

# **MAINBOARD**

## **Installation Guide**

**Rev: 1.00H**

**Date: May - 99**

- \* All other product names are trademarks or copyrights of their respective owners.
- \* Specifications and information contained in this manual are subject to change without notice.

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# INTRODUCTION

## Product Description

Designed as a flexible, high-performance and cost-effective solution for System Integrators and End Users alike, this mainboard provides the power and expandability to meet the requirements of the most advanced operating systems and software applications.

This mainboard is a high performance Pentium ®-based (FSB 100MHz) system board that utilizes the Intel® 810 chipset on micro-ATX Platform, providing next generation features and great graphics performance at a lower cost.

By incorporating such advanced features as AMR, AC97 audio, Super I/O, Ultra DMA/66 (\*) Bus Mastering IDE, Universal Serial Bus (USB) and Hardware Monitoring onto the mainboard, optimum system performance is assured and system design and implementation is simplified.

Fully “Plug & Play” compatible via an Award BIOS, this mainboard facilitates easy system configuration and peripheral setup. Also, the Award BIOS supports ACPI Readiness and is compatible with the PC’98 specification. This mainboard is the ideal foundation for high-end computer systems.

\* For the mainboard that uses FW82810 plus FW82801AB chipsets, PCI Bus Master IDE support up to UltraDMA/33 only.





# INTRODUCTION

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## Remark:

The **XStore Pro IDE Driver** enhances memory management by working with the Windows 95/98 operating system, resulting in higher system performance by implementing "read-ahead caching after seeking". This is especially effective with the large block sizes of modern hard disks.

**PC-cillin anti-virus software** provides a powerful defense against viruses to protect data integration.

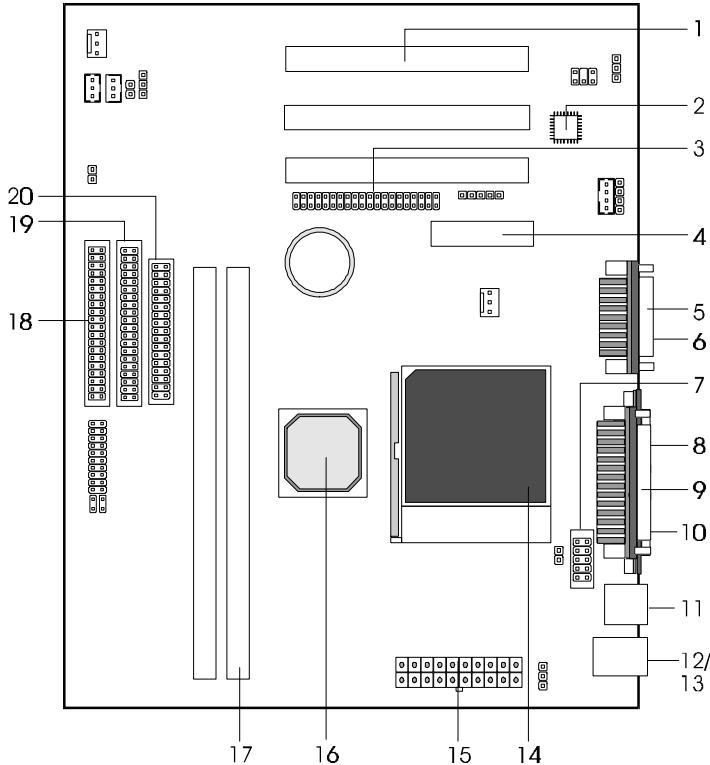
\* For the mainboard that uses FW82810 plus FW82801AB chipsets, PCI Bus Master IDE support up to UltraDMA/33 only.

## Package Checklist

Your mainboard package should include the items listed below. Damaged or missing items should be reported to your vendor.

- The mainboard
- Floppy disk ribbon cable
- IDE ribbon cable
- RS232 9-pin COM2 serial port bracket
- This Installation Guide
- BIOS, Driver & Utility Guide
- CD-ROM containing the following support software:  
(The latest drivers can always be found at their respective web sites.)
  - Intel® IDE Bus Master driver  
<http://support.intel.com/support/chipsets>
  - Support software for updating the FLASH BIOS
  - HighPoint® XStore Pro IDE Bus Master  
<http://www.highpoint-tech.com>
  - Trend ® PC-cillin Anti-Virus software  
<http://www.antivirus.com>

Board Level Feature



- |                      |                                      |
|----------------------|--------------------------------------|
| 1. PCI slots         | 11. USB connectors                   |
| 2. AC97 codec chip   | 12. PS/2 mouse connector (top)       |
| 3. Digital Video Out | 13. PS/2 keyboard connector (bottom) |
| 4. AMR Slot          | 14. CPU socket (Socket 370)          |
| 5. MIDI/Game port    | 15. Power connector                  |
| 6. Audio port        | 16. Intel® 810 chipset               |
| 7. COM2 connector    | 17. DIMM sockets                     |
| 8. VGA port          | 18. Primary IDE connector            |
| 9. Printer port      | 19. Secondary IDE connector          |
| 10. COM1 connector   | 20. Floppy connector                 |

\* Board Size: Micro-ATX 245 mm x 200 mm (8" x 6.6")

## INTRODUCTION

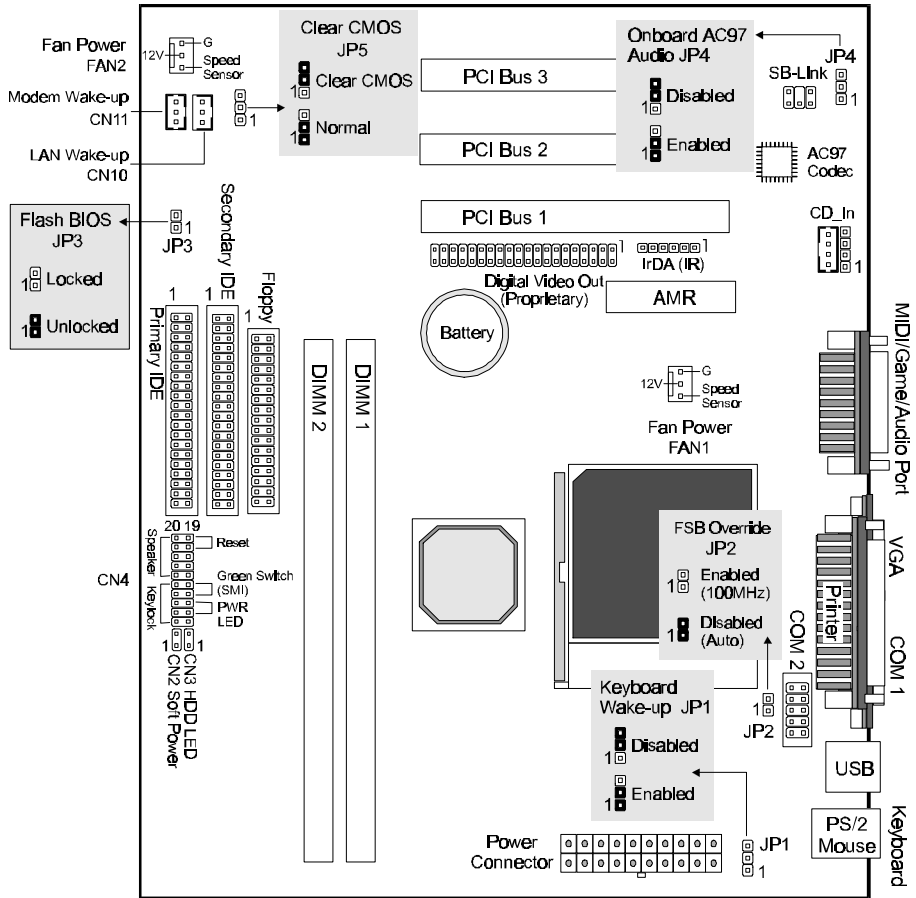
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1. **PCI Slots:** (3) 32-bit PCI slots are provided.
2. **AC97 Codec Chip:** AC97 Audio Codec chip.
3. **Digital Video Out:** A manufacturer's proprietary bus that connects to the optional TV-Out or Panel-Link daughter board.
4. **AMR Slot:** The Audio Modem Riser is a new standard interface for cost-effective AMR AC97/MC97 audio/modem cards.
5. **MIDI/Game Port:** 15-pin female MIDI/Joystick connector.
6. **Audio Port:** Three 1/8" female jacks for Line Out, Line In and MIC.
7. **COM2 Connector:** Connects to supplied high-speed UART compatible serial port bracket. COM2 can be directed to the Infrared Module for wireless connection capability.
8. **VGA Port:** 15-pin VGA connector.
9. **Printer Port:** EPP and ECP compatible 25-pin D-Sub parallel port.
10. **COM1 Connector:** High-speed UART compatible serial port.
11. **USB Connectors:** These connectors permit the connection of two USB peripheral devices directly to the port without an external hub. USB is a new technology supporting printers, fax modems and other telephony device.
12. **PS/2 Mouse Connector:** Supports PS/2 style mice.
13. **PS/2 Keyboard Connector:** Supports PS/2 style keyboards.
14. **CPU Socket:** ZIF Socket 370 for Intel® Celeron processors up to 500 MHz.
15. **Power Connector:** 20-Pin ATX Power Connector.
16. **Intel® 810 Chipset:** Supports Intel Celeron CPUs, AC97, AGP and Digital Video Out.
17. **DIMM Sockets:** (2) 168-pin DIMM sockets are provided to support a maximum RAM memory capacity of 512 MB. DIMM types of 3.3 Volt true SDRAM is supported and automatically detected by the BIOS.
18. **Primary IDE Connector:** Connector for first IDE channel. The on-board PCI Bus Mastering IDE controller features support for DMA Mode 2 and PIO Modes 3 and 4 for faster data transfer rates. (2) Connectors are provided for support of up to (4) IDE devices on two channels. ATAPI Tape Drives and CD-ROMs are also supported.
19. **Secondary IDE Connector:** Connector for second IDE channel.



20. **Floppy Connector:** Built-in floppy controller supports (2) 5.25" or 3.5" (1.44MB or 2.88MB) floppy drives.

## Comprehensive Mainboard View



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# INSTALLATION

## *Static Precautions*

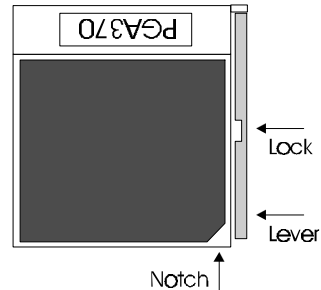
Static electricity can be a serious danger to the electronic components on this mainboard. To avoid damage caused by electrostatic discharge, observe the following precautions:

- ✓ Don't remove the mainboard from its anti-static packaging until you are ready to install it into a computer case. Also, handle add-in cards and modules by the edges or mounting bracket.
- ✓ Before you handle the mainboard in any way, touch a grounded, anti-static surface, such as an unpainted portion of the system chassis, for a few seconds to discharge any built-up static electricity.

## Installing the CPU

- ✓ **WARNING:** Use of a CPU Cooling Fan is required to prevent CPU from overheating. The Fan should be installed first before inserting the CPU into its socket.

1. Locate the ZIF (Zero Insertion Force) Socket 370.
2. First open the socket by pulling the lever sideways, then upwards. Notice how the lever locks in place when pressed all the way down.
3. The CPU must be inserted with the correct orientation. One corner of the CPU has a "Notch" and looks different that the other three. This corner is also missing a pin unlike the other three. Align this corner towards the end of the lever as shown in the figure at right. Insert the CPU, press it down.
4. Close the lever until it locks into place.



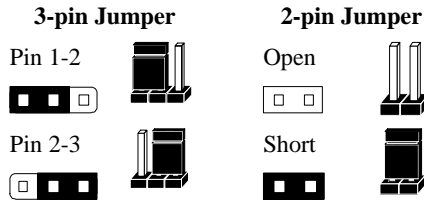
The CPU speed will be automatically detected by the mainboard BIOS. Manual setting is also possible. Refer to the BIOS, Driver & Utility Guide for details.

# INSTALLATION

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## Setting the Jumpers

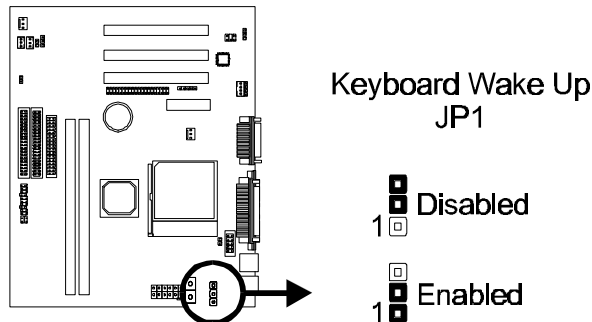
Jumpers are used on this mainboard to select various settings and features. A 2-pin jumper has two settings: Open and Short (or Closed). The jumper is closed by placing the Jumper Cap across the two pins, thereby connecting them. 3-pin jumpers can be set to pins 1-2 or 2-3 connected. Pin-1 is labeled on the circuit board.



### *Keyboard Power-on Jumper (JP1)*

This mainboard features the Keyboard Power-on function. For example, you may press any key on the keyboard to power on the system, or you may choose to type a password to power on the system. These options are set in the **Integrated Peripherals** of the BIOS. (Please refer to the BIOS, Driver & Utility Guide.)

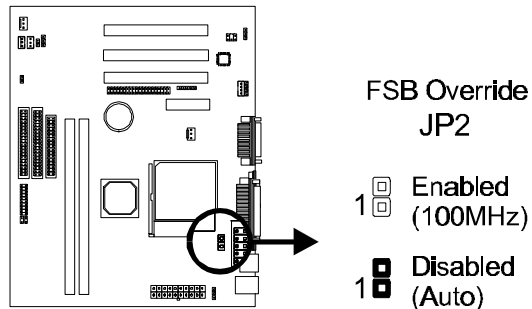
**Note:** If you choose to use a password to power on the system, it is recommended to keep a written record of your password. If you forget the password, you must remove the battery AND disconnect the mainboard's power supply for a couple of seconds then re-install them back. This is the only way you can power on your system again.



## *Setting the Bus Clock Override Jumper (JP2)*

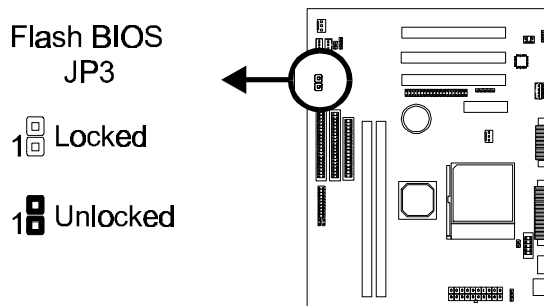
Setting the Bus Clock Override Jumper to *Enabled* overrides the CPU's default Bus Clock and set it at 100 MHz.

- *Over-clocking may cause serious system damage.*



## *Locking/Unlocking the Flash BIOS (JP3)*

To re-program the mainboard BIOS, short this jumper to unlock the flash BIOS. Lock the BIOS to prevent writing to the flash BIOS.

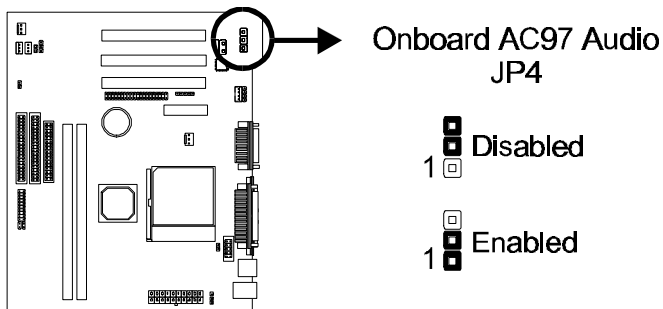


# INSTALLATION

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## ***Onboard AC97 Audio Selection Jumper (JP4)***

Set this jumper to *Enabled* if you are using the onboard AC97 audio features. Also make sure the “**AC97 Audio**” option is *Enabled* (default) in the ***Integrated Peripherals*** of the BIOS. (Please refer to the BIOS, Driver & Utility Guide.)

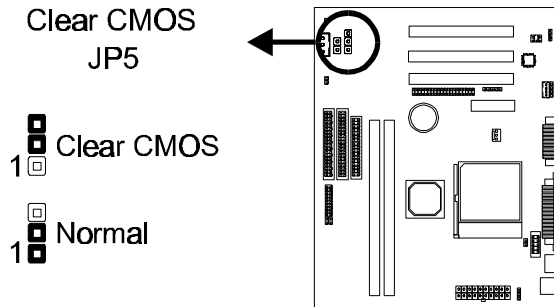


## *Clear CMOS (JP5)*

If you have set the password, either to protect the BIOS configuration or to restrict access to the computer, the password is stored in CMOS RAM. If you forget the password, the CMOS can be cleared by setting this jumper to *Clear CMOS*.

In case there is a CMOS error or improper CPU setting through the mainboard's BIOS that causes boot failure, the CMOS must be cleared by setting this jumper to *Clear CMOS* to allow the system to boot.

\* Clearing the CMOS will clear all user-defined BIOS setup options.

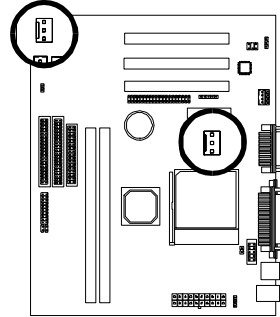
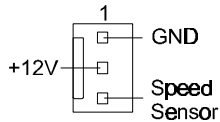


# INSTALLATION

## Connections

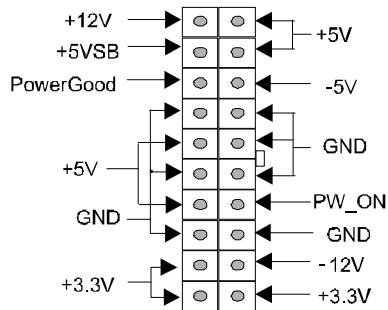
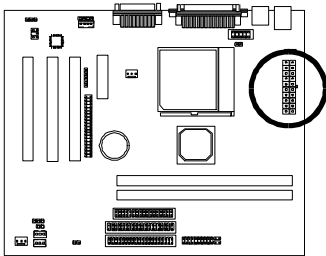
### *Cooling Fans*

These connectors are small 3-pin Header Connectors that provide 12-Volt power for CPU and chassis cooling fans. Plug in the fan cable to the connector. Pin-2 corresponds to the RED power lead as shown:



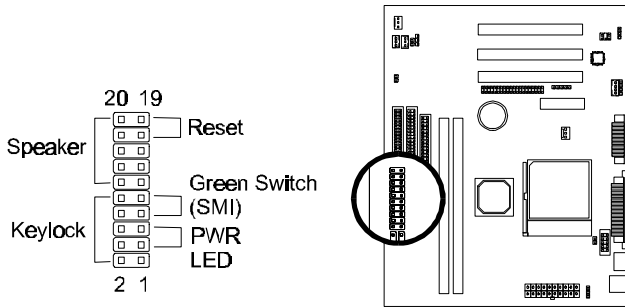
### *Power Supply Connector*

This mainboard features an ATX-style Power Supply Connector. This connector is keyed to prevent connection in the wrong direction. Line up the locking mechanism on the connector from the Power Supply with the tab on the mainboard connector. Press down until the two connectors are locked.





## System Function Connector Block (CN4)



**Pins [3 & 5] Power LED lead** – Pins 3 and 5 connect to the power LED lead from the system’s case. In case you case comes with a five-pin keylock & power LED connector, use the connector block marked as Keylock.

**Pins [7 & 9] SMI suspend switch lead** - If your system’s case has a suspend switch, hook the lead from the switch to pins 7 & 9. A suspend switch is used to save electricity by putting the system into a suspend mode when the computer is not being used. For this switch to be functional, “*Suspend Mode*” must first be enabled in the **Power Management Setup** in the BIOS Setup utility.

**Pins [17 & 19] Reset switch lead** - Connects to the Reset Switch lead from the system’s case. The reset switch is used to “cold-boot” the system without actually turning off the power, reducing wear and tear on the power supply.

**Pins [2, 6, 8 & 10] Keyboard lock switch lead** – Pins 2 & 6 connect to the power LED from the system’s case, Pins 8 and 10 connect to the case-mounted keylock switch.

**Pins [14 & 20] Speaker connector** - Connects to the Speaker lead from the system’s case.

# INSTALLATION

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## *Soft Power Switch (CN2)*

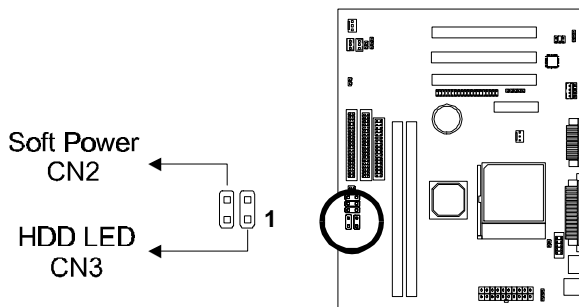
Connects to the Power Switch featured on ATX case designs. This switch must be hooked up before the system can be powered on, unlike traditional “Baby-AT” designs where the power switch is located on the Power Supply itself.

**Note:** Under the following two conditions, you have to press and hold the switch for more than 4 seconds to power off your system, regardless of the “*Soft-Off by PWR-BTTN*” setting in the **Power Management Setup** of the BIOS.

- *Shortly after the system is powered on, when the BIOS message is not yet appear.*
- *When CPU hangs.*

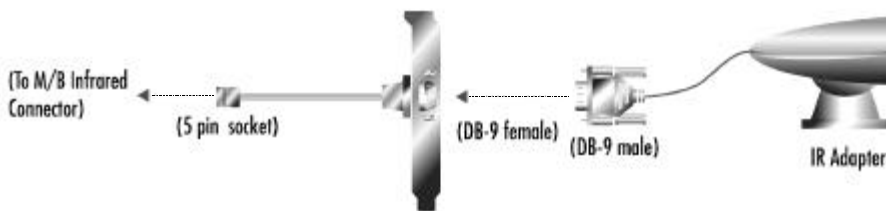
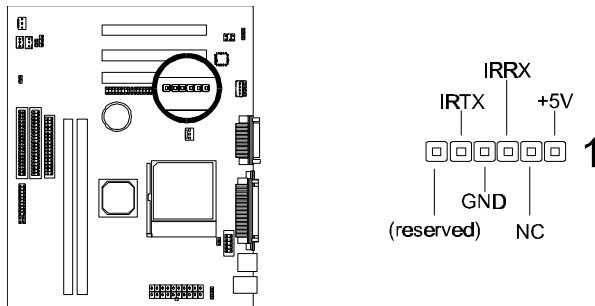
## *HDD Activity LED (CN3)*

Hook the IDE LED lead to this connector, with the RED lead corresponding to Pin-1.



## *IrDA-Compliant Infrared Module Connector*

The IrDA connector bracket hooks directly to this connector on the mainboard. This connector provides support for the optional wireless transmitting and receiving infrared module. You must first configure through the BIOS setup where UART2 is directed, COM2 or IrDA.



# INSTALLATION

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## ***Wake-up On LAN Connector (CN10)***

The Wake-up On LAN function will allow the network to wake up a Soft Power Down (Soft-Off) PC. However, if your system is in the Suspend mode, you can wake-up the system only through an IRQ or DMA interrupt. To use the Wake-up On LAN function, you may also have to enable the related option in the mainboard BIOS.

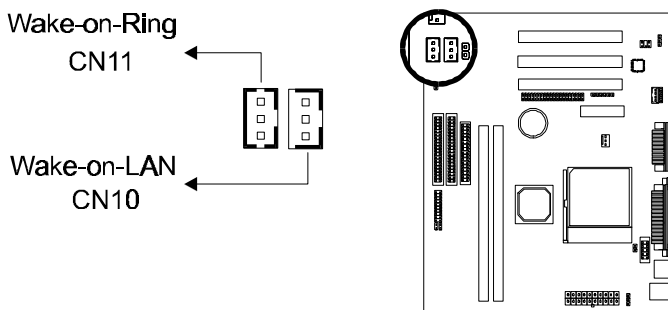
Connect the cable that comes with your LAN card to this connector on the system board. Refer to the add-in card's manual for details.

**Note:** Your LAN card must support Magic Packet in order to use the Wake-up On LAN function.

## ***Wake-on-Ring Function (CN11)***

The Wake-on-Ring function allows the modem to remotely power on the system. To use this function, you may also have to enable the related option in the mainboard BIOS.

For the function to work for an **internal modem card**, you must also connect the Wake-on-Ring cable on the modem card to the *Wake-on-Ring function connector* on the mainboard.



## *Serial and Parallel Ports*

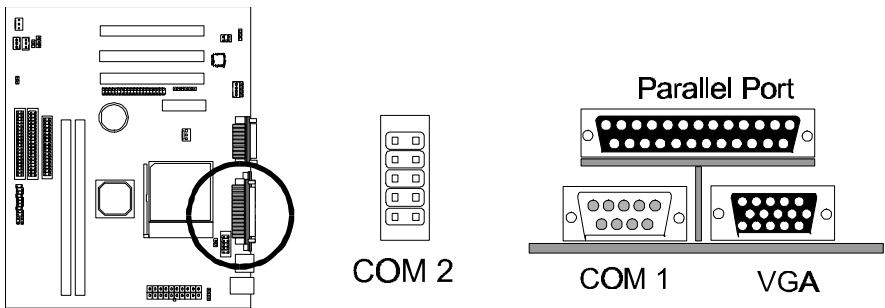
A 25-pin D-Sub header is provided on the back panel for a multi-mode bi-directional parallel port.

One 9-pin D-Sub headers are also provided on the back panel for Serial ports.

For the second serial port, plug the 10-pin cable of the serial port bracket to the COM2 connector on the mainboard.

## *VGA Connector*

This mainboard has built-in VGA features. A 15-pin connector is provided on the back panel for connecting to the VGA connector from the monitor.

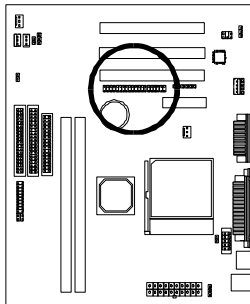


# INSTALLATION

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## *Digital Video Out*

This is a manufacturer's proprietary bus that connects to the cable from optional TV-Out or Panel-Link daughter board. This bus support traditional TVs as well as the new digital flat panel displays.



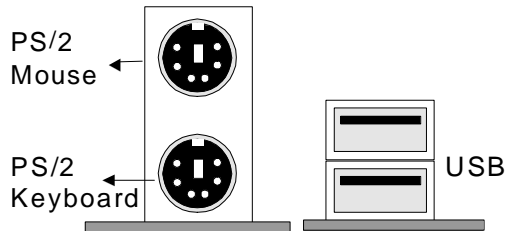
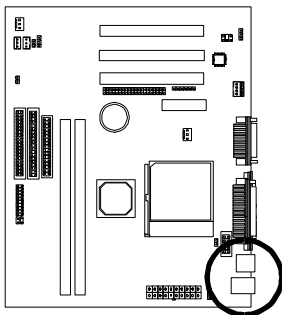
Digital Video Out  
(Proprietary)

## *USB Connectors*

These two connectors permit connection of two USB peripheral devices directly to the system without an external hub.

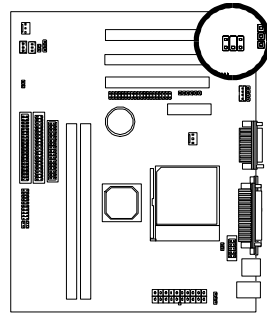
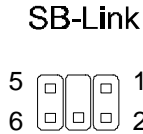
## *PS/2 Keyboard and Mouse Connectors*

These two connectors are located on the back panel of the mainboard.



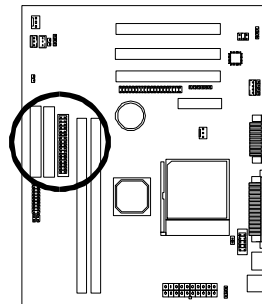
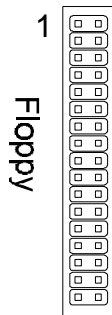
## *SB-Link*

Connect SB-Link cable on the Creative Sound Blaster Card to this connector. This PC to PCI bridge provides backward compatibility between PCI and ISA audio chips for earlier DOS games.



## *Floppy Drives*

The on-board floppy controller supports (2) floppy disk drives with the floppy ribbon cable provided. Make sure the RED stripe on the ribbon cable is oriented towards Pin-1. Notice the “twist” between the sets of connectors on the floppy cable. The floppy drive “A” position is at the END of the cable, whereas floppy drive “B” is hooked to one of the connectors on the other side of the twist. The cable provides both “Edge” and “Pin” connectors for both the A and B positions to match the connector on your floppy drives.



# INSTALLATION

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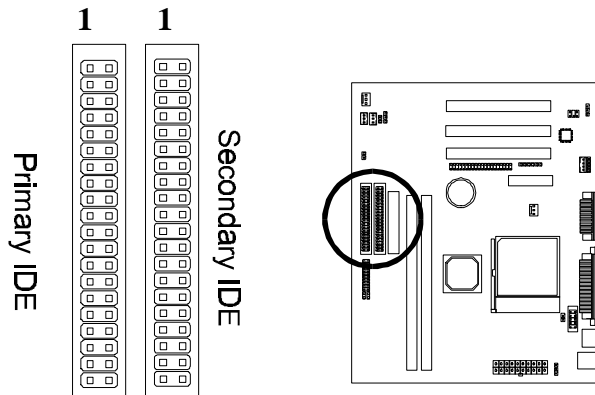
## *IDE Hard Drives and CD-ROMs*

The on-board Enhanced IDE controller can support up to (4) IDE hard drives or other ATAPI devices, such as CD-ROMs. This controller, as with all Enhanced IDE controllers, consists of both Primary and Secondary ports. Each port has an associated connector and cable which can support up to (2) ATAPI devices each.

All IDE devices have jumpers which allow the user to configure the device as either “Master” or “Slave”. A Master device is one that is ALONE on the IDE cable, whereas a Slave device is installed as a SECOND device on the same cable. Keep in mind that the Master device will appear before the Slave device in the CMOS Setup, as well as the Operating System software. \*Refer to the device documentation for jumper settings.

The Secondary IDE port can be used for up to (2) additional ATAPI devices. Normally it’s recommended that you connect your first hard drive to the Primary port, and the first CD-ROM to the Secondary.

Make sure to align the RED stripe on the ribbon cable with Pin-1 on the mainboard IDE connector. On most hard drives and CD-ROMs, the RED stripe should be oriented towards the power connector of the device.



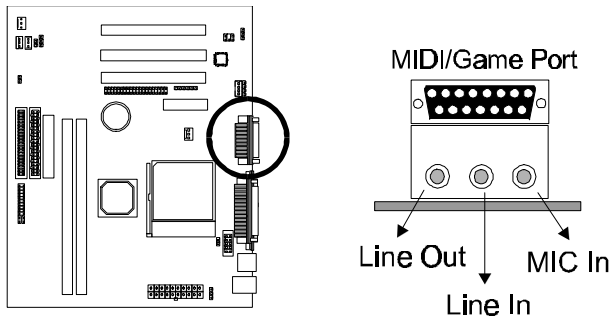


## *MIDI/Game Port*

You may plug a joystick or game pad to this 15-pin female connector for game playing, or connect a MIDI device for playing or editing audio.

## *Audio Port*

You can connect powered speakers or headphones to Line Out jack. Cassette players or other external audio sources can be connected to Line In jack. Plug in your microphones to MIC jack.



### **Note:**

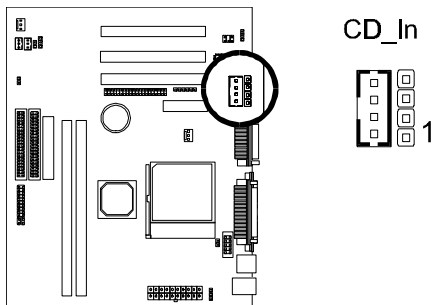
To use the on-board direct sound AC97 audio features, set jumper JP4 to *Enabled*. Also make sure to enable (default) the “**AC97 Audio**” option in **Integrated Peripherals** of the BIOS.

# INSTALLATION

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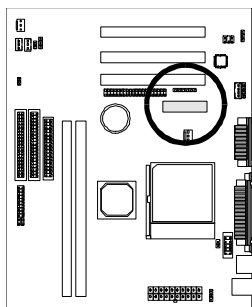
## *Audio Connectors*

Two types of CD Audio connectors are available for connecting the CD-ROM drive using CD audio cables. Make sure red lead is oriented toward pin 1.



## **Installing an AMR Card**

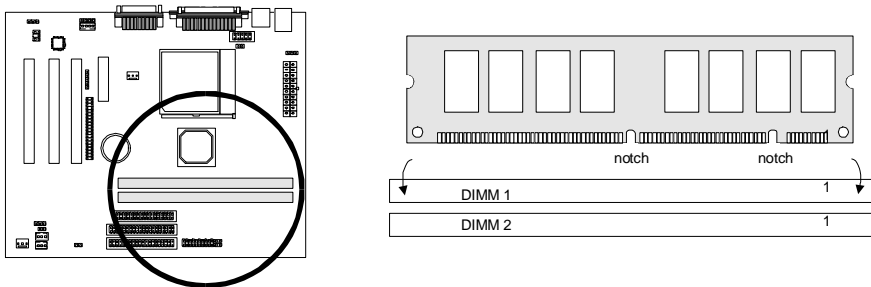
One AMR (Audio/Modem **R**iser) standard interface connector is provided for Audio Codec 97 (AC97) and/or Modem Codec 97 (MC97) cards.



## Installing the Memory Modules (DIMM)

- This mainboard has **two** sockets available for **168-pin DIMMs**. They can be 3.3 volt Unbuffered Synchronous DRAMs (SDRAM), 3.3 volt FPG or EDO DRAMs.
  - *To ensure reliability, it is recommended to use **PC100 SDRAM** for your 100MHz clocked SDRAM performance requirement.*
- DIMM Sizes supported: **8MB, 16MB, 32MB, 64MB, 128MB** and **256MB**
- A total of **(2)** DIMMs can be installed for a maximum RAM capacity of **512MB**.

To insert the DIMMs, the modules must be oriented in the correct way. Notice the notches of the DIMM. Align these notches as shown in the diagram below. Gently push the DIMM until the retainers on both sides of the socket lock the module in place. To remove a DIMM, push the retainers outwards to release the module then pull the module out of the socket.



# INSTALLATION

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## Installing the Support Drivers and Utilities

Included in your mainboard package you can find a CD-ROM containing support drivers and utilities. Just insert the CD-ROM, and from the Autorun screen, click the driver/utility that you want to install. Follow the on-screen instructions to complete the installation.



\* The screen will look different under different color mode.

More utilities can be found under the “Utilities” folder of the CD-ROM.

### For Windows 95/98/NT4.0 Users

Before beginning driver installation, you must first install the **Intel 81x Chipset Driver** in order for your operating system to recognize the Intel 81x chipset. Following is the driver’s installation procedure.

## *Installing Intel 81x Chipset Driver for Windows*

### **Windows 95/NT4.0**

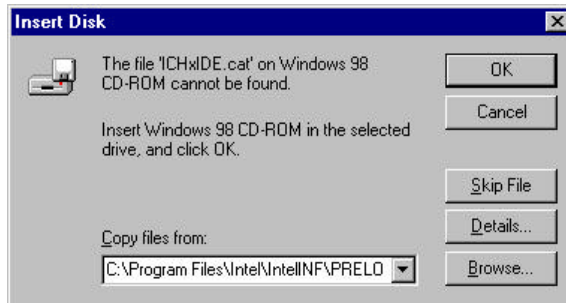
Just click **Install Intel 81x Chipset** from the Autorun screen and follow the on-screen instructions.

### **Windows 98**

Click **Install Intel 81x Chipset** from the Autorun screen and follow the on-screen instructions. When the following dialog box appears, specify the path:

**C:\Program Files\Intel\IntelINF\PRELOAD**

Click **OK** and follow the on-screen instructions to complete the installation.



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# SOFTWARE SUPPORT

For detailed information, please refer to the **BIOS, Driver & Utility Guide** included in your mainboard package.

## Mainboard BIOS

Shortly after the system is powered on, provided that the system is properly setup, you will see the message:

Press DEL to enter SETUP

- Press the **DEL** key to enter the Award BIOS Setup program.

The Main Menu will appear on the screen. Use the **arrow keys** to select among the items and press **<Enter>** to accept and enter the sub-menu.

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software

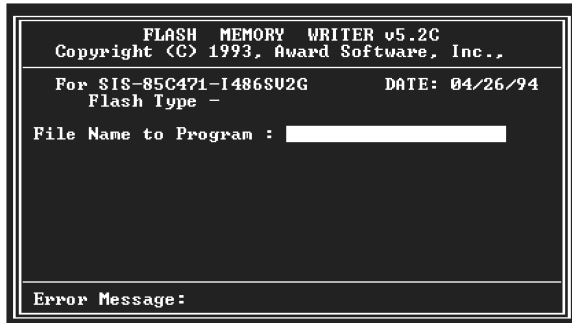
▶ Standard CMOS Features	▶ Frequency/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP / PCI Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	

Select **Load Optimized Defaults** for optimum system performance.

## Flash BIOS Programming Utility

Since this mainboard features FLASH BIOS, the user can simply re-program the old BIOS using the AWDFLASH Utility (found under “Utilities” folder of the supplied CD-ROM) as follows:

1. First, boot the system with DOS or to “Safe Mode” under Windows 95. *This is the only correct way to run the AWDFLASH Utility program.*
2. Make sure the files “AWDFLASH.EXE” and the updated “BIN” file (which contains the actual BIOS code) are in the same directory.
3. Changing to the directory where the two required files exist, type: AWDFLASH and press [ENTER]. The AWDFLASH Utility Screen appears:



4. Type in the name of the new BIOS (.bin) file and hit [ENTER].
5. Backup the old BIOS by entering the name of the new backup file (such as “backup.bin”) and press [ENTER].
6. To begin programming, hit “y”. The Utility can be aborted at this time by hitting “n”.
7. A bar indicator will show the progress of the programming operation. After successful completion, hit the reset button or power off the computer.

Be sure to perform “**Load Optimized Defaults**” for your new BIOS to synchronize the previous BIOS with the updated BIOS.

### Symbios SCSI Configuration Utility

This mainboard features built-in Symbios SCSI BIOS. The **Symbios SCSI Configuration Utility** is a menu driven utility that allows you to view and change the default configuration settings for host adapters using Symbios 53C8XX chips.

In most cases you should not need to change the default configuration of your host adapter. You may decide to alter these default values if there is a conflict between device settings, or if you need to optimize system performance. A message appears on your computer monitor (for about 5 seconds) during boot that looks like this:

**Press Ctrl-C to start Symbios Configuration Utility**

If you decide to press Ctrl-C during boot, the following message appears:

**Please wait, invoking Symbios Configuration Utility ...**

After a brief pause, your computer will display the Main Menu of the utility.

**Note:** Pressing **Ctrl-A** after memory count during re-boot allows you to recover the default settings and reconfigure.

### DMI Utility

This mainboard supports the **Desktop Management Interface (DMI)**, which is a new method of providing enterprise management for personal computers. The main component of DMI is the Management Information Format Database (MIF), which contains information about the computer system and its components, such as BIOS version/vendor, CPU speed/type, memory size/type, L1/L2 cache, port connectors (IDE, floppy, 2S/1P, USB, keyboard, mouse, ), slots ... etc. Using DMI, remote PC management software is able to obtain various information about the system, including hardware profiles, capabilities, operational status, installation dates, and other information about the system and its components.

This DMI utility, DMICFG.EXE (found under "Utilities" folder of the supplied CD-ROM), allows you to add additional information, such as serial numbers, vendor information, and enclosure/chassis configurations, into the MIF.



## FCC & DoC Compliance Statement

This device complies with Part 15 of the FCC rules, operation is subject to the following two conditions.

1. This device may not cause harmful interference and,
2. This device must accept any interference received, including interference that may cause undesired operation.

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

- Reorient or relocate the receiving antenna.
- Move the equipment away from the receiver.
- Plug the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for additional suggestions.

The FCC requires the user to be notified that any change or modifications to the equipment by the user not expressly approved by the grantee or manufacturer could void the user's authority to operate such equipment. The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations.



27-0M0370-07

# **MAINBOARD**

## **BIOS, Driver & Utility Guide**

**Rev: 1.00S**

**Date: May - 99**

- \* All other product names are trademarks or copyrights of their respective owners.
- \* Specifications and information contained in this manual are subject to change without notice.

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# MAINBOARD BIOS SETUP

## About the BIOS

The Mainboard BIOS (Basic Input/Output System) acts as the bridge between your Hardware (CPU, Disk Drives, Video, etc.) and Operating System Software (Windows 95, OS/2 and so on...) The BIOS Setup (also called CMOS Setup) is where many hardware configuration options are set and stored. This configuration information will remain in the BIOS until it is changed, or cleared by removing the battery for a while then reinstalling it back.

CMOS (Complementary Metal Oxide Semiconductor) refers to the chip in which the BIOS information is stored.

This mainboard features Award BIOS, which provides an easy to use Setup program to aid in hardware configuration. In this section we will look at the various menus and options contained in the Award BIOS Setup Program. This mainboard also features a "Flash" BIOS. A Flash BIOS can be upgraded via software, thereby eliminating the need to actually replace the "BIOS Chip" on the mainboard. Procedures for updating the BIOS follow this section.

The Award BIOS installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports Intel processor in a standard IBM-AT compatible input/output system.

## *Using Setup*

In general, you use the arrow keys to highlight items, press <Enter> to select or display the possible selections, use the <PageUp> and <PageDown> keys to change entries, press <F1> for general help and press <Esc> to quit.

An item marked with a ▶ indicates that there is a submenu for this item. A gray-out item marked with an x indicates that the item is not available. The item may be associated with another item and its availability is dependent on that associated item. Gray-out items are for information display only and contain no selectable fields.

# MAINBOARD BIOS SETUP

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## *Getting Help*

Pressing <F1> will display a help window that describes the appropriate keys to use. Pressing <Enter> will display a small help window that describes the possible selections for the highlighted item. To exit the Help Window press <Esc>.

A brief description of some highlighted selection may appear at the right frame (titled Item Help) of the setup screen.

## *A Final Note about Setup*

Not all systems have the same Setup. While the basic look and function of the Setup program remains the same for all systems, individual motherboard and chipset combinations require custom configurations. For example, you may find that your Setup main menu has a different number of entries from the main menu displayed in this manual. These are simply features not supported (or not user configurable) on your system.

The final appearance of the Setup program also depends on the Original Equipment Manufacturer (OEM) who built your system. If your OEM has decided that certain items should only be available to their technicians, those items may very well be removed from the Setup program.

## Main Menu

Shortly after the system is powered on, provided a CPU and sufficient RAM are installed, you will see the message:

Press DEL to enter SETUP

- Press the **DEL** key to enter the Award BIOS Setup program.

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 several 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.

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software

▶ Standard CMOS Features	▶ Frequency/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP / PCI Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	

Note that a brief description of each highlighted selection appears at the bottom of the screen.

# MAINBOARD BIOS SETUP

## Standard CMOS Features

This first menu is where the most basic hardware options are set. Information regarding the system clock, IDE hard disks and floppy drives is stored and configured in this section. To enter the Standard CMOS Features setup screen, press the [ENTER] key with this menu highlighted.

Upon entering the Standard CMOS Setup screen, you will see a screen like that below:

Date (mm:dd:yy)	Sat, Dec 18 1999	Item Help Menu Level ▶
Time (hh:mm:ss)	00 : 00 : 00	
▶ IDE Primary Master	Press Enter 8455 MB	
▶ IDE Primary Slave	Press Enter None	
▶ IDE Secondary Master	Press Enter None	
▶ IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA / VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	15360K	
Total Memory	16384K	

↑ ↓ → ← : Move    Enter : Select    +/- / PU / PD : Value    F10 : Save    ESC : Exit    F1 : General Help  
F5 : Previous Value    F6 : Fail-Safe Defaults    F7 : Optimized Defaults

**Date** and **Time** - Use the arrow keys to move to and highlight the “Date” option. Select the Month by using the PgDn and PgUp keys. This is how most settings will be configured. Then, move to the day, year and time via the arrow keys to finish setting the system date and time.

Keep in mind that the system time is set in 24-hour time. With this method, 1PM is represented as 13:00, 2PM as 14:00 and so on, with 00:00 corresponding to Midnight.

**IDE Primary Master, IDE Primary Slave, IDE Secondary Master, IDE Secondary Slave** - These four options relate to the (4) IDE hard drives, CD-ROMs or other ATAPI devices that can be controlled via the on-board IDE controller



## MAINBOARD BIOS SETUP

(review IDE Hard Drives and CD-ROMs in the Installation Guide). The “IDE Primary Master” setting specifies the first device on the primary IDE channel, “IDE Primary Slave” - the second. IDE Secondary Master and IDE Secondary Slave specify the devices on the secondary channel.

Pressing <Enter> at each of the four selections brings up a submenu such as one shown below:

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	Menu Level ▶▶
Capacity	0 MB	
Access Mode	Auto	
Cylinder	0	
Head	16	
Precomp	0	
Landing Zone	4091	
Sector	63	

↑ ↓ → ←:Move    Enter:Select    +/-/PU/PD:Value    F10:Save    ESC:Exit    F1: General Help  
F5:Previous Value    F6:Fail-Safe Defaults    F7:Optimized Defaults

- **IDE HDD Auto-Detection** – Automatically detects and configures hard disk parameters. The Award BIOS includes this ability in the event you are uncertain of your hard disk’s parameters.
- **IDE Primary/Secondary Master/Slave** – This is where you will specify the type of device and how it is represented in the BIOS Setup. If the device is a hard disk or CD-ROM, generally the *Auto* option is the best choice for fast and easy setup of the hard disk parameters. Let’s take a look at the difference between the Auto and Manual options:
  - **Auto** - This option instructs the BIOS to automatically configure the hard disk by reading the parameters (cylinders, sectors, etc.) directly from the hard disk’s firmware. Use this option if you are configuring a new hard drive, or one that has already been formatted using the *Auto* option. Keep

## MAINBOARD BIOS SETUP

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in mind that a hard drive is configured using a certain set of parameters, those same parameters must be used for the life of the drive, unless the drive is re-FDISKed using a different parameter set. (This procedure deletes the old partition(s) on the drive and creates a new one, using the new parameters).

- **Manual** - This option allows you to manually enter in the parameters (cylinder, head, precomp, landing zone and sector) of the hard drive. Generally, this option would be used only if the hard drive has already been formatted with a certain set of parameters, and assured consistency between the old and new parameters is desired.
- **Capacity** – Displays the capacity of the device.
- **Access Mode** - One of Enhanced IDE's most important features is **LBA** (Logical Block Addressing) Mode. This feature allows the use of larger hard drives by providing a way to bypass the cylinder limitations imposed by many Operating Systems. LBA Mode is used to extend a hard drive's useable capacity by "remapping" the cylinders in a way that is acceptable to these operating systems. For instance, a hard drive with the parameters of 2100 Cylinders, 16 Heads and 63 Sectors would be represented by LBA Mode as 525 Cylinders, 64 Heads and 63 Sectors. (Notice that the Cylinders have been divided, and the Heads have been multiplied, by a factor of 4.)

On hard drives smaller in capacity than 528MB, LBA support is not needed. The option on these devices is ignored, even if enabled. For hard drives greater than 528MB, LBA mode should be enabled. The following rules apply:

- Operating Systems that do not use the FAT file system do not need LBA Mode, and can use the Normal or Large Modes. Examples would be NetWare and Unix.
- When configuring a new hard drive greater than 528MB in capacity, always make sure LBA mode is enabled.
- If you are using a hard drive that is over 528MB in capacity, but was already formatted without using LBA mode, LBA support will be ignored even if it is enabled. This assures correct access to the drive's data.
- **SCSI Hard Drives** are NOT entered into the Mainboard BIOS Setup in any way. The hard drive settings in the Standard CMOS Setup are only for drives connected to the IDE Controller. So, if only SCSI drives were

## MAINBOARD BIOS SETUP

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installed, all these settings would be set to *None*. SCSI Devices are configured via the SCSI controller's BIOS.

**Floppy Drives A: and B:** - Select the Type for the A: and/or B: floppy drives. Remember, floppy drive A: is the first drive, hooked to the END of the floppy ribbon cable. Floppy drive B: is hooked up after the twist. Available settings are listed below:

None	No floppy drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

**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 their type in Setup.

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

**Halt On** - Determines whether or not the system will prompt you if an error is detected during POST.

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

**Memory** - This category is display-only. All memory detected by the POST (Power On Self Test) of the BIOS is shown as the following types:

## MAINBOARD BIOS SETUP

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**Base Memory** is the amount of conventional memory installed in the system. This value is typically 640K for systems with 640K or more memory installed on the motherboard. The **Extended Memory** is the amount of memory located above 1MB in the CPU's memory address map. **Other Memory** refers to the memory located in the region between 640K and 1MB. This region can be used for *shadowing* as well as *expanded memory* in DOS.

## Advanced BIOS Features

This menu provides access to more advanced BIOS configuration settings that deal with overall performance of the system and peripheral setup. This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation and security.

Anti-Virus Protection	Enabled	Item Help
CPU Internal Cache	Enabled	
External Cache	Enabled	Menu Level ▶
CPU L2 Cache ECC Checking	Enabled	
Quick Power On Self Test	Disabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	LS/ZIP	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	Off	
Gate A20 Option	Normal	
Typematic Rate Setting	Disabled	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Report No FDD For WIN 95	No	

↑ ↓ → ←: Move    Enter: Select    +/- /PU/PD: Value    F10: Save    ESC: Exit    F1: General Help  
 F5: Previous Value    F6: Fail-Safe Defaults    F7: Optimized Defaults

**Anti-Virus Protection** – Enables/Disables the built-in anti-virus for protection against **boot virus** infection. Unlike traditional BIOS protection which generally consists of simply write protecting the hard disk partition table, this Anti-Virus protection provides more complete virus protection by taking control early in the boot process, detecting boot viruses before they have a chance to load.

**CPU Internal Cache** - Enables or Disables the Level-1 Internal Cache memory. Generally, this would only be *Disabled* for troubleshooting purposes.

**External Cache** - Enables or Disables the Level-2 External Cache memory. Generally, this would only be *Disabled* for troubleshooting purposes.

**CPU L2 Cache ECC Checking** - Enables or Disables ECC (Error Checking and Correcting) for the CPU's Level 2 built-in cache.

## MAINBOARD BIOS SETUP

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**Quick Power on Self Test** - Speeds up Power On Self Test (POST) after the computer is powered on. When set to *Enabled*, the BIOS will shorten or skip some checks during POST.

**First/Second/Third/Other Boot Device** - When your system is powered on, the BIOS performs a variety of operations, then attempts to boot an Operating System from either a hard drive (IDE or SCSI), floppy drive, CD-ROM, LS-120/ZIP or LAN. This setting determines the sequence that the BIOS will follow when searching devices for a bootable disk.

**Swap Floppy Drive** - The hardware connections determine which floppy is configured as drive A: and drive B: “Swapping” the floppy drives can be useful if your system has two floppy drives, and you want the ability to boot from both. For example: Since a PC cannot boot from the B: Floppy, you would need to “Swap” floppy drives A: and B: in order to set the second floppy drive to drive A:, thereby making it bootable.

**Boot Up Floppy Seek** - When enabled, BIOS will attempt to move the head of the floppy disk drive forth and back once during POST to see if the drive is working properly.

**Boot Up NumLock Status** - When *On*, the NumLock key will be automatically enabled when the system boots.

**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 Mbytes. Initially, the gate A20 was handled via a pin on the keyboard (Normal). Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset (Fast; default) to provide support for gate A20.

**Typematic Rate Setting** - Determines if the typematic rate is to be used. When disabled, continually holding down a key on your keyboard will generate only one 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 to report that the key has been depressed repeatedly. This feature is used to accelerate cursor movements with the arrow keys.

**Typematic Rate (Chars/Sec)** - When the typematic rate is enabled, this selection allows you to select the rate at which the keys are accelerated: Options are 6 (default), 8, 10, 12, 15, 20, 24 and 30.

## MAINBOARD BIOS SETUP

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

**Security Option** - This option enables password checking every time the computer is powered on or every time BIOS Setup is executed. If *System* is chosen, a user password prompt appears every time the computer is turned on. If *Setup* is chosen, the password prompt appears only when the BIOS Setup program is executed. Refer to the section Supervisor Password for more information.

**OS Select For DRAM > 64MB** - This should be set to *OS2* if you are running IBM OS/2 with more than 64MB of RAM in the system. Otherwise, the setting should be *Non-OS2*.

**Report No FDD For WIN95** – When no floppy disk drive is installed, set this option to No to release IRQ6 for passing Win95 logo. This option is irrelevant under normal operation.

# MAINBOARD BIOS SETUP

## Advanced Chipset Features

This setup menu contains advanced configuration options relating to the mainboard chipset. These options are rarely changed by the user.

SDRAM CAS latency Time	3	Item Help
SDRAM Cycle Time Tras/Trc	6/8	
SDRAM RAS-to-CAS Delay	3	Menu Level ▶
SDRAM RAS Precharge Time	3	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
Delayed Transaction	Enabled	
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 Value    F6 : Fail-Safe Defaults    F7 : Optimized Defaults

**SDRAM CAS Latency Time** - This item allows you to select the CAS# latency for all SDRAM cycles. Options are 3 or 2 Clocks.

**SDRAM Cycle Time Tras/Trc** – Selects the Row Active Time and Row Cycle Time for an access cycle. Options are 6/8 and 5/7.

**SDRAM RAS-to-CAS Delay** – This option allows you to determine the number of clocks allocated between the assertion of RAS to CAS. Do not change the value in this field unless you change to different DRAM or CPU with different specifications.

**SDRAM RAS Precharge Time** – Defines the length of time that **Row Address Strobe** is allowed to precharge. If insufficient time is allowed, refresh may be incomplete and data will be lost.

**System BIOS Cacheable** - When Enabled, the contents of the F0000h system memory segment can be cached to the Level-2 cache memory. The contents of the



## MAINBOARD BIOS SETUP

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F0000h memory segment are always copied from the BIOS ROM to system RAM for faster execution and PCI compliance.

**Video BIOS Cacheable** - When Enabled, C0000h to C7FFH become cacheable memory.

**Memory Hole At 15M-16M** - In order to improve compatibility, certain space in memory can be reserved for old style ISA cards that map memory between 15M-16M. Do not enable this feature unless you use the old style ISA card, otherwise the memory size may be reduced to 15 MB for some O.S.

**Delayed Transaction** - When enabled, the delay transaction mechanism will be in effect when PIIX4 is the target of a PCI transaction.

**On-Chip Video Window Size** – Determines the maximum image area on screen for the on-chip VGA.

### \* Onboard Display Cache Setting \*

The following options are only for mainboards with onboard display cache.

**CAS# Latency** - This item allows you to select the CAS# latency for all onboard display cache clock cycles. Options are 3 or 2 Clocks.

**Paging Mode Control** – Selects the paging mode. *Open* or *Close*.

**RAS-to-CAS Override** - Selects the display cache clock period control. By *CAS# LT* or *Override(2)*.


**RAS# Timing** - This item controls RAS# active to Protegra, and refresh to RAS# active delay (in local memory clocks).


**RAS# Precharge Timing** – This item controls RAS# precharge (in local memory clocks).

# MAINBOARD BIOS SETUP

## Integrated Peripherals

This menu is used to configure the integrated IDE subsystem and other peripherals.

On-Chip Primary	PCI IDE	Enabled		Item Help
On-Chip Secondary	PCI IDE	Enabled		Menu Level ▶
IDE Primary Master	PIO	Auto		
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		Disabled		
IDE HDD Block Mode		Enabled		
POWER ON Function		Button ONLY		
x KB Power ON Password		Enter		
x Hot Key Power ON		Ctrl-F1		

AC97 Modem		Disabled		Item Help
IDE HDD Block Mode		Enabled		Menu Level ▶
POWER ON Function		Button ONLY		
x KB Power ON Password		Enter		
x Hot Key Power ON		Ctrl-F1		
Onboard FDC Controller		Enabled		
Onboard Serial Port 1		3F8/IRQ4		
Onboard Serial Port 2		2F8/IRQ3		
UART Mode Select		Normal		
RxD, TxD Active		Hi, Lo		
IR Transmission delay		Enabled		
Onboard Parallel Port		378/IRQ7		
Parallel Port Mode		SPP		
EPP Mode Select		EPP 1.7		
ECP Mode Use DMA		3		
PWRON After PWR-Fail		Off		
Game Port Address		201		
Midi Port Address		330		
Midi Port IRQ		5		

**On-Chip Primary PCI IDE** - Enables or Disables the primary controller. Situations where this controller would be disabled are: a) *You are not using any IDE Drives* or b) *You are using an add-on IDE controller in a PCI Slot.*

**On-Chip Secondary PCI IDE** - Enables or Disables the secondary controller. Situations where this controller would be disabled are: a) *You are not using any IDE Drives* or b) *You are using IDE Drives ONLY on the primary controller* or c) *You are using an add-on IDE controller in a PCI Slot.*

- **IDE PIO Mode** - IDE Programmed I/O Mode -

This setting relates to the speed at which the hard drive is able to transfer data, up to 16.6MB/second for Mode 4 drives. Available settings are *Auto*, 0, 1, 2, 3, or 4. As with the **Type** setting, *Auto* is the preferred choice, in that the supported PIO Mode is read directly from the hard drive. Be sure not to use a PIO Mode higher than what the drive actually supports. This could result in loss of data.

PIO Mode	Timing
0	600 ns
1	383 ns
2	240 ns
3	180 ns
4	120 ns

- **IDE UDMA (Ultra DMA) Mode** - The chipset used for this mainboard improves the IDE performance by implementing UltraDMA/66 Bus Mastering IDE which can handle data transfer up to 66 Mbyte/sec. This UDMA technology is downward compatible with existing ATA-2 IDE. So there is no upgrade required for current hard drives and cabling.

**USB Controller** – If you are using USB peripherals, set this option to *Enabled*.

**USB Keyboard Support** - This item allows you to enable or disable the USB keyboard driver within the onboard BIOS. The keyboard driver simulates legacy keyboard command and let you use USB keyboard during POST or after boot if you don't have USB driver in the operating system.

**Init Display First** - This option allows you to select the onboard VGA or other PCI display cards your system will use initially.

**AC97 Audio** – Enabling this option allows the system to use the on-chip AC97 audio support. If you want to use the Sound Blaster compatible mode or an add-on audio card instead, set this option to *Disabled* to avoid possible conflict.

## MAINBOARD BIOS SETUP

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**AC97 Modem** – Enabling this option allows the system to use the on-chip AC97 modem support. If you want to use the legacy modem compatible mode or an add-on modem card instead, set this option to *Disabled* to avoid possible conflict.

**IDE HDD Block Mode** - This allows your hard disk controller to use fast block mode to transfer data to and from your hard disk drive (HDD).

**POWER ON Function** - This option allows you select one of the various methods to power on your system:

Option	How to Power on your System
Any Key	By pressing any key on the keyboard ( <u>JP1 must be set to <i>Enabled</i></u> )
Button Only	By your conventional power button
Keyboard 98	By pressing the <i>Wakeup</i> button on your PC98 keyboard
Password	By typing the password on your keyboard (See below)
Hot Key	By pressing the hot key combination on your keyboard (See below)
Mouse Left	By left-clicking the mouse (for PS/2 mouse only)
Mouse Right	By right-clicking the mouse (for PS/2 mouse only)

**KB Power ON Password** – Available when the **Power ON Function** above is set to *Password*. Press [Enter] at this option then a dialog box will appear to prompt you to enter a password. Once a password is stored in the system, you can power on the system by typing the password, provided that **JP1** is set to *Enabled* (Refer to the Installation Guide). **Note:** If you forget the password, clear the CMOS by removing the mainboard's battery AND disconnecting the mainboard's power supply. Wait a couple of seconds before re-installing them back. This is the only way you can power on your system again.

**Hot Key Power ON**– Available when the **Power ON Function** above is set to *Hot Key*. You can power on the system by pressing the hot key specified here, provided that **JP1** is set to *Enabled* (Refer to the Installation Guide).

**Onboard FDC Controller** - Set to *Enabled* if you have a floppy disk drive installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

**Onboard Serial Port 1** - With this option, the on-board Serial Port 1 can be Disabled, or set to Auto, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4 or 2E8/IRQ3.

## MAINBOARD BIOS SETUP

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**Onboard Serial Port 2** - With this option, the on-board Serial Port 2 can be Disabled, or set to Auto, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4 or 2E8/IRQ3.

**UART Mode Select** - By default, this field is set to *Normal*, which directs the second serial port UART to support the COM2 serial port. Choosing *ASKIR* (SHARP IR) or *IrDA* (HPSIR) will activate the on-board infrared feature and redirect the second serial port UART to support the infrared module connector on the mainboard.

**RxD, TxD Active** – Determines the Infrared Receiving and Transmission active mode.

**IR Transmission Delay** – Available when the above *UART Mode Select* option is set to *IrDA*. Enabling this option to allow transmission delay when SIR is changed from receiving mode to transmission mode, ensuring data integrity.

**Onboard Parallel Port** - With this option, the on-board Parallel Port can be Disabled, or set to 378/IRQ7, 3BC/IRQ7 or 278/IRQ5.

**Parallel Port Mode** - Sets the operating mode of the parallel port. Options are: *SPP*, *EPP*, *ECP* and *ECP+EPP*.

SPP: Standard Parallel Port, EPP: Enhanced Parallel Port, ECP: Extended Capability Port.

**EPP Mode Select** - Options are 1.7 and 1.9 (default ; IEEE 1284 compliant).

**ECP Mode Use DMA** - Options are 1 and 3. This field is available only when one of the two following options in **Parallel Port Mode** is selected: *ECP* or *ECP+EPP*.

**PWRON After PWR-Fail** – This feature will power-on the PC when power returns after a power failure. The following table lists the options available and the corresponding “System State” when power returns.

Options Available	System State When Power Failure Occurred	System State When Power Returns
Former-State	On	On
	Off	Off
Off	On	Off
	Off	Off
On	On	On
	Off	On

## MAINBOARD BIOS SETUP

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**Game Port Address** – Selects the address that the game port will occupy.

**Midi Port Address** – Selects the address that the Midi port will occupy.

**Midi Port IRQ** – Selects the interrupt that the Midi port will occupy.

## Power Management Setup

Power Management allows you to configure you system to use energy most efficiently, and still in a manner consistent with your own style of computer use.

ACPI Function                    Enabled ACPI Suspend Type            S1 (POS) Power Management              User Define Video Off Method               DPMS Video Off In Suspend         Yes Suspend Type                   Stop Grant MODEM Use IRQ                3 Suspend Mode                   Disabled HDD Power Down                Disabled Soft-Off by PWR-BTTN        Instant-Off Power On by Ring               Enabled CPU Thermal-Throttling       50.0% Resume by Alarm               Disabled x Date (of Month) Alarm       0 x Time (hh:mm:ss) Alarm      0    0    0  ** Reload Global Timer Events ** Primary IDE 0                  Disabled Primary IDE 1                  Disabled		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: center;">Item Help</th> </tr> <tr> <td style="padding: 5px;">Menu Level ▶</td> </tr> </table>	Item Help	Menu Level ▶
Item Help				
Menu Level ▶				

Video Off In Suspend         Yes Suspend Type                   Stop Grant MODEM Use IRQ                3 Suspend Mode                   Disabled HDD Power Down                Disabled Soft-Off by PWR-BTTN        Instant-Off Power On by Ring               Enabled CPU Thermal-Throttling       50.0% Resume by Alarm               Disabled x Date (of Month) Alarm       0 x Time (hh:mm:ss) Alarm      0    0    0  ** 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		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: center;">Item Help</th> </tr> <tr> <td style="padding: 5px;">Menu Level ▶</td> </tr> </table>	Item Help	Menu Level ▶
Item Help				
Menu Level ▶				

# MAINBOARD BIOS SETUP

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**ACPI function** – This option allows you to enable/disable the Advanced Configuration and Power Interface, which makes hardware status information available to the operating system and offers improved power management. To make an ACPI system, you must use an ACPI OS such as Windows 98.

**ACPI Suspend Type** – Determines the ACPI defined suspend type.

Suspend Type	Power Consumption
<b>S1 (POS)</b>	State 1 (Power On Suspend) - below 30W CPU stops working through STPCLK#, while the power is still provided for the whole system.
<b>S3 (STR)</b>	State 3 (Suspend to RAM) - Less than 10W Power is provided only to DRAM and wake-up devices circuit, while the rest of the system is powered off.

**Power Management** - This category allows you to select the type (or degree) of Green PC power saving and is directly related to the **Suspend Mode** and **HDD Power Down**. There are three selections for Power Management, two of which have fixed mode settings:

Min Saving	Minimum power management. Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max Saving	Maximum power management -- <b>ONLY AVAILABLE FOR SL CPUs</b> . Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Set each mode individually. When Enabled, each range is from 1 min. to 1 hr., except for HDD Power Down which ranges from 1 min. to 15 min.

**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 synchronization ports, writing blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

**Video Off In Suspend** - This is to determine whether to activate the video off function in suspend mode.

**Suspend Type** – In *Stop Grant* (or Quick Start) state, the processor disables clocks to portions of its internal logic, but is able to snoop host bus cycles in order to



## MAINBOARD BIOS SETUP

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maintain cache coherency. In the *Power On Suspend* state, the host clock stops running altogether, resulting in more power saving but longer resume time.

**MODEM Use IRQ** - This item tells the Power Management BIOS which IRQ is assigned to the installed MODEM. Options are NA, 3, 4, 5, 7, 9, 10, and 11.

The following modes are Green PC power saving functions which are only user configurable when *User Defined* Power Management has been selected. See below for available selections.

<b>Suspend Mode</b>	When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.
<b>HDD Power Down</b>	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** - With *Instant-Off* selected, the ATX switch functions like a normal system power off button. With *Delay 4 Sec.* selected, you must hold down the ATX switch for more than 4 seconds to power off the system.

**Power On by Ring** - An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem power on the system or return it to full power out of suspend mode).

**CPU Thermal-Throttling** - This item determines the clock control thermal throttling mode. The rate indicates the percentage of time the STPCLK# (stop clock) signal is asserted to prevent CPU from accepting clocks. This will effectively reduce CPU speed as well as CPU power in power management mode.

**Resume by Alarm** - When enabled, the system will automatically power on or returns to full power out of suspend mode at the time and date of the month (0 for daily) specified.

### **\*\* Reload Global Timer Events \*\***

Reload Global Timer Events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as *Enabled*, even when the system is in a power down mode.

# MAINBOARD BIOS SETUP

## PnP/PCI Configurations

The PCI **P**ersonal **C**omponent **I**nterconnect Bus was developed to address two important issues: a) How to allow peripheral devices to take the fullest advantage of the power of Pentium and Pentium Pro chip technology, and b) Provide a simpler installation process for peripheral devices, such as Network cards, EIDE or SCSI controllers.

PCI accomplishes these goals with its 32-bit Data path Local Bus design, and support for Plug & Play. Unlike older expansion bus architectures, PCI provides peripherals with a direct connection to the CPU and memory. The PCI bus runs at 33Mhz and has a maximum transfer capability of 132MBps. With Plug & Play, the system BIOS automatically determines hardware resources for new peripherals, simplifying installation of multiple interface cards.

This Setup Menu provides configuration options for the PCI Bus and its assigned resources.

Reset Configuration Data	Disabled	Item Help
Resources Controlled by	Auto (ESCD)	Menu Level ▶
x IRQ Resources	Press Enter	
x Memory Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
SYMBIOS SCSI BIOS	Auto	

↑ ↓ → ←:Move    Enter:Select    +/-/PU/PD:Value    F10:Save    ESC:Exit    F1: General Help  
F5:Previous Value    F6:Fail-Safe Defaults    F7:Optimized Defaults

## MAINBOARD BIOS SETUP

**Reset Configuration Data** - Reset Configuration Data: When set to Enabled, ESCD (Extended System Configuration Data) is cleared. This setting will automatically be set back to Disabled when the system reboots.

**Resources Controlled By** - The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. This capability is specifically designed for a Plug and Play operating system such as Windows® 95.

When set to *Manual*, you are able to configure the **IRQ Resources**. Pressing <Enter> at the selection field brings up a submenu like the one shown below:

IRQ-3	assigned to	PCI/ISA PnP	Item Help Menu Level ▶▶
IRQ-4	assigned to	PCI/ISA PnP	
IRQ-5	assigned to	PCI/ISA PnP	
IRQ-7	assigned to	PCI/ISA PnP	
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	PCI/ISA PnP	
IRQ-15	assigned to	PCI/ISA PnP	

↑ ↓ → ←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help  
F5: Previous Value    F6: Fail-Safe Defaults    F7: Optimized Defaults

- **IRQ3/4/5/7/9/10/11/12/14/15 assigned to** –By default, all resources are assigned to the PCI Bus. If an ISA card requires a particular IRQ or DMA channel, those resources should be set to Legacy ISA so that the PCI Bus will not try to use them. Choices are *Legacy ISA* and *PCI/ISA PnP*.

Pressing <Enter> at **Memory Resources** brings up a submenu that gives you the following options:

- **Reserved Memory Base** - This item allows you to determine which basic addresses are not to be occupied by PCI Card and leave these addresses for some special ISA Card used only.

# MAINBOARD BIOS SETUP

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Choices are C800, CC00, D000, D400, D800, DC00 and N/A.

- **Reserved Memory Length** - Select a length for the memory area specified in the previous field. This field does not appear if no base address is specified. Options are 8K, 16K, 32K, 64K.

**PCI/VGA Palette Snoop** – This option must be set to *Enabled* if any ISA MPEG card installed requires VGA palette snooping.

**SYMBIOS SCSI BIOS** - When set to *Auto* (Default), the system will automatically sense the presence of any SCSI adapter that uses a Symbios SYM53C8XX SCSI chip:

If the SCSI adapter installed <b>has</b> its own BIOS on board:	The on-board SCSI BIOS will not be loaded. The adapter's own SCSI BIOS will be used.
If the SCSI adapter installed <b>doesn't have</b> its own BIOS and the card uses or is compatible with the SYM53C8XX chip:	The on-board SCSI BIOS will load and control the SCSI adapter.

\**Disabling* the onboard SCSI BIOS prevents it from being active in any way.

## PC Health Status

The onboard hardware monitor allows you to observe the current temperatures of the system and CPU, current speeds (in RPM, rotation per minute) of the system and CPU fans, as well as the various operating voltages. (If the fan is not installed, 0 RPM will be shown.)

CPU Warning Temperature	Disabled	Item Help
Current System Temp.	30°C/ 86°F	
Current CPU1 Temperature	35°C/ 95°F	Menu Level ▶
Current CPUFAN1 Speed	5400 RPM	
Current CPUFAN2 Speed	0 RPM	
IN0(V)	2.04 V	
IN1(V)	2.33 V	
IN2(V)	2.34 V	
+ 5 V	4.97 V	
+12 V	11.85 V	
- 12 V -	12.11 V	
- 5 V -	5.04 V	
VBAT(V)	3.21 V	
5VSB V)	5.51 V	
Shutdown Temperature	70°C/ 158°F	

↑↓ → ←:Move    Enter:Select    +/-/PU/PD:Value    F10:Save    ESC:Exit    F1: General Help  
 F5:Previous Value    F6:Fail-Safe Defaults    F7:Optimized Defaults

**CPU Warning Temperature** - Once the CPU temperature exceeds the temperature specified, a warning will be issued via the speaker and the operating CPU speed will be slowed down to ease the situation.

**Shutdown Temperature** - Once the system or CPU temperature exceeds the temperature specified, the CPU will shutdown automatically to avoid damaging. This function only works for an ACPI OS such as Windows 98 with ACPI activated.

# MAINBOARD BIOS SETUP

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## Frequency / Voltage Control

Use this menu to specify your settings for frequency/voltage control.

Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum	Disabled	
CPU Host Clock	Default	Menu Level ▶
CPU Ratio	X 3	

↑ ↓ → ←:Move    Enter:Select    +/-/PU/PD:Value    F10:Save    ESC:Exit    F1: General Help  
F5:Previous Value    F6:Fail-Safe Defaults    F7:Optimized Defaults

**Auto Detect DIMM/PCI Clk** – When *enabled*, any DIMM/PCI clock not in use will be disabled to reduce EMI radiation.

**Spread Spectrum** – The default is the optimal value determined by the system designer to reduce EMI radiation peak. Users should not attempt to change it.

**CPU Host Clock** – This option lets you select the CPU/PCI Bus clock. The chipset supports only the 66 and 100 MHz CPU bus clock. With this option, the bus clock can be extended from 66 MHz to 75 or 83.3 MHz, or from 100 MHz to 103 up to 140 MHz for internal test. *Over-clocking may cause serious system damage.*

**CPU Ratio** - This option allows you select the CPU ratio.

- The CPU Bus Clock when multiplied with the Ratio gives the CPU Clock.
- If you are uncertain about the speed requirements of your particular CPU, you should obtain Technical Documentation from the CPU manufacturer. Such information is available via the Intel WWW site.

### Load Fail-Safe Defaults

Loads “Fail Safe” settings into the BIOS Setup program. These options are designed to slow the system down for troubleshooting purposes. To load the default values, highlight this option and press [ENTER]. Enter “Y” in the confirmation screen and press [ENTER] again. User-defined options in the **Standard CMOS Setup** are not affected.

### Load Optimized Defaults

Loads the default values for best system performance into the BIOS Setup program. To load the default values, highlight this option and press [ENTER]. Enter “Y” in the confirmation screen and press [ENTER] again. User-defined options in the **Standard CMOS Setup** are not affected.

## Supervisor Password and User Password Setting

Passwords can be set to provide protection for the BIOS configuration options, or to restrict access to the computer itself.

When enabled, User Password will require all users to enter a password in order to use the system, and/or enter the BIOS setup (but can't change its contents). A Supervisor Password is used to protect the stored CMOS options from being changed by unauthorized users.

Keep in mind that when set, a password is required only when booting the system. It will not provide protection to a system that is already booted.

The password check option is set in **Advanced BIOS Features** by choosing either System (the password prompt appears every time the system is powered on) or Setup (the password prompt appears only when the user enters the BIOS Setup). The password is stored in CMOS RAM, and can be cleared by the Clear CMOS jumper (Refer to the Installation Guide).

### To set a password:

1. You must first set the *Supervisor* password by choosing *Supervisor Password* and pressing [ENTER]. Setup prompts for a password.
2. Enter a 1-8 character password using letters, numbers, or a combination of both. The specific characters are not shown as you enter them. Press [ENTER].
3. A confirmation box appears asking you to re-enter the password. Enter the password again. Press [ENTER]. Follow the same procedure to set the *User Password*.

### Changing a Password:

Select the appropriate password option (Supervisor or User) from the main menu and press [ENTER]. Enter the current password and press [Enter]. The screen does not display the characters entered. Enter in the new password, then the confirmation. You cannot change the current password unless you know it.



### **Erasing a Password:**

1. If you know the current password, but want to disable password checking, follow the procedure for changing the password. When Setup prompts for the new password, simply press [ENTER]. You will see a message indicating that the password is disabled.
2. If you do not know the current password, the CMOS must be cleared by cleared by the Clear CMOS jumper (Refer to the Installation Guide). \*This will clear all user-defined BIOS Setup options.

### **Save & Exit Setup / Exit Without Saving**

Select *Save & Exit Setup* to save into the CMOS memory all modifications specified during the current session. To save the configuration changes, highlight this option in the main menu and press [ENTER]. The system displays a confirmation message on the screen. Press the “Y” key and then [Enter]. Press the “N” key and then the [Enter] key to abort. The *Exit Without Saving* option allows the user to exit the BIOS Setup without updating any changes made during the current session.

# MAINBOARD BIOS SETUP

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## PCI Device Listing

This list of installed PCI devices appears after the **System Configuration** screen:

PCI device listing .....						
Bus No.	Device No.	Func No.	Vendor ID	Device ID	Device Class	IRQ
0	7	1	1106	0571	IDE Controller	14/15
0	7	2	8086	8829	Serial bus controller	11
0	9	0	1013	7333	Display controller	11

- Bus No.** Encoded value indicating 1 of 256 possible buses in a system.
- Device No.** Encoded value indicating 1 of 32 possible devices on a given bus.
- Func No.** Encoded value indicating 1 of 8 possible functions on a multifunction device.
- Vendor ID** Identifies the manufacturer of the device. Valid vendor identifiers are allocated by the PCI SIG (Special Interest Group) to ensure uniqueness.
- Device ID** Identifies the particular device. This identifier is allocated by the vendor.
- Device Class** Specifies one of the following device classes: Mass storage controller, Network controller, Display controller, Multimedia device, Bridge device, Simple communication controller, Base system peripherals, Input device, Docking station, Processor and Serial bus controller.

The PCI device listing is useful for troubleshooting purposes. More detailed information for each field may be obtained through the PCI specification documentation.

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## BUILT-IN SYMBIOS SCSI BIOS

To provide easy to use and cost effective support for adapters using or compatible with the Symbios Logic 53C8XX SCSI chips, this mainboard features built-in Symbios SCSI BIOS.

In most cases you should not need to change the default configuration of your host adapter. You may decide to alter these default values if there is a conflict between device settings, or if you need to optimize system performance. A message appears on your computer monitor (for about 5 seconds) during boot that looks like this:

**Press Ctrl-C to start Symbios Configuration Utility**

If you decide to press Ctrl-C during boot, the following message appears:

**Please wait, invoking Symbios Configuration Utility ...**

After a brief pause, your computer will display the Main Menu of the utility.

### *The Symbios SCSI Configuration Utility*

This menu driven utility allows you to view and change the default configuration settings for host adapters using Symbios 53C8XX chips.

**Note:** Pressing **Ctrl-A** after memory count during re-boot allows you to recover the default settings and reconfigure.

The following tables list the configuration settings you can change:

- Global: Affects both the adapter and all SCSI devices
- Device: Affects only the individual SCSI devices

# BUILT-IN SYMBIOS SCSI BIOS

Global Default Settings	
Settings	Default
SCAM Support	On
Parity Checking	On
Host Adapter SCSI ID	7
Scan Order	Low to High (0-Max)

Device Default Settings	
Settings	Default
Synchronous Transfer Rate (MB/sec)	20
Data Width	8
Disconnect	On
Read Write I/O Timeout (secs)	10
Scan for Devices at Boot Time	Yes
Scan for SCSI LUNs	Yes
Queue Tags	No

## Main Menu

MAIN MENU					
	Port	Irq	-----Status-----		NvRAM
	Num	Level	Current	Next-Boot	Found
SYM53C860	FC00	9	On	On	Yes
SYM53C820	0	0	Off	Off	?
SYM53C825	FD00	9	On	On	Yes
SYM53C815	FE00	10	On	On	No
Change Adapter Status					
Adapter Boot Order					
Additional Adapter Configuration					
Display Mode = Verbose					
Mono/Color					
Language					
Help					
Quit					

You can select an adapter only if the current status is “On”. *Changes are only possible with SCSI adapters that support NVRAM (non-volatile memory)*. Check the “NvRAM Found” column to see if NVRAM is present on your adapter. If you choose to alter any of these settings, exit via the **Quit** option and the system will reboot.

**Change Adapter Status** - Allows you to activate or deactivate a host adapter and all SCSI devices attached to it. The change takes place after a reboot, which is automatic upon exit from the utility when this option is changed.

## BUILT-IN SYMBIOS SCSI BIOS

**Adapter Boot Order** - Allows you to set the order in which host adapters will boot when more than one Symbios host adapter is present in the system. To change an adapter's boot order, select it and press <Enter>. You are then prompted to enter the new boot sequence number. When the adapters are ordered properly, press the <Esc> key to exit this menu.

	Port Num	Irq Level	-----Status-----		NvRAM Found
			Current	Next-Boot	
SYM53C860	FC00	9	On	On	Yes
SYM53C820	0	0	Off	Off	?
SYM53C825	FD00	9	On	On	Yes
SYM53C815	FE00	10	On	On	No

**Display Mode** - Determines how much information about your host adapters and SCSI devices is displayed on your computer monitor during boot:

- *verbose*: for more complete information
- *terse*: for a faster boot

**Mono/Color** - Allows you to choose between a black and white or color display for the SCSI Configuration utility.

**Language** - English mode only.

**Help** - Brings up a help screen with information about the Main menu.

**Quit** - Exits the SCSI Configuration utility.

### *Adapter Utilities Menu*

When you select a host adapter from the main menu, the following screen is displayed:

SYM53C860
Adapter Setup
Device Selections
Help
Exit this menu

## BUILT-IN SYMBIOS SCSI BIOS

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- **Adapter Setup:** Adapter settings are viewed and changed.

SYM53C860 Adapter Setup	
SCAM Support	On
Parity	On
Host SCSI ID	7
Scan Order	Low to High (0..Max)
Removable Media Support	Boot Drive Only
CHS Mapping	SCSI Plug and Play Mapping
Spinup Delay (Secs)	2
Help	
Restore Default Setup	
Exit this menu	

**SCAM Support** - SCAM (SCSI Configured AutoMatically) is the SCSI Plug and Play protocol supported by Symbios BIOS version 4.X.

**Parity** - The Symbios host adapters always generate parity, but some SCSI devices do not. Therefore, you are offered the option of disabling parity checking.

**Note:** When disabling parity checking, it is also necessary to disable disconnect for all devices, as parity checking for the reselection phase will not be disabled. If a device does not supporting parity disconnects, the I/O will never complete because the reselection phase will halt.

**Host SCSI ID** - The host adapter SCSI ID should remain on 7 (default), as this setting gives the adapter the highest priority on the SCSI bus. However, if you have two adapters on the same SCSI bus, you should give one of them an unassigned ID to avoid duplication of SCSI IDs.

**Scan Order** - This option allows you to tell the host adapter BIOS and your device drivers to scan the SCSI bus from low to high (0 to max) SCSI IDs, or from high to low (max to 0) SCSI IDs. If you have more than one device on the SCSI bus, changing the scan order changes the order in which drive letters are assigned by the system.

**Removable Media Support** - Determine if the removable media will be used as BIOS device. A BIOS device here is a device that can be controlled via BIOS INT 13H, i.e. it does not need a device driver and can be bootable. However, when used as a BIOS device, the full removability of removable media devices is not preserved. The following constraints apply:

- a) The device can only work as a fixed disk, i.e. media change is not allowed.

## BUILT-IN SYMBIOS SCSI BIOS

- b) The media must be inserted before the system boot-up.
- c) Only media with 512Bytes/sector is supported.

None	The removable media devices will not be used as BIOS devices.
Boot Drive Only	Allows only the removable media installed as Drive C: to work as a BIOS device.
With Media Installed	Enables all removable disk drives to work as BIOS devices.

**CHS Mapping** – Cylinder, Head, Sector mapping. Options are “SCSI Plug and Play Mapping” (default) and “Alternate CHS Mapping”.

**Spinup Delay** – 1-10 seconds. The default is a 2-second delay before the BIOS starts to scan for SCSI devices during initialization. This amount of time is enough for most devices to get ready for proper operation. Since some older hard drives may need more time to spin up, you may need to extend the delay for those devices.

- **Device Selections:** Settings for the devices attached to the selected adapter are viewed and changed.

SYM53C860 Devices 0 to 7								
	Sync Rate	Data Width	Disc	Time Out	Scan Bus	LUNS	Queue Tags	Init Boot
Dev0 N/A	20	8	On	10	Yes	Yes	On	No
Dev1 N/A	20	8	On	10	Yes	Yes	On	No
Dev2 N/A	20	8	On	10	Yes	Yes	On	No
Dev3 N/A	20	8	On	10	Yes	Yes	On	No
Dev4 N/A	20	8	On	10	Yes	Yes	On	No
Dev5 N/A	20	8	On	10	Yes	Yes	On	No
Dev6 N/A	20	8	On	10	Yes	Yes	On	No
SYM53C860	20	8	On	10	Yes	Yes	On	No
Devices 8 to15								
Help								
Exit this menu								

The above menu provides information about individual SCSI devices attached to the selected host adapter, as well as the adapter itself. To make changes to these settings select a device from this display and press <Enter> to bring up the individual **Device Setup** menu.

# BUILT-IN SYMBIOS SCSI BIOS

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## *Device Setup Menu*

When you select a specific device from the Device Selection menu, your computer displays the following Device Setup menu. The settings in this menu effect individual SCSI devices attached to the selected host adapter. Changes made from this menu will require a system reboot upon exit from the SCSI Configuration utility.

SYM53C860 Setup for All devices on this adapter	
Sync Rate (MBytes/sec)	20
Width (bits)	8
Disconnect	On
Read Write I/O Timeout (secs)	10
Scan for Device at Boot Time	Yes
Scan for SCSI LUNS	Yes
Queue Tags	On
Initial Boot Device	No
Format	
Verify	
Help	
Restore Default Setup	
Exit this menu	

**Sync Rate (Mega Bytes/sec)** - Defines the maximum transfer rate the host adapter attempts to negotiate. The host adapter and a SCSI device must agree to a rate they can both handle.

**Width (bits)** - Sets the maximum data width the host adapter will attempt to negotiate. The host adapter and a SCSI device must agree to a width they can both handle. Only those host adapters that support 16 bit data transfers will show this option as enabled.

**Disconnect** - SCSI devices have the ability to disconnect from the bus during an I/O transfer. This option tells the host adapter whether or not to allow a device to disconnect. Some devices run faster with disconnect enabled (mostly newer devices), while some run faster with disconnect disabled (mostly older devices).

**Read Write I/O Timeout (secs)** - This option sets the time the host adapter waits for a read, write, verify, or seek command to complete before trying the I/O transfer again. Since this provides a safeguard allowing the system to recover if an I/O operation fails, it is recommended that you always set the time-out to a value greater than zero (no time-out).



**Scan for Device at Boot Time** - When there is a device you do not wish to make available to the system, set this option to No for that device. Also, on a bus with only a few devices attached, you can speed up boot time by changing this setting to No for unused SCSI IDs.

**Scan for SCSI LUNs** - You can set this option to No if you have problems with a device that responds to all LUNs whether they are occupied or not.

**Queue Tags** - If your device driver can issue queue tags, this option allows you to enable or disable the issuing of queue tags during I/O requests.

**Format** - Low level format the selected device. All information on the drive will be erased.

**Verify** – This command is used to detect bad blocks on the chosen disk. With your confirmation, the bad blocks detected can be reassigned for future operations. This command is non-destructive, and therefore won't destroy the data on the drive.

Since some changes only take effect after your system reboots, it is important that you quit this Configuration utility properly. You should return to the Main Menu and exit via the **Quit** option. If you reboot the system without properly exiting the utility, some changes may not be saved.

### *Device Drivers*

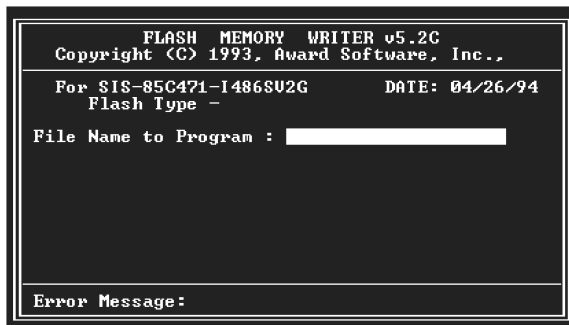
To function properly with different SCSI devices under different operating systems you'll need to install **device drivers**. The device driver information should be available in your SCSI adapter's package.

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# FLASH BIOS PROGRAMMING UTILITY

Updating the Award BIOS Code is made easy with the AWDFLASH Utility found under the “Utilities” folder of the supplied CD-ROM. Since this mainboard features FLASH BIOS, it is not necessary to change the actual BIOS chip in order to upgrade the System BIOS. The user can simply re-program the old BIOS using the AWDFLASH Utility as follows:

1. First, boot the system with DOS or to “Safe Mode” under Windows 95. If you are booting DOS from a hard drive or floppy disk, press [F5] when the message “Starting MS-DOS...” appears on the screen. If you are booting Windows 95, press the [F8] key, and select the “Safe mode command prompt” option. This will assure that the system is running in “*real mode*” with **no device drivers loaded**. *This is the only correct way to run the AWDFLASH Utility program.*
2. There are (2) important files needed to re-program the BIOS. The first is “AWDFLASH.EXE” which is the FLASH BIOS Programming Utility. The second file needed is the updated “BIN” file which contains the actual BIOS code. This file will have the extension [.bin], such as “P598GH.BIN”. Make sure these files are on the diskette or hard drive in the same directory.
3. Start the AWDFLASH Utility by changing to the directory where the two required files exist and typing: AWDFLASH and pressing [ENTER].



4. The AWDFLASH Utility Screen appears. You will be asked for the file name to program. Type in the name of the new BIOS (.bin) file and hit [ENTER].

## FLASH BIOS PROGRAMMING UTILITY

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5. The program will then ask if you want to backup the old BIOS. This is recommended in case there are any problems with the new “.bin” file. Enter the name of the new backup file (such as “backup.bin”) and press [ENTER].
6. At this time the system will prompt you for final confirmation before beginning programming. The Utility can be aborted at this time by hitting “n”. To begin programming, hit “y”...
7. When the Flash programming starts, a bar indicator will show the progress of the programming operation. After successful completion, hit the reset button or power off the computer.

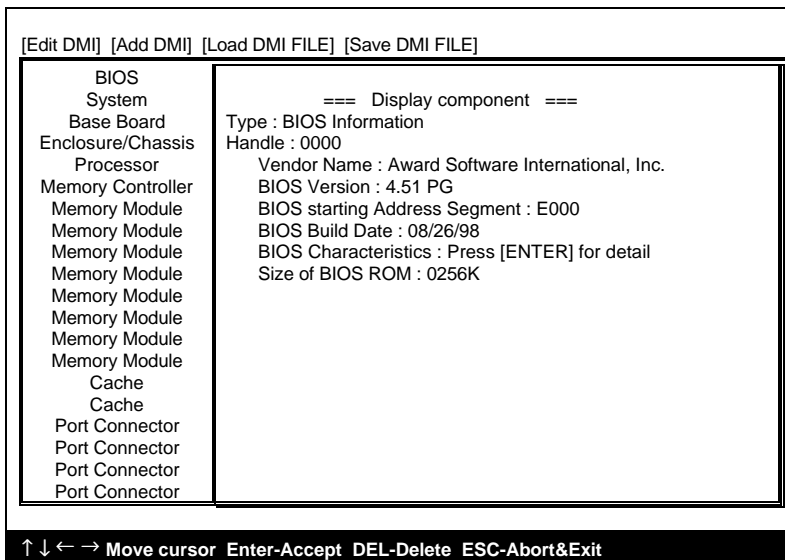
Be sure to perform “**Load Optimized Defaults**” for your new BIOS to synchronize the previous BIOS with the updated BIOS.

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# DMI UTILITY

This mainboard supports the **Desktop Management Interface (DMI)**, which is a new method of providing enterprise management for personal computers. The main component of DMI is the Management Information Format Database (MIF), which contains information about the computer system and its components, such as BIOS version/vendor, CPU speed/type, memory size/type, L1/L2 cache, port connectors (IDE, floppy, 2S/1P, USB, keyboard, mouse, ), slots ... etc. Using DMI, remote PC management software is able to obtain various information about the system, including hardware profiles, capabilities, operational status, installation dates, and other information about the system and its components.

This DMI utility, DMICFG.EXE found under the “Utilities” folder of the supplied CD-ROM, allows you to add additional information, such as serial numbers, vendor information, and enclosure/chassis configurations, into the MIF.



**Note:** The DMI utility must be run in real mode without the EMM386 memory manager loaded.

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