ASRock™

ALiveDual-eSATA2

User Manual

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FC

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.

CALIFORNIA, USA ONLY

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"

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

Contents

1. Introduction

Thank you for purchasing ASRock *ALiveDual-eSATA2* 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

1 x ASRock *ALiveDual-eSATA2* Motherboard
    (ATX Form Factor: 12.0-in x 8.4-in, 30.5 cm x 21.3 cm)
1 x ASRock *ALiveDual-eSATA2* Quick Installation Guide
1 x ASRock *ALiveDual-eSATA2* Support CD
1 x Ultra ATA 66/100/133 IDE Ribbon Cable (80-conductor)
1 x 3.5-in Floppy Drive Ribbon Cable
2 x Serial ATA (SATA) Data Cables (Optional)
1 x Serial ATA (SATA) HDD Power Cable (Optional)
1 x HDMI_SPDIF Cable (Optional)
1 x "ASRock 8CH_eSATAII I/O Plus" I/O Shield

1.2 Specifications

Platform	- ATX Form Factor: 12.0-in x 8.4-in, 30.5 cm x 21.3 cm
CPU	- Socket AM2 for AMD Phenom™ X4 / X2, Athlon 64FX / 64X2 / X2 / 64 and Sempron processors
	- AMD LIVE!™ Ready
	- Supports AMD's Cool 'n' Quiet™ Technology
	- FSB 1000 MHz (2.0 GT/s)
	- Supports Untied Overclocking Technology (see **CAUTION 1**)
	- Supports Hyper-Transport Technology
Chipset	- Northbridge: NVIDIA® M1695
	- Southbridge: NVIDIA® nForce3 250
Memory	- Dual Channel DDRII Memory Technology (see **CAUTION 2**)
	- 4 x DDRII DIMM slots
	- Support DDRII800/667/533
	- Max. capacity: 8GB (see **CAUTION 3**)
Hybrid Booster	- CPU Frequency Stepless Control (see **CAUTION 4**)
	- ASRock U-COP (see **CAUTION 5**)
	- Boot Failure Guard (B.F.G.)
	- ASRock AM2 Boost: ASRock Patented Technology to boost memory performance up to 12.5% (see **CAUTION 6**)
Expansion Slot	- 1 x PCI Express x16 slot
	- 1 x AGP 8X slot (see **CAUTION 7**)
	- 3 x PCI slots
Audio	- 7.1 CH Windows® Vista™ Premium Level Superior Audio (C-Media CM6501 Audio Codec with UAA architecture)
LAN	- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
	- Realtek RTL8111B / RTL8111C
	- Supports Wake-On-LAN
Rear Panel I/O	ASRock 8CH_eSATAII I/O Plus
	- 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 eSATAII Port
	- 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 by NVIDIA® nForce3 250, support RAID (RAID 0, RAID 1 and JBOD) and "Hot Plug" functions - 2 x Serial ATAII 3.0Gb/s connectors by JMicron® JMB363 (PCIE x1 interface), support RAID (RAID 0, RAID 1 and JBOD), NCQ, AHCI and "Hot Plug" functions (see **CAUTION 9**) - 1 x eSATAII 3.0Gb/s connector (shared with 1 SATAII connector), supports NCQ, AHCI and "Hot Plug" functions (see **CAUTION 10**) - 2 x ATA133 IDE connectors (support 4 x IDE devices) - 1 x Floppy connector - 1 x IR header - 1 x HDMI_SPDIF header - CPU/Chassis FAN connector - 24 pin ATX power connector - 4 pin 12V power connector - CD in header - Front panel audio connector - 1 x USB 2.0 header (supports 2 USB 2.0 ports) (see **CAUTION 11**) - 1 x WiFi header (see **CAUTION 12**)
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 Media Center / XP 64-bit / Vista™ / Vista™ 64-bit compliant
Certifications	- FCC, CE, WHQL Certificated

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. This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 37 for details.
2. 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 14 for proper installation.
3. Due to the operating system limitation, the actual memory size may be less than 4GB for the reservation for system usage under Windows® XP and Windows® Vista™. For Windows® XP 64-bit and Windows® Vista™ 64-bit with 64-bit CPU, there is no such limitation.
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. This motherboard supports ASRock AM2 Boost overclocking technology. If you enable this function in the BIOS setup, the memory performance will improve up to 12.5%, but the effect still depends on the AM2 CPU you adopt. Enabling this function will overclock the chipset/CPU reference clock. However, we can not guarantee the system stability for all CPU/DRAM configurations. If your system is unstable after AM2 Boost function is enabled, it may not be applicative to your system. You may choose to disable this function for keeping the stability of your system.
7. Do NOT use a 3.3V AGP card on the AGP slot of this motherboard! It may cause permanent damage! If you plan to install Windows® Vista™ 32-bit / Vista™ 64-bit OS on this motherboard, please read the instructions and limitation on page 56 and 57 carefully. For Windows® 2000 / XP / XP 64-bit OS, there is no such limitation.
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 11 for proper connection.

9. Before installing SATAII hard disk to SATAII connector, please read the "SATAII Hard Disk Setup Guide" on page 27 to adjust your SATAII hard disk drive to SATAII mode. You can also connect SATA hard disk to SATAII connector directly.

10. This motherboard supports eSATAII interface, the external SATAII specification. Please read "eSATAII Interface Introduction" on page 24 for details about eSATAII and eSATAII installation procedures.

11. Power Management for USB 2.0 works fine under Microsoft® Windows® Vista™ 64-bit / Vista™ / XP 64-bit / XP SP1 or SP2 / 2000 SP4.

12. WiFi header supports WiFi+AP function with ASRock WiFi-802.11g or WiFi-802.11n module, an easy-to-use wireless local area network (WLAN) adapter. It allows you to create a wireless environment and enjoy the convenience of wireless network connectivity. Please visit our website for the availability of ASRock WiFi-802.11g or WiFi-802.11n module.
ASRock website   http://www.asrock.com

1.3 Motherboard Layout
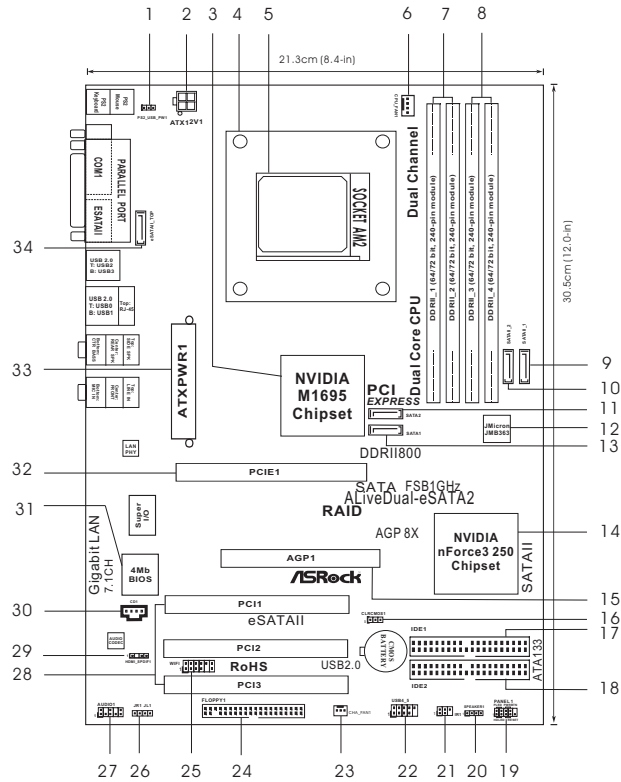
1	PS2_USB_PW1 Jumper	
2	ATX 12V Power Connector (ATX12V1)	
3	North Bridge Controller	
4	CPU Heatsink Retention Module	
5	AM2 940-Pin CPU Socket	
6	CPU Fan Connector (CPU_FAN1)	
7	2 x 240-pin DDRII DIMM Slots (Dual Channel A: DDRII_1, DDRII_2; Yellow)	
8	2 x 240-pin DDRII DIMM Slots (Dual Channel B: DDRII_3, DDRII_4; Orange)	
9	Primary SATAII Connector (SATAII_1; Red)	
10	Secondary SATAII Connector (SATAII_2; Orange)	
11	Secondary SATA Connector (SATA2; Black)	
12	JMicron JMB363 Chipset	
13	Primary SATA Connector (SATA1; Black)	
14	South Bridge Controller	
15	AGP Slot (1.5V_AGP1)	
16	Clear CMOS Jumper (CLRCMOS1)	
17	Primary IDE Connector (IDE1, Blue)	

18	Secondary IDE Connector (IDE2, Black)	
19	System Panel Header (PANEL1)	
20	Chassis Speaker Header (SPEAKER1)	
21	Infrared Module Header (IR1)	
22	USB 2.0 Header (USB4_5, Blue)	
23	Chassis Fan Connector (CHA_FAN1)	
24	Floppy Connector (FLOPPY1)	
25	WiFi Header (WIFI)	
26	JR1 / JL1 Jumper	
27	Front Panel Audio Header (AUDIO1)	
28	PCI Slots (PCI1- 3)	
29	HDMI_SPDIF Header (HDMI_SPDIF1)	
30	Internal Audio Connector: CD1 (Black)	
31	Flash Memory	
32	PCI Express x16 Slot (PCIE1)	
33	ATX Power Connector (ATXPWR1)	
34	eSATAII Connector (eSATAII_TOP; Orange)	

10

1.4   ASRock 8CH_eSATAII I/O Plus
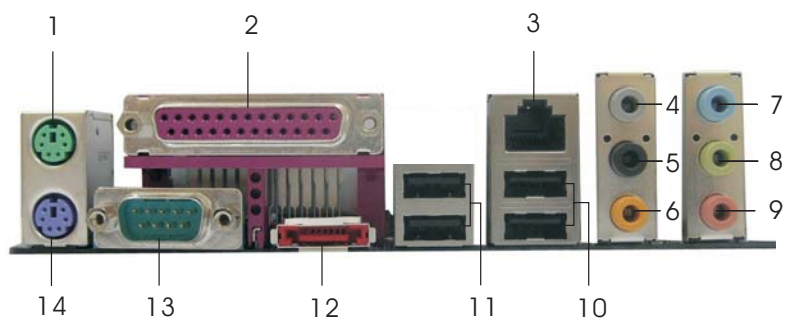
1	**PS/2 Mouse Port (Green)**	*** 8**	**Front Speaker (Lime)**
2	**Parallel Port**	**9**	**Microphone (Pink)**
3	**RJ-45 Port**	**10**	**USB 2.0 Ports (USB01)**
4	**Side Speaker (Gray)**	**11**	**USB 2.0 Ports (USB23)**
5	**Rear Speaker (Black)**	**12**	**eSATAII Port**
6	**Central / Bass (Orange)**	**13**	**COM Port**
7	**Line In (Light Blue)**	**14**	**PS/2 Keyboard Port (Purple)**

* 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. 8)	Rear Speaker (No. 5)	Central / Bass (No. 6)	Side Speaker (No. 4)
2	V	--	--	--
4	V	--	--	V
6	V	--	V	V
8	V	V	V	V

2. Installation

This is an ATX form factor (12.0-in x 8.4-in, 30.5 cm x 21.3 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
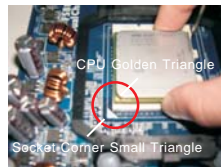
STEP 2 / STEP 3:
Match The CPU Golden Triangle
To The Socket Corner Small
Triangle

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 fas-
tened and in good contact with each other. Then connect the CPU fan to
the CPU FAN connector (CPU_FAN1, see Page 10, No. 6). For proper
installation, please kindly refer to the instruction manuals of the CPU fan
and the heatsink.

2.3 Installation of Memory Modules (DIMM)

This motherboard provides four 240-pin DDRII (Double Data Rate II) 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) DDRII DIMM pair in the slots of the same color. In other words, you have to install **identical** DDRII DIMM pair in **Dual Channel A** (DDRII_1 and DDRII_2; Yellow slots; see p.10 No.7) or **identical** DDRII DIMM pair in **Dual Channel B** (DDRII_3 and DDRII_4; Orange slots; see p.10 No.8), so that Dual Channel Memory Technology can be activated. This motherboard also allows you to install four DDRII DIMMs for dual channel configuration, and please install **identical** DDRII DIMMs in all four slots. You may refer to the Dual Channel Memory Configuration Table below.

Dual Channel Memory Configurations

	DDRII_1 (Yellow Slot)	DDRII_2 (Yellow Slot)	DDRII_3 (Orange Slot)	DDRII_4 (Orange Slot)
(1)	Populated	Populated	-	-
(2)	-	-	Populated	Populated
(3)*	Populated	Populated	Populated	Populated

* For the configuration (3), please install **identical** DDRII 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 yellow slots (DDRII_1 and DDRII_2), or in the set of orange slots (DDRII_3 and DDRII_4).
2. If only one memory module or three memory modules are installed in the DDRII 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 DDRII_1 and DDRII_3, it is unable to activate the Dual Channel Memory Technology .
4. It is not allowed to install a DDR memory module into DDRII slot; otherwise, this motherboard and DIMM may be damaged.

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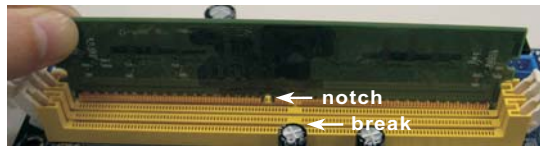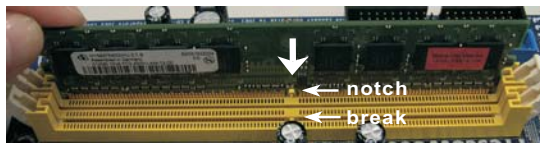
The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

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 (PCI Slots, PCI Express slot and AGP Slot)

There are 3 PCI slots, 1 PCI Express slot and 1 AGP slot on *ALiveDual-eSATA2* motherboard.

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

PCIE Slot: PCIE1 (PCIE x16 slot) is used for PCI Express cards with x16 lane width graphics cards.

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.

> 1. 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.
> 2. If you plan to install Windows® Vista™ 32-bit / Vista™ 64-bit OS on this motherboard, please read the instructions and limitation on page 56 and 57 carefully. For Windows® 2000 / XP / XP 64-bit OS, there is no such limitation.

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.

Jumper	Setting		
PS2_USB_PW1 (see p.10, No. 1)	**1_2** +5V	**2_3** +5VSB	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.10, No. 26)

JR1   JL1

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

Clear CMOS Jumper
(CLRCMOS1)
(see p.10, No. 16)

1_2 Default   **2_3** Clear CMOS

Note: CLRCMOS1 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 CLRCMOS1 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.

2.6 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.10, No. 24)

Pin1   FLOPPY1

the red-striped side to Pin1

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. 17)

Secondary IDE Connector (Black)
(39-pin IDE2, see p.10, No. 18)

PIN1   IDE1

PIN1   IDE2

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.10, No. 13)
(SATA2: see p.10, No. 11)

SATA2

SATA1

These two Serial ATA (SATA) connectors are supported by NVIDIA® nForce3 250 southbridge, support SATA data cables for internal storage devices. The current SATA interface allows up to 1.5 Gb/s data transfer rate.

Serial ATAII Connectors
(SATA II_1, red: see p.10 No. 9)
(SATA II_2, orange: see p.10 No. 10)

SATAII_2   SATAII_1

These two Serial ATAII (SATAII) connectors are supported by JMicron® JMB363 (PCIE x1 interface), support SATA data cables for internal storage devices. The current SATAII interface allows up to 3.0 Gb/s data transfer rate.

1. It is recommended to plug SATAII HDD to SATAII connector (SATAII_1 or SATAII_2) and connect SATA HDD to SATA connector (SATA1 or SATA2).

2. SATAII_2 connector can be used for internal storage device or be connected to eSATAII connector to support eSATAII device. Please read "eSATAII Interface Introduction" on page 24 for details about eSATAII and eSATAII installation procedures.

eSATAII Connector (eSATAII_TOP: see p.10, No. 34)	eSATAII_TOP	This eSATAII connector supports SATA data cable for external SATAII function. The current eSATAII interface allows up to 3.0 Gb/s data transfer rate.
Serial ATA (SATA) Data Cable (Optional)		Either end of the SATA data cable can be connected to the SATA / SATAII hard disk or the SATAII connector on this motherboard. You can also use the SATA data cable to connect SATAII_2 connector and eSATAII connector.
Serial ATA (SATA) Power Cable (Optional) connect to the SATA HDD power connector connect to the power supply		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 USB4_5) (see p.10 No. 22)	USB_PWR P-5 P+5 GND DUMMY GND P+4 P-4 USB_PWR	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.
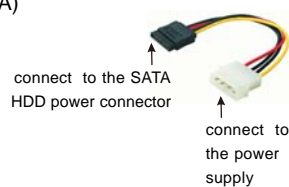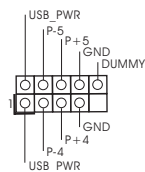
WiFi Header

(11-pin WIFI)

(see p.10 No. 25)

USB+5V_2
NC
NC   GND2
NC   +3SVB

GND1
NC
D0-D0+
USB+5V_1
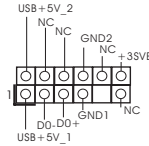
This header supports WiFi+AP function with ASRock WiFi-802.11g or WiFi-802.11n module, an easy-to-use wireless local area network (WLAN) adapter. It allows you to create a wireless environment and enjoy the convenience of wireless network connectivity.

Infrared Module Header

(5-pin IR1)

(see p.10, No. 21)

IRTX
+5VSB
DUMMY

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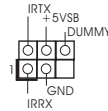
This header supports an optional wireless transmitting and receiving infrared module.

Internal Audio Connectors

(4-pin CD1)

(CD1: see p.10, No. 30)

CD-L
GND
GND
CD-R

CD1
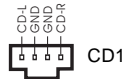
This connector allows you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.

Front Panel Audio Header

(8-pin AUDIO1)

(see p.10, No. 27)

GND
BACKOUT-R
BACKOUT-L

AUD-OUT-L
GND
AUD-OUT-R
MIC-POWER
MIC
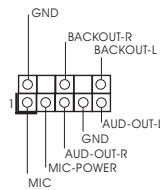
This is an interface for the front panel audio cable that allows convenient connection and control of audio devices.

System Panel Header

(9-pin PANEL1)

(see p.10, No. 19)

PLED+
PLED-
PWRBTN#
GND

DUMMY
RESET#
GND
HDLED-
HDLED+
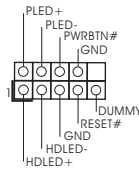
This header accommodates several system front panel functions.

Chassis Speaker Header

(4-pin SPEAKER 1)

(see p.10, No. 20)

SPEAKER
DUMMY
DUMMY
+5V
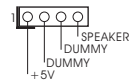
Please connect the chassis speaker to this header.

Chassis Fan Connector

(3-pin CHA_FAN1)

(see p.10, No. 23)

GND
+12V
CHA_FAN_SPEED
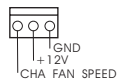
Please connect a chassis fan cable to this connector and match the black wire to the ground pin.

CPU Fan Connector

(4-pin CPU_FAN1)

(see p.10, No. 6)

```
1   GND
2   +12V
3   CPU_FAN_SPEED
4   FAN_SPEED_CONTROL
```
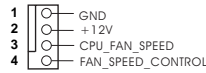
Please connect the CPU fan cable to this connector and match the black wire to the ground pin.

Though this motherboard provides 4-Pin CPU fan (Quiet Fan) support, the 3-Pin CPU fan still can work successfully even without the fan speed control function. If you plan to connect the 3-Pin CPU fan to the CPU fan connector on this motherboard, please connect it to Pin 1-3.

Pin 1-3 Connected

3-Pin Fan Installation
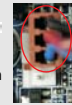
ATX Power Connector

(24-pin ATXPWR1)

(see p.10, No. 33)

```
12        24

1         13
```
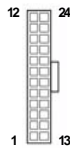
Please connect an ATX power supply to this connector.

Though this motherboard provides 24-pin ATX power connector, it can still work if you adopt a traditional 20-pin ATX power supply. To use the 20-pin ATX power supply, please plug your power supply along with Pin 1 and Pin 13.

20-Pin ATX Power Supply Installation
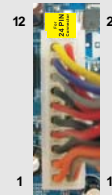
ATX 12V Power Connector

(4-pin ATX12V1)

(see p.10, No. 2)

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.

HDMI_SPDIF Header

(3-pin HDMI_SPDIF1)

(see p.10, No. 29)

```
1   GND
    SPDIFOUT
+5V
```

HDMI_SPDIF header, providing SPDIF audio output to HDMI VGA card, allows the system to connect HDMI Digital TV/ projector/LCD devices. Please connect the HDMI_SPDIF connector of HDMI VGA card to this header.

HDMI_SPDIF Cable

(Optional)

C

B

A
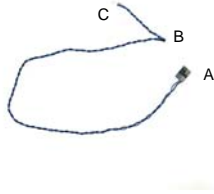
Please connect the black end (A) of HDMI_SPDIF cable to the HDMI_SPDIF header on the motherboard. Then connect the white end (B or C) of HDMI_SPDIF cable to the HDMI_SPDIF connector of HDMI VGA card.

A. black end

+5V

SPDIFOUT — blue

GND — black

B. white end (2-pin)

SPDIFOUT — blue

GND — black

C. white end (3-pin)

SPDIFOUT — blue

GND — black
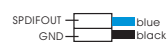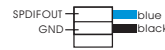
2.7 HDMI_SPDIF Header Connection Guide

HDMI (High-Definition Multi-media Interface) is an all-digital audio/video specification, which provides an interface between any compatible digital audio/video source, such as a set-top box, DVD player, A/V receiver and a compatible digital audio or video monitor, such as a digital television (DTV). A complete HDMI system requires a HDMI VGA card and a HDMI ready motherboard with a HDMI_SPDIF header. This motherboard is equipped with a HDMI_SPDIF header, which provides SPDIF audio output to HDMI VGA card, allows the system to connect HDMI Digital TV/projector/ LCD devices. To use HDMI function on this motherboard, please carefully follow the below steps.

Step 1.   Install the HDMI VGA card to the PCI Express Graphics slot on this motherboard. For the proper installation of HDMI VGA card, please refer to the installation guide on page 16.

Step 2.   Connect the black end (A) of HDMI_SPDIF cable to the HDMI_SPDIF header (HDMI_SPDIF1, yellow, see page 10, No. 29) on the motherboard.

> Make sure to correctly connect the HDMI_SPDIF cable to the motherboard and the HDMI VGA card according to the same pin definition. For the pin definition of HDMI_SPDIF header and HDMI_SPDIF cable connectors, please refer to page 21. For the pin definition of HDMI_SPDIF connectors on HDMI VGA card, please refer to the user manual of HDMI VGA card vendor. Incorrect connection may cause permanent damage to this motherboard and the HDMI VGA card.

Step 3.   Connect the white end (B or C) of HDMI_SPDIF cable to the HDMI_SPDIF connector of HDMI VGA card. (There are two white ends (2-pin and 3-pin) on HDMI_SPDIF cable. Please choose the appropriate white end according to the HDMI_SPDIF connector of the HDMI VGA card you install.

white end
(2-pin) (B)

white end
(3-pin) (C)
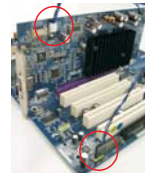
> Please do not connect the white end of HDMI_SPDIF cable to the wrong connector of HDMI VGA card or other VGA card. Otherwise, the motherboard and the VGA card may be damaged. For example, this picture shows the wrong example of connecting HDMI_SPDIF cable to the fan connector of PCI Express VGA card. Please refer to the VGA card user manual for connector usage in advance.

Step 4.   Connect the HDMI output connector on HDMI VGA card to HDMI device, such as HDTV. Please refer to the user manual of HDTV and HDMI VGA card vendor for detailed connection procedures.

Step 5.   Install HDMI VGA card driver to your system.

2.8 eSATAII Interface Introduction

What is eSATAII?

This motherboard supports eSATAII interface, the external SATAII specification. eSATAII allows you to enjoy the SATAII function provided by the I/O of your computer, offering the high speed data transfer rate up to 3.0Gb/s, and the convenient mobility like USB. eSATAII is equipped with Hot Plug capability that enables you to exchange drives easily. For example, with eSATAII interface, you may simply plug your eSATAII hard disk to the eSATAII ports instead of opening your chassis to exchange your SATAII hard disk. Currently, on the market, the data transfer rate of USB 2.0 is up to 480Mb/s, and for IEEE 1394 is up to 400Mb/s. However, eSATAII provides the data transfer rate up to 3000Mb/s, which is much higher than USB 2.0 and IEEE 1394, and still keeps the convenience of Hot Plug feature. Therefore, on the basis of the advantageous transfer speed and the facilitating mobile capability, in the near future, eSATAII will replace USB 2.0 and IEEE 1394 to be a trend for external interface.

NOTE:

1. If you set "PCIE-SATAII Operation Mode" option in BIOS setup to AHCI or RAID mode, Hot Plug function is supported with eSATAII devices. Therefore, you can insert or remove your eSATAII devices to the eSATAII ports while the system is power-on and in working condition.
2. If you set "PCIE-SATAII Operation Mode" option in BIOS setup to IDE mode, Hot Plug function is not supported with eSATAII devices. If you still want to use eSATAII function in IDE mode, please insert or remove your eSATAII devices to the eSATAII ports only when the system is power-off.
3. Please refer to page 33 to 37 for detailed information of RAID mode, IDE mode and AHCI mode.

How to install eSATAII?

SATAII_2

eSATAII_TOP

1. In order to enable the eSATAII port of the I/O shield, you need to connect the orange SATAII connector (SATAII_2; see p.10 No.10) and the eSATAII connector (eSATAII_TOP; see p.10 No.34) with a SATA data cable first.

Connect the SATA data cable to the orange SATAII connector (SATAII_2)

Connect the SATA data cable to the eSATAII connector (eSATAII_TOP)

2. Use the eSATAII device cable to connect eSATAII device and the eSATAII port of the I/O shield according to the eSATAII connector that you connect the SATA data cable.

Connect one end of the eSATAII device cable to eSATAII device

Connect the other end of the eSATAII device cable to eSATAII port of the I/O shield

Comparison between eSATAII and other devices

IEEE 1394	400Mb/s
USB 2.0	480Mb/s
SATA	1.5Gb/s (1500Mb/s)
eSATAII/SATAII	3.0Gb/s (3000Mb/s)
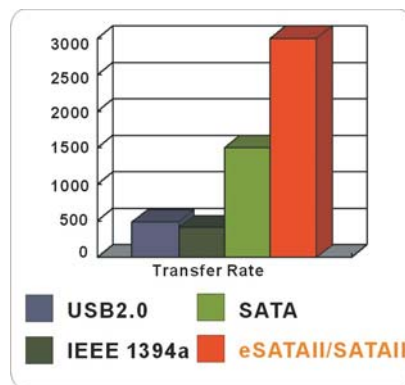
2.9   SATAII Hard Disk Setup Guide

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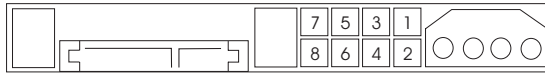
If pin 5 and pin 6 are shorted, SATA 1.5Gb/s will be enabled.
On the other hand, if you want to enable SATAII 3.0Gb/s, please remove the jumpers from pin 5 and pin 6.

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.

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

This motherboard adopts JMicron® JMB363 chipset that supports Serial ATAII (SATAII) hard disks and RAID functions. It also adopts NVIDIA® nForce3 250 south bridge chipset that supports Serial ATA (SATA) hard disks and 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.

> To create RAID with two HDDs, please insert the two HDDs simultaneously to either SATA connectors (black) or SATAII connectors (red and orange). If you insert one HDD to SATA connector and the other HDD to SATAII connector, you are not allowed to create RAID.

2.11 Hot Plug and Hot Swap Functions for SATA / SATAII HDDs and eSATAII Devices

This motherboard supports Hot Plug and Hot Swap functions for SATA / SATAII / eSATAII Devices in RAID / AHCI mode. JMicron® JMB363 chipset provides hardware support for Advanced Host controller Interface (AHCI), a new programming interface for SATA host controllers developed thru a joint industry effort. AHCI also provides usability enhancements such as Hot Plug.

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.

eSATAII is equipped with Hot Plug capability that enables you to exchange drives easily. For example, with eSATAII interface, you may simply plug your eSATAII devices to the eSATAII ports instead of opening your chassis to exchange your SATAII hard disk.

2.12 SATA / SATAII HDD Hot Plug Feature and Operation Guide

This motherboard supports Hot Plug feature for SATA / SATAII HDD in RAID / AHCI mode. Please read below operation guide of SATA / SATAII HDD Hot Plug feature carefully. Before you process the SATA / SATAII HDD Hot Plug, please check below cable accessories from the motherboard gift box pack.

A. 7-pin SATA data cable

B. SATA power cable with SATA 15-pin power connector interface

A. SATA data cable (Red)   B. SATA power cable

SATA 7-pin connector

The SATA 15-pin power connector (Black) connect to SATA / SATAII HDD

1x4-pin conventional power connector (White) connect to power supply

Caution

1. Without SATA 15-pin power connector interface, the SATA / SATAII Hot Plug cannot be processed.
2. Even some SATA / SATAII HDDs provide both SATA 15-pin power connector and IDE 1x4-pin conventional power connector interfaces, the IDE 1x4-pin conventional power connector interface is definitely not able to support Hot Plug and will cause the HDD damage and data loss.

Points of attention, before you process the Hot Plug:

1. Below operation procedure is designed only for our motherboard, which supports SATA / SATAII HDD Hot Plug.
   * The SATA / SATAII Hot Plug feature might not be supported by the chipset because of its limitation, the SATA / SATAII Hot Plug support information of our motherboard is indicated in the product spec on our website:
     www.asrock.com
2. Make sure your SATA / SATAII HDD can support Hot Plug function from your dealer or HDD user manual. The SATA / SATAII HDD, which cannot support Hot Plug function, will be damaged under the Hot Plug operation.
3. Please make sure the SATA / SATAII driver is installed into system properly. The latest SATA / SATAII driver is available on our support website:
   www.asrock.com
4. Make sure to use the SATA power cable & data cable, which are from our motherboard package.
5. Please follow below instructions step by step to reduce the risk of HDD crash or data loss.

How to Hot Plug a SATA / SATAII HDD:

Points of attention, before you process the Hot Plug:

Please do follow below instruction sequence to process the Hot Plug, improper procedure will cause the SATA / SATAII HDD damage and data loss.

Step 1 Please connect SATA power cable 1x4-pin end (White) to the power supply 1x4-pin cable.

SATA power cable 1x4-pin power connector (White)
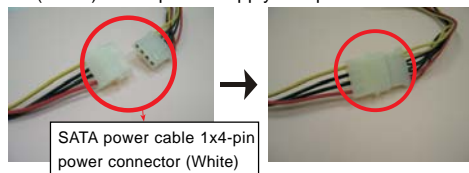
Step 2 Connect SATA data cable to the motherboard's SATAII connector.
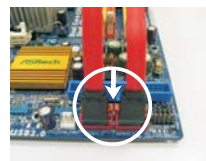
Step 3 Connect SATA 15-pin power cable connector (Black) end to SATA / SATAII HDD.

Step 4 Connect SATA data cable to the SATA / SATAII HDD.

How to Hot Unplug a SATA / SATAII HDD:

Points of attention, before you process the Hot Unplug:

Please do follow below instruction sequence to process the Hot Unplug, improper procedure will cause the SATA / SATAII HDD damage and data loss.

Step 1 Unplug SATA data cable from SATA / SATAII HDD side.
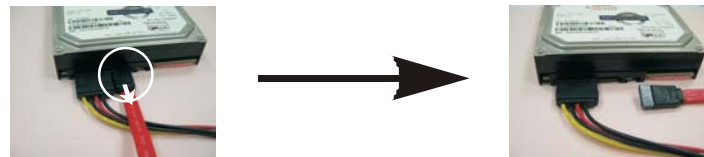
Step 2 Unplug SATA 15-pin power cable connector (Black) from SATA / SATAII HDD side.
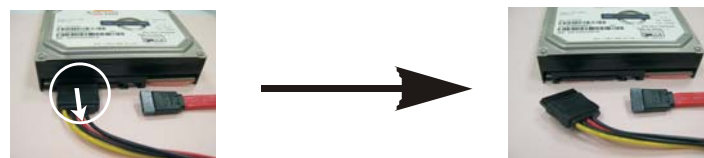
2.13 Driver Installation Guide

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.

For users who install Windows® XP 64-bit OS and plan to install drivers to your system from the support CD, since the NVIDIA® nForce3 250 SATA driver provided by the chipset vendor has not submitted Windows® Logo yet, we provide you with the following driver installation choices:

1. "All in 1 Logo Driver(Without RAID Driver)": You may choose this item to install all-in-1 logo driver which does not support RAID functions, but it has passed Microsoft® logo certification.
2. "All in 1 Non-Logo Driver(With RAID Driver)": You may choose this item to install all-in-1 non-logo driver which supports RAID functions, but it has not passed Microsoft® logo certification yet.

Please choose the driver which meets your requirement most from the above-mentioned items during driver installation process.

In Windows® XP 64-bit OS, NVIDIA® nForce3 250 SATA driver does not support Hot Plug functions.

For users who install Windows® Vista™ / Vista™ 64-bit OS, since Windows® Vista™ / Vista™ 64-bit driver keeps on updating now. As long as we have the latest driver, we will update it to our website in the future. Please visit our website for Microsoft® Windows® Vista™ / Vista™ 64-bit driver and related information. ASRock website http://www.asrock.com

2.14 Installing Windows® 2000 / XP / XP 64-bit / Vista™ / Vista™ 64-bit With RAID Functions

If you want to install Windows® 2000, XP, XP 64-bit, Vista™ or Vista™ 64-bit on your SATA / SATAII HDDs with RAID functions, please follow below procedures according to the OS you install.

2.14.1 Installing Windows® 2000 / XP / XP 64-bit With RAID Functions

If you want to install Windows® 2000, XP or XP 64-bit on your SATA / SATAII HDDs with RAID functions, please follow below steps.

> Before installing Windows® 2000 to your system, your Windows® 2000 optical disk is supposed to include SP4. If there is no SP4 included in your disk, please visit below website for proper procedures of making a SP4 disk: http://www.microsoft.com/Windows2000/downloads/servicepacks/sp4/spdeploy.htm#the_integrated_installation_fmay

STEP 1: Set up BIOS.

A. Enter BIOS SETUP UTILITY → Advanced screen → IDE Configuration.

B. If you plan to install Windows® 2000 / XP / XP 64-bit on NVIDIA® SATA ports with RAID functions, please set the "SATA Operation Mode" option to [RAID]. If you plan to install Windows® 2000 / XP / XP 64-bit on JMicron® SATAII ports with RAID functions, please set the "PCIE-SATAII Operation Mode" option to [RAID].

STEP 2: Make a SATA / SATAII driver diskette.

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

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

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

D. Then you will see these messages,

> **Please insert a blank**
> **formatted diskette into floppy**
> **drive A:**
> **press any key to start**

Please insert a floppy diskette into the floppy drive, and press any key.

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

STEP 3: Use "RAID Installation Guide" to set RAID configuration.

Before you start to configure RAID function, you need to check the RAID installation guide in the Support CD for proper configuration. Please refer to the BIOS RAID installation guide of the document in the following path in the Support CD:

.. \ RAID Installation Guide

STEP 4: Install Windows® 2000 / XP / XP 64-bit OS on your system.

After making a SATA / SATAII driver diskette and set RAID configuration, you can start to install Windows® 2000 / XP / XP 64-bit on your system. At the beginning of Windows® setup, press F6 to install a third-party RAID driver. When prompted, insert the SATA / SATAII driver diskette containing NVIDIA® and JMicron® RAID driver. After reading the floppy disk, the driver will be presented. Select your required driver to install according to the SATA / SATAII controller support vendor and the OS you install. The driver options are as below:

1. NVIDIA RAID CLASS DRIVER (required) Windows XP/2000
2. NVIDIA RAID CLASS DRIVER (required) Windows XP64
3. NVIDIA nForce Storage Controller (required) Windows XP/2000
4. NVIDIA nForce Storage Controller (required) Windows XP64
5. (Windows 2000/XP/2003) RAID/AHCI Driver for JMicron JMB36X Controller
6. (Windows XP/2003 x64) RAID/AHCI Driver for JMicron JMB36X Controller

If you insert HDDs to NVIDIA® SATA connectors (black), please choose item 1, 2, 3 or 4 according to the OS you install. If you insert HDDs to JMicron® SATAII connectors (red and orange), please choose item 5 or 6 according to the OS you install. You can also specify twice to load both two drivers if you plan to create RAID on two SATA HDDs and two SATAII HDDs, but please note that the two SATA HDDs and two SATAII HDDs provide separated RAID functions.

> NOTE. After the installation of Windows® 2000 / XP / XP 64-bit OS and RAID utility, if you want to manage RAID functions, please refer to the Windows RAID installation guide of the document in the following path in the Support CD:
> **.. \ RAID Installation Guide**

> If you want to use "NVIDIA RAID Tool" in Windows® environment, please install SATA drivers from the Support CD again so that "NVIDIA RAID Tool" will be installed to your system as well. If you want to use "JMicron RAID Tool" in Windows® environment, please install SATAII drivers from the Support CD again so that "JMicron RAID Tool" will be installed to your system as well.

2.14.2 Installing Windows® Vista™ / Vista™ 64-bit With RAID Functions

If you want to install Windows® Vista™ or Vista™ 64-bit on your SATA / SATAII HDDs with RAID functions, please follow below steps.

> Since NVIDIA® does not provide Windows® Vista™ / Vista™ 64-bit RAID driver, RAID function is not available on SATA ports of this motherboard under Windows® Vista™ / Vista™ 64-bit OS. If you install Windows® Vista™ / Vista™ 64-bit OS on this motherboard, RAID function is only available on SATAII ports.

STEP 1: Set up BIOS.

A. Enter BIOS SETUP UTILITY → Advanced screen → IDE Configuration.

B. If you plan to install Windows® Vista™ / Vista™ 64-bit on JMicron® SATAII ports with RAID functions, please set the "PCIE-SATAII Operation Mode" option to [RAID].

STEP 2: Make a SATAII driver diskette. (For JMicron® SATAII ports in RAID mode only.)

If you set "PCIE-SATAII Operation Mode" to [RAID] mode, and plan to install Windows® Vista™ / Vista™ 64-bit on JMicron® SATAII HDDs, please refer to step 2 on page 33 for detailed procedures of making a SATAII driver diskette.

STEP 3: Use "RAID Installation Guide" to set RAID configuration.

Before you start to configure RAID function, you need to check the RAID installation guide in the Support CD for proper configuration. Please refer to the BIOS RAID installation guide of the document in the following path in the Support CD:

.. \ RAID Installation Guide

STEP 4: Install Windows® Vista™ / Vista™ 64-bit OS on your system.

Insert the Windows® Vista™ / Vista™ 64-bit optical disk into the optical drive to boot your system, and follow the instruction to install Windows® Vista™ / Vista™ 64-bit OS on your system.

If you plan to install Windows® Vista™ / Vista™ 64-bit on JMicron® SATAII HDDs, when you see "Where do you want to install Windows?" page, please click the "Load Driver" button on the left on the bottom to load the JMicron® RAID drivers from the SATAII driver diskette you just made.

After that, please insert Windows® Vista™ / Vista™ 64-bit optical disk into the optical drive again to continue the installation.

2.15 Installing Windows® 2000 / XP / XP 64-bit / Vista™ / Vista™ 64-bit Without RAID Functions

If you want to install Windows® 2000, XP, XP 64-bit, Vista™ or Vista™ 64-bit on your SATA / SATAII HDDs without RAID functions, please follow below procedures according to the OS you install.

2.15.1 Installing Windows® 2000 / XP / XP 64-bit Without RAID Functions

If you want to install Windows® 2000, XP or XP 64-bit on your SATA / SATAII HDDs without RAID functions, please follow below steps.

> Before installing Windows® 2000 to your system, your Windows® 2000 optical disk is supposed to include SP4. If there is no SP4 included in your disk, please visit below website for proper procedures of making a SP4 disk: http://www.microsoft.com/Windows2000/downloads/servicepacks/sp4/spdeploy.htm#the_integrated_installation_fmay

STEP 1: Set up BIOS.
A. Enter BIOS SETUP UTILITY → Advanced screen → IDE Configuration.
B. If you plan to install Windows® 2000 / XP / XP 64-bit on NVIDIA® SATA ports without RAID functions, please set the "SATA Operation Mode" option to [non-RAID]. If you plan to install Windows® 2000 / XP / XP 64-bit on JMicron® SATAII ports without RAID functions, please set the "PCIE-SATAII Operation Mode" option to [IDE] or [AHCI].

STEP 2: Make a SATAII driver diskette. (For JMicron® SATAII ports in AHCI mode only.)
If you set "PCIE-SATAII Operation Mode" to [AHCI] mode, and plan to install Windows® 2000 / XP / XP 64-bit on JMicron® SATAII HDDs, please refer to step 2 on page 33 for detailed procedures of making a SATAII driver diskette. Otherwise, please skip this step.

STEP 3: Install Windows® 2000 / XP / XP 64-bit OS on your system.
After above steps, you can start to install Windows® 2000 / XP / XP 64-bit on your system. (If you plan to install Windows® 2000 / XP / XP 64-bit on JMicron® SATAII ports in AHCI mode, at the beginning of Windows® setup, press F6 to install a third-party AHCI driver. When prompted, insert the SATAII driver diskette containing JMicron® AHCI driver. After reading the floppy disk, the driver will be presented. The driver options are as below:

1. NVIDIA RAID CLASS DRIVER (required) Windows XP/2000
2. NVIDIA RAID CLASS DRIVER (required) Windows XP64
3. NVIDIA nForce Storage Controller (required) Windows XP/2000
4. NVIDIA nForce Storage Controller (required) Windows XP64

5. (Windows 2000/XP/2003) RAID/AHCI Driver for JMicron JMB36X Controller
6. (Windows XP/2003 x64) RAID/AHCI Driver for JMicron JMB36X Controller
Please select item 5 or 6 to install Windows® OS for JMicron® SATAII ports in AHCI mode.)

2.15.2 Installing Windows® Vista™ / Vista™ 64-bit Without RAID Functions

If you want to install Windows® Vista™ or Vista™ 64-bit on your SATA / SATAII HDDs without RAID functions, please follow below steps.

STEP 1: Set up BIOS.
A. Enter BIOS SETUP UTILITY→ Advanced screen → IDE Configuration.
B. If you plan to install Windows® Vista™ / Vista™ 64-bit on NVIDIA® SATA ports without RAID functions, please set the "SATA Operation Mode" option to [non-RAID]. If you plan to install Windows® Vista™ / Vista™ 64-bit on JMicron® SATAII ports without RAID functions, please set the "PCIE-SATAII Operation Mode" option to [IDE] or [AHCI].
STEP 2: Install Windows® Vista™ / Vista™ 64bit OS on your system.
You can start to install Windows® Vista™ / Vista™ 64-bit on your system.

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, AGP, 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.

> Please refer to the warning on page 8 for the possible overclocking risk before you apply Untied Overclocking Technology.

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.

```
                        BIOS SETUP UTILITY
    Main    Advanced    H/W Monitor    Boot    Security    Exit

    System Overview                           Use [Enter], [TAB]
                                              or [SHIFT-TAB] to
    System Time             [  :00:09]        select a field.
    System Date            [Mon 10/01/2007]
    BIOS Version     : ALiveDual-eSATA2 BIOS P1.0   Use [+] or [-] to
    Processor Type   : AMD Athlon(tm) 64 X2 Dual Core   configure system Time.
                       Processor 3800+ (64bit)
    Processor Speed  : 2000MHz
    Microcode Update : 40F33/0
    L1 Cache Size    : 256KB                   ↔     Select Screen
    L2 Cache Size    : 1024KB                  ↑↓    Select Item
                                               +-    Change Field
    Total Memory     : 2048MB                  Tab   Select Field
                       Dual-Channel Memory Mode  F1   General Help
       DDRII1        : 1024MB/266MHz (DDRII533)  F9   Load Defaults
       DDRII2        : 1024MB/266MHz (DDRII533)  F10  Save and Exit
       DDRII3        : None                      ESC  Exit
       DDRII4        : None

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```

System Time [Hour:Minute:Second]

Use this item to specify the system time.

System Date [Day Month/Date/Year]

Use this item to specify the system date.

3.3 Advanced Screen

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

```
                    BIOS SETUP UTILITY
   Main      Advanced    H/W Monitor    Boot      Security      Exit

  Advanced Settings                              Options for CPU

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

 ▶ CPU Configuration
 ▶ Chipset Configuration
 ▶ ACPI Configuration
 ▶ IDE Configuration
 ▶ PCIPnP Configuration                 ←→     Select Screen
 ▶ Floppy Configuration                 ↑↓     Select Item
 ▶ SuperIO Configuration                Enter  Go to Sub Screen
 ▶ USB Configuration                    F1     General Help
                                        F9     Load Defaults
                                        F10    Save and Exit
                                        ESC    Exit

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```

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

3.3.1 CPU Configuration

```
                    BIOS SETUP UTILITY
           Advanced

  CPU Configuration                             If AUTO, multiplier and
                                                voltage will be left at the
  AM2 Boost                  [Disabled]         rated frequency/voltage. If
  Overclock Mode             [Auto]             Manual, multiplier and
    CPU Frequency (MHz)      [200]              voltage will be set based
    PCIE Frequency (MHz)     [100]              on User Selection in Setup.
  Spread Spectrum            [Auto]
  Boot Failure Guard         [Enabled]
  Cool' n' Quiet             [Auto]
  Secure Virtual Machine     [Enabled]

  Processor Maximum Multiplier   x10.0 2000 MHz
  Processor Maximum Voltage      1.250 V        ←→     Select Screen
  Multiplier/Voltage Change      [Auto]         ↑↓     Select Item
                                                +-     Change Option
  Memory Clock               [Auto]             F1     General Help
  Flexibility Option         [Disabled]         F9     Load Defaults
  CAS Latency (CL)           [Auto]             F10    Save and Exit
  TRCD                       [Auto]             ESC    Exit
  TRP                        [Auto]

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```

AM2 Boost

If you set this option to [Enabled], you will enable ASRock AM2 Boost function, which will improve the memory performance. The default value is [Disabled]. Please refer to caution 6 on page 8 for details.

Overclock Mode

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

CPU Frequency (MHz)

Use this option to adjust CPU frequency.

PCIE Frequency (MHz)

Use this option to adjust PCIE frequency.

Spread Spectrum

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

Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

Cool 'n' Quiet

Use this item to enable or disable AMD's Cool 'n' Quiet™ technology. The default value is [Auto]. Configuration options: [Auto], [Enabled] and [Disabled]. If you install Windows® Vista™ and want to enable this function, please set this item to [Enabled]. Please note that enabling this function may reduce CPU voltage and memory frequency, and lead to system stability or compatibility issue with some memory modules or power supplies. Please set this item to [Disable] if above issue occurs.

Secure Virtual Machine

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by AMD-V. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled].

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.

BIOS SETUP UTILITY		
Advanced		

CPU Configuration		
		If AUTO, multiplier and voltage will be left at the rated frequency/voltage. If Manual, multiplier and voltage will be set based on User Selection in Setup.
AM2 Boost	[Disabled]	
Overclock Mode	[Auto]	
CPU Frequency (MHz)	[200]	
PCIE Frequency (MHz)	[100]	
Spread Spectrum	[Auto]	
Boot Failure Guard	[Enabled]	
Cool' n' Quiet	[Auto]	
Secure Virtual Machine	[Enabled]	
Processor Maximum Multiplier	x10.0 2000 MHz	
Processor Maximum Voltage	1.250 V	
Multiplier/Voltage Change	[Manual]	↔ Select Screen
		↑↓ Select Item
Processor Multiplier	[x8]	+- Change Option
Processor Voltage	[1.500V]	F1 General Help
		F9 Load Defaults
Memory Clock	[Auto]	F10 Save and Exit
Flexibility Option	[Disabled]	ESC Exit

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Processor Multiplier

This item will show when "Multiplier/Voltage Change" is set to [Manual]; otherwise, it will be hidden. The range of the value depends on the CPU you adopt on this motherboard. 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. The range of the value depends on the CPU you adopt on this motherboard. However, 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: [200 MHz (DDRII 400)], [266 MHz (DDRII 533)], [333 MHz (DDRII 667)], and [400MHz (DDRII 800)].

Flexibility Option

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

CAS Latency (CL)

Use this item to adjust the means of memory accessing. Configuration options: [Auto], [3CLK], [4CLK], [5CLK] and [6CLK]. The default value is [Auto].

TRCD

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

TRP

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

TRTP

Use this to adjust TRTP values. Configuration options: [Auto], [2-4CLK] and [3-5CLK]. The default value is [Auto].

TRAS

Use this to adjust TRAS values. Configuration options: [Auto], [5CLK] to [18CLK]. The default value is [Auto].

TRRD

Use this to adjust TRRD values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK] and [5CLK]. The default value is [Auto].

TRC

Use this to adjust TRC values. Configuration options: [11CLK] to [26CLK]. The default value is [Auto].

TWR

Use this to adjust TWR values. Configuration options: [Auto], [3CLK], [4CLK], [5CLK] and [6CLK]. The default value is [Auto].

TWTR

Use this to adjust TWTR values. Configuration options: [Auto], [1CLK], [2CLK] and [3CLK]. The default value is [Auto].

TRWTTO

Use this to adjust TRWTTD values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK], [5CLK], [6CLK], [7CLK], [8CLK] and [9CLK]. The default value is [Auto].

TWRRD

Use this to adjust TWRRD values. Configuration options: [Auto], [0CLK], [1CLK], [2CLK] and [3CLK]. The default value is [Auto].

TWRWR

Use this to adjust TWRWR values. Configuration options: [Auto], [1CLK], [2CLK] and [3CLK]. The default value is [Auto].

TRDRD

Use this to adjust TRWTTD values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK] and [5CLK]. The default value is [Auto].

MA Timing

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

Bank Interleaving

Interleaving allows memory accesses to be spread out over banks on the same node, or accross nodes, decreasing access contention.

3.3.2 Chipset Configuration

```
                        BIOS SETUP UTILITY
        Advanced

     Chipset Settings                                    To set DRAM Voltage.

     OnBoard Lan                    [Enabled]
     OnBoard UAA Audio              [Auto]

     AGP Data Rate                  [8X]
     AGP Aperture Size              [64 MB]
     AGP Fast Write                 [Disabled]
     AGP SideBand Address           [Enabled]
     Primary Graphics Adapter       [PCI]

     CPU - NB Link Speed            [Auto]        ←→    Select Screen
     CPU - NB Link Width            [Auto]        ↑↓    Select Item
     NB - SB Link Speed             [Auto]        + -   Change Option
     NB - SB Link Width             [Auto]        F1    General Help
                                                  F9    Load Defaults
     DRAM Voltage                   [Auto]        F10   Save and Exit
     AGP Voltage                    [Auto]        ESC   Exit


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```

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 Data Rate

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

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], [256MB], and [512MB].

AGP Fast Write

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

AGP SideBand Address

This allows you to enable or disable the feature of AGP SideBand Address. Configuration options: [Enabled], and [Disabled].

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], [PCI Express] 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] and [800 MHz].

NB - SB Link Width

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

DRAM Voltage

Use this to select DRAM voltage. Configuration options: [Auto], [1.80V], [1.85V], [1.90V], [1.95V], [2.00V], [2.10V], [2.15V] and [2.20V]. The default value is [Auto].

AGP Voltage

Use this to select among [Low] and [High] for AGP Voltage. The default value is [Auto].

3.3.3 ACPI Configuration

```
                         BIOS SETUP UTILITY
         Advanced

  ACPI Settings                                 Select auto-detect or
                                                disable the STR
  Suspend To RAM              [Auto]            feature.
  Repost Video on STR Resume  [No]
  Away Mode Support           [Disabled]

  Restore on AC/Power Loss    [Power Off]
  Ring-In Power On            [Disabled]
  PCI Devices Power On        [Disabled]
  PS/2 Keyboard Power On      [Disabled]
  RTC Alarm Power On          [Disabled]        ←→    Select Screen
                                                ↑↓    Select Item
  ACPI HPET Table             [Disabled]        +-    Change Option
                                                F1    General Help
                                                F9    Load Defaults
                                                F10   Save and Exit
                                                ESC   Exit

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```

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. (STR refers to suspend to RAM.)

Away Mode Support

Use this item to enable or disable Away Mode support under Windows® XP Media Center OS. The default value is [Disabled].

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]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® Vista™ certification.

3.3.4 IDE Configuration

```
                        BIOS SETUP UTILITY
        Advanced

    IDE Configuration                        DISABLED: disables the
                                             integrated IDE
                                             Controller.
    OnBoard IDE Controller      [Both]       PRIMARY: enables only
    Onboard SATA Controller     [Enabled]    the Primary IDE
       SATA Operation Mode      [non-RAID]   Controller.
    OnBoard SATAII Controller   [Enabled]    SECONDARY: enables
       PCIE-SATAII Operation Mode [RAID]     only the Secondary IDE
    HDD Fast Detection          [Enabled]    Controller.
                                             BOTH: enables both IDE
  ▶ Primary IDE Master          [Hard Disk]  Controllers.
  ▶ Primary IDE Slave           [Not Detected]
  ▶ Secondary IDE Master        [ATAPI CDROM] ←→    Select Screen
  ▶ Secondary IDE Slave         [Not Detected] ↑↓    Select Item
  ▶ SATA1                       [Not Detected] +-    Change Option
  ▶ SATA2                       [Not Detected] F1    General Help
                                             F9    Load Defaults
                                             F10   Save and Exit
                                             ESC   Exit

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```

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

Use this item to enable or disable the "Onboard SATA Controller" feature.

SATA Operation Mode

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

* If you select [RAID] mode, SATA / SATAII HDDs can not be accessed until you finish configuring RAID functions in NVIDIA BIOS / Windows RAID Utility.

* If you install OS on SATA / SATAII HDDs, please do not change the setting of this item after OS installation.

* If you install SATA / SATAII device on eSATAII port and plan to make a floppy image or use Ghost under DOS (Disk Operating System), please set this option to [non-RAID].

OnBoard SATAII Controller

Use this item to enable or disable onboard PCIE-SATAII controller. The default value of this option is [Enabled]. Configuration options: [Enabled] and [Disabled].

PCIE-SATAII Operation Mode

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

HDD Fast Detection

Configuratin optins: [Enabled] and [Disabled]. The default value is [Disabled].

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.

```
                       BIOS SETUP UTILITY
        Advanced

   IDE Master                              Select the type
                                           of device connected
   Device      :Hard Disk                  to the system.
   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]       ←→    Select Screen
   LBA/Large Mode             [Auto]       ↑↓    Select Item
   Block (Multi-Sector Transfer) [Auto]    +-    Change Option
   PIO Mode                   [Auto]       F1    General Help
   DMA Mode                   [Auto]       F9    Load Defaults
   S.M.A.R.T.                 [Disabled]   F10   Save and Exit
   32Bit Data Transfer        [Disabled]   ESC   Exit


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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 op-timizing the hard disk timing.

DMA Mode

DMA capability allows the improved transfer-speed and data-integrity for com-patible 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.

3.3.5 PCIPnP Configuration

```
                    BIOS SETUP UTILITY
        Advanced

  Advanced PCI / PnP Settings                    Value in units of PCI
                                                 clocks for PCI device
  PCI Latency Timer            [32]              latency timer
  PCI IDE BusMaster            [Enabled]         register.




                                             ←→    Select Screen
                                             ↑↓    Select Item
                                             +-    Change Option
                                             F1    General Help
                                             F9    Load Defaults
                                             F10   Save and Exit
                                             ESC   Exit

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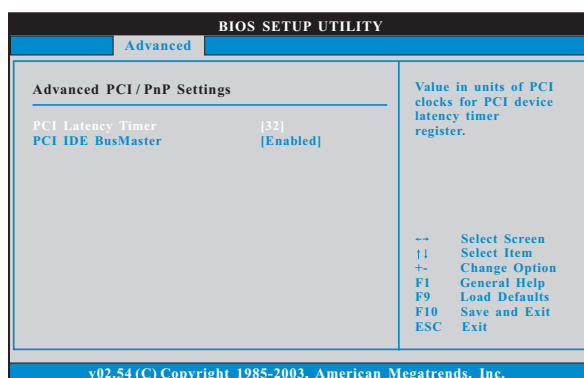
> Setting wrong values in this section may cause the system to malfunction.

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.
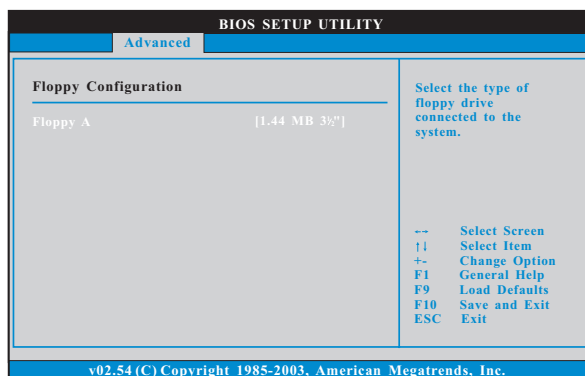
3.3.7 Super IO Configuration
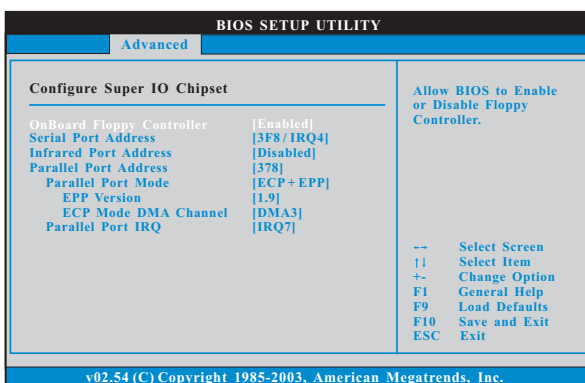
OnBoard Floppy Controller

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]. If you plan to
use ASRock DeskExpress on this motherboard, please keep this item on
[Disabled] option.

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].

3.3.8 USB Configuration

```
                    BIOS SETUP UTILITY
   Advanced

 USB Configuration                           To enable or disable
                                             the onboard USB
 USB Controller              [Enabled]       controllers.
 USB 2.0 Support             [Enabled]
 Legacy USB Support          [Disabled]




                                             ←→    Select Screen
                                             ↑↓    Select Item
                                             +-    Change Option
                                             F1    General Help
                                             F9    Load Defaults
                                             F10   Save and Exit
                                             ESC   Exit

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```
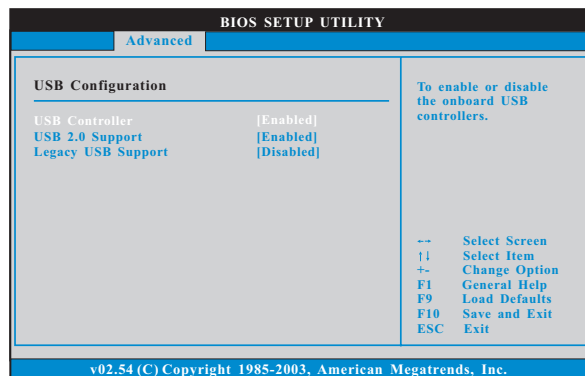
USB Controller

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 the I/O devices of legacy OS (DOS) such as mouse, keyboard, USB flash... 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.

```
                    BIOS SETUP UTILITY
  Main      Advanced      H/W Monitor      Boot      Security      Exit

                                              You are allowed to
  Hardware Health Event Monitoring            enable this function
                                              only when you install
  CPU Temperature          : 37°C / 98°F      4-pin CPU fan.
  M / B Temperature        : 31°C / 87°F

  CPU Fan Speed            : 3400 RPM
  Chassis Fan Speed        : N / A

  Vcore                    : 1.629V
  + 3.30V                  : 3.306V
  + 5.00V                  : 5.067V
  + 12.00V                 : 11.890V            ←→     Select Screen
                                                ↑↓     Select Item
  CPU Quiet Fan               [Disabled]        F1     General Help
                                                F9     Load Defaults
                                                F10    Save and Exit
                                                ESC    Exit

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```

CPU Quiet Fan

This item allows you to identify the temperature of CPU fan. Configuration options: [Disabled] and [Enabled]. The default value is [Disabled]. You are allowed to enable this function only when you install 4-pin CPU fan.

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.

```
                      BIOS SETUP UTILITY
   Main     Advanced     H/W Monitor     Boot      Security      Exit

   Boot Settings                              Configure Settings
                                              during System Boot.
  ▶ Boot Settings Configuration

    1st Boot Device        [1st Floppy Device]
    2nd Boot Device        [HDD: PM-MAXTOR 6L08]
    3rd Boot Device        [CD/DVD: SM-CD-ROM]
    4th Boot Device        [USB]
  ▶ Hard Disk Drives
  ▶ Removable Drives
  ▶ CD/DVD Drives
                                              ←→     Select Screen
                                              ↑↓     Select Item
                                              Enter  Go to Sub Screen
                                              F1     General Help
                                              F9     Load Defaults
                                              F10    Save and Exit
                                              ESC    Exit

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```

3.5.1 Boot Settings Configuration

```
                      BIOS SETUP UTILITY
                                        Boot

   Boot Settings Configuration                To enable or disable the
                                              boot from network feature.
   Boot From Network       [Disabled]
   Bootup Num-Lock         [On]




                                              ←→     Select Screen
                                              ↑↓     Select Item
                                              +-     Change Option
                                              F1     General Help
                                              F9     Load Defaults
                                              F10    Save and Exit
                                              ESC    Exit

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```

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.

```
                    BIOS SETUP UTILITY
 Main      Advanced      H/W Monitor      Boot      Security      Exit

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

 Change Supervisor Password
 Change User Password

                                              ←→      Select Screen
                                              ↑↓      Select Item
                                              Enter   Change
                                              F1      General Help
                                              F9      Load Defaults
                                              F10     Save and Exit
                                              ESC     Exit

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```
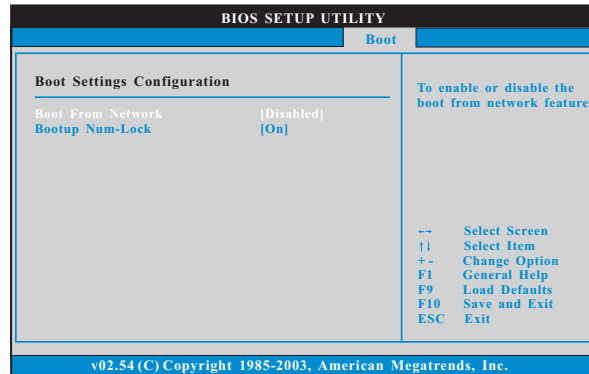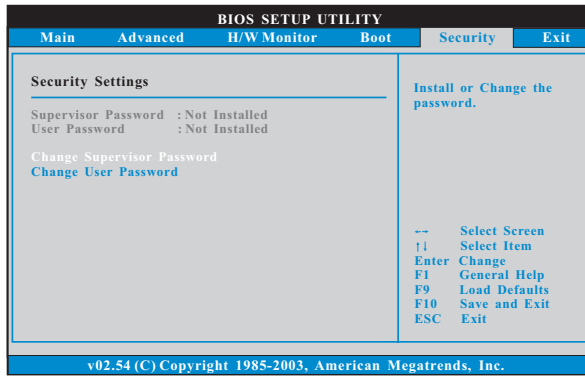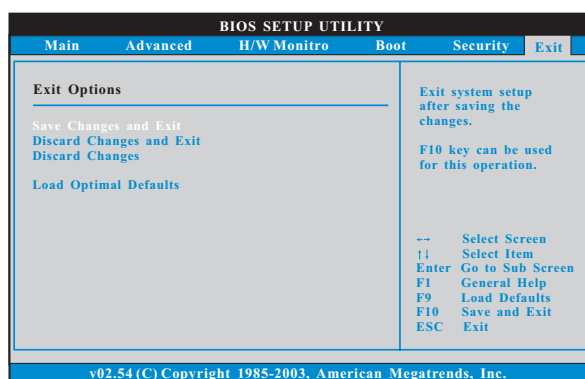
3.7 Exit Screen

```
                   BIOS SETUP UTILITY
   Main      Advanced     H/W Monitro     Boot      Security    Exit

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

  Load Optimal Defaults

                                             ←→    Select Screen
                                             ↑↓    Select Item
                                             Enter Go to Sub Screen
                                             F1    General Help
                                             F9    Load Defaults
                                             F10   Save and Exit
                                             ESC   Exit

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```

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 Media Center / XP 64-bit / Vista™ / Vista™ 64-bit. 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.

NOTE

If you plan to install Windows® Vista™ 32-bit / Vista™ 64-bit OS on this motherboard, please read below instructions carefully for AGP card limitation. For Windows® 2000 / XP / XP 64-bit OS, there is no such limitation.

(i) Single Core CPU:

If you adopt Single Core CPU on this motherboard, this motherboard can support ATi™ and NVIDIA® AGP cards. Please use Windows® Vista™ In Box Driver for Windows® Vista™ 32-bit / Vista™ 64-bit OS.

(ii) Dual Core CPU:

If you adopt Dual Core CPU on this motherboard, please refer to below instructions.

A. NVIDIA® AGP Card (Windows® Vista™ 32-bit):

Under Windows® Vista™ 32-bit OS, you need to install NVIDIA® XP GART (AGP) driver. Please follow below steps.

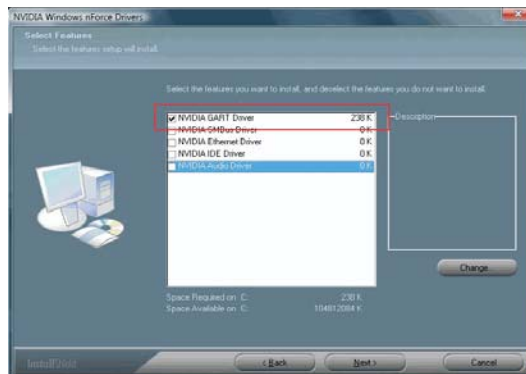1. Install the driver from the following path of our support CD:

   \Drivers\ALL in 1\nVIDIA\XP_2K(511_special)

   or download the driver from:

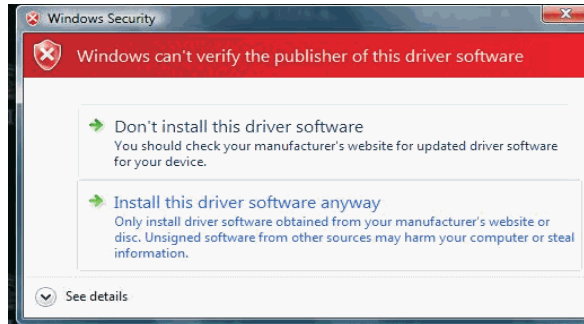   **http://www.asrock.com/mb/download.asp?Model=ALiveDual-eSATA2**

2. Extract and install it under Windows® Vista™ 32-bit.

3. You will see the following picture during the installation.

4. Please select "NVIDIA GART Driver" only and then press "Next".

5. You will see the following picture.

6. Please select "Install this driver software anyway".

7. Then follow the installation instructions to finish the installation
   process.

B. NVIDIA® AGP Card (Windows® Vista™ 64-bit):
Under Windows® Vista™ 64-bit OS, you need to install NVIDIA® XP 64-bit
GART (AGP) driver. Please follow below steps.

1. Install the driver from the following path of our support CD:
   \Drivers\ALL in 1\nVIDIA\XP64(514_Logo)
   or download the driver from:
   http://www.asrock.com/mb/download.asp?Model=ALiveDual-eSATA2

2. Install the driver by following steps 2-6 of "A. NVIDIA® AGP card
   (Windows® Vista™ 32-bit)" on page 1.

3. Please also do the following steps on every boot of Windows®
   Vista™ 64-bit:
   a. Press [F8] repeatedly after system passes the BIOS screen until the
      Windows® Vista™ "Advanced Boot options" shows up.
   b. Please select "Disable Driver Signature Enforcement" and then
      press [Enter].

C. ATi™ AGP Card (Windows® Vista™ 32-bit / Vista™ 64-bit):
Under Windows® Vista™ 32-bit / Vista™ 64-bit OS, this motherboard
does not support ATi™ AGP card because NVIDIA® does not provide
nForce3 250 relevant driver for Windows® Vista™ OS.