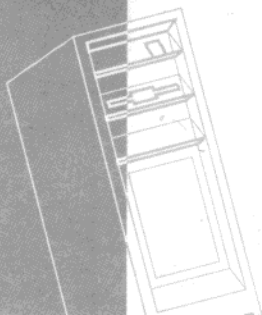
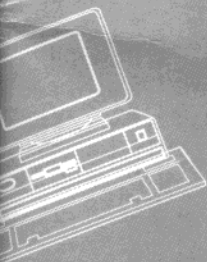


**PENTIUM<sup>®</sup> II**  
**P61440FX/Pentium<sup>®</sup> II**  
**Commander III**

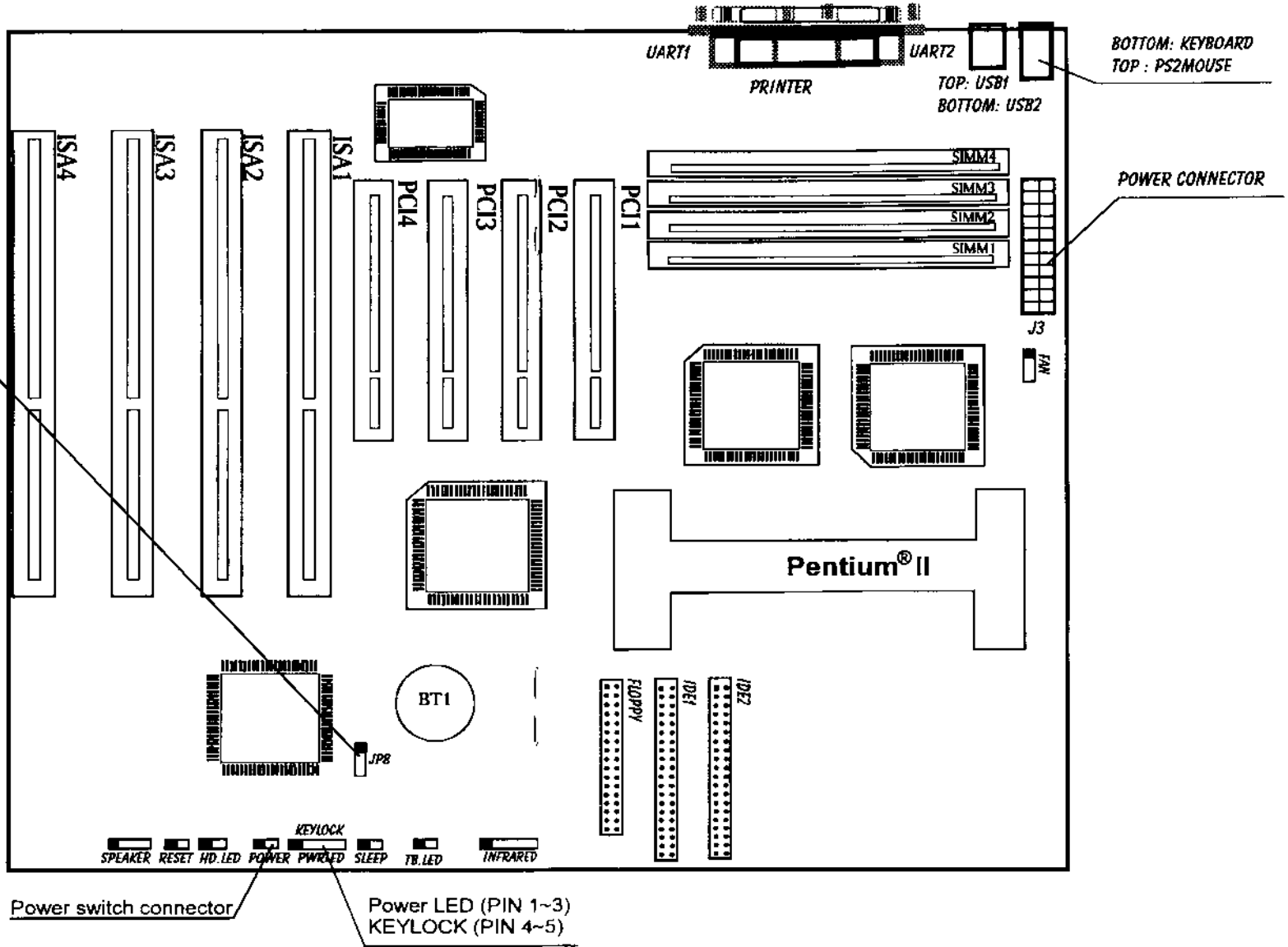


User Manual

**PC Main Board**



JP8  
CLEAR CMOS  
(SEE PAGE 2-5)



# CONTENTS

---

|                                             |            |
|---------------------------------------------|------------|
| <i>SpeedEasy Quick Setup</i> .....          | 1          |
| <b>1. Introduction</b> .....                | <b>1-1</b> |
| <i>Overview</i> .....                       | 1-1        |
| <i>Key Features</i> .....                   | 1-1        |
| <b>2. Connector Configuration</b> .....     | <b>2-1</b> |
| <i>Power LED Connector</i> .....            | 2-1        |
| <i>Power Switch Connector</i> .....         | 2-1        |
| <i>Hard Disk LED Connector</i> .....        | 2-2        |
| <i>Speaker Connector</i> .....              | 2-2        |
| <i>Turbo LED Connector</i> .....            | 2-2        |
| <i>Reset Switch</i> .....                   | 2-2        |
| <i>Hardware Green Connector</i> .....       | 2-2        |
| <i>Keylock Connector</i> .....              | 2-3        |
| <i>Infrared Header</i> .....                | 2-3        |
| <i>FAN Connector</i> .....                  | 2-3        |
| <i>I/O Port Description</i> .....           | 2-4        |
| <i>Memory Configuration</i> .....           | 2-4        |
| <i>Clear CMOS</i> .....                     | 2-5        |
| <i>Illustration of All Connectors</i> ..... | 2-5        |
| <b>3. AWARD BIOS Description</b> .....      | <b>3-1</b> |
| <i>Entering Setup</i> .....                 | 3-1        |
| <i>Standard CMOS Setup</i> .....            | 3-2        |
| <i>SpeedEasy CPU Setup</i> .....            | 3-4        |
| <i>BIOS Features Setup</i> .....            | 3-5        |
| <i>Chipset Features Setup</i> .....         | 3-8        |

---

# CONTENTS

---

|                                                 |            |
|-------------------------------------------------|------------|
| <i>Power Management Setup</i> .....             | 3-11       |
| <i>PNP/PCI Configuration Setup</i> .....        | 3-14       |
| <i>Load Setup Defaults</i> .....                | 3-15       |
| <i>Integrated Peripherals</i> .....             | 3-16       |
| <i>Password Setting</i> .....                   | 3-18       |
| <i>IDE HDD Auto Detection</i> .....             | 3-19       |
| <i>Hard Disk Low Level Format Utility</i> ..... | 3-21       |
| <i>Power-On Boot</i> .....                      | 3-22       |
| <b>4. BIOS Upgrade Diskette</b> .....           | <b>4-1</b> |

# SpeedEasy Quick Setup

## **Procedures:**

1. Insert the Pentium® II correctly.
2. Plug in other configurations and restore the system.
3. Press <Del> key and power on the system to enter BIOS Setup.
4. Enter "SpeedEasy CPU Setup" menu to set up CPU speed.

**Note: If you don't set CPU speed, your system will run at default setting (233MHz for Pentium® II).**

5. Save and exit BIOS Setup, then your system can boot successfully as you expected.

## SpeedEasy Type Introduction

---

### SpeedEasy CPU Setup Menu

Select <SpeedEasy CPU Setup> item from the main menu and enter the sub-menu:

| ROM PCI/ISA BIOS (2A69HQ1B) |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| SpeedEasy CPU SETUP         |                                                                             |
| QDI Innovative Technology   |                                                                             |
| CPU Model : Pentium-II      | Warning: Be sure your selection is right. CPU over speed will be dangerous! |
| Speed Mode : SpeedEasy      |                                                                             |
| CPU Speed : 233MHz          |                                                                             |
| ESC: Quit                   | ↑↓←→ : Select Item                                                          |
| F1: Help                    | PU/PD/+/- : Modify                                                          |
|                             | (Shift) F2 : Color                                                          |

Figure -1 SpeedEasy CPU Setup Menu

BIOS will provide you a set of basic values for your Pentium® II selection instead of jumper setting. You can manually select Pentium® II Speed on "SpeedEasy CPU Setup" menu screen.

#### Warning:

You'd better not to set CPU frequency higher than its working frequency. Otherwise, we will not be responsible for any damage it causes.

**Note:** In addition, if your system can not boot up again because of wrong CPU setting, you can hold down the hot-key <Del> while power on the system. The system will reboot and run at basic values.

# Chapter 1

## Introduction

### Overview

P6I440FX/Pentium® II Commander III green main board provides a highly integrated solution for fully compatible, high performance PC/ATX platforms, and supports Intel Pentium® II processors. Flexible main memory size can be installed from 8MB up to 512MB DRAM, so as to give full play to the advantages of the Intel Pentium® II processors. The main board offers a wide range of interface to support integrated on-board IDE and on-board I/O function.

The current Green function is divided into three phases: Doze, Standby and Suspend.

### Key Features

- Pentium® II*
  - Supports Intel Pentium® II processors at 233/266MHz
  - Supports 60MHz/66MHz Bus speed
  - Pentium® II core frequency = System Clock x2.5, x3, x3.5, x4 or x4.5
  - On board switching voltage regulator with VID (Voltage ID), and Pentium® II Core supply voltage can be selected from 1.3V to 3.5V automatically
- Chipset*
  - Intel® 440FX chipset
- System memory*
  - Supports 4x72pin SIMM modules
  - 64-bit data path for flexible memory size from 8MB up to 512MB DRAM on board
  - Supports both Fast Page mode and Extended Data Output (EDO) DRAM
  - Supports memory Parity checking and ECC (Error Checking and Correction) function
- On-board IDE*
  - Supports two PCI PIO and Bus Master IDE ports.
  - Supports up to Mode 4 Timing
  - Supports two Fast IDE interfaces for up to four IDE devices including IDE hard disk drives and CD-ROMs

## *Introduction*

---

- Green function* – Supports three Green modes: Doze, Standby and Suspend
- On-board I/O*
- Use NS Plug & Play I/O chip PC87307
  - One floppy port supports up to two 3.5" or 5.25" floppy drives 360K/720K/1.2M/1.44M/ 2.88M format
  - All I/O ports can be enabled/disabled by BIOS setup
  - Two high speed 16550 compatible UARTs (COM1/COM2/COM3/COM4 selectable) with 16-byte send/receive FIFOs and support MIDI mode
  - One enhanced parallel port at I/O address 378H/278H/3BCH with additional bi-direction I/O capability and multi-mode selection (SPP/EPP/ECP) (IEEE1284 compliant)
  - Provides protection circuit to prevent damage to the parallel port when a connected printer is powered up or operated at a higher voltage
- Advanced Feature*
- On board PS/2 mouse and PS/2 keyboard socket
  - On board one parallel and two UARTs port sockets
  - On board two USB sockets
  - On board switching voltage regulator with VID (support 1.3V to 3.5V)
  - Provides Anti-Virus function
  - Provides Infrared interface
  - Supports Windows 95 Software Power-Down
  - Supports External Modem Ring Power-On
  - SpeedEasy type for Pentium® II speed
- BIOS*
- Licensed advanced AWARD BIOS. Supports Flash ROM BIOS, Plug and Play ready. Built-in NCR® 53C810 SCSI BIOS
- Expansion slots* – 4 x ISA slots and 4 x PCI slots
- Board size* – 305mm x 244mm
-



# Chapter 2

## Connector Configuration

This section lists all connector pin assignment and port description on the main board. The situations of the connectors and ports are illustrated in the following figures. Before inserting these connectors, please pay attention to the direction.

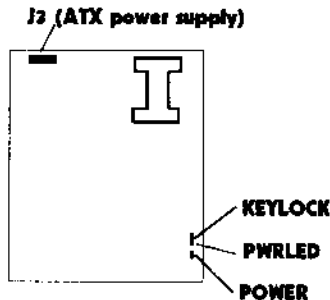
### Power LED Connector (PWRLED)

| PIN NUMBER | FUNCTION    |
|------------|-------------|
| 1          | LED Anode   |
| 2          | NC          |
| 3          | LED Cathode |

### Power Switch (POWER)

Connect ATX power supply connector to socket J3 first.

1. If you want to power up your system, you should turn on the mechanical switch of ATX power supply first, then push once the button connected to the two pin header (POWER).
2. If you want to power off your system, you need not turn off the mechanical switch of ATX power supply, just push once again the button connected to the two pin header (POWER). The location of connector is shown as below figure:



## Connector Configuration

---

### Hard Disk LED Connector (HD.LED)

| PIN NUMBER | FUNCTION    |
|------------|-------------|
| 1          | LED ANODE   |
| 2          | LED CATHODE |

### Speaker Connector (SPEAKER)

| PIN NUMBER | FUNCTION |
|------------|----------|
| 1          | SPKDATA  |
| 2          | GND      |
| 3          | GND      |
| 4          | VCC      |

### Turbo LED Connector (TB LED)

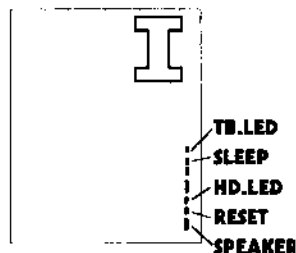
| PIN NUMBER | FUNCTION    |
|------------|-------------|
| 1          | LED ANODE   |
| 2          | LED CATHODE |

### Reset Switch (Reset)

| SETTING    | FUNCTION         |
|------------|------------------|
| CLOSE ONCE | RESET THE SYSTEM |
| OPEN       | NORMAL           |

### Hardware Green (SLEEP)

| SETTING    | FUNCTION       |
|------------|----------------|
| CLOSE ONCE | HARDWARE GREEN |
| OPEN       | NORMAL         |



## Keylock Connector (KB-LOCK)

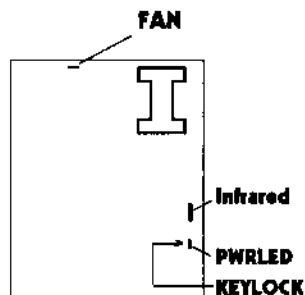
| PIN NUMBER | FUNCTION |
|------------|----------|
| 1          | +5V      |
| 2          | NC       |
| 3          | GND      |
| 4          | KEYLOCK  |
| 5          | GND      |

## Infrared Header (INFRARED)

| PIN NUMBER | FUNCTION |
|------------|----------|
| 1          | VCC      |
| 2          | NC       |
| 3          | IRRX     |
| 4          | GND      |
| 5          | IRTX     |
| 6          | VCC      |

## FAN Connector (FAN)

| PIN NUMBER | FUNCTION |
|------------|----------|
| 1          | GND      |
| 2          | +12V     |
| 3          | GND      |



## Connector Configuration

---

### I/O Port Description

| CONNECTOR | FUNCTION            |
|-----------|---------------------|
| IDE1      | Primary IDE Port    |
| IDE2      | Secondary IDE Port  |
| FLOPPY    | Floppy Drive Port   |
| PRINTER   | Parallel Port       |
| UART 1    | COM1/COM2/COM3/COM4 |
| UART 2    | COM2/COM3/COM4/COM1 |
| USB1      | First USB Port      |
| USB2      | Second USB Port     |

### Memory Configuration

The P61440FX/Pentium® II Commander III main board supports up to four 72Pin SIMMs, provides a flexible size from 8MB up to 512MB main memory. The DRAM SIMMs can be installed into either/both SIMM1 & 2 or/and SIMM3 & 4. It is not recommended to plug in two different brands of SIMMs simultaneously.

| RAM SIZE  | SIMM1  | SIMM2  | SIMM3  | SIMM4  |
|-----------|--------|--------|--------|--------|
| 8 MB      | 4 MB   | 4 MB   | ---    | ---    |
| 16 MB     | 4 MB   | 4 MB   | 4 MB   | 4 MB   |
| 16 MB     | 8 MB   | 8 MB   | ---    | ---    |
| 24 MB     | 8 MB   | 8 MB   | 4 MB   | 4 MB   |
| 32 MB     | 8 MB   | 8 MB   | 8 MB   | 8 MB   |
| 32 MB     | 16 MB  | 16 MB  | ---    | ---    |
| 40 MB     | 16 MB  | 16 MB  | 4 MB   | 4 MB   |
| 48 MB     | 16 MB  | 16 MB  | 8 MB   | 8 MB   |
| 64 MB     | 16 MB  | 16 MB  | 16 MB  | 16MB   |
| 64 MB     | 32 MB  | 32 MB  | ---    | ---    |
| 72 MB     | 32 MB  | 32 MB  | 4 MB   | 4 MB   |
| 80 MB     | 32 MB  | 32 MB  | 8 MB   | 8 MB   |
| 96 MB     | 32 MB  | 32 MB  | 16 MB  | 16 MB  |
| 128 MB    | 32 MB  | 32 MB  | 32 MB  | 32 MB  |
| 128 MB    | 64 MB  | 64 MB  | ---    | ---    |
| 256 MB    | 64 MB  | 64 MB  | 64 MB  | 64 MB  |
| ** 512 MB | 128 MB | 128 MB | 128 MB | 128 MB |

\*\* : Just according to chipset specification.



# Chapter 3

## AWARD BIOS Description

### Entering Setup

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

Press <DEL> to enter SETUP

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure-1) will be appeared on the screen. The Main Menu allows you to select from eleven setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

|                                                                                                                                                                             |                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| ROM PCI/ISA BIOS (2A69HQ1B)                                                                                                                                                 |                                                                                                                                          |
| CMOS SETUP UTILITY                                                                                                                                                          |                                                                                                                                          |
| AWARD SOFTWARE, INC.                                                                                                                                                        |                                                                                                                                          |
| STANDARD CMOS SETUP<br>SpeedEasy CPU SETUP<br>BIOS FEATURES SETUP<br>CHIPSET FEATURES SETUP<br>POWER MANAGEMENT SETUP<br>PNP/PCI CONFIGURATION SETUP<br>LOAD SETUP DEFAULTS | INTEGRATED PERIPHERALS<br>PASSWORD SETTING<br>IDE HDD AUTO DETECTION<br>HDD LOW LEVEL FORMAT<br>SAVE & EXIT SETUP<br>EXIT WITHOUT SAVING |
| Esc : Quit                                                                                                                                                                  | ↑↓→← : Select Item                                                                                                                       |
| F10 : Save & Exit Setup                                                                                                                                                     | (Shift) F2 : Change Color                                                                                                                |
| Time, Date, Hard Disk Type...                                                                                                                                               |                                                                                                                                          |

Figure -1 Main Menu

# AWARD BIOS Description

## Standard CMOS Setup

Use the arrow keys to highlight the item, then use the <PgUp> or <PgDn> keys to select the value you want in each item.

| ROM PCI/ISA BIOS (2A69HQ1B)        |                  |                           |      |      |                          |       |        |                         |  |
|------------------------------------|------------------|---------------------------|------|------|--------------------------|-------|--------|-------------------------|--|
| CMOS SETUP UTILITY                 |                  |                           |      |      |                          |       |        |                         |  |
| AWARD SOFTWARE, INC.               |                  |                           |      |      |                          |       |        |                         |  |
| Date (mm:dd:yy) : Thu, May 14 1996 |                  |                           |      |      |                          |       |        |                         |  |
| Time (hh:mm:ss) : 00:00:00         |                  |                           |      |      |                          |       |        |                         |  |
| HARD DISKS                         | TYPE             | SIZE                      | CYLS | HEAD | PRECOMP                  | LANDZ | SECTOR | MODE                    |  |
| Primary Master                     | : Auto           | 0                         | 0    | 0    | 0                        | 0     | 0      | AUTO                    |  |
| Primary Slave                      | : Auto           | 0                         | 0    | 0    | 0                        | 0     | 0      | AUTO                    |  |
| Secondary Master                   | : Auto           | 0                         | 0    | 0    | 0                        | 0     | 0      | AUTO                    |  |
| Secondary Slave                    | : Auto           | 0                         | 0    | 0    | 0                        | 0     | 0      | AUTO                    |  |
| Drive A                            | : 1.44M, 3.5 in. |                           |      |      |                          |       |        | Base Memory : 640K      |  |
| Drive B                            | : None           |                           |      |      |                          |       |        | Extended Memory : 7168K |  |
| Video                              | : EGA/VGA        |                           |      |      |                          |       |        | Other Memory : 384K     |  |
| Halt On                            | : All Errors     |                           |      |      |                          |       |        | Total Memory : 8192K    |  |
| ESC: Quit                          |                  | ↑↓→← : Select Item        |      |      | PU / PD / + / - : Modify |       |        |                         |  |
| F1 : Help                          |                  | (Shift) F2 : Change Color |      |      |                          |       |        |                         |  |

Figure -2 Standard CMOS Setup Menu

### Hard Disk

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

The categories identify the types of 2 IDE channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are used for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type "User" is user-definable. If your hard disk drive type is not matched with drive table or listed in it, you can use Type "User" to define your own drive type manually.

If you select Type "Auto", that means the system can autodetect your hard disk when boot up. If you select Type "User", related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>:

|                |                     |              |                 |
|----------------|---------------------|--------------|-----------------|
| <b>CYLS</b>    | number of cylinders | <b>HEAD</b>  | number of heads |
| <b>PRECOMP</b> | write precom        | <b>LANDZ</b> | landing zone    |
| <b>SECTOR</b>  | number of sectors   | <b>MODE</b>  | HDD access mode |

### **Video**

The category selects the type of video adapter used for the primary system monitors are supported, You do not have to select the type in setup.

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

### **Error Halt**

The category determines whether the computer will stop if an error is detected during power up.

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

### **Memory**

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

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



## SpeedEasy CPU Setup

| ROM PCI/ISA BIOS (2A69HQ1B) |              |                                                                             |
|-----------------------------|--------------|-----------------------------------------------------------------------------|
| SpeedEasy CPU SETUP         |              |                                                                             |
| QDI Innovative Technology   |              |                                                                             |
| CPU Model                   | : Pentium-II | Warning: Be sure your selection is right. CPU over speed will be dangerous! |
| Speed Mode                  | : SpeedEasy  |                                                                             |
| CPU Speed                   | : 233MHz     |                                                                             |
| ESC: Quit                   |              | ↑↓←→ : Select Item                                                          |
| F1: Help                    |              | FU/PD/+/- : Modify (Shift) F2 : Color                                       |

Figure -3 SpeedEasy CPU Setup

The following pages tell you the options of each item and describe the meanings of each option.

| Item        | Option                  | Description                                                                                                                                                        |
|-------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU Model   |                         | BIOS can automatically detect known CPU model, so this item is shown only.                                                                                         |
| Speed Model | <i>SpeedEasy</i>        | You should select CPU speed according to your CPU brand and type.                                                                                                  |
|             | <i>Jumper Emulation</i> | This item is only for the user who understand all the CPU parameter. (System Bus frequency and multiplication of Processor Core frequency to System Bus frequency) |

## BIOS Features Setup

| ROM PCI/ISA BIOS (2A69HQ1B) |   |          |                    |              |                    |
|-----------------------------|---|----------|--------------------|--------------|--------------------|
| BIOS FEATURES SETUP         |   |          |                    |              |                    |
| AWARD SOFTWARE, INC.        |   |          |                    |              |                    |
| Virus Warning               | : | Disabled | Video BIOS Shadow  | :            | Enabled            |
| Pentium-II L1 Cache         | : | Enabled  | C8000~CBFFF Shadow | :            | Disabled           |
| Pentium-II L2 Cache         | : | Enabled  | CC000~CFFFF Shadow | :            | Disabled           |
| Quick Power On Self Test    | : | Enabled  | D0000~D3FFF Shadow | :            | Disabled           |
| Boot Sequence               | : | C, A     | D4000~D7FFF Shadow | :            | Disabled           |
| Swap Floppy Drive           | : | Disabled | D8000~DBFFF Shadow | :            | Disabled           |
| Boot Up Floppy Seek         | : | Disabled | DC000~DFFFF Shadow | :            | Disabled           |
| Boot Up Numlock Status      | : | On       |                    |              |                    |
| Gate A20 Option             | : | Fast     |                    |              |                    |
| Typematic Rate Setting      | : | Disabled |                    |              |                    |
| Typematic Rate (Chars/Sec)  | : | 6        |                    |              |                    |
| Typematic Delay (Msec)      | : | 250      |                    |              |                    |
| Security Option             | : | Setup    | ESC: Quit          | ↑↓→← :       | Select Item        |
| PCI/VGA Palette Snoop       | : | Disabled | F1 : Help          | PU/PD/+/− :  | Modify             |
| OS Select For DRAM>64MB     | : | Non-OS2  | F5 : Old Values    | (Shift) F2 : | Color              |
|                             |   |          | F7 :               |              | Load Setup Default |

Figure -4 BIOS Features Setup Menu

The following pages tell you the options of each item and describe the meaning of each option.

| Item                   | Option          | Description                                                                                                                                                                                                |
|------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Virus Warning          | <i>Enabled</i>  | Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.                                        |
|                        | <i>Disabled</i> | No warning message to appear when anything attempts to access the boot sector or hard disk partition table.<br><b>Note: This function is available only for DOS and other OS that do not trap INT 13h.</b> |
| Pentium-II L1/L2 Cache | <i>Enabled</i>  | Enable Pentium® II Level1/Level2 cache.                                                                                                                                                                    |

## ***AWARD BIOS Description***

---

|                            |                 |                                                                                                                             |
|----------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------|
|                            | <i>Disabled</i> | Disable Pentium® II Level1/Level2 cache.                                                                                    |
| Quick Power On Self Test   | <i>Enabled</i>  | Enable quick POST. BIOS will shorten or skip some check items during POST to speed up POST after you power on the computer. |
|                            | <i>Disabled</i> | Normal POST.                                                                                                                |
| Boot Sequence              | <i>C,A</i>      | The system will firstly search for hard disk drive then floppy disk drive.                                                  |
|                            | <i>A,C</i>      | The system will firstly search for floppy disk drive then hard disk drive.                                                  |
| Swap Floppy Drive          | <i>Enabled</i>  | It will exchange the assignment of A & B floppy drives.                                                                     |
|                            | <i>Disabled</i> | The assignment of A & B floppy drives are normal.                                                                           |
| Boot Up Floppy Seek        | <i>Enabled</i>  | BIOS searches for floppy disk drive to determine if drive is ready for diskette read/write during booting.                  |
|                            | <i>Disabled</i> | skip drive seeking to speed up system booting.                                                                              |
| Boot Up Numlock Status     | <i>On</i>       | Keypad is used as number keys.                                                                                              |
|                            | <i>Off</i>      | Keypad is used as arrow keys.                                                                                               |
| Gate A20 Option            | <i>Normal</i>   | The A20 signal is controlled by keyboard controller or chipset hardware.                                                    |
|                            | <i>Fast</i>     | It is default. The A20 signal is controlled by Port 92 or chipset specific method.                                          |
| Typematic Rate Setting     | <i>Enabled</i>  | Enable typematic rate and typematic delay programming.                                                                      |
|                            | <i>Disabled</i> | Disable typematic rate and typematic delay programming. The system BIOS will use default value of these two items.          |
| Typematic Rate (Chars/Sec) | <i>6~30</i>     | Set the speed of the typematic rate (characters per second).                                                                |
| Typematic Delay (Msec)     | <i>250~1000</i> | Set the time of the typematic delay.                                                                                        |
| Security Option            | <i>System</i>   | The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.           |
|                            | <i>Setup</i>    | The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.              |

**Note:** To disable security, select Password Setting (refer to page 4-17) at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

|                                            |                 |                                                                                         |
|--------------------------------------------|-----------------|-----------------------------------------------------------------------------------------|
| PCI/VGA<br>Palette Snoop                   | <i>Enabled</i>  | Enable PCI/VGA palette snoop.                                                           |
|                                            | <i>Disabled</i> | Disable PCI/VGA palette snoop.                                                          |
| OS Select For<br>DRAM>64MB                 | <i>Non-OS2</i>  | If your operating system is not OS/2, please select this item.                          |
|                                            | <i>OS2</i>      | If system DRAM is more than 64MB and operating system is OS/2, please select this item. |
| Video BIOS<br>Shadow                       | <i>Enabled</i>  | Video BIOS will be copied to RAM. Video Shadow will increase the video speed.           |
|                                            | <i>Disabled</i> | Video shadow is disabled.                                                               |
| C8000~CBFFF Shadow ... DC000~DFFFF Shadow: |                 |                                                                                         |
|                                            | <i>Enabled</i>  | Enabled 16KB ROM area will be copied to RAM.                                            |
|                                            | <i>Disabled</i> | The shadow function is disabled.                                                        |

# AWARD BIOS Description

## Chipset Features Setup

| ROM PCI/ISA BIOS (2A69HQ1B) |            |                          |                    |
|-----------------------------|------------|--------------------------|--------------------|
| CHIPSET FEATURES SETUP      |            |                          |                    |
| AWARD SOFTWARE, INC.        |            |                          |                    |
| Auto Configuration          | : Enabled  | 8 Bit I/O Recovery Time  | : 1                |
|                             |            | 16 Bit I/O Recovery Time | : 1                |
| DRAM Speed Selection        | : 60ns     | Memory Hole At 15M~16M   | : Disabled         |
| DRAM RAS# Precharge Time    | : 3        | DRAM Fast Leadoff        | : Disabled         |
| MA Additional Wait State    | : Disabled |                          |                    |
| RAS# To CAS# Delay          | : Disabled |                          |                    |
| DRAM Read Burst (B/E/F)     | : x2/2/3   |                          |                    |
| DRAM Write Burst (B/E/F)    | : x2/2/3   |                          |                    |
| ISA Bus Clock               | : PCICLK/4 |                          |                    |
| DRAM Refresh Queue          | : Enabled  |                          |                    |
| DRAM RAS Only Refresh       | : Disabled |                          |                    |
| DRAM ECC/PARITY Select      | : Disabled |                          |                    |
| Fast Dram Refresh           | : Disabled |                          |                    |
| Read-Around-Write           | : Enabled  |                          |                    |
| PCI Burst Write Combine     | : Disabled |                          |                    |
| PCI-To-DRAM Pipeline        | : Enabled  |                          |                    |
| CPU-To-PCI Write Post       | : Enabled  | ESC: Quit                | ↑↓→← : Select Item |
| CPU-To-PCI IDE Posting      | : Enabled  | F1 : Help                | PU/PD/+/- : Modify |
| System BIOS Cacheable       | : Disabled | F5 : Old Values          | (Shift)F2 : Color  |
| Video RAM Cacheable         | : Disabled | F7 : Load Setup Default  |                    |

Figure -5 Chipset Features Setup Menu

The following pages tell you the options of each item and describe the meanings of each option.

| Item               | Option          | Description                                                                           |
|--------------------|-----------------|---------------------------------------------------------------------------------------|
| Auto Configuration | <i>Enabled</i>  | Automatically configure DRAM Timing according to the value of "DRAM Speed Selection". |
|                    | <i>Disabled</i> | Manually configure.                                                                   |
|                    |                 | <b>Note:</b> It is recommended to choose "Enabled" option for common users.           |

|                          |                                                        |                                                                                                                                                                                                                           |
|--------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DRAM Speed Selection     | <i>60ns, 70ns</i>                                      | This item is of selected DRAM read/write timing. You must ensure that your SIMMs is as fast as 60ns, otherwise you have to select 70ns.                                                                                   |
| DRAM RAS# Precharge Time | 3<br>4                                                 | DRAM RAS# Precharge time = 3x system clocks.<br>DRAM RAS# Precharge time = 4x system clocks.                                                                                                                              |
| MA Additional Wait State | <i>Enabled</i><br><br><i>Disabled</i>                  | One additional wait state is inserted before the assertion of the first MA and CAS#/RAS# during DRAM read or write leadoff cycles. This affects page hit, row miss and page miss cases.<br>Without additional wait state. |
| RAS# To CAS# Delay       | <i>Enabled</i><br><br><i>Disabled</i>                  | Add a delay time between the assertion of RAS# and CAS#.<br>Without additional delay time.                                                                                                                                |
| DRAM Read Burst (B/E/F)  | <i>x 1/2/3, x 2/2/3, x 2/3/4, x 3/4/4</i>              | The DRAM read burst timing depends on the type of DRAM on a per-row basis. Slower rates may be required to support slower memories.                                                                                       |
| DRAM Write Burst (B/E/F) | <i>x 2/2/3, x 3/3/3, x 3/3/4, x 4/4/4</i>              | The DRAM write burst timing depends on the type of DRAM on a per-row basis. Slower rates may be required to support slower memories.                                                                                      |
| ISA Bus Clock            | <i>PCICLK/3</i><br><i>PCICLK/4</i>                     | Sets ISA Bus clock to PCICLK/3.<br>Sets ISA Bus clock to PCICLK/4.<br><b>Note: PCICLK = System Clock/2.</b>                                                                                                               |
| DRAM Refresh Queue       | <i>Enabled</i><br><br><i>Disabled</i>                  | The internal DRAM refresh queue is enabled.<br>The refresh queue is disabled and all refreshes are priority requests.                                                                                                     |
| DRAM RAS Only Refresh    | <i>Enabled</i><br><br><i>Disabled</i>                  | Defines DRAM Refresh type as RAS-Only Refresh.<br>Defines DRAM Refresh type as CAS-before-RAS.                                                                                                                            |
| DRAM ECC/PARITY Select   | <i>ECC</i><br><br><i>Parity</i><br><br><i>Disabled</i> | Provide ECC (Error Checking and Correction) function.<br>Provide DRAM Parity generation and checking.<br>Disable ECC/PARITY function.                                                                                     |
| Fast Dram Refresh        | <i>Enabled</i>                                         | Defines DRAM refresh rate as fast refresh mode.                                                                                                                                                                           |

## ***AWARD BIOS Description***

---

|                          |                 |                                                                      |
|--------------------------|-----------------|----------------------------------------------------------------------|
|                          | <i>Disabled</i> | Defines DRAM refresh rate as normal refresh mode.                    |
| PCI Burst Write Combine  | <i>Enabled</i>  | Enables PCI burst write combining.                                   |
|                          | <i>Disabled</i> | Disables PCI burst write combining.                                  |
| PCI-To-DRAM Pipeline     | <i>Enabled</i>  | Provides PCI-To-DRAM pipeline operating.                             |
|                          | <i>Disabled</i> | Disable PCI-To-DRAM pipeline operating.                              |
| CPU-To-PCI Write Post    | <i>Enabled</i>  | Enables CPU-To-PCI write post.                                       |
|                          | <i>Disabled</i> | Disables CPU-To-PCI write post.                                      |
| System BIOS Cacheable    | <i>Enabled</i>  | Besides conventional memory, the system BIOS area is also cacheable. |
|                          | <i>Disabled</i> | The system BIOS area is not cacheable.                               |
| Video RAM Cacheable      | <i>Enabled</i>  | Besides conventional memory, video RAM area is also cacheable.       |
|                          | <i>Disabled</i> | Video RAM area is not cacheable.                                     |
| 8 Bit I/O Recovery Time  | <i>1~8</i>      | Defines the ISA Bus 8 bit I/O operating recovery time.               |
|                          | <i>NA</i>       | 8 bit I/O recovery time is not exist.                                |
| 16 Bit I/O Recovery Time | <i>1~4</i>      | Defines the ISA Bus 16 bit I/O operating recovery time.              |
|                          | <i>NA</i>       | 16 bit I/O recovery time is not exist.                               |
| Memory Hole At 15M-16M   | <i>Enabled</i>  | Memory Hole at 15-16M is reserved for expanded PCI card.             |
|                          | <i>Disabled</i> | Do not set this memory hole.                                         |

## Power Management Setup

| ROM PCI/ISA BIOS (2A69HQ1B)            |                | POWER MANAGEMENT SETUP          |                    |
|----------------------------------------|----------------|---------------------------------|--------------------|
| AWARD SOFTWARE, INC.                   |                |                                 |                    |
| ** Special Features **                 |                | ** Wake up Events In Suspend ** |                    |
| Ring Power On                          | : Disabled     | IRQ3 (COM2)                     | : ON               |
| Auto Start On AC Loss                  | : Disabled     | IRQ4 (COM1)                     | : ON               |
| Power Management                       | : Disabled     | IRQ5 (LPT 2)                    | : OFF              |
| PM Control by APM                      | : Yes          | IRQ6 (Floppy Disk)              | : OFF              |
| Video Off Method                       | : VHSYNC+Blank | IRQ7 (LPT1)                     | : OFF              |
| MODEM Use IRQ                          | : NA           | IRQ8 (RTC Alarm)                | : OFF              |
| Software Power Down                    | : Enabled      | IRQ9 (IRQ2 Redir)               | : OFF              |
|                                        |                | IRQ10 (Reserved)                | : OFF              |
| Doze Mode                              | : Disabled     | IRQ11 (Reserved)                | : OFF              |
| Standby Mode                           | : Disabled     | IRQ12 (PS/2 Mouse)              | : ON               |
| Suspend Mode                           | : Disabled     | IRQ13 (Coprocessor)             | : OFF              |
| HDD Power Mode                         | : Disabled     | IRQ14 (Hard Disk)               | : OFF              |
|                                        |                | IRQ15 (Reserved)                | : OFF              |
| ** Wake Up Events In Doze & Standby ** |                | ESC: Quit    ↑↓←→ : Select Item |                    |
| IRQ3 (Wake-Up Event)                   | : ON           | F1 : Help                       | PU/PD/+/- : Modify |
| IRQ4 (Wake-Up Event)                   | : ON           | F5 : Old Values                 | (Shift)F2 : Color  |
| IRQ8 (Wake-Up Event)                   | : ON           | F7 : Load Setup Default         |                    |
| IRQ12 (Wake-Up Event)                  | : ON           |                                 |                    |

Figure -6 Power Management Setup Menu

The following pages tell you the options of each item and describe the meanings of each option.

| Item                  | Option   | Description                                                                                                     |
|-----------------------|----------|-----------------------------------------------------------------------------------------------------------------|
| Ring Power-On         | Enabled  | Allows the system to be powered on when a Ring Indicator signal comes up to UART1 or UART2 from external modem. |
|                       | Disabled | Do not allow Ring Power-On.                                                                                     |
| Auto Start On AC Loss | Enabled  | Sets the power control for returning to the last known state of the system.                                     |



## AWARD BIOS Description

---

|                     |                              |                                                                                                                                                                                                                                                                                                                                         |
|---------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | Disabled                     | Powering down the system if the motherboard detects that the power supply has lost AC.                                                                                                                                                                                                                                                  |
| Power Management    | <i>Disabled</i>              | Global Power Management (PM) will be disabled.                                                                                                                                                                                                                                                                                          |
| PM Control by APM   | <i>No</i>                    | System BIOS will ignore APM when Power Management is enabled.                                                                                                                                                                                                                                                                           |
|                     | <i>Yes</i>                   | System BIOS will wait for APM's prompt before it enter any PM mode e.g. Standby or Suspend.<br><br><b>Note: If APM is installed, and if there is a task running, even the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode. But if APM is not installed, this option has no effect.</b> |
| Video Off Method    | <i>Blank Screen</i>          | The system BIOS will only blank off the screen when disabling video.                                                                                                                                                                                                                                                                    |
|                     | <i>V/H SYNC +Blank</i>       | In addition to Blank Screen, BIOS will also turn off the V-SYNC & H-SYNC signals from VGA cards to monitor.                                                                                                                                                                                                                             |
|                     | <i>DPMS</i>                  | This function is enabled only for the VGA card supporting DPMS.<br><br><b>Note: Green monitors detect the V/H -SYNC signals to turn off its electron gun.</b>                                                                                                                                                                           |
| MODEM Use IRQ       | <i>3, 4, 5, 7, 9, 10, 11</i> | Special wake-up event for Modem.                                                                                                                                                                                                                                                                                                        |
|                     | <i>NA</i>                    | Invalidates this feature.                                                                                                                                                                                                                                                                                                               |
| Software Power Down | <i>Enabled</i>               | Supports Windows 95 Software Power-Down. To enable Software Power-Down, Power Management must be enabled.                                                                                                                                                                                                                               |
| Doze Mode           | <i>Disabled</i>              | The system will never enter Doze mode.                                                                                                                                                                                                                                                                                                  |
|                     | <i>1Min - 1Hr</i>            | Defines the continuous idle time before the system entering Doze mode. If any item defined in "Wake Up Events In Doze & Suspend" is On and activated, the system will be waken up.                                                                                                                                                      |
| Standby Mode        | <i>Disabled</i>              | The system will never enter Standby mode.                                                                                                                                                                                                                                                                                               |
|                     | <i>1Min - 1Hr</i>            | Defines the continuous idle time before the system entering Standby mode. If any item defined in "Wake Up Events In Doze & Suspend" is On and activated, the system will be waken up.                                                                                                                                                   |

|                                  |                  |                                                                                                                                                                                                |
|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suspend Mode                     | <i>Disabled</i>  | The system will never enter Suspend mode.                                                                                                                                                      |
|                                  | <i>1Min ~1Hr</i> | Defines the continuous idle time before the system entering Suspend mode. If any item defined in " <i>Wake up Events In Suspend</i> " is <i>On</i> and activated, the system will be waken up. |
| HDD Power Down                   | <i>Disabled</i>  | HDD's motor will not be off.                                                                                                                                                                   |
|                                  | <i>1~15Min</i>   | Defines the continuous HDD idle time before the HDD entering power saving mode (motor off).                                                                                                    |
| IRQ3~IRQ12<br>(Wake-Up<br>Event) | <i>OFF</i>       | The specified event's activity will not make the system wake up from Doze & Standby mode.                                                                                                      |
|                                  | <i>ON</i>        | The specified event's activity will make the system wake up from Doze & Standby mode.                                                                                                          |
| IRQ3 ~IRQ15                      | <i>OFF</i>       | The specified event's activity will not make the system wake up from Suspend mode.                                                                                                             |
|                                  | <i>ON</i>        | The specified event's activity will make the system wake up from Suspend mode.                                                                                                                 |

# AWARD BIOS Description

## PNP/PCI Configuration Setup

| ROM PCI/ISA BIOS (2A69HQ1B)         |                                   |
|-------------------------------------|-----------------------------------|
| PNP/PCI CONFIGURATION SETUP         |                                   |
| AWARD SOFTWARE, INC.                |                                   |
| Resources Controlled By : Manual    | PCI IRQ Active By : Level         |
| Reset Configuration Data : Disabled | PCI IDE IRQ Map To : PCI-AUTO     |
|                                     | Primary IDE INT# : A              |
|                                     | Secondary IDE INT# : B            |
|                                     | Use MEM Base Addr : N/A           |
| IRQ-3 assigned to : Legacy ISA      |                                   |
| IRQ-4 assigned to : Legacy ISA      |                                   |
| IRQ-5 assigned to : PCI/ISA PnP     |                                   |
| IRQ-7 assigned to : Legacy ISA      |                                   |
| IRQ-9 assigned to : PCI/ISA PnP     |                                   |
| IRQ-10 assigned to : PCI/ISA PnP    |                                   |
| IRQ-11 assigned to : PCI/ISA PnP    |                                   |
| IRQ-12 assigned to : PCI/ISA PnP    |                                   |
| IRQ-14 assigned to : Legacy ISA     |                                   |
| IRQ-15 assigned to : Legacy ISA     |                                   |
| DMA-0 assigned to : PCI/ISA PnP     |                                   |
| DMA-1 assigned to : PCI/ISA PnP     |                                   |
| DMA-3 assigned to : PCI/ISA PnP     |                                   |
| DMA-5 assigned to : PCI/ISA PnP     |                                   |
| DMA-6 assigned to : PCI/ISA PnP     |                                   |
| DMA-7 assigned to : PCI/ISA PnP     |                                   |
|                                     | ESC: Quit      ↑↓→← : Select Item |
|                                     | F1 : Help      PU/PD+/- : Modify  |
|                                     | F5 : Old Values (Shift)F2 : Color |
|                                     | F7 : Load Setup Default           |

Figure -7 PNP/PCI Configuration Setup Menu

The following pages tell you the options of each item and describe the meaning of each option.

| Item                     | Option          | Description                                                                                      |
|--------------------------|-----------------|--------------------------------------------------------------------------------------------------|
| Resources Controlled By  | <i>Manual</i>   | Assigns system resources (IRQ and DMA) manually by user.                                         |
|                          | <i>Auto</i>     | Assigns system resources (IRQ and DMA) automatically by BIOS.                                    |
| Reset Configuration Data | <i>Enabled</i>  | Forces ESCD (device list in BIOS) update once, then this item automatically reset to "Disabled". |
|                          | <i>Disabled</i> | Invalidate this BIOS feature.                                                                    |

|                               |                        |                                                                                                                                                       |
|-------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| IRQ-3 ~ IRQ-15<br>assigned to | <i>Legacy ISA</i>      | The specified IRQ-x will be assigned to ISA only.                                                                                                     |
|                               | <i>PCI/ISA<br/>PnP</i> | The specified IRQ-x will be assigned to ISA or PCI.                                                                                                   |
| DMA-0 ~ DMA-7<br>assigned to  | <i>Legacy ISA</i>      | The specified DMA-x will be assigned to ISA only.                                                                                                     |
|                               | <i>PCI/ISA<br/>PnP</i> | The specified DMA-x will be assigned to ISA or PCI.                                                                                                   |
| PCI IRQ Active By             | <i>Level,<br/>Edge</i> | Tells the chipset that the IRQ signal input is level or edge trigger.                                                                                 |
| PCI IDE IRQ Map<br>To         | <i>PCI-AUTO</i>        | The BIOS will scan for PCI IDE devices and determine the location of the PCI IDE device.                                                              |
|                               | <i>PCI-SLOT#-1</i>     | The BIOS will scan IRQ14 for primary IDE INT# and IRQ15 for secondary IDE INT# at the specified slot.                                                 |
|                               | <i>ISA</i>             | The BIOS will not assign any IRQs even if PCI IDE card is found. Because some IDE cards connect the IRQ14 & 15 directly from ISA slot through a card. |
| Primary IDE INT#              | <i>A~D</i>             | Tells which INT# the PCI IDE card uses for its interrupt of 1st IDE channel.                                                                          |
| Secondary IDE INT#            | <i>A~D</i>             | Tells which INT# the PCI IDE card uses for its interrupt of 2nd IDE channel.                                                                          |
| Used MEM Base<br>Addr         | <i>8-64K</i>           | Claim a memory space occupied by legacy ISA card.                                                                                                     |
|                               | <i>N/A</i>             | Invalidates this feature.                                                                                                                             |

## Load Setup Defaults

The Setup Defaults is common and efficient setting.

# AWARD BIOS Description

## Integrated Peripherals

| ROM PCI/ISA BIOS (2A69HQ1B) |            |                                   |            |
|-----------------------------|------------|-----------------------------------|------------|
| INTEGRATED PERIPHERALS      |            |                                   |            |
| AWARD SOFTWARE, INC.        |            |                                   |            |
| IDE HDD Block Mode          | : Enabled  | USB Controller                    | : Disabled |
| IDE Primary Master PIO      | : Auto     |                                   |            |
| IDE Primary Slave PIO       | : Auto     |                                   |            |
| IDE Secondary Master PIO    | : Auto     |                                   |            |
| IDE Secondary Slave PIO     | : Auto     |                                   |            |
| On-Chip Primary PCI IDE     | : Enabled  |                                   |            |
| On-Chip Secondary PCI IDE   | : Enabled  |                                   |            |
| PCI Slot IDE 2nd Channel    | : Disabled |                                   |            |
| Onboard FDC Controller      | : Enabled  |                                   |            |
| Onboard Serial Port 1       | : 3F8/IRQ4 |                                   |            |
| Onboard Serial Port 2       | : 2F8/IRQ3 |                                   |            |
| Serial Port 2 Mode          | : Standard |                                   |            |
| Onboard Parallel Port       | : 378/IRQ7 |                                   |            |
| Parallel Port Mode          | : SPP      |                                   |            |
|                             |            | ESC: Quit    ↑↓→← : Select Item   |            |
|                             |            | F1 : Help    PU/PD/+/- : Modify   |            |
|                             |            | F5 : Old Values (Shift)F2 : Color |            |
|                             |            | F7 : Load Setup Default           |            |

Figure -8 Integrated Peripherals Menu

The following pages tell you the options of each item and describe the meaning of each option.

| Item                                     | Option          | Description                                               |
|------------------------------------------|-----------------|-----------------------------------------------------------|
| IDE HDD Block Mode                       | <i>Enabled</i>  | Allows IDE HDD read/write several sectors one time.       |
|                                          | <i>Disabled</i> | IDE HDD only reads/writes a sector one time.              |
| IDE Primary/ Secondary Master/ Slave PIO | <i>Mode 0~4</i> | Defines the IDE primary/secondary master /slave PIO mode. |
|                                          | <i>Auto</i>     | The IDE PIO mode is defined according to auto-detect.     |

|                                       |                                                                              |                                                                                                                                                                                                                                                                                                               |
|---------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On-chip Primary/<br>Secondary PCI IDE | <i>Enabled</i>                                                               | On-chip primary/secondary PCI IDE port is enabled.                                                                                                                                                                                                                                                            |
|                                       | <i>Disabled</i>                                                              | On-chip primary/secondary PCI IDE port is disabled.                                                                                                                                                                                                                                                           |
| PCI Slot IDE 2nd<br>Channel           | <i>Enabled</i>                                                               | The second IDE channel on PCI slot is enabled.                                                                                                                                                                                                                                                                |
|                                       | <i>Disable</i>                                                               | The second IDE channel on PCI slot is disabled.                                                                                                                                                                                                                                                               |
| Onboard FDC<br>Controller             | <i>Enabled</i>                                                               | Onboard floppy disk controller is enabled.                                                                                                                                                                                                                                                                    |
|                                       | <i>Disabled</i>                                                              | Onboard floppy disk controller is disabled.                                                                                                                                                                                                                                                                   |
| Onboard Serial Port 1/2               | <i>3F8/IRQ4,</i><br><i>2F8/IRQ3,</i><br><i>3E8/IRQ4,</i><br><i>2E8/IRQ3,</i> | Defines onboard serial port address and required interrupt number.                                                                                                                                                                                                                                            |
|                                       | <i>Disabled,</i><br><i>Auto</i>                                              | Onboard serial port is disabled.<br>Set address and interrupt number automatically.                                                                                                                                                                                                                           |
|                                       |                                                                              |                                                                                                                                                                                                                                                                                                               |
| Onboard Parallel Port                 | <i>378/IRQ7,</i><br><i>278/IRQ5,</i><br><i>3BC/IRQ7,</i>                     | Defines onboard parallel port address and IRQ channel.                                                                                                                                                                                                                                                        |
|                                       | <i>Disabled</i>                                                              | Onboard parallel port is disabled.                                                                                                                                                                                                                                                                            |
| Serial Port 2 Mode                    | <i>Standard,</i>                                                             | Defines Serial Port 2 as standard serial port                                                                                                                                                                                                                                                                 |
|                                       | <i>Sharp IR,</i>                                                             | This mode provides bidirectional communication by transmitting and receiving infrared radiation. In this mode, infrared I/O circuits receive the serial UART output signal. The rate of the signal is 38.4 KBaud in half-duplex, and it uses normal UART serial data formats with physical ASK-IR modulation. |
|                                       | <i>IrDA SIR</i>                                                              | The system function is the same as in Sharp-IR mode, but at 115.2 KBaud.                                                                                                                                                                                                                                      |
| Parallel Port Mode                    | <i>SPP</i><br><i>EPP1.7</i><br><i>EPP19</i><br><i>ECP,</i><br><i>ECP+EPP</i> | Defines the parallel port mode as Standard Parallel Port (SPP), Enhanced Parallel Port (EPP), or Extended Capabilities Port (ECP).                                                                                                                                                                            |

### **Password Setting**

When you select password setting function, the following message will appear at the centre 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 and not enter a password.

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

*PASSWORD DISABLED*

If you select "System" at "Security Option" of "BIOS Features Setup" Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter "CMOS Setup".

If you select "Setup" at "Security Option" of "BIOS Features Setup" Menu, you will be prompted for the password only when you try to enter "CMOS Setup".

## IDE HDD Auto Detection

The Enhanced IDE features was included in all Award BIOS. Below is a brief description of this features.

| ROM/PCI/ISA BIOS (2A69HQ1B)                                        |      |      |       |         |          |         |        |
|--------------------------------------------------------------------|------|------|-------|---------|----------|---------|--------|
| IDE HDD AUTO DETECTION                                             |      |      |       |         |          |         |        |
| AWARD SOFTWARE, INC.                                               |      |      |       |         |          |         |        |
| HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE           |      |      |       |         |          |         |        |
| Primary Master:                                                    |      |      |       |         |          |         |        |
| Select Primary Master Option (N = Sklp) : N                        |      |      |       |         |          |         |        |
| OPTION                                                             | SIZE | CYLS | HEADS | PRECOMP | LANDZONE | SECTORS | MODE   |
| 1(Y)                                                               | 516  | 1120 | 16    | 65535   | 1119     | 59      | NORMAL |
| 2                                                                  | 516  | 524  | 32    | 0       | 1119     | 63      | LBA    |
| 3                                                                  | 516  | 560  | 32    | 65536   | 1119     | 59      | LARGE  |
| Note: Some OSeS (like SCO-UNIX) must use "NORMAL" for installation |      |      |       |         |          |         |        |

Figure -9 IDE HDD Auto Detection Menu

### 1. Setup Changes

#### With auto-detection

- BIOS setup will display all possible modes that is supported by the HDD including NORMAL, LBA and LARGE.
- If HDD does not support LBA modes, no "LBA" option will be shown.
- If number of cylinders is less than or equal to 1024, no "LARGE" option will be shown.
- Users can select a mode which is appropriate for them

#### With Standard CMOS Setup

|         |               | CYLS | HEADS | PRECOMP | LAND | SECTOR | MODE   |
|---------|---------------|------|-------|---------|------|--------|--------|
|         |               |      |       |         | ZONE |        |        |
| Drive C | : User(516MB) | 1120 | 16    | 65535   | 1119 | 59     | Normal |
| Drive D | : None(203MB) | 684  | 16    | 65535   | 685  | 38     | -----  |

When HDD type is in "user" type, the "MODE" option will be opened for user to select their own HDD mode.



# *AWARD BIOS Description*

---

## **2. HDD Modes**

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

### **NORMAL**

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

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

### **LBA (Logical Block Addressing) mode**

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

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

### **LARGE mode**

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

BIOS tricks DOS (or other OS) that the number of cylinders is less than 1024 by dividing it by 2. At the same time, the number of heads is multiplied by 2. A reverse transformation process will be made inside INT13h in order to access the right HDD address.

### **Auto detect**

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

## **3. Remark**

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

## Hard Disk Low Level Format Utility

This Award Low-Level-Format Utility is designed as a tool to save your time formatting your disk. The Utility automatically looks for the necessary information of the drive you selected. Utility also searches for bad tracks and list them for your reference.

Shown below is the Main Menu after you enter into the Award Low-Level-Format Utility.

|                                                                  |               |                |      |                  |       |         |        |
|------------------------------------------------------------------|---------------|----------------|------|------------------|-------|---------|--------|
| Hard Disk Low-Level-Format Utility                               | NO. CYLS HEAD |                |      |                  |       |         |        |
| SELECT DRIVE<br>BAD TRACK LIST<br>PREFORMAT                      |               |                |      |                  |       |         |        |
| Current select drive is : C                                      |               |                |      |                  |       |         |        |
| DRIVE : C CYLINDER : 0 HEAD : 0                                  |               |                |      |                  |       |         |        |
|                                                                  | SIZE          | CYL            | HEAD | PRECOMP          | LANDZ | SECTORS | MODE   |
| Primary Master                                                   | : 40MB        | 977            | 5    | 300              | 977   | 17      | NORMAL |
| Primary Slave                                                    | : None        | 0              | 0    | 0                | 0     | 0       | AUTO   |
| Secondary Master                                                 | : None        | 0              | 0    | 0                | 0     | 0       | AUTO   |
| Secondary Slave                                                  | : None        | 0              | 0    | 0                | 0     | 0       | AUTO   |
| Up/Down - Select item                                            |               | Enter - Accept |      | ESC - Exit/Abort |       |         |        |
| Copyright (c) Award Software, Inc. 1992-1994 All Rights Reserved |               |                |      |                  |       |         |        |

Figure 10 Hard Disk Low Level Format Utility Menu

### SELECT DRIVE

Select from installed hard disk drive C or D. List at the bottom of the screen is the drive detected automatically by the utility.

### BAD TRACK LIST

#### Auto scan bad track

The utility will automatically scan bad tracks and list the bad tracks in the window at the right side of the screen.

#### Add bad track

Directly type in the information of the known bad tracks in the window at the right side of the screen.

## *AWARD BIOS Description*

---

### **Modify bad track**

Modifies the information of the added bad tracks in the window at the right side of the screen.

### **Delete bad track**

Deletes the added bad tracks in the window at the right side of the screen.

### **Clear bad track table**

Clears the whole bad track list in the window at the right side of the screen.

## **PREFORMAT**

### **Interleave**

Selects the interleave number of the hard disk drive you wish to perform low level format. You must select from 1 to 8. Check the documentation that came with the drive for the correct interleave number, or select 0 for utility automatic detection.

### **Auto scan bad track**

This allows the utility to scan bad track or not.

### **Start**

Press <Y> to start low level format.

## **Power-On Boot**

If you have made all the changes to CMOS values and the system cannot boot with the CMOS values selected in Setup, restart the system by turning it OFF then ON or press the "RESET" button on the system case.

You may also restart the system by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys.

# Appendix

## BIOS Upgrade Diskette

You may use this diskette to update your BIOS only when necessary.

For the most update and additional information about BIOS upgrade, please refer to "README" in the "BIOS Upgrade Diskette".

**Warning:**

**Before you update your BIOS, you should look over the "README" file to avoid making mistake.**



P/N: 430-01009-901

Manual P6I440FX/Pentium<sup>®</sup> II Commander III Ver 1.0