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Federal Communications Commission (FCC)

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

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

Shielded interconnect cables and 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/FCPGA Pentium III** 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**. The mainboard supports a system bus of **66 MHz** or **100 MHz**.

The mainboard uses the Intel i810 chipset which provides **CPU Plug & Play** through firmware. The mainboard is highly integrated and includes a built-in **Graphics Accelerator** with optional **AV/S-Video** output, a built-in **PCI 3D Sound System**, and a built-in **10BaseT/100BaseTX Network Adapter**. A **V.90 Fax/Modem DAA module** is also shipped with the mainboard. In addition, it has a full set of **I/O Ports** including a serial port, 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 that is network ready, and has built-in communications. The board is **baby-AT sized** and has power connectors for **ATX** and **AT** power supply units and it can be installed in AT system case.

Key Features

This key features of this mainboard include:

Processors Support
♦ **Pentium-III** support for 450 MHz to 800 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
♦ **FCPGA Pentium-III** support for 450 MHz to 800 MHz clock rates
♦ **PPGA Celeron** run from 300 MHz through to 600 MHz.
♦ Supports a 66 MHz and 100 MHz FSB (Front Side Bus)
♦ All processors configured by **CPU Plug & Play**

Memory Support
♦ Two DIMM slots for SDRAM 168-pin memory modules
♦ Support for 66 MHz & 100 MHz memory bus
♦ Maximum installed memory can be 2 x 256 MB = 512 MB

Expansion Slots
♦ Three 32-bit PCI slots

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 an AT or ATX power supply
♦ Support for Green PC standard, suspend switch, keyboard power on/off
♦ Support Wake on Modem, Wake on LAN and Wake on Alarm

Built-in Graphics System

♦ 3D Hyper Pipelined Architecture: Parallel Data Processing (PDP) and Precise Pixel Interpolation (PPI).
♦ Full 2D H/W and Motion Video Acceleration
♦ Up to 1600x1200 in 8-bit color at 85Hz refresh
♦ H/W Motion Compensation Assistance for S/W MPEG2 decode
♦ Optional TV encoder for NTSC and PAL TV support (AV/S-Video)

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®
♦ Stereo Mixer supports analog mixing from CD-Audio, Line-In

Onboard I/O Ports

♦ Floppy disk drive port with 1Mb/s transfer rate
♦ One 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) and One infrared port (optional)

3

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

Built-in LAN Adapter
♦ Onboard **10BaseT/100BaseTX LAN Adapter**
♦ LAN controller integrates Fast Ethernet MAC and PHY compliant with IEEE802.3u 100BASE-TX, 10BASE-T and ANSI X3T12 TP-PMD standards
♦ Compliant with ACPI 1.0 and the Network Device Class Power Management 1.0
♦ High Performance provided by 100 Mbps clock generator and data recovery circuit for 100 Mbps receiver

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** Fax/Modem and voice software

- ♦ **Media Ring Talk** provides PC to PC base internet phone communication
- ♦ **Gamut** provides professional audio applications included MP3 encoding/playback
- ♦ **WordPerfect Suite 8** is a windows version office application

Dimensions
- ♦ Baby-AT form factor (22cm x 25.7cm)

Package Contents

Your mainboard package ships with the following items:

- ❑ Mainboard
- ❑ This User's guide
- ❑ 1 UDMA/33 IDE cable
- ❑ Floppy diskette drive cable
- ❑ Audio ports and Game/MIDI port extension bracket
- ❑ Serial/Parallel ports extension bracket
- ❑ VGA extension bracket
- ❑ Fax/Modem DAA module
- ❑ Network adapter extension bracket
- ❑ 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)
- ❑ AV/S-Video output extension bracket
- ❑ UDMA/66 IDE cable

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: 1. Before installing the mainboard, you must ensure that the Clear CMOS jumper JP9 is set to the Normal setting. See this chapter for information locating JP9 and changing the jumper setting.

2. While installing the mainboard into AT case with ATX power, please make sure the AC power cord is unplugged before the full system is installed completely. Otherwise, it may destroy stuffs unpredictably, due to the power-on trigger event of power management.

Mainboard Components

Use the diagram below to identify the major components on your mainboard.
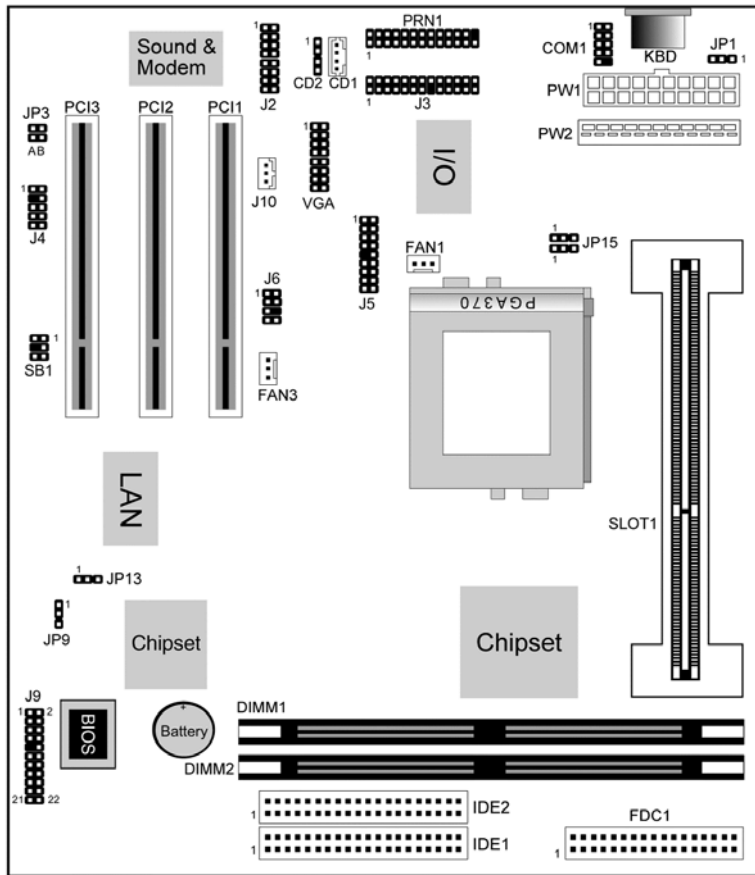
Note: Any jumpers on your mainboard that do not appear in this illustration are for testing only.

Install the Processor

This mainboard has a Slot-1 which can be installed with any Slot-1 processor cartridge including the Pentium-II, the Pentium-III and the SEPP Celeron. It also has a Socket-370 which can be installed with the PPGA Celeron/FCPGA Pentium-III processor.

To ensure reliability, make sure that your processor is fitted with a heatsink/cooling fan assembly.

You can install a Slot-1 processor or a Socket-370 processor. You cannot install a Socket-370 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 list notes the processors that are currently supported by this mainboard. New processors may be a released after this manual is printed.

Pentium III: Slot-1, 450~800 MHz, FSB: 100MHz
Pentium II: Slot-1, 350~450 MHz, FSB: 100MHz;
                233~333 MHz, FSB: 66MHz
SEPP Celeron: Slot-1, 266~433 MHz, FSB: 66MHz
FCPGA Pentium III: Socket-370, 500~800 MHz, FSB: 100MHz
PPGA Celeron: Socket-370, 300~600 MHz, FSB: 66MHz

Installing a Slot-1 Processor Cartridge
1.   Locate Slot-1, JP15 and FAN1 on the mainboard.

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

9
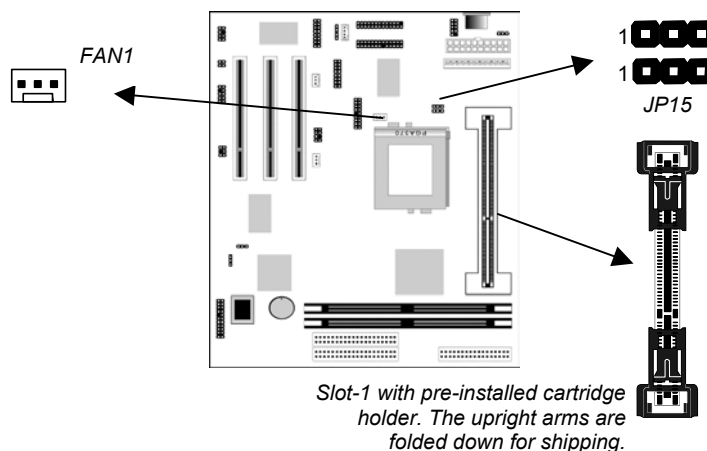
2. The Slot-1 is installed with a cartridge holder. The upright struts of the cartridge holder are folded down for shipping. Pull the struts upwards so that they are in the upright position.
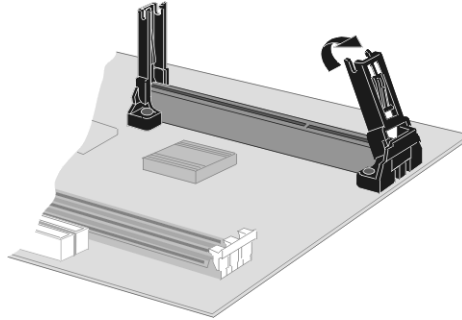
3. Insert the processor cartridge into the cartridge holder. Follow the instructions given with your processor cartridge. The edge connector on the cartridge has a notch so that it only fits into the Slot-1 in the correct way.
4. Locate the cooling fan power supply FAN1. Connect the cable from the processor cartridge cooling fan to FAN1.
5. Locate the jumper JP15. Use the two rows of three pins jumper to select you have installed a non-FCPGA Pentium III processor as right.

JP15
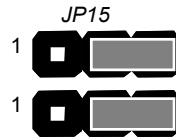
Selects a non-FCPGA Pentium III processor

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

10

1. Locate the Socket-370, JP15 and FAN1. Pull the locking lever out from the socket and swing it to the upright position.

FAN1

JP15

Socket-370
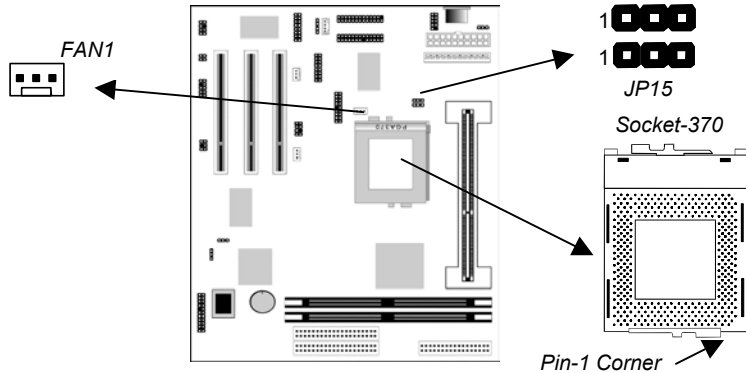
Pin-1 Corner

2. On the 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 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 processor in the socket.
6. If the processor is installed with a cooling fan assembly, connect the cable from the fan to the CPU fan power connector FAN1.
7. Locate the jumper JP15. Use the two rows of three pins jumper to select if you have installed a FCPGA Pentium III processor as below.

JP15

Selects a PPGA
Celeron processor

JP15

Selects a FCPGA
Pentium III processor

11
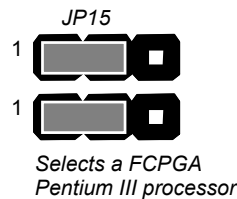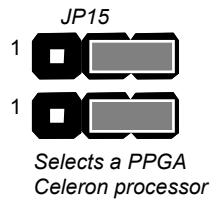
Install Memory

The mainboard has two DIMM slots which can be installed with memory modules. You must install at least one memory module in order to use the mainboard.
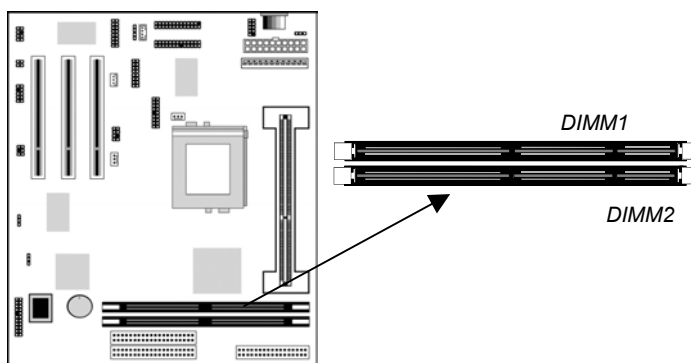
For this mainboard, you must use 168-pin, 3.3V memory modules installed with SDRAM memory chips. You must use memory that operates on a 100 MHz memory bus (PC-100 memory). You can install any size of memory module from 16 MB up to 256 MB, so the maximum memory size is 2 x 256 MB = 512 MB.

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.
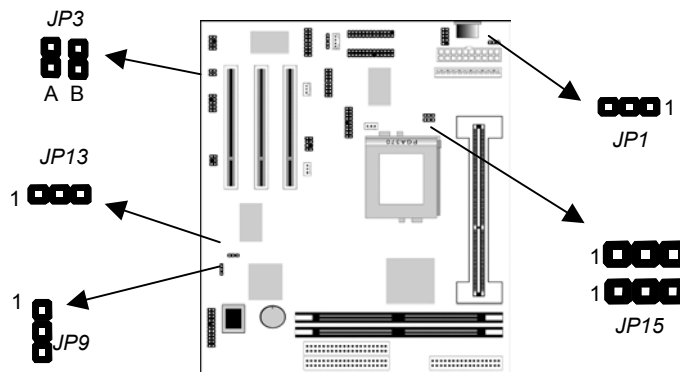
Jumper JP1: Keyboard Power On Selector

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
Enable Keyboard Power On	Short Pins 1-2
Disable Keyboard Power On	Short Pins 2-3

Jumper JP9: 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

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Jumper JP3(A, B): Onboard Fax/Modem & Audio Enable/Disable

This jumper has two rows of two pins. The left row (JP3-A) is used to enable or disable the onboard Fax/Modem. The right row (JP3-B) is used to enable or disable the onboard audio system.

Function	Jumper Setting
Enable Onboard Modem	Open JP3-A Pins
Disable Onboard Modem	Short JP3-A Pins

Function	Jumper Setting
Enable Audio	Open JP3-B Pins
Disable Audio/Modem	Short JP3-B Pins

Note: If you use the right row of pins to disable the onboard audio system, the Fax/Modem is disabled, even if you have set the left row of pins to the enable Fax/Modem setting.

Jumper JP13: Enable/Disable Onboard LAN

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

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

Jumper JP15: Select FCPGA Pentium III Processor

Use the two rows 3-pin jumper to prepare the mainboard to use either a FCPGA (Socket-370) Pentium III processor or not.

Function	Jumper Setting
FCPGA Pentium III CPU	Short all Pins 1-2
Non FCPGA Pentium III CPU	Short all 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.
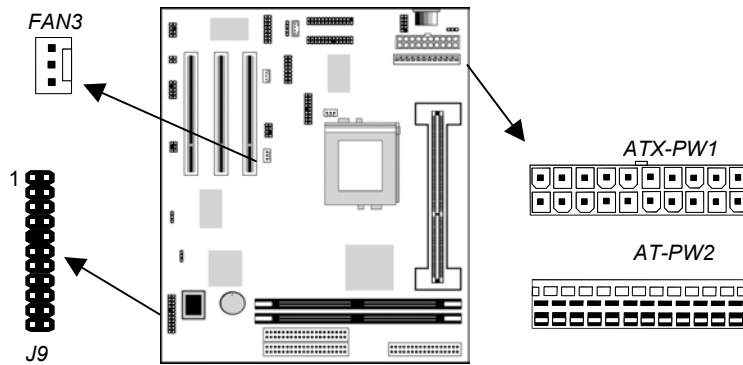
Connect the power cable from the power supply unit to the power connector on the mainboard. If you are using an AT power unit, connect it to the AT power connector PW2. If you are using an ATX power unit connect it to the ATX power connector PW1.

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 FAN3.

Connect the case switches and indicator LEDs to the bank of switch and LED connectors J9. See the illustration below for a guide to the pin functions of the J9 case connector.

1 2

Speaker
Pins 1-3-5-7

Power LED
Pins 2-4-6

Keylock
Pins 8-10

HDD LED Pins 15-16

Reset Switch Pins 17-18

Green LED Pins 19-20

Power Switch Pins 21-22

21 22

16
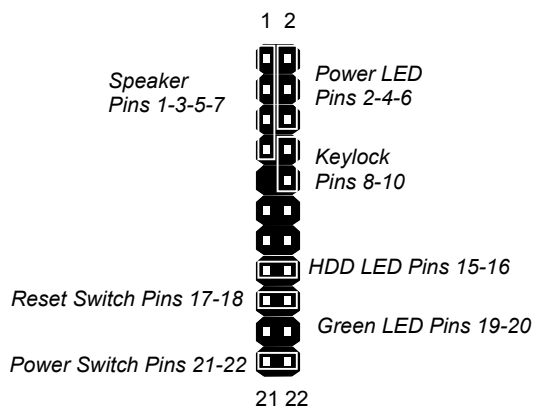
Install the Extension Brackets

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.

Audio Ports & Game/MIDI Extension Bracket
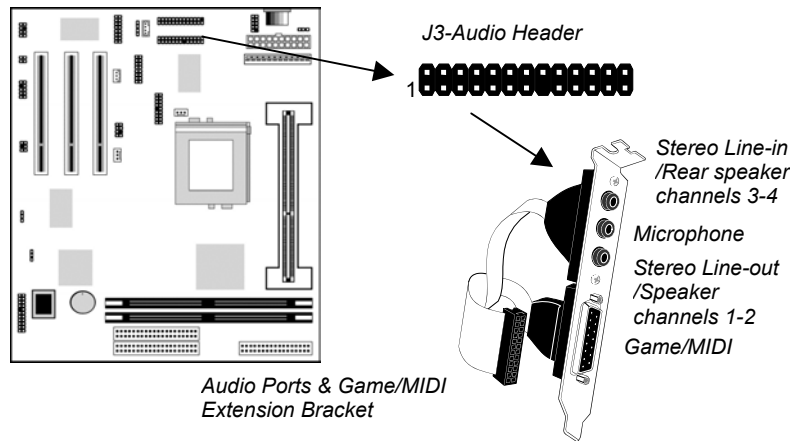
1. On the mainboard, locate the J3 audio header for this bracket.
2. Plug the cable from the bracket into the J3 audio header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

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Serial/Parallel Ports Extension Bracket

This bracket has one serial port - COM1 (9-pins) and one parallel port – LPT1 (25pins). On this mainboard, the second serial port is reserved for the Fax/Modem card so you can only connect one of the serial ports to the manboard header COM1.
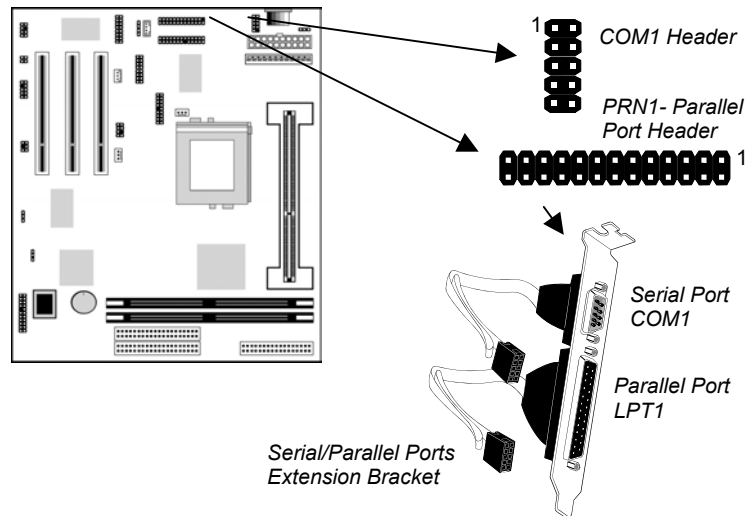
1. On the mainboard, locate the headers COM1 and PRN1 for this bracket.
2. Plug the serial cable into COM1 and the parallel cable into PRN1.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

LAN Adapter Extension Bracket

This bracket supports an RJ45 network connector and connects to the built in J4 LAN header on the mainboard.

J4 LAN Header

LAN Extension Bracket
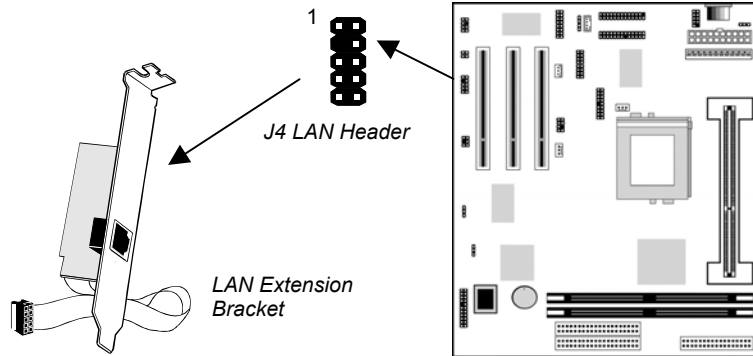
1. On the mainboard, locate the J4 LAN header for this bracket.
2. Plug the cable from the bracket into the LAN header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place 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 connectors on the metal edge of the Fax/Modem DAA module.

J2-MODEM Header

GND 1	2 MCLK
GND 3	4 FRA-SY
GND 5	6 SCLK
AUX 3V 7	8 RIN-WAK
HOOK 9	10 GPIO
RIN 11	12 SDO
AUX 5V 13	14 SDI
MUTE 15	16 RST

19
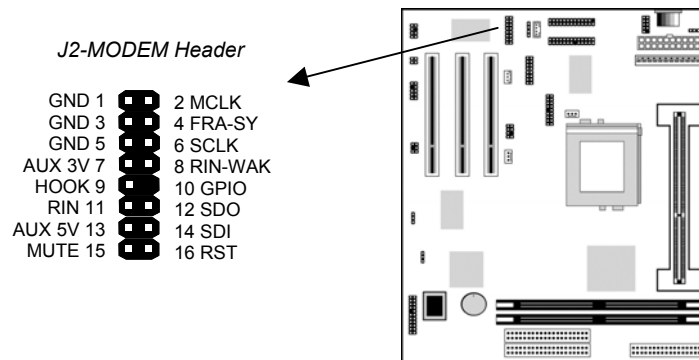
1. Locate the J2 Modem header on the mainboard.
2. Plug the Fax/Modem DAA module into the J2 Modem header.
3. Remove the blanking plate adjacent to the Fax/Modem DAA module.
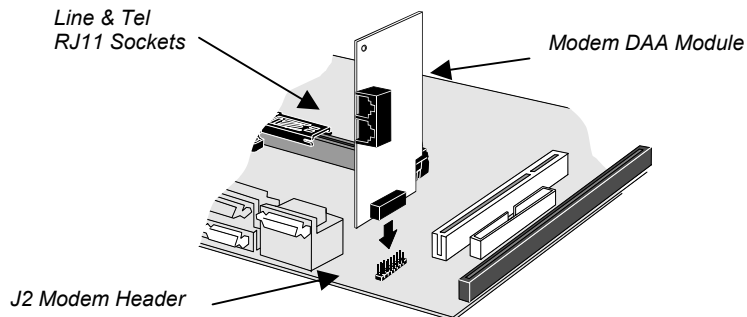
VGA Extension Bracket

The VGA extension bracket has a 15-pin connector for an external monitor cable.
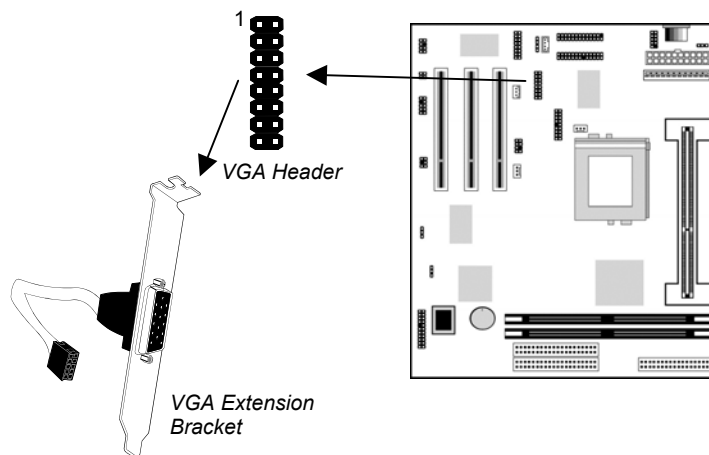
1. On the mainboard, locate the VGA header for this bracket.
2. Plug the cable from the bracket into the VGA header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

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Optional Extension Brackets

For this mainboard, you can also obtain an ATX Form Card and an AV/S-Video output extension bracket. Install these brackets by following the steps below.

ATX Form Card
This ATX Form Card provides a mini-DIN port for infrared, one mini-DIN port for a PS/2 mouse. In addition it has two USB (Universal Serial Bus) ports.
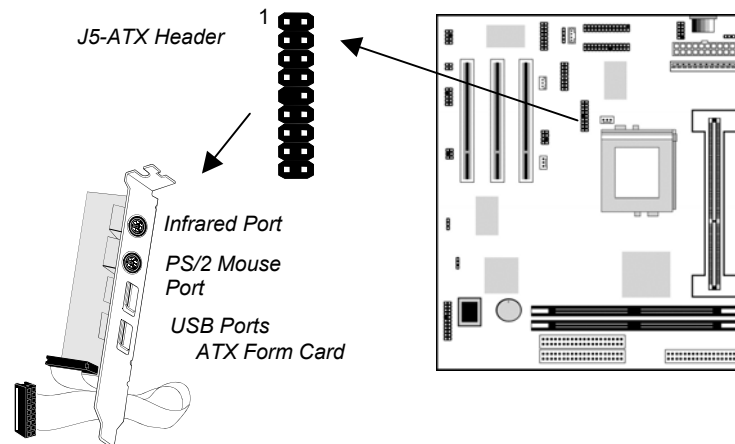
1. On the mainboard, locate the J5 ATX header for this bracket.
2. Plug the cable from the bracket into the J5 ATX header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

AV/S-Video Output Extension Bracket

This bracket has an AV jack and a S-Video jack for the television out.

J6 TV-Out Header

AV/S-Video Output Extension Bracket
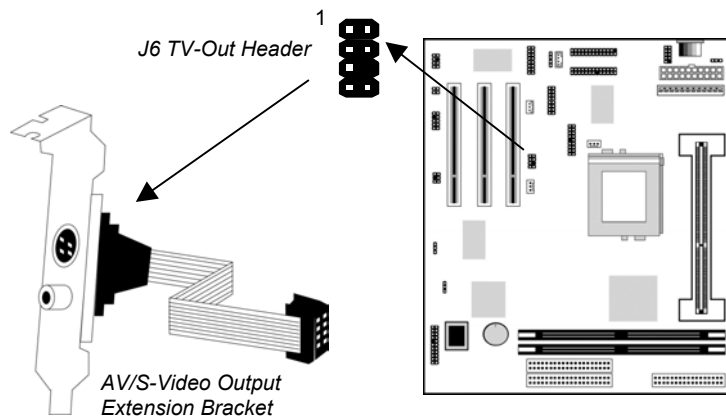
1. On the mainboard, locate the J6 TV-Out header for this bracket.
2. Plug the cable from the bracket into the J6 TV-Out header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

Install Other Devices

Install and connect any other devices in the system following the steps below.
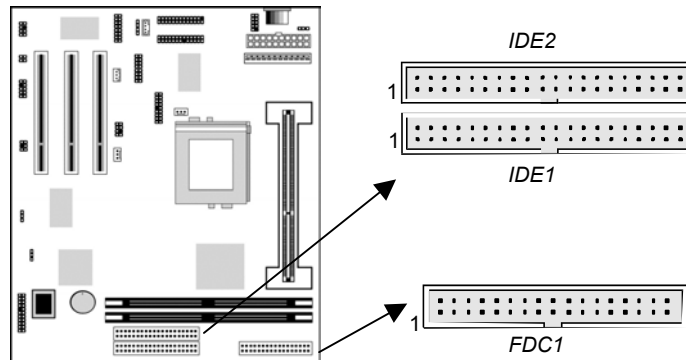
Floppy Disk Drive
The mainboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5" or 5.25" wide, with capacities of 360K, 720K, 1.2MB, 1.44MB, or 2.88MB.

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.

On the mainboard, locate the two 4-pin connectors for CD1 and CD2. There are two kinds of connector because different brands of CD-ROM drive have different kinds of cable connectors on their audio output cable. Connect the cable to the appropriate connector.
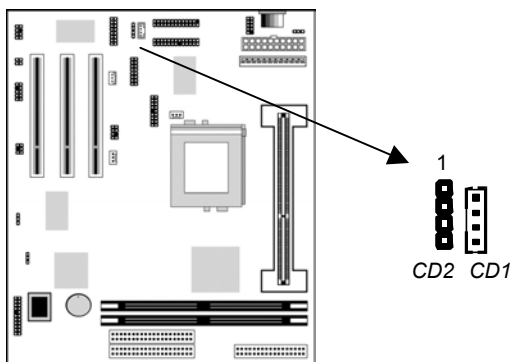
Expansion Slots

This mainboard has three 32-bit PCI expansion slots. The PCI1 slot is shared with the onboard VGA, the PCI2 slot is shared with the onboard LAN, and the PCI3 slot is shared with the onboard audio system. It means that you can use either one of shared both but you cannot use the both at the same time.

PCI3 PCI2 PCI1

J10-LAN Wake Up
Header

SB1-SB-Link
Header
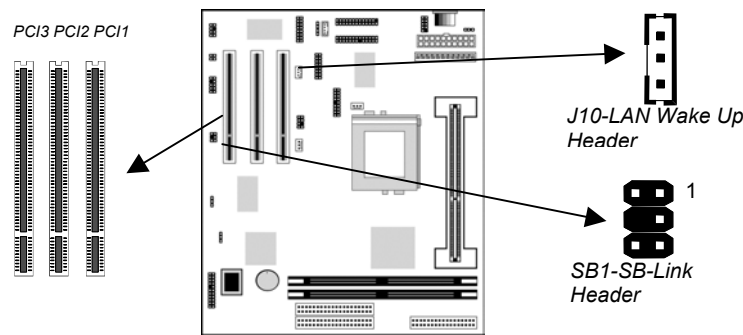
Follow the steps below to install a PCI expansion card.
1. Locate the PCI slot on the mainboard.
2. Remove the blanking plate from the appropriate expansion slot on the system chassis.
3. Install the edge connector of the expansion card into the slot and press it quite firmly down so that it is seated correctly.
4. Secure the bracket of the card into the expansion slot in the system chassis using the screw that held the blanking plate in place.

LAN Wake Up
If you are using an ATX power supply and you have installed a LAN adapter expansion card, connect the card to the LAN Wake Up header J10. This allows incoming traffic to resume the system from a software power down.

SB-Link
If you have disabled the built-in audio system and installed a PCI Sound Blaster audio card, you can connect the card to the SB-Link header 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.

```
           AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.20
          (C)1998 American Megatrends, Inc. All Rights Reserved

   Standard CMOS Setup                 Features Setup

   Advanced Setup                      CPU PnP Setup

   Power Management Setup              Hardware Monitor

   PCI / Plug and Play Setup           Change Password

   Load Optimal Settings               Exit

   Load Best Performance Settings


  ESC: Quit     ↑↓←→: Select Item    (Shift)F2: Change Color    F5: Old Values
  F6: Optimal values         F7: Best performance values       F10: Save&Exit

       Standard CMOS setup for changing time, date, hard disk type, etc.
```

You can use the cursor arrow keys to highlight any of the options on the 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 best-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. If you press the F3 key, the system will automatically detect and configure the hard disks on the IDE channels.

```
                 AMIBIOS SETUP - STANDARD CMOS SETUP
          (C)1998 American Megatrends, Inc. All Rights Reserved

Date (mm/dd/yyyy): Thu Apr 29,1999
Time (hh/mm/ss)  : 09:58:31
                                              LBA  Blk  PIO  32Bit
         Type            Size  Cyln  Head WPcom Sec Mode Mode Mode Mode
Pri Master : Not Installed
Pri Slave  : Not Installed
Sec Master : Not Installed
Sec Slave  : Not Installed

Floppy Drive A:  Not Installed
Floppy Drive B:  Not Installed


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

Date & Time	Use these items to 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 *ARMD*.
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.

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Advanced Setup Page

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

```
                AMIBIOS SETUP - ADVANCED SETUP
         (C)1998 American Megatrends, Inc. All Rights Reserved

 Trend ChipAwayVirus          Enabled
 Boot From OnBoard Lan        Disabled
 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       Disabled
 Internal Cache               Enabled
 System BIOS Cacheable        Disabled
 Video BIOS Shadow            Enabled
 DRAM Page Closing Policy     Open          ESC : Quit          ↑↓↔ : Select Item
 CAS Latency                  3 SCLKs       F1  : Help          PU/PD/+/- : Modify
 Graphic Win Size             64M           F5  : Old Values  (Shift)F2 : Color
 Delayed Transaction          Disabled      F6  : Load Optimal values
                                            F7  : Load Best performance values
```

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.
Boot From OnBoard Lan	If you enable this item, the system will boot from onboard LAN.
1st Boot Device **2nd Boot Device**	Use these two items to determine the order and priority that your computer follows to load an operating system at start-up time.
Try Other Boot Devices	If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first two locations.
S.M.A.R.T. for Hard Disks	Enable this item if 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.

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Floppy Drive Swap	If you have two diskette drives installed and you enable this item, drive A becomes drive B and drive B becomes drive A.
Floppy Drive Seek	If you enable this item, your system will check the diskette drives at start up time. Disable this item unless you are using an old 360K diskette drive.
Primary Display	Use this item to determine the display devices for the primary display of your computer.
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 BIOS Shadow	When this item is enabled, 32 kilobytes of the system video BIOS is copied to system memory from where it can execute more rapidly.
DRAM Page Closing Policy	This item determines the operation of the memory Page Closing Policy. We recommend that you leave this item at the default value.
CAS Latency	This item determines the operation of the main memory CAS (column address strobe). We recommend that you leave this item at the default value.
Graphic Window Size	This item determines the operation of the onboard graphics adapter. We recommend that you leave this item at the default value.
Delayed Transaction	If you enable this item, your system will delay the transaction mechanism for AGP master/PCI master. We recommend that you leave this item at the default value.

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Power Management Setup Page

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

```
             AMIBIOS SETUP - POWER MANAGEMENT SETUP
         (C)1998 American Megatrends, Inc. All Rights Reserved
┌─────────────────────────────────────┐  ┌──────────────────────────────────┐
│Power Management/APM      Disabled    │  │                                  │
│Green Monitor Power State Suspend     │  │                                  │
│Video Power Down Mode     Suspend     │  │                                  │
│Hard Disk Power Down Mode Suspend     │  │                                  │
│Standby Time Out (Minute) Disabled    │  │                                  │
│Suspend Time Out (Minute) Disabled    │  │                                  │
│FDC/LPT/COM Ports         Monitor     │  │                                  │
│Ring On Power On          Disabled    │  │                                  │
│Lan Card Power On         Disabled    │  │                                  │
│Keyboard Power On         Disabled    │  │                                  │
│ Stroke Keys Selected     N/A         │  │                                  │
│RTC Alarm Power On        Disabled    │  │                                  │
│  RTC Alarm Date          15          │  │                                  │
│  RTC Alarm Hour          12          │  │                                  │
│  RTC Alarm Minute        30          │  │ESC : Quit        ↑↓←→ : Select Item│
│  RTC Alarm Second        30          │  │F1  : Help        PU/PD/+/- : Modify│
│                                      │  │F5  : Old Values  (Shift)F2 : Color │
│                                      │  │F6  : Load Optimal values           │
│                                      │  │F7  : Load Best performance values  │
└─────────────────────────────────────┘  └──────────────────────────────────┘
```

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	Use this item to determine which power-saving mode is required to power down a green PC-compliant monitor. You can force the monitor to power down in Standby or Suspend modes, or you can disable the powerdown.
Video Power Down Mode	Use this item to determine which power-saving mode is required to power down the graphics sub-system. You can force the graphics to power down in Standby or Suspend modes, or you can disable the powerdown.
Hard Disk Power Down Mode	Use this item to determine which power-saving mode is required to power down the hard disk drive(s). You can force the hard disk to power down in Standby or Suspend modes, or you can disable the powerdown.

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.
FDC/LPT/COM Ports	If you set this item to Monitor, any activity on the floppy disk drive(s)/the parallel port/the serial port can resume the system from a power saving mode.
Ring On Power On	Your system can enter a software power down. If you enable this item, the system can automatically resume if there is an incoming call on the built-in Fax/Modem.
Lan Card Power On	Your system can enter a software power down. If you enable this item, the system can automatically resume if there is traffic on the network adapter.
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 enable the jumper for Keyboard Power On.
Stroke Keys Selected	If you have enabled the Keyboard Power On, use this item to select the hot keys to power on the system.
RTC Alarm Power On	Your system can enter a software power down. If you enable this item, the system can automatically resume at a fixed time on the system's RTC (realtime clock). Use the items below to set the date and time of the wake-up 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.

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```
                AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP
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 Plug and Play Aware O/S    Yes
 Primary Graphics Adapter   OnBoard VGA




                                       ESC : Quit          ↑↓←→ : Select Item
                                       F1  : Help          PU/PD/+/- : Modify
                                       F5  : Old Values   (Shift)F2 : Color
                                       F6  : Load Optimal values
                                       F7  : Load Best performance values
```

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 onboard VGA or add-on VGA.

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.

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Features Setup Page

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

```
                AMIBIOS SETUP - FEATURES SETUP
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OnBoard FDC              Enabled
OnBoard Serial Port1     3F8h/COM1
Ir Function              Disabled
   Ir Duplex Mode        N/A
OnBoard Parallel Port    378h
   Parallel Port Mode    Normal
   Parallel Port IRQ     7
   Parallel Port DMA     N/A
Onboard IDE              Both
Ultra DMA Support        Disabled
Onboard USB Function     Disabled
USB Function for DOS     Disabled
TV OUT Type              NTSC

                                  ESC : Quit        ↑↓↔ : Select Item
                                  F1  : Help        PU/PD/+/- : Modify
                                  F5  : Old Values  (Shift)F2 : Color
                                  F6  : Load Optimal values
                                  F7  : Load Best performance values
```

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, and to assign a port address
IR Function	Use this item to define the protocol for an infrared port if you have installed an optional IR port.
IR Duplex Mode	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.
Ultra DMA Support	Use this item to enable or disable the Ultra DMA function to support the IDE devices.
OnBoard USB Function	Use this item to enable or disable the USB (Universal Bus Ports) that are integrated on this mainboard.
USB Function for DOS	If you have enabled the USB function, use this item to enable or disable USB when you are working in the DOS environment.
TV Out Type	This item is available when TV out kit onboard (optional). Use this item to determine the type of the TV Out . You can select NTSC or PAL.

CPU PnP Setup Page

This page lets you configure the mainboard for the kind of CPU that you have installed.

```
                  AMIBIOS SETUP - CPU PnP SETUP
      (C)1998 American Megatrends, Inc. All Rights Reserved

 CPU Speed                 400MHz








                                    ESC : Quit          ↑↓↔ : Select Item
                                    F1  : Help          PU/PD/+/- : Modify
                                    F5  : Old Values  (Shift)F2 : Color
                                    F6  : Load Optimal values
                                    F7  : Load Best performance values
```

CPU Speed	Use this item to define the clock speed of the processor that you have installed.

Hardware Monitor Page

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

```
                    AMIBIOS SETUP - HARDWARE MONITOR
              (C)1998 American Megatrends, Inc. All Rights Reserved

=System Hardware Monitor=
   CPU Slot1 Temp.        41°C/125°F
   CPU Socket370 Temp.    24°C/  75°F
   System Temp.           24°C/  75°F
   CPU FAN Speed          Disconnect
   Chassis FAN Speed      Disconnect
   Vcore                   2.000 V
   Vcc + 1.8 V             1.800 V
   Vcc +3.3V               3.300 V
   Vcc +5.0V               5.000 V
   Board +12.0V           12.000 V
   +5V Standby             5.000 V
   Battery                 3.300 V

                                     ESC : Quit          ↑↓←→ : Select Item
                                     F1  : Help          PU/PD/+/- : Modify
                                     F5  : Old Values  (Shift)F2 : Color
                                     F6  : Load Optimal values
                                     F7  : Load Best performance values
```

CPU Slot1 / Socket370 & System Temp.	Use these items to monitor the threshold temperature for the CPU and the system chassis.
CPU/Chassis Fan Speed, VCCs & Battery	Use these items to monitor the parameters for the voltages that control the fans and the mainboard.

Change Password

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

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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.

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 exit without saving.

Chapter 4

Software & Applications

Introduction

The support software CD-ROM included in the mainboard package contains all the drivers and utilities as needed to use our products. Below you can find a brief description of each software program, and the right location for your mainboard. More information on each individual software might be available in a README file, located in the same directory as the software.
If the operating system used in your system is Windows 98, it will automatically install all the drivers and utilities for your board. See the Auto-Installing under Windows 98 section.

Installing the Drivers

The software on the support CD-ROM is for Windows 95/NT/2000 and Windows 98, but the automatic installation is now for Win98 only. If your operating system is not Windows 98, you have to manually install for your drivers.

Installing Under Windows 95/NT/2000
1. In order to run the software put the support software CD-ROM in the CD-ROM drive.
2. If your operating system is Windows 95/NT, the system might get an error message as one of two pictures below from the PnP function.

Don't care the message, and click the **OK** button to exit. You don't really need the file to install the drivers.
If your operating system is Windows 2000, exit the Auto Set Up window and go on.

3. Use either My Computer or Windows Explorer to look at the directory structure. You must use the Open command. Double-clicking on the drive icon will not work.
4. 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 need to install two IDE drivers if you are running Windows 9x.
♦ Windows 9x – D:\IDE\Intel810\WIN9x\Intelinf\SETUP.EXE, and then, D:\IDE\Intel810\WIN9x\Infinst\SETUP.EXE

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:
♦ Win95 – D:\USB\EUSBSUPP\USBSUPP.EXE
♦ Win95 (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 & Win3.x – D:\SOUND\Driver\DosDrv\
♦ Windows 9x – D:\SOUND\Driver\W95-98\Drv
♦ Windows NT – D:\SOUND\ Driver\Nt40\Drv\
There is also two Audio applications available for:
♦ Windows 9x – D:\SOUND\Gamut\Audio Player
♦ Windows 9x – D:\Yamaha-XG\S-YXG50

Graphics Drivers and Software
Find the Graphics drivers and software here:
♦ D:\VGA\Intel810\Win9x\Graphics\ 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\Driver\9xNT\Setup.exe
♦ D:\Modem\SuperVoice\
♦ D:\Modem\MediaRing Talk\

Network Adapter Driver
Find the network adapter driver here:
♦ D:\LAN\Davicom9102

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 the latest version of the BIOS setup available for your mainboard from the website.
♦ D:\UTILITY\AMIFL816.EXE

PC-Cillin Software
The PC-Cillin software program provides anti-virus protection for your system. This program is available for:
♦ DOS – D:\PC-CILLIN\DOS\PCSCAN.EXE
♦ Windows 9x – D:\PC-CILLIN\WIN98\SETUP.EXE

ADCM Software
The AMI Desk-Client Management software provides network management services.
This software is available for:
♦ Windows 9x – D:\AMIADCM\Win9x\SETUP.EXE

Auto-Installing under Windows 98
During the installation under Win98 OS, the setup program will automatically find out and match the proper drivers for the hardware of your system. However, Windows might not be able to detect some of your new hardware.
Please follow the steps listed below to install drivers and applications for your system.
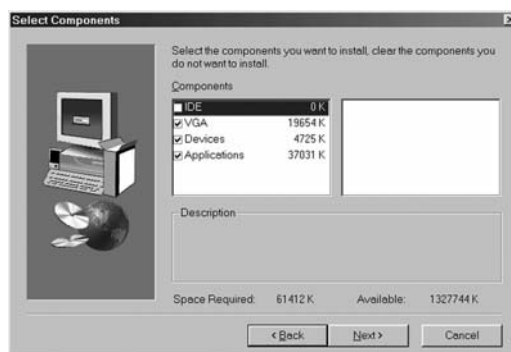1. Put the support CD into CD-ROM drive.

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2. The setup window will appear as below.

3. Click **Setup** button to continue.

4. Click **Next** button to continue.
5. Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.

6. The support software will automatically install.

Once any of the installation procedures start, software is automatically installed in sequence. You will need to follow the onscreen instructions, confirm commands and allow the computer to restart as few times as is needed to complete installing whatever software you selected to install. When the process is finished, all the support software will be installed and working.

There are some utilities that you have to manually install if you need, check to the above section.

Using the PCI Sound Pro Application

1. Before you install the Sound 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 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.
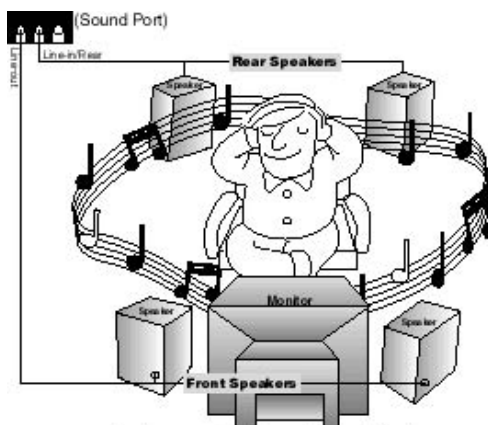
A picture on the 4 speakers application.