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Version 1.0

Safety Compliance

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 Règlement sur le matériel brouilleur du Canada.

Contents

Chapter 1: Introduction	1
Welcome	1
About the Manual	2
Checklist.....	3
Standard Items-----	3
Recommendations	3
Features	4
Chapter 2: Installation	7
Quick Installation Table.....	7
Quick Jumper Setting Reference	8
Before You Begin	9
Static Electricity -----	9
Choosing a Case -----	10
How to Set Jumpers -----	10
Preparing the Mainboard.....	11
Mainboard Guide -----	11
Check the Jumper Settings -----	13
Connecting Power, Chassis Fans, and Panel-----	16
Install Other Hardware	18
Install the Processor -----	18
Installing a Slot1 Processor -----	20
Installing a Socket-370 Processor-----	22
Install the Memory Modules-----	24
Install a Hard Disk Drive and CD-ROM/DVD -----	25
Installing a Floppy Diskette Drive-----	28
Using the Expansion Slots -----	29
Add-in Card Options -----	31
Install Extension Brackets and Modules -----	32
Chapter 3: Setup	38
About the Setup Utility.....	38
Starting the Setup Utility -----	38
How to Flash a New BIOS-----	40
Standard CMOS Setup Option.....	41
BIOS & CPU Features Setup Option	42
Chipset Features Option	45
Power Management Setup Option.....	47
PNP/PCI Configuration Option.....	50

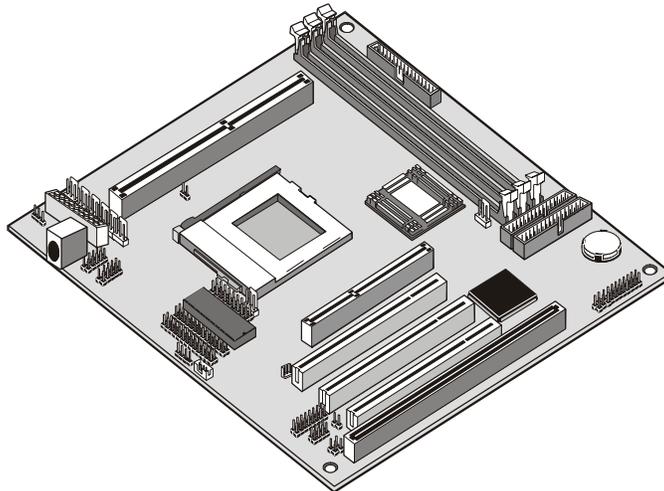
Load BIOS Defaults Option.....	51
Load Optimum Settings.....	51
Integrated Peripherals Option	52
Supervisor and User Password Settings	54
IDE HDD Auto Detection Option	54
Save And Exit Setup Option.....	55
Exit Without Saving Option	55
Chapter 4: Software	56
About the Software.....	56
Folders for this Mainboard	56
Running the Support CD-ROM	58
Utility Folder Installation Notes	58
CMI8X38 Folder Installation Notes	59
Audio Software-----	59
Modem Driver and Software-----	60
VIA Folder Installation Notes.....	60
Mainboard (MS7101C) Installation Notes	61
Appendix 1: Quick Jumper Setting Reference.....	62
Appendix 2: Glossary	64

Chapter 1: Introduction

Welcome

Congratulations on purchasing the MS7101C mainboard. The mainboard includes a Slot1 processor slot and a PPGA (Plastic Pin Grid Array) Celeron Socket-370 processor socket. **This feature means that you can install the mainboard with either a Pentium-II or Pentium-III cartridge, the SEPP (Single Edge Processor Package) Celeron cartridge, or one of the new generation PPGA (Plastic Pin Grid Array) Celerons.**

The MS7101C is a baby-AT sized mainboard that uses 4-layer printed circuit board and measures 22cm x 22cm. The mainboard features the VIA Apollo Pro Plus chipset. The MS7101C has a slot1 and a socket-370 so that it can be installed with either a slot1 processor (SEPP Celeron, Pentium-II, Pentium-III) or a socket-370 processor (PPGA Celeron). The mainboard includes an integrated audio system and a plug-in fax/modem module. The board has an AGP slot for a graphics adapter, three PCI slots and one legacy ISA slot. The mainboard has power connectors for both ATX and AT power supplies, so that it can be installed in practically any kind of PC case.



This chapter contains the following information:

- ❑ **About the Manual** explains how the information in this manual is organized
- ❑ **Checklist** comprises a list of the standard and optional components that are shipped with this mainboard
- ❑ **Recommendations** lists some Do's and Don'ts from the manufacturer to help ensure reliability and performance from this product
- ❑ **Features** highlights the functions and components that make this one of the best value mainboards on the market

About the Manual

The manual consists of the following chapters:

Introduction

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

Installation

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

Setup

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

Software

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

Checklist

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

Standard Items

- ✓ 1 x MS7101C Mainboard
- ✓ 1 x Cable/Bracket Pack
 - Diskette drive ribbon cable
 - IDE drive ribbon cable
- ✓ Parallel port extension bracket
- ✓ Serial ports extension bracket
- ✓ Audio ports extension bracket
- ✓ This User's Manual
- ✓ Software Support CD-ROM Disc

Optional Items

- ✓ ATX Form Bracket (2 USB ports, IR port, PS/2 mouse port)
- ✓ Digital audio extension bracket
- ✓ V.90 Fax/modem module

Recommendations

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

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

Components on this mainboard can be damaged by discharges of static electricity. Handle the board carefully holding it by the edges. Don't flex

or stress the circuit board. Keep the board in its static-proof packing until you are ready to install it. Follow the static guidelines given at the beginning of Chapter 2.

Features

The key features of this mainboard are the wide range of processors that can be installed, and the support for both AT and ATX power supplies.

Wide Choice of Processors

This mainboard provides an excellent platform for an inexpensive value PC that is internet-ready thanks to the fax/modem module. The socket-370 can be installed with a PPGA Celeron processor. The PPGA Celeron has 32k of internal cache memory, 128K of external cache memory, and operates over a 66 MHz system bus. The PPGA Celeron ships with clock speeds running from 300 MHz through to 500 MHz. The PPGA Celeron is the ideal processor choice for an entry-level PC.

For better performance, the MS7101C can be installed with a slot1 processor. The SEPP (Single Edge Processor Package) Celeron is the least expensive slot-1 processor. It has 32K of internal cache memory, 128K of external cache memory (except for older versions), and operates over a 66 MHz system bus. SEPP Celerons ship with clock speeds ranging from 266 MHz through to 500 MHz.

For higher-performance business-class computing, the slot1 can be installed with a Pentium-II or Pentium-III processor cartridge. The Pentium-II and Pentium-III have 32K of internal cache memory and 512K of external cache memory. They operate over a 100 MHz system bus (except for older versions). The Pentium-III includes new instructions that are designed to enhance multimedia/internet computing by providing rapid encoding and decoding of the compressed audio and video files which are pervasive in the internet environment. The Pentium-II ships with clock speeds running from 233 MHz through to 450 MHz. The Pentium-III ships with clock speeds of 450 MHz, 500 MHz and 550 MHz.

VIA Apollo Pro Plus Chipset

The VIA Apollo Pro Plus chipset is a high performance chipset that ensures full support for Intel's Slot1 and socket-370 processors. The chipset supports both 66 MHz and 100 MHz front side buses and SDRAM memory installation of up to 768 MB. Support is provided for a 2x AGP slot and Rev. 2.2 PCI slots with Ultra DMA 33/66. The chipset is compliant with the PC98/99 specifications.

Inexpensive Memory

The board has three DIMM sockets for the installation of 168-pin, 3.3V non-buffered DIMM memory modules. The DIMM memory modules must be installed with SDRAM memory chips. The board supports a memory bus of 66 MHz or 100 MHz, so you can choose between inexpensive 66 MHz memory modules or high-performance PC-100 memory modules. Each installed memory module can be populated with 8 MB up to 256 MB of memory, so a maximum total of 768 MB memory can be installed.

Highly Integrated Design

The ITE LPC I/O controller handles the mainboard's I/O functions. The CMI 8738/PCI C3DX is a two-chip solution that provides an integrated audio and fax/modem system.

Built-in PCI 3D Sound

The system includes built-in PCI 3D audio support. The chip provides Sound Blaster 16-bit-compatible audio, plus support for Microsoft's DirectSound 3D specification and Aureal A3D interface. The sound ports include jacks for speakers, microphone and stereo in, and a game/MIDI port. The audio system supports full duplex operation and drivers are available for WIN 95/98 and WIN NT 4.0. The audio system can output sound to 4 loudspeakers and also supports SPDIF 24-bit digital sound input and output.

Built-in V.90 Fax/modem

The mainboard includes an integrated fax/modem. The fax/modem supports 56 Kbps transmission using the V.90 protocol. The fax/modem is integrated with the built-in audio system to support voice as well as data transmissions. You must install a fax/modem module (with line and telephone sockets) in order to use the integrated fax/modem.

Expansion Options

The board has plenty of expansion potential with one 2x AGP slot for an AGP graphics adapter, three 32-bit PCI slots, and one legacy 8/16-bit ISA slot. The ISA slot is shared with one of the PCI slots which means that you can use either of the slots but not both at the same time. The PCI slots support Ultra DMA with speeds of 33/66 MHz.

Integrated I/O

Using the ITE LPC I/O chip and the VIA Apollo Pro Plus chipset, the board has a comprehensive set of integrated I/O ports. The I/O ports are installed as connectors on the mainboard and can be installed on the system case using extension brackets. The I/O ports include one PS/2 mouse port, a parallel port, two USB ports, and an infrared port. The

mainboard includes connections for floppy diskette drives and two PCI IDE channels.

Keyboard Power On Feature

Using the system BIOS setup program, you can configure the system to turn on using a keyboard typed password. A green keyboard is not required.

Hardware Monitoring

The system supports hardware monitoring so that monitoring software applications can generate warnings if critical parameters, such as voltages and temperatures, are exceeded

Programmable Firmware

The mainboard includes Award BIOS which allows BIOS setting of CPU parameters. The fully programmable firmware enhances the system features and allows users to set power management, CPU and memory timing, LAN and modem wake-up alarms, and so on. The firmware can also be used to set parameters for different Celeron processor clock speeds so that you don't need to change mainboard jumpers and switches.

Chapter 2: Installation

Quick Installation Table

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

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

Quick Jumper Setting Reference

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

JP1A: Audio enable/disable jumper

Use this jumper to enable or disable the audio system integrated on the mainboard.

Function	Jumper Cap
Enable audio	Open pins 1-2
Disable audio	Short pins 1-2



JP1B: Modem enable/disable jumper

Use this jumper to enable or disable the modem integrated on the mainboard.

Function	Jumper Cap
Enable modem	Open pins 1-2
Disable modem	Short pins 1-2

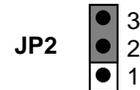


Note: If you use jumper JP1A to disable the audio system, the modem is automatically disabled as well, even if JP1B is set to enabled.

JP2: Keyboard power on jumper

Use this 3-pin jumper to enable keyboard power on with hot keys or password.

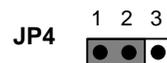
Function	Jumper Cap
Disable keyboard power on	Short pins 1-2
Enable keyboard power on	Short pins 2-3



JP4: Select Slot1 or Socket-370 jumper

Use this jumper to select if you are installing a processor into the Slot1 or a processor into the socket-370.

Function	Jumper Cap
Select Slot1	Short Pins 1-2
Select socket-370	Short pins 2-3



JP5: Clear CMOS memory jumper

Use this 3-pin jumper to clear all the current data stored in the CMOS memory.

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



J8: System bus frequency select jumper

When this jumper is open, it forces the mainboard to use a 100 MHz system bus, even if the processor requires a 66 MHz bus. When the jumper is short, the board automatically detects which bus frequency to use. This jumper is for testing purposes and we recommend that you always leave it at the normal operation setting.

Function	Jumper Cap
Normal operation	Short pins 1-2
Force 100 MHz	Open pins 1-2



Before You Begin

Before you begin to install your MS7101C mainboard, take some precautions to ensure that you avoid the possibility of damage to the product from static electricity. Ensure too that you are installing the mainboard into a suitable case.

Static Electricity

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

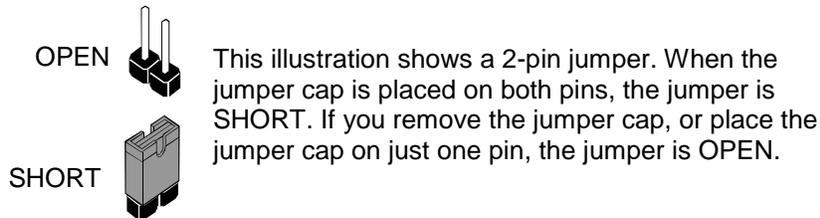
- ◆ If possible wear a grounding wrist strap clipped to a safely grounded device during the installation.
- ◆ If you don't have a wrist strap, discharge any static by touching the metal case of a safely grounded device before beginning the installation.
- ◆ Leave all components inside their static-proof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

Choosing a Case

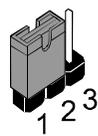
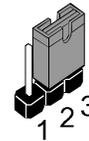
This is a baby-AT sized mainboard that measures 220mm x 220mm. It has 3 PCI slots, one ISA slot and an AGP slot. The mainboard has connectors for either an ATX or an AT power supply so it can be installed in almost all computer cases. Some features on the mainboard are implemented by cabling connectors on the mainboard to indicators and switches on the system case. Ensure that your case supports all the features required. The MS7101C mainboard can support one or two floppy diskette drives and four enhanced IDE drives. Ensure that your case has sufficient power and space for all the drives that you intend to install.

How to Set Jumpers

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



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



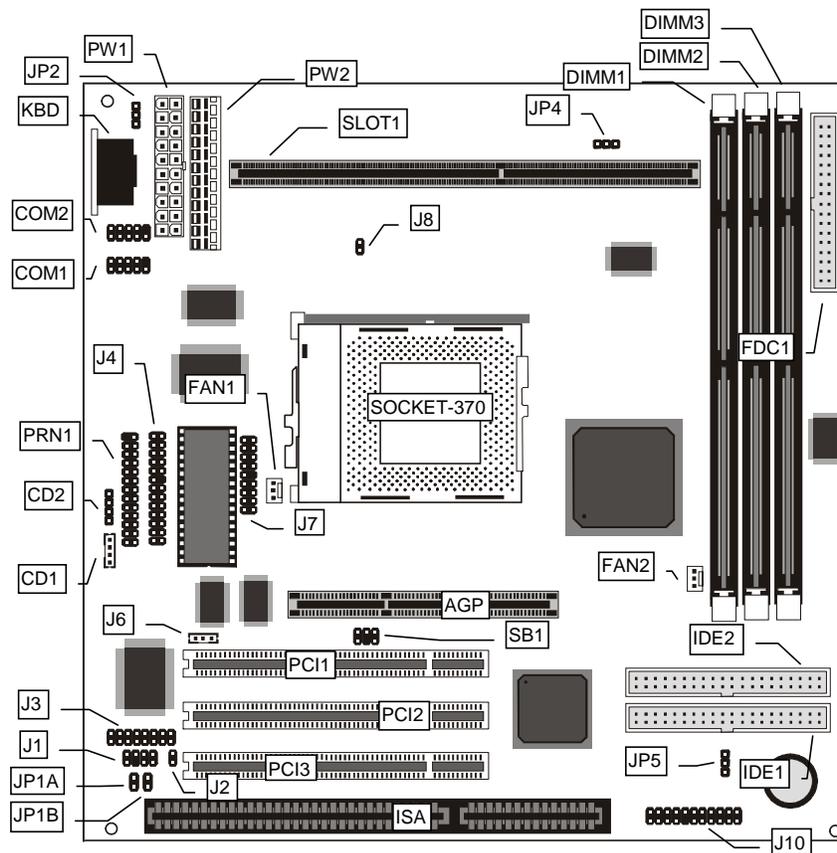
This illustration shows the same 3-pin jumper. The jumper cap is placed on pins 1 and 2, so this jumper setting is SHORT PINS 1-2.

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

Preparing the Mainboard

Mainboard Guide

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

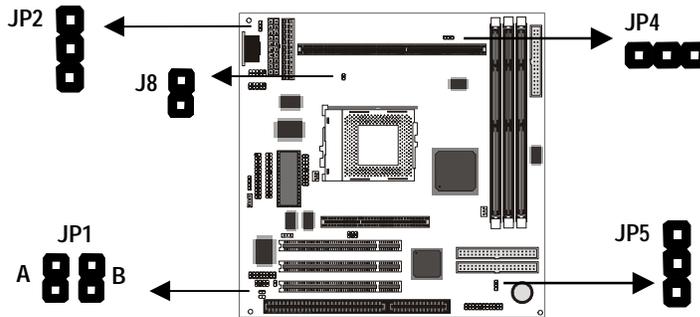


Key to Mainboard Components

Component	Description
Slot1	Slot for Slot1 processor cartridge
Socket-370	Socket for PPGA Celeron Processor
AGP	Slot for AGP graphics adapter
PCI 1,2,3	Three 32-bit PCI slots
ISA	One 8/16-bit ISA slot
DIMM 1, 2, 3	Three slots for 168-pin SDRAM memory modules
FDC1	Connector for floppy disk drives
IDE1, IDE2	Primary and secondary IDE channels
PW1	Connector for ATX power supply
PW2	Connector for AT power supply
COM1	Connector for serial port 1/3
COM2	Connector for serial port 2/4
KBD	Connector for AT keyboard
PRN1	Connector for parallel port LPT1
CD1	Audio connector for CD-ROM/DVD drive
CD2	Auxiliary audio connector for CD-ROM/DVD drive
FAN1	Power connector for CPU cooling fan
FAN2	Power connector for case cooling fan
SB1	SB-link connector for Creative PCI sound cards
J1	SPDIF digital audio connector
J2	SPDIF digital audio in connector
J3	Connector for fax/modem module
J4	Connector for audio ports extension bracket
J6	Wake on LAN connector
J7	Connector for ATX form card (IR / PS/2 mouse / 2 x USB)
J8	Select system bus frequency jumper
J10	Panel connector for case switches and indicators
JP1A	Enable/disable onboard audio jumper
JP1B	Enable/disable onboard fax/modem jumper
JP2	Keyboard power on jumper
JP4	Select Slot1 or Socket-370 jumper
JP5	Clear CMOS memory jumper

Check the Jumper Settings

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



JP1A: Audio Enable/disable Jumper

Use this 2-pin jumper to enable or disable the audio system integrated on this mainboard. You have to disable the audio system if you plan on using an alternate audio system on an add-in card.



Function	Jumper Cap
Enable audio	Open pins 1-2
Disable audio	Short pins 1-2

JP1B: Modem Enable/disable Jumper

Use this 2-pin jumper to enable or disable the modem integrated on this mainboard. You have to disable the modem if you plan on using an alternate modem.

Function	Jumper Cap
Enable modem	Open pins 1-2
Disable modem	Short pins 1-2

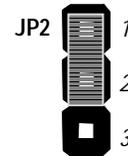


Note: When jumper JP1A is set to Disable Audio (short pins 1-2) the integrated modem is also disabled, even if the jumper JP1B is at the Enable Modem setting.

JP2: Keyboard Power On Jumper

This jumper lets you use a typed-in password as a power switch to turn your system on. If you enable this property, you need to define the password or the hot keys using the setup utility. See Chapter 3.

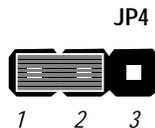
Function	Jumper Cap
Disable keyboard power on	Short pins 1-2
Enable keyboard power on	Short pins 2-3



Note: The keyboard power on function may not function if you are running this mainboard with an AT power supply.

JP4: Select Slot1 or Socket-370 Processor Jumper

Use this 3-pin jumper to prepare the mainboard for the installation of a slot1 processor cartridge or a socket-370 PPGA Celeron processor.

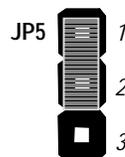


Function	Jumper Cap
Select slot1 processor	Short pins 1-2
Select socket-370 processor	Short pins 2-3

JP5: Clear CMOS Memory Jumper

This jumper lets you erase the system setup settings that are stored in CMOS memory. You might need to erase this data if incorrect settings are preventing your system from operating. To clear the CMOS memory, turn off the system, disconnect the power cable from the mainboard, and short the appropriate pins for a few seconds.

Function	Jumper Cap
Normal Operation	Short pins 1-2
Clear CMOS	Short pins 2-3



J8: System Bus Frequency Select Jumper

When this jumper is open, it forces the mainboard to use a 100 MHz system bus, even if the processor requires a 66 MHz bus. When the jumper is short, the board automatically detects which bus frequency to use.

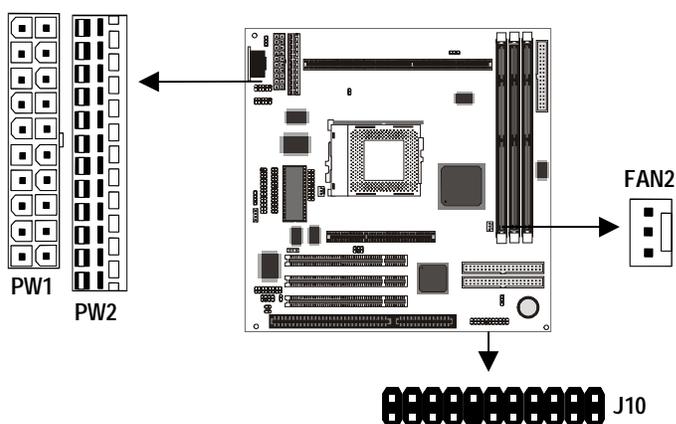
Function	Jumper Cap
Normal operation	Short pins 1-2
Force 100 MHz	Open pins 1-2



Note: *This jumper is required for testing purposes. We recommend that you always set this jumper to Normal Operation so that the board automatically selects the correct bus frequency for the installed processor.*

Connecting Power, Chassis Fans, and Panel

After you have installed the mainboard into the system case, connect the power cable from the case power supply unit to one of the mainboard power connectors PW1 or PW2. Connect the chassis fan (if your case has one) to the 12V power supply connectors FAN2. Then connect the case switches and indicators to the J10 panel connector on the mainboard.



Power Connector

This mainboard has two power connectors. If you are using an ATX power supply, connect the power cable from the ATX power supply unit to PW1. If you are using an AT power supply, connect the power cable from the AT power supply unit to PW2.

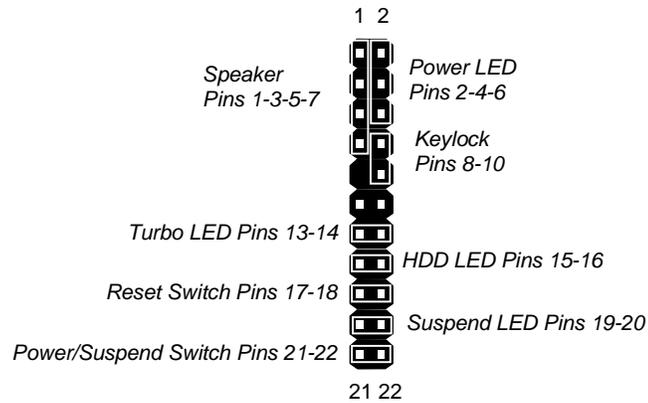
Chassis Fan

If your case has a cooling fan installed in the chassis, plug the cable from the chassis-mounted fan into the mainboard 12V power supply connector FAN2.

J10 Panel Connector

The mainboard J10 panel connector has a standard set of switch and indicator connectors that are commonly found on ATX/AT system cases. Use the illustration below to make the correct connections to the case switches and indicators.

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



Install Other Hardware

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

Install the Processor

This mainboard has a Slot1 processor slot and a Socket-370 processor socket. You can only install one processor however, so you must choose what kind of processor to run on this board. To choose a processor, you need to consider the performance requirements of the system and also the price of the processor. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory. Higher clock speeds and larger amounts of cache memory deliver greater performance.

About Slot1 Processors

You can install three kinds of processor into the Slot1: Pentium-III, Pentium-II, and SEPP Celeron.

Intel Pentium-III

The Pentium-III has the highest performance. This processor is similar to the Pentium-II but it includes new instructions to improve the throughput of multimedia data such as 3D audio and video, speech recognition. MPEG2 motion picture encoding/decoding and TCP/IP internet connections. However, only recently released software has the capability of using these improved instructions. The Pentium-III has 32K of internal cache memory and 512K of external cache memory. Currently Pentium-III processors are available at clock speeds up to 550 MHz and they operate over a 100 MHz system bus. The Pentium-III is the most expensive of the processors supported by this mainboard.

Intel Pentium-II

The Pentium-II has a wide range of performance. Pentium-II processors have shipped with clock speeds of 233 MHz through to 450 MHz. Currently you might find that stores only stock Pentium-IIs with clock speeds of 350 MHz and higher. Pentium-IIs with a clock speed of 350 MHz or higher operate over a 100 MHz system bus. Pentium-IIs slower than 350 MHz operate over a 66 MHz system bus. All Pentium-IIs have 32K of internal cache memory and 512K of external cache memory. Pentium-IIs are less expensive than Pentium-IIIs with the same clock speed.

Intel SEPP Celeron

SEPP stands for Single Edge Processor Package. The SEPP Celeron is similar to a Pentium-II except that it only has 128K of external cache memory. The first generation of SEPP Celerons had no external cache memory at all and ran at 266 MHz. These Celerons do not ship currently but are still supported by this mainboard. SEPP Celerons are available with clock speeds of 266 MHz through to 500 MHz. They all operate over a 66 MHz system bus. The SEPP Celeron is less expensive than a Pentium-II with the same clock speed.

About Socket-370 Processors

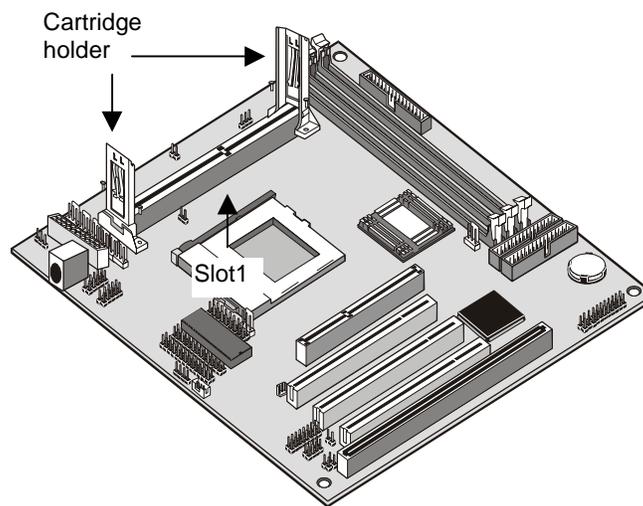
The socket-370 only supports the Intel PPGA Celeron processor.

Intel PPGA Celeron

PPGA stands for Plastic Pin Grid Array. This is a description of the square plastic package that the processor is embedded in. The PPGA Celeron is identical to the SEPP Celeron, except for the external packaging. PPGA Celerons run at clock speeds from 300 MHz through to 500 MHz. All the current PPGA Celerons operate over a 66 MHz system bus. The PPGA Celeron is less expensive than a SEPP Celeron with the same clock speed.

Installing a Slot1 Processor

This board has a SLOT1 processor cartridge slot. The slot must be installed with a cartridge holder that supports the processor cartridge. The cartridge holder may be already installed on your mainboard with the support brackets folded over. In this case simply pull the support brackets into the upright position.



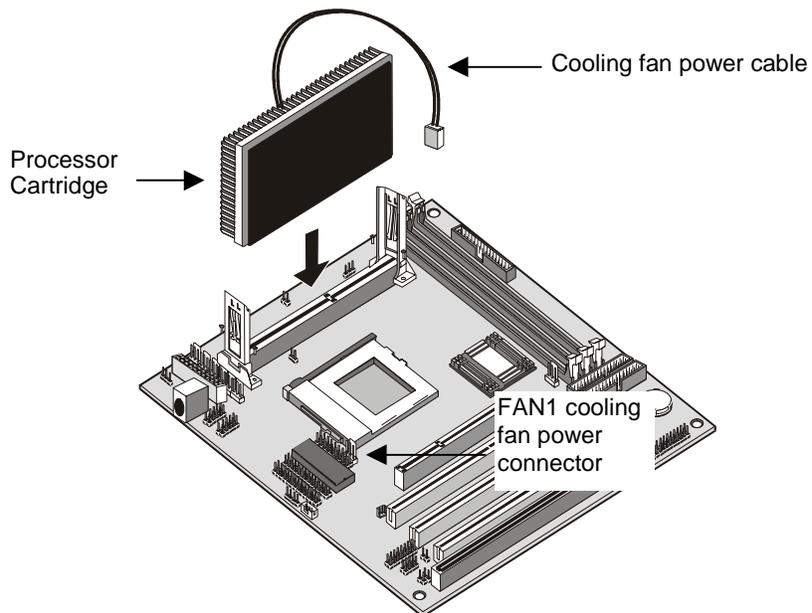
If the cartridge holder is not already installed, install it onto the slot1. Some cartridge holders are in two parts, one part for each end of the slot1. Other cartridge holders are a single assembly that sits over the whole length of the slot1.

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

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

Install the Processor Cartridge

After you have installed the cartridge holder, follow the instructions supplied with the processor cartridge to insert the cartridge into the holder. If the processor has a cooling fan, connect the power cable of the fan to the power supply connector on the mainboard FAN1.



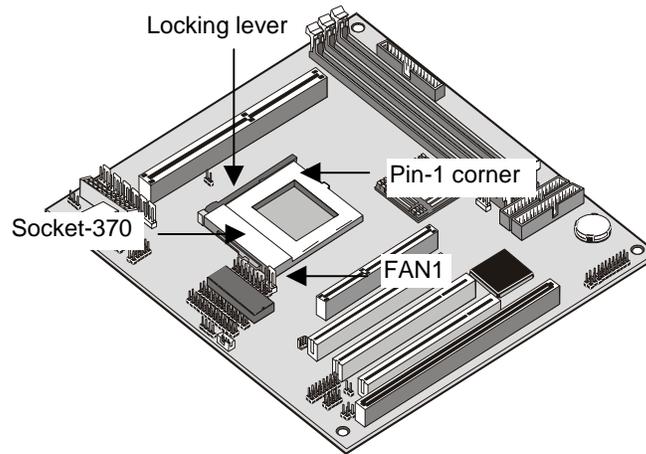
The mainboard must be configured to deliver the correct clock speed and the correct system bus for the kind of processor that you have installed. You can do this by using the system setup utility. The first time you start the system, immediately enter the setup system and make the appropriate settings. Usually, you can automatically configure the CPU by using the BIOS Features page of the setup utility. See Chapter 3 for more information.

Note: *If you have installed a Slot1 processor cartridge, make sure that the **Select Slot1 or Socket-370 jumper JP4** is at the appropriate setting. For a Slot1 processor, pins 1-2 are SHORT.*

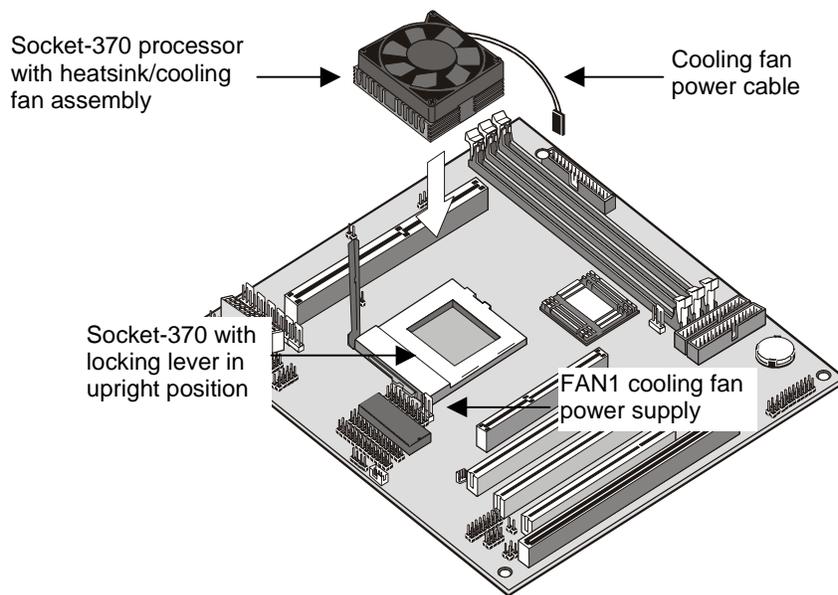
Installing a Socket-370 Processor

If you have decided to install the mainboard with a PPGA Celeron processor, follow the steps below.

Locate the Socket-370 and CPUFAN1



1. On the mainboard, locate the socket-370 and FAN1.
2. On the socket-370, pull the locking lever away from the socket to unhook it and then raise the locking lever to the upright position.
3. Identify the pin-1 corner on the socket-370 and the pin-1 corner on the processor. The socket pin-1 corner is adjacent to the handle of the locking lever. The processor pin-1 corner is beveled.
4. Matching the pin-1 corners, drop the processor into the socket. No force is required and the processor should seat into the socket easily.
5. Swing the locking lever down and hook it under the latch on the edge of the socket. This locks the processor in place.
6. Locate the power cable on the heatsink/cooling fan assembly that is attached to the top of the processor.
7. Plug the power cable into the CPUFAN1 12V power supply on the mainboard.



The mainboard must be configured to deliver the correct clock speed and the correct system bus for the kind of processor that you have installed. You can do this by using the system setup utility. The first time you start the system, immediately enter the setup utility and make the appropriate settings. Usually, you can automatically configure the CPU by using the CPU & BIOS Features page of the setup utility. See Chapter 3 for more information.

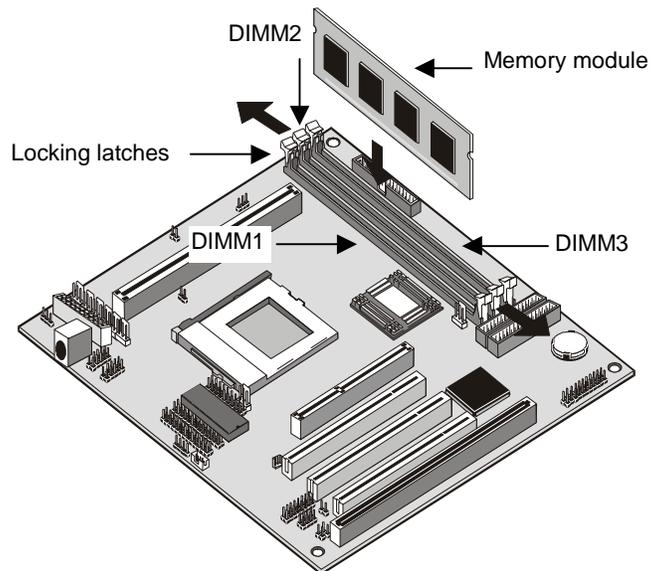
Note: If you have installed a socket-370 processor, make sure that the **Select Slot1 or Socket-370 jumper JP4** is at the appropriate setting. For a socket-370 processor, pins 2-3 are **SHORT**.

Install the Memory Modules

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

You must install at least one memory module. You can install the memory module in either DIMM1, DIMM2 or DIMM3. Each module may be installed with up to 256 MB of memory so the maximum capacity is 768 MB. The mainboard supports memory chips that have EC (Error Correction) or ECC (Error Correction Code).

1. Locate the DIMM slots on the mainboard.



2. The DIMM slots are keyed with notches and the DIMMs are keyed with cut-outs so that they can only be installed correctly. Check that the cut-outs on the DIMM module edge connector match the notches in the DIMM slot.

3. Push the latches on each side of the DIMM slot down.
4. Install the DIMM module into the slot and press it carefully but firmly down so that it seats correctly. The latches at either side of the slot are levered upwards and latch onto the edges of the DIMM when it is installed correctly.

Install a Hard Disk Drive and CD-ROM/DVD

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

Note: *Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a red stripe on the cable.*

About IDE Devices.

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

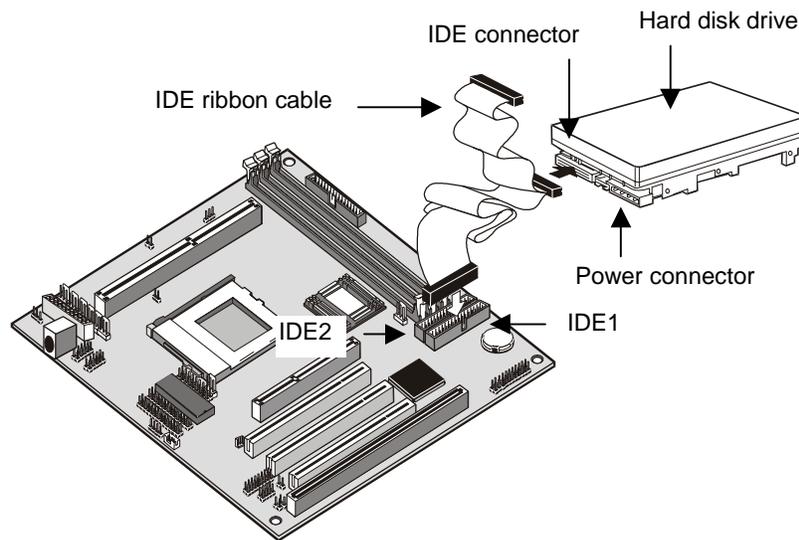
If you install two IDE devices on one cable, you must make sure that one device is set to MASTER and the other device is set to SLAVE. The documentation of your IDE device explains how to do this.

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

Installing a Hard Disk Drive

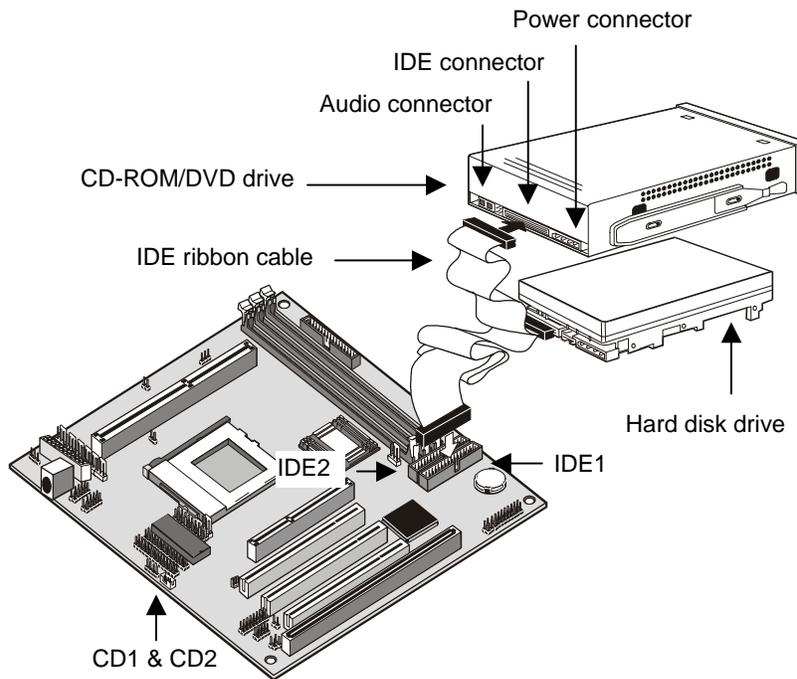
1. Install the hard disk drive into the drive cage in your system case.
2. Plug the IDE cable into the primary IDE channel on the mainboard IDE1.
3. Plug one of the connectors on the IDE cable into the IDE connector on the back edge of the hard disk drive. It doesn't matter which connector on the cable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

4. Plug a power cable from the case power supply unit into the power connector on the back edge of the hard disk drive.
5. When you first start up your system, go immediately to the setup utility and use the IDE Hard Disk Auto Detect feature to configure the IDE devices that you have installed. See Chapter 3 for more information.



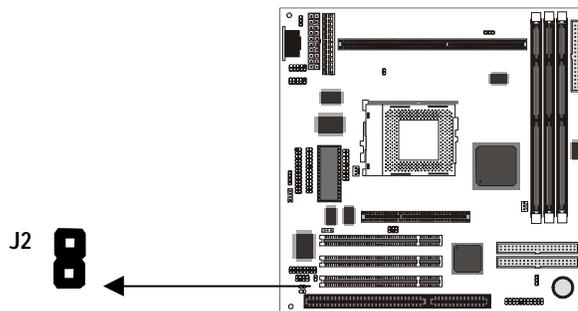
Installing a CD-ROM/DVD Drive

1. Install the CD-ROM/DVD drive into the drive cage in your system case. Plug the IDE cable into the primary IDE channel on the mainboard IDE1.
2. Plug one of the connectors on the IDE cable into the IDE connector on the back edge of the CD-ROM/DVD drive. It doesn't matter which connector on the cable that you use. Make sure that you have the pin-1 side of the cable matched with the pin-1 side of the connector.
3. Plug a power cable from the case power supply unit into the power connector on the back edge of the CD-ROM/DVD drive.
4. Use the audio cable provided with the CD-ROM/DVD drive to connect the audio connector on the CD-ROM/DVD drive to the one of the two audio-in connectors CD1 and CD2 on the mainboard.
5. When you first start up your system, go immediately to the setup utility and use the IDE Hard Disk Auto Detect feature to configure the IDE devices that you have installed. See Chapter 3 for more information.



Digital Audio Input

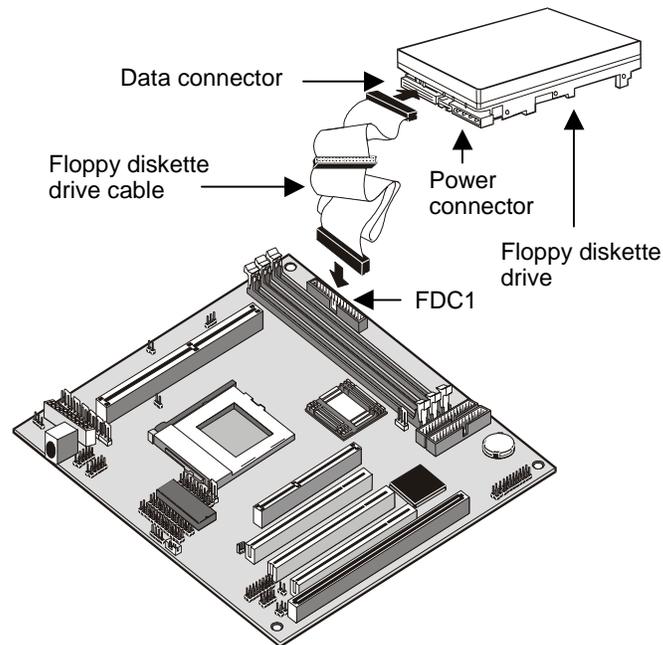
If your CD-ROM/DVD drive has a digital audio output connector, you can connect the digital audio output to the digital audio input connector on the mainboard, as an alternative to using the analog audio connectors CD1 and CD2. Use the cable provided with your CD-ROM DVD drive to connect to the digital audio input connector J2.



Installing a Floppy Diskette Drive

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

1. Install the floppy diskette drive into the drive cage in your system case. Plug the diskette drive cable into the diskette drive interface on the mainboard FDC1.
2. Plug one of the connectors on the diskette drive cable into the data connector on the back edge of the floppy diskette drive. Make sure that you have the pin-1 side of the cable matched with the pin-1 side of the connector.
3. Plug a power cable from the case power supply unit into the power connector on the back edge of the diskette drive.
4. When you first start up your system, go immediately to the setup utility and use the Standard page to configure the floppy diskette drives that you have installed. See Chapter 3 for more information.



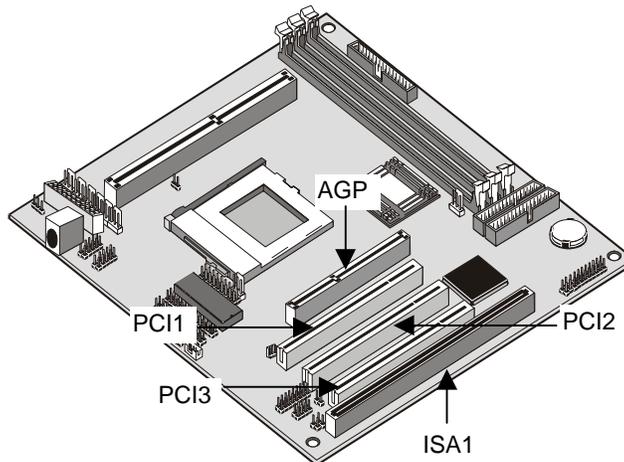
Using the Expansion Slots

This mainboard has three 32-bit PCI expansion slots, one legacy 8/16-bit ISA slot, and one AGP slot.

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

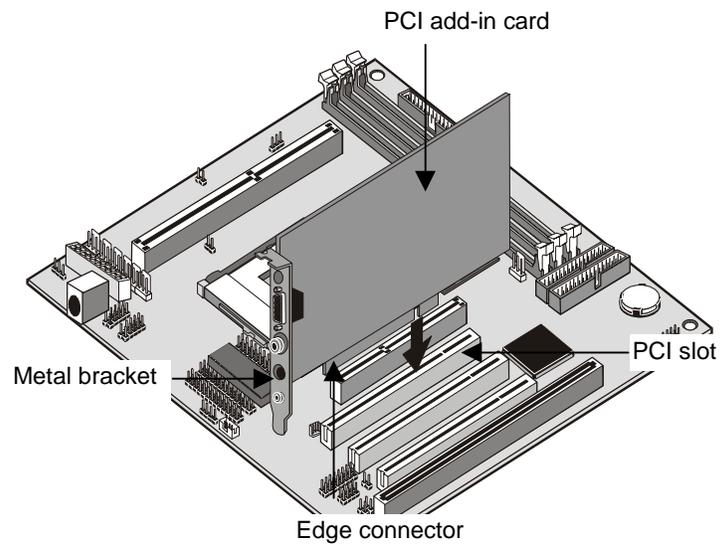
ISA Slot: The ISA slot can be used to install add-in cards that have the legacy 8/16-bit ISA (Industry Standard Architecture) edge connector.

AGP Slot: The AGP slot can be used to install a graphics adapter that has the AGP (Accelerated Graphics Port) edge connector.



1. Before installing an expansion card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.
2. Select which expansion slot you are going to use for your add-in card.
3. In the system case, remove the blanking plate from the slot in the system case that corresponds to the expansion slot that you are going to use.
4. Position the edge connector of the add-in card over the expansion slot. Position the metal bracket of the card in the empty slot in the system case.

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

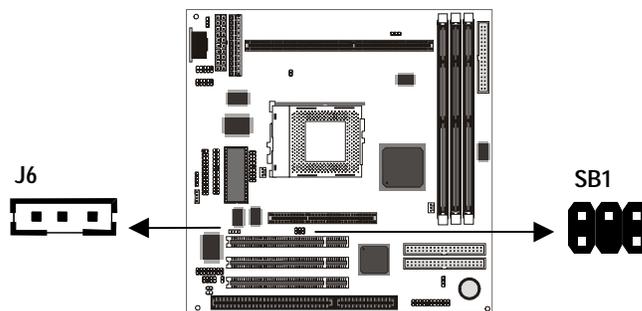


Add-in Card Options

The mainboard has two features that can be used if you have installed either a network adapter card or a Creative PCI sound card.

J6: Wake on LAN

If you have installed a network adapter (LAN adapter), you can use the cable provided with the card to plug into the J6 connector on the mainboard. J6 is the Wake On LAN feature. When your system is in a power-saving mode, any traffic through the network can automatically resume the system. You must enable this item using the Power Management page of the setup utility. See Chapter 3 for more information.



SB1: SB-Link Connector

If you have installed a PCI Creative Sound Blaster audio card, you can connect the card to the SB-Link circuit on the mainboard. The SB-Link circuit solves some problems that can occur when you use the audio card to play some legacy computer games that operate in the DOS real-mode environment.

Install Extension Brackets and Modules

On this mainboard many of the I/O ports must be implemented by cabling extension brackets or modules to connectors on the mainboard, and then installing the brackets or modules on the system case. Some of the extension brackets or modules are supplied with the system, others are options that can be ordered or purchased from third-party vendors.

Supplied extension brackets include:

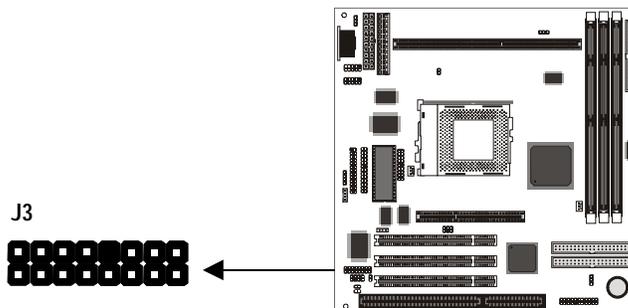
- Parallel port extension bracket
- Serial ports extension bracket
- Audio ports extension bracket
- V.90 fax/modem module

Optional extension brackets and modules include

- ATX form card
- Digital audio extension bracket

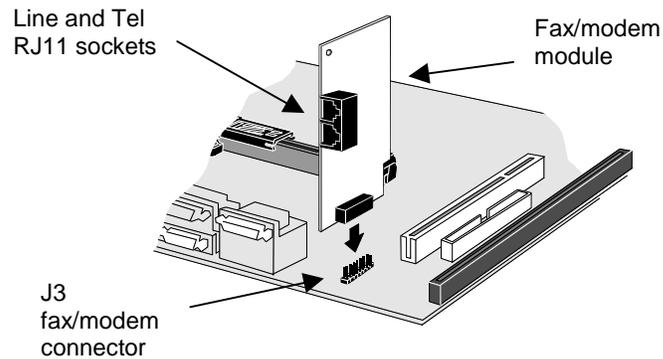
Fax/modem Module

You must install the fax/modem card in order to use the built-in fax/modem.



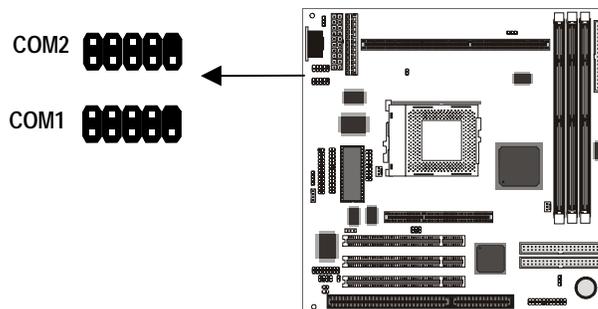
The fax/modem module is supplied with this mainboard.

1. Locate the J3 fax/modem connector on the mainboard.
2. Remove the expansion slot blanking plate from the system chassis that is adjacent to the fax/modem connector.
3. Install the fax/modem card on to the J3 connector as shown below. The RJ11 Line and Telephone sockets on the bracket are positioned in the expansion slot with the removed blanking plate.



Serial Ports Extension Bracket

If you want to have external serial ports available in your computer case, you must install the serial ports extension bracket.



The serial ports extension bracket is supplied with this mainboard.

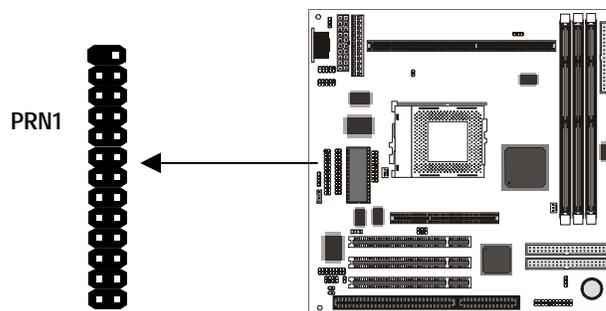
1. Locate the two serial port connectors COM1 and COM2. Remove a blanking plate from a free expansion slot in the system chassis.
2. Plug the two cables from the serial ports extension bracket into the COM1 and COM2 connectors. You can connect either of the cables to either of the connectors. The port connected to COM1 is identified as serial port COM1/3. The port connected to COM2 is identified as COM2/4
3. Install the metal bracket into the expansion slot in the system chassis from which you removed the blanking plate.

- Secure the bracket by driving a screw through the slot in the top of the metal bracket into the system chassis.

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

Parallel Port Extension Bracket

If you want to have an external parallel port available in your computer case, you must install the parallel port extension bracket.

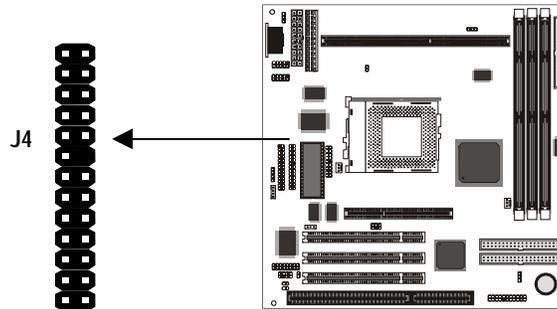


The parallel port extension bracket is supplied with this mainboard.

- Locate the parallel port connector PRN1. Remove a blanking plate from a free expansion slot in the system chassis.
- Plug the cable from the parallel port extension bracket into the PRN1 connector. The parallel port is identified by the system as LPT1.
- Install the metal bracket into the expansion slot in the system chassis from which you removed the blanking plate.
- Secure the bracket by driving a screw through the slot in the top of the metal bracket into the system chassis.

Audio Ports Extension Bracket

If you want to have external audio ports available in your computer case, you must install the audio ports extension bracket.

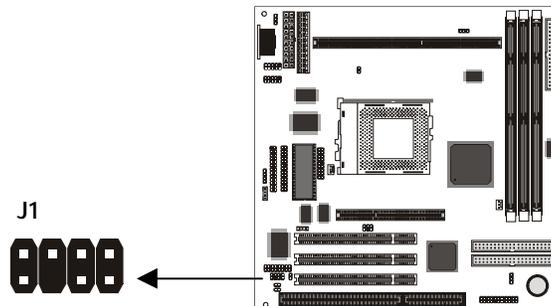


The audio ports extension bracket is supplied with this mainboard. It includes a 15-pin game/MIDI port, and jacks for line-in, line out, and microphone.

1. Locate the audio ports connector J4. Remove a blanking plate from a free expansion slot in the system chassis.
2. Plug the cable from the audio ports extension bracket into the J4 connector.
3. Install the metal bracket into the expansion slot in the system chassis from which you removed the blanking plate.
4. Secure the bracket by driving a screw through the slot in the top of the metal bracket into the system chassis.

Digital Audio Extension Bracket

You can purchase the 24-bit digital audio extension bracket as an option. You can use the audio SPDIF jacks to connect to digital audio devices.



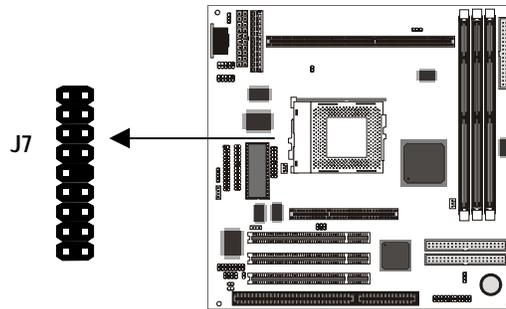
The digital audio extension bracket is an optional item. The digital audio extension bracket has an SPDIF-In jack, an SPDIF-Out jack, and Line-in jack.

1. Locate the SPDIF digital audio connector J1. Remove a blanking plate from a free expansion slot in the system chassis.
2. Plug the cable from the digital audio ports extension bracket into the J1 connector.
3. Install the metal bracket into the expansion slot in the system chassis from which you removed the blanking plate.
4. Secure the bracket by driving a screw through the slot in the top of the metal bracket into the system chassis.

Note: If you have used the digital audio in connector J2 to input digital audio from a CD-ROM or DVD drive, you cannot use the J1 digital audio connector to install a digital audio extension bracket. You must disconnect the CD-ROM/DVD digital audio connection to J2 before install the digital audio bracket.

ATX Form Bracket

You can purchase an optional ATX form card extension bracket.



The ATX form bracket extension bracket is an optional item. The ATX form extension bracket includes an infrared port, a PS/2 mouse port, and two USB (Universal Serial Bus) ports.

1. Locate the ATX form bracket connector J7. Remove a blanking plate from a free expansion slot in the system chassis.
2. Plug the cable from the ATX form extension bracket into the J7 connector.
3. Install the metal bracket into the expansion slot in the system chassis from which you removed the blanking plate.
4. Secure the bracket by driving a screw through the slot in the top of the metal bracket into the system chassis.

Chapter 3: Setup

About the Setup Utility

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

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

Starting the Setup Utility

You can only start the setup utility shortly after the computer has been turned on. A prompt appears on the computer display which says “*Press DEL to run Setup*”. When you see this prompt, press the **Delete** key, and the system will start the setup utility and display the main menu of the utility.

Using the Setup Utility

When you start setup, the main menu appears. The main menu of the setup utility shows a list of the options that are available. A highlight shows which option is currently selected. You can use the cursor arrow keys to move the highlight to other options. When an option is highlighted, you can execute the option by pressing the **Enter** key.

Some options lead to dialog boxes which ask you verify that that you wish to execute that option. You usually answer these dialogs by typing **Y** for yes and **N** for no. Some options lead to dialog boxes which ask for more information. Setting passwords have this kind of dialog box.

ROM PCI/ISA BIOS (P6BAT-B)
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD OPTIMUM SETTINGS	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

Some options lead to tables of items that usually have a value on the right side. The value of the first item is highlighted, and you can use the cursor arrow keys to select any of the other values in the table of items. When an item is highlighted, you can change the value by pressing the **PageUp** or **PageDown** keys, or the **Plus** or **Minus** keys. The **PageUp** and **Plus** keys cycle forward through the available values, the **PageDown** and **Minus** keys cycle backwards through the values.

When you are in the main menu, you can exit the utility by pressing the **Escape** key. You can save the current selections and exit the utility by pressing the **F10** key. You can change the color scheme of the utility by pressing the **F2** key while holding down the **Shift** key. When you are in one of the options that displays a dialog box, you can return to the main menu by pressing the **Escape** key.

When you are in an option that displays a table of items, you can return to the main menu by pressing the **Escape** key. For some items, you can display a help message by pressing the **F1** key. You can change the color scheme of the utility by pressing the **F2** key while holding down the **Shift** key. Press **F5** to discard any changes you have made and return all items to the value that they held when the setup utility was started. Press **F6** to load the displayed items with a standard list of default values. Press **F7** to load the displayed items with a high-performance list of default values.

How to Flash a New BIOS

You can install an updated BIOS for this motherboard that you can download from the manufacturer's website. A new BIOS may provide support for new peripherals, improvements in performance or fixes to address known bugs. Install a new BIOS as follows:

1. Some mainboards have a Flash BIOS jumper that protects the current BIOS from being changed or overwritten. If your mainboard has this jumper, change the setting to allow flashing a new BIOS.
2. Your computer must be running in a real-mode DOS environment, not the DOS window of Windows NT or Windows 95/98. We recommend that you create a new formatted DOS system floppy diskette.
3. Locate the flash memory utility on the support CD-ROM. It's called AWD66.EXE. Copy this file to the new system diskette.
4. Copy the new BIOS file that you downloaded from the manufacturer's website to the newly formatted system diskette.
5. Turn off your computer and insert the newly formatted DOS diskette in your computer's diskette drive.
6. You might need to run the setup utility and change the boot priority items on the BIOS Features Setup page, to force your computer to boot from the floppy diskette drive first.
7. At the A:\ prompt, after your computer has booted a clean DOS from the diskette, type in the filename AWD66 and press **Enter**.



8. In the opening dialog box, type in the filename of the new BIOS and follow the onscreen directions to flash the new BIOS.
9. When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. If your mainboard has a Flash BIOS jumper, don't forget to reset the jumper to protect the newly installed BIOS from being overwritten.

Standard CMOS Setup Option

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

```
ROM PCI/ISA BIOS (PS8AT-B)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.
```

Date (mm:dd:yy) : Thu, Jul 8 1999								
Time (hh:mm:ss) : 14 : 50 : 5								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	:	0	0	0	0	0	0	0 NORMAL
Primary Slave	:	0	0	0	0	0	0	0 NORMAL
Secondary Master	:	0	0	0	0	0	0	0 NORMAL
Secondary Slave	:	0	0	0	0	0	0	0 NORMAL
Drive A : 1.44M, 3.5 in.								
Drive B : None								
Floppy 3 Mode Support : Disabled								
Video : EGA/UGA								
Halt On : All Errors								
ESC : Quit		↑ ↓ ← → : Select Item			PG/PD/+/=- : Modify			
F1 : Help		(Shift)F2 : Change Color						

Date and Time

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

Hard Disks

Defaults: 0

These items show the characteristics of hard disk drives on the two available IDE channels. (Note that SCSI hard disk drives do not appear here.) You can automatically install most hard disks using the IDE HDD Auto Detect Option from the main menu. If you find that a drive cannot be automatically detected, you can use these items to select USER, then manually enter the characteristics of the drive. The documentation provided with your drive provides the data you need to fill in the values for CYLS (cylinders), HEAD (read/write heads), and so on.

The drive documentation drive may not tell you what value to use under the MODE heading. If the drive is smaller than 528 MB, set MODE to Normal. If the drive is larger than 528 MB and it supports Logical Block Addressing, set MODE to LBA. Very few high-capacity drives do not support Logical Block Addressing. If you have such a drive, you might be able to configure it by setting the MODE to Large. If you're not sure which MODE setting is required by your drive, set MODE to Auto and let the setup utility try to determine the mode automatically.

Drive A and Drive B**Default: 1.44M, 3.5 in., None**

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

Floppy 3 Mode Support**Default: Disabled**

Floppy 3 mode refers to a 3.5" diskette with a capacity of 1.2 MB. Floppy 3 mode is sometimes used in Japan.

Video**Default: EGA/VGA**

This item defines the video mode of the system. This mainboard has a built-in VGA graphics system so you must leave this item at the default value.

Halt On**Default: All Errors**

This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which kind of errors in the POST are sufficient to halt the system.

BIOS & CPU Features Setup Option

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

ROM PCI/ISA BIOS (P6BAT-B)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

CPU Internal Core Speed	: 233MHz	OS Select For DRAM > 64MB	: Non-OS2
CPU clock failed reset	: Disabled	HDD S.M.A.R.T. capability	: Disabled
CIH Buster Protection	: Enabled	Report No FDD For WIN 95	: Yes
Anti-Virus Protection	: Enabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	CB000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Processor Number Feature	: Enabled	D4000-D7FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D8000-DBFFF Shadow	: Disabled
Boot From LAN First	: Enabled	DC000-DFFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	ESC : Quit	↑↓←→ : Select Item
Swap Floppy Drive	: Disabled	F1 : Help	PU/PD/+/- : Modify
Boot Up NumLock Status	: On	F5 : Old Values (Shift)	F2 : Color
Gate A20 Option	: Fast	F6 : Load BIOS Defaults	
Memory Parity/ECC Check	: Disabled	F7 : Load Optimun Settings	
Security Option	: Setup		
PCI/UGA Palette Snoop	: Disabled		

CPU Internal Core Speed **Default: 233 MHz**

Use this item to set up the mainboard for the kind of processor that you have installed. Set this item to the rated internal clock speed of the installed processor. If you set this to Manual, you can use the two items below *CPU/SDRAM Bus Frequency* and *CPU Core: Bus Freq. Multiple* to manually configure the processor.

CPU/SDRAM Bus Frequency
CPU Core: Bus Freq. Multiple

These items can be changed if you have set the *CPU Internal Core Speed* to Manual. Use the *CPU Host Bus Frequency* to set the system bus frequency for the installed processor (usually 100 MHz). Then use *CPU Frequency* to set a multiple. The multiple times the system bus must equal the core speed of the installed processor e.g. **3.5 (multiple) x 100 MHz (system bus) = 350 MHz (installed processor clock speed)**.

CPU Clock Failed Reset **Default: Disabled**

If this item is enabled, and your system crashes three times because you have overclocked the processor, this item will automatically adjust the speed of the processor to the system bus speed multiplied by two.

CIH Buster Protection **Default: Enabled**
Anti-Virus Protection **Default: Enabled**

When CIH Buster Protection is enabled it provides some protection against viruses that target the system BIOS (particularly the CIH virus)

When Anti-Virus Protection is enabled it provides some protection against viruses which try to write to the boot sector and partition table of your hard disk drive. This item is Enabled as a default . You might need to disable it so that you can install an operating system. We recommend that you enable Anti-Virus Protection as soon as you have installed your disk with an OS.

CPU Internal Cache **Default: Enabled**

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

External Cache **Default: Enabled**

Most processors that can be installed in this system use external (L2) cache memory to improve performance. The exceptions are older SEPP Celeron CPUs running at 266 or 300 MHz. Enable this item for all but these two processors.

CPU L2 Cache ECC Checking **Default: Enabled**

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

Processor Number Feature **Default: Enabled**

Each Pentium-III processor cartridge is installed with a unique processor number. This number may be used for verification in internet transactions and e-commerce. If you prefer not to use or distribute the unique processor number, use this item to suppress the processor number.

Quick Power On Self Test **Default: Enabled**

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

Boot From LAN First **Default: Disabled**

Enable this item if you want your computer to remote boot an operating system from a network server.

Boot Sequence **Default: A,C,SCSI**

This item defines where the system will look for an operating system, and the order of priority. You can boot an OS from many locations including a SCSI or ZIP drive, a floppy diskette drive or an LS-120 high-capacity diskette drive.

Swap Floppy Drive **Default: Disabled**

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

Boot Up NumLock Status **Default: Enabled**

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

Gate A20 Option **Default: Fast**

This item defines how the system handles legacy software that was written for an earlier generation of processors. Leave this item at the default value.

Memory Parity/ECC Check **Default: Disabled**

If this item is enabled, it allows the system to use parity checking and ECC (Error Correction Code) to catch errors in system memory.

Security Option **Default: Setup**

If you have installed password protection, this item defines if the password is required at system start up, or if it is only required when a user tries to enter the setup utility.

PCI/VGA Palette Snoop **Default: Disabled**

This item is designed to overcome some problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

OS Select For DRAM > 64 MB **Default: Non-OS2**

This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default Non-OS2.

HDD S.M.A.R.T. capability **Default: Disabled**

SMART is an industry acronym for Self-monitoring, Analysis and Reporting Technology. If the documentation of your hard disk states that SMART is supported, you can enable this item.

Report No FDD for WIN 95 **Default: Yes**

If you are running a system with no floppy drive and using the Windows 95 OS, select Yes for this item to ensure compatibility with the Windows 95 logo certification.

Video BIOS Shadow **Default: Enabled**

This item allows the video BIOS to be copied to system memory for faster performance.

XXXXX-XXXXX Shadow **Default: Disabled**

These items allow the BIOS of other devices to be copied to system memory for faster performance.

Chipset Features Option

This option displays a table of items that define critical timing parameters for components including the memory, and the system logic. Generally, you should leave the items on this page at their default values unless you are very familiar with the technical specifications of your system hardware.

ROM PCI/ISA BIOS (P6BAT-B)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Bank 0/1 DRAM Timing : SDRAM 10ns	Auto Detect DIMM/PCI Clk : Enabled
Bank 2/3 DRAM Timing : SDRAM 10ns	Spread Spectrum : Disabled
Bank 4/5 DRAM Timing : SDRAM 10ns	
SDRAM Cycle Length : 3	Current CPU Temperature :
DRAM Clock : Host CLK	Current System Temp. :
Memory Hole : Disabled	Current CPUFAN Speed :
Read Around write : Disabled	Current CASFAN Speed :
Concurrent PCI/Host : Disabled	Analog(V) :
System BIOS Cacheable : Enabled	I/O (V) :
Video BIOS Cacheable : Disabled	+12 (V) :
Video RAM Cacheable : Disabled	CPU (V) :
I/O Recovery Time : Enabled	
AGP Aperture Size : 64M	
AGP-2X Mode : Enabled	
	ESC : Quit
	F1 : Help
	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Optimum Settings

Bank 0/1 DRAM Timing **Default: SDRAM 10ns**

Bank 2/3 DRAM Timing **Default: SDRAM 10ns**

Bank 4/5 DRAM Timing **Default: SDRAM 10ns**

These three fields define the speed of the memory chips that you can install in each of the three DIMM slots. For this motherboard, you must install SDRAM memory modules. Select SDRAM 10ns if the memory is rated for 10ns access time, or SDRAM 8ns if the memory is rated for 8ns access time. If you're not sure, select SDRAM 10ns as a default that ensures reliability.

SDRAM Cycle Length	Default: 3
DRAM Clock	Default: Host CLK

These two items determine timing parameters for system memory. We recommend that you leave these items at the default value.

Memory Hole	Default: Disabled
--------------------	--------------------------

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

Read Around Write	Default: Disabled
Concurrent PCI/Host	Default: Disabled

These two items determine how the system organizes read/write operations over the system's memory and PCI buses. These items are determined by the mainboard chipset so leave these items at the default value.

System BIOS Cacheable	Default: Enabled
Video BIOS Cacheable	Default: Disabled

These items allow the video and/or system to be cached in memory for faster execution. We recommend that you leave these items at the default value.

Video RAM Cacheable	Default: Disabled
----------------------------	--------------------------

This item determines if the system Video RAM can be cached to main memory for faster execution. We recommend that you leave this item at the default value.

I/O Recovery Time	Default: Enabled
--------------------------	-------------------------

This item sets a timing parameters for legacy 8-bit and 16-bit ISA expansion cards. We recommend that you leave these items at the default value Enabled.

AGP Aperture Size	Default: 64M
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This item defines the size of the aperture if you use an AGP graphics adapter. It refers to a section of the PCI memory address range used for graphics memory.

AGP-2X Mode	Default: Enabled
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This item lets you improve performance by doubling the speed of the AGP bus. This function is supported by this mainboard so we recommend that you leave this item at the default value Enabled.

Auto-Detect DIMM/PCI Clk	Default: Enabled
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If this item is enabled, the system reduces EMI (electromagnetic interference) by turning of the clock generator signal to DIMM slots or PCI slots that are unoccupied.

Spread Spectrum	Default: Disabled
------------------------	--------------------------

When this item is enabled, it can significantly reduce the EMI (electrical magnetic interference) that your system generates. However, it can cause timing critical devices, such as SCSI host adapters, to malfunction. We recommend that you leave this item at the default value.

Current CPU Temp., Current System Temp., etc.
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If you are using the hardware monitoring features of this system, you can use these items to set thermal and electrical parameters for the system.

Power Management Setup Option

This option displays items which let you control the system power management. Modern operating systems take care of much of the power management. This mainboard supports ACPI (advanced configuration and power interface). This system supports power-saving modes; doze mode, and suspend mode.

Power Management Timeouts

The power-saving modes can be controlled by timeouts. If the system is inactive for a time, the timeouts begin counting. If the inactivity continues so that the timeout period elapses, the system enters a power-saving mode. If any item in the list of *PM Events* is Enabled, then any activity on that item will restart the timeout counters or resume the system from a power-saving mode.

Wake Up Calls

If the system is suspended, or has been powered down by software, it can be resumed by a wake up call that is generated by incoming traffic to a modem or LAN card, or a fixed alarm on the system realtime clock.

ROM PCI/ISA BIOS (P6BAT-B)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: User Define	Primary INTR	: ON
PM Control by APM	: Yes	IRQ3 (COM 2)	: Primary
Video Off After	: Suspend	IRQ4 (COM 1)	: Primary
Video Off Method	: DPMS Support	IRQ5 (LPT 2)	: Primary
MODEM Use IRQ	: 3	IRQ6 (Floppy Disk)	: Primary
Soft-Off by PWRBTN	: Instant-Off	IRQ7 (LPT 1)	: Primary
HDD Power Down	: Disable	IRQ8 (RTC Alarm)	: Disabled
Doze Mode	: Disable	IRQ9 (IRQ2 Redir)	: Secondary
Suspend Mode	: Disable	IRQ10 (Reserved)	: Secondary
** PM Events **			
UGA	: OFF	IRQ11 (Reserved)	: Secondary
LPT & COM	: LPT/COM	IRQ12 (PS/2 Mouse)	: Primary
HDD & FDD	: OFF	IRQ13 (Coprocessor)	: Primary
DMA/master	: OFF	IRQ14 (Hard Disk)	: Primary
Resume by Ring/LAN	: Disabled	IRQ15 (Reserved)	: Disabled
Resume by Alarm	: Disabled	ESC : Quit	↑↓←→ : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values (Shift)	F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Optimum Settings	

Power Management **Default: User Define**

This item acts like a master switch for the power-saving modes and hard disk timeouts. If this item is set to Max Saving, doze and suspend mode, will occur after a short timeout. If this item is set to Min Saving, doze and suspend mode will occur after a longer timeout. If the item is set to User Define, you can insert your own timeouts for the power-saving modes.

PM Control by APM **Default: Yes**

Windows 95 and 98 have built-in power management capabilities called APM (Advanced Power Management). When you enable this item, you allow the APM routines in Windows to operate on your system.

Video Off After **Default: Suspend**

This option defines the level of power-saving mode required in to power down the video display. As a default, the video powers down in suspend mode.

Video Off Method **Default: DPMS Support**

This item defines how the video is powered down to save power. As a default, this is set to DPMS support (display power management software).

Soft-Off by PWR-BTTN **Default: Instant-Off**

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. Then you have to hold the power button down for four seconds to cause a software power down.

HDD Power Down **Default: Disabled**

You can set this item to Disabled, or a selection of timeouts from 1 to 15 minutes. The hard disk drive will power down if the selected timeout passes without any activity on the hard disk.

Doze Mode **Default: Disabled**

If you have selected User Define for the Power Management item, you can set this item to Disabled, or a selection of timeouts from 10 seconds to 1 hour. The system will go into the power-saving doze mode if the selected timeout passes without any system activity.

Suspend Mode **Default: Disabled**

If you have selected User Define for the Power Management item, you can set this item to Disabled, or a selection of timeouts from 10 seconds to 1 hour. The system will go into the power-saving suspend mode if the selected timeout passes without any system activity.

VGA **Default: Off**

If this item is set to On, any activity on the graphics system will resume the system from a power-saving mode and/or reset the power-saving mode timeout counters.

LPT & COM**Default: LPT/COM**

Select None, or either LPT or COM or both. If LPT and/or COM is selected, any activity on the system's parallel port (LPT) and/or serial ports (COM) will resume the system from a power-saving mode and/or reset the power-saving mode timeout counters.

HDD & FDD**Default: Off**

If this item is set to On, any activity on the hard disk drive or floppy disk drive will resume the system from a power-saving mode and/or reset the power-saving mode timeout counters.

DMA/master**Default: Off**

If this item is set to On, any activity on the system's DMA (Direct Memory Access) channels will resume the system from a power-saving mode and/or reset the power-saving mode timeout counters.

Resume by Ring/Alarm**Default: Disabled**

If you enable this item, the incoming calls to a fax/modem or incoming traffic to a network adapter can resume the system from a power-saving mode. You might have to make a hardware connection on the system mainboard in order to implement this feature.

Resume by Alarm**Default: Disabled**

If you enable this item, you can use the Date and Timer items which appear to install your system with an alarm time and date on the system's realtime clock. When the alarm time is reached, the system will resume from a power-saving mode.

Primary INTR**Default: On**

If you enable this item you can use the list of interrupt options that appears below to determine the effect that each interrupt can have on the system power management. If you set this item to Off, then the interrupts have no effect on system power management.

IRQ3 (COM2)...IRQ15 (Reserved)

These items appear if Primary INTR is set to ON. For each interrupt request line, you can set it to Disabled, Primary or Secondary. If it is set to disabled, the IRQ has no effect on system power management. If it is set to Secondary, activity on the IRQ can reset the power-saving mode timeout counters. If it is set to Primary, activity on the IRQ can reset the power-saving mode timeout counters and resume the system from a power saving mode

PNP/PCI Configuration Option

This option displays a table of items that configures how PNP (Plug and Play) and PCI expansion cards operate in your system.

ROM PCI/ISA BIOS (P6BAT-B)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed : No	CPU to PCI Write Buffer: Enabled
Resources Controlled By : Manual	PCI Dynamic Bursting : Enabled
Reset Configuration Data : Disabled	PCI Master 0 WS Write : Enabled
	PCI Delay Transaction : Enabled
IRQ-3 assigned to : PCI/ISA PnP	PCI#2 Access #1 Retry : Disabled
IRQ-4 assigned to : PCI/ISA PnP	AGP Master 1 WS Write : Enabled
IRQ-5 assigned to : Legacy ISA	AGP Master 1 WS Read : Disabled
IRQ-7 assigned to : PCI/ISA PnP	
IRQ-9 assigned to : PCI/ISA PnP	Assign IRQ For USB : Enabled
IRQ-10 assigned to : PCI/ISA PnP	Assign IRQ For VGA : Enabled
IRQ-11 assigned to : PCI/ISA PnP	
IRQ-12 assigned to : PCI/ISA PnP	
IRQ-14 assigned to : PCI/ISA PnP	
IRQ-15 assigned to : PCI/ISA PnP	
DMA-0 assigned to : PCI/ISA PnP	
DMA-1 assigned to : PCI/ISA PnP	ESC : Quit F10 : Select Item
DMA-3 assigned to : PCI/ISA PnP	F1 : Help PU/PD/+/- : Modify
DMA-5 assigned to : PCI/ISA PnP	F5 : Old Values (Shift)F2 : Color
DMA-6 assigned to : PCI/ISA PnP	F6 : Load BIOS Defaults
DMA-7 assigned to : PCI/ISA PnP	F7 : Load Optimum Settings

PNP OS Installed

Default: No

If you install a Plug and Play operating system such as Windows 95 or 98, you can set this item to Yes. When set to Yes you can use the Device Manager utility in the OS to make changes to the configuration of expansion cards.

Resources Controlled By

Default: Manual

If you cannot get an expansion card to work properly, you might be able to solve the problem by setting this item to Manual, and defining the characteristics of the card in the new items that appear. If you change this item to Manual, the display will list a series of items that allow you to define the assignments of the system interrupt lines (IRQs) and Direct Memory Access (DMA) channels. As a default, these items are set to PCI/ISA PnP. If you install an ISA-bus card that does not support PNP, and it requires a special IRQ and DMA, you can modify the list of assignments. Change the values of the IRQ and DMA that are required by the ISA card to Legacy ISA.

Reset Configuration Data

Default: Disabled

If you enable this item and restart the system, any PNP configuration data stored in the BIOS setup is cleared from memory. New updated data is created.

CPU to PCI Write Buffer	Default: Enabled
PCI Dynamic Bursting	Default: Enabled
PCI Master 0 WS Write	Default: Enabled
PCI Delay Transaction	Default: Enabled
PCI#2 Access #1 Retry	Default: Disabled

All of these five items determine how the system carries out read/write operations over the PCI bus. These items are determined by the system hardware and chipset, so you should leave these items at the manufacturer's defaults.

AGP Master 1 WS Write	Default: Enabled
AGP Master 1 WS Read	Default: Disabled

These two items determine how the system carries out read/write operations over the AGP bus. These items are determined by the system hardware and chipset, so you should leave these items at the manufacturer's defaults.

Assign IRQ for USB	Default: Enabled
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If this item is enabled, an IRQ will be assigned to the system's USB ports.

Assign IRQ for VGA	Default: Enabled
---------------------------	-------------------------

If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system.

Load BIOS Defaults Option

This option opens dialog box that lets you install BIOS defaults for all appropriate items in the whole setup utility. Press the **Y** key and then **Enter** to install the defaults. Press the **N** key and then **Enter** to not install the defaults. The BIOS defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the BIOS defaults as a first step in getting your system working properly again. If you only want to install BIOS defaults for a specific option, select and display that option, and then press the **F6** key.

Load Optimum Settings

This option opens dialog box that lets you install optimum defaults for all appropriate items in the whole setup utility. Press the **Y** key and then **Enter** to install the defaults. Press the **N** key and then **Enter** to not install the defaults. The setup defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the setup defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press the **F7** key.

Integrated Peripherals Option

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

ROM PCI/ISA BIOS (P6BAT-B)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

OnChip IDE Channel0 : Enabled	UR2 Mode : IrDA
OnChip IDE Channel1 : Enabled	UR2 Duplex Mode : Half
IDE Prefetch Mode : Enabled	Onboard Parallel Port : 378/IRQ7
IDE HDD Block Mode : Enabled	Parallel Port Mode : SPP
Primary Master PIO: Auto	OnChip USB : Enabled
Primary Slave PIO: Auto	USB Keyboard Support : Disabled
Secondary Master PIO: Auto	
Secondary Slave PIO: Auto	
Primary Master UDMA: Auto	
Primary Slave UDMA: Auto	
Secondary MasterUDMA: Auto	
Secondary Slave UDMA: Auto	
Init Display First : PCI Slot	
POWER ON Function : Hot Key	
Hot Key Power ON : Ctrl-F12	ESC : Quit
KBC input clock : 8 MHz	F1 : Help
Onboard FDC Controller: Enabled	F5 : Old Values (Shift)F2 : Color
Onboard Serial Port 1 : 3F8/IRQ4	F6 : Load BIOS Defaults
Onboard Serial Port 2 : 2F8/IRQ3	F7 : Load Optimum Settings
	↑↓←→ : Select Item
	PU/PD/+/- : Modify

OnChip IDE Channel0

Default: Enabled

OnChip IDE Channel1

Default: Enabled

Use these items to enable or disable the primary (channel0) and secondary (channel1) IDE channels that are integrated on this mainboard.

IDE Prefetch Mode

Default: Enabled

Prefetching can improve access to IDE devices. Enable this item if your IDE devices support prefetching.

IDE HDD Block Mode

Default: Enabled

Block mode transfers can improve the access to IDE devices. Enable this item if your IDE devices support block mode transfers.

IDE Primary Master PIO

Default: Auto

IDE Primary Slave PIO

Default: Auto

IDE Secondary Master PIO

Default: Auto

IDE Secondary Slave PIO

Default: Auto

Each IDE channel supports a master device and a slave device. These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. You can choose Auto, to let the system auto detect which PIO mode is best, or you can install a PIO mode from 0-4.

IDE Primary Master UDMA	Default: Auto
IDE Primary Slave UDMA	Default: Auto
IDE Secondary Master UDMA	Default: Auto
IDE Secondary Slave UDMA	Default: Auto

Each IDE channel supports a master device and a slave device. This motherboard supports UltraDMA. UltraDMA technology provides faster access to IDE devices. If you install a device which supports UltraDMA, change the appropriate item on this list to Auto. You may have to install the UltraDMA driver supplied with this motherboard in order to use an UltraDMA device.

Init Display First	Default: PCI Slot
---------------------------	--------------------------

Use this item to define if your graphics adapter is installed in one of the PCI slots.

Power On Function	Default: Hot KEY
Hot Key Power ON	Default: Ctrl-F12

The Power On Function item allows you to power on the system by pressing hot-keys, or typing a password. If you choose Password, you can use the item KB Power On Password to install a power on password. If you set it to Hot Key, you can then use the item Hot Key Power On to choose which hot keys are installed.

KBC input clock	Default: 8 MHz
------------------------	-----------------------

This item sets the clock speed for the keyboard controller. Leave this item at the default value of 8 MHz.

Onboard FDC Controller	Default: Enabled
-------------------------------	-------------------------

Use this item to enable or disable the floppy disk controller that is built into this mainboard.

Onboard Serial Port 1	Default: 3F8/IRQ4
------------------------------	--------------------------

This item lets you disable the built-in serial port 1, or enable it by assigning an I/O address and an Interrupt Request Line (IRQ).

Onboard Serial Port 2	Default: 2F8/IRQ3
------------------------------	--------------------------

This item lets you disable the built-in serial port 2, or enable it by assigning an I/O address and an Interrupt Request Line (IRQ).

UR2 Mode Select	Default: IrDA
------------------------	----------------------

This item defines the operation of serial port 2. In the Normal setting, serial port 2 is assigned to the external COM2 connector. If you have installed an optional infrared port, you must change the setting of this item to one of the Infrared settings (usually IrDA or FIR). These settings will disable the external COM2 serial port connector and assign the resources to the infrared device. If you have selected an IR mode, use the item below, UR2 Duplex Mode to determine if your IR port operates with half-duplex or full-duplex.

Onboard Parallel Port	Default: 378/IRQ7
------------------------------	--------------------------

This item lets you disable the built-in parallel port, or enable it by assigning an I/O address and an Interrupt Request Line (IRQ).

Parallel Port Mode	Default: SPP
---------------------------	---------------------

This item defines the operation of the parallel port. It can be set to SPP (standard parallel port). If you are connected to a parallel device that supports the higher-

performance EPP (enhanced parallel port) or the ECP (extended capabilities port) make the appropriate changes to this item.

OnChip USB**Default: Enabled**

Use this item to enable or disable the USB ports that are integrated in this mainboard.

USB Keyboard Support:**Default: Disabled**

Enable this item if you plan on using a keyboard that operates through a USB port.

Supervisor and User Password Settings

This item can be used to install a password. To install a password, follow these steps:

1. Highlight the item Password Settings on the main menu and press **Enter**.
2. The password dialog box appears.
3. If you are installing a new password, carefully type in the password. You cannot use more than 8 characters or numbers. The password will differentiate between upper case and lower characters. Press **Enter** after you have typed in the password. If you are deleting a password that is already installed just press **Enter** when the password dialog box appears.
4. The system will ask you to confirm the new password by asking you to type it in a second time. Carefully type the password again and press **Enter**, or just press **Enter** if you are deleting a password that is already installed.
5. If you typed the password correctly, the password will be installed.

IDE HDD Auto Detection Option

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 using the Standard CMOS Setup option.

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 And Exit Setup Option

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

About the Software

The software for this mainboard is supplied on a CD-ROM. The disk has some folders that can be used by many different mainboards, for example the **UTILITY** and **PERIPHERAL** folders. Some folders can only be used by mainboards which have certain brands of chipsets, for example the **INTEL** and **VIA** folders. In addition, software that is specifically intended for one kind of mainboard is stored in a folder with the name of that board. The software for this mainboard is stored in the **MS7101C** folder.

***Note:** Never try to install software from a folder that is not specified for use with your mainboard.*

Folders for this Mainboard

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

Utility Folder

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

- AWDFLASH:** Software to erase and install new revisions of the system BIOS
- DIRECTX5:** Software display drivers for Microsoft's DirectX Rev. 5 specification
- PC-CILLIN:** Anti-virus software
- BITWARE:** Software for the built-in fax/modem
- GAMUT:** Audio rack for the built-in sound system

CM18X38 Folder

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

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

Peripheral Folder

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

- ❑ **KEYBOARD, CD-ROM, MOUSE:** These three folders have drivers for accessories manufactured by BTC. Some system assemblers ship these accessories with complete systems based on this mainboard.

VIA Folder

- ❑ **IDE:** This folder has bus mastering Ultra DMS drivers for IDE devices
- ❑ **IRQ:** This folder has PCI IRQ miniport drivers.
- ❑ **REGISTRY:** This folder has patches for installation in the Windows registry to enhance Windows support for the VIA chipset installed in this system
- ❑ **USB_UPDATE:** This folder updates the Windows 98 USB ports driver.
- ❑ **VxD:** This folder cannot be used with this mainboard. It contains AGP graphics drivers for a different chipset than the one used in this system.

MS7101C Folder

- ❑ **AUDIO, MODEM, MONITOR:** These folders are empty. A readme file directs you to an alternate location with the required software.

Note: *Some folders are subdivided into different operating systems such as DOS, Windows 95, Windows NT, and so on. Always make sure that you are installing the correct software for the operating system on your computer. Some folders are also subdivided into different language versions, such as English, French, German and so on.*

Note: *Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.*

Running the Support CD-ROM

1. Place the disk in your CD-ROM drive. If you are running Windows with Autoplay enabled, the opening screen of the CD appears automatically. Click on READ ME to read the latest instructions.
2. Click on the item BROWSE THE CD TITLE. This uses Windows Explorer to show the contents of the support CD.
3. Double click on a folder to display the sub-folders.
4. Before installing the software, look for a file named README.TXT, or something similar. This file may contain important information to help you install the software correctly.
5. Some software is installed in separate folders for different operating systems, such as DOS, WIN NT, WIN95/98, and so on. Always log on to the correct folder for the kind of OS you are using.
6. To install the software, you usually execute a file named SETUP.EXE or INSTALL.EXE by double clicking on the filename.

Utility Folder Installation Notes

Award Flash Memory Utility

This utility lets you erase the system BIOS stored on a Flash Memory chip on the mainboard, and lets you copy an updated BIOS to the chip. Take care how you use this program. If you erase the current BIOS and fail to write a new BIOS, or write a new BIOS that is incorrect, your system will malfunction.

There are two flash memory utilities called **AWD66.EXE** and **AWD712.EXE**. For this mainboard you must use the **AWD66.EXE** utility. To use the utility, you must be in real-mode DOS (not the DOS box that is available in Windows 95/98/NT). If you are using WINDOWS 95/98, shut down your computer and select the option Restart in DOS in the shut-down dialog box. If you are running Windows NT, shut down your computer and boot from a DOS diskette temporarily in order to run the flash memory utility.

DirectX5 Drivers

The DirectX drivers are for installation only in Windows 95/98. The directX drivers need to be installed before you install an AGP driver. You may be able to get more up-to-date directX drivers from the Microsoft web site. Start the installation by clicking on the file DX5CORE.EXE.

PC-Cillin Anti-Virus Utility

Anti-virus software is provided for DOS, for WIN95, and WIN 98. Log on to the appropriate directory for your operating system. For DOS, copy all the files in the DOS folder to your hard disk drive. For Windows 95, log on to the Disk 1 folder and run SETUP. For Windows 98, run SETUP.

CMI8X38 Folder Installation Notes

Audio Software

This folder has software and drivers for the sound system that is integrated on this mainboard. Drivers are provided for Windows 95/98, Windows NT, and DOS. An MS-WORD format manual is stored in the MANUAL folder.

DOS Installation

Log on to the DOSDRV folder and run the program INSTALL.EXE

Windows 95/98 Installation

Please specify the path to the CD-ROM\CMI8X38\AUDIO\W95-98\DRV\ when your system detects the installed audio system. To install the audio applications, log on to the W95-98 folder, and then log on to the APPS folder. Run the SETUP program.

Windows NT 4.0 Installation

1. Press the "Start" button.
2. Move the highlight to "Settings" and select "Control Panel".
3. Double click on the "Multimedia" icon.
4. Select the "Devices" tab.
5. Press the "Add..." button.
6. Select item "Unlisted or Updated Driver" in the "List of Drivers" list box.
7. Specify the path to the PCI audio NT drivers.
8. Select "C-Media CM8338 PCI Device" and press the "OK" button.
9. Choose proper I/O or the "OK" button for the default setting.
10. Restart the Windows NT system.

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

Modem Driver and Software

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

Windows 95/98

The modem is a plug and play device so Windows 95/98 will automatically detect the presence of your modem. When the Plug and Play wizard begins to look for modem drivers, click on the button that says ***Have Disk*** and then browse or type in the pathname to the CMI8x58\modem\win9x folder.

Windows NT 4.0

Follow the instructions in the README file in the WINNT4 sub-folder.

VIA Folder Installation Notes

IDE

This folder has bus mastering Ultra DMA drivers for IDE devices. Drivers are available for Windows 95/98 and Windows NT 4.0 To begin the installation, run the SETUP program and then follow the screen prompts.

IRQ

This folder has PCI IRQ miniport drivers.

For Windows 95

Run "setup" to install VIA PCI IRQ Routing Miniport Driver.

Windows 98

Before installing Win98.

1. In the setup utility, enable "OnChip USB" in BIOS Chipset Features setup menu.
2. In the setup utility, enable "Assign IRQ for USB" in PNP/PCP Configuration Setup menu.
3. After Installing Win98 run "setup" to install VIA PCI IRQ Routing Miniport Driver.

USB_Update

This folder updates the USB driver in Windows 98. Run the file SETUP.EXE to begin the installation of the updated driver.

Registry

The Registry folder has updated information for insertion in the Windows 95/98 registry that outline to the operating system how the chipset components should be configured. This is needed for proper functionality of the following features:

- ◆ Core PCI and ISAPNP Services
- ◆ AGP Support
- ◆ IDE/ATA33/ATA66 Storage Support
- ◆ USB Support
- ◆ Identification of Intel Chipset Components in Device Manager

To install the files, run SETUP.EXE.

Mainboard (MS7101C) Installation Notes

All of the sub-folders in this folder are empty, with a short README file giving directions to alternate folders for the appropriate software.

Appendix 1: Quick Jumper Setting Reference

JP1A: Audio enable/disable jumper

Use this jumper to enable or disable the audio system integrated on the mainboard.

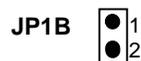
Function	Jumper Cap
Enable audio	Open pins 1-2
Disable audio	Short pins 1-2



JP1B: Modem enable/disable jumper

Use this jumper to enable or disable the modem integrated on the mainboard.

Function	Jumper Cap
Enable modem	Open pins 1-2
Disable modem	Short pins 1-2

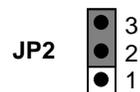


Note: If you use jumper JP1A to disable the audio system, the modem is automatically disabled as well, even if JP1B is set to enabled.

JP2: Keyboard power on jumper

Use this 3-pin jumper to enable keyboard power on with hot keys or password.

Function	Jumper Cap
Disable keyboard power on	Short pins 1-2
Enable keyboard power on	Short pins 2-3



JP4: Select Slot1 or Socket-370 jumper

Use this jumper to select if you are installing a processor into the Slot1 or a processor into the socket-370.

Function	Jumper Cap
Select Slot1	Short Pins 1-2
Select socket-370	Short pins 2-3



JP5: Clear CMOS memory jumper

Use this 3-pin jumper to clear all the current data stored in the CMOS memory.

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



J8: System bus frequency select jumper

When this jumper is open, it forces the mainboard to use a 100 MHz system bus, even if the processor requires a 66 MHz bus. When the jumper is short, the board automatically detects which bus frequency to use. This jumper is for testing purposes and we recommend that you always leave it at the normal operation setting.

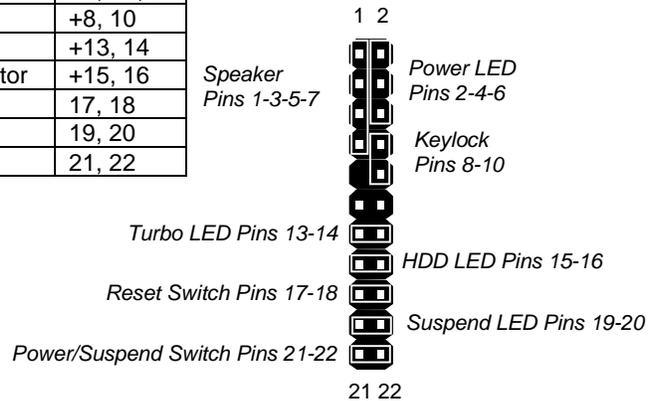
Function	Jumper Cap
Normal operation	Short pins 1-2
Force 100 MHz	Open pins 1-2



J10: Panel Connector

The mainboard J10 panel connector has a standard set of switch and indicator connectors that are commonly found on ATX/AT system cases. Use the illustration below to make the correct connections to the case switches and indicators.

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



Appendix 2: Glossary

AGP	Stands for Accelerated Graphics Port. The AGP interface provides direct access to main memory so that an AGP graphics adapter can store large texture files in main memory when rendering complex 3D video images.
BIOS	Stands for Basic Input Output System. A BIOS chip provides the basic communications between all the separate components of a modern PC
CD-ROM	Stands for Compact Disc-Read Only Memory. That is a CD-ROM on which the data is fixed and cannot be overwritten or changed.
CPU	Stands for Central Processing Unit. That is, the microprocessor that runs the system.
DIMM	Stands for Dual In-line Memory Module. Computer memory is packaged in this way for easy insertion into a DIMM slot on PC motherboards.
DVD	Stands for Digital Video/Versatile Disc. DVD is the same physical size as a CD-ROM but it holds much more data. DVDs are mostly used to distribute full length feature films with multiple language soundtracks.
FTP	Stands for File Transfer Protocol. The FTP protocol is an efficient means of transferring data over the internet without the graphics overhead of the world wide web.
HTML	Stands for HyperText Mark-up Language. All web sites and many other online documents are written with HTML codes so that they can be universally recognized by HTML web browsers.
IDE	Stands for Integrated Device Electronic. Most personal computers use IDE hard disks and CD-ROM drives because they deliver good performance without high cost.
ISA	Stands for Industry Standard Architecture. This 8/16-bit bus is very nearly obsolete and has been replaced by the 32-bit PCI bus.

LAN	Stand for Local Area Network, that is, a collection of PCs all connected with Ethernet cables.
LED	Stands for Light Emitting Diode. LEDs are used as indicator lights on most computer systems.
NTSC	Stands for National Television Standards Committee/ NTSC is the television video format used principally in the USA, Japan, and Central & Latin America. It uses 525 lines of dots to create each picture frame.
OS	Stands for Operating System. The operating system is the basic software of a computer on top of which you can install applications that are designed to run on that particular OS. Popular OSs include Windows, Windows NT, Unix, and Linux.
PCI	Stands for Peripheral Components Interface. The 32-bit PCI bus has replaced the old ISA bus as the standard interface for adding peripheral items to personal computers
PnP	Stands for Plug and Play. The plug and play initiative attempts to make computer peripherals self-configuring so that they work automatically when they are connected to the system.
POST	Stands for Power On Self Test. Most computers carry out a POST each time they are started up to make sure that everything is working properly
PPGA	Stands for Plastic Pin Grid Array. This describes the square plastic packaging used by many microprocessors including the Celeron, the Pentium-MMX, the AMD K5/K6, and etc.
RAM	Stands for Random Access Memory. That is the memory installed in computers which stores data as long as the computer is turned on and the memory is refreshed with an electric current.

ROM	Stands for Read Only Memory. ROM implies that the data stored in the ROM is fixed and cannot be altered. It does need to be refreshed with an electrical current so the data stays intact even if the device is turned off.
SDRAM	Stands for Synchronous Dynamic Random Access Memory. SDRAM is the most popular type of memory for current personal computers
SEPP	Stands for Single Edge Processor Package. This describes the packaging used by the Celeron processor that is designed to fit the Slot1 processor slot.
SLOT1	Slot1 is a special slot on some mainboards that allows for the installation of Slot1 processor cartridges such as the SEPP Celeron, the Pentium-II and the Pentium-III.
SOCKET-370	Socket-370 is a special socket on some mainboards that allows for the installation of a PPGA Celeron processor
SOCKET-7	Socket-7 is a special socket on some mainboard that allows for the installation of socket-7 processors such as the Pentium-MMX, the AMD K6/K7, the Cyrix M1/M2 and so on.
SPDIF	Stands for Sony Phillips Digital InterFace. SPDIF is a 24-bit digital interface for audio systems developed by Sony and Phillips.
USB	Stands for Universal Serial Bus. The USB bus is an attempt to create a new interface to the PC that provides good throughput without high cost. The USB bus allows many devices to connect to a single USB port.
WWW	Stands for World Wide Web. The World Wide Web is a massive collection of inter-linked internet sites that can be accessed with a web browser.