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Version 1.0

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- 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.
- 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 chapters:

Introduction

Use the **Introduction** chapter to learn about the features of the mainboard, and verify the checklist of items that are shipped with the package.

Installation

Use the **Installation** chapter to learn how to install the mainboard and get your system up and running.

Setup

Use the **Setup** chapter to configure the mainboard for optimum performance.

Software

Use the **Software** chapter to learn how to install the software drivers and support programs that are provided with this mainboard.

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Chapter 1: Introduction

Welcome

Congratulations on purchasing the K7ASA mainboard. The K7ASA is a high quality, high performance, and function-enhanced mainboard, based on the powerful AMD 750 family chipset. The full-size ATX mainboard uses a single Slot A AMD Athlon™ (K7™) processor that supports frontside bus (FSB) speeds up to 200 MHz.

Note: *Athlon is AMD's Pentium III-class CPU. The first models were introduced in 1999 with clock speeds from 500 MHz to 650 MHz. Using a 100 MHz DDR system bus, the Athlon contains the MMX multimedia instructions used in Pentium MMX and Pentium II CPUs along with an enhanced version of AMD's 3DNow 3-D instruction set for faster rendering of games and animation. This mainboard supports speeds up to 850 MHz and higher.*

The mainboard delivers high-level performance with an AGP (Accelerated Graphics Port) slot and two PCI Bus Master Ultra DMA (UDMA) ports that support up to four ATAPI (AT Attachment Packet Interface) devices. The PCI IDE also supports PIO Mode 3 and 4, UDMA33/66 IDE, and an ATAPI CD-ROM.

The mainboard accommodates PC 100 SDRAM (Synchronous DRAM) up to 768 MB using three 3.3V unbuffered DIMM modules. The mainboard achieves the highest reliability by supporting ECC (Error Checking and Correction) memory protection, enabling the mainboard to achieve superior data integrity and fault-tolerance, with respect to memory errors while running applications.

Other features include an embedded 10Base-T/100Base-TX network interface, a built-in PCI 3D sound system, and a built-in V.90 fax/modem function. The mainboard has a full set of I/O ports, such as dual channel PCI EIDE interfaces, a floppy controller, two FIFO serial port connectors, an EPP/ECP-capable bi-directional parallel port connector, a dual USB (Universal Serial Bus) connector, and PS/2 keyboard and mouse connectors.

One AGP slot and four PCI local bus slots provide expandability for add-on peripheral cards.

This chapter contains the following information:

- Checklist** lists the standard and optional components that are shipped with this mainboard
- Recommendations** lists some Do's and Don'ts from the manufacturer to help ensure reliability and performance from this product
- Features** highlights the functions and components that make this one of the best-value mainboards on the market

Checklist

Compare the contents of your mainboard package with the standard checklist below. If any item is missing or appears damaged, please contact the vendor of your mainboard package.

Standard Items

- One K7ASA mainboard
- One diskette drive ribbon cable
- One IDE drive ribbon cable (Ultra DMA/66)
- This user's manual
- Software support CD-ROM disc

Optional Items

- One fax/modem DAA module
- Digital audio extension bracket (SPDIF)

Recommendations

This mainboard automatically determines the CPU clock frequency and system bus frequency for the kind of processor that you install. You may be able to change these automatic settings by making changes to jumpers on the mainboard, or changing the settings in the system BIOS Setup Utility. Setting components to run faster than their rated speed is called “overclocking.”

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.*

We strongly recommend that you do not overclock the mainboard to run processors or other components faster than their rated speed.

Components on this mainboard can be damaged by discharges of static electricity. Handle the board carefully holding it by the edges. Don't flex or stress the circuit board. Keep the board in its static-proof packing until you are ready to install it. Follow the static guidelines given at the beginning of Chapter 2.

Features

The mainboard features an AMD chipset, a 10Base-T/100Base-TX network interface, a built-in PCI 3D sound system, and a built-in V.90 fax/modem function.

AMD Athlon Slot A Processors

The K7ASA mainboard accommodates powerful AMD Athlon (K7) Slot A processors. The Athlon is a Pentium III class CPU manufactured by AMD that runs at clock speeds from 500 to 850 MHz and supports a 200 MHz frontside bus. The Athlon has a 100 MHz DDR bus and contains MMX multimedia instructions and AMD's 3DNow 3-D instruction set, which provides faster rendering of games and animation.

AMD Chipset

This board features the AMD 750 chipset from Advanced Micro Devices. This powerful chipset enables synchronous and asynchronous frequency operation between the processor and the memory over a wide frequency range. ECC and memory parity features are optional. Further features of the chip include support for an embedded 10Base-T/100Base-TX network interface.

Inexpensive Memory

The board has three DIMM sockets for the installation of 168-pin, 3.3V non-buffered DIMM memory modules. The DIMM memory modules support PC 100 SDRAM memory chips. Each DIMM slot accommodates 256 MB, for a maximum of 768 MB.

Built-in V.90 fax/modem function

The PCI C3DX chip is a single chip solution for value PC communications. The chip supports 56 Kbps transmission using the V.90 protocol. The chip is integrated with the built-in audio system to support voice as well as data transmissions. Plugging an optional card (with RJ-11 line and telephone sockets) onto the mainboard facilitates the modem.

Built-in PCI 3D Sound

The built-in PCI Audio CMI8738 is a single-chip solution for PCI-bus 3D audio. The chip provides Sound Blaster 16-bit-compatible audio, plus support for Microsoft's DirectSound 3D specification and Aureal A3D interface. The sound ports include jacks for speakers, microphone, stereo in, and a MIDI/game port. The audio system supports full-duplex operation and drivers are available for MS-DOS, Windows 95/98/2000, and Windows NT 4.0. The audio system supports sound output to four loudspeakers and SPDIF 24-bit digital sound input and output.

Up-to-date Expansion Options

This is a full-sized ATX board with four 32-bit PCI (Peripheral Components Interconnect) slots each supporting Ultra DMA 33/66 and bus mastering.

Integrated I/O

Using the AMD chipset, the board has a comprehensive set of integrated I/O ports. The I/O port array features PS/2 keyboard and mouse ports, an RJ-45 LAN port, an ECP/EPP compatible parallel port, two USB ports, two 16550 compatible serial ports, a MIDI/game port, and three audio jacks. The mainboard has connectors for the installation of an infrared port. Four USB ports can be installed using an auxiliary connector on the mainboard. The board includes connections for floppy diskette drives and two PCI IDE channels.

Built-in Ethernet LAN

The onboard 10Base-T/100Base-TX Ethernet LAN controller integrates Fast Ethernet MAC and PHY compliant with IEEE802.3u 100BASE-TX, 10BASE-T and ANSI X3.263 TP-PMD standards. The controller is also compliant with ACPI 1.0 and the Network Device Class Power Management 1.0 protocols and enables high performance data transfers through a 100 Mbps clock generator and data recovery circuit for 100 Mbps receiver

Programmable Firmware

The mainboard includes AMI BIOS. This fully programmable firmware enhances the system features and allows users to set power management, CPU and memory timing, and other hardware settings. The firmware can also be used to set parameters for different processor clock speeds so that you don't need to change mainboard jumpers and switches.

This concludes Chapter 1. Chapter 2 covers mainboard installation.

Chapter 2: Installation

Quick Installation Table

This chapter explains how to successfully install the mainboard into a computer case and build a working system. The installation procedure is as follows:

Quick Jumper Setting Reference	Provides a quick reference for the jumper settings on this mainboard.
Before you Begin	Provides advice on choosing a case, avoiding static electricity damage, and setting jumpers.
Preparing the Mainboard	Provides a guide to the mainboard and I/O port locations, full details on the jumper settings, and advice on installing the mainboard in the system case.
Installing Other Hardware	Provides guidance on installing essential hardware: processor, memory, hard disk drive, CD-ROM, floppy disk drive, and expansion cards.
Making External Connections	Provides advice on using the external I/O ports to install peripheral devices such as a keyboard, a monitor, a mouse, a printer, or loudspeakers.

Quick Jumper Setting Reference

If you are familiar with most of the material in this chapter, you can begin preparing the mainboard for installation by using this quick reference to set the jumpers. A detailed description of jumper settings appears later in this chapter.

Note: Jumpers and pin numbers are displayed according to the orientation of the illustration on page 12.

JP702: Enable/disable onboard modem

Use this 3-pin jumper to enable or disable the onboard modem.

Function	Jumper Setting
Enable onboard modem	Short pins 1-2
Disable onboard modem	Short pins 2-3



JP703: Enable/disable onboard audio

Use this 3-pin jumper to enable or disable the onboard audio.

Function	Jumper Setting
Disable onboard audio/modem	Short pins 1-2
Enable onboard audio	Short pins 2-3



Note: Disabling JP703 also disables the onboard fax/modem even if JP702 is enabled.

JP706: Enable/disable onboard LAN

Use this 3-pin jumper to enable or disable the onboard LAN.

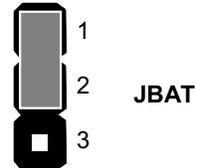
Function	Jumper Setting
Enable onboard LAN	Short pins 1-2
Disable onboard LAN	Short pins 2-3



JBAT: Clear CMOS Memory

Use this jumper to clear the contents of CMOS memory.

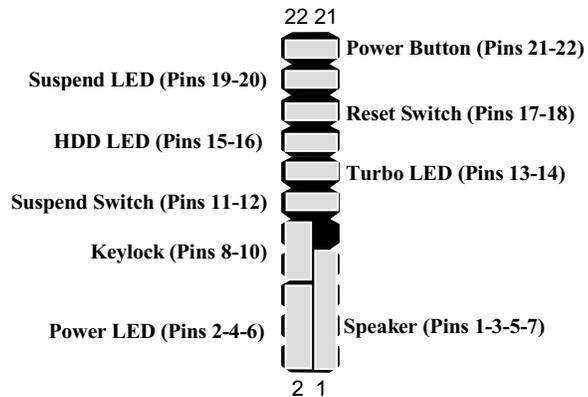
Function	Jumper Setting
Normal operation	Short pins 1-2
Clear CMOS memory	Short pins 2-3



J50 Panel Connector

The mainboard J50 connector has a standard set of switch and indicator connectors that are commonly found on ATX system cases. Use the illustration below to make the correct connections to the case switches and indicators.

Function	Pins
Speaker	1, 3, 5, 7
Power LED Indicator	+2, 4, 6
Keylock	8, 10
Suspend Switch	11, 12
Turbo LED Indicator	+13, 14
Hard Disk LED Indicator	+15, 16
Reset Switch	17, 18
Suspend LED Indicator	+19, 20
Power Button	21, 22



Note: The plus sign (+) indicates a pin which must be connected to a positive voltage.

Before You Begin

Before you begin to install your K7ASA mainboard, take care not to damage the product from static electricity. Ensure too that you are installing the mainboard into a suitable case.

Static Electricity

In adverse conditions, static electricity can accumulate and discharge through the integrated circuits and silicon chips on this product. These circuits and chips are sensitive and can be permanently damaged by static discharge.

- If possible, wear a grounding wrist strap clipped to a safely grounded device during the installation.
- If you don't have a wrist strap, discharge any static by touching the metal case of a safely grounded device before beginning the installation.
- Leave all components inside their static-proof bags until they are required for the installation procedure.
- Handle all circuit boards and electronic components carefully. Hold boards by the edges only. Do not flex or stress circuit boards.

Choosing a Case

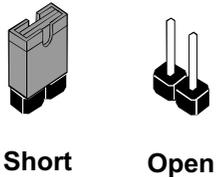
This full-sized ATX mainboard measures 305 x 244 mm. It has four PCI expansion slots and one AGP slot. The mainboard will fit most ATX cases that are designed for full-sized ATX mainboards. With a full set of expansion slots and support for four IDE devices, you might like to choose a case that has a robust power supply unit that delivers at least 250 watts.

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 K7ASA mainboard supports one or two floppy diskette drives and four enhanced IDE drives. Ensure that your case has a sufficient power supply and space for all the drives that you intend to install.

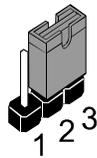
The mainboard has a set of I/O ports on the rear edge. Ensure that your case has an I/O template that supports the I/O ports and expansion slots.

How to Set Jumpers

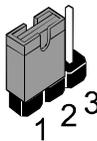
A jumper consists of two or more pins mounted on the mainboard. Some jumpers might be arranged in a series with each pair of pins numbered differently. Jumpers are used to change the electronic circuits on the mainboard. When a jumper cap (or shunt) is placed on two jumper pins, the pins are **SHORT**. If the jumper cap is removed (or placed on just a single pin), the pins are **OPEN**.



This illustration shows 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. The jumper cap is placed on pins 2 and 3, so this jumper setting is **SHORT pins 2-3**.



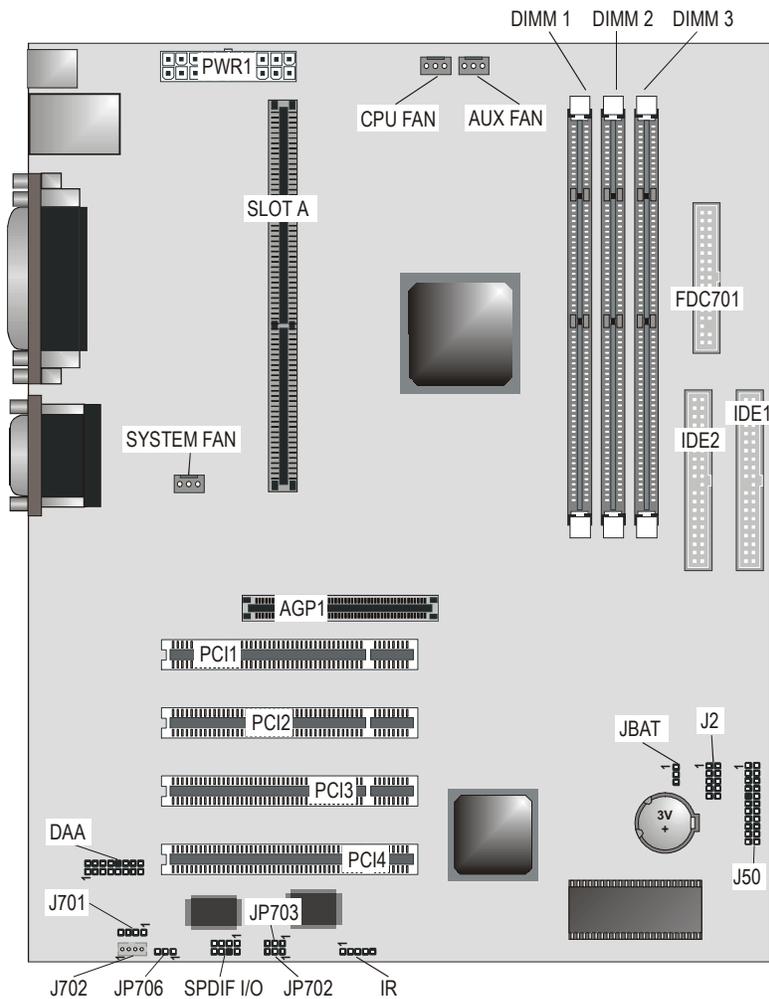
This illustration shows the same 3-pin jumper. The jumper cap is placed on pins 1 and 2, so this jumper setting is **SHORT pins 1-2**.

In this manual, all the jumper illustrations clearly show the pin numbers. When you are setting the jumpers, make sure that the jumper caps are placed on the correct pins to select the function or feature that you want to enable or disable.

Preparing the Mainboard

Mainboard Guide

Use the following illustration and key to identify the components on your mainboard.

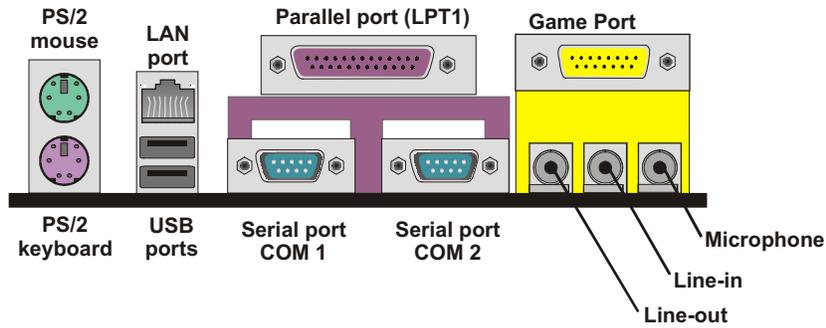


Note: all other jumpers on the mainboard are for testing purposes only.

Key to Mainboard Components

Component	Description
PWR1	Connector for ATX power supply
Slot A	Slot for Slot A processor cartridge
CPU FAN	Power connector for CPU cooling fan
AUX FAN	Power connector for CPU cooling fan
DIMM 1, 2, 3	Three slots for SDRAM memory modules
SYSTEM FAN	Power connector for case cooling fan
FDC701	Connector for floppy disk drives
IDE1, IDE2	Primary and secondary IDE channels
AGP1	Slot for AGP2X graphics adapter
PCI 1, 2, 3, 4	Four 32-bit PCI Slots
DAA	Connector for 56 Kbps fax/modem DAA module
J701/J702	CD audio connector CD-ROM/DVD drives
JP706	Enable and disable onboard LAN
SPDIF I/O	SPDIF in/out connector (24-bit digital audio interface)
JP702	Enable and disable onboard modem
JP703	Enable and disable onboard audio
IR	Connector for optional infrared port
JBAT	Clear CMOS memory jumper
J2	USB connector for USB ports
J50	Panel connector for switches and indicators

I/O Ports

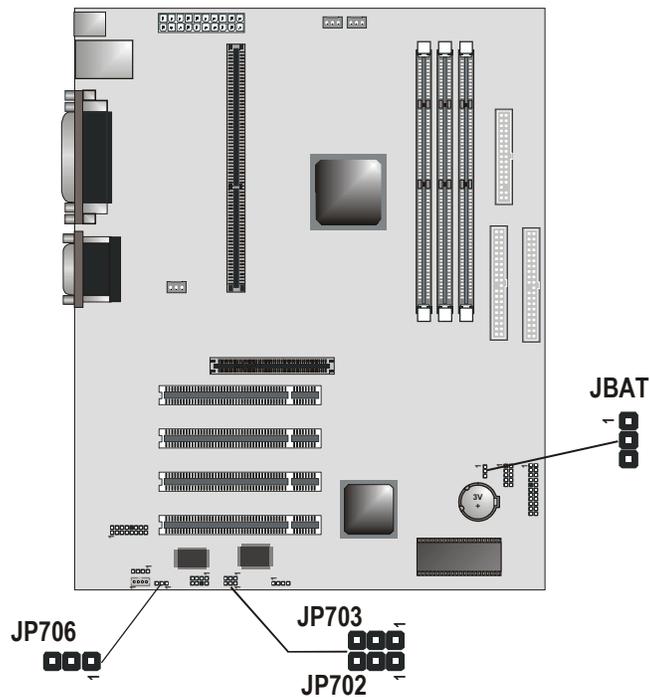


Key to I/O Ports

Component	Description
PS/2 mouse	PS/2 port for pointing device (upper port)
PS/2 keyboard	PS/2 port for keyboard (lower port)
LAN	Local Area Network port
USB ports	Two stacked Universal Serial Bus ports
LPT1	External parallel port
COM1	External serial port COM 1
COM2	External serial port COM 2
Game port	External MIDI/game port
Audio ports	Audio jacks for (from left to right) line-out, line-in, microphone

Checking Jumper Settings

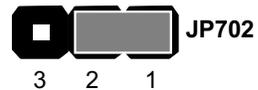
Check the mainboard jumpers to ensure that the board is configured correctly.



JP702: Enable/disable onboard modem

Use this 3-pin jumper to enable or disable the onboard fax/modem connector. If the audio jumper JP703 is disabled, the fax/modem is also disabled, no matter what JP702 is set to.

Function	Jumper Setting
Enable onboard modem	Short pins 1-2
Disable onboard modem	Short pins 2-3



JP703: Enable/disable onboard audio

Use this 3-pin jumper to enable or disable the onboard audio system. If you install a sound card, you must disable the onboard audio subsystem. If you use this jumper to disable the audio subsystem, it automatically disables the onboard fax/modem, even if the fax/modem jumper is enabled.

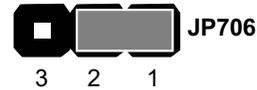
Function	Jumper Setting
Disable onboard audio/modem	Short pins 1-2
Enable onboard audio	Short pins 2-3



JP706: Enable/disable onboard LAN

Use this 3-pin jumper to enable or disable the onboard LAN.

Function	Jumper Setting
Enable onboard LAN	Short pins 1-2
Disable onboard LAN	Short pins 2-3

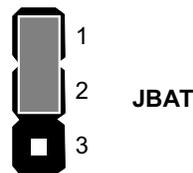


JBAT: Clear CMOS Memory

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

Return the jumper cap to the Normal operation setting. Reconnect the power cables and start the system. When the POST starts, press the delete key to start the BIOS Setup Utility and reload BIOS optimal settings. Refer to Chapter 3 for information on BIOS.

Function	Jumper Setting
Normal operation	Short pins 1-2
Clear CMOS memory	Short pins 2-3

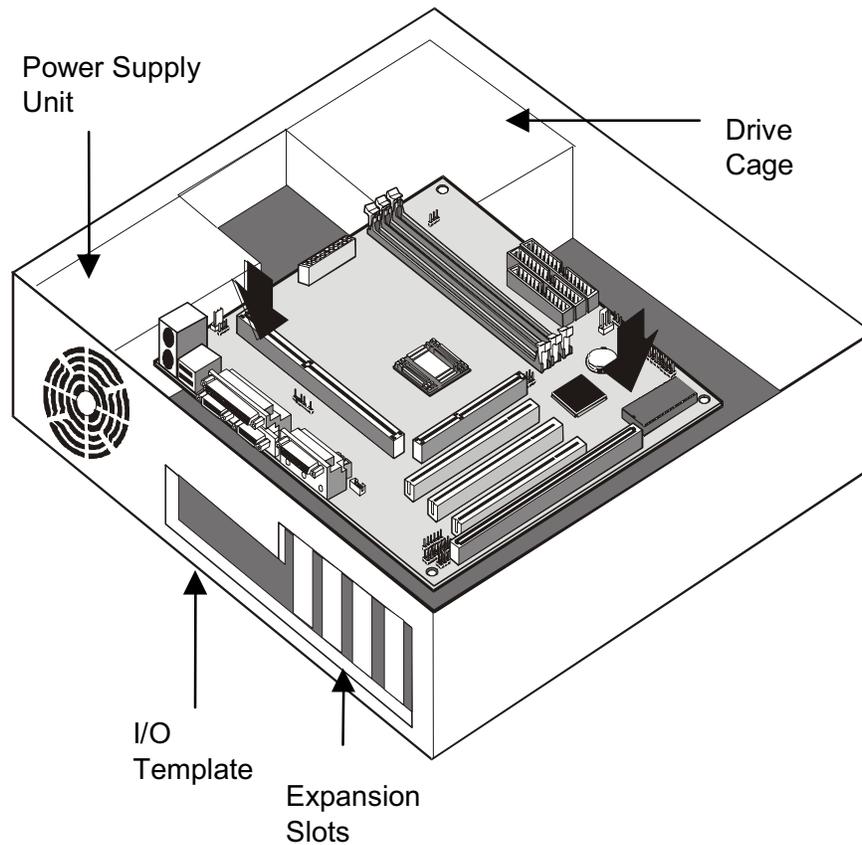


Installing the Mainboard in the Case

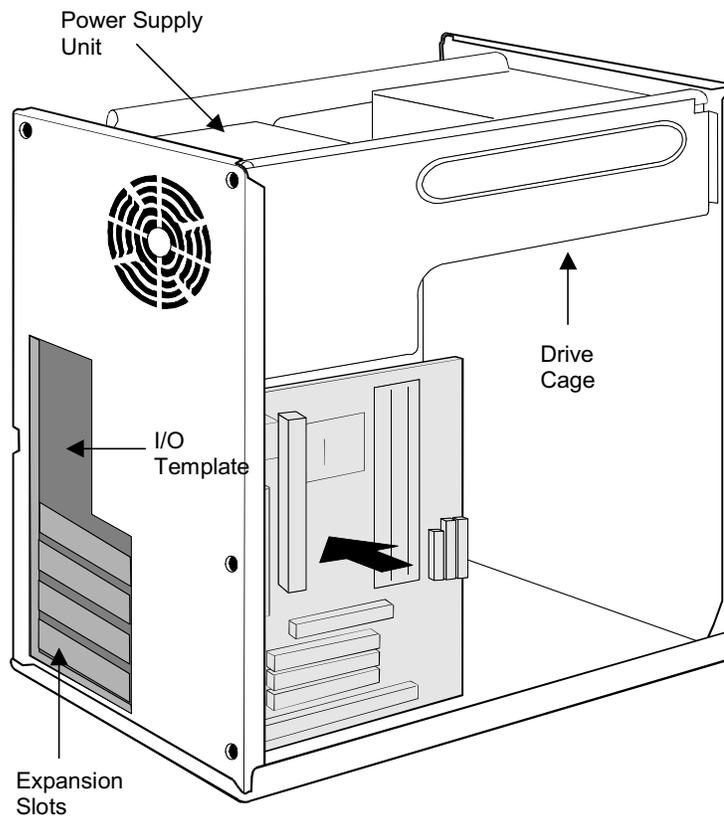
The mainboard is drilled with a series of holes. Most system cases have mounting brackets installed in the case, which correspond to the holes in the mainboard. You can secure the mainboard in the system case by placing the mainboard over the mounting brackets and driving screws through the mainboard into the mounting brackets.

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

The illustration below shows a mainboard being installed in a standard desktop case.

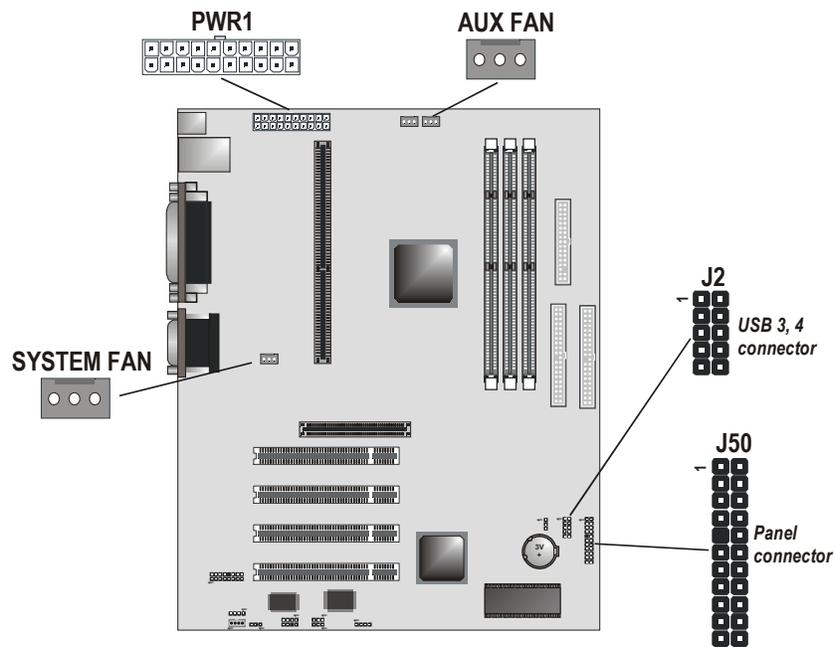


The illustration below shows a mainboard being installed into a tower-type case.



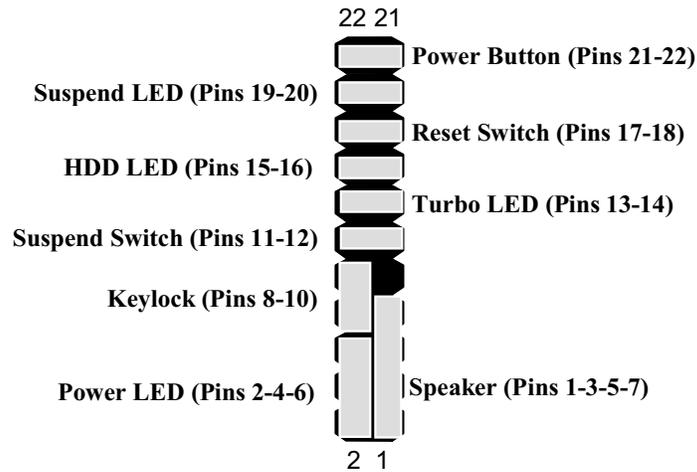
Connecting Internal Components

After you have installed the mainboard into the system case, connect the power cable from the case power supply unit to the mainboard power connector PWR1. Connect the case/power fans (if your case has them) to the 12V power supply connectors SYSTEM FAN and AUX FAN on the mainboard. Connect the case switches and indicators to the J50 connector on the mainboard. If your case has built-in USB ports, connect them to the USB port connector J2.



J50 Panel Connector

The mainboard J50 panel connector has a standard set of switch and indicator connectors that are commonly found on ATX system cases. Use the illustration below to make the correct connections to the case switches and indicators.



Function	Pins
Speaker	1, 3, 5, 7
Power LED Indicator	+2, 4, 6
Keylock	8, 10
Suspend Switch	11, 12
Turbo LED Indicator	+13, 14
Hard Disk LED Indicator	+15, 16
Reset Switch	17, 18
Suspend LED Indicator	+19, 20
Power Button	21, 22

Note: The plus sign (+) indicates a pin which must be connected to a positive voltage.

Installing Other Hardware

Start installing the essential hardware required to get your system started.

Installing the Processor

This mainboard has a Slot A processor slot that supports several different kinds of Slot A processors. To choose a processor, you need to consider the performance requirements of the system and the price of the processor. 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. Higher clock speeds and larger amounts of cache memory deliver greater performance.

About Slot A Processors

The Slot A is similar to the elongated slot used by Pentium II's and III's but is reserved for AMD's Athlon processor. The Athlon is the successor to the K6 series and was formerly known as the K7.

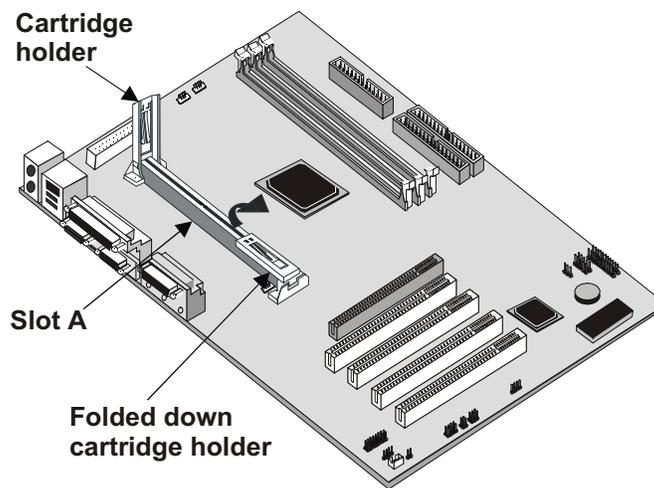
The Athlon is a Pentium III-class CPU. The first models were introduced in 1999 with clock speeds from 500 MHz to 650 MHz. Using a 100 MHz DDR bus, the Athlon contains the MMX multimedia instructions used in Pentium MMX and Pentium II CPUs along with an enhanced version of AMD's 3DNow 3-D instruction set for faster rendering of games and animation.

New Slot A Processors

This mainboard is designed to support Slot A processors that have not yet been released. Ask your mainboard vendor for an up-to-date list of Slot A processors that are supported by this mainboard.

Installing a Slot A Processor

This board has a Slot A processor cartridge slot. The slot must be installed with a cartridge holder that supports the processor cartridge. The cartridge holder may be already installed on your mainboard with the support brackets folded over. In this case, simply pull the support brackets into the upright position.



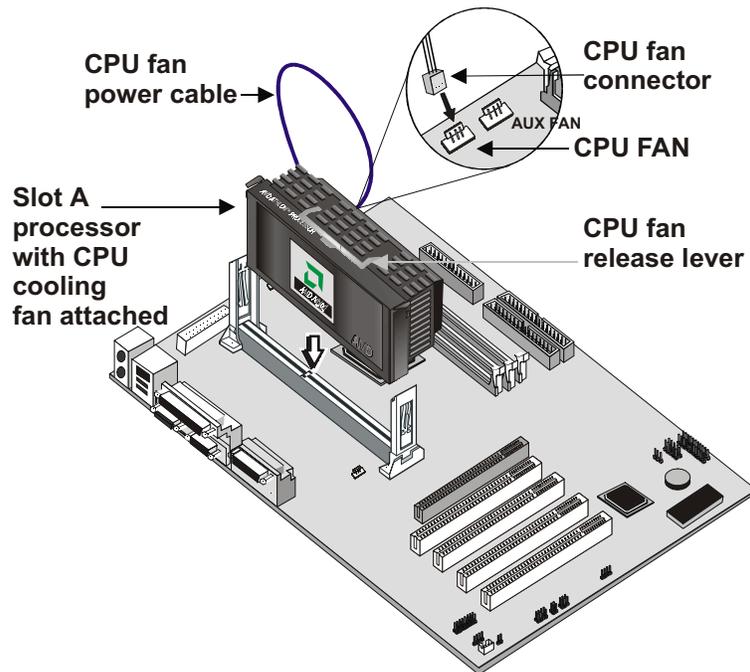
If the cartridge holder is not already installed, install it onto the Slot A. Some cartridge holders are in two parts, one part for each end of the Slot A. Other cartridge holders are a single assembly that sits over the whole length of the Slot A.

Some cartridge holders are secured in place with screws. If you have this kind of cartridge holder, don't overtighten the screws as this can stress the mainboard. Some cartridge holders are secured in place with plastic pins. In this case, place the mainboard on a foam plastic mat when you push the pins into place.

Some cartridge holders also include a support bar for the processor heat sink. This bar installs to the side of the cartridge holder. Some processor cartridges have support struts for the heatsink, which lock into the support bar. The documentation supplied with the processor shows how to do this.

Installing the Processor Cartridge

After you have installed the cartridge holder, follow the instructions supplied with the processor cartridge to insert the cartridge into the holder. If the processor has a cooling fan, connect the power cable of the fan to the power supply connector on the mainboard CPU FAN.



BIOS automatically configures the mainboard to deliver the correct clock speed and the correct system bus for the kind of processor that you have installed.

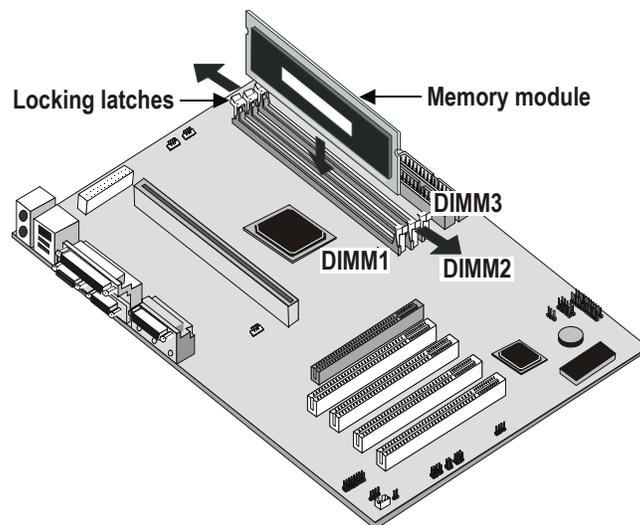
For more information on the BIOS Setup Utility, refer to Chapter 3.

Installing the Memory Modules

For this mainboard, you must use 168-pin 3.3V non-buffered Dual In-line Memory Modules (DIMMs). The memory chips must be standard or registered SDRAM (Synchronous Dynamic Random Access Memory). The memory bus can run at 66 MHz or 100 MHz/133 MHz. If your processor operates over a 100 MHz system bus, you must install PC 100 or PC 133 memory that also operates over a 100/133 MHz bus.

There are three slots for memory modules. You must install at least one module, and it makes no difference which slot you use to install the module.

1. Locate the DIMM slots on the mainboard.



2. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
3. Push the locking latches on each side of the DIMM slot down.
4. Install the DIMM module into the slot and press it carefully but firmly down so that it seats correctly. The latches at either side of the slot will be levered upwards and latch on to the edges of the DIMM when it is installed correctly.

Installing a Hard Disk Drive and CD-ROM

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

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 red stripe on the cable.*

About IDE Devices

Your mainboard has a primary IDE channel interface (IDE1) and a secondary IDE interface (IDE2). The mainboard ships with one IDE ribbon cable, which supports one or two IDE devices. All IDE devices have jumpers or switches that can be used to set the IDE device as MASTER or SLAVE.

If you install two IDE devices on one cable, you must make sure 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.

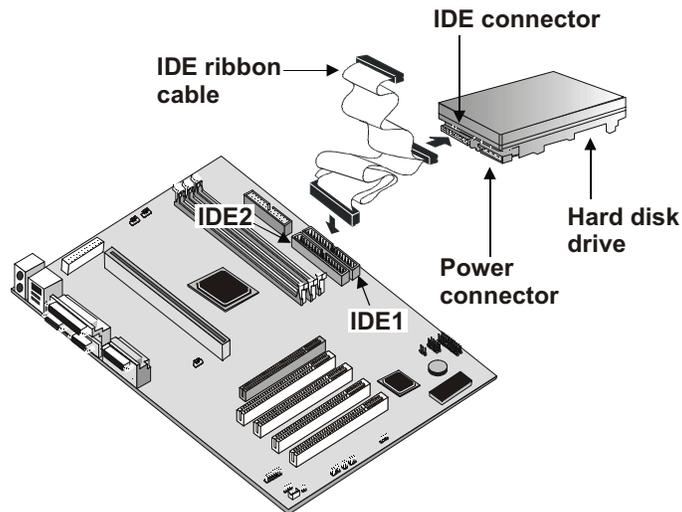
If you want to install more than two IDE devices, obtain a second IDE cable and you can add two more devices to the secondary IDE channel. If there are two devices on the cable, make one MASTER and one SLAVE.

About UDMA

This board supports Ultra DMA 33/66. UDMA is a technology that speeds the performance of devices in the IDE channel. We recommend that you install IDE devices that support UDMA, and use IDE cables that support UDMA.

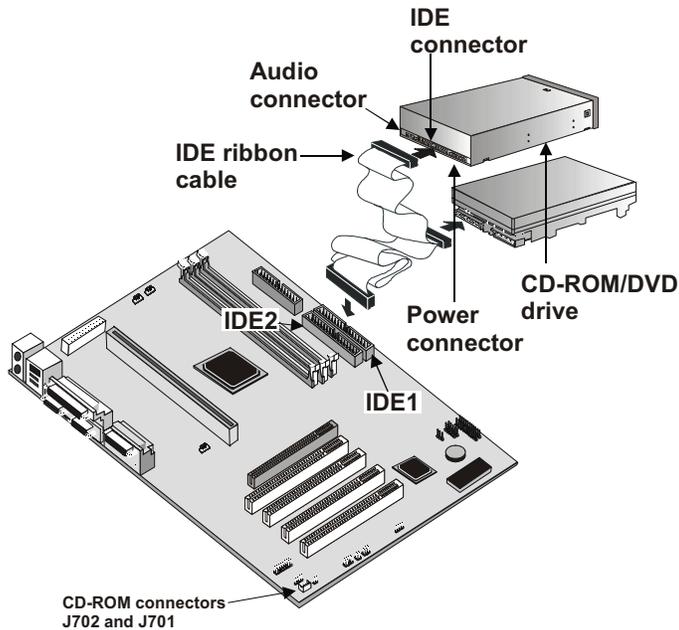
Installing a Hard Disk Drive

1. Install the hard disk drive into the drive cage in your system case.
2. Plug the IDE cable into the primary IDE channel on the mainboard IDE1.
3. Plug one of the connectors on the IDE cable into the IDE connector on the back edge of the hard disk drive. It doesn't matter which connector on the cable that you use. Make sure that you have the pin-1 side of the cable matched with the pin-1 side of the connector.
4. Plug a power cable from the case power supply unit into the power connector on the back edge of the hard disk drive.
5. When you first start up your system, go immediately to the BIOS Setup Utility and use the IDE Hard Disk Auto Detect feature to configure the IDE devices that you have installed. See Chapter 3 for more information.



Installing a CD-ROM/DVD Drive

1. Install the CD-ROM/DVD drive into the drive cage in your system case. Plug the IDE cable into the primary IDE channel on the mainboard IDE1.
2. Plug one of the connectors on the IDE cable into the IDE connector on the back edge of the CD-ROM/DVD drive. It doesn't matter which connector on the cable that you use. Make sure that you have the pin-1 side of the cable matched with the pin-1 side of the connector.

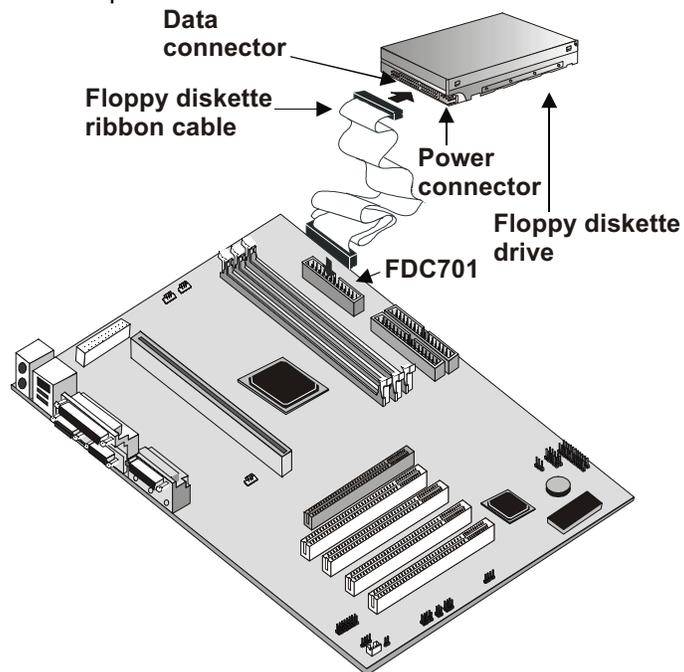


3. Plug a power cable from the case power supply unit into the power connector on the back edge of the CD-ROM/DVD drive.
4. Use the audio cable provided with the CD-ROM/DVD drive to connect the audio connector on the rear edge of the CD-ROM/DVD drive to the one of the two audio-in connectors J701 and J702 on the mainboard.
5. When you first start up your system, go immediately to the BIOS Setup Utility and use the IDE Hard Disk Auto Detect feature to configure the IDE devices that you have installed. See Chapter 3 for more information.

Installing a Floppy Diskette Drive

The mainboard has a floppy diskette drive interface and it ships with a diskette drive ribbon cable that supports one or two floppy diskette drives. You can install a 5.25-inch and a 3.5-inch drive with various capacities.

1. Install the floppy diskette drive into the drive cage in your system case. Plug the diskette drive cable into the diskette drive interface on the mainboard FDC701.
2. Plug one of the connectors on the diskette drive cable into the data connector on the back edge of the floppy diskette drive. Make sure that you have the pin-1 side of the cable matched with the pin-1 side of the connector.
3. Plug a power cable from the case power supply unit into the power connector on the back edge of the diskette drive.
4. When you first start up your system, go immediately to the BIOS Setup Utility and use *Standard CMOS Setup* to configure the floppy diskette drives that you have installed. See Chapter 3 for more information.

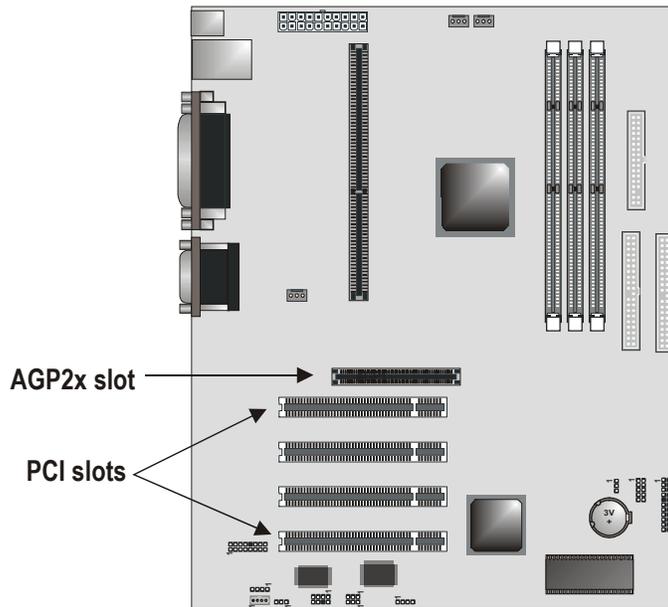


Using the Expansion Slots

This mainboard has four 32-bit PCI expansion slots and one AGP2X slot.

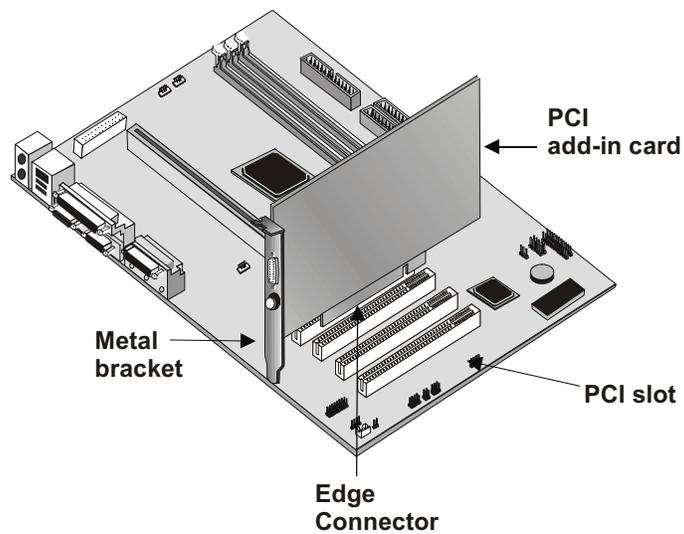
PCI Slots: The PCI slots can be used to install add-in cards that have the 32-bit PCI (Peripheral Components Interconnect) interface.

AGP2X Slot: The AGP slot can be used to install a graphics adapter that supports the AGP2X specification and has the AGP edge connector.



5. Before installing an expansion 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.
6. Remove the blanking plate from the slot in the system case that corresponds to the expansion slot that you are going to use.

7. Install the edge connector of the add-in card into the expansion slot. Press down quite firmly to ensure that the edge connector is correctly seated in the slot.
8. Secure the metal bracket of the card in the empty slot in the system case with a screw.
9. For some add-in cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-in card.



Installation Options and Extension Brackets

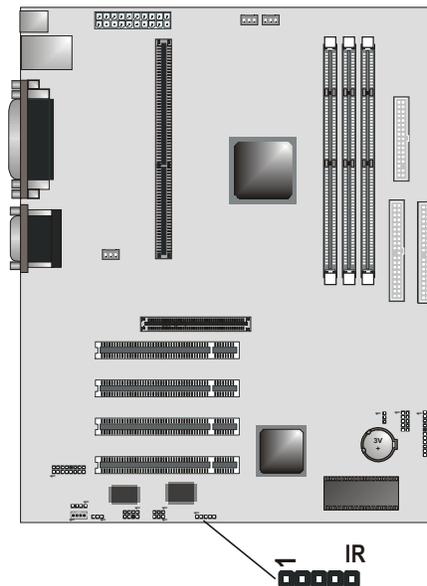
This mainboard has special connectors that allow you to add optional features to your system. You can install the following items:

- Infrared port
- Fax/modem DAA module
- 24-bit digital audio extension bracket (SPDIF)
- USB module

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

Infrared Port

This option can be purchased from third-party vendors.

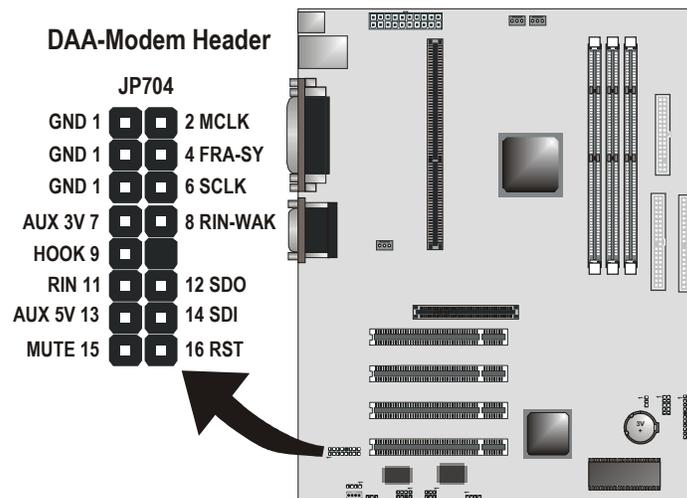


1. If you are installing an optional serial infrared port, connect the cable from the optional IR port to the IR1 connector on the mainboard.
2. After you have connected the cable, secure the optional IR port to the appropriate place on your system case.

Note: An IR port and a second serial port use the same resources, and they may use some of the resources required by a fax/modem card. If you have more than one of these items installed, you may not be able to use them at the same time. You can use the Features Setup option of the BIOS Setup Utility to switch resources between an IR port and a second serial port. See Chapter 3 for more information.

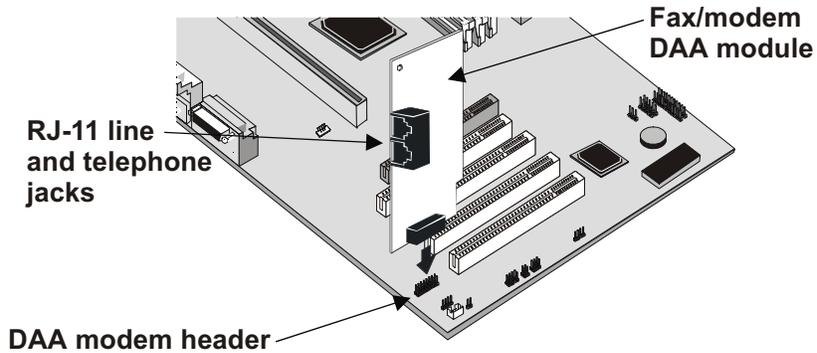
Fax/Modem Module

The fax/modem DAA module plugs directly into the mainboard in line with an expansion slot opening in the system case. When you remove the slot cover from the system case, you can access the LINE and TEL RJ-11 connectors on the metal edge of the fax/modem DAA module.



Follow these instructions to attach the fax/modem DAA module:

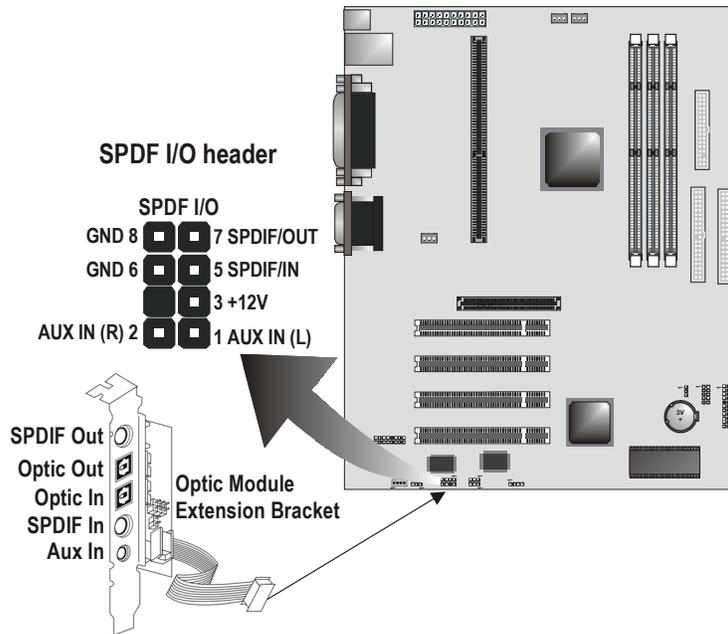
1. Remove the appropriate slot cover.
2. Locate the DAA modem header on the mainboard.



3. Plug the Fax/Modem DAA module into the DAA header.

Digital Audio Extension Bracket (SPDIF)

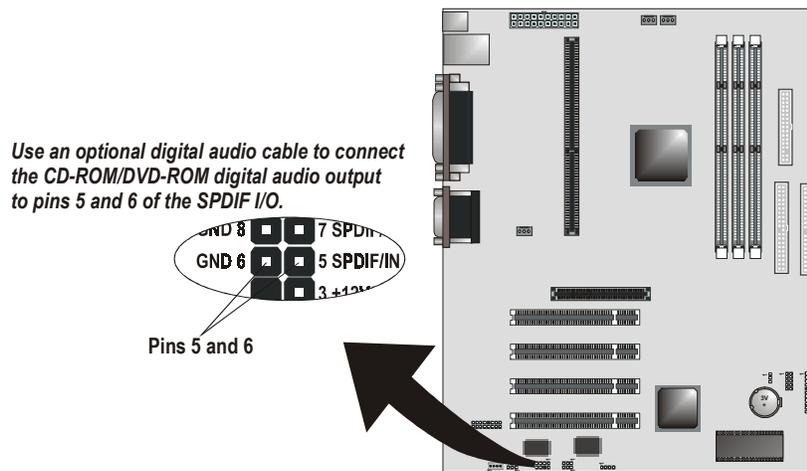
You can purchase an optional 24-bit digital audio extension bracket. Use the audio RCA jacks to connect to digital audio devices. If your CD-ROM/DVD drive has digital audio output, connect it to the input pins of the SPDIF connector.



1. On the mainboard, locate the SPDIF I/O header for this bracket.
2. Plug the cable from the bracket into the SPDIF I/O header.
3. In the system case, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

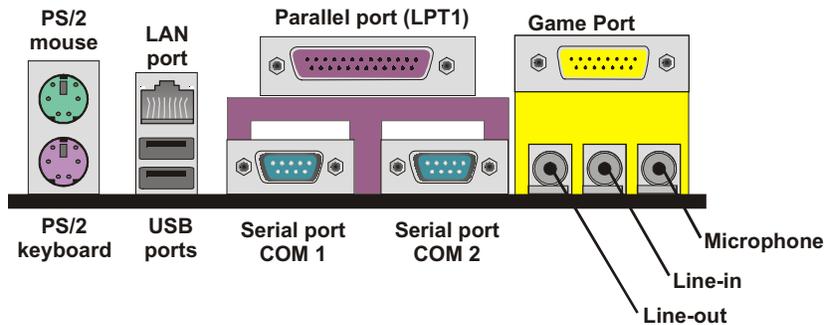
Internal Digital Audio

If you have an optional internal digital audio cable, you can also use it to connect the digital audio output connector of a CD-ROM or DVD-ROM drive to pins 5 and 6 of SPDIF I/O.



Making External Connections

After you have installed the mainboard, make the connections to the external ports.



1. The mainboard has a stack of two PS/2 mini-DIN ports. The upper port can be used by a PS/2 mouse or pointing device. The lower port can be used by a PS/2 keyboard.
2. The LAN port can be used to connect your system to a Local Area Network hub.
3. LPT1 is a parallel port that can be used by printers or other parallel communications devices. The system identifies the parallel port as LPT1.
4. You can use the game port to connect a joystick or a MIDI device to your system.
5. Three audio ports are provided. The left jack is for a stereo line-out signal. The middle jack is for a stereo line-in signal. The right jack is for a microphone.
6. COM1 and COM2 are serial ports that can be used by serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3, and COM2 is identified by the system as COM2/4.
7. Connect USB devices to the USB ports.

External Connector Color Coding

To help identify the external connectors, many connectors now use standard colors as shown in the table below.

Connector	Color
Analog VGA	Blue
Audio line-in	Light blue
Audio line-out	Lime
Digital monitor/flat panel	White
IEEE 1394	Grey
LAN	Black
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, etc.	None

Chapter 3: BIOS Setup

About the BIOS Setup Utility

This chapter explains how to use and modify the BIOS Setup Utility that is stored on the mainboard. The Setup Utility stores data about the mainboard components and the configuration of devices that are connected to it. This information is used to test and initialize components at startup and to make sure everything runs properly when the system is operating.

The Setup Utility is installed with a set of default values. You will probably have to make changes to the Setup Utility whenever you add new components to your system (such as new disk drives). You may be able to increase system performance by changing some of the timing values in the Setup Utility, but this can be limited by the kind of hardware you are using (for example the rating of your memory chips). In certain circumstances, the system may generate an error message that asks you to make changes to the Setup Utility. This happens when the system finds an error during the POST (Power On Self Test) that it carries out at startup.

If the Setup Utility configuration is incorrect, it may cause the system to malfunction. It can even stop your computer from booting properly. If this happens, you can use the clear CMOS jumper to clear the CMOS memory used to store the configuration information (see page 16), 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.

Starting the Setup Utility

You can only start the Setup Utility shortly after the computer has been turned on. A prompt appears on the computer display that says “Hit if you want to run SETUP”. When you see this prompt, press the **Delete** key and the system will start the Setup Utility and display the main menu of the utility.

AMIBIOS SIMPLE SETUP UTILITY – VERSION 1.20e (C) 2000 American Megatrends, Inc. All rights Reserved			
Standard CMOS Setup		Features Setup	
Advanced Setup		Hardware Monitor	
Power Management Setup		Change Password	
PCI / Plug and Play Setup		Exit	
Load Optimal Settings			
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
Standard CMOS setup for changing time, date, hard disk type, etc.			

Using the Setup Utility

You can use the cursor arrow keys to highlight any of the options on the main menu. 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 lead to submenus of items with installed values. In these submenus, use the cursor arrow keys to highlight the items, and then use the **PgUp** and **PgDn** keys to cycle through the alternate values for each of the items. Other options on the main menu lead to dialog boxes which 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.

The following table outlines the BIOS menu commands:

Key	Function
Esc	Escape key: Exits the current menu
↑ ↓ → ←	Cursor arrow keys: Scrolls through the items on a menu
+/-/PU/PD	Plus, minus, Page Up and Page Down keys: Modifies the selected field's values
F1	F1 key: Displays a screen that shows the available options for a field
Shift + F2	Shift and F2 key: Cycles through the different menu colors
F5	F5 key: Loads previously saved values to BIOS
F6	F6 key: Loads a standard set of values for troubleshooting purposes
F7	F7 key: Loads an optimum set of values for peak performance
F10	F10 key: Saves the current configuration and exits setup

How to Flash a New CMOS

You can download updated CMOS for this mainboard from the manufacturer's web site. New CMOS may provide support for new peripherals, improvements in performance or fixes for known bugs. Install new CMOS as follows:

1. Some mainboards have a Flash CMOS jumper that protects the current CMOS from being changed or overwritten. If your mainboard has this jumper, change the setting to allow flashing new CMOS.
2. Some Setup programs have an item called Firmware Write Protect that prevents the CMOS from being overwritten. If your BIOS Setup Utility has this item (check *Advanced Setup*) disable it for the present.
3. Your computer must be running in a real-mode DOS environment, not the DOS window of Windows NT or Windows 95/98. We recommend that you create a bootable formatted DOS system (floppy) diskette.
4. Locate the flash memory utility on the support CD-ROM named AMI817.EXE. Copy this file to the system diskette.
5. Copy the new CMOS file that you downloaded from the manufacturer's web site to the system diskette.
6. Turn off your computer and insert the system diskette in your computer's diskette drive. You might need to run the BIOS Setup Utility and change the boot priority items in *Advanced Setup* to force your computer to boot from the floppy diskette drive first.
7. At the A:\ prompt, type in the filename *AMIF817xxxx.ROM* and press **Enter**.
8. Follow the onscreen directions to flash the new CMOS.
9. When the installation is complete, remove the system diskette from the diskette drive and restart your computer. If your mainboard has a Flash CMOS jumper, don't forget to reset the jumper to protect the newly installed CMOS from being overwritten.

Standard CMOS Setup Option

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

AMIBIOS SETUP - STANDARD CMOS SETUP									
(C) 2000 American Megatrends, Inc. All rights Reserved									
Date (mm:dd:yy) : Mon, Apr 7 2000									
Time (hh:mm:ss) : 8:38:16									
						LBA	Blk	PIO	32Bit
	Type	Size	Cyln	Head	WPcom	Sec	Mode	Mode	Mode
Pri Master	: Auto								On
Pri Slave	: Auto								On
Sec Master	: Auto								On
Sec Slave	: Auto								On
Drive A: 1.44 MB 3.5 in									
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 and Time

The Date and Time items show the current date and time held by your computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

Pri/Sec Master/Slave

Default: None

Your computer has two IDE channels (Primary and Secondary) and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel.

If you leave each item at *Auto*, the system will automatically detect and configure any IDE devices it finds. If it fails to find a hard disk drive, change the value to *Manual* and then manually configure the drive by entering the characteristics of the drive in the items below (Size, Cylinder, Head, Precomp, etc.). Refer to your drive's documentation or look on the drive if you need to obtain this information. If no device is installed, change the value to *None*.

Note: Before attempting to configure a hard disk drive, make sure you have the configuration information supplied by the manufacturer of your hard drive. Incorrect settings can result in your system not recognizing the installed hard disk drive.

IDE HDD Auto-Detection

Press **F3** if you want the Setup Utility to automatically detect and configure a hard disk drive on the IDE channel.

Floppy Drive A/DriveB Default: 1.44M, 3.5 in./Not Installed

These items define the characteristics of any diskette drive attached to the system. You can connect one or two diskette drives.

Advanced Setup Option

This option displays a table of items that defines advanced information about your system. You can make modifications to most of these items without introducing fatal errors to your system.

AMIBIOS SETUP - ADVANCED SETUP (C) 2000 American Megatrends, Inc. All rights Reserved			
Trend ChipAwayVirus	Enabled	Spread Spectrum	Disabled
Quick Boot	Enabled	Stop Un-used PCI/DIMM CLK	Enabled
1st Boot Device	IDE-0		
2nd Boot Device	Floppy		
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		
Primary Display	VGA/EGA		
Password Check	Setup		
Boot To OS/2 Over 64MB	No		
Internal Cache	Enabled		
External Cache	Enabled		
System BIOS Cacheable	Disabled	Esc : Quit	↑ ↓ → ← Select Item
Graphics Aperture Size	64M	F1 : Help	PU/PD/+/- : Modify
DRAM Integrity Mode	Disabled	F5 : Old Values	(Shift) F2 : Color
Memory Hole	Disabled	F6 : Load BIOS Defaults	
DRAM Burst Refresh	Enabled	F7 : Load Setup Defaults	

Trend ChipAwayVirus ***Default: Enabled***

When this item is enabled, it provides some protection against viruses that try to write to the boot sector and partition table of your hard disk drive. This item is *Enabled* by default. You need to disable it so that you can install an operating system. We recommend that you enable virus warning protection as soon as you have installed your disk with an OS.

Quick Boot ***Default: Enabled***

You can enable this item to shorten the power on testing (POST) and have your system start up a little faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

1st/2nd Boot Device ***Default: IDE-0/Floppy***

Use these two items to select the priority and order of the devices that your system searches for an operating system at startup time.

Try Other Boot Devices ***Default: Yes***

If you enable this item, the system will search all other possible locations for an operating system if it fails to find one in the devices specified under the first and second boot devices.

S.M.A.R.T. for Hard Disks ***Default: Disabled***

The S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the hard disk drive and the host computer. The hard disk drive software monitors the internal performance of the motors, media, heads, and electronics of the drive. The host software monitors the overall reliability status of the drive. If a device failure is predicted, the host software, through the Client WORKS S.M.A.R.T. applet, warns the user of the impending condition and advises appropriate action to protect the data.

Boot Up NumLock ***Default: On***

This item defines if the keyboard NumLock key is active when your system is started.

Floppy Drive Swap **Default: Disabled**

If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.

Floppy Drive Seek **Default: Enabled**

If this item is enabled, it checks the geometry of the floppy disk drives at startup time. You don't need to enable this item unless you have a legacy diskette drive with 360K capacity.

Primary Display **Default: VGA/EGA**

Use this item to determine the display devices for the primary display of your computer. You should leave this item at the default value VGA/EGA.

Password Check **Default: Setup**

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

Boot to OS/2 Over 64MB **Default: No**

This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default setting.

Internal Cache **Default: Enabled**

All the processors that can be installed in this mainboard use internal level 1 (L1) cache memory to improve performance. Leave this item at the default value *Enabled* for better performance.

External Cache **Default: Enabled**

Most processors that can be installed in this system use external level 2 (L2) cache memory to improve performance. Leave this item at the default value *Enabled* for better performance.

System BIOS Cacheable **Default: Disabled**

When set to "Enabled" (default), the System BIOS will be cached for faster execution.

Graphics Aperture Size **Default: 64M**

This item defines the size of the aperture if you use an AGP graphics adapter. It refers to a section of the PCI memory address range used for graphics memory. We recommend that you leave this item at the default value.

DRAM Integrity Mode **Default: Disabled**

This item enables or disables ECC (Error Correction Code) error checking on the CPU cache memory. We recommend that you leave this item at the default value.

Memory Hole **Default: Disabled**

This item can be used to reserve memory space for some ISA expansion cards that require it.

DRAM Burst Refresh **Default: Enabled**

Use this item to set the burst refresh for the installed DRAM.

Spread Spectrum **Default: Disabled**

If you enable spread spectrum, the EMI (electromagnetic interference) generated by the system is greatly reduced.

Stop Un-used PCI/DIMM CLK **Default: Enabled**

If you enable this item, the system does not generate clock signals for unused PCI or DIMM slots, so that EMI (electromagnetic interference) is reduced.

Power Management Setup Option

This option displays items that let you control the system power management. Modern operating systems take care of much of the power management. This mainboard supports ACPI (Advanced Configuration and Power Interface). The system has various power saving modes including powering down the hard disk drive, turning off the video, suspending to RAM, and a software power down that allows the system to be automatically resumed by certain events.

AMIBIOS SETUP – POWER MANAGEMENT SETUP (C) 2000 American Megatrends, Inc. All rights Reserved		
Power Management/APM	Disabled	Esc: Quit ↑ ↓ → ← Select Item : Select Item F1 : Help PU/PD+/- : Modify F5 : Old Values (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
Green Monitor Power State	Suspend	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Suspend	
Suspend Time Out (Minute)	Disabled	
Ring On Power On	Disabled	
RTC Alarm Power On	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	

Power Management/APM

Default: Disabled

The mainboard supports both APM (Advanced Power Management) and ACPI (Advanced Configuration and Power Interface) power management specifications.

APM is a programming interface from Intel and Microsoft for battery-powered computers that lets programs communicate power requirements to slow down and speed up components.

ACPI is a power management specification developed by Intel, Toshiba and Microsoft that makes hardware status information available to the operating system. ACPI enables a PC to turn its peripherals on and off for improved power management especially in portables. It also allows the PC to be turned on and off by external devices, so that the touch of a mouse or the press of a key will "wake up" the machine.

Green Monitor Power State

Default: Suspend

This item defines which power-saving mode is required to trigger the power management operations of a green monitor.

Video Power Down Mode **Default: Suspend**

This item defines which power-saving mode is required to power down the monitor.

Hard Disk Power Down Mode **Default: Suspend**

This item defines which power-saving mode is required to power down the hard disk drive.

Suspend Time Out (Minute) **Default: Disabled**

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

Ring On Power On **Default: 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 fax/modem. You must use an ATX power supply in order to use this feature.

RTC Alarm Power On **Default: Disabled**

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). You must use an ATX power supply in order to use this feature. When set to "0" (zero) for the day of the month, the alarm will power on your system every day at the specified time.

RTC Alarm Date **Default: 15**

Enables you to set the date of the wake-up alarm.

RTC Alarm Hour **Default: 12**

Enables you to set the hour of the wake-up alarm.

RTC Alarm Minute **Default: 30**

Enables you to set the minute of the wake-up alarm.

RTC Alarm Second **Default: 30**

Enables you to set the second of the wake-up alarm.

PCI/Plug and Play Setup Option

This option displays a table of items that configures how Plug and Play and PCI expansion cards operate in your system. The PCI buses on the mainboard use system IRQs (Interrupt Requests) and DMAs (Direct Memory Access). You must set up the IRQ and DMA assignments correctly through the PCI/Plug and Play Setup menu; otherwise, the mainboard will not work properly. Selecting "PCI/Plug and Play Setup" on the main menu displays this screen:

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP (C) 2000 American Megatrends, Inc. All rights Reserved	
Plug and Play Aware O/S	Yes
Primary Graphics Adapter	PCI
Assign IRQ for VGA	Yes
Esc : Quit ↑ ↓ → ← Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

Plug and Play Aware O/S

Default: Yes

Setting this option to "Yes" allows the Plug and Play OS (instead of CMOS) to assign the system resources such as IRQ and I/O address to the ISA Plug and Play device.

Primary Graphics Adapter

PCI

Use this item to determine if your primary graphics adapter is integrated on the mainboard or installed on an add-in graphics card.

Allocate IRQ to PCI VGA

Default: Yes

Names the interrupt request (IRQ) line assigned to the USB/VGA (if any) on your system. Activity of the selected IRQ always awakens the system.

Features Setup Option

This option displays a list of items that defines the operation of some peripheral components on the system's input/output ports.

AMIBIOS SETUP – FEATURES SETUP (C) 2000 American Megatrends, Inc. All rights Reserved		
OnBoard FDC	Auto	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	3F8h/COM1	
OnBoard Serial Port2	2F8h/COM2	
OnBoard Ir Port	Disabled	
Ir Mode	HPSIR	
Ir Port IRQ	N/A	
OnBoard Parallel Port	378h	
Parallel Port Mode	Normal	
Parallel Port IRQ	7	
Parallel Port DMA	N/A	
OnBoard IDE	Both	
USB Function	Enabled	
USB Function for DOS	Disabled	
Ultra DMA Support	Disabled	

OnBoard FDC **Default: Auto**

This option enables the onboard floppy disk drive controller.

OnBoard Serial Port1/Serial Port2 **Default: Auto**

These options are used to assign the I/O addresses for the two onboard serial ports.

OnBoard Ir Port **Default: Disabled**

Use this field to set a COM port address for the onboard infrared port.

Ir Mode **Default: HPSIR**

This field is available if the OnBoard Serial Port2 field is set to any option but "Disabled." UART Mode Select enables you to select the infrared communication protocol—HPSIR or ASKIR. HPSIR is Hewlett Packard's infrared communication protocol with a maximum baud rate up to 115.2 Kbps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6 Kbps.

The UART mode setting depends on which type of infrared module is used in the system. When set to "ASKIR" or "HPSIR," UART 2 is used to support the infrared module connected on the mainboard.

Ir Port IRQ ***Default: N/A***

This field displays the IRQ that is assigned to the onboard IR device.

OnBoard Parallel Port ***Default: 378h***

Use this item to enable or disable the onboard LPT1 parallel port, and to assign a port address. The Auto setting will detect an available address.

Parallel Port Mode ***Default: EPP***

Enables you to set the data transfer protocol for your parallel port. There are four options: Normal (Standard Parallel Port), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port) and ECP+EPP.

Normal allows data output only. Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) are bi-directional modes, allowing both data input and output. ECP and EPP modes are only supported with EPP and ECP aware peripherals.

Parallel Port IRQ ***Default: Auto***

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

Parallel Port DMA ***Default: Auto***

When the onboard parallel port is set to ECP mode, the parallel port has the option to use DMA 3 (default), DMA 1, or DMA 0.

OnBoard IDE ***Default: Both***

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

USB Function ***Default: Enabled***

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

USB Function for DOS ***Default: Disabled***

Enable this item if you plan to use the USB ports on this mainboard in a DOS environment.

Ultra DMA Support**Default: Disabled**

Use this item to set Ultra DMA support for IDE devices on the Primary or Secondary IDE channels. You must enable this item or UDMA devices will not work at their intended speed.

If you make any changes to the onboard FDD controller, serial ports or parallel ports in the Setup Utility, save the changes and turn off the system. After powering up the system, ensure that the changes have taken effect.

Hardware Monitor Page

On mainboards that support hardware monitoring, this screen lets you monitor the parameters for critical voltages, critical temperatures, and fan speeds. You cannot make any changes to these fields. They are display only:

AMIBIOS SETUP – HARDWARE Monitor	
(C) 2000 American Megatrends, Inc. All rights Reserved	
--- System Hardware Monitor ---	
CPU TEMP.	30°C/86°F
System TEMP.	24°C/75°F
CPU FAN Speed	
System FAN Speed	
Vcc	5.000 V
Vcc3	3.300 V
Vcore	1.650 V
+12V	12.000 V
Esc: Quit ↑ ↓ → ← Select Item	
F1 : Help PU/PD/+/- : Modify	
F5 : Old Values (Shift) F2 : Color	
F6 : Load BIOS Defaults	
F7 : Load Setup Defaults	

System Component Characteristics

The following information is displayed:

- CPU temperature in degrees Fahrenheit and Celsius
- System temperature in degrees Fahrenheit and Celsius
- CPU fan speed (in RPMs)
- Case fan speed (in RPMs)
- VCC SRAM (CPU L2 cache voltage)
- Vcc3 (onboard 3.3 volt)
- Vcore (CPU core voltage)
- Power supply's ±12 volt

Change Password Option

This item can be used to set a password. You can set the password to prohibit unauthorized users from booting up the system or entering BIOS Setup. Refer to the Password Check item on page 44 for details.

To set a password, follow these steps:

1. Highlight the item “Change Password” on the main menu and press **Enter**.
2. The password dialog box appears.

Enter Password:

3. If you are setting a new password, type in the password. You cannot use more than eight characters or numbers. The Change Password item differentiates between upper and lower case characters. Press **Enter** after you have typed in the password. If you are deleting a password that is already installed just press **Enter** when the password dialog box appears. You see a message that indicates that the password has been disabled.
4. The system will prompt you to confirm the new password.

Confirm Password:

5. Type the password again and press **Enter**, or just press **Enter** if you are deleting a password that is already installed.
6. If you typed the password correctly, the password will be installed.

To disable the password, press the **<Enter>** key instead of entering a new password when the “Enter Password” dialog box appears. A message appears confirming that the password has been disabled:

PASSWORD DISABLED !!!
Press any key to continue . . .

Load Optimal Settings Option

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

Use this option if you have changed your system and it does not operate correctly or does not power up. When you select “Load Optimal Settings” from the main menu, you see the following screen:

Load high performance settings (Y/N)? **N**

Press the **Y** key and then **Enter** to install the defaults. Press the **N** key 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 the **F6** key.

Load Best Performance Settings Option

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the BIOS Setup Utility.

Use this option if you want to load the optimal settings for your system. These settings were configured at the factory. When you select “Load Optimized Defaults” from the main menu, you see the following screen:

Load best performance settings (Y/N)? **N**

The defaults loaded only affect the Features Setup, Power Management Setup, PCI/Plug and Play Setup and Features Setup. There is no effect on the Standard CMOS Setup.

Press the **Y** key and then **Enter** to install the defaults. Press the **N** key and then **Enter** to not install the defaults.

The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press the **F7** key.

Exit Option

Highlight this item and press **Enter** to save the changes that you have made in the Setup Utility and exit the setup program.

Save current settings and exit (Y/N)? **N**

Press the **Y** key and then press the **Enter** key if you want to save the new settings. Press **N** and then **Enter** if you don't want to proceed.

Chapter 4: Software

About the Software

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.

Folders for this Mainboard

For this board, you can install software from the following folders:

Utility Folder

You can use the software in the following sub-folders:

- AMIFLASH:** Software to erase and install new revisions of the system BIOS (CMOS)
- PC-CILLIN:** Anti-virus software
- GAMUT:** Audio rack for built-in sound system
- MEDIARING TALK:** Telephony software.
- SUPER VOICE:** Fax/modem software.

CM18X38 Folder

You can use the software from the following sub-folders:

- AUDIO:** Drivers and software for the built-in audio system
- MODEM:** Drivers and software for the built-in fax/modem

K7ASA Folder

You can use the software in the following sub-folders:

- AGP:** AMD miniport driver for AGP video cards.
- IDE:** AMD EIDE driver.
- LANSIS900:** LAN drivers for Windows and Linux.
- AUDIO, MODEM, MONITOR:** These folders are empty. A readme file directs you to an alternate location with the required software.

Running the Support CD-ROM

1. Place the disk in your CD-ROM drive. If you are running Windows with Autoplay enabled, the opening screen of the CD appears automatically:



If the opening screen doesn't appear, double-click the file "autorun.exe" in the \AUTORUN directory.

2. Click *READ ME* to read the latest instructions, and click the item *BROWSE THE CD TITLE* to open Windows Explorer and show the contents of the support CD.
3. Double-click a folder to display the sub-folders.
4. Before installing the software, 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.
5. Some software is installed in separate folders for different operating systems, such as DOS, WIN NT, WIN95/98, etc. Always go to the correct folder for the kind of OS you are using.
6. To install the software, execute a file named SETUP.EXE or INSTALL.EXE by double-clicking the filename and then following the instructions on the screen.

Note: Enable Windows Explorer to display file extensions (for example, EXE).

Utility Folder Installation Notes

AMI Flash Memory Utility

The AMI Flash Memory Utility allows you to update the BIOS file on the mainboard to a newer version. You can download the latest version of the BIOS Setup Utility available for your mainboard from the AMI Web site (www.ami.com).

UTILITY\AMIFLASH\AMIF817.EXE

PC-Cillin Software

The PC-cillin software program provides anti-virus protection for your system. This program is available for:

- DOS – \UTILITY\PC-CILLIN\DOS\PCSCAN.EXE
- Win98 – \UTILITY\PC-CILLIN\WIN98\SETUP.EXE

Anti-virus software is provided for DOS and WIN 98. Browse to the appropriate directory for your operating system. For DOS, copy all the files in the DOS folder to your hard disk drive and run PSCAN to scan your system. For Windows 98, run SETUP to install the application software.

GAMUT

The Gamut audio rack software for the built-in sound system is provided for different languages. Go to the directory \UTILITY\GAMUT; then run SETUP.EXE to install the application software.

MediaRing Talk

To install the MediaRing Talk voice modem software for the built-in modem, go to the directory \UTILITY\MEDIARING TALK; then run MRTALK-SETUP7.2.EXE to install the application software.

Super Voice

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.

CMI8X38 Folder Installation Notes

Audio Drivers and Software

This folder has software and drivers for the sound system that is integrated on this mainboard. Drivers are provided for Windows 95/98, Windows NT, DOS, and LINUX.

The sound drivers allow the system to generate optimal sound effects. Use the drivers listed below:

- DOS & Win3.x – \CMI8X38\AUDIO\DOSDRV\
- Windows 9x – \CMI8X38\AUDIO\W95-98\DRV\
- Windows NT – \CMI8X38\AUDIO\NT40\DRV\
- Linux – \CMI8X38\AUDIO\LINUX\

Audio applications are located in the following folders:

- Windows 9x – \UTILITY\GAMUT\
- Windows 95 – \CMI8X38\AUDIO\W95-98\APP\W95\
- Windows 98 – \CMI8X38\AUDIO\W95-98\APP\W98\
- Windows NT – \CMI8X38\AUDIO\NT40\APP\

DOS Installation

Browse to the DOSDRV folder and run INSTALL.EXE

Windows 95/98 Installation

Specify the path to the driver for your operating system when your system detects the installed audio system. To install the audio applications, browse to the W95-98 folder, and then browse to the APPS folder. Run the SETUP program.

Windows NT 4.0 Installation

1. Click **Start**. Select **Settings** and then **Control Panel**.
2. Double-click the **Multimedia** icon.
3. Select the **Devices** tab.
4. Click the **Add** button.
5. Select the item *"Unlisted or Updated Driver"* in the *"List of Drivers"* list box.

6. Specify the path to the PCI audio NT drivers.
7. Select "*C-Media CM8338 PCI Device*" and click **OK**.
8. Choose the proper I/O or click **OK** for the default setting.
9. Restart the Windows NT system.

To install the audio applications, browse to the NT4 folder, and then browse to the APPS folder. Run the SETUP program.

Linux

To install the audio driver for the Linux system, refer to the readme file in the directory "\Cmi8x38\Audio\Linux."

Fax/Modem Drivers and Software

Install the Modem driver from the sub-folders for Windows 95/98 or Windows NT4.0.

The fax/modem drivers and software are listed here:

- \CMI8X38\MODEM\WIN9XNT4\setup.exe
- \CMI8X38\MODEM\LINUX\
(refer to the README.TXT for installation instructions.)
- \UTILITY\SUPERVOICE\picshell.exe
- \UTILITY\MEDIARINGTALK\mrtalk-setup7.2.exe

Windows 98/95/NT

The modem is a Plug and Play device so Windows will automatically detect the presence of your modem. When the Plug and Play wizard begins to look for modem drivers, click on the button that says **Have Disk** and then browse or type in the path-name to the CMI8X38\MODEM\WIN9XNT4\ folder.

Mainboard (K7ASA) Installation Notes

Most of the sub-folders in this folder are empty, with a short README file giving directions to alternate folders for the appropriate software. One folder contains software that you can install.

AGP

This folder provides an AMD miniport driver for AGP video cards. Refer to the README file in the directory \K7ASA\AGP for installation instructions.

IDE Driver

The IDE Bus Master Driver allows the system to properly manage the IDE channels on the mainboard. You need to install the driver if you are running Windows 9x. To install the IDE Bus Master Driver, go to the directory \K7ASA\IDE; then run EIDE_124.EXE to install the application software.

LANSIS900 Driver

This folder contains SiS630/540 LAN Network Adapter drivers for Windows, DOS, and Linux. To install the LANDSIS900 driver for your OS, go to the directory \K7ASA\LANSIS900; then run SETUP.EXE to install the driver.

Audio, Modem, Monitor

These folders contain README files that direct you to the appropriate location for the Audio, Modem, and Monitor drivers and software. The Audio and Modem procedures were described previously.

The Genesys Logic System Monitor Software is used to control the GL520SM Microprocessor System Hardware Monitor. It can monitor the temperatures, power supply voltages and fan speeds via GL520SM and periodically display the information on the screen. You can use it to specify temperature, voltage and fan speed configurations used by GL520SM. Alarm warning events and polling intervals can also be set by this software.

Using the PCI Audio Software

1. Before you install the PCI Audio CMI8738 drivers, make sure your operating system has been installed, otherwise the onboard PCI audio might be detected as "Other device" by the OS device manager.
2. After the drivers are properly installed, choose the MULTIMEDIA icon in the CONTROL PANEL when you need to use the Software Wave-Table drivers as a MIDI output device. Select the MIDI tab and click **C-media SoftMidi Synthesis (Win98)/Driver (Win95)**; then click **OK** to confirm.
3. A Windows audio application is provided with the PCI Audio CMI8738 drivers, which gives you control over all the audio functions through a user interface that is as simple to use as a home stereo system. We recommend that you use the audio application's mixer to control your computer's audio volume, recording devices and recording gain.
4. If the devices you are using require the MIDI port as the control interface, you need to select the MULTIMEDIA icon in the CONTROL PANEL. Select the MIDI tab and click **CM8738 MPU-401 (Win98)** or **CM8738/C3DX PCI Audio External MIDI Port (Win95)**, and then click **OK** to confirm.
5. For more information, refer to the PCI Audio CMI8738 manual on the CD that ships with this mainboard.

The Four Speakers System

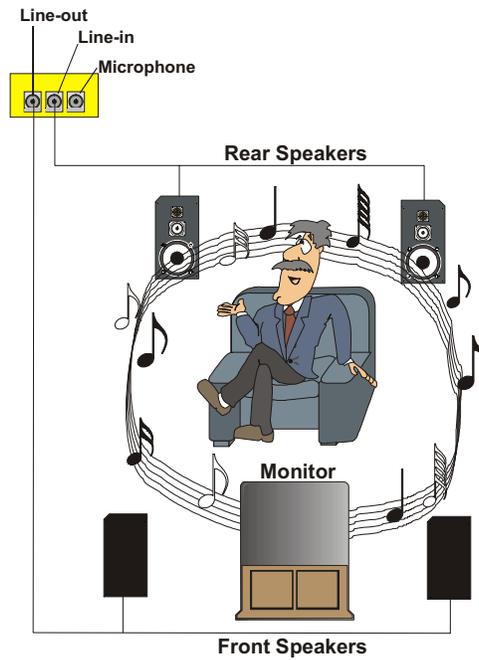
The onboard PCI Audio CMI8738 audio system supports two wave channels (front/rear) known as the 4 speaker system. If you are running applications that use the DirectSound® 3D or A3D® audio interface, your system can simulate realistic 3D sound through a 4-speaker setup. Follow the steps below to install a 4-speaker setup.

Speaker Installation

Connect the front two speakers to the line-out jack on the sound port extension bracket. Connect the rear two speakers to the line-in/rear jack on the sound port extension bracket. The original line-in can be moved to Aux.

Speaker Position

Set up your speakers as shown in the following figure to get the best audio result.



Mixer Setup

There is a 4-speaker option in the Volume Control of the Mixer after you set up the PCI Audio Application. Click the 4 SPK icon to enable this option. The output to the rear speakers is sent through the line-in/rear jack.

In order to avoid hardware conflicts, **DO NOT** enable this option when the line-in/rear jack is connected with a line-in device. While the 4-speaker mode is enabled, turn the output of the front speakers on or off and adjust the volume of the speakers so that the front/rear speakers have the same volume.

Demo

Execute the "Helicopter" demo in the C3D HRTF Positional Audio Demos of the PCI Audio Application. When you hear the helicopter flying behind you, it means that the rear speakers are working properly.

Appendix: Jumper Setting Reference

JP703: Enable/disable onboard audio

Use this 3-pin jumper to enable or disable the onboard modem.

Function	Jumper Setting
Disable onboard audio/modem	Short pins 1-2
Enable onboard audio	Short pins 2-3



Note: Disabling JP703 also disables the onboard fax/modem even if JP702 is enabled.

JP706: Enable/disable onboard LAN

Use this 3-pin jumper to enable or disable the onboard LAN.

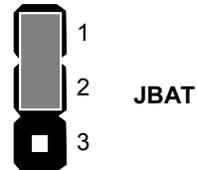
Function	Jumper Setting
Enable onboard LAN	Short pins 1-2
Disable onboard LAN	Short pins 2-3



JBAT: Clear CMOS Memory

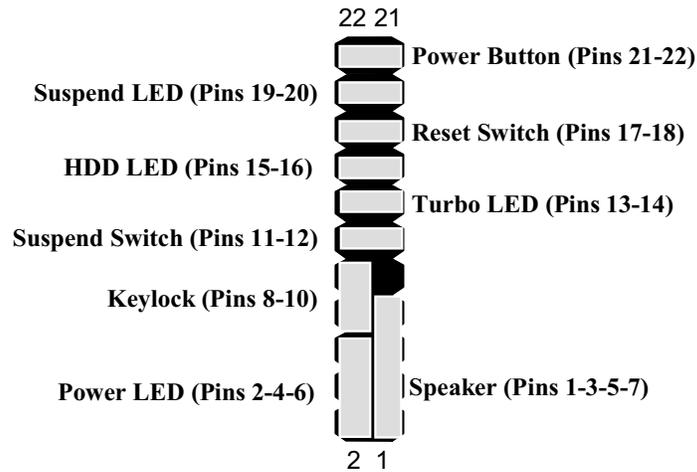
Use this jumper to clear the contents of CMOS memory.

Function	Jumper Setting
Normal operation	Short pins 1-2
Clear CMOS memory	Short pins 2-3



J50 Panel Connector

The mainboard J50 connector has a standard set of switch and indicator connectors that are commonly found on ATX system cases. Use the illustration below to make the correct connections to the case switches and indicators.



Function	Pins
Speaker	1, 3, 5, 7
Power LED Indicator	+2, 4, 6
Keylock	8, 10
Suspend Switch	11, 12
Turbo LED Indicator	+13, 14
Hard Disk LED Indicator	+15, 16
Reset Switch	17, 18
Suspend LED Indicator	+19, 20
Power Button	21, 22

Note: The plus sign (+) indicates a pin which must be connected to a positive voltage.