Chapter 4

AMI® BIOS USER'S GUIDE

The system configuration information and chipset register information is stored in the CMOS RAM. This information is retained by a battery when the power is off. Enter the BIOS setup (if needed) to modify this information.

The following pages will describe how to enter BIOS setup, and all about options.

4.1 Enter BIOS Setup

Enter the AMI® setup Program's Main Menu as follows:

1. Turn on or reboot the system. The following screen appears with a series of diagnostic check.

```
AMIBIOS (C) 1999 American Megatrends Inc.
AGIOMS VXXX XXXXXX

Hit <DEL> if you want to run setup




(C) American Megatrends Inc.
61-XXXX-001169-00111111-071592-i82440FX-H
```

2. When the "Hit <DEL>" message appears, press <DEL> key to enter the BIOS setup screen.

3. After pressing <DEL> key, the BIOS setup screen will appear.

Note: *If you don't want to modify CMOS original setting, then don't press any key during the system boot.*

```
 AMIBIOS  HIFLEX  SETUP  UTILITIES  -  VERSION  1.22
 (C)  1999  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
              Hardware  Monitor  Setup
              Auto-Detect  Hard  Disks
               Change  User  Password
            Change  Supervisor  Password
               Change  Language  Setting
       Auto  Configuration  with  Optimal  Settings
     Auto  Configuration  with  Fail  Safe  Settings
                Save  Settings  and  Exit
                Exit  without  Saving

     Standard CMOS setup for changing time, hard disk type, etc.
```

4. Use the <Up> and <Down> key to move the highlight scroll up or down.

5. Use the <ENTER> key to select the option.

6. To exit, press <ESC>. To save and exit, press <F10>.

7. Section 4.2 to 4.7 will explain the option in more details.

4.2 Standard CMOS Setup

1. Press <ENTER> on "Standard CMOS Setup" of the main menu
   screen .

```
        AMIBIOS  SETUP  -  STANDARD  CMOS  SETUP
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Date  (mm/dd/yyyy):      Fri March 20, 1999
Time  (hh/mm/ss):        17:09:25

Floppy  Drive A:         1.44 MB 3 1/2
Floppy  Drive B:         Not  Installed
                                           LBA   Blk   PIO   32Bit
           Type  Size  Cyln  Head  WPcom Sec  Mode  Mode  Mode  Mode
Pri Master :Auto                           ON    ON    AUTO  ON
Pri Slave  :Auto                           ON    ON    AUTO  ON
Sec Master :Auto                           ON    ON    AUTO  ON
Sec Slave  :Auto                           ON    ON    AUTO  ON

Boot  Sector  Virus  Protection  Disabled


Month  : Jan-Dec                 ESC:Exit       :Sel
Day    : 01-31                   PgUp/PgDn:Modify
Year   : 1901-2099               F2/F3:Color
```

2. Use <Up> and <Down> to choose the item and <PgUp> and
   <PgDn> keys to modify the highlighted item.

3. After you have finished with the Standard CMOS Setup,   press
   <ESC> to go back to the main menu.

4.3 Advanced CMOS Setup

1. Press <ENTER> on "Advanced CMOS Setup" of the main menu

```
            AMIBIOS  SETUP  -  ADVANCED  CMOS  SETUP
          (C) 1999 American Megatrends, Inc. All Rights Reserved

Quick Boot                       Enabled     | Available  Options:
Ist Boot Device                  Floppy      | Disabled
2nd Boot Device                  IDE 0       | Enabled
3rd Boot Device                  CD-ROM      |
Try Other Boot Devices           Yes         |
Initial Display Mode             BIOS        |
Display Mode at Add-On ROM Init  Force-BIOS  |
Floppy Access Control            Read-Write  |
S.M.A.R.T. For Hard Disk         Disabled    |
BootUp Num-Lock                  On          |
Floppy Drive Swap                Disabled    |
Floppy Drive Seek                Disabled    |
PS/2 Mouse Support               Enabled     |
Primary Display                  VGA/EGA     |
Password Check                   Setup       |
Boot to OS/2 > 64M               No          |
CPU Serial Number                Disabled    |
  L1 Cache                       WriteBack   |
  L2 Cache                       WriteBack   |
Cache Bus ECC                    Enabled     |
System BIOS Cacheable            Disabled    |
C000, 64k Shadow                 Enabled     | ESC:Exit       :Sel
                                             | PgUp/PgDn:Modify
                                             | F2/F3:Color
```

2. Use <Up> and <Down> to choose the item and <PgUp> and
    <PgDn> keys to modify the highlighted item.

3. After you have finished with the Advanced CMOS Setup, press
    <ESC> to go back to the main menu.

Description of the item on screen follows:

Quick Boot

Set this option to Enabled to permit AMI® BIOS to boot within 5 seconds. This option replaces the old ABOVE 1 MB Memory Test option. The Optimal default setting is Enabled. The Fail-Safe default setting is Disabled.

1st Boot Device/2nd Boot Device/3rd Boot Device

This option sets the sequence of boot drives.
The settings are:

IDE0	The system will boot from the first HDD.
IDE1	The system will boot from the Second HDD.
IDE2	The system will boot from the Third HDD.
IDE3	The system will boot from the Fourth HDD.
F(optical)	The system will boot from LS-120(120M Floppy).
SCSI	The system will boot from the SCSI.
Network	The system will boot from the Network drive.
CD-ROM	The system will boot from the CD-ROM.
Disable	Disable this sequence.

Try other Boot Devices

This option sets the device boot, if all the Four Boot Devices failed.

Initial Display Mode

This option sets the device boot, if all the Four Boot Devices failed.

Display Mode at Add-On ROM Init

This option sets the device boot, if all the Four Boot Devices failed.

Floppy Access Control

This option sets the Floppy to Read-only or Read-Write.

S.M.A.R.T. for Hard Disks

This option sets the SMART Function for the hard disk. The hard disk need to have SMART function for this feature to work.

Boot up Num Lock

When this option is set to Off, AMI® BIOS turns off the Num Lock key when the system is powered on. The end user can then use the arrow keys on both the numeric keypad and the keyboard. The settings are On or Off. The optimal default and Fail-Safe default settings are On.

Floppy Drive Swap

Set this option to Enabled to specify that floppy drives A: and B: are swapped. The setting are Enabled and Disabled. The Optimal and Fail-Safe default settings are Disabled.

Floppy Drive Seek

When this option is set to Enabled, AMI® BIOS performs a Seek command on floppy drive A: before booting the system. The settings are Enabled and Disabled. The Optimal and Fail-Safe default settings are Disabled.

PS/2® Mouse Support

When this option is set to Enabled, AMI® BIOS supports a PS/2® mouse. The settings are Enabled and Disabled. The Optimal and Fail-Safe default settings are Enabled.

Primary Display

This option configures the primary display subsytem in the computer. The settings are Mono(monochrome), 40CGA, 80CGA or VGA/EGA. The optimal and Fail-Safe default settings are VGA/EGA.

Password Check

This option specifies the type of AMI® BIOS password protection that is implemented. The Optimal and Fail-Safe default settings are Setup.

Boot To OS/2® > 64MB

Set this option to Enabled to permit the BIOS to run properly, if OS/2® is to be used with > 64MB of DRAM. The settings are Enabled or Disabled. The Optimal and Fail-safe default settings are Disabled.

CPU Serial Number

This option is for Pentium III processor. During Enabled, this will check the CPU Serial number. Disabled this option if you don't want the system to know the Serial number.

Cache Bus ECC

This option is for Pentium® II processor. During Enabled, this will affect the system performance. Disabled this option if you don't want to affect the system performance.

System BIOS Cacheable

AMI® BIOS always copies the system BIOS from ROM to RAM for faster execution. Set this option to Enabled to permit the contents of the F0000h RAM memory segment to be written to and read from cache memory. The settings are Enabled or Disabled. The Optimal default setting is Enabled. The Fail-Safe default setting is Disabled.

C000, 64K Shadow

These options specify how the contents of the video ROM are handled. The settings are:

Enabled - the Video ROM is copied to RAM.

Cached - the contents of the video ROM from C0000h - C7FFFh are not only copied from ROM to RAM; it can also be written to or read from cache memory.

Shadow - the Contents of the video ROM from C0000h - C7FFFh are copied(shadowed) from ROM to RAM for faster execution.

The Optimal and Fail-Safe default setting is Cached.

4.4 Advanced Chipset Setup

1. Press <ENTER> on "Advanced Chipset Setup" of the main menu screen.

```
        AMIBIOS  SETUP  -  ADVANCED  CHIPSET  SETUP
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USB  Function                      Enabled     Available  Options:
USB  Keyboard Legacy Support       Disabled    Disabled
CPU  Latency Timer                 Disabled    Enabled
DRAM Page Closing Policy           Closed
CD Hole (DC000h - DFFFh)           Disabled
Memory Hole                        Disabled
DRAM Tras/Trc Cycle Time(SCLKs)    6/8
Address  Setup Time(SCLKs)         1
CAS# Latency(SCLKs)                3
SDRAM RAS# to CAS# Delay(SCLKs)    3
SDRAM RAS# Precharge               3
Graphics Mode Select               UMA 1MB
Onboard Video Chip                 Enabled
CPU BIST Enable                    Disabled
ICH Delayed Transaction            Disabled
ICH DCB Enable                     Disabled
Local Memory Frequency             100 MHz
  ****Display Cache Function****               ESC:Exit       :Sel
Initialize Display Cache Memory    Enabled     PgUp/PgDn:Modify
  Paging Mode Control              Closed      F2/F3:Color
  RAS-to-CAS                       Default


  CAS Latency                      Slow
  RAS Timing                       Slow
  RAS Precharge Timing             Slow
```

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the Advanced Chipset Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

USB Function

Set this option to Enabled or Disabled the on-chip USB controller. The Optional and Fail-Safe default settings are Disabled.

USB Keyboard Legacy Support

Set this option to Enabled or Disabled USB keyboard. The Optional and Fail-Safe default settings are Disabled.

DRAM Page Closing Policy

This option controls whether the GMCH will precharge bank or precharge all, during the service of a page miss.

Memory Hole

This option allows the end user to specify the location of a memory hole. The cycle matching the selected memory hole will be passed to the ISA bus. If Enabled, the selected hole is not remapped.

DRAM Tras/Trc Cycle Time (SCLKs)

This option controls the number of SCLKs for an access cycle.

CAS# Latency

This option determines the CAS latency time parameter of SDRAM. The settings are 2 clks or 3 clks. Under 66MHz CPU bus, set this option to either 2 or 3 but for 100MHz CPU, it is recommended that this be set to 3.

SDRAM RAS# to CAS# Delay

This operation decide the delay in assertion of CAS#(SCAS#) from assertion of RAS#(SRAS#) in 66MHz. Under 66MHz CPU bus, set this option to either 2 or 3 but for 100MHz CPU, it is recommended that this be set to 3.

SDRAM RAS Precharge

This option defines the RAS# precharge requirements for the SDRAM memory type in 66MHz clocks. Under 66MHz CPU bus, set this option to either 2 or 3 but for 100MHz CPU, it is recommended that this be set to 3.

Graphics Mode Select

This option is used to enable/disable the internal graphics device and select the amount of system memory that is used to support the internal graphics device.

Onboard Video Chip

This option is used to enable/disable the onboard video chip.

Initialize Display Cache Memory

This option will allow you to initialize the display cache memory.

Paging Mode Control

This option allows the GMCH memory controller to control whether to leave the pages open or closed.

RAS-to-CAS

This option determine the display cache RAS#-to CAS# delay.

CAS# Latency

This option decide the display cache CAS latency.

RAS# Timing

This option controls RAS# active to precharge, and refresh to RAS# active delay.

RAS# Precharge Timing

This option controls RAS# precharge clocks.

4.5 Power Management Setup

1. Press <ENTER> on "Power Management Setup" of the main menu screen.

```
        AMIBIOS  SETUP  -  POWER  MANAGEMENT  SETUP
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ACPI Standby State              S1/POS      Available  Options:
USB Keyboard Wakeup from S3      Disabled    Disabled
Power  Management/APM            Enabled     Enabled
Green  PC LED Status             Blinking
Green  PC Monitor Power State    Stand By
Video Power Down Mode            Suspend
Hard Disk power Down Mode        Stand By
Standby Time Out (Minute)        Disabled
Suspend Time Out (Minute)        Disabled
Throttle  Slow Clock Ratio       50.0%
Keyboard & PS/2 Mouse Access     Monitor
FDC/LPT/COM Ports Access         Monitor
SB & MSS Audio Ports Access      Ignore
Midi Ports Access                Ignore
ADLIB Ports Access               Ignore
Primary Master IDE Access        Monitor
Primary Slave IDE Access         Ignore
Secondary Master IDE Access      Monitor
Secondary Slave IDE Access       Ignore
PIRQ[A] IRQ Active               Ignore
PIRQ[B] IRQ Active               Ignore
PIRQ[C] IRQ Active               Ignore
PIRQ[D] IRQ Active               Ignore
System  Thermal                  Ignore
Thermal  Slow Clock Ratio        50.0%
CPU Critical  Temperature        650C/1490F
Power Button Function            On/Off
Restore on AC/Power Loss         Last State  ESC:Exit      :Sel
Ring Resume from Soft Off        Disabled    PgUp/PgDn:Modify
LAN Resume from Soft Off         Disabled    F2/F3:Color
PME  Function Support            Disabled


RTC Alarm Resume from Soft Off   Disabled
RTC Alarm Date                   15
RTC Alarm Hour                   12
RTC ALarm Minute                 30
RTC Alarm Second                 30
```

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the Power Management Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

ACPI Standby State

This option sets the ACPI Power Management Standby State.

USB Keyboard Wake-Up from S3

This function allows the user to Enabled or Disabled the USB Keyboard Wake-up from Suspend to RAM. The default setting is Disabled.

Power Management/APM

Set this option to Enabled to enable the chipset's power management features and APM(Advanced Power Management). The settings are Enabled, Inst-On(instant-on) or Disabled. The Optimal and Fail-Safe default settings are Disabled.

Green PC LED Status

This option specifies the power state that the green PC-compliant video monitor enters when AMI® BIOS places it in a power savings state after the specified period of display inactivity has expired. The settings are Off, Standby, Suspend or Disabled. The Optimal and Fail-Safe default settings are Standby.

Green PC Monitor Power State

This option specifies the power state that the green PC-compliant video monitor enters when AMI® BIOS places it in a power savings state after the specified period of display inactivity has expired. The settings are Off, Standby, Suspend or Disabled. The Optimal and Fail-Safe default settings are Standby.

Video Power Down Mode

This option specifies the power conserving state that the VESA VGA video subsystem enters after the specified period of display inactivity has expired. The settings are Disabled, Standby or Suspend. The Optimal and Fail-Safe default settings are Standby.

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. The settings are Disabled, Standby or Suspend. The Optimal and Fail-Safe default settings are Disabled.

Standby Time Out (Minute)

This option specifies the length of a period of system inactivity while in Standby state. When this length of time expires, the computer enters Suspend power state. The settings are Disabled, 1 min, 2 min, 3 min, 4 min, 5 min, 6 min, 7 min, 8 min, 9 min, 10 min, 11 min, 12 min, 13 min, 14 min or 15 min. The Optimal and Fail-Safe default settings are Disabled.

Suspend Time Out (Minute)

This option specifies the length of a period of system inactivity while in Standby state. When this length of time expires, the computer enters Suspend power state. The settings are Disabled, 1 min, 2 min, 3 min, 4 min, 5 min, 6 min, 7 min, 8 min, 9 min, 10 min, 11 min, 12 min, 13 min, 14 min or 15 min. The Optimal and Fail-Safe default settings are Disabled.

Throttle Slow Clock Ratio

This option specifies the speed at which the system clock runs in power saving states. The settings are expressed as a ratio between the normal CPU clock speed and the CPU clock speed when the computer is in the power-conserving state.

Thermal Slow Clock Ratio

When set to Monitor, then you can choose the throttle ratio. This option is connected with the **CPU Critical Temperature** Option.

CPU Critical Temperature

This option is for setting the CPU temperature that would be critical enough, so that it would use the Thermal Slow Clock Ratio to cool down the CPU.

Power Button Function

During Suspend, if you push the switch once, the system goes into suspend mode and if you push it more than 4 seconds, the system will be turned off. During On/Off, the system will turn off once you push the switch.

Restore on AC/Power Loss

The settings are power on 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 the AC power returns.

Note: a. If you set this option to last status, the Power Button Function must be set to On/Off, or this function will not work.

Ring Resume from Soft-Off

During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from the modem.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system. Then, power off the system. This function will work the next time you power on.

LAN Resume from Soft-Off

During Disabled, the system will ignore any incoming signal from the LAN network card. During Enabled, the system will boot up if there's an incoming signal from the LAN network card.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system. Then, power off the system. This function will work the next time you power on.

RTC Alarm Resume From Soft-Off

This function is for setting the Date, Hour, Minute, and Second for your computer to boot up. During Disabled, you cannot use this function. During Enabled, Choose the Date, Hour, Minute, and Second:

RTC Alarm Date	Choose which day the system will boot up.
RTC Alarm Hour	Choose which hour the system will boot up.
RTC Alarm Minute	Choose which minute the system will boot up.
RTC Alarm Second	Choose which second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system. Then, power off the system. This function will work the next time you power on.

4.6 PCI/Plug and Play Setup

1. Press <ENTER> on "PCI/Plug and Play Setup" of the main menu screen.

```
        AMIBIOS  SETUP  -  PCI/PLUG  AND  PLAY  SETUP
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 Plug and Play Aware O/S          No       Available  Options:
 Clear  NVRAM                     No       Enabled
 PCI Latency Timer (PCI Clocks)   64       Disabled
 Primary  Graphics  Adapter       Add-On VGA
 VBULoad                          Disabled
 PCI VGA Palette Snoop            Disabled
 DMA Channel 0                    PnP
 DMA Channel 1                    PnP
 DMA Channel 3                    PnP
 DMA Channel 5                    PnP
 DMA Channel 6                    PnP
 DMA Channel 7                    PnP
 IRQ3                             PCI/PnP
 IRQ4                             PCI/PnP
 IRQ5                             PCI/PnP
 IRQ7                             PCI/PnP
 IRQ9                             PCI/PnP
 IRQ10                            PCI/PnP
 IRQ11                            PCI/PnP
 IRQ14                            PCI/PnP
 IRQ15                            PCI/PnP

                                          ESC:Exit      :Sel
                                          PgUp/PgDn:Modify
                                          F2/F3:Color
```

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the PCI/Plug and Play Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

Plug and Play Aware O/S

Set this option to Yes if the operating system in this computer is aware of and follows the Plug and Play specification. Currently, only Windows® 95 is PnP-aware. The settings are Yes or No. The Optimal and Fail-Safe default settings No.

Clear NVRAM on Every Boot

During Yes, this will clear NVRAM data on every boot.

PCI Latency Timer (PCI Clocks)

This option specifies the latency timings (in PCI clocks) for all PCI devices on the PCI bus. The settings are 32, 64, 96, 128, 160, 192, 224 or 248. The Optimal and Fail-Safe default settings are 64.

Primary Graphics Adapter

This option is for selecting which VGA card is to be your primary display graphics adapter.

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 ISA) and the Bit settings are:

Disabled - Data read and written by the CPU is only directed to the PCI VGA device's palette registers.

Enabled - Data read and written by the CPU is directed to 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 an ISA adapter card requires VGA palette snooping. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disabled.

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

These options specify the bus that the specified DMA channel is used. These options allow you to reserve DMAs for legacy ISA adapter cards.

These options determine if AMI® BIOS should remove a DMA from the available DMAs passed to devices that are configurable by the system BIOS. The available DMA pool is determined by reading the ESCD NVRAM. If more DMAs must be removed from the pool, the end user can use these options to reserve the DMA by assigning an ISA/EISA setting to it.

IRQ3/IRQ4/IRQ5/RQ7/IRQ9/IRQ10/IRQ11/IRQ14/IRQ15

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 AMI® BIOS 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 AMI® BIOS. All IRQs used by onboard I/O are configured as PCI/PnP. 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. The settings are ISA/EISA or PCI/PnP. The Optimal and Fail-Safe default settings are IRQ3 through 7 are ISA/EISA. The Optimal and Fail-Safe default settings PCI/PnP.

4.7 Peripheral Setup

1. Press <ENTER> on "Peripheral Setup" of the main menu screen.

```
        AMIBIOS  SETUP  -  PERIPHERAL  SETUP
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CLKGEN  Spread  Spectrum        Enabled     Available  Options:
CPU  Ratio  Selection           3.0x        Auto
CPU  Host  Clock  (Mhz)         Auto        Disabled
Onboard  AC'97  Audio           Enabled     Enabled
Onboard  AC'97  Modem           Disabled
Onboard  IDE                    Both
Onboard  FDC                    Auto
Onboard  Serial  Port  A        Auto
Onboard  Serial  Port  B        Auto
  Serial  Port  B  Mode         Normal
   IR  Duplex  Mode             Half  Duplex
   IR  Pin  Select              IRRX/IRTX
Onboard  CIR  Port              Disabled
  CIR  IRQ  Select              10
Onboard  Parallel  Port         Auto
  Parallel  Port  Mode          ECP
  EPP  Version                  N/A
  Parallel  Port  IRQ           Auto
  Parallel  Port  DMA  Channel  Auto
Onboard  Midi  Port             Disabled
  Midi  IRQ  Select             9
Onboard  Game  Port             Disabled   ESC:Exit      :Sel
Mouse  PowerOn  Function        Disabled   PgUp/PgDn:Modify
Keyboard  PowerOn  Function     Disabled   F2/F3:Color
Specific  Key  for  Power  On   N/A
```

2. Use <up> and <down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the Peripheral Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

CLKGEN Spread Spectrum
> This item allows you to set the CPU clock generator spread spectrum.

CPU Ratio Selection
> This item allows you to set the CPU ratio.

CPU Host Clock (MHz)
> This item allows you to set the CPU host clock.

Onboard AC'97 Audio/Onboard AC'97 Modem
> This item allows you to decide to enable/disable the 810 chipset
family to support AC97 Audio/Modem. The settings are Enabled, Disabled.

Onboard IDE
> Set this option to enable or disable on board IDE controller.

Onboard FDC

Choose Auto, for the BIOS to automatically detect the device

If the ISA add-on card has	Onboard FDC to be set at
FDC exist	Disabled
none FDC exist	Enabled

Choose Enabled, Enabling onboard FDC.
Choose Disabled, Disabling onboard FDC.
The Optimal and Fail-Safe default settings are Auto.

Onboard Serial Port A/Onboard Serial Port B

Choose 3F8, for the BIOS to automatically detect the device.

If the ISA add-on card has				Onboard Serial port to be set at			
COM1 (I/O:3F8H)	COM2 (I/O:3F8H)	COM3 (I/O:3E8H)	COM4 (I/O:2E8H)	PORT1	IRQ ASSIGNED	PORT2	IRQ ASSIGNED
✓	✓	✓	✓	DISABLED	X	DISABLED	X
✓	✓	X	X	COM3	4	COM4	3
X	X	✓	✓	COM1	4	COM2	3
✓	X	X	✓	COM2	3	COM3	4
X	✓	✓	X	COM1	4	COM4	3
✓	✓	✓	X	COM4	3	DISABLED	X
✓	✓	X	✓	COM3	4	DISABLED	X
✓	X	✓	✓	COM2	3	DISABLED	X
X	✓	✓	✓	COM1	4	DISABLED	X
X	X	X	X	COM1	4	COM2	3
✓	X	X	X	COM2	3	COM3	4
X	✓	X	X	COM1	4	COM3	4
X	X	✓	X	COM1	4	COM2	3
X	X	X	✓	COM1	4	COM2	3

Note: *If the onboard serial port interrupt and ISA add-on card interrupt are in conflict, the serial port will not work properly. Please disable one of the devices.*

Serial PortB Mode

Choosing Normal will set the Serial Port B for normal use, not for IR device. Choosing IrDA or Ask IR will set it for use with IR device using these protocols.

IR Duplex Mode

Can be set as either Half or Full duplex.

IR Pin Select

Set this option to IRRX/IRTX when using an internal IR device which is connected to IR1 connector.

Onboard Parallel Port

Choose Auto, the BIOS automatically assigned onboard parallel port to the available parallel port or disabled.

If the ISA add-on card has			Onboard parallel port to be set as	
LPT1 I/O:378H	LPT2 I/O:278H	LPT3 I/O:3BCH	PORT ASSIGNED	IRQ ASSIGNED
✓	✓	✓	Disabled	X
✓	✓	X	LPT3	5
✓	X	✓	LPT2	5
X	✓	✓	LPT1	7
✓	X	X	LPT2	5
X	✓	X	LPT1	7
X	X	✓	LPT1	7
X	X	X	LPT1	7

Note: *If the onboard parallel port interrupt and ISA add-on card interrupt are in conflict, the parallel port will not work properly. Please disable one of the devices.*

Parallel Port Mode

This option allows user to choose the operating mode of the onboard parallel port. The settings are Normal, SPP/EPP or ECP mode.

EPP Version

This option is for setting which EPP version will be used. The settings are 1.7 and 1.9.

Parallel Port IRQ

If the onboard parallel mode is not on auto mode, the user can select the interrupt line for onboard parallel port. We suggest that the user select the interrupt for the onboard parallel port as shown below:

Onboard parallel port set at	Parallel Port IRQ
LPT1(378H)	7
LPT2(278H)	5
LPT3(3BCH)	5

Parallel Port DMA Channel

This option allows user to choose DMA channel 1 to 3 for the onboard parallel port on ECP mode.

4.8 Hardware Monitor Setup (optional)

The Hardware Monitor Setup is used to set the CPU speed and monitor the current CPU Temperature, CPU Fan speed, Chassis Fan Speed, Power fan speed, Vcore, etc.

1. Press <ENTER> on "Hardware Monitor Setup" of the main menu screen.

```
        AMIBIOS  SETUP  -  HARDWARE  MONITOR  SETUP
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Chassis  Intrusion              Disabled     Available  Options:
CPU Temperature Detected By      CPU          Manual
  CPU Temperature               46°C/114°F    Auto
  System Temperature            31°C/87°F
  CPU Fan Speed                 4560 RPM
  CPU VID                       2.00V
  Vcore                         1.936V
  Vtt                           2.480V
  Vio                           3.280V
  +5,000V                       5.113V
  +12,000V                      12.045V
  -12,000V                      -11.763V
  -5,000V                       -4.932V
  Battery                       3.00V
  +5V SB                        5.60V

                                             ESC:Exit       :Sel
                                             PgUp/PgDn:Modify
                                             F2/F3:Color
```

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.

3. After you have finished with the PCI/Plug and Play Setup, press <ESC> to go back to the main menu.