775i915P-SATA2

User Manual

Version 1.0
Published August 2005
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(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

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

Contents

1 Introduction 5

1.1 Package Contents 5
1.2 Specifications 6
1.3 Supported PCI Express VGA Card List for AGI Express Slot 9
1.4 Motherboard Layout 10
1.5 ASRock 8CH I/O 11

2 Installation 12

2.1 Screw Holes 12
2.2 Pre-installation Precautions 12
2.3 CPU Installation 13
2.4 Installation of Heatsink and CPU fan 15
2.5 Installation of Memory Modules (DIMM) 16
2.6 Expansion Slots 18
2.7 Dual Graphics Feature 19
2.8 PCIE VGA Card Driver Installation Guide For Windows 98 SE / ME 20
2.9 Surround Display Feature 21
2.10 Jumpers Setup 21
2.11 Onboard Headers and Connectors 22
2.12 SATAII Hard Disk Setup Guide 25
2.13 Serial ATA (SATA) / Serial ATAII (SATAII) Hard Disks Installation 26
2.14 Hot Plug Function for SATAII HDDs 26

3 BIOS SETUP UTILITY 27

3.1 Introduction 27
3.1.1 BIOS Menu Bar 27
3.1.2 Navigation Keys 28
3.2 Main Screen 28
3.3 Advanced Screen 28
3.3.1 CPU Configuration 29
3.3.2 Chipset Configuration 30
3.3.3 ACPI Configuration 32
3.3.4 IDE Configuration 33
3.3.5 PCIPnP Configuration 35
3.3.6 Floppy Configuration 36
3.3.7 Super IO Configuration 36
3.3.8 USB Configuration 38
3.4 Hardware Health Event Monitoring Screen 38

3.5 Boot Screen 39
3.5.1 Boot Settings Configuration 40
3.6 Security Screen 40
3.7 Exit Screen 41
4 Software Support 42
4.1 Install Operating System 42
4.2 Support CD Information 42
4.2.1 Running Support CD 42
4.2.2 Drivers Menu 42
4.2.3 Utilities Menu 42
4.2.4 “LGA 775 CPU Installation Live Demo” Program .. 42
4.2.5 Contact Information 42

Chapter 1 Introduction

Thank you for purchasing ASRock 775i915P-SATA2 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 memory and CPU support lists on ASRock website as well. ASRock website http://www.asrock.com

1.1 Package Contents

ASRock 775i915P-SATA2 Motherboard
(ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm)
ASRock 775i915P-SATA2 Quick Installation Guide
ASRock 775i915P-SATA2 Support CD
(including *LGA 775 CPU Installation Live Demo*)
One 80-conductor Ultra ATA 66/100 IDE Ribbon Cable
One Ribbon Cable for a 3.5-in Floppy Drive
One Serial ATA (SATA) Data Cable (Optional)
One Serial ATA (SATA) HDD Power Cable (Optional)
One ASRock 8CH I/O

1.2 Specifications

Platform	- ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm
CPU	- 775-Pin Socket supporting Intel® Pentium® 4 / Celeron® D processor (in 775-land LGA package) - FSB 800/533 MHz - Supports EM64T CPU - Supports Hyper-Threading Technology (see **CAUTION 1**)
Chipset	- Northbridge: Intel® 915P chipset - Southbridge: Intel® ICH6
Memory	- Dual Channel DDR/DDRII Memory Technology (see **CAUTION 2**) - 2 x DDR DIMM slots - Support DDR400/333 - Max. capacity: 2GB - 4 x DDRII DIMM slots - Support DDRII533 - Max. capacity: 4GB
Hybrid Booster	- CPU Frequency Stepless Control (see **CAUTION 3**) - ASRock U-COP (see **CAUTION 4**) - Boot Failure Guard (B.F.G.)
Expansion Slot	- 3 x PCI slots - 1 x AGI Express slot for PCI Express x 16 graphics card (see **CAUTION 5**) - 1 x PCI Express x 16 slot - 1 x PCI Express x 1 slot
Audio	- Realtek ALC850 7.1 channel AC'97 audio codec
LAN	- Realtek PCI LAN 8101L - Speed: 10/100 Ethernet - Supports Wake-On-LAN
Rear Panel I/O	ASRock 8CH I/O - 1 x PS/2 Mouse Port - 1 x PS/2 Keyboard Port - 1 x Serial Port: COM1 - 1 x Parallel Port (ECP/EPP Support) - 4 x Ready-to-Use USB 2.0 Ports - 1 x RJ-45 Port - Audio Jack: Side Speaker/Rear Speaker/Central Bass/Line in/Front Speaker/Microphone (see **CAUTION 6**)

Connector	- 4 x Serial ATA 1.5Gb/s connectors (No Support for “RAID” and “Hot Plug” functions) - 1 x Serial ATAII 3.0Gb/s connector by JMicron JMB360 (PCIE x 1 interface) (Supports “Hot Plug” function) - 1 x ATA100 IDE connector (supports 2 x IDE devices) - 1 x Floppy connector - CPU/Chassis FAN connector - 20 pin ATX power connector - 4 pin 12V power connector - SLI/XFIRE power connector - CD in header - Front panel audio connector - 2 x USB 2.0 headers (support 4 USB 2.0 ports) (see **CAUTION 7**)
BIOS Feature	- 2Mb AMI BIOS - AMI Legal BIOS - Supports “Plug and Play” - ACPI 1.1 Compliance Wake Up Events - Supports jumperfree
Support CD	- Drivers, Utilities, AntiVirus Software
Hardware Monitor	- CPU Temperature Sensing - Chassis Temperature Sensing - CPU Overheat Shutdown to Protect CPU Life - CPU Fan Tachometer - Chassis Fan Tachometer - Voltage Monitoring: +12V, +5V, +3.3V, Vcore
OS	- Microsoft® Windows® 98SE/ME/2000/XP/XP 64-bit compliant (see **CAUTION 8**)
Certifications	- FCC, CE, WHQL

CAUTION!

1. About the setting of "Hyper Threading Technology", please check page 30.
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 16 for proper installation.
3. 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.
4. 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.
5. If you install PCI Express VGA card to AGI Express slot, PCIE2 slot (PCIE x 1) and SATAII functions will be disabled. For the information of the compatible PCI Express VGA cards, please refer to the "Supported PCI Express VGA Card List for AGI Express Slot" on page 9. For the proper installation of PCI Express VGA card, please refer to the installation guide on page 18.
6. 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.
7. Power Management for USB 2.0 works fine under Microsoft® Windows® XP SP1 / 2000 SP4.
8. Because of Intel 915P chipset limitation, Windows 98 / ME does not support USB 2.0 but only USB 1.1. Besides, after installing Windows 98 / ME, two display adapter controllers will appear in "Display Adapters" of "Device Manager". Please remove one of the display adapter controllers, and then you can successfully install the VGA driver.

1.3 Supported PCI Express VGA Card List for AGI Express Slot

(for Windows 2000/Windows XP)

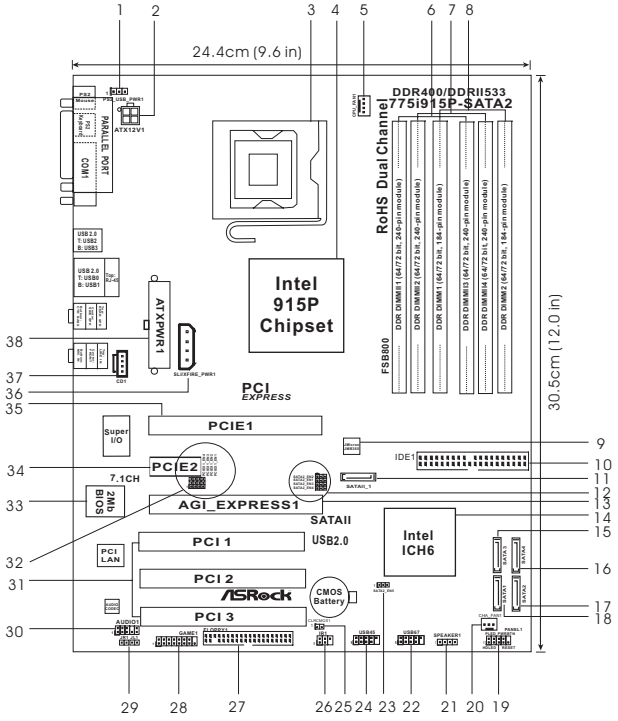
Graphics Chip Vendor	Model Name	Chipset Name
n-VIDIA	ASUS EN5750	GeForce PCX5750
	ASUS Extreme N5900	GeForce PCX5900
	ASUS EN6200GE	GeForce 6200
	ASUS EN6200	GeForce 6200
	ASUS EN6600	GeForce 6600
	ASUS EN6800GT	GeForce 6800GT
	ASUS EN6800	GeForce 6800
	ALBATRON PC6600GT	GeForce 6600GT
	GIGABYTE GV-NX66128D	GeForce 6600
	GIGABYTE GV-NX62128D	GeForce 6200
	LEADTEK PX6200 TC/TDH	GeForce 6200TC
	MSI PCX 5750-TD128	GeForce PCX5750
	SPARKLE GeFORCE 6200TC	GeForce 6200TC
ATi	ASUS EAX700PRO/TVD	Radeon X700 PRO
	ASUS EAX600XT/HTVD	Radeon X600 XT
	ABIT X600XT	Radeon X600 XT
	Gecube RX300	RADEON X300
	GECUBE X850XT-VIVO	Radeon X850 XT
	GIGABYTE GV-RX60P128D	RADEON X600PRO
	MSI X800XT	Radeon X800 XT

For the latest updates of the supported PCI Express VGA card list for AGI Express slot, please visit our website for details.

ASRock website: http://www.asrock.com/support/index.htm

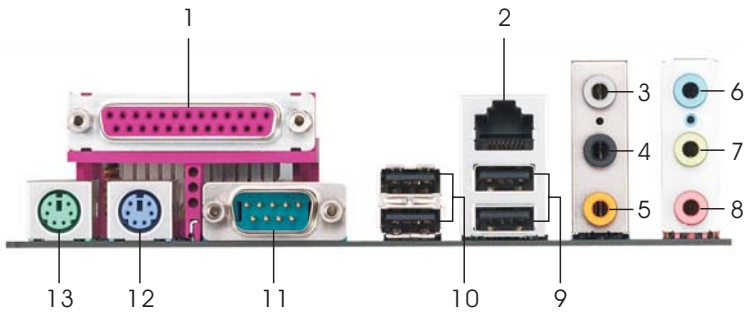
Note. Turbo cache PCI Express x 16 VGA cards are not recommanded to use.

1.4 Motherboard Layout



1 PS2_USB_PWR1 Jumper	19 System Panel Header (PANEL1)
2 ATX 12V Connector (ATX12V1)	20 Chassis Fan Connector (CHA_FAN1)
3 775-Pin CPU Socket	21 Chassis Speaker Header (SPEAKER 1)
4 North Bridge Controller	22 USB 2.0 Header (USB67, Blue)
5 CPU Fan Connector (CPU_FAN1)	23 SATA2_EN5
6 2 x 240-pin DDRII DIMM Slots (Dual Channel A: DDRII_1, DDRII_3; Yellow)	24 USB 2.0 Header (USB45, Blue)
7 2 x 240-pin DDRII DIMM Slots (Dual Channel B: DDRII_2, DDRII_4; Orange)	25 Clear CMOS Jumper (CLRCMOS1)
8 2 x 184-pin DDR DIMM Slots (Dual Channel: DDR1, DDR2; Blue)	26 Infrared Module Connector (IR1)
9 JMicron JMB360 Chipset (PCIEX1 interface)	27 Floppy Connector (FLOPPY1)
10 Primary IDE Connector (IDE1, Blue)	28 Game Port Header (GAME1)
11 Serial ATAII Connector (SATAII_1, red)	29 JR1 JL1 Jumper
12 SATA2_EN1 - 4	30 Front Panel Audio Header (AUDIO1)
13 AGI Express Slot	31 PCI Slots (PCI1- 3)
14 South Bridge Controller	32 PCIEX1_EN1 - 4
15 Third Serial ATA Connector (SATA3, black)	33 BIOS FWH Chip
16 Fourth Serial ATA Connector (SATA4, black)	34 PCI Express Slot (PCIE2)
17 Secondary Serial ATA Connector (SATA2, blue)	35 PCI Express Slot (PCIE1)
18 Primary Serial ATA Connector (SATA1, blue)	36 SLI / XFIRE Power Connector
	37 Internal Audio Connector: CD1 (Black)
	38 ATX Power Connector (ATXPWR1)

1.5 ASRock 8CH I/O



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

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

TABLE for Audio Output Connection

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

Chapter 2 Installation

775i915P-SATA2 is an ATX form factor (12.0" x 9.6", 30.5 x 24.4 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

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

2.1 Screw Holes

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

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

2.2 Pre-installation Precautions

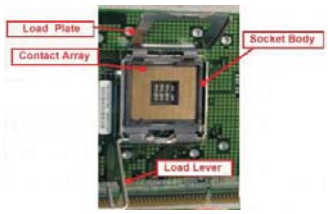
Take note of the following precautions before you install motherboard components or change any motherboard settings.

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

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

2.3 CPU Installation

For the installation of Intel 775-LAND CPU, please follow the steps below.



775-Pin Socket Overview

Before you insert the 775-LAND CPU into the socket, please check if the CPU surface is unclean or if there is any bent pin on the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.

Step 1. Open the socket:

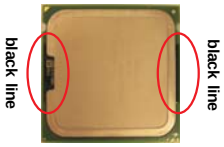
Step 1-1. Disengaging the lever by depressing down and out on the hook to clear retention tab.

Step 1-2. Rotate the load lever to fully open position at approximately 135 degrees.

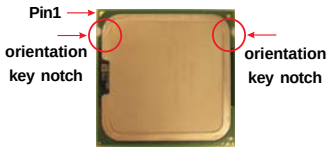
Step 1-3. Rotate the load plate to fully open position at approximately 100 degrees.

Step 2. Insert the 775-LAND CPU:

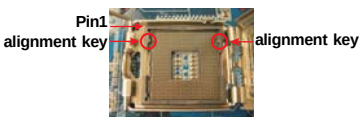
Step 2-1. Hold the CPU by the edges where are marked with black lines.



Step 2-2. Orient the CPU with IHS (Integrated Heat Sink) up. Locate Pin1 and the two orientation key notches.



775-LAND CPU



775-Pin Socket

For proper inserting, please ensure to match the two orientation key notches of the CPU with the two alignment keys of the socket.

Step 2-3. Carefully place the CPU into the socket by using a purely vertical motion.
Step 2-4. Verify that the CPU is within the socket and properly mated to the orient keys.

Step 3. Remove PnP Cap (Pick and Place Cap):
Use your left hand index finger and thumb to support the load plate edge, engage PnP cap with right hand thumb and peel the cap from the socket while pressing on center of PnP cap to assist in removal.

1. It is recommended to use the cap tab to handle and avoid kicking off the PnP cap.
2. This cap must be placed if returning the motherboard for after service.

Step 4. Close the socket:
Step 4-1. Rotate the load plate onto the IHS.
Step 4-2. While pressing down lightly on load plate, engage the load lever.
Step 4-3. Secure load lever with load plate tab under retention tab of load lever.

2.4 Installation of CPU Fan and Heatsink

This motherboard is equipped with 775-Pin socket that supports Intel 775-LAND CPU. Please adopt the type of heatsink and cooling fan compliant with Intel 775-LAND CPU to dissipate heat. Before you installed the heatsink, you need to spray thermal interface material between the CPU and the heatsink to improve heat dissipation. Ensure that the CPU and the heatsink are securely fastened and in good contact with each other. Then connect the CPU fan to the CPU_FAN connector (CPU_FAN1, see page 10, No. 5).

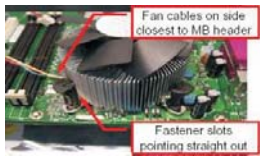
For proper installation, please kindly refer to the instruction manuals of your CPU fan and heatsink.

Below is an example to illustrate the installation of the heatsink for 775-LAND CPU.

Step 1. Apply thermal interface material onto center of IHS on the socket surface.

Step 2. Place the heatsink onto the socket. Ensure fan cables are oriented on side closest to the CPU fan connector on the motherboard (CPU_FAN1, see page 10, No. 5).

Step 3. Align fasteners with the motherboard throughholes.



Step 4. Rotate the fastener clockwise, then press down on fastener caps with thumb to install and lock. Repeat with remaining fasteners.

If you press down the fasteners without rotating them clockwise, the heatsink cannot be secured on the motherboard.

Step 5. Connect fan header with the CPU fan connector on the motherboard.

Step 6. Secure excess cable with tie-wrap to ensure cable does not interfere with fan operation or contact other components.

2.5 Installation of Memory Modules (DIMM)

775i915P-SATA2 motherboard provides four 240-pin DDRII (Double Data Rate) DIMM slots, two 184-pin DDR (Double Data Rate) DIMM slots, and supports Dual Channel DDR/DDRII Memory Technology. For dual channel configuration, you always need to install **identical** (the same brand, speed, size and chip-type) DDR/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_3; Yellow slots; see p.10 No.6) or **identical** DDRII DIMM pair in **Dual Channel B** (DDRII_2 and DDRII_4; Orange slots; see p.10 No.7), so that Dual Channel Memory Technology can be activated. You can also install **identical** DDR DIMM pair in **Dual Channel** (DDR1 and DDR2; Blue 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 (Orange Slot)	DDR1 (Blue Slot)	DDRII_3 (Yellow Slot)	DDRII_4 (Orange Slot)	DDR2 (Blue Slot)
(1)	Populated	-	-	Populated	-	-
(2)	-	Populated-	-	-	Populated	-
(3)	Populated	Populated	-	Populated	Populated	-
(4)	-	-	Populated	-	-	Populated

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

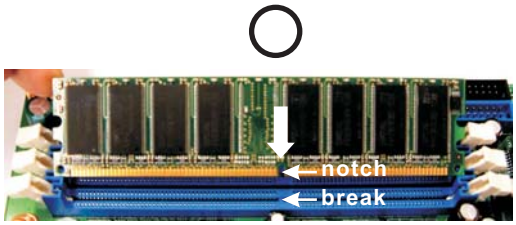
1. If you want to install two memory modules, for optimal compatibility and reliability, it is recommended to install them in the slots of the same color. In other words, install them either in the set of yellow slots (DDRII_1 and DDRII_3), in the set of orange slots (DDRII_2 and DDRII_4), or in the set of blue slots (DDR1 and DDR2).
2. If only one memory module or three memory modules are installed in the DDR/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_2, it is unable to activate the Dual Channel Memory Technology .
4. It is not allowed to install DDR into DDRII slot or DDRII into DDR slot; otherwise, this motherboard and DIMM may be damaged.
5. It is not allowed to install both DDR and DDRII to this motherboard at the same time; otherwise, this motherboard and DIMM may be damaged.

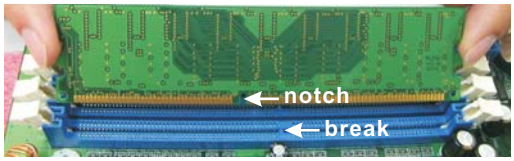
Installing a DIMM

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.

2.6 Expansion Slots (PCI, PCI Express, and AGI Express Slots)

There are 3 PCI slots, 2 PCI Express slots, and 1 AGI Express slot on this motherboard.

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

PCIE Slots: PCIE1 (PCIE x 16 slot) is used for PCI Express cards with x16 lane width graphics cards.
PCIE2 (PCIE x 1 slot) is used for PCI Express cards, such as Gigabit LAN card, SATA2 card, etc. Please check the jumper set tings on page 19 for different functions.

AGI Express slot:
AGI Express slot is used to install PCI Express expansion cards. For the information of the compatible PCI Express VGA cards, please refer to the "Supported PCI Express VGA Card List for AGI Express Slot" on page 9. Please check the jumper settings on page 19 for different functions.

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.

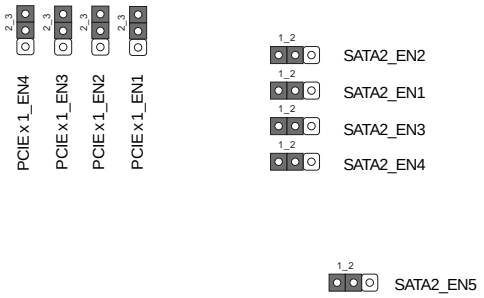
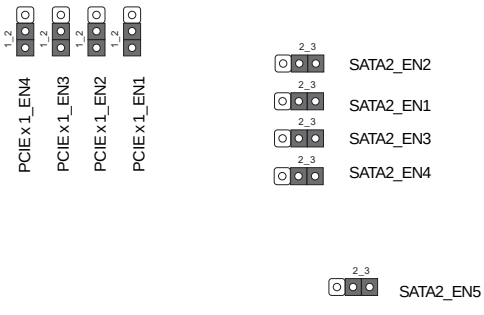
Step 2. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.

Step 3. Align the card connector with the slot and press firmly until the card is completely seated on the slot.

Step 4. Fasten the card to the chassis with screws.

2.7 Dual Graphics Feature

This motherboard supports Dual Graphics Technology. When installing the add-on VGA cards to this motherboard, you are allowed choosing two different ways to decide the function of PCIE2 slot (PCIE x 1), AGI Express slot, and SATA II. The default value of this feature is to enable PCIE2 slot (PCIE x 1), AGI Express slot (only PCI Express x 1), and SATA II. You can also adjust the jumpers to disable PCIE2 slot (PCIE x 1) and SATA II. Then only AGI Express slot (PCI Express x 4) will be enabled. In other words, you are able to adjust the jumpers to enjoy the benefit of Dual Graphics feature. Please refer to the table below for the correct jumper settings.

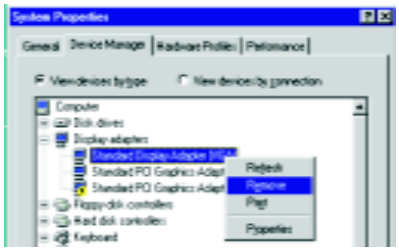
Function	Jumper Settings
Enable PCIE2/ SATA II / AGI Express (only PCIE x 1) (Default)	
Enable AGI Express (PCIE x 4) (Disable PCIE2/ SATA II)	

2.8 PCIE VGA Card Driver Installation Guide For Windows 98 SE / ME

If your system is Windows 98 / ME and want to install PCIE VGA card driver. Please follow the below steps for proper driver installation.

1. Click “My Computer” on your desktop, and right-click “Properties”.
2. Select “Device Manager”. You will see “Standard Display Adapter (VGA)” and “Standard PCI Graphics Adapter (VGA)” in the option “Display Adapters”.
3. Choose “Standard Display Adapter (VGA)”, and right-click “Remove”.

nVidia Driver



ATi Driver

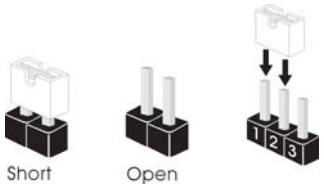
4. Reboot your computer. Then only “Standard PCI Graphics Adapter (VGA)” will appear in the option “Display Adapters”.
5. Start to install the PCIE VGA card driver.

2.9 Surround Display Feature

This motherboard supports Surround Display upgrade. With the external add-on PCI Express VGA card, you can easily enjoy the benefits of Surround Display feature.

2.10 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	Description
PS2_USB_PWR1 (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(see p.10 No. 29)

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
(CLRCMOS1, 2-pin jumper)
(see p.10 No. 25)

2-pin jumper

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 2 pins on CLRCMOS1 for 5 seconds.

2.11 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!

FDD connector
(33-pin FLOPPY1)
(see p.10 No. 27)

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. 10)

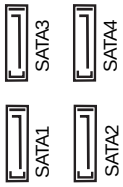
connect the blue end to the motherboard

connect the black end to the IDE devices

80-conductor ATA 66/100 cable

Note: Please refer to the instruction of your IDE device vendor for the details.

Serial ATA Connectors
(SATA1: see p.10 No. 18)
(SATA2: see p.10 No. 17)
(SATA3: see p.10 No. 15)
(SATA4: see p.10 No. 16)



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

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

SATA II_1

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

It is recommended to plug SATAII HDD to SATAII_1 connector and connect SATA HDD to SATA1-4 connector.

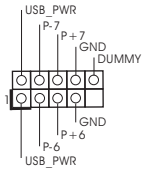
Serial ATA (SATA) Data Cable

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

Serial ATA (SATA)
Power Cable
(Optional)

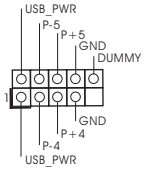
Please connect the black end of SATA power cable to the power connector on each drive. Then connect the white end of SATA power cable to the power connector of the power supply.

USB 2.0 Header
(9-pin USB67)
(see p.10 No. 22)



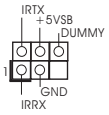
ASRock 8CH I/O accommodates 4 default USB 2.0 ports. If those USB 2.0 ports on the I/O panel are not sufficient, this USB 2.0 header is available to support 2 additional USB 2.0 ports.

USB 2.0 Header
(9-pin USB45)
(see p.10 No. 24)



ASRock 8CH I/O accommodates 4 default USB 2.0 ports. If those USB 2.0 ports on the I/O panel are not sufficient, this USB 2.0 header is available to support 2 additional USB 2.0 ports.

Infrared Module Header
(5-pin IR1)
(see p.10 No. 26)



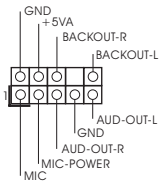
This header supports an optional wireless transmitting and receiving infrared module.

Internal Audio Connectors
(4-pin CD1)
(CD1: see p.10 No. 37)

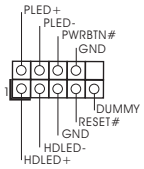
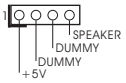
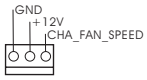
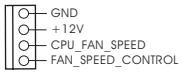
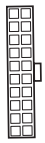
CD1

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

Front Panel Audio Header
(9-pin AUDIO1)
(see p.10 No. 30)



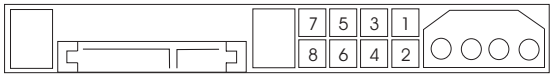
This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

System Panel Header (9-pin PANEL1) (see p.10 No. 19)		This header accommodates several system front panel functions.
Chassis Speaker Header (4-pin SPEAKER 1) (see p.10 No. 21)		Please connect the chassis speaker to this header.
Chassis Fan Connector (3-pin CHA_FAN1) (see p.10 No. 20)		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. 5)		Please connect a CPU fan cable to this connector and match the black wire to the ground pin.
ATX Power Connector (20-pin ATXPWR1) (see p.10 No. 38)		Please connect an ATX power supply to this connector.
ATX 12V Connector (4-pin ATX12V1) (see p.10 No. 2)		Please connect an ATX 12V power supply to this connector.
SLI/XFIRE Power Connector (4-pin SLI/XFIRE_POWER1) (see p.10 No. 36)	 SLI/XFIRE_POWER1	It is not necessary to use this connector, but please connect it with a hard disk power connecor when two graphics cards are plugged to this motherboard at the same time.

2.12 SATAII Hard Disk Setup Guide

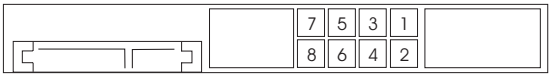
Before installing SATAII hard disk drive to your computer, please carefully read below SATAII hard disk drive setup guide. Some default setting of SATAII hard disk drives may not be at SATAII mode , which operate with the best performance. In order to enable SATAII function, please follow the below instruction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

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

This motherboard adopts JMicron JMB360 chipset that supports Serial ATAII (SATAII) hard disks, and Intel ICH6 south bridge chipset that supports Serial ATA (SATA) hard disks. 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.

It is recommended to plug SATAII HDD to SATAII_1 connector and connect SATA HDD to SATA1-4 connector.

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.

2.14 Hot Plug Function for SATAII HDDs

775i915P-SATA2 motherboard supports Hot Plug function for SATAII Devices. (For this motherboard, only JMicron JMB360 chipset provides Hot Plug function support; Intel ICH6 chipset does not support Hot Plug function.)

NOTE

What is Hot Plug Function?

If the SATAII HDDs are NOT set for RAID configuration, it is called "Hot Plug" for the action to insert and remove the 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 SATAII HDD.

Chapter 3 BIOS SETUP UTILITY

3.1 Introduction

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

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

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

3.1.1 BIOS Menu Bar

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

Main	To set up the system time/date information
Advanced	To set up the advanced BIOS features
H/W Monitor	To display current hardware status
Boot	To set up the default system device to locate and load the Operating System
Security	To set up the security features
Exit	To exit the current screen or the BIOS SETUP UTILITY

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

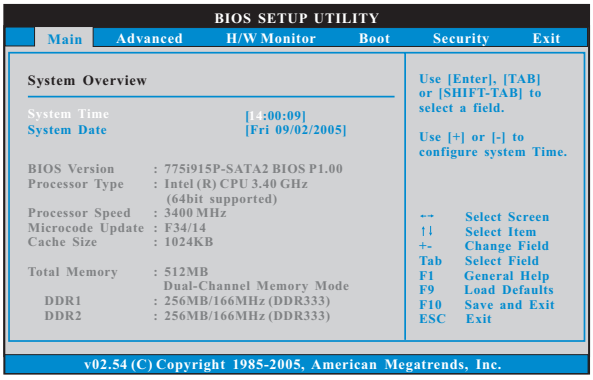
3.1.2 Navigation Keys

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

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F9>	To load optimal default values for all the settings
<F10>	To save changes and exit the BIOS SETUP UTILITY
<ESC>	To jump to the Exit Screen or exit the current screen

3.2 Main Screen

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



System Time [Hour:Minute:Second]

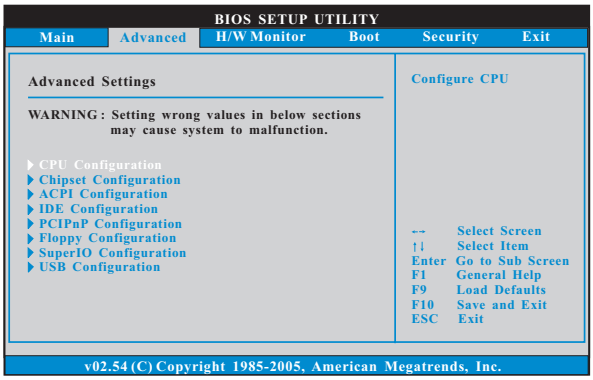
Use this item to specify the system time.

System Date [Day Month/Date/Year]

Use this item to specify the system date.

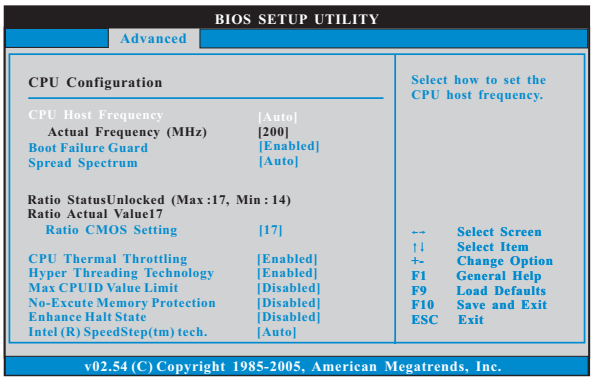
3.3 Advanced Screen

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



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

3.3.1 CPU Configuration



CPU Host Frequency

While entering setup, BIOS auto detects the present CPU host frequency of this motherboard. The actual CPU host frequency will show in the following item.

Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

Spread Spectrum

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

Ratio Status

This is a read-only item, which displays whether the ratio status of this motherboard is “Locked” or “Unlocked”. If it shows “Unlocked”, you will find an item **Ratio CMOS Setting** appears to allow you changing the ratio value of this motherboard.

Ratio Actual Value

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

Ratio CMOS Setting

If the ratio status is unlocked, will find this item appear to allow you changing the ratio value of this motherboard.

CPU Thermal Throttling

You may select [Enabled] to enable P4 CPU internal thermal control mechanism to keep the CPU from overheated.

Hyper Threading Technology

To enable this feature, it requires a computer system with an Intel Pentium®4 processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® XP. Set to [Enabled] if using Microsoft® Windows® XP, or Linux kernel version 2.4.18 or higher. This option will be hidden if the installed CPU does not support Hyper-Threading technology.

Max CPUID Value Limit

For Prescott CPU only, some OSes (ex. NT4.0) cannot handle the function with disable. This should be enabled in order to boot legacy OSes that cannot support CPUs with extended CPUID functions.

No-Excute Memory Protection

No-Execution (NX) Memory Protection Technology is an enhancement to the IA-32 Intel Architecture. An IA-32 processor with “No Execute (NX) Memory Protection” can prevent data pages from being used by malicious software to execute code. This option will be hidden if the current CPU does not support No-Excute Memory Protection.

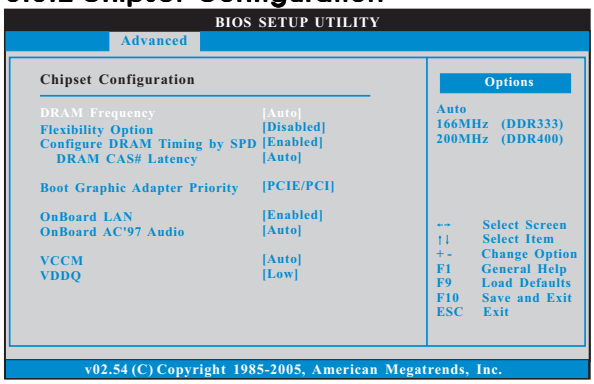
Enhance Halt State

All processors support the Halt State (C1). The C1 state is supported through the native processor instructions HLT and MWAIT and requires no hardware support from the chipset. In the C1 power state, the processor maintains the context of the system caches.

Intel (R) SpeedStep(tm) tech.

Intel (R) SpeedStep(tm) tech. is Intel’s new power saving technology. Processor can switch between multiple frequency and voltage points to enable power savings. If you select [Auto], you need to set the “Power Schemes” as “Portable/Laptop” to enable this function.

3.3.2 Chipset Configuration



DRAM Frequency

If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically. You may also select other value as operating frequency: [166MHz (DDR 333)], [200MHz (DDR 400)]. If DDRII DIMM is inserted to DDRII slot, you may select [200MHz (DDRII 400)], [266MHz (DDRII 533)] as operating frequency.

Flexibility Option

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

Configure DRAM Timing by SPD

Select [Enabled] will configure the following items by the contents in the SPD (Serial Presence Detect) device. If you select [Disabled], you will find the items “DRAM RAS# to CAS# Delay”, “DRAM RAS# Precharge”, and “DRAM RAS# Activate to Precharge” appear to allow you adjusting them.

DRAM CAS# Latency

Use this item to adjust the means of memory accessing. For DDR DIMM: Configuration options are [3], [2.5], [2], and [Auto]. For DDRII DIMM: Configuration options are [5], [4], [3], and [Auto].

DRAM RAS# to CAS# Delay

This controls the latency between the DRAM active command and the read / write command. Configuration options: [2 DRAM Clocks], [3 DRAM Clocks], [4 DRAM Clocks], and [5 DRAM Clocks].

DRAM RAS# Precharge

This controls the idle clocks after a precharge command is issued. Configuration options: [2 DRAM Clocks], [3 DRAM Clocks], [4 DRAM Clocks], and [5 DRAM Clocks].

DRAM RAS# Activate to Precharge

This controls the number of DRAM clocks for TRAS. Configuration options: [4 DRAM Clocks], [5 DRAM Clocks], [6 DRAM Clocks], [7 DRAM

Clocks], [8 DRAM Clocks], [9 DRAM Clocks], [10 DRAM Clocks], [11 DRAM Clocks], [12 DRAM Clocks], [13 DRAM Clocks], [14 DRAM Clocks], and [15 DRAM Clocks].

Boot Graphic Adapter Priority

This allows you to select [PCIE/PCI] or [PCI/PCIE] as the boot graphic adapter priority. The default value is [PCIE/PCI].

OnBoard LAN

This allows you to enable or disable the "OnBoard LAN" feature.

OnBoard AC'97 Audio

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

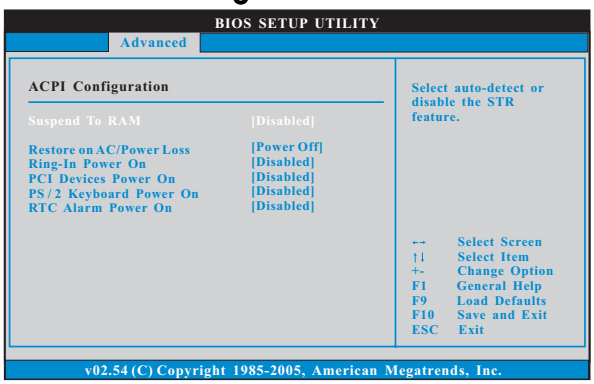
VCCM

Use this to select VCCM. Configuration options: [High], [Low], and [Auto]. The default value of this feature is [Auto].

VDDQ

Use this to select VDDQ. Configuration options: [High], and [Low]. The default value of this feature is [Low].

3.3.3 ACPI Configuration



Suspend to RAM

This field allows you to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the system supports it.

Restore on AC/Power Loss

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

Ring-In Power On

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

PCI Devices Power On

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

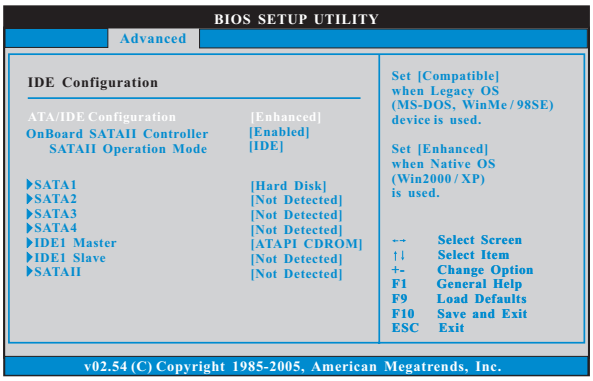
PS/2 Keyboard Power On

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

RTC Alarm Power On

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

3.3.4 IDE Configuration



ATA/IDE Configuration

Please select [**Compatible**] when you install legacy OS (Windows ME / 98SE). If native OS (Windows 2000 / XP) is installed, please select [**Enhanced**].

When [**Compatible**] is selected, SATAII always works under SATA mode.

Combined Option

It allows you to select between [**SATA 1, SATA 2, SATA 3, SATA 4**], and [**IDE 1, SATA 2, SATA 4**]. If it is set to [IDE 1, SATA 2, SATA 4], then SATA1, SATA3 will not work.

Because Intel® ICH6 south bridge only supports four IDE devices under legacy OS (Windows ME / 98SE), you have to choose [SATA 1, SATA 2, SATA 3, SATA 4], or [IDE 1, SATA 2, SATA 4] when the installed device is used with legacy OS.

	[SATA 1, SATA 2, SATA 3, SATA 4]	[IDE 1, SATA 2, SATA 4]
Master	SATA1, SATA2	SATA2
Slave	SATA3, SATA4	SATA4

OnBoard SATAII Controller

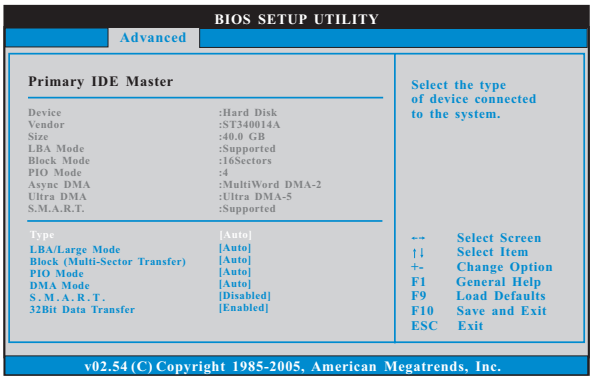
Enable the onboard SATAII controller by selecting [Enabled]. The default value of this option is [Enabled]. Configuration options: [Enabled], [Disabled].

SATAII Operation Mode

Use this item to adjust SATAII Operation Mode. The default value of this option is [IDE]. Configuration options: [IDE], [SATA]. If you set ATA/IDE Configuration to [Compatible], this feature will be hidden, and be set to [SATA].

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.



TYPE

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

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

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

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

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

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

LBA/Large Mode

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

Block (Multi-Sector Transfer)

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

PIO Mode

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

DMA Mode

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

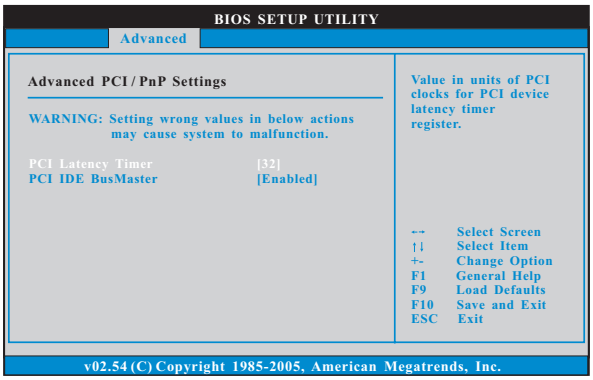
S.M.A.R.T.

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

32-Bit Data Transfer

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

3.3.5 PCIPnP Configuration



PCI Latency Timer

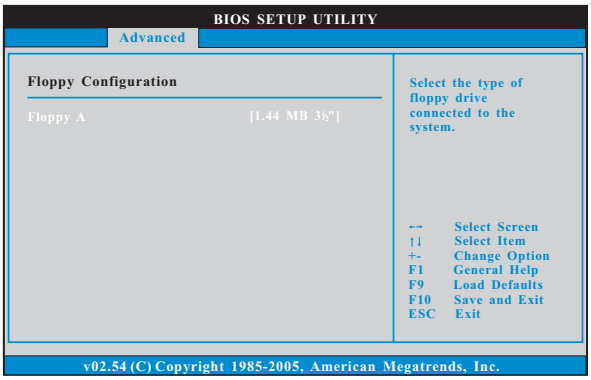
The default value is 32. It is recommended to keep the default value unless the installed PCI expansion cards' specifications require other settings.

PCI IDE BusMaster

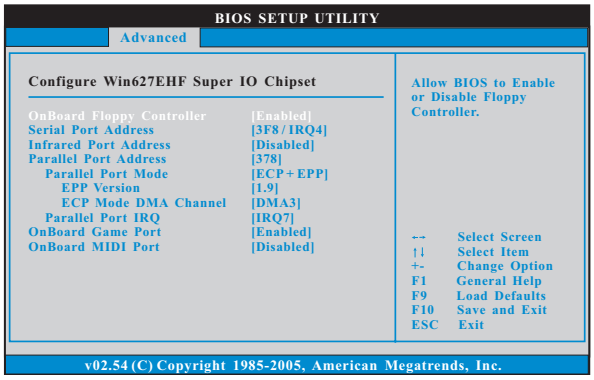
Use this item to enable or disable the PCI IDE BusMaster feature.

3.3.6 Floppy Configuration

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



3.3.7 Super IO Configuration



OnBoard Floppy Controller

Use this item to enable or disable floppy drive controller.

Serial Port Address

Use this item to set the address for the onboard serial port or disable it. Configuration options: [Disabled], [3F8 / IRQ4], [2F8 / IRQ3], [3E8 / IRQ4], [2E8 / IRQ3].

Infrared Port Address

Use this item to set the address for the onboard infrared port or disable it. Configuration options: [Disabled], [2F8 / IRQ3], and [2E8 / IRQ3].

Parallel Port Address

Use this item to set the address for the onboard parallel port or disable it. Configuration options: [Disabled], [378], and [278].

Parallel Port Mode

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

EPP Version

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

ECP Mode DMA Channel

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

Parallel Port IRQ

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

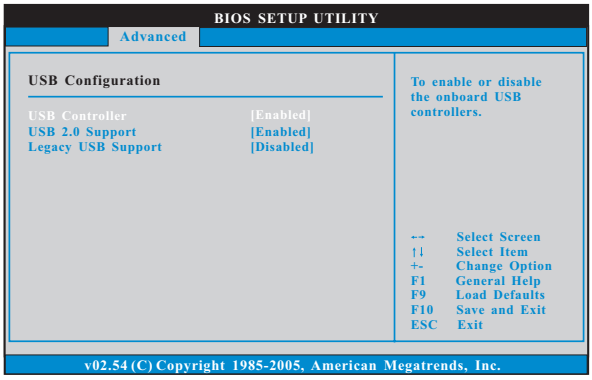
OnBoard Game Port

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

OnBoard MIDI Port

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

3.3.8 USB Configuration



USB Controller

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

USB 2.0 Support

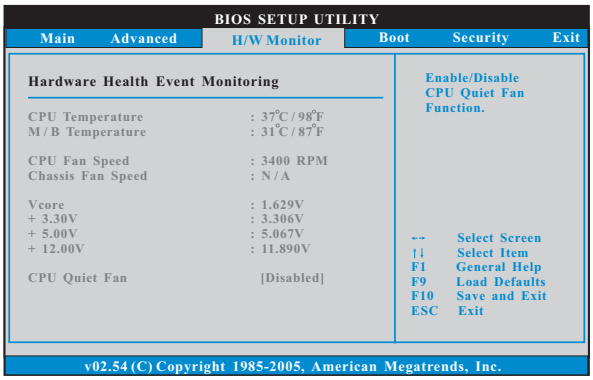
Use this item to enable or disable the USB 2.0 support.

Legacy USB Support

Use this item to enable or disable the support to emulate legacy I/O devices such as mouse, keyboard,... etc. Or you may select [Auto] so that the system will start to auto-detect; if there is no USB device connected, "Auto" option will disable the legacy USB support.

3.4 Hardware Health Event Monitoring Screen

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



CPU Quiet Fan

This item allows you to identify the temperature of CPU fan. If you set this option as [Disabled], the CPU fan will operate in full speed. If you set this option as [Enabled], you will find the items “Target CPU Temperature (°C)”, “Tolerance (°C)”, and “Minimun Fan Speed” appear to allow you adjusting them. The default value is [Disabled].

Target CPU Temperature (°C)

The target temperature will be between 50°C and 65°C. The default value is [50].

Tolerance (°C)

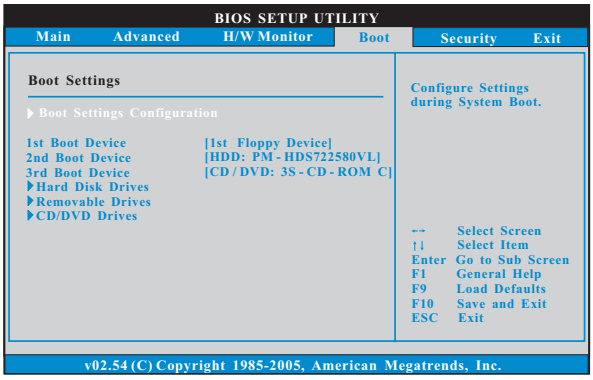
The default value of tolerance is [2], which means the error of the target CPU temperature will be within 2°C.

Minimun Fan Speed

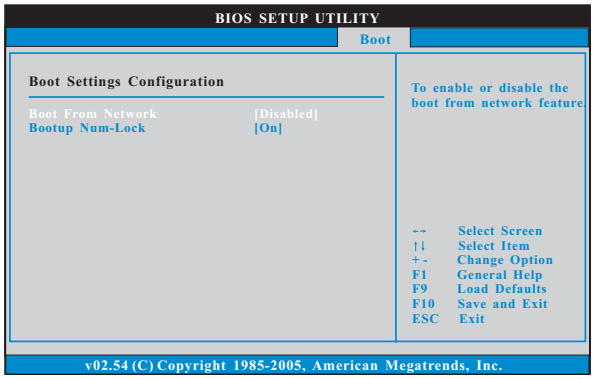
You can use this option to set the minimun fan speed. The default value is [90%]. Configuration options: [90%] and [85%]. The CPU fan speed will be controlled at the rate of 90% or 85%.

3.5 Boot Screen

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



3.5.1 Boot Settings Configuration



Boot From Network

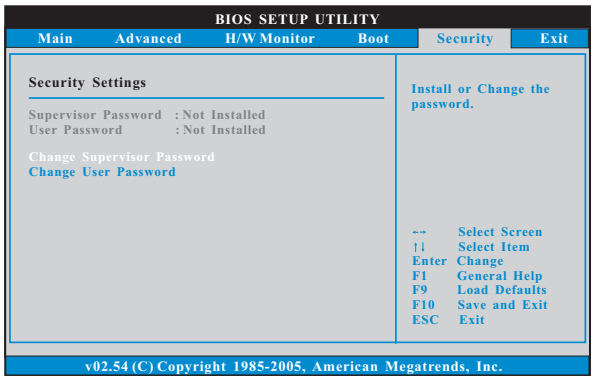
Use this item to enable or disable the Boot From Network feature.

Boot Up Num-Lock

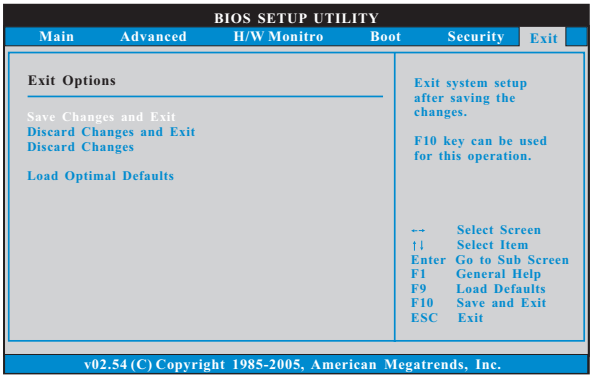
If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

3.6 Security Screen

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



3.7 Exit Screen



Save Changes and Exit

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

Discard Changes and Exit

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

Discard Changes

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

Load Optimal Defaults

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

Chapter 4 Software Support

4.1 Install Operating System

This motherboard supports various Microsoft® Windows® operating systems: 98 / ME / 2000 / XP / XP 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 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 "LGA 775 CPU Installation Live Demo" Program

This motherboard is equipped with Intel LGA 775 socket, which is a new CPU socket interface that Intel has released. Since it has several tiny pins, whcih are easily to be damaged by improper handling, ASRock sincerely presents you a clear installation guide through this "LGA 775 CPU Installation Live Demo". We hope you may check this live demo program before you start the installation of LGA 775 CPU in order to reduce the risks of CPU and motherboard damages caused by any improper handling. To see this Live Demo, you can run Microsoft® Media Player® to play the file. You may find this Live Demo in the motherboard's Support CD through the following path:

..\ MPEGAV \ LGA775INST.DAT

4.2.5 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.