939Dual-VSTA

User Manual

Version 1.0
Published June 2006
Copyright©2006 ASRock INC. All rights reserved.

Copyright Notice:

No part of this manual may be reproduced, transcribed, transmitted, or translated in any language, in any form or by any means, except duplication of documentation by the purchaser for backup purpose, without written consent of ASRock Inc.
Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

Disclaimer:

Specifications and information contained in this manual are furnished for informational use only and subject to change without notice, and should not be constructed as a commitment by ASRock. ASRock assumes no responsibility for any errors or omissions that may appear in this manual.
With respect to the contents of this manual, ASRock does not provide warranty of any kind, either expressed or implied, including but not limited to the implied warranties or conditions of merchantability or fitness for a particular purpose.
In no event shall ASRock, its directors, officers, employees, or agents be liable for any indirect, special, incidental, or consequential damages (including damages for loss of profits, loss of business, loss of data, interruption of business and the like), even if ASRock has been advised of the possibility of such damages arising from any defect or error in the manual or product.

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

1. Introduction 5

1.1 Package Contents 5
1.2 Specifications 6
1.3 Minimum Hardware Requirement Table for Windows® Vista™ Logo 9
1.4 Supported ATi X300 and X300SE Series PCI Express VGA Card List for PCI Express Slot (PCI Express x16) 10
1.5 Motherboard Layout 11
1.6 ASRock 8CH I/O 12

2. Installation 13

Pre-installation Precautions 13
2.1 CPU Installation 14
2.2 Installation of CPU Fan and Heatsink 14
2.3 Installation of Memory Modules (DIMM) 15
2.4 Expansion Slots (Future CPU Port, PCI Slots, PCIE Slots, and AGP Slot) 17
2.5 Jumpers Setup 19
2.6 Surround Display Feature 19
2.7 Onboard Headers and Connectors 20
2.8 SATAII Hard Disk Setup Guide 23
2.9 Serial ATA (SATA) / Serial ATAII (SATAII) Hard Disks Installation 24
2.10 Hot Plug and Hot Swap Functions for SATA / SATAII HDDs 24
2.11 Driver Installation Guide 25
2.12 Using SATA HDDs With RAID Functions 25
2.13 Using SATA HDDs Without RAID Functions 26
2.14 Using SATAII HDDs in “IDE” Mode 26
2.15 Using SATAII HDDs in “SATA” Mode 26
2.16 Untied Overclocking Technology 27

3. BIOS SETUP UTILITY 27

3.1 Introduction 27
3.1.1 BIOS Menu Bar 27
3.1.2 Navigation Keys 28
3.2 Main Screen 28
3.3 Advanced Screen 29
3.3.1 CPU Configuration 30
3.3.2 Chipset Configuration 32
3.3.3 ACPI Configuration 33
3.3.4 IDE Configuration 34

3.3.5 PCIPnP Configuration 37
3.3.6 Floppy Configuration 38
3.3.7 Super IO Configuration 38
3.3.8 USB Configuration 40
3.4 Hardware Health Event Monitoring Screen 40
3.5 Boot Screen 41
3.5.1 Boot Settings Configuration 41
3.6 Security Screen 42
3.7 Exit Screen 43
4. Software Support 44
4.1 Install Operating System 44
4.2 Support CD Information 44
4.2.1 Running Support CD 44
4.2.2 Drivers Menu 44
4.2.3 Utilities Menu 44
4.2.4 Contact Information 44
APPENDIX: AMD's Cool 'n' Quiet™ Technology 45

1. Introduction

Thank you for purchasing ASRock ***939Dual-VSTA*** 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

1.1 Package Contents

1 x ASRock ***939Dual-VSTA*** Motherboard
(ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm)
1 x ASRock ***939Dual-VSTA*** Quick Installation Guide
1 x ASRock ***939Dual-VSTA*** Support CD
1 x Ultra ATA 66/100/133 IDE Ribbon Cable (80-conductor)
1 x 3.5-in Floppy Drive Ribbon Cable
1 x Serial ATA (SATA) Data Cable (Optional)
1 x Serial ATA (SATA) HDD Power Cable (Optional)
1 x ASRock 8CH I/O Shield

1.2 Specifications

Platform	- ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm
CPU	- Socket 939 for AMD Athlon™ 64FX / 64X2 / 64 Processors - Supports AMD's Cool 'n' Quiet™ Technology (see **CAUTION 1**) - FSB 1000 MHz (2.0 GT/s) - Supports Untied Overclocking Technology (see **CAUTION 2**) - Supports Hyper-Transport Technology
Chipset	- Northbridge: ULi® M1695 - Southbridge: ULi® M1567
Memory	- Dual Channel DDR Memory Technology (see **CAUTION 3**) - 4 x DDR DIMM slots - Support DDR400/333/266 - Max. capacity: 4GB
Hybrid Booster	- CPU Frequency Stepless Control (see **CAUTION 4**) - ASRock U-COP (see **CAUTION 5**) - Boot Failure Guard (B.F.G.)
Expansion Slot	- 1 x Future CPU Port (Supports CPU upgrade from AMD K8 939-Pin CPU to AM2 940-Pin CPU through AM2CPU Board) (see **page 17** for details) - 3 x PCI slots - 1 x PCI Express x16 slot (see **CAUTION 6**) - 1 x PCI Express x1 slot - 1 x AGP 8X slot (see **CAUTION 7**)
Audio	- C-Media CM6501 7.1 channel audio compliant with UAA architecture
LAN	- Realtek PHY RTL8201CL - Speed: 10/100 Ethernet - Supports Wake-On-LAN
Rear Panel I/O	ASRock 8CH I/O - 1 x PS/2 Mouse Port - 1 x PS/2 Keyboard Port - 1 x Serial Port: COM1 - 1 x Parallel Port (ECP/EPP Support) - 4 x Ready-to-Use USB 2.0 Ports - 1 x RJ-45 Port - Audio Jack: Side Speaker/Rear Speaker/Central / Bass/ Line in/Front Speaker/Microphone (see **CAUTION 8**)

Connector	- 2 x Serial ATA 1.5Gb/s connectors, support RAID (RAID 0, RAID 1, JBOD) and “Hot Plug” functions - 1 x Serial ATAII 3.0Gb/s connector by JMicron JMB 360 (PCIE x1 interface), supports NCQ, AHCI and “Hot Plug” functions (see **CAUTION 9**) - 2 x ATA133 IDE connectors (support 4 x IDE devices) - 1 x Floppy connector - 1 x IR header - 1 x Game header - CPU/Chassis FAN connector - 20 pin ATX power connector - 4 pin 12V power connector - CD in header - Front panel audio connector - 1 x USB 2.0 headers (supports 2 USB 2.0 ports) (see **CAUTION 10**)
BIOS Feature	- 4Mb AMI BIOS - AMI Legal BIOS - Supports “Plug and Play” - ACPI 1.1 Compliance Wake Up Events - Supports jumperfree - SMBIOS 2.3.1 Support
Support CD	- Drivers, Utilities, AntiVirus Software (Trial Version)
Hardware Monitor	- CPU Temperature Sensing - Chassis Temperature Sensing - CPU Fan Tachometer - Chassis Fan Tachometer - CPU Quiet Fan - Voltage Monitoring: +12V, +5V, +3.3V, Vcore
OS	- Microsoft® Windows® 2000/XP/XP 64-bit/Vista™ compliant (see **CAUTION 11**)
Certifications	- FCC, CE, Microsoft® WHQL Certificated

CAUTION!

1. For power-saving's sake, it is strongly recommended to enable AMD's Cool 'n' Quiet™ technology under Windows system. See APPENDIX on page 45 to enable AMD's Cool 'n' Quiet™ technology. Since not all K8 939-pin CPU can support AMD's Cool 'n' Quiet™ technology, please check AMD's website for details.
2. This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 27 for details.
3. This motherboard supports Dual Channel Memory Technology. Before you implement Dual Channel Memory Technology, make sure to read the installation guide of memory modules on page 15 for proper installation.
4. 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.
5. 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.
6. For the information of the compatible PCI Express VGA cards, please refer to the "Supported ATi X300 and X300SE Series PCI Express VGA Card List for PCI Express Slot (PCI Express x16)" on page 10. For the proper installation of PCI Express VGA card, please refer to the installation guide on page 17.
7. Do NOT use a 3.3V AGP card on the AGP slot of this motherboard! It may cause permanent damage!
8. For microphone input, this motherboard supports both stereo and mono modes. For audio output, this motherboard supports 2-channel, 4-channel, 6-channel, and 8-channel modes. Please check the table on page 12 for proper connection.
9. Before installing SATAII hard disk to SATAII connector, please read the "SATAII Hard Disk Setup Guide" on page 23 to adjust your SATAII hard disk drive to SATAII mode. You can also connect SATA hard disk to SATAII connector directly.
10. Power Management for USB 2.0 works fine under Microsoft® Windows® Vista™ / XP 64-bit / XP SP1 or SP2 / 2000 SP4.
11. Microsoft® Windows® Vista™ driver is not ready yet. We will update it to our website in the future. Please visit our website for Microsoft® Windows® Vista™ driver and related information.
    ASRock website http://www.asrock.com

1.3 Minimum Hardware Requirement Table for Windows® Vista™ Premium and Basic Logo

For system integrators and users who purchase this motherboard and plan to submit Windows® Vista™ Premium and Basic logo, please follow the below table for minimum hardware requirement. Please adopt the CPU, memory, and VGA that we suggest.

CPU	Athlon 3000+
Memory	512MB Single Channel
VGA	DX9.0 with WDDM Driver
	with 128bit VGA memory (Premium)
	with 64bit VGA memory (Basic)

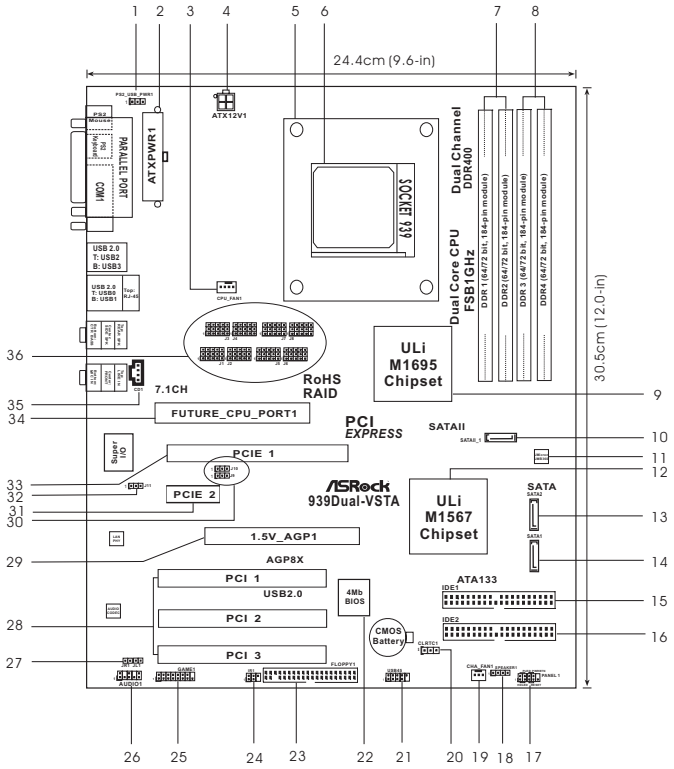
1.4 Supported ATi X300 and X300SE Series PCI Express VGA Card List for PCI Express Slot (PCI Express x16)

(for Windows® 2000/XP/XP 64-bit/Vista™)

Since the margin of ATi X300 and X300SE series PCI Express VGA cards may vary with different card vendors, we recommend users to adopt the compatible ATi X300 and X300SE series cards below which have passed our lab test.

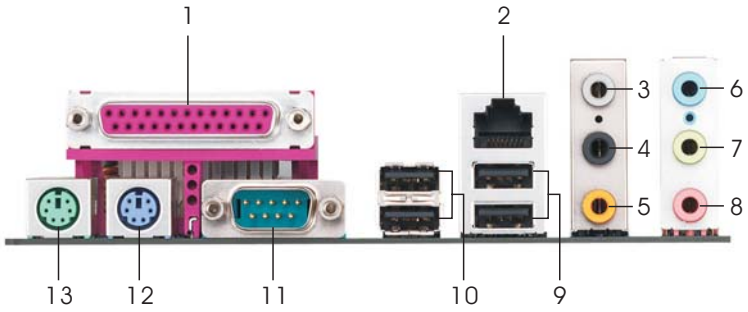
Graphics Chip Vendor	Model Name	Chipset Name
ATi	ASUS EAX300/TD/128M/A	RADEON X300
	GIGABYTE GV-RX30128D	RADEON X300
	GECUBE RADEONR X300 PCIe 128MB	RADEON X300
	MSI RX300-TD128E	RADEON X300
	MSI RX300SE-TD128E	RADEON X300SE

1.5 Motherboard Layout



1	PS2_USB_PWR1 Jumper	18	Chassis Speaker Header (SPEAKER 1)
2	ATX Power Connector (ATXPWR1)	19	Chassis Fan Connector (CHA_FAN1)
3	CPU Fan Connector (CPU_FAN1)	20	Clear CMOS Jumper (CLRTC1)
4	ATX 12V Power Connector (ATX12V1)	21	USB 2.0 Header (USB45, Blue)
5	CPU Heatsink Retention Module	22	Flash Memory
6	939-Pin CPU Socket	23	Floppy Connector (FLOPPY1)
7	2 x 184-pin DDR DIMM Slots (Dual Channel A: DDR1, DDR2; Blue)	24	Infrared Module Header (IR1)
		25	Game Port Header (GAME1)
8	2 x 184-pin DDR DIMM Slots (Dual Channel B: DDR3, DDR4; Black)	26	Front Panel Audio Header (AUDIO1)
		27	JR1 / JL1 Jumper
9	North Bridge Controller	28	PCI Slots (PCI1- 3)
10	Serial ATAII Connector (SATAII_1, red)	29	AGP Slot (1.5V_AGP1)
11	JMicron JMB360 Chipset (PCIE x1 interface)	30	J9 / J10 Jumper
12	South Bridge Controller	31	PCI Express x1 Slot (PCIE2)
13	Secondary Serial ATA Connector (SATA2)	32	J11 Jumper
14	Primary Serial ATA Connector (SATA1)	33	PCI Express x16 Slot (PCIE1)
15	Primary IDE Connector (IDE1, Blue)	34	Future CPU Port (FUTURE_CPU_PORT1)
16	Secondary IDE Connector (IDE2, Black)	35	Internal Audio Connector: CD1 (Black)
17	System Panel Header (PANEL1)	36	J1-J8 Jumpers

1.6 ASRock 8CH I/O



1	Parallel Port	8	Microphone (Pink)
2	RJ-45 Port	9	USB 2.0 Ports (USB01)
3	Side Speaker (Gray)	10	USB 2.0 Ports (USB23)
4	Rear Speaker (Black)	11	Serial Port: COM1
5	Central / Bass (Orange)	12	PS/2 Keyboard Port (Purple)
6	Line In (Light Blue)	13	PS/2 Mouse Port (Green)
*7	Front Speaker (Lime)		

* If you use 2-channel speaker, please connect the speaker's plug into "Front Speaker Jack". See the table below for connection details in accordance with the type of speaker you use.

TABLE for Audio Output Connection

Audio Output Channels	Front Speaker (No. 7)	Rear Speaker (No. 4)	Central / Bass (No. 5)	Side Speaker (No. 3)
2	V	--	--	--
4	V	--	--	V
6	V	--	V	V
8	V	V	V	V

2. Installation

939Dual-VSTA is an ATX form factor (12.0-in x 9.6-in, 30.5 cm x 24.4 cm) motherboard. Before you install the motherboard, 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.

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.

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 anti-static pad or in the bag that comes with the component.
5. When placing screws into the screw holes to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

2.1 CPU Installation

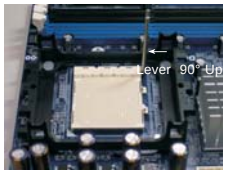
Step 1. Unlock the socket by lifting the lever up to a 90° angle.

Step 2. Position the CPU directly above the socket such that the CPU corner with the golden triangle matches the socket corner with a small triangle.

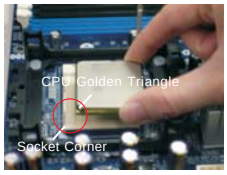
Step 3. Carefully insert the CPU into the socket until it fits in place.

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 Golden Triangle To The Socket Corner

STEP 4:
Push Down And Lock The Socket Lever

2.2 Installation of CPU Fan and Heatsink

After you install the CPU into this motherboard, it is necessary to install a 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 11, No. 3). For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink.

2.3 Installation of Memory Modules (DIMM)

939Dual-VSTA motherboard provides four 184-pin DDR (Double Data Rate) DIMM slots, and supports Dual Channel Memory Technology. For dual channel configuration, you always need to install **identical** (the same brand, speed, size and chip-type) DDR DIMM pair in the slots of the same color. In other words, you have to install **identical** DDR DIMM pair in **Dual Channel A** (DDR1 and DDR2; Blue slots; see p.11 No.7) or **identical** DDR DIMM pair in **Dual Channel B** (DDR3 and DDR4; Black slots; see p.11 No.8), so that Dual Channel Memory Technology can be activated. This motherboard also allows you to install four DDR DIMMs for dual channel configuration, and please install **identical** DDR DIMMs in all four slots. You may refer to the Dual Channel Memory Configuration Table below.

Dual Channel Memory Configurations

	DDR1 (Blue Slot)	DDR2 (Blue Slot)	DDR3 (Black Slot)	DDR4 (Black Slot)
(1)	Populated	Populated	-	-
(2)	-	-	Populated	Populated
(3)*	Populated	Populated	Populated	Populated

* For the configuration (3), please install **identical** DDR DIMMs in all four slots.

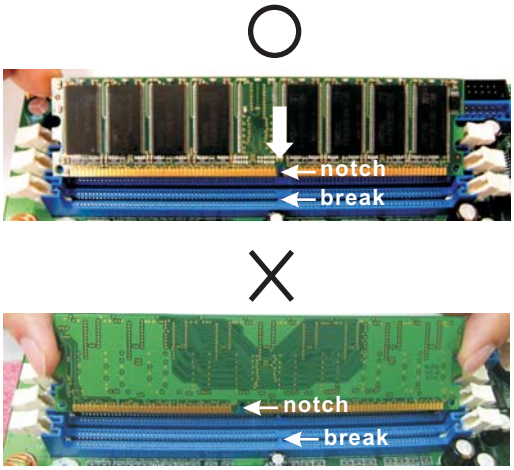
1. If you want to install two memory modules, for optimal compatibility and reliability, it is recommended to install them in the slots of the same color. In other words, install them either in the set of blue slots (DDR1 and DDR2), or in the set of black slots (DDR3 and DDR4).
2. If only one memory module or three memory modules are installed in the DDR DIMM slots on this motherboard, it is unable to activate the Dual Channel Memory Technology.
3. If a pair of memory modules is NOT installed in the same Dual Channel, for example, installing a pair of memory modules in DDR1 and DDR3, it is unable to activate the Dual Channel Memory Technology .

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.

2.4 Expansion Slots

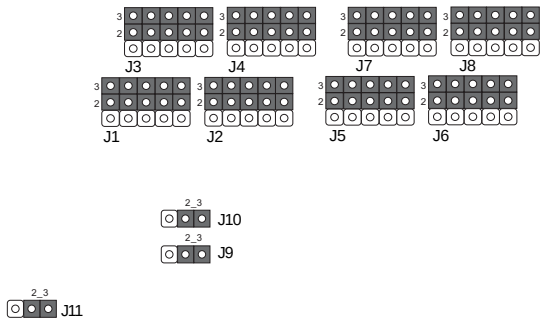
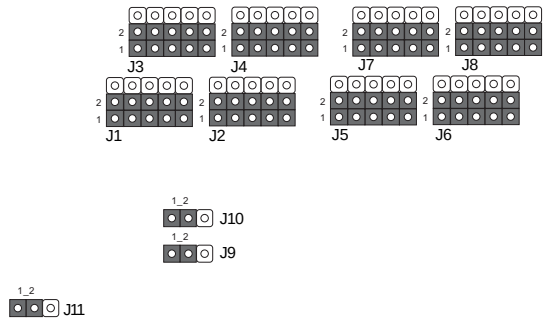
(Future CPU Port, PCI Slots, PCIE Slots, and AGP Slot)

There are 1 Future CPU Port, 3 PCI slots, 2 PCIE slots, and 1 AGP slot on ***939Dual-VSTA*** motherboard.

Future CPU Port (Yellow-Colored Port):

Future CPU Port allows you to upgrade your AMD K8 939-Pin CPU to AM2 940-Pin CPU by installing an add-on ASRock **AM2CPU Board** into this future CPU Port on ***939Dual-VSTA*** motherboard. Before you upgrade the K8 939-Pin CPU to AM2 940-Pin CPU, it is necessary to adjust the jumper settings for those required jumpers on ***939Dual-VSTA*** motherboard. Please refer to the table below for the correct jumper settings.

This yellow-colored Future CPU Port is not an AGP slot! Please do NOT insert any AGP card into it!

CPU Type	Jumper Settings
939-Pin CPU (Default)	
AM2 940-Pin CPU (Using add-on ASRock **AM2CPU Board**)	

NOTE

When adjusting the jumper settings, you may use the tool, Jumper Cap Remover, to help you removing the jumper caps more easily. This Jumper Cap Remover is bundled in your motherboard package, and please follow the "Jumper Cap Remover Instruction" to use it properly.

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

PCIE Slots: PCIE1 (PCIE x16 slot) is used for PCI Express cards with x16 lane width graphics cards. For the information of the compatible PCI Express VGA cards, please refer to the "Supported ATi X300 and X300SE Series PCI Express VGA Card List for PCI Express Slot (PCI Express x16)" on page 10.

PCIE2 (PCIE x1 slot) is used for PCI Express cards with x1 lane width graphics cards, such as Gigabit LAN card, SATA2 card, etc.

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 AGP card, please check with the AGP 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.

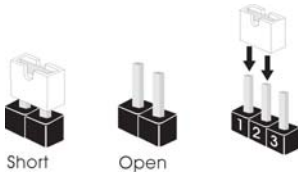
Step 6. Replace the system cover.

2.5 Surround Display Feature

This motherboard supports Surround Display upgrade. With the external add-on AGP VGA card and PCI Express VGA card, you can easily enjoy the benefits of Surround Display feature. For the detailed instruction, please refer to the document at the following path in the Support CD: **..\ Surround Display Information**

2.6 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.



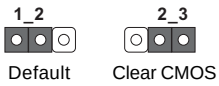
Jumper	Setting	
PS2_USB_PWR1 (see p.11, No. 1)		Short pin2, pin3 to enable +5VSB (standby) for PS/2 or USB wake up events.

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

JR1 JL1 Jumper (see p.11, No. 27)

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

Clear CMOS Jumper (CLRTC1) (see p.11, No. 20)



Note: CLRTC1 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 pin2 and pin3 on CLRTC1 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.

2.7 Onboard Headers and Connectors

Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard!

•

Floppy Connector
(33-pin FLOPPY1)
(see p.11 No. 23)

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.11 No. 15)

Secondary IDE Connector (Black)
(39-pin IDE2, see p.11 No. 16)

connect the blue end to the motherboard

connect the black end 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).

Serial ATA Connectors (Black)
(SATA1: see p.11 No. 14)
(SATA2: see p.11 No. 13)

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 II Connector (Red)
(SATA II_1: see p.11 No. 10)

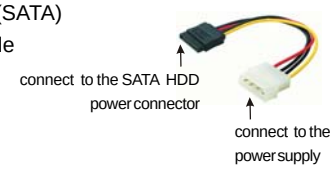
This Serial ATA II (SATA II) connector supports SATA data cables for internal storage devices. The current SATAII interface allows up to 3.0 Gb/s data transfer rate.

It is recommended to plug SATAII HDD to SATAII connector (SATAII_1) and connect SATA HDD to SATA connector (SATA1 or SATA2).

Serial ATA (SATA) Data Cable
(Optional)

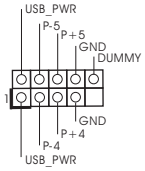
Either end of the SATA data cable can be connected to the SATA / SATAII hard disk or the SATA / SATAII connector on the motherboard.

Serial ATA (SATA) Power Cable
(Optional)



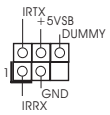
Please connect the black end of SATA power cable to the power connector on each drive. Then connect the white end of SATA power cable to the power connector of the power supply.

USB 2.0 Header
(9-pin USB45)
(see p.11 No. 21)



Besides four default USB 2.0 ports on the I/O panel, there is one USB 2.0 header on this motherboard. This USB 2.0 header can support two USB 2.0 ports.

Infrared Module Header
(5-pin IR1)
(see p.11 No. 24)



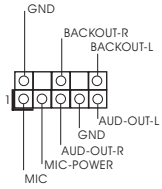
This header supports an optional wireless transmitting and receiving infrared module.

Internal Audio Connectors
(4-pin CD1)
(CD1: see p.11 No. 35)

CD1

This connector allows 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 Header
(8-pin AUDIO1)
(see p.11 No. 26)

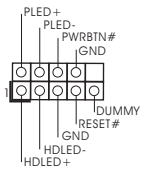


This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

System Panel Header

(9-pin PANEL1)

(see p.11 No. 17)

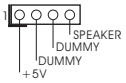


This header accommodates several system front panel functions.

Chassis Speaker Header

(4-pin SPEAKER 1)

(see p.11 No. 18)

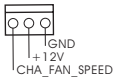


Please connect the chassis speaker to this header.

Chassis Fan Connector

(3-pin CHA_FAN1)

(see p.11 No. 19)

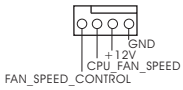


Please connect a chassis fan cable to this connector and match the black wire to the ground pin.

CPU Fan Connector

(4-pin CPU_FAN1)

(see p.11 No. 3)



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

ATX Power Connector

(20-pin ATXPWR1)

(see p.11 No. 2)

Please connect an ATX power supply to this connector.

ATX 12V Power Connector

(4-pin ATX12V1)

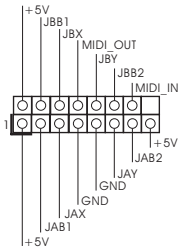
(see p.11 No. 4)

Please note that it is necessary to connect a power supply with ATX 12V plug to this connector. Failing to do so will cause power up failure.

Game Port Header

(15-pin GAME1)

(see p.11 No. 25)

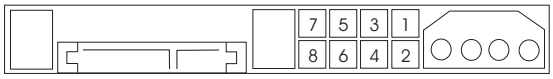


Connect a Game cable to this header if the Game port bracket is installed.

2.8 SATAII Hard Disk Setup Guide

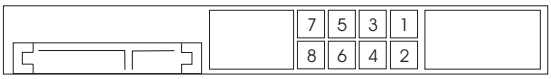
Before installing SATAII hard disk to your computer, please carefully read below SATAII hard disk setup guide. Some default setting of SATAII hard disks may not be at SATAII mode, which operate with the best performance. In order to enable SATAII function, please follow the below instruction with different vendors to correctly adjust your SATAII hard disk to SATAII mode in advance; otherwise, your SATAII hard disk may fail to run at SATAII mode.

Western Digital



If pin 5 and pin 6 are shorted, SATA 1.5Gb/s will be enabled.
On the other hand, if you want to enable SATAII 3.0Gb/s, please remove the jumpers from pin 5 and pin 6.

SAMSUNG



If pin 3 and pin 4 are shorted, SATA 1.5Gb/s will be enabled.
On the other hand, if you want to enable SATAII 3.0Gb/s, please remove the jumpers from pin 3 and pin 4.

HITACHI

Please use the Feature Tool, a DOS-bootable tool, for changing various ATA features. Please visit HITACHI's website for details:

http://www.hitachigst.com/hdd/support/download.htm

The above examples are just for your reference. For different SATAII hard disk products of different vendors, the jumper pin setting methods may not be the same. Please visit the vendors' website for the updates.

2.9 Serial ATA (SATA) / Serial ATAII (SATAII) Hard Disks Installation

This motherboard adopts JMicron JMB360 chipset that supports Serial ATAII (SATAII) hard disk. It also adopts ULi® M1567 south bridge chipset that supports Serial ATA (SATA) hard disks, and supports RAID functions. You may install SATA / SATAII hard disks on this motherboard for internal storage devices. This section will guide you to install the SATA / SATAII hard disks.

STEP 1: Install the SATA / SATAII hard disks into the drive bays of your chassis.
STEP 2: Connect the SATA power cable to the SATA / SATAII hard disk.
STEP 3: Connect one end of the SATA data cable to the motherboard's SATA / SATAII connector.
STEP 4: Connect the other end of the SATA data cable to the SATA / SATAII hard disk.

1. If you plan to use RAID 0, RAID 1, or JBOD functions on SATA, SATA HDDs must be operated in "RAID" mode.
2. "RAID" and "non-RAID" mode are options under "SATA Operation Mode" in BIOS setup. Please refer to page 35 for details. They need different drivers during actual operation.

2.10 Hot Plug and Hot Swap Functions for SATA / SATAII HDDs

939Dual-VSTA motherboard supports Hot Plug and Hot Swap functions for SATA / SATAII Devices.

NOTE

What is Hot Plug Function?

If the SATA / SATAII HDDs are NOT set for RAID configuration, it is called "Hot Plug" for the action to insert and remove the SATA / SATAII HDDs while the system is still power-on and in working condition.
However, please note that it cannot perform Hot Plug if the OS has been installed into the SATA / SATAII HDD.

What is Hot Swap Function?

If SATA / SATAII HDDs are built as RAID1 then it is called "Hot Swap" for the action to insert and remove the SATA / SATAII HDDs while the system is still power-on and in working condition.

2.11 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.

2.12 Using SATA HDDs With RAID Functions

The installation procedures for Windows Vista™ are subject to change.

If you want to install Windows® 2000, Windows® XP or Windows® XP 64-bit OS on your SATA HDDs with RAID functions, you need to make a SATA driver diskette before you start the OS installation.

STEP 1: Insert the ASRock Support CD into your optical drive to boot your system. (Do NOT insert any floppy diskette into the floppy drive at this moment!)

STEP 2: 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.

STEP 3: When you see the message on the screen, “Do you want to generate Serial ATA driver diskette [YN]?”, press <Y>.

STEP 4: 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>.

STEP 5: The system will start to format the floppy diskette and copy SATA / SATAII drivers into the floppy diskette.

Once you have the SATA driver diskette ready, you may start to install Windows® 2000 / Windows® XP / Windows® XP 64-bit on your system directly without setting the RAID configuration on your system, or you may start to use “RAID Installation Guide” to set RAID 0 / RAID 1 / JBOD configuration before you install the OS. Before you start to configure the RAID function, you need to check the installation guide in the Support CD for proper configuration. Please find the document, “Guide to SATA Hard Disks Installation and RAID Configuration”, at the following path in the Support CD:

.. \ Information \ Manual \ RAID Installation Guide \ English.pdf

After making a SATA driver diskette, you can start to install Windows® 2000 / Windows® XP / Windows® XP 64-bit OS on your system. At the beginning of Windows® setup, press F6 to install a third-party SCSI or RAID driver. When prompted, insert a floppy disk containing the ULi® RAID driver. After reading the floppy disk, the driver will be presented. Select the driver to install according to the mode you choose and the OS you install.

2.13 Using SATA HDDs Without RAID Functions

The installation procedures for Windows® Vista™ are subject to change.

If you want to install Windows® 2000, Windows® XP or Windows® XP 64-bit OS on your SATA HDDs operating in non-RAID mode, you don't need to make a SATA driver diskette before OS installation. Please follow the below procedures.

STEP 1: Enter "SATA Operation Mode" in BIOS setup to set the option from [RAID] to [non-RAID].
STEP2: Start Windows® 2000, Windows® XP or Windows® XP 64-bit OS installation.

2.14 Using SATAII HDDs in "IDE" Mode

The installation procedures for Windows® Vista™ are subject to change.

If you want to install Windows® 2000, Windows® XP or Windows® XP 64-bit OS on your SATAII HDDs operating in IDE mode, you don't need to make a SATAII driver diskette or set up BIOS before OS installation.

2.15 Using SATAII HDDs in "SATA" Mode

The installation procedures for Windows® Vista™ are subject to change.

If you want to install Windows® 2000, Windows® XP or Windows® XP 64-bit OS on your SATAII HDDs in SATA mode, you need to make a SATAII driver diskette before you start the OS installation. Please follow the below procedures.

STEP 1: Please see the "Readme.txt" in SATAII driver directory on the support CD for the files needed to copy to the diskette. Then make a SATAII driver diskette.
STEP 2: Enter "SATAII Operation Mode" in BIOS setup to set the option from [IDE] to [SATA].
STEP 3: Start Windows® 2000, Windows® XP or Windows® XP 64-bit OS installation. At the beginning of Windows® setup, press F6 to install a

third-party SCSI or RAID driver. When prompted, insert a floppy disk containing the JMicron® RAID driver. After reading the floppy disk, the driver will be presented. Select the driver to install according to the mode you choose and the OS you install.

2.16 Untied Overclocking Technology

This motherboard supports Untied Overclocking Technology, which means during overclocking, FSB enjoys better margin due to fixed AGP / PCI / PCIE buses. Before you enable Untied Overclocking function, please enter "Overclock Mode" option of BIOS setup to set the selection from [Auto] to [CPU, PCIE, Async.]. Therefore, CPU FSB is untied during overclocking, but AGP / PCI / PCIE buses are in the fixed mode so that FSB can operate under a more stable overclocking environment.

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
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.

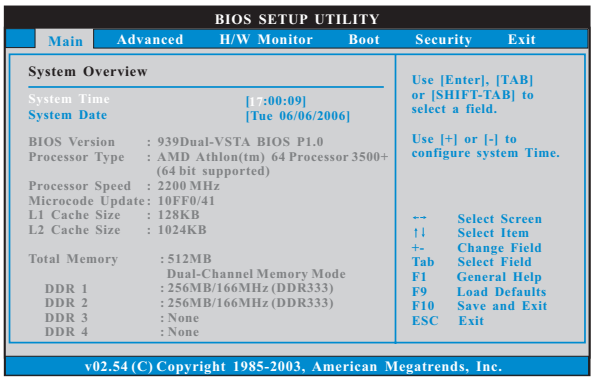
3.1.2 Navigation Keys

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.

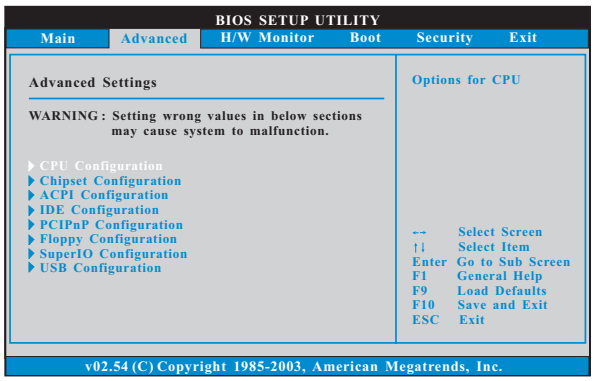
System Date [Day Month/Date/Year]

Use this item to specify the system date.

In the future, you may upgrade your AMD 939-Pin CPU to AM2 940-Pin CPU by installing an add-on ASRock **AM2CPU Board** into future CPU Port on this motherboard

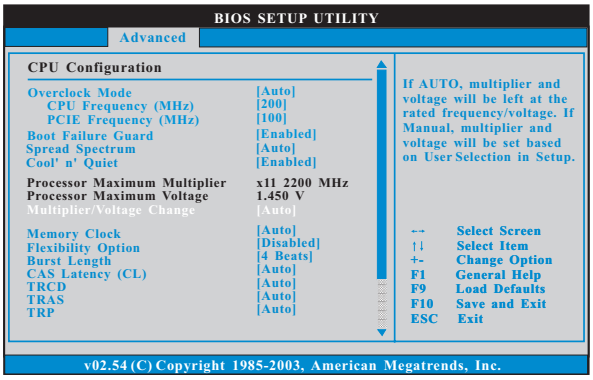
3.3 Advanced Screen

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



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

3.3.1 CPU Configuration



Overclock Mode

Use this to select Overclock Mode. The default value is [Auto]. Cnfiguration options: [Auto], [CPU, PCIE, Sync.] and [CPU, PCIE, Async.].

CPU Frequency (MHz)

Use this option to adjust CPU frequency. The default value is [200].

PCIE Frequency (MHz)

Use this option to adjust PCIE frequency. The default value is [100].

Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

Spread Spectrum

This feature will be set to [Auto] as default.

Cool 'n' Quiet

Use this item to enable or disable AMD's Cool 'n' Quiet™ technology.

Processor Maximum Multiplier

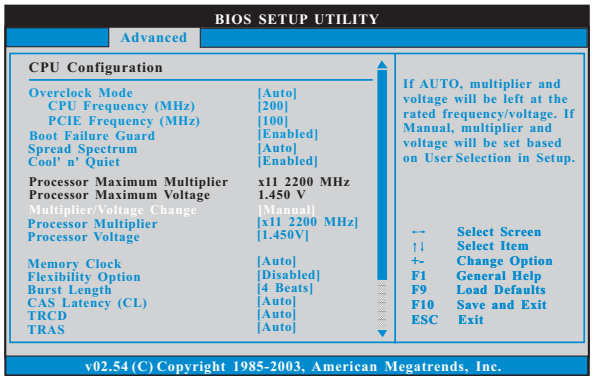
It will display Processor Maximum Multiplier for reference.

Processor Maximum Voltage

It will display Processor Maximum Voltage for reference.

Multiplier/Voltage Change

This item is set to [Auto] by default. If it is set to [Manual], you may adjust the value of Processor Multiplier and Processor Voltage. However, it is recommended to keep the default value for system stability.



Processor Multiplier

This item will show when "Multiplier/Voltage Change" is set to [Manual]; otherwise, it will be hidden. You may set the value from [x8 1600 MHz] up to [x25 5000 MHz] but no higher than the value of "Processor Maximum Multiplier". For example, if the value of "Processor Maximum Multiplier" is [x11 2200 MHz], the actual value of multiplier will be [x11 2200 MHz] even if you set this item to a value higher than [x11 2200 MHz]. However, for system stability, it is not recommended to adjust the value of this item.

Processor Voltage

This item will show when "Multiplier/Voltage Change" is set to [Manual]; otherwise, it will be hidden. For safety and system stability, it is not recommended to adjust the value of this item.

Memory Clock

This item can be set by the code using [Auto]. You can set one of the standard values as listed: [100 MHz (DDR200)], [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].

Burst Length

Burst length can be set to 8 or 4 beats. 64 Bit Dq must use the 4 beats.

CAS Latency (CL)

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

TRCD

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

TRAS

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

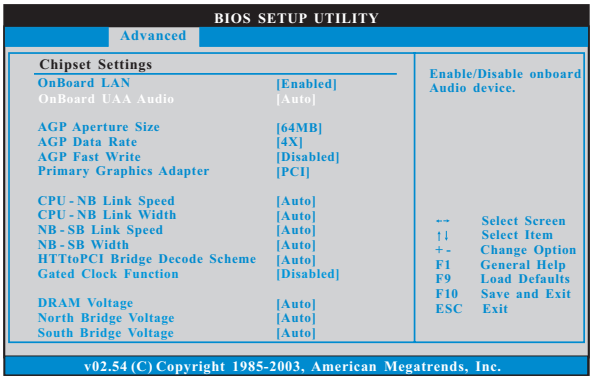
TRP

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

MA Timing

Use this to adjust values for MA timing. Configuration options: [Auto], [2T], [1T]. The default value is [Auto].

3.3.2 Chipset Configuration



OnBoard LAN

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

OnBoard UAA Audio

Select [Auto], [Enabled] or [Disabled] for the onboard UAA Audio feature. If you select [Auto], the onboard UAA Audio will be disabled when PCI Sound Card is plugged.

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. Configuration options: [32MB], [64MB], [128MB], and [256MB].

AGP Data Rate

Use this item to adjust the AGP Data Rate. Configuration options: [8X], [4X].

AGP Fast Write

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

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. The default value of this feature is [PCI]. Configuration options: [PCI], [PCIE] and [AGP].

CPU - NB Link Speed

This feature allows you selecting CPU to NB link frequency. Configuration options: [Auto], [200 MHz], [400 MHz], [600 MHz], [800 MHz], and [1000 MHz].

CPU - NB Link Width

This feature allows you selecting CPU to NB link width. Configuration options: [Auto], [8 BIT], and [16 BIT].

NB - SB Link Speed

This feature allows you selecting NB to SB link frequency. Configuration options: [Auto], [200 MHz], [400 MHz], [600 MHz], [800 MHz], and [1000 MHz].

NB - SB Width

This feature allows you selecting NB to SB link width. Configuration options: [Auto], [8 BIT], and [16 BIT].

HTTtoPCI Bridge Decode Scheme

Use this to select HTT to PCI bridge decode scheme. Configuration options: [Auto], [Positive], and [Subtractive].

Gated Clock Function

You can enable or disable gated clock function. Configuration options: [Enabled], [Disabled].

DRAM Voltage

Use this to select DRAM voltage. Configuration options: [Auto], [Low], [Normal], [High]. The default value is [Auto].

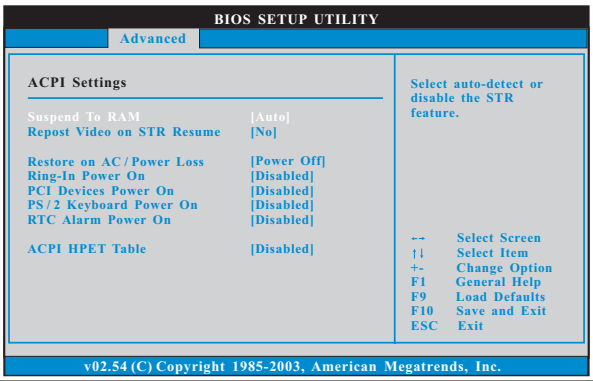
North Bridge Voltage

Use this to select north bridge voltage. Configuration options: [Auto], [Normal], [High]. The default value is [Auto].

South Bridge Voltage

Use this to select south bridge voltage. Configuration options: [Auto], [Normal], [High]. The default value is [Auto].

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. If you set this item to [Disabled], the function “Repost Video on STR Resume” will be hidden.

Repost Video on STR Resume

This feature allows you to repost video on STR resume.

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.

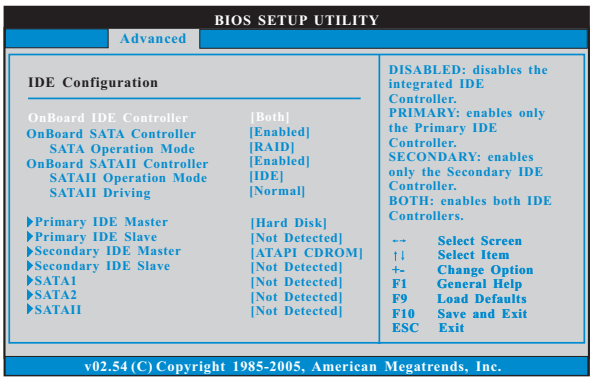
RTC Alarm Power On

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

ACPI HPET Table

Use this item to enable or disable ACPI HPET Table. The default value is [Disabled].

3.3.4 IDE Configuration



OnBoard IDE Controller

You may enable either the primary IDE channel or the secondary IDE channel. Or you may enable both the primary and the secondary IDE channels by selecting [Both]. Set to [Disabled] will disable the both. Configuration options: [Disabled], [Primary], [Secondary], [Both].

OnBoard SATA Controller

Enable the onboard SATA controller by selecting [Enabled]. The default value of this option is [Enabled]. Configuration options: [Enabled], [Disabled], [Auto].

SATA Operation Mode

Use this item to adjust SATA Operation Mode. The default value of this option is [RAID]. Configuration options: [RAID], [non-RAID].

OnBoard SATAII Controller

Enable the onboard SATAII controller by selecting [Enabled]. The default value of this option is [Enabled]. Configuration options: [Enabled], [Disabled], [Auto].

SATAII Operation Mode

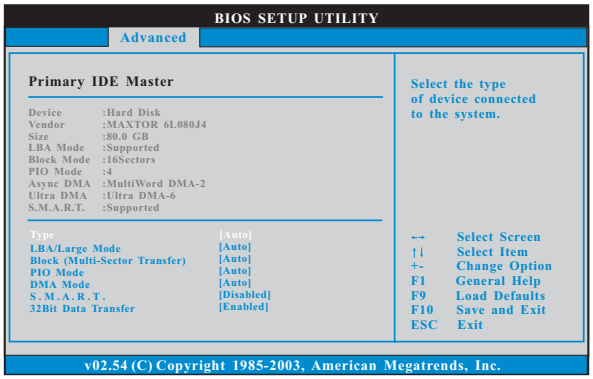
Use this item to adjust SATAII Operation Mode. The default value of this option is [IDE]. Configuration options: [IDE], [SATA].

SATAII Driving

Use this item to adjust SATAII Driving. The default value of this option is [Normal]. Configuration options: [Normal], [Strong].

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].

[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.

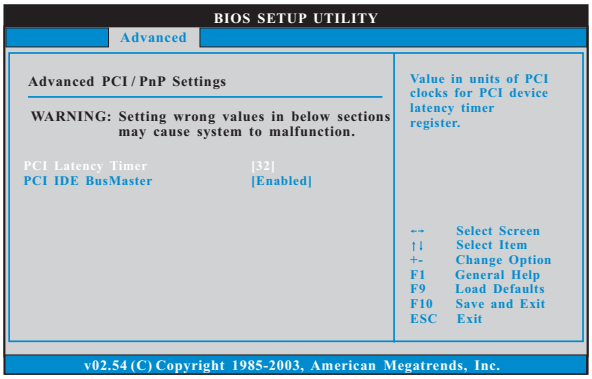
S.M.A.R.T.

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].

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



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

PCI Latency Timer

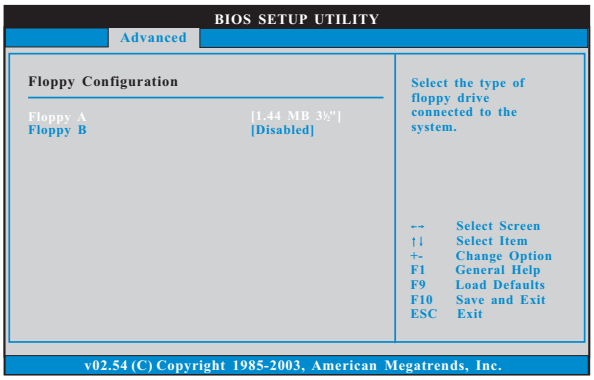
The default value is 32. It is recommended to keep the default value unless the installed PCI expansion cards' specifications require other settings.

PCI IDE BusMaster

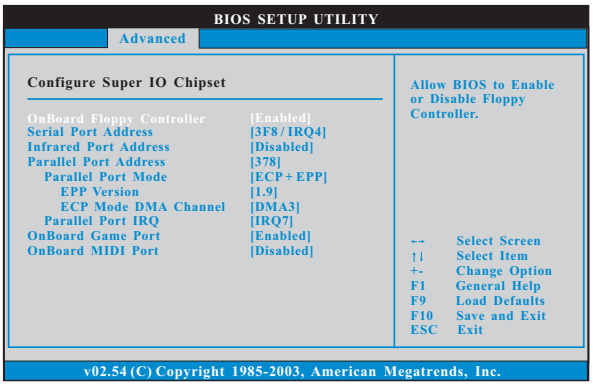
Use this item to enable or disable the PCI IDE BusMaster feature.

3.3.6 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].

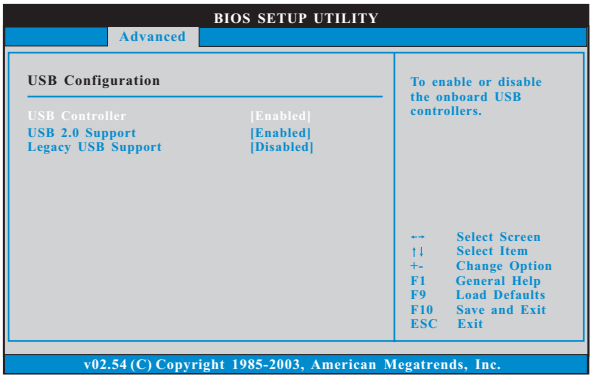
OnBoard Game Port

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

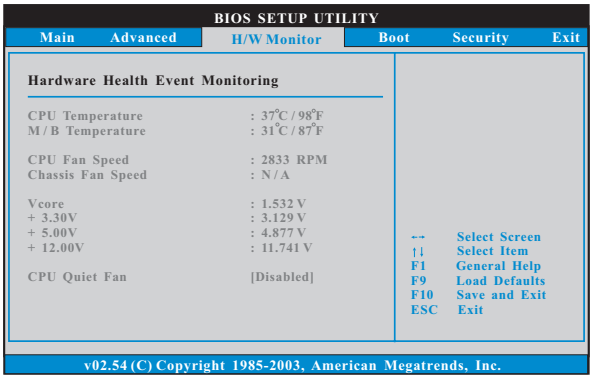
Use this item to enable or disable the USB 2.0 support.

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; if there is no USB device connected, "Auto" option will disable the legacy USB support.

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.

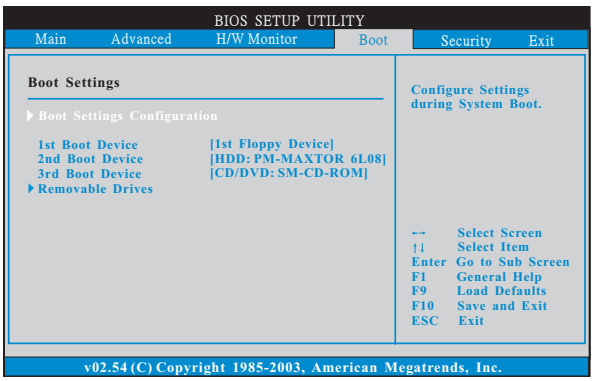


CPU Quiet Fan

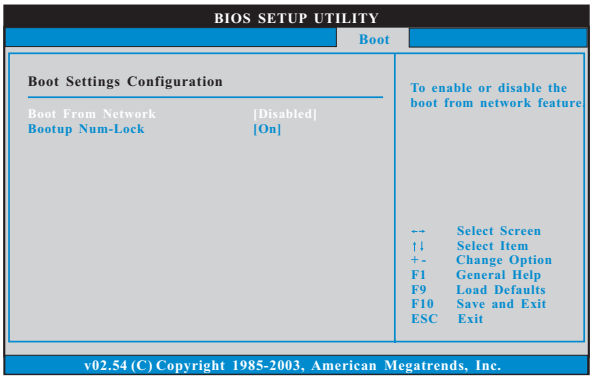
This item allows you to identify the temperature of CPU fan.Configuration options: [Disabled] and [Enabled]. The default value is [Disabled].

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

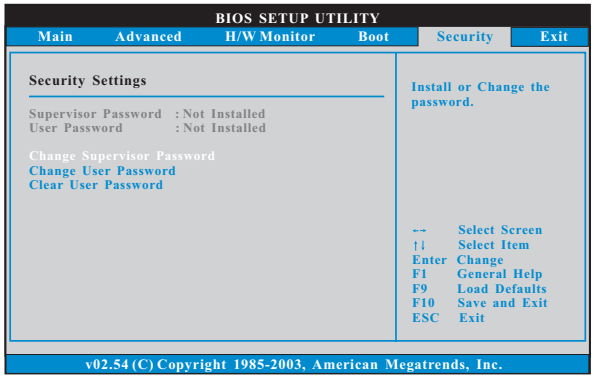
Use this item to enable or disable the Boot From Network feature.

Boot Up Num-Lock

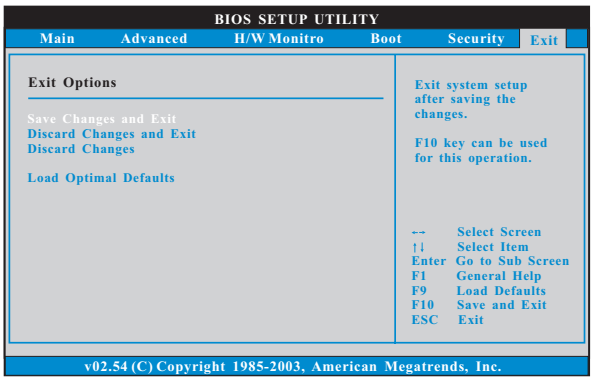
If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

3.6 Security Screen

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

4. Software Support

4.1 Install Operating System

This motherboard supports various Microsoft® Windows® operating systems: 2000 / XP / XP 64-bit / Vista™. 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 the 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.

APPENDIX:
AMD's Cool 'n' Quiet™ Technology

For power-saving sake, it is strongly recommended to enable AMD's Cool 'n' Quiet™ technology under Windows® system. When using this feature, please make sure to install "AMD Processor Driver" from the "Support CD" first.

If you are using Windows® 2000/XP operating system, please follow the instruction below to enable AMD's Cool 'n' QuietTM technology:

1. From the Windows® 2000/XP operating system, click the Start button. Select Settings, then Control Panel.
2. Switch to Classic View. (for Windows® XP only)
3. Double-click the Display icon in the Control Panel then select the Screen Saver tab.
4. Click the "Power…" button. The following dialog box appears.
5. From the Power schemes combo list box, select **Minimal Power Management**.
6. Click OK to implement settings.