## Item Checklist

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

- ☑ P6I440BX/B6 motherboard
- ☑ QDI Motherboard Utility CD-ROM
- ☑ Retention Module
- ☑ I/O shield (manufacturing option)
- ☑ 1 IDE ribbon cable
- ☑ 1 serial port ribbon cable with bracket (manufacturing option)
- ☑ User' s manual

## Notice

The information in this document is subject to change in order to improve reliability, design, or function without prior notice and does not represent a commitment on the part of this company. In no event will we be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or the possibility of such damages.

All trademarks are the property of their respective owners.

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

# Declaration of conformity

CE (EC conformity marking)

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

declares that the product

**Pentium®II Motherboard**
**P6I440BX/B6**

is in conformity with
(reference to the specification under which conformity is declared in accordance with 89/336 EEC-EMC Directive)

| | | |
|---|---|---|
| ☑ | EN 55022 | Limits and methods of measurements of radio disturbance characteristics of information technology equipment |
| ☑ | EN 50081-1 | Generic emission standard Part 1: Residential, commercial and light industry |
| ☑ | EN 50082-1 | Generic immunity standard Part 1: Residential, commercial and light industry |

European Representative:

| | |
|---|---|
| QDI COMPUTER ( UK ) LTD | QDI COMPUTER ( SCANDINAVIA ) A/S |
| QDI SYSTEM HANDEL GMBH | QDI COMPUTER ( NETHERLANDS) B. V. |
| QDI COMPUTER (FRANCE) SARL | QDI COMPUTER HANDELS GMBH |
| QDI COMPUTER (ESPANA) S.A. | QDI COMPUTER (SWEDEN) AB |

Signature : _____ Place / Date : HONG KONG/1998

Printed Name : Anders Cheung Position/ Title : President

# Declaration of conformity

| | |
|---|---|
| Trade Name: | QDI Computer ( U. S . A. ) Inc. |
| Model Name: | P6I440BX/B6 |
| Responsible Party: | QDI Computer ( U. S. A.) Inc. |
| Address: | 41456 Christy Street<br>Fremont, CA 94538 |
| Telephone: | (510) 668-4933 |
| Facsimile: | (510) 668-4966 |
| Equipment Classification: | FCC Class B Subassembly |
| Type of Product: | AGP Pentium®II Motherboard |
| **Manufacturer**: | **Quantum Designs (HK) Inc.** |
| Address: | 5/F, Somerset House, TaiKoo Place<br>979 Kings Road, Quarry Bay,<br>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

# CONTENTS

**1. Introduction ..... 1**
Overview ..... 1
Key Features ..... 1

**2. Installation Instructions ..... 5**
**Jumper Settings ..... 5**
Clock Multiple Selection ..... 5
Clear CMOS ..... 6
Enable/Disable on-board audio ..... 6
Enable/Disable on-board VGA ..... 7
Speaker-out/Line-out Selection ..... 7
Enable keyboard password and PS/2 mouse power-on function ..... 7
**External Connectors ..... 8**
PS/2 Keyboard Connector, PS/2 Mouse Connector ..... 8
USB1, USB2 ..... 8
Parallel Port Connector and Serial Port Connector ..... 9
Line-in Jack, Microphone-in Jack and Speaker-out/Line-out Jack ..... 9
AGP VGA Connector ..... 10
Power Supply Connector & Power Switch ..... 10
Hard Disk LED Connector ..... 10
Reset Switch ..... 11
Speaker Connector ..... 11
Power LED Connector ..... 11
Key-Lock Connector ..... 11
Green LED Connector ..... 11
Hardware Green Connector ..... 11
Infrared Header ..... 12
Fan Connector ..... 12
Wake-Up On LAN ..... 12
Wake-Up On Internal Modem ..... 13
Chassis Security ..... 13
CD Audio Connector ..... 14
VESA Feature Connector ..... 14
Expansion Slots & I/O Ports description ..... 14
**Memory Configuration ..... 15**

# CONTENTS

**3. BIOS Description ..... 17**
**Utility Support** ..... 17
**AWARD BIOS Description** ..... 19
Entering Setup ..... 19
Load Setup Defaults ..... 19
Standard CMOS Setup ..... 19
BIOS Features Setup ..... 22
Chipset Features Setup ..... 24
Power Management Setup ..... 26
PNP/PCI Configuration Setup ..... 29
Integrated Peripherals ..... 30
System Monitor Setup ..... 32
Password Setting ..... 33
IDE HDD Auto Detection ..... 34
Boot with BIOS defaults ..... 35

**4. ATI Rage IIC/Pro AGP Graphics Description ..... 37**
Features ..... 37
System Requirements ..... 37
Installation of ATI Rage IIC Display Drivers for Windows 95/98/NT ..... 38
Configuring Windows 95 Driver ..... 40
Configuring Windows NT 4.0 Driver ..... 42

**5. Creative Audio Description ..... 43**
Features ..... 43
Creative Software Installation ..... 44
Installation of Windows 95 driver ..... 44
Installing Driver in DOS/Windows 3.1X ..... 45
Installation of Windows NT 4.0 Driver ..... 45
Enabling/Disabling the Creative 3D Stereo Enhancement Effect ..... 46
Software Wavetable Synthesis ..... 47

**Appendix A** QDI Motherboard Utility CD-ROM ..... 49
**Appendix B** Processor Installation Procedures ..... 51
**Appendix C** Boot Logo ..... 54

# Chapter 1
# Introduction

## Overview

The P6I440BX/B6 is a highly integrated, cost-effective, microATX motherboard which is centered on the Intel® 440BX AGPset. It provides 66MHz and 100MHz system bus support for all Intel Pentium® II and Celeron™ processors. Both 66MHz/100MHz SDRAMs with SPD and 66MHz EDO DIMMs are supported. It also provides advanced features such as wake-up on LAN, wake-up on internal/external modem and keyboard password power-on function. ManageEasy, our management application is supplied to enable remote monitoring and configuring of the system. Together with its integrated Creative CT2511SBT audio and integrated ATI Rage IIC(or ATI Rage Pro) AGP video, you get a state-of-the-art corporate system.

## Key Features

### Form factor

- microATX form factor of 244mm x 210mm.
- Provides backward compatibility with standard ATX 2.01 chassis for easy integration.

### Microprocessor

- Supports all Intel Pentium® II processors at 233/266/300/333MHz with 66MHz bus speed and 350/400/450MHz with 100MHz bus speed.
- Supports all Intel® Celeron™ processors at 266/300/333MHz with 66MHz bus speed.
- Supports 66MHz and 100MHz host bus speed.
- CPU core frequency = Bus speed x3, x3.5, x4, x4.5, x5, x5.5.
- CPU core voltage can be selected from 1.3V to 3.5V automatically through on-board switching voltage regulator with VID(Voltage ID).

### Chipset

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

### System memory

- Provides two 168 pin 3.3V unbuffered DIMM sockets.
- Supports both 66MHz/100MHz SDRAMs with SPD and 66MHz EDO DIMMs.
- Minimum memory size is 8MB, Maximum memory size is 512MB.
- 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 PIO mode 4 timing.
- Supports "Ultra DMA/33" Synchronous DMA mode, transferring up to 33Mbytes/sec.
- Integrated 16x32bit buffer for IDE PCI Burst Transfers.

**On-board I/O**

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

**On-board audio**

- Based on the Creative ViBRA™16XV CT2511 sound chip.
- Compatible with Sound Blaster™, Sound Blaster Pro™ and Windows Sound System™.
- Supports FM Music Synthesizer and Software-based Wavetable Synthesizer.
- Stereo Enhancement Support.
- Provides on-board Line-in Jack, Microphone-in Jack, Speaker-out/Line-out Jack and MIDI/Joystick Connector.

**On-board AGP**

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

**Advanced Features**

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

**BIOS**

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

**Green function**

- Supports ACPI (Advanced Configuration and Power Interface) and ODPM (OS Directed Power Management).
- Supports three green modes: Doze, Standby and Suspend.
- The Green LED will flash when the system is in the green status.

**Expansion slots**

- 1 ISA slot and 2 PCI slots.

-- This page is intentionally left blank --

# Chapter 2
# Installation Instructions

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

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

## Jumper Settings

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

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

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

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

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

**Clear CMOS (JCC)**

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

Normal status: 1 2 3 JCC

Clear CMOS: 1 2 3 JCC

(Unplug the AC power supply)

**Enable/Disable on-board audio (JP7)**

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

Enable on-board audio JP7

Disable on-board audio JP7

**Enable/Disable on-board VGA(JP10)**

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

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

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

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

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

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

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

**Note:**

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

## External Connectors

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

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

### USB1, USB2

Two USB ports are available for connecting USB devices.

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

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

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

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

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

**AGP VGA Connector**

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

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

ATX/SFX power supply can both be used on this system. Be sure to connect the power supply plug to connector J10 in the proper orientation. The power switch (POWER) should be connected to a momentary switch. When powering up your system, first turn on the mechanical switch of the power supply (if one is provided), then push once the button of the power switch. When powering off the system, you needn' t turn off the mechanical switch, just ***push once**** the button of the power switch.

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

**Note: * If you change "soft-off by PWR-BTTN" from default "Instant-off" to "Delay 4 Secs" in BIOS Setup (POWER MANAGEMENT SETUP), the power button should be pressed for more than 4 seconds before the system powers down.**
****This optional signal (-5V) is not available in the SFX power supply.**

**Hard Disk LED Connector (HDLED)**

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

**Reset Switch (RESET)**

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

**Speaker Connector (SPEAKER)**

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

**Power LED Connector (PWRLED)**

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

**Key-Lock Connector (KEY_L)**

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

**Green LED Connector (GRNLED)**

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

**Hardware Green Connector (SLEEP)**

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

**Infrared Header (IRDA)**

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

**Fan Connector (CPUFAN, CHSFAN)**

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

**Wake-Up On LAN (WOL)**

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

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

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

### Chassis Security (CHSSEC)

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

**CD Audio Connector (CDLIN, MITSU)**

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

**VESA Feature Connector (VFC)**

**Expansion Slots & I/O Ports description**

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

## Memory Configuration

This motherboard provides two 168 pin 3.3V un-buffered DIMM sockets to support a flexible memory size ranging from 8MB/256MB for SDRAM or from 8MB/512MB for EDO memory. Both 66MHz/100MHz SDRAM with SPD and 66MHz EDO DIMMs are supported. The following set of rules allows optimum configurations.

**Rules for populating a 440BX memory array:**

- EDO/SDRAM DIMMs can not be used on the same system, it is advised you use only one kind of DIMM.
- Processors with 100MHz front-side bus should be paired only with 100MHz SDRAM. Processors with 66MHz front-side bus can be paired with either 66MHz SDRAM/EDO or 100MHz SDRAM.
- Using the serial presence detect (SPD) data structure, programmed into an $E^2$PROM on the DIMM, the BIOS can determine the SDRAM' s size and speed.
- The DRAM Timing register, which provides the DRAM speed grade control for the entire memory array, must be programmed to use the timing of the slowest DRAMs installed.
- Possible EDO DIMM memory sizes are 8MB, 16MB, 32MB, 64MB, 128MB, 256MB in each DIMM socket.
- Possible SDRAM DIMM memory sizes are 8MB, 16MB, 32MB, 64MB, 128MB in each DIMM socket.

-- This page is intentionally left blank --

# Chapter 3
# BIOS Description

## Utility Support:

### FLASH.EXE

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

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

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

Follow the steps exactly for a successful upgrade.

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

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

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

FLASH [BIOSfile] [/g]

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

<command> function definition:

c: clear CMOS;

p: clear PnP;

d: clear DMI.

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

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

/g: Retrieves BIOS file from BIOS ROM.

Examples:

A:\FLASH.EXE BIOSfile.bin

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

A:\FLASH.EXE BIOSfile.bin /g

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

# AWARD BIOS Description

## Entering Setup

Power on the computer, when the following message briefly appears at the bottom of the screen during the POST (Power On Self Test), press <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 ten setup functions and two exit choices. Use the arrow keys to select among the items and press the <Enter> key to accept or enter the sub-menu. The <ESC> key is used to exit the sub-menu.

Figure-1 Main Menu

**Note: The 'System Monitor SETUP' item will not be displayed if there is no hardware monitor chip on the motherboard.**

## Load Setup Defaults

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

## Standard CMOS Setup

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

Figure-2 Standard CMOS Setup Menu

## Hard Disk

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

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

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

## Video

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

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

## Halt On

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

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

## Memory

This is a Display-Only category determined by POST (Power On SelfTest) of the BIOS

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

## BIOS Features Setup

Figure-3 BIOS Features Setup Menu

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

| 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. |
| ● CPU L2 Cache ECC | *Enabled* | Enables CPU L2 Cache ECC (Error Checking and Correction) 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. |
| ● 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 Floppy Seek | *Enabled* | BIOS searches for the floppy disk drive to determine if the drive is ready for diskette read/ write during booting. |
| | *Disabled* | Skips the drive seeking to speed up system booting. |
| ● 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. |
| ● Typematic Rate Setting | *Enabled* | Enables typematic rate and typematic delay programming. |
| | *Disabled* | Disables typematic rate and typematic delay programming. The system BIOS will use the default value of these two items. |
| ● Typematic Rate (Chars/Sec) | *6-30* | Sets the speed of the typematic rate (characters per second). |
| ● Typematic Delay (Msec) | *250-1000* | Sets the time of the typematic delay. |
| ● 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. |
| ● PCI/VGA Palette Snoop | *Enabled* | Non-standard VGA cards such as graphics accelerators or MPEG video cards may not show colors properly. Enabling this item can solve this problem. |
| | *Disabled* | Default setting. |
| ● 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. |
| ● Report NO FDD For WIN95 | Yes | Reports ‘ No Floppy Disk Drive’ for WIN95 to release IRQ6. |
| | No | Does not report ‘ No Floppy Disk Drive’ for WIN95. |
| ● Video BIOS Shadow | *Enabled* | Video BIOS will be copied to RAM. Video Shadow will increase the video speed. |
| | *Disabled* | Video shadow is disabled. |