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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. Click
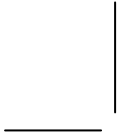   the "Continue Anyway" button and go ahead the installation.
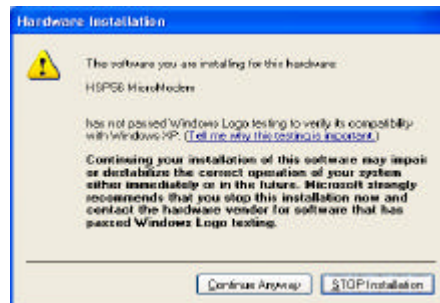
2. USB 2.0 Driver Limitations:
   2-1 The USB 2.0 driver only supports Windows XP and
       Windows 2000.
   2-2 If you connect a USB 2.0 hub to the root hub, plugging USB
       devices into this hub, the system might not successfully
       execute certain USB devices' connection because it could not
       recognize these devices.

Table of Contents

Chapter 1

Introduction

This mainboard has a **Socket-A** support for the **AMD K7** processors. The Socket-A processor's front-side bus speed is **266MHz**.

This mainboard has a **KM266** chipset that supports one **4X AGP** slot for highly graphics display, 100/**133 MHz DDR**, and **Ultra DMA ATA** 100/**133** function to provide outstanding high system performance under all types of system operations. The mainboard has the built-in **AC97 Codec**, a **CNR** (Communications and Networking Riser) slot and a built-in **10BaseT/100BaseTX Network Interface**. This mainboard has the **128-bit 2D/3D AGP Graphics Accelerator** with 32MB frame buffer, supporting **AGP 4X 266MHz** mode up to 1GB/s bandwidth, which provides a direct connection between the graphics sub-system and memory so that the graphics do not have to compete for processor time with other devices on the PCI bus. There is a full set of **I/O Ports** including PS/2 keyboard and mouse ports, one serial port, one onboard VGA port, one parallel port, and maximum six USB2.0 ports – four back-panel ports and onboard USB header USB3 providing two extra ports by connecting the Extended USB Module to the mainboard.

This mainboard has all the features you need to develop a powerful multimedia workstation that is network ready. The board is **Micro ATX size** and has power connectors for an **ATX** power supply.

Key Features

The key features of this mainboard include:

Socket-A Processor Support
- Supports AMD **Athlon XP/Athlon/Duron** processors
- Supports **266 MHz** Front-Side Bus

Chipset
There are **VIA KM266** Northbridge and VT8235 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:
- An advanced V-Link memory controller architecture that provides the bandwidth up to 266 MB/s and performance necessary for even the most demanding Internet and 2D/3D graphics
- Support for an 4xAGP interface providing vivid 2D/3D graphics and video performance

Memory Support
- Two 184-pin DIMM slots for DDR memory modules
- Support for 100/133 MHz memory bus
- Maximum installed memory is 2GB

Expansion Slots
- One CNR slot
- One 4X AGP slot for AGP 2.0-compliant interface
- Two 32-bit PCI slots for PCI 2.2-compliant bus interface

Onboard IDE channels
- Primary and Secondary PCI IDE channels
- Support for PIO (programmable input/output) modes
- Support for Multiword DMA modes
- Support for Bus Mastering and Ultra DMA **ATA 100** 33/66/**100/133** modes

Power Supply and Power Management

- ◆ ATX power supply connector
- ◆ ACPI and previous PMU support, suspend switch, keyboard power on/off
- ◆ Supports Wake on LAN

VGA

- ◆ Single cycle 128-bit 3D architecture
- ◆ 128-bit 2D graphic engine
- ◆ 8/16/32 MB frame buffer using system memory
- ◆ Supports AGP 4X 266 MHz mode up to 1GB/s bandwidth
- ◆ Supports 250MHz RAMDAC
- ◆ 2D/3D resolutions up to 1920x1440
- ◆ Supports AGP Rev. 2.0 Spec. Compliant

AC97 Codec

- ◆ Compliant with AC' 97 2.1 specification
- ◆ 16-bit stereo full-duplex CODEC with fixed 48KHz sampling rate
- ◆ 3 analog line-level stereo inputs with 5-bit volume control: LINE-IN, CD-IN
- ◆ Three Audio Jacks – Line-Out, Line-In and Microphone-In
- ◆ Sound Blaster, Sound Blaster Pro Compatible
- ◆ Advanced power management support

Onboard I/O Ports

- ◆ Provides PC99 Color Connectors for easy peripheral device connections
- ◆ Floppy disk drive connector with 1Mb/s transfer rate
- ◆ Two PS/2 ports for keyboard and mouse
- ◆ One serial port with 16C550-compatible fast UART
- ◆ One parallel port with ECP and EPP support
- ◆ One VGA port
- ◆ Four back-panel USB2.0 ports and extra two USB2.0 ports (onboard USB header USB3)
- ◆ One infrared port connector for optional module

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

Hardware Monitoring
- ♦ Built-in hardware monitoring for CPU & System temperatures, fan speeds and mainboard voltages

Onboard Flash ROM
- ♦ Supports Plug and Play configuration of peripheral devices and expansion cards

Bundled Software
- ♦ **PC-Cillin2002** provides automatic virus protection under Windows 98/ME/NT/2000/XP
- ♦ **Adobe Acrobat Reader V5.0** is the software to help users read .PDF files.

Dimensions
- ♦ Micro ATX form factor (24.4cm x 19cm)

Package Contents

Your mainboard package ships with the following items:
- ❑ The mainboard
- ❑ The User's Manual
- ❑ One diskette drive ribbon cable (optional)
- ❑ One IDE drive ribbon cable
- ❑ Software support CD

Optional Accessories
You can purchase the following optional accessories for this mainboard.
- ❑ Extended USB module
- ❑ 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.)

Static Electricity Precautions

Components on this mainboard can be damaged by static electricity. Take the following precautions when unpacking the mainboard and installing it in a system.

1. Keep the mainboard and other components in their original static-proof packaging until you are ready to install them.
2. During installation, 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. Handle the mainboard carefully by the edges. Avoid touching the components unless it is absolutely necessary. During installation put the mainboard on top of the static-protection packaging it came in with the component side facing up.

Pre-Installation Inspection

1. Inspect the mainboard for damage to the components and connectors on the board.
2. If you suspect that the mainboard has been damaged, do not connect power to the system. Contact your mainboard vendor and report the damage.

Chapter 2

Mainboard Installation

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

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

Note:
1. Before installing this mainboard, 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 mainboard.

Mainboard Components

This diagram below identifies major components on the mainboard.
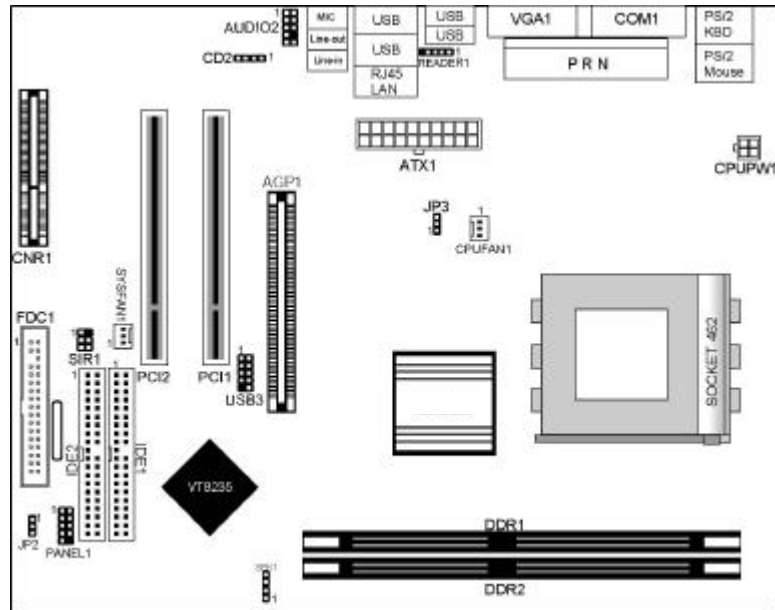
Note: Any jumpers on your mainboard that do not appear in the illustration above are for testing only.

I/O Ports

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

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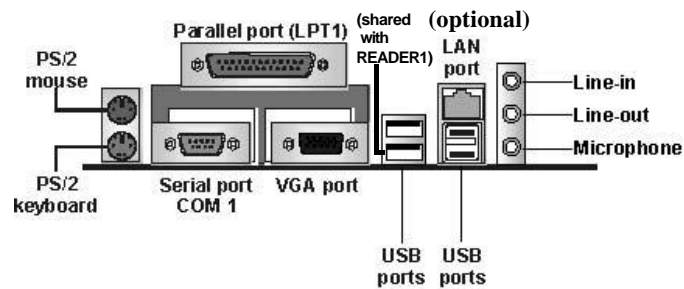
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
LPT1	Use LPT1 to connect printers or other parallel communications devices.
COM1	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified 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 connector.*
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 mainboard has a Socket 462 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. Unhook the CPU socket's locking lever by pulling it away from socket and raising it to the upright position.
2. Match the pin 1 corner of CPU socket to the one of processor, and insert the processor into the socket. Do not use force.

3. Push the locking lever down and hook it under the latch on the edge of socket.
4. Apply thermal grease to the top of the CPU.
5. Lower the CPU fan/heatsink unit onto the CPU and CPU socket, and then use the retention module clamps to snap the fan/heatsink into place.
6. Plug the CPU fan power cable into the CPU cooling fan power supply (CPUFAN1) on the mainboard.

Install Memory Modules

This mainboard accommodates two 184-pin 2.5V unbuffered Double Data Rate SDRAM (DDR SDRAM) Dual Inline Memory Module (DIMM) sockets, and supports up to 2.0 GB of 200/266 MHz DDR SDRAM.

DDR SDRAM is a type of SDRAM that supports data transfers on both edges of each clock cycle (the rising and falling edges), effectively doubling the memory chip's data throughput. DDR DIMMs can synchronously work with 100 MHz or 133 MHz memory bus.

DDR SDRAM provides 1.6 GB/s or 2.1 GB/s data transfer rate depending on whether the bus is 100 MHz or 133 MHz. DDR SDRAM uses additional power and ground lines and requires 184-pin 2.5V unbuffered DIMM module.
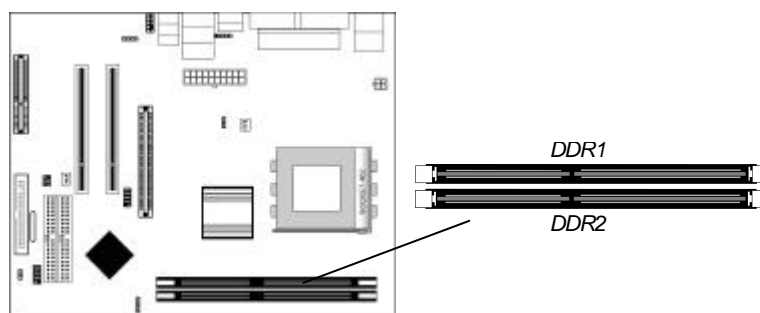
Installation Procedure

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

1. Push the latches on each side of the DIMM socket down.
2. Align the memory module with the socket. The DIMM sockets are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
3. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM socket.
4. 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.
5. Install any remaining DIMM modules.

Jumper Settings

Jumpers are sets of pins connected together with jumper caps. The jumper caps change the mainboard's operation by changing the electronic circuits on the mainboard. If we connect two pins with a jumper cap, these pins are SHORT; if remove a jumper cap from these pins, they are OPEN.
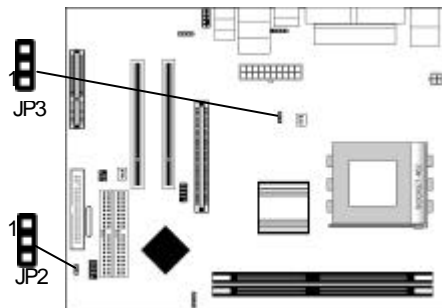
Jumper JP2: Clear CMOS Memory

This jumper can clear the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect that your mainboard can't operate. To clear the CMOS memory, disconnect all the power cables, 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

Jumper JP3: CPU Clock Selector

This 3-pin jumper selects the processor 133 MHz or 100 MHz.

Function	Jumper Setting
100 MHz	Short Pins 1-2
133 MHz	Short Pins 2-3

Install the Mainboard

Install the mainboard in a system chassis (case). The board is a Micro ATX size mainboard. You can install this mainboard in an ATX case. Ensure your case has an I/O cover plate that matches the ports on this mainboard.

Install the mainboard in a case. Follow the instructions provided by the case manufacturer using the hardware and internal mounting points on the chassis.
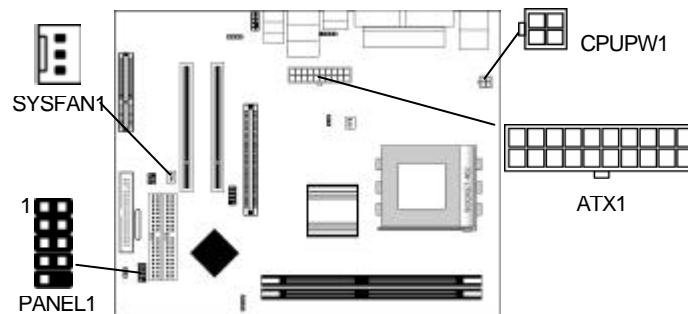
Connect the power connector from the power supply to the **ATX1** connector on the mainboard. **CPUPW1** is the CPU Vcore power connector.

If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **SYSFAN1** fan power connector on the mainboard.

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

Pin	Signal	Pin	Signal
1	HDD_LED_P	2	PWR/ACPI LED
3	HDD_LED_N	4	PWR/ACPI LED
5	RESET	6	POWER BUTTON
7	RESET	8	POWER BUTTON
9	NC	10	KEY

Connecting Optional Devices

Refer to the following for information on connecting the mainboard's optional devices:
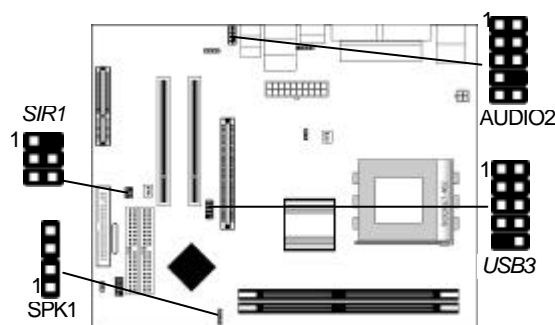
SPK1: Speaker Connector

Connect the cable from the PC speaker to the **SPK1** header on the mainboard.

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

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

Note: If you want to connect the front panel sound jack, you have to remove jumper caps of Pin(5-6) and Pin(9-10) from the AUDIO2 header.

USB3: Front panel USB Connector

The mainboard 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 connector USB3 to connect the front-mounted ports to the mainboard.

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	NC

1. Locate the USB3 header on the mainboard.
2. Plug the bracket cable onto the 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 Connector (optional)
This connector 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	Pin	Signal
1	STANDBY 5V	2	USB-
3	USB+	4	GND
5	KEY		

❶ *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.*

❶ *Please check the pin assignment of the cable and the USB header on the mainboard. 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.*

SIR1: Infrared Port
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 **SIR1** header on the mainboard.
2. If you are adding an infrared port, connect the ribbon cable from the port to the SIR1 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.
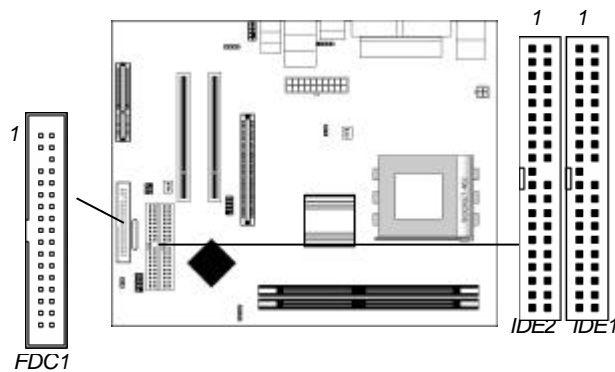
Floppy Disk Drive

The mainboard 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.
The mainboard 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 mainboard.

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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 mainboard. If you have two devices on the cable, one must be Master and one must be Slave.

Internal Sound Connections

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system.
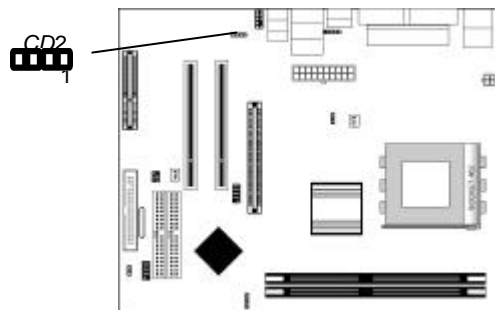
When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn' t, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the mainboard, locate the 4-pin connector **CD2**.

CD2

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

Expansion Slots

This mainboard has one AGP, one CNR and two 32-bit PCI slots.
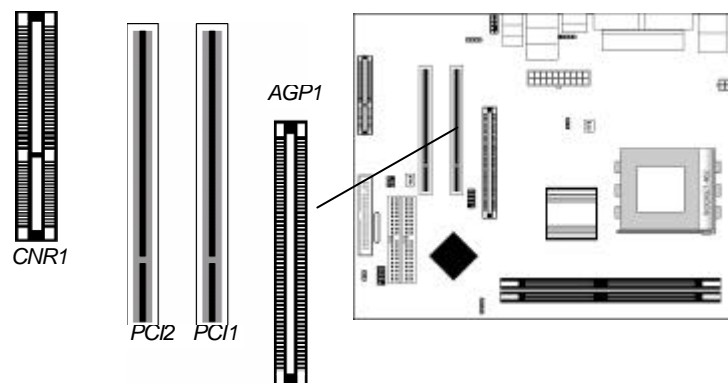
Follow the steps below to install a PCI/AGP/CNR expansion card.
1. Locate the CNR, AGP or PCI slots on the mainboard.
2. Remove the blanking plate of the slot from the system chassis.
3. Install the edge connector of the expansion card into the slot. Ensure the edge connector is correctly seated in the slot.
4. Secure the metal bracket of the card to the system chassis with a screw.

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 mainboard, 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.

```
               AMIBIOS SIMPLE SETUP UTILITY – VERSION 1.21.12
              (C) 2000 American Megatrends, Inc. All Rights Reserved
 ┌──────────────────────────────────┬───────────────────────────────┐
 │ Standard CMOS Setup              │  Features Setup               │
 │ Advanced Setup                   │  CPU PnP Setup                │
 │ Power Management Setup           │  Hardware Monitor             │
 │ PCI / Plug and Play Setup        │  Change Password              │
 │ Load Optimal Settings            │  Exit                         │
 │ Load Best Performance Settings   │                               │
 ├──────────────────────────────────┴───────────────────────────────┤
 │ Esc :  Quit    -  ‾  ¬ ®: Select Item  (Shift)F2 : Change Color  F5 : Old Values │
 │ F 6  :  Optimal values           F7 : Best  performance values   F10 : Save&Exit │
 ├───────────────────────────────────────────────────────────────────┤
 │      Standards COMOS setup for changing time, date, hard disk  type, etc.       │
 └───────────────────────────────────────────────────────────────────┘
```

You can use the cursor arrow keys to highlight any of the options on the main menu page. Press **Enter**to select the highlighted option. To leave the setup utility, press the **Escape** key. To cycle through the Setup Utility's optional color schemes hold down the **Shift** key and press **F2**.

Some of the options on the main menu page lead to tables of items with installed values. In these pages, use the cursor arrow keys to highlight the items, and then use the **PgUp** and **PgDn**keys to cycle through the alternate values for each of the items. Other options on the main menu page lead to dialog boxes requiring you to answer Yes or No by hitting the **Y** or **N** keys.

If you have already made changes to 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

Use this page to set basic information such as the date, the time, the IDE devices, and the diskette drives. If you press the F3 key, the system will automatically detect and configure the hard disks on the IDE channels.

```
                  AMIBIOS SETUP – STANDARD CMOS SETUP
              (C) 2000 American Meg atrends, Inc. All Rights Reserved

Date (mm/dd/yy) : Tue May 13, 2003
Time (hh/mm/ss) : 13:51:23
                                              LBA   Blk   PIO   32Bit
           Type         Size Cyln Head WPcom Sec Mode  Mode  Mode  Mode
Pri Master  : Auto                                                  On
Pri Slave   : Auto                                                  On
Sec Master : Auto                                                  On
Sec Slave  : Auto                                                   On

Floppy Drive A : 1.44 MB 3 1/2
Floppy Drive B : Not Installed


Month : Jan – Dec                           ESC  : Exit
  Day : 01 – 31                             ↑↓   : Select Item
  Year : 1901 – 2099                        PU/PD/+/- : Modify
                                            (Shift)F2 : Color
                                            F3 : Detect All HDD
```

Date & Time	Use these items to set the system date and time
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 Floppy Drive B	Use these items to set the size and capacity of the floppy diskette drive(s) installed in the system.

Advanced Setup Page

Use this page to set more advanced information about your system. Take some care with this page. Making changes can affect the operation of your computer.

```
              AMIBIOS SETUP – ADVANCED SETUP
         (C) 2000 American Megatrends, Inc. All Rights Reserved

Quick Boot                  Enabled    CLK Gen Spread Spectrum      Disabled
1st Boot Device             IDE-0      Auto detect DIMM/PCI Clk     Enabled
2nd Boot Device             Floppy
3rd Boot Device             CD/DVD-0
Try Other Boot Devices      Yes
S.M.A.R.T. for Hard Disks   Disabled
BootUp Num-Lock             On
Floppy Drive Swap           Disabled
Floppy Drive Seek           Disabled
Password Check              Setup
Boot To OS/2>64MB           No
L2 Cache                    Enabled
System BIOS Cacheable       Enabled    ESC : Quit      - ¯¬ ® : Select Item
DRAM Timing by SPD          Disabled
DRAM CAS# Latency           2.5        F1   : Help      PU/PD/+/ - : Modify
DRAM Bank Interleave        2-Way
AGP Mode                    4X         F5   : Old Values  (Shift)F2  : Color
AGP Comp. Driving           Auto
Manual AGP Comp. Driving    CB         F6   : Load BIOS Defaults
AGP Aperture Size           64MB
                                       F7   : Load Setup Defaults
```

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.
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 cache memory.
System BIOS Cacheable	If you enable this item, a segment of the system BIOS will be cached to main memory for faster execution.
DRAM Timing by SPD	This item enables or disables the SDRAM 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 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 Mode	This item provides the OnBoard VGA mode with three options of 1,2, 4 multiplied frequency.
AGP Comp. Driving	This item signals the auto or manual driving current on AGP cards. Some AGP cards need stronger driving current for operation. We recommend you set this item to be default value.
Manual AGP Comp. Driving	This item decides the AGP current driving value while AGP Driving is set to Manual.
AGP Aperture Size	This option determines the effective size of the AGP Graphic *Aperture*, where memory-mapped graphic data structures are located.
CLK Gen Spread Spectrum	This item enables the clock to generate spread spectrum.
Auto Detect DIMM/PCI Clk	When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Power Management Setup Page

This page sets some of the parameters for system power management operation.

```
┌─────────────────────────────────────────────────────────────────────┐
│              AMIBIOS SETUP – POWER MANAGEMENT SETUP                    │
│         (C) 2000 American Megatrends, Inc. All Rights Reserved         │
├──────────────────────────────┬────────────────────────────────────────┤
│ ACPI Aware O/S          Yes  │                                         │
│ Power Management        Enabled                                        │
│ Hard Disk Time Out      Suspend                                        │
│ Suspend Time Out (Minute) Disabled                                     │
│ LAN/Ring Power On       Disabled                                       │
│ Keyboard Power On       Disabled │                                     │
│  Wake-Up Key            Any Key │                                      │
│    Wake-Up Password     N/A     │ ESC  : Quit      - ¯ ¬ ® : Select Item│
│ PowerOn by RTC Alarm    Disabled│ F1   : Help      PU/PD/+- : Modify    │
│ RTC Alarm Date          15      │                                      │
│ RTC Alarm Hour          12      │ F5   : Old Values  (Shift)F2  : Color │
│ RTC Alarm Minute        30      │ F6   : Load BIOS Defaults             │
│ RTC Alarm Second        30      │ F7   : Load Setup Defaults            │
└──────────────────────────────┴────────────────────────────────────────┘
```

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	This item enables or disables a power management scheme. If you enable power management, there are some options for you to decide the power management operation. Both APM and ACPI are supported.
Hard Disk Time Out	This sets the timeout to power down the hard disk drive, if the time selected passes without any hard disk activity.
Suspend Time Out (Minute)	This item sets up the timeout (minutes) for the Suspend mode. The computer will be a power-saving Suspend mode if the system has been inactive after the setup time
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. 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 hot keys 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 some of the parameters for devices installed on the PCI bus and devices that use the system plug and play capability.

```
            AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP
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Plug and Play Aware O/S      Yes
Share Memory Size            32MB
Primary Graphics Adapter     PCI
Allocate IRQ to PCI VGA      Yes
PCI IDE BusMaster            Disabled
                                      ESC : Quit        - ¯ ¬ ® : Select Item
                                      F1  : Help        PU/PD/+/ - : Modify
                                      F5  : Old Values  (Shift)F2  : Color
                                      F6  : Load BIOS Defaults
                                      F7  : Load Setup Defaults
```

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 or 98.
Share Memory Size	This item lets you allocate a portion of the main memory for the onboard VGA display application with 8/16/32MB 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 a PCI 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 recommend 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 some of the parameters for peripheral devices connected to the system.

```
┌─────────────────────────────────────────────────────────────────────┐
│              AMIBIOS SETUP – FEATURES SETUP                          │
│        (C) 2000 American Megatrends, Inc. All Rights Reserved        │
├──────────────────────────────────┬──────────────────────────────────┤
│ OnBoard FDC            Enabled    │                                  │
│ OnBoard Serial PortA   3F8h/COM1  │                                  │
│ OnBoard IR Port        Disabled   │                                  │
│ OnBoard Parallel Port  378h       │                                  │
│   Parallel Port Mode   ECP        │                                  │
│   Parallel Port IRQ    7          │                                  │
│   Parallel Port DMA    3          │                                  │
│ OnBoard IDE            Both       │ ESC : Quit    - ‾ ¬ ® : Select   │
│ Ethernet Device        Enabled    │ Item                             │
│ Audio Device           Enabled    │ F1  : Help    PU/PD/+/ - : Modify│
│ Modem Device           Auto       │                                  │
│ USB Controller         Enabled    │ F5  : Old Values (Shift)F2 : Color│
│ USB Device Legacy Support Disabled│ F6  : Load BIOS Defaults          │
│ ThumbDrive Support For DOS Disabled│                                 │
│                                   │ F7  : Load Setup Defaults         │
└──────────────────────────────────┴──────────────────────────────────┘
```

OnBoard FDC	This item enables or disables the onboard floppy disk drive interface.
OnBoard Serial PortA	These items enable or disable the onboard COM1 serial port, and assign a port address.
OnBoard IR Port	This item enables or disables the Infrared port, and assigns a port address. If you select a specific address, the resources are assigned to the IR port, and you can use the five items below to determine the operation of the IR port
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	This item decides 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	This item assigns either IRQ 5 or 7 to the parallel port.
Parallel Port DMA	This item assigns a DMA channel to the parallel port. The options are 0, 1 and 3.
OnBoard IDE	This item enables or disables either or both of the onboard Primary and Secondary IDE channels.
Ethernet Device	This item enables or disables the onboard Ethernet LAN.
Audio Device	This item enables or disables the onboard AC' 97 audio chip.
Modem Device	This item enables or disables the onboard AC' 97 modem chip.
USB Controller	Enable this item to select the USB ports or disable.
USB Device Legacy Support	This item enables the USB device, if you have installed a USB device on the system board.

ThumbDrive Support for DOS	Enable this item to make a small portion of memory storage device for the USB ports.

CPU PnP Setup Page

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

```
┌─────────────────────────────────────────────────────────────┐
│              AMIBIOS SETUP – CPU PnP SETUP                    │
│      ©2000 American Megatrends, Inc. All Rights Reserved      │
├──────────────────────────────┬──────────────────────────────┤
│ -= CPU PnP Type =-            │                              │
│ CPU Brand          AMD K7     │                              │
│ CPU Type           Duron      │                              │
│ CPU Frequency      Auto       │                              │
│ DRAM Frequency     Auto       │                              │
│                               ├──────────────────────────────┤
│                               │ ESC : Quit    - ¯¬ ® : Select Item│
│                               │ F1  : Help    PU/PD/+/ - : Modify │
│                               │ F5  : Old Values  (Shift)F2 : Color│
│                               │ F6  : Load Optimal values    │
│                               │ F7  : Load Best performance values│
└──────────────────────────────┴──────────────────────────────┘
```

CPU Brand/Type	These items show brand and type of the CPU installed in your system.
CPU / DRAM Frequency	These items decide frequency of the CPU/SDRAM installed in your system.

Hardware Monitor Page

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

```
┌────────────────────────────────────────────────────────────────┐
│            AMIBIOS SETUP – HARDWARE MONITOR                     │
│     (C) 2000 American Megatrends, Inc. All Rights Reserved      │
├──────────────────────────────┬─────────────────────────────────┤
│ *** System  Hardware  ***    │                                 │
│ Vcore                1.616 V  │                                 │
│ Vcc 2.5V             2.496 V  │                                 │
│ Vcc 3.3V             3.392 V  │                                 │
│ Vcc 5 V              4.945 V  │                                 │
│ +12V                12.032V   ├─────────────────────────────────┤
│ -12V              - 12.032V   │ ESC : Quit      - ¯¬® : Select Item │
│ SB5V                 5.026 V  │ F1  : Help    PU/PD/+/ - : Modify │
│ VBAT                 3.472 V  │ F5  : Old Values (Shift)F2  : Color │
│ SYSTEM Fan Speed    0  RPM    │                                 │
│ CPU Fan Speed      1308 RPM   │ F6  : Load BIOS Defaults        │
│ SYSTEM Temperature 41°C/105°F │ F7  : Load Setup Defaults       │
│ CPU Temperature    33°C/91°F  │                                 │
└──────────────────────────────┴─────────────────────────────────┘
```

System / CPU 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.

Change Password

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

Change or Remove the Password
Highlight this item, press Enter and type in the current password. At the next dialog box, type in the new password, or just press Enter to disable password protection.

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

About the Software & CD-ROM

The support software CD-ROM that is included in the mainboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your mainboard version. More information on some programs is available in a README file, located in the same directory as the software.

Note: Never try to install software from a folder that is not specified for use with your mainboard.

Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.

Utility Software Reference

All the utility software available on the CD-ROM is Windows compliant. It is provided only for the convenience of customers. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

Note: The software in these folders is subject to change at anytime without prior notice. Please refer to the support CD for available software.

AMI Flash Memory Utility

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

PC-CILLIN 2002

The PC-CILLIN software program provides anti-virus protection for your system. This program is available for Windows XP/2000/ME/98SE and Windows NT. Be sure to check the readme.txt and install the appropriate anti-virus software for your operating system.
We strongly recommend users to install this free anti-virus software to help protect your system against viruses.

Note: Update your virus software regularly to protect against new viruses.