Intel Slot-1
AGP/PCI
Motherboard

IN810ES/IN810S

User's Manual

Declaration

Rights:

No part of this manual, including but not limited to the products and software described in it, may be reproduced, transmitted, transcribes, stored in a retrieval system, or translated in any form or by any means without the expressed written permission of the manufacture.

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies and are used only for identification or explanation purposes without intent to infringe.

● IBM and OS/2 are registered trademarks of International Business Machines.

● Intel is a registered trademark of Intel Corporation.

● AMI is a registered trademark of AMI Software International, Inc.

Responsibility:

This manual is provided "As is" with no warranties of any kind, either expressed or implied, including, but not limited to the implied warranties or conditions of this product's fitness for any particular purpose. In no event shall we be liable for any loss of profits, loss of business, loss of data, interruption of business, or indirect, special, incidental, or consequential damages of any kind, even the possibility of such damages arising from any defect or error in this manual or product. We reserve the right to modify and update the user manual without prior notice.

Warning:
Replace your system's CMOS RAM battery only with the identical CR-2032 3V Lithium Ion coin cell (or equivalent) battery type, to avoid risk of personal injury or physical damage to your equipment. Always dispose of used batteries according to the manufacturer's instructions, or as required by local ordinance (where applicable).

1999/09

Compliance & Certificate

ISO 9001 Certificate:

This device was produced in our plant with advanced quality system certified by DNV QA Ltd. in according to ISO 9001. This Certificate is valid for:
DESIGN & MANUFACTURE OF MOTHER BOARDS AND PERSONAL COMPUTERS.

CE Declaration:

CE marking is a visible declaration by the manufacturer or his authorized representatives that the electrical equipment to which it relates satisfies all the provisions of the 1994 Regulations.

FCC Compliance:

FCC stands for **F**ederal **C**ommunications **C**ommission.

This product complies with FCC Rules Part 15 and has been tested, and complied with the EMI rules by a certified body. In normal operation, there shall be no harmful interference caused by this device nor shall this devise accept any interference received, including interference that may cause undesired operation of this product.

Year 2000 Compliance:

This product is tested to be qualified to bear the NSTL Year 2000 Compliant logo.
Year2000 problem is mainly a problem of computer software (OS), and the hardware issue. With the support of BIOS on motherboard, the Y2K problem can be thoroughly conquered.

Easy Installation

Easy Installation Steps

The following "Easy Installation" steps are for users accustomed to the assembly of a computer system. For those individuals requiring more specific information, please refer to the more detailed descriptions located within the latter chapters of this manual.

Note: You must keep your power cable unplugged until the following installation steps are completed.

Getting Start:

Touch a grounded metal surface to release static electricity stored in your body before unpacking your motherboard. For details please refer to Precaution section in Chapter 3.
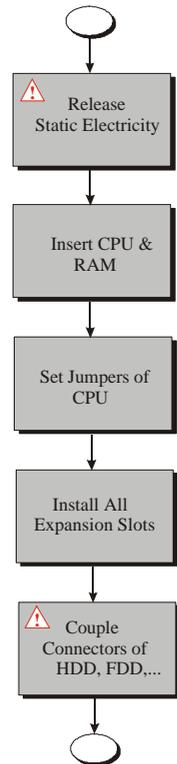
Install the CPU by correctly aligning the CPU with the Slot as noted in the motherboard diagram. Once aligned, press down on the CPU gently but firmly and lock it. Next, install the 3.3 volt unbuffered SDRAM into the 168 pin DIMMs. See Sec. 3.4.

After completing the above steps, install any expansion

Cards (PCI) into riser card and have the riser card installed firmly into the slot for riser card on board. See Sec. 3.5.

Plug in all cables included in the package except for the power cord. Please see Sec. 3.6.

Please recheck all steps to ensure no mistakes have been made and then plug in the power cord and turn on the power to enter the BIOS setup, Chapter 4.

INSTALLATION

⚠ Release Static Electricity

Insert CPU & RAM

Set Jumpers of CPU

Install All Expansion Slots

⚠ Couple Connectors of HDD, FDD,...

Contents

Contents

Contents

1. Introduction

1.1 How To Use This Manual

This manual provides information necessary for Original Equipment Manufactures (OEMs) and home users to build a PC-AT compatible system using the AGP/PCI motherboard. Follow the installation procedure presented on the **Easy Installation Page** and refer to the section number following each step if you require more detailed instructions.

USER   MANUAL
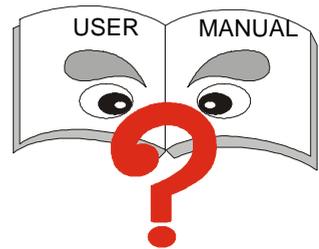
1.2 Check Your Device Items

The standard package should contain the following items. If you find any of these items be missing or damaged, please contact your retailer.

➢ The motherboard

➢ 1 IDE ribbon cable

➢ 1 floppy ribbon cable

➢ 1 CD with drivers

➢ 1 User's Manual
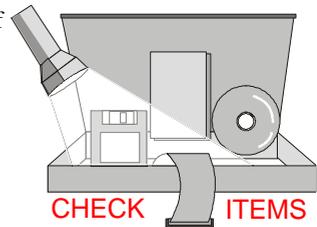
CHECK   ITEMS

2. Features

2.1 Features Of The Motherboard

The motherboard integrates the Intel Pentium II/III processor, memory, I/O and AGP, and is designed to fit into a Micro ATX form factor chassis. Page 11 illustrates the Layout for the motherboard. Below lists the key features provided by this motherboard:
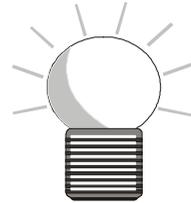
Processor

➢ Intel Slot-1 mechanism
➢ Support 66/100/133 MHz FSB for IN810ES, 66/100 MHz for IN810S

Chipset

➢ Intel 810E/810 Chipset includes GMCHE/GMCH0, ICH and FWH
➢ Winbond 83627F/HF LPC I/O Controller

System Memory

➢ Two 168-pin DIMM sockets
➢ Minimum 16MB up to maximum 512MB Memory Capacity
➢ Support PC-100 SDRAM DIMM module

Graphic Support

➢ GMCHE/GMCH0 Integrated H/W 3D AGP Graphic Controller (2X Mode)

Audio and Modem Support

➢ ICH Integrated AC97 Controller
➢ Three Audio Phone Jacks (Line out/Line In/Mic In), MIDI/Game Port, CD In, Modem In and AUX In
➢ Aureal AU8810 PCI Audio Controller (Optional)

PCI Bus Master IDE Controller

➢ Two Integrated PCI Bus Master IDE Controller Chip with Ultra-DMA66 capabilities. Up to four IDE devices can be supported using the two onboard IDE connectors. Also supported is PIO Modes 1,2, 3&4, Bus Master IDE DMA Mode 2 & 4 and Enhanced

2. Features

IDE devices such as Tape Backup machines and CD-ROMs. Either the 5.25-inch or 3.5 inch (1.44MB or 2.88MB) floppy drives can be used without requiring an external card. Additionally, Floppy 3 mode (Japanese standard 3.5 inch disk drive, 1.2MB) and LS-120 floppy disk drives (3.5 inch disk drive: 120MB, 1.44MB, 720K) are also supported.

Integrated I/O

- 1 Floppy Port (up to 2.88 MB)
- 1 Parallel Port (ECP/EPP)
- 2 Serial Ports (16C550 Fast UART Compatible)
- 1 PS/2 Mouse Connector, 1 PS/2 Keyboard connector
- 2 Standard USB Connector (48MHz), 1 Front Side USB Header

System BIOS

- 4M bit FWH Integrated Random Number Generator to enhance platform security
- AMI PCI BIOS with Plug and Play, ACPI, APM, Y2K, PC99 and DMI support
- Bootable from CD-ROM supported

Green Features

- Power Management: APM 2.1
- Additionally, with support for ACPI (Advanced Configuration and Power Interface) feature and On-Now, your system will become more wise in power management

Additional features

- Wake-On-LAN header
- Wake-On Ring header

Hardware Monitor

- Detects the temperature, CPU Fan speed, Chassis Fan speed, voltage for CPU

Expansion Slots

- 1 AMR Slot, 3 PCI Slots with 1 Slot Shared, LVR Slot (TV-Out an DFP Riser Card Slot)

Mechanical

- This motherboard complies with the Micro ATX Form Factor specifications and has four layers with dimensions of 9.6" x 8.5"

3. Installation

3.1 Motherboard Layout & Main Parts
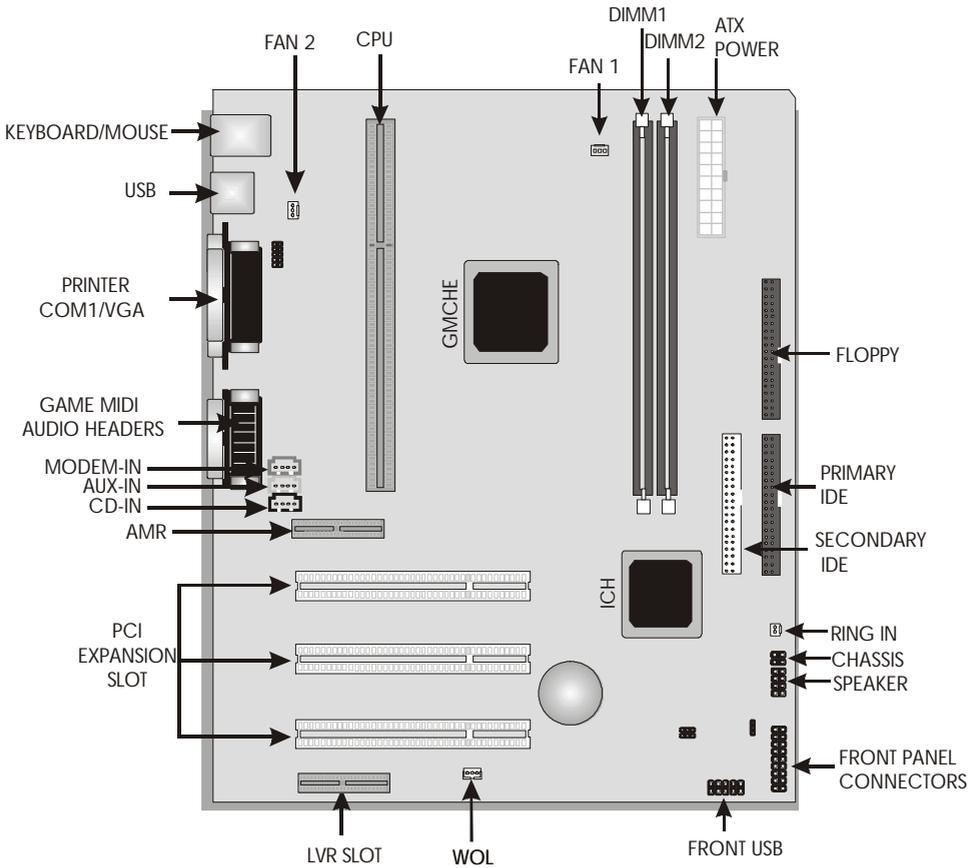
3. Installation

Significant Parts List

Front Panel Connectors

Power Switch	Refer to Sec. 3.6.9
Power LED	Refer to Sec. 3.6.10
Reset Switch	Refer to Sec. 3.6.6
Sleep Switch	Refer to Sec. 3.6.8
HDD LED	Refer to Sec. 3.6.7

Back Panel Connectors

PS/2-style keyboard and mouse connectors	Refer to Sec. 3.6.12
USB connectors	Refer to Sec. 3.6.12
One parallel port	Refer to Sec. 3.6.12
One VGA port	Refer to Sec. 3.6.12
One serias port	Refer to Sec. 3.6.12
One Game/MIDI Port	Refer to Sec. 3.6.12
Line-out	Refer to Sec. 3.6.12
Line-in	Refer to Sec. 3.6.12
MIC-in	Refer to Sec. 3.6.12

Expansion Slots

CPU Slot	Refer to Sec. 3.3
DIMM Sockets	Refer to Sec. 3.4.1
PCI/AMR/LVR Slots	Refer to Sec. 3.5

Power/IDE/FDD Connectors

IDE connectors	Refer to Sec. 3.6.1-3.6.2
Power connector	Refer to Sec. 3.6.4
FDD connector	Refer to Sec. 3.6.3

Additional Connectors

Fan 1	Refer to Sec. 3.6.13

WOL Connector	Refer to Sec. 3.6.13
Speaker Connector	Refer to Sec. 3.6.11
Ring In	Refer to Sec. 3.6.13
Front USB Connector	Refer to Sec. 3.6.13
CD-IN	Refer to Sec. 3.6.13
AUX-IN	Refer to Sec. 3.6.13
MODEM-IN	Refer to Sec. 3.6.13
CLR CMOS/PWD	Refer to Sec. 3.6.5
SAFE Mode	Refer to Sec. 3.6.5

3. Installation

Precaution Before Start

Static Electricity Damage:

Static electricity can easily damage your motherboard. Observing a few basic precautions can help safeguard against damage that could result in expensive repairs. Follow the simple measures below to protect your equipment from static electricity damage.

1. Keep the motherboard and other system components in their anti-static packaging until you are ready to install them.

2. Touch a grounded surface before you remove any system component from its protective anti-static packaging. Unpacking and installation should be done on a grounded, anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same points as the anti-static mat.

3. After removing the motherboard from its original packaging, only place it on a grounded, anti-static surface component side up. Immediately inspect the board for damage. Due to shifting during shipping, it is suggested that the installer press down on the entire socket ICs to ensure they are properly seated. Do this only with the board placed on a firm flat surface.

4. During configuration and installation touch a grounded surface frequently to discharge any static electrical charge that may have built up in your body. The best precaution is to wear a grounded wrist strap. Avoid touching the components When handling the motherboard or an adapter card. Handle the motherboard and adapter cards either by the edges or by the adapter card case-mounting bracket.

Misplaced Jumper Damage:

There are critical headers used for connectors or power sources. These are clearly marked separately from the jumpers listed in Motherboard Layout. Incorrect setting jumpers and connectors may lead to damage to your motherboard. Please pay special attention not to connect these headers in wrong directions

3. Installation

3.2 Slots And Connectors

This motherboard requires jumper setting for making some change. The following graphic shows you how to set the jumper setting.

Note: In the following pages, the triangle ▲ mark stands for pin 1 of connectors.

Slots/Connectors List

J17: PCI 1	J23: RING-IN
J16: PCI 2	J31: SPDIF
J15: PCI 3	J11: AUX-IN
J22: Secondary IDE (IDE 2)	J12: MODEM-IN
J28: Primary IDE (IDE 1)	J6: Game Port
J29: Floppy (FLP1)	J7: Audio Jack
J19: Fan 1	J10: CD-IN
J24: Fan 2	J1: VGA
J25: Front Panel Connector	J5: Universal Serial Bus Ports
J2: PS/2 Keyboard and Mouse Port	J8: Parallel Port
J4: Serial Port (COM1)	

3.3 CPU (Central Processing Unit)

This motherboard support an Intel Pentium II/III series processor. To complete CPU installation, please install CPU to the slot firmly and arrange jumper settings carefully, presented in sec. 3.3.1.
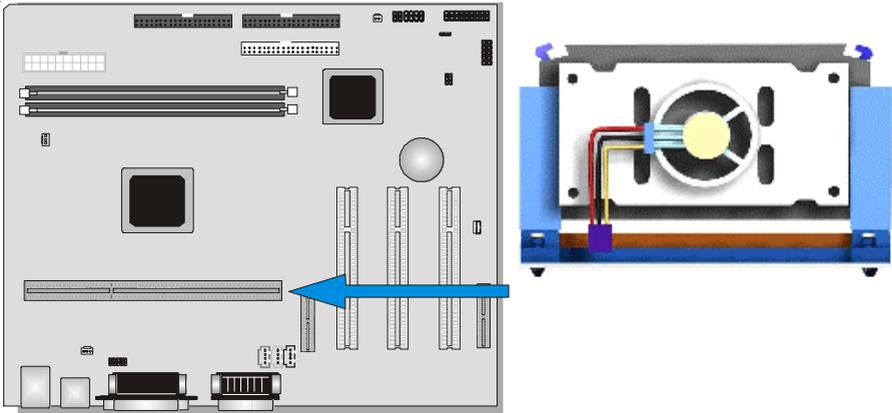
3.3.1 Install CPU

Please follow the below steps to install your CPU.

First please ensure the following parts you received with this motherboard. One URM (Universal Retention Mechanism) and four Lock Pins. Usually, the URM was set on motherboard already.

4 Lock Pins

Universal Retention Mechanism
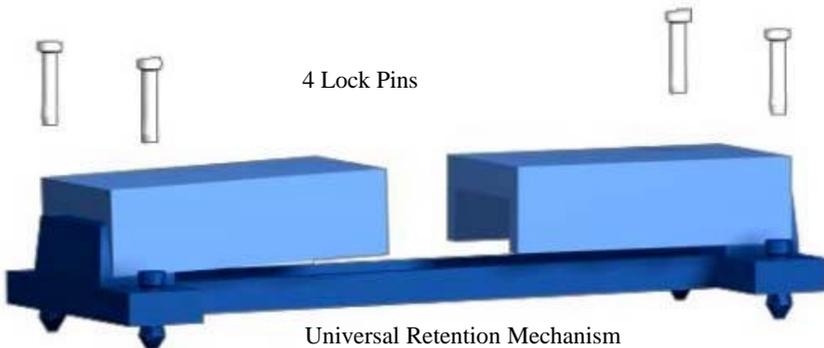
3. Installation
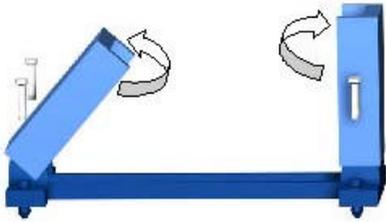
1. Unfold the Retention Mechanism.
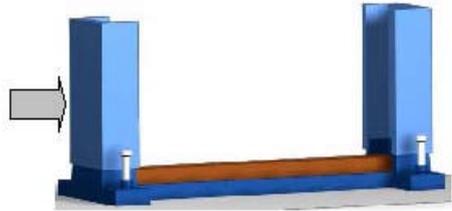
2. Place the Retention Mechanism over CPU Slot

3. Push 4 lock pins into holes to fix Retention

   Mechanism on motherboard.
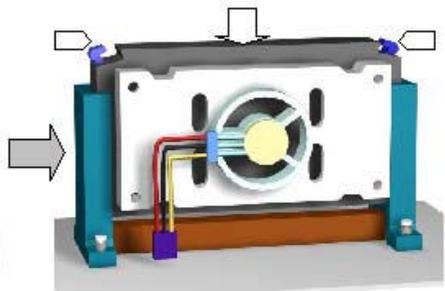
4. Insert CPU. Push two lock pins inward and press CPU down gently.

Step 1:   Place the Universal Retention Mechanisms over the CPU slot (SC242 slot) on motherboard.

Step 2:   Fix the Retention Mechanism to the motherboard with four Lock Pins. To insert the Lock Pins into holes to lock them tight and firmly. And then unfold the URM.

Step 3:   Push the SEC Cartridge's two locks inward and insert the CPU into Retention Mechanism. Press the top of CPU gently but firmly until it is fully inserted.

Warning :   It is strongly recommended that a heatsink and CPU cooling fan be used to prevent the CPU from overheating. Applying a thermal of jelly between the CPU and the heatsink/fan will further cool the CPU.

3. Installation

3.4 System Memory (DRAM)

3.4.1 DIMM (Dual Inline Memory Module)

The features three 168-pin DIMM sockets. You can configure the system memory size from 16MB to 512MB in a variety of ways by using different combinations of the two 168-pin DIMM.

DIMM2
DIMM1
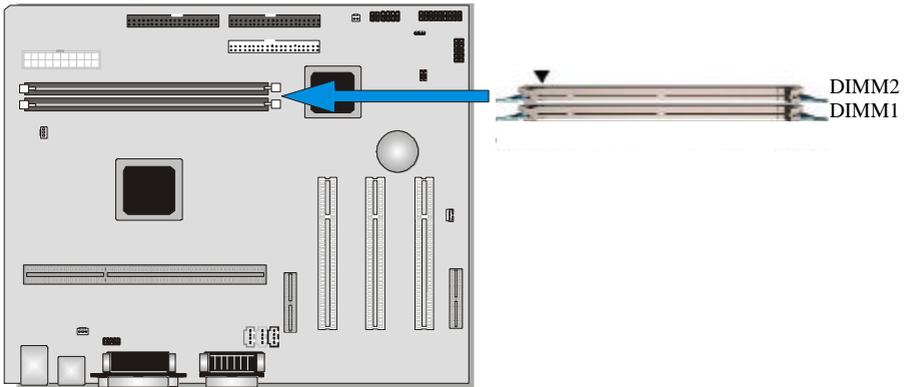
3.4.2 Installation Procedure

Step1: Make sure Pin 1 of the DIMM match with pin 1 of the DIMM socket.

Step2: Insert the DIMM module into the DIMM socket vertically. After inserting the DIMM module completely into the socket, push up on the socket latches securing the DIMM into place.
If the pin 1 of the DIMM module does not line up with pin 1 of the socket, the DIMM module will not be inserted correctly into the socket.
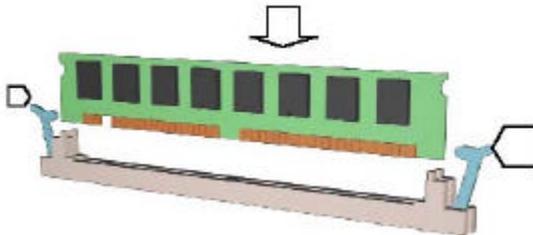
Be careful not to misfit the DIMM Module into DIMM sockets in wrong direction. This module can be inserted into the socket only one way. Please note the "▲" for pin 1 location. To release the memory module, push both latches down and carefully rock the module forward and backward while slowly lifting it upward.

3.4.3 DIMM Module Combinations

Each DIMM socket can be inserted with 16MB, 32MB, 64MB, 128MB, 256MB, DIMM. For example, the following figure shows you one way to insert your DIMM.

Select

DIMM 1	Empty	16MB	32MB	64MB	128MB	256MB

DIMM 2	Empty	16MB	32MB	64MB	128MB	256MB

Select	DIMM1:32MB	Total
	DIMM2: 64MB	32+64=96 MB
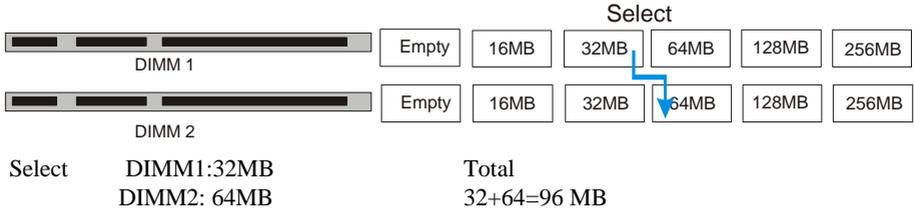
Select one of the six choices (Empty, 16MB, 32MB, 64MB, 128MB, 256MB) in DIMM1.

Then, repeat in DIMM2 (Empty, 16MB, 32MB, 64MB, 128MB, 256MB) to go through your own path.

3.5 Expansion Slots
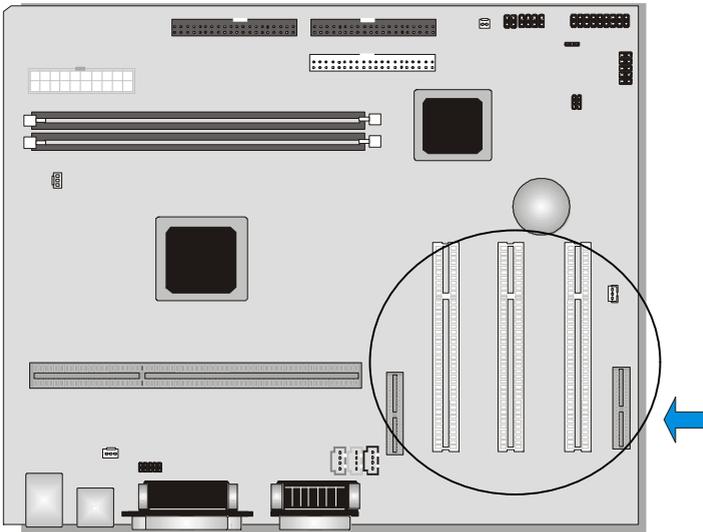
This motherboard contains 5 expansion slots (including one shared PCI/LVR) onboard. Three 32-bit PCI expansion slots, one AMR slot and one LVR slot as shown above.

All PCI expansion slots accept PCI bus master cards and are fully supported by the PCI 2.2 specification.

The Audio Modem Riser (AMR) connector which supports an industry-standard riser board and interface for both audio and modem, while also addressing specific function limitations of previous audio and modem subsystem. (AMR interface specification Rev. 1.01 compliant)

To install expansion cards, please read the expansion card's documentation for instructions and cautions.

3.6 Connectors

This motherboard contains IDE, floppy, power input, front panel, back panel and additional connectors.
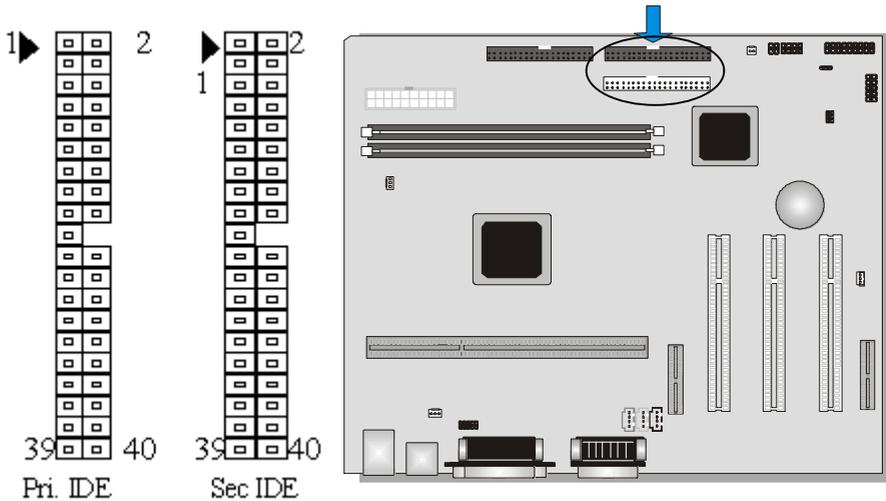
3.6.1 Primary IDE Connector (J28, 39-pin block, Black)

This connector supports two primary channel IDE devices via a ribbon cable. When two IDE devices are installed using the primary IDE connector, make sure that the second IDE device is set to slave mode as indicated in the device's manual.

3.6.2 Secondary IDE Connector (J22, 39-pin block, White)

This connector supports two secondary channel IDE devices as well as the 120MB Floppy drives via a ribbon cable. When two IDE devices are installed using the secondary IDE connector, make sure that the second IDE device is adjusted to slave mode as indicated in the device's manual.

3. Installation

3.6.3 Floppy Drive Connector (J29, 33-pin block)
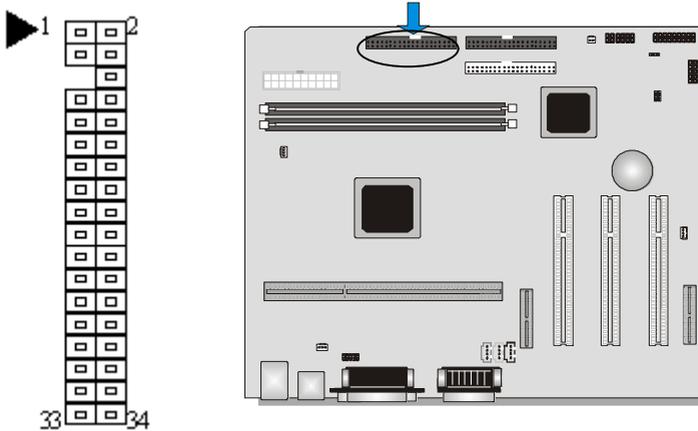
The FDC sub-system can control three types of floppy drives (1.2, 1.44 and 2.88MB) or compatible tape drives. The connection to the floppy drive is via a header. The floppy disk interface includes 48mA drivers and inputs on the drive interface.

3.6.4 Power Input Connector (J20, 20-pin block)
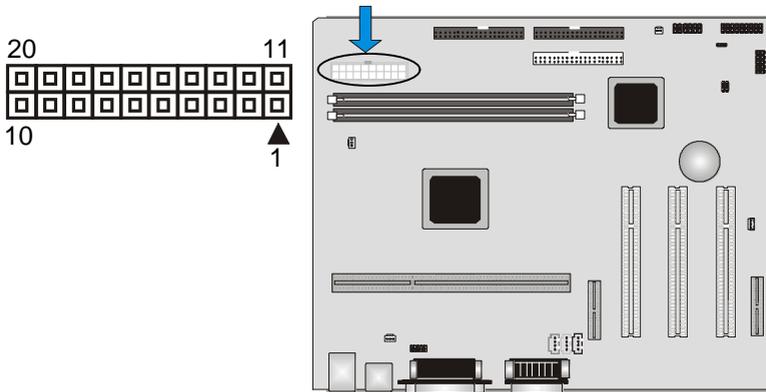
This connector supports a standard ATX power supply. When connecting, make sure the lock key matches the hook attached on a power supply cable. The power cord should be unplugged when you connect it.

3.6.5 Front Panel connectors (J25, 15-pin)

Front Panel includes headers for the following six I/O connectors:

Power Switch, Power LED, Speaker, Reset, Sleep and HDD LED.
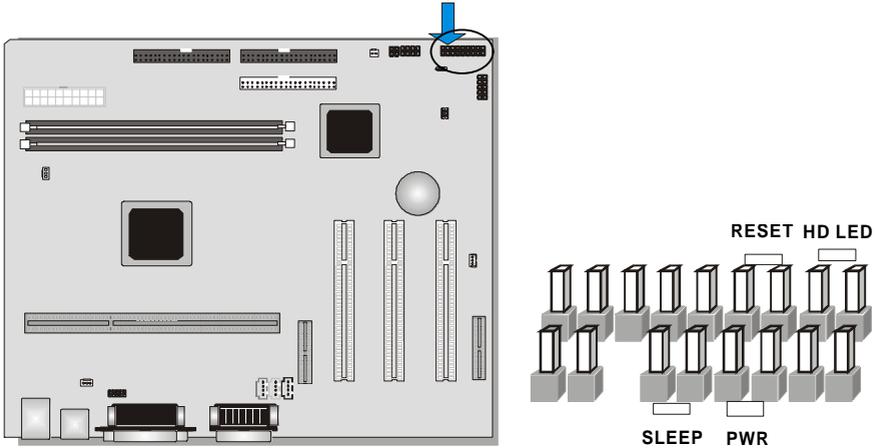
Reset Switch Connector (2-pin)
This connector supports the front panel case-mounted reset button. It is advised that the reset switch be used for rebooting the system in order to extend the life of the system's power supply.

HDD (IDE) LED Connector (2-pin)
The mainboard supports one straight 2-pin header for connecting to front Panel Hard Disk activity LED indicator.

Sleep Switch (2-pin)
When the APM (Advanced Power Management) feature is enabled in the system BIOS and the operating system's APM driver is loaded, the system can enter the sleep (standby) mode in one of the following ways:

➢ Optional front panel sleep/resume button

➢ Prolonged system inactivity using the BIOS inactivity timer feature.

The 2-pin header supports a front panel sleep/resume switch, which must be a momentary SPST type that is normally open.

Power Switch (2-pin)
This connector supports the Micro ATX case-mounted Power Switch, which in turn supports System Suspend function. When the BIOS sets the Power Button function to "Delay 4 sec.",

the system can be set to the suspended mode once you push the power switch for no longer then 4 seconds. If the power switch is pushed down for over 4 seconds the system will be totally Power Off. When the BIOS setting sets the Delay 4 second to "Instant-off", then Power Switch function work as regular power switch.

Power LED (2-pin)
This header can be connected to a LED that will light when the computer is powered on.
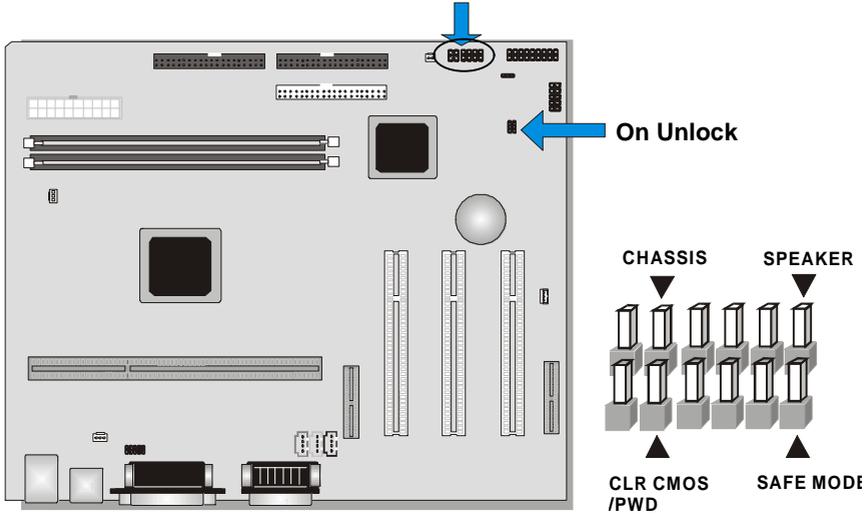
On Unlock (J30, 2-pin)
This jumper is for Flash BIOS. When you need flash BIOS, install this jumper please.

Chassis (2-pin)
This is for a chassis designed for chassis intrusion detection. After-market toggle switches may also be installed to the chassis panel or any removable components. Two wires should be available from the chassis to connect to this lead. When any chassis component is removed, the contact should open and the motherboard will record a chassis intrusion event. The event can then be processed by software such as LDCM. If the chassis intrusion lead is not used, a jumper cap must be placed over the pins to prevent unnecessary power loss.

Speaker (4-pin)
It is used to drive a chassis-mounted speaker if desired.

Clear CMOS/Password (2-pin)
This jumper is used to clear CMOS setting. You can clear password or set all CMOS setting to Default.

Safe Mode (2-pin)

Usually, slot1 processors have locked frequency multiples. In this case, there is no way to exceed the specified multiple whether through motherboard settings or BIOS setup. With unlock slot1 processors, exceeding the specified multiple is possible through BIOS setup. Exceeding the specified multiple may result in hanging during boot up. If this occurs, enable Safe Mode to force a multiple of 2 in order to enter BIOS setup to correct the problem.

3.6.6 Back Panel Connectors

Mouse

Keyboard

USB2
USB1

COM1

Parallel port

VGA

Game/MIDI

Line-In Line-Out Mic In
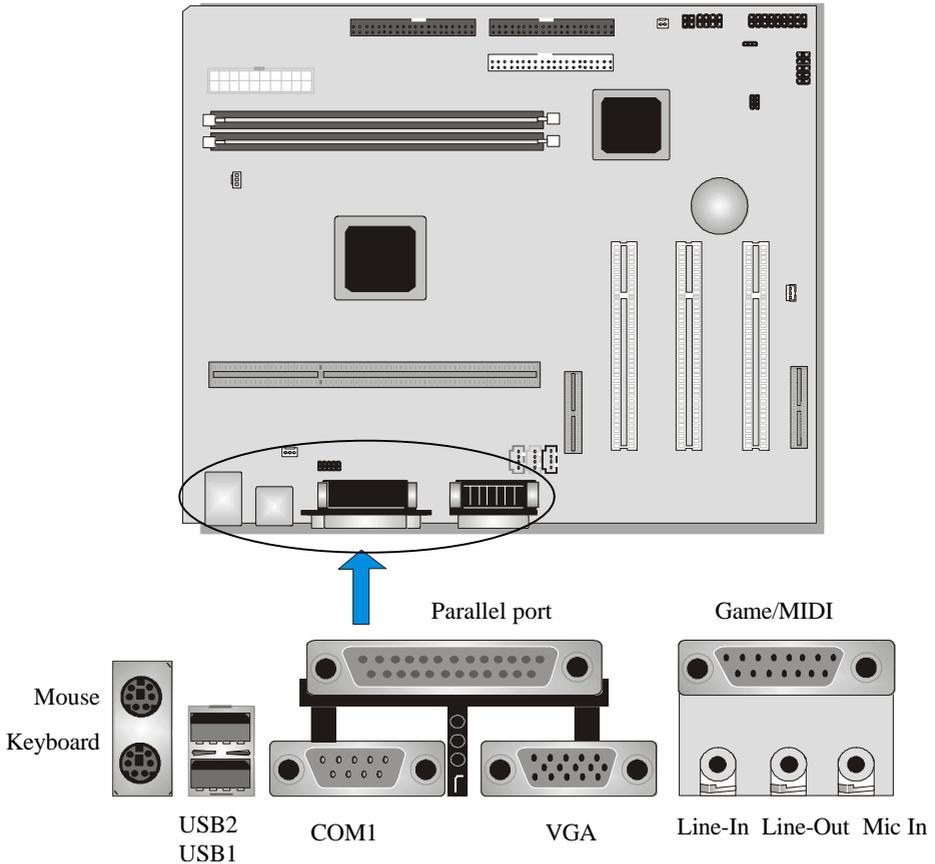
3. Installation

PS/2 Keyboard and Mouse Ports (J2)

The motherboard offers 1 PS/2 Keyboard and 1 PS/2 Mouse port.

Mouse

Keyboard

Universal Serial Bus (USB) Ports (J5)

The motherboard has two USB connectors. USB devices provide a more convenient operating environment and improve data transferring capacity. True Plug & Play. This new bus technology will support over 127 different peripherals through a Hub.

USB2

USB1

Parallel Port (Printer, J8)

The motherboard includes a parallel port (EPP/ECP compatible). The parallel port is capable of being disabled or remapped to either the secondary LPT address or the primary LPT address through BIOS if another parallel port is installed.

Parallel port
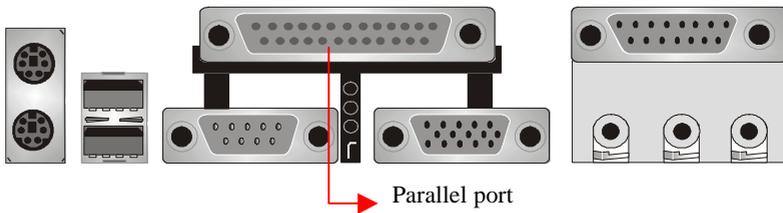
3. Installation

Serial Port (COM1/VGA, J4/J1)

The motherboard has two serial ports (one on rare panel, one on board). The electrical characteristics are compliant with the EIA-232-D Serial Communications Specifications. The serial ports may be remapped over other installable serial ports or disabled through the BIOS.

COM1   VGA
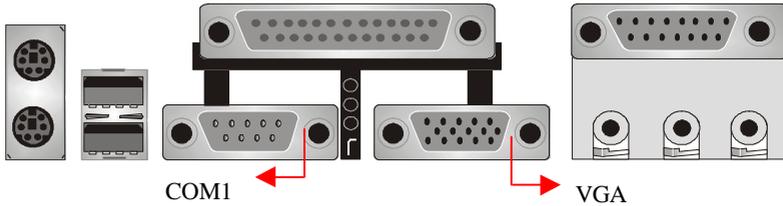
This product integrates the AGP function via a VGA port beside the COM1. The Accelerated Graphics Port (AGP or A.G.P.) is a high performance interconnect targeted at 3D graphical display applications.

GAME / MIDI Port (J6/J7)

The motherboard integrates a Game/MIDI port. This port can let you pulg a joystick or MIDI device.

Game/MIDI
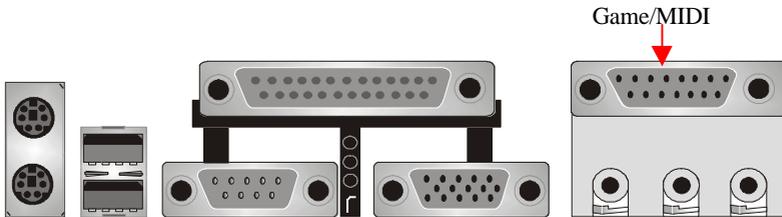
Audio Port (J7, Line-in, Line-out, MIC-in)

The motherboard also provides external sound system through a user accessible stereo jack connector soldered to the PWA.This jack allow the connection of self-amplified speakers, Line-in voice input and MIC-in voice input.

Line-out, Line-in, MIC-in

3.6.13 Additional Connectors

Ring-In

Front USB Connector

USB Jumper

Fan 1

WOL

Fan 2
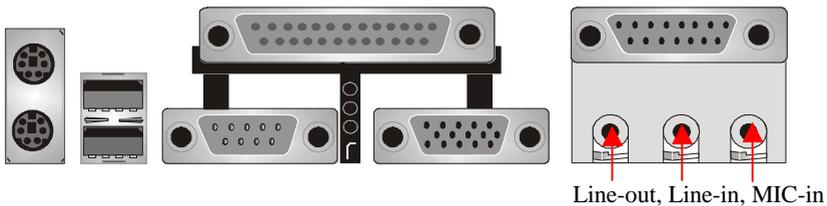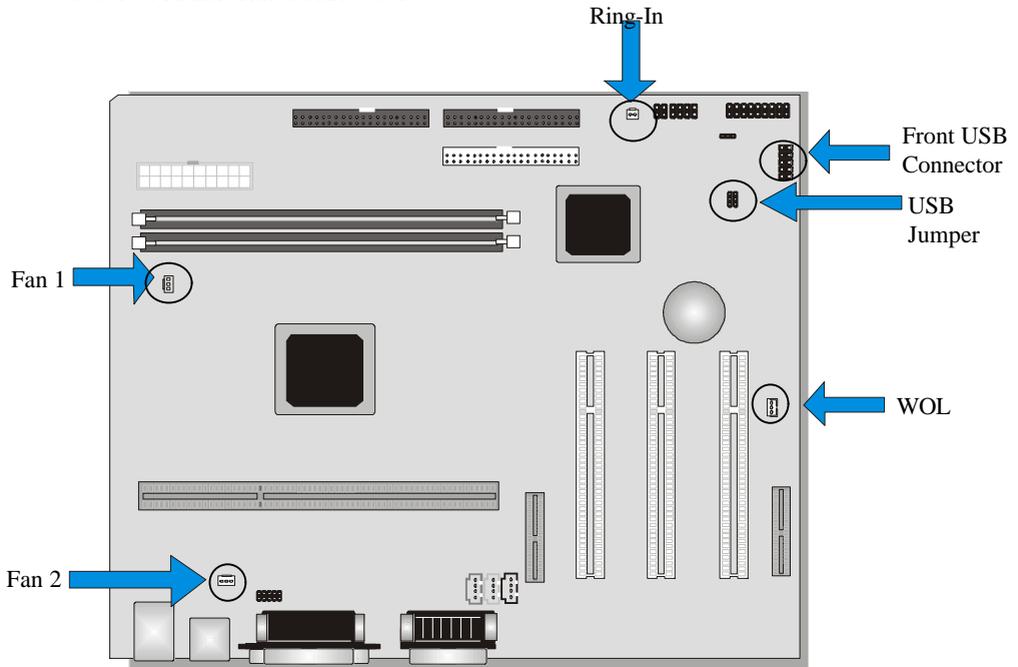
WOL (Wake On LAN, J18)

This header is used for remote wakeup of the computer through a network. WOL requires a PCI add-in network interface card (NIC) with remote wakeup capabilities. The remote wakeup header on the NIC must be connected to the onboard Wake on LAN header. For Wake on LAN, the 5-V standby line for the power supply must be capable of delivering 5VSB±5% at 720mA.

Ring In (J23, 2-pin)

This header is used for remote wakeup of the computer through a modem. Ring-In requires an add-in modem card with remote wakeup capabilities. The remote wakeup header on the add-in modem card must be connected to the onboard Ring-In header.

CLR CMOS/PWD (JP5)

This Jumper Choose for clear CMOS Setting allows you to clear password or all CMOS Setting to Default.

SAFE Mode (JP4)

Usually Pentium II/III processors have locked frequency multiples. In this case, there is no way to exceed the specified multiple whether through motherboard settings or BIOS setup. With unlock Pentium II/III processors, exceeding the specified multiple is possible through

BIOS setup. Exceeding the specified multiple may result in hanging during bootup. If this occurs, enable Safe Mode to force a multiple of 2 in order to enter BIOS setup to correct the problem.

Chassis Intrusion (J27)

This leas is for a chassis designed for chassis intrusion detection. After-market toggle switches may also be installed to the chassis panel or on any removable components. Two wires should be available from the chassis to connect to this lead. When any chassis component is removed, the contact should open and the motherboard will record a chassis intrusion event. The event can then be processed by software such as LDCM. If the chassis intrusion lead is not used, a jumper cap must be placed over the pins to prevent unnecessary power loss.

Front USB Header and Jumper (JP1, 2)

You can use either this Front USB or Back Panel USB by setting the USB Select jumper. Following table shows the jumper settings.

USB Select Jumper

USB Select	Front USB	Back USB
JP1		
JP2		

Fan 1 (J19, 3-pin)

Your CPU may have an attached heatsink and Fan; this connector is the power source for the Fan 1.

Modem-IN Header (J12, 4-pin, Green)

A 1x4 pin ATAPI style connector is available for connecting the monaural audio signals of an internal telephony device to the audio subsystem. A monaural audio-in and audio-out signal interface is necessary for telephony applications such as speakerphones, fax modems, and answering machines.

Modem-IN   AUX-IN   CD-IN
(Green)   (White)   (Black)
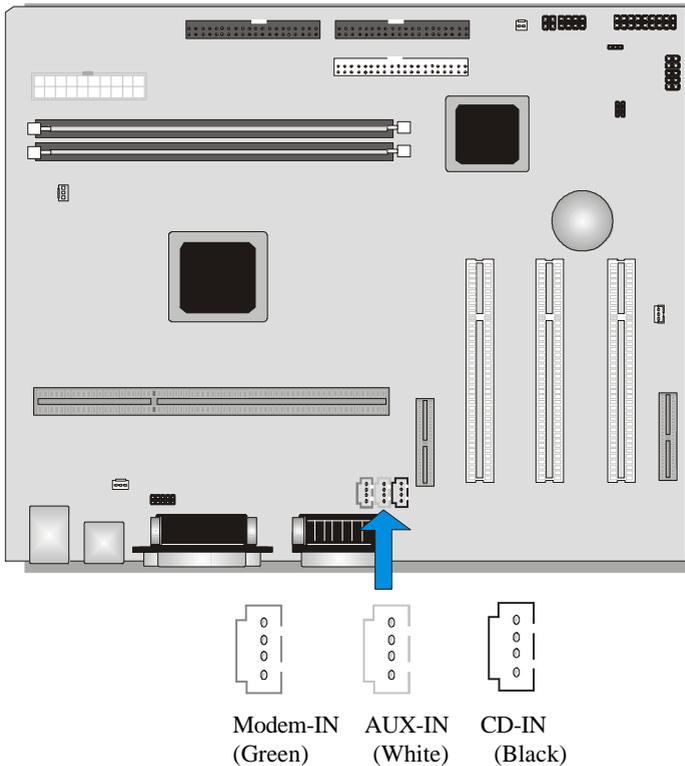
CD-IN Header (J10, 4-pin, Black)

A connector is available for audio input from CD-ROM drives.

AUX-IN Header (J11, 4-pin, White)

Access to the AUX-IN connector for audio input from AUX devices.

3. Installation

Ready To Turn On Power

Check Again

1. Is the CPU installed exactly and firmly into the socket (Sec. 3.3)?
2. Are all the DRAM modules installed properly (Sec. 3.4)?
3. Did you insert the expansion card (VGA, Sound…etc.) already (Sec. 3.5)?

   Are you sure that all the connectors (described in Sec 3.6) have been connected to their variable devices (Sec. 3.6)?

Yes, I have checked and assured the above steps!

Now get ready to turn on your device by following the steps below.

1. Mount your motherboard to the chassis frame and close the case cover.
2. Switch off all power.
3. Connect the power supply cord into inlet of the system case.
4. Connect the power supply cord into an outlet of power supply.
5. Connect Monitor signal cable to the system VGA port and the monitor power cord to power outlet.
6. Now turn on the monitor and system power.

After Power on, The power LED on the front panel of the system case will light. For ATX power supplies, the system LED will light when the ATX power switch is pressed.

The system will then do a power-on tests item by item, and additional messages will appear on screen. If the screen blinks or the tests stops more than 30 seconds, the system may have failed the power-on test. If so, please recheck the above steps or call your retailer for assistance.

If the power-on test goes well, hold down <Del> button on the keyboard to enter BIOS Setup. Next, follow the instructions in the next chapter, **BIOS SETUP.**
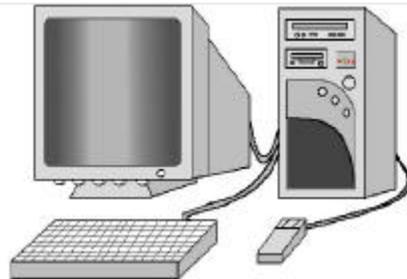
4. BIOS Setup

The motherboard uses AMIBIOS, which is stored in a Flash EEPROM and can be upgraded by a floppy disk-based program. The BIOS has a built-in Setup Program that allows users to modify the basic system configuration settings. The settings are then stored in a dedicated battery-backed memory, called CMOS RAM that retains the information when the power is turned off.

The BIOS provides critical low-level support for the system's central processing, memory and I/O subsystems. The AMI BIOS has been customized by adding important, nonstandard, features such as virus and password protection, power management, and detailed fine-tuning of the chipset which controls the system. The remainder of this manual is intended to guide you through the process of configuring your system using the BIOS Setup.

4.1 BIOS Setup

The AMI BIOS is immediately activated when you first turn on the computer. The BIOS reads system configuration information in CMOS RAM and begins the process of checking the system and configuring it through the power-on self test (POST). When these preliminaries are finished, the BIOS seek an operation system on the data storage devices (hard drive, floppy drive, etc.). The BIOS launches the operating system and hands over control of system operation to it.

To start Setup, press the <Del> key during boot-up before or while a message similar to this appears briefly at the bottom of the screen during POST (Power On Self Test):

Press DEL if you want to enter SETUP

If the above message disappears before you have responded and you still wish to enter Setup, reboot the system to try again by pressing the "RESET" button on the system case. You may also restart by simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys.

Press **F1** to continue, **DEL** to enter SETUP.

4. BIOS Setup

4.1.1 Setup Keys

The keys below help you navigate in Setup.

<↑> , <↓>	Move to previous or next item
<←> , <→>	Move to the item in the left or right hand
<Esc>	Main Menu – Quit and not save changes into CMOS
	Other Pages -- Exit current page and return to Main Menu
<PgUp> / <+>	Increase the numeric value or make changes
<PgDn> / <–>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Change color from total 16 colors. F2 to select color forward, F3 to select color backward
<F3>	Calendar, only for Status Page Setup Menu
<F10>	Save all the CMOS changes, only for Main Menu

4.1.2 Getting Help

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

4.1.3 In Case of Problems

If after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the Award BIOS supports an override to the CMOS settings that resets your system to its default configuration.

The best advice is to alter only settings that you thoroughly understand. In particular, do not change settings in the Chipset screen without a good reason. BCM Advanced Research Inc. or your system manufacturer for the best performance and reliability has carefully chosen the Chipset defaults. Even a seemingly small change to the Chipset setup may cause the system to become unstable.

4.2 Main Setup Menu

When you enter the AMI BIOS CMOS Setup Utility, a Main Menu (Figure 1) appears 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.

4. BIOS Setup

A brief description of each highlighted selection appears at the bottom of the screen.

```
         AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.23
      (C) 1998 American Megatrends, Inc. ALL Rights Reserved


                   Standard CMOS Features
                   Advanced CMOS Features
                  Advanced Chipset Features
                   Power Management Setup
                   PCI/Plug and Play Setup
                      Peripheral Setup
                  Hardware Monitor Setup
                   Auto-Detect Hard Disks
                   Change User Password
                 Change Supervisor Password
                  Change Language Setting
             Auto Configuration with Optimal Settings
            Auto Configuration with Fail Safe Settings
                   Save Settings and Exit
                    Exit Without Saving


         Standard CMOS setup for changing time, date, hard disk type, etc.
         ESC :Exit  ↑↓ :Sel  F2/F3 :Color  F10 :Save & Exit
```

Figure 1: Main Menu

Following is a brief summary of each Setup category.

Standard CMOS	Options in the original PC AT-compatible BIOS.
Advanced CMOS Setup	AMI enhanced BIOS options.
Advanced Chipset Setup	Options specific to your system chipset.
Power Management Setup	Advanced Power Management (APM) options.
PCI/Plug and Play Setup	Plug and Play standard and PCI Local Bus configuration options.

Peripheral Setup	I/O subsystems that depend on the integrated peripherals controller in your system.
Auto - Detection Hard Disks	Automatically detect and configure IDE hard disk parameters.
Change User Password	Change, set, or disable a password. In BIOS versions that allow separate user and supervisor passwords, only the supervisor password permits access to Setup. The user password generally allows only power-on access.
Change Supervisor Password	Once this item is set with a password.
Change Language Setting	Change system language. It is fixed, you can change it.
Auto Configuration with Optimal Settings	Setup defaults are factory settings for optimal-performance system operations.
Auto Configuration with Fail Safe Settings	AMIBIOS will automatically set all AMIBIOS Setup options to a complete set of default settings when you choose this option.
Save Settings and Exit	Save settings in nonvolatile CMOS RAM and exit Setup.
Exit Without Saving	Abandon all changes and exit Setup.

4.3 Standard CMOS Setup Menu

In the Standard CMOS Menu (Figure 2) you can set the system clock and calendar, record disk drive parameters and the video subsystem type, and select the type of errors that stop the BIOS POST.

Move to items

Enter Sub-Menu

```
                    AMIBIOS SETUP - Standard CMOS Setup
              © 1999 American Megatrends, Inc. All Rights Reserved

Date (mm:dd:yy) :   Fri, Sep. 3, 1999            Base Memroy: 640 KB
Time (hh:mm:ss) :   15: 14: 51                   Extd Memory:62 MB

Floppy Drive A:     1.44MB 3 1/2
Floppy Drive B:     Not Installed

                                                LBA BLK PIO 32Bit
                Type    Size Cyln Head WPcom Sec Mode Mode Mode Mode

Pri Master : Not Installed
Pri Slave  : CDROM                                         4    On
Sec Master: User       6495 13424 15    0    63  On   On   4    On
Sec Slave : Not Installed

Boot Sector Virus Protection      Disabled

Month:  Jan-Dec                                 ESC: Exit  ↑↓: Sel
 Day:  01- 31                                   PgUp/PgDn: Modify
 Year:  2099                                    F1: Help  F2/F3: Color
```
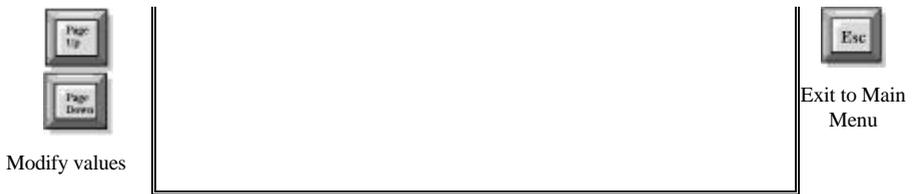
4. BIOS Setup

Figure 2: Standard CMOS Setup

4.3.1 Date

The BIOS determines the day of the week from the other date information. This field is for information only. Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

4.3.2 Time

The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the left or right arrow key to move to the desired field. Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

4.3.3 Hard Disks

The BIOS supports up to four IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or about other hard drive types, such as SCSI drives.

NOTE: We recommend that you select type AUTO for all drives.

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detects its specifications during POST, every time the system boots.

If you do not want to select drive type AUTO, other methods of selecting the drive type are available:

1.   Match the specifications of your installed IDE hard drive(s) with the preprogrammed values for drive types 1 through 45.

2.   Select USER and enter values into each drive parameter field.

3.   Use the IDE HDD AUTO DECTECTION function in Setup.

Here is a brief explanation of drive specifications:

➢   Type: The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors, Drives whose specifications do not accommodate

---

35

any pre-defined type are classified as type USER.

➢ Size: Disk drive capacity (approximate). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.

➢ Cyls: Number of cylinders

➢ Head: Number of herds

➢ Precomp: Write precompensation cylinder

➢ Landz: Landing zone

➢ Sector: Number of sectors

➢ Mode: Auto, Normal, large, or LBA

➢ Auto: The BIOS automatically determines the optimal mode.

➢ Normal: Maximum number of cylinders, heads, and sectors supported are

➢ 1024, 16 and 63.

➢ Large: For drives that do not support LBA and have more than 1024 cylinders.

➢ LBA (Logical Block Addressing): During drive accesses, the IDE controller

➢ Transforms the data address described by sector, head, and cylinder number

➢ into a physical block address, significantly improving data transfer rates. For drives with greater than 1024 cylinders.

4.3.4 Drive A/B type

Select the correct specifications for the diskette drive(s) installed in the computer.

None	No diskette 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

4.3.4 Primary/Secondary IDE Master/Slave

Not Installed	No diskette drive installed

1 to 46	Drive types 1 through 46 with preprogrammed values
User	Enter values into each drive parameter field manually
Auto	Detect HDD type automatically
CDROM	Use for ATAPI CD-ROM drives
FIOPTICAL	

The BIOS supports up to four IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or about other hard drive types, such as SCSI drives.

NOTE: We recommend that you select type AUTO for all drives.

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detects its specifications during POST, every time the system boots.

If you do not want to select drive type AUTO, other methods of selecting the drive type are available:

1.   Match the specifications of your installed IDE hard drive(s) with the preprogrammed values for drive types 1 through 45.

2.   Select USER and enter values into each drive parameter field.

3.   Use the IDE HDD AUTO DECTECTION function in Setup.

Here is a brief explanation of drive specifications:

➢   Type: The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors, Drives whose specifications do not accommodate any pre-defined type are classified as type USER.

➢   Size: Disk drive capacity (approximate). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.

➢   Cyln: Number of cylinders

➢   Head: Number of herds

➢   WPcom: Write precompensation cylinder

➢   Sec: Number of sectors

➢   Mode: LBA, Blk, PIO, 32Bit

➢   LBA (Logical Block Addressing): During drive accesses, the IDE controller

➢ Transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. For drives with greater than 1024 cylinders.

4.3.5 Boot Sector Virus Protection

This will enable a warning message if a virus attempts to write to the boot sector or the partition table of the hard disk drive. Keep in mind that this feature not only protects the boot sector, but the entire hard drive.

4.3.6 Memory

You cannot change any values in the Memory fields; they are only for your information. The fields show the total installed random access memory (RAM) and amounts allocated to base memory, extended memory, and other (high) memory. RAM is counted in kilobytes (KB: approximately one thousand bytes) and megabytes (MB: approximately one million bytes).

RAM is the computer's working memory, where the computer stores programs and data currently being used, so they are accessible to the CPU. Modern personal computers may contain up to 64 MB, 128 MB, or more.

Base Memory
Typically 640 KB. Also called conventional memory. The DOS operating system and conventional applications use this area.

Extended Memory
Above the 126-MB boundary. Early IBM personal computers could not use memory above 126 MB, but current PCs and their software can use extended memory.

4.4 Advanced CMOS Setup Menu

This screen (Figure 3) contains industry-standard options additional to the core PC AT BIOS. This section describes all fields offered by AMI Software in this screen. Some fields may vary from those in your Setup program. Your system board designer may omit or modify some fields.
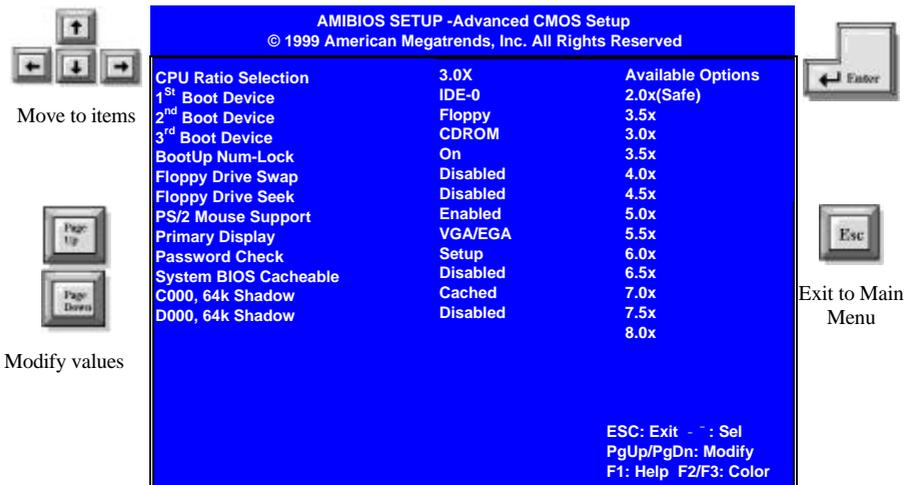
Figure 3: Advanced BIOS Features Setup Menu

4.4.1 CPU Ratio Selction

This option sets the CPU frequency ratio. The settings are 1:2, 1:4, 1:5, 2:5, 2:9, 2:11, 1:6, 1:8, 1:7, 2:13, 2:15, and 1:2A.

4.4.2 First Boot Device

This option sets the type of device for the first boot drives that the AMIBIOS attempts to boot from after AMIBIOS Post completes.

4.4.3 Second Boot Device

This option sets the type of device for the second boot drives that the AMIBIOS attempts to boot from after AMIBIOS Post completes.

4.4.4 Third Boot Device

This option sets the type of device for the third boot drives that the AMIBIOS attempts to

boot from after AMIBIOS Post completes.

4.4.5 Boot Up NumLock

Toggle between *On* or *off* to control the state of the NumLock key when the system boots. When toggled *on*, the numeric keypad generates numbers instead of controlling cursor operations.

4.4.6 Floppy Drive Swap

This field is effective only in systems with two floppy drives. Switch the floppy disk drives between being designated as A and B. Default is Disabled. Selecting Enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

4.4.7 Floppy Drive Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

4.4.8 PS/2 Mouse Support

Set this option to *Enabled* to enable AMIBIOS support for a PS/2-type mouse. Pins 2-3 of the PS/2 Mouse Selector jumper on the motherboard must be shorted together to enable PS/2 mouse support.

4.4.9 Primary Display

This option configures the type of monitor attached to the computer. The settings are *Mono*, *CGA40x25*, *CGA80x25*, *VGA/EGA* or *Absent*. The Optimal and Fail-Safe default settings are *VGA/EGA*.

4.4.10 Password Check

This option enables password checking every time the system boots or when you run AMIBIOS Setup. If *Always* is chosen, a user password prompt appears every time the computer is turned on. If *Setup* is chosen, the password prompt appears if AMIBIOS is executed. See the Advanced Setup chapter for instructions on changing a password. The Optimal and Fail-Safe defaults are *Setup.*

4.4.11 System BIOS Cacheable

When set to Enabled, the contents of the F0000h system memory segment can be read from or written to cache memory. The contents of this memory segment are always copied from the BIOS ROM to system RAM for faster execution. The settings are *Enabled* or *Disabled*. The Optimal default setting is *Enabled*. The Fail-Safe default setting is *Disabled*.

4.4.12 C000 Shadow (64K)

These options specify how the 64 KB of video ROM at C0000h is treated. The settings are:

Setting	Description
Disabled	The contents of the video ROM are not copied to RAM.
Enabled	The contents of the video ROM area from C0000h – C7FFFh are copied (shadowed) from ROM to RAM for faster execution.
Cached	The contents of the video ROM area from C0000h – C7FFFh are copied from ROM to RAM and can be written to or read from cache memory.

4.4.13 D000 Shadow (64K)

These options enable shadowing of the contents of the ROM area named in the option. The ROM area not used by ISA adapter cards is allocated to PCI adapter cards. The settings are:

Setting	Description
Disabled	The contents of the video ROM are not copied to RAM.
Cached	The contents of the video ROM area from C0000h – C7FFFh are copied from ROM to RAM and can be written to or read from cache memory.
Enabled	The contents of the video ROM area from C0000h – C7FFFh are copied (shadowed) from ROM to RAM for faster execution.

4.5 Advanced Chipset Setup Menu

```
          ↑                    AMIBIOS SETUP – Advanced Chipset  Setup                  ↵ Enter
      ←   ↓   →              © 1999 American Megatrends, Inc. All Rights Reserved
                      USB Keyboard Legacy Support     Disabled      Availabe Options
   Move to items      Display Cache Window Size       64MB            Disabled
                      Display Cache Speed             133 MHz         Enabled
                      Primary IDE Cable Type          Auto Detect
                      Secondary IDE Cable Type        Auto Detect


        Page
         Up                                                                              Esc


        Page                                                                        Exit to Main
        Down                                                                           Menu

   Modify values

                                                      ESC: Exit  - ¯ : Sel
                                                      PgUp/PgDn: Modify
                                                      F1: Help  F2/F3: Color
```

Figure 4: Advanced Chipset Features Setup Menu

4.5.1 USB Keyboard Legacy Support

Set this option to *Enabled* to enable support for older keyboards device.

4.5.2 Display Cache Window Size

This option specifies the amount of cache available for the graphics local memory window. The settings are *32MB* or *64MB*. The Optimal and Fail-Safe default Settings are *32MB*.

4.5.3 Display Cache Speed

This option shows the speed of cache as 133MHz for IN810ES.

4.5.4 Primary IDE Cable Type

There are two IDE cable types for Primary IDE, ATA66 and ATA33. It is recommend to use the default settting "Auto Detect".

4.5.5 Secondary IDE Cable Type

There are two IDE cable types for Secondary IDE, ATA66 and ATA33. It is recommend to use the default settting "Auto Detect".

4.6 Power Management Setup Menu

Move to items

Modify values

```
                AMIBIOS SETUP – Power Management  Setup
              © 1999 American Megatrends, Inc. All Rights Reserved

Power Management/APM            Enabled        Availabe Options
Video Power Down Mode          Suspend
Hard Disk Power Down Mode      Suspend
Suspend Time Out(Minute)       Disabled
Power Button Function          Instant Off
Restore on AC/Power Loss       Power Off
Resume On Ring Header          Disabled
Resume On LAN Header           Disabled
PCI Slot PME Function Support  Disabled
Resume On RTC Alarm            Disabled
RTC Alarm Date                 15
RTC Alarm Hour                 12
RTC Alarm Minute               30
RTC Alarm Second               30

                                              ESC: Exit  - ¯ : Sel
                                              PgUp/PgDn: Modify
                                              F1: Help  F2/F3: Color
```

Exit to Main Menu

Figure 6: Power Management Setup Menu

4.61 Power Management/APM

Set this option to *Enabled* to invoke the chipset power management and APM (Advanced Power Management) features.

4.6.2 Video Power Down Mode

This option specifies the power state that the video subsystem enters when AMIBIOS places it in a power saving state after the specified period of display inactivity has expired.

4.6.3 Hard Disk Power Down Mode

This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired.

4.6.4 Suspend Time Out (Minute)

This option specifies the length of a period of system inactivity while in Standby state. When this length of time expires, the computer enters Suspend power state.

4.6.5 Power Button Function

When set to *Instant Off*, the ATX switch can be used as a normal system power-off button when pressed for less than 4 seconds. *Delay 4 Sec* allows the button to have a dual function where pressing less than 4 seconds will place the system in sleep mode. Regardless of the setting, holding the ATX switch for more than 4 seconds will power off the system.

4.6.7 Restore on AC/Power Loss

This option is used to reboot system after power has been interrupted. *Power Off* leaves the system off and *Last State* reboots the system.

4.6.8 Resume On Ring Header

This option allows either settings of *Enabled* or *Disabled* for powering up the computer when the modem receives a call while the computer is soft-off mode.

Note: The computer can not receive or transmit data until the computer and applications are fully running, thus connection can not be made on the first try. Turning an external modem off and then back on while the computer is off causes an initialization string that will also cause the system to power on.

4.6.9 Resume On LAN Header

Wake-On-Lane allows your computer to be booted from another computer via a network by sending a wake-up frame or signal.

4.6.10 PCI Slot PME Function Support

This option allows you to enable the PME resume. Set it to *Enabled* to invoke the PME resume.

4.6.11 Resume On RTC Alarm

This option allows you to enable the Real Time Clock (RTC) resume. Set it to *Enabled* to invoke the RTC Alarm.

4.6.12 RTC Alarm Date, Hour, Minute, Second

This allows you to have an unattended or automatic power up of your system. You may configure your system to power up at a certain time in a day by selecting or on the first through the end of one month by selecting the RTC Alarm Date.

4.7 PCI Plug and Play Setup Menu

```
           AMIBIOS SETUP – PCI Plug and Play Setup
           © 1999 American Megatrends, Inc. All Rights Reserved

Plug and Play Aware O/S        Yes          Availabe Options
Clear NVRAM                    No               No
Primary Graphics Adapter       Add-on VGA       Yes
PCI VGA Palette Snoop          Disabled
Allocate IRQ to PCI VGA        Yes
DAM Channel 0                  PnP
DAM Channel 1                  PnP
DAM Channel 3                  PnP
DAM Channel 5                  PnP
DAM Channel 6                  PnP
DAM Channel 7                  PnP
IRQ3                           PCI/PnP
IRQ4                           PCI/PnP
IRQ5                           PCI/PnP
IRQ7                           PCI/PnP
IRQ9                           PCI/PnP
IRQ10                          PCI/PnP
IRQ11                          PCI/PnP       ESC: Exit  - ‾ : Sel
IRQ14                          PCI/PnP       PgUp/PgDn: Modify
IRQ15                          PCI/PnP       F1: Help  F2/F3: Color
```

Move to items

Modify values

Enter

Esc

Exit to Main Menu

Figure 7: PCI/ Plug and Play Configuration Setup Menu

4.7.1 Plug and Play Aware O/S

Set this option to *Yes* to inform AMIBIOS that the operating system can handle plug and Play (PnP) devices.

4.7.2 Clear NVRAM

Select *Yes* to reset Extended System Configuration Data(ESCD) when you exit Setup, if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot. Normally, leave this setting *No*.

4.7.3 Primary Graphics Adapter

Leave on default setting(*OnBoard VGA*) if you want to use the onboard VGA. As in *Add-on VGA* setting, all display cache configuration will not be available.

4.7.4 PCI VGA Palette Snoop

When this option is set to *Enabled,* multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. Bit 5 of the command register in the PCI device configuration space is the VGA Palette Snoop bit (0 is disabled). For example: if there are two VGA devices in the computer (one PCI and one ISA) and the VGA Palette Snoop Bit is:

VGA Palette Snoop Bit	Action
Disabled	Data read and written by the CPU is only directed to the PCI VGA device's palette registers.
Enabled	Data read and written by the CPU is directed to the both the PCI VGA device's palette registers and the ISA VGA device palette registers, permitting the palette registers of both devices to be identical.

This option must be set to *Enabled* if any ISA adapter card installed in the system requires VGA palette snooping.

4.7.5 Allocate IRQ to PCI VGA

This option allows you to reserve IRQ for PCI VGA device.

4.7. 6 DMA Channel 0/1/3/5/6/7

These options allow you to specify the bus type used by each DMA channel.

4.7.7 IRQ 3 to 15

These options specify the bus that the specified IRQ line is used on. These options allow you to reserve IRQs for legacy ISA adapter cards. These options determine if AMIBIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the pool, the end user can use these options to reserve the IRQ by assigning an *ISA/EISA* setting to it. Onboard I/O is configured by AMIBIOS. All IRQs used by onboard I/O are configured as *PCI/PnP*. **IRQ12** only appears if the **Mouse Support** option in Advanced Setup is set to *Disabled.* IRQ14 and 15 will not be available if the onboard PCI IDE is enabled. If all IRQs are set to ISA/EISA and IRQ14 and 15 are allocated to the onboard PCI IDE, IRQ9 will still be available for PCI and PnP devices, because at least one IRQ must be available for PCI and PnP devices.
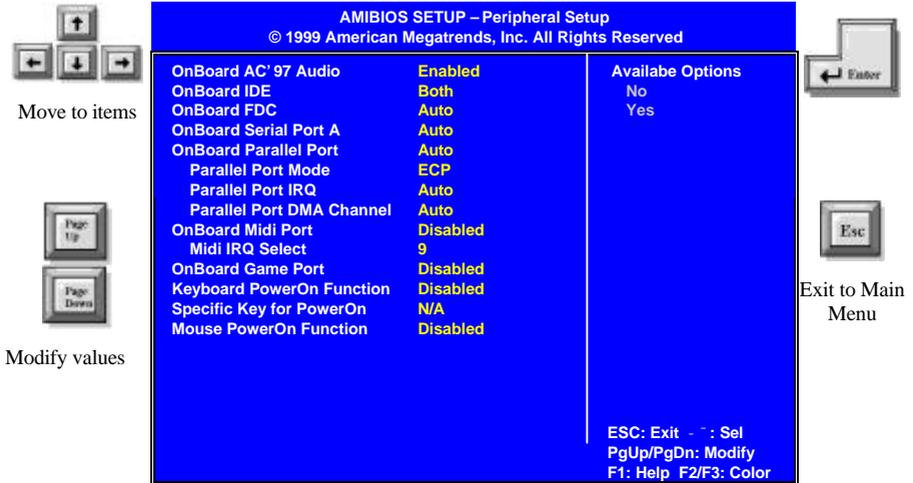
4.8 Peripheral Setup

Move to items

Modify values

Exit to Main Menu

```
              AMIBIOS SETUP – Peripheral Setup
        © 1999 American Megatrends, Inc. All Rights Reserved

OnBoard AC' 97 Audio        Enabled          Availabe Options
OnBoard IDE                 Both                 No
OnBoard FDC                 Auto                 Yes
OnBoard Serial Port A       Auto
OnBoard Parallel Port       Auto
   Parallel Port Mode       ECP
   Parallel Port IRQ        Auto
   Parallel Port DMA Channel Auto
OnBoard Midi Port           Disabled
   Midi IRQ Select          9
OnBoard Game Port           Disabled
Keyboard PowerOn Function   Disabled
Specific Key for PowerOn    N/A
Mouse PowerOn Function      Disabled




                                         ESC: Exit  - ⁻: Sel
                                         PgUp/PgDn: Modify
                                         F1: Help  F2/F3: Color
```

Figure 5: Integrated Peripherals Setup Menu

4.8.1 OnBoard AC′97 Audio

This option allows you to enable the onboard Audio control.

4.8.2 OnBoard IDE

This option allows you to enable the primary IDE channel, secondary IDE channel, both or disabled them.

4.8.3 OnBoard FDC

This option allows you to enable the floppy drive controller on the motherboard. Three options for your choice: *Auto(default)*, *Disabled*, *Enabled*.

4.8.4 OnBoard Serial PortA

This option specifies the base I/O port address of serial port A on the motherboard. The default setting is *Auto*.

4.8.5 OnBoard Parallel Port

This option specifies the base I/O port address of parallel port on the motherboard. The default setting is *Auto*.

4.8.6 Parallel Port Mode

This option specifies the parallel port mode. The Optimal default setting is Normal. The Fail-Safe default setting is Disabled. The settings are:

Settings	Description
Normal	Default setting.
EPP	The parallel port can be used with devices that adhere to the Enhanced Parallel Port(EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the hose device.
ECP	The parallel port can be used with devices that adhere to the Extended Capabilities Port(ECP) specification. ECP uses the DMA protocol to achieve data transfer rates up to 2.5 Megabits per second. ECP provides symmetric bidirectional communication.

4.8.7 Parallel Port IRQ

This option specifies the IRQ used by the parallel port.

4.8.8 Parallel Port DMA Channel

This option is only available if the setting for the Parallel Port Mode option is *ECP*. It sets the DMA channel used by the parallel port.

4.8.9 OnBoard Midi Port

This option sets the address of the onboard MIDI connector.

4.8.10 Midi IRQ Select

This option specifies the IRQ for MIDI port. It is not available if you select Disabled in OnBoard Midi Port.

4.8.11 OnBoard Game Port

This option specifies the address of the onboard game port connector.

4.8.12 Keyboard PowerOn Function

This option allows you to use PS/2 keyboard by pressing any key or specific key.

4.8.13 Specific Key for PowerOn

This option allows you to power on your computer by using a specific key on your keyboard.

4.8.14 Mouse PowerOn Function

This option allows you to power on your computer by using the mouse left or right button.

4.9 Hardware Monitor Setup

Move to items

Modify values

| AMIBIOS SETUP – Hardware Monitor Setup |
| © 1999 American Megatrends, Inc. All Rights Reserved |

```
-==System Hardware Monitor  ==-              Availabe Options
Current System Temperature  32°C/89°F
Fan 1 Speed                 3792 RPM
Fan 2 Speed                 0 RPM
CPU VID                     2.00V
Vcore                       2.032 V
Vtt                         1.536 V
Vio                         3.312 V
+  5.000V                   5.085 V
+12.000V                    11.802 V
- 12.000V                   –11.907 V
-  5.000V                   N/A
Battery                     3.280 V
+  5  SB                    4.921 V



                                           ESC: Exit  -  ¯ : Sel
                                           PgUp/PgDn: Modify
                                           F1: Help  F2/F3: Color
```

Enter

Esc

Exit to Main Menu

4.9.1 Current System Temperature

This field shows the current system temperature, if your computer contains a monitoring system.

4.9.2 Fan 1 Speed

The onboard hardware monitor can detect the chassis fan speed in rotations pre minute (PRM). The presence of the fan will be detected automatically. This field shows the current speed of up to three CPU fans, if your computer contains a monitoring system.

4.9.3 Fan 2 Speed

The onboard hardware monitor can detect the chassis fan speed in rotations pre minute (PRM). The presence of the fan will be detected automatically. This field shows the current speed of fan 2.

4.9.4 CPU VID

The onboard hardware monitor can detect the voltage output by the onboard voltage regulators. This field shows the voltage for CPU.

4.10 Auto-Detection IDE HDD

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

4.11 Set User Password

When you select this function, a message appears at the center of the screen:

ENTER PASSWORD:

Type the password, up to eight characters, and press Enter. Typing a password clears any previously entered password from CMOS memory. Now the message changes:

CONFIRM PASSWARD:

Again, type the password and press Enter. To abort the process at any time, press Esc.

In the *Security Option* item in the **BIOS Features** Setup screen select *System or Setup*:

➢   System: Enter a password each time the system boots and whenever you enter Setup.

➢   Setup: Enter a password whenever you enter Setup.

NOTE: To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.

4.12 Set Supervisor Password

The BIOS Setup will not be accessible unless you enter the correct password. Select this function and press "Enter", the screen will display a start symbol instead of the characters entered. After the new password is entered, type the new password as prompted and press "Enter" again.

If the password confirmation is incorrect, an error message appears. If the new password is typed correctly, press "ESC". The password is stored in NVRAM after AMIBIOS completes its cycle. Next time, when you boot the system, a password prompt will appear if this function is enabled.

4.13 Auto Configuration with Optimal Settings

The chipset defaults are settings which provide for maximum system performance. While AMI has designed the custom BIOS to maximize performance, the manufacturer has the right to change these defaults to meet their needs.

4.14 Auto Configuration with Fail Safe Settings

AMIBIOS will automatically set all AMIBIOS Setup options to a complete set of default settings when you choose this option. The Fail-Safe settings are designed for maximum system stability, but not maximum performance. Choose the Fail-Safe AMIBIOS Setup options if your computer is experiencing system configuration problems.

4.15 Save Settings and Exit

This feature allows the changes to be made to the CMOS setup to be saved. The system will resume booting after a successful save.

4.16 Exit Without Saving

Abandon all CMOS value change without saving.