

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) 1998 American Megatrends Inc.  
A5I84MS 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 " message appears, press key to enter the BIOS setup screen.
3. After pressing 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 1.07 (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 Hardware Monitor Setup (optional) 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 3.2 to 3.7 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, 1998
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

Month : Jan-Dec
Day : 01-31
Year : 1901-2099

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.

4.3 Advanced CMOS Setup

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

AMIBIOS SETUP - ADVANCED CMOS SETUP		
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Quick Boot	Disabled	Available Options: Enabled Disabled
Pri Master ARMD Emulated	Auto	
Pri Slave ARMD Emulated	Auto	
Sec Master ARMD Emulated	Auto	
Sec Slave ARMD Emulated	Auto	
1st Boot Device	Floppy	
2nd Boot Device	IDE 0	
3rd Boot Device	CD-ROM	
Try Other Boot Devices	Yes	
Initialize I2O Devices	No	
Floppy Access Control	Read-Write	
Hard Disk Access Control	Read-Write	
S.M.A.R.T. For Hard Disk	Disabled	
BootUp Num-Lock	On	
PS/2 Mouse Support	Enabled	
Primary Display	Abset	
Password Check	Setup	
Boot to OS/2	No	
Internal Cache	Writeback	
External Cache	Writeback	
System BIOS Cacheable	Enabled	
C000, 32k Shadow	Cached	ESC:Exit :Sel PgUp/PgDn:Modify F2/F3:Color
C800, 16k Shadow	Disabled	
CC00, 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 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.

Pri Master ARMD Emulated as/Pri Slave ARMD Emulated as/Sec Master ARMD Emulated as/Sec Slave ARMD Emulated as

If set to Auto, the default emulation type will depend on the ARMD drive. The default emulation type is Floppy for LS120, HD for MO, and HD for ZIP drive.

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

This option sets the sequence of boot drives.

The settings are:

1st IDE-HDD	The system will boot from the first HDD.
2nd IDE-HDD	The system will boot from the Second HDD.
3rd IDE-HDD	The system will boot from the Third HDD.
4th IDE-HDD	The system will boot from the Fourth HDD.
Floppy	The system will boot from floppy drive.
ARMD-FDD	The system will boot from IOMEGA drive.
ARMD-HDD	The system will boot from LS-120 drive.
ATAPI CDROM	The system will boot from the CD-ROM.
SCSI	The system will boot from the SCSI.
Network	The system will boot from the Network drive.
Disable	Disable this sequence.

Try other Boot Devices

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

Initialize I2O Devices

If set to Yes, BIOS will initialize I2O processors, I2O storage device, and provide INT13 support for I2O storage device. If set to No, BIOS will not initialize I2O processors and I2O storage device.

Floppy Access Control

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

Hard Disk Access Control

This option sets the Hard Disk to Read-only or Read-Write. During the Read-only, if you try to write on the Hard disk, the system will halt.

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

This option sets the SMART Function for the hard disk. The hard disk needs 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.

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 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 AMI® BIOS password protection that is implemented. The Optimal and Fail-Safe default settings are Setup.

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 AMI® BIOS 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 - AMI® BIOS 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

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, 32K 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 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.

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.

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	Disabled	Available Options: Enabled Disabled
USB KB/Mouse Legacy Support	Disabled	
Memory Hole	Disabled	
Cache Read Pipeline	Enabled	
CPU Write Pipeline	Enabled	
DRAM Read Pipeline	Enabled	
Linear Burst	Disabled	
CAS Latency	2 Clk	
ECC Mode	Disabled	
AGP Aperture Size	64MB	
Delay Transaction	Enabled	
CPU to PCI Write Buffer	Enabled	
PCI Dynamic Bursting	Enabled	
PCI Master O W/S Write	Enabled	
PCI Delay Transaction	Enabled	
CLKGen for PCI Slot/DIMM	Yes	
		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 Chipset Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:**USB Function**

Set this option to Enable or Disable the onchip USB controller. The default setting is Disabled.

USB KB/Mouse Legacy Support

Set this option to Enable or Disable USB Keyboard/Mouse. The default setting is Disabled

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.

Cache Read Pipeline

This item allows you to enable or disable the SRAM read pipeline function.

CPU Write Pipeline

This option allows you to Enable or Disable the CPU write pipeline function.

DRAM Read Pipeline

This item allows you to Enable or Disable the DRAM Read Pipeline function.

Linear Burst

This item allows you to Enable or Disable the linear burst function.

CAS Latency

This item allows you to select the SDRAM CAS Latency Time. The settings are 2 CLK or 3 CLK.

ECC Mode

Select Enabled or Disabled ECC (Error Correcting Code), according to the type of the installed DRAM.

AGP Aperture Size

This option determines the effective size of the graphics aperture used in the particular PAC configuration. The AGP aperture is memory-mapped, while graphics data structure can reside in a graphics aperture. The aperture range should be programmed as not cacheable in the processor cache, accesses with the aperture range are forwarded to the main memory, then PAC will translate the original issued address via a translation table that is maintained on the main memory. The option allows the selection of an aperture size of 4MB, 8MB, 16MB, 32MB, 64MB, 128MB, and 256MB.

Delay Transaction

During Enabled, the chipset delay transaction mechanism will enable the chipset to target the PCI transaction. A read cycle from Host to PCI is immediately retrieved due to any pending PCI to DRAM cycle. During Disabled, a read cycle from Host to PCI is waited until time-out due to any pending PCI to DRAM cycle.

CPU to PCI Write Buffer

This item allows you to Enable or Disable the CPU to PCI Write Buffer. The default setting is Enabled.

PCI Dynamic Bursting

This setting allows you to Enable or Disable PCI Dynamic Bursting Function. The default setting is Enabled.

PCI Master 0 WS Write

Enabled Zero wait-state response

Disabled One wait-state response

The default setting is Enabled.

PCI Delay Transaction

This item allows you to Enable or Disable the PCI Delay Transaction.

ClkGen for PCI Slot/DIMM

This item allows the clock generator to auto-detect the interface of PCI/DIMM. If there's no PCI/DIMM present, the clock will be shutdown.

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 Aware OS	Enabled	Available Options: Enabled Disabled
Power Management / APM	Disabled	
Green PC Monitor Power State	Stand By	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Stand By	
Standby Time Out	1	
Suspend Time Out	1	
Throttle Slow Clock Ratio	50-62.5%	
Modem Use IRQ	N/A	
Display Activity	Ignore	
IRQ3	Monitor	
IRQ4	Monitor	
IRQ5	Ignore	
IRQ7	Monitor	
IRQ9	Ignore	
IRQ10	Ignore	
IRQ11	Ignore	
IRQ13	Ignore	
IRQ14	Monitor	
IRQ15	Ignore	
Power Button Function	Suspend	
PWR Status LED		
Ring Resume From Soft-Off	Disabled	
LAN Resume From Soft-Off	Disabled	
RTC Alarm Resume From Soft-Off	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	ESC:Exit :Sel
RTC Alarm Minute	50	PgUp/PgDn:Modify
RTC Alarm Second	30	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:**ACPI Aware OS**

During Enabled, this will support ACPI function.

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 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 AMI® BIOS places it in a power savings state after the specified period of display inactivity has expired. The settings are Off, Standby, or Suspend. 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

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, 4 min, 8 min, 10 min, 20 min, 30 min, 40 min, 50 min, or 60 min. The Optimal and Fail-Safe default settings are Disabled.

Suspend Time Out

This option specifies the length of a period of system inactivity while in Standby state. When this length of time expires, the computer enters Suspend power state. The settings are Disabled, 1 min, 2 min, 4 min, 8 min, 10 min, 20 min, 30 min, 40 min, 50 min, or 60 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.

Modem Use IRQ

This indicates which IRQ no. will be used by the Modem(if there is a Modem).

Display Activity/IRQ3/IRQ4/IRQ5/IRQ7/IRQ9/IRQ10/ IRQ11/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, AMI® BIOS watches for activity on the specified IRQ line. The computer enters the full on power state if any activity occurs.

AMI® BIOS reloads the Standby and Suspend timeout timers if activity occurs on the specified IRQ line.

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.

PWR Status LED

This allows you to select the type of power status LED.

Ring Resume from Soft-Off/LAN Resume from Soft-Off

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

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: Enabled Disabled
Clear NVRAM	Enabled	
PCI Latency Timer (PCI Clocks)	64	
PCI VGA Palette Snoop	Disabled	ESC:Exit :Sel PgUp/PgDn:Modify F2/F3:Color
PCI IDE BusMaster	Enabled	
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	Disabled	
OffBoard PCI IDE Secondary IRQ	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	
IRQ8	PCI/PnP	
IRQ9	PCI/PnP	
IRQ10	PCI/PnP	
IRQ11	PCI/PnP	
IRQ12	PCI/PnP	
IRQ14	PCI/PnP	
IRQ15	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 or 98 is PnP-aware. The settings are Yes or No. The Optimal and Fail-Safe default settings No.

Clear NVRAM

During Enabled, this option will reset 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 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.

PCI IDE Busmaster

This setting allows you to Enable or Disable PCI IDE Busmaster function.

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(AMI® BIOS 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.

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.

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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OnBoard FDC	Enabled	Available Options:
OnBoard Serial Port1	3F8h/COM1	Enabled
OnBoard Serial Port2	2F8h/COM2	Disabled
OnBoard Parallel Port	378	
Parallel Port Mode	ECP	
EPP Version	N/A	
Parallel Port IRQ	7	
Parallel Port DMA Channel	3	
Onboard IDE	Both	
		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 Port 1/Onboard Serial Port 2

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.

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.

EPP Version

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

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:

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.

Onboard IDE

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

4.8 Hardware Monitor Setup (optional)

The Hardware Monitor Setup is used to monitor the Current CPU temperature, CPU Fan speed, Chassis Fan Speed, Power fan speed, Vcore, etc.

AMIBIOS SETUP - HARDWARE MONITOR SETUP		
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--System Hardware Monitor--		Available Options:
System Thermal	Ignore	Enabled
Thermal Slow Clock Ratio	50~62.5%	Disabled
CPU Critical Temperature	40°c/104°f	
Current CPU Temperature	30°c/100°f	
Current CPU Fan Speed	5273RPM	
Current Chassis Fan Speed	0 RPM	
Current Power Fan Speed	0 RPM	
Vcore	2.2V	
Vtt	1.5V	
Vio	3.3V	
+5,000V	+5V	
+12,000V	+12V	
-12,000V	-12V	
-5,000V	-5V	
		ESC:Exit :Sel
		PgUp/PgDn:Modify
		F2/F3:Color