

Advanced Socket 370  
Motherboard

User's Manual

**IN810EP**

USER'S MANUAL

# DECLARATION

## DECLARATION

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# COMPLIANCE & CERTIFICATE

## 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:



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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 device 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

### 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:

**T**ouch 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**.

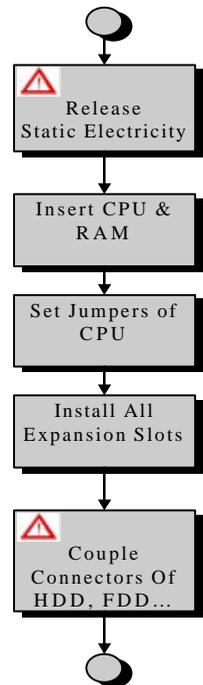
Install the CPU by correctly aligning the CPU with the socket370 as noted in the motherboard diagram. Once aligned, press down on the CPU gently but firmly and lock it. Next, install the 3.3 volt unbuffered SDRAM into the 168 pin DIMMs. See **Sec. 3.2 & Sec. 3.3**.

Set CPU speed in according to **Sec.3.2**.

After completing the above steps, install any expansion Cards( PCI, AMR) into riser card and have the riser card installed firmly into the slot for riser card on board. See **Sec. 3.4**.

**P**lug in all cables included in the package except for the power cord. Please see **Sec. 3.5**.

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**.



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# 1. INTRODUCTION

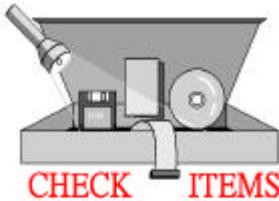
## 1 INTRODUCTION



### 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 Pentium II PCI/ISA/AGP motherboard. Just 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.



### Check Your Device Items

The standard package should contain following items marked with a “✓”. If you find any these items missing or damaged. Please contact your retailer.

- ✓The IN810 motherboard
- ✓1 IDE ribbon cable
- ✓1 floppy ribbon cable
- ✓1 CD with drivers of Intel810 VGA and AC'97 Audio codec.

## **2. FEATURES**

# **2 FEATURES**

**Photo Of The Motherboard**

## 2. FEATURES



### Features Of The Motherboard

This product is based on the “Micro ATX” form factor. It features the advanced Multimedia function and provides support for business PC maker. This motherboard incorporates Intel 810-DV100 chipset. Providing features such as integrated 2D/3D AGP VGA controller, Ultra DMA 33/66 IDE Interface, ACPI power management, and PCI 3D sound support.

#### Processor (+Cache)

- Single Intel Socket-370 mechanism for Intel Celeron Processor.
- Support 66/100 MHz FSB

#### Chipset

- Intel 810 Chipset includes GMCH0 (Memory Controller Hub), ICH(I/O Controller Hub) and FWH(Firm Ware Hub).
- Winbond W83627F-AW super I/O Controller.
- Software Audio and Hardware AC'97 V2.1 CODEC.

#### System Memory

- Two 168-pin DIMM sockets.
- Minimum 8MB up to maximum 512 MB Memory Capacity.
- 100MHz SDRAM DIMM module.

#### Graphics Support

- Integrated H/W 3D AGP Graphic controller (2x mode)
- Supports AGP(Accelerated Graphics Port) for increased performance of Graphic Displays, special 3D operations in multimedia, and higher speed to satisfy the users optical vision.
- Supports 3D hyper pipelined architecture, parallel data processing and compression, precise pixel interpolation, full 2D hardware acceleration and motion video compression.

#### PCI Bus Master IDE Controller (I/O controller Hub)

- Two PCI Bus Master IDE Ports(Up to 4 IDE Devices) for 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.
- Support Ultra DMA 33/66 MB/sec (ATA33/ATA66)
- Support PIO Mode3,4, run in 17MB/sec. (Max)

#### Integrated I/O

- LPC revision 1.0 super I/O controller.
- 1 Floppy Port (up to 2.88 MB), 1 Parallel Port (ECP/EPP).
- 2 Serial Ports (16C550 Fast UART Compatible).
- 1 IrDA TX/RX Port. (option, shared with COM2)
- 1 PS/2 Mouse Connector, 1 PS/2 Keyboard connector.

## 2. FEATURES

- 1 MIDI/Game port
- 2 Standard USB Connector (48MHz).

### **System BIOS**

- 4M-bit Flash device in Firmware Hub(FWH).
- A unique Roandom Number Generatior in FWH to enable enhanced platform security.
- PC97 and PnP compatible. ACPI, APM and DMI support.
- Bootable from CD-ROM supported.

### **Green Features**

- Power Management: APM 1.2.
- Additionally, with support for ACPI (Advanced Configuration and Power Interface) feature and On-Now, your system will become more wise in management of power.

### **Sound System**

- Software Audio and Hardware AC'97 V2.1 codec compliant.
- 3 Audio Phone Jacks (Line out, Line in, Mic. In)
- 1 MIDI/Game port, 1 CD in, 1 Modem in. 1 Aux in.

### **Additional features**

- Wake-On-LAN and Wake-on-Ring header
- Keyboard/Mouse wake up with ICH.
- Modem Ring up function
- Front USB header.
- Hardware Monitor Capability (optional)

### **Expansion Slots**

- 1 AMR, 3 PCI expansion slots.

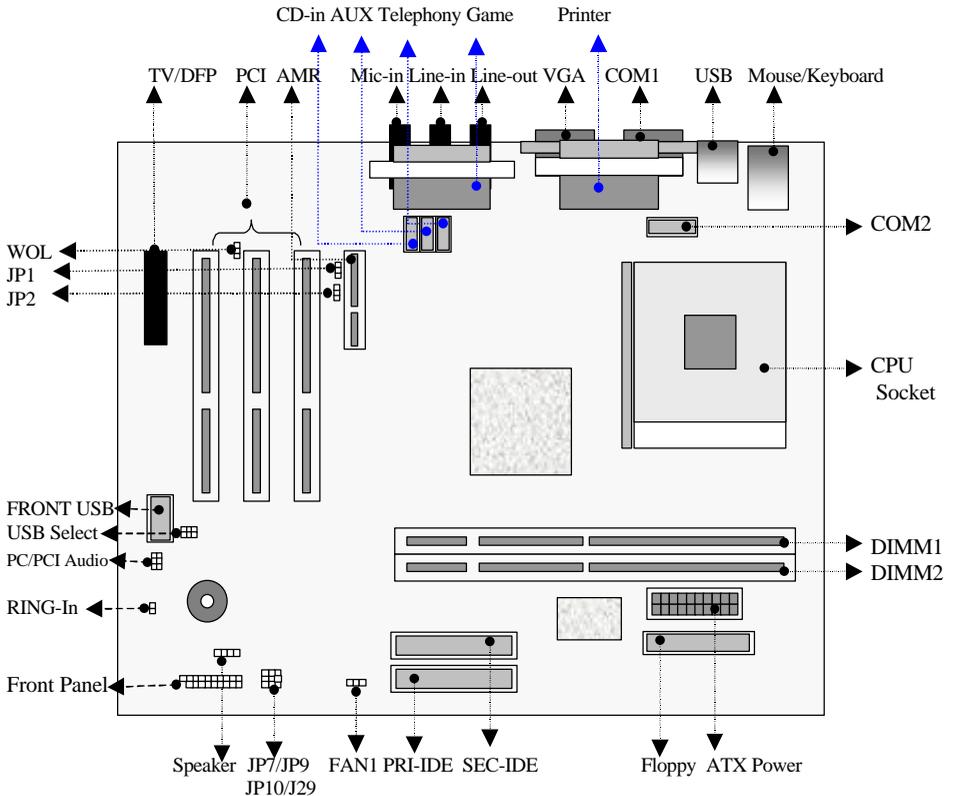
### **Mechanical**

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

# 3.INSTALLATION

## 3 INSTALLATION

### Motherboard Layout & Main Parts



# 3.INSTALLATION

## Significant Parts List

### Front Panel Connectors

IrDA	Sec. 3.5.6
Reset Switch	Sec. 3.5.6
HDD LED	Sec. 3.5.6
Sleep Switch	Sec. 3.5.6
Power Switch	Sec. 3.5.6
Power LED	Sec. 3.5.6

### Back Panel Connectors

PS/2-style keyboard and mouse connectors	Sec. 3.5.7
USB connectors	Sec. 3.5.7
One parallel port	Sec. 3.5.7
One VGA port	Sec. 3.5.7
One serials port	Sec. 3.5.7
One Game/MIDI Port	Sec. 3.5.7
Line-out	Sec. 3.5.7
Line-in	Sec. 3.5.7
MIC-in	Sec. 3.5.7

### Expansion Slots/sockets

PGA370 CPU Socket	Sec. 3.2
DIMM Sockets	Sec. 3.3
PCI/AMR Slots	Sec. 3.4

### Power/IDE/FDD Connectors

IDE connectors	Sec. 3.5.1
Power connector	Sec. 3.5.4
FDD connector	Sec. 3.5.3
TV/DFP Connector	Sec. 3.5.5

### Additional Connectors

Ring In	
OnBoard Codec	Sec. 3.5.8
Front USB Header	Sec. 3.5.8
WOL Connector	Sec. 3.5.8
CPU Fan	Sec. 3.5.8
Telephony Header	Sec. 3.5.8
CD-IN	Sec. 3.5.8
PC/PCI Audio Header	Sec. 3.5.8
AUX-IN	Sec. 3.5.8

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SB-LINK

Sec. 3.5.8

UNLock

Sec. 3.5.8

CLR PWD/CMOS

Sec. 3.5.8

SAFE Mode

Sec. 3.5.8

# 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. When handling the motherboard or an adapter card avoids touching its components. Handle the motherboard and adapter cards either by the edges or by the adapter card case-mounting bracket.

### Misplaced Jumper Damage:

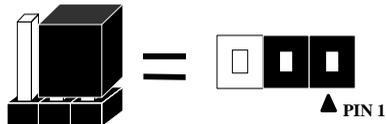
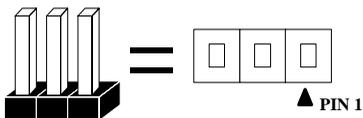


There are critical headers used for connectors or power sources. These are clearly marked separately from the jumpers listed in Motherboard Layout. Incorrectly setting jumpers and connectors may lead to damage to your motherboard. Please pay special attention not to connect these headers in wrong directions.

# 3.INSTALLATION

## 3.1 Slots And Connectors

List in sec.3.2.2.



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

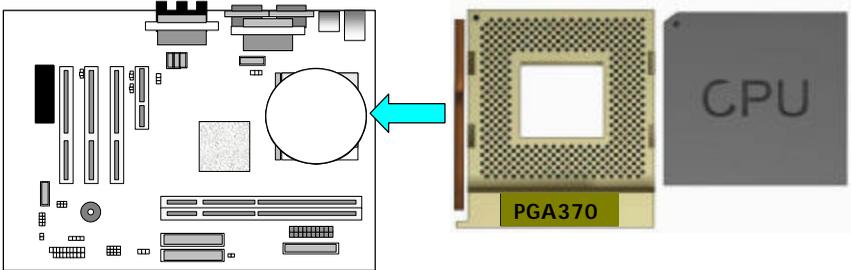
### Slots/Connectors List

- |                         |                                  |
|-------------------------|----------------------------------|
| J1: VGA                 | J2: Keyboard/Mouse               |
| J3: COM1                | J4: USB0/USB1                    |
| J5: Game / MIDI Port    | J6: Line-in, Line-out and Mic-in |
| J7: Printer Port        | J8: COM 2 Header                 |
| J9: CD-In               | J10: AUX-In                      |
| J11: Telephony          | J12: AMR                         |
| J13: TV Out/DFP         | J15: PCI 3                       |
| J16: PCI 2              | J17: PCI 1                       |
| J18: CPU Fan            | J19: WOL (Wake On LAN)           |
| J20: Front USB Header   | J21: PC/PCI Audio Header         |
| J22: ATX Power          | J23: Floppy                      |
| J24: Speaker            | J25: IRDA Header                 |
| J26: Secondary IDE      | J27: Ring-In                     |
| J28: Front Panel Header | J29: Chassis Intrusion Header    |
| J31: Primary IDE        | J33: Power LED                   |
- 
- |                          |
|--------------------------|
| JP1: AMR Select Jumper   |
| JP2: Codec select Jumper |
| JP4: USB select Jumper   |
| JP5: USB select Jumper   |
| JP7: UNLock              |
| JP9: CLR PWD/CMOS        |
| JP10: SAFE Mode          |

# 3.INSTALLATION

## 3.2 CPU (Central Processing Unit)

This motherboard support a PGA 370 Intel Celeron PGA family processor.  
To complete CPU installation, please install CPU to socket firmly and arrange jumper settings carefully, presented in sec. 3.2.1 and 3.2.2.

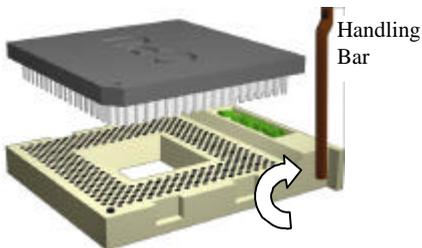


### 3.2.1 Install CPU

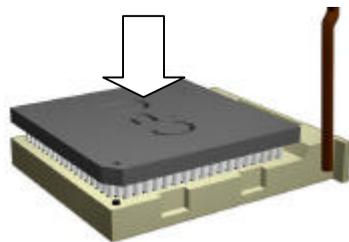
Please follow the below steps to install your CPU, and configure the types and speed in accordingly to the Processor Jumper Setting List.

Step 1: Pull the handling bar of the socket upward to the other end to loosen the socket's openings.

Step 2: Place the CPU on the middle of the socket, orienting its beveled corner to line up with the socket's beveled corner. Make sure the pins of the CPU fit evenly to the socket openings.



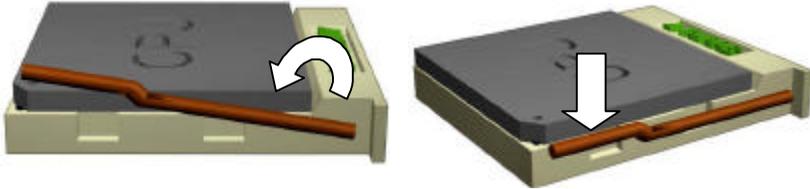
Step 1: Pull handling bar



Step 2: Place CPU

# 3.INSTALLATION

Step 3: Press the handling bar downward to fasten the CPU to the socket.



Step 3: Fasten the CPU to socket.

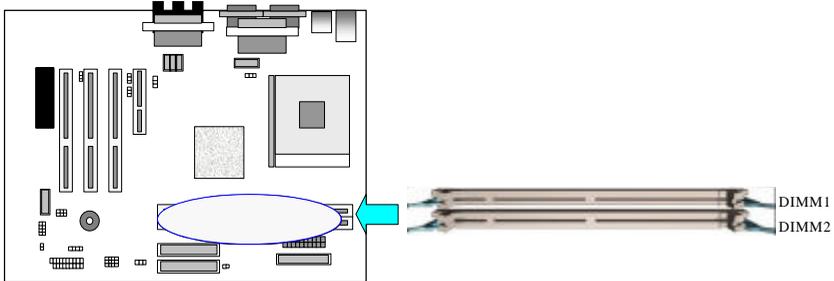
Warning : It is strongly recommended that a heatsink and CPU cooling fan be used to prevent the CPU from overheating. Applying a thermal of jelly between the CPU and the heatsink/fan will further cool the CPU.

# 3.INSTALLATION

## 3.3 System Memory (DRAM)

### 3.3.1 DIMM (Dual Inline Memory Module)

The IN810 features two 168-pin DIMM sockets. You can configure the system memory size from 8MB to 256MB in a variety of ways by using different combinations of the two 168-pin DIMM. Note that you must use only PC/100 compliant DIMMs.

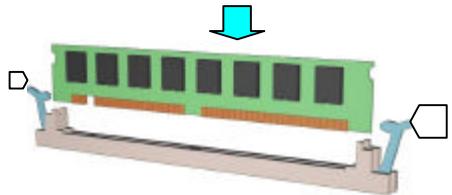


### 3.3.2 Installation Procedure

**Step1:** Pin 1 of the DIMM must match 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 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.

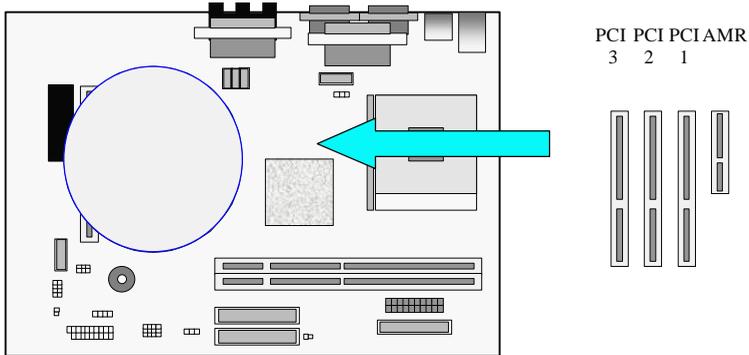


Be careful not to misfit the DIMM Module into DIMM sockets in wrong direction. This module can be inserted into DIMM socket only one way. Please note the “▲” for pin 1 location. To release the memory module, push both latches down and carefully rock the module forward and backward while slowly lifting it upward.



# 3.INSTALLATION

## 3.4 Expansion Slots



This motherboard contains 4 expansion slots onboard. Three 32-bit PCI expansion slots and one AMR slot as shown above.

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

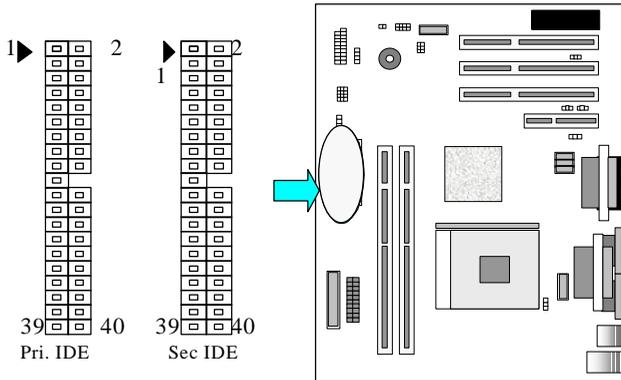
The Audio Modem Riser (AMR) connector which supports an industry-standard riser board and interface for both audio and modem, while also addressing specific function limitations of previous audio and modem subsystem. (AMR interface specification Rev. 1.01 compliant)

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

# 3.INSTALLATION

## 3.5 Connectors

This IN810 motherboard contains IDE, floppy, power input, front panel, back panel and additional connectors.



### 3.5.1 Primary IDE Connector (J31, 39-pin block)

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.

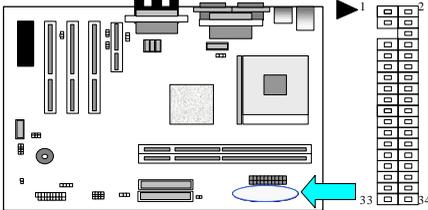
### 3.5.2 Secondary IDE Connector (J26, 39-pin block)

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 instructed in the device's manual.

**WARNING:** When you connect a ribbon cable to these ports, you must orient the cable connector so that the PIN 1 edge of the cable is at the PIN 1 edge of the onboard connector.

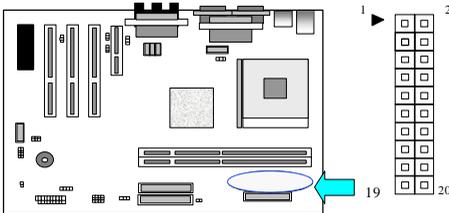
# 3.INSTALLATION

## 3.5.3 Floppy Drive Connector (J23, 33-pin block)



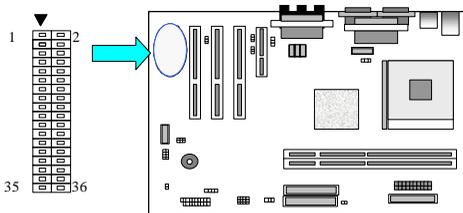
The FDC sub-system can control three types of floppy drives (1.2, 1.44 and 2.88MB) or compatible tape drives. The connection to the floppy drive is via a header. The floppy disk interface includes 48mA drivers and inputs on the drive interface.

## 3.5.4 Power Input Connector (J22, 20-pin block)



This connector supports a 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.

## 3.5.5 TV-Out/DFP connector (J13, 36-pin slot)

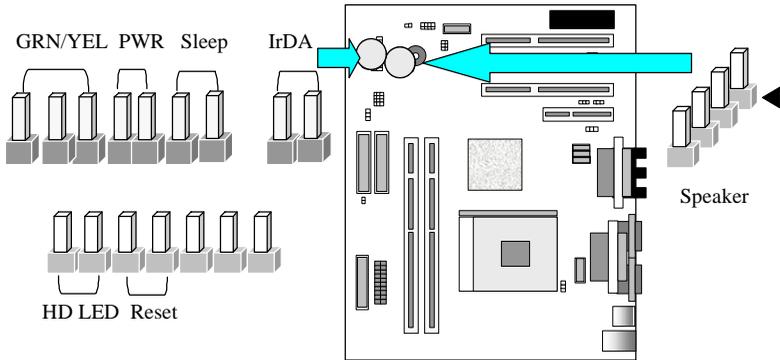


This connector provides an interface to support both the TV out function and the Digital Flat Panel (DFP) capability. The riser card also contains the connectors to allow the interconnection with a standard TV and with a DFP display unit.

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## 3.5.6 Front Panel connectors (J28 20-pin header)

Front Panel includes headers for the following six I/O connectors:  
Power Switch, Power LED, Speaker, Reset, Sleep and HDD LED.



### Infrared (IrDA) connector (4-pin)

The IN810 offers an IrDA infrared header that supports third party infrared modules. The case must reserve space for the IR module if you want to use the IrDA function. This option supports wireless transmission and reception of infrared data. The module mounts in a small opening on the system case that supports this feature. The efficient distance is 100cm and the transfer rate is 115,200 bits/sec.

### 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 IN810 supports one straight 4-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

# 3.INSTALLATION

(standby) mode in one of the following ways:

- ◆ Optional front panel sleep/resume button
- ◆ Prolonged system inactivity using the BIOS inactivity timer feature (Section 4.5)

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 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 than 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)**

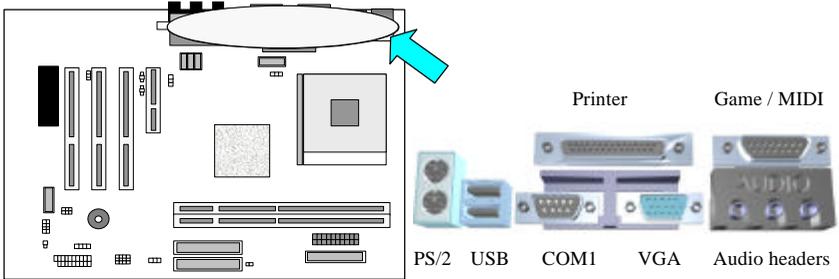
This header can be connected to a LED that will light when the computer is powered on.

## **Speaker Connector (4-pin)**

It is used to drive a chassis-mounted speaker if desired.

# 3.INSTALLATION

## 3.5.7 Back Panel Connectors



### PS/2 Keyboard and Mouse Ports (J2)

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



### Universal Serial Bus (USB) Ports (J4)

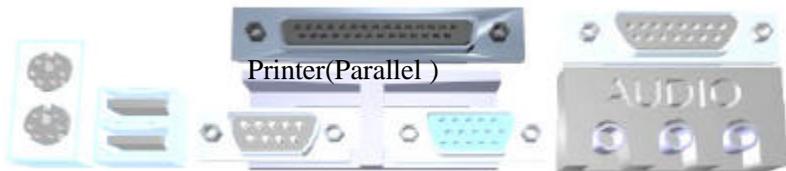
The motherboard has two USB connectors. USB devices provide a more convenient operating environment and improve data transferring capacity. True Plug & Play, this new bus technology will support over 127 different peripherals through a Hub.



# 3.INSTALLATION

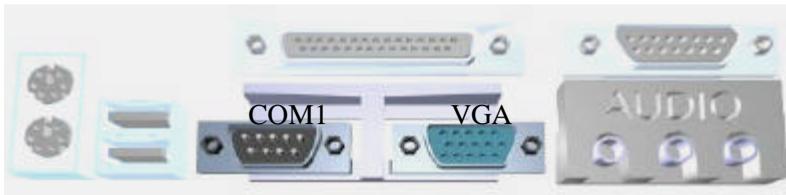
## Parallel Port (Printer, J7)

The IN810 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.



## Serial Port/VGA Port (COM1, J3/ VGA, J1)

The motherboard has two serial ports (one on rear 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.

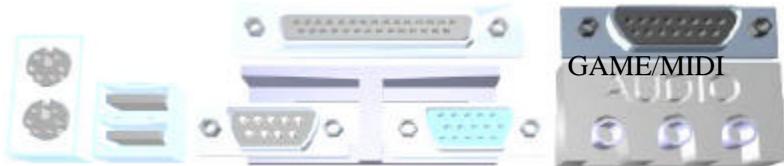


This product integrate the AGP function via a VGA port beside the COM1. The Accelerated Graphics Port (AGP or A.G.P.) is a high performance interconnect targeted at 3D graphical display applications.

# 3.INSTALLATION

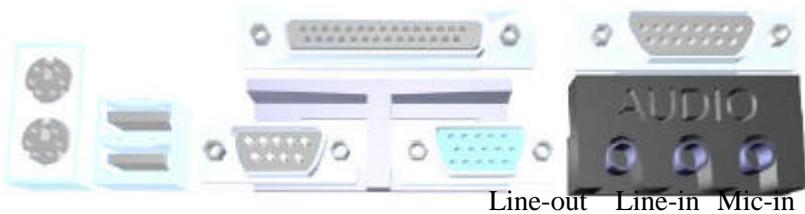
## GAME / MIDI Port (J5)

The IN810 integrate a Game/MIDI port. This port can let you plug a joystick or MIDI device.



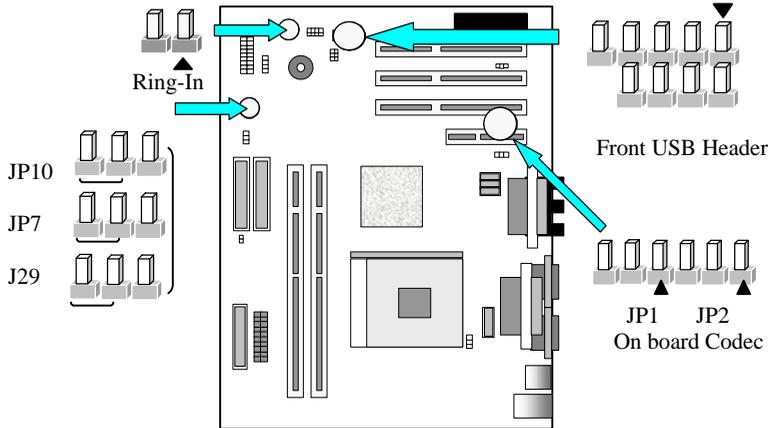
## Audio Port ( Line-in, Line-out, MIC-in) (J6)

The IN810 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.



# 3.INSTALLATION

## 3.5.8 Additional Connectors



### Ring In (J27, 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.

### On board Codec (JP1, 2-pin & JP2, 3-pin)

On board codec	Enable	Disable
JP1		
JP2		

### Front USB Header and Jumper (JP4&5, 6-pin)

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

# 3.INSTALLATION

## USB Select Jumper

USB Select	Front USB	Back USB
JP4		
JP5		

### **ON Unlock (JP7, 2-pin)**

This Jumper for Flash BIOS. When you need flash BIOS will installed this Jumper.

### **CLR Power/CMOS (JP9, 3-pin)**

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

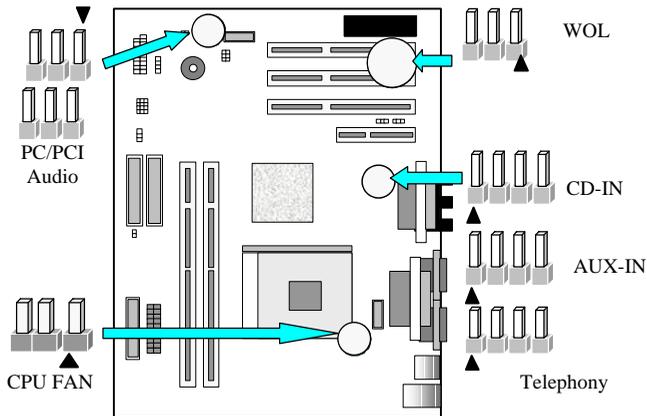
### **SAFE Modem (JP10, 2-pin)**

Usually socket 370 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 socket 370 processors, exceeding the specified multiple is possible through BIOS setup. Exceeding the specified multiple may result in hanging during bootup. If this occurs, enable Sage Mode to force a multiple of 2 in order to enter BIOS setup to correct the problem.

### **Chassis Intrusion (J29, 2-pin)**

This lead 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.

# 3.INSTALLATION



## **WOL (Wake On LAN ) (J19, 3-pin)**

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  $5V \pm 5\%$  at 720mA.

## **CPU Fan (J18, 3-pin)**

Your Pentium Cartridge may have an attached heatsink and Fan; this connector is for the CPU Fan.

## **Telephony Header (J11, 4-pin)**

A 1x4 pin ATAPI style connector (J2F1) is available for connecting the monaural audio signals of an internal telephony device to the audio subsystem. A monaural audio-in

## 3.INSTALLATION

and audio-out signal interface is necessary for telephony applications such as speakerphones, fax modems, and answering machines..

### **CD-IN Header (J9, 4-pin, Black)**

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

### **PC/PCI Audio Header (J21, 6-pin)**

A connector provides Sound Blaster compatibility for some legacy PCI Audio Card.

### **AUX-IN Header (J10, 4-pin, White)**

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

### **SB-Link**

The mainboard provides a distributed DMA connector for PCI sound card with this feature.

# 3.INSTALLATION

## Ready To Turn On Power

### ◆ Check Again



1. Is the CPU installed exactly and firmly into socket (Sec. 3.2)?
2. Are all the DRAM modules installed properly (Sec. 3.3)?
3. Did you insert expansion card (VGA, Sound.... etc.) already (Sec. 3.4)?
4. Are you sure that all the connectors (described in Sec 3.5) have been connected to their variable devices (Sec. 3.5)?

### ◆ Yes, I have checked and assured the above steps!



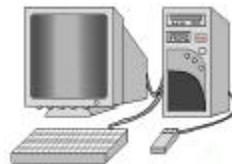
Now get ready to turn on your device by the following steps.

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 system VGA port, and the monitor power cord to power outlet.
6. Now turn on 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 <Delete> button on the keyboard to enter BIOS Setup. Next, follow the instructions in the next chapter, **BIOS**



# 3.INSTALLATION

**SETUP.**

# 3.INSTALLATION

## 4. BIOS SETUP

### 4 BIOS SETUP



The IN810 motherboard uses AMI BIOS, 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 How To Enter 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 <F1> 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 F1 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, **F1** to enter SETUP

# 4. BIOS SETUP

## 4.1.1 Setup Keys

These keys help you navigate in Setup:

<↑> , <↓>	Move to previous / next item Change Values
<←> , <→>	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> / <3>	Change color from total 16 colors. F2 to select Shift-F2 color forward, Shift-F2 to select color backward
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F7>	Load the Setup default
<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 AMI BIOS supports an override to the CMOS settings that resets your system to its default configuration.

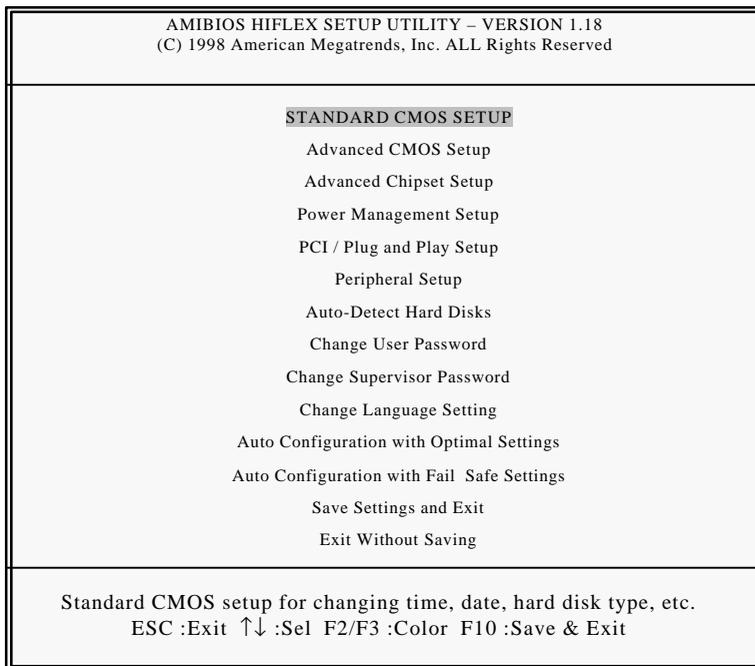
The best advice is to alter only settings that you thoroughly understand. In particular, do not change settings in the Chipset screen without a good reason. Your system manufacturer for the best performance and reliability has carefully chosen the Chipset defaults. Even a seemingly small change to the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

# 4. BIOS SETUP

## 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.

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



**Figure 1: Main Menu**

## 4. BIOS SETUP

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.
Peripherals Setup	I/O subsystems that depend on the integrated peripherals controller in your system.
Auto - Detection IDE HDD	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.
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 & Exit Setup	Save settings in nonvolatile CMOS RAM and exit Setup.
Exit Without Save	Abandon all changes and exit Setup.

# 4. BIOS SETUP

## 4.3 Standard CMOS Setup Menu

In the Standard CMOS Menu (Figure2) 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.

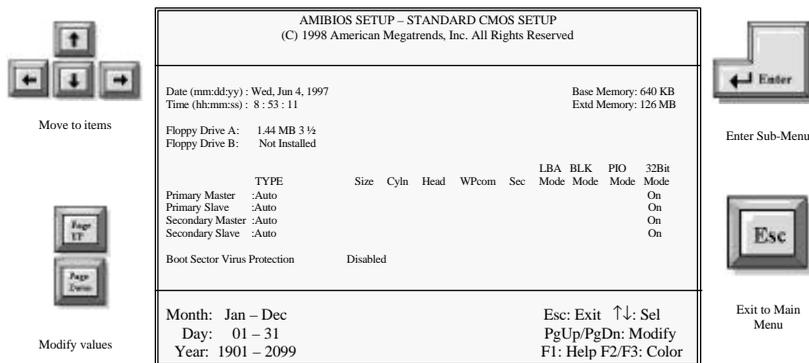


Figure 2: Standard CMOS Setup

### 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.

### 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.

### 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.*

## 4. BIOS SETUP

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 DETECTION 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.
- **Cyls:** Number of cylinders
- **Head:** Number of heads
- **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. BIOS SETUP

### Drive A/B type

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

Not Installed	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

### 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
ATAPI CDROM	Use for ATAPI CD-ROM drives
ARMD	

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 DETECTION 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

## 4. BIOS SETUP

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.
- CylIn: Number of cylinders
- Head: Number of heads
- 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.

### **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.

### **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

# 4. BIOS SETUP

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.

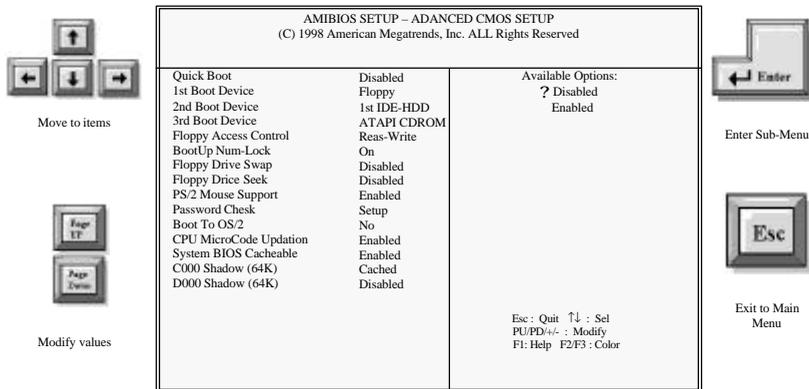


Figure 3: Advanced CMOS Setup Menu

### Quick Boot

Set this option to *Enabled* to instruct AMIBIOS to boot quickly when the computer is powered on. This option replaces the old **Above 1 MB Memory Test** Advanced Setup option.

### 1st 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.

### 2nd Boot Device

## 4. BIOS SETUP

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

### 3rd 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.

### Floppy Access Control

This option specifies the read/write access that is set when booting from a floppy drive.

### BootUp Num-Lock

Set this option to *Off* to turn the Num Lock key off when the computer is booted so you can use the arrow keys on both the numeric keypad and the keyboard.

### Floppy Drive Swap

Switch the floppy disk drives between being designated as A and B. Default is Disabled.

### 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.

### 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.

### 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*.

### Boot To OS/2

Set this option to *Yes* if running OS/2 operating system and using more than 64 MB of

## 4. BIOS SETUP

system memory on the motherboard.

### CPU MicroCode Updation

Set this option to *Enabled* to permit the CPU to be updated online at any time.

### 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.

### C000 Shadow (64K)

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

Setting	Description
<i>Disabled</i>	The contents of the video ROM are not copied to RAM.
<i>Enabled</i>	The contents of the video ROM area from C0000h – C7FFFh are copied (shadowed) from ROM to RAM for faster execution.
<i>Cached</i>	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.

### 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
<i>Disabled</i>	The contents of the video ROM are not copied to RAM.
<i>Cached</i>	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.
<i>Enabled</i>	The contents of the video ROM area from C0000h – C7FFFh are copied (shadowed) from ROM to RAM for faster execution.

# 4. BIOS SETUP

## 4.5 Advanced Chipset Setup Menu

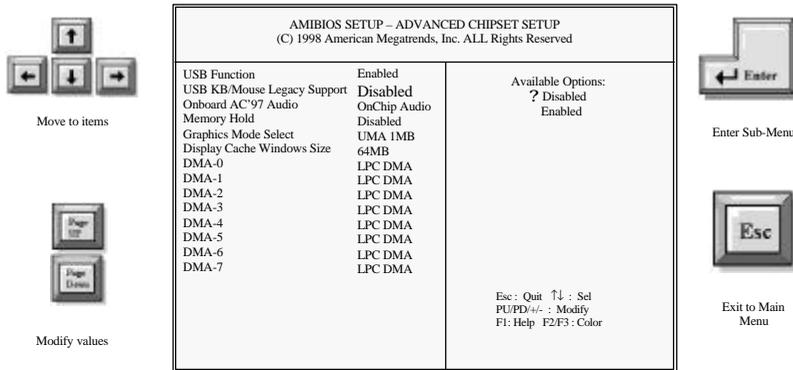


Figure 4: Advanced Chipset Setup

### USB Function

Set this option to *Enabled* to enable USB (Universal Serial Bus) support. The settings are *Enabled* or *Disabled*.

### USB KB/Mouse Legacy Support

Set this option to *Enabled* to enable support for older keyboards and mouse devices if the **USB Function** option is set to *Enabled*

## 4. BIOS SETUP

### **Onboard AC'97 Audio**

Allows the motherboard's BIOS to detect whether you are using any audio device. If a audio device is detected, the onboard audio controller will be enabled; if no audio device is detected, the onboard audio controller will be disabled. If you want to use different controller cards to connect audio connectors, set these fields to Disabled.

### **Memory Hold**

This option specifies the location of an area of memory that cannot be addressed on the ISA bus.

### **Graphics Mode Select**

This option selects the internal graphics device and the amount of system memory to be used as video memory.

### **Display Cache Windows Size**

This option specifies the amount of cache available for the graphics local memory window.

### **Display Cache Windows Size DMA-0/1/2/3/4/5/6/7**

These options specify the bus that the specified DMA channel can be used on.

# 4. BIOS SETUP

## 4.6 Power Management Setup Menu

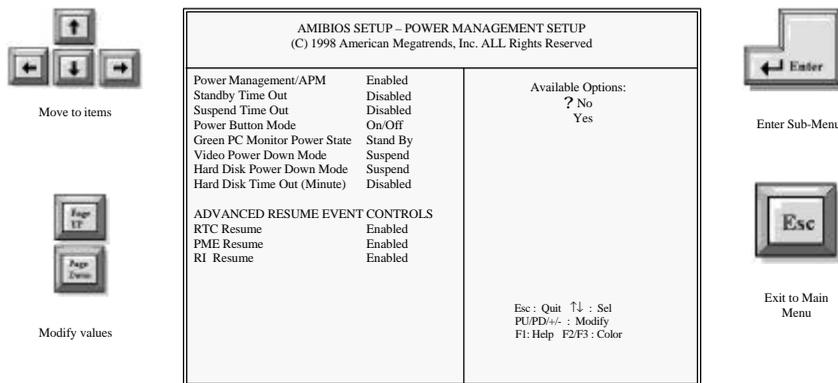


Figure 5: Power Management Setup

### Power Management/APM

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

### Standby Time Out

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

### Suspend Time Out

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.

### Power Button Mode

This option specifies how the power button mounted externally on the computer chassis is used. The settings are:

Setting	Description
On/Off	Pushing the power button turns the computer on or off.

## 4. BIOS SETUP

Suspend	Pushing the Power button places the computer in Suspend mode or Full On power mode.
---------	---

### Green PC Monitor Power State

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

### 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.

### 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.

### Hard Disk Time Out (Minute)

This option specifies the length of a period of hard disk drive inactivity. When this length of time expires, the computer enters power-conserving state specified in the Hard Disk Power Down Mode option.

## ADVANCED RESUME EVENT CONTROLS

### RTC Resume

Set this option to *Enabled* to enable the SMI timer overflow.

### PME Resume

Set this option to *Enabled* to enable PME resume.

### RI Resume

Set this option to *Enabled* to enable RI resume.

# 4. BIOS SETUP

## 4.7 PCI/Plug and Play Setup Menu

AMIBIOS SETUP - PCI/PLUG AND PLAY SETUP  
(C) 1998 American Megatrends, Inc. ALL Rights Reserved

Plug and Play Aware O/S	Yes	Available Options:
Primary Graphics Adapter	OnBoard	?No
PCI VGA Palette Snoop	Disabled	Yes
Allocate IRQ to PCI VGA	Yes	
DMA Channel 0	Disabled	
DMA Channel 1	Disabled	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PnP	
IRQ4	PCL/PnP	
IRQ5	PCL/PnP	
IRQ7	PCL/PnP	
IRQ9	PCL/PnP	
IRQ10	PCL/PnP	
IRQ11	PCL/PnP	
IRQ14	PCL/PnP	
IRQ15	PCL/PnP	

↑↓ : Set  
PU/PD/+/- : Modify  
F1: Help F2/F3 : Color

Figure 6: PCI/Plug and Play Setup

### 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.

### Primary Graphics Adapter

Leave on default setting if you want to use the onboard VGA. If this field is OffBoard, all display cache configurations will not be available.

### 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:

## 4. BIOS SETUP

VGA Palette Snoop Bit	Action
<i>Disabled</i>	Data read and written by the CPU is only directed to the PCI VGA device's palette registers.
<i>Enabled</i>	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.

### Allocate IRQ to PCI VGA

This options allow you to reserve IRQ for PCI VGA devices.

### DMA Channel 0/1/3/5/6/7

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

### IRQ3/4/5/7/9/10/11/14/15

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. BIOS SETUP

## 4.8 Peripherals Setup Menu

AMIBIOS SETUP – PERIPHERAL SETUP  
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CPU Frequency	66.8MHz	Available Options:
CPU Ratio Select	3.0x	? 125MHz
-- System Hardware Monitor = -		
AC Power Loss Control	Always Off	127MHz
Current CPU Temperature	39 c #102 c K	130MHz
Current System Temperature	36 c #132 c K	72MHz
Current CPU Fan Speed	0 RPM	140MHz
Current Fan1 Speed	0 RPM	
Current Fan2 Speed	5400 RPM	
CPU VID	2.00V	
Vcore	2.016 V	
Vtt	1.520 V	
Vio	3.312 V	
+ 5.000V	5.085 V	
+12.000V	11.741 V	
-12.000V	-11.989 V	
- 5.000V		
Battery		
+5V SB		
On Board FDC		
On Board Serial PortA		
OnBoard Parallel Port		
Parallel Port Mode		
Parallel Port IRQ		
Parallel Port DMA Channel		
OnBoard Midi Port		
Midi IRQ Select		
OnBoard Game Port		
Keyboard PowerOn Function		
Specific Key for PowerOn		
Mouse PowerOn Function		
OnBoard IDE		

Esc : Quit ↑↓ : Set  
PU/PD+/- : Modify  
F1: Help F2/F3 : Color

Figure 7: Peripherals Setup

### CPU Frequency

Check your processor and set this function accordingly. If you set this to Manual, you can set the CPU Frequency accordingly.

### CPU Ratio Select

This option sets the CPU frequency ratio

## 4. BIOS SETUP

### *System Hardware Monitor*

#### **AC Power Loss Control**

The setting are power ON/OFF or Last status. During power ON, after every AC/Power Loss, the system will be turned on. During last status, after every AC/Power Loss, whatever the system status, it will be the same when AC power returns. During Off, after every AC/Power Loss, the system will be shutdown.

#### **Current CPU Temperature**

The onboard hardware monitor is able to detect the CPU temperatures.

#### **Current System Temperature**

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

#### **Current CPU Fan Speed**

Current CPUFAN1 Speed these fields display the *current* speed of up to three CPU fans, if your computer contains a monitoring system.

#### **Current Fan1/Fan2 Speed**

The onboard hardware monitor is able to detect the CPU fan speed in rotations per minute (RPM). The presence of the fans is automatically detected.

#### **CPU VID**

The onboard hardware monitor is able to detect the voltage output by the onboard voltage regulators.

#### **On Board FDC**

Set this option to *Enabled* to enable the floppy drive controller on the motherboard.

#### **On Board Serial PortA**

This option specifies the base I/O port address of serial port A.

#### **OnBoard Parallel Port**

This option specifies the base I/O port address of the parallel port on the motherboard.

## 4. BIOS SETUP

### 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:

Setting	Description
<i>Normal</i>	The normal parallel port mode is used.
<i>EPP</i>	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 bidirectional data transfer driven by the host device.
<i>ECP</i>	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.

### Parallel Port IRQ

This option specifies the IRQ used by the parallel port. The settings are *Auto*, (*IRQ*) 5, or (*IRQ*) 7

### Parallel Port DMA Channel

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

### OnBoard Midi Port

This field sets the address of the onboard MIDI connector.

### Midi IRQ Select

This field is not available if you select *Disabled* in OnBoard Midi Port.

### OnBoard Game Port

This field sets the address of the onboard game port connector.

### Keyboard/Mouse PowerOn Function

## 4. BIOS SETUP

Set this field to Enabled if you wish to use your PS2 keyboard (by pressing the spacebar) or PS2 mouse (by clicking on the left button) to power up your computer. This feature requires an ATX power supply that can supply at least 300mA on the +5VSB lead. The default is set to Disabled because not all computers have the appropriate ATX power supply. Your computer will not power ON if you set this to Enabled and do not have the appropriate ATX power supply.

### **Specific Key for PowerOn**

This function allows you to select a specific key which features the same function to Power ON the system.

### **OnBoard IDE**

You can select to enable the primary IDE channel, secondary IDE channel, both, or disabled both channels.

# 4. BIOS SETUP

## 4.9 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

## 4.10 Change 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 PASSWORD:**

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.

## 4.11 Change Supervisor Password

The BIOS Setup will not be accessible unless you enter the correct password. Select "Set Supervisor Password" and press "Enter", the screen will display start symbol "\*" instead of the characters entered. After the new password is entered, retype the new password as prompted and press "Enter". If the password confirmation is incorrect, an error message appears. If the new password is entered with out error, press "ESC". The password is stored in NVRAM after AMIBIOS completes its cycle. Next time when booting the system, a passwords prompt will appears if the password function is enabled.

## 4. BIOS SETUP

### 4.12 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.

### 4.13 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.

### 4.14 Save Setting 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.

### 4.15 Exit Without Saving

Abandon all CMOS value change without saving.