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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 uses the **TX PRO-II** chipset to build a mainboard which features the socket-7 architecture. The mainboard supports all **Socket-7 processors** and permits bus speeds of **60/66/75 MHz**. The mainboard firmware supports **CPU Plug and Play** so that the system will automatically adopt the correct configuration for the Socket-7 processor that you install.

The mainboard is highly integrated and includes a built-in **PCI 3D Sound System** and a built-in graphics adapter. The sound system supports a **4-way speakers**. The graphics system supports extended VGA resolutions with a 4MB frame buffer.

Communications and networking are supported with a **56 Kbps V.90 Fax/Modem DAA module** and a **10BaseT/100BaseTX network adapter**. The mainboard supports either an **AT** or **ATX power supply.** If you use an ATX supply, it supports many of the ATX power management features.

The mainboard supports a full set of **I/O ports** and **five expansion slots.** The board adheres to the **Baby-AT form factor**.

Key Features

The key features of this mainboard include:

Socket-7 Processor Support

♦ Supports all recent socket-7 processors including the Intel **P55C** (Pentium MMX), the Cyrix/IBM **6x86L/6x86MX /MII**, the AMD **K6/K6-2/K6-III**, IDT **C6/WinChip 2/2A** CPUs

♦ Supports socket-7 processors with system bus frequencies of **60/66/75 MHz**

♦ Supports **CPU Plug and Play** to automatically configure the CPU

♦ **512K external Level 2 cache memory** is provided onboard

Memory Support

♦ Two DIMM slots for **FP/EDO/SDRAM** 168-pin memory modules

♦ Maximum installed memory can be 2 x 256 MB = **512 MB**

Expansion Slots

♦ Three **32-bit PCI slot**
♦ Two **8/16-bit ISA** 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

♦ Provides AT/ATX power connector
♦ Support for Power button/Suspend Switch
♦ Supports Wake on Modem, Wake on LAN and Wake on Alarm

Built-in Graphics System

♦ Onboard 64-bit **Graphics Accelerator**
♦ Shared memory architecture allows a maximum of 4 MB main memory to act as frame buffer
♦ Supports high resolutions up to 1024 x 768 pixels

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 interfaces plus support for **4-channel speakers**
♦ Drivers support Windows 3.1/95/98/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, 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
♦ One serial port with 16550-compatible fast UART
♦ One parallel port with support for ECP and EPP
♦ Two USB ports & one PS/2 ports (optional)
♦ One optional infrared port

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 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

Bundled Software
♦ **PC-Cillin** provides automatic virus protection under Windows 95/98
♦ **Gamut2000** is an audio application that includes MP3 encoding/decoding
♦ **SuperVoice** is fax/modem software with support for data and voice transmission
♦ **MediaRing Talk** is an internet telephone application.
♦ **3Deep** delivers the precise imagery and displays accurate color in your monitor
♦ **WordPerfect Suite 8** is a windows version office application (optional)

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

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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/parallel ports extension bracket
❑ VGA extension bracket
❑ V.90 Fax/Modem DAA module
❑ 10BaseT/100BaseTX 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)

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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 extension brackets/options
- ❑ Install any other devices and make the appropriate connections to the mainboard headers.

Note: Before installing the mainboard, you must ensure that jumper JP4 is set to the Normal setting. See this chapter for information on locating JP4 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.

Note: The PCI3 slot can only be used if you disable the onboard sound system using jumper JP3.

Mainboard Components

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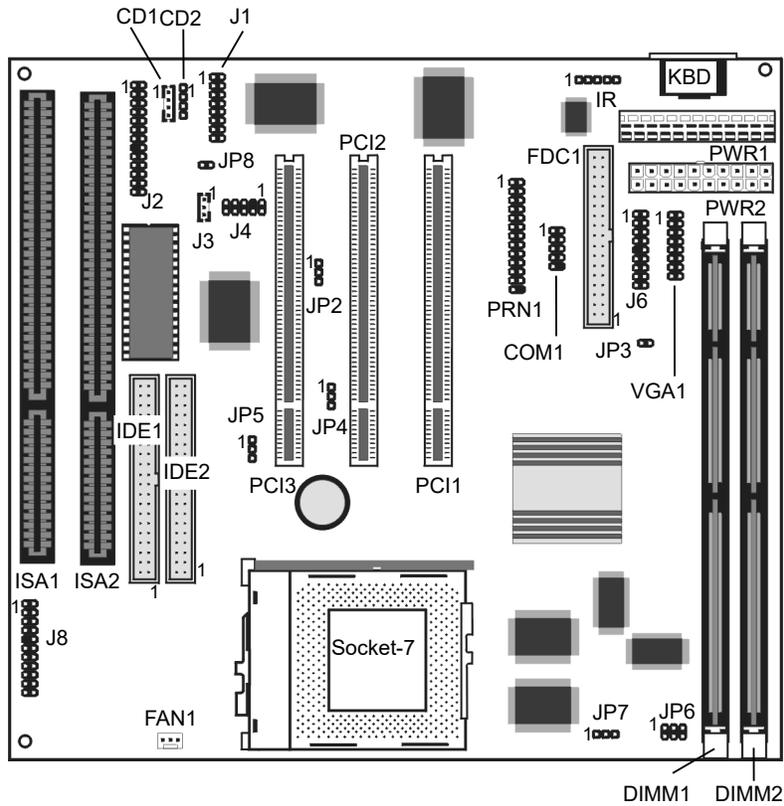
Note: Any jumpers on your mainboard that do not appear in this illustration are for testing only.

Install the Processor

This mainboard is installed with a socket-7, and so it may be installed with any of the socket-7 processors including the Intel P55C (MMX) series, the Cyrix/IBM 6x86L/6x86MX/MII series, the AMD K6/K6-2/K6-III series, the IDT C6 series, and the WinChip 2/2A. The mainboard supports system bus speeds of 60, 66, and 75 MHz.

The board supports CPU plug and play, so the system can automatically install the processor with the correct clock speed and the correct system bus frequency. To automatically configure the processor, use the BIOS setup program to select the CPU speed and system bus frequency. See chapter three for more information.

To ensure reliability, make sure that your socket-7 processor is fitted with a heatsink/cooling fan assembly.

The socket-7 processor installs into the ZIF (Zero Insertion Force) socket-7 on the mainboard.

1. Locate the socket-7 and FAN1. Pull the locking lever out from the socket and swing it to the upright position.

FAN1

Pin-1 Corner

Socket-7

9
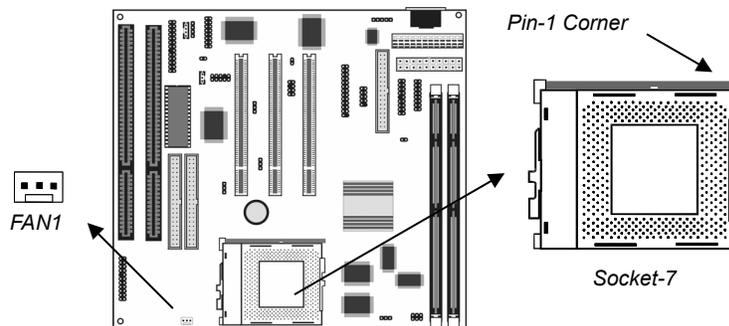
2. On the socket-7 processor, identify the pin-1 corner by noting that it has a slight bevel.
3. On the socket-7, identify the pin-1 corner. The pin-1 corner is on the same side as the locking lever, closest to the top of the lever when it is in the locked position.
4. Match the pin-1 corners and insert the socket-7 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 socket-7 processor in the socket.
6. If the socket-7 processor is installed with a heatsink/cooling fan assembly, connect the cable from the fan to the CPU fan power connector FAN1.

Install Memory

The mainboard has two DIMM slots that can be installed with memory modules. You must install at least one memory module in order to use the mainboard. You must install the first memory module into DIMM1 so that the system can share some of the memory with the built-in graphics system. A second module can be installed in DIMM2.
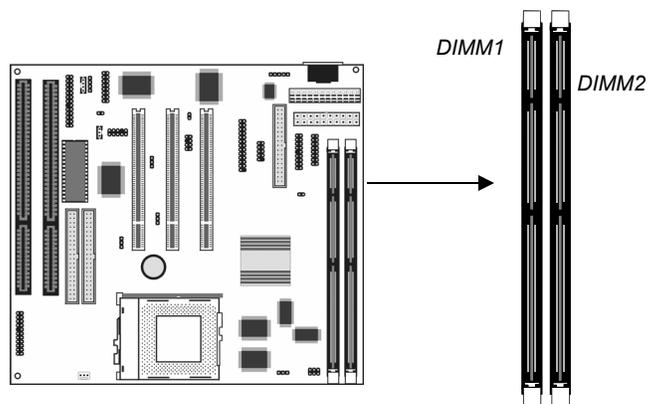
For this mainboard, you must use 168-pin, memory modules installed with SDRAM memory chips. The board supports 3.3V memory and also 5V memory. You can select the memory voltage by using the jumper JP6. See the next section for information on using JP6.

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.

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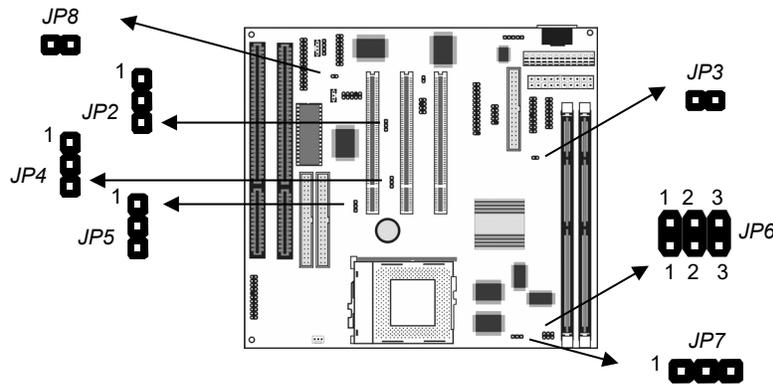
Jumper JP4: Clear CMOS Memory

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

Note: The mainboard ships with this jumper in the CLEAR position so you must change this jumper to NORMAL.

Jumper JP6: DIMM Voltage Selector

This jumper has two rows of three pins. Set the two jumper caps on the pins 1-2 to select a voltage of 3.3V volts for the memory module DIMM slots. Set the two jumper caps to pins 2-3 to select a voltage of 5V for the DIMM slots.

Function	Top Row Setting	Bottom Row Setting
3.3V memory	Short Pins 1-2	Short Pins 1-2
5V memory	Short Pins 2-3	Short Pins 2-3

Jumper JP3: Enable/disable Onboard Audio

Use this 2-pin jumper to enable or disable the onboard audio system. You must disable the onboard audio if you want to use an alternate audio system on an add-in card,

Function	Jumper Setting
Enable onboard audio	Open Pins 1-2
Disable onboard audio	Short Pins 1-2

Note: If you disable the onboard audio system, the onboard Fax/Modem is automatically disabled as well, even if the Fax/Modem enable/disable jumper JP8 is in the enabled setting.

Jumper JP8: Enable/disable Onboard Fax/Modem
Use this 2-pin jumper to enable or disable the onboard Fax/Modem DAA module.

Function	Jumper Setting
Enable onboard Fax/Modem	Open Pins 1-2
Disable onboard Fax/Modem	Short Pins 1-2

> *Note: If you disable the onboard audio system, the onboard Fax/Modem is automatically disabled as well, even if the Fax/Modem enable/disable jumper JP8 is in the enabled setting.*

Jumper JP2: LAN Enable/disable Selector
This mainboard has a built-in 10BaseT/100BaseTX network adapter. If you plan on using an alternative network adapter, you must use this 3-pin jumper to disable the onboard network adapter.

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

Jumper JP5: Onboard LAN Power Selector
Use this 3-pin jumper to set the voltage for the onboard LAN adapter to 5V or standby 5V.

Function	Jumper Setting
SB (Standby) 5V	Short Pins 1-2
5V	Short Pins 2-3

Jumper JP7: Enable/disable Onboard Graphics Adapter
Use this 3-pin jumper to enable or disable the onboard graphics adapter. Disable the graphics adapter if you plan to use an alternate graphics adapter on an add-in card.

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

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Install the Mainboard

Install the mainboard into the system chassis. This mainboard uses the baby-AT format. However, the board supports an AT or an ATX power supply. If you use an AT power supply, some of the ATX power management features might not function.

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.

PWR1: AT

PWR2: ATX

J8
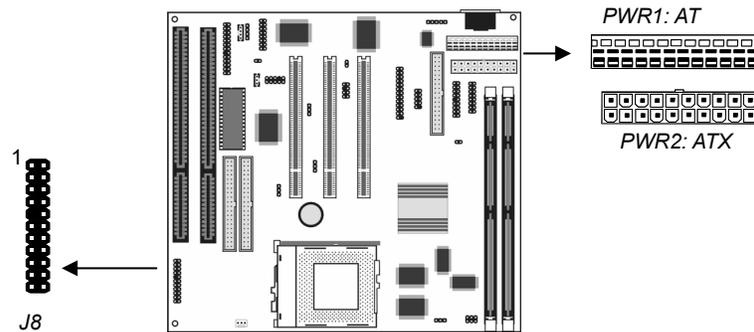
If you are using a case with an ATX power supply, connect the power cable from the ATX power supply unit to the power connector PWR2 on the mainboard.

If you are using a case with an AT power supply, connect the power cable from the AT power supply unit to the power connector PWR1 on the mainboard.

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Connect the case switches and indicator LEDs to the bank of switch and LED connectors J8. See the illustration below for a guide to the pin functions of the J8 connector.
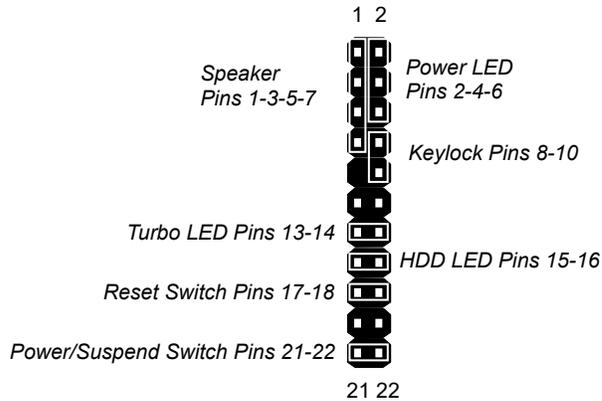
Install the Extension Brackets/Options

This mainboard ships with 5 extension brackets/modules:
     Audio ports and Game/MIDI bracket
     Serial/parallel ports bracket
     VGA bracket
     Fax/Modem DAA module
     10BaseT/100BaseTX LAN bracket

As options, you can also obtain:
     Digital audio extension bracket
     ATX Form card

The modules and 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.*

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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
J2

Stereo Line-in /Rear speaker channels 3-4
Microphone
Stereo Line-out /Speaker channels 1-2
Game/MIDI

Audio Ports & Game/MIDI Extension Bracket
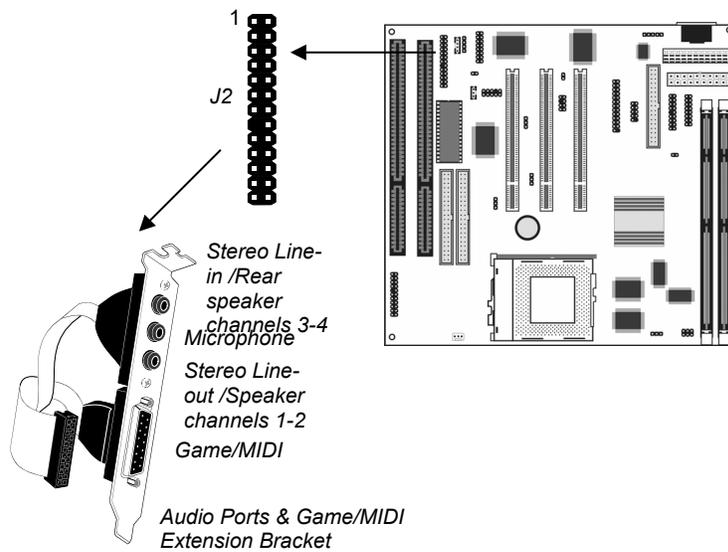
1. On the mainboard, locate the J2 header for this bracket.
2. Plug the cable from the bracket onto the J2 header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure 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).
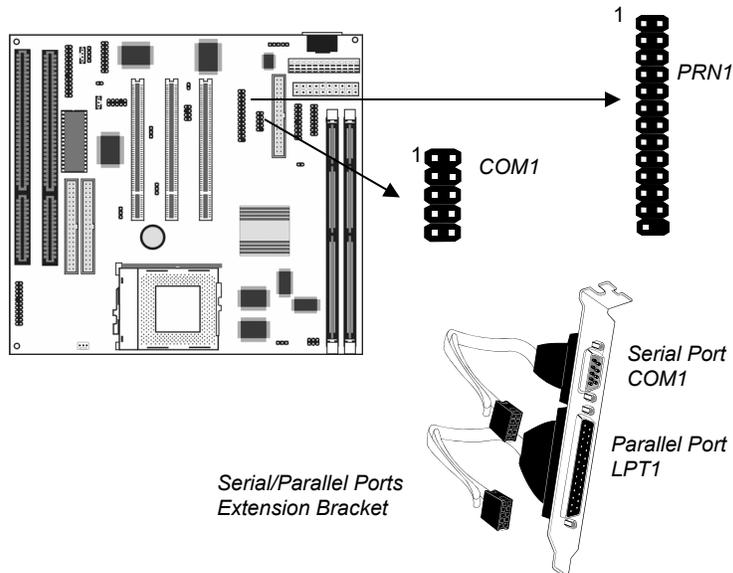
1. On the mainboard, locate the headers COM1 and PRN1 for this bracket.
2. Plug the serial cable into COM1 and the parallel cable into PRN1.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

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VGA Extension Bracket

The VGA extension bracket has a 15-pin connector for an external monitor cable.

1

VGA1-VGA Header

VGA Extension Bracket
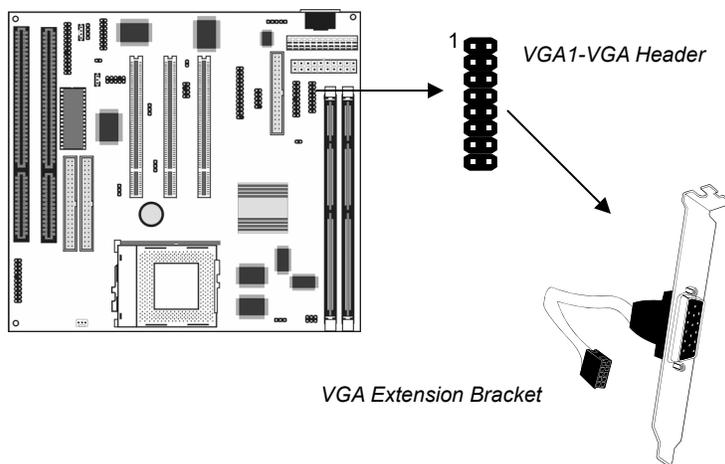
1. On the mainboard, locate the VGA1 header for this bracket.
2. Plug the cable from the bracket into the VGA1 header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

LAN Network Adapter Extension Bracket

This bracket supports an RJ45 network connector and connects to the built in LAN header J4 on the mainboard.
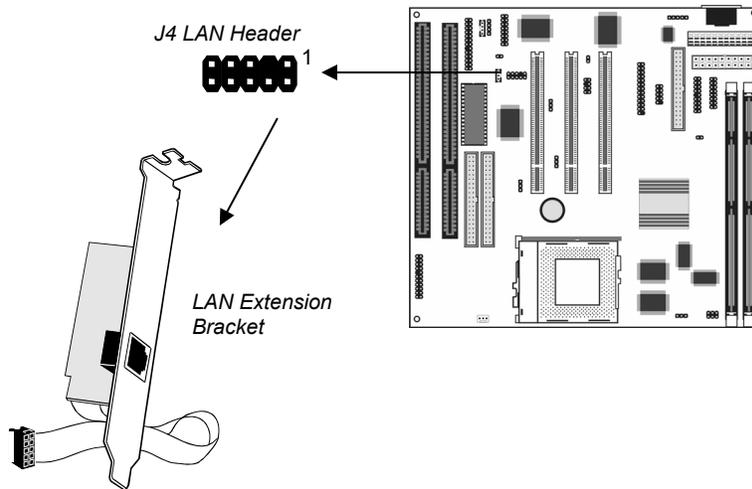
1. On the mainboard, locate the J4 LAN header for this bracket.
2. Plug the cable from the bracket into J4.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

Fax/Modem DAA Module

The Fax/Modem 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.

J1-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
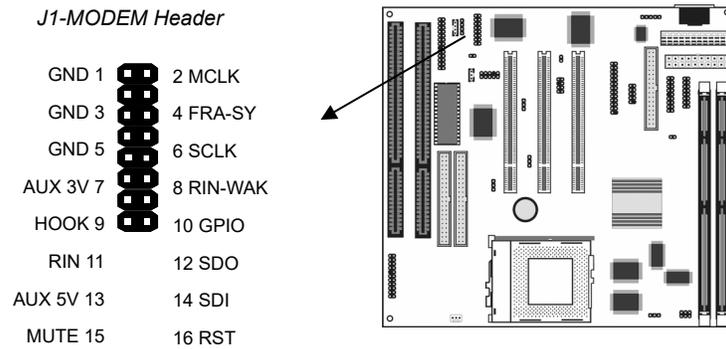
1. Locate the J1 modem header on the mainboard.
2. Plug the Fax/Modem DAA module into the J1 modem header.
3. Remove the blanking plate adjacent to the Fax/Modem DAA module.

Line & Tel RJ11 Sockets

Modem DAA Module

Modem Header

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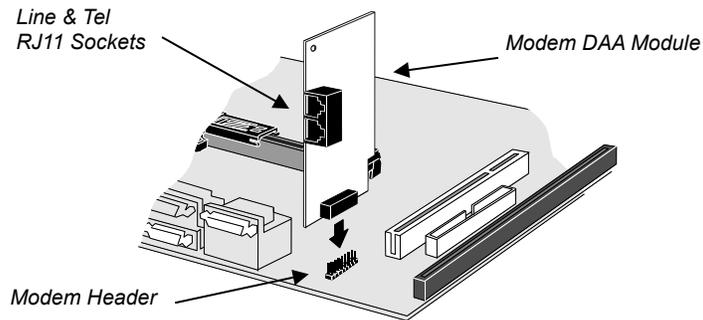
Optional ATX Form Card

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.
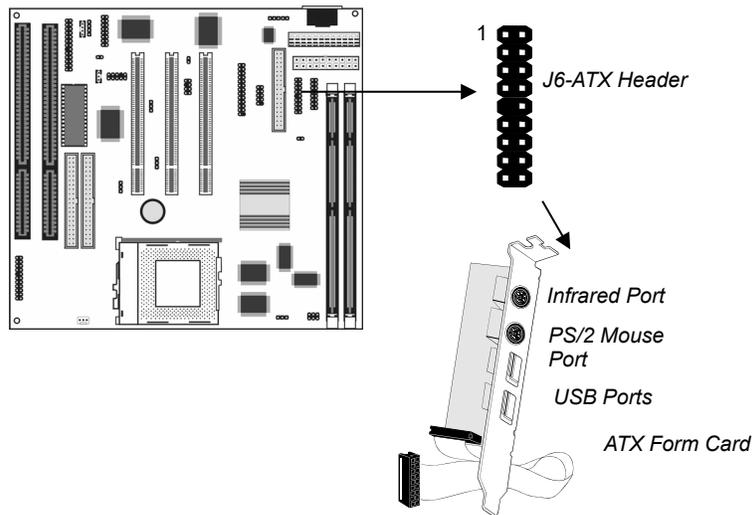
1. On the mainboard, locate the J6 ATX header for this bracket.
2. Plug the cable from the bracket into the J6 ATX header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

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Optional Infrared Port

This mainboard has an infrared header that lets you add a third-party optional infrared port.
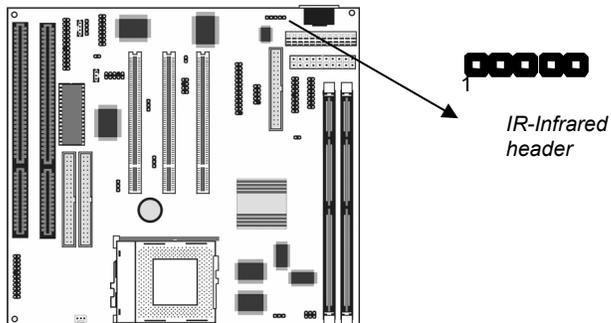
IR-Infrared header

Connect the cable from the infrared port to the infrared header IR. Then install the infrared port to an appropriate place on the system chassis.

Install Other Devices

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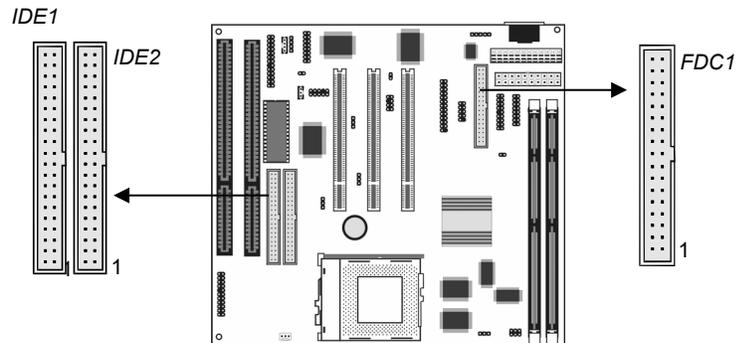
Floppy Disk Drive
The mainboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5" or 5.25" wide, with capacities of 360K, 720K, 1.2MB, 1.44MB, or 2.88MB.

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.

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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 Analog Sound Connections

If you have installed a CD-ROM drive or a DVD drive, you can connect the analog 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.
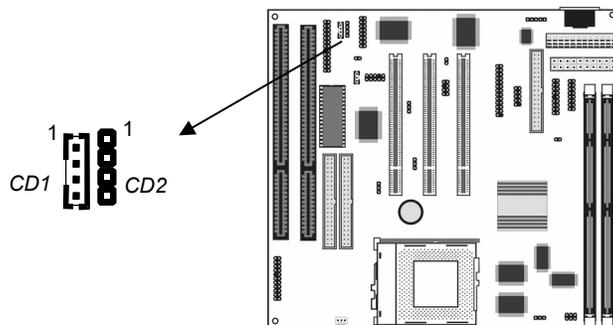
Expansion Slots

This mainboard has three PCI 32-bit expansion slots and two 8/16-bit ISA slot.
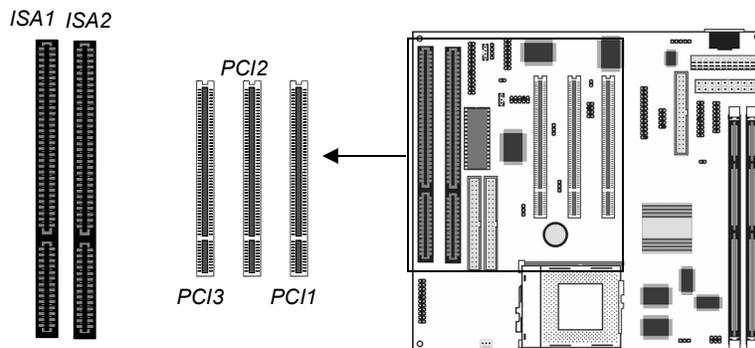
Use the PCI slots to install 32-bit PCI expansion cards. Use the ISA slots to install legacy 8/16-bit expansion cards.

Installing an Expansion Card
1. Locate the PCI or ISA 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 expansion card into the expansion slot in the system chassis using the screw that held the blanking plate in place.

Wake On LAN Connector
If you have installed a LAN adapter expansion card, you can connect it to the J3 Wake on LAN connector. Incoming traffic to the LAN adapter can then resume the system from a power-saving mode or a software powerdown. You might need to enable this item in the setup utility first.

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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 1.19
            (C)1998 American Megatrends, Inc. All Rights Reserved
    ┌─────────────────────────────────┬─────────────────────────────────┐
    │ Standard CMOS Setup             │  Peripheral Setup               │
    │                                 │                                 │
    │ Advanced CMOS Setup             │  CPU PnP Setup                  │
    │                                 │                                 │
    │ Advanced Chipset Setup          │  Change Supervisor Password     │
    │                                 │                                 │
    │ Power Management Setup          │  Auto-Detect Hard Disks         │
    │                                 │                                 │
    │ PCI / Plug and Play Setup       │  Save Settings and Exit         │
    │                                 │                                 │
    │ Load Optimal Settings           │  Exit Without Saving            │
    │                                 │                                 │
    │ 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

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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.

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

 Date (mm/dd/yyyy): Mon May 24,1999
 Time (hh/mm/ss)  : 13:02:37
                                               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            Base Memory : 0 Kb
 Floppy Drive B:  Not Installed           Other Memory : 384 Kb
                                       Extended Memory : 0 Mb
                                          Total Memory : 1 Mb

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

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 CMOS 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 CMOS SETUP
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1st Boot Device        IDE-0      D000,16k Shadow         Disabled
2nd Boot Device        Floppy     D400,16k Shadow         Disabled
3rd Boot Device        ARMD-HDD   D800,16k Shadow         Disabled
4th Boot Device        Disabled   DC00,16k Shadow         Disabled
Try Other Boot Devices Yes
S.M.A.R.T. for Hard Disks Disabled
Quick Boot             Enabled
BootUp Num-Lock        On
Floppy Drive Swap      Disabled
Floppy Drive Seek      Disabled
PS/2 Mouse Support     Enabled
Primary Display        VGA/EGA
Password Check         Setup
Internal Cache         Enabled
External Cache         Enabled
System BIOS Cacheable  Enabled    ESC : Quit        ↑↓↔ : Select Item
C000,16k Shadow        Cached     F1  : Help        PU/PD/+/- : Modify
C400,16k Shadow        Cached     F5  : Old Values  (Shift)F2 : Color
C800,16k Shadow        Disabled   F6  : Load BIOS Defaults
CC00,16k Shadow        Disabled   F7  : Load Setup Defaults
```

1st Boot Device 2nd Boot Device 3rd Boot Device 4th Boot Device	Use these four 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 four 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).
Quick Boot	If you enable this item, the system start-up time is a little quicker.
BootUp Num-Lock	Use this item to determine if your system starts up with the Num Lock key active or not.
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	Enable this item if you are using a mouse or trackball with a PS/2 interface.
Primary Display	Use this item to determine the video mode of your primary display. Leave this item at the default VGA/EGA.
Password Check	If you have installed a password, 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*).
Internal Cache	Leave this item enabled since all socket-7 processors have internal cache memory.
External Cache	Leave this item enabled since this mainboard is installed with external cache memory.
System BIOS Cacheable	If you enable this item, a segment of the BIOS will be cached to memory for faster execution.
COOO, 16K Shadow, etc.	Use these items to copy other segments of system or video ROM, or other ROMs into main memory.

Advanced Chipset Setup Page

This page sets some of the timing parameters for your system. Before making changes to this page, you must ensure that your hardware supports the new values.

```
                    AMIBIOS SETUP - ADVANCED CHIPSET SETUP
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DRAM Auto Configuration    Enabled
 SDRAM Access Time         None Used
 EDO Dram Access Time      None Used
 FP Dram Access Time       None Used
Refresh Cycle Time         4
OnChip USB                 Disabled
USB Function for DOS       Disabled
On Chip VGA                Enabled
   VGA Shared Memory Size  1  M
   VGA Frequency           65 Mhz




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

DRAM Auto Configuration	When this item is set to Enabled, the BIOS will automatically configure some of the DRAM timing items below. If it is set to Disabled, you must insert the DRAM timing values manually.
SDRAM Access Time	This item determines the access time for installed SDRAM.
EDO Dram Access Time	This item determines the access time for installed EDO RAM.
FP Dram Access Time	This item determines the access time for installed Fast Page mode DRAM.
Refresh Cycle Time	This item determines the cycle time for refreshing the memory chips.
OnChip USB	Use this item to enable or disable the onboard USB ports.
USB Function for DOS	Use this item to enable or disable the onbaord USB ports in the DOS environment.

On Chip VGA	Use this item to enable or disable the graphics adapter that is integrated on this mainboard.
VGA Shared Memory Size	Use this item to determine what share of the main memory can be used by the onboard graphics as video memory.
VGA Frequency	Use this item to determine the horizantal frequency of the onbaord graphics system.

Power Management Setup Page

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

```
                 AMIBIOS SETUP - POWER MANAGEMENT SETUP
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Power Management/APM       Disabled
  Green PC Monitor Power   Off
  Video Power Down Mode    Suspend
  Hdd Power Down Mode      Suspend
  Standby Time Out (Min)   Disabled
  Suspend Time Out (Min)   Disabled
  Slow Clock Ratio         1:8
  Ring Active              Enabled
  IRQ3(COM2/COM4)          Ignore
  IRQ4(COM1/COM3)          Ignore
  IRQ5(LPT2)               Ignore
  IRQ7(LPT1)               Ignore
  IRQ9                     Ignore
  IRQ10                    Ignore
  IRQ11                    Ignore
  IRQ12(PS2 Mouse)         Ignore     ESC : Quit         ↑↓↔ : Select Item
  IRQ13(Math Coprocessor)  Ignore     F1  : Help         PU/PD/+/- : Modify
  IRQ14                    Ignore     F5  : Old Values  (Shift)F2 : Color
  IRQ15                    Ignore     F6  : Load BIOS Defaults
Soft Off By Power Button   Delay 4 Sec F7 : Load Setup Defaults
```

Note: Some of the power management routines are not functional if you have connected the mainboard to an AT power supply, rather than an ATX power supply.

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. You can enable the system with APM (Advanced Power Management), ACPI (Advanced Configuration and Power management Interface) or both.

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Green PC Monitor Power	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 *Stand By* 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 *Stand By* 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 *Stand By* 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.
Slow Clock Ratio	Use this item to determine what percentage of time the system will halt the processor clock in power-saving mode.
Ring Active	If this item is enabled, an incoming call to the built-in fax/modem can resume the system from a power-saving mode or a software powerdown.
IRQ3-IRQ55	This item determines the effect of activity on the interrupt request lines. Set it to *Ignore*, and it has no effect. Set it to *Monitor*, and it resets the timeout counters. Set it to *WakeUp* and it resumes the system from a power-saving mode. Set it to *Both* and it resets the timeouts and resumes the system.

Soft-Off by PWRBTN	Under ACPI (advanced configuration and power interface) the system can be turned off mechanically (by the power button) or it can undergo a software power off. If the system has been turned off by software, the system can be resumed by a LAN, MODEM or ALARM wake up signal. This item allows you to define a software power off using the power button. If the value is set to Instant-Off, the power button will automatically cause a software power off. If the value is set to Delay 4 Sec. the power button must be held down for a full four seconds to cause a software power off.

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.

```
                    AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP
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Plug and Play Aware O/S    Yes        IRQ9                    PCI/PnP
PCI Latency Timer          64         IRQ10                   PCI/PnP
PCI VGA Palette Snoop      Disabled   IRQ11                   PCI/PnP
OffBoard PCI IDE Card      Auto       IRQ14                   PCI/PnP
OffBoard PCI IDE Pri IRQ   Disabled   IRQ15                   PCI/PnP
OffBoard PCI IDE Sec IRQ   Disabled
Assign IRQ to PCI VGA      No
PCI Slot1 IRQ Priority     Auto
PCI Slot2 IRQ Priority     Auto
PCI Slot3 IRQ Priority     Auto
DMA Channel 0              PnP
DMA Channel 1              PnP
DMA Channel 3              PnP
DMA Channel 5              PnP
DMA Channel 6              PnP
DMA Channel 7              PnP        ESC : Quit        ↑↓↔ : Select Item
IRQ3                       PCI/PnP    F1  : Help        PU/PD/+/- : Modify
IRQ4                       PCI/PnP    F5  : Old Values  (Shift)F2 : Color
IRQ5                       PCI/PnP    F6  : Load BIOS Defaults
IRQ7                       PCI/PnP    F7  : Load Setup Defaults
```

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.
PCI Latency Timer	This item sets the latency timer for the PCI bus. Leave this item at the default value.

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.
OffBoard PCI IDE Card	Enable this item if you have disabled the onboard IDE channels and are using IDE channels installed on an expansion card.
OffBoard PCI IDE Pri IRQ **OffBoard PCI IDE Sec IRQ**	If you are using external IDE channels installed on an expansion card., Use these two items to allocate an Interrupt Request line to the primary and secondary channels
PCI Slot1 IRQ Priority **PCI Slot2 IRQ Priority** **PCI Slot3 IRQ Priority**	You may install expansion cards in the PCI slots that require the use of an Interrupt Request Line. Use these three items to determine which slot has priority when the plug and play OS/BIOS is dynamically allocating IRQs to competing demands from the expansion cards.
DMA Channels 0-7	If you set these items to PnP, the DMA channels will be automatically allocated by the Plug and Play BIOS or operating system. If you set it to ISA/EISA, the channel(s) will be reserved for an installed ISA or EISA expansion card.
IRQ 3-15	If you set these items to PCI/PnP, the IRQ lines will be automatically allocated by the Plug and Play BIOS or operating system. If you set it to ISA/EISA, the IRQ lines will be reserved for an installed ISA or EISA expansion card.

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.

```
              AMIBIOS SETUP - PERIPHERAL SETUP
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OnBoard FDC              Enabled
OnBoard Serial Port1     3F8h
OnBoard Serial Port2     2F8h
OnBoard Ir Port          Normal
  Ir Mode                HPSIR
  Ir Duplex              Half
OnBoard Parallel Port    378
  Parallel Port Mode     Normal
  Parallel Port IRQ      7
  Parallel Port DMA      N/A
Onboard PCI IDE          Both
  Pri. Master Prefetch   Enabled
  Pri. Slave Prefetch    Enabled
  Sec. Master Prefetch   Enabled
  Sec. Slave Prefetch    Enabled       ESC : Quit       ↑↓↔ : Select Item
On Board SoundPRO        Enabled       F1  : Help       PU/PD/+/- : Modify
                                       F5  : Old Values  (Shift)F2 : Color
                                       F6  : Load BIOS Defaults
                                       F7  : Load Setup Defaults
```

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.
Onboard Serial Port2	Use this item to enable or disable the onboard serial port COM2. and to assign a port address. You must install an optional serial port extension bracket in order to use this item. This item is disabled as a default.

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Onboard IR Port	Use this item to determine the allocation of the resources of the second serial port. If you select normal, the resources are assigned to the optional second serial port. If you select a specific address, the resources are assigned to the IR port, and you can use the two items below to determine the operation of the IR port.
IR Mode	If you have an IR port installed, use this item to determine the protocol of the port. Select HPSIR (standard IrDA) or ASKIR.
IR Duplex	If you have selected an infrared port, use this item to set the infrared port as 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 PCI IDE	Use this item to enable or disable either of the two onboard IDE channels, Primary or Secondary.
Pri. Master/Slave Sec. Master/Slave Prefetch	Use these items to enable prefetching for any of the master or slave devices on the primary and secondary IDE channels.
Onboard SoundPRO	Use this item to enable or disable an onboard sound card.

CPU PnP Setup Page

This page lets you set some of the parameters for your processor and system bus frequencies.

```
                AMIBIOS SETUP - CPU PnP SETUP
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┌─────────────────────────────────────┬──────────────────────────────┐
│CPU Plug and Play      Auto           │                              │
│CPU Brand              AMD-K6-2       │                              │
│VC Core Voltage        2.2V           │                              │
│CPU Speed              266MHZ         │                              │
│CPU Base Frequency     66MHZ          │                              │
│CPU Multiple Factory   4.0X           │                              │
│                                      │                              │
│                                      │                              │
│                                      │                              │
│                                      │                              │
│                                      │                              │
│                                      │  ESC : Quit      ↑↓↔ : Select Item │
│                                      │  F1  : Help      PU/PD/+/- : Modify │
│                                      │  F5  : Old Values  (Shift)F2 : Color │
│                                      │  F6  : Load BIOS Defaults    │
│                                      │  F7  : Load Setup Defaults   │
└─────────────────────────────────────┴──────────────────────────────┘
```

CPU Plug and Play	If you set this item to Auto, the CPU parameters will be auto-detected. If you set this item to Manual, you can manually install the CPU clock speed and system bus frequency using the items below.
CPU Brand	Use this item to define the brand of CPU that you are using in the system.
VCCore Voltage	If you are manually configuring the CPU, use this item to define the core voltage of the processor.
CPU Speed	If you are manually configuring the CPU, use this item to define the clock speed of the CPU.
CPU Base Frequency	If you are manually configuring the CPU, use this item to determine the Baser Frequency (system bus) required by the processor.
CPU Multiple Factor	If you are manually configuring the CPU, use this item to set a multiple for the system bus frequency. The multiple x system bus = CPU internal clock speed.

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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 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.

Error Starting Program ⊠	Autorun.EXE - Unable To Locate DLL ⊠
⚠ A required .DLL file, MSVBVM50.DLL, was not found.	✕ The dynamic link library MSVBVM50.DLL could not be found in the specified path E:\;.;C:\WINNT\System32;C:\WINNT\system;C:\WINNT;C:\WINNT\system32;C:\WINNT.
OK	OK

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. Look for the folders in:

♦ D:\IDE\SiS5598\

USB Driver

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

♦ Win95 – D:\USB\EUSBSUPP\USBSUPP.EXE
♦ Win95 (Chinese) – D:\USB\CUSBSUPP\CUSBSUPP.EXE

Video Driver

The video drivers are available for Windows 95/98 and Windows NT. Look for the folders in:

♦ D:\VGA\SiS5598\VGA\

Sound Driver

The Sound driver allows the system to generate optimal sound effects. Find the driver and Audio application here:

♦ D:\SOUND\Driver\C-Media\
♦ D:\SOUND\GAMUT\

3Deep Software

Find the software here:

♦ D:\3Deep\3Deep 3.3\Setup.EXE

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\AMINF321.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

LAN Driver

The LAN driver is required by the onboard LAN network adapter.
♦ D:\LAN\SIS900

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\PCI\
♦ D:\MODEM\SUPERVOICE
♦ D:\MODEM\MEDIARING TALK

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.
2. The setup window will appear as below.
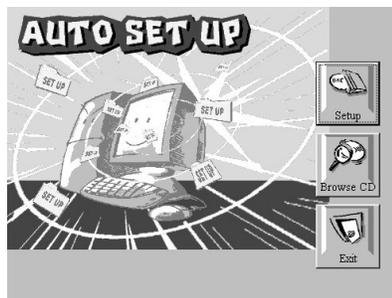
3. Click **Setup** button to continue.
4. Click **Next** button to continue in the Welcome window.
5. Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.
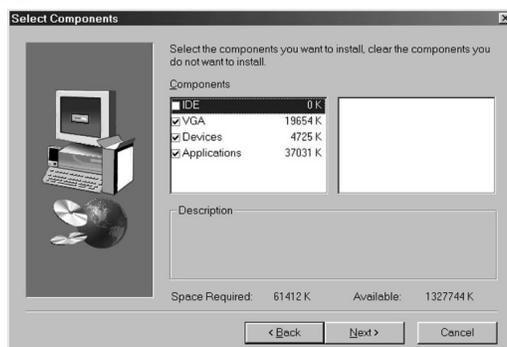
6. The support software will automatically install.

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.