 7B V1.0