TÜV CERT

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**

TGA-ZM-30-98-02

Essen, 04.03.2004

RWTÜV

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

ISO14001 CERTIFICATE

Certificate No.: 061-04-E1-0065-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,
Shatuojiao, 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.

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Static Electricity Precautions

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

Pre-Installation Inspection

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

Table of Contents

Notice:

1   Owing to Microsoft's certifying schedule is various to every supplier, we might have some drivers not certified yet by Microsoft. Therefore, it might happen under Windows XP that a dialogue box (shown as below) pop out warning you this software has not passed Windows Logo testing to verify its compatibility with Windows XP. Please rest assured that our RD department has already tested and verified these drivers. Just click the "Continue Anyway" button and go ahead the installation.
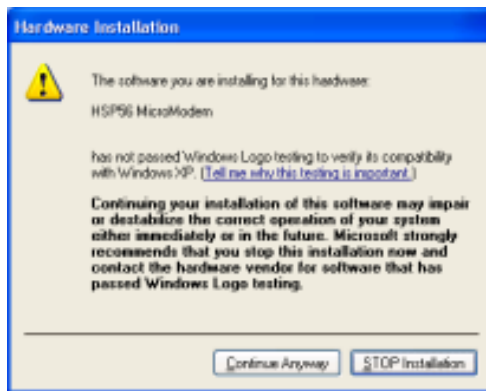
2   USB 2.0 Driver Limitations:
    2-1 The USB 2.0 driver only supports Windows XP and Windows 2000.
    2-2 If you connect a USB 2.0 hub to the root hub, plugging USB devices into this hub, the system might not successfully execute certain USB devices' connection because it could not recognize these devices.

Currently, we are working on such limitations' solution. As soon as the solution is done, the updated USB drive will be released to our website: www.pcchips.com for your downloading.

Chapter 1 Introduction

This motherboard has a **Socket-478** to support **Intel Pentium 4** processors with **Hyper-Threading Technology** and Front-Side Bus (FSB) speeds up to **800 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 P4M800** Northbridge and **VT8237** Southbridge that supports the **Serial ATA** interface for high-performance and maiinstream 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:

Socket-478 Processor
- Supports **Intel Pentium 4 Series** processors with **Hyper-Threading Technology**
- Supports up to **800 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 P4M800 Northbridge** and **VT8237** in the chipsets in accordance with an innovative and scalable architecture with proven reliability and performance.

- High Performance UMA North Bridge: Integrated Pentium 4 North Bridge with 800 MHz FSB support and UniChrome Pro 3D / 2D Graphics & Video Controllers in a single chip
- Supports Intel 800/533/400 MHz FSB Pentium 4 and Pentium M processors and Hyper Threading Technology

- AGP v3.0 compliant 8X / 4X transfer modes with Fast Write support
- Supports DDR400 / 333 / 266 memory types with 2.5V SSTL-2 DRAM interface
- Supports 66 MHz, 4X and 8X transfer modes, V-Link interface with 533 MB/sec total bandwidth
- ACPI 2.0 and PCI Bus Power Management 1.1 compliant
- Graphics engine clocks up to 133 MHz decoupled from memory clock
- PCI to system memory data streaming up to 132Mbyte/sec (data sent to north bridge via high speed Ultra V-Link interface)
- PCI-2.2 compliant, 32-bit 3.3V PCI interface with 5V tolerant inputs
- Support three PCI slots of arbitration and decoding for all integrated functions and LPC bus.
- Dual Channel Serial ATA/RAID Controller—Complies with Serial ATA Specification Revision 1.0

Memory Support
- Two 184-pin DIMM sockets for DDR SDRAM memory modules
- Supports **DDR400**/333/266 memory bus
- Maximum installed memory is 2GB

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(Rev 2.3) CODEC.
- Front-Out,Surround-Out,MIC-In and Line-In Jack Sensing
- Three analog line-level stereo inputs with 5-bit volume control: LINE_IN,CD,AUX
- Two analog line-level mono input
- 48-pins LQFP.
- Built-in earphone buffer and internal PLL.

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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 Power Saving Mode.
- 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.
- Adaptive Equalizer.
- Baseline wander Correction.
- LED Outputs

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
- 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

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

Dimensions

- Micro ATX form factor of 244 x 220 mm

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

Package Contents

Your motherboard package ships with the following items:

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

Optional Accessories

You can purchase the following optional accessories for this motherboard.

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

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

Chapter 2 Motherboard Installation

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

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

Note:

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

Motherboard Components
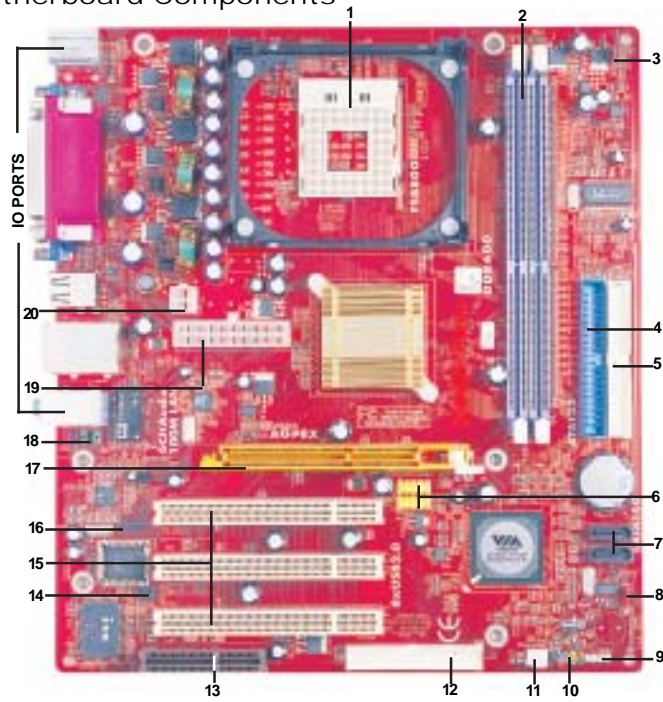
ITEM	LABEL	COMPONENTS
1	CPU Socket	Socket-478 for Intel Pentium 4 processors
2	DIMM1/2	184-pin DDR SDRAM sockets
3	CPU_FAN	CPU Fan connector(3-pin)
4	IDE1	Primary IDE connector
5	IDE2	Sceondary IDE connector
6	USB2/3	Front Panel USB headers
7	SATA1/2	Serial ATA connectors
8	CLR_CMOS	Clear CMOS jumper
9	SPK1	Speaker header
10	PANEL1	Front Panel Switch/LED header
11	SYS_FAN	System Fan connector
12	FDD	Floppy Disk Drive connector
13	CNR1	CNR slot
14	IR1	Infrared header
15	PCI 1-3	32-bit PCI slots
16	CD1	Analog Audio Input header
17	AGP1	AGP slot
18	AUDIO1	Front Panel Audio header
19	ATX1	Standard 20-Pin ATX Power connector
20	PJ1	Standard 4-Pin ATX Power connector

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I/O Ports

The illustration below shows a side view of the built-in I/O ports on the motherboard.
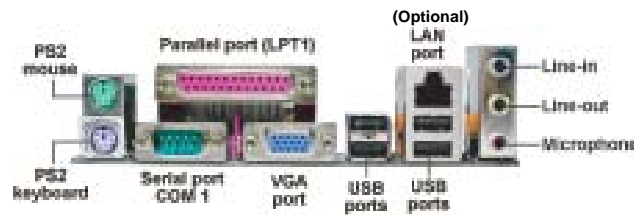
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the low er PS/2 port to connect a PS/2 keyboard.
Parallel Port (LPT1)	Use the Parallel port to connect printers or other parallel communications devices.
COM1	Use the COM port to connect serial devices such as mice or f ax/modems. COM1 is identified by the system as COM1.
VGA	Use the VGA port to connect VGA devices.
LAN Port (optional)	Connect an RJ-45 jack to the LAN port to connect your computer to the Netw ork.
USB Ports	Use the USB ports to connect USB devices.
Audio Ports	Use these three audio jacks to connect audio devices. The first jack is for stereo Line-In signal, the second jack for stereo Line-Out signal, and the third jack for Microphone.

Installing the Processor

This motherboard has a **Socket-478** for **Intel Pentium 4** 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.

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CPU Installation Procedure

Follow these instructions to install the CPU:
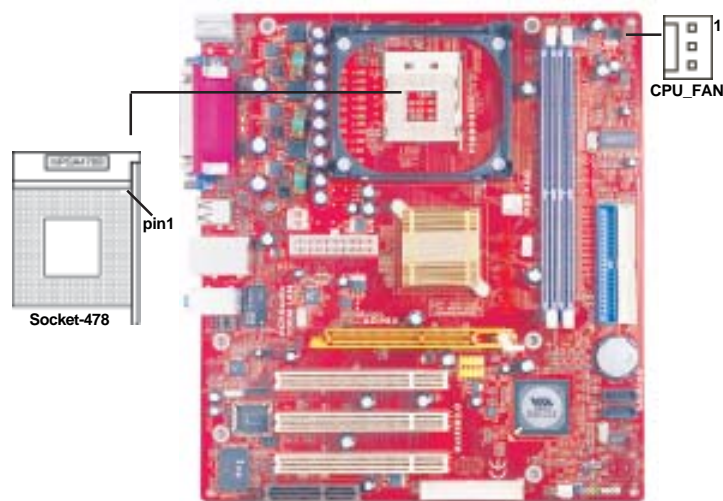
1 Install your CPU. Pull up the lever away from the socket and lift up to 90-degree angle.
2 Locate the CPU cut edge (the corner with the pin hold noticeably missing).
   Align and insert the CPU correctly.
3 Press the lever down and apply thermal grease on top of the CPU.
4 Put the CPU Fan down on the retention module and snap the four retention legs of the cooling fan into place.
5 Flip the levers over to lock the heat sink in place and connect the CPU cooling Fan power cable to the CPU fan connector (CPU_FAN). This completes the installation.

Note: The fan power requirement for proper operation is a maximum current of 740mA at +12V.

Installing Memory Modules

This motherboard accommodates two 184-pin DIMM sockets (Dual Inline Memory Module) for unbuffered **DDR400**/333/266 (Double Data Rate SDRAM), and maximum 2.0 GB installed memory.

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. DDR DIMMs can synchronously work with 400/333/266 MHz memory and provide 3.2 GB/s, 2.7 GB/s, 2.1 GB/s and 1.6 GB/s data transfer rate.

DIMM1 DIMM2
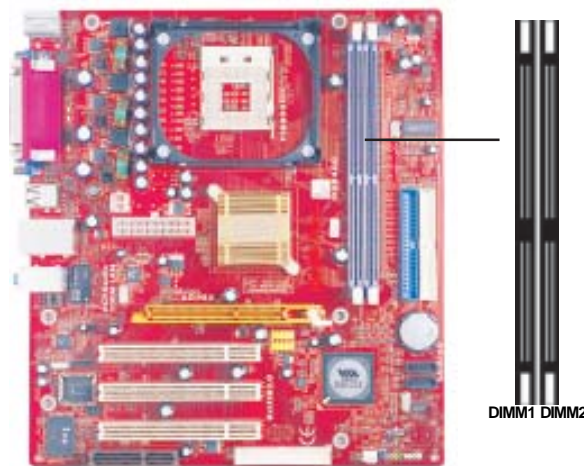
Memory Module Installation Procedure

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.

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4.   Install any remaining DIMM modules.

Jumper Settings

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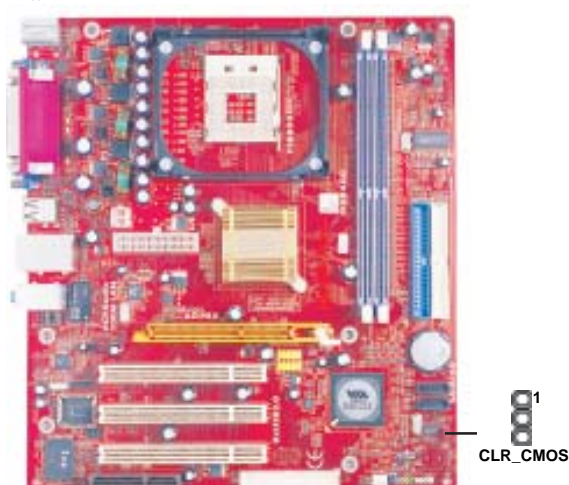
CLR_CMOS: Clear CMOS Jumper

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

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

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

Install the Motherboard

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

Install the motherboard in a case. Follow the case manufacturer's instructions to use the hardware and internal mounting points on the chassis.
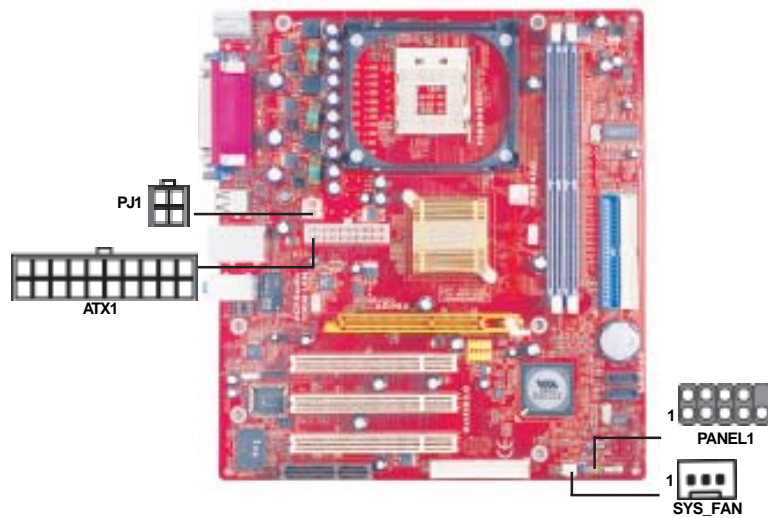
Connect the power connector from the power supply to the **ATX1** connector on the motherboard. The **PJ1** is a +12V connector for CPU Vcore power.

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

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

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

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Connecting Optional Devices

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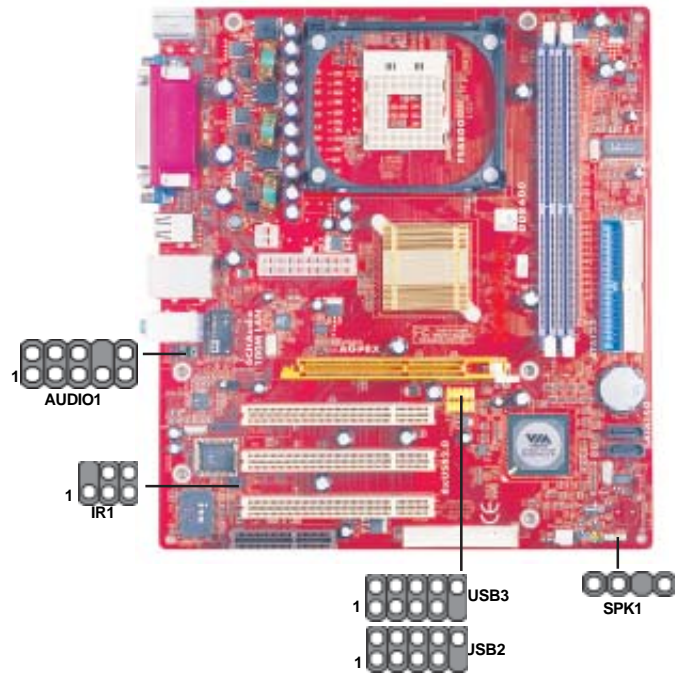
SPK1: Speaker Header

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

Pin	Signal
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.

Here is a list of the header AUDIO1 pin assignments.

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

USB2/USB3: 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 USB2/USB3 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 USB2/USB3 header on the motherboard.
2. Plug the bracket cable onto the USB2/USB3 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.
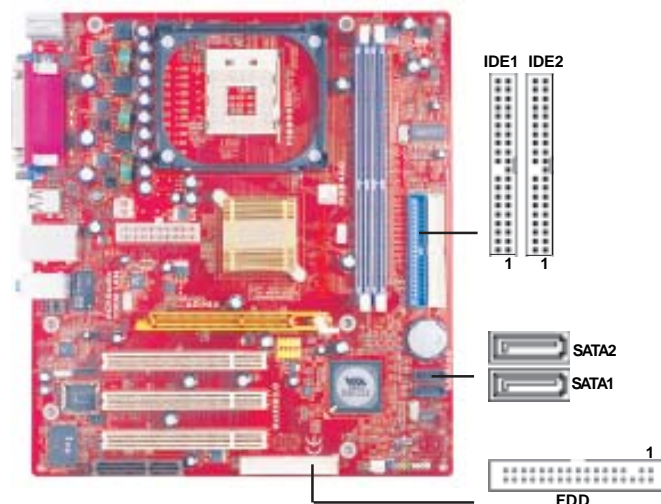
Floppy Disk Drive

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 **FDD**.

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.

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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.
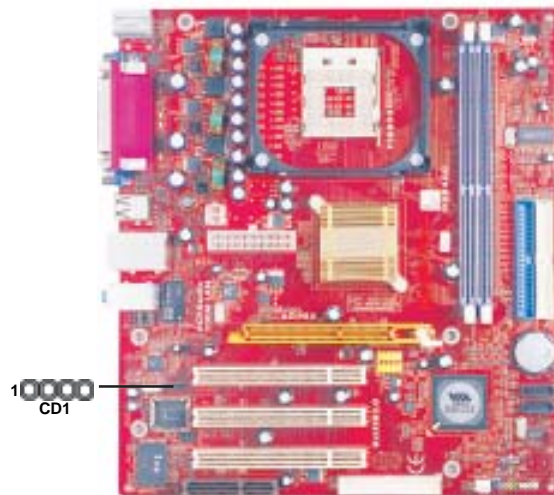
When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the motherboard, locate the 4-pin header **CD1**.

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

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Expansion Slots

This motherboard has one AGP, CNR and three 32-bit PCI slots.
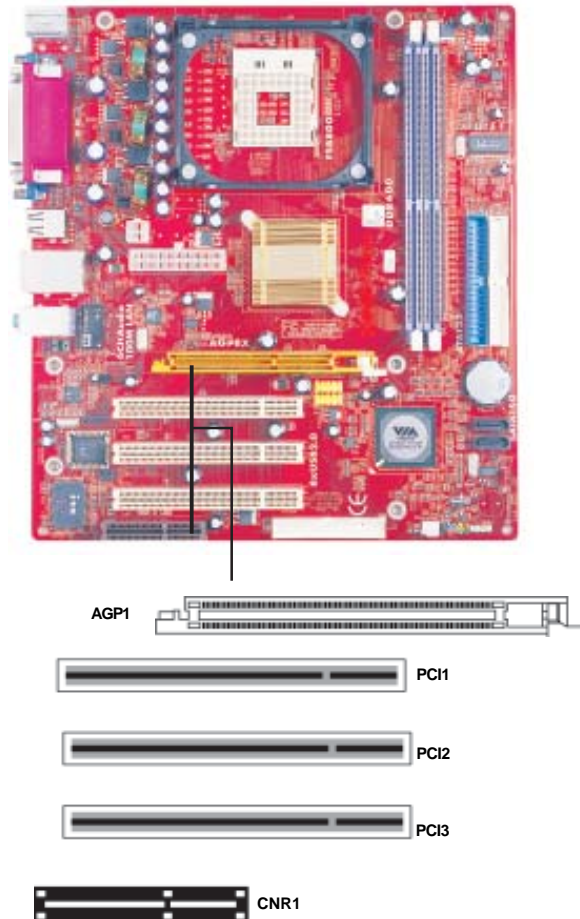
Follow the steps below to install an AGP/CNR/PCI expansion card.

    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.

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 S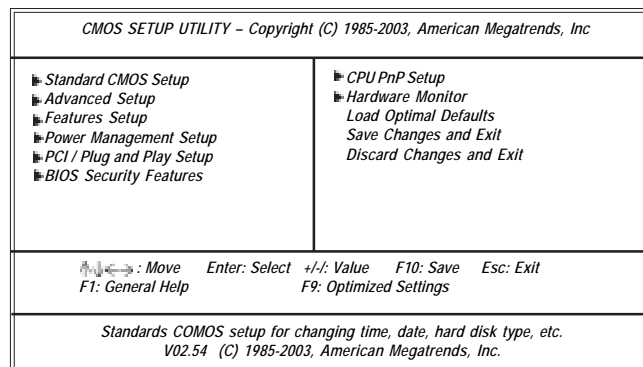ETUP*". Whenever you see this message, press the **Delete** key, and the Main menu page of the Setup Utility appears on your monitor. If you manually clear CMOS, you need to press the **F1** key that enters the Main menu page of the Setup Utility.

```
 ┌──────────────────────────────────────────────────────────────────┐
 │       CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc │
 ├──────────────────────────────────┬─────────────────────────────────┤
 │  ▶ Standard CMOS Setup           │  ▶ CPU PnP Setup                │
 │  ▶ Advanced Setup                │  ▶ Hardware Monitor             │
 │  ▶ Features Setup                │     Load Optimal Defaults       │
 │  ▶ Power Management Setup         │     Save Changes and Exit       │
 │  ▶ PCI / Plug and Play Setup      │     Discard Changes and Exit    │
 │  ▶ BIOS Security Features         │                                 │
 │                                  │                                 │
 ├──────────────────────────────────┴─────────────────────────────────┤
 │   ↑↓←→ : Move    Enter: Select   +/-/: Value    F10: Save   Esc: Exit │
 │   F1: General Help               F9: Optimized Settings              │
 ├──────────────────────────────────────────────────────────────────┤
 │    Standards COMOS setup for changing time, date, hard disk type, etc. │
 │           V02.54  (C) 1985-2003, American Megatrends, Inc.          │
 └──────────────────────────────────────────────────────────────────┘
```

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

Some options on the main menu page lead to tables of items with installed values that you can use cursor arrow keys to highlight one item, and press **+** 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.

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

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-IC35L040AVVN07        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
Bootup Num-Lock                 On               tests while booting. This will
Boot To OS/2 > 64 MB            No               decrease the time needed
AGP Aperture Size               64 MB            to boot the system.
DRAM Timing                     Manual
DRAM CAS# Latency               By SPD
DRAM Bank Interleave            4-way
Auto Detect DIMM/PCI Clk        Enabled
Spread Spectrum                 Disabled
Hyper Threading Function        Ensabled
Max CPUID Value Limit           Disabled
Execute Disable Bit             Enabled
DRAM Driving                    Normal
```

Quick Boot

If you enable this item, the system starts up more quickly be elimination 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.

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.

Hyper Threading Function

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

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.

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.

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

OnBoard Floppy Controller

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

Serial Port1 Address

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.

Parallel Port Address

Use this item to enable or disable the onboard 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.

OnBoard PCI IDE Controller

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.

USB Function for DOS

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

Power Management Setup Page

This page sets some parameters for system power management operation.

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                       Power Management Setup

ACPI Aware O/S                Yes              Help Item
Power Management              Enabled
ACPI Enhanced Efficiency      Disabled         Yes / No
Suspend Time Out              Disabled         ACPI support for Operating
Resume on RTC Alarm           Disabled         System.
LAN/Ring Power On             Disabled         Yes: If OS supports ACPI.
Keyboard Power On             Disabled         No: If OS does not support
   Wake-Up Key                Any Key          ACPI.
```

ACPI Aware O/S

This itme supports ACPI (Advanced Configuraion 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

Primary Graphics Adapter          PCI              Help Item
Share Memory Size                 32 MB
Allocate IRQ to PCI VGA           Yes        Select which graphics controller
PCI IDE BusMaster                 Enabled    to use as the primary boot
                                             device.
```

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 theonbaord VGA display application with several options.

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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.

```
┌─────────────────────────────────────────────────────────────────────────┐
│         CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.  │
│                        BIOS Security Features Setup                        │
├──────────────────────────────────────────────────┬──────────────────────┤
│  Security Settings                                 │   Help Item          │
├──────────────────────────────────────────────────┼──────────────────────┤
│  Supervisor Password : Not Installed               │  Install or Change the│
│  Change Supervisor Password          Press Enter   │  password.           │
│                                                    │                      │
│                                                    │                      │
│                                                    │                      │
└──────────────────────────────────────────────────┴──────────────────────┘
```

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.

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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.

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

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.

Hardware Monitor Page

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

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                        Hardware Monitor Setup

***System Hardware Monitor***                              Help Item

Vcore                        1.504 V
Vdimm                        2.496 V
Vivdd                        2.608 V
Vcc5V                        5.107 V
SB3V                         3.296 V
VBAT                         3.264 V
CPU Temperature              41ºC/105ºF
SYSTEM Temperature           32ºC/89ºF
CPU FAN Speed                4560 RPM
SYSTEM FAN Speed             0 RPM
```

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.

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.

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/ME2000/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.
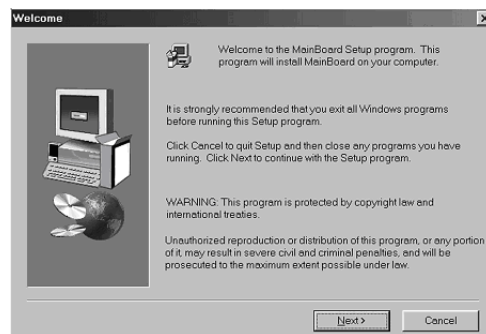
2   Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.
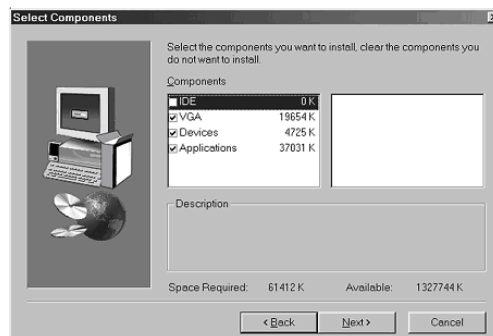
3   The support software will automatically install.

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.