



K7S41GX Pro

User Manual

Version 1.0

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

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The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.

"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

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1. Introduction

Thank you for purchasing ASRock **K7S41GX Pro** 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.

In this manual, chapter 1 and 2 contain introduction of the motherboard and step-by-step guide to the hardware installation. Chapter 3 and 4 contain the configuration guide to BIOS setup and information of the Support CD.



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 VGA cards and CPU support lists on ASRock website as well. ASRock website <http://www.asrock.com>
If you require technical support related to this motherboard, please visit our website for specific information about the model you are using.
www.asrock.com/support/index.asp

1.1 Package Contents

One ASRock **K7S41GX Pro** Motherboard
(Micro ATX Form Factor: 9.6-in x 7.8-in, 24.4 cm x 19.8 cm)
One ASRock **K7S41GX Pro** Quick Installation Guide
One ASRock **K7S41GX Pro** Support CD
One 80-conductor Ultra ATA 66/100/133 IDE Ribbon Cable
One Ribbon Cable for a 3.5-in Floppy Drive
One I/O Panel Shield

1.2 Specifications

Platform	<ul style="list-style-type: none">- Micro ATX Form Factor: 9.6-in x 7.8-in, 24.4 cm x 19.8 cm
CPU	<ul style="list-style-type: none">- Socket 462 for AMD Sempron / Athlon / Athlon XP / Duron Processors- FSB 333/266/200 MHz
Chipset	<ul style="list-style-type: none">- Northbridge: SiS® 741GX- Southbridge: SiS® 963L
Memory	<ul style="list-style-type: none">- 2 x DDR DIMM slots- Support DDR 400/333/266 non-ECC, un-buffered memory- Max. capacity of system memory: 2GB
Expansion Slot	<ul style="list-style-type: none">- 1 x AGP 8X/4X slot (see CAUTION 1)- 1 x AMR slot- 2 x PCI slots
Graphics	<ul style="list-style-type: none">- Integrated Mirage Graphics- DirectX 7- Max. shared memory 128MB (see CAUTION 2)- Supports D-Sub with max. resolution up to 2048x1536 @ 75Hz
Audio	<ul style="list-style-type: none">- 5.1 CH AC'97 Audio (C-Media® CMI9739A Audio Codec)
LAN	<ul style="list-style-type: none">- Realtek LAN PHY RTL8201EL- Speed: 10/100 Ethernet- Supports Wake-On-LAN
Rear Panel I/O	<p>I/O Panel</p> <ul style="list-style-type: none">- 1 x PS/2 Mouse Port- 1 x PS/2 Keyboard Port- 1 x Parallel Port (ECP/EPP Support)- 1 x Serial Port: COM1- 1 x VGA Port- 4 x Ready-to-Use USB 2.0 Ports- 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED)- Audio Jack: Line in / Front Speaker / Microphone
Connector	<ul style="list-style-type: none">- 2 x ATA133 IDE connectors (support 4 x IDE devices)- 1 x Floppy connector- 1 x IR header- CPU/Chassis FAN connector- 20 pin ATX power connector- CD in header- AUX in header- Front panel audio header

	- 1 x USB 2.0 header (supports 2 USB 2.0 ports) (see CAUTION 3)
BIOS Feature	- 2Mb AMI Legal BIOS - Supports "Plug and Play" - ACPI 1.1 Compliance Wake Up Events - SMBIOS 2.3.1 Support
Support CD	- Drivers, Utilities, AntiVirus Software (Trial Version)
Unique Feature	- Intelligent Energy Saver (see CAUTION 4) - Instant Boot - ASRock Instant Flash (see CAUTION 5) - Hybrid Booster: - CPU Frequency Stepless Control (see CAUTION 6) - ASRock U-COP (see CAUTION 7) - Boot Failure Guard (B.F.G.)
Hardware Monitor	- CPU Temperature Sensing - Chassis Temperature Sensing - CPU Fan Tachometer - Chassis Fan Tachometer - Voltage Monitoring: +12V, +5V, +3.3V, Vcore
OS	- Microsoft® Windows® 2000 / XP compliant
Certifications	- FCC, CE, WHQL - ErP/EuP Ready (ErP/EuP ready power supply is required) (see CAUTION 8)

* For detailed product information, please visit our website: <http://www.asrock.com>

WARNING

Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using the third-party overclocking tools. Overclocking may affect your system stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking.

CAUTION!

1. Do NOT use a 3.3V AGP card on the AGP slot of this motherboard!
It may cause permanent damage!
2. The maximum shared memory size is defined by the chipset vendor and is subject to change. Please check SiS® website for the latest information.
3. Power Management for USB 2.0 works fine under Microsoft® Windows® XP SP1 or SP2 / 2000 SP4.
4. Featuring an advanced proprietary hardware and software design, Intelligent Energy Saver is a revolutionary technology that delivers unparalleled power savings.
5. ASRock Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. With this utility, you can press <F6> key during the POST or press <F2> key to BIOS setup menu to access ASRock Instant Flash. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system.
6. Although this motherboard 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.
7. While CPU overheat is detected, the system will automatically shutdown. Before you resume the system, please check if the CPU fan on the motherboard functions properly and unplug the power cord, then plug it back again. To improve heat dissipation, remember to spray thermal grease between the CPU and the heatsink when you install the PC system.

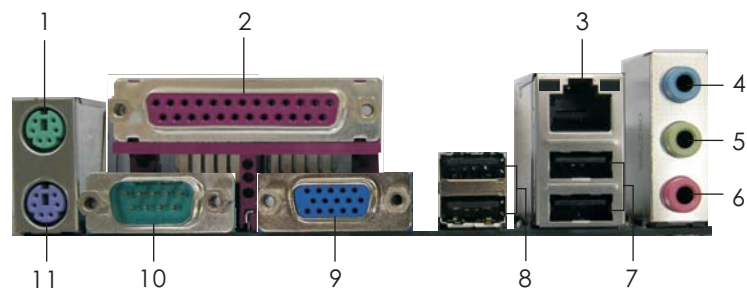
-
8. EuP, stands for Energy Using Product, was a provision regulated by European Union to define the power consumption for the completed system. According to EuP, the total AC power of the completed system shall be under 1.00W in off mode condition. To meet EuP standard, an EuP ready motherboard and an EuP ready power supply are required. According to Intel's suggestion, the EuP ready power supply must meet the standard of 5v standby power efficiency is higher than 50% under 100 mA current consumption. For EuP ready power supply selection, we recommend you checking with the power supply manufacturer for more details.

The diagram illustrates the layout of the ASRock K7S41GX Pro motherboard. Key components and their locations are as follows:

- Top Edge:** PARALLEL PORT, COM1, VGA, USB 2.0 (T: USB2, B: USB3), USB 2.0 (T: USB0, B: USB1), LAMP POST, and PS2 connectors (PS2_MOUSE, PS2_USB_PWR1).
- Left Edge:** AUDIO1, SPDIF, and JST connectors.
- Bottom Edge:** AMR1, Super I/O, 2MB BIOS, USB2, FLOPPY, FDC, and CHA_FAN1.
- Right Edge:** IDE1, IDE2, and SATA connectors.
- Internal Components:** CPU (Socket 462), SiS 741GX Chipset, K7S41GX Pro (1.5V_AGP1), PCI 1, PCI 2, ErP/EuP Ready, CMOS Battery, and various expansion slots (DDR1, DDR2, IDE1, IDE2).
- Dimensions:** 19.8cm (7.8-in) width and 24.4cm (9.6-in) height.
- Labels:** "Designed in Taipei" and "ASRock" are prominently displayed.

- 10

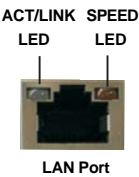
1.4 I/O Panel



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

LAN Port LED Indications

Activity/Link LED		SPEED LED	
Status	Description	Status	Description
Off	No Activity	Green	10Mbps connection
Blinking	Data Activity	Green	100Mbps connection



Chapter 2 Installation

K7S41GX Pro is a Micro ATX form factor (9.6-in x 7.8-in, 24.4 cm x 19.8 cm) motherboard. Before you install the motherboard, please study the configuration of your chassis to ensure that the motherboard fits into it.

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.

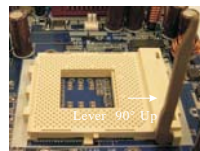
2.1 CPU Installation

- 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.

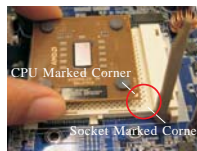


The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to avoid bending of the pins.

- 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:
Lift Up The Socket Lever



STEP 2/STEP 3:
Match The CPU Marked Corner
to The Socket Marked Corner



STEP 4:
Push Down And Lock
The Socket Lever

2.2 Installation of CPU Fan and Heatsink

This motherboard adopts 462-pin CPU socket to support AMD Athlon XP / Duron CPU. It requires larger heatsink and cooling fan to dissipate heat. You also need to spray thermal grease between the CPU and the heatsink to improve heat dissipation. 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 10, No. 2). For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink.

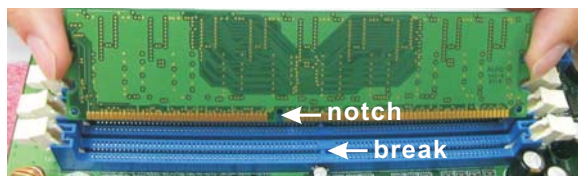
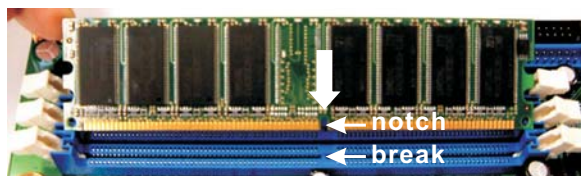
2.3 Installation of Memory Modules (DIMM)

K7S41GX Pro motherboard provides two 184-pin DDR (Double Data Rate) DIMM slots.



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.

2.4 Expansion Slots (PCI, AMR, and AGP Slots)

There are 2 PCI slots, 1 AMR slot, and 1 AGP slot on *K7S41GX Pro* motherboard.

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

AMR slot: The AMR slot is used to insert an ASRock MR card (optional) with v.92 Modem functionality.

AGP slot: The AGP slot is used to install a graphics card. The ASRock AGP slot has a special design of clasp that can securely fasten the inserted graphics card.



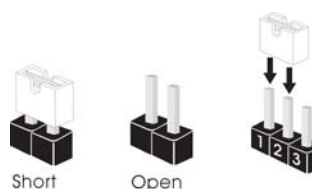
Please do NOT use a 3.3V AGP card on the AGP slot of this motherboard! It may cause permanent damage! For the voltage information of your graphics card, please check with the graphics card vendors.

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.

2.5 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.



Setting		Description
FSB Select		
Jumpers	<div><div>1 2</div><div>FSB_SEL1</div><div>2 3</div><div>FSB_SEL0</div></div>	<div><div>2 3</div><div>FSB_SEL1</div><div>2 3</div><div>FSB_SEL0</div></div>
(see p.10 No. 25)	FSB 200MHz	FSB 266MHz
		FSB 333MHz

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.10 No. 1)	<div>1 2</div> <div>+5V</div>	<div>2 3</div> <div>+5VSB</div>	Short pin2, pin3 to enable +5VSB (standby) for PS/2 or USB01/23 wake up events.
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Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply.

USB_PWR1 (see p.10 No. 16)	<div>1 2</div> <div>+5V</div>	<div>2 3</div> <div>+5VSB</div>	Short pin2, pin3 to enable +5VSB (standby) for USB4_5 wake up events.
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Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply.

JR1 (see p.10 No. 22)



JL1 (see p.10 No. 21)

Note: If the jumpers JL1 and JR1 are short (see the figure above), both front panel and rear panel audio connectors can work.

Clear CMOS



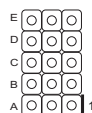
(CLR CMOS1, 2-pin jumper)

2-pin jumper

(see p.10 No. 11)

Note: CLR CMOS1 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 CLR CMOS1 for 5 seconds.

J1 Jumpers (see p.10 No. 28)

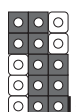


Note: The set of J1 jumpers are only for advanced users to adjust the multiplier of CPU. Please follow the table below to adjust the multiplier of CPU. However, the system will work well without the adjustment of multiplier. You do not have to adjust the multiplier for normal usage.

Multiplier	A	B	C	D	E
5x	1-2	1-2	2-3	1-2	1-2
5.5x	2-3	1-2	2-3	1-2	1-2
6x	1-2	2-3	2-3	1-2	1-2
6.5x	2-3	2-3	2-3	1-2	1-2
7x	1-2	1-2	1-2	2-3	1-2
7.5x	2-3	1-2	1-2	2-3	1-2
8x	1-2	2-3	1-2	2-3	1-2
8.5x	2-3	2-3	1-2	2-3	1-2
9x	1-2	1-2	2-3	2-3	1-2
9.5x	2-3	1-2	2-3	2-3	1-2
10x	1-2	2-3	2-3	2-3	1-2
10.5x	2-3	2-3	2-3	2-3	1-2
11x	1-2	1-2	1-2	1-2	1-2
11.5x	2-3	1-2	1-2	1-2	1-2
12x	1-2	2-3	1-2	1-2	1-2
12.5x	2-3	2-3	1-2	1-2	1-2
13x	1-2	1-2	2-3	1-2	2-3
13.5x	2-3	1-2	2-3	1-2	2-3
14x	1-2	2-3	2-3	1-2	2-3
15x	1-2	1-2	1-2	2-3	2-3
16x	1-2	2-3	1-2	2-3	2-3
16.5x	2-3	2-3	1-2	2-3	2-3
17x	1-2	1-2	2-3	2-3	2-3
18x	2-3	1-2	2-3	2-3	2-3
19x	2-3	1-2	1-2	1-2	2-3
20x	2-3	2-3	1-2	1-2	2-3
21x	2-3	2-3	2-3	1-2	2-3
22x	2-3	1-2	1-2	2-3	2-3
23x	1-2	2-3	2-3	2-3	2-3
24x	2-3	2-3	2-3	2-3	2-3

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.

2.6 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!

Connector	Figure	Description
FDD Connector (33-pin FLOPPY1) (see p.10 No. 15)		

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.10 No. 8)	Secondary IDE Connector (Black) (39-pin IDE2, see p.10 No. 7)
connect the blue end	connect the black end
to the motherboard	to the IDE devices
80-conductor, ATA 66/100/133 cable	

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).

USB 2.0 Connector (9-pin USB45) (see p.10 No. 17)		There are 4 default USB 2.0 ports on the rear panel. If the rear USB ports are not sufficient, this USB 2.0 connector is available to support 2 additional USB 2.0 ports.
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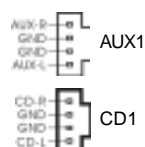
Infrared Module Connector (5-pin IR1) (see p.10 No. 19)		This connector supports an optional wireless transmitting and receiving infrared module.
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Internal Audio Connectors

(4-pin CD1, 4-pin AUX1)

(CD1: see p.10 No. 26)

(AUX1: see p.10 No. 27)

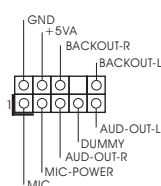


These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.

Front Panel Audio Connector

(9-pin AUDIO1)

(see p.10 No. 23)

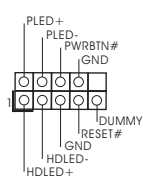


This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

System Panel Connector

(9-pin PANEL1)

(see p.10 No. 13)

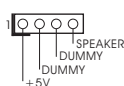


This connector accommodates several system front panel functions.

Chassis Speaker Connector

(4-pin SPEAKER 1)

(see p.10 No. 14)

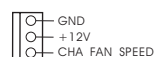


Please connect the chassis speaker to this connector.

Chassis Fan Connector

(3-pin CHA_FAN1)

(see p.10 No. 12)



Please connect a chassis fan cable to this connector and match the black wire to the ground pin.

CPU Fan Connector

(3-pin CPU_FAN1)

(see p.10 No. 2)



Please connect a CPU fan cable to this connector and match the black wire to the ground pin.

ATX Power Connector

(20-pin ATXPWR1)

(see p.10 No. 6)



Please connect an ATX power supply to this connector.



2.7 Driver Installation Guide

To install the drivers to your system, please insert the support CD to your optical drive first. Then, the drivers compatible to your system can be auto-detected and listed on the support CD driver page. Please follow the order from up to bottom side to install those required drivers. Therefore, the drivers you install can work properly.

Chapter 3 BIOS SETUP UTILITY

3.1 Introduction

This section explains how to use the BIOS SETUP UTILITY to configure your system. The SPI 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> or 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
OC Tweaker	To set up overclocking features
Advanced	To set up the advanced BIOS features
H/W Monitor	To display current hardware status
Boot	To set up the default system device to locate and load the Operating System
Security	To set up the security 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.

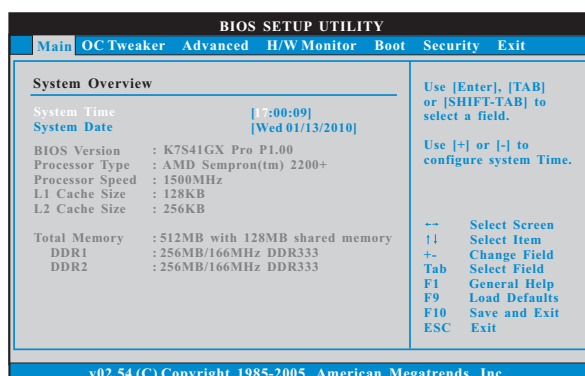
3.1.2 Navigation Keys

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
<F9>	To load optimal default values for all the settings
<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]

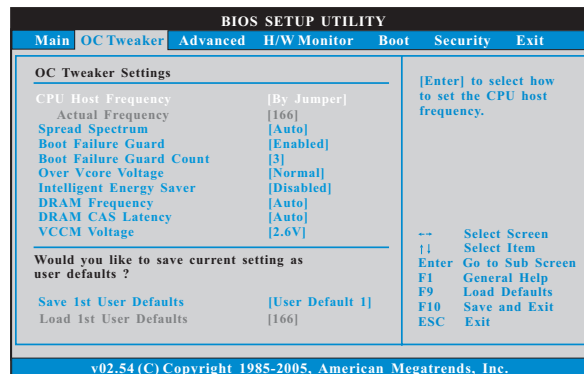
Use this item to specify the system time.

System Date [Day Month/Date/Year]

Use this item to specify the system date.

3.3 OC Tweaker Screen

In the OC Tweaker screen, you can set up overclocking features.



CPU Host Frequency

[By Jumper]

It is recommended to select this option, which will let the CPU host frequency of this motherboard determined by the jumper-setting.

[Manual]

This allows user to set CPU host frequency manually. However, because the CPU host frequency of this motherboard is determined by the jumper-setting, you must set the FSB jumper adjustment according to your AMD CPU before you use this "Manual" option as the FSB setting in BIOS setup to perform over clocking. This is not recommended unless you thoroughly know the feature. Wrong setup may cause problems during operation.

Actual Frequency

This is a read-only item, which displays the actual frequency of this motherboard.

Spread Spectrum

This field should always be [Disabled] for better system stability.

Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

Boot Failure Guard Count

Enable or disable the feature of Boot Failure Guard Count.

Over Vcore Voltage

This feature allows you to increase the CPU Vcore voltage by 3% or 6%. The default value is [Disabled].



It is not recommended to enable "Over Vcore Voltage" feature. Doing so may cause CPU damage.

Intelligent Energy Saver

Intelligent Energy Saver is a revolutionary technology that delivers unparalleled power savings. The default value is [Disabled]. Configuration options: [Enabled] and [Disabled]. If you want to enable this function, please set this item to [Enabled]. Besides the BIOS option, you can also choose our Intelligent Energy Saver utility to enable this function.

DRAM Frequency

If set to [Auto], the motherboard will detect the inserted memory module(s) and automatically assign appropriate frequency. You may select other value as the operating frequency: [133MHz DDR266], [166MHz DDR333] and [200MHz DDR400].

DRAM CAS Latency

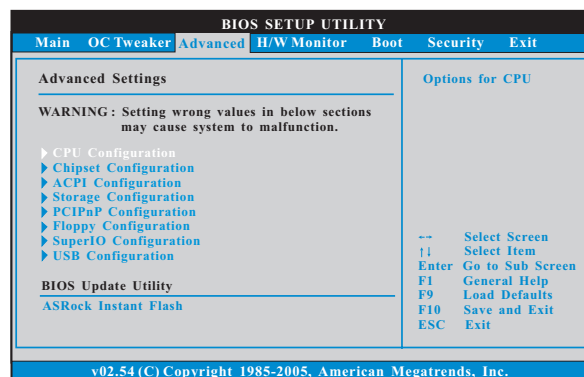
This is used to adjust the means of memory accessing. Configuration options: [Auto], [2T], [2.5T], [3T]. Please note that not all the DDR DIMMs can support CAS latency=3T.

VCCM Voltage

Use this to select VCCM voltage. Configuration options: [2.75V], [2.7V], [2.65V] and [2.6V]. The default value is [2.6V].

3.4 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, ACPI Configuration, Storage Configuration, PCIPnP Configuration, Floppy Configuration, SuperIO Configuration, and USB Configuration.

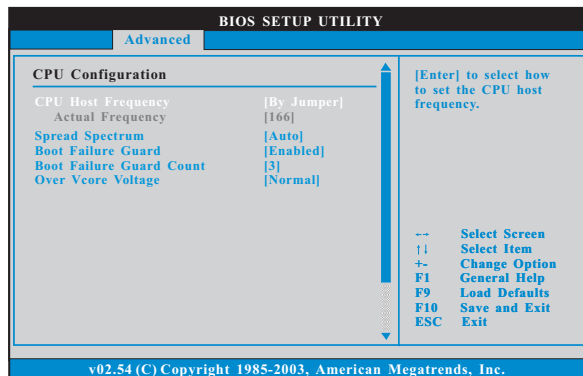


Setting wrong values in this section may cause the system to malfunction.

ASRock Instant Flash

ASRock Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute ASRock Instant Flash utility, the utility will show the BIOS files and their respective information. Select the proper BIOS file to update your BIOS, and reboot your system after BIOS update process completes.

3.4.1 CPU Configuration



CPU Host Frequency

[By Jumper]

It is recommended to select this option, which will let the CPU host frequency of this motherboard determined by the jumper-setting.

[Manual]

This allows user to set CPU host frequency manually. However, because the CPU host frequency of this motherboard is determined by the jumper-setting, you must set the FSB jumper adjustment according to your AMD CPU before you use this "Manual" option as the FSB setting in BIOS setup to perform over clocking. This is not recommended unless you thoroughly know the feature. Wrong setup may cause problems during operation.

Actual Frequency

This is a read-only item, which displays the actual frequency of this motherboard.

Spread Spectrum

This field should always be [Disabled] for better system stability.

Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

Boot Failure Guard Count

Enable or disable the feature of Boot Failure Guard Count.

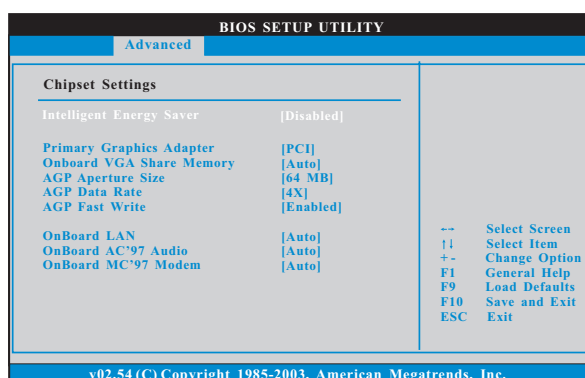
Over Vcore Voltage

This feature allows you to increase the CPU Vcore voltage by 3% or 6%. The default value is [Disabled].



It is not recommended to enable "Over Vcore Voltage" feature. Doing so may cause CPU damage.

3.4.2 Chipset Configuration



Intelligent Energy Saver

Intelligent Energy Saver is a revolutionary technology that delivers unparalleled power savings. The default value is [Disabled]. Configuration options: [Enabled] and [Disabled]. If you want to enable this function, please set this item to [Enabled]. Besides the BIOS option, you can also choose our Intelligent Energy Saver utility to enable this function.

Primary Graphics Adapter

If both AGPcard and PCI graphics card are installed on the mother board, you may use this option to select PCI or AGP as the primary graphics adapter.

Onboard VGA Share Memory

This allows you to select the size of share memory for onboard VGA. Onboard VGA will get better resolution if larger size of share memory is selected.

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

The default setting is [Auto]. You may select between [8X] or [4X] for an AGP 3.0 card, or select among [4X], [2X], [1X] for an AGP 2.0 card.

AGP Fast Write

This allows you to enable or disable the feature of AGP fast write protocol support.

OnBoard LAN

This allows you to enable or disable the onboard LAN feature.

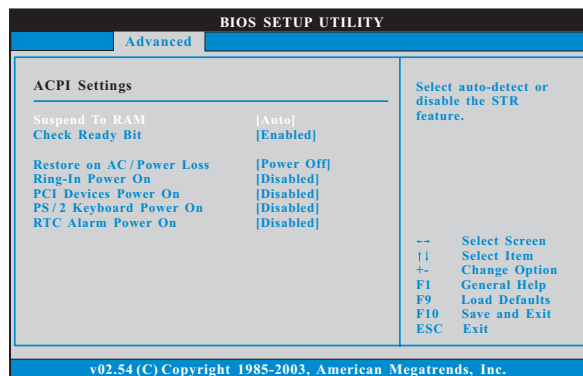
OnBoard AC'97 Audio

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

OnBoard MC'97 Modem

Select [Disabled], [Auto] or [Enabled] for the onboard MC'97 Modem feature.

3.4.3 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.

Check Ready Bit

Use this item to enable or disable the feature Check Ready Bit.

Restore on AC/Power Loss

This allows you 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.

3.4.4 Storage Configuration

BIOS SETUP UTILITY	
Advanced	
Storage Configuration	
OnBoard IDE Controller	[Both]
▶ Primary IDE Master	[Hard Disk]
▶ Primary IDE Slave	[Not Detected]
▶ Secondary IDE Master	[Not Detected]
▶ Secondary IDE Slave	[Not Detected]
<div>DISABLED: disables the integrated IDE Controller. PRIMARY: enables only the Primary IDE Controller. SECONDARY: enables only the Secondary IDE Controller. BOTH: enables both IDE Controllers.</div>	
<div>-- Select Screen ↑↓ Select Item +~ Change Option F1 General Help F9 Load Defaults F10 Save and Exit ESC Exit</div>	
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Onboard IDE Controller

Use this item to enable or disable the “Onboard IDE Controller” feature. The default value is [Both].

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 “Secondary IDE Master”, “Primary IDE Slave” and “Secondary IDE Slave” as well.

BIOS SETUP UTILITY	
Advanced	
Primary IDE Master	
Device	:Hard Disk
Vendor	:MAXTOR 6L080J4
Size	:80.0 GB
LBA Mode	:Supported
Block Mode	:16Sectors
PIO Mode	:4
Async DMA	:MultiWord DMA-2
Ultra DMA	:Ultra DMA-6
S.M.A.R.T.	:Supported
Type	[Auto]
LBA/Large Mode	[Auto]
Block (Multi-Sector Transfer)	[Auto]
PIO Mode	[Auto]
DMA Mode	[Auto]
S.M.A.R.T.	[Disabled]
32Bit Data Transfer	[Disabled]
<div>Select the type of device connected to the system.</div>	
<div>-- Select Screen ↑↓ Select Item +~ Change Option F1 General Help F9 Load Defaults F10 Save and Exit ESC Exit</div>	
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TYPE

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

[Not Installed]: Select [Not Installed] to disable the use of IDE device.

[Auto]: Select [Auto] to automatically detect the hard disk drive.



After selecting 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.

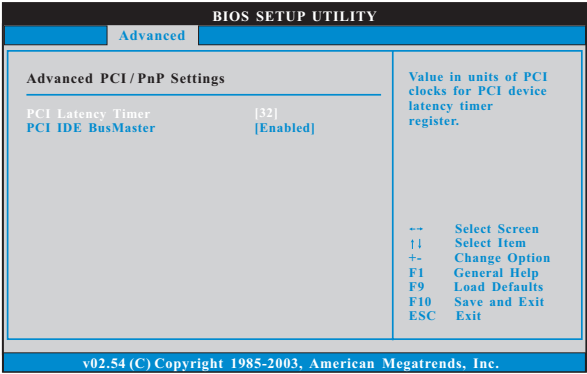
S.M.A.R.T.


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].

32Bit Data Transfer

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

3.4.5 PCIPnP Configuration





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

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.

3.4.6 Floppy Configuration

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

BIOS SETUP UTILITY	
Advanced	
Floppy Configuration	
Floppy A	[1.44 MB 3½"]
Select the type of floppy drive connected to the system.	
--	Select Screen
↑↓	Select Item
+/-	Change Option
F1	General Help
F9	Load Defaults
F10	Save and Exit
ESC	Exit

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3.4.7 Super IO Configuration

BIOS SETUP UTILITY	
Advanced	
Configure Super IO Chipset	
OnBoard Floppy Controller	[Enabled]
Serial Port Address	[3F8 / IRQ4]
Infrared Port Address	[Disabled]
Parallel Port Address	[378]
Parallel Port Mode	[ECP + EPP]
EPP Version	[1.9]
ECP Mode DMA Channel	[DMA3]
Parallel Port IRQ	[IRQ7]
Allow BIOS to Enable or Disable Floppy Controller.	
--	Select Screen
↑↓	Select Item
+/-	Change Option
F1	General Help
F9	Load Defaults
F10	Save and Exit
ESC	Exit

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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].

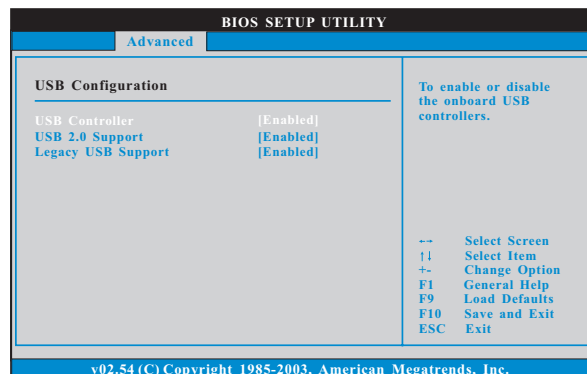
ECP Mode DMA Channel

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].

3.4.8 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 option to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto], [Disabled] and [BIOS Setup Only]. The default value is [Enabled]. Please refer to below descriptions for the details of these four options:

[Enabled] - Enables support for legacy USB.

[Auto] - Enables legacy support if USB devices are connected.

[Disabled] - USB devices are not allowed to use under legacy OS and BIOS setup when [Disabled] is selected. If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS.

[BIOS Setup Only] - USB devices are allowed to use only under BIOS setup and Windows / Linux OS.

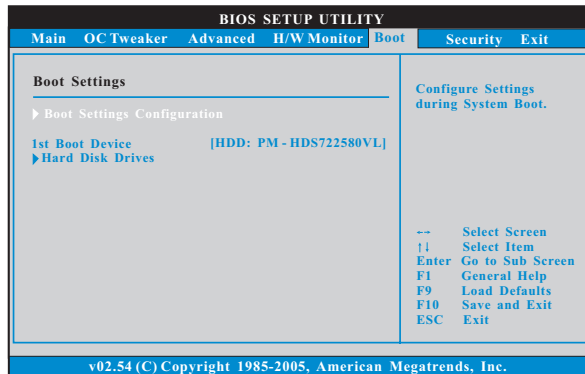
3.5 Hardware Health Event Monitoring Screen

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.

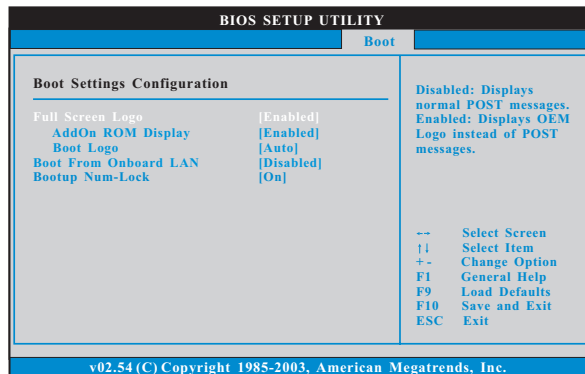
BIOS SETUP UTILITY					
Main	OC Tweaker	Advanced	H/W Monitor	Boot	Security Exit
Hardware Health Event Monitoring				<div>-- Select Screen ↑↓ Select Item F1 General Help F9 Load Defaults F10 Save and Exit ESC Exit</div>	
CPU Temperature		: 37°C / 98°F			
M/B Temperature		: 27°C / 80°F			
CPU Fan Speed		: 4722 RPM			
Chassis Fan Speed		: N/A			
Vcore		: 1.216V			
+ 3.30V		: 3.248V			
+ 5.00V		: 5.136V			
+ 12.00V		: 12.091V			
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3.6 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.



3.6.1 Boot Settings Configuration



Full Screen Logo

Use this item to enable or disable OEM Logo. The default value is [Enabled].

AddOn ROM Display

Use this option to adjust AddOn ROM Display. If you enable the option "Full Screen Logo" but you want to see the AddOn ROM information when the system boots, please select [Enabled]. Configuration options: [Enabled] and [Disabled]. The default value is [Enabled].

Boot Logo

Use this option to select logo in POST screen. This option only appears when you enable the option "Full Screen Logo". Configuration options: [Auto], [EuP], [Scenery] and [ASRock]. The default value is [Auto].

Boot From Onboard LAN

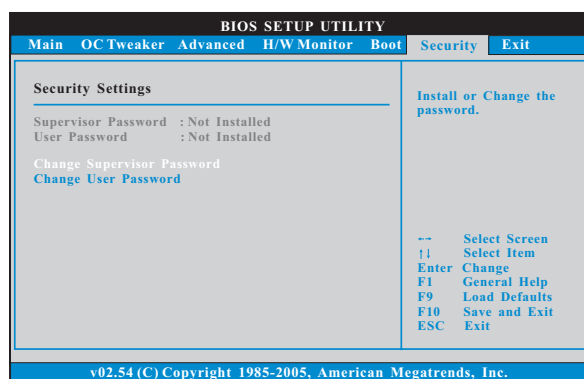
Use this item to enable or disable the Boot From Onboard LAN feature.

Boot Up Num-Lock

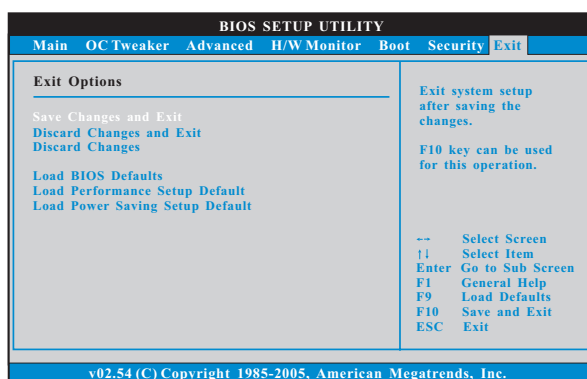
If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

3.7 Security Screen

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



3.8 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 BIOS Defaults

Load BIOS default values for all the setup questions. F9 key can be used for this operation.

Load Performance Setup Default

This performance setup default may not be compatible with all system configurations. If system boot failure occurs after loading, please resume optimal default settings. F5 key can be used for this operation.

Load Power Saving Setup Default

Load power saving setup default. F6 key can be used for this operation.

Chapter 4 Software Support

4.1 Install Operating System

This motherboard supports various Microsoft® Windows® operating systems: 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 will 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. 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.