

Preface

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

About the Manual

The manual consists of the following:

Chapter 1 Introducing the Mainboard	Describes features of the mainboard, and provides a shipping checklist. Go to ⇒ page 1
Chapter 2 Installing the Mainboard	Describes installation of mainboard components. Go to ⇒ page 8
Chapter 3 Using BIOS	Provides information on using the BIOS Setup Utility. Go to ⇒ page 27
Chapter 4 Using the Mainboard Software	Describes the mainboard software. Go to ⇒ page 42

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Chapter 1

Introducing the Mainboard

Introduction

Thank you for choosing the L7S7A2 mainboard. The L7S7A2 is designed to fit the advanced AMD processors in the 462-pin package. Based on the ATX form factor featuring the SiS746 Northbridge and SiS963/963L Southbridge chipsets. This mainboard provides the standard 133/166MHz front side bus with for high-end business or personal desktop markets.

The mainboard incorporates the SiS746 Northbridge and SiS963 Southbridge chipsets. The SiS746 Northbridge features the S2K compliant bus driver technology to support AMD 133/166 MHz FSB processor. It also supports the AMD PowerNow!™ dynamic power management technique. The Memory Controller can support DDR and offer bandwidth up to 2.7GB/s under DDR333 in order to sustain the bandwidth demand from host processor, as well as the multi I/O masters and AGP masters. While the SiS963/963L Southbridge integrates the Universal Serial Bus 2.0 Host Controllers, 1394a (*except for SiS963L*) and Audio Controller with AC 97 interface.

The L7S7A2 is designed to give customers a high quality, multimedia solution and state-of-the-art technology. It provides advanced full set of I/O ports, such as dual channel IDE interfaces, a floppy controller, two high-speed serial port ([COM2 optional](#)), an EPP/ECP capable bi-directional parallel port connector, four USB (Universal Serial Bus) connector, a PS/2 keyboard, mouse and 1394a connectors. One AGP slot, five PCI local bus slots and one communication and networking riser (CNR) slot ([optional](#)) provide expandability for add-on peripheral cards.

Note: SDRAM provides 800 MBps or 1 GBps data transfer depending on whether the bus is 100 MHz or 133 MHz. Double Data Rate SDRAM (DDR SDRAM) doubles the rate to 1.6 GBps or 2.7 GBps by transferring data on both the rising and falling edges of the clock. DDR SDRAM uses additional power and ground lines and requires 184-pin DIMM modules rather than the 168-pin DIMMs used by SDRAM.

Checklist

Compare the mainboard's package contents with the following checklist:

Standard Items

- One mainboard
- One diskette drive ribbon cable (optional)
- One IDE drive ribbon cable
- One auto-install software support CD
- One I/O panel
- This user's manual

Features

Processor	The mainboard uses an AMD 462-pin Socket A that supports 133/166 MHz frontside bus (FSB).
Chipset	<p>The SiS746 and SiS963/963L chipsets are based on an innovative and scalable architecture with proven reliability and performance. A few of the chipset's advanced features are:</p> <ul style="list-style-type: none"> • Supports AMD Socket A CPU: 133/166 MHz • Synchronous/Asynchronous Host-t-DRAM timing: 133/200, 133/266, 133/400, 166/266, 166/333, 166/400 • Supports 200/266/333/400 DDR SDRAM • Supports up to 2 unbuffered DIMM DDR333 or up to 3 unbuffered double-sided DIMM DDR266/200 • AGP v3.0 Compliant • Bi-directional 16 bit data bus • 1 GB/s performance in 133MHz x 4 mode • PCI 2.2 Specification Compliance • Integrated Multithreaded I/O Link Mastering with Read Pipelined Streaming • Supports Enhanced Software and Automatic schemes to access PHY registers • Supports Ultra DMA 33/66/100/133 • USB v2.0 and Enhanced Host Controller Interface (EHCI) v1.0 compatible <p>Additional key features include support for six USB ports, Fast Ethernet MAC controller, AC97 interface, IEEE 1394 host controller (<i>except for SiS963L Southbridge chipset</i>), advanced power management, integrated DMA controller and keyboard controller.</p>
Memory	<ul style="list-style-type: none"> • Supports DDR up to 200/266/333/400 (<i>enhanced</i>) MHz SDRAM memory module • Accommodates three unbuffered 2.5V 184-pin slots • Each slot supports up to 1 GB with a total maximum capacity of 3 GB
Graphics	The L7S7A2 includes an AGP slot that provides eight times the bandwidth of the original AGP specification. The AGP 3.0 (8xAGP) offers a significant increase in performance along with feature enhancements to AGP2.0. This interface represents the natural evolution from the existing AGP to meet the ever-increasing demands placed on the graphic interfaces within the workstation and desktop environments.
Audio	<p>The AC' 97 Audio codec is compliant with the AC 97 2.2 specification that meets the PC2001 requirements and supports S/PDIF In/Out. It also has a built-in buffer and internal PLL. Features include support for analog switch for rear-out (share), the line-in jack (share), center/bass (share), and MIC jack to output 6 channels audio.</p> <p>Note: Optional 4-channel audio controller.</p>
Expansion Options	<p>The mainboard comes with the following expansion options:</p> <ul style="list-style-type: none"> • Five 32-bit PCI slots • One AGP slot (supports 1.5V AGP Interface only) • A Communications Network Riser (CNR) slot (AC97 inter-

	<p>face only; <i>optional</i>)</p> <ul style="list-style-type: none"> Two IDE connectors which support four IDE channels and a floppy disk drive interface <p>The L7S7A2 supports Ultra DMA bus mastering with transfer rates of 33/66/100/133 MB/sec.</p>
Onboard LAN (optional)	<p>RTL8201BL is a Fast Ethernet Phyceiver with an MII (Media Independent Interface)/SNI (Serial Network Interface). It can be used as a Network Interface Adapter, MAU, CNR, ACR, Ethernet Hub, and Ethernet Switch.</p>
IEEE 1394A Controller Interface (optional)	<ul style="list-style-type: none"> Fully support provisions of IEEE1394-1995 for High- Performance Serial Bus and the P1394a draft 2.0 standard Provides one compliant cable port at 100Mbps/s, 200Mbps/s, and 400Mbps/s Supports arbitrated short bus reset to improve utilization of the bus Data interface to link-layer controller provided through 2/4/8 parallel lines at 50Mbps/s Support power-down feature to conserve energy in battery powered applications
Integrated I/O	<p>The mainboard has a full set of I/O ports and connectors:</p> <ul style="list-style-type: none"> Two PS/2 ports for mouse and keyboard Two serial port (<i>COM2 port optional</i>) One parallel port Four USB ports One LAN port (<i>optional</i>) One 1394a port (<i>optional</i>) Audio jacks for microphone, line-in and line-out
BIOS Firmware	<p>This mainboard uses AMI BIOS that enables users to configure many system features including the following:</p> <ul style="list-style-type: none"> Power management Wake-up alarms CPU parameters CPU and memory timing <p>The firmware can also be used to set parameters for different processor clock speeds.</p>



Some hardware specifications and software items are subject to change without prior notice.

Choosing a Computer Case

There are many types of computer cases on the market. The mainboard complies with the specifications for the ATX system case. Some features on the mainboard are implemented by cabling connectors on the mainboard to indicators and switches on the system case. Ensure that your case supports all the features required. The mainboard can support one or two floppy diskette drives and four enhanced IDE drives. Ensure that your case has sufficient power and space for all the drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the mainboard.

This mainboard has an ATX form factor of 305 x 190 mm. Choose a case that accommodates this form factor.

Mainboard Components

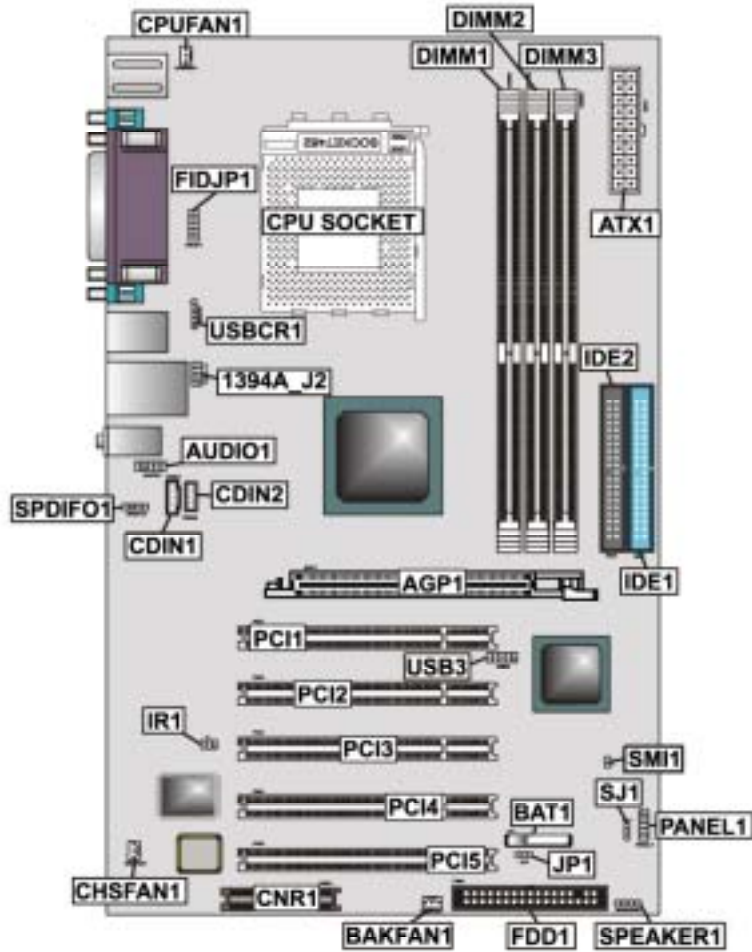


Table of Mainboard Components

Label	Component
1394A-J2 *	IEEE 1394A header
AGP1	Accelerated Graphics Port (supports 1.5V AGP card only)
ATX1	Standard 20-pin ATX power connector
AUDIO1	Front audio connector
BAT1	Three volt realtime clock battery
BAKFAN1 *	Case fan connector 2
CDIN1	Primary CD-in connector
CDIN2 *	Secondary CD-in connector
CNR1 *	Communications Networking Riser slot
CPU SOCKET	Micro PGA 478-pin socket for Pentium 4 CPUs
CHSFAN1	Chassis Fan connector
CPUFAN1	Cooling fan for CPU
DIMM1, DIMM2, DIMM3	Three 184-pin DDR SDRAM
FDD1	Floppy disk drive connector
FIDJP1	CPU ratio selector
IDE 1	Primary IDE channel
IDE 2	Secondary IDE channel
IR1	Infrared port
JP1	Clear CMOS jumper
PANEL1	Connector for case front panel switches and LED indicators
PCI1 ~ PCI5	Five 32-bit add-on card slots
SJ1	Single color LED header
SMI1	System Management Interrupt
SPEAKER1	Speaker connector
SPDIFO1 *	SPDIF out header
USB3	Connector for front panel USB ports
USBCR1	USB Card reader connector

* *Optional component*

This concludes Chapter 1. The next chapter explains how to install the mainboard.

Chapter 2

Installing the Mainboard

Safety Precautions

Follow these safety precautions when installing the mainboard:

- Wear a grounding strap attached to a grounded device to avoid damage from static electricity.
- Discharge static electricity by touching the metal case of a safely grounded object before working on the mainboard.
- Leave components in the static-proof bags they came in.
- Hold all circuit boards by the edges. Do not bend circuit boards.

Quick Guide

This Quick Guide suggests the steps you can take to assemble your system with the mainboards.

The following table provides a reference for installing specific components:

Locating Mainboard Components	Go to page 6
Installing the Mainboard in a Case	Go to page 9
Setting Jumpers	Go to page 9
Installing Case Components	Go to page 11
Installing the CPU	Go to page 14
Installing Memory	Go to page 16
Installing a HDD and CD-ROM Drive	Go to page 17
Installing an FDD	Go to page 19
Installing Add-on Cards	Go to page 20
Connecting Options	Go to page 22
Connecting Peripheral (I/O) Devices	Go to page 25

Installing the Mainboard in a Case

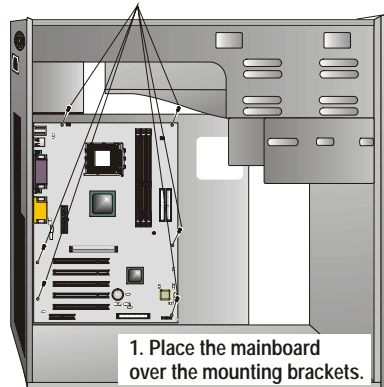
Refer to the following illustration and instructions for installing the mainboard in a case:

This illustration shows an example of a mainboard being installed in a tower-type case:

Note: Do not overtighten the screws as this can stress the mainboard.

Most system cases have mounting brackets installed in the case, which correspond to the holes in the mainboard. Place the mainboard over the mounting brackets and secure the mainboard onto the mounting brackets with screws.

2. Secure the mainboard with screws where appropriate.



Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your mainboard.

Checking Jumper Settings

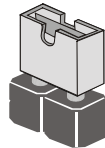
This section explains how to set jumpers for correct configuration of the mainboard.

Setting Jumpers

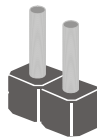
Use the mainboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations below show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is **SHORT**. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is **OPEN**.

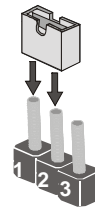
This illustration shows a 3-pin jumper. Pins 1 and 2 are **SHORT**.



Short

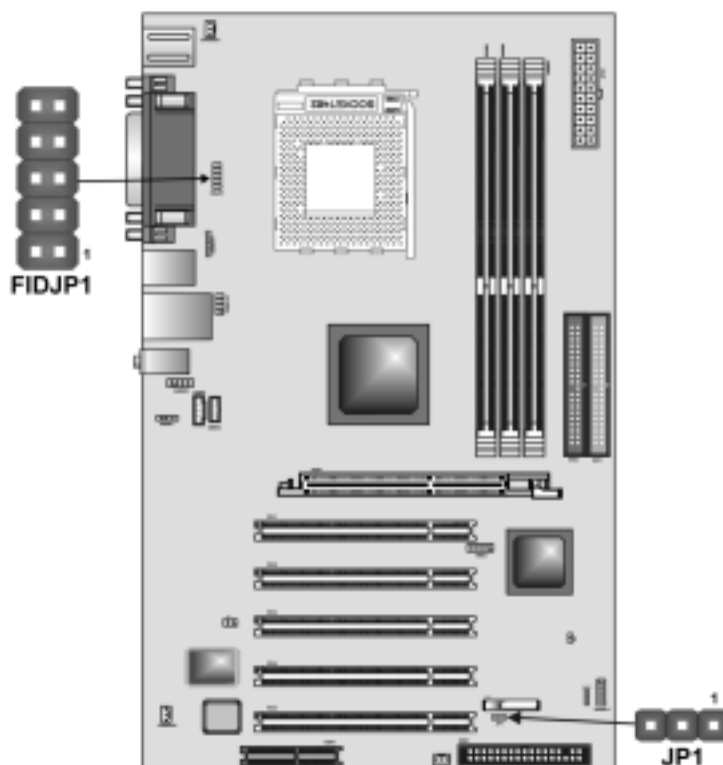


Open



Checking Jumper Settings

The following illustration shows the location of the mainboard jumpers. Pin 1 is labeled.



Jumper Settings

Jumper	Type	Description	Setting (default)
JP1	3-pin	Clear CMOS	1-2: Normal 2-3: <i>Clear CMOS</i>
FID JP1	10-pin	CPU ratio selector	Refer to the table on the next page.

Jumper 1 – This jumper is use to clear all the current data stored in the CMOS memory. Refer to the following instructions:

1. Turn the system off.
2. Short pins 2 and 3 on jumper 1.
3. Return the jumper to the normal setting.
4. Turn the system on. The BIOS is returned to the default settings.

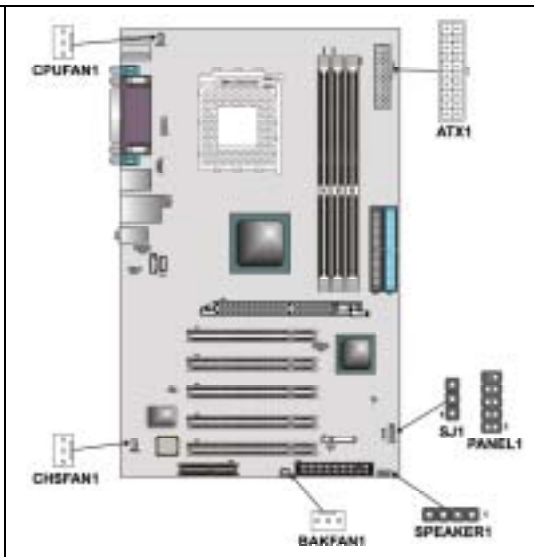
FIDJP1 – Sets the CPU ratio. Refer to the following table.

1-2	3-4	5-6	7-8	9-10	Ratio
Short	—	—	—	—	By CPU
Open	Open	Open	Open	Open	10.5
Open	Open	Open	Open	Short	6.5
Open	Open	Open	Short	Open	8.5
Open	Open	Open	Short	Short	12.5
Open	Open	Short	Open	Open	9.5
Open	Open	Short	Open	Short	5.5
Open	Open	Short	Short	Open	7.5
Open	Open	Short	Short	Short	11.5
Open	Short	Open	Open	Open	10.0
Open	Short	Open	Open	Short	6.0
Open	Short	Open	Short	Open	8.0
Open	Short	Open	Short	Short	12.0
Open	Short	Short	Open	Open	9.0
Open	Short	Short	Open	Short	5.0
Open	Short	Short	Short	Open	7.0
Open	Short	Short	Short	Short	11.0

Connecting Case Components

After you have installed the mainboard into a case, you can begin connecting the mainboard components. Refer to the following:

1. Connect the standard power supply connector to **ATX1**.
2. Connect the CPU cooling fan cable to **CPUFAN1**.
3. Connect the case cooling fan connector to either **CHSFAN1/BAKFAN1** (optional).
4. Connect the case LED cable to **SJ1**.
5. Connect the case switches and indicator to **PANEL1**.
6. Connect the case speaker cable to **SPEAKER1**.



CPUFAN1/CHSFAN1/BAKFAN1(optional): FAN Power Connectors

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor


ATX1: ATX 20-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	Ground	13	Ground
4	+5V	14	PS ON#
5	Ground	15	Ground
6	+5V	16	Ground
7	Ground	17	Ground
8	PWRGD	18	-5V
9	+5VSB	19	+5V
10	+12V	20	+5V

SJ1: Single color LED header

Pin	Signal Name	Function
1	ACPI LED	MSG LED (-) green
2	ACPI LED	MSG LED (-) green
3	SB5V	Power LED (+)

ACPI LED function:

SJ1	S0	S1	S3	S4/S5
	Light	Blinking	Blinking	Dark

SPEAKER1: Internal speaker

Pin	Signal Name
1	Signal
2	Key
3	Ground
4	VCC

Front Panel Connector

The front panel connector (PANEL1) provides a standard set of switch and LED connectors commonly found on ATX or micro-ATX cases. Refer to the table below for information:



PANEL1

Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (positive)	2	FP PWR/SLP	MSG LED [dual color or single color (+)]
3	HD_LED_N	Hard disk active LED (negative)	4	FP PWR/SLP	MSG LED [dual color or single color (-)]
5	RST_SW_N	Reset Switch	6	PWR_SW_P	Power Switch
7	RST_SW_P	Reset Switch	8	PWR_SW_N	Power Switch
9	RSVD	Reserved	10	NC	No pin

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power / Sleep / Message Waiting LED

Connecting pins 2 and 4 to a single- or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pins 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal debounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

Installing Hardware

Installing the Processor

Caution: When installing a CPU heatsink and cooling fan make sure that you **DO NOT** scratch the mainboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the mainboard, you may cause serious damage to the mainboard or its components.

On most mainboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the mainboard and processor socket.

Before installing the Processor

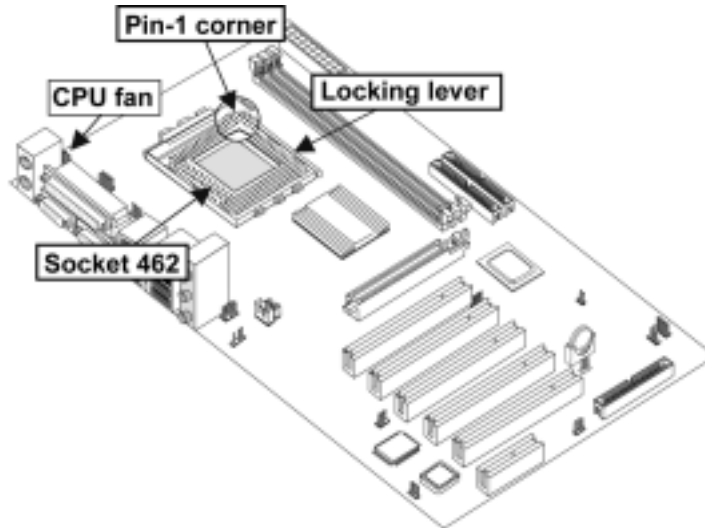
This mainboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change these settings by making changes to jumpers on the mainboard, or changing the settings in the system Setup Utility. We strongly recommend that you do not overclock processors or other components to run faster than their rated speed.

Warning: Overclocking components can adversely affect the reliability of the system and introduce errors into your system. Overclocking can permanently damage the mainboard by generating excess heat in components that are run beyond the rated limits.

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

The following illustration shows CPU installation components:

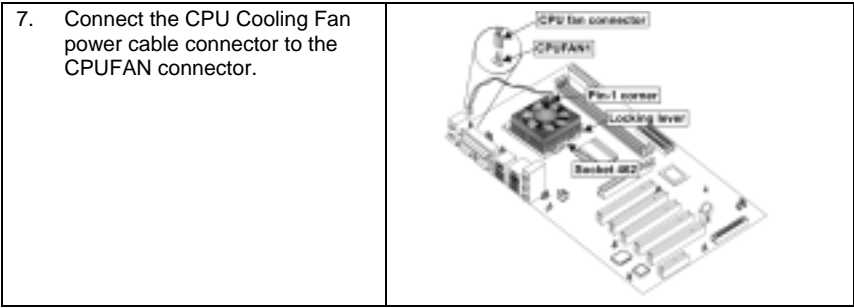


Note: The pin-1 corner is marked with an arrow ▼

Follow these instructions to install the CPU:

1.	Pull the CPU socket locking lever away from the socket to unhook it and raise the locking lever to the upright position.
2.	Match the corner on the CPU marked with an arrow with pin A-1 on the CPU socket (the corner with the pinhole noticeably missing). Insert the processor into the socket. Do not use force.
3.	Swing the locking lever down and hook it under the latch on the edge of the socket.
4.	Apply thermal grease to the top of the CPU.
5.	Lower the CPU cooling fan/heatsink assembly onto the CPU
6.	Secure the two retention clips on either side of the fan/heatsink unit onto the Socket 462 base.

A diagram showing a fan/heatsink unit being lowered onto a CPU. A dashed arrow points from the unit to the CPU. Below the diagram is the text: 'Fan/heatsink unit secured to socket'.



Note: CPU fan and heatsink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.

Installing Memory Modules

This mainboard accommodates three 184-pin 2.5V unbuffered Double Data Rate (DDR) SDRAM memory modules. The memory chips must be standard or registered SDRAM (Synchronous Dynamic Random Access Memory). The memory bus can run up to 166 MHz.

When you installed DDR333 memory modules, the memory bus can run up to 166 MHz. If you have DDR266, this can operate over a 133 MHz. For DDR200, it can only run up to 100 MHz.

Note: SDRAM provides 800 MBps or 1 GBps data transfer depending on whether the bus is 100MHz or 133MHz. Double Data Rate SDRAM (DDR SDRAM) doubles the rate to 1.6 GBps and 2.1 GBps. DDR SDRAM uses additional power and ground lines and requires 184-pin DIMM modules rather than the 168-pin DIMMs used by SDRAM.

The mainboard accommodates three memory modules. You must install at least one module in any of the three slots. Each module can be installed with 32 MB to 1 GB of memory; total memory capacity is 3 GB.



Do not remove any memory module from its antistatic packaging until you are ready to install it on the mainboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

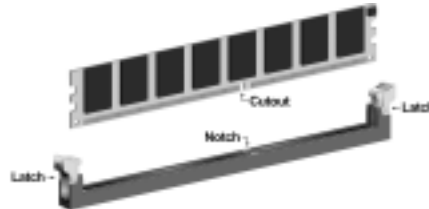
Refer to the following to install the memory modules.

1. This mainboard supports unbuffered DDR SDRAM only. Do not attempt to insert any other type of DDR SDRAM into the slots.

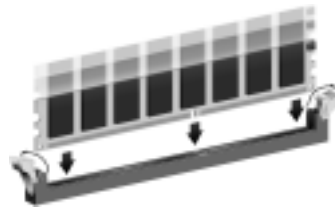


2. Push the latches on each side of the DIMM slot down.

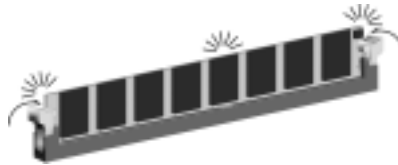
3. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.



4. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.



5. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.



6. Install any remaining DIMM modules.

DDR SDRAM memory module table:

DDR 266	3 DIMMs
DDR 333	3 DIMMs
DDR 400	2 DIMMs

Note: We do not guarantee that all DDR 400 memory modules will work properly with your mainboard.

Installing a Hard Disk Drive/CD-ROM

This section describes how to install IDE devices such as a hard disk drive and a CD-ROM drive.

About IDE1 and IDE2 Devices

Your mainboard has a primary and secondary IDE channel interface (IDE1 and IDE2). An IDE ribbon cable supporting two IDE devices is bundled with the mainboard.

If you want to install more than two IDE devices, get a second IDE cable and you can add two more devices to the secondary IDE channel.

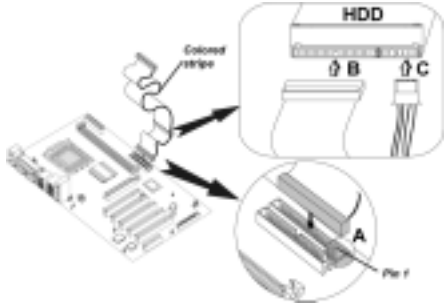
IDE devices have jumpers or switches that are used to set the IDE device as MASTER or SLAVE. Refer to the IDE device user's manual. When installing two IDE devices on one cable, ensure that one device is set to MASTER and the

other device is set to SLAVE. The documentation of your IDE device explains how to do this.

About UltraDMA

This mainboard supports UltraDMA 66/100/133. UDMA is a technology that accelerates the performance of devices in the IDE channel. To maximize performance, install IDE devices that support UDMA and use 80-pin IDE cables that support UDMA 66/100/133.

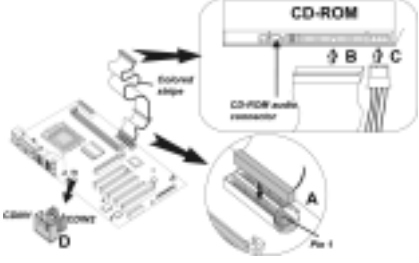
Installing a Hard Disk Drive

1. Install the hard disk drive into the drive cage in your system case.	
2. Plug the IDE cable into IDE1 (A): Note: Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable.	
3. Plug an IDE cable connector into the hard disk drive IDE connector (B). It doesn't matter which connector on the cable you use.	
4. Plug a power cable from the case power supply into the power connector on the hard disk drive (C).	

When you first start up your system, the BIOS should automatically detect your hard disk drive. If it doesn't, enter the Setup Utility and use the IDE Hard

Disk Auto Detect feature to configure the hard disk drive that you have installed.

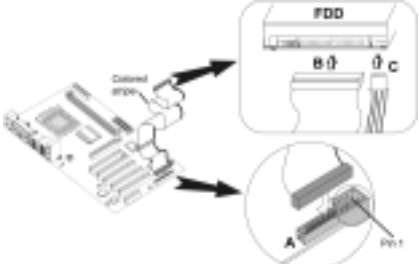
Installing a CD-ROM/DVD Drive

<ol style="list-style-type: none"> 1. Install the CD-ROM/DVD drive into the drive cage in your system case. 2. Plug the IDE cable into IDE1 (A). If you have already installed an HDD, use the other connector on the IDE cable. Note: Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable. 	
<ol style="list-style-type: none"> 3. Plug an IDE cable connector into the CD-ROM/DVD drive IDE connector (B). It doesn't matter which connector on the cable you use. 	
<ol style="list-style-type: none"> 4. Plug a power cable from the case power supply into the power connector on the CD-ROM/DVD drive (C). 	
<ol style="list-style-type: none"> 5. Use the audio cable provided with the CD-ROM/DVD drive to connect to the mainboard CD-in connector CDIN1 or CDIN2 (optional) (D). 	

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.

Installing a Floppy Diskette Drive

The mainboard has a floppy diskette drive (FDD1) interface and ships with a diskette drive ribbon cable that supports one or two floppy diskette drives. You can install a 5.25-inch drive and a 3.5-inch drive with various capacities. The floppy diskette drive cable has one type of connector for a 5.25-inch drive and another type of connector for a 3.5-inch drive.

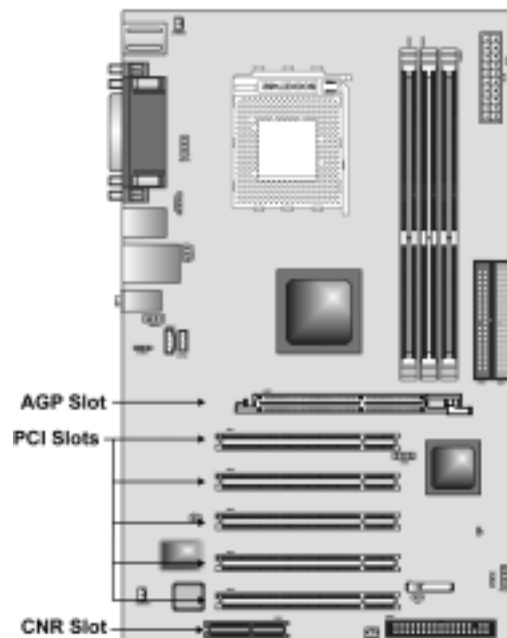
<ol style="list-style-type: none"> 1. Install the FDD into the drive cage in your system case. 2. Plug the FDD cable into FDD1 (A): Note: Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable. 	
<ol style="list-style-type: none"> 3. Plug the correct connector on the FDD cable for the 5.25-inch or 3.5-inch drive into the FDD connector (B). 	

4. Plug a power cable from the case power supply into the power connector on the FDD (C).

When you first start up your system, go immediately to the Setup Utility to configure the floppy diskette drives that you have installed.

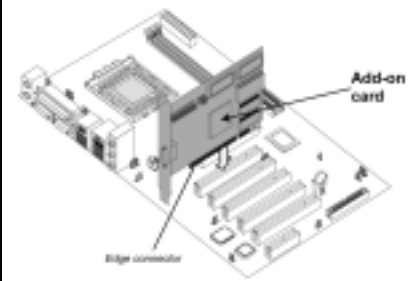
Installing Add-on Cards

The slots in this mainboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the mainboard's features and capabilities. With these efficient facilities, you can increase the mainboard's capabilities by adding hardware which performs tasks that are not part of the basic system.



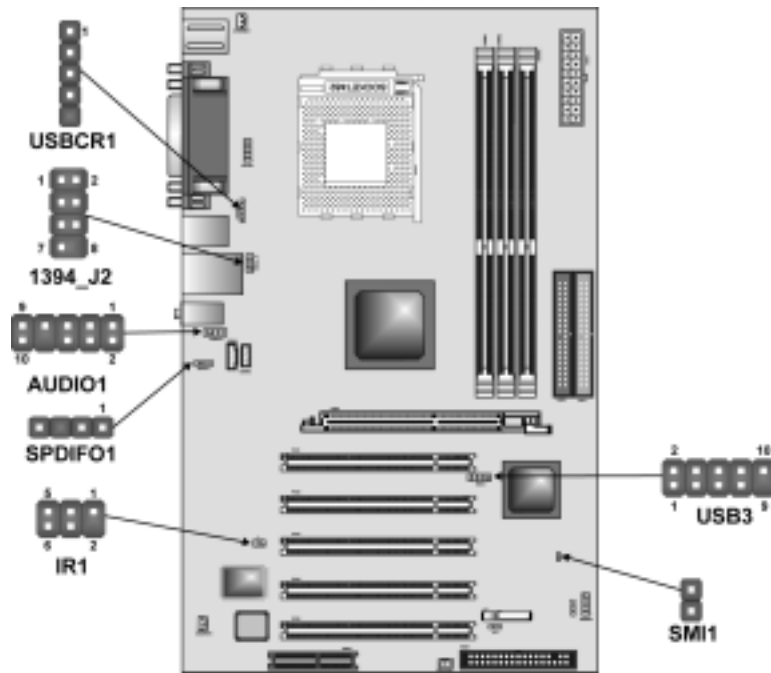
PCI Slots	PCI slots are used to install expansion cards that have the 32-bit PCI interface.
AGP Slot	The AGP slot is used to install 3D graphics adapter that supports the 8x AGP card which is also backward compatible with 4x AGP card. The slot is keyed to support only the latest 1.5-volt AGP cards. Note: The above layout is for reference only. The AGP slot may be different from your mainboard. Please refer to actual shipment.
CNR Slot (optional)	This slot is used to insert CNR cards with Modem and Audio functionality. Note: Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

1. Remove a blanking plate from the system case corresponding to the slot you are going to use.	
2. Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.	
3. Secure the metal bracket of the card to the system case with a screw.	
Note: For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.	

Connecting Optional Devices

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



AUDIO1: Front Panel Audio header

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

Pin	Signal Name	Function
1	AUD_MIC	Front Panel Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	AUD_MIC_BIAS	Microphone Power
4	AUD_VCC	Filtered +5 V used by Analog Audio Circuits
5	AUD_FPOUT_R	Right Channel Audio signal to Front Panel
6	AUD_RET_R	Right Channel Audio signal to Return from Front Panel
7	HP_ON	Reserved for future use to control Head-phone Amplifier
8	KEY	No Pin
9	AUD_FPOUT_L	Left Channel Audio signal to Front Panel
10	AUD_RET_L	Left Channel Audio signal Return from Front Panel

USB3: Front panel USB connectors

The mainboard has four 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 Name	Function
1	VREG_FP_USBPWR0	Front Panel USB Power
2	VREG_FP_USBPWR0	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	KEY	No pin
10	Not assigned	Not assigned

Note: Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

IR1: Infrared port

Infrared ports allow 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 Name	Function
1	Not assigned	Not assigned
2	KEY	No pin
3	+5V	IR Power
4	GND	Ground
5	IRTX	IrDA serial output
6	IRRX	IrDA serial input

SPDIF01: SPDIF out header (optional)

You can purchase an optional 24-bit digital audio extension bracket from a third-party vendor. You can use the audio RCA jacks to connect to digital audio devices. If your CD-ROM/DVD drive has digital audio output, you can connect it to the input pins of the SPDIF connector.

Pin	Signal Name	Function
1	SPDIF	SPDIF digital output
2	+5VA	5V analog power
3	NC	Not connected
4	GND	Ground

1394A_J2: IEEE 1394A header (optional)

Use this header to connect to any IEEE 1394A interface.

Pin	Signal Name	Pin	Signal Name
1	Cable-power	5	TPA-
2	GND	6	TPA+
3	TPB-	7	Chassis GND
4	TPB+	8	NC

SMI1: System Management Interrupt

This connector is for use with SMI hardware interrupt power management.

Pin	Signal Name	Function
1	-EXTSMI	Sleep button
2	GND	Ground

USBCR1: USB Card Reader connector

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 Name	Function
1	USBVCC2	+5V dual
2	USB2-	Data signal port 2-
3	USB2+	Data signal port 2+
4	GND	Ground
5	Key	No pin

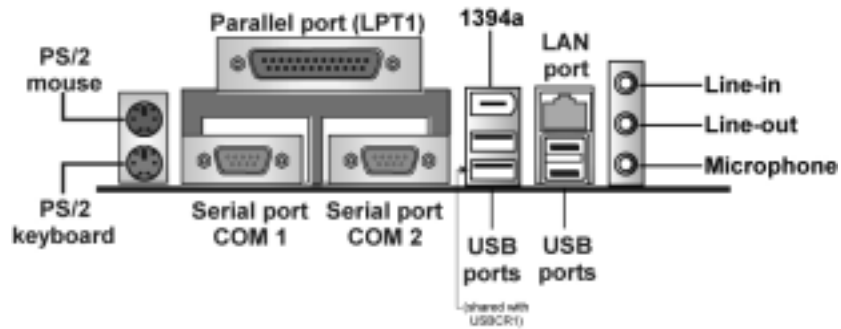
Note: The USBCR1 is shared with one of the USB ports of the I/O back panel. The USB port is located beside the serial port connectors. See “Connecting I/O Devices” for more information.



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.

Connecting I/O Devices

The backplane of the mainboard has the following I/O ports:



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.
COM1/2 (COM2 optional)	Use the COM ports to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3. COM2 is identified by the system as COM2/4.
1394a Port (optional)	Use the 1394a port to connect any Firewire device.
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.
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 USB port located below the 1394a port is shared with the USBCR1 connector.

External Connector Color Coding

Many connectors now use standard colors as shown in the table below.

Connector	Color
Audio line-in	Light blue
Audio line-out	Lime
Digital monitor/flat panel	White
IEEE 1394	Grey
Microphone	Pink
MIDI/game	Gold
Parallel	Burgundy
PS/2-compatible keyboard	Purple
PS/2-compatible mouse	Green
Serial	Teal or Turquoise
Speaker out/subwoofer	Orange
Right-to-left speaker	Brown
USB	Black
Video out	Yellow
SCSI, network, telephone, modem	None

This concludes Chapter 2. The next chapter covers the BIOS.

Chapter 3

Using BIOS

About the Setup Utility

The computer uses the latest AMI BIOS with support for Windows Plug and Play. The CMOS chip on the mainboard contains the ROM setup instructions for configuring the mainboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Running the Setup Utility

Each time your computer starts, before the operating system loads, a message appears on the screen that prompts you to "Hit if you want to run *SETUP*". When you see this message, press the **Delete** key and the Main menu page of the Setup Utility appears on your monitor.



BIOS Navigation Keys

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 exit the setup utility, press the **Escape** key. To cycle through the Setup Utility's optional color schemes press down the **F2/F3**.

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 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 high-performance values.

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ►) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ►.

Standard CMOS Setup

The Standard CMOS setup is used to modify basic system configuration data, such as date, time floppy and hard disk drive types, video type and keyboard.

AMIBIOS SETUP - STANDARD CMOS SETUP	
(c)2001 American Megatrends, Inc. All Rights Reserved	
Date (mm/dd/yyyy): Fri 09/13/2002	Base Memory: 0 KB
Time (hh/mm/ss) : 11:08:31	Extd Memory: 0 MB
Floppy Drive A: Not Installed	
Floppy Drive B: Not Installed	
	LBA 81k PIO 32Bit
Type	Size Cyln Head WPrcon Sec Mode Mode Mode
Pri Master: Not Installed	
Pri Slave : Not Installed	
Sec Master: Not Installed	
Sec Slave : Not Installed	
Boot Sector Virus Protection	Disabled
Month: Jan - Dec	ESC:Exit F1:Sel
Day: 01 - 31	PgUp/PgDn:Modify
Year: 1980 - 2099	F1:Help F2/F3:color

Date & Time

Use these items to set the system date and time.

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.

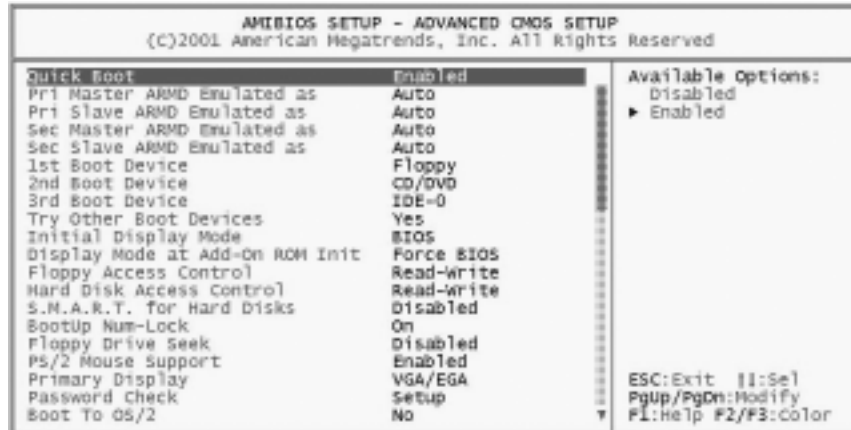
Pri Master/Pri Slave/Sec Master/Sec Slave

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*.

Advanced CMOS Setup

The Advanced CMOS setup is used to control advanced system information such as hardware access and boot settings.



Quick Boot (Enabled)

If you enable this item, the system starts up more quickly by elimination of some of the power on test routines.

Pri/Sec Master ARMD Emulated as (Auto)

Pri/Sec Slave ARMD Emulated as (Auto)

These four options ensure that, if you have an ARMD attached as a master or slave device, it can properly be detected by the system.

1st Boot Device/2nd Boot Device/3rd Boot Device (Disabled)

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 Devices (Yes)

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.

Initial Display Mode (BIOS)

This option specifies the initial display mode when the system boots.

Display Mode at Add-On ROM Init (Force BIOS)

This option allows OEM logo to show during boot-up.

Floppy Access Control (Read-Write)

This option specifies the read/write access that is set when booting from a floppy drive.

Hard Disk Access Control (Read-Write)

This option specifies the read/write access that is set when booting from a hard disk drive.

S.M.A.R.T for Hard Disks (Disabled)

Set this option to Enabled to permit the BIOS to use the SMART (System Management and Reporting Technologies) protocol for reporting server system information over a network. Enabling this feature allows you to back up your data when your hard disk is about to fail. If a password has been set for the supervisor, this item will not be visible for the user.

BootUp Num-Lock (On)

Set this option to Off to turn the Num Lock key off when the computer is booted you can use the arrow keys in both the numeric keypad and the keyboard.

Floppy Drive Seek (Disabled)

When enabled, the BIOS will attempt to initialize the floppy drive. If it cannot detect one, it will flash an error message. When set to disabled, the BIOS will skip the floppy drive check which can speed up the booting process by several seconds.

PS/2 Mouse Support (Enabled)

Set this option to Enabled to enable the BIOS support for a PS/2-type mouse. The BIOS will allocate IRQ12 for the PS/2 mouse.

Primary Display (VGA/EGA)

This option configures the type of monitor attached to the computer.

Password Check (Setup)

This option enables password checking every time the system boots or when you run the BIOS Setup. If you choose Always, a user password prompt appears every time the computer is turned on. If you choose Setup, the password prompt appears if the BIOS is executed.

Boot To OS/2 (No)

Set this option to Enabled if running an OS/2 operating system and using more than 64 MB of system memory on the mainboard.

Internal Cache (Write Back)

This option sets the type of caching algorithm used by the L1 internal cache memory on the CPU.

External Cache (Write Back)

This option sets the type of caching algorithm used by the L1 external cache memory on the CPU.

System BIOS Cacheable (Disabled)

When set to Enabled, the contents of the F0000h system memory segment can be read from or written to cache memory. If parts of the BIOS ROM are frequently used, these parts are copied to cache memory for faster execution.

Advanced Chipset Setup

The Advanced Chipset Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer. You should leave the items on this page at their default values, if you change the values incorrectly, you may introduce fatal errors or recurring instability into your system.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP	
(C)2001 American Megatrends, Inc. All Rights Reserved	
CPU Frequency	133 MHz
Over CPU Vcore Function	Normal
Over DDR Vcc Function	Normal
AUTO Detect DRAM Frequency	Disabled
CPU/DRAM Clock Ratio	[1:1]
DRAM Frequency	133 MHz
Auto Detect DIMM/PCI Clk	Enabled
Clock Spread Spectrum Enable	Enabled
On Board LAN	Enabled
LAN Boot ROM Support	Disabled
BIOS Write Protect	Disabled
Fast Synchronizer	Disabled
DRAM Timing Configuration	Normal Mode
Graphic Win Size	64M
IO APIC Support	Enabled
DDR CAS Latency	SPD
AGP Fast Write	Disabled

ESC:Exit F4:Sel
PgUp/PgDn:Modify
F1:Help F2/F3:Color

Current Frequency (133 MHz)

This item displays the current frequency. This is a display-only item. You cannot make changes to this field.

Over CPU Vcore Function (Normal)

This item allows you to adjust the CPU Vcore voltage to maintain system stability.

Over DDR Vcc Function (Normal)

This item allows you to adjust the memory Vcore voltage to maintain system stability.

CPU/DRAM Clock Ratio ([1:1])

Enables you to set the CPU and DRAM clock.

DRAM Frequency (133 MHz)

This item displays the memory (DRAM) frequency. This is a display-only item. You cannot make changes to this field.

Auto Detect DIMM/PCI Clk (Enabled)

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

Clock Spread Spectrum Enable (Enabled)

The Clock Spread Spectrum significantly reduces the EMI (Electro Magnetic

Interference) generated by the system.

Auto Detect DRAM Frequency (Disabled)

When set to enable, the BIOS automatically detects the reasonable speed for memory to maintain the system stability.

On Board LAN (Enabled)

Enables and disables the onboard LAN.

LAN Boot ROM Support (Disabled)

Use this item to enable and disable the booting from the onboard LAN with a remote boot ROM installed.

BIOS Write Protect (Disabled)

This option protects the BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS' data cannot be changed when attempting to update the BIOS with a Flash utility. To successfully update the BIOS, you'll need to disable this BIOS Write Protect function.

Fast Synchronizer (Disabled)

This option enables you to adjust the timing between CPU and DRAM to enhance performance.

DRAM Timing Configuration (Normal Mode)

The DRAM timing is controlled by the DRAM Timing Registers. The Timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.

Graphic Win Size (64M)

This setting controls just how much system RAM can be allocated to AGP for video purposes.

IO APIC Support (Enable)

This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

DDR CAS to Latency (SPD)

This item determines the operation of the DDR memory CAS (column address strobe). We recommend that you leave this item at the default value.

AGP Fast Write (Disabled)

Enabling this item increases the graphic performance considerably. Make sure that the graphics card supports this option; otherwise problems may be encountered with older cards which do not support this feature. If you proceed to set this to enable, it may cause the system to crash.

Power Management Setup

The Power Management Setup Menu option is used to change the values of the chipset registers for system power management.

AMIBIOS SETUP - POWER MANAGEMENT SETUP (c)2001 American Megatrends, Inc. All Rights Reserved		
Power Switch Type	on/off	Available options: Disabled
ACPI Aware O/S	Yes	► Enabled
ACPI Standby State	S1	
Power Management	Enabled	
Suspend Time Out	Disabled	
Hard Disk Time Out	Disabled	
RTC Alarm Resume From Soft Off	Disabled	
RTC Alarm Date	Every Day	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	00	
Resume on PME	Enabled	
Resume on Mac PME	Enabled	
Wake on Ring/Lan	Disabled	
Keyboard PowerOn Function	Disabled	
USB Device Lead To Power On	Disabled	
Resume on PS2 Mouse	Disabled	
PS2 MOUSE Wake Select Mode	Bottom	
Restore on AC/Power Loss	Power Off	
		ESC:Exit F1:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color

Power Switch Type (On/Off)

This option specifies how the power button is used. In the Suspend mode, the hard disk motor is spindled down, the monitor is shut down, and the processor clock is stopped.

ACPI Aware O/S (Yes)

Set this option to Yes to enable Advanced Configuration and Power Interface (ACPI) BIOS for an ACPI-aware operating system.

ACPI Standby State (S1)

This item allows you to select the standby type under ACPI operating system.

Power Management (Enabled)

Set this option to Enabled to enable the chipset power management and APM (Advanced Power Management) features.

Suspend Time Out (Disabled)

This option defines the length of time that the system while in Standby mode, it must be inactive before it enters Suspend mode.

Hard Disk Time Out (Disabled)

This option specifies the length of period of hard disk drive inactivity. When this time period expires, the computer enters the power-conserving state specified in the Hard Disk Power Down Mode option.

RTC Alarm Resume From Soft Off (Disabled)

This option enable or disable the RTC alarm to wake up the system from Soft Off.

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.

Resume on PME (Enable)

This option allows you to enable or disable the Resume on PME function.

Resume on MAC PME (Disabled)

This option allows you to enable or disable the Resume on MAC PME function.

Wake on Ring/LAN (Disabled)

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 PowerOn Function (Disabled)

If you enable this item, you can turn the system on and off by pressing hot keys on the keyboard. You must enable the Keyboard Power On jumper and use an ATX power supply in order to use this feature.

USB Device Lead To Power On (Disabled)

If you enable this item, the system can automatically resume if there is traffic on the USB device.

Resume on PS2 Mouse (Disabled)

This option allows you to enable or disable the Resume on PS2 mouse function.

PS2 MOUSE Wake Select Mode (Bottom)

This option allows you to set the mouse action to turn on the system.

Restore on AC/Power Loss (Power Off)

This sets the power state after a shutdown due to an unexpected interrupt of AC power.

PCI / Plug and Play Setup

This section describes configuring the PCI bus system. PCI (Peripheral Component Interconnect) is a system, which allows I/O devices to operate at speeds nearing CPU's when they communicate with own special components.

All the options describes in this section are important and technical and it is strongly recommended that only experienced users should make any changes to the default settings.

AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP (c)2001 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	No	Available Options: ▶ No Yes
Primary Graphics Adapter	PCI	
Allocate IRQ to PCI VGA	Yes	
PCI IDE BusMaster	Enabled	
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	Disabled	
OffBoard PCI IDE Secondary IRQ	Disabled	
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	
IRQ10	PCI/PnP	
IRQ11	PCI/PnP	
		ESC:Exit [I:Sel] PgUp/PgDn:Modify F1:help F2/F3:color

Plug and Play Aware O/S (Yes)

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

Primary Graphics Adapter (PCI)

If you are going to use an AGP graphics card, set this item to AGP. Your system will attempt to initialize the AGP card first. But if you have PCI graphics card then leave this item to its default setting.

Allocate IRQ to PCI VGA (Yes)

This option will be used to allocate IRQ for PCI VGA card. In general, some of PCI VGA cards need IRQ support.

PCI IDE BusMaster (Enabled)

Set this option to Enabled to specify that the IDE controller on the PCI bus has bus mastering capability.

OffBoard PCI IDE Card (Auto)

This option specifies if an offboard PCI IDE controller adapter card is used in the computer. You must also specify the PCI expansion slot on the mainboard where the offboard PCI IDE controller card is installed. If an offboard PCI IDE controller is used, the onboard IDE controller is automatically disabled.

OffBoard PCI IDE Primary IRQ (Disabled)

This option specifies the PCI interrupt used by the primary IDE channel on the offboard PCI IDE controller.

OffBoard PCI IDE Secondary IRQ (Disabled)

This option specifies the PCI interrupt used by the secondary IDE channel on the offboard PCI IDE controller.

DMA Channel 0/1/3/5/6/7 (PnP)

This option allows you to specify the bus type used by each DMA channel.

IRQ (PCI/ PnP)

This option specifies the bus that the specified IRQ line is used on. They allow you to reserve IRQs for legacy ISA adapter cards and determine if the BIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the pool, the end user can use these options to reserve the IRQ by assigning an ISA/EISA setting to it. Onboard I/O is configured by the BIOS. All IRQs used by onboard I/O are configured as PCI/PnP. IRQ12 only appears if the PS/2 Mouse Support option in Advanced Setup is set to Disabled. IRQ14 and 15 will not be available if the onboard PCI IDE is enabled.

Peripheral Setup

The Peripheral Setup menu describes I/O resources assignment for all of the on-board peripheral devices.

AMIBIOS SETUP - PERIPHERAL SETUP	
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==S15963 Device Control==	
Audio Device	Enabled
Modem Device	Enabled
USB 2.0 Supports	Enabled
USB Ports Supports	Enable
USB Function	Enabled
USB KB/Mouse/FDD Legacy Support	Enabled
Onboard 1394 Device	Enable
==S15950 Device Control==	
Onboard FDC	Auto
Onboard Serial PortA	3F8h/COM1
Onboard Serial PortB	2F8h/COM2
Serial Port2 Mode	Normal
Onboard Parallel Port	Auto
Parallel Port Mode	ECP
Parallel Port IRQ	Auto
Parallel Port DMA	Auto
==S15963 PCI IDE control==	
Onboard PCI IDE	Both
Available Options: ▶	
ESC:Exit F1:Sel PgUp/PgDn:Modify F1:Help F2/F3:color	

Audio Device (Enabled)

This item enables or disables the onboard AC'97 audio chip.

Modem Device (Enabled)

This item enables or disables the onboard AC'97 modem chip.

USB 2.0 Supports (Enabled)

This item enables or disables the onboard USB 2.0.

USB Ports Supports (Enable)

Enable this item if you plan to use the USB ports on this mainboard.

USB Function (Enabled)

Enable this item if you plan to use the USB ports on this mainboard.

USB KB/Mouse/FDD Legacy Support (Enabled)

Set this item to enable to support for older keyboard, mouse and legacy devices if the USB option is set to enable.

Onboard 1394 Device (Enable)

Enable this item if you plan to use the onboard 1394 device.

OnBoard FDC (Auto)

Set this option to Enabled to enable the floppy drive controller on the mainboard.

OnBoard Serial PortA (3F8h/COM1)

This option specifies the base I/O port address of serial port A.

OnBoard Serial PortB (2F8h/COM2)

This option specifies the base I/O port address of serial port B.

Serial Port2 Mode (Normal)

Use this item to allocate the resources of the second serial port. Under Normal, the resources are allocated to the onboard serial port. Under ASKIR or IrDA, the resources are allocated to the onboard IR port.

OnBoard Parallel Port (Auto)

This option specifies the base I/O port address for the parallel port on the mainboard.

Parallel Port Mode (ECP)

This option specifies the parallel port mode.

Parallel Port IRQ (Auto)

Use this item to assign either IRQ 5 or 7 to the parallel port.

Parallel Port DMA (Auto)

Use this item to assign a DMA channel to the parallel port. The options are 0, 1 and 3.

Onboard PCI IDE (Both)

Use this item to enable or disable either or both of the onboard Primary and Secondary IDE channels.

Hardware Monitor Page

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

AMIBIOS SETUP - HARDWARE MONITOR SETUP	
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--> System Hardware Monitor <--	
CPU Vcore	1.632 V
Vcc2.5V	2.512 V
+3.3V	3.168 V
+5V	4.784 V
+12V	12.032 V
SB+3.3V	3.424 V
SB+5V	4.892 V
BBK Fan1 Speed	0 RPM
SYSTEM Fan Speed	0 RPM
CPU FAN Speed	4115 RPM
SYSTEM Temperature	44°C/111°F
CPU Temperature	88°C/176°F
Available Options: ▶ <--	
ESC:Exit T4:Sel PgUp/PgDn:Modif F1:Help F2/F3:Color	

CPU / System Temperature

These items display CPU and system temperature measurement.

FANS & Voltage Measurements

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

Change Supervisor/User Password

When this function is selected, the following message appears at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter BIOS Setup freely.

PASSWORD DISABLED

If you have selected **“System”** in “Security Option” of “BIOS Features Setup” menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup.

If you have selected **“Setup”** at “Security Option” from “BIOS Features Setup” menu, you will be prompted for the password only when you enter BIOS Setup.

Supervisor Password has higher priority than User Password. You can use Supervisor Password when booting the system or entering BIOS Setup to modify all settings. Also you can use User Password when booting the system or entering BIOS Setup but can not modify any setting if Supervisor Password is enabled.

Auto Configuration with Optimal Settings

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

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

Auto Configuration with Fail Safe Settings

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility:

Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting your system working properly again. If you only want to install fail-safe defaults for a specific option, select and display that option, and then press <F6>.

Save Settings and Exit

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press <Y> to save and exit, or press <N> to return to the main menu.

Exit Without Saving

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 Exit Without Saving dialog box appears, press <Y> to discard changes and exit, or press <N> to return to the main menu.

Note: If you have made settings that you do not want to save, use the "Exit Without Saving" item and press <Y> to discard any changes you have made.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the mainboard.

Chapter 4

Using the Mainboard Software

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.

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

The Auto-install CD-ROM makes it easy for you to install the drivers and software for your mainboard.

Note: If the Auto-install CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to Utility Folder Installation Notes later in this chapter.

The support software CD-ROM disc loads automatically under Windows 98/ME/2000/XP. When you insert the CD-ROM disc in the CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.



Note: If the opening screen doesn't appear, double-click the file "setup.exe" in the root directory.

Setup Tab

Setup	Click the Setup button to run the software installation program. Select from the menu which software you want to install.
Browse CD	<p>The Browse CD button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD.</p> <p>Before installing the software from Windows Explorer, look for a file named README.TXT, INSTALL.TXT or something similar. This file may contain important information to help you install the software correctly.</p> <p>Some software is installed in separate folders for different operating systems, such as DOS, WIN NT, or WIN98/95. Always go to the correct folder for the kind of OS you are using.</p> <p>To install the software, execute a file named SETUP.EXE or INSTALL.EXE by double-clicking the file and then following the instructions on the screen.</p>
Exit	The Exit button closes the Auto Setup window.

Application Tab

Lists the software utilities that are available on the CD.

Read Me Tab

Displays the path for all software and drivers available on the CD.

Running Setup

Follow these instructions to install device drivers and software for the mainboard:

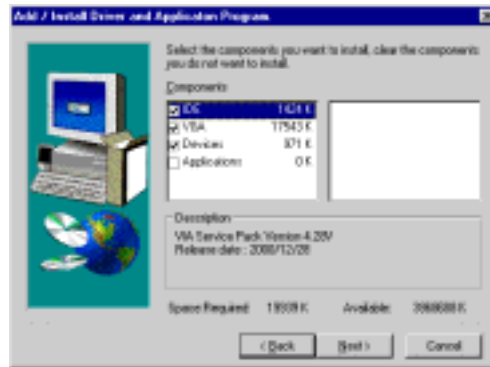
1. Click **Setup**. The installation program begins:



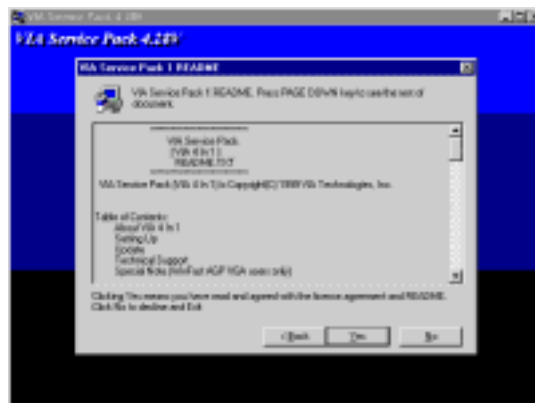
Note: The following screens are examples only. The screens and driver lists will be different according to the mainboard you are installing.

The mainboard identification is located in the upper left-hand corner.

2. Click **Next**. The following screen appears:



3. Check the box next to the items you want to install. The default options are recommended.
4. Click **Next** run the Installation Wizard. An item installation screen appears:



5. Follow the instructions on the screen to install the items.

Drivers and software are automatically installed in sequence. Follow the on-screen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

Manual Installation

Insert the CD in the CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your mainboard.

Look for the chipset and mainboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

Note: These software(s) are subject to change at anytime without prior notice. Please refer to the support CD for available software.

AWARD Flash Memory Utility

This utility lets you 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.

WinFlash Utility

The Award WinFlash utility is a Windows version of the DOS Award BIOS flash writer utility. The utility enables you to flash the system BIOS stored on a Flash Memory chip on the mainboard while in a Windows environment. This utility is currently available for WINXP\ME\2000\98SE. To install the WinFlash utility, run WINFLASH.EXE from the following directory:

UTILITY\WINFLASH 1.51

PC-CILLIN 2002

The PC-CILLIN 2002 software program provides anti-virus protection for your system. This program is available for Windows 2000/ME/98SE/XP 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.

MediaRing Talk – Telephony Software

To install the MediaRing Talk voice modem software for the built-in modem, go to the directory \UTILITY\MEDIARING TALK, then run MRTALK-SETUP72.EXE to install the application software.

Super Voice – Fax/Modem Software

To install the Super Voice voice, fax, data communication application for use with the built-in fax/modem, go the directory \UTILITY\SUPER_VOICE, then run PICSHELL.EXE to install the application software.

PageABC

The PageABC application software enables you to create your very own home page. To install the PageABC, go to the directory \UTILITYPageABC, and then run SETUP.EXE to install the application software.

This concludes Chapter 4.