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Static Electricity Precautions

1. Don't take this motherboard and components out of their original static-proof package until you are ready to install them.
2. While installing, please wear a grounded wrist strap if possible. If you don't have a wrist strap, discharge static electricity by touching the bare metal of the system chassis.
3. Carefully hold this motherboard by its edges. Do not touch those components unless it is absolutely necessary. Put this motherboard on the top of static-protection package with component side facing up while installing.

Pre-Installation Inspection

1. Inspect this motherboard whether there are any damages to components and connectors on the board.
2. If you suspect this motherboard has been damaged, do not connect power to the system. Contact your motherboard vendor about those damages.

Table of Contents

Notice:

1 Owing to Microsoft's certifying schedule is various to every supplier, we might have some drivers not certified yet by Microsoft. Therefore, it might happen under Windows XP that a dialogue box (shown as below) pop out warning you this software has not passed Windows Logo testing to verify its compatibility with Windows XP. Please rest assured that our RD department has already tested and verified these drivers. Just click the "Continue Anyway" button and go ahead the installation.

Chapter 1 Introduction

This motherboard has a **LGA775 socket** for latest *** Intel® Core™ 2 Quad/ Intel® Core™ 2 Duo/Pentium® 4/Celeron® D** processors with **Hyper-Threading Technology** and Front-Side Bus (FSB) speeds up to **1066 MHz**. Hyper-Threading Technology, designed to take advantage of the multitasking features, giving you the power to do more things at once.

It integrates the P4M900 CD Northbridge and VT8237S Southbridge that supports the Serial ATA interface for high-performance and mainstream desktop PCs; the built-in **USB 2.0** providing higher bandwidth, implementing **Universal Serial Bus Specification Revision 2.0** and is compliant with **UHCI 1.1** and **EHCI 1.0**. It supports **High Definition Audio Codec** and provides **Ultra DMA 133**/100/66 function. It has one **PCI Expressx16**, one **PCI Expressx1** and two 32-bit **PCI** slots. There is a full set of I/O ports including two PS/2 ports for mouse and keyboard, one serial port, one VGA port, one LAN port (optional), four back-panel USB 2.0 ports and Audio jacks for microphone, line-in and line-out and onboard USB headers providing extra ports by connecting the Extended USB Module to the motherboard.

It is a **Micro ATX** motherboard and has power connectors for an ATX power supply.

" * " stands for this motherboard is ready to support Intel® Core™2 Quad processor Q6700 (G0) and below.

Key Features

The key features of this motherboard include:

LGA775 Socket Processor

- Supports the latest *** Intel® Core™ 2 Quad/Intel® Core™ 2 Duo/ Pentium® 4/Celeron® D** processors with **Hyper-Threading Technology**
- Supports up to **1066 MHz** Front-Side Bus

Note: Hyper-Threading technology enables the operating system into thinking it's hooked up to two processors, allowing two threads to be run in parallel, both on separate 'logical' processors within the same physical processor.

1

Chipset

There are **P4M900 CD Northbridge** and **VT8237S** in the chipsets in accordance with an innovative and scalable architecture with proven reliability and performance.

- High Performance Host Interface: Supports *** Intel® Core™ 2 Quad/ Intel® Core™ 2 Duo/Pentium® 4/Celeron® D** processor family with FSB 1066 MHz
- Hyper-Threading Technology
- System Memory Controller Support: DDR2 SDRAM with up to maximum memory of 4 GB.
- PCI Express Graphics Interface Support: One PCI Express x16 port
- PCI Bus Interface Support: PCI Revision 2.3 Specification at 33MHz
- Integrade Serial ATA Host Controller: Independent DMA operation on two ports with Data transfer rates up to 3.0 Gb/s
- Intgrated IDE Controller: Ultra DMA-133/100/66 Bus Master EIDE Controller
- USB 2.0: Integrated USB 2.0 interface, supporting up to eight functional ports

Memory Support
- Two 240-pin DIMM sockets for DDR2 SDRAM memory modules
- Supports **DDR2 667**/533/400 memory bus
- Maximum installed memory is 4 GB

Expansion Slots
- Two 32-bit PCI slots
- One **PCI Expressx16** slot
- One **PCI Expressx1** slot

Onboard IDE channels
- One IDE Connector
- Supports PIO (Programmable Input/Output) and DMA (Direct Memory Access) modes
- Supports IDE Ultra DMA bus mastering with transfer rates of **133**/100/ 66 MB/sec

Serial ATA
- Two Serial ATA Connectors
- Transfer rate exceeding best ATA (3.0 Gb/s) with scalability to higher rates
- Low pin count for both host and devices

Audio

- 5.1Channel High Definition Audio Codec
- ADCs support 44.1k/48k/96k sample rate
- High-quality analog differential CD input
- Meet Microsoft WHQL/WLP 3.0x audio requirements
- Direct Sound 3D™ compatible

LAN (Optional)

- Supports 10 Mb/s and 100 Mb/s N-way Auto-negotiation operation
- Single Chip 100Base-TX/10Base-T Physical Layer Solution
- Half/Full Duplex capability

Onboard I/O Ports

- Two PS/2 ports for mouse and keyboard
- One serial port
- One VGA port
- One LAN port (optional)
- Four back-panel USB2.0 ports
- Audio jacks for microphone, line-in and line-out

BIOS Firmware

This motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters and memory timing
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

Dimensions

- Micro ATX form factor of 244 x 200 mm

Note: Hardware specifications and software items are subject to change without notification.

Package Contents

Your motherboard package ships with the following items:

- ❑ The motherboard
- ❑ The User's Guide
- ❑ One diskette drive ribbon cable (optional)
- ❑ One IDE drive ribbon cable
- ❑ The Software support CD

Optional Accessories

You can purchase the following optional accessories for this motherboard.

- ❑ The Extended USB module
- ❑ The CNR v.90 56K Fax/Modem card
- ❑ The Serial ATA cable
- ❑ The Serial ATA power cable

Note: You can purchase your own optional accessories from the third party, but please contact your local vendor on any issues of the specification and compatibility.

Chapter 2 Motherboard Installation

To install this motherboard in a system, please follow these instructions in this chapter:

- ❑ Identify the motherboard components
- ❑ Install a CPU
- ❑ Install one or more system memory modules
- ❑ Make sure all jumpers and switches are set correctly
- ❑ Install this motherboard in a system chassis (case)
- ❑ Connect any extension brackets or cables to headers/connectors on the motherboard
- ❑ Install peripheral devices and make the appropriate connections to headers/connectors on the motherboard

Note:

1. Before installing this motherboard, make sure jumper CLR_CMOS is under Normal setting. See this chapter for information about locating CLR_CMOS and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the motherboard.

Motherboard Components
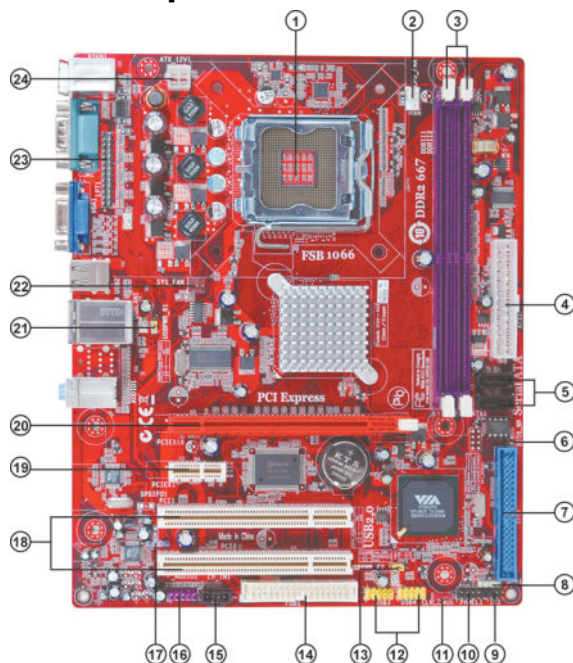
ITEM	LABEL	COMPONENTS
1	CPU Socket	LGA775 socket for *Intel® Core™2 Quad/Intel® Core™2 Duo/ Pentium® 4/Celeron® D CPUs
2	CPU_FAN	CPU cooling fan connector
3	DDRII1~2	240-pin DDR2 SDRAM slots
4	ATX1	Standard 24-pin ATX power connector
5	SATA1~2	Serial ATA connectors
6	BIOS_WP	BIOS flash protect jumper
7	IDE1	Primary IDE connector
8	SPK1	Speaker header
9	IR1	Infrared header
10	PANEL1	Front panel switch/LED header
11	CLR_CMOS	Clear CMOS jumper
12	USB3~4	Front Panel USB headers
13	USBPWR_F2	Front Panel USB Power Select Jumper
14	FDD	Floppy disk drive connector
15	CD_IN1	Analog audio input connector
16	F_AUDIO1	Front panel audio header
17	SPDIFO1	SPDIF out header
18	PCI1~2	32-bit add-on card slots
19	PCIEX1	PCI Express x1 slot
20	PCIEX16	PCI Express slot for graphics interface
21	USBPWR_R1	Real Panel USB PS/2 Power Select Jumper
22	SYS_FAN	System cooling fan connector
23	LPT1	Parallel port header
24	ATX_12V1	Auxiliary 4-pin power connector

6

I/O Ports

The illustration below shows a side view of the built-in I/O ports on the motherboard.
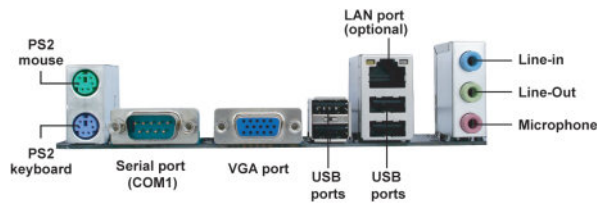
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the low er PS/2 port to connect a PS/2 keyboard.
COM1	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1.
VGA Port	Use the VGA port to connect VGA devices.
LAN Port (optional)	Connect an RJ-45 jack to the LAN port to connect your computer to the Netw ork.
USB Ports	Use the USB ports to connect USB devices.
Audio Ports	Use these three audio jacks to connect audio devices. The first jack is for stereo Line-In signal, the second jack for stereo Line-Out signal, and the third jack for Microphone.

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Installing the Processor

This motherboard has a **LGA775** socket for the latest *** Intel® Core™ 2 Quad/ Intel® Core™ 2 Duo/Pentium® 4/Celeron® D** processors. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

CPU Installation Procedure

Follow these instructions to install the CPU:
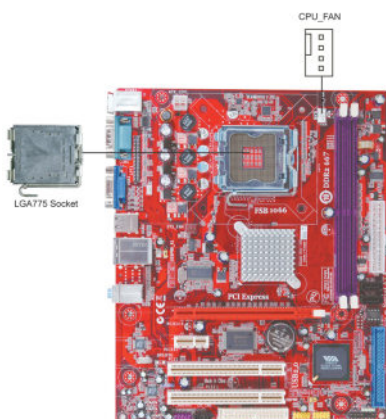
A. Read and follow the instructions shown on the sticker on the CPU cap.

B. Unload the cap
   - Use thumb & forefinger to hold the lifting tab of the cap.
   - Lift the cap up and remove the cap completely from the socket.

C. Open the load plate
   - Use thumb & forefinger to hold the hook of the lever, pushing down and pulling aside unlock it.
   - Lift up the lever.
   - Use thumb to open the load plate. Be careful not to touch the contacts.

D. Install the CPU on the socket
   - Orientate CPU package to the socket. Make sure you match triangle marker to pin 1 location.

E. Close the load plate
- Slightly push down the load plate onto the tongue side, and hook the lever.
- CPU is locked completely.

F. Apply thermal grease on top of the CPU.

G. Fasten the cooling fan supporting base onto the CPU socket on the motherboard.

H. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for mor detail installation procedure.

Note 1: To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 3800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/ heatsink supplied. The form and size of fan/heatsink may also vary.

Note 2: The fan connector supports the CPU cooling fan of 1.1A~2.2A (26.4W max.) at +12V.

Note 3: Do Not remove the CPU cap from the socket before installing a CPU.

Note 4: Return Material Authorization (RMA) requests will be accepted only if the motherboard comes with the cap on the LGA775 socket.

Installing Memory Modules

This motherboard accommodates two 240-pin DIMM sockets (Dual Inline Memory Module) for unbuffered **DDR2 667**/533/400 memory modules (Double Data Rate SDRAM), and maximum 4 GB installed memory.

Over its predecessor, DDR-SDRAM, DDR2-SDRAM offers greater bandwith and density in a smaller packahe along with a reduction in power consumption. In addition, DDR2-SDRAM offers new features and functions that enable a higher clock rate and data rate operations of 400 MHz, 533 MHz and 667 MHz. DDR2 transfer 64 bits of data twice every clock cycle.
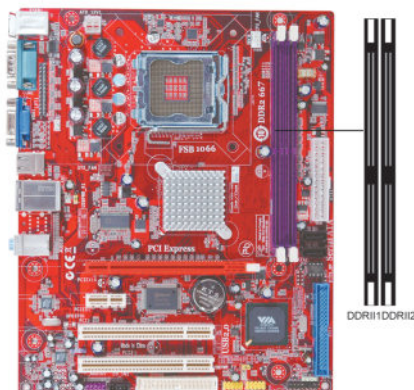
Memory Module Installation Procedure

These modules can be installed with up to 4 GB system memory. Refer to the following to install the memory module.

1. Push down the latches on both sides of the DIMM socket.
2. Align the memory module with the socket. There is a notch on the DIMM socket that you can install the DIMM module in the correct direction. Match the cutout on the DIMM module with the notch on the DIMM socket.
3. Install the DIMM module into the socket and press it firmly down until it is seated correctly. The socket latches are levered upwards and latch on to the edges of the DIMM.
4. Install any remaining DIMM modules.
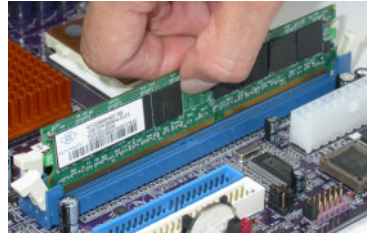
Jumper Settings

Connecting two pins with a jumper cap is SHORT; removing a jumper cap from these pins, OPEN.
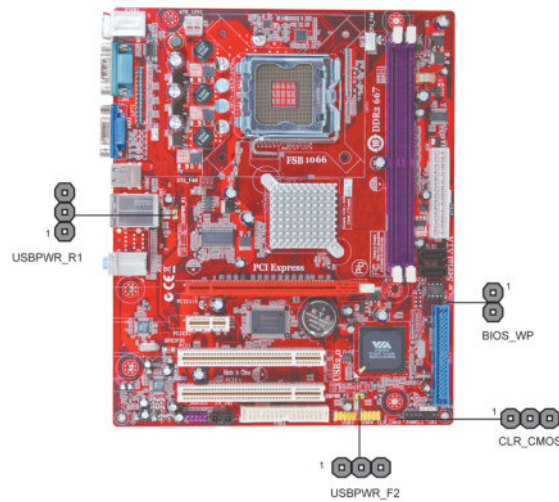
CLR_CMOS: Clear CMOS Jumper

Use this jumper to clear the contents of the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect and prevent your motherboard from operating. To clear the CMOS memory, disconnect all the power cables from the motherboard and then move the jumper cap into the CLEAR setting for a few seconds.

Function	Jumper Setting
Normal	Short Pins 1-2
Clear CMOS	Short Pins 2-3

Note: To avoid the system unstability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Optimal De-faults" and then "Save Changes and Exit".

BIOS_WP: BIOS FLASH PROTECT Jumper

Use this jumper to set the BIOS FLASH PROTECT function.

Function	Jumper Setting
WRITE ENABLE	OPEN
WRITE DISABLE	SHORT

USBPWR_F2: FRONT PANEL USB POWER SELECT Jumper

Function	Jumper Setting
VCC	Short Pins 1-2
5VSB	Short Pins 2-3

USBPWR_R1: REAR USB PS/2 POWER SELECT Jumper

Use this jumper to set the Rear USB PS/2 Power function.

Function	Jumper Setting
VCC	Short Pins 1-2
5VSB	Short Pins 2-3

Note: Make sure the power supply provides enough SB5V voltage before selecting the SB5V function.

Install the Motherboard

Install the motherboard in a system chassis (case). The board is a Micro ATX size motherboard. You can install this motherboard in an ATX case. Make sure your case has an I/O cover plate matching the ports on this motherboard.

Install the motherboard in a case. Follow the case manufacturer's instructions to use the hardware and internal mounting points on the chassis.
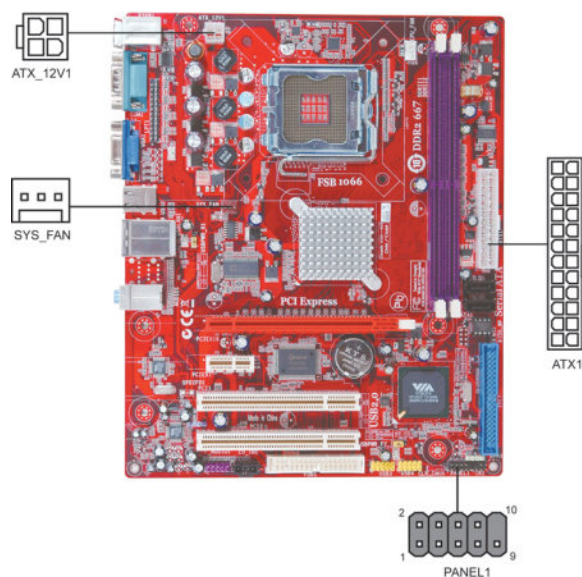
Connect the power connector from the power supply to the **ATX1** connector on the motherboard. The **ATX_12V1** is a +12V connector for CPU Vcore power.

If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **SYS_FAN** fan power connector on the motherboard.

Connect the case switches and indicator LEDs to the **PANEL1** header.

Here is a list of the PANEL1 pin assignments.

Pin	Signal	Pin	Signal
1	HD_LED_P(+)	2	FP PWR/SLP(+)
3	HD_LED_N(-)	4	FP PWR/SLP(-)
5	RESET_SW_N(-)	6	POWER_SW_P(+)
7	RESET_SW_P(+)	8	POWER_SW_N(-)
9	RSVD_DNU	10	KEY

Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:
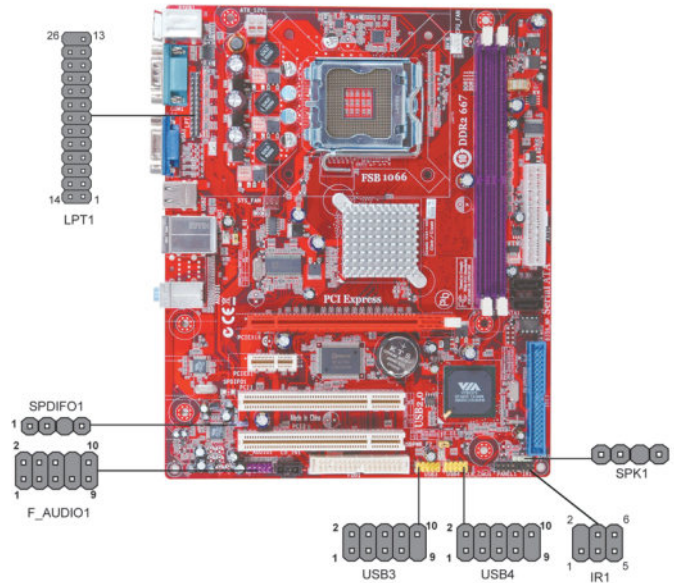
SPK1: Speaker Header

Connect the cable from the PC speaker to the SPK1 header on the motherboard.

Pin	Signal	Pin	Signal
1	VCC	2	Key
3	NC	4	Signal

SPDIFO1: S/PIF Out Header

S/PDIF (Sony/Plilips Digital Interface) is a standard audio transfer file format and allows the transfer of digatal audio signals from one device to another without having to be converted first to an analog format. Via a specific audio cable, you can connect the SPDIFO1 header (S/PDIF output) on the motherboard to the S/PDIF digital input on the external speakers or AC Decode devices.

Pin	Signal	Pin	Signal
1	SPDIFOUT	2	5VA
3	KEY	4	GDN

13

F_AUDIO1: Front Panel Audio Header

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal	Pin	Signal
1	PORT1L	2	GND
3	PORT1R	4	PRESENCE#
5	PORT2R	6	Sense1_return
7	SENSE_SEND	8	KEY
9	PORT2L	10	Sense2_return

USB3/USB4: Front panel USB Headers

The motherboard has USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB headers USB3/USB4 to connect the front-mounted ports to the motherboard.

Pin	Signal	Pin	Signal
1	VERG_FP_USBPWR0	2	VERG_FP_USBPWR0
3	USB_FP_P0(-)	4	USB_FP_P1(-)
5	USB_FP_P0(+)	6	USB_FP_P1(+)
7	GROUND	8	GROUND
9	KEY	10	NC

1. Locate the USB3/USB4 header on the motherboard.
2. Plug the bracket cable onto the USB3/USB4 header.
3. Remove a slot cover from one of the expansion slots on the system chassis. Install an extension bracket in the opening. Secure the extension bracket to the chassis with a screw.

IR1: Infrared Header

The infrared port allows the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

Pin	Signal	Pin	Signal
1	NC	2	KEY
3	+5V	4	GND
5	IRTX	6	IRRX

1. Locate the infrared port-**IR1** header on the motherboard.
2. If you are adding an infrared port, connect the ribbon cable from the port to the IR1 header and then secure the port to an appropriate place in your system chassis.

LPT1: Onboard parallel port Header

This header allows the user to connect to the printer, scanner or devices.

Pin	Signal	Pin	Signal
1	STROBE	2	PD0
3	PD1	4	PD2
5	PD3	6	PD4
7	PD5	8	PD6
9	PD7	10	ACK
11	BUSK	12	PE
13	SLCT	14	ALF
15	ERROR	16	INIT
17	SLCTIN	18	Ground
19	Ground	20	Ground
21	Ground	22	Ground
23	Ground	24	Ground
25	Ground	26	Key

Install Other Devices

Install and connect any other devices in the system following the steps below.

15
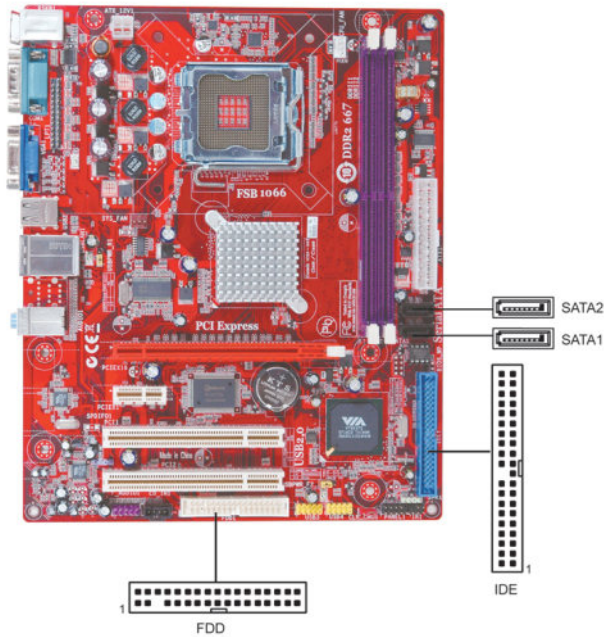
Floppy Disk Drive

The motherboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5" or 5.25" wide, with capacities of 360 K, 720 K, 1.2 MB, 1.44 MB, or 2.88 MB.

Install your drives and connect power from the system power supply. Use the cable provided to connect the drives to the floppy disk drive connector **FDD1**.

IDE Devices

IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among others.

The motherboard ships with an IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device. The Master device connects to the end of the cable.

Install the device(s) and connect power from the system power supply. Use the cable provided to connect the device(s) to the Primary IDE channel connector **IDE1** on the motherboard.

Serial ATA Devices

The **Serial ATA (Advanced Technology Attachment)** is the standard interface for the IDE hard drives, which is designed to overcome the design limitations while enabling the storage interface to scale with the growing media rate demands of PC platforms. It provides you a faster transfer rate of **3.0 Gb/s**. If you have installed a Serial ATA hard drive, you can connect the Serial ATA cables to the Serial ATA hard drive or the connector on the motherboard.

On the motherboard, locate the Serial ATA connectors **SATA1/2**, which support new Serial ATA devices for the highest data transfer rates, simpler disk drive cabling and easier PC assembly.

It eliminates limitations of the current Parallel ATA interface, but maintains register compatibility and software compatibility with Parallel ATA.

Analog Audio Input Connector

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system.
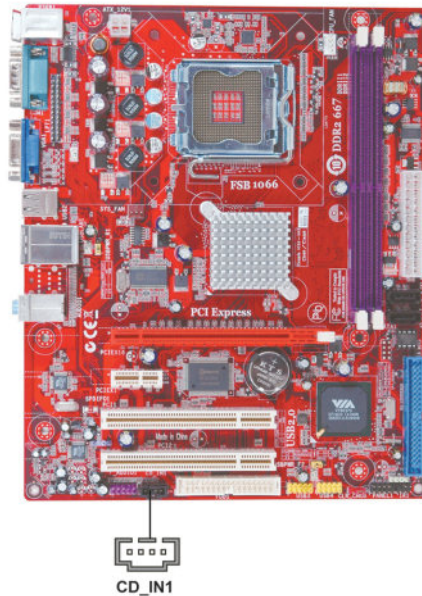
CD_IN1

When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the motherboard, locate the 4-pin connector **CD_IN1**.

Pin	Signal
1	CD IN L
2	GND
3	GND
4	CD IN R

Expansion Slots

This motherboard has one PCI Ex16, one PCI Ex1 and two 32-bit PCI slots.
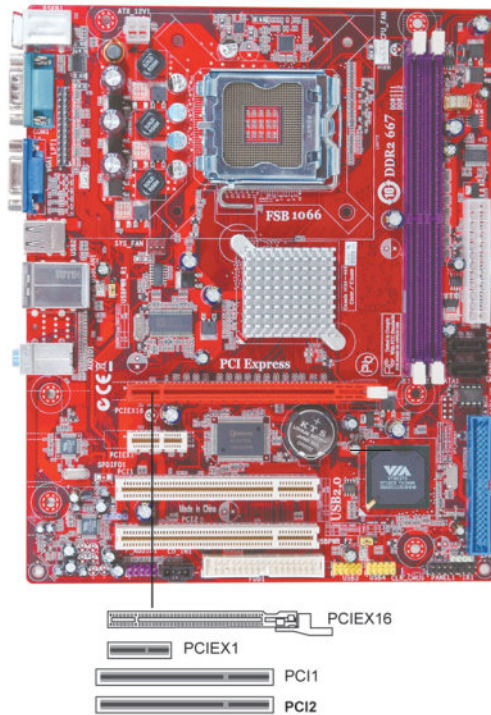
Follow the steps below to install an PCI Express/CNR/PCI expansion card.

    1   Locate the PCI Express, CNR or PCI slots on the motherboard.
    2   Remove the blanking plate of the slot from the system chassis.
    3   Install the edge connector of the expansion card into the slot. Ensure the edge connector is correctly seated in the slot.
    4   Secure the metal bracket of the card to the system chassis with a screw.
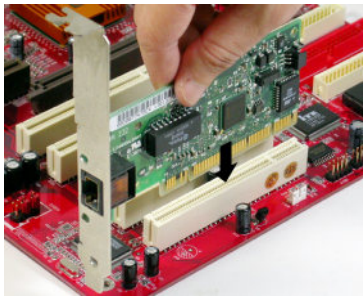
PCI Express Slot

You can install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revsion 1.0a.

PCI Slots

You can install the 32-bit PCI interface expansion cards in the slots.

Chapter 3 BIOS Setup Utility

Introduction

The BIOS Setup Utility records settings and information of your computer, such as date and time, the type of hardware installed, and various configuration settings. Your computer applies the information to initialize all the components when booting up and basic functions of coordination between system components.

If the Setup Utility configuration is incorrect, it may cause the system to malfunction. It can even stop your computer booting properly. If it happens, you can use the clear CMO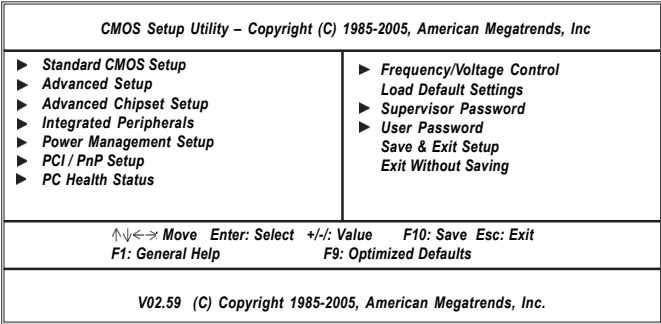S jumper to clear the CMOS memory which has stored the configuration information; or you can hold down the **Page Up** key while rebooting your computer. Holding down the **Page Up** key also clears the setup information.

You can run the setup utility and manually change the configuration. You might need to do this to configure some hardware installed in or connected to the motherboard, such as the CPU, system memory, disk drives, etc.

Running the Setup Utility

Every time you start your computer, a message appears on the screen before the operating system loading that prompts you to "*Hit <DEL> if you want to run SETUP*". Whenever you see this message, press the **Delete** key, and the Main menu page of the Setup Utility appears on your monitor.

```
CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc
─────────────────────────────────────────────────────────────────────
 ► Standard CMOS Setup              ► Frequency/Voltage Control
 ► Advanced Setup                     Load Default Settings
 ► Advanced Chipset Setup           ► Supervisor Password
 ► Integrated Peripherals           ► User Password
 ► Power Management Setup             Save & Exit Setup
 ► PCI / PnP Setup                    Exit Without Saving
 ► PC Health Status

─────────────────────────────────────────────────────────────────────
        ↑↓←→ Move  Enter: Select  +/-/: Value    F10: Save  Esc: Exit
          F1: General Help              F9: Optimized Defaults
─────────────────────────────────────────────────────────────────────
          V02.59  (C) Copyright 1985-2005, American Megatrends, Inc.
```

You can use cursor arrow keys to highlight anyone of options on the main menu page. Press **Enter** to select the highlighted option. Press the **Escape** key to leave the setup utility. Press +/-/ to modify the selected field's values.

Some options on the main menu page lead to tables of items with installed values that you can use cursor arrow keys to highlight one item, and press **PgUp** and **PgDn** keys to cycle through alternative values of that item. The other options on the main menu page lead to dialog boxes requiring your answer OK or Cancel by selecting the **[OK]** or **[Cancel]** key.

If you have already changed the setup utility, press **F10** to save those changes and exit the utility. Press **F1** to display a screen describing all key functions. Press **F9** to load optimtimal settings.

Standard CMOS Setup Page

This page displays a table of items defining basic information of your system.

```
    CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.
                          Standard CMOS Setup
  ─────────────────────────────────────────────────────────────────────────
    Date                    Wed 07/18/2007            Help Item
    Time                    03:08:56
  ───────────────────────────────────────────
  ▶ Primary IDE Master      ATAPI CDROM         While entering setup, BIOS
  ▶ Primary IDE Slave       Not Detected        auto detects the presence of
  ▶ S-ATA1                  Hard Disk           IDE devices. This displays
  ▶ S-ATA2                  Hard Disk           the status of auto detection of
                                                IDE devices.
    IDE BusMaster           Enabled

    Drive A                 1.44 MB 3¹/₂
  ─────────────────────────────────────────────────────────────────────────
        ↑↓←→  : Move   Enter: Select   +/-: Value      F10: Save  Esc: Exit
             F1: General Help             F9: Optimized Defaults
```

Date & Time

These items set up system date and time.

Primary IDE Master/Primary IDE Slave

Use these items to configure devices connected to the Primary IDE channels. To configure an IDE hard disk drive, choose *Auto*. If the *Auto* setting fails to find a hard disk drive, set it to *User*, and then fill in the hard disk characteristics (Size, Cyls, etc.) manually. If you have a CD-ROM drive, select the setting *CDROM*. If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120), select *Floptical*.

S-ATA1/2

These items display the status of auto detection of saa devices when "Onboard SATA-IDE" sets to "IDE".

IDE BusMaster

This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

Drive A

The item defines the characteristics of any diskette drive attached to the system. You can connect one or two diskette drives.

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Advanced Setup Page

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.

```
CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.
                            Advanced Setup

  TM Status                       TM1              Help Item
  Limit CPUID MaxVal              Disabled
  Hyper-Threading Technology      Enabled          Disabled for WindowsXP
  Quick Power on Self Test        Enabled
  Bootup NumLock Status           On
  APIC Mode                       Enabled
  1st Boot Device                 1st FLOPPY DRIVE
  2nd Boot Device                 ST3120023AS
  3rd Boot Device                 DVD-ROM DDU1632
  ▶ Hard Disk Drives              Press Enter
  ▶ Removable Drives              Press Enter
  ▶ CD/DVD Drives                 Press Enter
  Boot Other Device               Yes
  BIOS Protect                    Disabled


       ↑↓←→ : Move   Enter: Select   +/-/: Value     F10: Save  Esc: Exit
       F1: General Help              F9: Optimized Defaults
```

TM Status

This item display CPU Thermal Monitor status.

Limit CPUID MaxVal

This item can support Prescott CPUs for old OS. Users please note that under NT 4.0, it must be set "Enabled", while under WinXP, it must be set "Disabled"

Hyper-Threading Technology

This item is only available when the chipset supports Hyper-Threading and you areusing a Hyper-Threading CPU.

Quick Power On Self Test

Enable this item to shorten the power on self testing (POST) and have your system start up faster. You might like to enable this item after you confident that your system hardware is operating smoothly.

Boot Up NumLock Status

This item determines if the NumLock key is active or inactive at system start-up time.

APIC Mode

This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

1st/2nd/3rd Boot Device

Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.

▶ **Hard Disk Drives (Press Enter)**

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.	
Hard Disk Drives	
Hard Disk Drives	**Help Item**
1st Drive 1st FLOPPY DRIVE 2nd Drive WDC WD2500JS-08NCB1	Specifies the boot sequence from the available devices.
↑↓←→ : Move Enter: Select +/-/: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults	

Press <Esc> to return to Advanced Setup screen.

▶ **Removable Drives (Press Enter)**

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.	
Removable Drives	
Removable Drives	**Help Item**
1st Drive 1st FLOPPY DRIVE	Specifies the boot sequence from the available devices.
↑↓←→ : Move Enter: Select +/-/: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults	

Press <Esc> to return to Advanced Setup screen.

▶ **CD/DVD Drives (Press Enter)**

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.	
CD/DVD Drives	
CD-DVD Drives	**Help Item**
1st Drive DVD-ROM DDU1632	Specifies the boot sequence from the available devices.
↑↓←→ : Move Enter: Select +/-/: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults	

Press <Esc> to return to Advanced Setup screen.

Boot Other Device

When enabled, the system searches all other possible locations for operating system if it fails to find one in the devices specified under the First, Second, and Third boot devices.

BIOS Protect

This item enables or disables BIOS protect.

Press <Esc> to return to the main menu page.

Advanced Chipset Setup Page

This page sets up more advanced chipset information about your system. Handle this page with caution. Any changes can affect the operation of your computer.

```
CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.
                        Advanced Chipset Setup
┌──────────────────────────────────────────┬─────────────────────────┐
│                                           │      Help Item          │
│  DRAM Timing                  Auto        │                         │
│  VGA Share Memory Size        256MB       │        Options          │
│                                           │                         │
│                                           │     Manual              │
│                                           │     Auto                │
│                                           │     Turbo               │
│                                           │     Ultra               │
│                                           │                         │
│                                           │                         │
├───────────────────────────────────────────────────────────────────┤
│  ↑↓←→   : Move   Enter: Select  +/-: Value    F10: Save  Esc: Exit  │
│  F1: General Help              F9: Optimized Defaults               │
└───────────────────────────────────────────────────────────────────┘
```

DRAM Timing

This item allows you to enable or disable the DRAM timing defined by the Serial Presence Detect electrical. Users please note that if setting this item to auto, the following two items are not available.

VGA Share Memory Size

This item shows the VGA memory size borrowed from main memory capability. In this case, 256MB is borrowed, which in the meanwhile the same the main memory loses.

Press <Esc> to return to the main menu page.

Integrated Peripherals Page

This page sets up some parameters for peripheral devices connected to the system.

```
CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.
                        Integrated Peripherals
```

OnBoard Floppy Controller	Enabled	Help Item
Serial Port1 Address	3F8/IRQ4	
Serial Port2 Adress	2F8/IRQ3	Allow BIOS to Enable
Serial Port2 Mode	Normal	or Disable Floppy
Parallel Port Address	378	Controller.
Parallel Port Mode	ECP	
ECP Mode DMA Channel	DMA3	
Parallel Port IRQ	IRQ7	
SATA Controller	IDE	
HDAC Audio Controller	Auto	
LAN Controller	Enabled	
LAN Option ROM	Disabled	
OnBoard USB Function	Enabled	
USB Function For DOS	Enabled	

```
↑↓←→ : Move   Enter: Select   +/-/: Value      F10: Save  Esc: Exit
          F1: General Help              F9: Optimized Defaults
```

OnBoard Floppy Controller

Use this item to enable or disable the onboard floppy disk drive interface.

Serial Port1/2 Address

Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.

Serial Port2 Mode

If Serial Port 2 Address is not disabled, it allows you to set the Serial Port 2 Mode.

Parallel Port Address

Use this item to enable or disable the onboard Parallel port, and to assign a port address.

Parallel Port Mode

Use this item to select the parallel port mode. You can select Normal (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or BPP (Bi-Directional Parallel Port).

ECP Mode DMA Channel

Use this item to assign the DMA Channel under ECP Mode function.

Parallel Port IRQ

Use this item to assign IRQ to the parallel port.

SATA Controller

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

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HDAC Audio Controller

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

LAN Controller

This option allows you to enable or disable the onboard LAN controller.

LAN Option ROM

Use this item to enable or disable the booting from the onboard LAN with a remote boot ROM installed.

Onboard USB Function

Enable this item if you plan to use the USB ports on this motherboard.

USB Function For DOS

Enable this item if you plan to use the USB ports on this motherboard in a DOS environment.

Press <Esc> to return to the main menu setting page.

Power Management Setup Page

This page sets some parameters for system power management operation.

```
        CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.
                              Power Management Setup

    ACPI Suspend Type                S1            │      Help Item
    Suspend Time Out                 Disabled      │
    Resume on RTC Alarm              Disabled      │
    Resume On Ring                   Disabled      │   Select the ACPI
    Resume On PME#                   Enabled       │   state used for
    Resume by WOL                    Disabled      │   System Suspend.
    Resume On PS/2 Mouse             Disabled      │
    Resume by PCI-E PME              Disabled      │
    PWRON After PWR-Fail             Power Off      │
    Soft-Off by PWR-BTTN             Instant Off   │
    USB Device Wakeup Function        Enabled      │
    Resume On KBC                    Disabled      │
       Wake-Up Key                   Any Key       │

    ──────────────────────────────────────────────────────────────
        ↑↓←→: Move   Enter: Select  +/-/: Value    F10: Save  Esc: Exit
             F1: General Help               F9: Optimized Defaults
```

ACPI Suspend Type

Use this item to define how your system suspends. In the default, S3 (STR), the suspend mode is a suspend to RAM, i.e., the system shuts down with the exception of a refresh current to the system memory.

Suspend Time Out

This item sets up the timeout for Suspend mode in minutes. If the time selected passes without any system activity, the computer will enter power-saving Suspend mode.

Resume On RTC Alarm

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

Resume On Ring

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem. You must use an ATX power supply in order to use this feature.

Resume On PME#

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI Modem or PCI LAN card. You must use an ATX power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI card.

Resume by WOL

This item specifies whether the system will be awakened from power saving modes when activity or input signal of the specified WOL device is detected.

Resume On PS/2 Mouse

This item enables or disables you to allow mouse activity to awaken the system from power saving mode.

Resume by PCI-E PME

This item specifies whether the system will be awakened from power saving modes when activity or input signal of the specified WOL device is detected.

PWRON After PWR-Fail

This item enables your computer to automatically restart or return to its last operating status.

Soft-Off By PWR- BTTN

If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for four seconds to cause power down.

USB Device Wakeup Function

This item allows you to enable or disable the USB device Wakeup function.

Resume On KBC

This item enables or disables you to allow keyboard activity to awaken the system.

- **Wake-Up key**: When Keyboard Power On is set to Enable, this item is available and users can enter any key, or hot key on the keyboard or type in the password.

Press <Esc> to return to the main menu setting page.

PCI / PnP Setup Page

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.

```
CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.
                         PCI / PnP Setup

  Init Display First              PCI                    Help Item
  Allocate IRQ to PCI VGA         Yes

                                                           Options

                                                    PCI
                                                    PCI Express Card




  ↑↓←→  : Move   Enter: Select   +/-/: Value    F10: Save  Esc: Exit
  F1: General Help                F9: Optimized Defaults
```

Init Dispaly First

This item allows you to choose the primary display card.

Allocate IRQ to PCI VGA

If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system. You set this value to No to free up an IRQ.

PCI Health Status Page

This page helps you monitor the parameters for critical voltages, temperatures and fan speeds.

```
CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.
                         PC Health Status

                                                          Help Item
  Hardware Health Event Monitoring
  Vcore                    : 1.296V
  Vdimm                    : 1.592V                       Options
  Vcc5V                    : 1.296V
  CPU FAN Speed            : 1962RPM                 Disabled
  CPU Temperature          : 162°C/143°F             Enabled
  CPU SMART Fan Control      Disabled



  ↑↓←→  : Move   Enter: Select   +/-/: Value    F10: Save  Esc: Exit
      F1: General Help           F9: Optimized Defaults
```

System Component Characteristics

These fields provide you with information about the system current operating status.

- CPU Temperature
- System Temperature
- CPU Fan Speed
- System Fan Speed
- CPU Vorce
- VDIMM

CPU SMART Fan Control

This item allows users to enable or disable smart fan control function.

Press <Esc> to return to the main menu setting page.

Frequency/Voltage Control Page

This page helps you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.

```
CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.
                     Frequncey/Voltage Control

                                                    Help Item
 Manufacturer :    Intel
 Ratio Actual Value : 15
 DRAM Frequency                    Auto              Options
 CPU Over-clocking Func.:          Disabled
 CPU Frequency         :              200MHz         Auto
 Auto Detect DIMM/PCI Clk          Enabled           400MHz
 Spread Spectrum                   Enabled           533 MHz
                                                     667 MHz



   ↑↓←→   : Move   Enter: Select   +/-/: Value      F10: Save  Esc: Exit
      F1: General Help               F9: Optimized Defaults
```

Manufacturer

This item indicates the brand of the CPU installed in your system.

Ratio Actual Value

This item determinese the actual value of ratio.

DRAM Frequency

This item enables users to adjust the DRAM frequency. The default setting is auto and we recommend users leave the setting unchanged. Modify it at will may cause the system to be unstable.

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CPU Over-clocking Func.

This item decides the CPU over-clocking function/frequencyinstalled in your system. If the over-clocking fails, please turn offthe system power. And then, hold the PageUp key (similar to theClear CMOS function) and turn on the power, the BIOS willrecover the safe default.

CPU Frequency

This item indicates the current CPU frequency. Users can not make any change to this item. Please noted that the frequency will be varied with different CPU.

Auto Detect DIMM/PCI Clk

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Spread Spectrum

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic interface) generated by the system.

Load Default Settings

This option opens a dialog box to ask if you are sure to install optimized defaults or not. You select [OK], and then <Enter>, the Setup Utility loads all default values; or select [Cancel], and then <Enter>, the Setup Utility does not load default values.

Note: It is highly recommend that users enter this option to load optimal default values for accessing the best performance.

Supervisor Password Page

This page helps you set up some parameters for the hardware monitoring function of this motherboard.

CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc. Supervisor Password	
Supervisor Password : Not Installed	**Help Item**
Change Supervisor Password **Press Enter**	**Installed or Change the password**
↑↓←→ : Move Enter: Select +/-/: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults	

Supervisor Password

This item indicates whether a supervisor password has been set. If the password has been installed , Installed displays. If not, Not Installed dispalys.

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Change Supervisor Password

You can select this option and press<Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Press <Esc> to return to the main menu setting page.

User Password Page

This page helps you set up some parameters for the hardware monitoring function of this motherboard.

```
CMOS Setup Utility – Copyright (C) 1985-2005, American Megatrends, Inc.
                           User Password
┌─────────────────────────────────────────────┬──────────────────────────┐
│ User Password : Not Installed                │        Help Item         │
├─────────────────────────────────────────────┤                          │
│ Change User Password          Press Enter    │ Installed or Change the  │
│                                              │ password                 │
│                                              │                          │
│                                              │                          │
│                                              │                          │
│                                              │                          │
├─────────────────────────────────────────────┴──────────────────────────┤
│    ↑↓←→: Move   Enter: Select   +/-: Value      F10: Save  Esc: Exit    │
│         F1: General Help              F9: Optimized Defaults             │
└─────────────────────────────────────────────────────────────────────────┘
```

User Password

This item indicates whether a user password has been set. If the password has been installed , Installed displays. If not, Not Installed dispalys.

Change User Password

You can select this option and press<Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Save & Exit Setup

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press [Y] to save and exit, or press [N] to return to the main menu.

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, press [Y] to discard changes and exit, or press [N] to return to the main menu.

Note: If you have made settings that you do not want to save, use the "Exit Without Saving" item and presst [Y] to discard any changes you have made.

Chapter 4 Software & Applications

Introduction

This chapter describes the contents of the support CD-ROM that comes with the motherboard package.

The support CD-ROM contains all useful software, necessary drivers and utility programs to properly run our products. More program information is available in a README file, located in the same directory as the software.

To run the support CD, simply insert the CD into your CD-ROM drive. An Auto Setup screen automatically pops out, and then you can go on the auto-installing or manual installation depending on your operating system.

If your operating system is Windows 2000/XP/Vista, it will automatically install all the drivers and utilities for your motherboard.

Installing Support Software

    1   Insert the support CD-ROM disc in the CD-ROM drive.

    2   When you insert the CD-ROM disc in the system CD-ROM drive, the CD automatically displays an Auto Setup screen.

    3   The screen displays three buttons of **Setup**, **Browse CD** and **Exit** on the right side, and three others **Setup**, **Application** and **ReadMe** at the bottom. Please see the following illustration.

The **Setup** button runs the software auto-installing program as explained in next section.

The **Browse CD** button is a standard Windows command that you can check the contents of the disc with the Windows file browsing interface.

The **Exit** button closes the Auto Setup window. To run the program again, reinsert the CD-ROM disc in the drive; or click the CD-ROM driver from the Windows Explorer, and click the Setup icon.

The **Application** button brings up a software menu. It shows the bundled software that this mainboard supports.

The **ReadMe** brings you to the Install Path where you can find out path names of software driver.

Auto-Installing under Windows 2000/XP/Vista

If you are under Windows 2000/XP, please click the **Setup** button to run the software auto-installing program while the Auto Setup screen pops out after inserting the support CD-ROM:

1 The installation program loads and displays the following screen. Click the **Next** button.

2 Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.
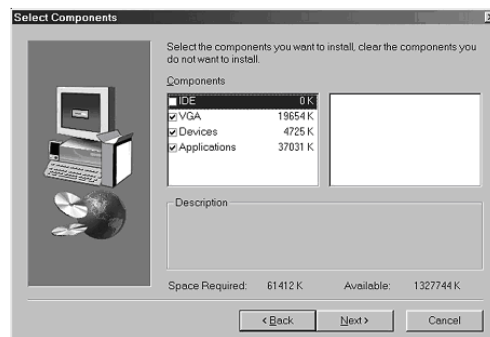
3   The support software will automatically install.

Once any of the installation procedures start, software is automatically installed in sequence. You need to follow the onscreen instructions, confirm commands and allow the computer to restart as few times as needed to complete installing what-ever software you selected. When the process is finished, all the support software will be installed and start working.

During the Windows Vista Driver Auto Setup Procedure, users should use one of the following two methods to install the driver after the system restart.

Method 1. Run Reboot Setup

Windows Vista will block startup programs by default when installing drivers after the system restart. You must select taskbar icon **Run Blocked Program** and run **Reboot Setup** to install the next driver, until you finish all drivers installation.
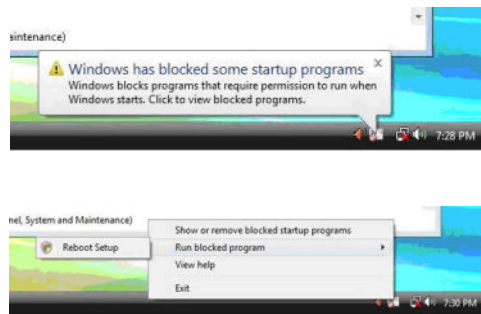
Method 2. Disable UAC (User Account Control)

* For administrator account only. Standard user account can only use Method 1.

Disable Vista UAC function before installing drivers, then use CD driver to install drivers, it will continue to install drivers after system restart without running blocked programs.

Follow these instructions to Disable Vista UAC function:

1. Go to **Control Panel**.
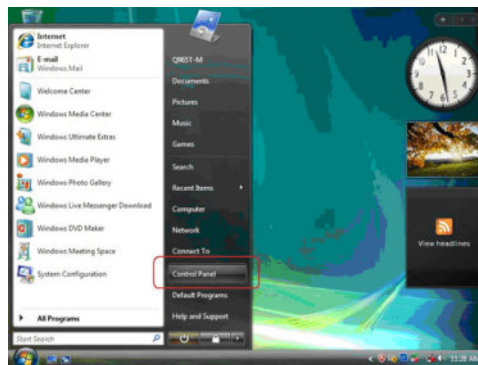
2. Select **Classic View**.

3. Set **User Account**.

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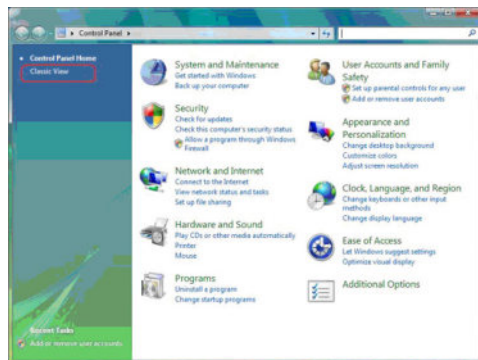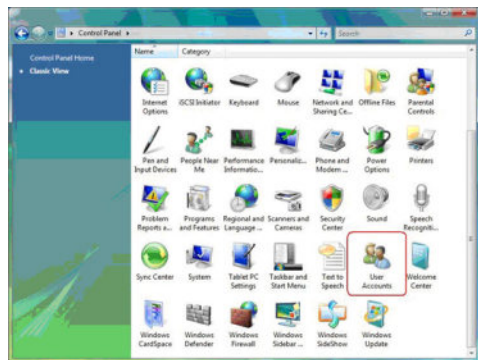
*4. Select **Turn User Account Control on or off** and press **Continue**.*
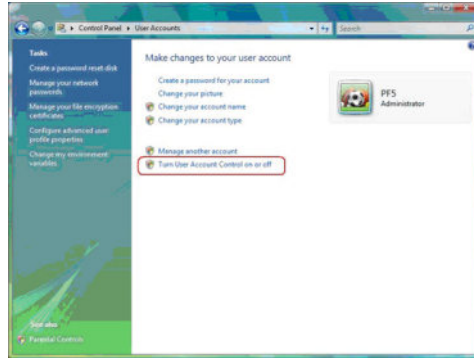
*5. Disable **User Account Control (UAC) to help protect your computer** item and press **OK**, then press **Restart Now**. Then you can restart your computer and continue to install drivers without running blocked programs.*
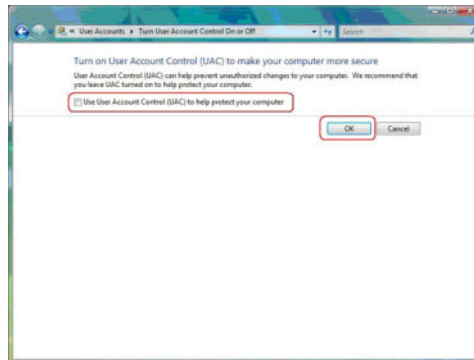
Bundled Software Installation

All bundled software available on the CD-ROM is for users' convenience. You can install bundled software as follows:

1. Click the **Application** button while the Auto Setup screen pops out after inserting the support CD-ROM.
2. A software menu appears. Click the software you want to install.
3. Follow onscreen instructions to install the software program step by step until finished.

Chapter 5 VIA VT8237 SATA RAID Setup Guide

VIA RAID Configurations

The motherboard includes a high performance Serial ATA RAID controller integrated in the VIA VT8237 Southbridge chipset. It supports RAID 0, RAID 1 and JBOD with two independent Serial ATA channels.

RAID: (Redundant Array of Independent Disk Drives) use jointly several hard drives to increase data transfer rates and data security. It depends on the number of drives present and RAID function you select to fulfill the seurity or performance pruposes or both.

RAID 0 (called data striping) optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks. Two hard disks perform the same work as a single drive but at a sustained data transfer rate, double that of a single disk alone, thus improving data access and storage.

RAID 1 (called data mirroring) copies and maintains an identical image of data from one drive to a second drive. If one drive fails, the disk array management software directs all applications to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides data protection and increases fault tolerance to the entire system.

JBOD: (Just a Bunch of Drives) Also known as "Spanning". Two or more hard drives are required. Several hard disk types configured as a single hard disk. The hard drives are simply hooked up in series. This expands the capacity of your drive and results in a useable total capacity. However, JBOD will not increase any performance or data security.

Install the Serial ATA (SATA) hard disks

The VIA VT8237 Southbridge chipset supports Serial ATA hard disk drives. For optimal performance, install identical drives of the same model and capacity when creating a RAID set.

- If you are creating a RAID 0 (striping) array of performance, use two new drives.
- If you are creating a RAID 1 (mirroring) array for protection, you can use two new drives or use an existing drive and a new drive (the new drive must be of the same size or larger than the existing drive). If you use two drives of different sizes, the smaller capacity hard disk will be the base storage size. For example, one hard disk has an 80 GB storage capacity and the other hard disk has 60 GB storage capacity, the maximum storage capacity for the RAID 1 set is 60 GB.

Follow these steps to install the SATA hard disks for RAID configuration.

  i   Before setting up your new RAID array, verify the status of your hard disks. Make sure the Master/Slave jumpers are configured properly.

  ii Both the data and power SATA cables are new cables. You cannot use older 40-pin 80-conductor IDE or regular IDE power cables with Serial ATA drives. Installing Serial ATA (SATA) hard disks require the use of new Serial ATA cable (4-conductor) which supports the Serial ATA protocol and a Serial ATA power cable.

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

1. Install the Serial ATA hard disks into the drive bays.
2. Connect one end of the Serial ATA cable to the motherboard's primary Serial ATA connector (SATA1).
3. Connect the other end of Serial ATA cable to the master Serial ATA hard disk.
4. Connect one end of the second Serial ATA cable to the motherboard's secondary Serial ATA connector (SATA2).
5. Connect the other end of Serial ATA cable to the secondary Serial ATA hard disk.
6. Connect the Serial ATA power cable to the power connector on each drive.
7. Proceed to section "Entering VIA Tech RAID BIOS Utility" for the next procedure.

Entering VIA Tech RAID BIOS Utility

1. Boot-up your computer.
2. During POST, press <TAB> to enter VIA RAID configuration utility. The following menu options will appear.

The RAID BIOS information on the setup screen shown is for reference only. What you see on your screen may not by exactly the same as shown.

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On the upper-right side of the screen is the message and legend box. The keys on the legend box allow you to navigate through the setup menu options. The message describes the function of each menu item. The following lists the keys found in the legend box with their corresponding functions.

F1	View Array
↑↓	Move to the next item
Enter	Confirm the selection
ESC	Exit

Create Array

1. In the VIA RAID BIOS utility main menu, select **Create Array** then press the <Enter> key. The main menu items on the upper-left corner of the screen are replaced with create array menu options.

RAID 0 for performance

1. Select the second option item **Array Mode**, then press the <Enter> key. The RAID system setting pop-up menu appears.
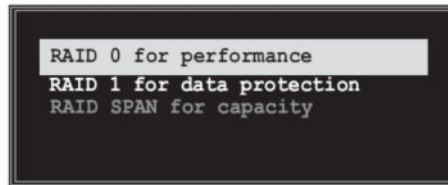
2. Select **RAID 0 for performance** from the menu and press <Enter>. From this point, you may choose to auto-configure the RAID array by selecting Auto Setup for Performance or manually configure the RAID array for stripped sets. If you want to manually configure the RAID array continue with next step, otherwise, proceed to step #5.

3. Select **Select Disk Drives**, then press <Enter>. Use arrow keys to select disk drive/s, then press <Enter> to mark selected drive. An asterisk is placed before the selected drive.

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4 Select **Block Size**, then press <Enter> to set array block size. Lists of valid array block sizes are displayed on a pop-up menu.

```
4K
8K
16K
32K
64K
```
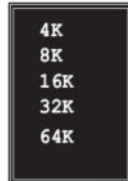
Tip *For server systems, it is recommended to use a lower array block size. For multimedia computer systems used mainly for audio and video editing, a higher array block size is recommended for optimum performance.*

Use arrow keys to move selection bar on items and press <Enter> to select.

5 Select Start Create Process and press <Enter> to setup hard disk for RAID system. The following confirmation appears:

The same confirmation message appears when the Auto Setup for Performance option is selected.

```
The data on the selected disks will
be destroyed. Continue? Press Y/N
```

Press "Y" to confirm or "N" to return to the configuration options.

RAID 1 for data protection

1 Select the second option item Array Mode, then press the <Enter> key. The RAID system setting pop-up menu appears.

```
RAID 0 for performance
RAID 1 for data protection
RAID SPAN for capacity
```
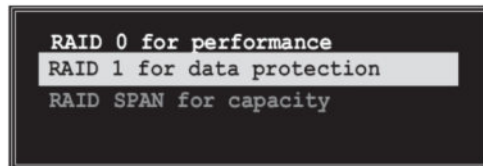
2 Select RAID 1 for data protection from the menu and press <Enter>. Select next task from pop-up menu. The task Create only creates the mirrored set without creating a backup. Create and duplicate creates both mirrored set and backup.

```
Create only
Create and duplicate
```

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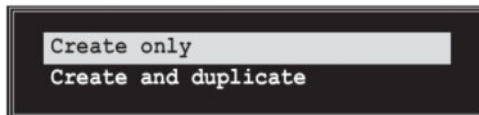
3   Select task and press <Enter>. The screen returns to Create Array menu
    items. From this point, you may choose to auto-configure the RAID
    array by selecting Auto Setup for Data Security or manually configure
    the RAID array for mirrored sets. If you want to manually configure the
    RAID array continue with next step, otherwise, proceed to step #5.

4   Select Select Disk Drives, then press <Enter>. Use arrow keys to select
    disk drive/s, then press <Enter> to mark selected drive. (An asterisk is
    placed before a selected drve.)

5   Select Start Create Process and press <Enter> to setup hard disk for
    RAID system. The following confirmation message appears:

> **The same confirmation message appears when
> the Auto Setup for Performance option is selected.**

```
The data on the selected disks will
be destroyed. Continue? Press Y/N
```

Press "Y" to confirm or "N" to return to the configuration options.

Delete Array
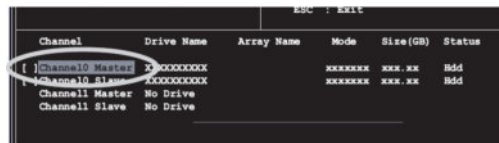
1   In the VIA RAID BIOS utility main menu, select **Delete Array** then
    press the <Enter> key. The focus is directed to the list of channel used for
    IDE RAID arrays.

2   Press the <Enter> key to select a RAID array to delete. The following
    confirmation message appears.

```
The selected array will be destroyed.
Are you sure? Continue? Press Y/N
```

Press "Y" to confirm or "N" to return to the configuration options.

Select Boot Array

1   In the VIA RAID BIOS utility main menu, select Select Boot Array then
     press the <Enter> key. The focus is directed to the list of channel used
     for IDE RAID arrays.

2   Press the <Enter> key to select a RAID array for boot. The Status of the
     selected array will change to Boot. Press <ESC> key to go return to
     menu items. Follow the same procedure to deselect the boot array.

Serial Number View

1   In the VIA RAID BIOS utility main menu, select Serial Number View then press the <Enter> key. The focus is directed to the list of channel used for IDE RAID arrays. Move the selection bar on each item and the serial number is displayed at the bottom of the screen. This option is useful for identifying same model disks.
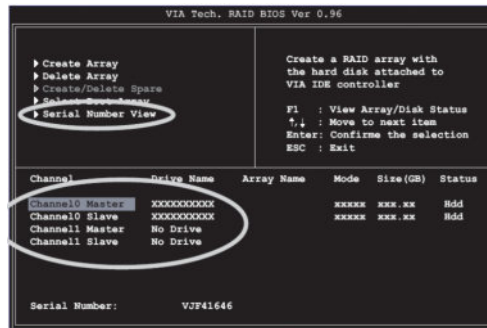
Duplicate Critical RAID 1 Array

When booting up the system, BIOS will detect if the RAID 1 array has any inconsistencies between user data and backup data. If BIOS detects any inconsistencies, the status of the disk array will be marked as critical, and BIOS will prompt the user to duplicate the RAID 1 in order to ensure the backup data consistency with the user data.
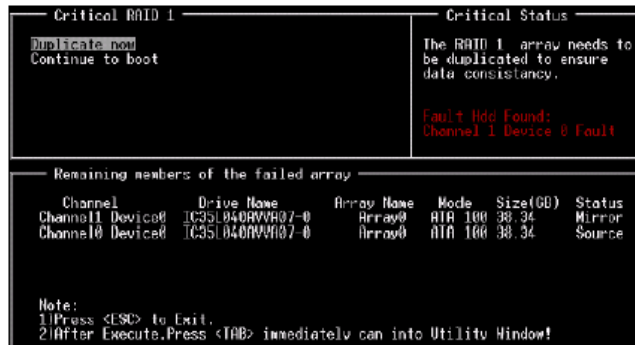
If user selects **Continue to boot**, it will enable duplicating the array after booting into OS.

Rebuild Broken RAID 1 Array

When booting up the system, BIOS will detect if any member disk drives of RAID has failed or is absent. If BIOS detects any disk drive failures or missing disk drives, the status of the array will be marked as broken.

If BIOS detects a broken RAID 1 array but there is a spare hard drive available for rebuilding the broken array, the spare hard drive will automatically become the mirroring drive. BIOS will show a main interface just like a duplicated RAID 1. Selecting **Continue to boot** enables the user to duplicate the array after booting into operating system.

If BIOS detects a broken RAID 1 array but there is no spare hard drive available for rebuilding the array, BIOS will provide several operations to solve such

1. Power off and Check the Failed Drive:

This item turns off the computer and replaces the failed hard drive with a good one. If your computer does not support APM, you must turn off your computer manually. After replacing the hard drive, boot into BIOS and select **Choose replacement drive and rebuild** to rebuild the broken array.

2. Destroy the Mirroring Relationship:

This item cancels the data mirroring relationship of the broken array. For broken RAID 1 arrays, the data on the surviving disk will remain after the destroy operation. However, **Destroy the Mirroring Relationship** is not recommended because the data on the remaining disk will be lost when the hard drive is used to create another RAID 1 array.

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3. Choose Replacement Drive and Rebuild:

This item enables users to select an already-connected hard drive to rebuild the broken array. After choosing a hard drive, the channel column will be activated.

Highlight the target hard drive and press <Enter>, a warning message will appear. Press **Y** to use that hard drive to rebuild, or press **N** to cancel. Please note selecting option **Y** will destroy all the data on the selected hard drive.

4. Continue to boot:

This item enables BIOS to skip the problem and continue booting into OS.

Installing RAID Software & Drivers

Install Driver in Windows OS

New Windows OS (2000/XP/NT4) Installation

The following details the installation of the drivers while installing Windows XP.

1 Start the installation:
   Boot from the CD-ROM. Press **F6** when the message "Press F6 if you need to install third party SCSI or RAID driver' appears.
2 When the Windows Setup window is generated, press **S** to specify an Additional Device(s).
3 Insert the driver diskette **VIA VT8237 Disk Driver** into drive A: and press <Enter>.
4 Depending on your operation system, choose **VIA Serial ATA RAID Controller (Windows XP), VIA Serial ATA RAID Controller (Windows 2000) or VIA Serial ATA RAID Controller (Windows NT4)** from the list that appears on Windows XP Setup screen, press the <Enter> key.
5 Press <Enter> to continue with installation or if you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, press <Enter> to continue with installation.
6 From the Windows XP Setup screen press the <Enter> key. Setup will now load all device files and the continue the Windows XP installation.

Existing Windows XP Driver Installation

1 Insert the supported CD into the CD-ROM drive.
2 The CD will auto-run and the setup screen will appear.
3 Under the Driver tab, click on **VIA SATA RAID Utility.**
4 The drivers will be automatically installed.

Confirming Windows XP Driver Installation

1 From Windows XP, open the **Control Panel** from **My Computer** followed by the System icon.
2 Choose the **Hardware** tab, then click the **Device manager** tab.
3 Click the "+" in front of the **SCSI and RAID Controllers** hardware type. The driver **VIA IDE RAID Host Controller** should appear.

Installation of VIA SATA RAID Utility

The VIA SATA RAID Utility is the software package that enables high-performance RAID 0 arrays in the Windows*XP operating system. This version of VIA SATA RAID Utility contains the following key features:

- • Serial ATA RAID driver for Windows XP
- • VIA SATA RAID utility
- • RAID0 and RAID1 functions

Insert the supported CD and click on the **Setup** to install the software.
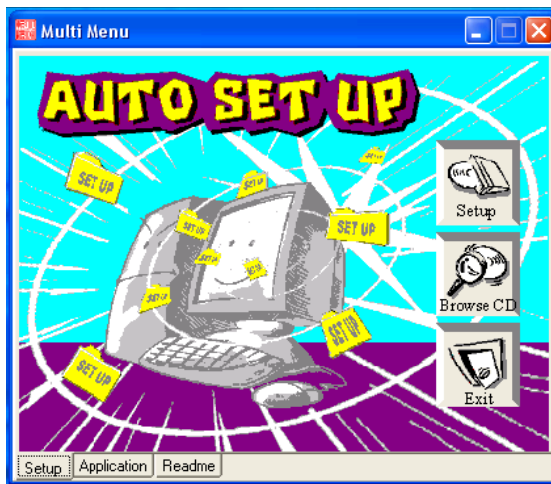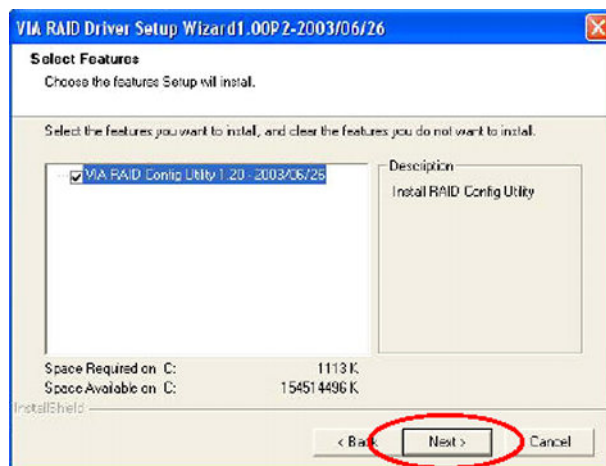

The **InstallShield Wizard** will begin automatically for installation. Click on the **Next** button to proceed the installation in the welcoming window.

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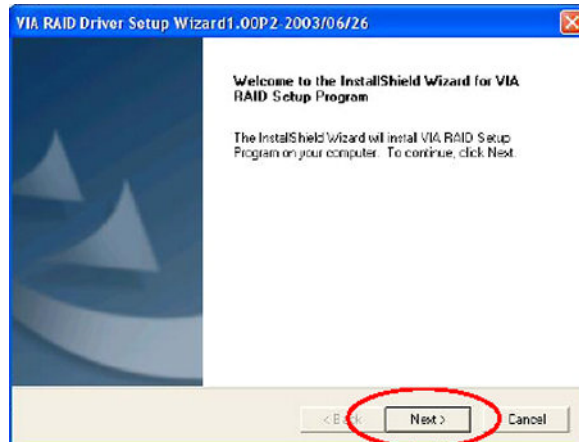
Put a check mark in the check box to install the feature you want. Then click **Next** button to proceed the installation.

Using VIA RAID Tool

Once the installation is complete, go to Start---> Programs---> VIA---> raid_tool.exe to enable VIA RAID Tool.
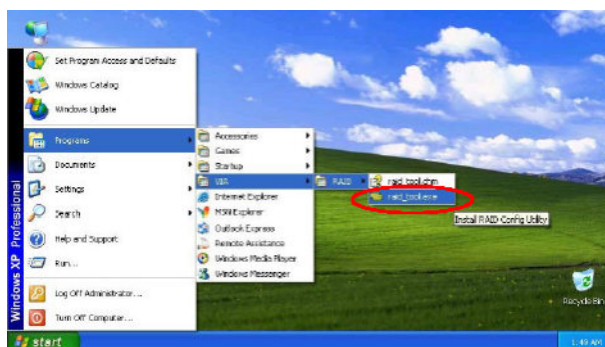
After the software is finished installation, it will automatically started every time Windows is initiated. You may double-click on the icon shown system tray of the tool bar to launch the **VIA RAID Tool** utility.

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The main interface is divided into two windows and the toolbar above contain the main functions. Click on these toolbar buttons to execute their specific functions. The left windowpane displays the controller and disk drives and the right windowpane displays the details of the controller or disk drives. The available features are as following:

 View by Controller

 View by Devices

 View Event log

 Help Topics

It means that VT8237 SATA RAID only has the feature of monitoring the statuses of RAID 0 and RAID 1.

Click on or button to determine the viewing type of left window-pane. There are two viewing types: By controllers and by device. Click on the object in the left windowpane to display the status of the object in the right windowpane. The following screen shows the status of Array 0-RAID 0.
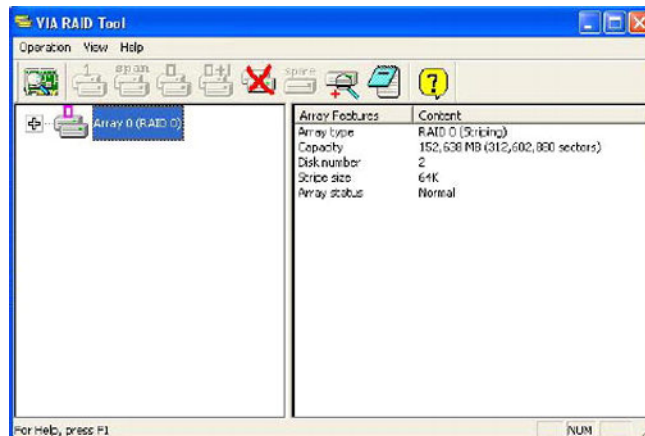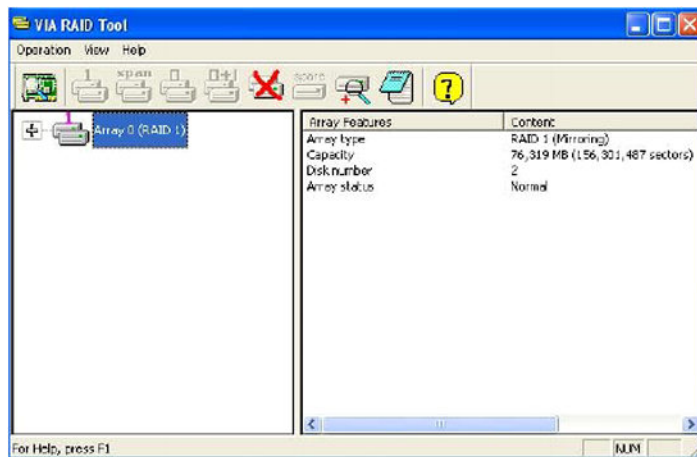
Click on the plus (+) symbol next to Array 0--RAID 0 to see the details of each disk.
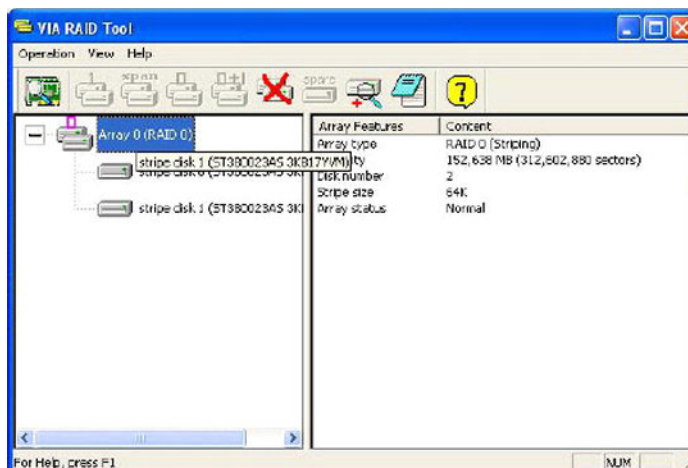
You may also use the same [icon] or [icon] button to view the statuses of Array 0--RAID 1.

Click on the plus (+) symbol next to Array 0; RAID 1 to see the details of each disk.