

Mainboard User's Manual

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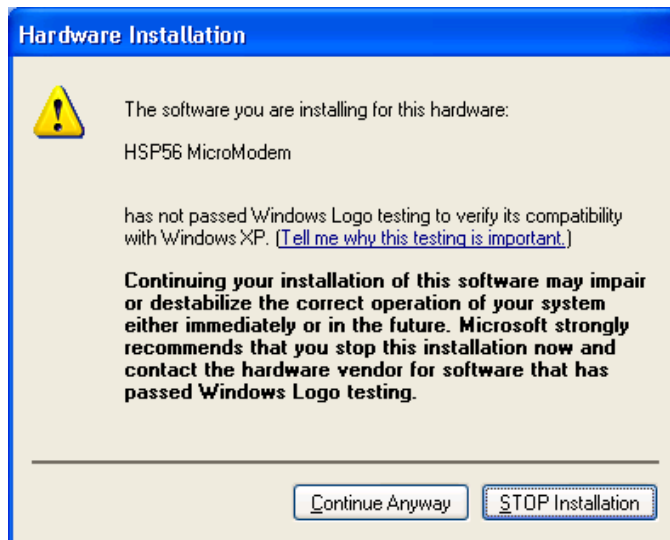
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M821 Series, V1.2A
V8361X/April 2002**

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Notice:

Owing to Microsoft's certifying schedule is various to every supplier, we might have some drivers not certified yet by Microsoft. Therefore, it might happen under Windows XP that a dialogue box (shown as below) pop out warning you this software has not passed Windows Logo testing to verify its compatibility with Windows XP. Please rest assured that our RD department has already tested and verified these drivers. Just click the "Continue Anyway" button and go ahead the installation.



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Chapter 1

Introduction

The **Socket-462** processor on this mainboard is for **AMD K7** type CPUs. You can install any processors of such types on the mainboard.

This mainboard supports Socket-462 processor front-side bus speeds of **200MHz** or **266MHz**.

This mainboard has the **VIA VT8361** chipset that provides **Ultra DMA 66/100** function and integrates a **2D/3D graphics accelerator**. This mainboard has a built-in **AC97 Codec**, an **AMR** (Audio Modem Riser) slot to support Audio and Modem application, and a built-in **10BaseT/100BaseTX Network Interface**. In addition, the mainboard has an extended set of **ATX I/O Ports** including PS/2 keyboard and mouse ports, two USB ports, a parallel port, a VGA port and a serial port. Two extra USB ports can be added by means of the Extended USB Module that connects to the mainboard.

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

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Key Features

The key features of this mainboard include:

Socket-462 Processor Support

- ◆ Supports AMD **Athlon XP/Athlon/Duron** processors
- ◆ Supports 200/266 MHz Front-Side Bus

Memory Support

- ◆ Two DIMM slots for 168-pin SDRAM memory modules
- ◆ Support for 100/133 MHz memory bus
- ◆ Maximum installed memory is 2GB

Expansion Slots

- ◆ One AMR slot for a special audio/modem riser card
- ◆ One 8/16-bit ISA slot
- ◆ 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 66/100 modes

Power Supply and Power Management

- ◆ ATX power supply connector
- ◆ ACPI and previous PMU support, suspend switch
- ◆ Supports Wake on Modem, Wake on LAN and Wake on Alarm

1: Introduction

AC97 Codec

- ◆ Compliant AC97 2.1 specification
- ◆ Supports 18-bit ADC (Analog Digital Converter), DAC (Digital Analog Converter), and 18-bit stereo full-duplex codec

Built-in Graphics System

- ◆ Onboard **64-bit 2D/3D** graphic engine and Video Accelerator with advanced DVD video
- ◆ 2 to 8 MB frame buffer use system memory
- ◆ Supports high resolutions up to 1600x1200

Onboard I/O Ports

- ◆ Provides PC99 Color Connectors for easy peripheral device connections
- ◆ Floppy disk drive connector with 1Mb/s transfer rate
- ◆ One serial port with 16550-compatible fast UART
- ◆ One parallel port with ECP and EPP support
- ◆ Two USB ports, optional two USB ports module
- ◆ Two PS/2 ports for keyboard and mouse
- ◆ One infrared port connector for optional module

Hardware Monitoring

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

Built-in Ethernet LAN

- ◆ Built-in **10BaseT/100BaseTX Ethernet LAN**
- ◆ LAN controller integrates Fast Ethernet MAC and PHY in compliance with IEEE802.3u 100BASE-TX, 10BASE-T and ANSI X3.263 TP-PMD standards
- ◆ In compliance with ACPI 1.0 and the Network Device Class Power Management 1.0
- ◆ High Performance achieved by 100Mbps clock generator and data recovery circuit for 100Mbps receiver

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Onboard Flash ROM

- ◆ Automatic board configuration
- ◆ Supports Plug and Play configuration of peripheral devices and expansion cards

Bundled Software

- ◆ **PC-Cillin2000** provides automatic virus protection under Windows 98/ME/NT/2000/XP
- ◆ **MediaRing Talk** provides PC to PC or PC to Phone internet phone communication
- ◆ **3Deep** delivers the precise imagery and displays accurate color in your monitor
- ◆ **Recovery Genius 21st V5.0** provides the function to recover, reserve and transfer hard disk data.
- ◆ **CD Ghost** is the software stimulating a real CD-ROM to perform equivalent function.
- ◆ **Language Genius 21st** is the software to provide learning tools of language and singing.
- ◆ **PC DJ** is a dual-MP3 player that enables users to actually mix music right on their own personal computers.
- ◆ **Adobe Acrobat Reader V5.0** is the software to help users read .PDF files.

Dimensions

- ◆ Micro ATX form factor (24.4cm x 22cm)

1: Introduction

Package Contents

Attention: This mainboard serial has two models, M821LR (LAN Ready) and M821 (without LAN). Please contact your local supplier for more information about your purchased model. Each model will support different specification, listed as below:

Model	Specification
M821LR	Onboard LAN chip (U14), LAN header (LAN1) and LAN extension bracket
M821	---

Your mainboard package contains the following items:

- The mainboard
- The User's Guide
- 1 UDMA/66 IDE cable
- 1 Floppy disk drive cable
- Support software on CD-ROM disk

Optional Accessories

You can purchase the following optional accessories for this mainboard.

- Extended USB module
- AMR v.90 56K Fax/Modem card

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Static Electricity Precautions

Static electricity may damage components of this mainboard. Please take the following precautions while 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, you can 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 that comes in with the component side facing up.

Pre-Installation Inspection

1. Inspect the mainboard whether there are any damages to the components and connectors on the board.
2. If the mainboard seems damaged to you, please do not connect power to the system. Contact your mainboard vendor and show where the damages are.

Chapter 2

Mainboard Installation

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

- ❑ Identify the mainboard components
- ❑ Install a CPU
- ❑ Install one or more system memory modules
- ❑ Verify that all jumpers or switches are set correctly
- ❑ Install the mainboard in a system chassis (case)
- ❑ Connect any extension brackets or cables to connecting headers on the mainboard
- ❑ Install other devices and make the appropriate connections to the mainboard connecting headers.

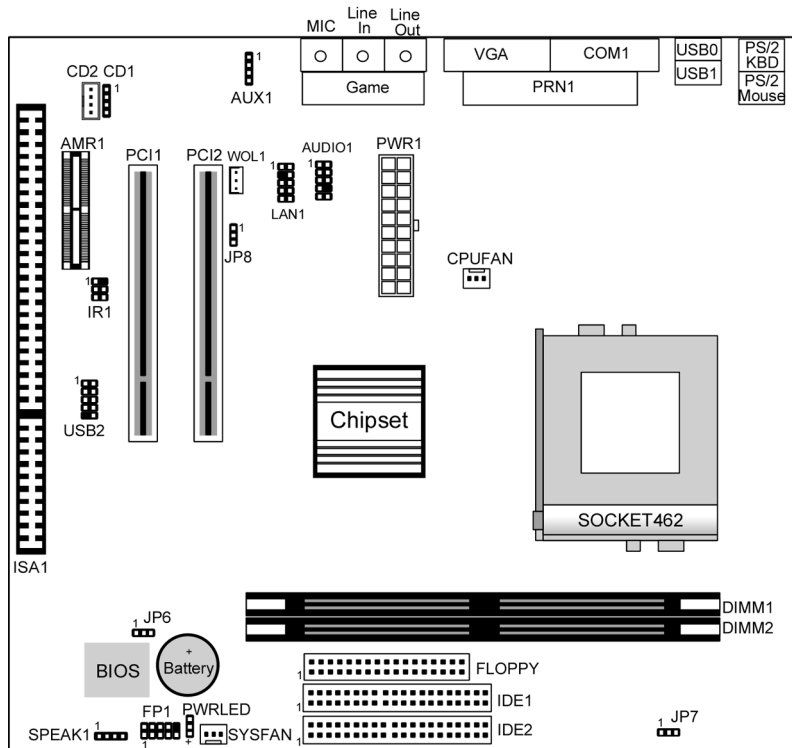
Note:

1. Before installing this mainboard, make sure jumper JP6 is under Normal setting. See this chapter for information about locating JP6 and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the mainboard.

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Mainboard Components

Identify major components on the mainboard via this diagram underneath.

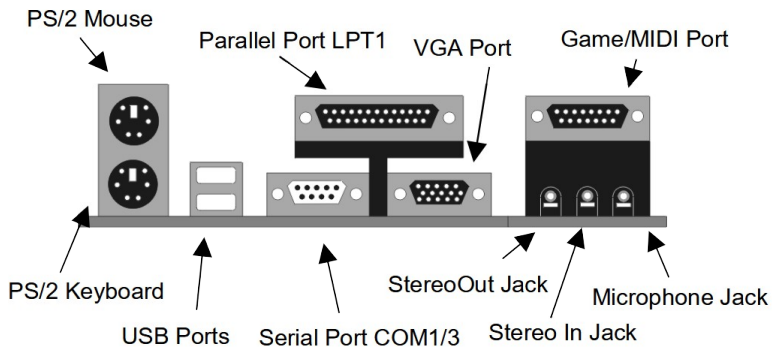


Note: Those jumpers of mainboard not appearing in this illustration are for testing only.

3: BIOS Setup Utility

I/O Ports

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



Install A CPU

This mainboard has a Socket-462 CPU socket for AMD K7 processors.

To ensure the reliability, make sure your processor has a heatsink/cooling fan assembly.

Do not try to install a Socket-370/Socket-7 processor in the Socket-462. A Socket-370/Socket-7 processor, such as the PPGA Celeron, FCPGA Pentium-III, Pentium-MMX, or the AMD K5/K6, does not fit in the Socket-462.

The following list indicates the processors that are currently supported by this mainboard.

Athlon XP: 1500+ ~ 2000+; FSB: 266 MHz

Athlon: 650 MHz~1.4 GHz; FSB: 200, 266 MHz

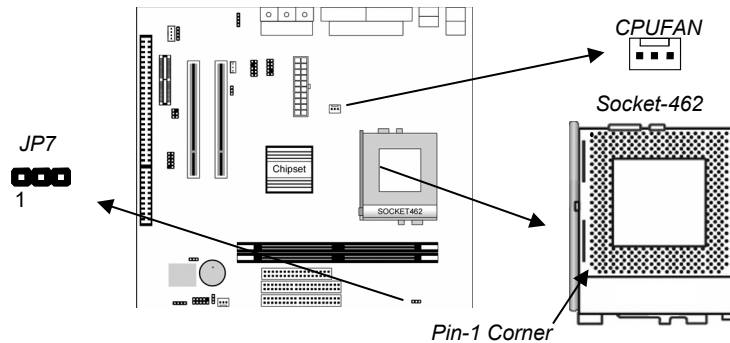
Duron: 550~1.2 GHz; FSB: 200 MHz

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Installing a Socket-462 Processor

Install a processor in the ZIF (Zero Insertion Force) Socket-462 on the mainboard.

1. Locate the Socket-462, JP7 and CPUFAN. Pull the locking lever out slightly from the socket and raise it to the upright position.



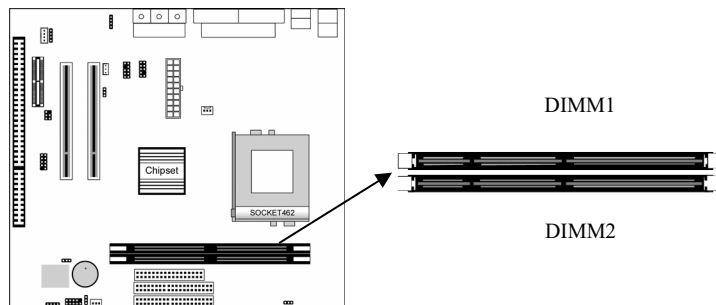
2. On the processor, identify the Pin-1 corner by its beveled edge.
3. On the Socket-462, identify the Pin-1 corner. The Pin-1 corner is on the top of the locking lever when it is locked.
4. Match the Pin-1 corner and insert the processor into the socket. It is not necessary to push the processor hard for it freely falls into the position.
5. Press the locking lever down and hook it under the catch on the side of the socket. Thus, the CPU is fixed in the socket.
6. All processors should be installed together with a heatsink/cooling fan (the original fan is recommended, the other is not), connect the cable from the fan to the CPU fan power connector CPUFAN.
7. Locate the jumper JP7. Use this jumper to select the CPU speed that you have installed. See the setting list below. CPU speed is equal to the CPU Front-Side Bus x the CPU Multiplier, and the CPU Multiplier will be detected by the system BIOS while the system booting.

Front-Side Bus	Jumper Setting
266 MHz	Short Pins 1-2
200 MHz	Short Pins 2-3

3: BIOS Setup Utility

Install Memory

This mainboard has two DIMM sockets for system memory modules. You must install at least one memory module to work this mainboard out.



For this mainboard, you must use 168-pin, 3.3V unbuffered PC100 or PC133 SDRAM memory modules. You can install any sizes of memory modules from 32 MB to 1GB. The maximum memory size is $2 \times 1\text{GB} = 2\text{GB}$.

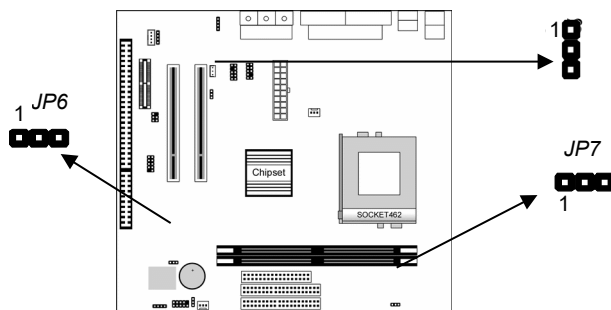
The edge connectors on the memory modules have cut outs that coincide with spacers inside the DIMM sockets; therefore, memory modules can be installed in the correct orientation only.

To install a module, push outwards the retaining latches at either end of the socket. Position the memory module correctly and insert it into the DIMM socket. Press the module down into the socket so that the retaining latches rotate up and secure the module in place by fitting into notches on the edge of the module.

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Setting Jumper Switches

Jumpers are a few sets of pins connected with jumper caps. The jumper caps change the way of mainboard's operation by changing the electronic circuits on it. If a jumper cap connects two pins, these two pins are SHORT. If a jumper cap is removed from two pins, they are OPEN.



Jumper JP6: Clear CMOS Memory

This jumper is to clear the contents of 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 mainboard and move the jumper cap to the CLEAR setting for a few seconds.

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

Jumper JP7: CPU Setting

This jumper is to select the Front-Side Bus for the installed CPU.

Front-Side Bus	Jumper Setting
266 MHz	Short Pins 1-2
200 MHz	Short Pins 2-3

Jumper JP8: Onboard LAN Selector

This 3-pin jumper enables or disables the onboard network adapter.

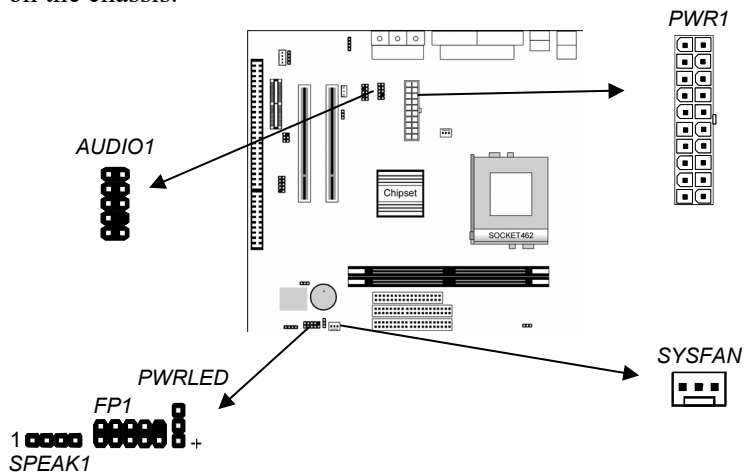
3: BIOS Setup Utility

Function	Jumper Setting
Enable	Short Pins 1-2
Disable	Short Pins 2-3

Install the Mainboard

Install the mainboard in a system chassis (case). The board is a Micro ATX size mainboard with a twin-tier of I/O ports. You can install this mainboard in any ATX case. Make sure your case has an I/O cover plate that matches the ports on this mainboard.

Install the mainboard in a case. Follow the case manufacturer's instructions how to use the hardware and internal mounting points on the chassis.



Connect the power connector from the power supply to the **PWR1** connector on the mainboard.

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

If there is another power-on indicator LED installed in the system chassis, connect the LED to the **PWRLED** header.

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Pin	Signal
1	PWRLED +
2	NC
3	PWRLED -

Connect the cable from the PC speaker to the **SPEAK1** header on the mainboard.

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

Connect the case switches and indicator LEDs to the **FP1** header.

Pin	Signal	Pin	Signal
1	HDD_LED_P	2	ACPI_LED-P
3	HDD_LED_N	4	ACPI_LED-N
5	RESET	6	POWER_BUTTON
7	RESET	8	POWER_BUTTON
9	KEY	10	KEY

If there are a headphone jack or/and a microphone jack on the front panel, connect the cables to the **AUDIO1** header on the mainboard. If you want to use the rear-mounted sound ports (default settings), you have to short pins 5-6 and 9-10 of AUDIO1.

Pin	Signal	Pin	Signal
1	MIC	2	GND
3	MIC-P	4	VCC
5	AUD_FPOUT_R	6	AUD_RET_R
7	NC	8	KEY
9	AUD_FPOUT_L	10	AUD_RET_L

3: BIOS Setup Utility

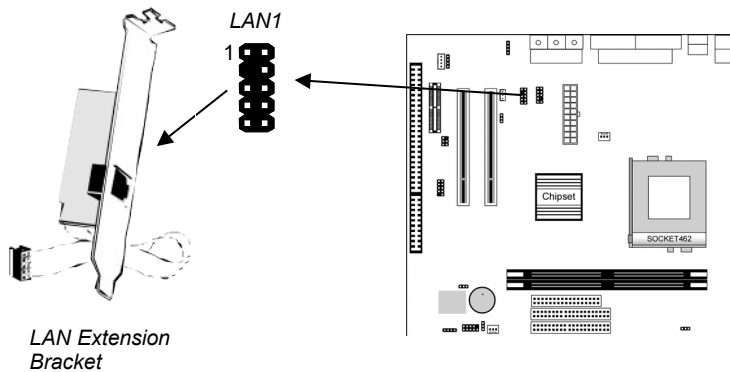
Install the Extension Brackets

The extension brackets connect the mainboard's features to external connectors attached to the system chassis. Follow these steps below to install the extension brackets.

Note: All the ribbon cables used on the extension brackets have a red stripe on the Pin-1 side of the cable.

LAN Adapter Extension Bracket

This bracket supports an RJ45 network connector and connects to the built-in LAN1 header on the mainboard.



1. On the mainboard, locate the LAN1 header for this bracket.
2. Plug the cable from the bracket into the LAN1 header.
3. In the system chassis, remove a blanking plate from one of the expansion slots, install an extension bracket in the opening, and then screw this bracket firmly to that slot.

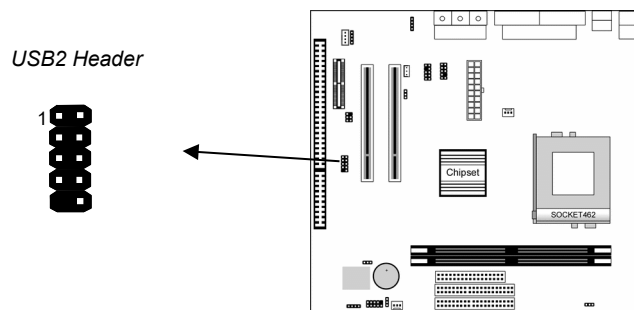
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Optional Extension Brackets

For this mainboard, you can also obtain a USB module extension bracket. Complete this installation by following the steps below.

Extended USB Module

This module bracket has two USB ports for more USB devices (USB port 3-4).



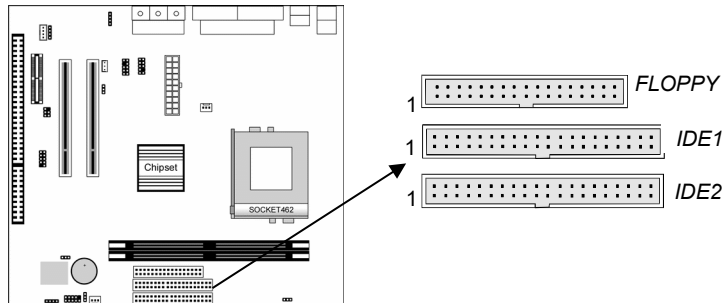
Pin	Signal	Pin	Signal
1	VERG FP USBPWR0	2	VERG FP USBPWR0
3	USB FP P0-	4	USB FP P1-
5	USB FP P0+	6	USB FP P1+
7	GND	8	GND
9	KEY	10	NC

1. Locate the USB2 header on the mainboard.
2. Plug the bracket cable into the USB2 header.
3. In the system chassis, remove a slot cover from one of the expansion slots, install an extension bracket in the opening, and then screw this bracket firmly to that slot.

3: BIOS Setup Utility

Install Other Devices

Install and connect other devices in the system in compliance with the following steps.



Floppy Disk Drive

The mainboard ships together with a floppy disk drive cable that supports one or two drives. Drives is 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 available cable to connect the drives to the floppy disk drive header **FLOPPY**.

IDE Devices

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

The mainboard ships together with an IDE cable that supports 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 them 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.

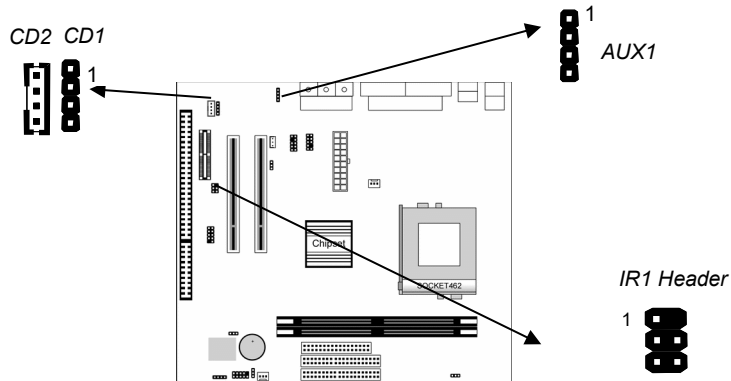
Install the device(s) and connect power from the system power supply. Use the available cable to connect the device(s) to the Primary IDE channel connector **IDE1** on the mainboard.

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 the other Slave.

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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.



On the mainboard, locate two 4-pin connectors **CD1** and **CD2**. There are two kinds of connectors because different brands of CD-ROM drives have different kinds of audio cable connectors. Connect the cable to the appropriate connector.

CD1

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

CD2

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

3: BIOS Setup Utility

Infrared Port

You can connect an infrared port to the mainboard. You can purchase this optional item from third-party vendors.

Pin	Signal	Pin	Signal
1	Reserved	2	KEY
3	+5V	4	GND
5	IRTX	6	IRRX

1. Locate the infrared port **IR1** header on the mainboard.
2. If you have an additional infrared port, connect the ribbon cable from the port to the IR1 header, and lay the port in an appropriate place of your system chassis.

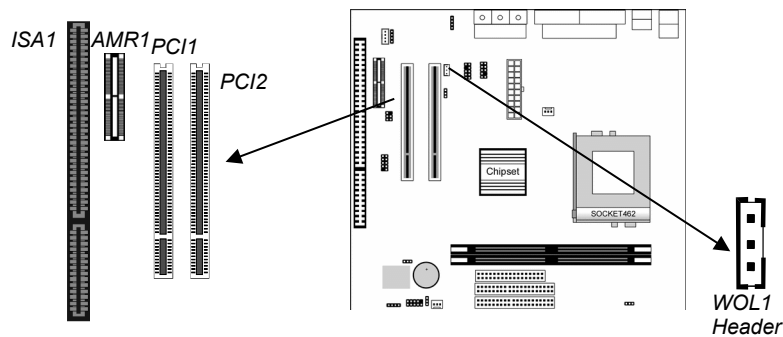
Aux-In Connection

If you have installed a secondary CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system. On the mainboard, locate the 4-pin Aux-In header **AUX1**, and connect the cable to the connector.

Pin	Signal	Pin	Signal
1	AUX L	2	AUD GND
3	AUD GND	4	AUX R

Expansion Slots

This mainboard has two 32-bit PCI expansion slots, one AMR slot and one ISA slot.



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

1. Locate the ISA, AMR or PCI slots on the mainboard.
2. Remove the slot cover from the system chassis.

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3. Insert the expansion card edge connector into the slot and press it firmly down until it is fully inserted.
4. Secure the expansion card bracket to the system chassis with that slot cover's screw.

AMR Slot

The AMR (Audio Modem Riser) slot is an industry standard slot that allows for the installation of a special audio/modem riser card. Different territories have different regulations regarding the specifications of a modem card. You can purchase an approved AMR card in your area, and install it directly into the AMR slot.

Wake On LAN

If you have installed a LAN card, connect the fax/modem to the Wake On LAN connector **WOL1**. You can use the setup utility to program your computer to resume from a power saving mode whenever there is an incoming call to the LAN.

Pin	Signal
1	5VSB
2	GND
3	RIJ

Chapter 3

BIOS Setup Utility

Introduction

The BIOS Setup Utility records your computer's settings and relative information, such as the date and time, the type of installed hardware, and various configuration settings. Your computer applies the information to initialize all the components when booting up, and basic functions of overall coordination between system components.

If the Setup Utility configuration is incorrect, it may cause the system's malfunction. It can even keep your computer from 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 you reboot your computer. Holding down the **Page Up** key also clears the setup information.

You can run the setup utility and manually make changes to the configuration. You might need to do this to configure some of the hardware that you install in or connect to the mainboard, such as the CPU, system memory, disk drives, etc.

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Running the Setup Utility

Every time you start your computer, a message appears on the screen before the operating system loading, to prompt 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.

AMIBIOS SIMPLE SETUP UTILITY – VERSION 1.21.10
(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 F6 : Optimal values F7 : Best performance values F10 : Save&Exit	
Standards CMOS 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 alternative values for each item. Other options on the main menu page lead to dialog boxes that require 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.

3: BIOS Setup Utility

Standard CMOS Setup Page

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

AMIBIOS SETUP - STANDARD CMOS SETUP										
(C) 2000 American Megatrends, Inc. All Rights Reserved										
Date (mm/dd/yy) : Thur April 11, 2002										
Time (hh/mm/ss) : 11:19:12										
	Type	Size	Cyln	Head	WPcom	Sec	LBA Mode	Blk 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 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 up system date and time
Pri Master	Use these items to configure devices connected to the Primary and Secondary IDE channels. To configure an IDE hard disk drive, choose <i>Auto</i> . If the <i>Auto</i> setting fails to find a hard disk drive, set it to <i>User</i> , and then fill in the hard disk characteristics (Size, Cyls, etc.) manually. If you have a CD-ROM drive, select the setting <i>CDROM</i> . If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120), select <i>Floptical</i> .
Pri Slave	
Sec Master	
Sec Slave	
Floppy Drive A	Use these items to set up size and capacity of the floppy diskette drive(s) installed in the system.
Floppy Drive B	

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Advanced Setup Page

This page sets up more advanced information about your system. Be more careful to this page. Any changes can affect the operation of your computer.

AMIBIOS SETUP – ADVANCED SETUP			
(C) 2000 American Megatrends, Inc. All Rights Reserved			
Quick Boot	Enabled	Spread Spectrum	Disabled
1 st Boot Device	IDE-0	DOS Flat Mode	Disabled
2 nd Boot Device	Floppy		
3 rd Boot Device	CDROM		
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	ESC : Quit	↑↓←→ : Select Item
L1 Cache	Enabled	F1 : Help	PU/PD/+/- : Modify
L2 Cache	Enabled	F5 : Old Values (Shift)	F2 : Color
System BIOS Cacheable	Enabled	F6 : Load BIOS Defaults	
SDRAM Timing by SPD	Disabled	F7 : Load Setup Defaults	
SDRAM CAS# Latency	3		
AGP Mode	4x		
Auto Detect PCI Clock	Disabled		
CLK Spread Spectrum	Disabled		

Quick Boot	If you enable this item, the system starts up more quickly by skipping some of the power on test routines.
1st Boot Device	These items determine the device order for the computer's application of looking for an operating system to load at start-up time.
2nd Boot Device	
3rd Boot Device	
Try Other Boot Device	If you enable this item, the system will search for other booting 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 whether the Num Lock key is active or not at system start-up time.

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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 (<i>Setup</i>) or to both start-up and enter the Setup Utility (<i>Always</i>).
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.
L1/L2 Cache	Leave these items enabled since all processors installed on this board have internal L1/L2 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 allows you to enable or disable the DRAM timing defined by the Serial Presence Detect electrical.
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.
AGP Mode	This item provides the OnBoard VGA mode with three options of 1, 2 or 4 multiplied frequency.
Auto Detect PCI Clock	When this item is enabled, BIOS will disable the clock signal of free PCI slots.
CLK Spread Spectrum	Use this item to set up the system bus spread spectrum for the installed processor.

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Power Management Setup Page

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

AMIBIOS SETUP - POWER MANAGEMENT SETUP (C) 2000 American Megatrends, Inc. All Rights Reserved		
Power Management	Enabled	
ACPI Aware O/S	Yes	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Resume On Ring	Disabled	
Resume On PME#	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	
		ESC : Quit ↑↓←→ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS defaults F7 : Load Setup defaults

Power Management/APM	This item enables or disables a power management scheme. If you enable power management, you can use the items below to set up the power management operation. Both APM and ACPI are supported.
ACPI Aware O/S	Enable this item if you are using an O/S that supports ACPI function such as Windows 98/ME /2000.
Standby Time Out (Minute)	This sets up the timeout for Standby mode in minutes. If the system remains inactive longer than the defaulted time, the computer will enter power-saving Standby mode.
Suspend Time Out (Minute)	This sets the timeout for Suspend mode in minutes. If the system remains inactive longer than the defaulted time, the computer will enter power-saving Suspend mode.
Resume On Ring	The system can be turned off by a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Fax/Modem. You must use an ATX power supply to have this feature work out.

3: BIOS Setup Utility

Resume On PME#	The system can be turned off by a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Fax/Modem. You must use an ATX power supply to have this feature work out. Use this item to do the wake-up job if inserting the PCI card.
Resume On RTC Alarm	The system can be turned off by a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Fax/Modem. You must use an ATX power supply to have this feature work out.
RTC Alarm Date / Hour / Minute / Second	The system can be turned off by a software command. If you enable this item, the system can automatically resume after a fixed time based on the system's RTC (real time clock). Use these items to set up date and time of the wake-up alarm. You must use an ATX power supply to have this feature work out.

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PCI / Plug and Play Setup Page

This page sets up 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 (C) 2000 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	Yes	Reserved Memory Address C8000
Share Memory Size	8MB	
Primary Graphics Adapter	PCI	
Allocate IRQ for PCI VGA	Yes	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PCI/PnP	
IRQ4	PCI/PnP	
IRQ5	PCI/PnP	
IRQ7	PCI/PnP	
IRQ9	PCI/PnP	ESC : Quit ↑↓←→ : Select Item
IRQ10	PCI/PnP	F1 : Help PU/PD/+/- : Modify
IRQ11	PCI/PnP	F5 : Old Values (Shift)F2 : Color
IRQ14	PCI/PnP	F6 : Load BIOS Defaults
IRQ15	PCI/PnP	F7 : Load Setup Defaults
Reversed Memory Size	Disabled	

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.
Primary Graphics Adapter	This item indicates if the primary graphics adapter uses the PCI or the AGP bus. The default PCI setting still works out the onboard display, and allows the use of a second display card installed in a PCI slot.
Allocate IRQ for PCI VGA	If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system. You set this value to No for freeing up an IRQ.
DMA Channels 0-7	If you set up these items to PnP, the Plug and Play BIOS or operating system will automatically allocate DMA channels. If you set

3: BIOS Setup Utility

	it to ISA/EISA, the channel(s) will be reserved for an installed ISA or EISA expansion card.
IRQ 3-15	If you set up these items to PCI/PnP, the Plug and Play BIOS or operating system will automatically allocate IRQ lines. If you set it to ISA/EISA, the IRQ lines will be reserved for an installed ISA or EISA expansion card.
Reserved Memory Size	This item reserves a block of memory for any devices in need of it.
Reserved Memory Address	This item sets up the address for any block of memory that has been reserved.

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 up a set of fail-safe default values. These default values are not very demanding and they should allow your system to do the jobs 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 up a set of best-performance default values. These default values are quite demanding and your system might not do the good jobs if you are using slower memory chips or other low-performance components.

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Features Setup Page

This page sets up 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	ESC : Quit ↑↓←→ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
OnBoard Serial Port1	3F8/COM1	
OnBoard IR Port	Disabled	
Duplex Mode	N/A	
OnBoard Parallel Port	378	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port DMA Channel	N/A	
Parallel Port IRQ	7	
OnBoard IDE	Both	
OnBoard AC'97 Audio	Enabled	
OnBoard MC'97 Modem	Auto	
OnBoard Legacy Audio	Enabled	
MPU-401	Enabled	
MPU-401 I/O Address	330h-333h	
Game Port (200h-207h)	Enabled	
USB Controller	All USB Port	
USB Function for DOS	Disabled	

OnBoard FDC	This item enables or disables the onboard floppy disk drive interface.
OnBoard Serial Port1	These items enable or disable the onboard COM1 serial port, and assign a port address.
OnBoard IR Port	These items enable or disable the onboard IR port, and 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 any available address.
Parallel Port Mode	This item sets up the parallel port mode. You can select SPP (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or ECP + EPP.
EPP Version	This item determines the EPP version, if you have set up the Parallel Port Mode to EPP.
Parallel Port DMA	This item assigns a DMA channel to the parallel port.

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Parallel Port IRQ	This item assigns IRQ to the parallel port.
Onboard IDE	This item enables or disables the onboard either Primary or Secondary IDE channels, or both of them.
Onboard AC'97 Audio	This item enables or disables the onboard AC'97 audio chip.
Onboard MC'97 Modem	This item enables or disables the onboard MC'97 modem chip.
Onboard Legacy Audio	This option enables the onboard legacy audio function. When it is enabled, the following items become available.
MPU-401, MPU-401 I/O Address	These two items enable the MPU-401 function and set the I/O address for the game port.
Game Port (200-207H)	This item enables or disables the I/O address for the game port.
USB Controller	Use this item to select or disable the USB ports.
USB Function for DOS	Enable this item if you plan to use the USB ports on this mainboard in a DOS environment.

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CPU PnP Setup Page

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

AMIBIOS SETUP - CPU PnP SETUP	
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CPU BRAND	AMD K7
CPU Type	Athlon
CPU Speed	700 MHz
CPU Ratio	7.0x
CPU Frequency	100 MHz
DRAM Frequency	100 MHz
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/ Core Voltage/Ratio /Frequency	These items show the type, core voltage, ratio and frequency of CPU installed in your system.
--	---

CPU Speed	This item decides CPU speed installed in your system.
------------------	---

DRAM Frequency	This item decides the frequency of DRAM installed in your system.
-----------------------	---

Note: If you manually set up wrong speed, system won't run properly. Press the **Page Up** key while the system is booting and a default setting will replace the incorrect CPU setting.

3: BIOS Setup Utility

Hardware Monitor Page

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

AMIBIOS SETUP – HARDWARE MONITOR (C) 2000 American Megatrends, Inc. All Rights Reserved	
*** Hardware Monitor *** CPU Temperature System Temperature CPU Fan Speed System Fan Speed Vcore + 2,500V + 3,300V + 5,000V +12,000V	ESC : Quit ↑↓←→ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults

CPU / System Temperature	These items display CPU and system temperature measurement.
FANs & Voltage Measurements	These items indicate cooling fan speeds in RPM and various system voltage measurements.

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 start-up, depending on the setting of the Password Check item in Advanced Setup.

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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

Software & Applications

Introduction

This chapter describes the contents of the support CD-ROM that comes with the mainboard 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 mainboard; 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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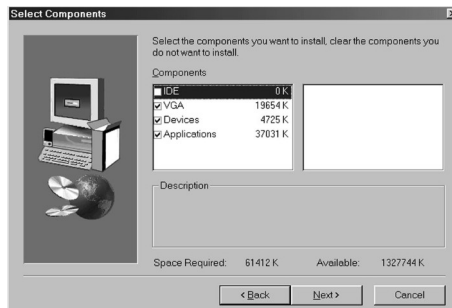
Auto-Installing under Windows 98/ME/2000/XP

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.

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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 Information

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.