

## **Chapter 3**

### **AMI BIOS USER 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 need) to modify this information.

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

## 3.1 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) 1996 American Megatrends Inc.  
AGIOMS VXXX XXXXXX
```

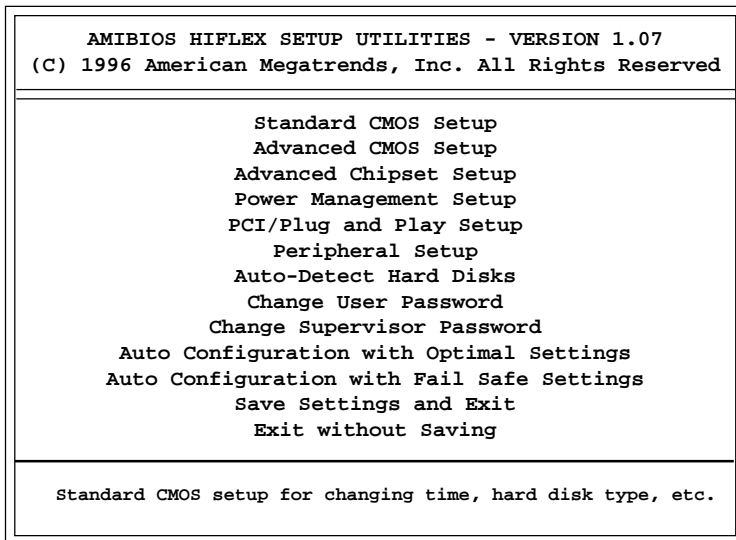
```
Hit <DEL> if you want to run setup
```

```
(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.*

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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 3.2 to 3.7 will explain the option in more details.

3.2 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): Mon Apr 30, 1997  
Time (hh/mm/ss): 17:09:25

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

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

Time is 24 hour format:  
Hour: 00-23 Minute: 00-59 Second: 00-59  
(1:30AM = 01:30:00, 1:30PM = 13:30:00)

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 Standard CMOS Setup, press <ESC> to go back to the main menu.

3.3 Advanced CMOS Setup

- 1. Press <ENTER> on “Advanced CMOS Setup” of the main menu

AMIBIOS SETUP - ADVANCED CMOS SETUP		
(C) 1996 American Megatrends, Inc. All Rights Reserved		
Quick Boot	Enabled	Available Options: Enabled Disabled
Pause on Config. Screen (sec.)	Disabled	
1st Boot Device	IDE-0	
2nd Boot Device	FLOPPY	
3rd Boot Device	CD-ROM	
4th Boot Device	Disabled	
Try Other Boot Devices	Yes	
S.M.A.R.T. for Hard Disks	Disabled	
BootUp Num-Lock	On	
Floppy Drive Swap	Disabled	
Floppy Drive Seek	Disabled	
Floppy Access Control	Normal	
HDD Access Control	Normal	
PS/2 Mouse Support	Enabled	
Primary Display	VGA/EGA	
Password Check	Setup	
Parity Check	Disabled	
Boot to OS/2	No	
Internal Cache	Writeback	
External Cache	Writeback	
System BIOS Cacheable	Enabled	
C000, 16k Shadow	Cached	ESC:Exit :Sel
C400, 16k Shadow	Cached	PgUp/PgDn:Modify
C800, 16k Shadow	Disabled	F2/F3:Color

CC00, 16k Shadow	Disabled	
D000, 16k Shadow	Disabled	
D400, 16k Shadow	Disabled	
D800, 16k Shadow	Disabled	
DC00, 16k Shadow	Disabled	

- 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 AMIBIOS 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.

### **Pause on Config. Screen (Sec.)**

This option sets the time for pausing the OS screen during boot-up sequence. The settings are 0- 15 Sec. or Disabled. The Optimal and Fail-Safe default settings are Disabled.

### **1st Boot Device/2nd Boot Device/3rd Boot Device/ 4th 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.

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

This option sets the SMART Function for the Hard Disk. The Hard Disk has to have SMART function for this feature to take effect.

### **Boot up Num Lock**

When this option is set to Off, AMIBIOS turns off the Num Lock key when the system is powered on so the end user can 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, AMIBIOS 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.

### **Floppy Access Control**

This option sets the Floppy to Read-only or Normal(Full Access).

### **HDD Access Control**

This option sets the HDD to Read-only or Normal(Full Access). During Read-only, if you try to write on the HDD the system will halt.

### **PS/2 Mouse Support**

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

### **Primary Display**

This option configures the primary display subsystem 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 AMIBIOS password protection that is implemented. The Optimal and Fail-Safe default settings are Setup.

### **Parity Check**

Set this option to Enabled to use the Parity Check function. The DIMM module need to have parity bit for this function to work.

### **Boot to OS/2**

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.

### **Internal Cache/External Cache**

This option selects the type of caching algorithm used by AMIBIOS and the CPU for L1 cache memory(internal/external to the CPU). The settings are Writeback - a writeback algorithm is used, Write-through - a write-through algorithm is used or Disabled - AMIBIOS does not specify the type of caching algorithm. The algorithm is set by the CPU. The Optimal and Fail-Safe default settings are Writeback.

### **System BIOS Cacheable**

AMIBIOS 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, 16K Shadow/C400, 16k Shadow**

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

- Disabled** - the Video ROM is not copied to RAM.
- Cached** - the contents of the video ROM are 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 are from C0000h - C7FFFh are copied(shadowed) from ROM to RAM for faster execution.

The Optimal and Fail-Safe default setting is Cached.

**C800, 16k Shadow/CC00, 16k Shadow/D000, 16K Shadow/D400, 16k Shadow/D800, 16k Shadow/DC00, 16K Shadow**

These options specify how the contents of the adaptor ROM named in the option title are handled. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards. The settings are;

- Disabled** - The specified ROM is not copied to RAM.
- Cache** - The contents of the ROM area are not only copied from ROM to RAM for faster execution, it can also be written to or read from cache memory.
- Shadow** - The contents of the ROM area are copied from ROM to RAM for faster execution.

The Optimal and Fail-Safe default settings are Disabled.

3.4 Advanced Chipset Setup

- 1. Press <ENTER> on “Advanced Chipset Setup” of the main menu screen.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP		
(C) 1996 American Megatrends, Inc. All Rights Reserved		
Auto Configure DRAM Timing	Enabled	Available Options: Enabled Disabled
DRAM Speed (ns)	60	
DRAM Read Burst Timing (B/E/F)	x2/2/3	
DRAM Write Burst Timing (B/E/F)	x2/3/3	
RASx# to CASx# Delay	Enabled	
MA wait State	1 W/s	
RAS Precharge	3 Clocks	
DRAM Parity/ECC	Disabled	
DRAM Fast Leadoff	Disabled	
DRAM Refresh Type	CAS/RAS	
DRAM Refresh Queue	Disabled	
VGA Frame Buffer USWC	Disabled	
PCI Frame Buffer USWC	Disabled	
Fixed Memory Hole	Disabled	
CPU To IDE Posting	Enabled	
USWC Write Posting	Enabled	
CPU To PCI Posting	Enabled	
PCI To DRAM Pipeline	Enabled	
PCI To Burst Write Combine	Enabled	
Read Around Write	Enabled	
8-Bit I/O Recovery Times	1 SysClk	
16-Bit I/O Recovery Times	1 SysClk	
Passive Release Enable	Enabled	
Delayed Transaction Enable	Disabled	ESC:Exit :Sel
USB Function	Disabled	PgUp/PgDn:Modify
USB Keyboard/Mouse Support	Disabled	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 Chipset Setup, press <ESC> to go back to the main menu.

## **Description of the item on screen follows:**

### **Auto Configure DRAM Timing**

Choose Enabled(default) will automatically configure the DRAM timing depends on “DRAM Speed” selection. Choose disable to customize setup.

### **DRAM Speed (ns)**

This option specifies the RAS access time (in nanoseconds) for the DRAM used in the computer for system memory. The settings are 50,60 or 70. The Optimal default setting is 60 and the Fail-Safe default setting is 70.

### **DRAM Read Burst Timing (B/E/F)**

Choose DRAM read burst timing for the customize setup.  
B stand for BEDO DRAM, E stand for EDO DRAM and F stand for FAST PAGE DRAM.

### **DRAM Write Burst Timing (B/E/F)**

Choose DRAM write burst timing for the customize setup.

### **RASx# to CASx# Delay**

Choose Enabled will insert 3 clock delay between the RASx# and CASx#. There will be 2 clock delay if disabled (default) is chosen.

### **MA Wait State**

Choose Enabled, one additional wait state is inserted before the assertion of the first MA and CAS/RAS assertion during DRAM read or write leadoff cycles.

### **RAS Precharge**

Choose the DRAM's RASx# precharge time.

### **DRAM Parity/ECC**

Set this option to Enabled for ECC(Error Checking and Correction) DRAM integrity mode. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disabled.

**Note:** *To enable this function, you have to used DIMM w/Parity.*

### **DRAM Fast Leadoff**

Choose Enabled, one additional wait state is added to the DRAM leadoff timing for page/row miss cycles. The leadoff controls the MA setup to the first CASx# assertion.

### **DRAM Refresh Type**

This option sets the type of system memory refresh that is used in the computer. The settings are RAS only or CAS/RAS (CAS before RAS refresh). The Optimal and Fail-Safe default settings are CAS/RAS.

### **DRAM Refresh Queue**

Choose Enabled, the system will provide 4-deep refresh queue. All refresh request are queued, with the 4th refresh request being the priority request. All refresh requests are priority when the refresh queue is Disabled.

### **Fixed 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.

### **CPU To IDE Posting**

Set this option to Enabled to enable posted messages from the CPU to the IDE controller. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.

### **USWC Write Posting**

Set this option to Enabled to use USWC(Uncacheable, Speculatable, Write-Combined) memory. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disable.

### **CPU To PCI Posting**

Set this option to Enabled to give priority to posted messages from the CPU to the PCI bus. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.

### **PCI to DRAM Pipeline**

Set this option to Enabled the pipeline from the PCI bus to system memory. The settings are Enabled or Disabled. The Optimal and Fail-Safe Default settings are Enabled.

### **PCI Burst Write Combine**

Set this option to Enabled to allow write instructions to be combined in PCI Burst mode. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.

### **Read Around Write**

Set this option to Enabled to allow read operations to bypass write operations in the memory controller. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.

### **8-Bit I/O Recovery Time / 16-Bit I/O Recovery Time**

Choose the recovery time for 8-bit and 16-bit I/O cycles respectively.

### **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/Mouse Support**

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

3.5 Power Management Setup

- 1. Press <ENTER> on “Power Management Setup” of the main menu screen.

AMIBIOS SETUP - POWER MANAGEMENT SETUP		
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Power Management / APM	Disabled	Available Options: Enabled Disabled
Green PC Monitor Power State	Blank	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Stand By	
Hard Disk Time Out (Minute)	Disabled	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Slow Clock Ratio	1:8	
Modem Use IRQ	N/A	
IRQ3	Both	
IRQ4	Both	
IRQ5	Ignore	
IRQ7	Monitor	
IRQ8	Ignore	
IRQ9	Ignore	
IRQ10	Ignore	
IRQ11	Ignore	
IRQ12	Both	
IRQ13	Ignore	
IRQ14	Monitor	
		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 Power Management Setup, press <ESC> to go back to the main menu.

## **Description of the item on screen follows:**

### **Power Management/APM**

Set this option to Enabled to enable the Intel 82440FX ISA 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 Monitor Power State**

This option specifies the power state that the green PC-compliant video monitor enters when AMIBIOS 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.

### **Hard Disk Timeout (Minutes)**

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 (see the previous page). 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.

### **Standby Timeout (Minute)**

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. 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 Timeout (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.

### **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. The settings are 1:1, 1:2, 1:4, 1:8, 1:16, 1:32, 1:64 or 1:128. The Optimal and Fail-Safe defaults are 1:8.



**IRQ3/IRQ4/IRQ5/RQ7/IRQ8/IRQ9/IRQ10/IRQ11/IRQ12/  
IRQ13/IRQ14/IRQ15**

When set to Monitor, these options enable event monitoring on the specified hardware interrupt request line. If set to Monitor and the computer is in a power saving state, AMIBIOS watches for activity on the specified IRQ line. The computer enters the full on power state if any activity occurs.

AMIBIOS reloads the Standby and Suspend timeout timers if activity occurs on the specified IRQ line.

The settings for each of these options are Monitor or Ignore. The Optimal and Fail-Safe default settings are Disabled for all the above options except IRQ3, IRQ4, IRQ7, IRQ12, IRQ14 or IRQ15. The Optimal default settings for these options is Monitor.

3.6 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		
(C) 1996 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	No	Available Options: Enabled Disabled
Clear NVRAM	Disabled	
PCI Latency Timer (PCI Clocks)	32	
PCI VGA Palette Snoop	Disabled	
PCI IDE Busmaster	Enabled	
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	INTA	
OffBoard PCI IDE Secondary IRQ	INTB	
Allocate IRQ to PCI VGA	No	
1st Priority IRQ For PCI	Auto	
2nd Priority IRQ For PCI	Auto	
3rd Priority IRQ For PCI	Auto	
4th Priority IRQ For PCI	Auto	
IRQ3	PCI/PnP	
IRQ4	PCI/PnP	
IRQ5	PCI/PnP	
IRQ7	PCI/PnP	
IRQ8	PCI/PnP	
IRQ9	PCI/PnP	
IRQ10	PCI/PnP	
IRQ11	PCI/PnP	
IRQ12	PCI/PnP	ESC:Exit :Sel
IRQ14	PCI/PnP	PgUp/PgDn:Modify
IRQ15	PCI/PnP	F2/F3:Color

DMA0	PCI/PnP
DMA1	PCI/PnP
DMA2	PCI/PnP
DMA3	PCI/PnP
DMA5	PCI/PnP
DMA6	PCI/PnP
DMA7	PCI/PnP

- 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**

During Enabled, this option will clear the NVRAM 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.

### **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 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 an ISA adapter card requires VGA palette snooping. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disabled.

### **Allocate IRQ to PCI VGA**

Choose the IRQ to be assigned to the PCI VGA display adapter card. The Optimal and Fail-Safe default settings are No.

### **PCI IDE BusMaster**

Set this option to Enabled to specify that the IDE controller on the PCI local bus includes a bus mastering capability. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disabled.

### **Offboard PCI IDE Card**

This option specifies if an offboard PCI IDE controller adapter card is installed in the computer. You must specify the PCI expansion slot on the mainboard where the offboard PCI IDE controller is installed. If an offboard PCI IDE controller is used, the onboard IDE controller is automatically disabled. The settings are Auto(AMIBIOS automatically determines where the offboard PCI IDE controller adapter card is installed), Slot1, Slot2, Slot3 or Slot4. The Optimal and Fail-Safe settings are Auto.

In the AMIBIOS for the Intel 82440FX ISA chipset, this option forces IRQ14 and IRQ15 to a PCI slot on the PCI Local bus. This is necessary to support non-compliant ISA IDE controller adapter cards.

If an offboard PCI IDE controller adapter card is installed in the computer, you must also set the Offboard PCI IDE Primary IRQ and Offboard PCI IDE Secondary IRQ options.

### **Offboard PCI IDE Primary IRQ/ Offboard PCI IDE Secondary IRQ**

These options specify the PCI interrupt used by the Primary (or Secondary) IDE channel on the offboard PCI IDE controller. The settings are Disabled, Hardwired, INTA, INTB, INTC or INTD. The Optimal and Fail-Safe default settings are Disabled.

**DMA0/DMA1/DMA2/DMA3/DMA5/DMA6/DMA7**

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 AMIBIOS 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 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. IRQ14 and 15 will not be available if the onboard 82440FX ISA 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. 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.

3.7 Peripheral Setup

- 1. Press <ENTER> on “Peripheral Setup” of the main menu screen.

AMIBIOS SETUP - PERIPHERAL SETUP		
(C) 1996 American Megatrends, Inc. All Rights Reserved		
OnBoard FDC	Auto	Available Options: Enabled Disabled
OnBoard Serial Port1	3F8h	
OnBoard Serial Port2	2F8h	
Serial Port2 Mode	Normal	
IR Duplex Mode	Half	
IrDA Protocol	1.6 uS	
OnBoard Parallel Port	Auto	
EPP Version	1.9	
Parallel Port Mode	SPP/EPP	
Parallel Port IRQ	7	
Parallel Port DMA Channel	N/A	
Onboard IDE	Both	
FAN#1 Speed(RPM)	5000	
FAN#2 Speed(RPM)	5000	
CPU#1 Temperature(c)	35	
CPU#2 Temperature(c)	35	
		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 Peripheral Setup, press <ESC> to go back to the main menu.

## Description of the item on screen follows:

### 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 Port1/Onboard Serial Port2

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 Port2 Mode

Choose onboard Serial Port2 operation mode as standard UART or as IR/Infrared. The default setting is Normal.

## IR Duplex Mode

Choose full duplex or half duplex operation mode when the onboard Serial Port2 operation mode is selected as IR.

## IrDA Protocol

If onboard Serial Port2 is selected as IrDA mode, the user has to set the IR transmit active pulse time according to the specification of IR module. Based on different IR module, the user can select active pulse time as 1.6us or 3/16 bit.

## Onboard Parallel Port

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

If the ISA add-on card has			Onboard parallel port	
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.



## **EPP Version**

### **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.

### **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:

<b>Onboard parallel port set at</b>	<b>Parallel Port IRQ</b>
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.

### **Onboard IDE**

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

### **FAN#1 Speed (RPM)/FAN#2 Speed (RPM)**

This option monitors the Fan Speed. If the system detect your fan speed more or less than 5000 RPM, it will show a warning sign.

### **CPU#1 Temperature(c)/CPU#2 Temperature(c)**

This option monitors the CPU temperature. If the system detected that your CPU temp. is more or less than 35 degree. It will show a warning sign.