

Thank you for purchasing one of the most sophisticated mainboards on the market today. But before you enjoy the limitless possibilities that your computer can offer you must setup your mainboard correctly.

This user's guide and technical reference is for assisting system manufacturers and end-users in setting up in installing the mainboard. Every effort has been made to insure that the information in this manual is accurate. Information in this document is subject to change without notice.

No part of this manual may be reproduced, transmitted, translated into any language in any form or by any means, electronically, or mechanically, including photocopying, and reporting, for any purpose without the express written permission from the company.

Please note that damaging the board due to an incorrect setup violates the manufacturer's warranty and could violate other warranties presented by your peripherals.

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# Introduction

## ***Which model do I have?***

This manual covers eight different types of mainboards. This section will teach you to figure out which board it is that you have.

The eight boards covered in this manual are:

- ATX BX Mainboard
- ATX BX Mainboard with Sound
- ATX ZX Mainboard
- ATX ZX Mainboard with Sound
- MicroATX BX Mainboard
- MicroATX BX Mainboard with Sound
- MicroATX ZX Mainboard
- MicroATX ZX Mainboard with Sound

The easiest way to decide which board you have is to look on your sales receipt. If it is not located on that then follow these steps (you can refer to dig 1 or 1.1 for placements of items):

1. Count to see how many PCI slots there are. If there are 2 PCI slots, then proceed to #2; If there are 4 then proceed to #3.
2. Your board is a MicroATX form factor board. Next, find out how many SDRAM (memory) sockets there are. If you have 2 SDRAM sockets, then proceed to #4; If you have 3 SDRAM sockets then proceed to #5

3. Your board is an ATX form factor board. Next, find out how many SDRAM (memory) sockets there are. If you have 2 SDRAM sockets, then proceed to #6; If you have 3 SDRAM sockets then proceed to #7.
  
4. Your board contains the newest ZX Chipset from Intel. Now to determine if you have sound on-board you have to look at the input devices. If you have a mic, line, and speaker input, then you have on-board sound. Your mainboard is [MicroATX ZX with sound](#). If you DO NOT have the microphone, line, and speaker input, then you DO NOT have on-board sound. Your mainboard is [MicroATX ZX without sound](#).
  
5. Your board contains the BX Chipset from Intel. Now to determine if you have sound on-board you have to look at the input devices. If you have a microphone, line, and speaker input, then you have on-board sound. Your mainboard is [MicroATX BX with Sound](#). If you DO NOT have the microphone, line, and speaker input, then you DO NOT have on-board sound. Your mainboard is [MicroATX BX without sound](#).
  
6. Your board contains the newest ZX Chipset from Intel. Now to determine if you have sound on-board you have to look at the input devices. If you have a mic, line, and speaker input, then you have on-board sound. Your mainboard is [ATX ZX with Sound](#). If you DO NOT have the mic, line, and speaker input, then you DO NOT have on-board sound. Your mainboard is [MicroATX ZX without Sound](#).
  
7. Your board contains the BX Chipset from Intel. Now to determine if you have sound on-board you have to

(cont...) look at the input devices. If you have a mic, line, and speaker input, then you have on-board sound. Your mainboard is [ATX BX with Sound](#). If you DO NOT have the mic, line, and speaker input, then you DO NOT have on-board sound. Your mainboard is [ATX BX without Sound](#).

## ***Feature Listing:***

*Features on all models unless otherwise stated.*

### **CPU**

- Intel Pentium II/III CPU's running at 233 ~ 900 MHz
- Intel Celeron running at 233 ~ 900 MHz
- Intel Mendocino (on Slot 1 card) running at 233 ~ 900 MHz
- Supports MMX technology

### **Chipset**

- Intel 100MHz 440BX AGPset Chipset with PIIX4E South Bridge
- Intel 100MHz 440ZX AGPset Chipset with PIIX4E South Bridge

### **Main Memory**

- Supporting ECC Configuration
- Auto Memory Detection
- PC100 Compliant SDRAM Interface
- 66MHz / 100MHz / 133MHz / 150MHz RAM compatibility.
- SDRAM sockets support 4MB / 8MB / 16MB / 32MB 64MB / 128MB / 256MB SDRAM/EDO memory modules

- BX Chipset boards support up to 768MB
- ZX Chipset boards support up to 512MB

## I/O Function

- Variant PS/2 mouse and keyboard connectors
- Dual USB connectors
- InfraRed on-board connector
- Optional IrDA TX/RX Header
- On-board super Multi-I/O chip
- 2 9-pin serial ports: 16550 fast UART ports
- 1 parallel port with normal, ECP and EPP capabilities
- One dual floppy drive interface
- 2 dual IDE ports supporting 4 IDE devices
- On-board SB-Link provides real time DOS mode compatibility with PCI sound cards
- Wake up on LAN on-board

## ACPI

- Advanced Configuration Power Interface (ACPI)
- Supports Legacy PMU
- Fully PC97, PC98 compliant power interfaces
- ATX power support
- Software controlled shutdown
- Keyboard, mouse, password power function
- Suspend / Resume modes on reset button features
- BIOS controlled timer-on function
- Wake up on modem ring
- Wake up on LAN

## PC Slot Configuration

- MicroATX form factor supports 2 ISA, 2 PCI, and 1 AGP card slots.

- ATX form factor supports 3 ISA, 4 PCI, and 1 AGP card slots.

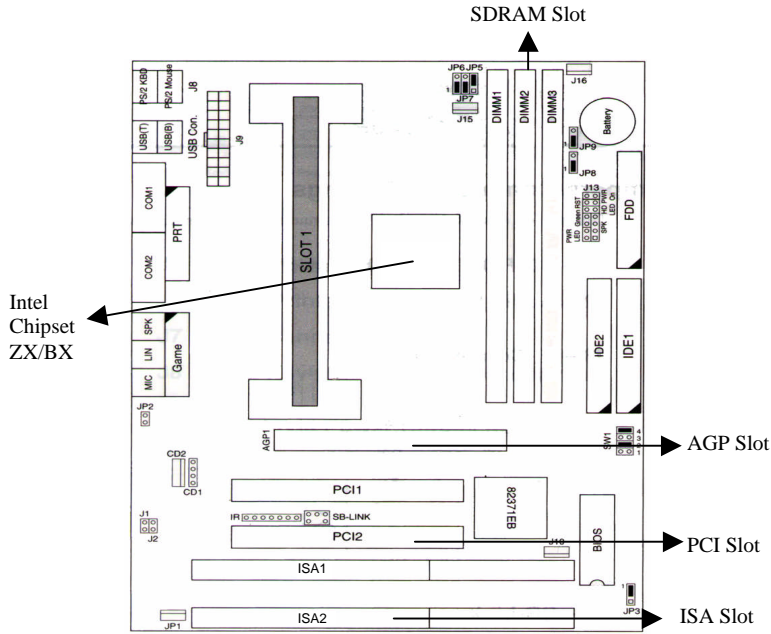
## On-board 3D Surround Sound

- Sound Blaster 16/Pro compatible
- Sampling rates in stereo mode, up to 48 kHz
- I/O Digital audio SPDIF (Sony/Phillips Digital Interface)
- HRTF 3D Positional Audio
- Virtual Surround Sound (3D surround sound)
- Full duplex enabled CODEC

## Additional Functions

- On-board PCI Bus Master IDE interface
- Bus Master supports PIO Mode 0, 1, 2, 3, 4
- UDMA / DMA33 supported
- IDE DMA Mode 2 supported
- Supports 2.88MB, Iomega ZIP-100M, and IDE LS-120 FDD
- FDD, IDE 0,1,2,3, SCSI, CD-ROM, Network, LS-120, and other devices bootable
- Supports fan status, monitor alarm, and temperature monitor
- Supporting voltage monitor and alert, system resources alert
- Virus Write Protection
- Intel LANDESK Client Manager (LDCM) software support

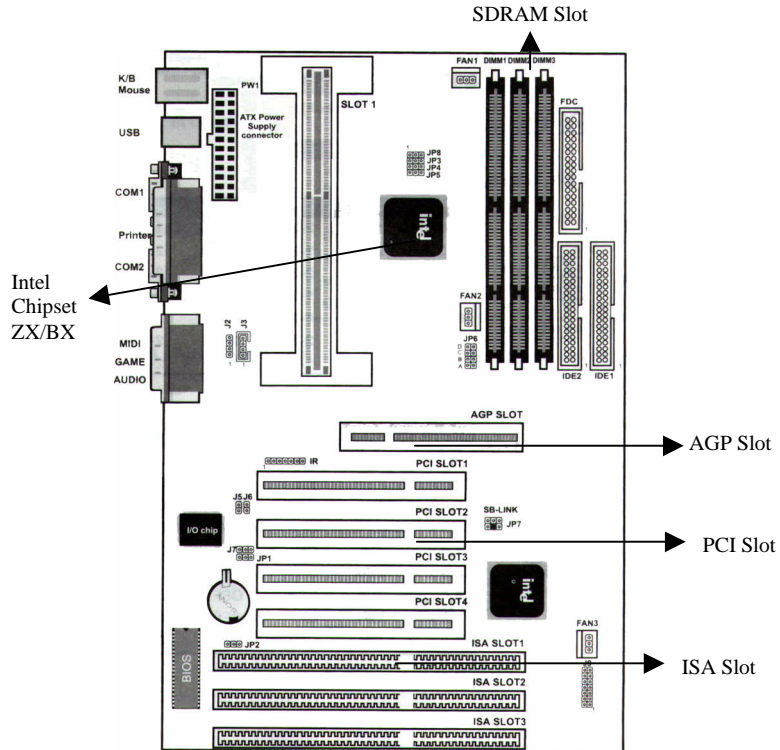
# Diagram 1: MicroATX Mainboard Layout



BX Boards have 3 SDRAM (DIMM) Slots  
 ZX Boards have 2 SDRAM (DIMM) Slots



## Diagram 2: ATX Mainboard Layout



BX Boards have 3 SDRAM (DIMM) Slots  
ZX Boards have 2 SDRAM (DIMM) Slots

## Jumper and Connectors Description

Jumpers and connectors will enable or disable functions on the mainboard. Pin 1 usually matches against the red wire.

J1 – CD ROM Audio Digital In

J2 – Audio Digital Out

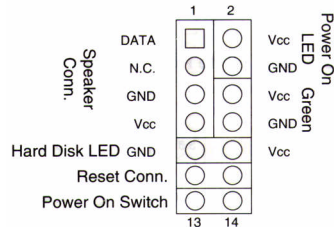
J3 – IR TX/RX Connector

J4 – SB-LINK: For Real Time DOS support of PCI sound Cards

J9 – ATX Style Power Connector – 20 Pin single Connector

J10, J15, J16 – Fan Power connectors (x3)

J13 – Case LED/Speaker connector



J14 – Floppy Drive Connector

JP1 – Wake up on LAN Header

JP3 – Flash ROM Voltage – Resetting might cause system Failures

JP5 ~ 7 – System BUS Speed Selection

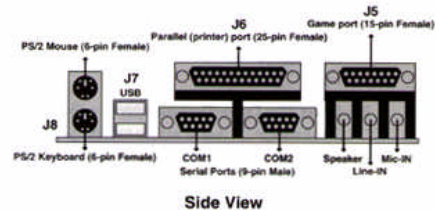
JP8 – CMOS Setting

JP9 – Clear CMOS Keyboard Password

SW1 – CPU Multiplier Selector

External Connectors – note that boards without sound On-Board will not contain mic, speaker, line-out and gameport connectors

### External Connectors Location



IDE 0 (Primary) – IDE Device Connector

IDE 1 (Secondary) – IDE Device Connector

FDC – Floppy Drive Connector

CD1 ~ 2 – CD Audio Input

## Memory Configuration Data

BX Mainboards allow up to 768 MB of system memory.

ZX Mainboards allow up to 512 MB of system memory.

Memory banks within the mainboard consist of 168-pin DIMM sockets.

Each bank can support RAM modules of:

4 MB / 8 MB / 16 MB / 32 MB / 64 MB / 128 MB / 256 MB

Total memory is calculated by adding up all memory banks.

Memory Bank	Modules
DIMM 0	4 MB / 8 MB / 16 MB / 32 MB / 64 MB / 128 MB / 256 MB
DIMM 1	4 MB / 8 MB / 16 MB / 32 MB / 64 MB / 128 MB / 256 MB
DIMM 3	4 MB / 8 MB / 16 MB / 32 MB / 64 MB / 128 MB / 256 MB
Total System Memory = Adding up all the memory banks	
Eg. DIMM 0 has 64 MB of RAM and DIMM 3 has 256 MB of RAM. Total RAM = 64 MB + 256 MB Total RAM = 192 MB	

*Note:*

If using a CPU that runs at 100 MHz, you **MUST** use PC100 compliant RAM.

Use only EDO (Extend Data Out) or SDRAM (Synchronous Dynamic RAM) only.

## Setting up your board

Setting up your mainboard BEFORE any items are placed on it is important. This will provide error free setup.

1. Determine what CPU you have.
2. Determine all your peripherals, CD-ROM

Make sure you are grounded (done by keeping constant contact with a metal surface touching the ground. Insert the RAM into the SDRAM socket farthest from the CPU Slot. This will protect your RAM from power surges from the power supply. SDRAM is slotted in one fashion. DO NOT FORCE THIS CONNECTION!

Next, set your jumpers for the CPU. To determine the CPU clock speed setting, you use the following formula:

$$\begin{array}{ccc} \text{System BUS Speed} & \times & \text{CPU Multiplier} \\ (\text{JP } 5 \sim 7) & & (\text{SW1}) \end{array}$$

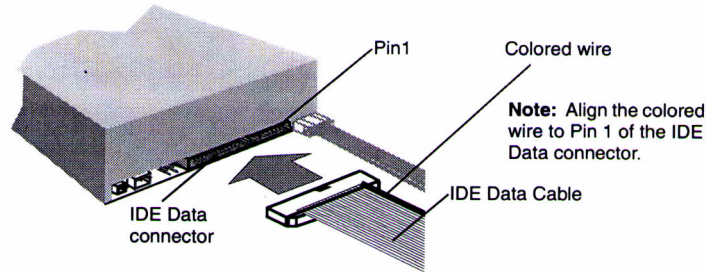
*Please refer to the quick setup guide for further instructions on CPU settings.*

Plug in your video card. This card can be PCI or AGP. Two or more video cards are supported by our mainboard. The cards must be PCI and/or AGP. However, the ISA slot does not support multiple video cards. Be sure that you have a VGA/SVGA video card that is Windows 95/98/NT compatible before installing windows.

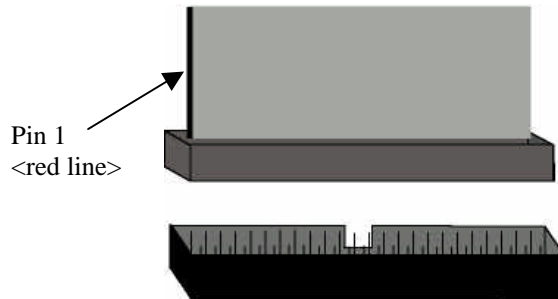
Following this, plug in any other peripheral cards that you may have. SCSI cards, DVD cards, Accelerator cards are just a few options that you may have purchased with your computer.

The next step is to plug in drive peripherals. Our connectors and cables are molded so that you cannot make a mistake. However, if a third party cable is used, make sure that Pin 1 is slotted to the red line of the cables. If you are unsure which is Pin 1, then look on the board itself. Pin 1 usually is marked with a small 1, or an arrow.

From the peripheral drive:



Our mainboard IDE connector:



The case LED's and Speakers should now be connected. These connections, are not necessary for the function of the computer, but will give you visual aids as to the state of the computer.

The very last connection is the ATX power supply. This power connection is beveled so that it can be inserted in one fashion. DO NOT FORCE THIS CONNECTION!

## Quick Start CPU Setup:

CPU	JP5	JP7	JP6	SW1			
				1	2	3	4
300Mhz 66MHz Bus	2-3	1-2	1-2	Off	On	Off	On
300Mhz 100MHz Bus	1-2	1-2	1-2	On	Off	On	On
333MHz	2-3	1-2	1-2	On	Off	Off	On
350MHz	1-2	1-2	1-2	On	Off	On	On
366MHz	2-3	1-2	1-2	Off	Off	Off	On
400MHz	1-2	1-2	1-2	On	On	Off	On
450MHz	1-2	1-2	1-2	Off	On	Off	On
500MHz	1-2	1-2	1-2	On	Off	Off	On
550MHz	1-2	1-2	1-2	Off	Off	Off	On

Note:

This quick setup guide is by no means complete. It covers only a small percentage of possible settings. Please refer to our web page for a more complete listing.

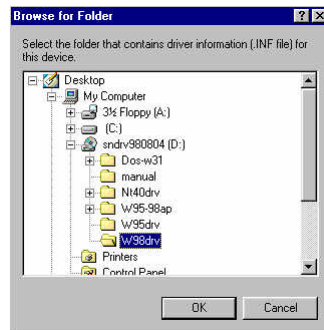
## 3D Surround Sound Setup

Upon Setting up Windows 95/98 disable the On-board sound chip. After setup, enable the sound in the BIOS configuration. Win95/98 will not setup properly if sound is enabled during the setup configuration (refer to our BIOS setup for disabling and enabling sound).

After windows setup, Windows will detect your on-board sound.



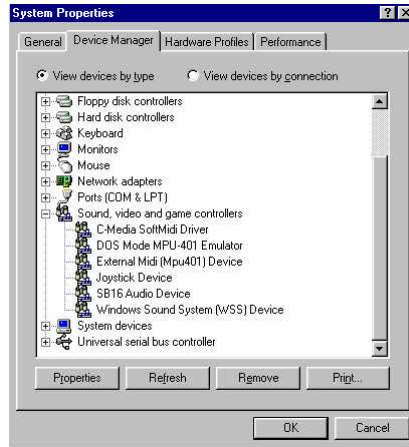
To setup the on-board sound driver, insert the CDROM included with your mainboard into the CD ROM drive.





Select your CD-ROM drive. Select Drivers. Select Audio. And select Windows 95 or 98. Then click next. Your audio sound drivers should install without problems.

Or download a new update from our web site.

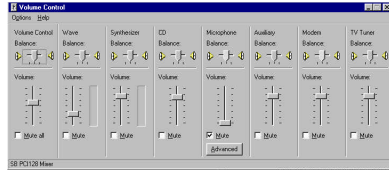


Following setup, you should see the device drivers as listed above.

After setting up the Windows Sound System, you should be able to see a small speaker in the bottom right hand area of your screen:



After double clicking on this icon, you can see a control screen. This controls the volume settings for your computer.



To change the volume, slide the control bars. Up for an increase in volume, and down for a decrease in volume. For further details, please look at your Windows manual.

## AMI BIOS Setup

Your new mainboard contains the new award winning AMI BIOS Hi-Flex Setup. This manual consists of only a brief description of the setup. Please consult our technical support for further information. This information may not reflect actual circumstances.

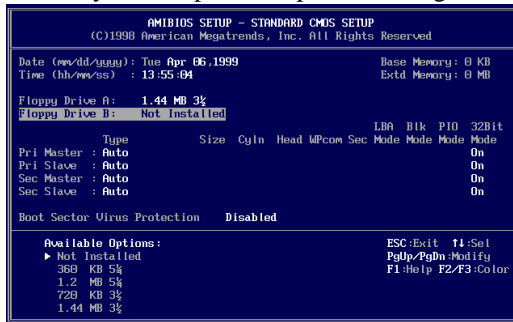
The BIOS gives important and vital information to your OS. Without it, your computer will not know what is plugged into your computer. It could not know the amount of RAM installed, the interrupt request of your network card, and so forth.

To get into the BIOS setup menu, hit the delete key during the memory-testing phase of the mainboard test cycle (after the computer is turned on). This phase is also known as the POST state. If you do not get into the BIOS setup, then reset your computer and try again.



Setting the BIOS is fairly simple. You use the arrow keys to toggle between different option settings such as the date, floppy drives, IDE devices. Use the PAGE UP and PAGE DOWN keys to choose between the choices within that option. Such as disabling or enabling items.

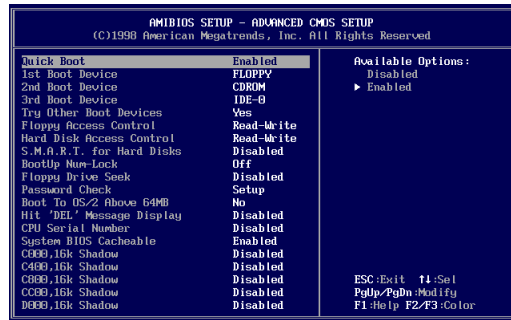
The first screen that you will encounter will allow you to choose between the Standard CMOS Settings, PnP Options, and Peripherals Options or to reset the computer using defaults. Choosing the safe mode default will ensure that your computer will boot, however, these settings may cause the computer to be slow. Using the optimal settings will allow your computer to operate at a higher efficiency.



In the Standard CMOS Settings options you can set the computer date and time, floppy drives, and IDE devices. It is safest to leave the IDE devices on Auto (auto detect) to ensure the optimal settings. The Auto setting will auto detect your IDE devices (hard drives, CD-ROM, etc) every time you start up your system.

The built-in virus scanner will track programs writing into the boot sector of your hard drive ONLY. Do NOT set this function on when setting up your OS.

The Advanced CMOS settings allow you to set different boot up



options, and hard drive options. Setting up the boot devices 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and other will force the computer to boot-up in that order. If no boot device is found, such as a floppy disk in the floppy drive, then the system will try the second boot device, and then the third.

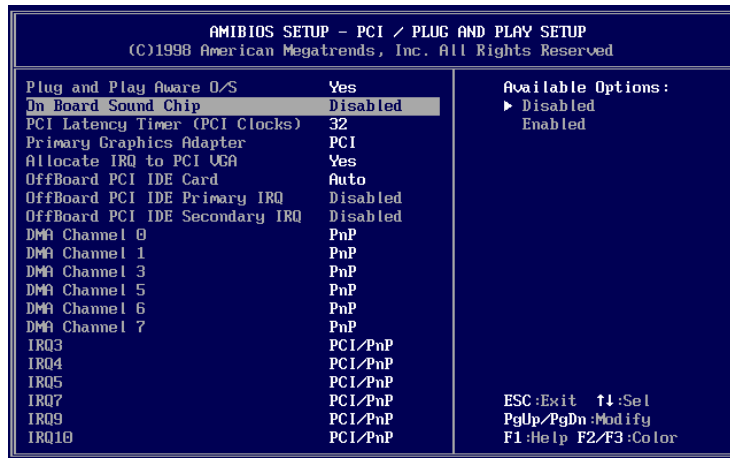
Disabling the CPU serial number for Intel Pentium III CPU's will NOT allow the Intel Serial number utility to activate the CPU serial number in Windows.

The Advanced Chipset Setup will allow your RAM speed settings. Altering these settings will allow your computer to run faster or slower. However, you must be certain that your RAM can handle the added speed.

Enabling the USB port will allow you to use USB peripherals.

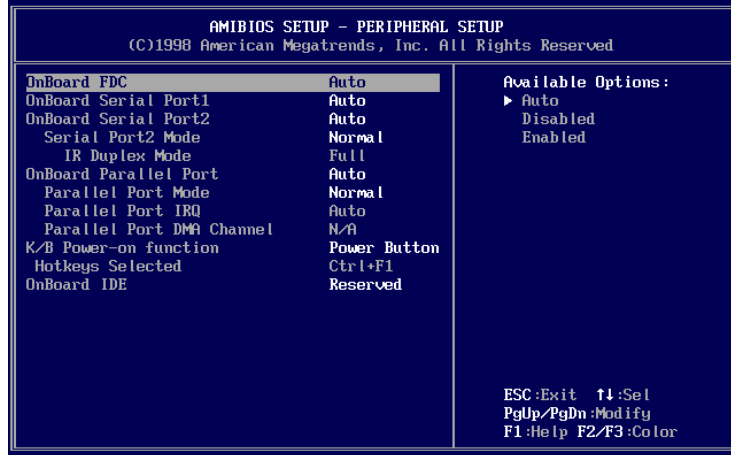
The power management setup will enable or disable the Green or Power Saving functions (ACPI) on your mainboard. Disabling these features will override the MS-Windows commands for power saving.

The PCI/PnP setup allows you to setup the peripheral cards that you have plugged into your computer. Most OS are now plug and play and will allow the BIOS to set the interrupt request (IRQ) and DMA (direct memory access) numbers. Because of this feature, it will allow all of programs to access your hardware without the hassle of configuring each piece of software to recognize hardware.



This section will also allow you to enable your On-Board sound chip, if available. Please see setting up the On-Board Sound for further instructions. It is advisable to disable this function during the Windows setup.

The peripheral setup allows you to setup the serial/parallel ports as well as certain other advanced power-on features offered by your mainboard.



Auto detecting the hard drives will allow the computer to setup your hard drives. By selecting this option, you will override the auto detect function in the Standard CMOS Setup. If you replace your hard drives, you must re-detect again.

If you do not like the changes you made, then select Exit Without Saving. However, in order for the changes to be written to the BIOS, you must select the Save and Exit function.

## AMI BIOS Flash Utility

To upgrade your current BIOS, you must create a bootable floppy disk WITH the AMI Flash BIOS Utility (located on the CD ROM), and the BIOS Upgrade (from our website). At the MS-DOS prompt, Type the file name:

```
amifl633 *.*
```

\* = the file name of the BIOS upgrade with the extension

The flash utility will load, and prompt you to upgrade with the specified BIOS. Type “y” for yes.

Following reboot, you must reset your CMOS settings by running the BIOS Setup. This is because the checksum utility will detect an error.

Contact us via email or the web page for more details.