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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.

APM Support

This AMI BIOS supports Version 1.1&1.2 of the Advanced Power Management (APM) specification. Power management features are implemented via the System Management Interrupt (SMI). Sleep and Suspend power management modes are supported. Power to the hard disk drives and video monitors can also be managed by this AMI BIOS.

ACPI Support

AMI ACPI BIOS support Version 3.0 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.

PCI Bus Support

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

DRAM Support

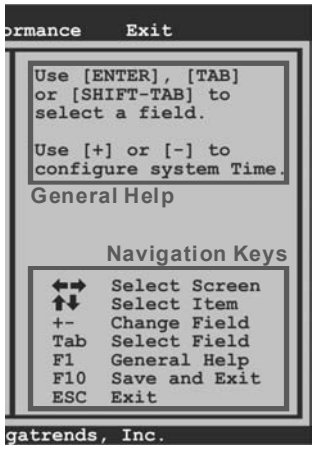
DDR3 SDRAM (Double Data Rate III Synchronous DRAM) is supported.

Supported CPUs

This AMI BIOS supports the NanoBGA2 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.

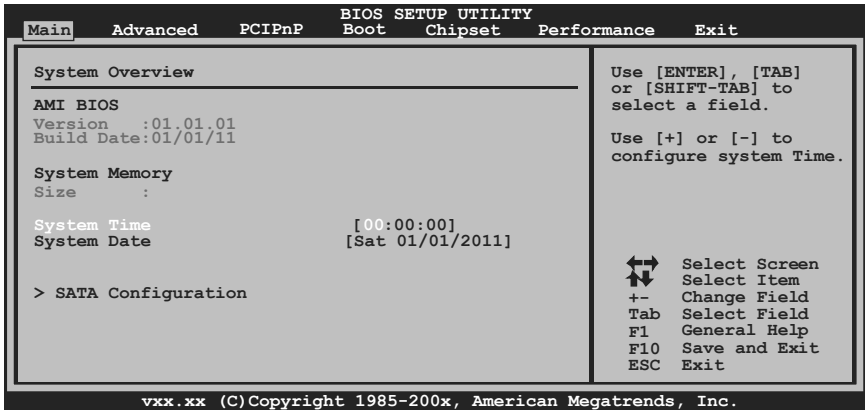


Notice

- 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.

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.



AMI BIOS

Shows system information including BIOS version and built date.

System Memory

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

System Time

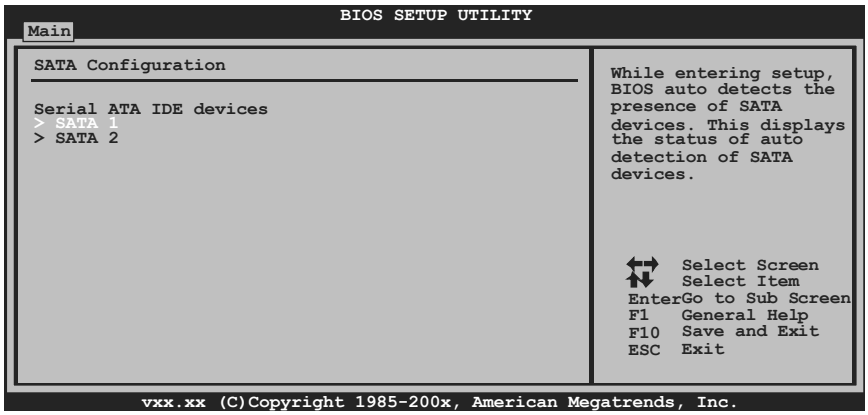
Set the system internal clock.

System Date

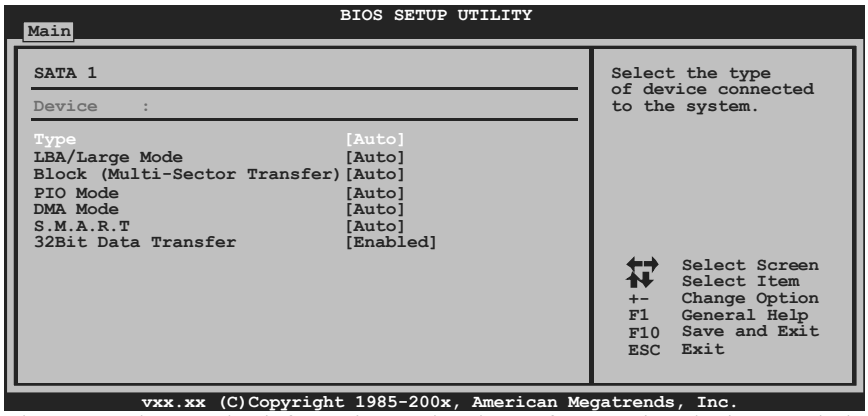
Set the system date. Note that the 'Day' automatically changes when you set the date.

SATA Configuration

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



SATA 1/2



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 / UDMA 0 ~ 6

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

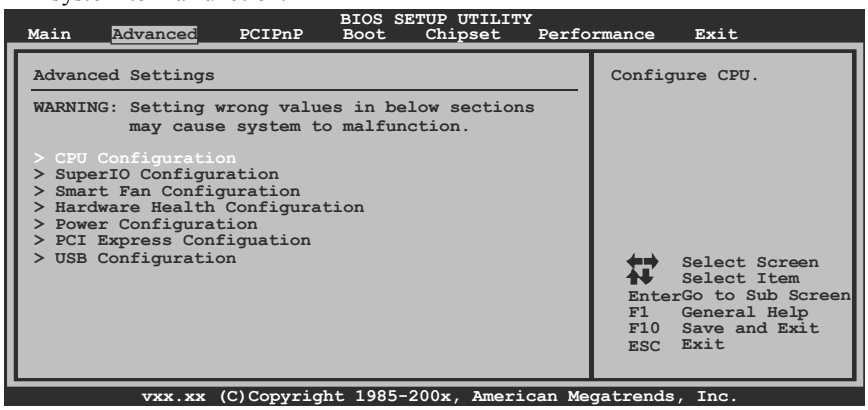
32Bit Data Transfer
Enable or disable 32-bit data transfer.
Options: Enabled (Default) / Disabled

2 Advanced Menu

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

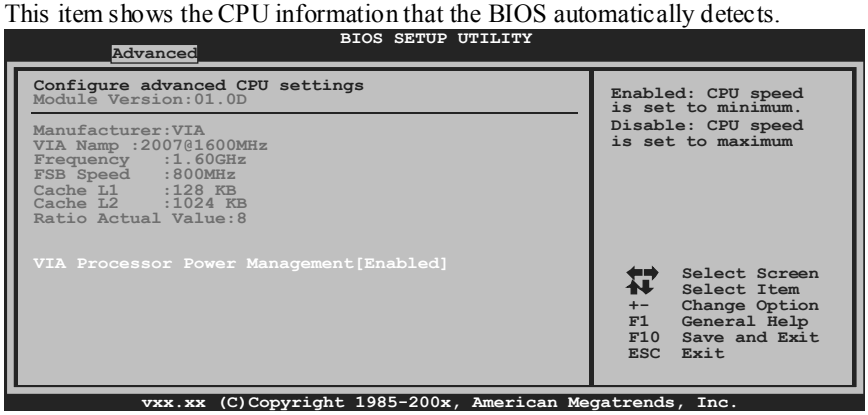
Notice

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



CPU Configuration

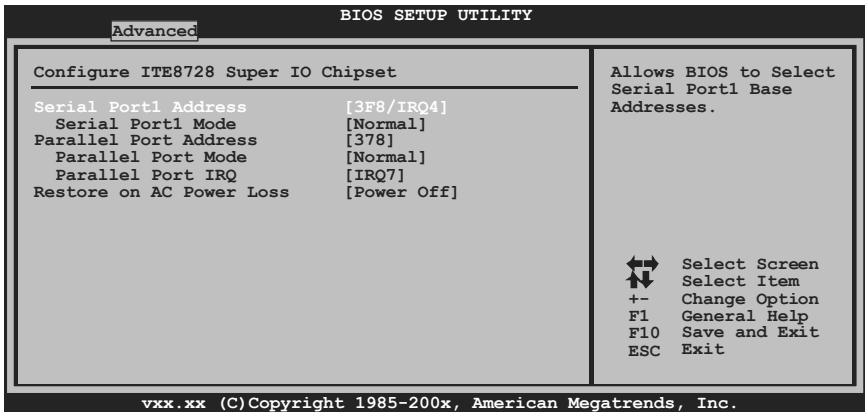
This item shows the CPU information that the BIOS automatically detects.



VIA Processor Power Management

Enabled: Enable CPU Power Management function; Disabled: Disable CPU Power Management function.
Options: Enabled (Default) / Disabled

SuperIO Configuration



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 /Disabled

Serial Port1 Mode

Select a mode for Serial Port 1.
Options: Normal (Default) / IrDA / ASK IR

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.

ECP Mode DMA Channel

This item allows you to select parallel port ECP DMA.
Options: DMA3 (Default) / DMA0 / DMA1

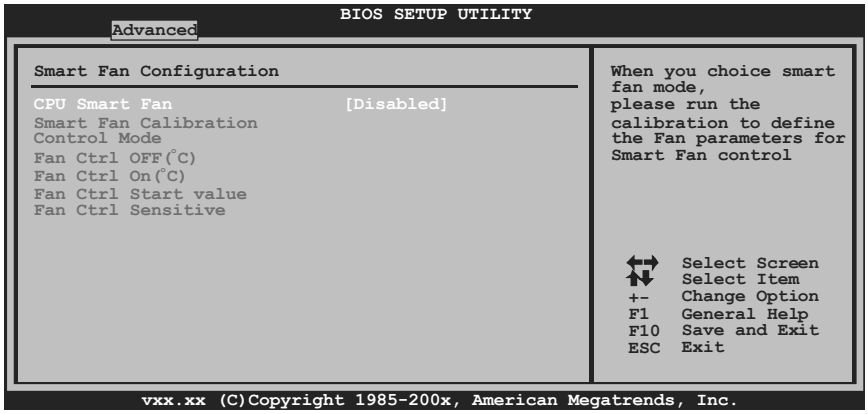
Parallel Port IRQ

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

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

Smart Fan Configuration



CPU Smart Fan

This item allows you to control the CPU Smart Fan function.
Options: Disabled (Default) / Auto / 3Pin / 4Pin

Smart Fan Calibration

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

Control Mode

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

Fan Ctrl OFF(℃)

If the CPU Temperature is lower than the set value, the fan will turn off.
Options: 0~127 (℃) (With the interval of 1℃)

Fan Ctrl On(℃)

CPU fan starts to work when the temperature arrives this set value.
Options: 0~127 (℃) (With the interval of 1℃)

Fan Ctrl Start Value

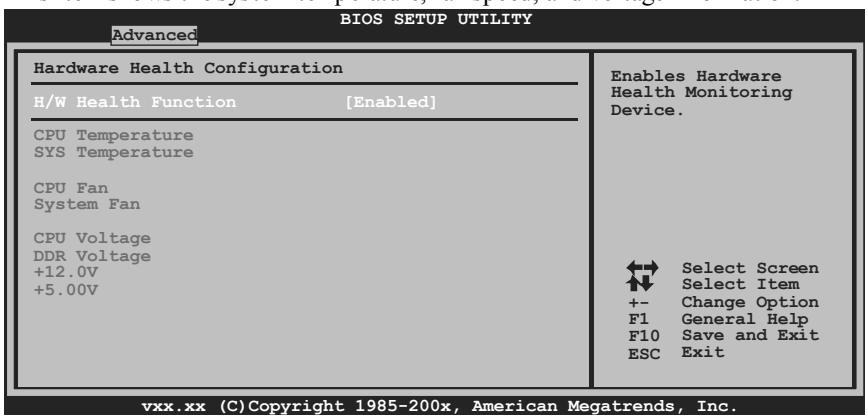
When CPU temperature arrives to the set value, the CPU fan will work under Smart Fan Function mode.
Options: 0~127 (With the interval of 1)

Fan Ctrl Sensitive

Increasing the value of slope PWM will raise the speed of CPU fan.
Options: 0~127 (With the interval of 1)

Hardware Health Configuration

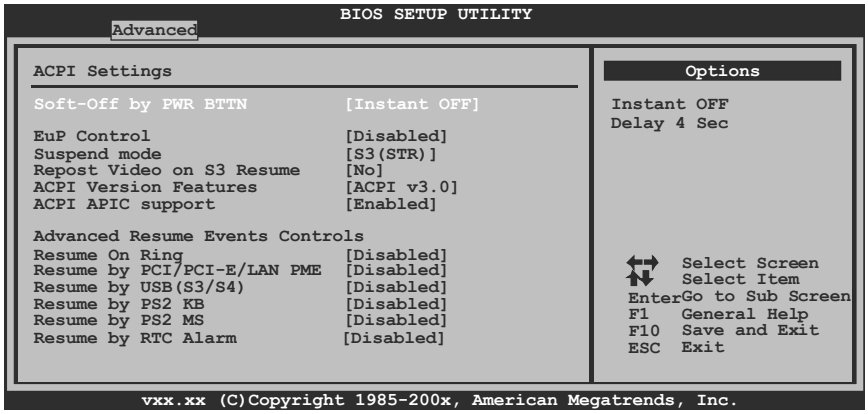
This item shows the system temperature, fan speed, and voltage information.



H/W Health Function

If with a monitoring system, the system will show PC health status during POST stage.
Options: Enabled (Default) / Disabled

ACPI Configuration



Soft-Off by PWR BTTN

This item allows you to determine Soft-Off by PWR BTTN function.
Options: Disabled (Default) / Enabled

EuP Control

When EuP is enabled, the system will meet EuP requirement.
Options: Disabled (Default) / Enabled

Suspend mode

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

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

ACPI Version Features

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

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

Resume On Ring

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

Resume by PCI/PCI-E/LAN PME

This item allows you control the wake by PCI/PCI-E/LAN PME function.
Options: Disabled (Default) / Enabled

Resume by USB (S3/S4)

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

Resume by PS2 KB

This item allows you to enable or disable the PS2 KB resume.
Options: Disabled (Default) / Enabled

Resume by PS2 MS

This item allows you to enable or disable the PS2 MS resume.
Options: Disabled (Default) / Enabled

Resume by 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)

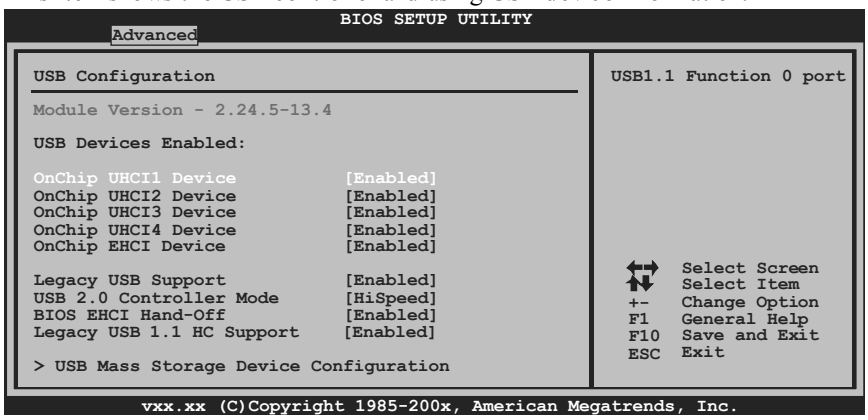
You can choose which date the system will boot up.

System 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.



OnChip UHCI 1/2/3/4 Device

This item allows you to control OHCI host controller. (USB 1.1 Device)
Options: Enabled (Default) / Disabled

OnChip EHCI Device

This item allows you to control EHCI host controller. (USB 2.0 Device)
Options: Enabled (Default) / Disabled

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

Legacy USB1.1 HC Support

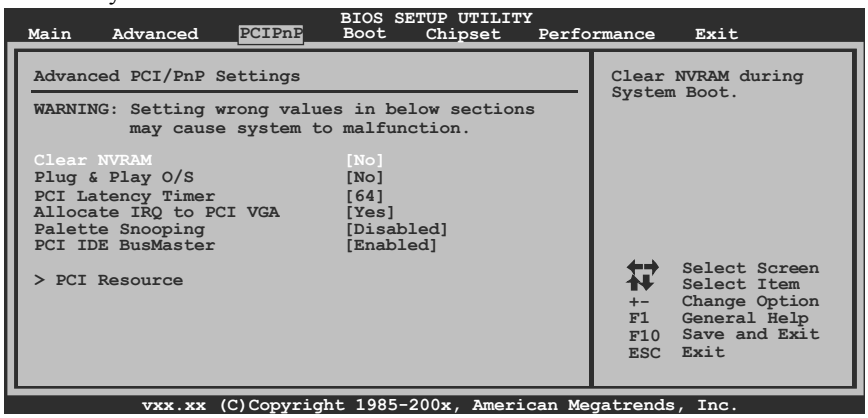
This item allows you to enable to support USB1.1 HC.
Options: Enabled (Default) / Disabled

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.



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

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) / 0-255

Allocate IRQ to PCI VGA

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

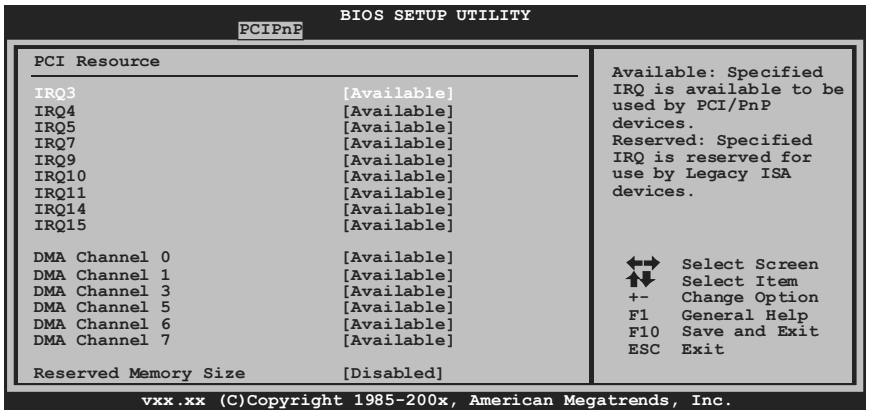
Palette Snooping

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

PCI Resource



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

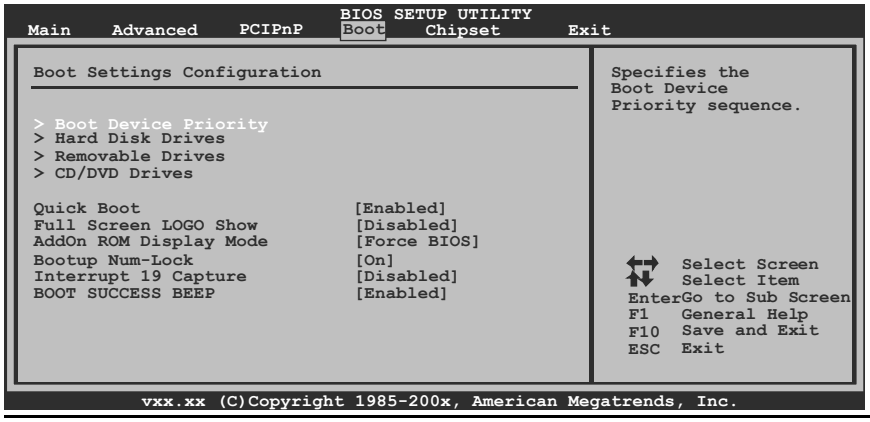
These items will allow you to assign each DMA channel a type, depending on the type of device using the channel. The option "Available" means the channel is going to assign automatically.
Options: Available (Default) / Reserved

Reserved Memory Size

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

4 Boot Menu

This menu allows you to setup the system boot options. (The screenshot below is without any Hard Disk / CDROM / USB Drive / Bootable Add-in Cards etc.)



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.
Options: Removable / Hard Disk / CDROM / Legacy LAN / Disabled

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.
Options: Pri. Master / Pri. Slave / Sec. Master / Sec. Slave / USB HDD0 / USB HDD1 / USB HDD2 / Bootable Add-in Cards

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.
Options: Zip100 / USB-FDD0 / USB-FDD1 / USB-ZIP0 / USB-ZIP1 / LS120

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.
Options: Pri. Master / Pri. Slave / Sec. Master / Sec. Slave / USB CDROM0 / USB CDROM 1

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

Full Screen LOGO Show

This item allows you to enable/disable Full Screen LOGO Show function.
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

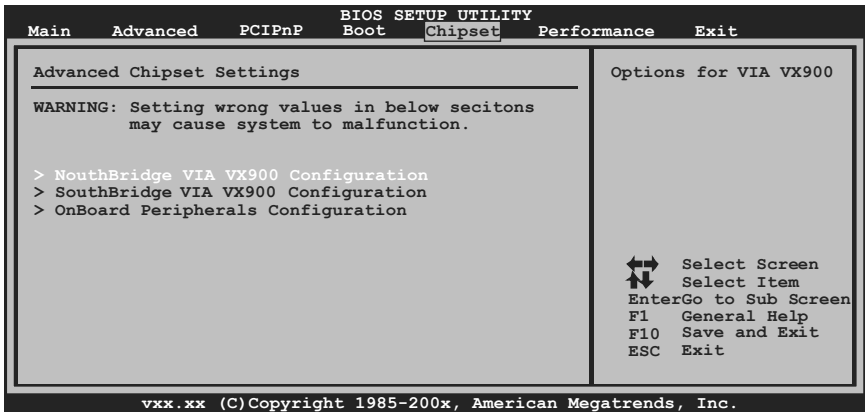
Interrupt 19 is the software interrupt that handles the boot disk function. When set to Enabled, this item allows the option ROMs to trap interrupt 19.
Options: Disabled (Default) / Enabled

BOOT SUCCESS BEEP

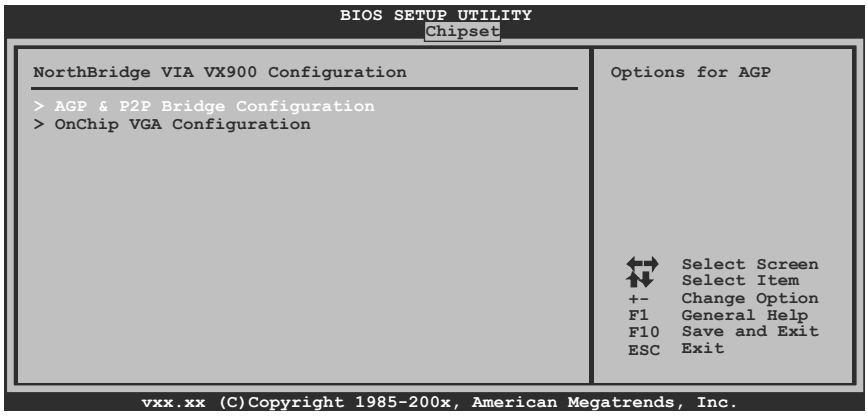
When this item is set to Enabled, BIOS will let user know boot success with beep.
Options: Enabled (Default) / Disabled

5 Chipset Menu

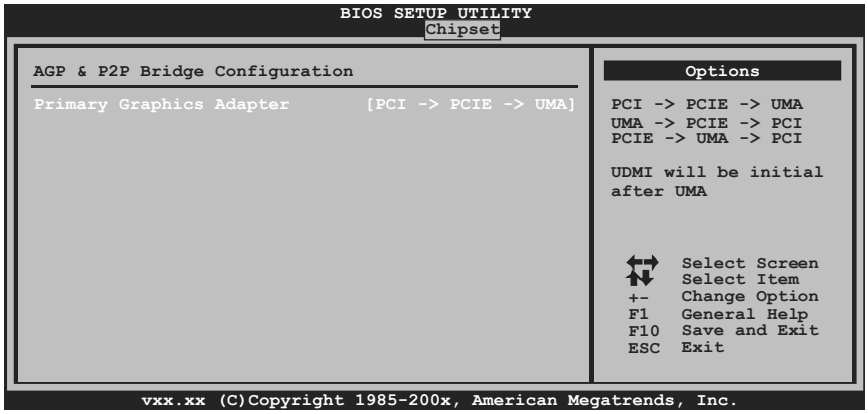
This submenu allows you to configure the specific features of the chipset installed on your system. This chipset manage bus speeds and access to system memory resources, such as DRAM. It also coordinates communications with the PCI bus.



NorthBridge VIA VX900 Configuration



AGP & P2P Bridge Configuration

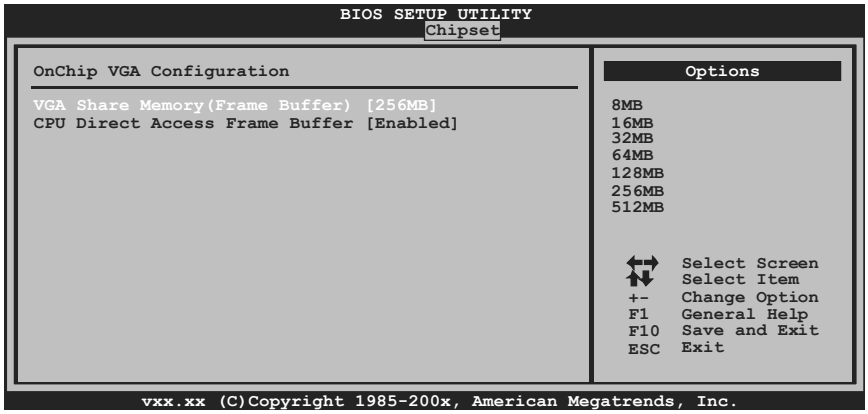


Primary Graphic Adapter

This item allows you to set the priority of VGA controller.

Options: PCI -> PCIE -> UMA (Default) / UMA -> PCIE -> PCI / PCIE -> UMA ->PCI

OnChip VGA Configuration



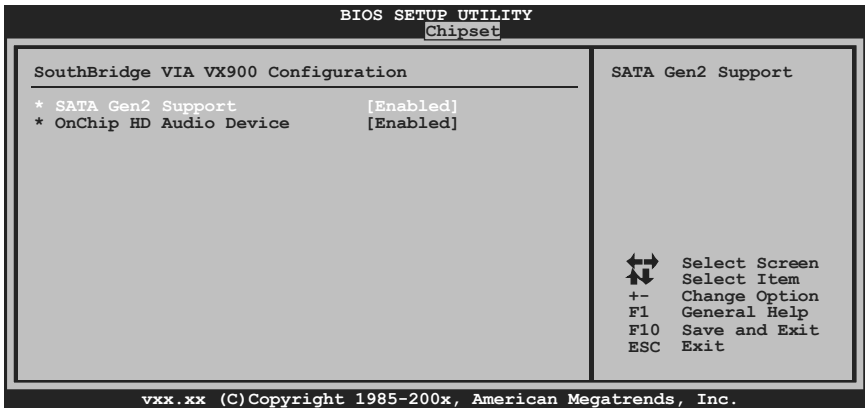
VGA Share Memory (Frame Buffer)

This item allows you to set Share Memory of VGA.

Options: 256MB (Default) / 8M / 16M / 32M / 64MB / 128MB / 512M

CPU Direct Access Frame Buffer
This item allows you to enable/diable CPU Direct Access Frame Buffer.
Options: Enabled (Default) / Disabled

SouthBridge VIA VX900 Configuration



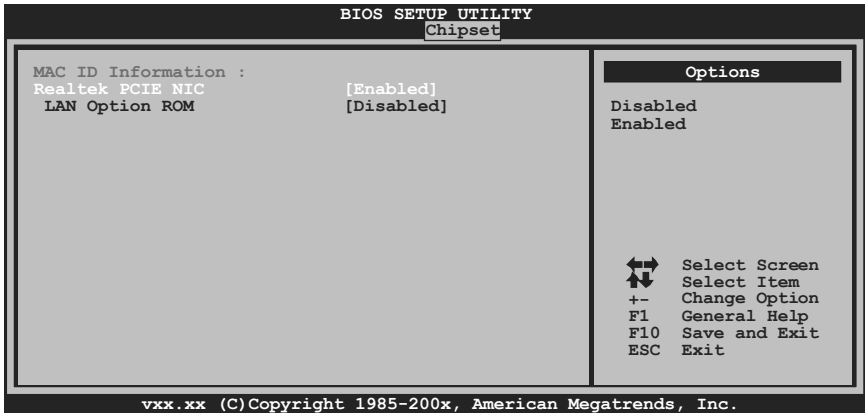
SATA Gen2 Support

This item allows you to enable or disable SATA Gen2 Support.
Options: Enabled (Default) / Disabled

OnChip HD Audio Device

This item allows you to enable or disable OnChip HD Audio Device.
Options: Enabled (Default) / Disabled

Onboard Peripherals Configuration



MAC ID Information

This area shows the MAC ID.

Realtek PCIE NIC

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

LAN Option ROM

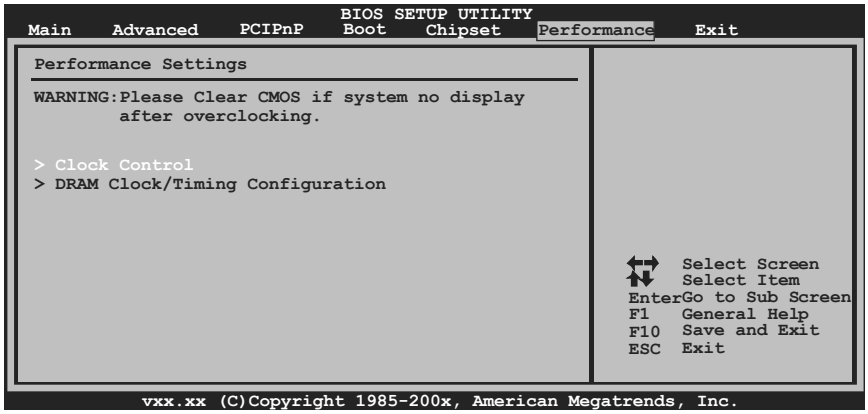
This item allows you to enable or disable the Onboard LAN Boot ROM.
Options: Disabled (Default) / Enabled

6 Performance Menu

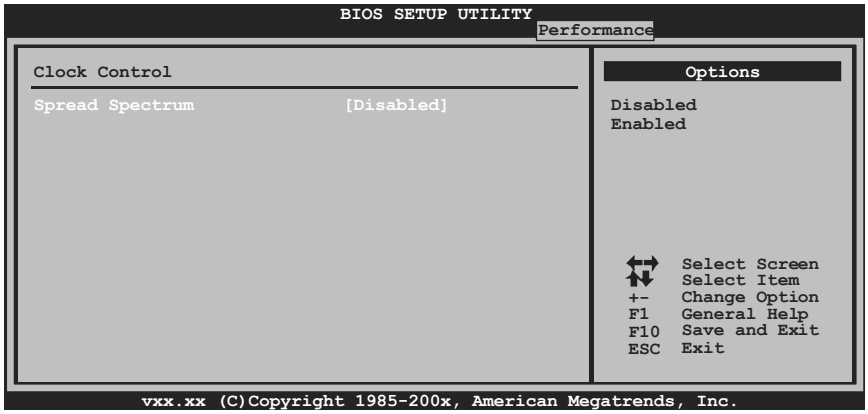
This submenu allows you to change voltage and clock of various devices.
(However, we suggest you use the default setting. Changing the voltage and clock improperly may damage the device.)

Notice

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



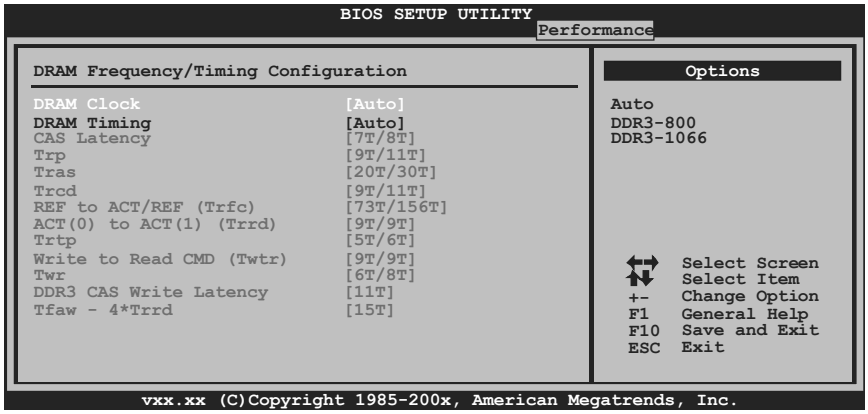
Clock Control



Spread Spectrum

This item allows you to control Spread Spectrum function.
Options: Disabled (Default) / Enabled

DRAM Clock & Timing Configuration



DRAM Clock

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

DRAM Timing

This item allows you to choose to manually or automatically regulate the DRAM Timing.
Options: Auto (Default) / Manual

CAS Latency (CL)

Options: 7T/8T (Default) / 3T/4T ~ NA/11T

Precharge to Active (Trp)

Options: 9T/11T (Default) / 2T/4T ~ 8T/10T

Active to Precharge (Tras)

Options: 20T/30T (Default) / 5T/15T ~ 19T/29T

Active to CMD (Trcd)

Options: 9T/11T (Default) / 2T/4T ~ 8T/10T

REF to ACT/REF to REF (Trfc)

Options: 73T/156T (Default) / 10T/30T ~ 72T/154T

ACT (0) to ACT (1) (Trrd)

Options: 9T/9T (Default) / 2T/2T ~ 8T/8T

Read to Precharge (Trtp)

Options: 5T/6T (Default) / 2T/3T ~ 4T/5T

Write to Read CMD (Twtr)

Options: 9T/9T (Default) / 2T/NA ~ 8T/8T

Write Recovery Time (Twr)

Options: 6T/8T (Default) / 2T/4T ~ 9T/11T

DDR3 CAS Write Latency

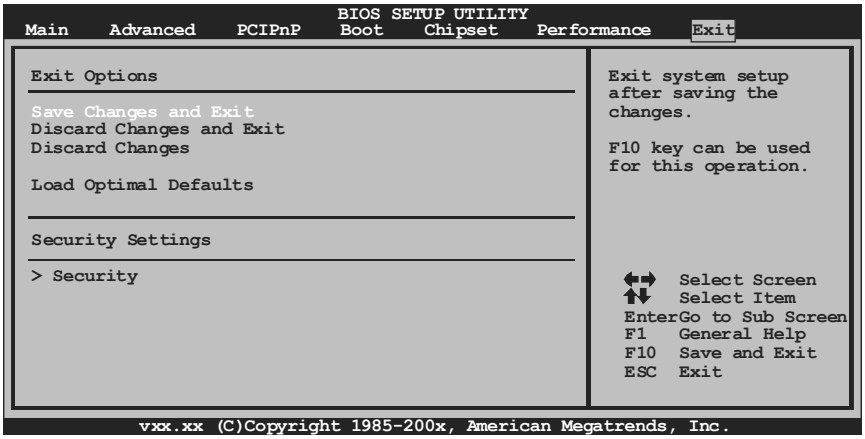
Options: 11T (Default) / 4T ~ 10T

Tfaw – 4*Trrd

Options: 15T (Default) / 0T ~ 14T

7 Exit Menu

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



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

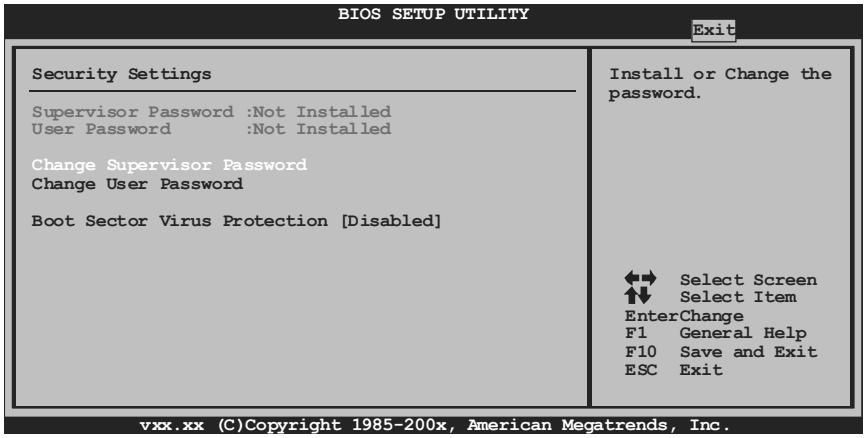
Abandon all changes made during the current session and restore the previously saved values.

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.

Security

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



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.

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.

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