775Twins-PT890

User Manual

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.

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

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1. Introduction

Thank you for purchasing ASRock *775Twins-PT890* motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

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

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

1.1 Package Contents

ASRock *775Twins-PT890* Motherboard
    (ATX Form Factor: 12.0-in x 8.3-in, 30.5 cm x 21.1 cm)
ASRock *775Twins-PT890* Quick Installation Guide
ASRock *775Twins-PT890* Support CD
    (including *LGA 775 CPU Installation Live Demo*)
One 80-conductor Ultra ATA 66/100/133 IDE Ribbon Cable
One Ribbon Cable for a 3.5-in Floppy Drive
One Serial ATA (SATA) Cable (Optional)
One Serial ATA (SATA) HDD Power Cable (Optional)
One HDMI_SPDIF Cable (Optional)
One HD 8CH I/O Panel Shield

1.2 Specifications

Platform	- ATX Form Factor: 12.0-in x 8.3-in, 30.5 cm x 21.1 cm
CPU	- LGA 775 for Intel® Dual Core Pentium® XE and Pentium® D / Pentium® 4 / Celeron® D, supporting Core™ 2 Duo Desktop (Conroe), Presler and Cedar Mill processors (in 775-land LGA package) - FSB 1066/800/533 MHz - Supports EM64T CPU - Supports Hyper-Threading Technology (see **CAUTION 1**) - Supports Untied Overclocking Technology (see **CAUTION 2**)
Chipset	- Northbridge: VIA® PT890 chipset - Southbridge: VIA® VT8237A
Memory	- 2 x DDRII DIMM slots - Support DDRII533 - Max. capacity: 4GB - 2 x DDR DIMM slots - Support DDR400/333/266 - Max. capacity: 2GB
Hybrid Booster	- CPU Frequency Stepless Control (see **CAUTION 3**) - ASRock U-COP (see **CAUTION 4**) - Boot Failure Guard (B.F.G.)
Expansion Slot	- 4 x PCI slots - 1 x PCI Express x16 slot
Audio	- Realtek ALC888 7.1 channel audio CODEC with High Definition audio
LAN	- VIA® PHY VT6103 - Speed: 10/100 Ethernet - Supports Wake-On-LAN
Rear Panel I/O	HD 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 - HD Audio Jack: Side Speaker/Rear Speaker/Central / Bass/ Line in/Front Speaker/Microphone (see **CAUTION 5**)

Connector	- 2 x Serial ATA 1.5Gb/s connectors, support RAID (RAID 0, RAID 1, and JBOD) and "Hot Plug" functions
	- 2 x ATA133 IDE connectors (supports 4 x IDE devices)
	- 1 x Floppy connector
	- 1 x Game header
	- 1 x IR header
	- 1 x HDMI_SPDIF header
	- CPU/Chassis FAN connector
	- 20 pin ATX power connector
	- 4 pin 12V power connector
	- CD in header
	- Front panel audio connector
	- 2 x USB 2.0 headers (support 4 USB 2.0 ports) (see **CAUTION 6**)
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
	- Voltage Monitoring: +12V, +5V, +3.3V, Vcore
OS	- Microsoft® Windows® 2000/XP/XP 64-bit/Vista™ compliant (see **CAUTION 7**)
Certifications	- FCC, CE, WHQL

CAUTION!

1. About the setting of "Hyper Threading Technology", please check page 30.
2. This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 26 for details.
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. 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.
6. Power Management for USB 2.0 works fine under Microsoft® Windows® Vista™ / XP 64-bit / XP SP1 or SP2 / 2000 SP4.
7. Microsoft® Windows® Vista™ driver is not ready yet. We will update it to our website in the future. Please visit our website for Microsoft® Windows® Vista™ driver and related information. ASRock website: http://www.asrock.com

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

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

CPU	Celeron D 326
Memory	512MB Single Channel
VGA	DX9.0 with WDDM Driver
	with 128bit VGA memory (Premium)
	with 64bit VGA memory (Basic)

1.4 Motherboard Layout
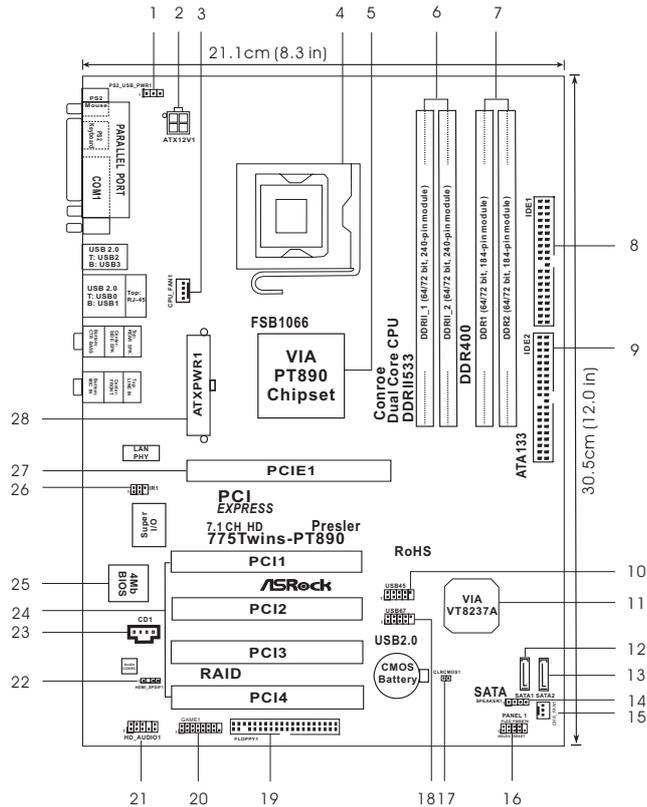
1 PS2_USB_PWR1 Jumper	**14** Chassis Speaker Header (SPEAKER 1)
2 ATX 12V Connector (ATX12V1)	**15** Chassis Fan Connector (CHA_FAN1)
3 CPU Fan Connector (CPU_FAN1)	**16** System Panel Header (PANEL1)
4 775-Pin CPU Socket	**17** Clear CMOS Jumper (CLRCMOS1)
5 North Bridge Controller	**18** USB 2.0 Header (USB67, Blue)
6 2 x 240-pin DDRII DIMM Slots (DDRII_1, DDRII_2; Yellow)	**19** Floppy Connector (FLOPPY1)
7 2 x 184-pin DDR DIMM Slots (DDR1, DDR2; Blue)	**20** Game Connector (GAME1)
	21 Front Panel Audio Header (HD_AUDIO1)
8 Primary IDE Connector (IDE1, Blue)	**22** HDMI_SPDIF Header (HDMI_SPDIF1)
9 Secondary IDE Connector (IDE2, Black)	**23** Internal Audio Connector: CD1 (Black)
10 USB 2.0 Header (USB45, Blue)	**24** 4 x PCI Slots (PCI1- 4)
11 South Bridge Controller	**25** Flash Memory
12 Primary Serial ATA Connector (SATA1)	**26** Infrared Module Header (IR1)
13 Secondary Serial ATA Connector (SATA2)	**27** PCI Express x16 Slot (PCIE1)
	28 ATX Power Connector (ATXPWR1)

1.5 HD 8CH I/O Panel
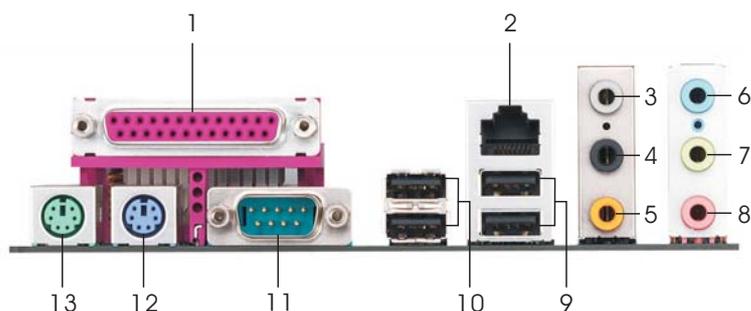
1	**Parallel Port**	**8**	**Microphone (Pink)**
2	**RJ-45 Port**	**9**	**USB 2.0 Ports (USB01)**
3	**Side Speaker (Gray)**	**10**	**USB 2.0 Ports (USB23)**
4	**Rear Speaker (Black)**	**11**	**Serial Port: COM1**
5	**Central / Bass (Orange)**	**12**	**PS/2 Keyboard Port (Purple)**
6	**Line In (Light Blue)**	**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

* To enable Multi-Streaming function, you need to connect a front panel audio cable to the front panel audio header. After restarting your computer, you will find "Mixer" tool on your system. Please select "Mixer ToolBox" , click "Enable playback multi-streaming", and click

"ok". Choose "2CH", "4CH", "6CH", or "8CH" and then you are allowed to select "Realtek HDA Primary output" to use Rear Speaker, Central/Bass, and Front Speaker, or select "Realtek HDA Audio 2nd output" to use front panel audio.

Chapter 2 Installation

775Twins-PT890 is an ATX form factor (12.0" x 8.3", 30.5 x 21.1 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.

2.3 775-LAND CPU Installation

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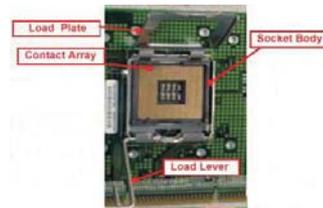
775-Pin Socket Overview

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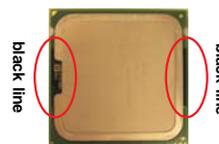
Step 2-2. Orient the CPU with IHS (Integrated Heat Sink) up. Locate Pin1 and the two orientation key notches.

> 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. 3).

> 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. 3).

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)

This motherboard is equipped with two 184-pin DDR (Double Data Rate) DIMM slots and two 240-pin DDRII (Double Data Rate) DIMM slots.

> 1. It is not allowed to install a DDR memory module into DDRII slot or a DDRII memory module into DDR slot; otherwise, this motherboard and DIMM may be damaged.
> 2. It is not allowed to install both DDR and DDRII memory modules to this motherboard at the same time; otherwise, this motherboard and DIMM may be damaged.

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

Installing a DIMM

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

Step 2.   Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.
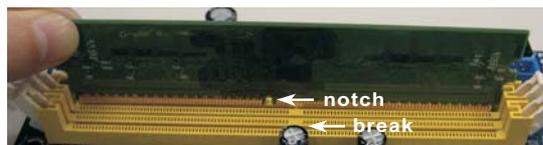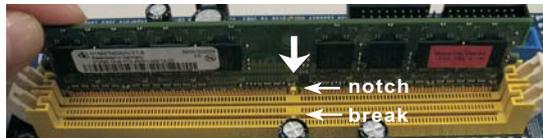
> The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

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

2.6 Expansion Slots (PCI and PCI Express Slots)

There are 4 PCI slots and 1 PCI Express slot on *775Twins-PT890* 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.

Installing an expansion card

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

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

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

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

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

Step 6.   Replace the system cover.

2.7 Jumpers Setup

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

Short   Open
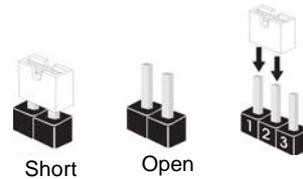
Jumper	Setting	
PS2_USB_PWR1 (see p.10, No. 1)	**1_2** +5V **2_3** +5VSB	Short pin2, pin3 to enable +5VSB (standby) for PS/2 or USB wake up events.

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

Clear CMOS
(CLRCMOS1, 2-pin jumper)
(see p.10, No. 17)   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.

2.8 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. 19)

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)   Secondary IDE Connector (Black)
(39-pin IDE1, see p.10, No. 8)   (39-pin IDE2, see p.10, No. 9)

PIN1   IDE1   PIN1   IDE2
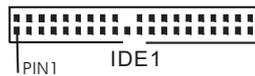
connect the blue end   connect the black end
to the motherboard   to the IDE devices

80-conductor ATA 66/100/133 cable

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

Serial ATA Connectors
(SATA1: see p.10, No. 12)
(SATA2: see p.10, No. 13)

SATA1   SATA2
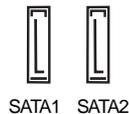
These two Serial ATA (SATA)
connectors support SATA data
cables for internal storage
devices. The current SATA
interface allows up to 1.5 Gb/s
data transfer rate.

Serial ATA (SATA)
Data Cable

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

Serial ATA (SATA) Power Cable (Optional)	connect to the SATA HDD power connector	Please connect the black end of SATA power cable to the power connector on the drive. Then connect the white end of SATA power cable to the power connector of the power supply.
	connect to the power supply	

USB 2.0 Header (9-pin USB67) (see p.10, No. 18)	USB_PWR P-7 P+7 GND DUMMY 1 GND P+6 P-6 USB_PWR	This HD 8CH I/O provides you 4 ready-to-use USB 2.0 ports on the rear panel. If the rear USB ports are not sufficient, this USB 2.0 header is available to support 2 extra USB 2.0 ports.
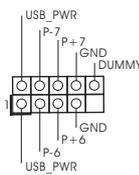
USB 2.0 Header (9-pin USB45) (see p.10, No. 10)	USB_PWR P-4 P+4 GND DUMMY 1 GND P+5 P-5 USB_PWR	This HD 8CH I/O provides you 4 ready-to-use USB 2.0 ports on the rear panel. If the rear USB ports are not sufficient, this USB 2.0 header is available to support 2 extra USB 2.0 ports.
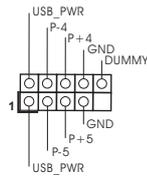
Infrared Module Header (5-pin IR1) (see p.10, No. 26)	IRTX +5VSB DUMMY 1 GND IRRX	This header supports an optional wireless transmitting and receiving infrared module.
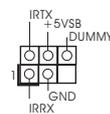
Internal Audio Connector (4-pin CD1) (CD1: see p.10, No. 23)	GND GND CD-L CD-R CD1	This connector allows you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.
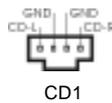
Front Panel Audio Header (9-pin HD_AUDIO1) (see p.10, No. 21)	GND PRESENCE# MIC_RET OUT_RET 1 OUT2_L J_SENSE OUT2_R MIC2_R MIC2_L	This is an interface for the front panel audio cable that allows convenient connection and control of audio devices.
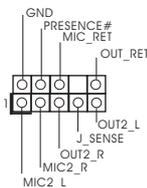
1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instruction in our manual and chassis manual to install your system.
2. If you use AC'97 audio panel, please install it to the front panel audio header as below:
   A. Connect Mic_IN (MIC) to MIC2_L.
   B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT2_L.
   C. MIC_RET and OUT_RET are for HD audio panel only. You don't need to connect them for AC'97 audio panel.
   D. Enter BIOS Setup Utility. Enter Advanced Settings, and then select Chipset Configuration. Set the Front Panel Control option from [Auto] to [Enabled].
   E. Enter Windows system. Click the icon on the lower right hand taskbar to enter Realtek HD Audio Manager. Click "Audio I/O", select "Connector Settings"   , choose "Disable front panel jack detection", and save the change by clicking "OK".
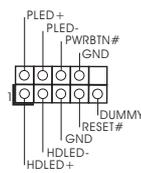
System Panel Header	PLED+ PLED- PWRBTN# GND DUMMY RESET# GND HDLED- HDLED+	This header accommodates
(9-pin PANEL1)		several system front panel
(see p.10, No. 16)		functions.
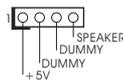
Chassis Speaker Header	SPEAKER DUMMY DUMMY +5V	Please connect the chassis
(4-pin SPEAKER 1)		speaker to this header.
(see p.10, No. 14)		
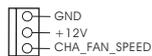
Chassis Fan Connector	GND +12V CHA_FAN_SPEED	Please connect the chassis fan
(3-pin CHA_FAN1)		cable to this connector and
(see p.10, No. 15)		match the black wire to the
		ground pin.
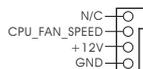
CPU Fan Connector	N/C CPU_FAN_SPEED +12V GND	Please connect the CPU fan
(4-pin CPU_FAN1)		cable to this connector and
(see p.10, No. 3)		match the black wire to the
		ground pin.

Game Connector

(15-pin GAME1)

(see p.10, No. 20)

```
+5V
 JBB1
  JBX
   MIDI_OUT
    JBY
     JBB2
      MIDI_IN
   ┌─┬─┬─┬─┬─┬─┬─┐
   │○│○│○│○│○│○│○│
 1 │○│○│○│○│○│○│○│
   └─┴─┴─┴─┴─┴─┴─┘
      +5V
     JAB2
    JAY
   GND
  GND
 JAX
 JAB1
+5V
```
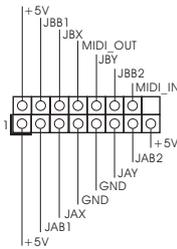
Connect a Game cable to this connector if the Game port bracket is installed.

ATX Power Connector

(20-pin ATXPWR1)

(see p.10, No. 28)

Please connect an ATX power supply to this connector.

ATX 12V 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 so that it can provides sufficient power. Failing to do so will cause the failure to power up.

HDMI_SPDIF Header

(3-pin HDMI_SPDIF1)

(see p.10 No. 22)

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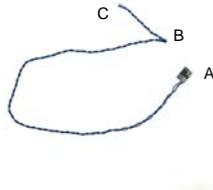
Please connect the black end (A) of HDMI_SPDIF cable to the HDMI_SPDIF header on the motherboard. Then connect the white end (B or C) of HDMI_SPDIF cable to the HDMI_SPDIF connector of HDMI VGA card.

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
```
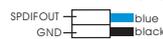
2.9 HDMI_SPDIF Header Connection Guide

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 17.

Step 2. Connect the black end (A) of HDMI_SPDIF cable to the HDMI_SPDIF header (HDMI_SPDIF1, yellow, see page 10, No. 22) 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 23. 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)
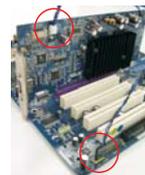
> Please do not connect the white end of HDMI_SPDIF cable to the wrong connector of HDMI VGA card or other VGA card. Otherwise, the motherboard and the VGA card may be damaged. For example, this picture shows the wrong example of connecting HDMI_SPDIF cable to the fan connector of PCI Express VGA card. 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.

2.10 Serial ATA (SATA) Hard Disks Installation

This motherboard adopts VIA® VT8237A southbridge chipset that supports Serial ATA (SATA) hard disks and RAID (RAID 0, RAID 1, and JBOD) functions. You may install SATA hard disks on this motherboard for internal storage devices. This section will guide you to install the SATA hard disks.

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

2.11 Hot Plug and Hot Swap Functions for SATA HDDs

775Twins-PT890 motherboard supports Hot Plug and Hot Swap functions for SATA Devices.

NOTE

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

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

2.12 Driver Installation Guide

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

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

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

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

STEP 1: Make a SATA Driver Diskette.
A. Insert the ASRock Support CD into your optical drive to boot your system.
B. During POST at the beginning of system boot-up, press <F11> key, and then a window for boot devices selection appears. Please select CD-ROM as the boot device.
C. When you see the message on the screen, "Do you want to generate Serial ATA driver diskette [YN]?", press <Y>.
D. Then you will see these messages,

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

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

STEP 2: Use "RAID Installation Guide" to set RAID configuration.
Before you start to configure the RAID function, you need to check the installation guide in the Support CD for proper configuration. Please refer to the document in the Support CD, "Guide to SATA Hard Disks Installation and RAID Configuration", which is located in the folder at the following path: **.. \ RAID Installation Guide**

STEP 3: Install Windows® 2000 / Windows® XP / Windows® XP-64bit OS on your system.
After making a SATA driver diskette and using "RAID Installation Guide" to set RAID configuration, you can start to install Windows® 2000 / Windows® XP / Windows® XP-64bit on your system. At the beginning of Windows® setup, press F6 to install a third-party SCSI or RAID driver. When prompted, insert a floppy disk containing the VIA® RAID driver. After reading the floppy disk, the driver will be presented. Select the driver to install according to the mode you choose and the OS you install.

After the installation of Windows® 2000 / Windows® XP / Windows® XP-64bit OS, if you want to manage RAID functions, you are allowed to use both "RAID Installation Guide" and "VIA RAID Tool Information" for RAID configuration. Please refer to the document in the Support CD, "Guide to SATA Hard Disks Installation and RAID Configuration", which is located in the folder at the following path: **.. \ RAID Installation Guide** and the document in the support CD, "Guide to VIA RAID Tool", which is located in the folder at the following path: **.. \ VIA RAID Tool Information**

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

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

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

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

STEP 1: Set Up BIOS.
A. Enter BIOS SETUP UTILITY → Advanced screen → IDE Configuration.

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

STEP 2: Install Windows® 2000 / Windows® XP / Windows® XP-64bit OS on your system.
After setting up BIOS, you can start to install Windows® 2000 / Windows® XP / Windows® XP-64bit on your system.

If you don't want to set up RAID functions, there is no need to make a SATA driver diskette.

2.15 Untied Overclocking Technology

This motherboard supports Untied Overclocking Technology, which means during overclocking, FSB enjoys better margin due to fixed PCI / PCIE bus. You may set "CPU Host Frequency" option of BIOS setup to [Auto], which will show you the actual CPU host frequency in the following item. Therefore, CPU FSB is untied during overclocking, but PCI / PCIE bus is in the fixed mode so that FSB can operate under a more stable overclocking environment.

3. BIOS SETUP UTILITY

3.1 Introduction

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

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

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

3.1.1 BIOS Menu Bar

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

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

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

3.1.2 Navigation Keys

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

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

3.2 Main Screen

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

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

  System Overview                              Use [Enter], [TAB]
                                               or [SHIFT-TAB] to
  System Time              [17:00:09]          select a field.
  System Date              [Tue 05/16/2006]
                                               Use [+] or [-] to
  BIOS Version    : 775Twins-PT890 BIOS P1.00  configure system Time.
  Processor Type  : Intel (R) CPU 3.60 GHz
                    (64bit supported)
  Processor Speed : 3600 MHz
  Microcode Update : F43/4                     ↔      Select Screen
  Cache Size      : 1024KB                     ↑↓     Select Item
                                               +-     Change Field
  Total Memory    : 512MB                      Tab    Select Field
    DDRII 1       : 256MB/266MHz (DDRII533)    F1     General Help
    DRDII 2       : 256MB/266MHz (DDRII533)    F9     Load Defaults
    DDR 1         : None                       F10    Save and Exit
    DDR 2         : None                       ESC    Exit

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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                              Configure CPU

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

  ▶ CPU Configuration
  ▶ Chipset Configuration
  ▶ ACPI Configuration
  ▶ IDE Configuration
  ▶ PCIPnP Configuration
  ▶ Floppy Configuration                  ←→    Select Screen
  ▶ SuperIO Configuration                 ↑↓    Select Item
  ▶ USB Configuration                     Enter  Go to Sub Screen
                                          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                              Select how to set the
                                                 CPU host frequency.
  CPU Host Frequency              [Auto]
    Actual Frequency (MHz)        [200]
  Boot Failure Guard              [Enabled]
  Spread Spectrum                 [Auto]
  PCIE Clock Operation Mode       [Async. Mode]

  Ratio Status                    : Locked
  Ratio Actual Value              : 18

  Enhance Halt State              [Disabled]    ←→    Select Screen
  Max CPUID Value Limit           [Disabled]    ↑↓    Select Item
  Intel (R) Virtualization tech.  [Enabled]     +-    Change Option
  CPU Thermal Throttling          [Enabled]     F1    General Help
  No-Excute Memory Protection     [Disabled]    F9    Load Defaults
  Hyper Threading Technology      [Enabled]     F10   Save and Exit
  Intel (R) SpeedStep(tm) tech.   [Auto]        ESC   Exit

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```

CPU Host Frequency

When [Auto] is selected, BIOS will auto detect the present CPU host frequency of this motherboard. The actual CPU host frequency will show in the following ietm. When [Manual] is selected, you are allowed to set the item "Actual Frequency (MHz)".

Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

Spread Spectrum

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

PCIE Clock Operation Mode

When [Sync. mode] is selected, the PCIE clock is synchronous with CPU host frequency. When [Async. mode] is selected, the PCIE clock is fixed at 100MHz.

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 Setting** appears to allow you changing the ratio value of this motherboard. If it shows "Locked", then the item **Ratio Setting** will be hidden. If you use the ratio value to time the CPU frequency, it will be equal to the core speed of the installed processor.

Ratio Actual Value

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

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.

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.

Intel (R) Virtualization tech.

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by Vanderpool Technology. This option will be hidden if the installed CPU does not support Intel (R) Virtualization Technology.

CPU Thermal Throttling

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

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.

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.

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

```
                        BIOS SETUP UTILITY
        Advanced

    Chipset Configuration
                                                        Options
    DRAM Frequency              [Auto]
    Flexibility Option          [Disabled]        166MHz  (DDR333)
    DRAM CAS# Latency           [Auto]            200MHz  (DDR400)
    DRAM Bank Interleave        [Auto]            Auto
    Precharge to Active (Trp)   [Auto]
    Active to Precharge (Tras)  [Auto]
    Active to CMD (Trcd)        [Auto]
    REF to ACT/REF to REF (Trfc)[Auto]
    ACT (0) to ACT (1) (Trrd)   [Auto]
    Read to Precharge (Trtp)    [Auto]            ←→      Select  Screen
    Write to Read CMD (Twtr)    [Auto]            ↑↓      Select  Item
    Write Recovery Time (Twr)   [Auto]            +-      Change  Option
    DRAM Command Rate           [2T Command]      F1      General Help
                                                  F9      Load Defaults
    DRAM Voltage                [Auto]            F10     Save and Exit
    VDDQ Voltage                [Auto]            ESC     Exit
    Primary Graphics Adapter    [PCI]

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```

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)] for DDR; [200MHz (DDRII 400)], [266MHz (DDRII 533)] for DDRII.

Flexibility Option

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

DRAM CAS# Latency

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

DRAM Bank Interleave

Use this option to select DRAM Bank Interleave. Configuration options: [Auto], [Disabled], [2-Way], [4-Way], and [8-Way]. The default value is set to [Auto] to set the timing by dram SPD.

Precharge to Active (Trp)

Use this option to select Precharge to Active (Trp). Configuration options: [Auto], [2T], [3T], [4T], and [5T]. The default value is set to [Auto] to set the timing by dram SPD.

Active to Precharge (Tras)

Use this option to select Active to Precharge (Tras). Configuration options: [Auto], [5T], [6T], [7T], [8T], [9T], [10T], [11T], [12T], [13T], [14T], [15T], [16T], [17T], [18T], [19T] and [20T]. The default value is set to [Auto] to set the timing by dram SPD.

Active to CMD (Trcd)

Use this option to select Active to CMD (Trcd). Configuration options: [Auto], [2T], [3T], [4T], and [5T]. The default value is set to [Auto] to set the timing by dram SPD.

REF to ACT / REF to REF (Trfc)

Use this option to select REF to ACT / REF to REF (Trfc). Configuration options: [Auto], [8T] to [71T]. The default value is set to [Auto] to set the timing by dram SPD.

ACT(0) to ACT (1) (Trrd)

Use this option to select ACT(0) to ACT (1) (Trrd). Configuration options: [Auto], [2T], [3T], [4T], and [5T]. The default value is set to [Auto] to set the timing by dram SPD.

Read to Precharge (Trtp)

Use this option to select Read to Precharge (Trtp). Configuration options: [Auto], [2T], [3T]. The default value is set to [Auto] to set the timing by dram SPD.

Write to Read CMD (Twtr)

Use this option to select Write to Read CMD (Twtr). Configuration options: [Auto], [1T], [2T] for DDR; [Auto], [2T], [3T] for DDRII. The default value is set to [Auto] to set the timing by dram SPD.

Write Recovery Time (Twr)

Use this option to select Write Recovery Time (Twr). Configuration options: [Auto], [2T], [3T], [4T], and [5T]. The default value is set to [Auto] to set the timing by dram SPD.

DRAM Command Rate

Use this to select among [2T Command] and [1T Command] for DRAM Command Rate. The default value is [2T Command].

DRAM Voltage

Use this to select among [Auto], [Highest], [High] and [Normal] for DRAM Voltage. The default value is [Auto].

VDDQ Voltage

Use this to select among [Auto], [Normal] and [High] for VDDQ Voltage. The default value is [Auto].

Primary Graphics Adapter

This allows you to select [PCI] or [PCIE] as the primary graphics adapter. The default vaule is [PCI].

V-Link Speed

This allows you to set the North Bridge and South Bridge V-Link Speed of VIA chipset. configuration options: [Normal], [Fast]. The default value is [Normal].

PCI Delay Transaction

Enable PCI Delay Transaction feature will free the PCI Bus when the CPU is accessing 8-bit ISA cards. Disable this feature when using ISA cards that are not PCI 2.1 compliant.

IDE Drive Strength

This allows you to set the drive strength of the onboard IDE controller. Configuration options: [Lowset], [Low], [Normal], and [Highest]. The default value is [Low].

OnBoard LAN

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

OnBoard HD Audio

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

Front Panel Control

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio Front Panel.

3.3.3 ACPI Configuration

```
                    BIOS SETUP UTILITY
    Advanced

ACPI Configuration                              Select auto-detect or
                                                disable the STR
Suspend To RAM                   [Disabled]     feature.

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
                                                +-    Change Option
                                                F1    General Help
                                                F9    Load Defaults
                                                F10   Save and Exit
                                                ESC   Exit

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```

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
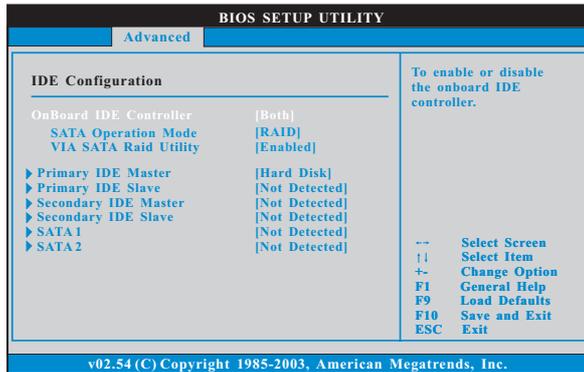
OnBoard IDE Controller

Use this item to enable or disable the onboard IDE controller.

SATA Operation Mode

Use this item to adjust SATA Operation Mode. The default value of this option is [RAID]. If you don't want to operate RAID function on SATA HDDs, please select [non-RAID].

VIA SATA Raid Utility

Use this to enable or disable VIA® VT8237A SATA Raid BIOS Utility during POST.

IDE Device Configuration

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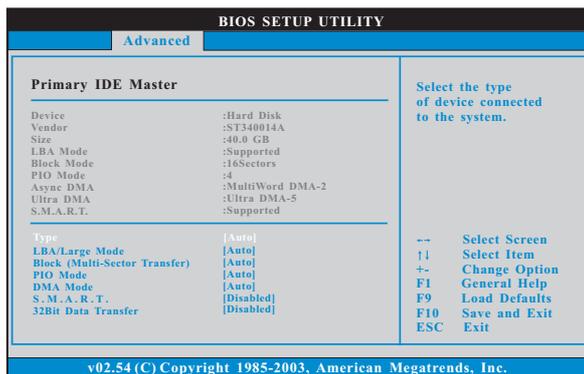
TYPE

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

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

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

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

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

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

LBA/Large Mode

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

Block (Multi-Sector Transfer)

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

PIO Mode

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

DMA Mode

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

S.M.A.R.T.

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

32-Bit Data Transfer

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

3.3.5 PCIPnP Configuration

```
                          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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```
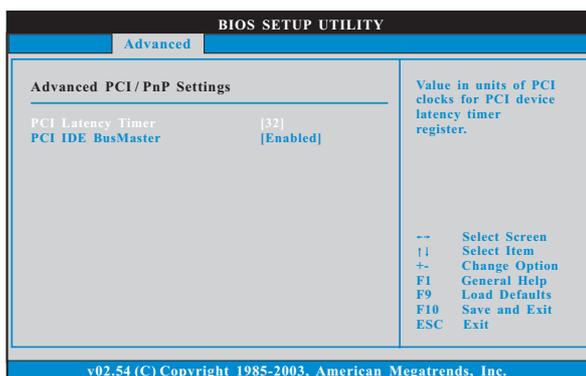
PCI Latency Timer

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.

```
                          BIOS SETUP UTILITY
           Advanced

  Floppy Configuration                             Select the type of
                                                   floppy drive
  Floppy A              [1.44 MB 3½"]              connected to the
  Floppy B              [Disabled]                 system.




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

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```

3.3.7 Super IO Configuration

```
                        BIOS SETUP UTILITY
        Advanced

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

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```

OnBoard Floppy Controller

Use this item to enable or disable floppy drive controller.

Serial Port Address

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

Infrared Port Address

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

Parallel Port Address

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

Parallel Port Mode

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

EPP Version

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

ECP Mode DMA Channel

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

Parallel Port IRQ

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

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

```
                    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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```
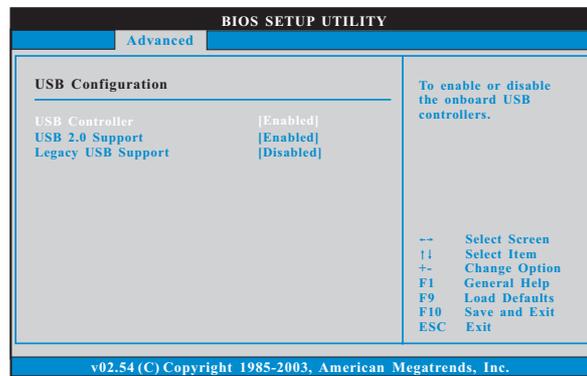
USB Controller

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 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.

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

  Hardware Health Event Monitoring

  CPU Temperature              : 37°C / 98°F
  M / B Temperature            : 31°C / 87°F

  CPU Fan Speed                : 2463 RPM
  Chassis Fan Speed            : N / A

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

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```

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]
  ▶ 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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```
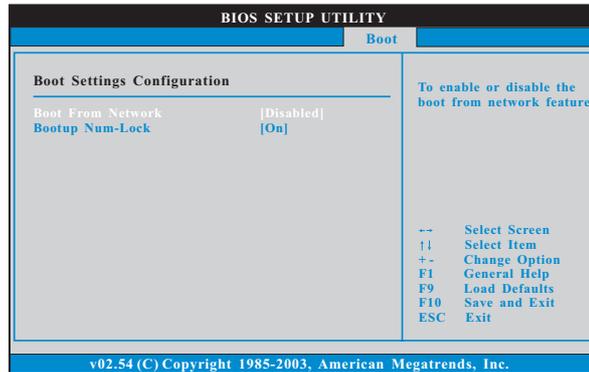
Boot From Network

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
   Save Changes and Exit                         changes.
   Discard Changes and Exit
   Discard Changes                               F10 key can be used
                                                 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 64-bit / Vista™. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information.

4.2 Support CD Information

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

4.2.1 Running The Support CD

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

4.2.2 Drivers Menu

The Drivers Menu shows the available devices drivers if the system detects 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.