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## HOW TO USE THIS MANUAL

This manual is written in a user-friendly style. It would be advisable for users to read it in an orderly sequence :

### **1. For Hardware Information:**

Read **COMPONENT LOCATION DIAGRAM, Page A: QUICK JUMPER & CONNECTOR SETTING, Page B: CHECK LIST OF THE PACKAGING** and **Page C: CONNECTORS AND JUMPERS DESCRIPTION.**

### **2. For Mainboard and System Features:**

Read “**Chapter 1 Introduction**” in detail, and you will find helpful information on mainboard and system features. Especially, when you want to do some feature setup, detailed instructions are provided therein to help you through.

### **3. For CPU, Memory and Drivers Installation:**

Read “**Chapter 2 Installation**” for your CPU, memory and application drivers installation. Detailed instructions are provided to guide all kinds of users.

### **4. For BIOS Update and Setup:**

Read “**Chapter 3 Award BIOS Setup**” for updating your mainboard BIOS and setting up your BIOS Configuration.

### **5. For other Technical Support:**

Read “**APPENDIX A**”, fill and send the Request Form to your dealer for other technical support.

It is often heard that the default settings on a mainboard is not what user expects. A user-friendly manual would be the handiest assistant to help change the on-board configuration or default setting. In case this manual cannot solve all your problems, please ask your dealer for help and be sure the warranty on your system is still valid.

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# CHAPTER 1 INTRODUCTION

7400M mainboard utilizes Intel 810 chipset which can enhance the performance and exceptional value of the Intel Celeron™ processor-powered PC. In addition, this mainboard supports both 66MHz and 100MHz Host Bus Intel PPGA Celeron™ CPUs. Whether you utilize 66MHz or 100MHz FSB (Front Side Bus) CPU, this mainboard only can run with higher performance PC-100 or above memory modules.

The mainboard has integrated AC97 CODEC controller which could enable audio and modem by running sound and modem software. And onboard VGA integrated in i810 chipset with 1MB shared memory allows the system to have 2D/3D graphic performance. Moreover, onboard 4MB SDRAM display cache which could enhance 3D graphic performance is supported while utilizing FW82810 DC100 chip.

It provides one AMR (Audio/Modem Riser) slot to connect riser board with Audio and/or Modem CODEC (AMC/AC/MC Adapters). This design can reduce the baseline implementation cost of audio and modem.

(Note: If you would like to enable the onboard AC97 CODEC, you need to set JP9 pin 2-3 closed. But in this way, you can only plug the riser board with Modem CODEC to the AMR slot. Otherwise, you can plug the riser board with Audio/Modem CODEC to the AMR slot with JP9 pin 1-2 closed for disabling onboard AC97 CODEC.)

And the last special feature of 7400M is a full suite of PC 99 color-coding I/O ports which are easy for identification while connecting.

## Features of three types of i810 chipsets :

Chipset Type	FW82810DC100 FW82801AA	FW82810 FW82801AA	FW82810 FW82801AB
With 4MB Display cache	Yes	No	No
Supporting UDMA 66	Yes	Yes	No
After installing VGA driver, the shared memory	7MB	11MB	11MB

- \* Please refer to Page A for the chipset location.
- \* Please ask your dealer for the chipset type of your mainboard.

## 1.1 System Features

- ☐ Intel 810 chipset supporting PPGA Celeron™ CPUs at 66MHz (300MHz ~466MHz) & 100MHz (350 MHz~500MHz) Front Side Bus.
- ☐ VGA function integrated in i810 chipset with 1MB shared memory. ***(Onboard 4MB SDRAM Display Cache which could enhance 3D graphic performance is supported while utilizing FW82810 DC100 chip.)***
- ☐ Software audio controller with onboard CODEC complies with AC97 Spec..
- ☐ Two 168-pin DIMM sockets for two banks of 64-bit wide path up to 512MB SDRAM. ***(Note : Only PC-100 or higher performance memory modules are available for this mainboard.)***
- ☐ Built-in Switching Voltage Regulator (VRM 8.4 SPEC.).
- ☐ Auto-detected CPU core voltage ranging from 1.3V to 2.8V.
- ☐ Three PCI slots compliance with reversion 2.2 of the PCI Local Bus specification.
- ☐ One AMR (Audio/Modem Riser) slot which is connected to riser board with Audio and/or Modem CODEC.
- ☐ Dual Master IDE connectors supporting Ultra DMA/33/66 up to four devices in two channels for connecting high capacity hard disk, CD-ROM, LS-120MB floppy drive, tape backup etc. ***(Ultra DMA 66 is not supported while utilizing FW82801AB chip.)***
- ☐ Award BIOS with 2MB FWH supporting ACPI, PnP, Green, CPU/SDRAM/PCI Clock & Ratio settings.
- ☐ Supporting Software Power Off Control, Modem Ring On and Wake-On-LAN.
- ☐ SMSCLPC47B272 I/O chipset.
- ☐ ATX & AT Power Supply Connectors.
- ☐ USB (Universal Serial Bus) Header supporting up to 127 peripheral devices.
- ☐ AT style Keyboard Connector and PS/2 Mouse Header.
- ☐ Infrared Transfer (IrDA TX/RX) Connector.
- ☐ One FDD Port supporting two devices available for 1.2MB, 1.44MB and 2.88MB.
- ☐ One SPP/EPP/ECP Mode Parallel Printer Port.
- ☐ Two 16550A Fast UART Compatible Serial Ports.
- ☐ One Game Connector, one Audio Connector and one VGA Connector.
- ☐ BabyAT Form Factor; Board Dimension is 230mm x 220mm. (9.05" x 8.65")

## VGA Features

-  Integrated Graphics Controller
  - ◆ 3D Hyper Pipelined Architecture
  - ◆ Full 2D H/W Acceleration
  - ◆ Motion Video Acceleration
-  3D Graphics Visual Enhancements
  - ◆ Flat & Gouraud Shading
  - ◆ Mip Maps with Bilinear and Anisotropic Filtering
  - ◆ Fogging Atmospheric Effects
  - ◆ Z Buffering
  - ◆ 3D Pipe 2D Clipping
  - ◆ Backface Culling
-  3D Graphics Texturing Enhancements
  - ◆ Per Pixel Perspective Correction Texture Mapping
  - ◆ Texture Compositing
  - ◆ Texture Color Keying/Chroma Keying
-  Display
  - ◆ Integrated 24-bit 230MHz RAMDAC
-  2D Graphics
  - ◆ Up to 1600 x 1200 in 8-bit Color at 85 Hz Refresh
  - ◆ Hardware Accelerated Functions
-  H/W Motion Compensation Assistance for S/W MPEG2 Decode
  - ◆ Software DVD at 30fps
  - ◆ H/W Overlay Engine with Bilinear Filtering

## Audio Features

-  Intel 810 ICH with built-in AC97 controller
-  Supporting HRTF-based 3D positional audio, A3D, Q3D, wavetable, and 3D surround sound



**Note:** If you would like to enable the onboard AC97 CODEC, you need to set JP9 pin 2-3 closed. But in this way, you can only plug the riser board with Modem CODEC to the AMR slot.

## 1-2 Software Power Off Control

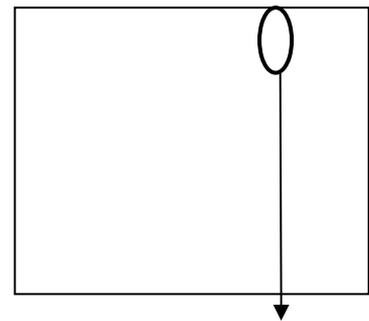
The mainboard design supports Software Power Off Control feature through the SMM code in the BIOS under Windows 95/98, and MS-DOS operation system environment. **This is Intel ATX form factor feature and you should use ATX power supply.**

First, you should connect the power switch cable to the connector “PS-ON” on the mainboard. In the BIOS screen of POWER MANAGEMENT SETUP’, choose “User Define” (or “Min. Power Saving” or “Max. Power Saving”) in ‘Power Manager’.

In Windows 95/98, if you would like to power off the system, you just need to choose “shutdown the computer?” in the “Shut Down Windows” from Windows 95/98. Then the system power will be off directly, and become to the stand-by status. If you would like to restart the system, just press the power switch button, and the system will be powered on.

**Note : If you are going to leave your system idle for several days, we suggest you use hardware power off to shutdown your system.**

Status	Power LED Light	Turbo LED Light
Software power off control	Light off	Light off
APM mode	Light on	Light on
System running	Light on	Light on



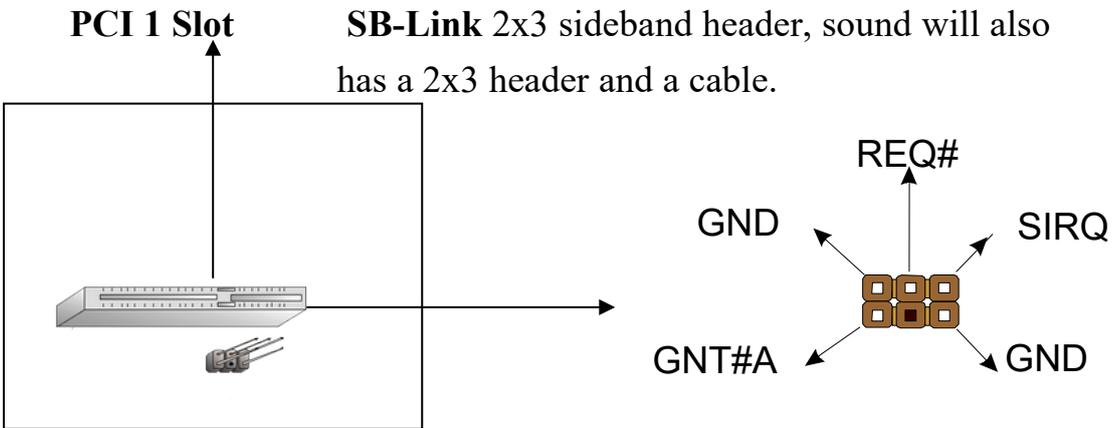
PS-ON of CONN1

## 1-3 Modem Ring On

With Modem Ring On function, the computer can wake up remotely through the connected modem. This function enables users to access their computer data from anywhere in the world. But users have to set “Resume by Ring” with ‘enabled’ in “Power Management Setup” from the BIOS setup screen. **( An ATX power supply is needed to achieve this function.)**

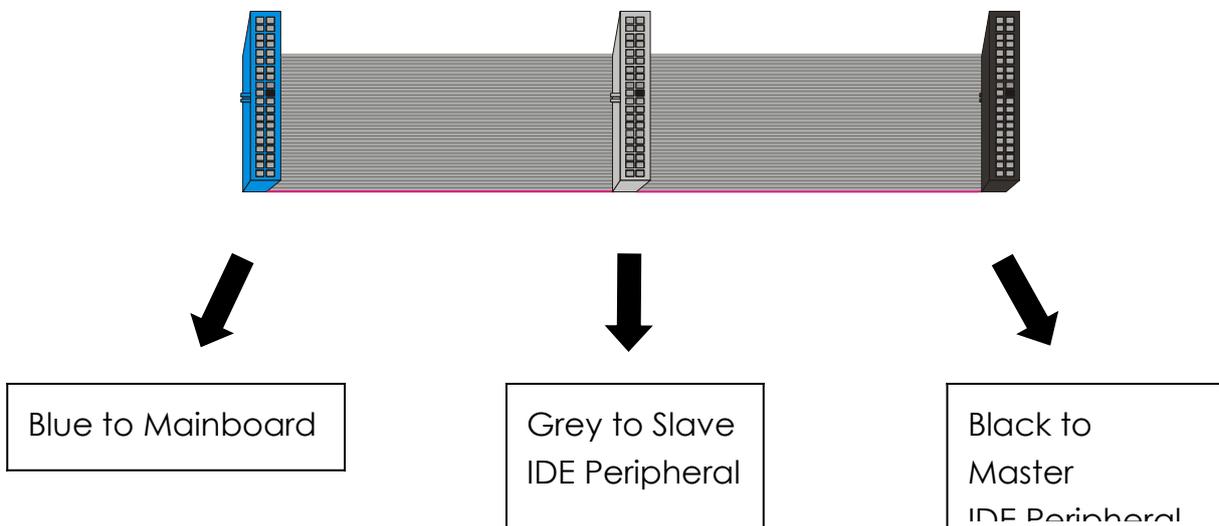
### 1-4 SB-Link Sideband Signals

In order to migrate the legacy Sound Blaster compatible audio to the PCI bus, EMU8008 incorporates a pair of SB-Link request/grant sideband signals (PCPCIR EQN and PCPCIGNTN) to interface to the PCI bus. SB-Link is a mechanism that was defined and developed by Intel as a docking solution which allows ISA slots to exist in docking stations connected to desktop PC PCI bus.



### 1-5 Ultra DMA 66 Cable (optional)

Ultra DMA 66 cable (40-pin connector & 80-line cable) is packaged while utilizing FW82801AA chip which supports both UDMA 33 & UDMA 66 on the mainboard. In other words, Ultra DMA 33 cable is provided with FW82801AB chip supporting only Ultra DMA 33. And the Ultra DMA 66 color coded connectors for connection are shown as bellow:



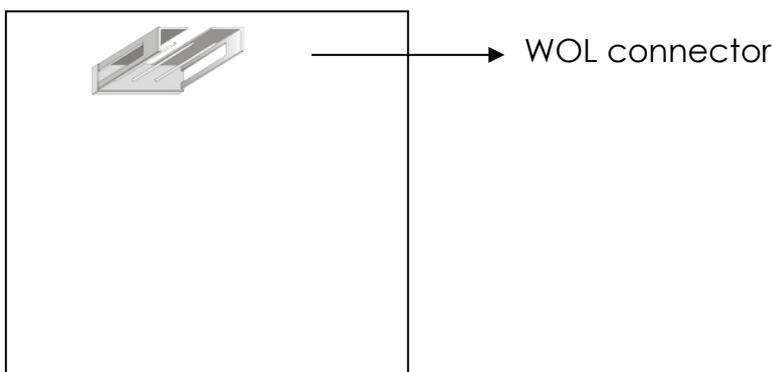
## 1-6 Wake-On-LAN

The remote Wake-On-LAN (WOL) mode of operation is a mechanism that uses Advanced Micro Device Magic Packet technology to power on a sleeping workstation on the network. This mechanism is accomplished when the LAN card receives a specific packet of information, called a Magic Packet, addressed to the node on the network. For additional protection, Secure ON is an optional security feature that can be added to the Magic Packet that requires a password to power on the sleeping workstation. When LAN card is in remote Wake-On-LAN mode, main system power can be shut down leaving power only for the LAN card and auxiliary power recondition.

The LAN card performs no network activities while in the remote Wake-On-LAN mode of operation. It only monitors the network for receipt of a Magic Packet. If a Magic Packet is addressed to the LAN card on the network, the LAN card wake up the system. If the Secure ON feature has been enabled, the password added to the Magic Packet is also verified prior to waking up the system.

You should select two kinds of PCI Ethernet cards with WOL function. One is Intel and the other is with PME signal supporting. And you can set “PCI PME# Function” enabled through “Power Management Setup” from the BIOS setup screen.

Caution: For Wake-On-LAN, the +5V standby line for the power supply should be capable of delivering  $+5V \pm 5%$  at 720mA. Failure to provide adequate standby current when implementing Wake-On-LAN will damage the power supply.



# CHAPTER 2 INSTALLATION

## 2-1 INSTALLATION PROCEDURE

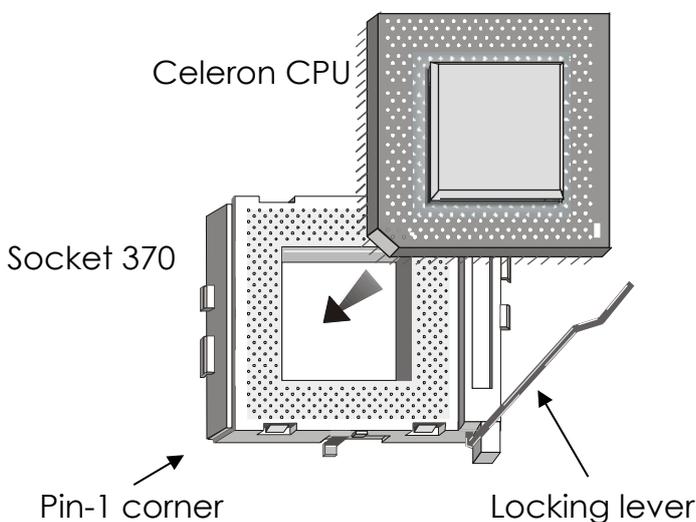
Before installing the computer, please prepare all components such as CPU, DRAM; peripherals such as hard drive, keyboard, CD-ROM and accessories such as cables. Then, install the system as following:

- ❶ Put CPU / heat sink (refer to Celeron™ CPU installation guide or see the following setup chapter), and DRAM modules on the mainboard.
- ❷ Plug add-on cards into PCI slots, if needed.
- ❸ Connect cables to peripheral devices.
- ❹ Make sure all components and devices are well connected, turn on the power and setup System BIOS based on your configuration.
- ❺ Install peripheral devices, add-on card drivers and test them.
- ❻ If all of above procedures are running successfully, turn the power off and screw the chassis cover to the chassis, and then connect external devices which are cabled to the system.

## 2-2 CPU INSTALLATION

**This mainboard supports PPGA Celeron™ processors.**

The 7400M mainboard has a JumperFree feature that let users needn't to set up the CPU clock frequency, and voltage through jumpers. It is smart enough to detect and recognize the CPU voltage, clock, ratio and enables users to setup the CPU frequency only from the BIOS Setup Screen. Users can adjust the frequency through "Frequency / Voltage Control" from the BIOS Setup Screen.



### Celeron™ CPU Setup Chart

- ▶▶ Locate Socket 370.
- ▶▶ Push the socket locking lever sideways and then lift it upward.
- ▶▶ Insert the processor into the socket with pin 1 to the right corner.
- ▶▶ Lock the CPU to socket by pushing down the locking lever.

## 2-3 SYSTEM MEMORY INSTALLATION

7400M mainboard provides two 3.3V 168-pin DIMM sockets for system memory expansion from 8MB to 512MB SDRAM. These two DIMMs are arranged to two banks, please refer to page A.

Bank/DIMM	PC-100 Memory Module	Total Memory
Bank0/DIMM1	8/16/32/64/128/256MB	8MB~256MB
Bank1/DIMM2	8/16/32/64/128/256MB	8MB~256MB
Total System Memory		8MB~512MB

### DIMM type, Size, parity supported:

- ⌘ PC-100 or higher performance memory module.
- ⌘ Unbuffered, registered SDRAM with SPD.
- ⌘ Both parity or non-parity are available.
- ⌘ 3.3V, single/double-side.
- ⌘ 8/16/32/64/128/256Mbytes.

---

◆ *For either 66MHz or 100MHz host bus CPUs, please use 10ns or faster and PC-100 compliant modules.*

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### ⌘ SPD (Serial Presence Detect)

This EPROM contains speed and design information of the memory module. The mainboard may get optimal performance via accessing the data of SPD.

## 2-4 INTEL 810 DRIVER INSTALLATION

### ➤ INF Files for Windows 95/98 :

1. Start Windows 95/98.
2. Put the All-In-One CD into your CD-ROM drive.
3. Choose **Intel 810/820 Inf Files** on the Autorun main menu.
4. Then follow the instruction on the screen.  
(INF Files that enable the Intel 810/820 Chipsets to be recognized by listed operating systems.)

## 2-5 VGA DRIVER INSTALLATION

### Install Intel 810 AGP Driver For Win95/98/NT

1. Start Windows 95/98/NT.
2. Put the All-In-One CD into your CD-ROM drive.
3. Choose **Intel 810 AGP Driver** on the Autorun main menu.
4. Press **Next** to install the driver.
5. Follow the instructions on the screen to complete the installation.

## 2-6 SOUND DRIVER INSTALLATION

### Install Sound Driver For Win95/98/NT

1. Start Windows 95/98/NT.
2. Put the All-In-One CD into your CD-ROM drive.
3. Choose **Audio Device Driver** on the Autorun main menu.
4. Follow the instructions on the screen to finish the installation.  
(Please refer to readme.doc file to get more detailed information.)

### Install YAMAHA Software Synthesizer For Win95/98/NT

1. Start Windows 95/98/NT.
2. Put the All-In-One CD into your CD-ROM drive.
3. Choose **YAMAHA Software Synthesizer** on the Autorun main menu.
4. Follow the instructions on the screen to finish the installation.  
(Please refer to readme.doc file to get more detailed information.)

**Note : the sound driver is not supported under DOS operating system.**

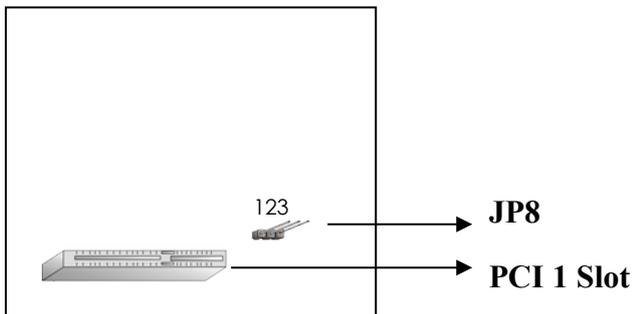
# CHAPTER 3 AWARD BIOS SETUP

Award BIOS manufacturer provides access to the system BIOS through the hardware and software on each mainboard. The hardware consists of a Flash ROM (4MB in 7400M mainboard) and the software is a group of programs that are installed in the ROMBIOS along with all the other data that should be included into the BIOS.

After the BIOS is updated, if you want to clear the old setup data stored in the CMOS, then you can reset CMOS as follow.

**NOTE :** In case CMOS should be reset, first unplug the power cord, then set Jumper 8 2-3 closed for at least 5 seconds, reset JP8 1-2 closed to normal position and plug the power cord again.

	JP8
Normal	1-2
Reset CMOS	2-3



**Normal(1-2 closed)    Reset CMOS(2-3 closed)**

## **3-1 UPDATE BIOS PROCEDURE**

If the BIOS needs to be updated, you can get a CD with the updated BIOS utility in the package. The CD includes :

“awdf flash.exe” -- BIOS update utility program  
“awdf flash.doc”

The update procedure is as following:

1. Boot the system to DOS mode in a normal manner.
2. Insert the updated CD to drive D (or E).
3. Change working directory to CD-ROM drive, D or E, which contains the update BIOS CD. -- Type “d:\” or “e:\”, then press “ENTER”.
4. Type “cd flash”, then press “ENTER”.
5. Type “awdf flash”, then press “ENTER”-- for running the BIOS update utility.
6. Type “(update BIOS file name with version number).bin”, ENTER.
7. If you do not want to save the old BIOS, type “N” when the screen displays the message : " Do you want to save BIOS (Y/N) ?".
8. Type “Y” when the screen shows the message : " Are you sure to program (Y/N) ?".
9. Follow instructions displayed on the screen. DO NOT remove the update BIOS CD from the CD-ROM drive nor turn the system power off until the BIOS update is completed.
10. Turn the power off. Clear the data in CMOS according to the procedure described in the previous page.
11. Turn the system power on and test that your system is working properly.

### 3-1-1 UPDATE MICROCODE API

Intel also provides MICROCODE API (Applications Programming Interface) for mainboard user to update data block in BIOS quickly and easily. (You can find this utility in the All-In-One CD in the mainboard package).

The BIOS code on the mainboards contains data that is specific to each silicon stepping of the processor. Integrators must ensure that this BIOS stepping data matches the used processor stepping. When the BIOS does not contain stepping data that matches the processor stepping, integrators must update the data in the BIOS before shipping the system. Historically, the systems have been updated by replacing the entire BIOS with a new revision of BIOS that contains the correct stepping data.

Intel's BIOS update API allows just the stepping data within the BIOS to be updated as needed. Mainboards that contain a BIOS with the Intel-defined BIOS update API can be quickly and easily updated, if required, without obtaining a complete BIOS upgrade. Using this utility, integrators can easily verify that the correct stepping data is present in all mainboards. However, if the stepping data requires to be updated, the mainboard BIOS must contain the Intel-defined BIOS update API, otherwise a complete BIOS upgrade is required from the mainboard vendor.

Since API program can only be executed **under DOS Real Mode**, you must **enter Real Mode** first and load the API program to Drive C.

To load the program to C by following steps:

- (1) Type " md c:\ api " and press Enter. Directory "api" is made in Drive C now.
- (2) Insert the Driver/Utility CD into CD ROM Drive E.
- (3) Then type " copy e:\api\\*. \* c:\api " and press Enter.  
(API program is loaded to Drive C now.)
- (4) Type " C:\ api \checkup " to execute this program.

The main menu should now be displayed with the following four options :

- 1) Check and load update
- 2) Specify stepping data file [current : pep.pdb]
- 3) Help
- 4) Quit without loading update

Select 1 to know the stepping filename, select 2 to load right patch code, then select 1 to update proper patch code. Now, the screen will show the message "please remove the CD from CD-ROM drive". Then cold boot (mechanical power off) system to continue. For more information, please refer to "CHECKUP.HLP" file.

### 3-2 SYSTEM BIOS CONFIGURATION SETUP

The following pages explain how to set up the BIOS configuration under the Award BIOS. The SETUP program is stored in the Read-Only-Memory (ROM) on the mainboard. To do the SETUP procedure, press the <Del> key when the system is booting up. The following main menu will appear. Please select " STANDARD CMOS FEATURE" to enter the next screen.

**CMOS Setup Utility - Copyright ( C ) 1984-1998**

<b>Standard CMOS Feature</b>	<b>Load Fail-Safe Defaults</b>
<b>Advanced BIOS Feature</b>	<b>Load Optimized Defaults</b>
<b>Advanced Chipset Feature</b>	<b>Set Supervisor Password</b>
<b>Integrated Peripherals</b>	<b>Set User Password</b>
<b>Power Management Setup</b>	<b>Save &amp; Exit Setup</b>
<b>PnP/PCI Configurations</b>	<b>Exit Without Saving</b>
<b>Frequency/Voltage Control</b>	
<b>Esc : Quit</b> <span style="float: right;"><b>↑↓←→ : Select Item</b></span>	
<b>F10 : Save &amp; Exit Setup</b>	
<b>Time, Date, Hard Disk Type....</b>	

The section on the bottom of the main menu explains how to control this screen. The other section displays the items highlighted in the list.

※ **Control Key Description** ※

UP ARROW	↑	Move to the previous item
DOWN ARROW	↓	Move to the next item
LEFT ARROW	←	Move to the item on the left
RIGHT ARROW	→	Move to the item on the right
Esc KEY	Esc	Main Menu : Quit without saving changes Setup menu : Exit current page and return to main menu
PgUp KEY		Increase the numeric value or make changes
PgDn KEY		Decrease the numeric value or make changes
F1 KEY	Help	General help
F5 KEY	Old Value	Restore the pervious CMOS value from CMOS
F6 KEY	Load Fail-Safe Defaults	Load the fail-safe default CMOS value from BIOS default table
F7 KEY	Load Optimized Defaults	Load the optimized default
F10 KEY	Save & Exit Setup	Save all the CMOS changes and Exit setup, only for Main Menu

**STANDARD CMOS FEATURES** This screen records some basic hardware information, and sets the system clock and error handling. These records can be lost or corrupted if the on-board battery has failed or is weak.

CMOS Setup Utility – Copyright © 1984-1998 Award Software

Standard CMOS Features

Date:	Mon, Apr 26 1999	Item Help
Time:	16:19:20	
➤ IDE Primary Master	Press Enter	Menu Level ➤
None		
➤ IDE Primary Slave	Press Enter	Change the day, month, year and century
None		
➤ IDE Secondary Master	Press Enter	
None		
➤ IDE Secondary Slave	Press Enter	
None		
Drive A	1.44M, 3.5 in.	
Drive B	None	
Floppy 3 mode support	Disabled	
Video	EGA/VGA	
Halt On	All Errors	
Based Memory	640K	
Extended Memory	64512K	
Total Memory	65536K	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

**Date** The date format is <day>,<date>,<month>,<year>. Press<F3> to show the calendar.

day	The day, from Sun to Sat, automatically changes when you set the date.
date	The date, from 1 to 31
month	The month, Jan. through Dec.
year	The year, from 1900 to 2099

**Time** The time format is <hour><minute><second>. The time is calculated based on the 24-hour military-time clock. For example, 1p.m. is 13:00:00.

**Drive A, Drive B** This category identifies the types of floppy disk drive A or drive B that have been installed in the computer.

None	No floppy drive installed
360K, 5.25 in	5.25“ PC-type 360KB capacity
1.2M, 5.25 in	5.25“ AT-type 1.2MB capacity

720K, 3.5 in	3.5" double-side 720KB capacity
1.44M, 3.5 in	3.5" double-side 1.44MB capacity
2.88M, 3.5 in	3.5" double-side 2.88MB capacity

**Floppy 3 Mode Support** This is the Japanese standard floppy drive. This standard stores 1.2MB in a 3.5" diskette.

**Video** This category selects the type of primary video adapter used for the system monitor.

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

**Halt On** This category determines whether the computer will stop if an error is detected during power up.

No errors	The system boot will not be stopped for any error that may be detected.
All errors	When the BIOS detects a non-fatal error, the system will be stopped and you will be prompted.
All, But Keyboard	The system boot will not stop for a keyboard error. It will stop for all other errors.
All, But Diskette	The system boot will not stop for a floppy drive error. It will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a floppy drive or keyboard error. It will stop for all other errors.

**Memory** This category is displayed only which is determined by POST (Power On Self Test) of the BIOS.

**Base Memory** The POST will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K or 640K based on the memory installed on the motherboard.

**Extended Memory** How much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

**Total Memory** Displays the total memory available in the system.

**IDE Primary Master; Primary Slave Secondary Master; Secondary Slave**

Press Enter to enter the sub menu of detailed options.

**Ex : IDE Primary Master sub menu**

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**IDE Primary Master**

IDE HDD Auto-Detection	Press Enter	Item Help
		Menu Level >>
IDE Primary Master	Auto	To auto-detect the HDD's size, head... on this channel
Capacity	2557 MB	
Access Mode	Auto	
Cylinder	4956	
Head	16	
Precomp	0	
Landing Zone	4955	
Sector	63	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

**IDE HDD Auto-Detection** Press Enter to auto-detect the HDD. If detection is successful, it fills the remaining fields on this menu.

**IDE Primary Master** If you select 'Auto', the BIOS will detect the HDD & CD-ROM Drive automatically at the POST stage and show the IDE for HDD & CD-ROM Drive. If you select 'manual', please contact your hard disk vendor or dealer to get the information listed below. Then enter the figure directly and press <Enter>.

***The following options are selectable only if the IDE Primary Master item is set to "Manual".***

Cylinder	number of cylinders
Head	number of read/write heads
Precomp	write precomp
Landing Zone	landing zone
Sector	number of sectors per track

**Capacity** Displays your disk drive size.

**Access Mode** Choose the access mode for the hard disk. The choices: Normal, LBA, Large, Auto.

**ADVANCED BIOS FEATURES** This screen is a list of system configuration options. Some of them are defaults required by the mainboard's design, others depend on the features of your system.

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Advanced BIOS Features

Virus Warning	Disabled	Item Help
CPU L1 Cache	Enabled	
CPU L2 Cache	Enabled	
Quick Power On Self Test	Enabled	Menu Level >
First Boot device	Floppy	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
Second Boot device	HDD-0	
Third Boot device	SCSI	
Boot other device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
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	
OS Select For DRAM > 64MB	Non-OS2	
HDD S.M.A.R.T Capability	Disabled	
Report NO FDD For Win 95	No	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

***Virus Warning*** When this item is enabled, the Award BIOS will monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If an attempt is made, the BIOS will halt the system and the following error message will appear.

Afterwards, if necessary, you will be able to run an anti-virus program to locate and remove the problem before any damage is done.

**! WARNING !**

Disk boot sector is to be modified

Type 'Y' to accept write or 'N' to abort write

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Enabled	Activates automatically when the system boots up. If anything attempts
---------	--

	to access the boot sector or hard disk, partition table will cause a warning message to appear.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

Many disk diagnostic programs which attempt to access the boot sector table can cause the above warning message. If you will be running such a program, we recommend that you first disable Virus Protection beforehand.

**CPU L1 Cache, L2 Cache** These two categories speed up memory access. However, it depends on CPU design. The default value is 'Enabled'.

**Quick Power On Self Test** This category speeds up Power On Self Test after you power up the computer. If you set "Enabled", BIOS will skip some items under check during POST.

**First Boot Device, Second Boot Device, Third Boot Device, Boot Other Device** The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The choices: Floppy, LS/ZIP/, HDD, SCSI, CDROM, Disabled.

**Swap Floppy Drive** This item allows you to determine whether to enable the swap floppy drive or not. The choice : Enabled/ Disabled

**Boot Up Floppy Seek** *During POST, the BIOS will determine if the floppy disk drive installed is 40 tracks (360K) or 80 tracks (720K, 1.2M, 1.44M)*

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks
Disabled	BIOS will not search for the type of floppy disk drive by track number

**Boot Up NumLock Status** *This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on.*

On	Keypad is for numeric keys
Off	Keypad is for arrow keys

**Gate A20 Option** This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 MB. Initially, the gate A20 was handled via a pin on the keyboard controller. Today, while keyboard controller still provides this function, it is more common and much faster for the system chipset to provide support for gate A20. Normal is keyboard; Fast is chipset.

**Typematic Rate Setting** This determines if the typematic rate is to be used. When disabled, continually holding down a key on your keyboard will generate only one key instance. In other words, the BIOS will only report that the key is down. When the typematic rate is enabled, the BIOS will report as before, but it will then wait a moment, and, if the key is still down, it will begin the report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys. The choice : Enabled/Disabled

**Typematic Rate (Chars/Sec)** When the typematic rate is enabled, this section allows you to select the rate at which the keys are repeated. 6 means 6 characters per second.

**Typematic Delay (Msec)** When the typematic rate is enabled, this section allows you to select the delay between when the key was first depressed and when the acceleration begins. 250: 250 msec (500,750,1000)

**Security Option** This category allows you to limit access to the system and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt

To disable the security, select PASSWORD SETTING at Main Menu, and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable the security. Once the security is disabled, the system will boot and you can enter Setup freely.

**OS Select for DRAM > 64MB** This item allows you to access the memory that is over 64MB in OS/2. The choice : Non-OS2, OS2

**HDD S.M.A.R.T. Capability** Select Enabled if your Hard disk supports S.M.A.R.T. (Safe-Monitoring Analysis and Reporting Technology) function.

**Report No FDD For WIN 95** Set this item to Yes, BIOS will report FDD to Win95. If in standard CMOS setup, set Drive A to none and set this item to yes. Inside Win95, My Computer and File manager Disk(A:) will show Removable Disk (A:).

**ADVANCED CHIPSET FEATURES** This screen controls the setting for the chipset on the mainboard. This chipset manages bus speeds and access to system memory resources.

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Advanced Chipset Features

SDRAM CAS Latency Time	3	Item Help
SDRAM Cycle Time Tras/Trc	6/8	
SDRAM RAS-to-CAS Delay	3	
SDRAM RAS Precharge Time	3	Menu Level ➤
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Enabled	
Memory Hole At 15M-16M	Disabled	
Delay Transaction	Disabled	
On-Chip Video Window Size	64MB	
* Onboard Display Cache Setting *		
CAS# Latency	3	
Paging Mode Control	Close	
RAS-to-CAS Override	By CAS#	
LT		
RAS# Timing	Slow	
RAS# Precharge Timing	Slow	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

**SDRAM CAS Latency Time** When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. The choices: 2,3. “2” gives faster performance and “3” gives more stable performance.

**SDRAM Cycle Time Tras/Trc** Select the number of SCLKs for an access cycle. “5/7” gives faster performance and “6/8” gives more stable performance.

**SDRAM RAS-to-CAS Delay** This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. “2” gives faster performance and “3” gives more stable performance.

**SDRAM RAS Prechage Time** If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data.

**System BIOS Cacheable** Selecting Enabled allows the caching of the system BIOS ROM area, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

**Video BIOS Cacheable** Selecting Enabled allows the caching of the video BIOS ROM area, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

**Memory Hole At 15M-16M** Certain space in memory can be reserved for ICH/ICH0.

**Delay Transaction** This chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1. The choice : Enabled, disabled space

**On-chip Video Window Size** Determine the size of memory space can be allocated for on-chip graphics device.

**The following items are optional for onboard display cache setting:**

**CAS# Latency** The number of clock cycles of CAS latency depends on the Display Cache timing. The choices: 2,3. “2” gives faster performance and “3” gives more stable performance.

**Paging Mode Control** Close: the GMCH will precharge all during the service of a page miss. Open: it will precharge bank during the service of a page miss.

**RAS-to-CAS Override** By CAS# LT: the RAS-to-CAS delay timing will be the same as item of *CAS# Latency*. Override: the value will be fixed in 2.

**RAS# Timing** This item controls the active time of RAS# and bank cycle time. “Fast” gives faster performance and “Slow” gives more stable performance.

**RAS# Precharge Timing** If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. “Fast” gives faster performance and “Slow” gives more stable performance.

**INTEGRATED PERIPHERALS** This section page includes all the items of IDE hard drive and Programmed Input/Output features. See also Section “Chipset Features Setup”.

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Integrated Peripherals

OnChip Primary PCI IDE	Enabled	Item Help
OnChip Secondary PCI IDE	Enabled	
IDE Primary Master PIO	Auto	Menu Level  If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support
IDE Primary Slave PIO	Auto	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	
IDE Primary Slave UDMA	Auto	
IDE Secondary Master UDMA	Auto	
IDE Secondary Slave UDMA	Auto	
USB Controller	Enabled	
USB Keyboard Support	Disabled	
Init Display First	PCI Slot	
AC97 Audio	Enabled	
AC97 Modem	Auto	
IDE HDD Block Mode	Enabled	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
UART Mode Select	Normal	
IR Duplex Mode	Half	
TxD RxD Polarity Active	Lo, Hi	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	ECP	
ECP Mode Use DMA	3	
Game Port Address	201	
Midi Port Address	Disabled	
Midi Port IRQ	5	
CPU FAN Speed	0RPM	
Power FAN Speed	0RPM	
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

***On-Chip Primary PCI IDE; On-Chip Secondary PCI IDE*** This setup item allows you to either enable or disable the primary/secondary controller. You might choose to disable the controller if you want to add higher performance or specialized controller.

***IDE Primary Master/Slave PIO IDE; Secondary Master/Slave PIO***

PIO - Programmed Input/Output, it allows the BIOS to tell the controller what it wants and then let the controller and the CPU to complete the task by themselves. This is

simpler and faster. Your system supports five modes, 0 - 4, which primarily differ in timing. When **Auto** is selected, the BIOS will select the best available mode.

**IDE Primary Master/Slave UDMA; IDE Secondary Master/Slave UDMA** Auto, will support the Ultra DMA function. Disabled, will not support the Ultra DMA function.

**USB Controller** This item allows you to decide to enable/disable the USB controller.

**USB Keyboard Support** Enabled will support USB keyboard in none-USB supported OS.

**Init Display First** This item allows you to decide to active whether PCI VGA or on-chip VGA first. The choice: PCI Slot, Onboard.

**AC97 Audio; AC 97 Modem** This item allows you to decide to enable/disable the i810 chipset family to support AC97 Audio/Modem.

**IDE HDD Block Mode** This allows your HD controller to use the fast block mode to transfer data to and from your HD drive.

Enabled	IDE controller uses block mode
Disabled	IDE controller uses standard mode

**On Board FDC Controller** This item will enable or disable the floppy disk controller.

**On Board Serial Port 1** User can select serial port IRQ. If set to Auto, system will assign an IRQ for it. Note : set to Auto is not recommended.

**On Board Serial Port 2** User can select serial port IRQ. If set to Auto, system will assign an IRQ for it. Note : set to Auto is not recommended.

**UART Mode Select** This lets you select the Infrared mode. Choices are Standard, HPIR, and ASKIR. If you choose HPIR or ASKIR mode, the screen will show another two lines to let you choose 'IR Function Duplex' (Full or Half) and 'TxD RxD Polarity Active' (Hi Lo; Lo Hi; Hi Hi; Lo Lo).

**On Board Parallel Port** Let user select IRQ for parallel port When Disabled, the parallel port will be disabled.

**Onboard Parallel Mode** Let user select error check mode. This item is not recommended to change except user has special request.

**ECP Mode Use DMA** Select a DMA channel for the port. Choices are 3, 1.

**Game Port Address; Midi Port Address** The IO address of Game Port/Midi Port.

**CPUFAN / PowerFAN Speed** It shows the running speed of the CPU fan and Power fan. The figure will be changing when the system is running. If you do not install the fan, the figure will show 0.

**POWER MANAGEMENT SETUP** This screen controls the 'green' features of this mainboard.

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**Power Management Setup**

ACPI function	Enabled	Item Help
Power Management	User Define	
Video Off Method	DPMS	
Video Off In Suspend	Yes	Menu Level ➤
Suspend Type	Stop Grant	
MODEM Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWRBTN	Instant Off	
CPU PME# Function	Disabled	
Power On by Ring	Enabled	
Resume by Alarm	Disabled	
** Reload Global Timer Events **		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD, COM, LPT Port	Disabled	
PCI PIRQ [A-D]#	Disabled	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

**ACPI function** This item is to set the ACPI ( Advanced Configuration Power Interface ) function enabled or disabled.

**Power Management** This category allows you to select the type (or degree) of power saving and is directly related to the following modes : Suspend; HDD Power Down.

Disabled	No power management. It means all 4 modes are disabled.
Min. Power Saving	Minimum power management. Doze =1hr.; Standby=1hr.; Suspend=1hr.; HDD Power Down=15min
Max. Power Saving	Maximum power management <b>only available for SL CPU.</b> Doze=1min.; Standby=1min.; Suspend=1min.;HDD Power Down=1min
User Define	Allows you to set each mode individually. When not disabled, each of the ranges are from 1min. to 1hr. except for HDD Power Down which ranges from 1 to 15min. and disable

**Video Off Method** This determines the manner in which the monitor is blanked.

V/H SYNC + Blank	This selection will cause the system to turn off the vertical and horizontal sync. ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial of "Display Power Management Signaling".

**Video off In Suspend** This determines the manner in which the monitor is blanked.

**Suspend Type** Select the suspend type.

Stop Grant	Only CPU enters sleeping mode
Full on Suspend	Both CPU and chipset enter sleeping mode

**MODEM Use IRQ** This item determines the IRQ in which the MODEM can be used. The choice : 3,4,5,7,9,10,11,NA.

**Suspend Mode** When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

**HDD Power Down** When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

**Soft-Off by PWR-BTTN** *Instant-off* : When push the power button, the system power will be off immediately. *Delay 4 sec* : when push the power button, it will enter suspend mode. We need to push the power button and hold it for 4 seconds to turn off the power.

**PCI PME# Function** With PCI card supporting PCI Power Management capability and this item setting to Enabled, the system can be waked up by PCI card.

**PowerOn by Ring** Enabled: when system is in suspend mode, it can be waked up by modem. Disabled: it cannot be waked up by modem.

**Resume by Alarm** When Enabled, two additional lines will be added to the screen :Date (of Month) Alarm; Time (hh:mm:ss) Alarm to let user set the desired date and time. After power off, the system will automatically power on at the specified date and time.

**Reload Global Timer Events** When enabled, an event occurring on each device listed below restarts the global time for Standby mode. IRQ [3-7, 9-15], NMI;

Primary IDE 0; Primary IDE 1; Secondary IDE0; Secondary IDE1; Floppy Disk;  
Serial Port; Parallel Port.

**PNP/PCI CONFIGURATION** This screen configures the PCI Bus slots.

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**PnP/PCI Configurations**

Reset Configuration Data	Disabled	Item Help -----
Resources Controlled By	Auto	Menu Level   ➤
➤ IRQ Resources	Press	Default is Disabled.
Enter		Select Enabled to
➤ DMA Resources	Press	reset Extended System
Enter		Configuration
➤ Memory Resources	Press	Data (ESCD) when you
Enter		exit Setup if you have
PCI/VGA Palette Snoop	Disabled	installed a new add-on
		and the system
		reconfiguration has
		caused such a serious
		conflict that the OS
		cannot boot
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

**Reset Configuration Data** This item allows you to determine whether to reset the configuration data or not.

**Resource Controlled by** The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug & Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play OS such as Windows 95. Choices are Auto and Manual.

**IRQ Resources; DMA Resources** When resources are controlled manually, assign each system interrupt/DMA channel a type, depending on the type of device using the interrupt/DMA channel.

**IRQ3/4/5/7/9/10/11/12/14/15, DMA0/1/3/5/6/7 Assign to** This item allows you to determine the IRQ/DMA assigned to the ISA bus and is not available to any PCI slot. Choices are Legacy ISA and PCI/ISA PnP.

**PCI/VGA Palette Snoop** If MPEG card is plugged and the colors of display are abnormal, then enable this option to correct the problem.

**FREQUENCY / VOLTAGE CONTROL** This screen controls the 'green' features of this mainboard.

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**Frequency/Voltage Control**

Auto Detect DIMM/PCI CLK	Disabled	Item Help
Spread Spectrum Modulated	Disabled	-----
CPU/SDRAM/PCI Clock	Default	Menu Level      ➤
CPU Ratio	X 3	
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

**Auto Detect DIMM/PCI CLK** If this item is enabled, the unused DIMM and PCI slot clock will be disabled. If this item is disabled the unused DIMM and PCI slot will still get the active clock signal.

**Spread Spectrum** Enable / Disable this item, the BIOS will Enable / Disable the clock generator spread spectrum .

**CPU/SDRAM/PCI Clock** Use this item to set CPU base clock frequency which includes  
 70/105/35 `75/112/37 `83/125/41 `90/90/30 `95/95/31 `100/100/33 `101/101/33 `105/105/35 `114/114/38 `120/120/40 `124/124/41 `133/133/33 `133/133/44 `140/140/35 and 150/150/37MHz.

**Note: After you change the CPU Clock Frequency and the system can not start, please do the following procedures:**

1. Turn the system off.
2. Turn on the system. Then press and hold the “ Insert ” key at boot.
3. Enter the BIOS SETUP MENU.
4. Select the proper figure in the item of *CPU/SDRAM/PCI Clock*.
5. Save and Exit Setup.

**CPU Ratio** Use this item to set CPU ratio which includes x 3 ` x 3.5 ` x 4 ` x 4.5 ` x 5 ` x 5.5 ` x 6 ` x 6.5 ` x 7 ` x 7.5 and x 8.

**LOAD FAIL-SAFE DEFAULTS** When your mainboard has problems and needs to trouble shoot the system, you can use this function. The default values loaded only affect the BIOS Features Setup, Chipset Features Setup, Power Management Setup and PNP/PCI Configuration Setup. There is no effect on the Standard CMOS Setup. To use this function, select it from main menu and press <Enter>. A line will appear on the screen asking if you want to load the fail-safe default values. Press <Yes> and <Enter> then the BIOS default values will be loaded.

**LOAD OPTIMIZED DEFAULTS** This allows you to load optimal settings which are stored in the BIOS ROM. The default values loaded only affect the BIOS Features Setup, Chipset Features Setup, Power Management Setup and PNP/PCI Configuration Setup. There is no effect on the Standard CMOS Setup. To use this function, select it from main menu and press <Enter>. A line will appear on the screen asking if you want to load the optimized default values. Press <Yes> and <Enter> then the Setup default values will be loaded.

**SUPERVISOR PASSWORD / USER PASSWORD** This allows you to set the password. The mainboard defaults with password disabled. If you set both supervisor and user passwords, only the supervisor password allows you to enter the BIOS SETUP program.

**Enter/Change password :** Enter the current password. And at the prompt, key-in your new password (up to eight alphanumeric characters), then press <Enter>. At the next prompt, confirm the new password by typing it again and press <Enter>.

**Disable password :** Press the <Enter> key instead of entering a new password when the 'Enter Password' dialog box appears. A message will appear for confirming that the password is disabled.



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**CAUTION:** If you forget your password, you must clear CMOS first and restart system in order to set up password again. See "Reset CMOS" on Page 12.

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**SAVE & EXIT SETUP** This allows you to save the new setting values in the CMOS memory and continue with the booting process. If you select this item and press 'Y', then these records will be saved in the CMOS memory on the mainboard. It will be checked every time you turn your computer on.

**EXIT WITHOUT SAVING** This allows you to exit the BIOS setup utility without recording any new values or changing old ones.