K7NF2-RAID

User Manual

Version 1.0
Published March 2005

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

ASRock Website: http://www.asrock.com

Contents

Chapter 1 Introduction

Thank you for purchasing ASRock K7NF2-RAID motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

Chapter 1 and 2 of this manual contain introduction of the motherboard and step-by-step installation guide. Chapter 3 and 4 contain basic BIOS setup and support CD information. More information of advanced BIOS setup is offered on page 23 for advanced users' reference.

Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock website without further notice. You may find the latest memory and CPU support lists on ASRock website as well.
ASRock website http://www.asrock.com

1.1 Package Contents

ASRock K7NF2-RAID Motherboard
(ATX Form Factor: 12.0-in x 7.8-in, 30.5 cm x 19.8 cm)
ASRock K7NF2-RAID Quick Installation Guide
ASRock K7NF2-RAID Support CD
One 80-conductor Ultra ATA 66/100/133 IDE Ribbon Cable
One Ribbon Cable for a 3.5-in Floppy Drive
One Serial ATA (SATA) Cables
One Serial ATA (SATA) HDD Power Cable (Optional)
One ASRock I/O Plus™ Shield
One Game Port Bracket (Optional)

1.2 Specifications

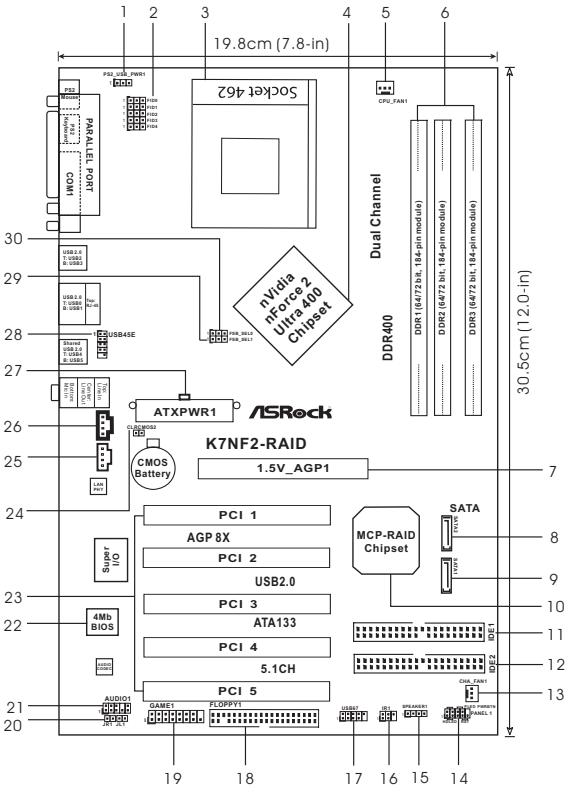
Platform:	ATX Form Factor (12.0-in x 7.8-in, 30.5-cm x 19.8-cm)
CPU:	Supports Socket A (462 pins) for AMD Athlon™ /Athlon™ XP / Sempron™ /Duron™ processor
Chipsets:	North Bridge: nVidia nForce 2 Ultra 400, FSB @ 400/333/266/200 MHz, AGP 8X; South Bridge: MCP-RAID, supports USB 2.0, ATA 133, SATA 1.5Gb/s
Memory:	3 DDR DIMM slots: DDR1, DDR2, and DDR3 PC2100 (DDR266) / PC2700 (DDR333) / PC3200 (DDR400) for 3 DDR DIMM slots, Max. 3GB;
IDE:	IDE1: ATA 133 / Ultra DMA Mode 6; IDE2: ATA 133 / Ultra DMA Mode 6; Supports up to 4 IDE devices
Serial ATA:	2 SATA connectors, support up to 2 SATA devices at1.5Gb/s data transfer rate (Not Support "Hot Plug" function)
Floppy Port:	Supports up to 2 floppy disk drives
Audio:	5.1 channels AC'97 Audio
LAN:	Speed: 802.3u (10/100 Ethernet), supports Wake-On-LAN
Hardware Monitor:	CPU temperature sensing; Chassis temperature sensing; CPU overheat shutdown to protect CPU life (ASRock U-COP)(see CAUTION 1); CPU fan tachometer; Chassis fan tachometer; Voltage monitoring: +12V, +5V, +3.3V, Vcore
PCI slots:	5 slots with PCI Specification 2.3
AGP slot:	1 AGP slot, supports 1.5V, AGP 8X card (see CAUTION 2)
USB 2.0:	8 USB 2.0 ports: includes 6 default USB 2.0 ports on the rear panel, plus two headers to support 2 additional USB 2.0 ports (see CAUTION 3)
ASRock I/O Plus™:	1 PS/2 keyboard port, 1 PS/2 mouse port; 1 serial port: COM1; 1 parallel port: ECP/EPP support; 1 RJ-45 port; 6 default USB 2.0 ports; Audio Jack: Line Out / Line In / Microphone

BIOS:	AMI legal BIOS; Supports "Plug and Play"; ACPI 1.1 compliance wake up events; SMBIOS 2.3.1 support; CPU frequency stepless control (only for advanced users' reference, see CAUTION 4)
OS:	Microsoft® Windows® 98 SE / ME / 2000 / XP compliant

CAUTION!

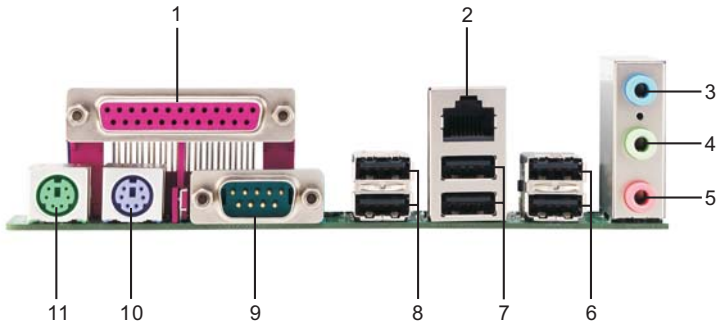
1. While CPU overheat is detected, the system will automatically shutdown. Please check if the CPU fan on the motherboard functions properly before you resume the system. To improve heat dissipation, remember to spray thermal grease between the CPU and the heatsink when you install the PC system.
2. Do NOT insert a 3.3V AGP card into the AGP slot of K7NF2-RAID motherboard! It may cause permanent damage!
3. Power Management for USB 2.0 works fine under Microsoft® Windows® XP SP1/2000 SP4. It may not work properly under Microsoft® Windows® 98/ME.
4. Although K7NF2-RAID offers stepless control, it is not recommended to perform over clocking. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the CPU. The CPU host frequency of this motherboard is determined by the jumper-setting. You must set the FSB jumper according to your AMD CPU before you use the "Manual" option as the FSB setting in BIOS setup to perform over clocking. Please check page 24 for details.

1.3 Motherboard Layout



1	PS2_USB_PWR1 Jumper	16	Infrared Module Connector (IR1)
2	FID Jumpers (FID0, FID1, FID2, FID3, FID4)	17	USB 2.0 Header (USB67, Blue)
3	CPU Socket	18	Floppy Connector (FLOPPY1)
4	North Bridge Controller	19	Game Connector (GAME1)
5	CPU Fan Connector (CPU_FAN1)	20	JR1 / JL1 Jumpers
6	184-pin DDR DIMM Slots (DDR1- 3)	21	Front Panel Audio Connector (AUDIO1)
7	AGP Slot (AGP1)	22	Flash Memory
8	Secondary Serial ATA Connector (SATA2)	23	PCI Slots (PCI1- 5)
9	Primary Serial ATA Connector (SATA1)	24	Clear CMOS Jumper (CLRCMOS2)
10	South Bridge Controller	25	Internal Audio Connector: AUX1 (White)
11	Primary IDE Connector (IDE1, Blue)	26	Internal Audio Connector: CD1 (Black)
12	Secondary IDE Connector (IDE2, Black)	27	ATX Power Connector (ATX PWR1)
13	Chassis Fan Connector (CHA_FAN1)	28	Shared USB 2.0 Header (USB45E, Blue)
14	System Panel Connector (PANEL1)	29	FSB Select Jumper (FSB_SEL1)
15	Chassis Speaker Connector (SPEAKER 1)	30	FSB Select Jumper (FSB_SEL0)

1.4 ASRock I/O Plus™



1	Parallel Port	7	USB 2.0 Ports (USB01)
2	RJ-45 Port	8	USB 2.0 Ports (USB23)
3	Line In (Light Blue)	9	Serial Port: COM1
4	Line Out (Lime)	10	PS/2 Keyboard Port (Purple)
5	Microphone (Pink)	11	PS/2 Mouse Port (Green)
6	USB 2.0 Ports (USB45)		

Chapter 2 Installation

K7NF2-RAID is an ATX form factor (12.0-in x 7.8-in, 30.5-cm x 19.8-cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.

2.1 Screw Holes

Place screws into the holes indicated by circles to secure the motherboard to the chassis.

Do not over-tighten the screws! Doing so may damage the motherboard.

2.2 Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

1. Unplug the power cord from the wall socket before touching any component.
2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component.

Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

2.3 CPU Installation

Step 1. Unlock the socket by lifting the lever up to a 90° angle.

Step 2. Position the CPU directly above the socket such that its marked corner matches the base of the socket lever.

Step 3. Carefully insert the CPU into the socket until it fits in place.

The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to avoid bending of the pins.

Step 4. When the CPU is in place, press it firmly on the socket while you push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.

Step 1

Step 2, 3

Step 4

2.4 Installation of CPU Fan and Heatsink

AMD Athlon™ /Athlon™ XP/ Sempron™/Duron™ family CPUs with a speed of 600 MHz and higher require larger heatsink and cooling fan. Thermal grease between the CPU and the heatsink is also needed to improve heat transfer. Make sure that the CPU and the heatsink are securely fastened and in good contact with each other. Then connect the CPU fan to the CPU_FAN connector (CPU_FAN1, see page 8, No. 5). For proper installation, please kindly refer to the instruction manuals of the CPU fan and heatsink vendors.

2.5 Installation of Memory Modules (DIMM)

K7NF2-RAID motherboard provides three 184-pin DDR (Double Data Rate) DIMM slots, and supports Dual Channel Memory Technology. To enable Dual-Channel mode, you need to install 2 DIMMs into DDR1 and DDR3 slots. Although this chipset can work on the Dual-Channel mode with 2 different modules, we recommend users to use two identical (the same brand, speed, size and chip-type) memory modules in the DDR DIMM slots for optimized performance.

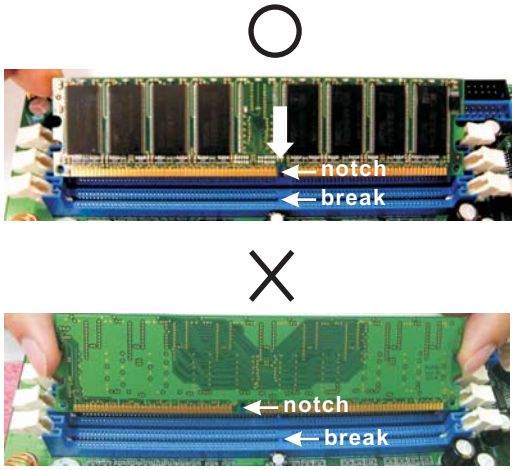
If you install only one memory module, please install it on DDR1 first.
If you install 2 memory modules, please install them on DDR1 and DDR3.

Installing a DIMM

Please make sure to disconnect power supply before adding or removing DIMMs or the system components.

Step 1. Unlock a DIMM slot by pressing the retaining clips outward.

Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.



The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

Step 3. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated.

2.6 Expansion Slots (PCI and AGP Slots)

There are 5 PCI slots and 1 AGP slot on K7NF2-RAID motherboard.

PCI slots: PCI slots are used to install expansion cards that have the 32-bit PCI interface.

AGP slot: The AGP slot is used to install an AGP graphics card.

Please do NOT insert a 3.3V AGP card into the AGP slot of K7NF2-RAID motherboard! It may cause permanent damage! For the voltage information of your VGA card, please check with the VGA card vendors.

Installing an expansion card

Step 1. Before installing the expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.

Step 2. Remove the system unit cover (if your motherboard is already installed in a chassis).

Step 3. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.

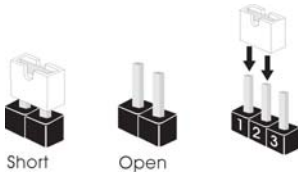
Step 4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.

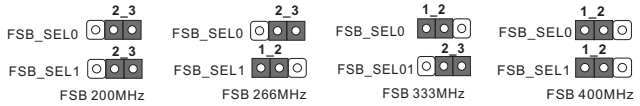
Step 5. Fasten the card to the chassis with screws.

Step 6. Replace the system cover.

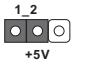
2.7 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is "Short". If no jumper cap is placed on pins, the jumper is "Open". The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when jumper cap is placed on these 2 pins.



Jumper	Setting
FSB_SEL0 (see p.8 item 30) FSB_SEL1 (see p.8 item 29)	

Note: The setting of the CPU front side bus frequency of this motherboard is by means of the adjustment of jumper-setting. You must set the FSB jumper according to your AMD CPU before you use the "Manual" option as the FSB setting in BIOS setup to perform over clocking. Please follow the figures above to set the CPU front side bus frequency.

PS2_USB_PWR1 (see p.8 item 1)			Short pin2, pin3 to enable +5VSB (standby) for PS/2 or USB wake up events.

Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply.

JR1 (see p.8 item 20) JL1 (see p.8 item 20)	

Note: If the jumpers JL1 and JR1 are short, both front panel and rear panel audio connectors can work at the same time.

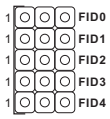
Clear CMOS Jumper (CLRCMOS2) (see p.8 item 24)	 2-pin jumper

Note: CLRCMOS2 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short 2 pins on CLRCMOS2 for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action.

FID Jumpers

(FID0, FID1, FID2, FID3, FID4)

(see p.8 item 2)

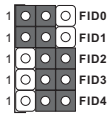


Note: The set of FID jumpers are only for advanced users to adjust the multiplier of CPU. Please follow the table below to adjust the multiplier of CPU. However, the system will work well without the adjustment of multiplier. You do not have to adjust the multiplier for normal usage.

Multiplier	FID0	FID1	FID2	FID3	FID4
5x	2-3	2-3	1-2	2-3	2-3
5.5x	1-2	2-3	1-2	2-3	2-3
6x	2-3	1-2	1-2	2-3	2-3
6.5x	1-2	1-2	1-2	2-3	2-3
7x	2-3	2-3	2-3	1-2	2-3
7.5x	1-2	2-3	2-3	1-2	2-3
8x	2-3	1-2	2-3	1-2	2-3
8.5x	1-2	1-2	2-3	1-2	2-3
9x	2-3	2-3	1-2	1-2	2-3
9.5x	1-2	2-3	1-2	1-2	2-3
10x	2-3	1-2	1-2	1-2	2-3
10.5x	1-2	1-2	1-2	1-2	2-3
11x	2-3	2-3	2-3	2-3	2-3
11.5x	1-2	2-3	2-3	2-3	2-3
12x	2-3	1-2	2-3	2-3	2-3
12.5x	1-2	1-2	2-3	2-3	2-3
13x	2-3	2-3	1-2	2-3	1-2
13.5x	1-2	2-3	1-2	2-3	1-2
14x	2-3	1-2	1-2	2-3	1-2
15x	2-3	2-3	2-3	1-2	1-2
16x	2-3	1-2	2-3	1-2	1-2
16.5x	1-2	1-2	2-3	1-2	1-2
17x	2-3	2-3	1-2	1-2	1-2
18x	1-2	2-3	1-2	1-2	1-2
19x	1-2	2-3	2-3	2-3	1-2
20x	1-2	1-2	2-3	2-3	1-2
21x	1-2	1-2	1-2	2-3	1-2
22x	1-2	2-3	2-3	1-2	1-2
23x	2-3	1-2	1-2	1-2	1-2
24x	1-2	1-2	1-2	1-2	1-2

For example, "Athlon XP 2000+" is an 1666MHz CPU: 12.5 (Multiplier) X 133MHz (External frequency) = 1666MHz

FID jumpers setting:



The jumper caps are not provided by ASRock. Please understand that ASRock does not guarantee and support the adjustment of multiplier. These jumpers setting may not apply to all multiplier-locked or even some unlocked AMD CPU. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the CPU.

2.8 Connectors

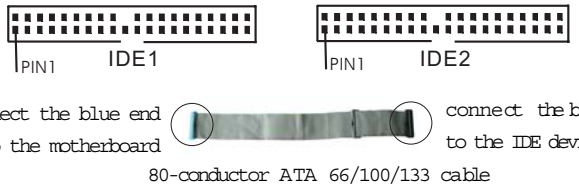
Connectors are NOT jumpers. DO NOT place jumper caps over these connectors. Placing jumper caps over the connectors will cause permanent damage of the motherboard!

FDD Connector
(33-pin FLOPPY1)
(see p.8 item 18)

Note: Make sure the red-striped side of the cable is plugged into Pin1 side of the connector.

Primary IDE Connector (Blue)
(39-pin IDE1, see p.8 item 11)

Secondary IDE Connector (Black)
(39-pin IDE2, see p.8 item 12)



Note: If you use only one IDE device on this motherboard, please set the IDE device as "Master". Please refer to the instruction of your IDE device vendor for the details. Besides, to optimize compatibility and performance, please connect your hard disk drive to the primary IDE connector (IDE1, blue) and CD-ROM to the secondary IDE connector (IDE2, black).

Serial ATA Connectors
(SATA1: see p.8 item 9)
(SATA2: see p.8 item 8)

These two Serial ATA (SATA) connectors support SATA data cables for internal storage devices. The current SATA interface allows up to 1.5 Gb/s data transfer rate.

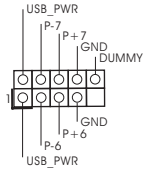
Serial ATA (SATA)
Data Cable

Either end of the SATA data cable can be connected to the SATA hard disk or the SATA connector on the motherboard.

Serial ATA (SATA)
Power Cable
(Optional)

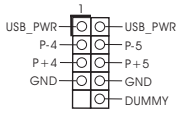
Please connect the black end of SATA power cable to the power connector on each drive. Then connect the white end of SATA power cable to the power connector of the power supply.

USB 2.0 Connector
(9-pin USB67)
(see p.8 item 17)



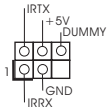
ASRock I/O Plus™ provides you 6 default USB 2.0 ports on the rear panel. If the rear USB ports are not sufficient, this USB 2.0 connector (USB67) is available to support 2 additional USB 2.0 ports.

Shared USB 2.0 Connector
(9-pin USB45)
(see p.8 item 28)



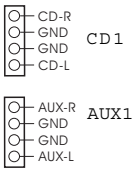
This USB45 connector is shared with the USB 2.0 ports 4,5 on ASRock I/O Plus™. When using the front panel USB ports by attaching the front panel USB cable to this connector (USB45), the USB ports 4,5 on ASRock I/O Plus™ will not be able to function.

Infrared Module Connector
(5-pin IR1)
(see p.8 item 16)



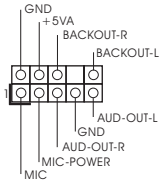
This connector supports an optional wireless transmitting and receiving infrared module.

Internal Audio Connectors
(4-pin CD1, 4-pin AUX1)
(CD1: see p.8 item 26)
(AUX1: see p.8 item 25)

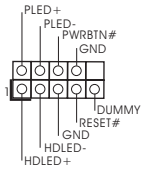
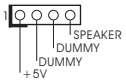
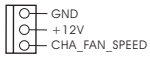
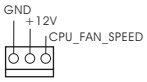
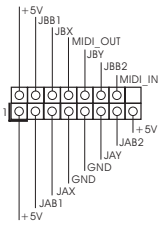


These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.

Front Panel Audio Connector
(9-pin AUDIO1)
(see p.8 item 21)



This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

System Panel Connector (9-pin PANEL1) (see p.8 item 14)		This connector accommodates several system front panel functions.
Chassis Speaker Connector (4-pin SPEAKER 1) (see p.8 item 15)		This connector allows you to attach to an external speaker.
Chassis Fan Connector (3-pin CHA_FAN1) (see p.8 item 13)		Connect the fan cable to the connector matching the black wire to the ground pin.
CPU Fan Connector (3-pin CPU_FAN1) (see p.8 item 5)		Connect the fan cable to the connector matching the black wire to the ground pin.
ATX Power Connector (20-pin ATXPWR1) (see p.8 item 27)		Connect an ATX power supply to the connector.
Game Connector (15-pin GAME1) (see p.8 item 19)		Connect a Game cable to this connector if the Game port bracket is installed.
Game cable with the Game port bracket (Optional)		

2.9 Serial ATA (SATA) Hard Disks Installation

This motherboard supports Serial ATA (SATA) hard disks and RAID functions. This section will guide you to install the SATA hard disks.

STEP 1: Install the SATA hard disks into the drive bays of your chassis.

STEP 2: Connect the SATA power cable to the SATA hard disk.

STEP 3: Connect one end of the SATA data cable to the motherboard's SATA connector.

STEP 4: Connect the other end of the SATA data cable to the SATA hard disk.

2.10 Installing Windows 2000 / Windows XP With RAID Functions

If you want to install Windows 2000 or Windows XP on your SATA HDDs with RAID functions, please follow the below steps.

STEP 1: Make a SATA Driver Diskette.

A. Insert the ASRock Support CD into your optical drive to boot your system.

B. During POST at the beginning of system boot-up, press <F11> key, and then a window for boot devices selection appears. Please select CD-ROM as the boot device.

C. When you see the message on the screen, "Do you want to generate Serial ATA driver diskette [YN]?", press <Y>.

D. Then you will see these messages,

Please insert a diskette into the floppy drive.
WARNING! Formatting the floppy diskette will lose ALL data in it!
Start to format and copy files [YN]?

Please insert a floppy diskette into the floppy drive, and press <Y>.

E. The system will start to format the floppy diskette and copy SATA drivers into the floppy diskette.

STEP 2: Set Up BIOS.

A. Enter BIOS SETUP UTILITY ¡÷Advanced screen ¡÷IDE Configuration.

B. Set the "SATA Operation Mode" option from [non-RAID] to [RAID].

STEP 3: Use "RAID BIOS Setting Utility" to set RAID configuration.

Before you start to configure the RAID function, you need to check the installation guide in the Support CD for proper configuration. Please refer to the document in the Support CD, "Guide to SATA Hard Disks Installation and RAID Configuration", which is located in the folder at the following path:
.. \ RAID BIOS Setting Utility

After step1, 2, 3, you can start to install Windows 2000 / Windows XP.

NOTE. If you install Windows 2000 / Windows XP on IDE HDDs and want to manage (create, convert, delete, or rebuild) RAID functions, you still need to set up "RAID Operation Mode" to [RAID] first. Then, please set the RAID configura-tion by using "RAID Utility for Windows" in Windows environment. Please refer to the document in the Support CD, "Guide to nVidia RAID Utility for Windows", which is located in the folder at the following path:
.. \ RAID Utility for Windows

2.11 Installing Windows 2000 / Windows XP Without RAID Functions

If you just want to install Windows 2000 or Windows XP on your SATA HDDs without RAID functions, you don't have to make a SATA driver diskette. Besides, there is no need for you to change the BIOS setting. You can start to install Windows 2000 or windows XP on your system directly.

2.12 Installing Windows 98 SE / Windows ME on SATA HDD

If you want to install Windows 98 SE / Windows ME on SATA HDD, it must be installed on SATA 1 in order to finish the OS installation process. After finishing the installation of Windows 98 SE / Windows ME, please install Windows SE 98 / Windows ME registry patch file provided in the support CD, which is located in the folder at the following patch:

..\Nvidia SATA patch for Win98/ME

Then the SATA HDD can be used in SATA 1 or SATA 2 port.

Windows 98 SE / Windows ME does not support RAID function.

Chapter 3 BIOS SETUP UTILITY

3.1 Introduction

This section explains how to use the BIOS SETUP UTILITY to configure your system. The Flash Memory on the motherboard stores the BIOS SETUP UTILITY. You may run the BIOS SETUP UTILITY when you start up the computer. Please press <F2> during the Power-On-Self-Test (POST) to enter the BIOS SETUP UTILITY, otherwise, POST will continue with its test routines.

If you wish to enter the BIOS SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

3.1.1 BIOS Menu Bar

The top of the screen has a menu bar with the following selections:

Main	To set up the system time/date information
Advanced	To set up the advanced BIOS features
PCIPnP	To set up the PCI features
Boot	To set up the default system device to locate and load the Operating System
Security	To set up the security features
Chipset	To set up the chipset features
Exit	To exit the current screen or the BIOS SETUP UTILITY

Use < ← > key or < → > key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen.

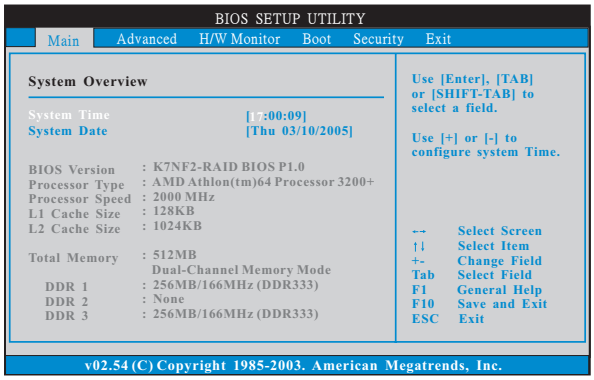
3.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description
↑ / ↓	Moves cursor left or right to select Screens
←/ →	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F10>	To save changes and exit the BIOS SETUP UTILITY
<ESC>	To jump to the Exit Screen or exit the current screen

3.2 Main Screen

When you enter the BIOS SETUP UTILITY, the Main screen will appear and display the system overview



System Time [Hour:Minute:Second]

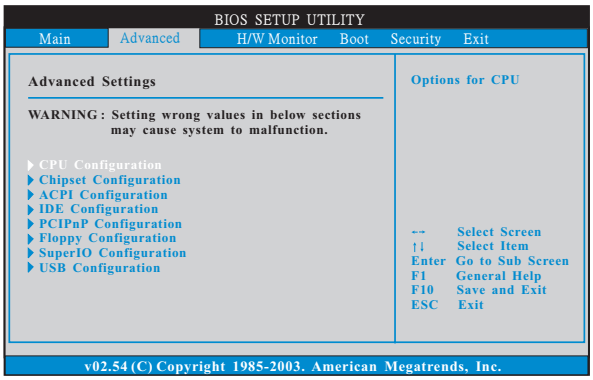
Use this item to specify the system time.

System Date [Day Month/Date/Year]

Use this item to specify the system date.

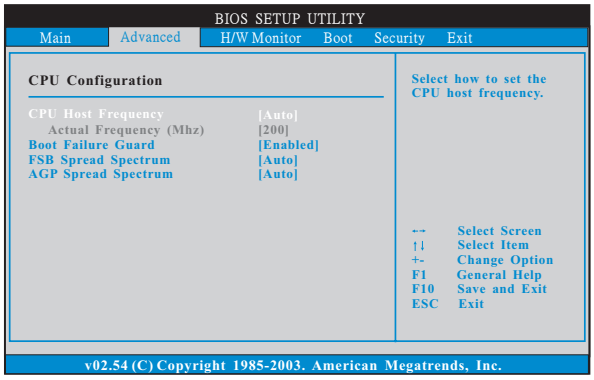
3.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, IDE Configuration, Floppy Configuration, SuperIO Configuration, Hardware Health Configuration, ACPI Configuration, and USB Configuration.



Setting wrong values in this section may cause the system to malfunction.

3.3.1 CPU Configuration



CPU Host Frequency

This item shows current CPU host frequency of the installed motherboard.

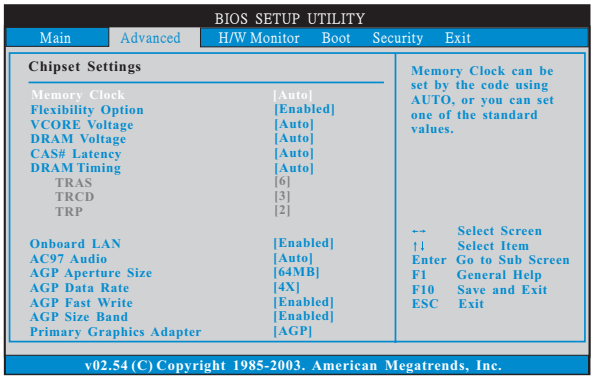
Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

Spread Spectrum

This item should always be [Auto] for better system stability.

3.3.2 Chipset Configuration



Memory Clock

This item can be set by the code using [Auto]. You can set one of the standard values as listed: [133 MHz (DDR266)], [166 MHz (DDR333)], [200 MHz (DDR400)].

Flexibility Option

The default value of this option is [Disabled]. It will allow better tolerance for memory compatibility when it is set to [Enabled].

VCORE Voltage

Use this to adjust the values for VCORE Voltage. Configuration options: [Auto], [High], and [Normal].

DRAM Voltage

Use this to adjust the values for DRAM Voltage. Configuration options: [Auto], [High], and [Normal].

CAS Latency (CL)

Use this item to adjust the means of memory accessing. Configuration options: [Auto], [2.0], [3.0], and [2.5].

DRAM Timing

Use this to adjust the values for DRAM Timing. Configuration options: [Auto], and [Normal].

TRCD

Use this to adjust TRCD values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK], [5CLK], [6CLK], and [7CLK].

TRAS

Use this to adjust TRAS values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK], [5CLK], [6CLK], [7CLK], [8CLK], [9CLK], [10CLK], [11CLK], [12CLK], [13CLK], [14CLK], and [15CLK].

TRP

Use this to adjust TRP values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK], [5CLK], [6CLK], and [7CLK].

OnBoard LAN

Use this item to enable or disable the onboard LAN device.

OnBoard AC'97 Audio

Select [Disabled], [Auto] or [Enabled] for the onboard AC'97 Audio feature.

AGP Aperture Size

It refers to a section of the PCI memory address range used for graphics memory. It is recommended to leave this field at the default value unless the installed AGP card's specifications requires other sizes.

AGP Data Rate

Use this item to adjust the AGP Data Rate. Configuration options: [4X], [2X], [1X].

AGP Fast Write

Use this item to enable or disable the feature of AGP fast write protocol support.

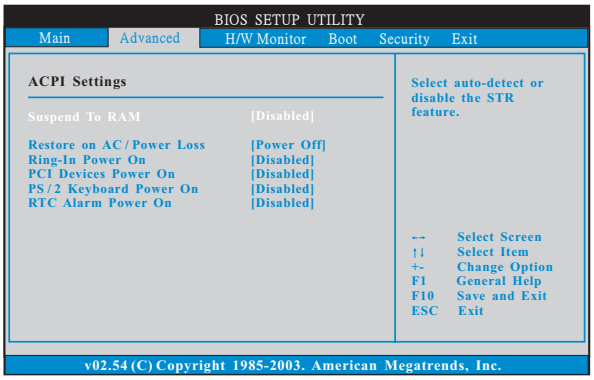
AGP Side Band

Use this item to enable or disable the AGP Side Band.

Primary Graphics Adapter

This item will switch the PCI Bus scanning order while searching for video card. It allows you to select the type of Primary VGA in case of multiple video controllers.

3.3.3 ACPI Configuration



Suspend to RAM

Use this item to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the OS supports it.

Restore on AC/Power Loss

Use this item to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers.

Ring-In Power On

Use this item to enable or disable Ring-In signals to turn on the system from the power-soft-off mode.

PCI Devices Power On

Use this item to enable or disable PCI devices to turn on the system from the power-soft-off mode.

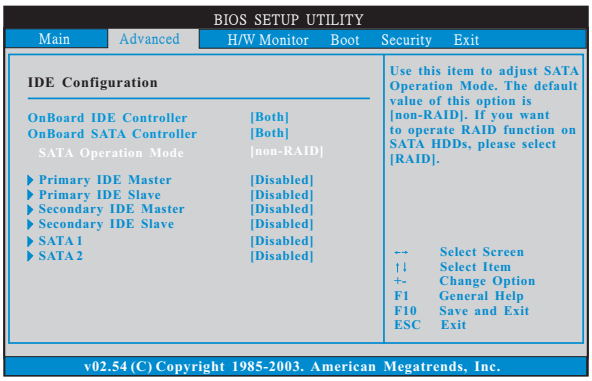
PS/2 Keyboard Power On

Use this item to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode.

RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

3.3.4 IDE Configuration



OnBoard IDE Controller

Use this item to enable or disable the OnBoard IDE Controller.

OnBoard SATA Controller

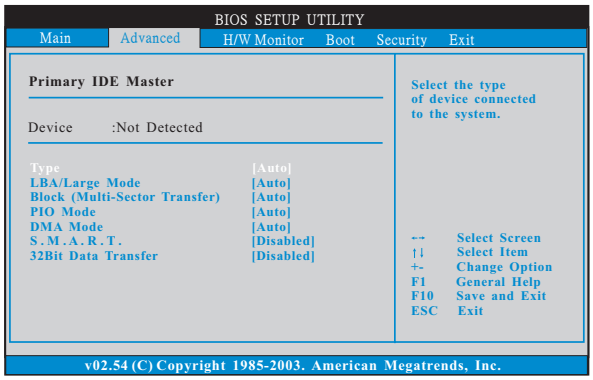
Use this item to enable or disable the OnBoard SATA Controller.

SATA Operation Mode

Use this item to adjust SATA Operation Mode. The default value of this option is [non-RAID]. If you want to operate RAID function on SATA HDDs, please select [RAID].

IDE Device Configuration

You may set the IDE configuration for the device that you specify. We will use the "Primary IDE Master" as the example in the following instruction, which can be applied to the configurations of "Primary IDE Slave", "Secondary IDE Master", and "Secondary IDE Slave" as well.



TYPE

Use this item to configure the type of the IDE device that you specify. Configuration options: [Not Installed], [Auto], [CD/DVD], and [ARMD].

Before you attempt to configure a hard disk drive, make sure you have the correct configuration information supplied by the drive manufacturer. The system may fail to recognize the installed disk due to the incorrect settings.

[Auto]: Select [Auto] to automatically detect the hard disk drive. If auto-detection is successful, the BIOS SETUP UTILITY will automatically fill in the correct values for the remaining fields on this sub-menu. The auto-detection may fail if the hard disk is too old or too new. If the hard disk was already formatted on an older system, the BIOS SETUP UTILITY may detect incorrect parameters. In those cases, select [User] to manually enter the IDE hard disk drive parameters.

After entering the hard disk information into BIOS, use a disk utility, such as FDISK, to partition and format the new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

[CD/DVD]: This is used for IDE CD/DVD drives.

[ARMD]: This is used for IDE ARMD (ATAPI Removable Media Device), such as MO.

LBA/Large Mode

Use this item to select the LBA/Large mode for a hard disk > 512 MB under DOS and Windows; for Netware and UNIX user, select [Disabled] to disable the LBA/Large mode.

Block (Multi-Sector Transfer)

The default value of this item is [Auto]. If this feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

DMA Mode

DMA capability allows the improved transfer-speed and data-integrity for compatible IDE devices.

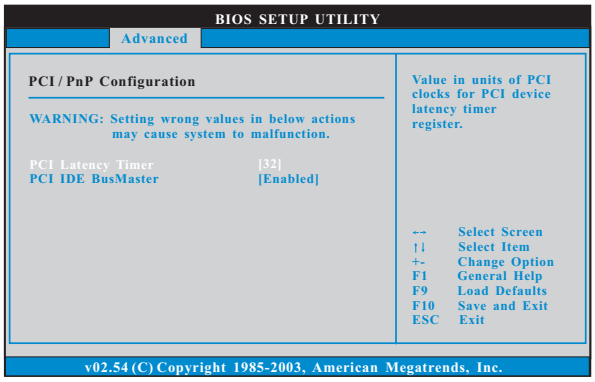
S.M.A.R.T.

Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled], [Auto], [Enabled].

32 Bit Data Transfer

Use this item to enable 32-bit access to maximize the IDE hard disk data transfer rate.

3.3.5 PCIPnP Configuration



PCI Latency Timer

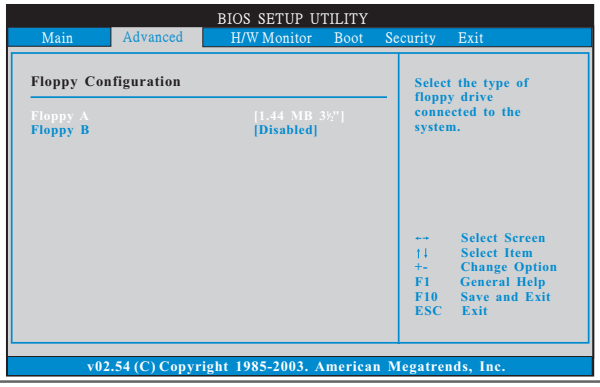
The default value is 32. It is recommended to keep the default value unless the installed PCI expansion cards' specifications require other settings.

PCI IDE BusMaster

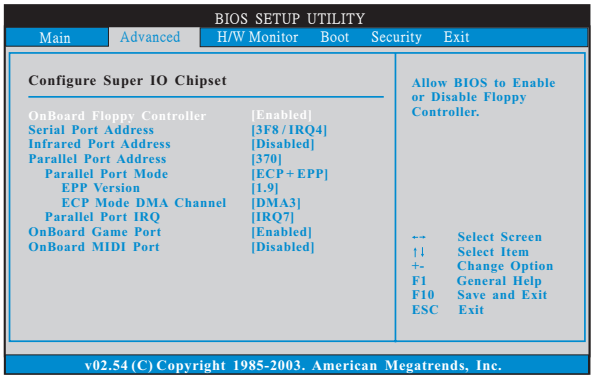
Use this item to enable or disable the PCI IDE BusMaster feature.

3.3.6 Floppy Configuration

In this section, you may configure the type of your floppy drive.



3.3.7 Super IO Configuration



OnBoard Floppy Controller

Use this item to enable or disable floppy drive controller.

Serial Port Address

Use this item to set the address for the onboard serial port or disable it.

Configuration options: [Disabled], [3F8 / IRQ4], [2F8 / IRQ3], [3E8 / IRQ4], [2E8 / IRQ3].

Infrared Port Address

Use this item to set the address for the onboard infrared port or disable it.

Configuration options: [Disabled], [2F8 / IRQ3], and [2E8 / IRQ3].

Parallel Port Address

Use this item to set the address for the onboard parallel port or disable it.

Configuration options: [Disabled], [378], and [278].

Parallel Port Mode

Use this item to set the operation mode of the parallel port. The default value is [ECP+EPP]. If this option is set to [ECP+EPP], it will show the EPP version in the following item, "EPP Version". Configuration options: [Normal], [Bi-Directional], and [ECP+EPP].

EPP Version

Use this item to set the EPP version. Configuration options: [1.9] and [1.7].

ECP Mode DMA Channel

Use this item to set the ECP mode DMA channel. Configuration options: [DMA0], [DMA1], and [DMA3].

Parallel Port IRQ

Use this item to set the IRQ for the parallel port. Configuration options: [IRQ5] and [IRQ7].

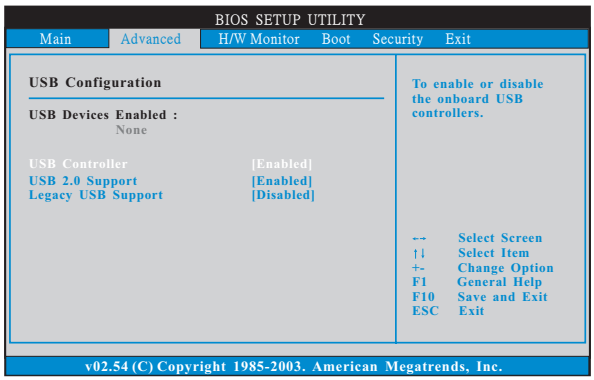
OnBoard Game Port

Use this item to enable the Game Port or disable it.

OnBoard MIDI Port

Use this itme to select the address for the MIDI Port or disable it. Configuration options: [Disabled], [300], and [330].

3.3.8 USB Configuration



USB Controller

Use this item to enable or disable the use of USB controller.

USB 2.0 Support

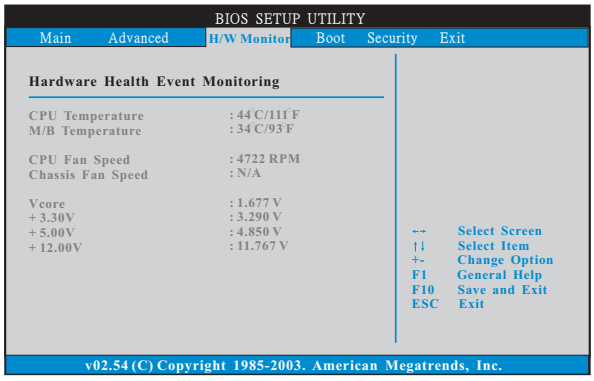
Use this item to enable or disable the USB 2.0 support.

Legacy USB Support

Use this item to enable or disable the support to emulate legacy I/O devices such as mouse, keyboard,... etc. Or you may select [Auto] so that the system will start to auto-detect.

3.4 Hardware Health Event Monitoring Screen

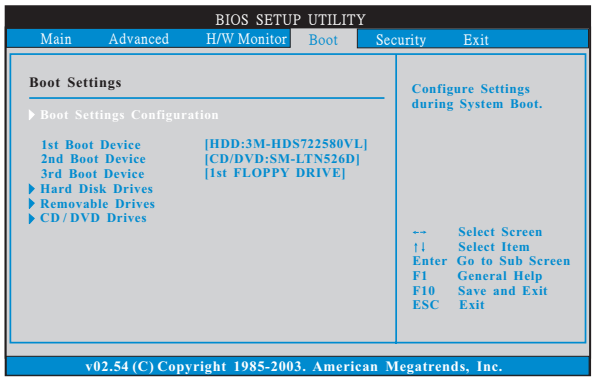
In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.



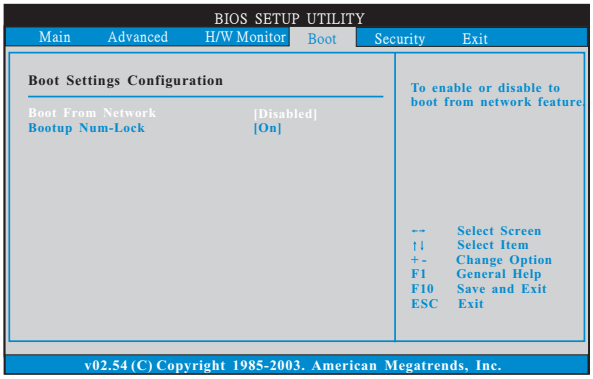
Setting wrong values in this section may cause the system to malfunction.

3.5 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.



3.5.1 Boot Settings Configuration



Boot From Network

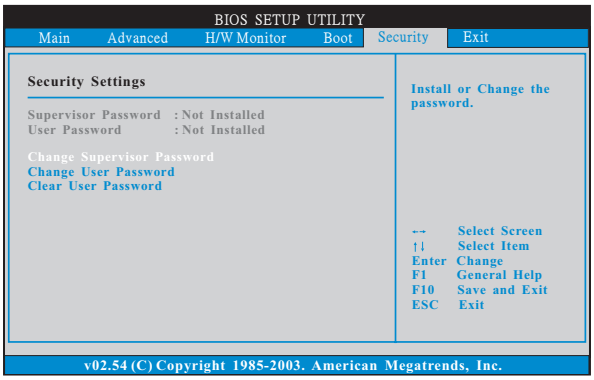
Use this item to enable or disable the Boot From Network feature.

Boot Up Num-Lock

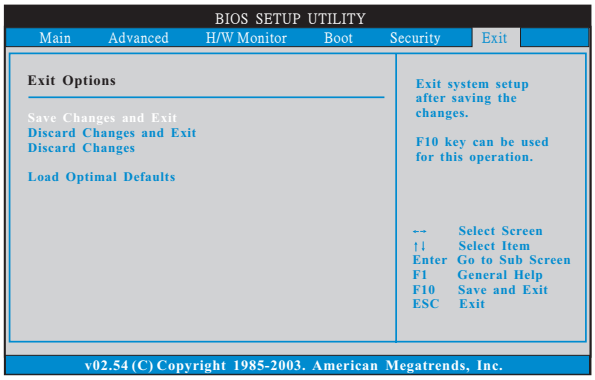
If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

3.6 Security Screen

In this section, you may set or change the supervisor/user password for the system in this section. For the user password, you may also clear it.



3.7 Exit Screen



Save Changes and Exit

When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the BIOS SETUP UTILITY.

Discard Changes and Exit

When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the BIOS SETUP UTILITY without saving any changes.

Discard Changes

When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes.

Load Optimal Defaults

When you select this option, it will pop-out the following message, "Load optimal defaults?" Select [OK] to load the default values for all the setup configurations.

Chapter 4 Software Support

4.1 Install Operating System

This motherboard supports various Microsoft® Windows® operating systems: 98 SE / ME / 2000 / XP. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information.

4.2 Support CD Information

The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features.

4.2.1 Running The Support CD

To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file "ASSETUP.EXE" from the BIN folder in the Support CD to display the menus.

4.2.2 Drivers Menu

The Drivers Menu shows the available devices drivers if the system detects installed devices. Please install the necessary drivers to activate the devices.

4.2.3 Utilities Menu

The Utilities Menu shows the applications software that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

4.2.4 Contact Information

If you need to contact ASRock or want to know more about ASRock, welcome to visit ASRock's website at http://www.asrock.com; or you may contact your dealer for further information.