



# CERTIFICATE

The TÜV CERT Certification Body  
for QM Systems of RWTÜV Systems GmbH

hereby certifies in accordance with TÜV CERT  
procedure that

**ELITEGROUP COMPUTER SYSTEMS CO., LTD.**  
**ECS MANUFACTURING (SHENZHEN) CO., LTD.**  
**ELITE TECHNOLOGY (SHENZHEN) CO., LTD.**

2F, No. 240, Sec. 1, Nei Hu Road, Taipei, Taiwan 114  
No. 22, Alley 38, Lane 91, Sec. 1, Nei Hu Road, Taipei, Taiwan 114  
No. 20 & No. 26, Free Trade Zone, Shatoujiao, Shenzhen City, Guangdong Province, China

has established and applies a quality system for

**Design, Manufacturing and Sales of Mainboards,  
Personal Computers, Notebooks and Peripheral Cards**

An audit was performed, Report No. 2.5-1585/2000

Proof has been furnished that the requirements according to  
ISO 9001 : 2000 / EN ISO 9001 : 2000 / JIS Q 9001 : 2000 / ANSI/ASQC Q9001 : 2000

are fulfilled. The certificate is valid until 27 January 2007

Certificate Registration No. 04100 2000 1325

The company has been certified since 2000



Essen, 04.03.2004



  
The TÜV CERT Certification Body for QM Systems  
of RWTÜV Systems GmbH



# ISO14001 CERTIFICATE

Certificate No.: 061-04-EI-0065-R1-L

We hereby certify that

**ECS MANUFACTURING (SHANZHEN) CO., LTD.**

by reason of its

**Environmental Management System**

has been awarded this certificate for  
compliance with the standard

**ISO14001:1996**

The Environmental Management System  
applies in the following area:

**ECS MANUFACTURING (SHANZHEN) CO., LTD.**  
located at No. 20 & 26 (except 1F, 2F), Free Trade Zone,  
Shatuoqiao, Shenzhen City, Guangdong Province, P. R. China,  
is engaged in manufacturing of Mother Board and Peripheral Card,  
and interrelated managerial activities.

Date of issue: 28th Sept. 2004

Date of expiry: 27th Sept. 2007

Signed by:



**SHENZHEN SOUTHERN CERTIFICATION CO., LTD.**

This publication, including photographs, illustrations and software, is under the protection of international copyright laws, with all rights reserved. Neither this user's guide, nor any of the material contained herein, may be reproduced without the express written consent of the manufacturer.

The information in this document is subject to change without notice. The manufacturer makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Further, the manufacturer reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of the manufacturer to notify any person of such revision or changes.

### Trademarks

IBM, VGA, and PS/2 are registered trademarks of International Business Machines.

Intel, Pentium/II/III, Pentium 4, Celeron and MMX are registered trademarks of Intel Corporation.

Microsoft, MS-DOS and Windows 98SE/ME/2000/XP are registered trademarks of Microsoft Corporation.

AMI is a trademark of American Megatrends Inc.

It has been acknowledged that other brands or product names in this manual are trademarks or the properties of their respective owners.

### 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.

**Copyright © 2005  
All Rights Reserved  
P23G Series, V1.0  
November 2005**

**Table of Contents**

**Trademark ..... i**  
*Static Electricity Precautions ..... i*  
*Pre-Installation Inspection ..... i*

**Chapter 1: Introduction ..... 1**  
*Key Features ..... 1*  
*Package Contents ..... 4*

**Chapter 2: Motherboard Installation ..... 5**  
*Motherboard Components ..... 6*  
*I/O Ports ..... 7*  
*Installing the Processor ..... 7*  
*Installing Memory Modules ..... 9*  
*Jumper Settings ..... 11*  
*Install the Motherboard ..... 12*  
*Connecting Optional Devices ..... 13*  
*Install Other Devices ..... 15*  
*Expansion Slots ..... 17*

**Chapter 3: BIOS Setup Utility ..... 19**  
*Introduction ..... 19*  
*Running the Setup Utility ..... 19*  
*Standard CMOS Setup Page ..... 20*  
*Advanced Setup Page ..... 21*  
*Features Setup Page ..... 23*  
*Power Management Setup ..... 24*  
*PCI/Plug and Play Setup Page ..... 25*  
*BIOS Security Features Setup Page ..... 26*  
*CPU PnP Setup Page ..... 27*  
*Hardware Monitor Page ..... 28*  
*Load Optimal Defaults ..... 28*  
*Save Changes and Exit ..... 29*  
*Discard Changes and Exit ..... 29*

**Chapter 4: Software & Applications ..... 31**  
*Introduction ..... 31*  
*Installing Support Software ..... 31*  
*Bundled Software Installation ..... 33*

**Notice:**

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 Pentium 4/Celeron D/Pentium D processors with Hyper-Threading Technology and Front-Side Bus (FSB) speeds up to 1066/800/533 MHz. Hyper-Threading Technology, designed to take advantage of the multitasking features in Windows XP, gives you the power to do more things at once.

It integrates the VIA P4M800Pro Northbridge and VT8237R 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 0.95. It supports AC' 97 Audio Codec and provides Ultra DMA 133/100/66 function. It has one 8X AGP, one CNR and three 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 parallel port, one LAN port(optional), one VGA port, three audio jacks for Line-in, Line-out and Microphone, four back-panel USB2.0 ports 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.

### Key Features

The key features of this motherboard include:

#### **LGA775 Socket**

- Supports latest Intel Pentium 4/Celeron D/Pentium D Series processors with Hyper-Threading Technology
- Supports up to 1066/800/533 MHz Front-Side Bus

**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.

#### **Chipset**

There are VIA P4M800Pro Northbridge and VT8237R in the chipsets in accordance with an innovative and scalable architecture with proven reliability and performance.

- High Performance Northbridge with 1066/800/533 MHz FSB for P4/Celeron D processors
- V-link 533 MB/s high bandwidth North/South Bridge interconnect
- Integrated UniChrome Pro 3D/2D Graphics & Video Controller, Microsoft DirectX 9.0 compatible, OpenGL supported

## Motherboard User's Guide

---

- Supports for AGP 8X/4X, AGP v3.0 compliant with 1.5V
- Advanced 64-bit DDR2 533 and DDR400 SDRAM controller

**Note:** P4M800Pro chipset can only support mixed 1024/512/256/128/64Mb x8/16 DDR2 SDRAMs or mixed 1024/512/256/128/64Mb x8/16 DDR SDRAMs.

- Supports 16-bit 66 MHz V-Link Host interface with total bandwidth of 1066 MB/s
- Compliant with PCI 2.2 specification at 33 MHz, supporting up to 6 PCI masters
- Integrated Serial ATA Host Controllers, supporting data transfer rates up to 1..5Gb/s
- Integrated Dual channel UltraDMA 133/100/66 Master Mode EIDE Controller
- USB 2.0 Controller, supporting up to 8 USB 2.0 ports
- Network Controller, supporting enterprise class 100/10 Mb Fast Ethernet MAC
- Integrated keyboard Controller with PS2 mouse support

### Memory Support

- Two 184-pin DIMM sockets for DDR SDRAM memory modules
- Two 240-pin DIMM sockets for DDR2 SDRAM memory modules
- Support DDR 400/333 or DDR2 533/400
- Maximum installed memory is 2GB

**Note:** Users please note that DDR & DDR2 can't both be applied at the same time on this motherboard. Users can use either DDR or DDR2 memory modules only!

### Expansion Slots

- Three 32-bit PCI slots
- One 8X AGP slot
- One CNR slot

### Onboard IDE channels

- 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 (~150 MB/s) with scalability to higher rates
- Low pin count for both host and devices

### **AC'97 Audio Codec**

- Compliant with AC'97 2.3 specifications
- Meets performance requirements for audio on PC99/2001 systems
- Meets Microsoft WHQL/WLP 2.0 audio requirements
- Support 48KHz of S/PDIF output is compliant with AC'97 rev2.3 specification
- HRTF 3D Positional Audio and 10 Bands of Software Equalizer

### **Onboard I/O Ports**

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

### **Fast Ethernet LAN (optional)**

- Single Chip 100Base-TX / 10Base-T Physical Layer Solution
- Dual Speed – 100/10 Mbps
- Half and Full Duplex
- MII Interface to Ethernet Controller
- MII Interface to Configuration & Status
- Auto Negotiation: 10 / 100, Full / Half Duplex
- Meet All Applicable IEEE 802.3, 10Base-T and 100Base-Tx Standards.
- On Chip Wave Shaping – No External Filters Required.

### **USB 2.0**

- Compliant with Universal Serial Bus Specification Revision 2.0
- Compliant with Intel's Enhanced Host Controller Interface Specification Revision 1.0
- Compliant with Universal Host Controller Interface Specification Revision 1.1
- PCI multi-function device consists of two UHCI Host Controller cores for full-/low-speed signaling and one EHCI Host Controller core for high-speed signaling
- Root hub consists 4 downstream facing ports with integrated physical layer transceivers shared by UHCI and EHCI Host Controller, up to eight functional ports

## Motherboard User's Guide

---

- Support PCI-Bus Power Management Interface Specification release 1.1
- Legacy support for all downstream facing ports

### 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 244 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:

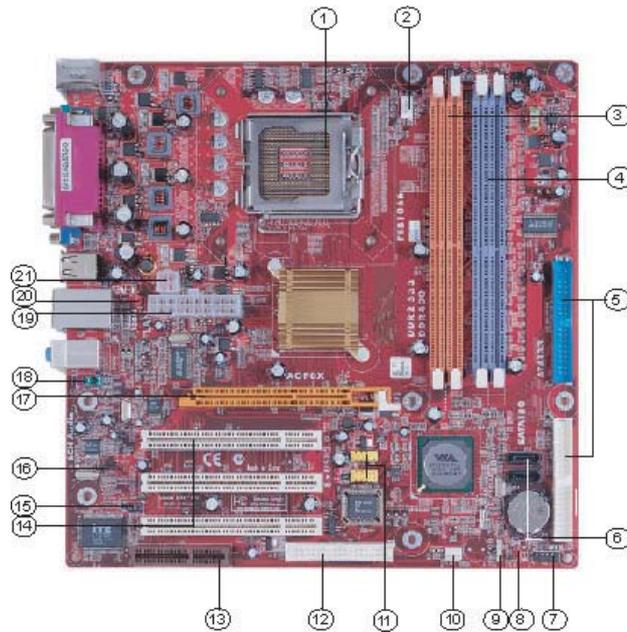
- Identify the motherboard components
- Install a CPU
- Install one or more system memory modules
- Make sure all jumpers and switches are set correctly
- Install this motherboard in a system chassis (case)
- Connect any extension brackets or cables to headers/connectors on the motherboard
- Install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

**Note:**

1. Before installing this motherboard, make sure jumper CLR\_CMOS1 is under Normal setting. See this chapter for information about locating CLR\_COMS1 and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the motherboard.

## Motherboard User's Guide

### Motherboard Components

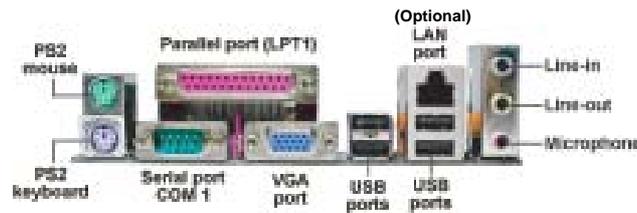


ITEM	LABEL	COMPONENTS
1	CPU Socket	LGA 775 Socket for Intel Pentium 4/ Celeron D/Pentium D processors
2	CPU_FAN1	CPU Fan connector(4-pin)
3	DDR11-2	240-pin DDR2 SDRAM sockets
4	DDR1-2	184-pin DDR SDRAM sockets
5	IDE1/2	Primary/Secondary IDE connectors
6	SATA 1/2	Serial ATA connectors
7	PANEL1	Front Panel Switch/LED header
8	CLR_COMS1	Clear CMOS jumper
9	SPK1	Speaker header
10	SY_S_FAN1	System Fan connector
11	F_USB1/2	Front Panel USB headers
12	FDD1	Floppy Disk Drive connector
13	CNR1	CNR slot
14	PCI 1-3	32-bit PCI slots
15	IR1	Infrared header
16	CD_IN1	Analog Audio Input header
17	AGP1	AGP slot
18	AUDIO1	Front Panel Audio header
19	PWR1	Standard 20-Pin ATX Power connector
20	USB_PWR1	USB Power Select jumper
21	PWR2	Standard 4-Pin ATX Power connector

## Chapter 2: Motherboard Installation

### I/O Ports

The illustration below shows a side view of the built-in I/O ports on the motherboard.



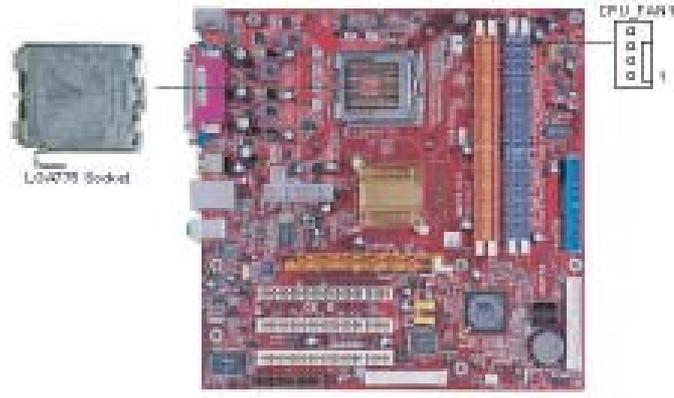
<b>PS/2 Mouse</b>	Use the upper PS/2 port to connect a PS/2 pointing device.
<b>PS/2 Keyboard</b>	Use the lower PS/2 port to connect a PS/2 keyboard.
<b>Parallel Port (LPT1)</b>	Use the Parallel port to connect printers or other parallel communications devices.
<b>COM1</b>	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1.
<b>VGA</b>	Use the VGA port to connect VGA devices.
<b>LAN Port (optional)</b>	Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
<b>USB Ports</b>	Use the USB ports to connect USB devices.
<b>Audio Ports</b>	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.

### Installing the Processor

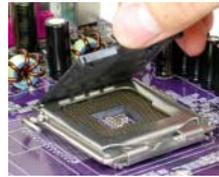
This motherboard has a LGA775 socket for the latest Intel Pentium 4/Celeron D/ Pentium D processors. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity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

### CPU Installation Procedure

Follow these instructions to install the CPU:



- A. 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.
- B. 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.
- C. Install the CPU on the socket
  - Orientate CPU package to the socket. Make sure you match triangle marker to pin 1 location.
- D. Close the load plate
  - Slightly push down the load plate onto the tongue side, and hook the lever.
  - CPU is locked completely.
- E. Apply thermal grease on top of the CPU.
- F. Fasten the cooling fan supporting base onto the CPU socket on the motherboard.



## Chapter 2: Motherboard Installation

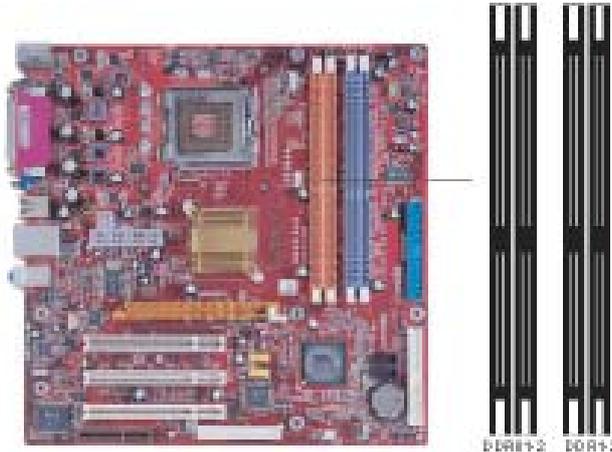
- G. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for more detail installation procedure.



- 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.

### Installing Memory Modules

This motherboard accommodates two 184-pin DIMM DDR1-2 sockets (Dual Inline Memory Module) for unbuffered DDR400/333 memory modules (Double Data Rate SDRAM) and two 240-pin DIMM DDRII-2 sockets (Dual Inline Memory Module) for unbuffered DDR2 533/400 memory modules (Double Data Rate SDRAM). DDR SDRAM is a type of SDRAM that supports data transfers on both edges of each clock cycle (the rising and falling edges), effectively doubling the memory chip's data throughput. You must install at least one module in any of the four slots. Each module can be installed with 256 MB to 1 GB of memory; total memory capacity is 2 GB.



## Motherboard User's Guide

---

**Note1:** Please be noted you can **NOT** use DIMM DDRII1-2 (DDR2 533/400) and DIMM DDR1-2 (DDR400/333) simultaneously. Only use either DDR2(533/400) or DDR(400/333) memory modules!

**Note2:** 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.

### Memory Module Installation Procedure

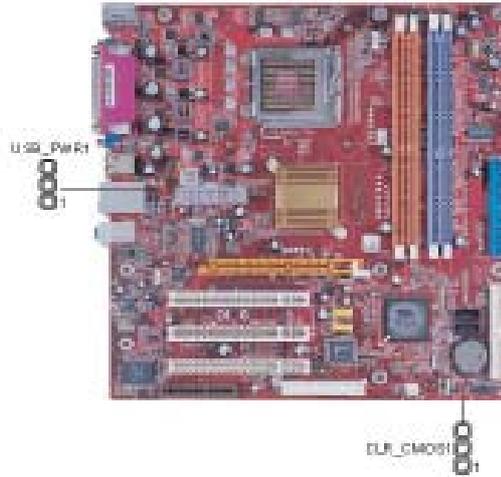
These modules can be installed with up to 2 GB system memory. Refer to the following to install the memory module.

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\_CMOS1: 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 instability after clearing CMOS, we recommend users to enter the main BIOS setting page to “Load Optimal De-faults” and then “Save Changes and Exit”.

#### USB\_PWR1: USB Power Select Jumper

Use these jumpers to select the voltage for USB port.

Function	Jumper Setting
VCC5V	Short Pins 1-2
SB5V	Short Pins 2-3

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

## Motherboard User's Guide

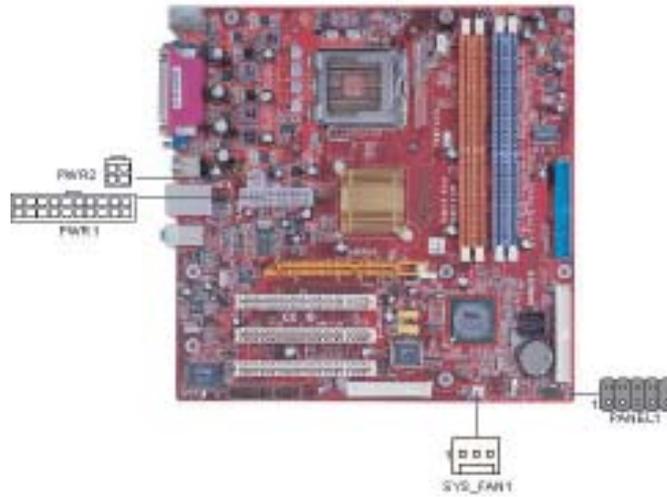
---

### 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 PWR1 connector on the motherboard. The PWR2 is a +12V connector for CPU Vcore power.



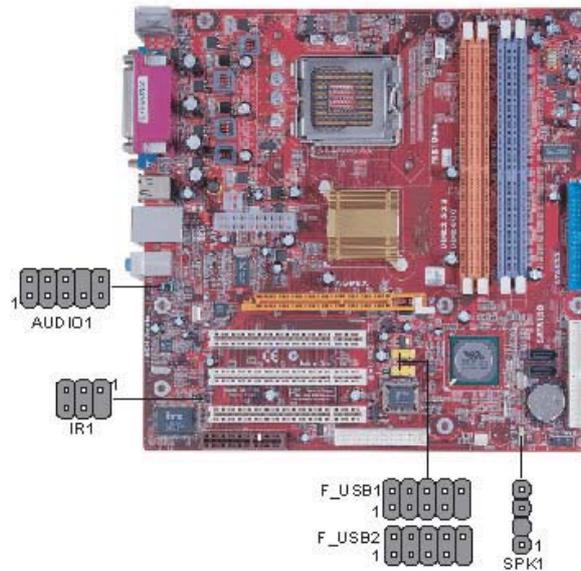
If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the SYS\_FAN1 fan power connector on the motherboard.

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

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	SPKR	2	NC
3	GND	4	+5V

#### 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	AUD_MIC	2	AUD_GND
3	AUD_MIC_BIAS	4	AUD_VCC
5	AUD_FPOUT_R	6	AUD_RET_R
7	HP_ON	8	KEY
9	AUD_FPOUT_L	10	AUD_RET_L

### F\_USB1/F\_USB2: 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 F\_USB1/F\_USB2 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	USB_FP_OC0

1. Locate the F\_USB1/F\_USB2 header on the motherboard.
2. Plug the bracket cable onto the F\_USB1/F\_USB2 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

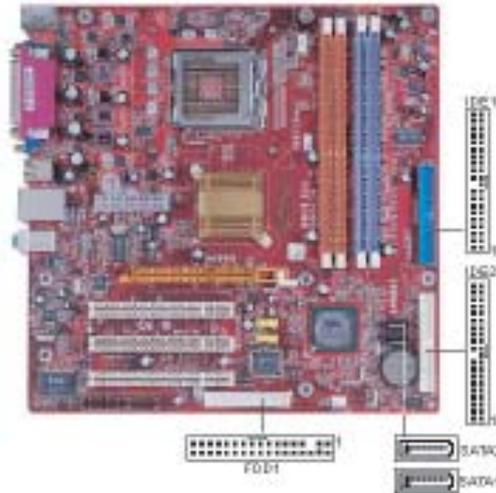
The infrared port allows the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

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.

### Install Other Devices

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



#### 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 360K, 720K, 1.2MB, 1.44MB, or 2.88MB.

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.

If you want to install more IDE devices, you can purchase a second IDE cable and connect one or two devices to the Secondary IDE channel connector IDE2 on the motherboard. If you have two devices on the cable, one must be Master and one must be Slave.

### Serial ATA Devices

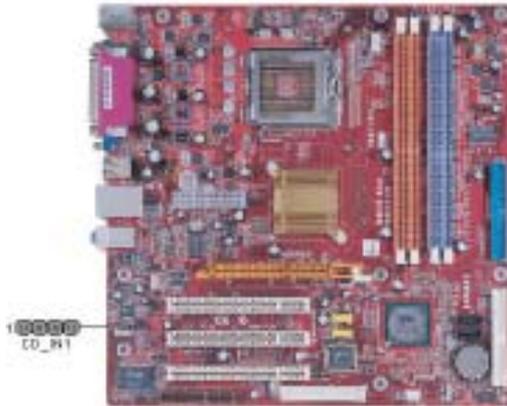
The Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives, which is designed to overcome the design limitations while enabling the storage interface to scale with the growing media rate demands of PC platforms. It provides you a faster transfer rate of 150 MB/s. 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 Header

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

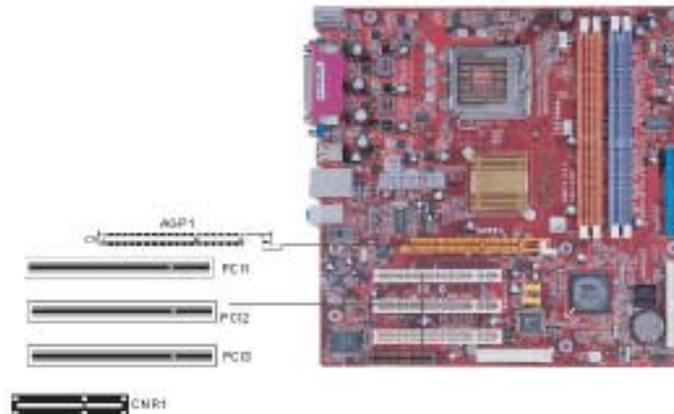


When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the motherboard, locate the 4-pin header CD\_IN1.

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

### Expansion Slots

This motherboard has one AGP, CNR and three 32-bit PCI slots.



Follow the steps below to install an AGP/CNR/PCI expansion card.

- 1 Locate the AGP, 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.



#### **8X AGP Slot**

You can install a graphics adapter that supports the 8X AGP specification and has a 8X AGP edge connector in the AGP slot.

#### **CNR Slot**

You can install the CNR (Communications and Networking Riser) cards in this slot, including LAN, Modem, and Audio functions.

#### **PCI Slots**

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

***Memo***

# Chapter 3 BIOS Setup Utility

## Introduction

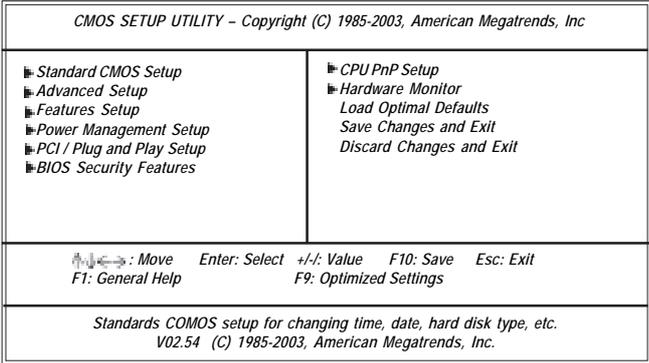
The BIOS Setup Utility records settings and information of your computer, such as date and time, the type of hardware installed, and various configuration settings. Your computer applies the information to initialize all the components when booting up and basic functions of coordination between system 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 CMOS 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. If you manually clear CMOS, you need to press the **F1** key that enters the Main menu page of the Setup Utility.



## Motherboard User's Guide

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 + and - 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 **[OK]** or **[Cancel]**.

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 install the setup utility with a set of default values.

### Standard CMOS Setup Page

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

<i>CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc. Standard CMOS Setup</i>		
<i>System Time</i>	<i>00:01:25</i>	<i>Help Item</i>
<i>System Date</i>	<i>Fri 10/24/2003</i>	
<input type="checkbox"/> <i>Primary IDE Master</i>	<i>Hard Disk</i>	<i>User [Enter], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system time.</i>
<input type="checkbox"/> <i>Primary IDE Slave</i>	<i>Not Detected</i>	
<input type="checkbox"/> <i>Secondary IDE Master</i>	<i>Not Detected</i>	
<input type="checkbox"/> <i>Secondary IDE Slave</i>	<i>CD/DVD ROM</i>	
<i>Floppy A</i>	<i>1.44 MB 3 1/2"</i>	
<i>Floppy B</i>	<i>Disabled</i>	

#### **System Time & System Date**

These items set up system date and time.

#### **Primary IDE Master/Primary IDE Slave/Secondary IDE Master/Secondary IDE Slave**

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.

#### **Floppy A/B**

These items set up size and capacity of the floppy diskette drive(s) installed in the system.

### 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) 1985-2003, American Megatrends, Inc.		
Advanced Setup		
Quick Boot	Enabled	
1st Boot Device	PM-IC35L040AVV07	Help Item
2nd Boot Device	SS-Pioneer DVD-R0	
3rd Boot Device	1st Floppy Drive	
Try Other Boot Device	Yes	Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
Bootup Num-Lock	On	
Boot To OS/2 > 64 MB	No	
AGP Aperture Size	64 MB	
DRAM Timing	Manual	
DRAM CAS# Latency	By SPD	
DRAM Bank Interleave	4-way	
Hyper Threading Function	Enabled	
Auto Detect DIMM/PCI Clk	Enabled	
Spread Spectrum	Disabled	
Max CPUID Value Limit	Disabled	
Execute Disable Bit	Enabled	
CPU TM Function	Disabled	
C1E Support	Disabled	
Intel (R) SpeedStep (tm) tech.	Disabled	
Venderpool Technology	Enabled	
DRAM Driving	Normal	

#### Quick Boot

If you enable this item, the system starts up more quickly by elimination of some of the power on test routines.

#### 1st Boot Device/2nd Boot Device/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.

#### Try Other Boot Device

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 two locations.

#### BootUp Num-Lock

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

#### Boot To OS/2 > 64MB

Enable this item if you are booting the OS/2 operating system and you have more than 64MB of system memory installed.

#### AGP Aperture Size

This item defines the size of aperture if you use a graphic adapter.

#### DRAM Timing

This item allows you to enable or disable the DRAM timing defined by the Serial Presence Detect electrical.

### **DRAM CAS# Latency**

This item determines the operation of SDRAM memory CAS (column address strobe). It is recommended that you leave this item at the default value. The 2T setting requires faster memory that specifically supports this mode.

### **DRAM Bank Interleave**

Enable this item to increase DRAM memory speed. When enabled, separate memory banks are set for odd and even addresses and the next byte of memory can be accessed while the current byte is being refreshed.

### **Hyper Threading Function**

You can set "Disabled" or "Enabled" to control HT CPU support in O.S. Set "Enabled" to test HT CPU function.

### **Auto detect DIMM/PCI Clock**

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 Interference) generated by the system.

### **Max CPUID Value Limit**

When this item is enabled, you can use Prescott CPU and LGA-775 CPU and there will be a normal NT4.0 installation; otherwise, the automatically restarting will occur while installing.

### **Execute Disable Bit**

It allows the processor to classify areas in memory by where application code can execute and where it cannot. When a malicious worm attempts to insert code in the buffer, the processor disables code execution, preventing damage or worm propagation. Replacing older computers with Execute Disable Bit-enabled systems can halt worm attacks, reducing the need for virus related repairs.

### **CPU TM Function**

For some specific brands of CPU, you can use this item to control the CPU frequency and voltage according to its temperature.

### **C1E Support**

Use this item to decrease the bus ratio that reduces the consumption of CPU electricity and power.

### **Intel (R) SpeedStep (tm) tech.**

Use this item to enable or disable the Intel SpeedStep Technology, which is only for the Intel CPU supporting the SpeedStep Technology function.

### **Venderpool Technology**

Use this item to enable or disable the Venderpool Technology, which is only for the CPU supporting the VT function.

**DRAM Driving**

When this item is defaulted at “Normal”, some DDRs might cause the problem of booting or system stability; in that case, please set it at “High”.

**Features Setup Page**

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

<i>CMOS SETUP UTILITY - Copyright (C) 1985-2003, American Megatrends, Inc.</i>		
<i>Features Setup</i>		
		<i>Help Item</i>
<i>OnBoard Floppy Controller</i>	<i>Enabled</i>	<i>Allows BIOS to Enable or Disable Floppy Controller.</i>
<i>Serial Port1 Address</i>	<i>3F8/IRQ4</i>	
<i>OnBoard IR Port</i>	<i>Disabled</i>	
<i>Parallel Port Address</i>	<i>378</i>	
<i>Parallel Port Mode</i>	<i>ECP</i>	
<i>ECP Mode DMA Channel</i>	<i>DMA3</i>	
<i>Parallel Port IRQ</i>	<i>IRQ7</i>	
<i>OnBoard PCI IDE Controller</i>	<i>Both</i>	
<i>OnBoard SATA-IDE</i>	<i>IDE</i>	
<i>Audio Device</i>	<i>Enabled</i>	
<i>MODEM Device</i>	<i>Auto</i>	
<i>Ethernet Device</i>	<i>Enabled</i>	
<i>OnBoard LAN Boot Rom</i>	<i>Disabled</i>	
<i>OnBoard USB Function</i>	<i>Enabled</i>	
<i>USB Function For DOS</i>	<i>Disabled</i>	

**OnBoard Floppy Controller**

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

**OnBoard Serial Port**

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

**OnBoard IR Port**

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

**Onboard Parallel Port**

This item enables or disables the onboard LPT1 parallel port, and assigns a port address. The Auto setting will detect and available address.

**Parallel Port Mode**

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

**Parallel Port IRQ**

Use this item to assign IRQ to the parallel port.

**Parallel Port DMA**

Use this item to assign a DMA channel to the parallel port.

## Motherboard User's Guide

---

### **OnBoard PCI IDE**

Use this item to enable or disable the onboard PCI IDE channel.

### **OnBoard SATA-IDE**

Use this item to select RAID mode, IDE mode or Disabled for onboard SATA-IDE.

### **Audio Device**

This item enables or disables the AC'97 audio chip.

### **MODEM Device**

This item enables or disables the MC'97 modem chip.

### **Ethernet Device**

This item enables or disables the onboard Ethernet LAN.

### **OnBoard LAN Boot ROM**

Use this item to enable or disable the LAN Boot ROM function.

### **OnBoard USB Function**

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

## Power Management Setup Page

This page sets some parameters for system power management operation.

<i>CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc. Power Management Setup</i>		
		<i>Help Item</i>
<i>ACPI Aware O/S</i>	<i>Yes</i>	
<i>Power Management</i>	<i>Enabled</i>	
<i>ACPI Enhanced Efficiency</i>	<i>Disabled</i>	<i>Yes / No</i>
<i>Suspend Time Out</i>	<i>Disabled</i>	<i>ACPI support for Operating System.</i>
<i>Resume on RTC Alarm</i>	<i>Disabled</i>	<i>Yes: If OS supports ACPI.</i>
<i>LAN/Ring Power On</i>	<i>Disabled</i>	<i>No: If OS does not support ACPI.</i>
<i>Keyboard Power On</i>	<i>Disabled</i>	
<i>Wake-Up Key</i>	<i>Any Key</i>	

### **ACPI Aware O/S**

This item supports ACPI (Advanced Configuration and Power Management Interface). Use this item to enable or disable the ACPI feature.

### **Power Management**

Use this item to enable or disable a power management scheme. If you enable power management, you can use this item below to set the power management operation. Both APM and ACPI are supported.

### **ACPI Enhanced Efficiency**

Use this item to enable or disable the function of ACPI enhanced efficiency.

**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.

**LAN/Ring Power On**

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/Ring, or traffic on the network adapter. You must use an ATX power supply in order to use this feature.

**Keyboard Power On/Wake-Up Key**

If you enable this item, the system can automatically resume by pressing any keys, hot key, power key on the keyboard, or typing in the password. You must use an ATX power supply in order to use this feature.

PCI / Plug and Play 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) 1985-2003, American Megatrends, Inc. PCI / Plug and Play Setup		
<i>Primary Graphics Adapter</i>	<i>PCI</i>	<i>Help Item</i>
<i>Share Memory Size</i>	<i>32 MB</i>	<i>Select which graphics controller to use as the primary boot device.</i>
<i>Allocate IRQ to PCI VGA</i>	<i>Yes</i>	
<i>PCI IDE BusMaster</i>	<i>Disabled</i>	

**Primary Graphics Adapter**

This item indicates if the primary graphics adapter uses the PCI or the AGP bus. The default PCI setting still lets the onboard display work and allows the use of a second display card installed in an AGP slot.

**Share Memory Size**

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

## Motherboard User's Guide

---

### 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 IDE BusMaster

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

## BIOS Security Features Setup Page

This page helps you install or change a password.

<i>CMOS SETUP UTILITY - Copyright (C) 1985-2003, American Megatrends, Inc. BIOS Security Features Setup</i>	
<i>Security Settings</i>	<i>Help Item</i>
<i>Supervisor Password : Not Installed Change Supervisor Password                      Press Enter</i>	<i>Install or Change the password.</i>

### Supervisor Password

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

### 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.

### CPU PnP Setup Page

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

<i>CMOS SETUP UTILITY - Copyright (C) 1985-2003, American Megatrends, Inc. CPU PnP Setup</i>		
<i>Manufacturer:</i>	<i>Intel</i>	<i>Help Item</i>
<i>Ratio Status</i>	<i>Locked</i>	
<i>CPU Over-clocking Func.</i>	<i>Disabled</i>	
<i>CPU Frequency</i>	<i>200 MHz</i>	
<i>DRAM Frequency</i>	<i>Auto</i>	

**Manufacturer**

These items show the brand of the CPU installed in your system.

**Ratio Status**

This item shows the Locked/Unlocked ratio status of CPU installed in your system.

**CPU Over-clocking Func.**

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.

**CPU Frequency**

This item shows the frequency of the CPU installed in your system.

**DRAM Frequency**

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

## Motherboard User's Guide

---

### Hardware Monitor Page

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

<i>CMOS SETUP UTILITY - Copyright (C) 1985-2003, American Megatrends, Inc.</i>	
<i>Hardware Monitor Setup</i>	
<i>***System Hardware Monitor***</i>	<i>Help Item</i>
<i>SYSTEM Temperature</i>	<i>32°C/89°F</i>
<i>CPU Temperature</i>	<i>41°C/105°F</i>
<i>Chassis Temperature</i>	<i>32°C/89°F</i>
<i>SYSTEM FAN Speed</i>	<i>0 RPM</i>
<i>CPU FAN Speed</i>	<i>4560 RPM</i>
<i>Vcore</i>	<i>1.504 V</i>
<i>Vdimm</i>	<i>2.496 V</i>
<i>Vvdd</i>	<i>2.608 V</i>
<i>Vcc5V</i>	<i>5.107 V</i>
<i>SB3V</i>	<i>3.296 V</i>
<i>VBAT</i>	<i>3.264 V</i>
<i>Smart FAN Control</i>	<i>Disabled</i>

#### **CPU/System Temperature**

These items display CPU and system temperature measurement.

#### **FANS & Voltage Measurements**

These items indicate cooling fan speeds in RPM and the various system voltage measurements.

#### Load Optimal Defaults

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

### Save Changes and Exit

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

### Discard Changes and Exit

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 Discard Changes and Exit dialog box appears, select [OK] to discard changes and exit, or select [Cancel] to return to the main menu.

**Note:** If you have made settings that you do not want to save, use the "Discard Changes and Exit" item and select [OK] to discard any changes you have made.

***Memo***

## 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 98SE/ME/2000/XP, 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 98 file browsing interface.

## Motherboard User's Guide

---

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.

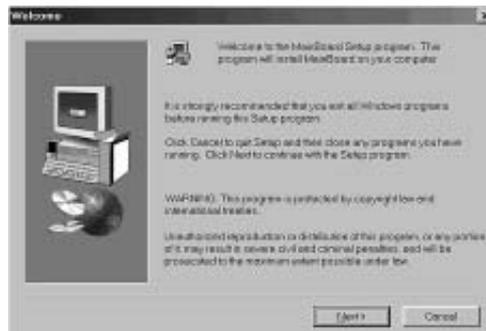
The **Application** button brings up a software menu. It shows the bundled software that this mainboard supports.

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

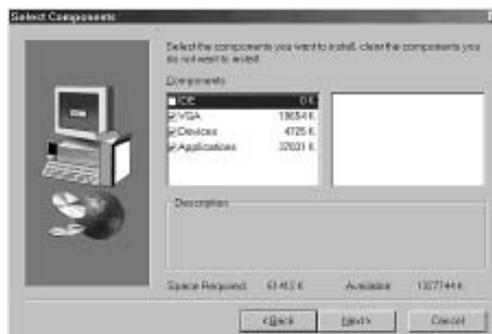
### Auto-Installing under Windows 98SE/ME/2000/XP

If you are under Windows 98SE/ME/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 whatever software you selected. When the process is finished, all the support software will be installed and start working.

### 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.

### AMI/AWARD Flash Utility

This utility lets you erase the system BIOS stored on a Flash Memory chip on the motherboard, and lets you copy an updated version of the BIOS to the chip. Proceed with caution when using this program. If you erase the current BIOS and fail to write a new BIOS, or write a new BIOS that is incorrect, your system will malfunction. Refer to Chapter 3, BIOS Setup Utility for more information.

### WinFlash Utility

The WinFlash utility is a Windows version of the DOS BIOS flash writer utility. The utility enables you to flash the system BIOS stored on a Flash Memory chip on the motherboard while in a Windows environment. This utility is currently available for WINXP/2000. To install the WinFlash utility, run AFUWIN.EXE (AMI) or WINFLASH.EXE (Award) from the following directory: \Utility\AMIFlash or AWDFlash.

***Memo***