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M765MRT, Version 1.2A
i6T/May 1999

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 shielded AC power cable must be employed with this equipment to insure 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 Réglement sur le matériel brouilieur du Canada.

Table of Contents

Chapter 1

Introduction

This mainboard has a **slot-1** processor socket for an **Intel processor cartridge**, and it also has a **socket-370** for an **Intel PPGA (Plastic Pin Grid Array) Celeron** processor. You can install either one of these processors according to the power and performance requirements that you need from your system. *Note that you cannot install two processors on this mainboard.*

Slot-1 processors include the **SEPP (Single Edge Processor Package) Celeron, the Pentium-II, and the Pentium-III.** Clock rates run as high as **550 MHz**. Socket-370 processors are the **PPGA Celeron** which runs at clock rates up to **466 MHz**. The mainboard supports a system bus of **66 MHz** or **100 MHz**.

The mainboard uses the Intel 440BX or 440ZX chipset which provides **CPU Plug & Play** through firmware. The mainboard is highly integrated and includes a built-in **PCI 3D Sound System**. A **V.90 Fax/Modem DAA module** is also shipped with the mainboard. In addition, the mainboard has a full set of **I/O Ports** including two serial ports, one PS/2 ports, a parallel port and two USB ports.

This mainboard has all the features you need to develop a powerful multimedia workstation with built-in communications. The board is **baby-AT sized** and has power connectors for **ATX** and **AT** power supply units.

Key Features

This key features of this mainboard include:

Slot-1 Processor Support

- **Pentium-III** support for 450 MHz and 550 MHz clock rates
- **Pentium-II** support for 233 MHz to 450 MHz clock rates
- **SEPP Celeron** support for 266 MHz to 433 MHz clock rates
- Support for 66 MHz and 100 MHz FSB (Front Side Bus)
- All processors configured by **CPU Plug & Play**

Socket-370 Processor Support

- The **PPGA Celeron** provides Pentium-II performance with integrated level 1 and level 2 cache memory
- PPGA Celerons run from 300 MHz through to 466 MHz.
- Supports a 66 MHz front side system bus
- All Celerons are automatically configured using firmware

Memory Support

Note: *If this mainboard is installed with the Intel 440BX chipset, it supports three DIMM slots for memory modules. If the mainboard is installed with the Intel 440ZX chipset, it supports two DIMM slots.*

- Three/Two DIMM slots for SDRAM 168-pin memory modules
- Support for 66 MHz & 100 MHz memory bus
- Maximum installed memory can be 3 x 256 MB = 768 MB for the 440BX version and 2 x 256 MB = 512 MB for the 440ZX version.

Expansion Slots

- One AGP Slot
- Three 32-bit PCI slots
- One 8/16-bit ISA slot

Onboard IDE channels

- Primary and Secondary PCI IDE channels
- Support for PIO (programmable input/output) modes
- Support for Bus mastering and UltraDMA 33 modes

Power Supply and Power Management

- Dual connector for either AT or ATX power supply
- Support for Green PC standard, suspend switch, optional keyboard power on/off
- Supports Wake on Modem, Wake on LAN and Wake on Alarm

Sound System

- Meets PC98 audio specification
- Full duplex playback and recording with built-in 16-bit CODEC
- HRTF 3D professional audio supports both Direct Sound 3D® and A3D® compatible interface plus support for **4-channel speakers**
- Drivers support DOS/Windows 95/98/2000/NT 4.0
- Built-in 32 ohm earphone buffer and 3D surround
- Provides MPU-401 Game/MIDI port and legacy Sound Blaster 16 support
- Downloadable Wave-table Synthesizer supports Direct Music®
- Digital Audio Interface (SPDIF In/Out) with **24-bit stereo**, 44KHz sampling rate and measured **120dB** audio quality
- Stereo Mixer supports analog mixing from CD-Audio, Line-In, and digital mixing from voice, FM/Wave-table and digital CD-Audio

Onboard I/O Ports

- Floppy disk drive port with 1Mb/s transfer rate
- Two serial ports with 16550-compatible fast UART
- One parallel port with support for ECP and EPP
- Two USB ports
- One PS/2 port (for mouse)
- One infrared port

Hardware Monitoring

- Built-in hardware monitoring for CPU/system temperatures, fan speeds and mainboard voltages
- Supports AMI's Desktop Client Manager (ADCM)

Fax/Modem DAA Module

- **56 Kbps Fax/Modem DAA module**
- Supports V.90, V.34, V.32bis, V.32, V.22bis, V.22
- Supports Auto Fallback and MNP 5, V.42bis data compression with 115200 compatible Virtual UART
- Requires 16 MB RAM and WIN 95/98/NT

Onboard Flash ROM

- Provides plug and play function for automatic CPU and board configuration
- Supports plug and play configuration of peripheral devices and expansion cards
- Built-in virus protection using **Trend's ChipAway Virus** which ensures that the entire boot process is virus protected.

Bundled Software

- **AMI Desktop Client Manager** supports hardware monitoring on stand alone systems or over a network
- **PC-Cillin** provides automatic virus protection under Windows 95/98
- **SuperVoice** is Fax/Modem software with support for data and voice transmission
- **MediaRing Talk** is an internet telephone application.
- **Gamut** is an audio application that includes MP3 encoding/ decoding
- **WordPerfect Suite 8** is a windows version office application

Dimensions

- Baby-AT form factor (22cm x 22cm)

Package Contents

Your mainboard package ships with the following items:

- Mainboard
- This User's guide
- IDE cable
- Floppy diskette drive cable
- Audio ports and Game/MIDI port extension bracket
- Serial ports extension bracket
- Parallel port extension bracket
- V.90 Fax/Modem DAA module
- Support software CD-ROM

Optional Accessories

You can purchase the following optional accessories for this mainboard.

- ATX Form Card (2 USB ports, IR port & PS/2 port)
- Digital Audio extension bracket

Static Electricity Precautions

1. Components on this mainboard can be damaged by static electricity. Take the following precautions when unpacking the mainboard and installing it in a system.
2. Keep the mainboard, and other components, in their original static-proof packaging until you are ready to install them.
3. During an installation, wear a grounded wrist strap if possible. If you don't have a wrist strap, frequently discharge any static electricity by touching the bare metal of the system chassis.
4. Handle the mainboard carefully by the edges. Avoid touching the components unless it is absolutely necessary. During the installation lay the mainboard on top of the static-proof packaging with the component side facing upwards.
5. Inspect the mainboard for any damage caused during transit. Ensure that all the components that are plugged into sockets are correctly seated.
6. If you suspect that the mainboard has been damaged, do not apply power to the system. Contact your mainboard vendor and report the damage.

Chapter 2

Mainboard Installation

To install this mainboard into your system, follow the procedures in this chapter:

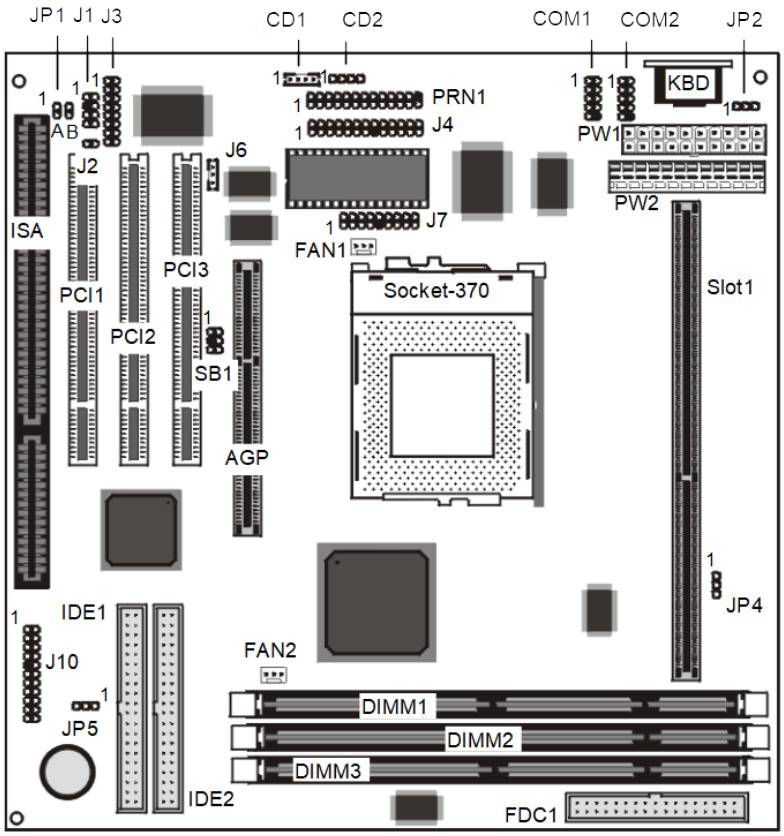
- Identify the mainboard components
- Install the correct processor
- Install one or more memory modules
- Verify that any jumpers or switches are at the correct setting
- Install the mainboard in the system chassis
- Install any extension cables to the mainboard headers
- Install any other devices and make the appropriate connections to the mainboard headers.

Note: *Before installing the mainboard, you must ensure that the Clear CMOS jumper JP5 is set to the Normal setting. See this chapter for information locating JP5 and changing the jumper setting.*

Note: *Please do not use the AC power cord to connect the system case to a power outlet until you have completely installed the mainboard and components. In some circumstances, the power management of the system might damage components and create unsafe conditions by allowing power to flow before the installation is complete,*

Mainboard Components

Use the diagram below to identify the major components on your mainboard.



Note: *Some versions of this mainboard use the Intel 440 BX chipset. These boards have three DIMM slots. Some versions of this mainboard use the Intel 440 ZX chipset. These boards only have two DIMM slots.*

Install the Processor

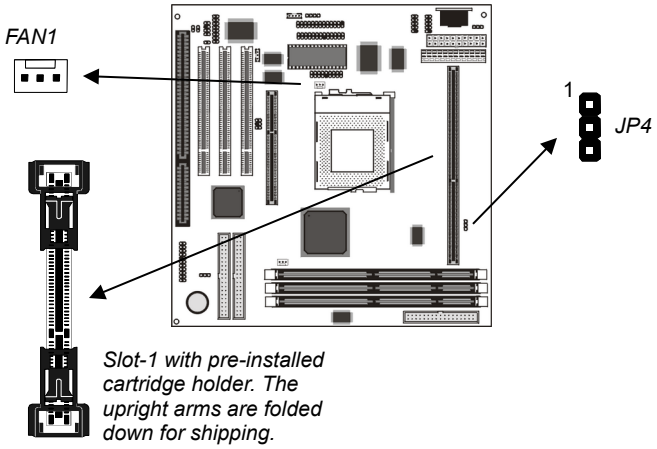
This mainboard has a Slot-1 that can be installed with any Slot-1 processor cartridge including the Pentium-III, Pentium-II, and the SEPP Celeron. It also has a Socket-370 that can be installed with the Celeron processor which is shipped in a PPGA (Plastic Pin Grid Array) package. **To ensure reliability, ensure that your PPGA Celeron processor has a heatsink/cooling fan assembly.**

You can install a Slot-1 processor or a PPGA Celeron. You cannot install a PPGA and a Slot-1 processor cartridge together. Take care that you do not try to install a Socket-7 processor into the Socket-370. A Socket-7 processor such as the Pentium-MMX, or the AMD K5/K6 does not fit in the socket-370. The following table lists the processors that are currently supported by this mainboard. New processors may be a released after this manual is printed.

Processor Cartridge	Clock Rate MHz	Processor Socket	System Bus MHz
Pentium-III	550	Slot-1	100
Pentium-III	500	Slot-1	100
Pentium-III	450	Slot-1	100
Pentium-II	450	Slot-1	100
Pentium-II	400	Slot-1	100
Pentium-II	350	Slot-1	100
Pentium-II	333	Slot-1	66
Pentium-II	300	Slot-1	66
Pentium-II	266	Slot-1	66
Pentium-II	233	Slot-1	66
SEPP Celeron	433	Slot-1	66
SEPP Celeron	400	Slot-1	66
SEPP Celeron	366	Slot-1	66
SEPP Celeron	333	Slot-1	66
SEPP Celeron	300A	Slot-1	66
SEPP Celeron	300	Slot-1	66
SEPP Celeron	266	Slot-1	66
PPGA Celeron	466	Socket-370	66
PPGA Celeron	433	Socket-370	66
PPGA Celeron	400	Socket-370	66
PPGA Celeron	366	Socket-370	66
PPGA Celeron	333	Socket-370	66
PPGA Celeron	300	Socket-370	66

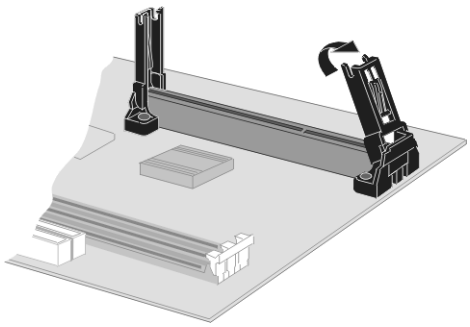
Installing a Slot-1 Processor Cartridge

1. Locate Slot-1, FAN1, and JP4 on the mainboard.



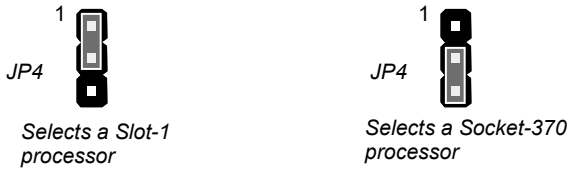
Slot-1 with pre-installed cartridge holder. The upright arms are folded down for shipping.

2. The Slot-1 is installed with a cartridge holder. The upright struts of the cartridge holder are folded down for shipping. Pull the struts upwards so that they are in the upright position.



3. Insert the processor cartridge into the cartridge holder. Follow the instructions given with your processor cartridge. The edge connector on the cartridge has a notch so that it only fits into the Slot-1 in the correct way.
4. Locate the cooling fan power supply FAN1. Connect the cable from the processor cartridge cooling fan to FAN1.

5. Locate the jumper JP4. Use this jumper to select if you have installed a Slot-1 processor or a Socket-370 processor. The jumper settings are illustrated below.

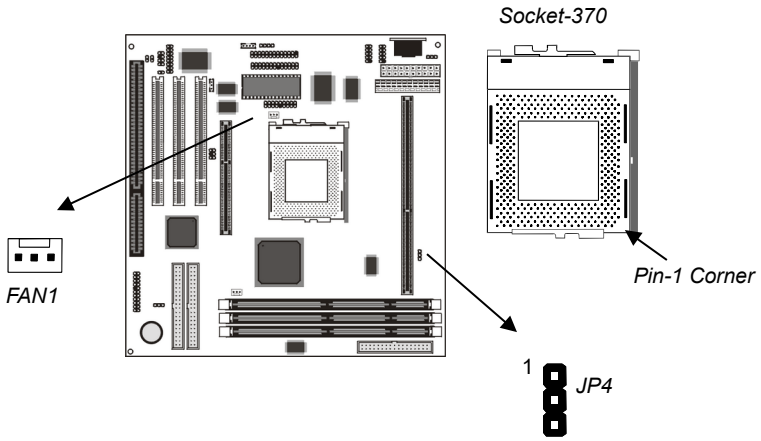


6. On this mainboard, you can configure the processor by entering the correct settings in the BIOS setup utility.

Installing a Socket-370 Processor

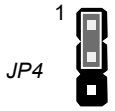
The Celeron processor installs into the ZIF (Zero Insertion Force) Socket-370 on the mainboard.

1. Locate the Socket-370, FAN1, and JP4. Pull the locking lever out from the socket and swing it to the upright position.

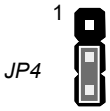


2. On the Celeron processor, identify the pin-1 corner by noting that it has a slight bevel.
3. On the Socket-370, identify the pin-1 corner. The pin-1 corner is on the same side as the locking lever, closest to the top of the lever when it is in the locked position.

4. Match the pin-1 corners and insert the Celeron processor into the socket. No force is required and the processor should drop into place freely.
5. Swing the locking lever down and hook it under the catch on the side of the socket. This locks the Celeron processor in the socket.
6. Locate the jumper JP4. Use this jumper to select if you have installed a Slot-1 processor or a Socket-370 processor. The jumper settings are illustrated below.



Selects a Slot-1 processor



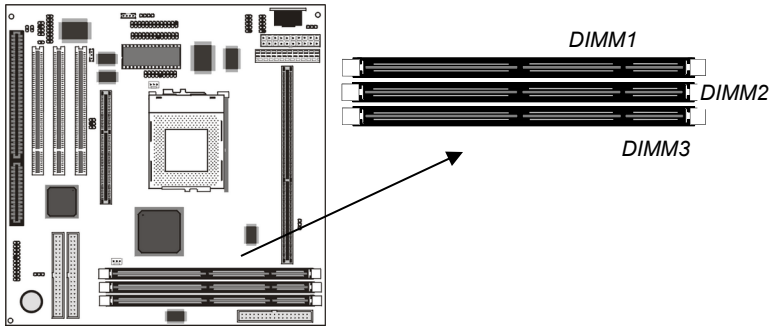
Selects a Socket-370 processor

7. If the Celeron processor is installed with a cooling fan assembly, connect the cable from the fan to the CPU fan power connector FAN1.

Install Memory

The mainboard has three DIMM slots which can be installed with memory modules. You must install at least one memory module in order to use the mainboard.

> ***Note:*** *Some versions of this mainboard use the Intel 440 BX chipset. These boards have three DIMM slots. Some versions of this mainboard use the Intel 440 ZX chipset. These boards only have two DIMM slots.*



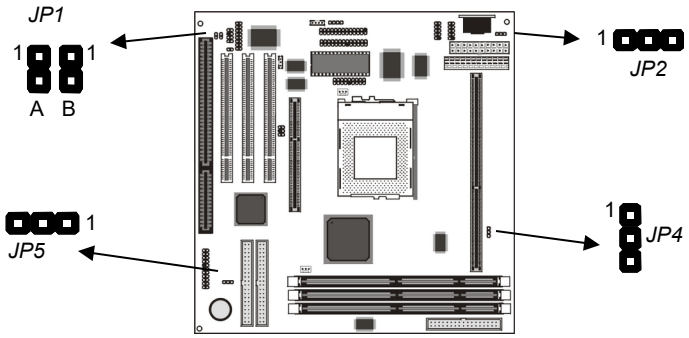
For this mainboard, you must use 168-pin, 3.3V memory modules installed with SDRAM memory chips. If you are using a processor cartridge that runs on a 100 MHz system bus, you must use memory that operates on a 100 MHz memory bus (PC-100 memory). If you are using a processor cartridge that runs on a 66 MHz system bus, you can use memory that operates on a 66 MHz memory bus. You can install any size of memory module from 16 MB up to 256 MB, so the maximum memory size is 3 x 256 MB = 768 MB. *(2 x 256 MB = 512 MB if you have the 440 ZX version).*

The edge connectors on the memory modules have cut outs, which coincide with struts in the DIMM slots, so the memory modules can only be installed in the correct way.

On the DIMM slot, pull the locking latches at either end of the slots outwards. Position the memory module correctly and insert it into the DIMM slot. Press the module down into the slot so that the locking latches lever inwards and lock the module in place.

Set the Jumpers

Jumpers are sets of pins that can be connected together with jumper caps. The jumper caps change the way the mainboard operates by changing the electronic circuits on the mainboard. If a jumper cap connects two pins, we say the pins are SHORT. If a jumper cap is removed from two pins, the pins are OPEN.



Jumper JP1: Fax/Modem & Audio System Enable/disable

This jumper consists of two sets of 2-pin jumpers JP1A and JP1B. Use JP1A to enable or disable the onboard sound system. Use JPIB to enable or disable the onboard Fax/Modem.

JP1A: Function	**Jumper Setting**
Disable Audio System	Short Pins 1-2
Enable Audio System	Open Pins 1-2
JP1B: Function	**Jumper Setting**
Disable Fax/Modem	Short Pins 1-2
Enable Fax/Modem	Open Pins 1-2

> ***Note:*** *If you use JP1A to disable the onboard sound system, the Fax/Modem is also disabled, even if you have set JP1B to the Enable Fax/Modem setting.*

Jumper JP2: Keyboard Power On Selector

If you are using an ATX power supply unit, you can use hot keys on your keyboard as a power on/off switch for the system Use this jumper to turn this feature on or off.

Note: *Make sure that the system can provide 1A on +5VSB (+5V Standby) signal before using the Keyboard Power On function.*

Function	Jumper Setting
Disable Keyboard Power On	Short Pins 1-2
Enable Keyboard Power On	Short Pins 2-3

Jumper JP5: 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 setup utility are incorrect and prevent 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 setting for a few seconds.

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

Jumper JP4: Select Processor Type

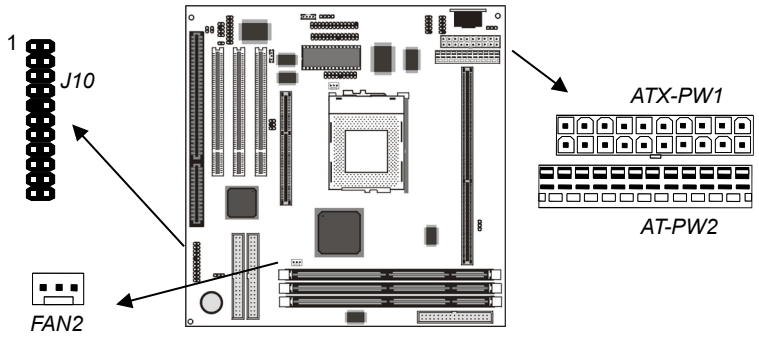
Use this 3-pin jumper select if you are using a Socket-370 processor (PPGA Celeron) or a Slot1 processor cartridge (Pentium-II, Pentium-III, or SEPP Celeron).

Function	Jumper Setting
Select Slot1 Processor	Short Pins 1-2
Select Socket-370 processor	Short Pins 2-3

Install the Mainboard

Install the mainboard into the system chassis. This mainboard is baby AT-sized and the I/O ports are provided on extension brackets. In addition the mainboard can operate using an AT power supply unit or an ATX power supply unit. This means that you have a wide choice of cases that can be used by this mainboard.

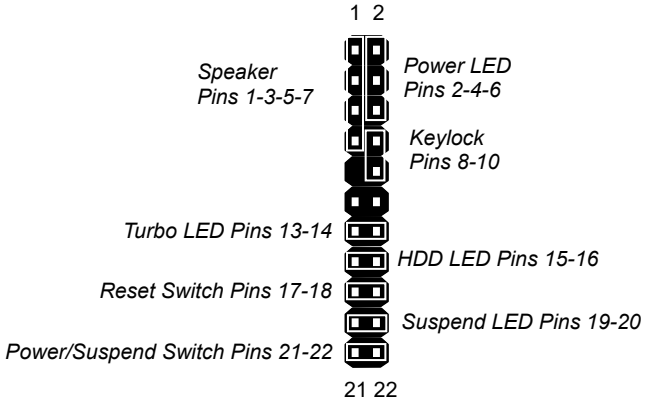
Install the mainboard into the unit case. Follow the instructions provided by the case manufacturer using the screws and mounting points provided in the chassis.



Connect the power cable from the power supply unit to the power connector on the mainboard. If you are using an AT power unit, connect it to the AT power connector PW2. If you are using an ATX power unit connect it to the ATX power connector PW1.

If the case that you are using has a chassis cooling fan, connect the power cable from the fan to the onboard chassis cooling fan power supply FAN2.

Connect the case switches and indicator LEDs to the bank of switch and LED connectors J10. See the illustration below for a guide to the pin functions of the J10 case connector.



Install the Extension Brackets

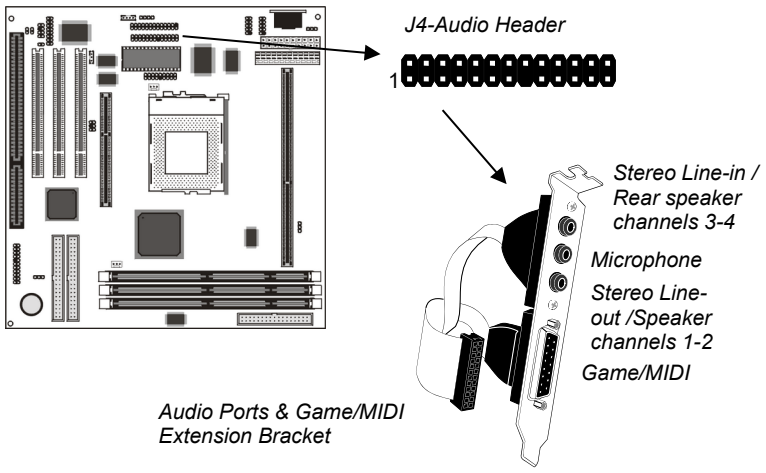
The extension brackets are used to transmit features on the mainboard to external connectors that can be fixed to the system chassis. Follow the steps below to install the extension brackets.

Note: *All the ribbon cables used on the extension brackets carry a red stripe on the pin-1 side of the cable.*

Audio Ports and Game/MIDI Port Extension Bracket

This bracket provides three audio jacks for stereo line in, stereo line out and microphone. In addition it has a 15-pin D-connector which can be used by either a joystick or a MIDI device.
If you are using a four channel speaker system, channel one and two are output through the Stereo Line-out, and the rear speaker channels three and four are output through Stereo Line-in.

1. On the mainboard, locate the J4 audio header for this bracket.

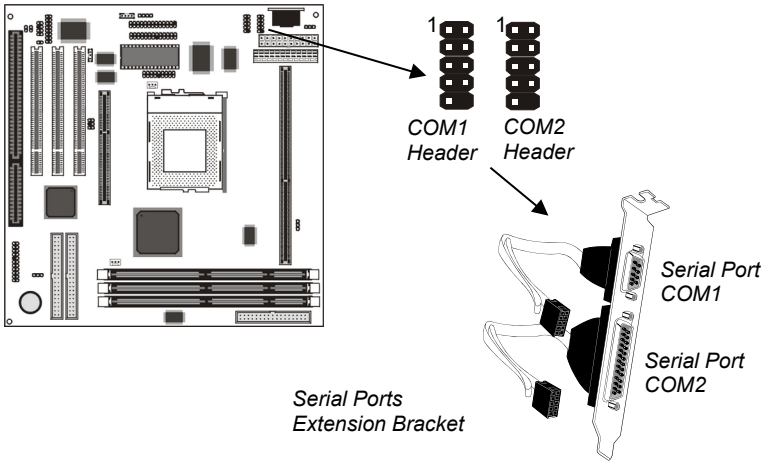


2. Plug the cable from the bracket into the J4 audio header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

Serial Ports Extension Bracket

This bracket has two serial ports; COM1 (9-pins) and COM2 (25pins).

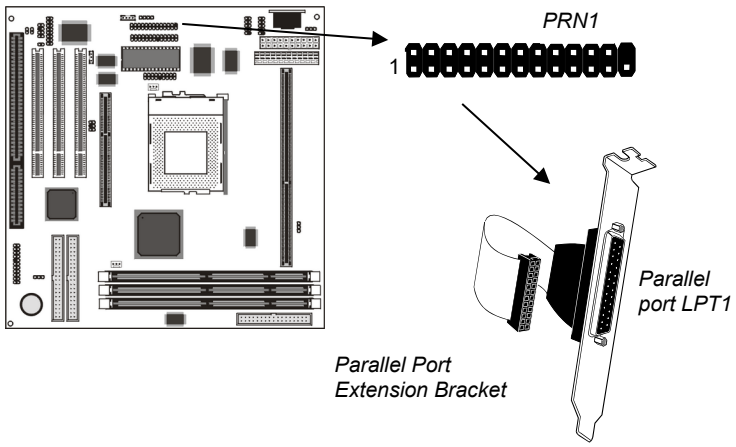
1. On the mainboard, locate the two headers COM1 and COM2 for this bracket.
2. Plug the two cables from the bracket into the appropriate COM1 and COM2 headers.



3. In the system chassis, 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.

Parallel Port Extension Bracket

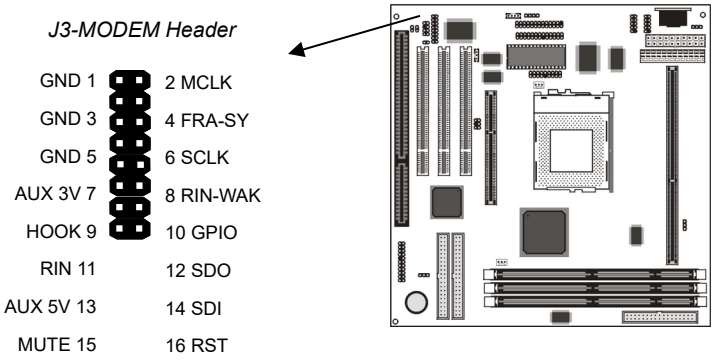
This bracket has one parallel port LPT1.



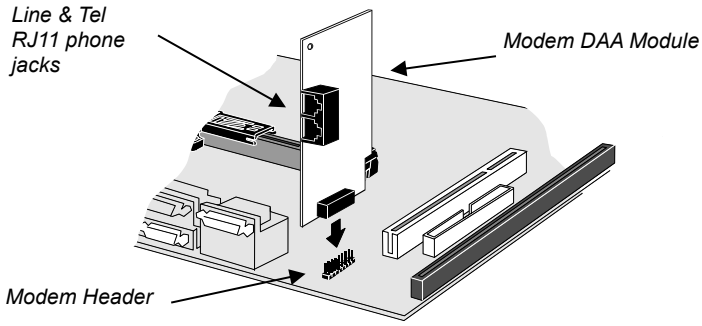
1. On the mainboard, locate the parallel port headers PRN1 for this bracket.
2. Plug the cable from the bracket into the PRN1 header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

Fax/Modem DAA Module

The Fax/Modem DAA module plugs directly into the mainboard adjacent to an expansion slot in the system chassis. When you remove the blanking plate from the system chassis, you can access the LINE and TEL RJ11 phone jacks on the metal edge of the Fax/ Modem DAA module.



1. Locate the J3 modem header on the mainboard.
2. Plug the Fax/Modem DAA module into the J3 modem header.
3. Remove the blanking plate adjacent to the Fax/Modem DAA module.

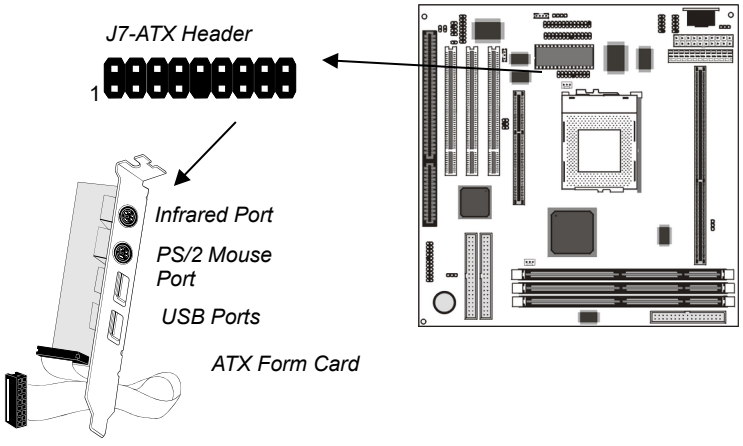


Optional Extension Brackets

For this mainboard, you can also obtain an ATX Form Card and an SPDIF digital audio extension bracket. Install these brackets by following the steps below.

ATX Form Card

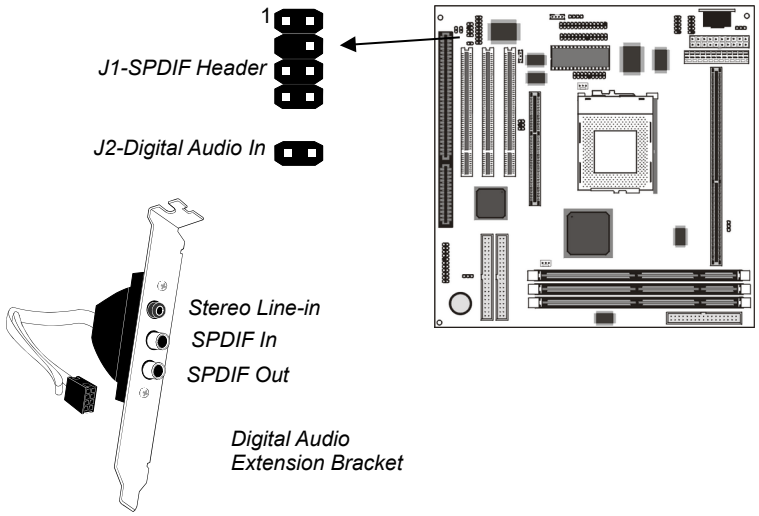
This ATX Form Card provides a mini-DIN PS/2 port for infrared, one mini-DIN port for a PS/2 mouse. In addition it has two USB (Universal Serial Bus) ports.



1. On the mainboard, locate the J7 ATX header for this bracket.
2. Plug the cable from the bracket into the J7 ATX header.
3. In the system chassis, 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.

Digital Audio Extension Bracket

This bracket has two RCA jacks for digital audio in and digital audio out, and an auxiliary jack for a Stereo Line-in device.



1. On the mainboard, locate the J1 SPDIF header for this bracket.
2. Plug the cable from the bracket into the J1 SPDIF header.
3. In the system chassis, 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.

Note: *If you install the Digital Audio Extension Bracket, you cannot use the internal digital audio in header J2. (See Internal Sound Connections later in this chapter).*

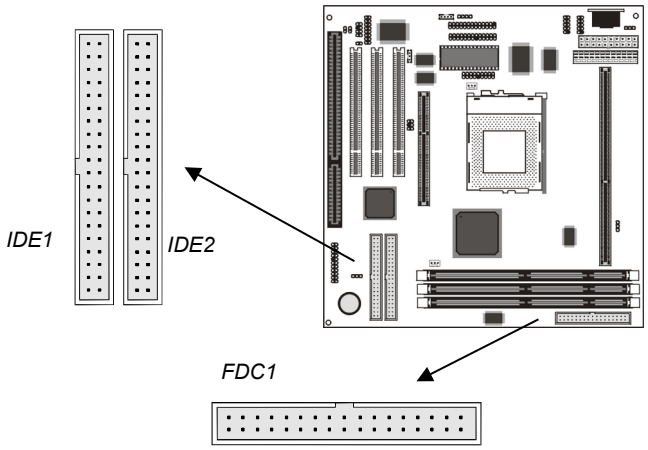
Install Other Devices

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

Floppy Disk Drive

The mainboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5” or 5.25” wide, with capacities of 360K, 720K, 1.2MB, 1.44MB, or 2.88MB.

Install your drives and supply power from the system power unit. Use the cable provided to connect the drives to the floppy disk drive header FDC1.



IDE Devices

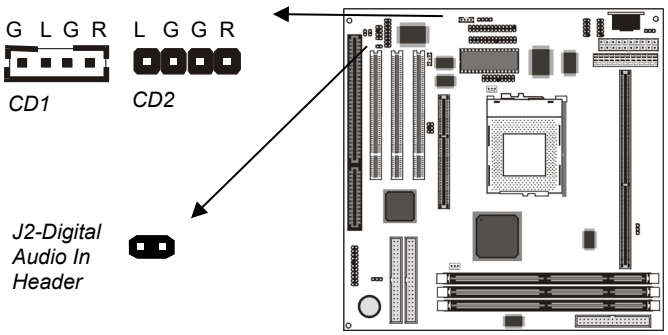
IDE devices include hard disk drives, high-density diskette drives, and CD-ROM/DVD drives.

The mainboard ships with an IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure for Master or Slave.

Install the device(s) and supply power from the system power unit. Use the cable provided to connect the device(s) to the Primary IDE channel connector IDE1 on the mainboard.
If you want to install more IDE devices, you can purchase a second IDE cable and connect one or two devices to the Secondary IDE channel connector IDE2 on the mainboard. If you have two devices on the cable, one must be Master and one must be Slave.

Internal Sound Connections

If you have installed a CD-ROM drive or a DVD drive, you can connect the sound output of the drive to the built-in sound system. You can connect the analog audio output to the analog connectors CD1 or CD2. If your drive has a digital audio output, you can connect it to the digital audio in connector J2.



Analog Audio

On the mainboard, locate the two 4-pin connectors for CD1 and CD2. The illustration shows the ground pins (G) and the pins for the left (L) and right (R) audio channels. There are two kinds of connector because different brands of CD-ROM/DVD drives have different kinds of cable connectors on their audio output cable. Connect the cable to the appropriate connector.

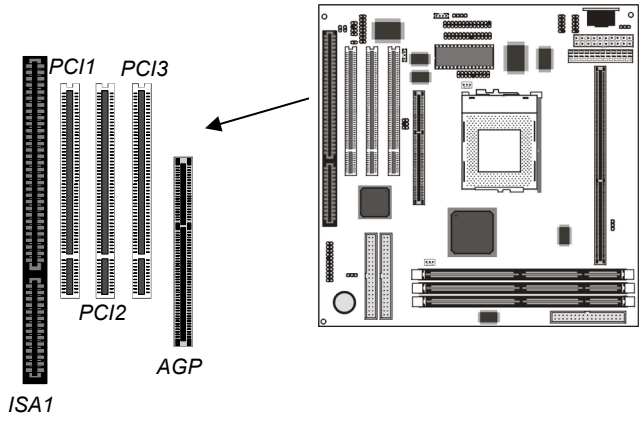
Digital Audio Connection

If your CD-ROM or DVD drive has 24-bit digital audio outputyou can use an optional internal digital audio cable to connect the digital output from the drive to the digital audio input connector J2 on the mainboard.

Note: *You cannot use the J2 digital audio in connector if you have already used the SPDIF1 digital audio in/out connector to connect to a digital audio extension bracket.*

Expansion Slots

This mainboard has one AGP slot, three 32-bit PCI expansion slots, and one 8/16-bit ISA slot. The first PCI slot (PCI1) is shared with the ISA slot (ISA1). This means that you can use either one of these slots but you cannot use both slots at the same time.



Follow the steps below to install an add-in card into one of the slots.

1. Determine which slot you need to use. The table below shows the functions of the slots.

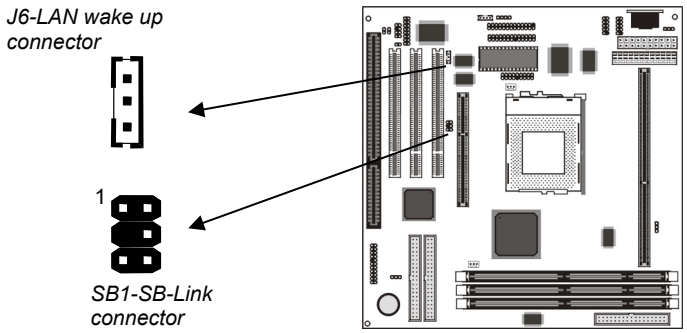
AGP	AGP stands for Accelerated Graphics Port. Use this slot to install a graphics adapter which has an AGP edge connector.
PCI	PCI stands for Peripheral Components Interconnect. Use this slot to install current add-in cards which have a 32-bit PCI edge connector.
ISA	ISA stands for Industry Standard Architecture. Use this slot to install older, legacy add-in cards which have an 8/16-bit ISA edge connector.

2. Locate the ISA or PCI or AGP slot on the mainboard.

3. Remove the blanking plate from the appropriate expansion slot on the system chassis.
4. Install the edge connector of the expansion card into the slot and press it quite firmly down so that it is seated correctly.
5. Secure the bracket of the card into the expansion slot in the system chassis using the screw that held the blanking plate in place.

Add-In Card Options

This mainboard has a LAN wake up connector that can be used by an installed network adapter. It also has an SB-Link connector that can be used by an installed PCI Sound Blaster audio card.



LAN Wake Up

If you are using an ATX power supply you can configure your system so that it powers down by software and can be resumed by alarms. If you have installed a LAN adapter expansion card, connect the card to the LAN Wake Up connector J6. This allows incoming traffic to resume the system from a software power down. You need to enable this feature in the system setup utility.

SB-Link

If you have disabled the built-in sound system and installed a PCI Sound Blaster audio card, you can connect the card to the SB-Link connector on the mainboard. The SB-Link circuit solves some problems that can occur when you try to play some older computer games which run in the DOS real-mode environment.

Chapter 3

BIOS Setup

Introduction

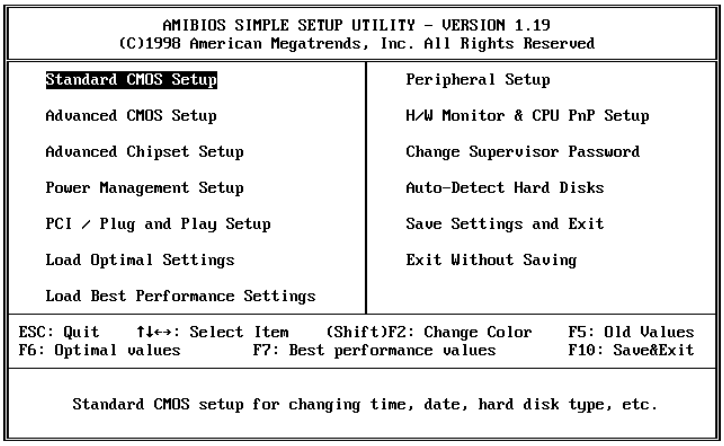
The BIOS setup utility stores information about your computer such as the date and time, the kind of hardware you have installed, and so on. Your computer uses this information to initialize all the components at boot up time, and make sure that everything runs smoothly.

If the information in the setup utility is incorrect, it may cause your 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 area that is used to store the setup information, or you can hold down the **End** key while you reboot your computer, Holding down the **End** key also clears the setup information.

You can run the setup utility and manually make changes to the setup utility. You might need to do this to configure some of the hardware that you add to the mainboard, such as the CPU, the memory, disk drive, etc.

Running the Setup Utility

Each time your computer starts, before the operating system is booted, a message appears on the screen that prompts "*Hit <DEL> if you want to run SETUP*". When you see this message, press the **Delete** key and the Mainmenu page of the setup utility appears on your monitor.



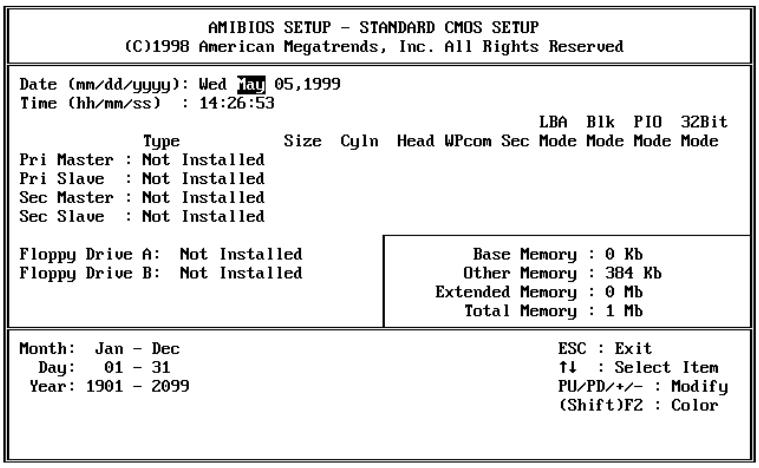
You can use the cursor arrow keys to highlight any of the options on the Mainmenu page. Press **Enter** to select the highlighted option. To leave the setup utility, press the **Escape** key. Hold down the **Shift** key and press **F2** to cycle through the optional color schemes of the setup utility.

Some of the options on the Mainmenu page lead to tables of items with installed values. In these pages, use the cursor arrow keys to highlight the items, and then use the **PgUp** and **PgDn** keys to cycle through the alternate values for each of the items. Other options on the Mainmenu page 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.

Standard CMOS Setup Page

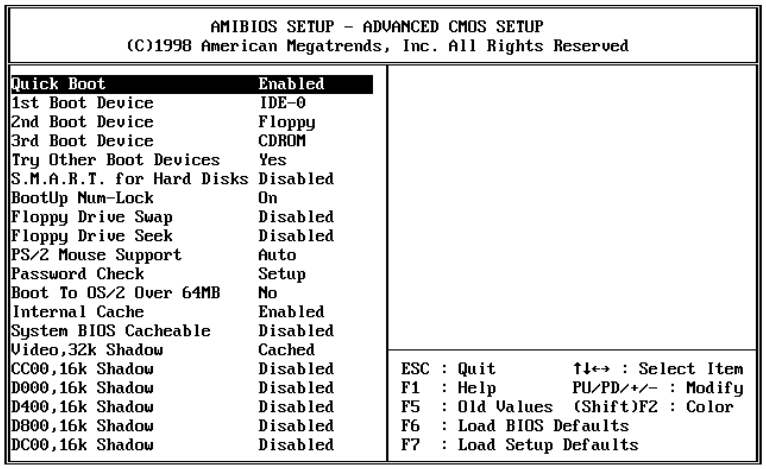
Use this page to set basic information such as the date and time, the IDE devices, and the diskette drives.



Date & Time	Use these items to install your system with the correct date and time
Pri Master **Pri Slave** **Sec Master** **Sec Slave**	Use these items to configure devices on the primary and secondary IDE channels. To configure a hard disk drive, choose *Auto*. If the *Auto* setting fails to find a hard disk drive, set it to *User*, and then fill in the hard disk characteristics (Size, Cyls, etc.) manually. If you have a CD-ROM drive, select the setting *CDROM*. If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120) select *FLOPTICAL.*
Floppy Drive A **Floppy Drive B**	Use these items to set the size and capacity of the floppy diskette drive(s) installed in the system.

Advanced Setup Page

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

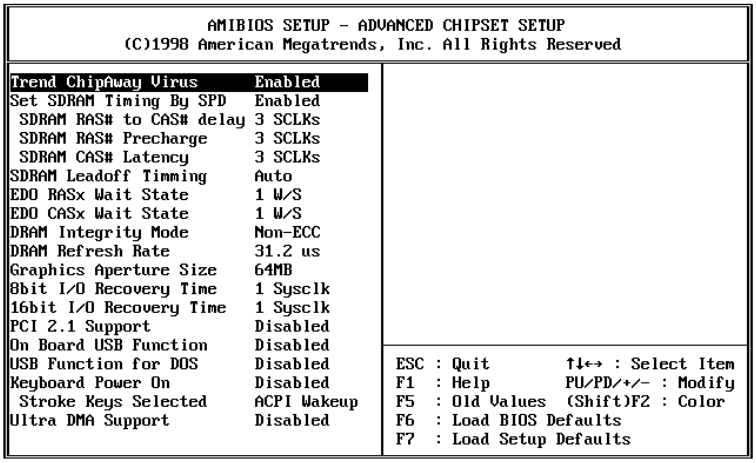


Quick Boot	If you enable this item, the system starts up more quickly be elimination some of the power on test routines.
1st Boot Device **2nd Boot Device** **3rd Boot Device**	Use these three items to determine the order and priority that your computer follows to load an operating system at start-up time.
Try Other Boot Device	If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first three locations.
S.M.A.R.T. for Hard Disks	Enable this item if your hard disk(s) supports SMART (Self-Monitoring, Analysis and Reporting Technology).
BootUp Num-Lock	This items determines if the Num Lock key is active or inactive at system start-up time.
Floppy Drive Swap	If you have two diskette drives installed and you enable this item, drive A becomes drive B and drive B becomes drive A.

Floppy Drive Seek	If you enable this item, your system will check the diskette drives at start up time. Disable this item unless you are using an old 360K diskette drive.
PS/2 Mouse Support	Set this item to auto so that it will automatically detect if you are using a mouse with a PS/2 interface.
Password Check	If you have installed a password on your system, use this item to determine if the password is required to enter the setup utility (*Setup*) or required at start-up time and to enter the setup utility (*Always*).
Boot to OS/2 Over 64MB	Enable this item if you are booting the OS/2 operating system and you have more than 64MB of memory installed.
Internal Cache	Leave this item enabled since all the processors that can be installed on this board have internal cache memory.
System BIOS Cacheable	If you enable this item, a segment of the system BIOS will be cached to main memory for faster execution.
Video, 32k Shadow	If you enable this item, 32k of the video BIOS is cached to main memory for faster execution.
XXXX, 16k Shadow	These items allow 16k segments of the BIOS of other devices to be cached to main memory for faster execution.

Advanced Chipset Setup Page

This page lets you set some of the timing parameters for the system.

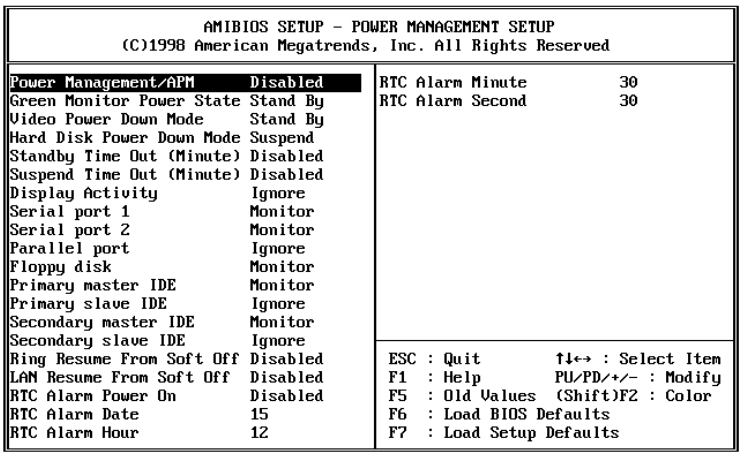


Trend ChipAway Virus	This mainboard has built-in virus protection in the firmware. Use this item to enable or disable the built-in virus protection.
SDRAM Items	The five items which define the timing for SDRAM memory are pre-installed with fixed values and you cannot change them.
EDO RASx Wait State	This item sets wait states for the Row Address Strobe (RAS) for installed EDO RAM memory.
EDO CASx Wait State	This item sets wait states for the Column Address Strobe (CAS) for installed EDO RAM memory.
DRAM Integrity Mode	Use this item to define the kind of error correction supported by the memory that you have installed.
DRAM Refresh Rate	Use this item set the refresh rate for the installed DRAM.
Graphics Aperture Size	This item defines an aperture for the graphics. Leave this item at the default value 64 MB.
8/16-bit I/O Recovery Time	These two items set the timing parameters for legacy 8-bit and 16-bit ISA expansion cards. Leave these items at the default value.

PCI 2.1 Support	Enable this item to support compliance with thw PCI specification version 2.1
On Board USB Function	Enable this item if you plan on using the USB (Universal Serial Bus) ports integrated on this mainboard.
USB Function for DOS	Enable this item if you plan on using the USB ports while working in the DOS environment.
Keyboard Power On	Your system can enter a software power down. If you enable this item, you can resume the system by pressing hot keys on the keyboard. You must be using an ATX power supply and enable jumper JP2 in order to use this feature.
Stroke Keys Selected	If you have enabled the Keyboard Power On, use this item to select the hot keys to power on the system.
Ultra DMA Support	Enable this item if your IDE hard disk drives support Ultra DMA

Power Management Setup Page

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

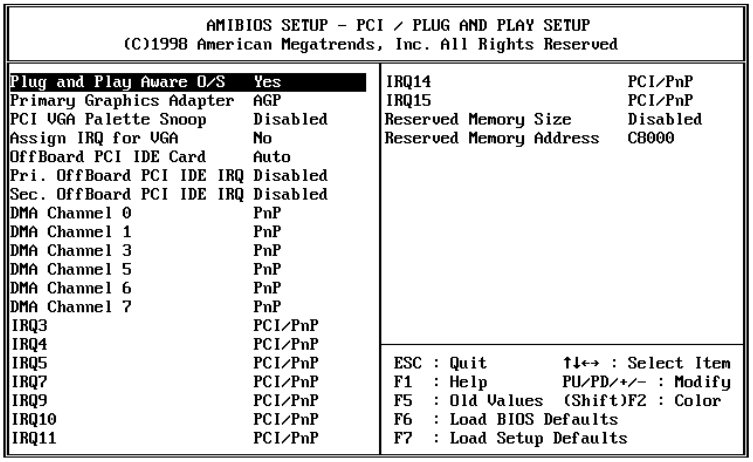


Power Management/APM	Use this item to enable or disable the power management routines. If you enable the power management, you can use the items below to set the power management operation.
Green Monitor Power State	This item defines which power-saving mode is required to trigger the power management operations of a green monitor.
Video Power Down Mode	This item defines which power-saving mode is required to power down the monitor.
Hard Disk Power Down Mode	This item defines which power-saving mode is required to power down the hard disk drive.
Standby Time Out (Minute)	This sets the timeout for standby mode in minutes. If the time selected passes without any system activity, the computer will enter the power-saving standby mode.
Suspend Time Out (Minute)	This sets the timeout for suspend mode in minutes. If the time selected passes without any system activity, the computer will enter the power-saving suspend mode.
Display Activity	If you set this item to Monitor, any activity on the display will reset the timers for the power-saving timeouts.
Serial Port 1	If you set this item to Monitor, any activity on the serial port 1 will reset the timers for the power-saving timeouts.
Serial Port 2	If you set this item to Monitor, any activity on the serial port 2 will reset the timers for the power-saving timeouts.
Parallel port	If you set this item to Monitor, any activity on the parallel port will reset the timers for the power-saving timeouts.
Primary master/slave IDE	If you set these items to Monitor, any activity on devices on the primary IDE channel will reset the timers for the power-saving timeouts.
Secondary master/ slave IDE	If you set these items to Monitor, any activity on devices on the primary IDE channel will reset the timers for the power-saving timeouts.
Ring Resume From Soft Off	If you enable this item, incoming calls to the fax/ modem can resume the system from a power-saving mode or a software power down.

LAN Resume From Soft Off	If you enable this item, network traffic to the LAN adapter can resume the system from a power-saving mode or a software power down.
RTC Alarm Power On	If you enable this item you can set an alarm on the system realtime clock that will resume the system from a power-saving mode or a software power down.
RTC Alarm Date / Hour / Minute / Second	If you have enabled the RTC Alarm Power on, use these items to set the time and date of the alarm.

PCI / Plug and Play Setup Page

This page sets some of the parameters for devices installed on the system PCI bus, and devices that use the system plug and play capability.



Plug and Play Aware O/S	Enable this item if you are using an O/S that supports Plug and Play such as Windows 95 or 98.
Primary Graphics Adapter	Use this item to define if your primary graphics adapter is installed in a PCI slot or on an AGP bus.

PCI VGA Palette Snoop	When this item is enabled, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device.
Assign IRQ for VGA	If this item is enabled, an IRQ will be assigned to the VGA graphics system. We recommend that you set this value to No.
Offboard PCI IDE Card	If you are using an IDE interface add-in card, use this item to define which PCI slot the card is installed in. Leave this item at Auto for automatic detection.
Pri. / Sec. Offboard PCI IDE IRQ	If you are using an IDE interface add-in card, use these items to assign an IRQ to the primary and secondary IDE channels.
DMA Channel X	If you set this to PnP, the system will dynamically allocate DMA channels as they are required. If you set a DMA channel to ISA/EISA, it will be reserved for a non-plug and play ISA or EISA device.
IRQ X	If you set this to PCI/PnP, the system will dynamically allocate IRQs as they are required. If you set an IRQ to ISA/EISA, it will be reserved for a non-plug and play ISA or EISA device.
Reserved Memory Size	This item lets you reserve a block of memory for any device that requires it.
Reserved Memory Address	This item lets you set the address for any block of memory that has been reserved.

Load Optimal Settings

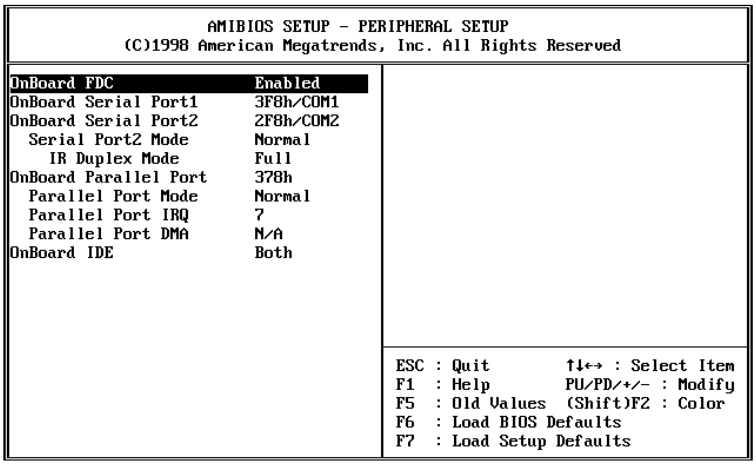
If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the setup utility is loaded with a set of optimal default values. The optimal default values are not very demanding and they should allow your system to function with most kinds of hardware and memory chips.

Load Best Performance Settings

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the setup utility is loaded with a set of best-performance default values. The optimal default values are quite demanding and your system might not function properly if you are using slower memory chips or other kinds of low-performance components.

Peripheral Setup Page

This page sets some of the parameters for peripheral devices installed on the system.

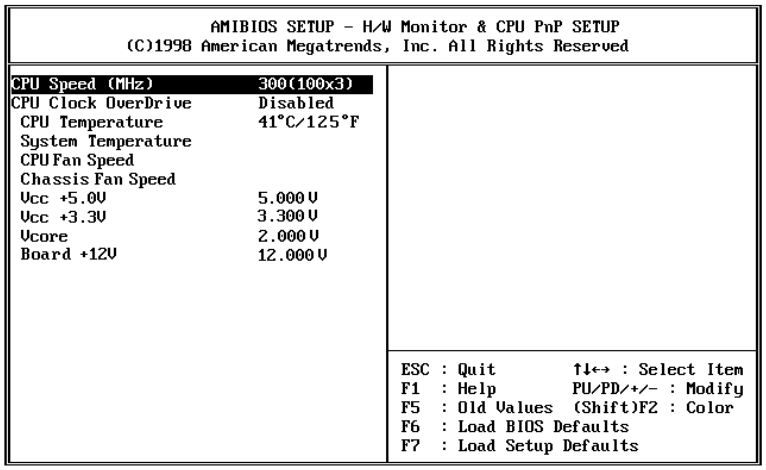


Onboard FDC	Use this item to enable or disable the onboard floppy disk drive interface.
Onboard Serial Port1	Use this item to enable or disable the onboard serial port COM1/3, and to assign a port address
Onboard Serial Port 2	Use this item to enable or disable the onboard serial port COM2/4, and to assign a port address

Serial Port2 Mode	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,
IR Duplex	Use this item to define if the optional infrared port is full-duplex or half-duplex.
Onboard Parallel Port	Use this item to enable or disable the onboard parallel port LPT1, and to assign a port address
Parallel Port Mode	Use this item to determine the parallel port mode. You can select Normal, ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or ECP + EPP.
Parallel Port IRQ	Use this item to assign an IRQ to the parallel port.
Parallel Port DMA	Use this item to assign a DMA channel to the parallel port.
Onboard IDE	Use this item to enable or disable either of the two onboard IDE channels, Primary or Secondary.

Hardware Monitor & CPU PnP Setup Page

This page lets you set the parameters for hardware monitoring and manually or automatically configure the mainboard for the CPU.



CPU Speed	Use this item to set the internal clock speed of your CPU.
CPU Clock Overdrive	Use this item to increase the clock speed of your CPU. We recommend that you do not try to run your CPU faster than its rated speed.
CPU Temperature	Use this item to set the threshold temperature for the CPU. The system will alert you if this temperature is exceeded.
FAN Speed, voltages & Vcore	Use these items to set the parameters for the fan speeds and the mainboard voltages. If the values deviate from the values installed here, the hardware monitoring will alert you with a warning .

Change Supervisor Password

If you highlight this item and press **Enter**, a dialog box appears which lets you enter a Supervisor password. You can enter no more than six letters or numbers. Press **Enter** after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press **Enter** after you have retyped it correctly. The password is required at boot time, or when the user enters the setup utility.

Change or Remove the Password

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

Auto-Detect Hard Disks

This item automatically detects and installs any hard disk drives installed on the primary and secondary IDE channel. Most modern drives can be detected. If you are using a very old drive that can't be detected, you can install it manually.

Setup will check for two devices on the primary IDE channel and then two devices on the secondary IDE channel. At each device,

the system will flash an N in the dialog box. Press **Enter** to skip the device and proceed to the next device. Press **Y**, then **Enter** to tell the system to auto-detect the device.

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 program. When the Save and Exit dialog box appears, press **Y** to save and exit, or press **N** to return to the setup main menu.

Exit Without Saving Option

Highlight this item and press **Enter** to discard any changes that you have made in the setup utility and exit the setup program. When the Exit Without Saving dialog box appears, press **Y** to discard changes and exit, or press **N** to return to the setup main menu.

Chapter 4

Software & Applications

Introduction

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

In order to run the software, put the support software CD-ROM in the CD-ROM drive, and execute the EXE file name given in the description below.

> ***Note:*** *The correct path name for each software driver is provided, where* ***D:*** *identifies the CD-ROM drive letter – modify if necessary.*

Bus Master IDE Driver

The IDE Bus Master Drivers allows the system to properly manage the IDE channels on the mainboard. You only need to install an IDE driver if you are running Windows 95.

- Windows 95 – D:\IDE\M765MRT\WIN95\SETUP.EXE
- Windows NT4.0 – D:\IDE\M765MRT\NT40

USB Driver

The USB Driver allows the system to recognize the USB ports on the mainboard. You need to install this driver if you are running Windows 95.
This driver is available for:

- Windows 95 – D:\USB\EUSBSUPP\USBSUPP.EXE
- Windows 95 (Chinese) – D:\USB\CUSBSUPP\ CUSBSUPP.EXE

Sound Driver

The Sound driver allows the system to generate optimal sound effects.
This driver is available for:

- DOS & Windows 3.x – D:\SOUND\DRIVER\8738AM\DOS-W31
- Windows 9X – D:\SOUND\DRIVER\8738AM\W95-98
- Windows NT – D:\SOUND\DRIVER\8738AM\NT40

There is also an Audio application program available for:

- Windows 95/98 - D:\SOUND\GAMUT\AUDIO PLAYER

BIOS Update Utility

The BIOS Update utility allows you to update the BIOS setup file on your mainboard to a newer version. You can download updates of the BIOS setup available for your mainboard from the website.

- D:\UTILITY\AMIFL815.EXE

PC-Cillin Software

The PC-Cillin software program provides anti-virus protection. This program is available for:

- DOS – D:\PC-CILLIN\DOS\PCSCAN.EXE
- Windows 95 – D:\PC-CILLIN\WIN95\DISK1\SETUP.EXE
- Windows 98 – D:\PC-CILLIN\WIN98\SETUP.EXE

Modem Driver and Applications

The Modem driver is required by the onboard modem module. SuperVoice is a suite of modem applications for data and voice transmissions. MediaRing Talk provides an internet telephone for the onboard modem.
D:\MODEM\8738\WIN9X
D:\MODEM\SUPERVOICE
D:\MODEM\MEDIARING TALK

ADCM

The AMI Desktop Client Manager application provides hardware monitoring for stand-alone or networked workstations
D:\AMIADCM\WIN95&98\SETUP.EXE

Using the PCI Sound Pro Application

1. Before you install the PCI Sound Pro drivers, make sure your Operating System has been installed, otherwise the PCI Sound Pro might be detected as “Other device” by the device manager of your OS.
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 page and click on “C-media SoftMidi Synthesis (Win98) / Driver (Win95)”, then click “OK” to confirm.
3. A Windows application named Audio Rack is provided with the PCI Sound Pro 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 System Mixer in the Audio Rack software to control your computer’s audio volume, recording device and the recording gain.
4. If the devices that 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 page and click on “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 Sound Pro manual in the CD which ships with this mainboard.

The Four Speakers System

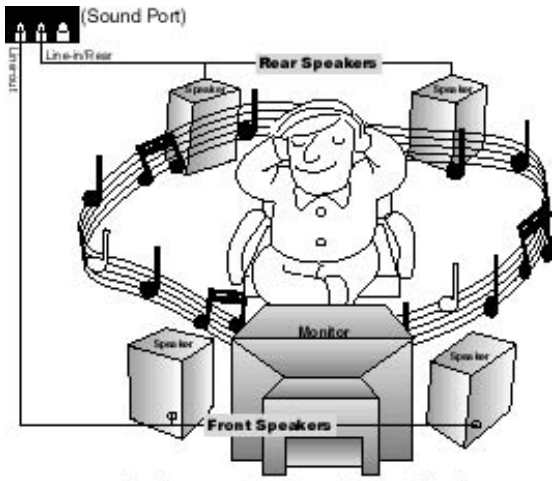
The onboard Sound Pro audio system supports 2 wave channels (front/rear) known as the 4 speaker system. If you are running applications which use the DirectSound® 3D or A3D® audio interface, your system can simulate realistic 3D sound through a 4 speaker setup. Follow the steps below to install a 4-speaker setup.

Speaker Installation

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

Speaker Position

Set up your speakers similar to the following figure to get the best audio result.



A picture on the 4 speakers application.

Mixer Setup

There is a 4-speakers option in the Volume Control of the Mixer when you are setting up the PCI Audio Application. Click on the 4 SPK icon to enable this option. This means that 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 speakers mode is enabled, turn on/off the output of the front speakers 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.