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, R.O.C.
No. 22, Alley 38, Lane 91, Sec. 1, Nei Hu Road, Taipei, Taiwan 114, R.O.C.
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-30-96-00

Essen, 04.03.2004

RWTÜV

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

ROC. FE1737, RC

CERTIFICATION
S Z E C

ISO14001
CERTIFICATE

Certificate NO.: 05-2001-065

We hereby certify that

ECS Manufacturing(Shenzhen) 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:

The manufacture of Mother Board and Peripheral Card and interrelated
management activities of ECS Manufacturing(Shenzhen) Co.,Ltd.
which is located in No.20,Free Trade Zone,Shatuojiao,Shenzhen, P. R.China.

Date of issue: 30th Dec 2001
Date of expiry: 29th Dec 2004
Signed by:

SHENZHEN ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION CENTER

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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.
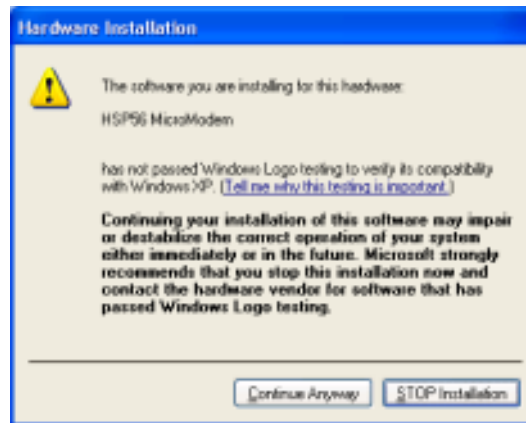
2. USB 2.0 Driver Limitations:
   2-1 The USB 2.0 driver only supports Windows XP and
       Windows 2000.
   2-2 If you connect a USB 2.0 hub to the root hub, plugging
       USB devices into this hub, the system might not
       successfully execute certain USB devices' connection
       because it could not recognize these devices.
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.tw for your downloading.

Chapter 1 Introduction

This motherboard has a **Socket-478** to support **Intel Pentium 4** processors with Front-Side Bus (FSB) speeds up to **800 MHz**.

It integrates the **SiS661FX** Northbridge and **SiS964L** Southbridge that supports 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 five 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 USB2/USB3 providing extra ports by connecting the Extended USB Module to the motherboard.

It is an **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** CPU
- Supports up to **800 MHz** Front-Side Bus

Chipset

There are **SiS661FX Northbridge** and **SiS964L Southbridge** in this chipset in accordance with an innovative and scalable architecture with proven reliability and performance.

- Accelerated Graphics Port (AGP) Interface: Supports AGP v2.0 Compliant and AGP 8x/4x/2x interface with Fast Write Transaction
- Built-in a high performance 256-bit 3D engine and 32-bit floating point format VLIW triangle setup engine
- **Complete TV-OUT/Digital Flat Panel Solution**: Built-in secondary CRT controller to support independent display of secondary CRT, LCD and TV-out
- Integrated Multi-threaded I/O link ensures concurrency of upstream/down stream data transfer with 1 GB/s bandwidth
- PCI 2.3 Specification Compliance
- Integrated Multithreaded I/O Link Mastering with Read Pipelined Streaming

Memory Support
- Two 184-pin DIMM sockets for DDR SDRAM memory modules
- Supports DDR**400** memory bus
- Maximum installed memory is 2GB

Expansion Slots

- Five 32-bit PCI slots
- One 8x AGP slot
- One CNR slot

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 MB/sec

Onboard VGA

- Built-in a high performance **256-bit 3D** engine
- Supports AGP 2.0 compliant configuration setting
- Supports AGP 4X 266 MHz with 16 stages pipeline full side-band/pipe function

AC'97 Audio Codec

- 6-CH hardware architecture allows multi-channel south bridge to playback 6CH audio
- Intel® AC'97 (REV. 2.3) compatible, meeting Microsoft® PC2001 requirements
- Built-in earphone buffer and internal PLL, the latter saving additional crystal
- Line-in/rear out share the same jack; Center/bass share the MIC jack
- Digital S/PDIF OUT Support
- CRL® 3D: HRTF based BS3D compatible audio engine

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

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- One **VGA** port
- One LAN port (optional)
- Four back-panel USB 2.0 ports
- Audio jacks for microphone, line-in and line-out

Fast Ethernet LAN (optional)

- Built-in **100Base-TX/10Base-T Physical Layer solution**
- Dual Speed – 100/10 Mbps
- MII Interface to Ethernet Controller and Configuration & Status
- Auto Negotiation: 10/100, Full/Half Duplex
- Meet All applicable IEEE 802.3, 10Base-T and 100 Base-TX Standards

USB 2.0

- Compliant with Universal Serial Bus Specification Revision 2.0
- Compliant with Intel's Enhanced Host Controller Interface Specification Revision 0.95
- 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

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

Dimensions

- ATX form factor of 305 x 220 mm

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

Package Contents

Your motherboard package contains 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 Card Reader

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 JP2 is under Normal setting. See this chapter for information about locating JP2 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
CPUPW1	Standard 4-Pin ATX Power connector
ATXPW1	Standard 20-Pin ATX Power connector
USB2/USB3	Front Panel USB headers
FDD1	Floppy Disk Drive connector
PANEL1	Front Panel Switch/LED header
SYSFAN1	System Fan connector
SYSFAN2	System Fan connector (optional)
JP2	Clear CMOS jumper
JP3	USBLAN1 Power Select jumper
JP4	USB1 Power Select jumper
JP5	USB2 Power Select jumper
JP6	USB3 Power Select jumper
SPK1	Speaker header
IR1	Infrared header
PCI 1-5	32-bit PCI slots
CD1	Analog Audio Input header
AUDIO2	Front Panel Audio header
READER1	USB Card Reader header
CPUFAN1	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.
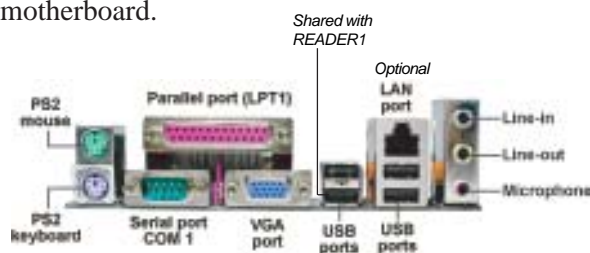
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (LPT1)	Use the Parallel port to connect printers or other parallel communications devices.
COM1	Use the COM port to connect serial devices such as mice or fax/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 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 READER1 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 the Processor

This motherboard has a Socket 478 processor socket. 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:
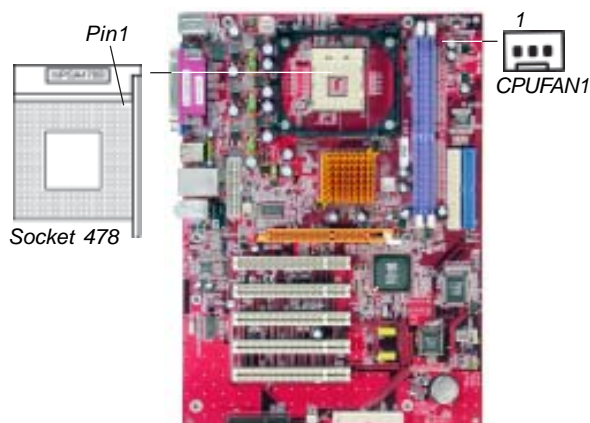
1   Install your CPU. Pull up the lever away from the socket and lift up to 90-degree angle.
2   Locate the CPU cut edge (the corner with the pin hold noticeably missing).
    Align and insert the CPU correctly.
3   Press the lever down and apply thermal grease on top of the CPU.
4   Put the CPU Fan 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 CPUFAN1 connector.
This completes the installation.

Installing Memory Modules

This motherboard accommodates two 184-pin 2.5V DIMM sockets (Dual Inline Memory Module) for unbuffered **DDR400**/333/266/200 (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 400/333/266/200 MHz memory and provide 3.2 GB/s, 2.7 GB/s, 2.1 GB/s and 1.6 GB/s data transfer rate.

DDR1 DDR2
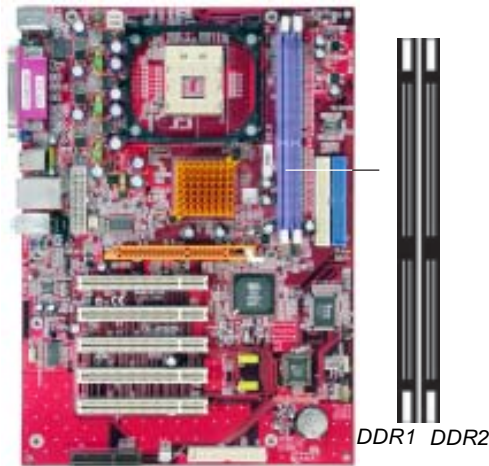
Memory Module Installation Procedure

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.
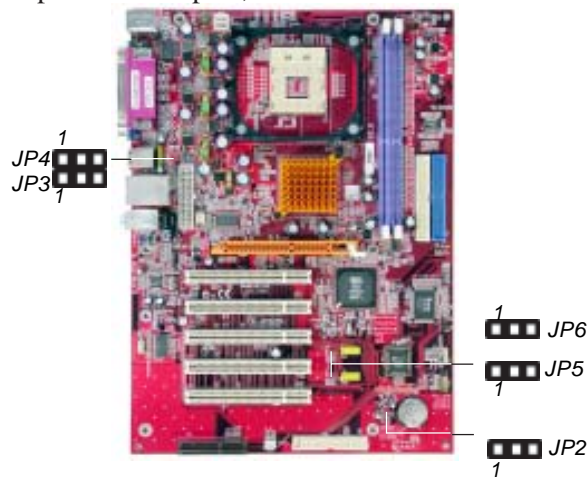
JP2: Clear CMOS Jumper

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 mainboard 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
Clear CMOS	Short Pins 1-2
Normal	Short Pins 2-3

JP3/JP4/JP5/JP6: USB Power Select Jumper

Use these jumpers to select the voltage for USB ports:

- **USBLAN1 Power Selector: JP3**

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

- **USB1 Power Selector: JP4**

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

- **USB2 Power Selector: JP5**

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

- **USB3 Power Selector: JP6**

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.*

Install the Motherboard

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

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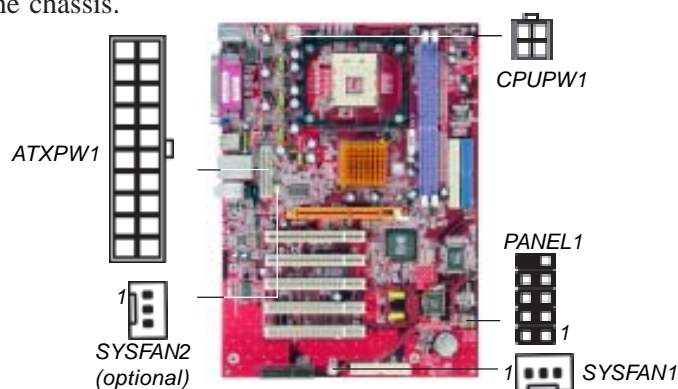
Connect the power connector from the power supply to the **ATXPW1** connector on the motherboard. The **CPUPW** is a +12V connector for CPU Vcore power.

If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **SYSFAN1/2** fan power connector on the motherboard *(SYSFAN2 is an optional connector)*.

Connect the case switches and indicator LEDs to the **PANEL1** connector. 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:
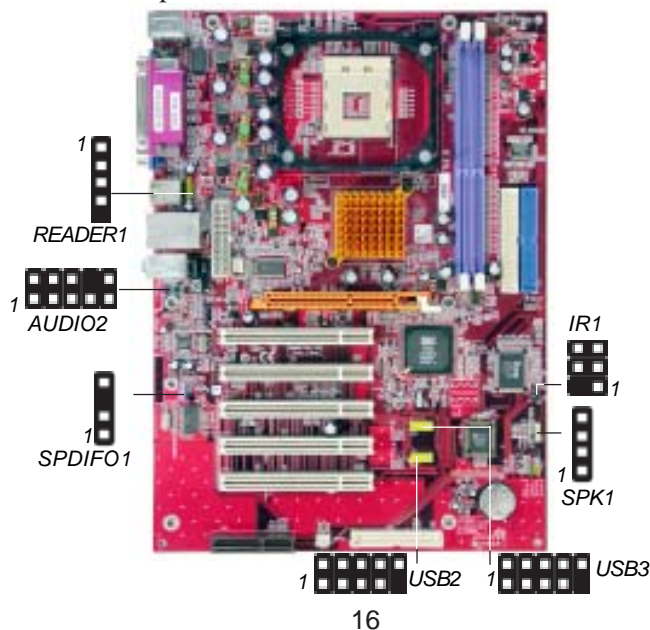
SPK1: Speaker Header

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.

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.

READER1: 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.

Pin	Signal
1	VCC
2	USB-
3	USB+
4	GND
5	KEY

Note1: *The READER1 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 misusage of the purchased product.*

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	Signa	Pin	Signa
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.

SPDIFO1: SPDIF Out Header

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

Pin	Signal	Pin	Signal
1	SPDIF	2	+5VA
3	KEY	4	GND

Install Other Devices

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

19
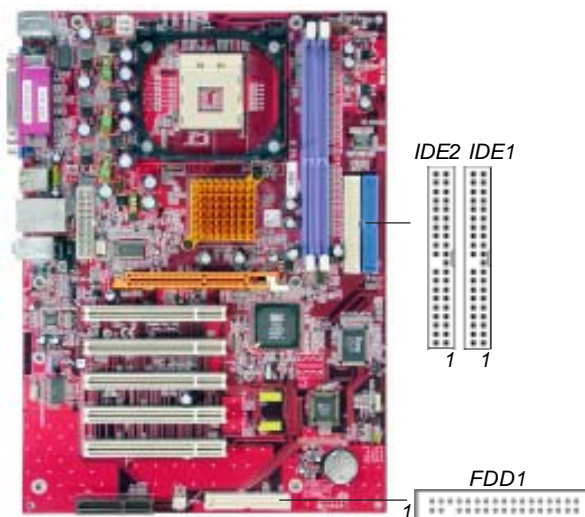
Floppy Disk Drive

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.

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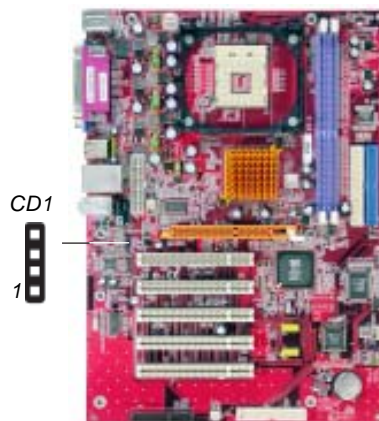
When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the motherboard, locate the 4-pin header **CD1**.

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

Expansion Slots

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

AGP1

PCI1

PCI2

PCI3

PCI4

PCI5

CNR1
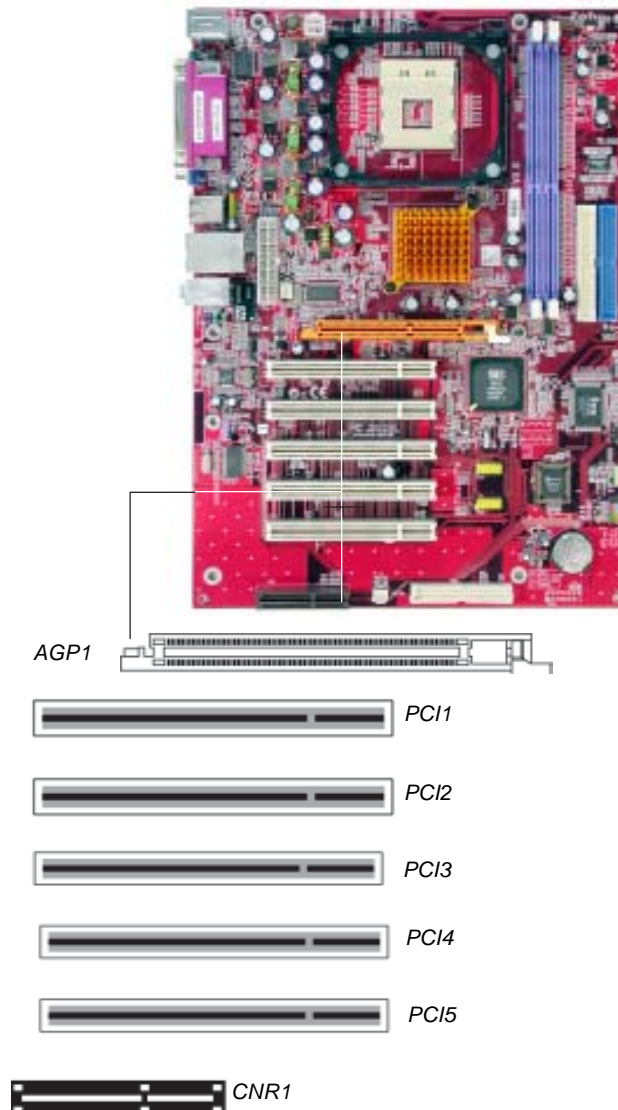
Follow the steps below to install an AGP/CNR/PCI expansion card.

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 SETUP*". Whenever you see this message, press the **Delete** key, and the Main menu page of the Setup Utility appears on your monitor.

```
╔══════════════════════════════════════════════════════════════╗
║ CMOS SETUP UTILITY – Copyright (C) 1985-2003, 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.

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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            00:00:10                Help Item
 System Date            Fri 10/24/2003
                                         User [Enter], [TAB] or
   Primary IDE Master   Auto              [SHIFT-TAB] to select a
   Primary IDE Slave    Auto              field.
   Secondary IDE Master Auto              Use [+] or [-] to configure
   Secondary IDE Slave  Auto              system time.


 Floppy A               1.44 MB 3 1/2"
 Floppy B               Disabled
```

Date & Time

These items set up system date and time.

Primary IDE Master/Primary IDE Slave/Secondary IDE Master/Secondary IDE 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 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		
Share Memory Size	32MB	Help Item
Quick Boot	Enabled	
1st Boot Device	PM-IC35L040AVVN07	Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
2nd Boot Device	SS-Pioneer DVD-R0	
3rd Boot Device	1st Floppy Drive	
Try Other Boot Device	Yes	
Bootup Num-Lock	On	
Boot To OS/2 > 64 MB	No	
Graphic Win Size	64 MB	
DRAM CAS# Latency	By SPD	
Performance Mode Select	Disabled	
MA 1T/2T Select	Auto	
Hyper Threading Function	Disabled	
Auto Detect DIMM/PCI Clk	Enabled	
Spread Spectrum	Disabled	
DRAM Voltage Control	Auto	
CPU Vcore Voltage Adjustment	Auto	
Max CUPID Value Limit	Disabled	

Share Memory Size

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

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.

Graphic Win Size

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

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.

Performance Mode Select

You can enable this item to achieve a better performance; however, it is necessary to use a better DDR SDRAM going with this function.

MA 1T/2T Select

This item adjusts timing 1T/2T latency. We recommend you to leave this item at the default value.

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.

DRAM Voltage Control

Use this item to adjust the voltage of the DRAM memory.

CPU Vcore Voltage Adjustment

Use this item to adjust the Vcore voltage of the CPU.

Max CUPID 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.

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     │      Help Item       │
│ Serial Port1 Address            3F8/IRQ4     │                      │
│ Onboard IR Port                 Disabled     │  Allows BIOS to      │
│ Parallel Port Address           378          │  Enable or Disable   │
│   Parallel Port Mode            ECP          │  Floppy Controller.  │
│     ECP Mode DMA Channel        DMA3         │                      │
│   Parallel Port IRQ             IRQ7         │                      │
│ OnBoard PCI IDE Controller      Both         │                      │
│ Audio Device                    Enabled      │                      │
│ MODEM Device                    Auto         │                      │
│ Ethernet Device                 Enabled      │                      │
│ 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.

OnBoard Serial Port

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

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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.

OnBoard PCI IDE

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

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 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 mainboard 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
Suspend Time Out           Disabled    Yes / No
Resume on RTC Alarm        Disabled    ACPI support for
Keyboard Power On          Disabled    Operating System.
LAN/Ring Power On          Disabled    Yes: If OS supports
S3/S4 USB Device Power On  Disabled    ACPI.
                                       No: If OS does not
                                       support ACPI.
```

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.

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Resume On 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.

Keyboard Power On

If you enable this item, system can automatically resume by pressing any keys, hot or power key, or typing in the password on the keyboard. 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.

S3/S4 USB Device Power On

If you enable this item, only in S3/S4 mode, the system can automatically resume by using the USB device.

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 Allocate IRQ to PCI VGA Yes PCI IDE BusMaster Disabled	*Help Item* Select which graphics controller 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.

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 *Change Supervisor Password* *Press Enter*	*Install or Change the 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.

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*
Auto Dectect CPU and DRAM FREQU *Enabled*		
CPU Frequency Setting *133*		*Sets the ratio between CPU Core Clock and the FSB Frequency. Note: If an invalid ratio is set in CMOS then actual and setpoint values may differ.*
DRAM Frequency *200MHz*		

Manufacturer

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

Auto Detect CPU and DRAM FREQU

When this item is enabled, it automatically detects and shows the frequency of the CPU and DRAM memory installed in your system; when disabled, it can adjust the frequency of the CPU and DRAM memory.

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                  1.792 V
  Vcc5V                  5.107 V
  SB3V                   3.296 V
  SYSTEM FAN1 Speed      0 RPM
  SYSTEM FAN2 Speed      0 RPM
  CPU FAN Speed          4560 RPM
  SYSTEM Temperature     32°C/89°F
  CPU Temperature        41°C/105°F
```

CPU/System Temperature

These items display CPU and system temperature measurement.

FAN & 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 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.

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Auto-Installing under Windows 2000/XP

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

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

2   Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.

3   The support software will automatically install.

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

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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.