Electronic Emission Notices

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions contained in this manual, may cause harmful interference to radio and television communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- RE-ORIENT OR RELOCATE THE RECEIVING ANTENNA
- INCREASE THE SEPARATION BETWEEN THE EQUIPMENT AND THE RECEIVER
- CONNECT THE EQUIPMENT INTO AN OUTLET ON A CIRCUIT DIFFERENT FROM THAT OF THE RECEIVER
- CONSULT THE DEALER OR AN EXPERIENCED AUDIO/TELEVISION TECHNICIAN

NOTE: Connecting this device to peripheral devices that do not comply with Class B requirements, or using an unshielded peripheral data cable, could also result in harmful interference to radio or television reception.

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

To ensure that the use of this product does not contribute to interference, it is necessary to use shielded I/O cables.

Table of Contents

Note to User

This manual is for use with both versions with or without the DIMM socket. If your motherboard does not have a DIMM socket, ignore the DIMM socket on motherboard layout and the respective DIMM configurations.

HARDWARE CONFIGURATION

The Pentium® motherboard is based on the Intel® 82430VX Chipset. The chipset is a highly integrated solution for a cost-effective and compact motherboard. Features on-board include super-I/O, PCI bus master IDE, PCI Ver 2.1 compliance, USB, support of Pentium CPUs running at 75, 90, 100, 120, 133, 150, 166, 180, 200, 233MHz, Cyrix 6x86 CPUs, AMD K5 and AMD K6 processors. DIMM and SIMM sockets are provided onboard, allowing flexible installation of main memory. The onboard pipelined burst cache further boosts the system performance.

Key Features

Processor

- ZIF Socket 7.
- Full support for the Intel® P55C(MMX) processors using socket 7.
- Supports 50MHz, 55MHz, 60MHz and 66MHz bus speed including all Pentium® processors operating from 75MHz to 233MHz.
- Supports Cyrix 6x86, AMD K5 and K6 processors.

Cache

- The external cache policy is direct-mapped, write-back.
- 256KB or 512KB synchronous pipelined burst cache is supported.

System Memory

- 8M to 128MB
- A total of four 72-pin SIMM sockets and two 168-pin DIMM sockets.
- Both 5V Fast Page Mode and Extended Data Output (EDO) DRAM types are supported by SIMM sockets.
- 3.3V SDRAM types supported by DIMM sockets.

Memory Organization

Four 72-pin SIMM Sockets

- System memory is divided into two banks. Each bank has two 72-pin SIMM slots.
- Supports Fast Page Mode (FPM), Extended Data Out (EDO) at , 60 and 70ns speeds.
- Supports Symmetrical and Asymmetrical DRAM addressing.
- Memory size from 8M byte up to 128M byte.
- Supports single-density SIMMs of 1MB, 2MB and 4MB depth (x32 or x36).
- Supports double-density SIMMs of 2MB, 4MB and 8MB depth (x32 or 36).
- Banks of different DRAM types and depths can be mixed.

Two 168-pin DIMM Sockets

- System memory is divided into two banks. Each bank has one 168-pin DIMM slot.
- Supports Synchronous DRAM (SDRAM) at 66MHz.
- Supports Symmetrical and Asymmetrical DRAM addressing.
- Memory size from 8M byte up to 64M byte.
- Supports single-density DIMMs of 1MB and 2MB depth (x64).
- Supports double-density DIMMs of 2MB and 4MB depth (x64).
- Supports 3.3V SDRAM types.

On-Board I/O

- Two PCI fast IDE ports supporting up to 4 ATA2 IDE devices.
- Supports Bus Master IDE and PIO mode 4 (up to 22M bytes/sec) transfer.
- One ECP/EPP parallel port (via a header).
- Two 16550-compatible UART serial ports (via a header).
- One floppy port supporting two FDDs of 360KB, 720KB, 1.2MB or 1.44MB formated capacity.
- Two USB ports (via a header).
- Keyboard port (factory option for PS/2 Type).
- PS/2 mouse port (via a header).
- Infrared (IrDA) support (via a header).

System BIOS

- 1MB or 2MB flash BIOS supporting PnP, APM, ATAPI and Windows® 95.
- Auto detects and supports LBA hard disks with formatted capacities up to 8.4GB.
- Easily upgradable by end-user.

Plug-and-Play

- Supports plug-and-play specification 1.1.
- Plug-and-play for DOS, Windows® 3.X as well as Windows® 95.
- Fully steerable PCI interrupts.

Power Management

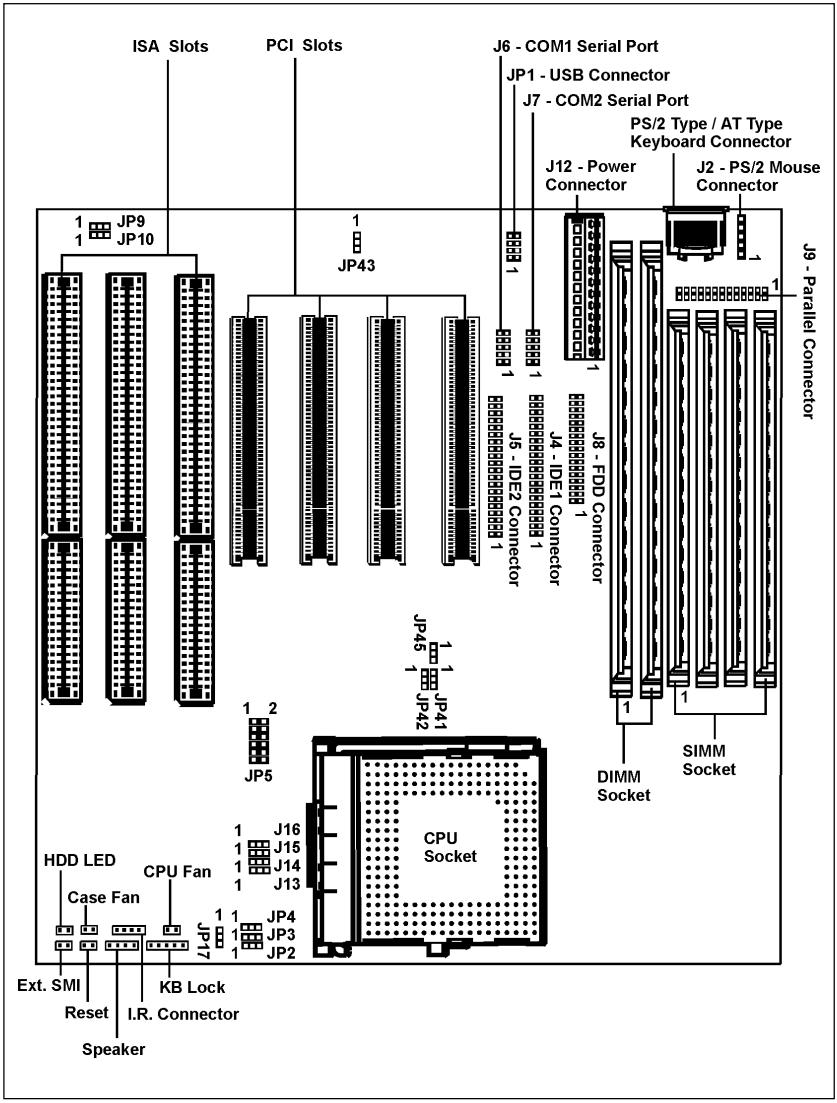
- Supports SMM and APM.
- Break switch for instant suspend/resume on system operation.
- Energy star “Green PC” compliant.

Expansion Slots

- 4 PCI bus master slots (rev. 2.1 compliant, with 1 PCI slot sharing with 1 ISA slot).
- 3 ISA slots (1 ISA slot sharing with 1 PCI slot).

Motherboard Layout (Model Code No. - 35832003)

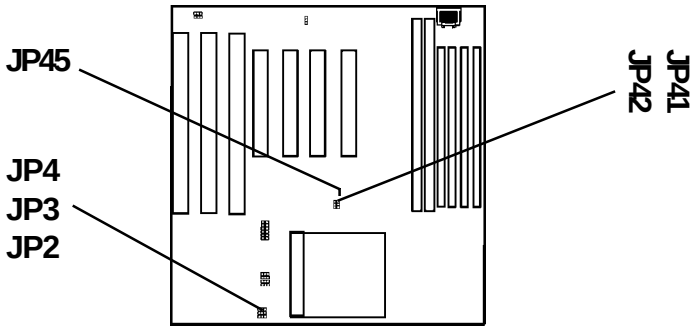
The following diagrams show the relative positions of the jumpers, connectors, major components and banks on the motherboard.



Jumper Settings

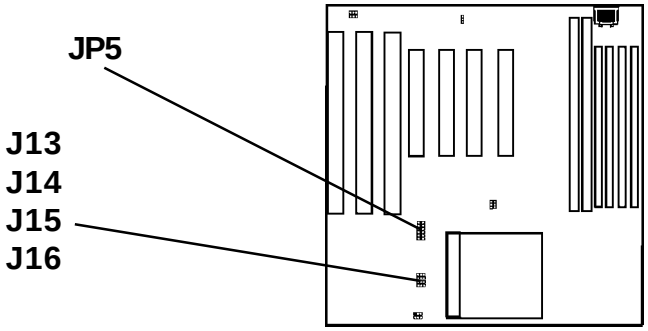
This chapter explains how to configure the motherboard's hardware. Before using your computer, make sure all jumpers and DRAM modules are set correctly. Refer to this chapter whenever in doubt.

JP2, JP3, JP41, JP42 - CPU Type Selection



CPU Type & Speed	Bus Clock	JP41	JP42	JP2	JP3
Intel Pentium-75	50MHz	2-3	2-3	1-2	1-2
Intel Pentium-90	60MHz	1-2	2-3	1-2	1-2
Intel Pentium-100	66MHz	1-2	1-2	1-2	1-2
Intel Pentium-120	60MHz	1-2	2-3	1-2	2-3
Intel Pentium-133	66MHz	1-2	1-2	1-2	2-3
Intel Pentium-150	60MHz	1-2	2-3	2-3	2-3
Intel Pentium-166	66MHz	1-2	1-2	2-3	2-3
Intel Pentium-180	60MHz	1-2	2-3	2-3	1-2
Intel Pentium-200	66MHz	1-2	1-2	2-3	1-2
Intel Pentium-233	66MHz	1-2	1-2	1-2	1-2
Cyrix 6x86-P120+ 100MHz	50MHz	2-3	2-3	1-2	2-3
Cyrix 6x86-P133+ 110MHz	55MHz	2-3	1-2	1-2	2-3
Cyrix 6x86-P150+ 120MHz	60MHz	1-2	2-3	1-2	2-3
Cyrix 6x86-P166+ 133MHz	66MHz	1-2	1-2	1-2	2-3
Cyrix 6x86-P200+ 150MHz	50MHz	2-3	2-3	1-2	1-2
AMD-K5-PR75	50MHz	2-3	2-3	1-2	1-2
AMD-K5-PR90	60MHz	1-2	2-3	1-2	1-2
AMD-K5-PR100	66MHz	1-2	1-2	1-2	1-2
AMD-K5-PR120	60MHz	1-2	2-3	1-2	1-2
AMD-K5-PR133	66MHz	1-2	1-2	1-2	1-2
AMD-K5-PR166	66MHz	1-2	1-2	2-3	2-3
AMD-K5-PR200	66MHz	1-2	1-2	2-3	1-2
AMD-K6-PR2-166	66MHz	1-2	1-2	2-3	2-3
AMD-K6-PR2-200	66MHz	1-2	1-2	2-3	1-2
AMD-K6-PR2-233	66MHz	1-2	1-2	1-2	1-2

JP4 is reserved for <u>future</u> AMD K6 processors. Simply leave JP4 OPEN for all <u>existing</u> Intel, Cyrix, AMD K5 and AMD K6 processors. This motherboard is compatible with Cyrix 6x86 CPU but must be Revision 2.7 and newer. Please contact your CPU supplier for details on identification of Cyrix 6x86 CPU revisions. JP45 is a reserved jumper (1-2).



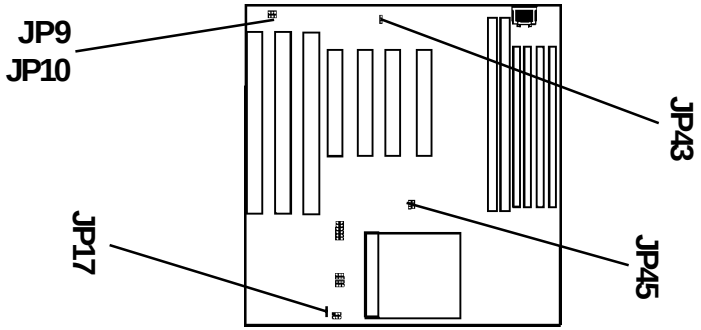
JP5, J13, J14, J15, J16- Power Selection for the CPU Bus Section & CPU Core-Voltage Select

JP5	J13, J14, J15, J16	Core Voltage	CPU Examples
1-2	1-2	2.7V	- AMD K5 (“J” marking)
3-4	1-2	2.8V	- Intel® Pentium Processors with MMX technology - Cyrix 6x86L (Core 2.8V I/O 3.3V)
5-6	1-2	2.9V	- AMD K5 (“H” marking) - AMD K6 PR2-166, - AMD K6 PR2-200
7-8	1-2	3.2V	- AMD K6 PR2-233
9-10	2-3	3.3V	- AMD K5 (“C” or “F” marking)
11-12*	2-3	3.5V	- Intel P54C - AMD K5 (“B” marking) - Cyrix 6x86

Remark: Example of AMD marking : “AMD-K5-PR100ABQ”

In the above tables, the AMD marking refers to the 2nd character - (B in the example) after P-rating (PR100 in the example).

Note: Cyrix 6x86 is a single-voltage CPU while Cyrix 6x86L is a dual-voltage version.



JP17 - CPU Bus-Voltage Select

JP17	Bus-Voltage	CPU Examples
1-2*	3.5V	- Intel® Pentium Processors with MMX technology - Intel P54C - Cyrix 6x86 - AMD K5 (“B”, “C”, “F” marking) - AMD K6 PR2-166 - AMD K6 PR2-200 - AMD K6 PR2-233
2-3	3.3V	- AMD K5 (“H”, “J” marking) - Cyrix 6x86L

JP9, JP10, JP45 - Reserved Jumpers

Reserved jumpers are pre-installed in factory. They should NOT be altered by the users.

JP43 - CMOS Clear

JP43	CMOS
2-3	Normal operation
1-2	Clear

Memory Configuration

Table 1 and 2 show the possible memory combinations. The motherboard will support both Fast Page DRAM or EDO DRAM SIMMs and SDRAM DIMMs

Notice :

Don’t mix the Fast Page DRAM and EDO DRAM within the same memory bank. If Fast Page DRAM and EDO DRAM SIMMs are installed in separate banks, each bank will be optimized for maximum performance.

Table 1 (SIMM Configurations)

SIMM1 (Bank 0)	SIMM2 (Bank 0)	SIMM3 (Bank 1)	SIMM4 (Bank 1)	Total
Empty	Empty	4MB	4MB	8MB
Empty	Empty	8MB	8MB	16MB
Empty	Empty	16MB	16MB	32MB
Empty	Empty	32MB	32MB	64MB
4MB	4MB	Empty	Empty	8MB
4MB	4MB	4MB	4MB	16MB
4MB	4MB	8MB	8MB	24MB
4MB	4MB	16MB	16MB	40MB
4MB	4MB	32MB	32MB	72MB
8MB	8MB	Empty	Empty	16MB
8MB	8MB	4MB	4MB	24MB
8MB	8MB	8MB	8MB	32MB
8MB	8MB	16MB	16MB	48MB
8MB	8MB	32MB	32MB	80MB
16MB	16MB	Empty	Empty	32MB
16MB	16MB	4MB	4MB	40MB
16MB	16MB	8MB	8MB	48MB
16MB	16MB	16MB	16MB	64MB
16MB	16MB	32MB	32MB	96MB
32MB	32MB	Empty	Empty	64MB
32MB	32MB	4MB	4MB	72MB
32MB	32MB	8MB	8MB	80MB
32MB	32MB	16MB	16MB	96MB
32MB	32MB	32MB	32MB	128MB

Table 2 (DIMM Configurations)

DIMM1	DIMM2	Total
8MB	Empty	8MB
8MB	8MB	16MB
8MB	16MB	24MB
8MB	32MB	40MB
Empty	8MB	8MB
16MB	8MB	24MB
32MB	8MB	40MB
16MB	Empty	16MB
16MB	16MB	32MB
16MB	32MB	48MB
Empty	16MB	16MB
32MB	16MB	48MB
32MB	Empty	32MB
32MB	32MB	64MB
Empty	32MB	32MB

BIOS SETUP

This chapter discusses Award's Setup Program built into the ROM BIOS. The Setup Program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM, which retains the setup information when the power is turned off.

Starting Setup

The Award BIOS is immediately activated when you turn on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system .

While the BIOS is in control, the Setup Program can be activated :

1. By pressing <Del> immediately after switching the system on, or
2. By pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test)

Press DEL to enter SETUP

If the message disappears before you can respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing the <Ctrl>, <Alt>, and <Delete> keys . If you do not press the keys at the correct time and the system does not reset, an error message will be displayed and you will again be asked to ...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

In Case of Problems

If, after making and saving system changes with the Setup Program, you discover that your computer does not reset, use the Award BIOS defaults to override the CMOS settings.

Main Menu

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

ROM PCI/ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE. INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION SETUP	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Time. Date. Hard Disk Type	

(Note : The figures of BIOS Setup Menu included here only show a typical case, and may not be exactly the same as the one on your unit.)

Note that a brief description of each highlighted item will appear at the bottom of the screen.

Standard CMOS Setup This setup page includes all the items of Award™ special standard features.

BIOS Features Setup This setup page includes all the items of Award special enhanced features.

Chipset Features Setup This setup page includes all the items of chipset special features.

Power Management Setup This entry only appears if your system supports Power Management "Green PC" standards.

PNP / PCI Configuration Setup This entry appears if your system supports PNP/PCI.

Load BIOS Defaults The BIOS defaults have been set by the manufacturer and represent settings which provide the minimum requirements for your system to operate.

Load Setup Defaults The chipset defaults are settings which provide for maximum system performance. While Award has designed the custom BIOS to maximize performance, the manufacturer has the right to change these defaults to meet its needs.

Integrated Peripherals This section page includes all the items of IDE hard drive and Programmed Input / Output features.

Supervisor / User Password Setting Changes, sets , or disables password. It allows you to limit access to the system and the Setup Program.

IDE HDD Auto Detection Automatically detects and configures the hard disk parameters. The Award BIOS includes this ability in the event you are uncertain of your hard disk's parameters.

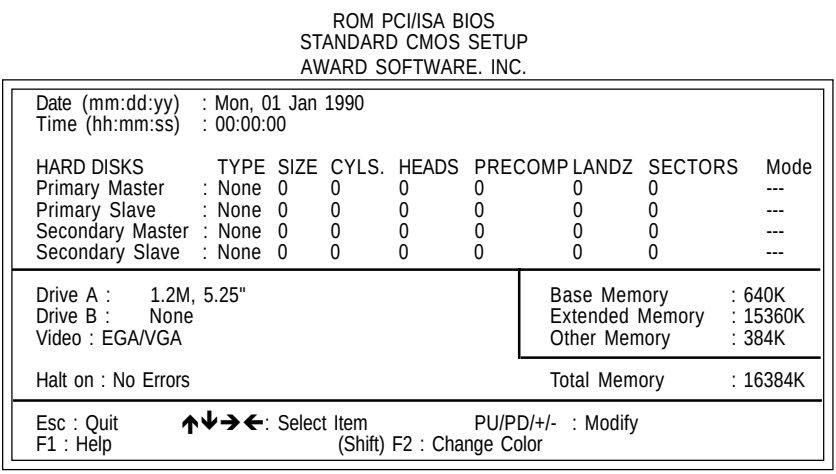
HDD Low Level Format If supported by your system, this provides a hard disk low level format utility.

Save & Exit Setup Saves value changes to CMOS and exits setup.

Exit Without Save Abandons all CMOS value changes and exits setup.

Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes, one or more setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> key to select the desired value in each item.



(Note : The figures of BIOS Setup Menu included here only show a typical case, and may not be exactly the same as the one on your unit.)

Date The date format is <day-of-the-week>. <day> <month> <year>. Press <F3> to display the calendar.

Time The time format is <hour> <Minute> <second> displayed in 24-hour military-time clock. For example, 1 p. m. is displayed as 13:00:00.

Primary Master/Primary Slave/Secondary Master/Secondary Slave

These categories identify the types of the two channels that have been installed in the computer. There are 45 predefined types and four user definable types are BIOS. Type 1 to Type 45 are predefined. Type “user” is user-definable.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with those of the drive table. The hard disk will not work properly if your enter improper information for this category. If your hard disk drive type is not matched or listed, you can select Type “User” to define your own drive type manually.

If you select Type “User” ,you will need to know the information listed below. Enter the information directly from the keyboard and press <Enter>. This information should be included in the documentation from your hard disk vendor or the system manufacturer.

If the controller of the HDD interface is ESDI, the selection shall be “Type1”.

If the controller of the HDD interface is SCSI, the selection shall be “None” .

If you select Type “Auto”, the BIOS will auto-detect the HDD and CD-ROM drive at the POST stage and show the IDE for the HDD and CD-ROM drive.

TYPE	-Drive type
CYLS	-Number of cylinders
HEADS	-Number of heads
PRECOMP	-Write precom
LANDZONE	-Landing zone
SECTORS	-Number of sectors
MODE	-Mode type

If a hard disk has not been installed, select NONE and press <Enter> .

Drive A Type / Drive B Type

This category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

Video

This category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select them in Setup.

BIOS Features Setup

This section allows your to configure you system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

Chipset Features Setup

The Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It must be stated that these items should not be altered. The default settings have been chosen because they provide the best operating conditions for your system.

Integrated Peripherals

The Integrate Peripherals Setup allows the user to configure the onboard IDE controller, floppy disk controller, the printer port and the serial ports.

Supervisor/User Password Setting

You can set either supervisor or user password, or both of then. The differences between are:

Supervisor Password :	You can enter the Setup Program and change the options of the setup menus.
User Password :	You can enter the Setup Program but cannot change the options of the setup menus

.

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press<Enter>. The new password will clear the previously entered password from the 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 operate without a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will be displayed to confirm that the password is disabled.

PASSWORD DISABLED.

Once the password is disabled , the system will reset and you can enter the Setup Program freely.

When a password is enabled, you will be prompted to enter it every time you try to enter setup. This prevents an unauthorized person from changing any setting of your system configuration.

In addition, when a password is enabled, you can require the BIOS to request a password every time your system is rebooted. This would further prevent unauthorized use of your computer.

The password requirement is defined by the Security Option of the BIOS Features Setup Menu. If the Security Option is set to “System”, the password will be required both at resetting and at entering setup . If the option is set to “Setup”, the prompt only appears when you try to enter setup.

Power Management Setup

The Power Management Setup Menu allows you to configure you system save most energy while operating in a manner consistent with your own style of computer use .

PNP/PCI Configuration Setup

This section describes how to configure the PCI bus system. This section covers some very technical items and it is recommended that only experienced users should make any changes to the default settings.

Flash Update Procedure

A program AWDFLASH.EXE is included in the utility diskette. The user is recommended to follow the procedure below to update the flash BIOS.

1. Create a DOS-bootable floppy diskette. Copy the new BIOS file (just obtained or downloaded) and the utility program AWDFLASH.EXE to the diskette.

2. Allow the PC system to boot from the DOS diskette.

3. At the DOS prompt, key in

   AWDFLASH

   and hit <ENTER>

4. Enter the file name of the new BIOS.

5. The question: “Do you want to save file?” is displayed.
   Key in “N” if there is no need to save the existing BIOS content..
   Key in “Y” if a backup copy of the existing BIOS is needed.
   (A file name has to be assigned to the existing BIOS binary file.)

6. The question : “Are you sure to program?” is displayed.
   Key in “Y”

7. Wait until the flash-update is completed.

8. Power down the PC system.

9. Restart the PC.