ID-PCM8E series

VIA C7-D or Nano Processor Motherboard

User's Manual

Version:1.1

Preface

Copyright

Version 1.1

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1

Introducing the Motherboard

Describes features of the motherboard.

Go to ⇨ page 1

Chapter 2

Installing the Motherboard

Describes installation of motherboard components.

Go to ⇨ page 7

Chapter 3

Using BIOS

Provides information on using the BIOS Setup Utility.

Go to ⇨ page 23

Chapter 4

Using the Motherboard Software

Describes the motherboard software

Go to ⇨ page 41

Chapter 5

VIA VT8237 SATA RAID

Setup Guide

Describes the information about SATA RAID Setup

Go to ⇨ page 47

TABLE OF CONTENTS

Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing this motherboard. This motherboard is a high performance, enhanced function motherboard that supports the onboard VIA C7-D or Nano processor for high-end business or personal desktop markets.

The motherboard incorporates the VIA CN896 Northbridge (NB) and VT8237S Southbridge (SB) chipsets. The Northbridge supports a Front Side Bus (FSB) frequency of 800/400 MHz FSB and Hyper-Threading technology. The memory controller supports DDR2 memory DIMM frequencies of 667/533/400. It supports two DDR2 sockets with up to 4 GB of phisical memory. High resolution graphics via one PCI Express slot, intended for Graphics Interface, is fully compliant to the PCI Express Base Specification revision 1.1.

The VT8237S Southbridge is a highly integrated peripheral controller, it includes an integrated keyboard controller with PS2 mouse support, two-channel Serial ATA (S-ATA) PHY for support of up to two S-ATA devices directly, Dual channel hard disk controller supporting up to two enhanced IDE devices in Ultra DMA-133/100/66 Mode and eight USB 2.0 ports with integrated PHY.

This motherboard is equipped with advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, COM1, one VGA port, four USB ports, one optional LAN port, and audio jacks for microphone, line-in and line-out.

Feature

Processor

This motherboard uses the onboard VIA C7-D or Nano processor that carries the following features:

- Accommodates onboard VIA C7-D or Nano processor
- Supports a system bus (FSB) of 800/400 MHz

Chipset

The VIA CN896 Northbridge (NB) and VT8237S Southbridge (SB) chipsets are based on an innovative and scalable architecture with proven reliability and performance.

VIA CN896 (NB)

- Supports 16-bit 66 MHz, 4x and 8x transfer modes, Ultra V-Link Host interface with 1 GB/s total bandwidth
- Supports up to two PCI Express ports, configured as one x16 and one x1 PCI Express lanes
- Integrated Chrome9™ HC 2D/3D Graphics & Video Controllers
- Advanced High-Performance DDR2 SDRAM Controller
- ACPI 2.0 and PCI Bus Power Management 1.1 complaint

VT8237S (SB)

- Supports 16-bit 66 MHz Ultra V-Link Host interface with total bandwidth of 1 GB/s
- Compliant with PCI 2.3 specification at 33 MHz, supporting up to 6 PCI masters
- Integrated SATA Controller with maximum transfer rate up to 3.0 Gb/s.
- Integrated Dual channel Ultra DMA 133/100/66 Master Mode EIDE Controller
- USB 2.0 Controller, supporting up to eight USB 2.0 ports

Memory

- Supports DDR2 667/533/400 DDR SDRAM with Dual-channel architecture
- Accommodates two unbuffered double-sided DIMMs
- Up to 4 GB of phisical memory

Audio

- 5.1 Channel High Definition Audio Codec
- ADCs supports 44.1k/48k/96kHz sample rate
- Meets Microsoft WLP 3.08 Vista premium and mobile PCs audio requirements
- Direct Sound 3D™ compatible

Onboard LAN (Optional)

The onboard LAN controller provides any of the following features:

- Integrated Fast Ethernet Controller for PCI Express™ Applications
- Integrated 10/100 transceiver
- Wake-on-LAN and remote wake-up support

Expansion Options

The motherboard comes with the following expansion options:

- One PCI Express x16 slot for Graphics Interface
- One 32-bit PCI v2.3 compliant slot
- Two 40-pin IDE connectors supporting up to four IDE devices
- Two 7-pin SATA connectors

This motherboard supports UltraDMA bus mastering with transfer rates of 133/100/66 MB/s.

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

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

BIOS Firmware

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

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

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

Some hardware specifications and software items are subject to change without prior notice.

Motherboard Components

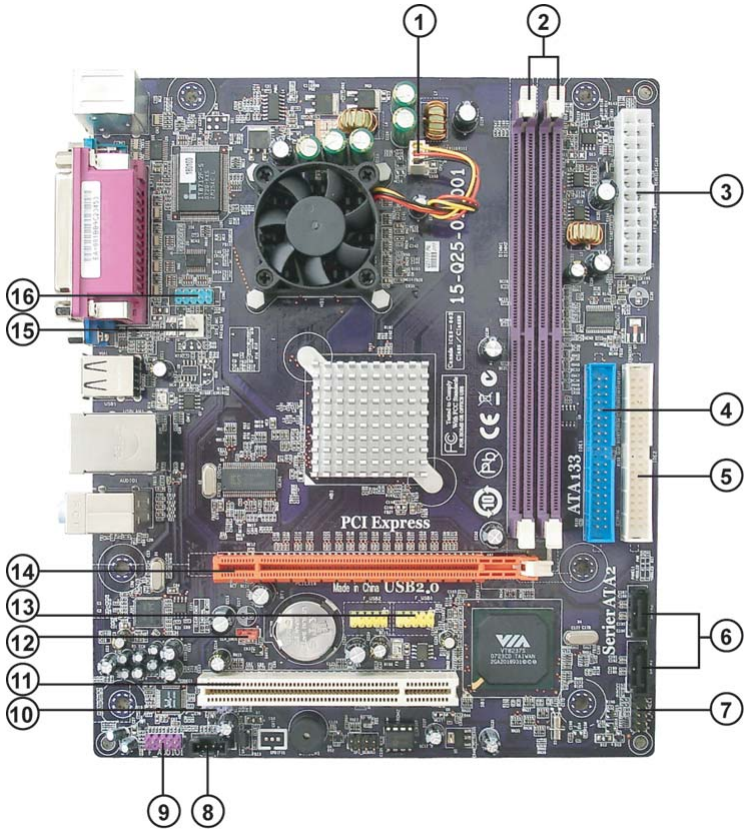


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU_FAN1	CPU cooling fan connector
2. DIMM1~2	240-pin DDR2 SDRAM slots
3. ATX_POWER1	Standard 24-pin ATX power connector
4. IDE1	Primary IDE connector
5. IDE2	Secondary IDE connector
6. SATA1~2	Serial ATA connectors
7. F_PANEL1	Front panel switch/LED header
8. CD_IN1	Analog audio input connector
9. F_AUDIO1	Front panel audio header
10. SPDIFO1	SPDIF out header
11. PCI1	32-bit add-on card slots
12. CLR_CMOS	Clear CMOS jumper
13. F_USB1~2	Front Panel USB headers
14. PCIEX16	PCI Express slot for graphics interface
15. SYS_FAN1	System cooling fan connector
16. COM2	Onboard serial port header

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Memo

Chapter 2
Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the Micro ATX system case. First, some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Secondly, this motherboard supports four enhanced IDE drives. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

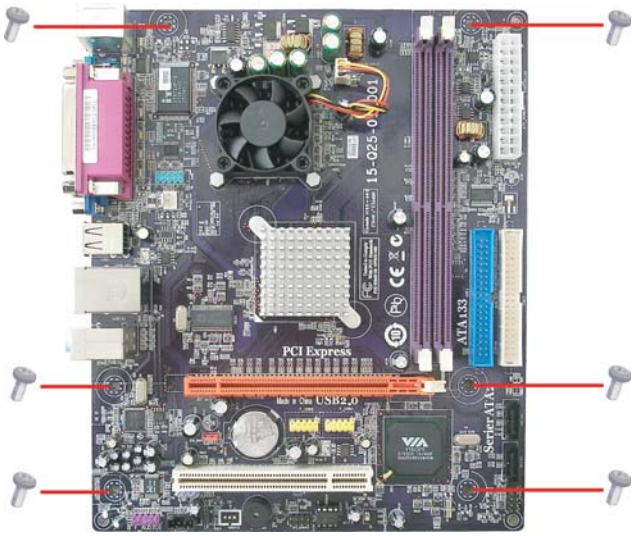
This motherboard carries a Micro ATX form factor of 190 x 228 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



Do not over-tighten the screws as this can stress the motherboard.

Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

Setting Jumpers

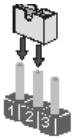
Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

SHORT

OPEN

This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT



Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.

Jumper Settings

Jumper	Type	Description	Setting (default)	
CLR_CMOS	3-pin	Clear CMOS	1-2: NORMAL 2-3: CLEAR CMOS Before clearing the CMOS, make sure to turn off the system.	1 CLR_CMOS

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

Installing Hardware

Installing Memory Modules

This motherboard accommodates two memory modules. It can support two 240-pin DDR2 667/533/400. The total memory capacity is 4 GB.

DDR2 SDRAM memory module table

Memory module	Memory Bus
DDR2 400	***200 MHz***
DDR2 533	***266 MHz***
DDR2 667	***333 MHz***

You must install at least one module in any of the two slots. Each module can be installed with 2 GB of memory; total support memory capacity is 4 GB.

Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

1. This motherboard supports unbuffered DDR2 SDRAM .
2. Push the latches on each side of the DIMM slot down.
3. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
4. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
5. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.

Table B: DDR2 (memory module) QVL (Qualified Vendor List)

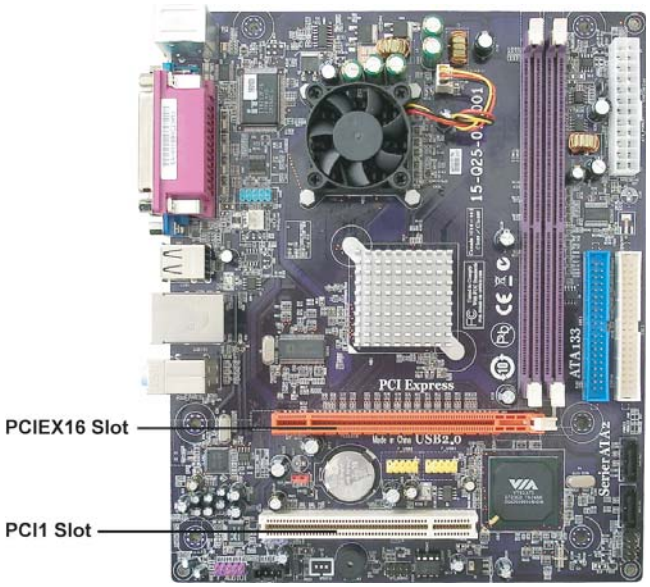
The following DDR2 memory modules have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Module Name
DDRII 400	256 MB	Hynix	HYMP532U646-E3 AA
	512 MB	Nanya	NT512T64U88A0F-5A
DDRII 533	256 MB	Elixir	M2U25664TUH4A0F-37B
	512 MB	Aeneon	AET660UD00-370A98Z
		Infineon	HYS64T64400HU-3.7-A
		Kingston	KVR533D2N4/512
		PQI	MEABR321LA01AA
		Samsung	M378T6553BGO-CD5
	1 GB	Infineon	HYS64T128920HU-3.7-A
		PQI	MEABR421LA0106
		UMAX	UMAX U2S12D30TP-5C
DDRII 667	256 MB	Infineon	HYS64T32400HU-3S-A
	512 MB	A-DATA	M2OAD5G3H3166I1C52
		Apacer	AU512E667C5KBGC
			AU512E667C5KBGY
		APOGEE	AU51082-667P005
		Cosair	VS512MB667D2
		Kingston	KVR667D2N5/512
		Nanya	NT512T64U88A0BY-3C
		PSC	AL6E8E63B-6E1T
		Transcend	K4T51083QC ZCE6
		Twinmos	8G25JK-ED
			8D23JK-TT
	1 GB	A-DATA	M2OAD5G3I4176I1C52
		Apacer	AU01GE667C5KBGY
		APOGEE	AU1G082-667P005
		Infineon	HYS64T128920HU-3S-A
		PQI	MEABR421LA0107
		PSC	AL7E8E63B-6E1T
		Twinmos	8D23KK-TT
	2 GB	Kingston	KVR667D2N5/2G
		Nanya	NT2GT64U8HB0JY-3C
DDRII 800	256 MB	Infineon	HYS64T32000HU-25F-B
	512 MB	A-DATA	M2OAD6G3H3160I1E53
		Aeneon	AET660UD00-25DB98X
		Apacer	AU512E800C5KBGC
		APOGEE	AU51082-800P505
		Infineon	HYS64T64000HU-25F-B
		Nanya	NT512T64U88B0BY-25C
		PSC	AL6E8E63H-8E1
	1 GB	APOGEE	AU1G082-800P000
		Infineon	HYS64T128020HU-25F-B
		Kingston	KHX6400D2ULK2/1G
		Nanya	NT1GT64U8HB0BY-25C
		PSC	AL7E8E63H-8E1
		UMAX	53016042-7100B

Expansion Slots

Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



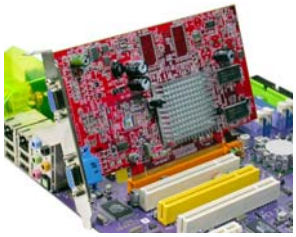
PCIEX16 Slot The PCI Express x16 slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 1.1.

PCI1 Slot This motherboard is equipped with two standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slots on this board are PCI v2.3 compliant.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

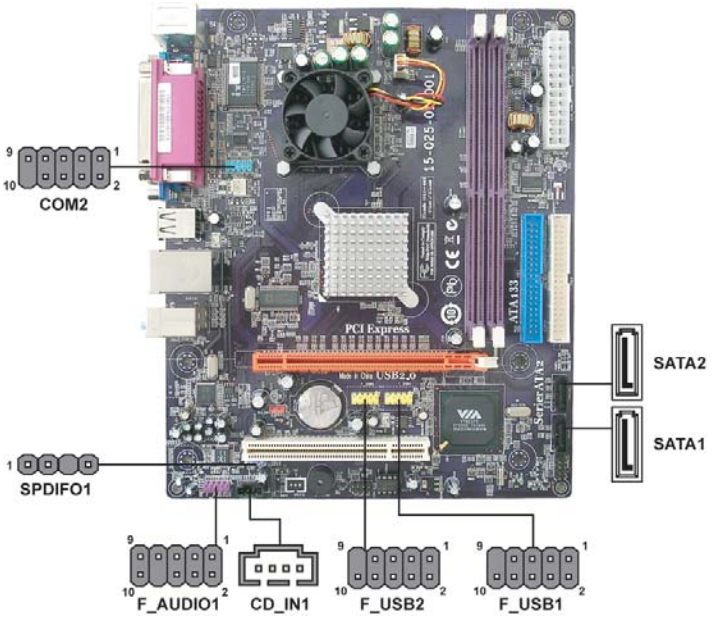
1 Remove a blanking plate from the system case corresponding to the slot you are going to use.
2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3 Secure the metal bracket of the card to the system case with a screw.



For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

Connecting Optional Devices

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



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 Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	SENSE1_RETURN
7	SENSE_SEND	8	KEY
9	PORT 2L	10	SENSE2_RETURN

F_USB1~2: Front Panel USB headers

The motherboard has four 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 connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	USB_FP_OC0	Overcurrent signal

SATA1~2: Serial ATA connectors

These connectors are use to support the new Serial ATA devices for the highest date transfer rates (3.0 Gb/s), 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.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

SPDIFO1: SPDIF out header

This is an optional header that provides an S/PDIF (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.

Pin	Signal Name	Function
1	SPDIF	SPDIF digital output
2	+5VA	5V analog Power
3	Key	No pin
4	GND	Ground

CD_IN1: Analog audio input connector

Pin	Signal Name	Function
1	CD_L	Left CD-in signal
2	GND	Ground
3	GND	Ground
4	CD_R	Right CD-in signal

COM2: Onboard serial port connector

Connect a serial port extension bracket to this header to add a second serial port to your system.

Pin	Signal Name	Function
1	DCDB	Data Carrier Detect
2	SINB	Serial Input
3	SOUTB	UART B Serial Output
4	DTRB	UART B Data Terminal Ready
5	GND	Ground
6	DSRB	Data Set Ready
7	RTSB	RART B Request to Send
8	CTSB	Clear to Send
9	RI	Ring Indicator
10	Key	No pin

Installing a Hard Disk Drive/CD-ROM/SATA Hard Drive

This section describes how to install IDE devices such as a hard disk drive and a CD-ROM drive.

About IDE Devices

Your motherboard has a primary and secondary IDE channel interface (IDE1 and IDE2). An IDE ribbon cable supporting two IDE devices is bundled with the motherboard.

You must orient the cable connector so that the pin1 (color) edge of the cable corresponds to the pin 1 of the I/O port connector.

IDE1: Primary IDE Connector

The first hard drive should always be connected to IDE1.

IDE2: Secondary IDE Connector

The second drive on this controller must be set to slave mode. The configuration is the same as IDE1.

IDE devices enclose jumpers or switches used to set the IDE device as MASTER or SLAVE. Refer to the IDE device user's manual. Installing two IDE devices on one cable, ensure that one device is set to MASTER and the other device is set to SLAVE. The documentation of your IDE device explains how to do this.

About SATA Connectors

Your motherboard features two SATA connectors supporting a total of two drives. SATA, or Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with an SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

SATA cable (optional)

SATA power cable (optional)

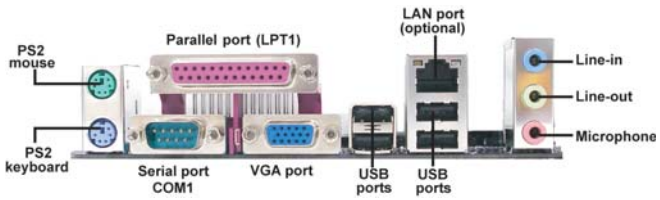
Refer to the illustration below for proper installation:

1. Attach either cable end to the connector on the motherboard.
2. Attach the other cable end to the SATA hard drive.
3. Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.

This motherboard does not support the "Hot-Plug" function.

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:



PS2 Mouse — Use the upper PS/2 port to connect a PS/2 pointing device.

PS2 Keyboard — Use the lower PS/2 port to connect a PS/2 keyboard.

Serial Port (COM1) — Use the COM port to connect serial devices such as mice or fax/modems.

VGA Port — Connect your monitor to the VGA port.

LAN Port (optional) — Connect an RJ-45 jack to the LAN port to connect your computer to the Network.

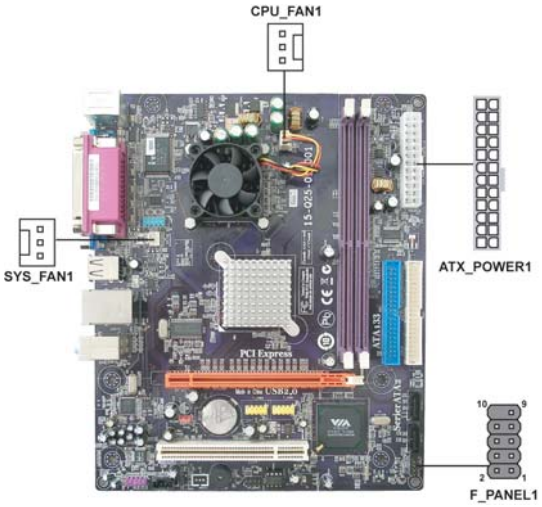
USB Ports — Use the USB ports to connect USB devices.

Audio Ports — Use the three audio ports to connect audio devices. The first jack is for stereo line-in signal. The second jack is for stereo line-out signal. The third jack is for microphone.

Connecting Case Components

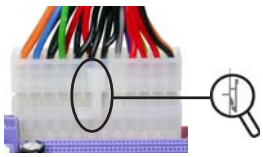
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1 Connect the CPU cooling fan cable to **CPU_FAN1**.
2 Connect the system cooling fan connector to **SYS_FAN1**.
3 Connect the case switches and indicator LEDs to the **F_PANEL1**.
4 Connect the standard power supply connector to **ATX_POWER1**.



Connecting 24-pin power cable

Users please note that the 24-pin power cable can be connected to the ATX_POWER1 connector.



With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX_POWER1 match perfectly.

24-pin power cable

CPU_FAN1/SYS_FAN1: Cooling FAN Power Connectors

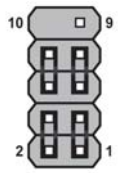
Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

ATX_POWER1: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

Front Panel Header

The front panel header (F_PANEL1) provides a standard set of switch and LED headers commonly found on ATX or micro-ATX cases. Refer to the table below for information:



F_PANEL1

Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED(+)	2	FPPWR/SLP	POWER LED(+)
3	HD_LED_N	Hard disk LED(-)	4	FPPWR/SLP	POWER LED(-)
5	RST_SW_N	Reset Switch(-)	6	PWR_SW_P	Power Switch(+)
7	RST_SW_P	Reset Switch(+)	8	PWR_SW_N	Power Switch(-)
9	RSVD	Reserved	10	Key	No pin

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep LED

Connecting pins 2 and 4 to a single-color, front panel mounted LED provides power on/off and sleep indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.

Memo

Chapter 3

Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc." BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

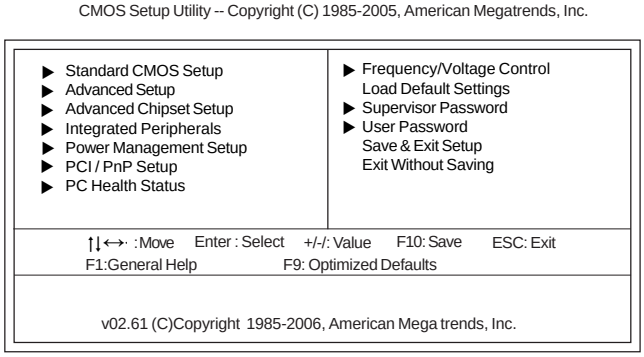
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL/F1 to enter SETUP

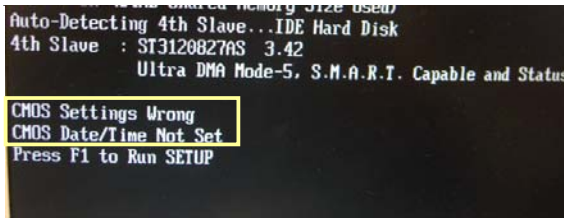
Press the delete key or F1 to access the BIOS Setup Utility.



Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.



Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ▶.

The default BIOS setting for this motherboard applies for most conditions with optimum performance. It is not suggested to change the default values in the BIOS setup and the manufacture takes no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

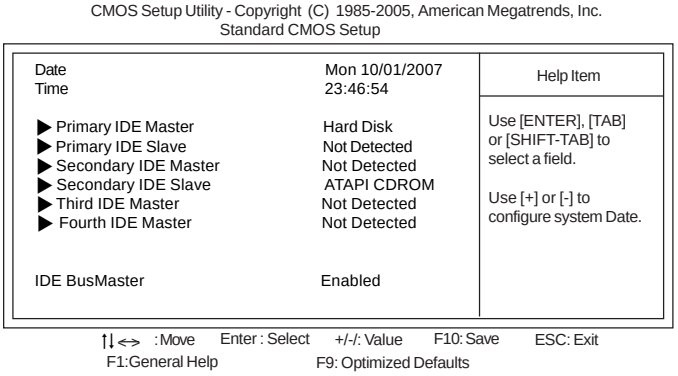
The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓ <->	Scrolls through the items on a menu
+/-/PU/PD	Modifies the selected field's values
F1	Displays a screen that describes all key functions
F9	Loads an optimized setting for better performance
F10	Saves the current configuration and exits setup
ESC	Exits the current menu

For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.

Standard CMOS Setup

This option displays basic information about your system.

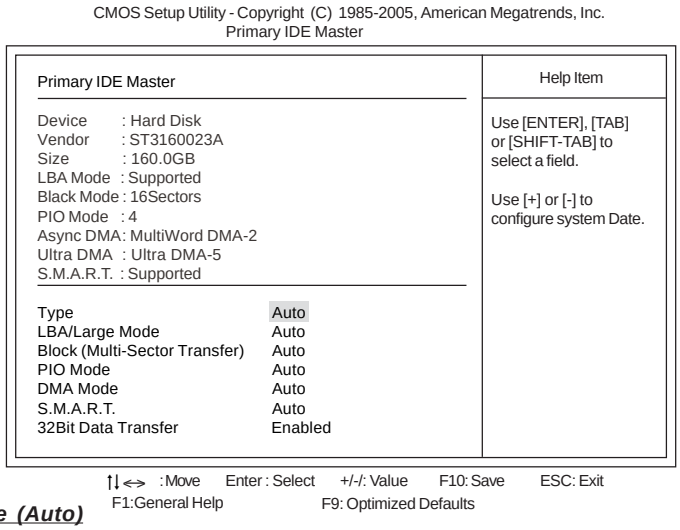


Date and Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

►IDE Devices

Your computer has two IDE channels and each channel can be installed with one or two devices (Master and Slave). In addition, this motherboard supports two SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the IDE channel.



Type (Auto)

Use this item to configure the type of the IDE device that you specify. If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

LBA/Large Mode (Auto)

Use this item to set the LAB/Large mode to enhance hard disk performance by optimizing the area the hard disk is visited each time.

Block (Multi-Sector Transfer) (Auto)

If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode (Auto)

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

DMA Mode (Auto)

DMA capability allows user to improve the transfer-speed and data-integrity for compatible IDE devices.

S.M.A.R.T. (Auto)

The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.

32Bit Data Transfer (Enabled)

Use this item to set the onboard SATA-IDE channel to be disabled, IDE, or RAID.

Press <Esc> to return to the Standard CMOS Setup page.

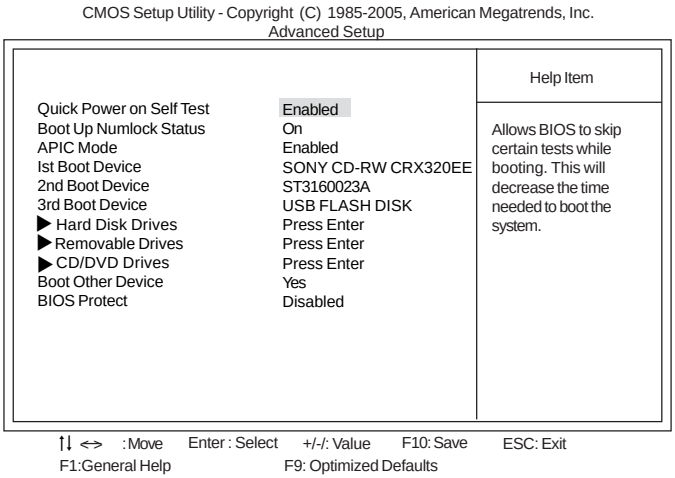
IDE BusMaster (Enabled)

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

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

Advanced Setup

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



Quick Power On Self Test (Enabled)

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 (On)

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

APIC Mode (Enabled)

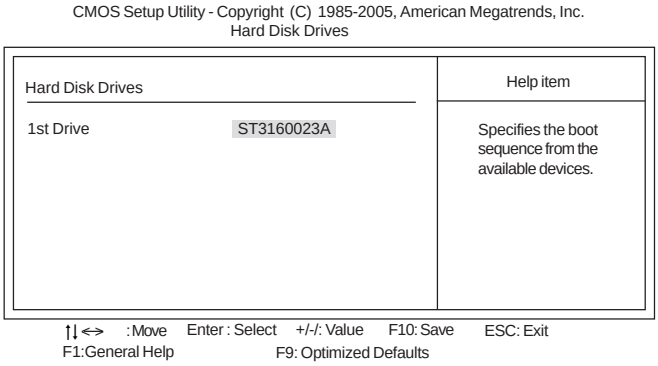
This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

1st/2nd/3rd Boot Device (SONY CD-RW CRX320EE/ST3160023A/USB FLASH DISK)

Use these items to determine the device order the computer used to look for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on your motherboard.

▶ Hard Disk Drives (Press Enter)

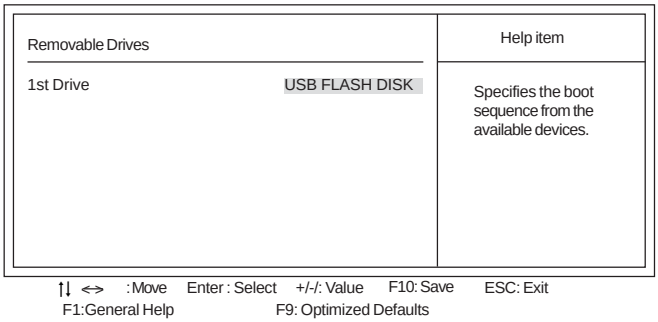
Enter this item, the system will show you the removable drives option.



Press <Esc> to return to the Advanced Setup Page.

▶ Removable Drives (Press Enter)

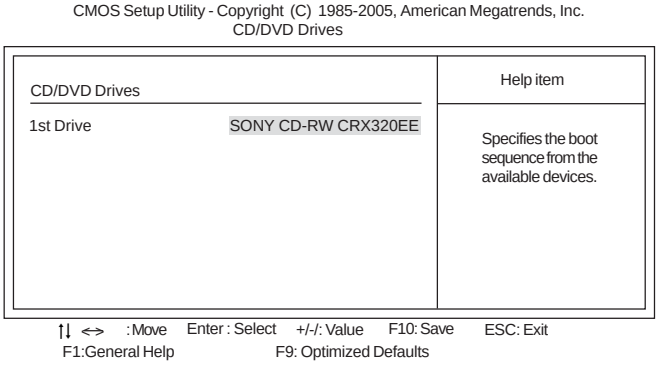
Enter this item, the system will show you the removable drives option.



Press <Esc> to return to the Advanced Setup Page.

▶ CD/DVD Drives (Press Enter)

Enter this item, the system will show you the removable drives option.



Press <Esc> to return to the Advanced Setup Page.

Boot Other Device (Yes)

If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first boot device.

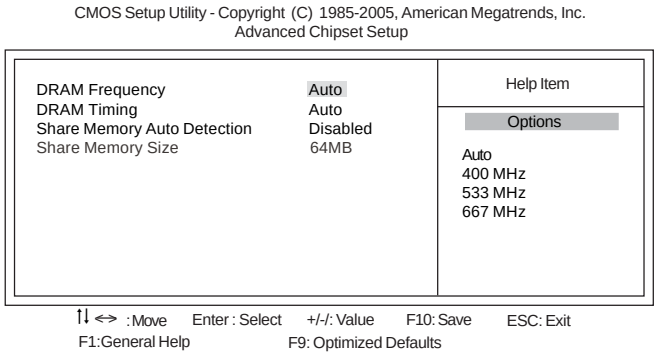
BIOS Protect (Disabled)

This item enables or disables BIOS protect.

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

Advanced Chipset Setup

This page sets up some critical timing parameters of the motherboard.



DRAM Frequency (Auto)

This item shows the frequency of the DRAM in your computer.

DRAM Timing (Auto)

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.

Share Memory Auto Detection (Disabled)

Disable this item to set the Share Memory Size. And if the item is set to Auto, Share Memory Size can be controlled according to the dram size. When the dram size is less than 512 MB, Share Memory Size should be set to 64 MB. While between 512 MB and 1 GB, it should be set to 128 MB. When more than 1 GB, it should be set to 256 MB.

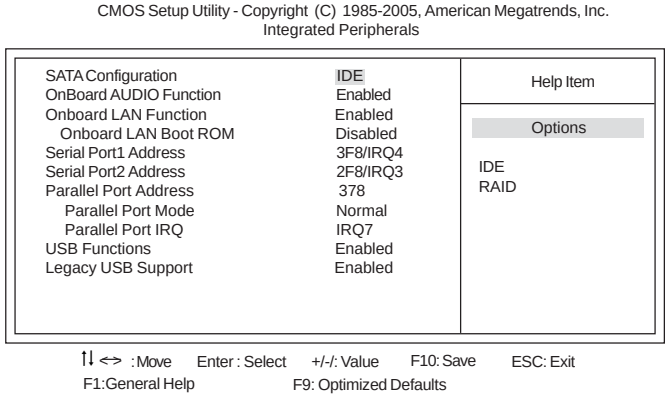
Share Memory Size (64MB)

This item lets you allocate a portion of the main memory for the onboard VGA display application.

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

Integrated Peripherals

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



SATA Configuration (IDE)

Use this item to show the Serial ATA Configuration options: IDE or RAID.

OnBoard AUDIO Function (Enabled)

Use this item to enable or disable the onboard audio device.

Onboard LAN Function (Enabled)

Use this item to enable or disable the onboard LAN function.

OnBoard LAN Boot ROM (Disabled)

Use this item to enable or disable the booting from the onboard LAN or a network add-in card with a remote boot ROM installed.

Serial Port1 Address (3F8/IRQ4)

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

Serial Port2 Address (2F8/IRQ3)

Use this item to enable or disable the onboard COM2 serial port, and to assign a port address.

Parallel Port Address (378)

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

Parallel Port Mode (Normal)

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).

Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

USB Functions (Enabled)

Use this item to enable or disable the USB function.

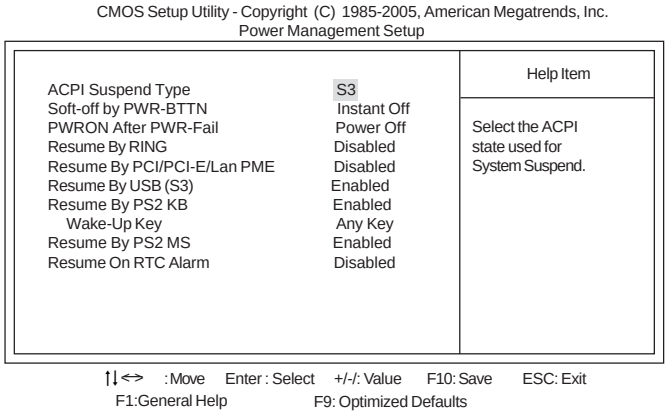
Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices. Setting to Auto allows the system to detect the presence of USB device at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.

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

Power Mangement Setup

This page sets up some parameters for system power management operation.



ACPI Suspend Type (S3)

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.

Soft-Off by PWR- BTTN (Instant Off)

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the power button on your system. 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 a software power down.

PWRON After PWR-Fail (Power Off)

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

Resume By RING (Disabled)

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 by PCI/PCI-E/Lan PME (Disabled)

These items specify whether the system will be awakened from power saving modeswhen activity or input signal of the specified hardware peripheral or component isdetected.

Resume By USB (S3) (Enabled)

This item allows you to enable/disable the USB device wakeup function from S3/ S4mode.

Resume By PS2 KB (Enabled)

This item enable or disable you to allow keyboard activity to awaken the system from power saving mode.

Wake-Up Key (Any 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.

Resume On PS2 MS (Enabled)

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

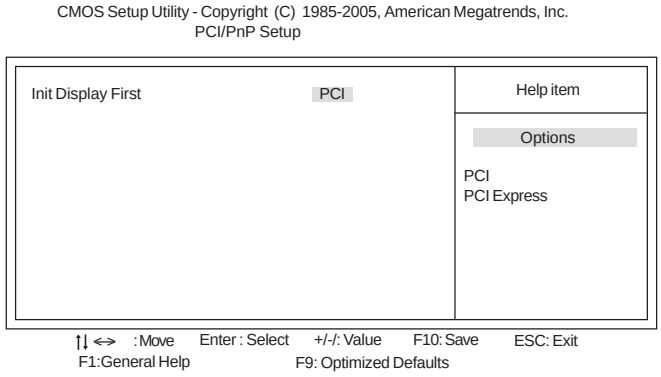
Resume On RTC Alarm (Disabled)

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.

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

PCI / PnP Setup

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



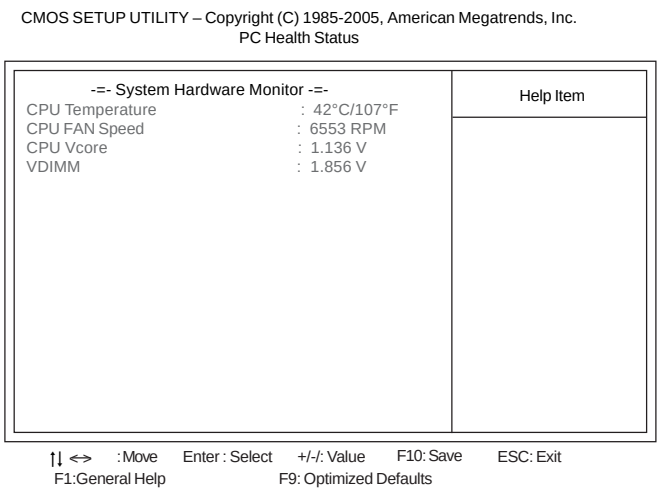
Init Display First (PCI)

Use this item to decide which device to be the initial display device.

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

PC Health Status

This page sets up some parameters for the hardware monitoring function of this motherboard.



System Component Characteristics

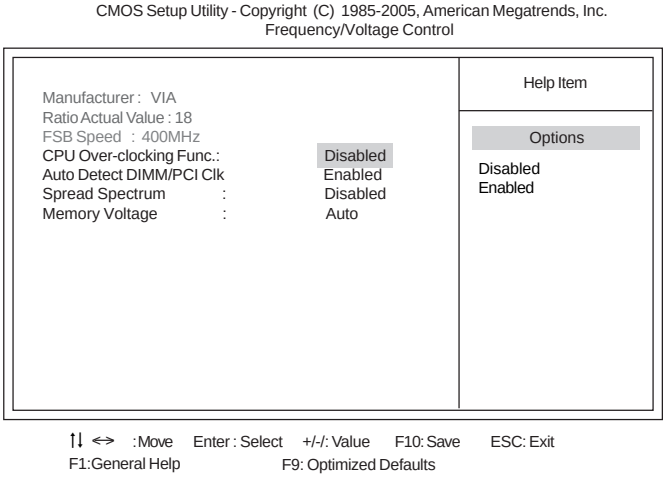
These fields provide you with information about the system's current operating status. You cannot make changes to these fields.

- CPU Temperature
- CPU Fan Speed
- CPU Vcore
- VDIMM

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

Frequency/Voltage Control

This page helps you manually configure the CPU of this motherborad. The system will automatically detect the type of installed CPU and make the appropriate adjustments to these items on this page.



Manufacturer (VIA)

This item displays the information of current manufacturer of the CPU installed in your computer.

Ratio Actual Value

This item shows the actual ratio of the CPU installed in your system.

FSB Speed

This item shows the frequency of Front Side BUS.

CPU Over-clocking Func. (Disabled)

This item decides the CPU over-clocking function installed in your system. If the over-clocking fails, please turn off the system power. And then, hold the PageUp key (similar to the Clear CMOS function) and turn on the power, the BIOS will recover the safe default.

Auto Detect DIMM/PCI Clk (Enabled)

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

Spread Spectrum (Disabled)

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

Memory Voltage (Auto)

This item determines the DDR2 voltage adjustment.

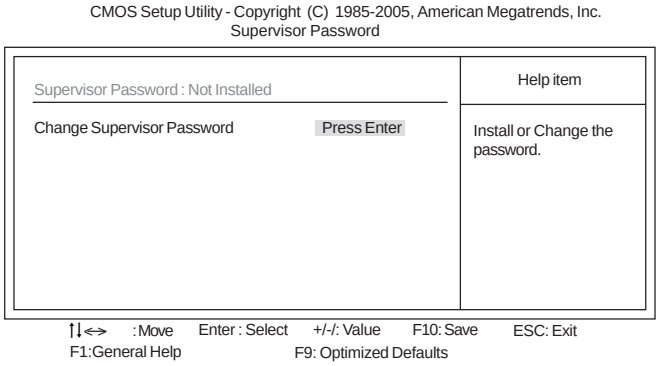
Press <Esc> to return to the main menu setting page.

Load Default Settings

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility. Press <OK> and then <Enter> to install the defaults. Press <Canel> and then <Enter> to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press <F9>.

Supervisor Password

This page helps you install or change a password.



Supervisor Password (Not Installed)

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

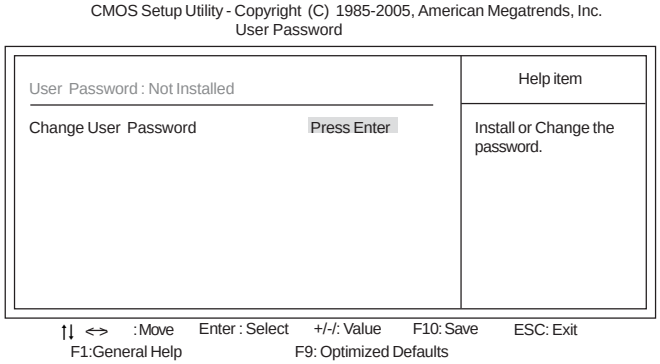
Change Supervisor Password (Press Enter)

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

This page helps you install or change a password.



User Password (Not Installed)

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

Change User Password (Press Enter)

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

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

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, select <OK> to save and exit, or select <Cancel> 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, select <OK> to discard changes and exit, or select <Cancel> to return to the main menu.

If you have made settings that you do not want to save, use the "Exit Without Saving" item and press <OK> to discard any changes you have made.

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
3. Prepare a bootable device or create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the bootable device.
5. Turn off your computer and insert the bootable device in your computer. (You might need to run the Setup Utility and change the the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first.)
6. At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new BIOS and then press <Enter>. Example: AMINF340.EXE040706.ROM
7. When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Memo

Chapter 4

Using the Motherboard Software

About the Software CD-ROM

The support software CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.

1.Never try to install all software from folder that is not specified for use with your motherboard.
2.The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center "before" installing HD audio driver bundled in the Driver CD. Please log on to http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto for more information.

Auto-installing under Windows 2000/XP/Vista

The Auto-install CD-ROM makes it easy for you to install the drivers and software for your motherboard.

If the Auto-install CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software CD-ROM disc loads automatically under Windows 2000/XP/ Vista. When you insert the CD-ROM disc in the CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.

If the opening screen does not appear; double-click the file "setup.exe" in the root directory.

Setup Tab

Setup	Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD. Before installing the software from Windows Explorer, look for a file named README.TXT, INSTALL.TXT or something similar. This file may contain important information to help you install the software correctly. Some software is installed in separate folders for different operating systems, such as Windows 2000/XP/Vista. Always go to the correct folder for the kind of OS you are using. In install the software, execute a file named SETUP.EXE or INSTALL.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The **EXIT** button closes the Auto Setup window.

Application Tab

Lists the software utilities that are available on the CD.

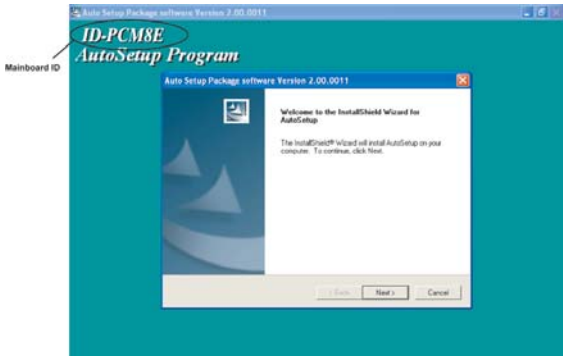
Read Me Tab

Displays the path for all software and drivers available on the CD.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

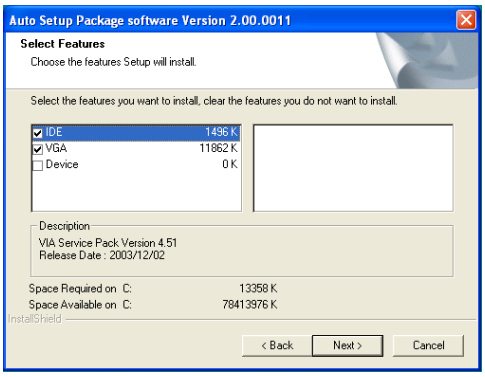
1. *Click **Setup.** The installation program begins:*



The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

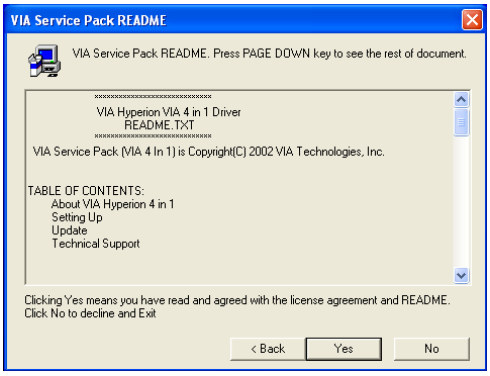
The motherboard identification is located in the upper left-hand corner.

2. *Click **Next.** The following screen appears:*



3. *Check the box next to the items you want to install. The default options are recommended.*

4. *Click **Next** run the Installation Wizard. An item installation screen appears:*



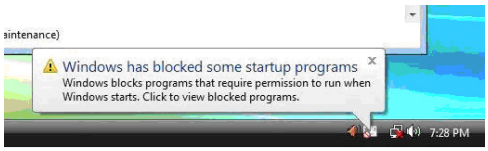
5. *Follow the instructions on the screen to install the items.*

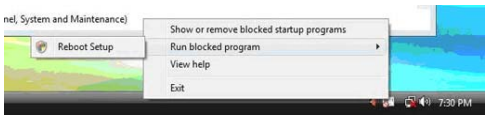
1. Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

2. 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.





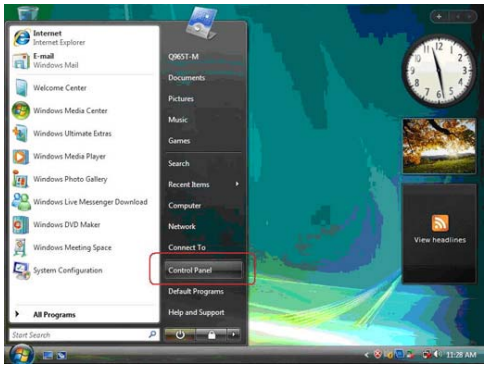
Method 2. Disable UAC (User Account Control)

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

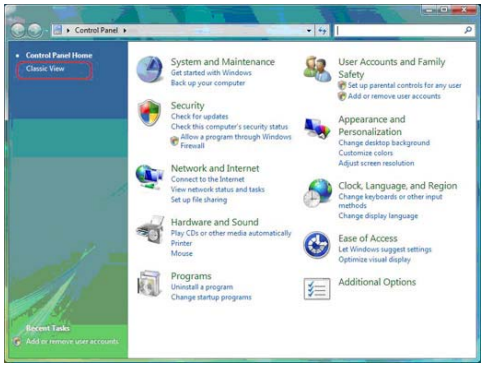
Disable Vista UAC function before installing drivers, then use CD driver to install drivers, it will continue to install drivers after system restart without running blocked programs.

Follow these instructions to Disable Vista UAC function:

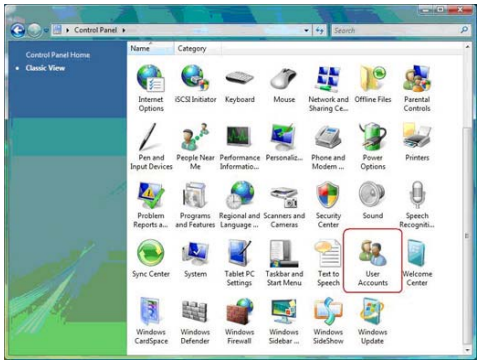
1. *Go to* ***Control Panel****.*



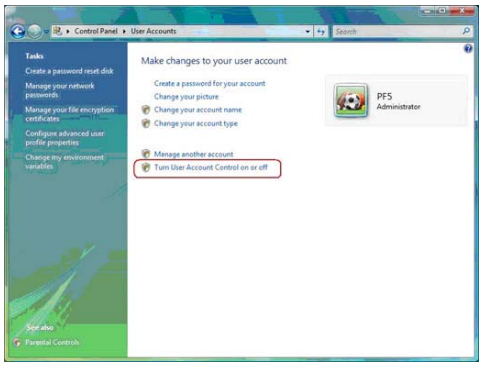
2. *Select* ***Classic View***.



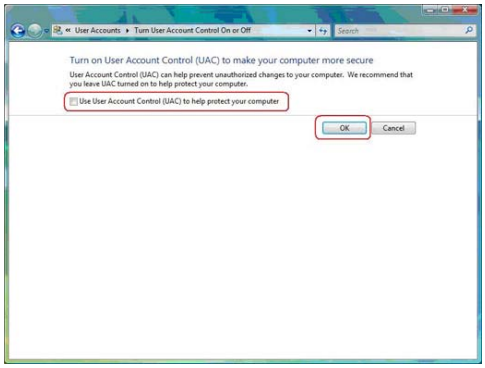
3. *Set* ***User Account***.



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.*



Manual Installation

Insert the CD in the CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

These software(s) are subject to change at anytime without prior notice. Please refer to the support CD for available software.

This concludes Chapter 4.

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 80GB storage capacity and the other hard disk has 60GB storage capacity, the maximum storage capacity for the RAID 1 set is 60GB.

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.

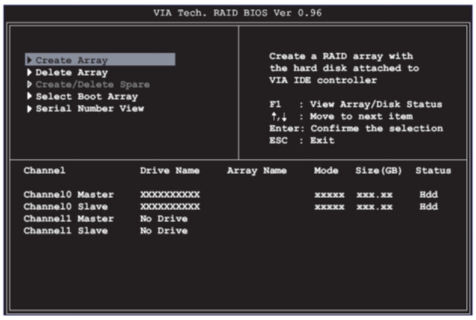
iii Either end of the Serial ATA data cable can be connected to the SATA hard disk or the SATA connector on the motherboard.

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.

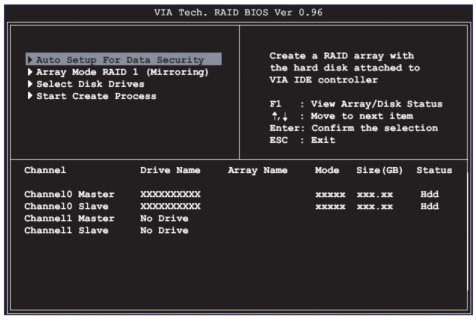


On the upper-right side of the screen is the message and legend box. The keys on the legend box allow you to navigate through the setup menu options. The message describes the function of each menu item. The following lists the keys found in the legend box with their corresponding functions.

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

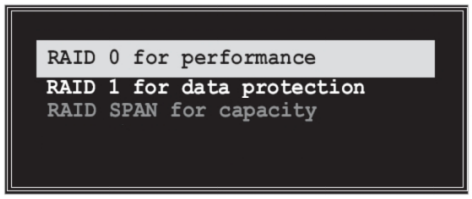
Create Array

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.

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.

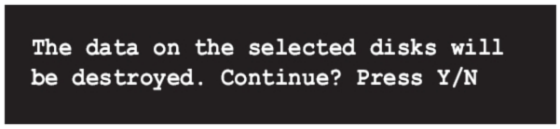
Tip

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:

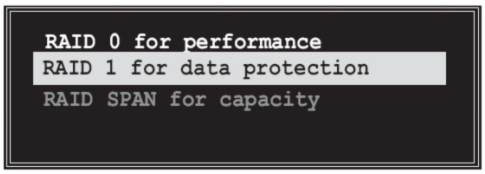
The same confirmation message appears when the *Auto Setup for Performance* option is selected.



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.



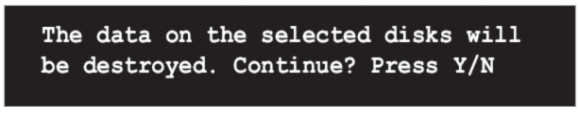
2 Select RAID 1 for data protection from the menu and press <Enter>. Select next task from pop-up menu. The task Create only creates the mirrored set without creating a backup. Create and duplicate creates both mirrored set and backup.

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.

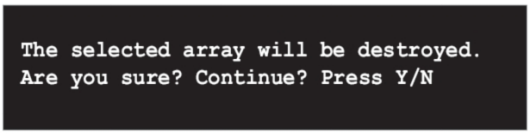


Press "Y" to confirm or "N" to return to the configuration options.

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.

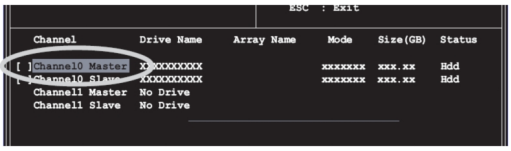


Press "Y" to confirm or "N" to return to the configuration options.

Select Boot Array

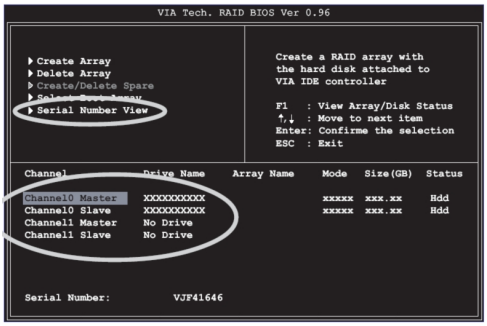
1 In the VIA RAID BIOS utility main menu, select Select Boot Array then press the <Enter> key. The focus is directed to the list of channel used for IDE RAID arrays.

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.



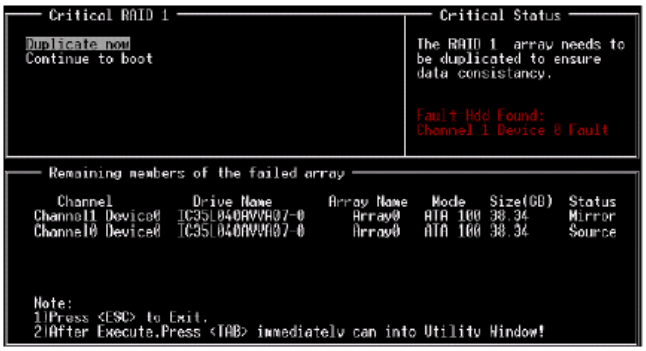
Serial Number View

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.



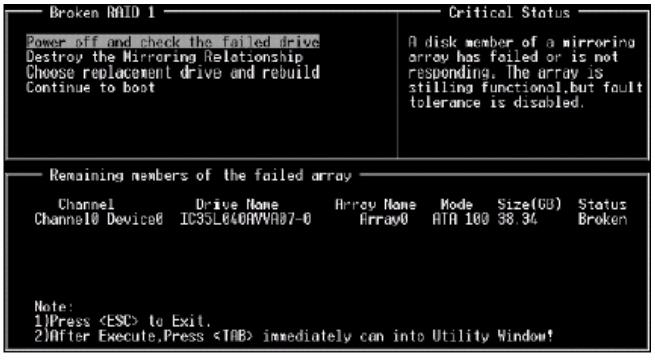
If user selects **Continue to boot**, it will enable duplicating the array after booting into OS.

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 problems.



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.

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 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.

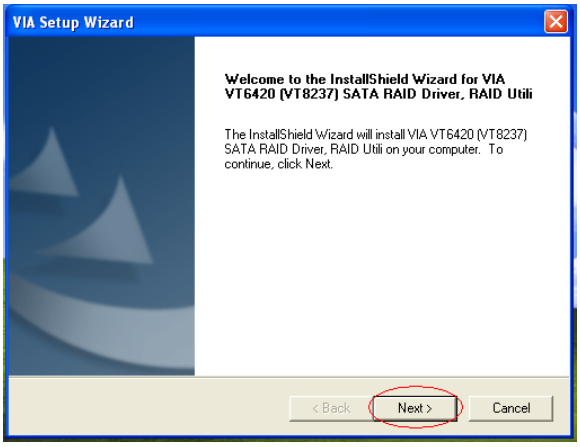
Installation of VIA SATA RAID Utility

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:

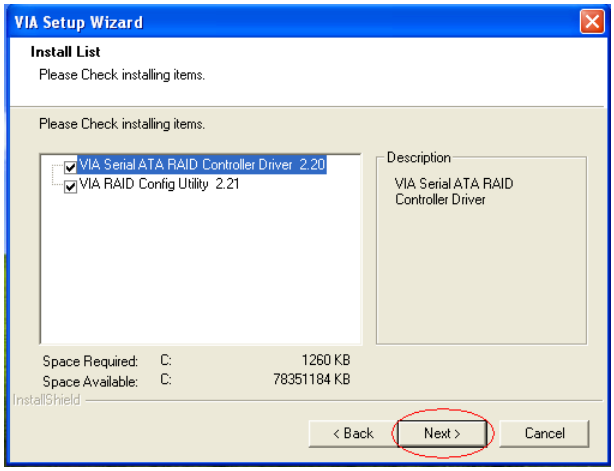
- Serial ATA RAID driver for Windows XP
- VIA SATA RAID utility
- RAID0 and RAID1 functions

Insert the 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.

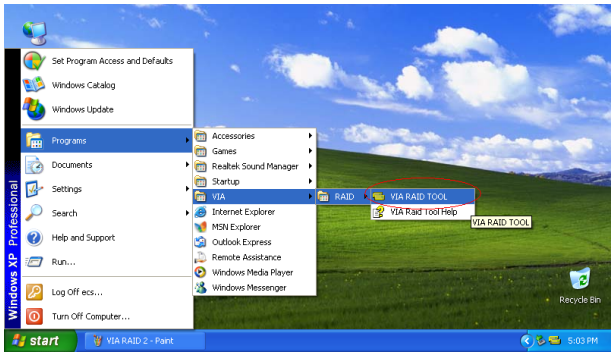


Put a check mark in the check box to install the feature you want. Then click **Next** button to proceed the installation.

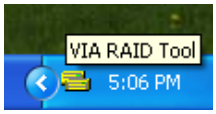


Using VIA RAID Tool

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 in the system tray of the tool bar to launch the **VIA RAID Tool** utility.



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 window-pane displays the details of the controller or disk drives. The available features are as following:

View by Controller

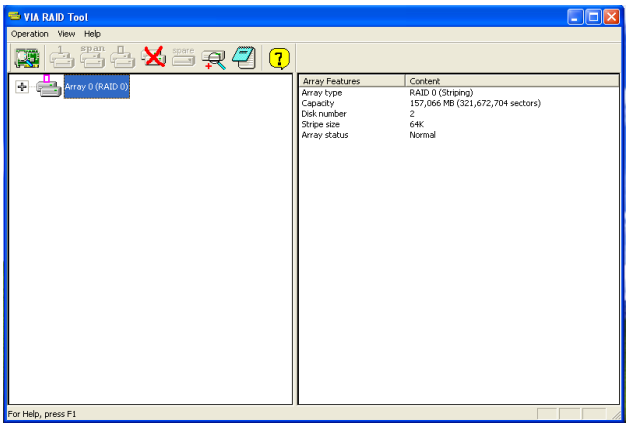
View by Devices

View Event log

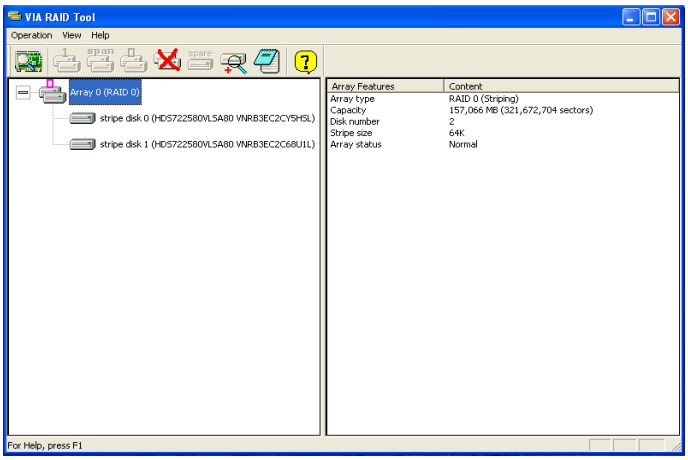
Help Topics

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

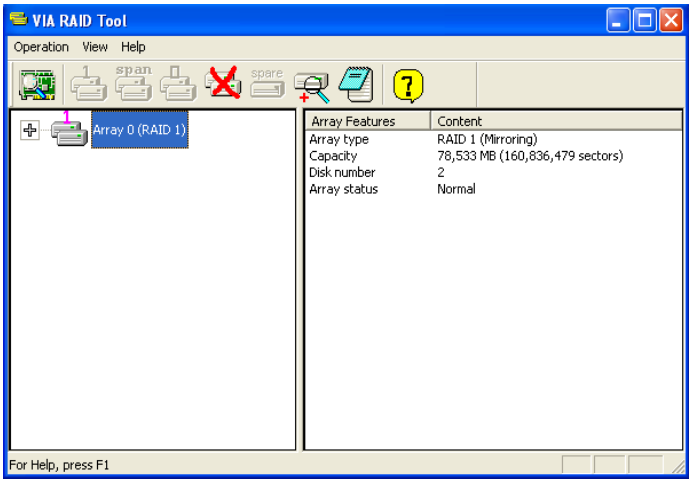
Click on  or  button to determine the viewing type of left windowpane. There are two viewing types: By controllers and by device. Click on the object in the left windowpane to display the status of the object in the right windowpane. The following screen shows the status of Array 0-RAID 0.



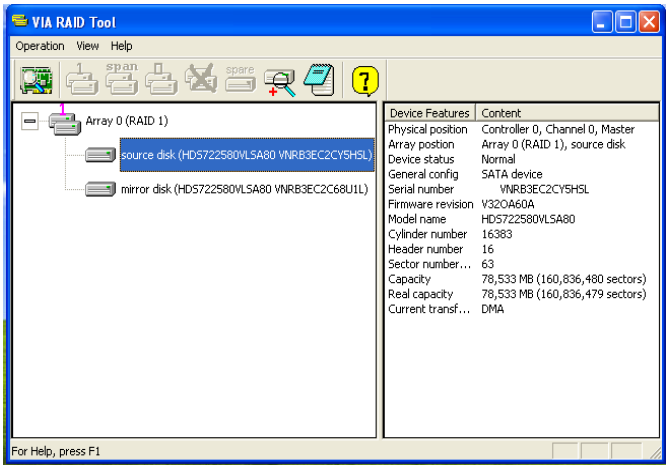
Click on the plus (+) symbol next to Array 0--RAID 0 to see the details of each disk.



You may also use the same  or  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.



Memo