Note to Users

This User's Guide & Technical Reference are for assisting system manufacturers and end users in setting up and installing the motherboard. Every effort has been made to ensure that the information in this manual is accurate. **Champion-First** Electronics Limited is not responsible for printing or clerical errors. Information in this document is subject to change without notice and does not represent a commitment on the part of **Champion-First**. For previous or updated manuals, BIOS, drivers, or product release information, please contact **Champion-First** Electronics Limited at http://www.champion-first.com or through any of the means indicated on the following pages.

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Chapter 1
Introduction

1.1 Product Features

The Intel 443BX highest performance motherboard is based on the all new Intel 443BX chipset with Baby AT form factor to support the latest Socket 370 including Intel Pentium III FCPGA, Celeron FCPGA / PPGA as well as Cyrix III processors.

1.2 Features Summary

This Motherboard comes with following features:

★ Support Intel Pentium III FCPGA, Celeron PPGA or Cyrix III Processor on Socket 370
★ Intel 443BX Chipset
★ Two DIMM slots Supporting up to 512MB Memory Capacity
★ Support 100MHz PC100 SDRAM DIMM
★ 4 x PCI slots, 1 x AGP slot
★ 2 x USB ports, 1 x PS/2 mouse port, 1 x PS/2 Keyboard port, 1 x IrDA port
★ 1 x FDD port, 1 x LPT port, 2 x COM ports
★ Dual IDE Channels Supporting Four Ultra-DMA33 IDE Devices
★ Advanced Configuration Power Interface (ACPI) Ready.
★ 2MB AMI BIOS, PC99/ACPI/DMI Compliant
★ AT/ATX Power Supply Interface
★ Baby AT format, 220mm x 195mm PCB

Chapter 2
Installation

2.1   Installation Instructions

This section covers External Connectors and Memory Configuration. Please refer to the motherboard layout chart for external connectors, slots and I/O ports. Furthermore, this section lists all necessary connector pin assignments for your reference. The locations of the connectors and ports are illustrated in the following figures. Before inserting these connectors, please pay attention to the orientations.

NOTICE !!!
1. Make sure to unplug your power supply while adding or removing system components
2. Always work on an antistatic surface to avoid possible damage to the motherboard or other components from static discharge.

2.2   Motherboard Layout
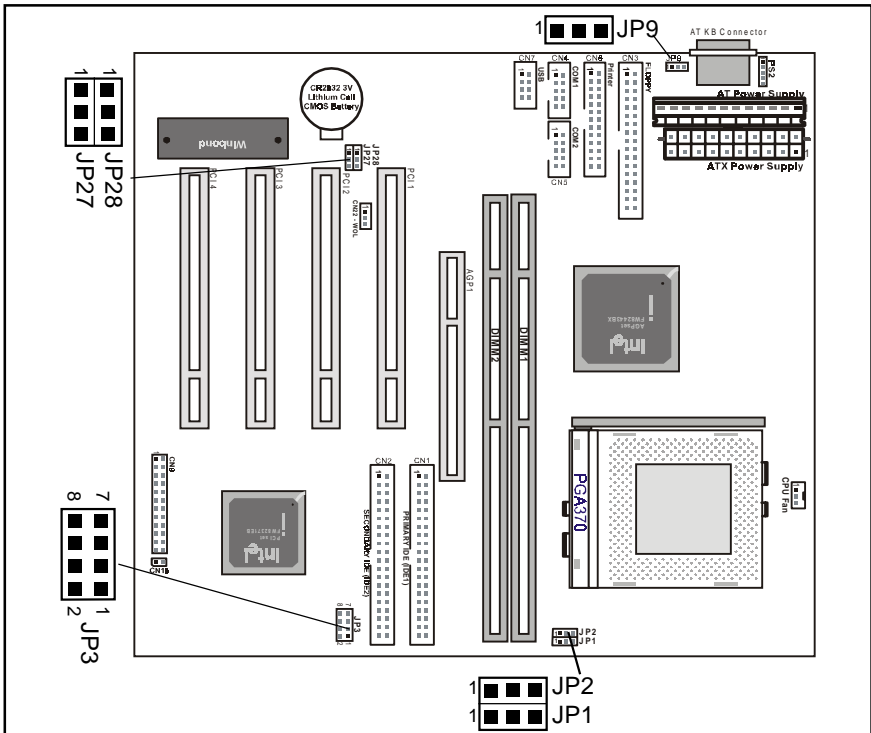
2.3 Jumper Setting

CPU Speed - JP1

JP1	CPU Speed
1 ▪▪▪ (1-2)	100 MHz
1 ▪▪▪ (2-3)	66 MHz

CPU Speed - JP2

JP2	CPU Speed
1 ▪▪▪ (1-2)	100 MHz
1 ▪▪▪ (2-3)	133 MHz
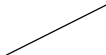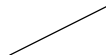
CPU Voltage - JP9

JP9	CPU Voltage
1 ▪▪▪ (1-2)	VCC
1 ▪▪▪ (2-3)	5VSB

CMOS Clear - JP28

JP28	Function
1 ▪▪▪ (1-2)	Normal (Default)
1 ▪▪▪ (2-3)	CMOS Clear

Remark: ▪▪ Open ▪▪ Close

CPU Frequency Ratio selection - JP3

JP3	CPU Ratio	CPU Speed		
		66MHz	**100MHz**	**133MHz**
7 □□□□ 1 / 8 □□□□ 2	4.0 X			533MHz
7 □□□■ 1 / 8 □□□■ 2	4.5 X	300MHz		600MHz
7 □□■□ 1 / 8 □□■□ 2	5.0 X	333MHz	500MHz	667MHz
7 □□■■ 1 / 8 □□■■ 2	5.5 X	366MHz	550MHz	733MHz
7 ■□□□ 1 / 8 ■□□□ 2	6.0 X	400MHz	600MHz	800MHz
7 ■□□■ 1 / 8 ■□□■ 2	6.5 X	433MHz	650MHz	866MHz
7 ■□■□ 1 / 8 ■□■□ 2	7.0 X	466MHz	700MHz	933MHz
7 ■□■■ 1 / 8 ■□■■ 2	7.5 X	500MHz	750MHz	1000MHz
7 ■■□■ 1 / 8 ■■□■ 2	8.0 X	533MHz	800MHz	1066MHz

Remark: ■□ Open   ■■ Close

2.4 Function & Installation Instructions

2.4.1 AT Power Supply Connector (12-Pin)

This connector connects to a standard 5V power supply. To connect the leads from the power supply, ensure first that the power supply is not power on. Most power supplies provide two plugs, and each plug contains six wires. Two of six wires are black and please orient the plugs to the connector so that 4 black wires are together.
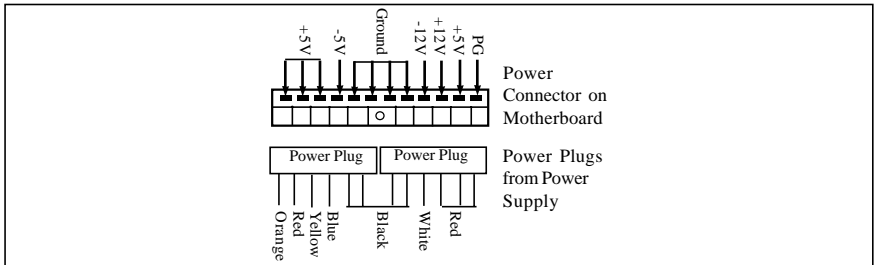
AT Power Connector

At a slight angle, align the plastic guide pins on the lead to their receptacles on the connector. Once aligned, press the lead onto the connector until the lead locks into place.

2.4.2 ATX Power Supply Connector (20-Pin)

This connector connects to an ATX power supply. The plug from ATX power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned. The system power can be turned off through software control, like the shut down in Windows 2000 / ME / 98 / 95 start menu. Power management must be enabled in the system BIOS in order to activate this soft-off feature. Once the system BIOS receives the power management command from the OS, it will switch the system power off.
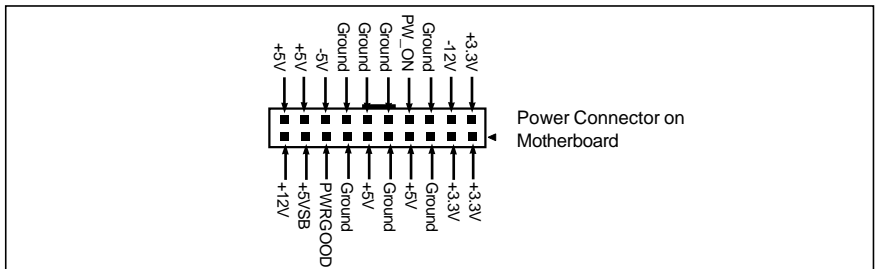
ATX Power Connector

2.4.3 AT Keyboard Connector

This connector supports a standard IBM-compatible keyboard, such as 101/ 102 enhanced keyboard (Use a PS/2 keyboard adapter in order to connect a PS/2 KB to this AT connector.).

2.4.4 Serial (COM1/COM2) Port Connector

This motherboard provides two compatible serial ports, it can be used when add additional serial devices.

2.4.5 USB Connector

This 8-pin connector connects to the optional USB ports cable with a mounting bracket.

CN7
1 USB-VCC ⟶ 2 USB-GND
3 USB DT0- ⟶ 4 USB DT1+
5 USB DT0+ ⟶ 6 USB DT1-
7 USB-GND ⟶ 8 USB-VCC

CN8- PS/2
1 MS-DATA
2 NC
3 GND
4 VCC
5 MS-CLK

PRINTER
Pin1 ⟶
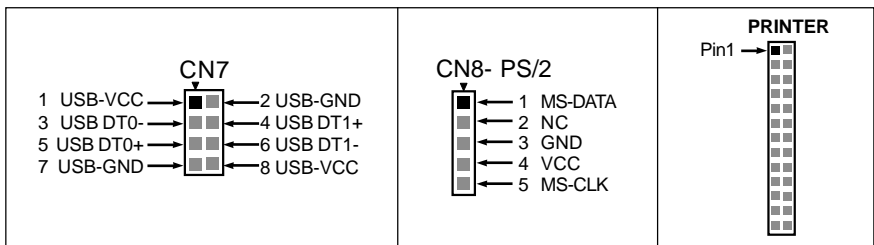
2.4.6 PS/2 Connector

This 5-pin connector connects to the PS/2 ports cable with a mounting bracket.

2.4.7 Parallel Port Connector (26-pin)

This connector supports the included parallel port ribbon cable with mounting bracket. Connect the parallel port ribbon cable to this connection and mount the bracket to the case on an open slot, it will then be available for a parallel printer cable.

EXPANSION CARDS INSTALLATION

Before adding or removing any expansion cards or system components, confirm that you already unplugged your power supply. Otherwise, it may severely damage to your motherboard and expansion cards. Please follow the installation procedures as below:

1. Check carefully if those hardware or software settings for your expansion cards are in the proper position as shown in their User' s Manual.
2. Remove your computer case' s cover and unscrew the bracket plate for those slots needed to insert.
3. Those expansion cards must be aligned on the slots firmly with good connection.
4. Put on the computer case cover.
5. If needed, set up the BIOS configuration and install the required drivers for your expansion cards.

2.4.8 SDRAM Sockets

There are two SDRAM sockets on-board to provide more flexibility for your system memory upgrade. Because the number of pins are different on either side of the breaks, the DIMM module will only fit the 3.3V 168-pin unbuffered for this motherboard.

168 PIN DRAM DIMM

20Pins   60Pins   88Pins

Lock

Two DIMM Socket

Unbuffered   3.3V Key
DRAM Key
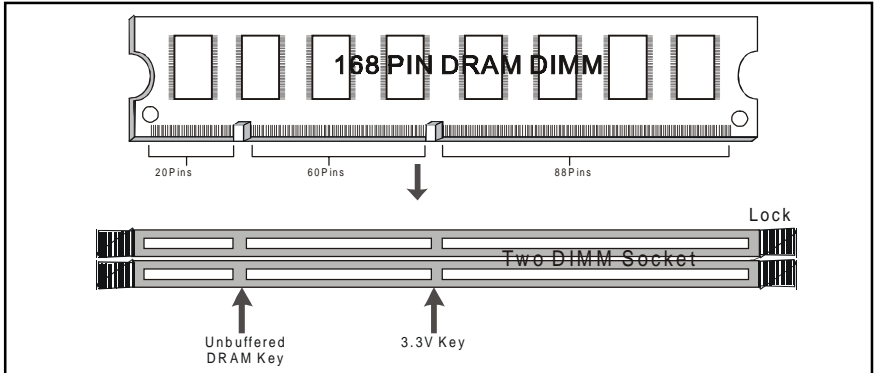
168-Pin SDRAM Module Installation Diagram

2.4.9 Floppy Drive Connector (34-Pin)

This connector supports the provided floppy drive ribbon cable. After connecting the single end to the on-board "FLOPPY" connector, connect the remaining plugs on the other end to the floppy drives correspondingly.

2.4.10 IDE Connectors (40-Pin)

The IDE connectors support the provided IDE HDD ribbon cable. After connecting the single end to the board, connect the two plugs at the other end to your HDDs. If you install two IDE devices on the same cable, you must configure the second device to slave mode by setting its jumper accordingly. (Refer to your IDE device document for the jumper settings. Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged.)

Pin20 be removed

Primary IDE (IDE1)

Pin1

Secondary IDE (IDE2)
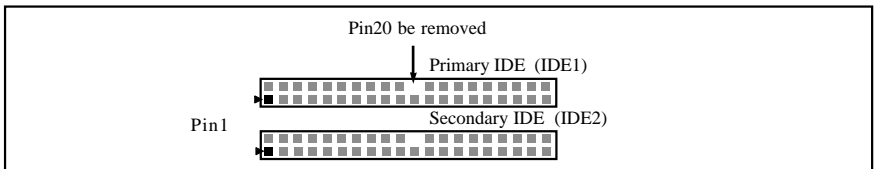
IDE Connectors

2.4.11 BIOS

The motherboard flash BIOS provides users with more flexibility in upgrading their motherboards. The flash BIOS can be easily reprogrammed via software.

2.4.12 PCI Slots

This motherboard provides four full-length 32-bit PCI slots with up to 133MB/sec burst data transfer rate.

2.4.13 AGP(Accelerated Graphics Port) Slot

This motherboard provides an AGP Slot to support AGP graphics cards

2.4.14 Wake-On-LAN Interface (WOL)

This connector connects to a LAN card with a Wake-On-LAN output. The connector powers up the system when a wakeup signal is received from the network.

CN22- WOL
+5VSB
WOL
GND

2.4.15 Front Panel Function Connector

The front panel integrates: 4-pin Speaker, 2-pin Reset Switch, 2-pin IDE LED, 2-pin Power Led, 2-pin Power On, 5-pin IrDA, 2-pin EXT SMI, 5-pin Keylock.

The connector pin out are described as the figure below:

SPEAKER				
	1	Speaker	2 RX	IrDA
	3	NC	4 Ground	
	5	Ground	6 TX	
	7	VCC +5V	8 VCC	
RESET	9	Reset	10 NC	
	11	Ground	12 EXT SMI	EXT SMI
IDE LED	13	VCC	14 Ground	
	15	IDE LED	16 VCC	
PW LED	17	PW LED	18 Ground	KEYLOCK
	19	Ground	20 Ground	
PWR ON	21	ATXPWRON	22 Keylock	
	23	Ground	24 Ground	
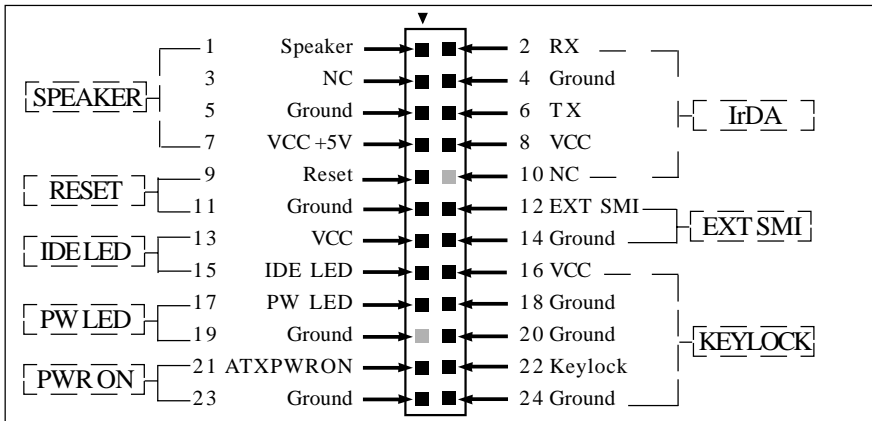
2.4.16 PGA370 CPU Socket

The motherboard provides a ZIF Socket 370. The CPU that comes with the motherboard should have a fan attached to it to prevent overheating. If it is not so, purchase a fan before you turn on your system.

Notice !!!

Be sure that there is a sufficient air circulation across the processor's heatsink by regularly checking that your CPU fan is working. Without sufficient circulation, the processor could be overheated and it may damage both the processor and the motherboard. You may install an auxiliary fan, if necessary.

Installation step:

1. Turn off the power of your system and remove its cover;
2. Locate the ZIF socket and open it by first pulling the lever sideways away from the socket then upwards to a 90-degree angle;
3. Insert the CPU with correct orientation
   (The CPU has a corner pin for two of the four corners, that the CPU only fit in the orientation.)
4. Once completely inserted, pull down the socket's lever to horizontal and make sure the CPU is firmly locked in the socket.

2.4.17 CPU Fan Connector

CPU Fan cable plug in the 3-pin CPU Fan connector onboard.

CN17- CPU FAN
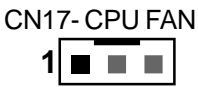
Pin1 Sense
Pin2 +12V
Pin3 GND

Chapter 3
Software Installation

Note:

Before installation, you must already have Windows 95/98/ 2000/ME or Windows NT4.0 install on your computer.

The installation procedure is as below:

1. Make sure that Auto-insert detection is enabled for your CDROM drive. It should be enabled by default.

2. Insert this CD disk into your CDROM drive.

3. The Explorer screen will then appear, that gives you instructions for installation.

4. There may require restarts of Windows during some software setup. In these cases, you can just eject then close the CD-tray in order to get back to the Explorer screen. You can then proceed with the next step.

   You can get more information with open file: ***readme.txt*** in the CD disk.

Chapter 4
AMIBIOS Setup

This GC-2001 motherboard comes with the AMI BIOS from AMI Software Inc. Enter the AMI BIOS program Main Menu by:

1. Turn on or reboot the system. After a series of diagnostic checks, the following message will appear:

   Press <DEL> to enter setup, ESC to skip memory test

2. Press the <DEL> key and the main program screen will appear as follows.

```
       AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.21
     (C)1998 American Megatrends, Inc. All Rights Reserved

                      Standard CMOS Setup
                      Advanced CMOS Setup
                     Advanced Chipset Setup
                    Power Management Setup
                   PCI / Plug and Play Setup
                        Peripheral Setup
                     CPU Configuration Setup
                    Auto-Detect Hard Disks
                     Change User Password
                   Change Supervisor Password
            Auto Configuration with Optimal 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
```

3. Using the arrows ↑↓→← on your keyboard, select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system. Otherwise you may return to the Main Menu anytime by pressing <ESC> .

Types of Setup	Description
Standard CMOS Setup	Sets time, date, hard disk type, types of floppy drives, monitor type, and if keyboard is installed.
Advanced CMOS Setup	Sets Typematic Rate and Delay, Above 1MB Memory Test, Memory Test Tick Sound, Hit <Del> Message Display, System Boot Up Sequence, and others.
Advanced Chipset Setup	Sets chipset-specific options and features.
Power Management Setup	Controls power conservation options.
PCI/PnP Setup	Sets options related to the PCI bus and Plug and Play options.
Peripheral Setup	Controls I/O Controller-related options.
CPU Configuration Setup	This option selects the type of CPU install in the motherboard. The settings are *Auto* (AMIBIOS automatically determines the CPU type).

4. In the Main Menu, "Save Settings and Exit" saves your changes and reboots the system, and "Exit Without Saving" ignores your changes and exits the CMOS Setup.

```
                 AMIBIOS SETUP - STANDARD CMOS SETUP
             (C)1998 American Megatrends, Inc. All Rights Reserved

Date (mm/dd/yyyy) : Tue Nov 21, 2000              Base Memory: 640 KB
Time (hh/mm/ss)   : 16:17:06                      Extd Memory: 127 MB

Floppy Drive A:      1.44 MB 3½
Floppy Drive B:      Not Installed
                                               LBA    Blk   PIO   32Bit
          Type          Size   Cyln   Head  WPcom Sec Mode  Mode  Mode  Mode
Pri Master : Auto                                                        On
Pri Slave  : Auto                                                        On
Sec Master : Auto                                                        On
Sec Slave  : Auto                                                        On

Boot Sector Virus Protection    Disabled

Available Options:                             ESC:Exit  ↑↓:Sel
 ▶  Disabled                                   PgUp/PgDn:Modify
    Enabled                                    F1:Help  F2/F3:Color
```

4.1 Standard CMOS Setup

Select the AMIBIOS Setup options by choosing Standard Setup from the AMIBIOS Setup main menu. Standard Setup options are described below.

Floppy Drive A: and B:

Move the cursor to these fields via ↑ and ↓ and select the floppy type. The settings are *360 KB 5¼inch*, *1.2 MB 5¼inch*, *720 KB 3½inch*, *1.44 MB 3½ inch*, or *2.88 MB 3½inch.*

Primary Master
Primary Slave
Secondary Master
Secondary Slave

Select these options to configure the drive named in the option. Select *Auto Detect IDE* to let AMIBIOS automatically configure the drive. A screen with a list of drive parameters appears. Click on *OK* to configure the drive.

Type	How to Configure
SCSI	Select *Type*. Select *Not Installed* the drive parameter screen. The SCSI drivers provided by the SCSI manufacturer should allow you to configure the SCSI drive.
IDE	Select *Type.* Select **Auto** to let AMIBIOS determine the parameters. Click on OK when AMIBIOS displays the drive parameters. Select *LBA/Large Mode*. Select *On* if the drive has a capacity greater than 540 MB. Select **Block** *Mode*. Select *On* to allow block mode data transfers. Select **32-Bit** *Transfer*. Select *On* to allow 32-bit data transfers. Select the **PIO** *Mode*. It is best to select *Auto* to allow AMIBIOS to determine the PIO mode. If you select a PIO mode that is not supported by the IDE drive, the drive will not work properly. If you are absolutely certain that you know the drive' s PIO mode, select PIO mode 0-5, as appropriate.
CD-ROM	Select *Type*. Select *CDROM*. Click on *OK* when AMIBIOS displays the drive parameters.
Standard MFM	Select *Type.* You must know the drive parameters. Select the drive type that exactly matches your drive' s parameters.
Non-Standard MFM	Select *Type.* If the drive parameters do not match the drive parameters listed for drive types 1-46, select *User* and enter the correct hard disk drive parameters.

Entering Drive Parameters

You can also enter the hard disk drive parameters. The drive parameters are

Parameter	Description
Type	The number for a drive with certain identification parameters.
Cylinders	The number of cylinders in the disk drive.
Heads	The number of heads.
Write Precomp- ensation	The actual physical size of a sector gets progressively smaller as the track diameter diminishes. Yet each sector must still hold 512 bytes. Write precompensation circuitry on the hard disk compensates for the physical difference in sector size by boosting the write current for sectors on inner tracks. This parameter is the track number on the disk surface where write precompensation begins.
Landing Zone	This number is the cylinder location where the heads normally park when the system is shut down.
Sectors	The number of sectors per track. MFM drives have 17 sectors per track. RLL drives have 26 sectors per track. ESDI drives have 34 sectors per track. SCSI and IDE drives have even more sectors per track.
Capacity	The formatted capacity of the drive is the number of heads times the number of cylinders times the number of sectors per track times 512 (bytes per sector).

4.2 Advanced CMOS Setup

The AMIBIOS Setup options described in this section are selected by choosing Advanced CMOS Setup from the AMIBIOS Setup main menu.

4.3 Advanced Chipset Setup

Choose Chipset Setup on the AMIBIOS Setup main menu. All Chipset Setup options are then displayed. AMIBIOS Setup can be customized.

4.4 Power Management Setup

The AMIBIOS Setup options described in this section are selected by choosing Power Management Setup from the AMIBIOS Setup main menu.

4.5 PCI / PnP Setup

Choose PCI/Plug and Play Setup from the AMIBIOS Setup screen to display the PCI and Plug and Play Setup options.

4.6 CPU Configuration Setup

This system BIOS is capable to detect the CPU type, say Pentium III, Pentium II or Celeron. The user is only required to select the CPU speed. In addition, overclocking option is provided for advanced users who prefer to run the CPU over the specified clock frequency.

4.7 Save Settings and Exit

Choose Save Setting and Exit from the AMIBIOS Setup main menu. Type "Y" to exit the BIOS Setup program and saving the values. Type "N" to return to the Setup program.

4.8 Exit Without Saving

Choose Exit Without Saving from the AMIBIOS Setup main menu. Type "Y" to exit the BIOS Setup program without saving the values. Type "N" to return to the Setup program.

The End