P43D3 BIOS Manual

BIOS Setup

Introduction

The purpose of this manual is to describe the settings in the AMI BIOS Setup program on this motherboard. The Setup program allows users to modify the basic system configuration and save these settings to CMOS RAM. The power of CMOS RAM is supplied by a battery so that it retains the Setup information when the power is turned off.

Basic Input-Output System (BIOS) determines what a computer can do without accessing programs from a disk. This system controls most of the input and output devices such as keyboard, mouse, serial ports and disk drives. BIOS activates at the first stage of the booting process, loading and executing the operating system. Some additional features, such as virus and password protection or chipset fine-tuning options are also included in BIOS.

The rest of this manual will to guide you through the options and settings in BIOS Setup.

Plug and Play Support

This AMI BIOS supports the Plug and Play Version 1.0A specification.

EPA Green PC Support

This AMI BIOS supports Version 1.03 of the EPA Green PC specification.

ACPI Support

AMI ACPI BIOS support Version 1.0/2.0 of Advanced Configuration and Power interface specification (ACPI). It provides ASL code for power management and device configuration capabilities as defined in the ACPI specification, developed by Microsoft, Intel and Toshiba.

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PCI Bus Support

This AMI BIOS also supports Version 2.3 of the Intel PCI (Peripheral Component Interconnect) local bus specification.
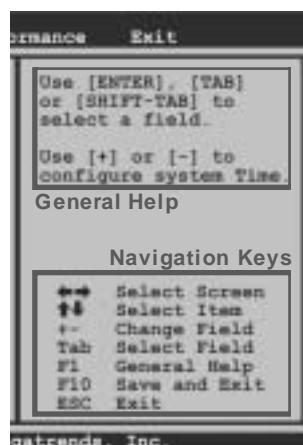
DRAM Support

DDR2 SDRAM (Double Data Rate II Synchronous DRAM) is supported.

Supported CPUs

This AMI BIOS supports the Intel CPU.

Using Setup

When starting up the computer, press **<Del>** during the **Power-On Self-Test (POST)** to enter the BIOS setup utility.
In the BIOS setup utility, you will see **General Help** description at the top right corner, and this is providing a brief description of the selected item. **Navigation Keys** for that particular menu are at the bottom right corner, and you can use these keys to select item and change the settings.

Notice

- The default BIOS settings apply for most conditions to ensure optimum performance of the motherboard. If the system becomes unstable after changing any settings, please load the default settings to ensure system's compatibility and stability. Use Load Setup Default under the Exit Menu.
- For better system performance, the BIOS firmware is being continuously updated. The BIOS information described in this manual is for your reference only. The actual BIOS information and settings on board may be slightly different from this manual.
- The content of this manual is subject to be changed without notice. We will not be responsible for any mistakes found in this user's manual and any system damage that may be caused by wrong-settings.

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1 Main Menu

Once you enter AMI BIOS Setup Utility, the Main Menu will appear on the screen providing an overview of the basic system information.

```
                         BIOS SETUP UTILITY
 Main    Advanced   PCIPnP    Boot    Chipset   Performance    Exit

  System Overview                              Use [ENTER], [TAB]
                                               or [SHIFT-TAB] to
  AMI BIOS                                     select a field.
  Version   :01.01.01
  Build Date:01/01/09                          Use [+] or [-] to
  System Memory                                configure system Time.
  Size      :

  System Time              [00:00:00]
  System Date              [Thu 01/01/2009]
                                                    Select Screen
  Floppy A                                           Select Item
                                               +-   Change Field
  > SATA/IDE Configuration                     Tab  Select Field
                                               F1   General Help
                                               F10  Save and Exit
                                               ESC  Exit

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```

AMI BIOS

Shows system information including BIOS version, built date, etc.

System Memory

Shows system memory size, VGA shard memory will be excluded..

System Time

Set the system internal clock.

System Date

Set the system date. Note that the 'Day' automatically changes when you set the date.
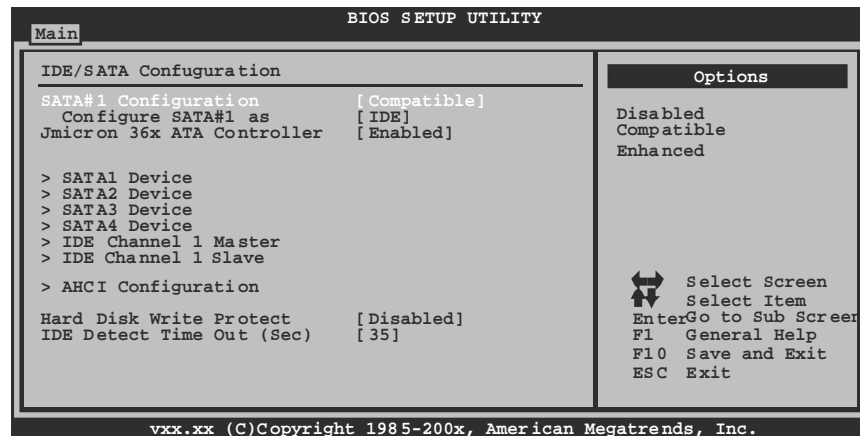
Floppy A

Select the type of floppy disk drive installed in your system.
Options: 360K, 5 1/4 in / 1.2M, 5 1/4 in / 720K, 3 1/2 in / 1.44M, 3 1/2 in / 2.88M, 3 1/2 in / Disabled

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SATA/IDE Configuration

The BIOS will automatically detect the presence of SATA/IDE devices.   There is a sub-menu for each SATA/IDE device.   Select a device and press <Enter> to enter the sub-menu of detailed options.

```
                         BIOS SETUP UTILITY
 ┌──────┐
 │ Main │
 └──────┘
 ┌──────────────────────────────────────────┐ ┌───────────────────────┐
 │ IDE/SATA Confuguration                    │ │        Options        │
 │                                           │ │                       │
 │ SATA#1 Configuration      [Compatible]    │ │                       │
 │   Configure SATA#1 as     [IDE]           │ │ Disabled              │
 │ Jmicron 36x ATA Controller [Enabled]      │ │ Compatible            │
 │                                           │ │ Enhanced              │
 │ > SATA1 Device                            │ │                       │
 │ > SATA2 Device                            │ │                       │
 │ > SATA3 Device                            │ │                       │
 │ > SATA4 Device                            │ │                       │
 │ > IDE Channel 1 Master                    │ │                       │
 │ > IDE Channel 1 Slave                     │ │   ⬌  Select Screen    │
 │                                           │ │   ⬍  Select Item      │
 │ > AHCI Configuration                      │ │ Enter Go to Sub Screen│
 │                                           │ │ F1    General Help    │
 │ Hard Disk Write Protect   [Disabled]      │ │ F10   Save and Exit   │
 │ IDE Detect Time Out (Sec) [35]            │ │ ESC   Exit            │
 │                                           │ │                       │
 └──────────────────────────────────────────┘ └───────────────────────┘
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```

SATA#1 Configuration

This item allows you to control the onboard SATA controller.
Options: Compatible (Default) / Disabled / Enhanced

Configure SATA#1 as

This item allows you to choose the SATA operation mode.
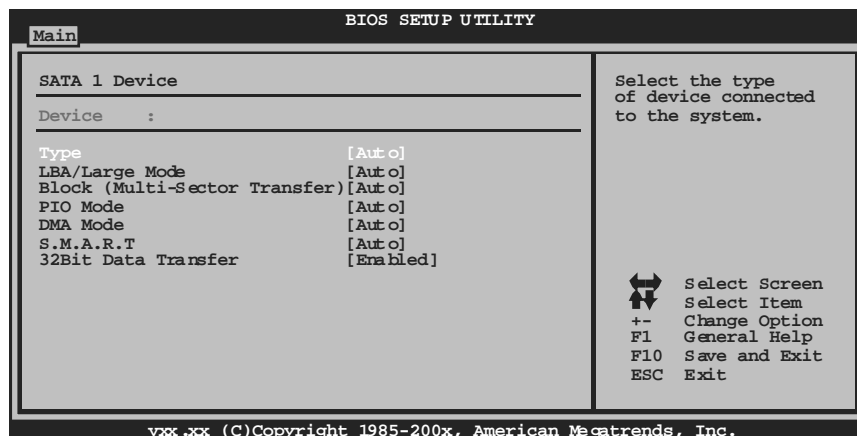Options: IDE (Default) / AHCI

JMicron 36x ATA Controller

This item allows you to control the onboard IDE controller.
Options: Enabled (Default) / Disabled

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SATA 1/2/3/4 Device; IDE Channel 1 Master/Slave

```
                        BIOS SETUP UTILITY
 Main

  SATA 1 Device                              Select the type
                                             of device connected
  Device    :                                to the system.

  Type                      [Auto]
  LBA/Large Mode            [Auto]
  Block (Multi-Sector Transfer)[Auto]
  PIO Mode                  [Auto]
  DMA Mode                  [Auto]
  S.M.A.R.T                 [Auto]
  32Bit Data Transfer       [Enabled]
                                              ⇄   Select Screen
                                              ⇕   Select Item
                                              +-  Change Option
                                              F1  General Help
                                              F10 Save and Exit
                                              ESC Exit

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```

The BIOS detects the information and values of respective devices, and these information and values are shown below to the name of the sub-menu.

Type
Select the type of the IDE/SATA drive.
Options: Auto (Default) / CDROM / ARMD / Not Installed

LBA/Large Mode
Enable or disable the LBA mode.
Options: Auto (Default) / Disabled

Block (Multi-Sector Transfer)
Enable or disable multi-sector transfer.
Options: Auto (Default) / Disabled

PIO Mode
Select the PIO mode.
Options: Auto (Default) / 0 / 1 / 2 / 3 / 4

DMA Mode
Select the DMA mode.
Options: Auto (Default) / SWDMA0 ~ 2 / MWDMA0 ~ 2 / UDMA0 ~ 5

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S.M.A.R.T
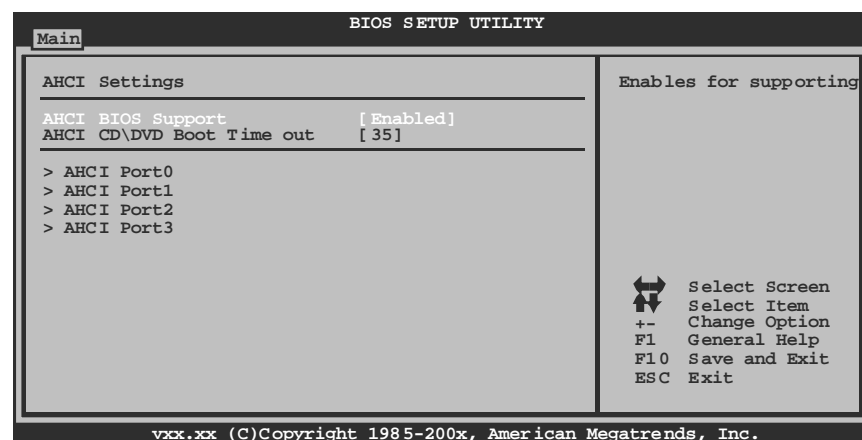Set the Smart Monitoring, Analysis, and Reporting Technology.
Options: Auto (Default) / Disabled / Enabled

32Bit Data Transfer
Enable or disable 32-bit data transfer.
Options: Enabled (Default) / Disabled

AHCI Configuration

```
                        BIOS SETUP UTILITY
 ┌─────┐
 │Main │
 └─────┘
 ┌──────────────────────────────────────────┬──────────────────────────┐
 │ AHCI Settings                            │ Enables for supporting   │
 │                                          │                          │
 │ AHCI BIOS Support           [Enabled]    │                          │
 │ AHCI CD\DVD Boot Time out   [35]         │                          │
 │                                          │                          │
 │ > AHCI Port0                             │                          │
 │ > AHCI Port1                             │                          │
 │ > AHCI Port2                             │                          │
 │ > AHCI Port3                             │                          │
 │                                          │                          │
 │                                          │                          │
 │                                          │   ↔  Select Screen       │
 │                                          │   ↕  Select Item         │
 │                                          │   +- Change Option       │
 │                                          │   F1  General Help       │
 │                                          │   F10 Save and Exit      │
 │                                          │   ESC Exit               │
 └──────────────────────────────────────────┴──────────────────────────┘
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```

AHCI BIOS Support
This BIOS feature controls the AHCI function of the SATA controller.
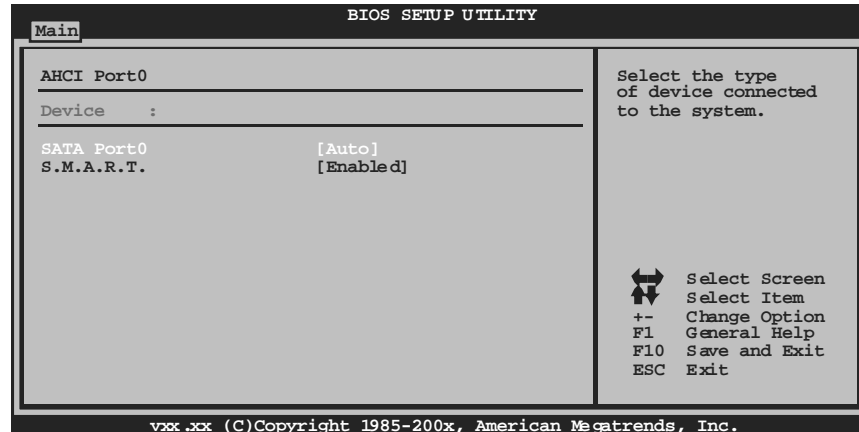Options: Enabled (Default) / Disabled

AHCI CD/DVD Boot Time Out
This BIOS feature allows you to set the AHCI CD/DVD boot time out.
Options: 35 (Default) / 0 / 5 / 10 / 15 / 20 / 25 / 30

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AHCI Port0/Port1/Port2/Port

```
                        BIOS SETUP UTILITY
 Main

   AHCI Port0                                      Select the type
                                                   of device connected
   Device   :                                      to the system.

   SATA Port0          [Auto]
   S.M.A.R.T.          [Enabled]




                                                   Select Screen
                                                   Select Item
                                               +-  Change Option
                                               F1  General Help
                                               F10 Save and Exit
                                               ESC Exit

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```

Device

This area shows the detected connected device.

SATA Port0/1/2/3

This item allows you to select the connected device type.
Options: Auto (Default)

S.M.A.R.T.

This item allows you to control the device S.M.A.R.T function.
Options: Enabled (Default) / Disabled

Hard Disk Write Protect

Disable or enable device write protection.   This will be effective only if the device is accessed through BIOS.
Options: Disabled (Default) / Enabled

IDE Detect Time Out (Sec)

Select the time out value for detecting IDE/SATA devices.
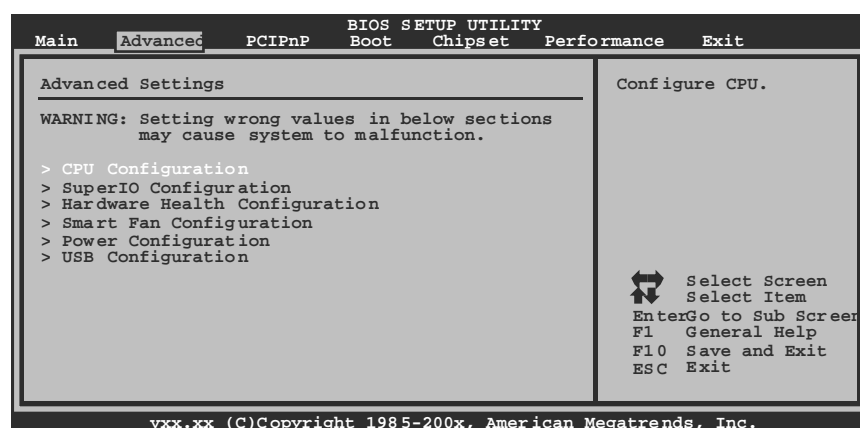Options: 35 (Default) / 30 / 25 / 20 / 15 / 10 / 5 / 0

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2 Advanced Menu

The Advanced Menu allows you to configure the settings of CPU, Super I/O, Power Management, and other system devices.
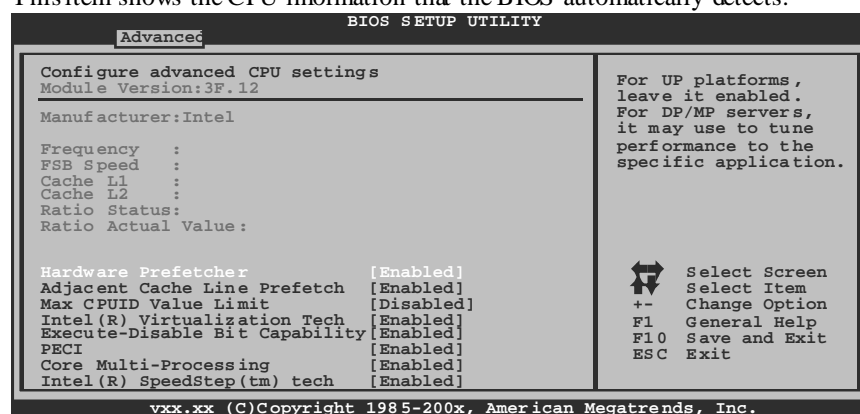
Notice

- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.

```
                          BIOS SETUP UTILITY
   Main    Advanced    PCIPnP    Boot    Chipset    Performance    Exit

   Advanced Settings                                  Configure CPU.

   WARNING: Setting wrong values in below sections
            may cause system to malfunction.

   > CPU Configuration
   > SuperIO Configuration
   > Hardware Health Configuration
   > Smart Fan Configuration
   > Power Configuration
   > USB Configuration
                                                         Select Screen
                                                         Select Item
                                                   EnterGo to Sub Screen
                                                   F1   General Help
                                                   F10  Save and Exit
                                                   ESC  Exit

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```

CPU Configuration

This item shows the CPU information that the BIOS automatically detects.

```
                          BIOS SETUP UTILITY
        Advanced

   Configure advanced CPU settings                For UP platforms,
   Module Version:3F.12                           leave it enabled.
                                                  For DP/MP servers,
   Manufacturer:Intel                             it may use to tune
                                                  performance to the
   Frequency   :                                  specific application.
   FSB Speed   :
   Cache L1    :
   Cache L2    :
   Ratio Status:
   Ratio Actual Value:

   Hardware Prefetcher          [Enabled]           Select Screen
   Adjacent Cache Line Prefetch [Enabled]           Select Item
   Max CPUID Value Limit        [Disabled]      +-  Change Option
   Intel(R) Virtualization Tech [Enabled]       F1  General Help
   Execute-Disable Bit Capability[Enabled]      F10 Save and Exit
   PECI                         [Enabled]       ESC Exit
   Core Multi-Processing        [Enabled]
   Intel(R) SpeedStep(tm) tech  [Enabled]

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```

Hardware Prefetcher

The processor has a hardware prefetcher that automatically analyzes its requirements and prefetches data and instructions from the memory into the Level 2 cache that are likely to be required in the near future. This reduces the latency associated with memory reads.
Options: Enabled (Default) / Disabled

Adjacent Cache Line Prefetch

The processor has a hardware adjacent cache line prefetch mechanism that automatically fetches an extra 64-byte cache line whenever the processor requests for a 64-byte cache line. This reduces cache latency by making the next cache line immediately available if the processor requires it as well.
Options: Enabled (Default) / Disabled

Max CPUID Value Limit

When the computer is booted up, the operating system executes the CPUID instruction to identify the processor and its capabilities. Before it can do so, it must first query the processor to find out the highest input value CPUID recognizes. This determines the kind of basic information CPUID can provide the operating system.
Options: Disabled (Default) / Enabled

Intel(R) Virtualization Tech

Virtualization Technology can virtually separate your system resource into several parts, thus enhance the performance when running virtual machines or multi interface systems.
Options: Enabled (Default) / Disabled

Execute-Disable Bit Capability

This item allows you to configure the Execute Disabled Bit function, which protects your system from buffer overflow attacks.
Options: Enabled (Default) / Disabled

PECI

This item allows you to control the PECI function for the processor which supports Platform Environment Control Interface for better thermal management.
Options: Disabled (Default) / Enabled

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Core Multi-Processing

This item allows multi-processing function for multi-core processors.
Options: Enabled (Default) / Disabled

Intel(R) SpeedStep(tm) Tech

This item allows you to enable SpeedStep technology for better power saving. SpeedStep is a technology built into some Intel processors that allows the clock speed of the processor to be dynamically changed by software.
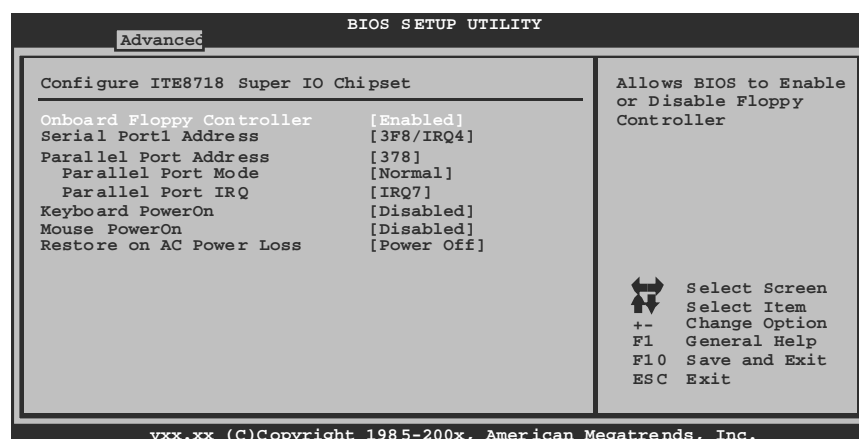Options: Enabled (Default) / Disabled

Intel(R) C-STATE Tech

This item allows you to control the C-State power management functions of the processor.
Options: Enabled (Default) / Disabled

SuperIO Configuration

```
                         BIOS SETUP UTILITY
         Advanced

  Configure ITE8718 Super IO Chipset              Allows BIOS to Enable
                                                  or Disable Floppy
  Onboard Floppy Controller      [Enabled]        Controller
  Serial Port1 Address           [3F8/IRQ4]
  Parallel Port Address          [378]
    Parallel Port Mode           [Normal]
    Parallel Port IRQ            [IRQ7]
  Keyboard PowerOn               [Disabled]
  Mouse PowerOn                  [Disabled]
  Restore on AC Power Loss       [Power Off]


                                                       Select Screen
                                                       Select Item
                                                  +-   Change Option
                                                  F1   General Help
                                                  F10  Save and Exit
                                                  ESC  Exit

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```

Onboard Floppy Controller

Select enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you installed another FDC or the system uses no floppy drive, select disabled in this field.
Options: Enabled (Default) / Disabled

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Serial Port1 Address

Select an address and corresponding interrupt for the first and second serial ports.
Options: 3F8/IRQ4 (Default) / 2F8/IRQ3 / 3E8/IRQ4 / 2E8/IRQ3 / Auto / Disabled

Parallel Port Address

This item allows you to determine access onboard parallel port controller with which I/O Address.
Options: 378 (Default) / 278 / 3BC / Disabled

Parallel Port Mode

This item allows you to determine how the parallel port should function.
Options: Normal (Default)   Using Parallel port as Standard Printer Port.
           EPP   Using Parallel Port as Enhanced Parallel Port.
           ECP   Using Parallel port as Extended Capabilities Port.
           ECP+EPP   Using Parallel port as ECP & EPP mode.

Parallel Port IRQ

This item allows you to select the IRQ for the onboard parallel port.
Options: IRQ7 (Default) / IRQ5 / Disabled

Keyboard PowerOn

This item allows you to control the keyboard power on function.
Options: Disabled (Default) / Specific Key / Stroke Key / Any Key

Specific Key Enter
This item will show only when Keyboard PowerOn is set "Specific Key."

Stroke Keys Selected
This item will show only when Keyboard PowerOn is set "Stroke Key."
Options: Ctrl+F1 (Default) / Wake Key / Power Key / Ctrl+F2 / Ctrl+F3 /
           Ctrl +F4 / Ctrl+F5 / Ctrl+F6

Mouse PowerOn

This item allows you to control the mouse power on function.
Options: Disabled (Default) / Enabled

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Restore on AC Power Loss

This setting specifies how your system should behave after a power fail or interrupts occurs. By choosing Disabled will leave the computer in the power off state. Choosing Enabled will restore the system to the status before power failure or interrupt occurs.

Options: Power Off (Default) / Power ON / Last State

Hardware Health Configuration

This item shows the system temperature, fan speed, and voltage information.

```
                         BIOS SETUP UTILITY
         Advanced

    Hardware Health Configuration                    Enables Hardware
    ──────────────────────────────────────          Health Monitoring
    H/W Health Function          [Enabled]           Device.
    Shutdown Temperature         [Disabled]

    CPU Temperature
    System Temperature

    CPU Fan
    System1 Fan

    CPU Vcore
    Chipset Voltage                                      →←   Select Screen
    +3.30V                                               ↑↓   Select Item
    +12.0V                                               +-   Change Option
    FSB Voltage                                          F1   General Help
    Memory Voltage                                       F10  Save and Exit
                                                        ESC  Exit


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```

H/W Health Function

If with a monitoring system, the system will show PC health status during POST stage.

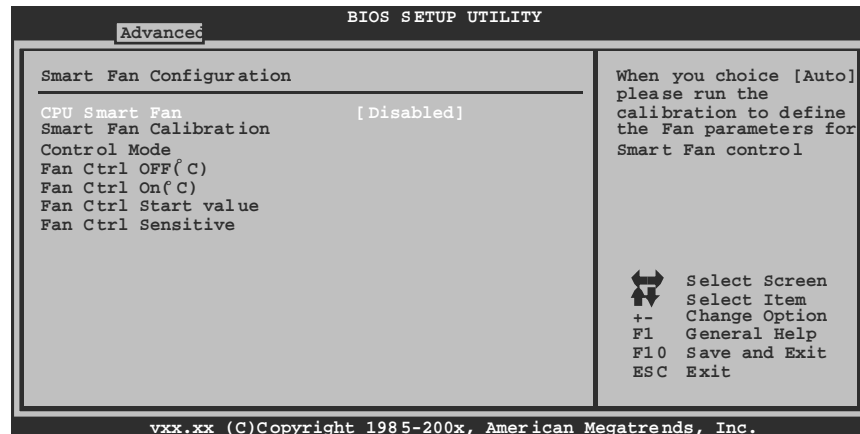Options: Enabled (Default) / Disabled

Shutdown Temperature

This item allows you to set up the CPU shutdown Temperature. This item is only effective under Windows 98 ACPI mode.

Options: Disabled (Default) / 60℃/140°F / 65℃/149°F / 70℃/158°F / 75℃/167°F / 80℃/176°F / 85℃/185°F / 90℃/194°F

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Smart Fan Configuration

```
                        BIOS SETUP UTILITY
     Advanced

 Smart Fan Configuration                          When you choice [Auto]
                                                  please run the
 CPU Smart Fan                  [Disabled]        calibration to define
 Smart Fan Calibration                            the Fan parameters for
 Control Mode                                     Smart Fan control
 Fan Ctrl OFF(°C)
 Fan Ctrl On(°C)
 Fan Ctrl Start value
 Fan Ctrl Sensitive

                                                       Select Screen
                                                       Select Item
                                                  +-   Change Option
                                                  F1   General Help
                                                  F10  Save and Exit
                                                  ESC  Exit

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CPU Smart Fan

This item allows you to control the CPU Smart Fan function.
Options: Disabled (default) / Auto

Smart Fan Calibration

Choose this item and then the BIOS will auto test and detect the CPU/System fan functions and show CPU/System fan speed.

Control Mode

This item provides several operation modes of the fan.
Options: Quiet / Performance / Manual

Fan Ctrl OFF(℃)
If the CPU/System Temperature is lower than the set value, FAN will turn off.
Options: 0~127 (℃) (Interval: 1℃)

Fan Ctrl On(℃)
CPU/System fan starts to work under smart fan function when arrive this set value.
Options: 0~127 (℃) (Interval: 1℃)

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Fan Ctrl Start Value

When CPU/System temperature arrives to the set value, the CPU/System fan will work under Smart Fan Function mode.
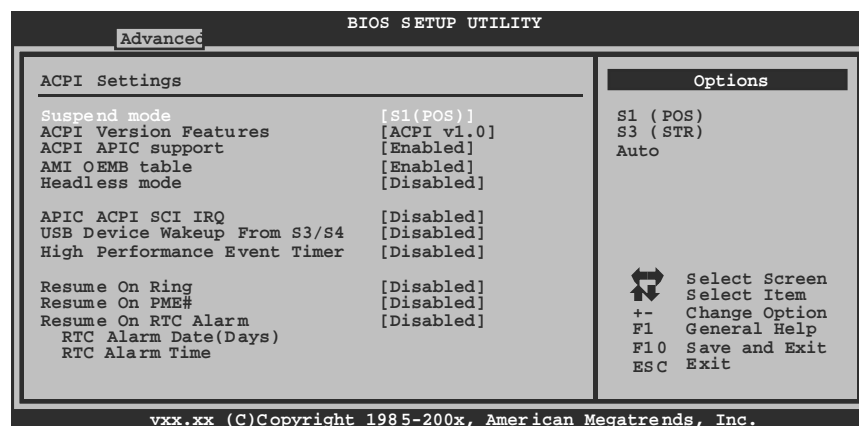
Options: 0~127 (Interval: 1)

Fan Ctrl Sensitive

Increasing the value will raise the speed of CPU/System fan.

Options: 1~127 (Interval: 1)

Power Configuration

```
                              BIOS SETUP UTILITY
        Advanced

     ACPI Settings                                        Options

     Suspend mode               [S1(POS)]          S1 (POS)
     ACPI Version Features      [ACPI v1.0]        S3 (STR)
     ACPI APIC support          [Enabled]          Auto
     AMI OEMB table             [Enabled]
     Headless mode              [Disabled]

     APIC ACPI SCI IRQ          [Disabled]
     USB Device Wakeup From S3/S4  [Disabled]
     High Performance Event Timer  [Disabled]

     Resume On Ring             [Disabled]              Select Screen
     Resume On PME#             [Disabled]              Select Item
     Resume On RTC Alarm        [Disabled]          +-  Change Option
       RTC Alarm Date(Days)                         F1  General Help
       RTC Alarm Time                               F10 Save and Exit
                                                    ESC Exit

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```

Suspend mode

The item allows you to select the suspend type under the ACPI operating system.

Options:	S1 (POS) (Default)	Power on Suspend
	S3 (STR)	Suspend to RAM
	Auto	POS+STR

Repost Video on S3 Resume

The item allows you to determine whether to invoke VGA BIOS post on S3/STR resume.

Options: No (Default) / Yes

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ACPI Version Features
The item allows you to select the version of ACPI.
Options: ACPI v1.0 (Default) / ACPI v2.0 / ACPI v3.0

ACPI APIC support
This item is used to enable or disable the motherboard's APIC (Advanced
Programmable Interrupt Controller). The APIC provides multiprocessor support,
more IRQs and faster interrupt handling.
Options: Enabled (Default) / Disabled

AMI OEMB table
Set this value to allow the ACPI BIOS to add a pointer to an OEMB table in the Root
System Description Table (RSDT) table.
Options: Enabled (Default) / Disabled

Headless mode
This is a server-specific feature. A headless server is one that operates without a
keyboard, monitor or mouse. To run in headless mode, both BIOS and operating
system (e.g. Windows Server 2003) must support headless operation.
Options: Disabled (Default) / Enabled

APIC ACPI SCI IRQ
Options: Disabled (Default) / Enabled

USB Device Wakeup from S3/S4
This item allows you to enable or disabled the USB resume from S3/S4 function.
Options: Disabled (Default) / Enabled

High Performance Event Timer
This item allows you to enable or disabled the HPET.
Options: Disabled (Default) / Enabled

HPET Memory Address
This item allows you to set the memory address of HPET.
Options: FED00000h (Default) / FED01000h / FED02000h / FED03000h

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Resume On Ring

This item allows you control the wake on ring function.
Options: Disabled (Default) / Enabled

Resume On PME#

When you select Enabled, a PME signal from PCI card returns the system to Full ON state.

For this function to work, you may need a LAN add-on card which supports the Wake on LAN function. Set the Wake on LAN (WOL) jumper on motherboard to enable if applicable.
Options: Disabled (Default) / Enabled

Resume On RTC Alarm

When "Enabled", you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.
Options: Disabled (Default) / Enabled

RTC Alarm Date (Days)
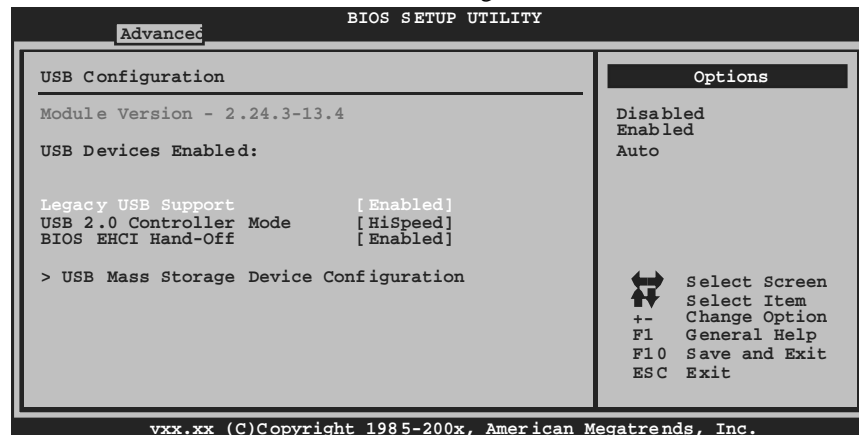
You can choose which date the system will boot up.

RTC Alarm Time

You can choose the system boot up time, input hour, minute and second to specify.

USB Configuration

This item shows the USB controller and using USB device information.

```
                              BIOS SETUP UTILITY
       Advanced

 USB Configuration                                           Options

 Module Version - 2.24.3-13.4                          Disabled
                                                       Enabled
 USB Devices Enabled:                                  Auto


 Legacy USB Support              [Enabled]
 USB 2.0 Controller Mode         [HiSpeed]
 BIOS EHCI Hand-Off              [Enabled]

 > USB Mass Storage Device Configuration                    Select Screen
                                                            Select Item
                                                       +-   Change Option
                                                       F1   General Help
                                                       F10  Save and Exit
                                                       ESC  Exit


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```

Legacy USB Support

This item determines if the BIOS should provide legacy support for USB devices like the keyboard, mouse, and USB drive. This is a useful feature when using such USB devices with operating systems that do not natively support USB (e.g. Microsoft DOS or Windows NT).
Options: Enabled (Default) / Disabled

USB 2.0 Controller Mode

This item allows you to select the operation mode of the USB 2.0 controller.
Options: HiSpeed (Default)   USB 2.0-480Mbps
            FullSpeed   USB 1.1-12Mbps

BIOS EHCI Hand-Off

This item allows you to enable support for operating systems without an EHCI hand-off feature.
Options: Enabled (Default) / Disabled

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USB Mass Storage Device Configuration

```
                          BIOS SETUP UTILITY
            Advanced

    USB Mass Storage Device Configuration          Number of seconds
                                                    POST waits for the
    USB Mass Storage Reset Delay [20 Sec]           USB mass storage
                                                    device after start
       Device #                                     unit command.
       Emulation Type          [Auto]



                                                       ↔   Select Screen
                                                       ↕   Select Item
                                                    +-     Change Option
                                                    F1     General Help
                                                    F10    Save and Exit
                                                    ESC    Exit

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```

USB Mass Storage Reset Delay
This item allows you to set the reset delay for USB mass storage device.
Options: 20 Sec (Default) / 10 Sec / 30 Sec / 40 Sec

Emulation Type
This item allows you to select the emulation type of the USB mass storage device.
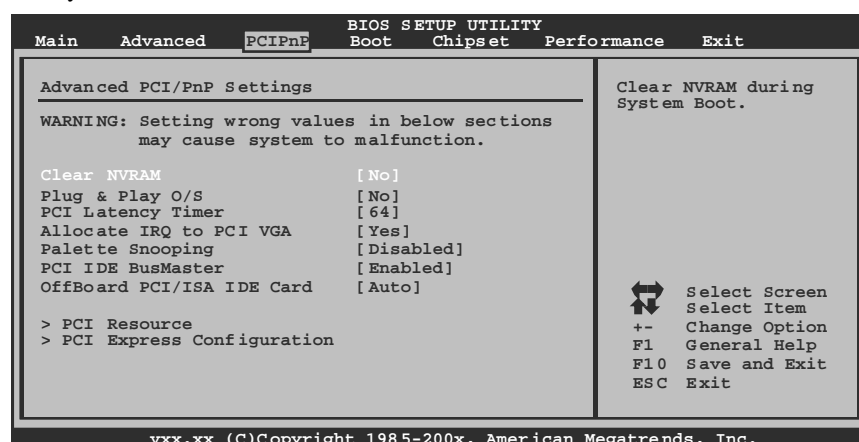Options: Auto (Default) / Floppy / Forced FDD / Hard Disk / CDROM

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3 PCIPnP Menu

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

Notice
- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.

```
                          BIOS SETUP UTILITY
   Main    Advanced    PCIPnP    Boot    Chipset    Performance    Exit

   Advanced PCI/PnP Settings                        Clear NVRAM during
                                                    System Boot.
   WARNING: Setting wrong values in below sections
            may cause system to malfunction.

   Clear NVRAM                   [No]
   Plug & Play O/S               [No]
   PCI Latency Timer             [64]
   Allocate IRQ to PCI VGA       [Yes]
   Palette Snooping              [Disabled]
   PCI IDE BusMaster             [Enabled]
   OffBoard PCI/ISA IDE Card     [Auto]
                                                       Select Screen
                                                       Select Item
   > PCI Resource                                  +-  Change Option
   > PCI Express Configuration                     F1  General Help
                                                   F10 Save and Exit
                                                   ESC Exit


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```

Clear NVRAM

This item allows you to clear the data in the NVRAM (CMOS) by selecting "Yes".
Options: No (Default) / Yes

Plug & Play OS

When set to YES, BIOS will only initialize the PnP cards used for the boot sequence (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Window™ 95. When set to NO, BIOS will initialize all the PnP cards. For non-PnP operating systems (DOS, Netware™), this option must set to NO.
Options: No (Default) / Yes

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PCI Latency Timer

This item controls how long a PCI device can hold the PCI bus before another takes over. The longer the latency, the longer the PCI device can retain control of the bus before handing it over to another PCI device.
Options: 64 (Default) / 32 / 96 / 128 / 160 / 192 / 224 / 248

Allocate IRQ to PCI VGA

This item allows BIOS to choose a IRQ to assign for the PCI VGA card.
Options: Yes (Default) / No

Palette Snooping

Some old graphic controllers need to "snoop" on the VGA palette and then map it to their display as a way to provide boot information and VGA compatibility. This item allows such snooping to take place.
Options: Disabled (Default) / Enabled

PCI IDE BusMaster

This item is a toggle for the built-in driver that allows the onboard IDE controller to perform DMA (Direct Memory Access) transfers.
Options: Enabled (Default) / Disabled

OffBoard PCI/ISA IDE Card

This item is for any other non-onboard PCI/ISA IDE controller adapter.
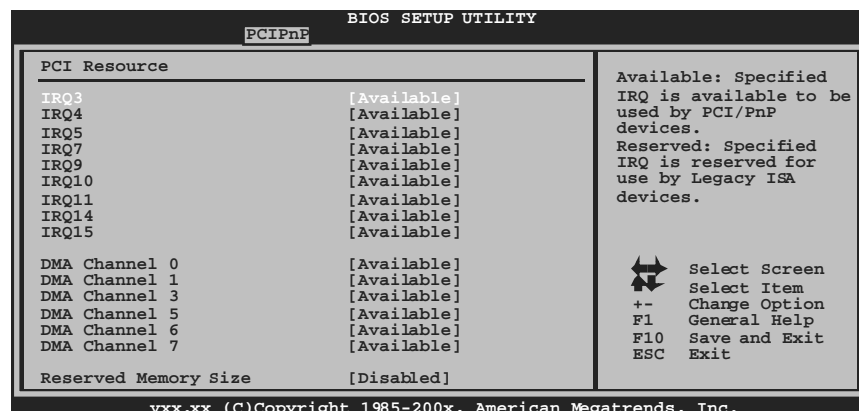Options: Auto (Default) / PCI Slot1~6

OffBoard PCI IDE Primary/Seocndary IRQ

Disabled: Use if this channel on card does not need an IRQ. INTx: Use these settings to assign an IRQ to the IntPin used by this channel. Hardwired: The card hardwires a fixed INTx into IntPin.
Options: Disabled (Default) / INTA / INTB / INTC / INTD / Hardwired

P43D3 BIOS Manual

PCI Resource

```
                           BIOS SETUP UTILITY
                    PCIPnP

   PCI Resource                                      Available: Specified
                                                     IRQ is available to be
   IRQ3                     [Available]              used by PCI/PnP
   IRQ4                     [Available]              devices.
   IRQ5                     [Available]              Reserved: Specified
   IRQ7                     [Available]              IRQ is reserved for
   IRQ9                     [Available]              use by Legacy ISA
   IRQ10                    [Available]              devices.
   IRQ11                    [Available]
   IRQ14                    [Available]
   IRQ15                    [Available]

   DMA Channel 0            [Available]              ⇄    Select Screen
   DMA Channel 1            [Available]              ⇅    Select Item
   DMA Channel 3            [Available]              +-   Change Option
   DMA Channel 5            [Available]              F1   General Help
   DMA Channel 6            [Available]              F10  Save and Exit
   DMA Channel 7            [Available]              ESC  Exit

   Reserved Memory Size     [Disabled]

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```

IRQ3/4/5/7/9/10/11/14/15

These items will allow you to assign each system interrupt a type, depending on the type of device using the interrupt.   The option "Available" means the IRQ is going to assign automatically.
Options: Available (Default) / Reserved

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

These items will allow you to assign each DMA channel a type, depending on the type of device using the channel.   The option "Available" means the channel is going to assign automatically.
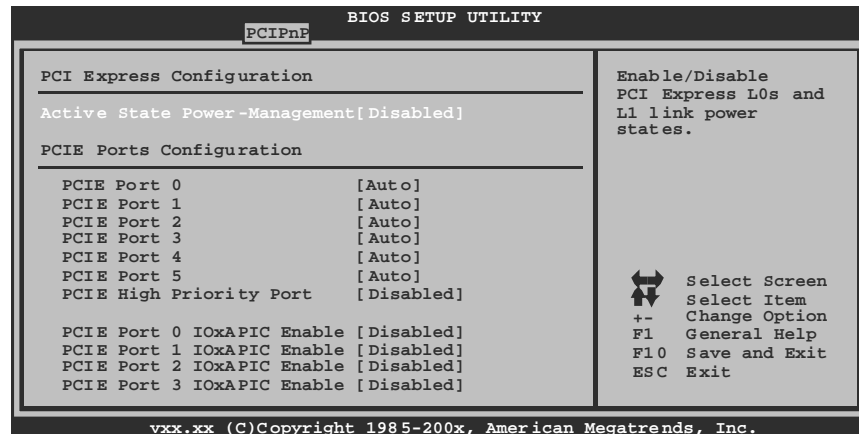Options: Available (Default) / Reserved

Reserved Memory Size

This item allows BIOS to reserve certain memory size for specific PCI device.
Options: Disabled (Default) / 16K / 32K / 64K

PCI Express Configuration

```
                          BIOS SETUP UTILITY
                 PCIPnP

   PCI Express Configuration                      Enable/Disable
                                                  PCI Express L0s and
   Active State Power-Management[Disabled]        L1 link power
                                                  states.
   PCIE Ports Configuration

     PCIE Port 0             [Auto]
     PCIE Port 1             [Auto]
     PCIE Port 2             [Auto]
     PCIE Port 3             [Auto]
     PCIE Port 4             [Auto]
     PCIE Port 5             [Auto]                    Select Screen
     PCIE High Priority Port [Disabled]               Select Item
                                                  +-  Change Option
     PCIE Port 0 IOxAPIC Enable [Disabled]        F1  General Help
     PCIE Port 1 IOxAPIC Enable [Disabled]        F10 Save and Exit
     PCIE Port 2 IOxAPIC Enable [Disabled]        ESC Exit
     PCIE Port 3 IOxAPIC Enable [Disabled]

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```

Active State Power-Management

This item sets the ASPM configuration for the PCI Express devices before the operating system boots. This function is for OS which does not support ASPM.
Options: Disabled (Default) / Enabled

PCIE Port 0 /1 /2 /3/4 /5

Options: Auto (Default) / Enabled / Disabled

PCIE High Priority Port

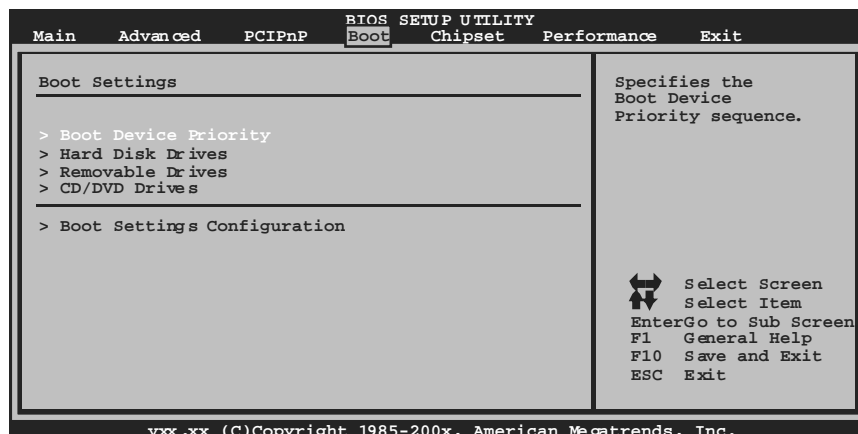Options: Disabled (Default) / Port0 / Port1 / Port2 / Port3 / Port4 / Port5

PCIE Port 0 /1 /2/3/4/5 IOxAPIC Enable

Options: Disabled (Default) / Enabled

P43D3 BIOS Manual

4 Boot Menu

This menu allows you to setup the system boot options.

```
                                BIOS SETUP UTILITY
    Main    Advanced    PCIPnP   Boot   Chipset   Performance   Exit

    Boot Settings                                   Specifies the
                                                    Boot Device
                                                    Priority sequence.
    > Boot Device Priority
    > Hard Disk Drives
    > Removable Drives
    > CD/DVD Drives

    > Boot Settings Configuration


                                                      Select Screen
                                                      Select Item
                                                    Enter Go to Sub Screen
                                                    F1   General Help
                                                    F10  Save and Exit
                                                    ESC  Exit


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```

Boot Device Priority

Items in this sub-menu specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

Hard Disk Drives

The BIOS will attempt to arrange the hard disk boot sequence automatically. You can also change the booting sequence. The number of device items that appears on the screen depends on the number of devices installed in the system.
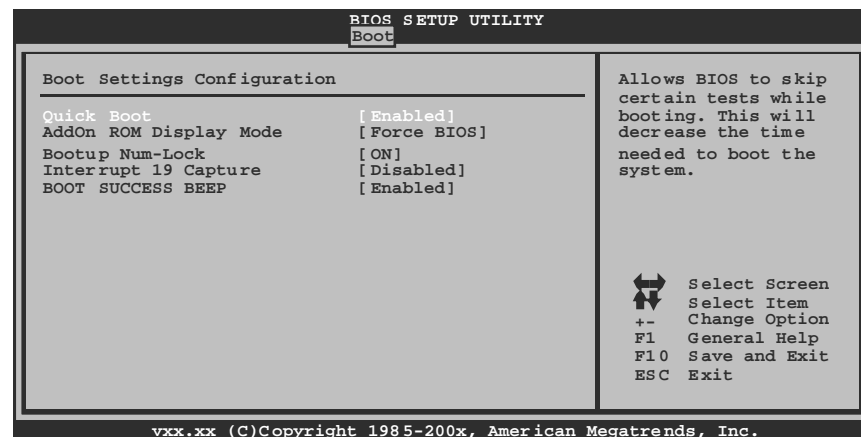
Removable Drives

The BIOS will attempt to arrange the removable drive boot sequence automatically. You can also change the booting sequence. The number of device items that appears on the screen depends on the number of devices installed in the system.

CD/DVD Drives

The BIOS will attempt to arrange the CD/DVD drive boot sequence automatically. You can also change the booting sequence. The number of device items that appears on the screen depends on the number of devices installed in the system.

Boot Settings Configuration

```
                        BIOS SETUP UTILITY
                         Boot

  Boot Settings Configuration              Allows BIOS to skip
                                           certain tests while
  Quick Boot              [Enabled]        booting. This will
  AddOn ROM Display Mode   [Force BIOS]    decrease the time
  Bootup Num-Lock          [ON]            needed to boot the
  Interrupt 19 Capture     [Disabled]      system.
  BOOT SUCCESS BEEP        [Enabled]


                                           ↔    Select Screen
                                           ↕    Select Item
                                           +-   Change Option
                                           F1   General Help
                                           F10  Save and Exit
                                           ESC  Exit

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```

Quick Boot

Enabling this option will cause an abridged version of the Power On Self-Test (POST) to execute after you power up the computer.
Options: Enabled (Default) / Disabled

AddOn ROM Display Mode
This item sets the display mode for option ROM.
Options: Force BIOS (Default) / Keep Current

Bootup Num-Lock
Selects the NumLock State after the system switched on.
Options: ON (Default) / OFF

Interrupt 19 Capture

Interrupt 19 is the software interrupt that handles the boot disk function. When set to Enabled, this item allows the option ROMs to trap interrupt 19.
Options: Disabled (Default) / Enabled

BOOT SUCCESS BEEP

When this item is set to Enabled, BIOS will let user know boot success with beep.
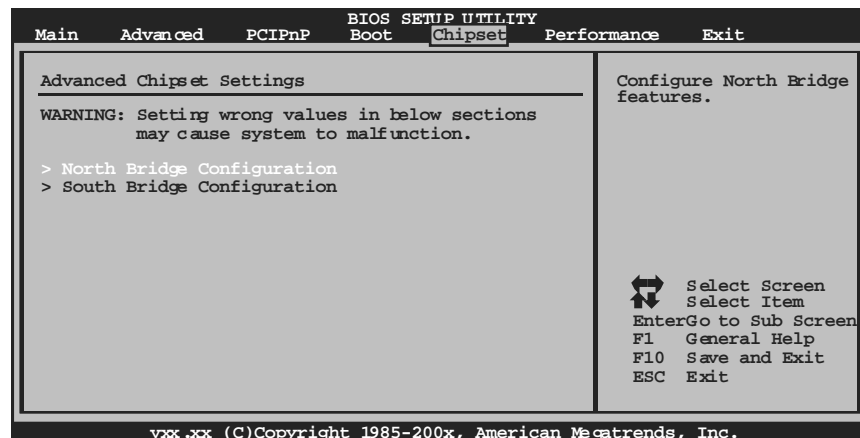Options: Enabled (Default) / Disabled

P43D3 BIOS Manual

5 Chipset Menu

This submenu allows you to configure the specific features of the chipset installed on your system. This chipset manage bus speeds and access to system memory resources, such as DRAM. It also coordinates communications with the PCI bus.
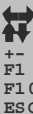
Notice

● Beware of that setting inappropriate values in items of this menu may cause system to malfunction.

```
                        BIOS SETUP UTILITY
   Main     Advanced    PCIPnP    Boot   Chipset   Performance    Exit

   Advanced Chipset Settings                      Configure North Bridge
                                                  features.
   WARNING: Setting wrong values in below sections
            may cause system to malfunction.

   > North Bridge Configuration
   > South Bridge Configuration




                                                  ⬍  Select Screen
                                                  ⬍  Select Item
                                                  Enter Go to Sub Screen
                                                  F1   General Help
                                                  F10  Save and Exit
                                                  ESC  Exit

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```

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North Bridge Configuration

```
                    BIOS SETUP UTILITY
                        Chipset

 North Bridge Chipset Configuration        ENABLE: Allow
                                           remapping of
 Memory Remap Feature        [Enabled]     overlapped PCI memory
   PCI MMIO Allocation:                    above the total
 Memory Hole                 [Disabled]    physical memory.

 Initiate Graphic Adapter    [PEG/PCI]     DISABLE: Do not allow
 IGD Graphics Mode Select    [Enabled, 32MB]  remapping of memory.
 IGD GTT Graphics memory size [No VT mode, 2MB]
 PAVP Mode                   [Lite]

 PEG Port Configuration                         Select Screen
   PEG Port                  [Auto]             Select Item
                                           +-   Change Option
                                           F1   General Help
                                           F10  Save and Exit
                                           ESC  Exit

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```

Memory Remap Feature

This item allows you to enable or disable the remapping of the overlapped PCI memory above the total physical memory. Only 64-bit OS supports this function.
Options: Enabled (Default) / Disabled

Memory Hole

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved it cannot be cached. Check the user information of peripherals that need to use this area of system memory for the memory requirements.
Options: Disabled (Default) / 15M-16M

Initiate Graphic Adapter
This item allows you to enable or disable VGA controller.
Options: PEG/PCI (Default) / IGD / PCI/IGD / PCI/PEG / PEG/IGD

IGD Graphics Mode Select
This item will be different as your memory modules. When the memory size is decided, this frame buffer size will also be fixed.
Options: Enabled,32MB (Default) / Enabled,64MB / Enabled,128MB / Disabled

IGD GTT Graphics memory size
Options: No VT mode, 2MB (Default)

PAVP Mode
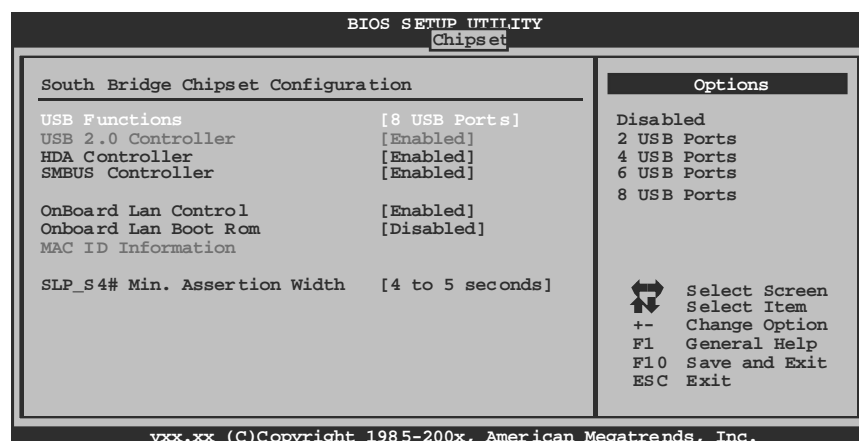GMCH Protected Audio Video Path (PAVP) BIOS support.
Options: Lite (Default) / Disabled / High

PEG Port
This BIOS feature is a toggle that enables or disables the PCI Express port.
Options: Auto (Default) / Disabled

South Bridge Configuration

```
                    BIOS SETUP UTILITY
                         Chipset

┌──────────────────────────────────────┬──────────────────────┐
│ South Bridge Chipset Configuration    │        Options       │
│                                       │                      │
│ USB Functions          [8 USB Ports]  │ Disabled             │
│ USB 2.0 Controller     [Enabled]      │ 2 USB Ports          │
│ HDA Controller         [Enabled]      │ 4 USB Ports          │
│ SMBUS Controller       [Enabled]      │ 6 USB Ports          │
│                                       │ 8 USB Ports          │
│ OnBoard Lan Control    [Enabled]      │                      │
│ Onboard Lan Boot Rom   [Disabled]     │                      │
│ MAC ID Information                    │                      │
│                                       │                      │
│ SLP_S4# Min. Assertion Width [4 to 5 seconds] │  ⇄  Select Screen │
│                                       │  ↑↓ Select Item      │
│                                       │  +-  Change Option   │
│                                       │  F1  General Help    │
│                                       │  F10 Save and Exit   │
│                                       │  ESC Exit            │
└──────────────────────────────────────┴──────────────────────┘
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```

USB Functions

The item determines the number of functional USB port.
Options: 8 USB Ports (Default) / 6 USB Ports / 4 USB Ports / 2 USB Ports /
           Disabled

USB 2.0 Controller

This entry is to enabled/ disabled EHCI controller only. This Bios itself may/may not
have high speed USB support. If the Bios has high speed USB support built in, the
support will be automatically turn on when high speed device were attached.
Options: Enabled (Default) / Disabled

HDA Controller

This item allows you to control the HD Audio support.
Options: Enabled (Default) / Disabled

SMBUS Controller

This BIOS feature controls the I/O buffers for the SMBus.
Options: Enabled (Default) / Disabled

OnBoard Lan Control
This item allows you to enable or disable the Onboard LAN.
Options: Enabled (Default) / Disabled

Onboard Lan Boot Rom
This item allows you to select the status of Onboard LAN Boot ROM.
Options: Disabled (Default) / Enabled

MAC ID Information
This item shows the LAN MAC ID.

SLP_S4# Min. Assertion Width

Options: 4 to 5 seconds (Default) / 3 to 4 seconds / 2 to 3 seconds / 1 to 2 seconds
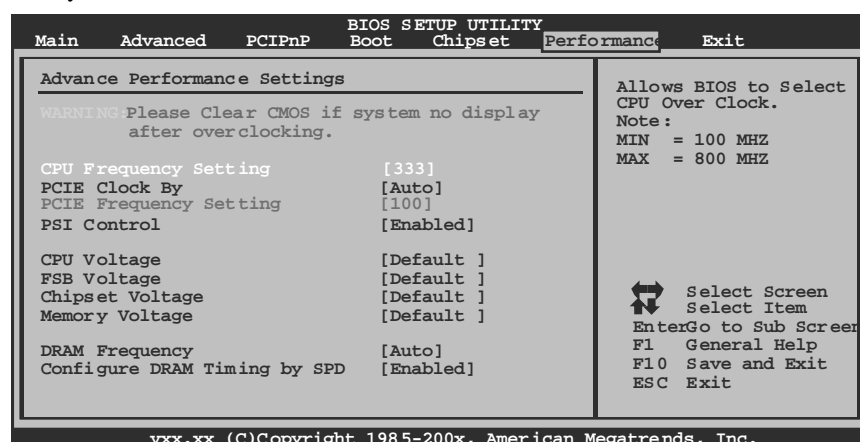
P43D3 BIOS Manual

6 Performance Menu

This submenu allows you to change voltage and clock of various devices.
(However, we suggest you to use the default setting. Changing the voltage and clock improperly may damage the device.)

Notice
- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.

```
                           BIOS SETUP UTILITY
   Main     Advanced    PCIPnP    Boot    Chipset   Performance   Exit

   Advance Performance Settings                   Allows BIOS to Select
                                                  CPU Over Clock.
   WARNING:Please Clear CMOS if system no display Note:
          after overclocking.                    MIN  = 100 MHZ
                                                  MAX  = 800 MHZ
   CPU Frequency Setting          [333]
   PCIE Clock By                  [Auto]
   PCIE Frequency Setting         [100]
   PSI Control                    [Enabled]

   CPU Voltage                    [Default ]
   FSB Voltage                    [Default ]       ⇄   Select Screen
   Chipset Voltage                [Default ]       ↕   Select Item
   Memory Voltage                 [Default ]      Enter Go to Sub Screen
                                                  F1   General Help
   DRAM Frequency                 [Auto]          F10  Save and Exit
   Configure DRAM Timing by SPD   [Enabled]       ESC  Exit

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```

CPU Frequency Setting

This item allows you to select the CPU Frequency.
Options: 333 (Default) / Min= 100MHz; Max= 800MHz

PCIE Clock By

This item allows you to select the PCIE clock control
Options: Auto (Default) / Manual

PCIE Frequency Setting

This item allows you to select the PCIE clock control
Options: 100 (Default) / Min=100; Max=150

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PSI Control

This item allows you to control power supply of CPU for the purpose of saving energy.
Options:　Enabled (Default) / Disabled

CPU Voltage

This item allows you to select CPU Voltage Control.
Options:　Default (Default) / +5% / +10% / +15%

FSB Voltage

This item allows you to select FSB Voltage Control.
Options:　Default (Default) / +0.1V / +0.2V / +0.3V

Chipset Voltage

This item allows you to select Chipset Voltage Control.
Options:　Default (Default) / +0.1V / +0.2V / +0.3V

Memory Voltage

This item allows you to select Memory Voltage Control.
Options:　Default (Default) / +0.1V / +0.2V / +0.3V / +0.4V / +0.5V / +0.6V

DRAM Frequency

This item allows you to control the Memory Clock.
Options:　Auto (Default) / DDR3 800 / DDR3 1066 / DDR3 1333

Configure DRAM Timing by SPD

Options:　Enabled (Default) / Disabled

DRAM tCL

Options:　3 (Default) / 3 ~ 10

DRAM tRAS

Options:　9 (Default) / 9 ~ 24

DRAM tRP

Options: 3 (Default) / 3 ~ 10

DRAM tRCD

Options: 3 (Default) / 3 ~ 10

DRAM tWR

Options: 3 (Default) / 3 ~ 15

DRAM tRFC

Options: 15 (Default) / 15 ~ 78

DRAM tWTR

Options: 2 (Default) / 2 ~ 15

DRAM tRRD

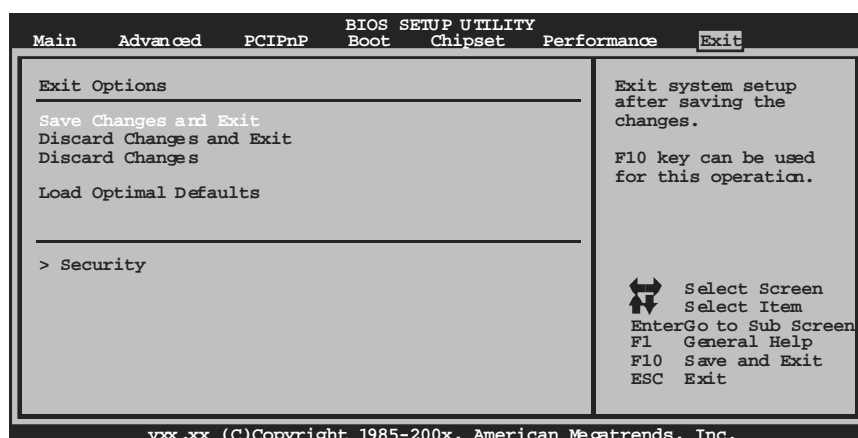Options: 2 (Default) / 2 ~ 15

DRAM tRTP

Options: 2 (Default) / 2 ~ 15

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7 Exit Menu

This menu allows you to load the optimal default settings, and save or discard the changes to the BIOS items.

```
                        BIOS SETUP UTILITY
   Main    Advanced   PCIPnP    Boot   Chipset   Performance    Exit

   Exit Options                                    Exit system setup
                                                   after saving the
   Save Changes and Exit                           changes.
   Discard Changes and Exit
   Discard Changes                                 F10 key can be used
                                                   for this operation.
   Load Optimal Defaults


   > Security
                                                       Select Screen
                                                       Select Item
                                                   EnterGo to Sub Screen
                                                   F1   General Help
                                                   F10  Save and Exit
                                                   ESC  Exit

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```

Save Changes and Exit

Save all configuration changes to CMOS RAM and exit setup.

Discard Changes and Exit

Abandon all changes made during the current session and exit setup.

Discard Changes

Abandon all changes made during the current session and restore the previously saved values.
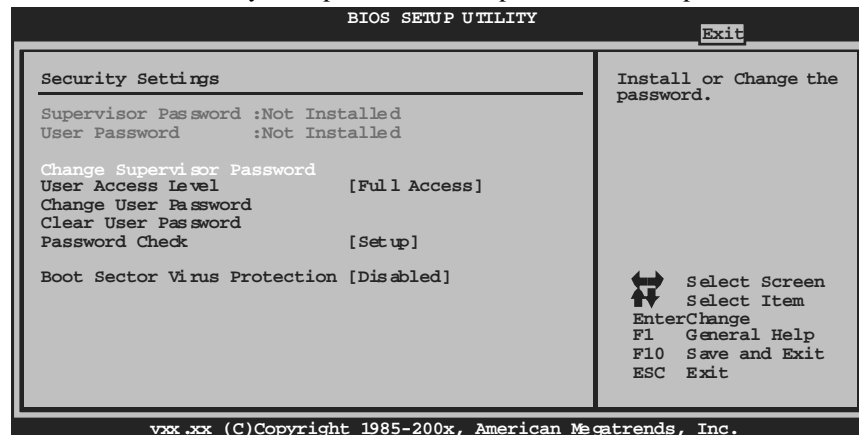
Load Optimal Defaults

This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system.

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Security

This sub-menu allows you to provide/revise supervisor and user password.

```
                          BIOS SETUP UTILITY
                                                          Exit

    Security Settings                             Install or Change the
                                                  password.
    Supervisor Password :Not Installed
    User Password       :Not Installed

    Change Supervisor Password
    User Access Level           [Full Access]
    Change User Password
    Clear User Password
    Password Check              [Setup]
                                                      ↔   Select Screen
    Boot Sector Virus Protection [Disabled]           ↕   Select Item
                                                  EnterChange
                                                  F1   General Help
                                                  F10  Save and Exit
                                                  ESC  Exit

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```

Change Supervisor Password

Setting the supervisor password will prohibit everyone except the supervisor from making changes using the CMOS Setup Utility. You will be prompted with to enter a password.

User Acess Level

This item allows supervisor to set the user level.
Options: Full Access (Default) / No Access / View Only / Limited

Change User Password

If the Supervisor Password is not set, then the User Password will function in the same way as the Supervisor Password. If the Supervisor Password is set and the User Password is set, the "User" will only be able to view configurations but will not be able to change them.

Clear User Password

This item is for clearing user password.

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Password Check

This item is for setting the timing that checking password.
Options: Setup (Default) / Always

Boot Sector Virus Protection

This option allows you to choose the VIRUS Warning feature that is used to protect the IDE Hard Disk boot sector. If this function is enabled and an attempt is made to write to the boot sector, BIOS will display a warning message on the screen and sound an alarm beep.
Options: Disabled (Default) / Enabled