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CLE266/May 2004**

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Static Electricity Precautions

Static electricity could damage components on this motherboard. Take the following precautions while unpacking this motherboard and installing it in a system.

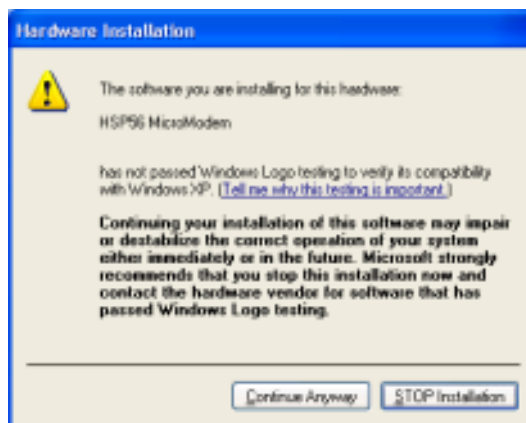
1. Don't take this motherboard and components out of their original static-proof package until you are ready to install them.
2. While installing, please wear a grounded wrist strap if possible. If you don't have a wrist strap, discharge static electricity by touching the bare metal of the system chassis.
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.

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.

Chapter 1 Introduction

This motherboard has a **VIA C3 CPU onboard** with front-side bus speed up to **133MHz**.

This motherboard integrates the **VIA CLE266 Northbridge** and **8235 Southbridge** chipsets that support **DDR 266MHz**, **Ultra DMA 33/66/100/133** function and remarkably high system performance under all types of system operations

It supports built-in **USB 2.0** providing higher bandwidth. It implements **Universal Serial Bus Specification Revision 2.0** and is compliant with **UHCI 1.1** and **EHCI 1.0**.

The motherboard supports the built-in **AC'97 Codec**, two 32-bit **PCI** slots, one **CNR** (Communications and Networking Riser) slot, and an onboard **10BaseT/100BaseTX Network** interface (optional). This motherboard integrates a **128-bit 3D/2D graphics engine** and a high-performance 3D accelerator.

In addition, this motherboard has a full set of I/O ports including two PS/2 ports for mouse and keyboard, one serial port, one VGA port, one parallel port, one LAN port (optional), audio jacks for microphone, line-in and line-out, four back-panel USB2.0 ports and onboard USB header USB1 providing two extra ports by connecting the extended USB module to the motherboard.

This motherboard has all the features you need to develop a powerful multimedia workstation. The board is **FLEX ATX** size and has a power connector for an **ATX** power supply.

Key Features

The key features of this motherboard include:

CPU Type

- Supports the **VIA C3 CPU onboard**
- Supports **133 MHz** Front-Side Bus

Chipset

There are **VIA CLE266 Northbridge** and **8235 Southbridge** in this chipset in accordance with an innovative and scalable architecture with proven reliability and performance. A few of the chipset's advanced features are:

- High Performance CPU Interface: Support for VIA C3 processors; 133/100/66 MHz CPU Front Side Bus (FSB)
- High Bandwidth 266 MB/sec 8-Bit V-Link Host Controller: Supports 66 MHz V-Link Host Interface with total bandwidth of 266 MB/sec
- Advanced High-Performance DDR/SDR DRAM Controller: DRAM interface synchronous with host CPU (133/100 MHz) for most flexible configuration; Supports 4 banks up to 2 GB DRAMs
- Integrated Graphics / Video Accelerator : 16/32 frame buffer using system memory; Internal AGP 4x performance
- Concurrent PCI Bus Controller: 33 MHz operation, PCI 2.2 compliant, 32 bit 3.3V PCI interface with 5V tolerant inputs
- **Fast Ethernet Controller: 1/10/100 MHz** full and half duplex operation
- **UltraDMA-133/100/66/33** Master Mode EIDE Controller: Transfer rate up to 133MB/sec to cover PIO mode 4, multi-word DMA mode 2 drives, and UltraDMA-133 interface
- Direct Sound Ready **AC'97** Digital Audio Controller: AC'97 2.1 compliant

- Universal Serial Bus Controller: **USB v2.0** and Enhanced Host Controller Interface (EHCI) v1.0 compatible; USB v1.1 and Universal Host Controller Interface (UHCI) v1.1 compatible

Memory Support

- Two 184-pin DIMM sockets for DDR memory modules
- Supports **DDR266/200** memory bus
- Maximum installed memory is 2GB

Expansion Slots

- One CNR slot
- Two 32-bit PCI slots for PCI 2.2-compliant bus interface

Onboard IDE channels

- Two IDE Connectors
- Supports PIO (Programmable Input/Output) and DMA (Direct Memory Access) modes
- Supports IDE Ultra DMA bus mastering with transfer rates of **133/100/66/33 MB/sec**

VGA

- Intergrated Graphics/Video Accelerator supports optimized Shared Memory Architecture (SMA)
- Separate 128-bit data paths between north bridge and graphics core for pixel data flow and texture/command access
- Graphics engine clocks up to 133MHz decoupled from memory clock
- High quality DVD video playback

AC'97 Codec

- 6- channel and compliant with Intel® AC'97 (REV. 2.3) Spec, meeting with Microsoft® PC2001 requirements

Motherboard User's Guide

- Advanced power management and power saving capabilities.
- Stereo Line-in function shared with Surround out.
- High quality pseudo-differential analog CD Audio input.
- Valuable add-on software technology: Support most industry standards of PC 3D sound and unique karaoke function support featured with microphone echo, key shifting, and vocal cancellation.

Onboard I/O Ports

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

- 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)

- **10Base-T/100Base-TX Physical Layer Solution**
- Dual Speed – 100/10 Mbps
- MII Interface to Ethernet Controller/Configuration & Status
- Auto Negotiation: 10/100, Full/Half Duplex
- Meet All Applicable IEEE802.3, 10Base-T and 100Base-TX Standards

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
- 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:

- Hard drives, diskette drives, and peripherals
- Power management
- CPU parameters and memory timing
- Hardware monitoring parameters

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

Bundled Software

- **PC-Cillin** provides automatic virus protection under Windows 98/ME/NT/2000/XP
- **Adobe Acrobat Reader** is the software to help users read PDF files.

Dimensions

- FLEX ATX form factor (230 x 170 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 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
- Card Reader (You can buy your own Card Reader from the third party, but please contact your local Card Reader vendor on any issues of the specification and compatibility.)

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

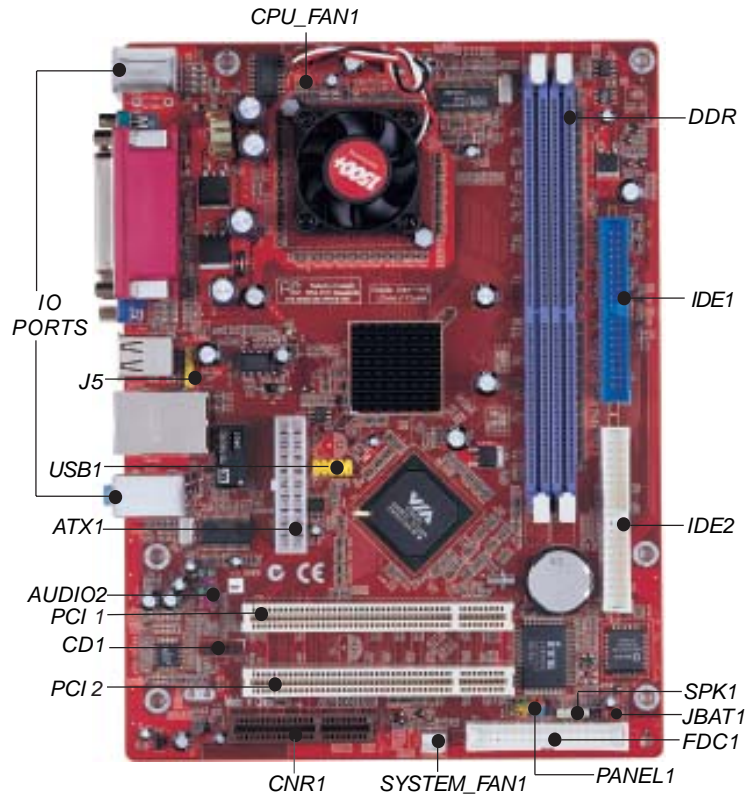
To install this motherboard in a system, please follow these instructions in this chapter:

- 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 connectors/headers on the motherboard
- Install peripheral devices and make the appropriate connections to connectors/headers on the motherboard

Note:

1. Before installing this motherboard, make sure jumper JBAT1 is under Normal setting. See this chapter for information about locating JBAT1 and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the motherboard.

Motherboard Components



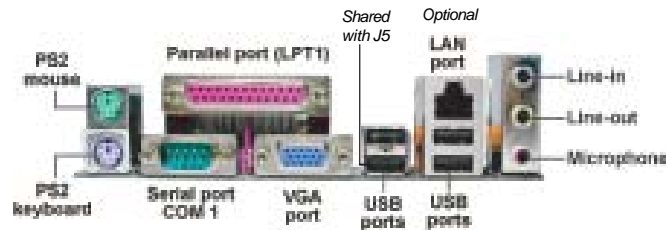
LABEL	COMPONENTS
DDR1/2	Two 184-pin DDR SDRAM sockets
IDE1/2	Primary/Secondary IDE connectors
ATX1	Standard 20-Pin ATX Power connector
USB1	Front Panel USB header
FDC1	Floppy Disk Drive connector
PANEL1	Front Panel Switch/LED header
SYSTEM_FAN1	System Fan connector
JBAT1	Clear CMOS jumper
SPK1	Speaker header
PCI 1-2	32-bit PCI slots
CD1	Analog Audio input header

Chapter 2: Motherboard Installation

LABEL	COMPONENTS
AUDIO2	Front Panel Audio header
J5	USB Card Reader header
CPU_FAN1	CPU Fan connector
CNR1	Communications Networking Riser slot

I/O Ports

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

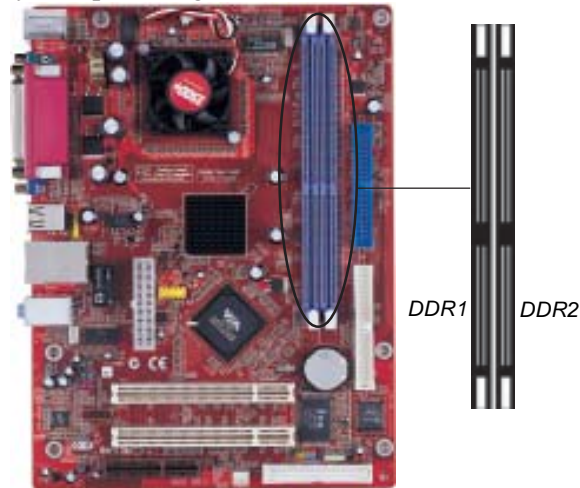


PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (LPT1)	Use the Parallel port to connect printers or other parallel communications devices.
Serial Port COM1	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1.
VGA Port	Use the VGA port to connect VGA devices.
LAN Port (optional)	Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
USB Ports	Use the USB ports to connect USB devices. Note: The lower USB port located beside the VGA port is shared with the J5 header.
Audio Ports	Use the three audio ports to connect audio devices. The first jack is for stereo Line-In signal. The second jack is for stereo Line-Out signal. The third jack is for Microphone.

Installing Memory Modules

This motherboard accommodates two 184-pin 2.5V DIMM sockets (Dual Inline Memory Module) for unbuffered **DDR266/200** memory modules (Double Data Rate SDRAM), and maximum 2.0GB 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 200 MHz or 266 MHz memory bus, providing 1.6 GB/s or 2.1 GB/s data transfer rate.



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.

Chapter 2: Motherboard Installation

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**.



JBAT1: Clear CMOS Jumper

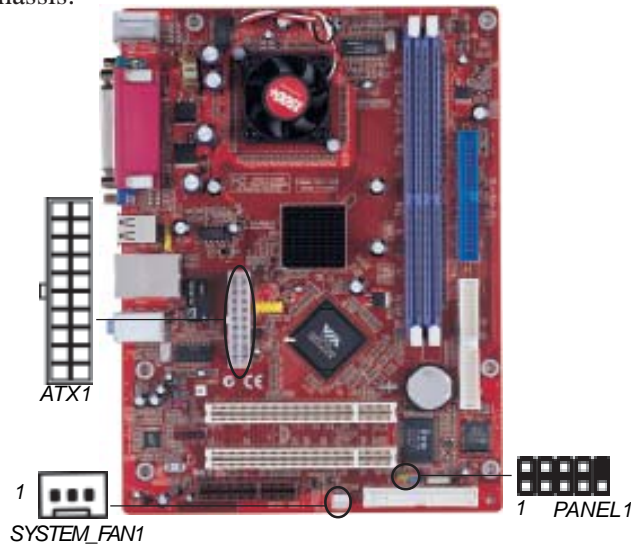
Use this jumper to clear the contents of the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect and prevent your motherboard from operating. To clear the CMOS memory, disconnect all the power cables from the motherboard and then move the jumper cap into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

Function	Jumper Setting
<i>Normal</i>	<i>Short Pins 1-2</i>
<i>CLEAR CMOS</i>	<i>Short Pins 2-3</i>

Install the Motherboard

Install the motherboard in a system chassis (case). The board is a FLEX 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.

If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **SYSTEM_FAN1** fan power connector on the motherboard.

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

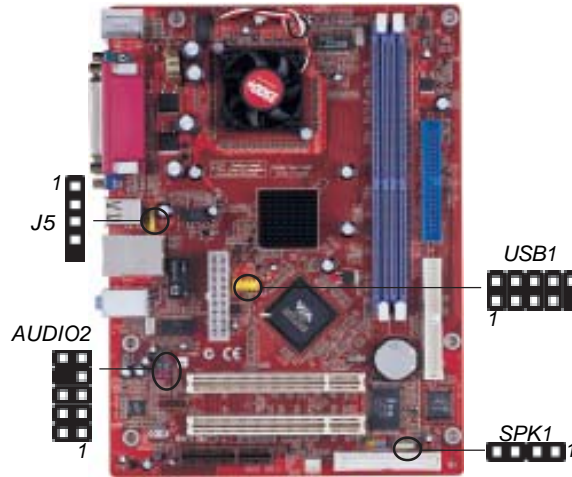
Motherboard User's Guide

Here is a list of the PANEL1 pin assignments.

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

Connecting Optional Devices

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



SPK1: Speaker Header

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

Pin	Signal	Pin	Signal
1	SPKR	2	NC
3	GND	4	+5V

AUDIO2: Front Panel Audio Header

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

<i>Pin</i>	<i>Signal</i>	<i>Pin</i>	<i>Signal</i>
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

USB1: Front Panel USB Header

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 header USB1 to connect the front-mounted ports to the motherboard.

<i>Pin</i>	<i>Signal</i>	<i>Pin</i>	<i>Signal</i>
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 USB1 header on the motherboard.
2. Plug the bracket cable onto the USB1 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.

J5: USB Card Reader Header (optional)

This header is for connecting internal USB card reader. You can use a card reader to read or transfer files and digital images to your computer.

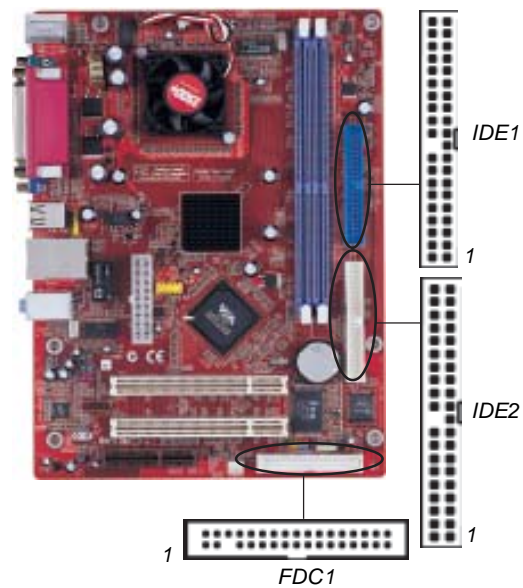
<i>Pin</i>	<i>Signal</i>	<i>Pin</i>	<i>Signal</i>
1	VCC5	2	USB -
3	USB+	4	GND
5	KEY		

Note1: *The J5 is shared with the lower USB port located beside the VGA port of the I/O back panel. Please see "I/O Ports" for more information.*

Note2: *Please check the pin assignment of the cable and the USB header on the motherboard. Make sure the pin assignment will match before plugging in. Any incorrect usage may cause unexpected damage to the system. The vendor won't be responsible for any incidental or consequential damage arising from the usage or misuse of the purchased product.*

Install Other Devices

Install and connect any other devices in the system. Follow 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 **FDC1**.

IDE Devices

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

Motherboard User's Guide

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.

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.



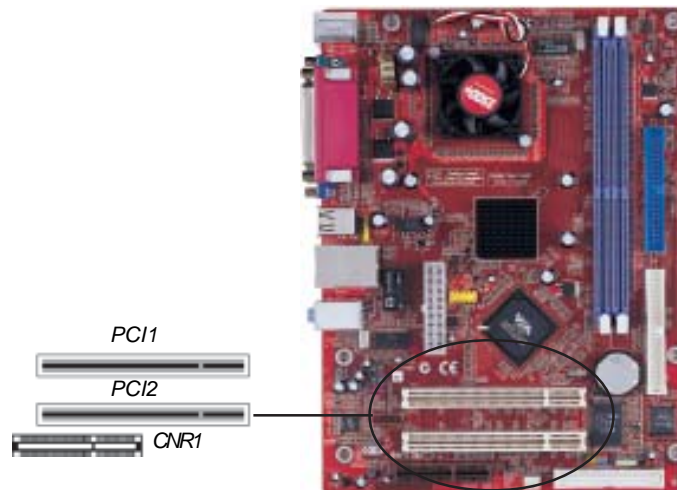
Chapter 2: Motherboard Installation

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

Expansion Slots

This motherboard has one CNR and two 32-bit PCI slots.



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

1. Locate the CNR or PCI slots on the motherboard.
2. Remove the blanking plate of the slot from the system chassis.

Motherboard User's Guide

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.



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 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.

<i>AMBIOS SIMPLE SETUP UTILITY – VERSION 1.21.12 (C) 2000 American Megatrends, Inc. All Rights Reserved</i>	
<i>Standard CMOS Setup Advanced Setup Power Management Setup PCI/Plug and Play Setup Load Optimal Settings Load Best Performance Settings</i>	<i>Features Setup CPU PnP Setup Hardware Monitor Change Password Exit</i>
<i>ESC: Quit  : Select Item <Shift>F2: Change Color F5: Old Values F6: Optimal Values F7: Best Performance Values F10: Save&Exit</i>	
<i>Standards CMOS setup for changing time, date, hard disk type, etc.</i>	

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. Hold down the **Shift** key and press **F2** to cycle through the Setup Utility’s optional color schemes.

Some options on the main menu page lead to tables of items with installed values that you can use cursor arrow keys to highlight one item, and press **PgUp** and **PgDn** keys to cycle through alternative values of that item. The other options on the main menu page lead to dialog boxes requiring your answer Yes or No by hitting the **Y** or **N** keys.

If you have already changed the setup utility, press **F10** to save those changes and exit the utility. Press **F5** to reset the changes to the original values. Press **F6** to install the setup utility with a set of default values. Press **F7** to install the setup utility with a set of high-performance values.

Standard CMOS Setup Page

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

AMIBIOS SETUP - Standard CMOS Setup										
(C) 2000 American Megatrends, Inc. All Rights Reserved										
Date (mm/dd/yy): Thu Apr 15,2004										
Time (hh/mm/ss): 16:46:44										
	Type	Size	Cyln	Head	WPcom	Sec	LBA Mode	Bik Mode	PIO Mode	32Bit Mode
Pri Master :	Auto									On
Pri Slave :	Auto									On
Sec Master :	Auto									On
Sec Slave :	Auto									On
Floppy Drive A : 1.44 MB 31/2										
Floppy Drive B : Not installed										
Month : Jan - Dec							ESC : Exit			
Day : 01 - 31							↑↓ : Select Item			
Year : 1980 - 2099							PU/PD/+/- : Modify			
							(Shift)F2 : Color			
							F3 : Detect All HDD			

Date & Time

These items set up system date and time.

IDE Pri Master/Pri Slave/Sec Master/Sec Slave

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

Floppy Drive 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.

<i>AMIBIOS SETUP - Advanced Setup</i>		
<i>(C) 2000 American Megatrends, Inc. All Rights Reserved</i>		
<i>Quick Boot</i>	<i>Enabled</i>	
<i>1st Boot Device</i>	<i>IDE-0</i>	
<i>2nd Boot Device</i>	<i>Floppy</i>	
<i>3rd Boot Device</i>	<i>CD/DVD-0</i>	
<i>Try Other Boot Devices</i>	<i>Yes</i>	
<i>S.M.A.R.T. for Hard Disks</i>	<i>Disabled</i>	
<i>BootUp Num-Lock</i>	<i>On</i>	
<i>Floppy Drive Swap</i>	<i>Disabled</i>	
<i>Floppy Drive Seek</i>	<i>Disabled</i>	
<i>Password Check</i>	<i>Setup</i>	
<i>Boot To OS/2 >64MB</i>	<i>No</i>	
<i>L2 Cache</i>	<i>Enabled</i>	
<i>System BIOS Cacheable</i>	<i>Enabled</i>	
<i>DDR Timing by SPD</i>	<i>Enabled</i>	
<i>DDR CAS# Latency</i>	<i>2.5</i>	
<i>DDR Bank Interleave</i>	<i>Disabled</i>	<i>ESC:Quit</i> <i>↑↓←→:Select Item</i>
<i>AGP Aperture Size</i>	<i>64MB</i>	<i>F1:Help</i> <i>PU/PD/+/-:Modify</i>
<i>Auto Detect DIMM/PCI CLK</i>	<i>Enabled</i>	<i>F5:Old Values</i> <i>(Shift)F2:Color</i>
<i>Clock Spread Spectrum</i>	<i>Disabled</i>	<i>F6:Load Optimal Values</i>
		<i>F7:Load Best Performance Values</i>

Quick Boot

If you enable this item, the system starts up more quickly by eliminating 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.

S.M.A.R.T. for Hard Disks

Enable this item if any IDE hard disks support the S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) feature.

BootUp Num-Lock

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

Floppy Drive Swap

If you have two diskette drives installed and you enable this item, drive A becomes drive B and drive B becomes drive A.

Floppy Drive Seek

If you enable this item, your system will check all floppy disk drives at start up. Disable this item unless you are using an old 360KB drive.

Password Check

If you have entered a password for the system, use this item to determine, if the password is required to enter the Setup Utility (*Setup*) or required both at start-up and to enter the Setup Utility (*Always*).

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.

L2 Cache

Leave these items enabled since all the processors that can be installed on this board have internal L2 cache memory.

System BIOS Cacheable

If you enable this item, a segment of the system BIOS will be copied to main memory for faster execution.

DDR Timing by SPD

This item enables or disables the SDRAM timing defined by the Serial Presence Detect electrical.

DDR 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.

DDR Bank Interleave

Enable this item to increase SDRAM memory speed. When enabled, separate memory banks are set for odd and even addresses, and upcoming byte of memory is accessible while refreshing the current byte.

AGP Aperture Size

This option determines the effective size of the AGP Graphic *Aperture*, where memory-mapped graphic data structures are located.

Auto Detect DIMM/PCI CLK

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

Clock Spread Spectrum

This item enables the clock to generate spread spectrum.

Power Management Setup Page

This page sets some parameters for system power management operation.

<i>AMBIOS SETUP – Power Management Setup</i>		
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<i>ACPI Aware O/S</i>	<i>Yes</i>	
<i>Power Management</i>	<i>Enabled</i>	
<i>Suspend Time Out</i>	<i>Disabled</i>	
<i>LAN/Ring Power On</i>	<i>Disabled</i>	
<i>Keyboard Power On</i>	<i>Disabled</i>	
<i>Wake-Up Key</i>	<i>Any Key</i>	
<i>Wake-Up Password</i>	<i>N/A</i>	
<i>PowerOn by RTC Alarm</i>	<i>Disabled</i>	<i>ESC:Quit</i>
<i>RTC Alarm Date</i>	<i>15</i>	<i>↑↓←→:Select Item</i>
<i>RTC Alarm Hour</i>	<i>12</i>	<i>F1:Help</i>
<i>RTC Alarm Minute</i>	<i>30</i>	<i>PU/PD/+/:Modify</i>
<i>RTC Alarm Second</i>	<i>30</i>	<i>F5:Old Values (Shift)F2:Color</i>
		<i>F6:Load Optimal Values</i>
		<i>F7:Load Best Performance Values</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 select a power management scheme. Both APM and ACPI are supported.

Suspend Time Out

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

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/Wake-Up Password

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

PowerOn by RTC Alarm / Date / Hour / Minute / Second

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.

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.

<i>AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP</i>		
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<i>Plug and Play Aware O/S</i>	<i>Yes</i>	
<i>Share Memory Size</i>	<i>32 MB</i>	
<i>Primary Graphics Adapter</i>	<i>PCI</i>	
<i>Allocate IRQ to PCI VGA</i>	<i>Yes</i>	
<i>PCI IDE BusMaster</i>	<i>Disabled</i>	
		<i>ESC:Quit</i> <i>↑↓←→:Select Item</i> <i>F1:Help</i> <i>PU/PD/+/-:Modify</i> <i>F5:Old Values</i> <i>(Shift)F2:Color</i> <i>F6:Load Optimal Values</i> <i>F7:Load Best Performance Values</i>

Plug and Play Aware O/S

Enable this item if you are using an O/S that supports Plug and Play such as Windows 95/98/ME.

Share Memory Size

This item lets you allocate a portion of the main memory for the onboard VGA display application with 16/32/64MB options.

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.

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.

Load Optimal Settings

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the Setup Utility loads a set of fail-safe default values. These default values are not very demanding and they should allow your system to function with most kinds of hardware and memory chips.

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

Load Best Performance Settings

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the Setup Utility loads a set of best-performance default values. These default values are quite demanding and your system might not function properly if you are using slower memory chips or other low-performance components.

Features Setup Page

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

<i>AMIBIOS SETUP - Features Setup</i>		
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<i>OnBoard FDC</i>	<i>Auto</i>	
<i>OnBoard Serial PortA</i>	<i>3F8h/COM1</i>	
<i>OnBoard Parallel Port</i>	<i>378</i>	
<i>Parallel Port Mode</i>	<i>ECP</i>	
<i>Parallel Port IRQ</i>	<i>7</i>	
<i>Parallel Port DMA</i>	<i>3</i>	
<i>OnBoard IDE</i>	<i>Both</i>	
<i>OnBoard LAN</i>	<i>Enabled</i>	
<i>Audio Device</i>	<i>Enabled</i>	
<i>Modem Device</i>	<i>Auto</i>	<i>ESC:Quit</i> <i>↑↓←→:Select Item</i>
<i>USB Controller</i>	<i>Enabled</i>	<i>F1:Help</i> <i>PU/PD/+/:Modify</i>
<i>USB Function for DOS</i>	<i>Disabled</i>	<i>F5:Old Values</i> <i>(Shift)F2:Color</i>
<i>ThumbDrive Support</i>		<i>F6:Load Optimal Values</i>
<i>For DOS</i>	<i>Disabled</i>	<i>F7:Load Best Performance Values</i>

OnBoard FDC

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

OnBoard Serial PortA

Use this item to enable or disable the onboard COM1 serial 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 SPP (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or ECP + EPP.

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.

OnBoard IDE

This item enables or disables either or both of the onboard Primary and Secondary IDE channels.

OnBoard LAN

This item enables or disables the onboard Ethernet LAN.

Hardware Monitor Page

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

<i>AMIBIOS SETUP - Hardware Monitor</i>		
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<i>*** System Hardware ***</i>		
<i>CPU Vcore</i>	<i>1.616 V</i>	
<i>Vcc2.5V</i>	<i>2.432 V</i>	
<i>+3.3V</i>	<i>3.328 V</i>	
<i>+5 V</i>	<i>4.945 V</i>	
<i>+12V</i>	<i>12.096V</i>	
<i>CPU FAN1</i>	<i>5443RPM</i>	<i>ESC:Quit</i>
<i>SYSTEM FAN1</i>	<i>0RPM</i>	<i>←→:Select Item</i>
<i>CPU Temperature</i>	<i>33°C/91°F</i>	<i>F1:Help PU/PD/+/-:Modify</i>
<i>SYSTEM Temperature</i>	<i>52°C/125°F</i>	<i>F5:Old Values (Shift)F2:Color</i>
		<i>F6:Load Optimal Values</i>
		<i>F7:Load Best Performance Values</i>

FANs & Voltage Measurements

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

CPU/ SYSTEM Temperature

These items display CPU and system temperature measurement.

Change Password

If you highlight this item and press Enter, a dialog box appears that you can enter a Supervisor password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. There will be the second dialog box asking you to retype the password for confirmation. Press Enter after you have retyped it correctly. Then, the password is required for the access to the Setup Utility or for it at start-up, depending on the setting of the Password Check item in Advanced Setup.

Exit

Highlight this item and press Enter to save the changes that you have made in the Setup Utility configuration and exit the program. When the Save and Exit dialog box appears, press Y to save and exit, or press N to exit without saving.

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 98/ME/2000/XP, it will automatically install all the drivers and utilities for your motherboard; if Windows NT or manual installation, please follow the instructions described as the Installing under Windows NT or Manual Installation section.

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.

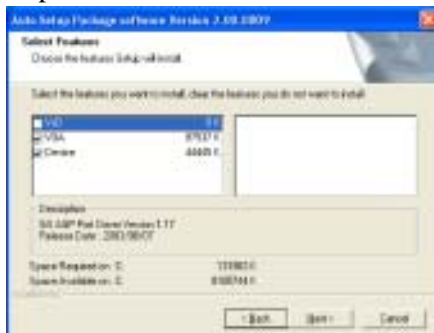
Auto-Installing under Windows 98/ME/2000/XP

If you are under Windows 98/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.

Installing under Windows NT or Manual Installation

If you are under Windows NT, the auto-installing program doesn't work out; or you have to do the manual installation, please follow this procedure while the Auto Setup screen pops out after inserting the support CD-ROM:

- 1 Click the **ReadMe** to bring up a screen, and then click the Install Path at the bottom of the screen.
- 2 Find out your mainboard model name and click on it to obtain its correct driver directory.
- 3 Install each software in accordance with the corresponding driver path.

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.