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 Réglement sur le matériel brouilieur du Canada.

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Version 1.0

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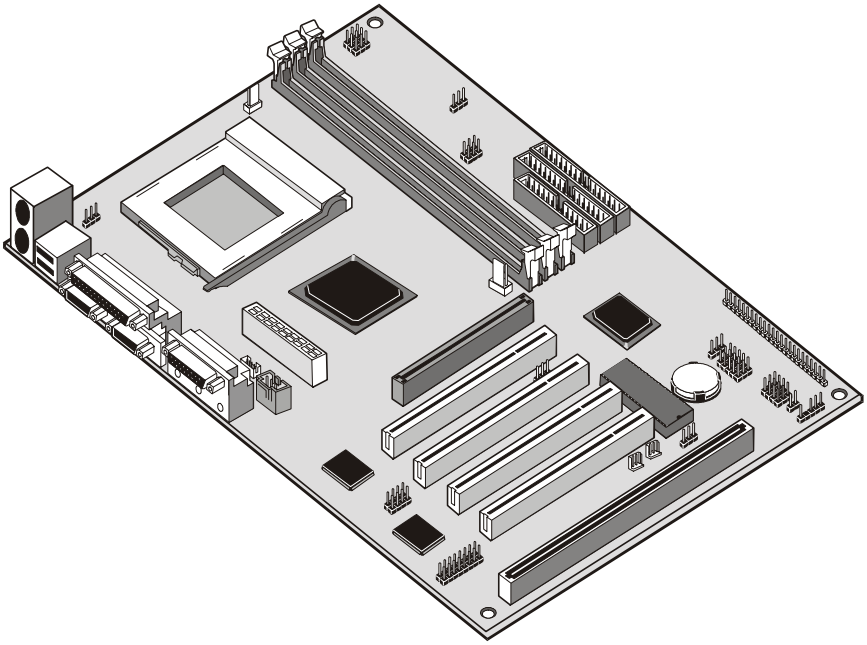
Chapter 1: Introduction

Welcome

Congratulations on purchasing the MS7157C mainboard. This mainboard features the latest VIA VT82C694X/VT82C596B chipset. The mainboard features a FC-PGA (Plastic Pin Grid Array) processor socket. **This feature means that you can install the mainboard with a PGA Intel Celeron or Cyrix Joshua processor, or an FC-PGA Intel Coppermine processor.**

The MS7157C is a full-sized ATX mainboard that uses a 4-layer printed circuit board and measures 304mm by 200mm.. The board includes a built-in sound system, 6 expansion slots including an AGP graphics slot, and a full set of I/O ports. Using this mainboard, you can create the exact system you need. The supported processors cover a wide range of price/performance points so that you can build a system for high performance or low cost.



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 MS7157C Mainboard
- ✓ 1 x Cable/Bracket Pack
  - Diskette drive ribbon cable
  - DMA 66 IDE drive ribbon cable
- ✓ This User's Manual
- ✓ Software Support CD-ROM Disc

Optional Items

- ♦ 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 advanced VIA VT82C694X/ VT82C596B chipset, and the FC-PGA processor support so that you can install a wide range of Intel Celeron, Cyrix Joshua, or Intel Coppermine processors. You can use this board to develop a low-cost value system, with very comprehensive features.

Support PGA Intel Celeron/Cyrix Joshua and FC-PGA Intel Coppermine Processor

This mainboard supports three kinds of processors: PGA Intel Celeron and Cyrix PGA Joshua processors, and FC-PGA Intel Coppermine processors.

The new generation PGA Celeron processors ship in the familiar square plastic package, and they install in a Zero Insertion Force (ZIF) socket called a Socket-370. The new Celeron processors are close to Pentium-II performance because they include a level-2 cache memory of 128K. However, they operate over a 66 MHz system bus and they currently ship at clock speeds of up to 533 MHz.

The new Cyrix PGA Joshua processors also fit into the Socket-370. The Joshua will include a 256K on-chip L2 cache, which runs at full processor speed. It is the first non-Intel chip to plug into the same socket as a Celeron. The Cyrix Joshua runs over a 100 and 133 MHz system bus.

The FC-PGA Coppermine processor operates over a 66, 100 or 133 MHz system bus. The FC-PGA Coppermine ships with clock speeds running from 500 MHz through to 750 MHz.

Assemblers can choose the processor they need to meet performance or price targets. You can configure the system for any of the supported processor clock speeds using the BIOS setup utility. It is not necessary to set switches or jumpers.

Three DIMM Memory Slots

The board has three DIMM slots for the installation of 168-pin, 3.3V standard or registered SDRAM (Synchronous Dynamic Random Access Memory) memory modules. The system supports memory that has built-in error correction (EC), error correction code (ECC), or has no error correction.

The DIMM slots support PC-100 (100 MHz) and PC-133 (133 MHz) memory modules. You can install one, two or three modules. Each memory module can hold a maximum capacity of 512 MB of standard SDRAM chips so maximum memory capacity is 1.5 GB.

The VIA chipset on this board supports an asynchronous memory bus architecture, and provides option of 66/100, 100/66, 100/133 or 133/100 MHz CPU and memory bus combinations.

Optimized Chipset

This board uses the VIA VT82C694X/VT82C596B chipset. The VT82C694X forms the north bridge and supports system buses of 66, 100 and 133 MHz. It is AGP Rev. 1 compliant and supports 3.3v AGP devices operating over a 66/133 MHz bus. The memory bus supports the fastest access (X-1-1-1) for both 66, 100 and 133 MHz operation. The board is compliant with PCI Rev.2.1 operating at 33 MHz Four PCI Bus masters are supported.

The south bridge is provided by the VT82C596B. This chip supports ACPI (Advanced Configuration and Power Interface) Rev 1.0, onboard PCI IDE channels, USB ports, and a System Management Bus for OS control and configuration of devices.

This new VIA chipset is designed to lower cost of performance, by offering a cheap solution to using the latest range of processors, while offering a clear upgrade path to the future generation of 133 MHz processor types. This chipset makes the evolutionary move from PC100 to PC133, increasing the speed of the system and memory buses from 100 MHz to 133 MHz. The 133 MHz memory interface also opens the door to a wide range of PC133 memory devices now on the market.

This latest VIA chipset supports asynchronous memory bus architecture, and provides the option of 66/100, 100/66, 100/133 and 133/100 MHz CPU and memory bus combinations. By supporting 66/100/133 CPU bus and memory settings, this chipset is a highly scaleable choice for end users building Celeron or Joshua level systems, and allows for a wide range of cost-effective system design options.

Built-in PCI 3D Sound

The CMI 8738 is a single chip solution for PCI-bus 3D audio. The chip provides Sound Blaster 16-bit-compatible audio, plus support for Microsoft's DirectSound 3D specification and Aureal A3D interface. The sound ports include jacks for speakers, microphone and stereo in, and a

game/MIDI port. The audio system supports full duplex operation and drivers are available for WIN 95/98/2000 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.

Optional Built-in Communications

The mainboard has an integrated fax/modem connector. As an option, you can purchase a fax/modem extension bracket which connects the line and telephone RJII sockets to the board. The fax/modem supports the V.90 protocol that allows transmissions at up to 56Kbps and is fully compatible with earlier transmission and error correction standards. It supports automatic fall back and caller ID.

Expansion Options

Although this is an ATX board, it has a generous allocation of expansions slots. One AGP slot is available for the installation of an Accelerated Graphics Port graphics adapter. Four 32-bit PCI slots can be used by PCI expansion cards. One legacy 8/16-bit ISA slot can be used by ISA cards.

Integrated I/O

The board has a comprehensive set of integrated I/O ports. The I/O port array features PS/2 keyboard and mouse ports, a parallel port, two USB ports, two serial ports, a monitor port, a game/MIDI port, and three audio jacks. Optionally, you can use the built-in mainboard header to add in an infrared port. The mainboard has two PCI-IDE channels and a floppy disk drive interface.

Hardware Monitoring

The mainboard is installed with an integrated hardware monitoring system (GL520SM). Using this system and the monitoring software supplied with the board, users and system administrators can monitor critical parameters such as the CPU temperature, the fan speeds and so on. Hardware monitoring helps maintain the system and reduce maintenance costs and downtime.

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.

Programmable Firmware

The mainboard includes Award BIOS that 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 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.

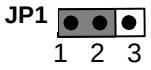
Quick Jumper Setting Reference

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.

JP1: Clear CMOS memory jumper

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

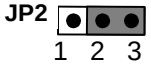
Function	Jumper Cap
Normal operation	Short pins 1-2
Clear CMOS	Short pins 2-3



JP2: Keyboard power on jumper

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

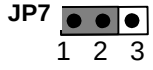
Function	Jumper Cap
Disable keyboard power on	Short pins 1-2
Enable keyboard power on	Short pins 2-3



JP7: Suspend-to-RAM jumper

Use this 3-pin jumper to enable the Suspend-to-RAM function.

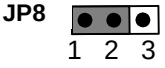
Function	Jumper Cap
Enable Suspend-to-RAM	Short pins 1-2
Disable Suspend-to-RAM	Short pins 2-3



JP8: Flash BIOS jumper

Use this 3-pin jumper to enable or disable Flash BIOS protection. If enabled, the existing BIOS cannot be flashed with another version.

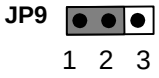
Function	Jumper Cap
Enable Flash BIOS	Short pins 1-2
Disable Flash BIOS	Short pins 2-3



JP9: Set System Bus Frequency to 100 MHz

Use this 3-pin jumper to set the system bus frequency. In the normal setting, the system automatically selects the correct frequency according to the kind of processor installed. In the Force 100 MHz setting, the system uses a 100 MHz system bus even if the processor is designed to operate with a 66 MHz bus.

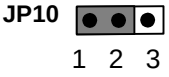
Function	Jumper Cap
Normal operation	Short pins 1-2
Force 100 MHz	Short pins 2-3



JP10: Set System Bus Frequency to 133 MHz

Use this 3-pin jumper to set the system bus frequency. In the normal setting, the system automatically selects the correct frequency according to the kind of processor installed. In the Force 133 MHz setting, the system uses a 133 MHz system bus even if the processor is designed to operate with a 100 MHz bus.

Function	Jumper Cap
Normal operation	Short pins 1-2
Force 133 MHz	Short pins 2-3

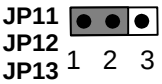


Note: *When both JP9 and JP10 have the 2-3 pins shorted, the board is set to force a 66 MHz FSB processor to run on a 133 MHz system bus.*

JP11, JP12, JP13: Select Celeron or Joshua Processor for Socket-370

Use these 3-pin jumper sets to select the processor type you are using in the PGA370 processor socket.

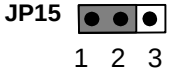
Function	Jumper Cap
Intel Celeron	Short pins 1-2
Cyrix Joshua	Short pins 2-3



JP15: Automatic (BIOS) or Manual configuration

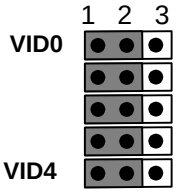
Use this 3-pin jumper to automatically (BIOS) or manually set the CPU core voltage and system bus multiplier ratio. When set to manual configuration, use the VID and BF jumpers to define proper configuration. It is recommended that you set this jumper to automatic configuration.

Function	Jumper Cap
Automatic configuration	Short pins 1-2
Manual configuration	Short pins 2-3



VID: Set CPU core voltage jumpers

Use this 3 x 5-pin jumper set to manually set the CPU core voltage. See later in this chapter for information on the core voltage setting required for the processor that you have installed.



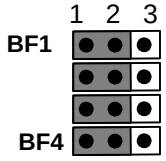
Volt.	Pin Settings				
	VID0	VID1	VID2	VID3	VID4
Auto*	1-2	1-2	1-2	1-2	1-2
2.05V	2-3	2-3	2-3	2-3	2-3
2.00V	All open	2-3	2-3	2-3	2-3
1.95V	2-3	All open	2-3	2-3	2-3
1.90V	All open	All open	2-3	2-3	2-3
1.85V	2-3	2-3	All open	2-3	2-3
1.80V	All open	2-3	All open	2-3	2-3
1.75V	2-3	All open	All open	2-3	2-3
1.70V	All open	All open	All open	2-3	2-3
1.65V	2-3	2-3	2-3	All open	2-3
1.60V	All open	2-3	2-3	All open	2-3
1.55V	2-3	All open	2-3	All open	2-3
1.50V	All open	All open	2-3	All open	2-3
1.45V	2-3	2-3	All open	All open	2-3
1.40V	All open	2-3	All open	All open	2-3
1.35V	2-3	All open	All open	All open	2-3
1.30V	All open	All open	All open	All open	2-3
3.5V	2-3	2-3	2-3	2-3	All open
3.4V	All open	2-3	2-3	2-3	All open
3.3V	2-3	All open	2-3	2-3	All open
3.2V	All open	All open	2-3	2-3	All open
3.1V	2-3	2-3	All open	2-3	All open
3.0V	All open	2-3	All open	2-3	All open
2.9V	2-3	All open	All open	2-3	All open

Volt.	Pin Settings				
	VID0	VID1	VID2	VID3	VID4
2.8V	All open	All open	All open	2-3	All open
2.7V	2-3	2-3	2-3	All open	All open
2.6V	All open	2-3	2-3	All open	All open
2.5V	2-3	All open	2-3	All open	All open
2.4V	All open	All open	2-3	All open	All open
2.3V	2-3	2-3	All open	All open	All open
2.2V	All open	2-3	All open	All open	All open
2.1V	2-3	All open	All open	All open	All open

*Auto: When all 1-2 pins are shorted, the core voltage will automatically be determined.

BF: Set system bus multiplier ratio jumpers

Use this 3 x 4-pin jumper set to manually set the system bus multiplier ratio. See later in this chapter for information on the system bus multiplier ratio setting required for the processor that you have installed.



Ratio	Pin Settings			
	BF1	BF2	BF3	BF4
Auto*	1-2	1-2	1-2	1-2
2	2-3	2-3	2-3	2-3
4	2-3	All open	2-3	2-3
3	2-3	2-3	All open	2-3
5	2-3	All open	All open	2-3
2.5	2-3	2-3	2-3	All open
4.5	2-3	All open	2-3	All open
3.5	2-3	2-3	All open	All open
5.5	2-3	All open	All open	All open
6	All open	2-3	2-3	2-3
8	All open	All open	2-3	2-3
7	All open	2-3	All open	2-3
Res.	All open	All open	All open	2-3
6.5	All open	2-3	2-3	All open
1.5	All open	All open	2-3	2-3
7.5	All open	2-3	All open	All open
2	All open	All open	All open	All open

*Auto: When all 1-2 pins are shorted, the system bus multiplier ratio will automatically be determined.

Before You Begin

Before you begin to install your MS7157C 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

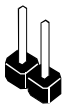
This is a full-sized ATX mainboard that measures 304mm x 200mm (11.9" x 7.8"). It has 6 expansion slots. The mainboard will fit most ATX cases that are designed for full-sized ATX mainboards. With a full set of expansion slots and support for 4 IDE devices, you might like to choose a case that has a robust power supply unit that delivers at least 250 watts.

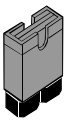
Some features on the mainboard are implemented by cabling connectors on the board to indicators and switches on the system case. Ensure that your case supports all the features required. The MS7157C mainboard can support one or two floppy diskette drives and four enhanced IDE drives. Ensure that your case has sufficient power and space for all the drives that you intend to install.

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

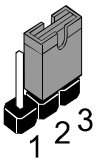
How to Set Jumpers

A jumper consists of two or more pins mounted on the mainboard. Some jumpers might be arranged in a series with each pair of pins numbered differently. Jumpers are used to change the electronic circuits on the mainboard. When a jumper cap 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.

OPEN 

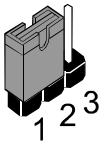
SHORT 

This illustration shows a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.



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

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

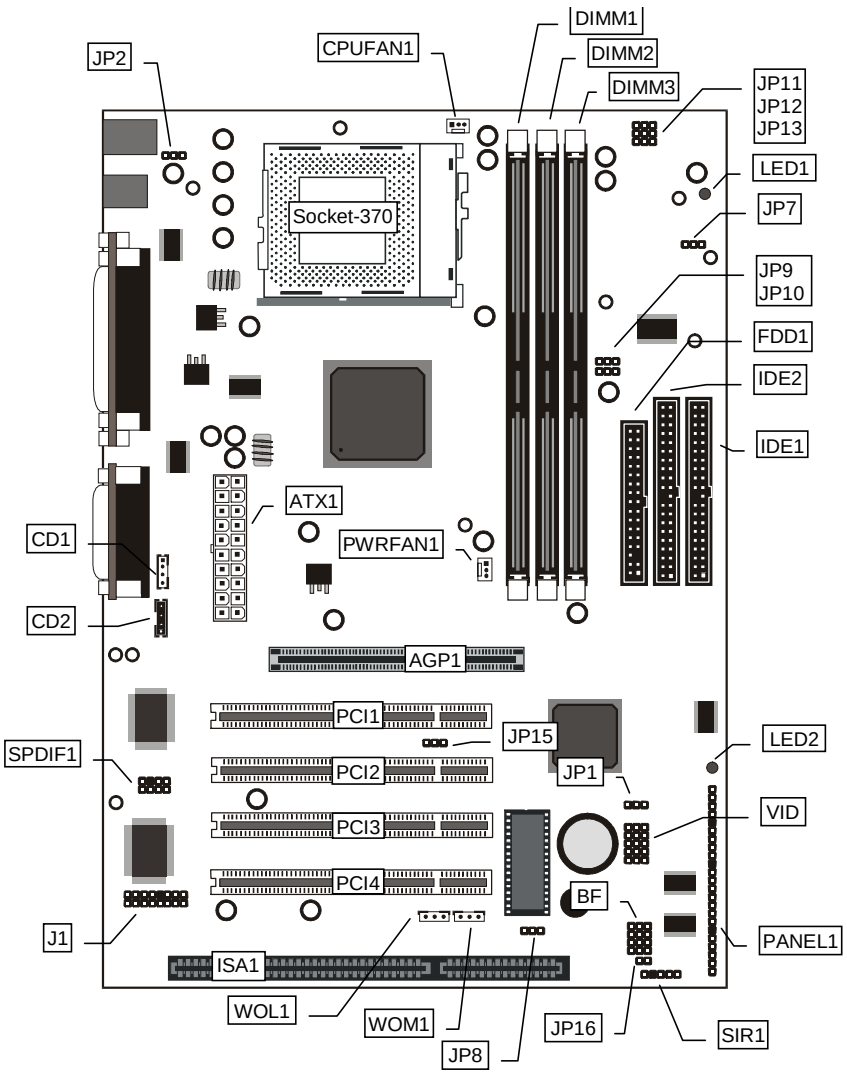


In this manual, all the jumper illustrations clearly show the pin numbers. When you are setting the jumpers, make sure that the jumper caps are placed on the correct pins to select the function or feature that you want to enable or disable.

Preparing the Mainboard

Mainboard Guide

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



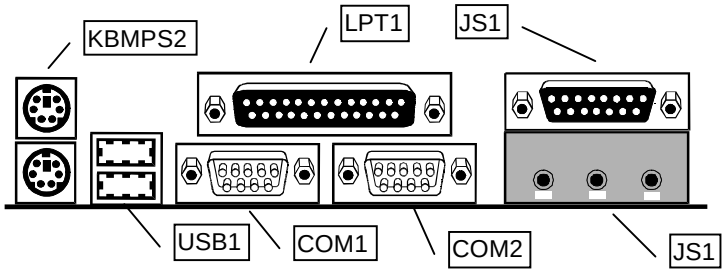
Key to Mainboard Components

Component	Description
SOCKET-370	Socket for Intel FC-PGA Celeron or Cyrix Joshua processor
DIMM1, 2, 3	Slots for 168-pin memory modules
IDE1, 2	Primary and secondary IDE channels
FDD1	Connector for floppy disk drives
AGP1	Slot for AGP graphics adapter
PCI 1, 2, 3, 4	3 x 32-bit PCI expansion slot
ISA1	8/16-bit ISA expansion slot
ATX1	Connector for ATX power supply
CPUFAN1	Power connector for CPU cooling fan
PWRFAN1	Power connector for case cooling fan
SIR1	Connector for optional IR port
PANEL1	Panel connector for switches and indicators
CD1	Audio connector for optional CD-ROM drive
CD2	Auxiliary audio connector for optional CD-ROM drive
SPDIF1	In/Out connector for 24-bit digital audio
WOL1	Wake up connector for network adapter
WOM1	Wake up connector for fax/modem card
JP1	Clear CMOS memory jumper
JP2	Keyboard power on jumper
JP7	Enable Suspend-to-RAM jumper
JP8	Enable Flash BIOS jumper
JP9	Set system bus frequency jumper (100MHz)
JP10	Set system bus frequency jumper (133MHz)
JP11	
JP12	Set CPU type for Socket-370 jumper.
JP13	
JP15	Automatic (BIOS)/manual CPU core voltage and multiplier ratio configuration jumper
JP16	Connector for two-color LED
J1	Connector for fax/modem adapter card
VID	Set CPU core voltage jumpers
BF	Set CPU multiplier ratio jumpers
LED1*	Onboard 3VSB LED for SDRAM
LED2**	Onboard Power LED

***LED1**
This red indicator turns on if your system is suspended to RAM. In a suspend to RAM, the system turns off most of the power-consuming components except for the 3.3V required to refresh the memory. If LED1 is turned on, it warns you that the computer is still active and you should not carry out any work on the mainboard.

****LED2**
This green indicator turns on whenever the system is turned on. It warns you that the system is active and you should not carry out any work on the mainboard.

I/O Ports Side View

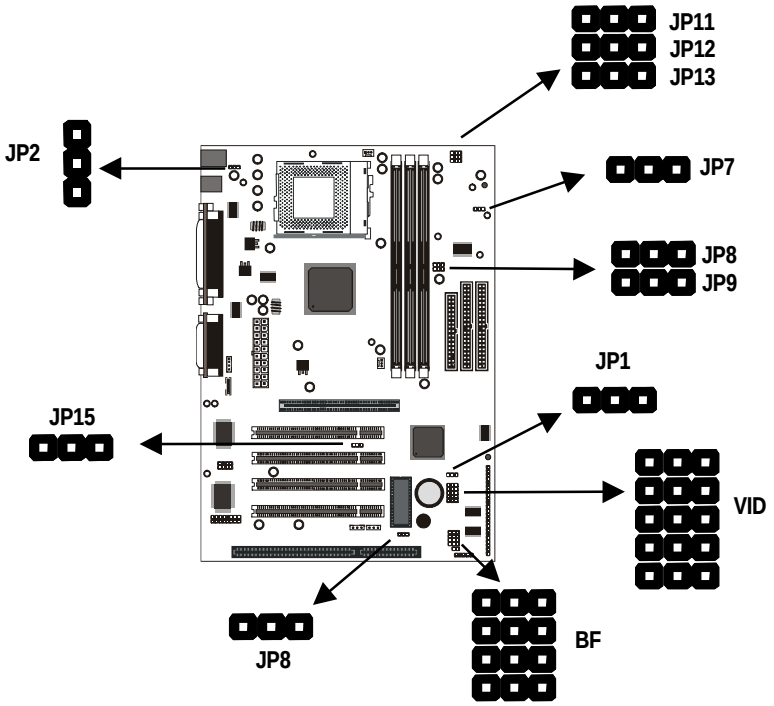


Key to I/O Ports

Component	Description
KBMPS2	PS/2 port for pointing device (upper port) PS/2 port for keyboard (lower port)
LPT1	External parallel port
JS1 (Upper)	External game/MIDI port
JS1 (Lower)	Audio jacks for (left to right) line out, line in, microphone
COM2	External serial port 2/4
COM1	External serial port 1/3
USB1	Two stacked Universal Serial Bus ports

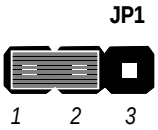
Check the Jumper Settings

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



JP1: 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.

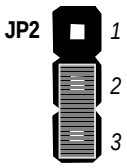


Function	Jumper Cap
Normal Operation	Short pins 1-2
Clear CMOS	Short pins 2-3

JP2: Keyboard Power On Jumper

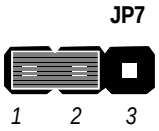
This jumper lets you use a typed-in password as a power switch to turn your system on. If you enable this property, you need to define the password or the hot keys using the setup utility. See Chapter 3 for more information.

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



JP7: Suspend-to-RAM Jumper

Use this 3-pin jumper to enable the Suspend-to-RAM feature. In a Suspend-to-RAM condition, the contents of the system's memory is held intact, while practically all other components are turned off completely or slowed down to reduce power consumption.

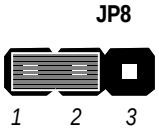


Function	Jumper Cap
Enable Suspend-to-RAM	Short pins 1-2
Disable Suspend-to-RAM	Short pins 2-3

JP8: Flash BIOS jumper

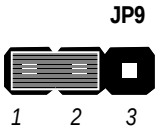
Use this 3-pin jumper to enable or disable Flash BIOS protection. If enabled, the existing BIOS cannot be flashed with another version.

Function	Jumper Cap
Enable Flash BIOS	Short pins 1-2
Disable Flash BIOS	Short pins 2-3



JP9: Set System Bus Frequency to 100MHz

Use this 3-pin jumper to set the system bus frequency. In the normal setting, the system automatically selects the correct frequency according to the kind of processor installed. In the Force 100 MHz setting, the system uses a 100 MHz system bus even if the processor is designed to operate with a 66 MHz bus.

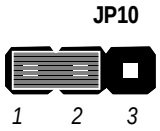


Function	Jumper Cap
Normal Operation	Short pins 1-2
Force 100 MHz	Short pins 2-3

JP10: Set System Bus Frequency to 133MHz

Use this 3-pin jumper to set the system bus frequency. In the normal setting, the system automatically selects the correct frequency according to the kind of processor installed. In the Force 133 MHz setting, the system uses a 133 MHz system bus even if the processor is designed to operate with a 100 MHz bus.

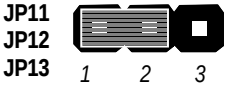
Function	Jumper Cap
Normal Operation	Short pins 1-2
Force 133 MHz	Short pins 2-3



Note: *When both JP9 and JP10 have the 2-3 pins shorted, the board is set to force a 66 MHz FSB processor to run on a 133 MHz system bus.*

JP11, JP12 and JP13: Select Celeron or Joshua Processor for Socket-370

Use these 3-pin jumper sets to select the processor type you are using in the PGA370 processor socket. If pins 1-2 are shorted, the Socket-370 is set for use with the Intel Celeron processor. If pins 2-3 are shorted, the Socket-370 is set for use with the Cyrix Joshua processor.

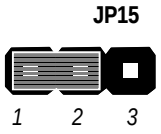


Function	Jumper Cap
Intel Celeron	Short pins 1-2
Cyrix Joshua	Short pins 2-3

JP15: Automatic (BIOS) or Manual configuration

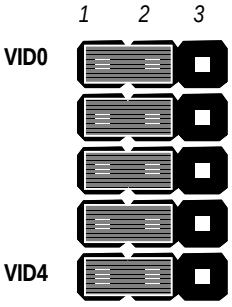
Use this 3-pin jumper to automatically (BIOS) or manually set the CPU core voltage and system bus multiplier ratio. When set to manual configuration, use the VID and BF jumpers to define proper configuration. It is recommended that you set this jumper to automatic configuration.

Function	Jumper Cap
Automatic configuration	Short pins 1-2
Manual configuration	Short pins 2-3



VID: Set CPU core voltage jumpers

Use this 3 x 5-pin jumper set to manually set the CPU core voltage. Check the documentation that comes with the processor that you want to use, to check the required voltage settings.

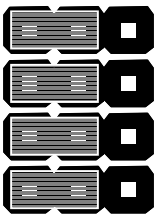


Volt.	Pin Settings				
	VID0	VID1	VID2	VID3	VID4
Auto*	1-2	1-2	1-2	1-2	1-2
2.05V	2-3	2-3	2-3	2-3	2-3
2.00V	All open	2-3	2-3	2-3	2-3
1.95V	2-3	All open	2-3	2-3	2-3
1.90V	All open	All open	2-3	2-3	2-3
1.85V	2-3	2-3	All open	2-3	2-3
1.80V	All open	2-3	All open	2-3	2-3
1.75V	2-3	All open	All open	2-3	2-3
1.70V	All open	All open	All open	2-3	2-3
1.65V	2-3	2-3	2-3	All open	2-3
1.60V	All open	2-3	2-3	All open	2-3
1.55V	2-3	All open	2-3	All open	2-3
1.50V	All open	All open	2-3	All open	2-3
1.45V	2-3	2-3	All open	All open	2-3
1.40V	All open	2-3	All open	All open	2-3
1.35V	2-3	All open	All open	All open	2-3
1.30V	All open	All open	All open	All open	2-3
3.5V	2-3	2-3	2-3	2-3	All open
3.4V	All open	2-3	2-3	2-3	All open
3.3V	2-3	All open	2-3	2-3	All open
3.2V	All open	All open	2-3	2-3	All open

Volt.	Pin Settings				
	VID0	VID1	VID2	VID3	VID4
3.1V	2-3	2-3	All open	2-3	All open
3.0V	All open	2-3	All open	2-3	All open
2.9V	2-3	All open	All open	2-3	All open
2.8V	All open	All open	All open	2-3	All open
2.7V	2-3	2-3	2-3	All open	All open
2.6V	All open	2-3	2-3	All open	All open
2.5V	2-3	All open	2-3	All open	All open
2.4V	All open	All open	2-3	All open	All open
2.3V	2-3	2-3	All open	All open	All open
2.2V	All open	2-3	All open	All open	All open
2.1V	2-3	All open	All open	All open	All open

*Auto: When all 1-2 pins are shorted, the core voltage will automatically be determined.

BF: Set system bus multiplier ratio jumpers



Use this 3 x 4-pin jumper set to manually set the system bus multiplier ratio. The CPU clock speed is configured by the product of the system bus frequency times the multiplier. For example, if you have a system bus speed of 100 MHz and a multiplier of 4, the CPU clock speed will be 100 x 4 = 400 MHz.

Ratio	Pin Settings			
	BF1	BF2	BF3	BF4
Auto*	1-2	1-2	1-2	1-2
2	2-3	2-3	2-3	2-3
4	2-3	All open	2-3	2-3
3	2-3	2-3	All open	2-3
5	2-3	All open	All open	2-3
2.5	2-3	2-3	2-3	All open
4.5	2-3	All open	2-3	All open
3.5	2-3	2-3	All open	All open
5.5	2-3	All open	All open	All open
6	All open	2-3	2-3	2-3
8	All open	All open	2-3	2-3
7	All open	2-3	All open	2-3
Res.	All open	All open	All open	2-3
6.5	All open	2-3	2-3	All open
1.5	All open	All open	2-3	2-3

Ratio	Pin Settings			
	BF1	BF2	BF3	BF4
7.5	All open	2-3	All open	All open
2	All open	All open	All open	All open

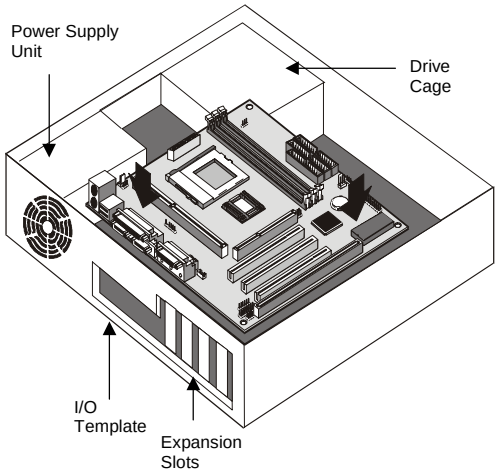
*Auto: When all 1-2 pins are shorted, the system bus multiplier ratio will automatically be determined.

Install the Mainboard in the Case

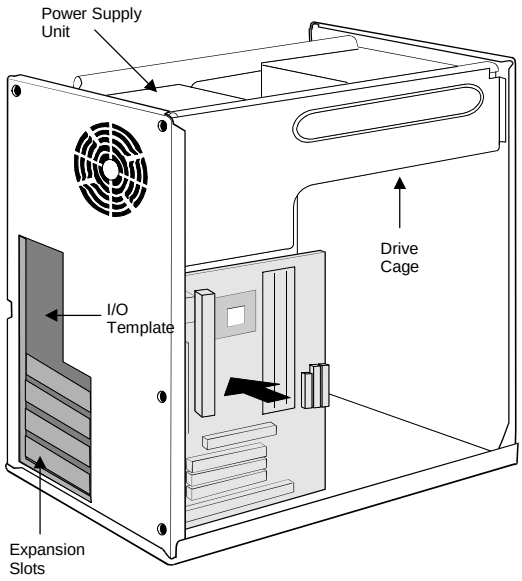
The mainboard is drilled with a series of holes. Most system cases have mounting brackets installed in the case which correspond to the holes in the mainboard. You can secure the mainboard in the system case by placing the mainboard over the mounting brackets and driving screws through the mainboard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

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

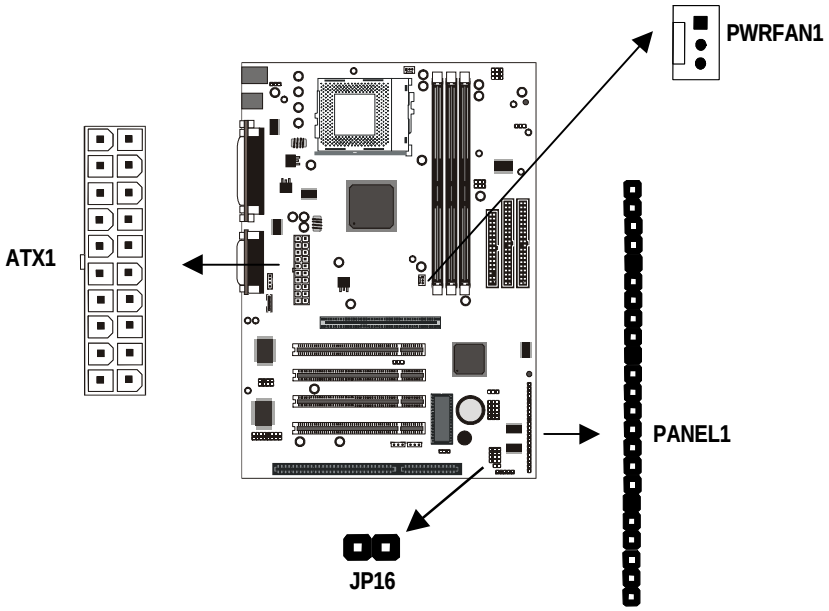
The illustration below shows the mainboard installing in a standard desktop case.



The illustration below shows the mainboard installing into a tower-type case.



Connecting Power, Chassis Fan, and Panel



After you have installed the mainboard into the system case, connect the power cable from the case power supply unit to the mainboard power connector ATX1. Connect the chassis (if your case has them) to the 12V power supply connector PWRFAN1 on the mainboard. Then connect the case switches and indicators to the PANEL1 and JP16 connector on the mainboard.

Power Connector

Locate the power cable from the case power supply unit and plug it into the ATX1 power connector.

Chassis Fan

If your case has a cooling fan installed, plug the cable from the fan into the mainboard fan power supply PWRFAN1.

Green LED Connector

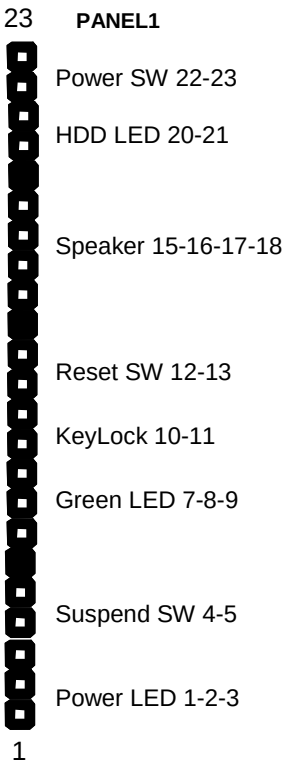
If your case has a dual color indicator lamp for the ACPI Green suspend mode, connect the cable from the indicator to the JP16 dual color LED connector.

Panel Connector

The mainboard PANEL1 connector has a standard set of switch and indicator connectors that are commonly found on ATX system cases. Use the illustration below to make the correct connections to the case switches and indicators.

Function	Pins
Power Indicator	1+, 2+, 3
Suspend Switch	4, 5
Green LED*	7+, 8+, 9
Keylock	10, 11
Reset Switch	12, 13
Speaker	15+, 16, 17, 18
HDD Indicator	20+, 21
Power Switch	22+, 23

**Green LED*
"Green LED" can support two kinds of LED: When using Single-color LED, connect to pins 7 and 8. When using Dual-color LED, connect to pins 8 and 9.



Install Other Hardware

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

Install the Processor

This mainboard has a Socket-370 processor socket. 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 Socket-370 Processors

The socket-370 supports PGA Intel Celeron and Cyrix Joshua processors, and FC-PGA Intel Coppermine processors.

Intel Celeron
PGA stands for Plastic Pin Grid Array. This is a description of the square plastic package that the processor is embedded in. The PGA Celeron is identical to the SEPP Celeron, except for the external packaging. PGA Celerons run at clock speeds from 300 MHz through to 533 MHz. All the current PGA Celerons operate over a 66 MHz system bus. The PGA Celeron is less expensive than a SEPP Celeron with the same clock speed.

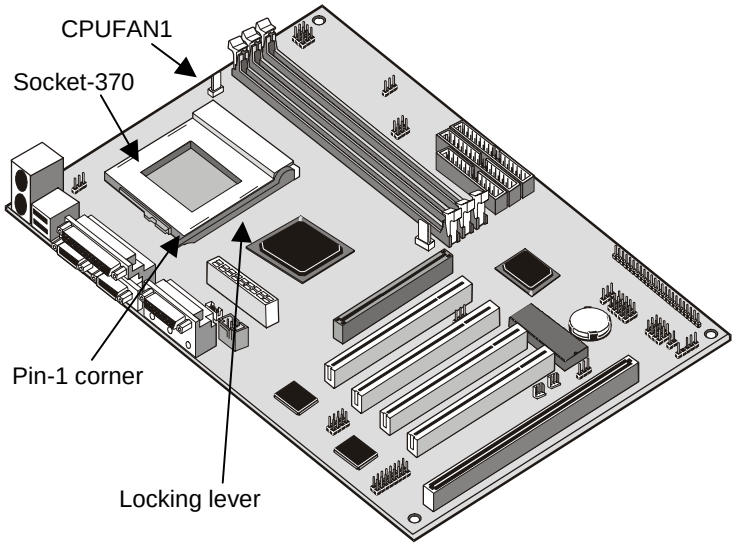
Cyrix Joshua
The new Cyrix Joshua processor also fits into the Socket-370. The Joshua will include a 256K on-chip L2 cache, which runs at full processor speed. It is the first non-Intel chip to plug into the same socket as a Celeron. Cyrix Joshua processors run over a 100 or 133 MHz system bus.

Intel Coppermine
The Intel Coppermine processor runs over a 66, 100 or 133 MHz system bus. The FC-PGA Coppermine ships with clock speeds running from 500 MHz through to 750 MHz.

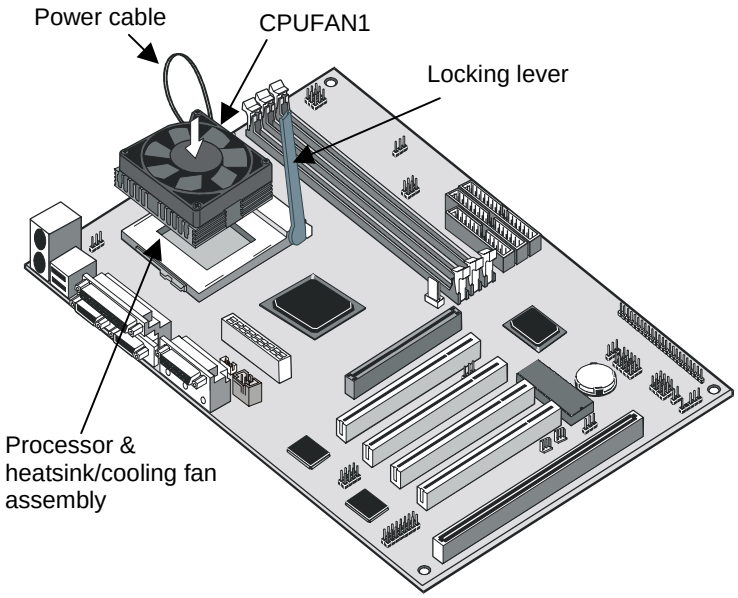
Installing a Socket-370 Processor

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

Locate the Socket-370 and CPUFAN1



1. On the mainboard, locate the socket-370 and CPUFAN1.
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 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 either using the system setup utility, or manually, by setting the correct jumper settings on the board.

The first time you start the system, immediately enter the setup system and make the appropriate settings. Usually, you should automatically configure the CPU by using the BIOS Features page of the setup utility. See Chapter 3 for more information.

However, you have the possibility to manually set the system bus speed, multiplier ratio, and CPU voltage. Remember that the CPU clock speed is configured by the product of the system bus frequency times the multiplier. For example, if you have a system bus speed of 100 MHz and a multiplier of 4, the CPU clock speed will be 100 x 4 = 400 MHz.

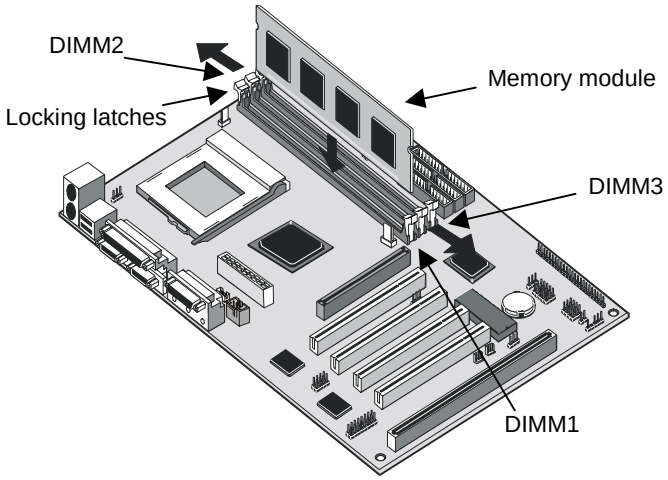
> ***Note:*** *When using the Cyrix Joshua processor, make sure to adjust jumpers JP11, JP12 and JP13 to the proper settings.*

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 100 MHz or 133 MHz. If your processor operates over a 133 MHz system bus, you must install PC-133 memory that also operates over a 133 MHz bus. If your processor operates over a 100 MHz system bus, you must install PC-100 memory that also operates over a 100 MHz bus.

You must install at least one memory module. You can install the module in any one of the three DIMM slots. 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 module edge connector match the notches in the 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 will be levered upwards and latch on to the edges of the DIMM when it is installed correctly.

Install a Hard Disk Drive and CD-ROM

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

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

About IDE Devices.

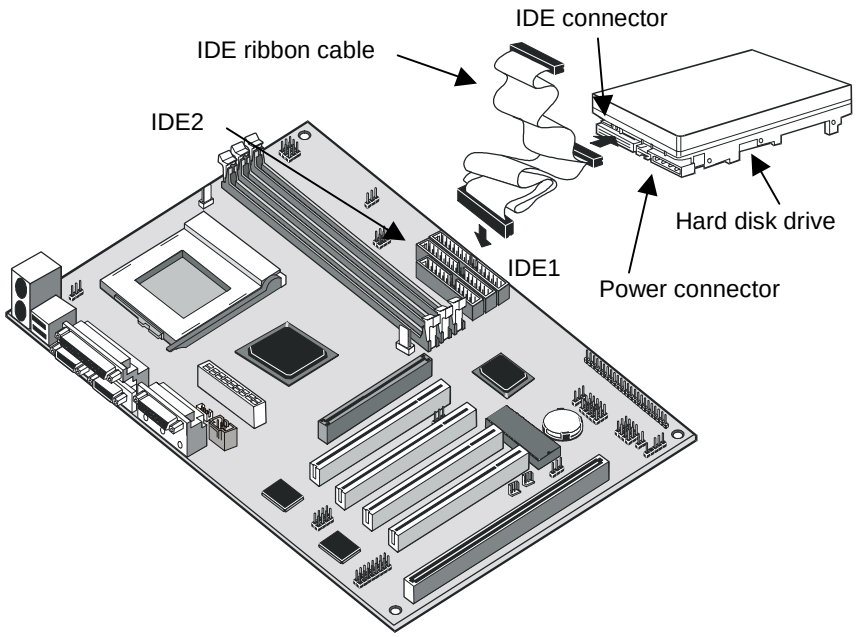
Your mainboard has a primary IDE channel interface (IDE1) and a secondary IDE interface (IDE2). The mainboard ships with one IDE ribbon cable which supports one or two IDE devices. All IDE devices have jumpers or switches which can be used to set the IDE device as MASTER or SLAVE.

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.

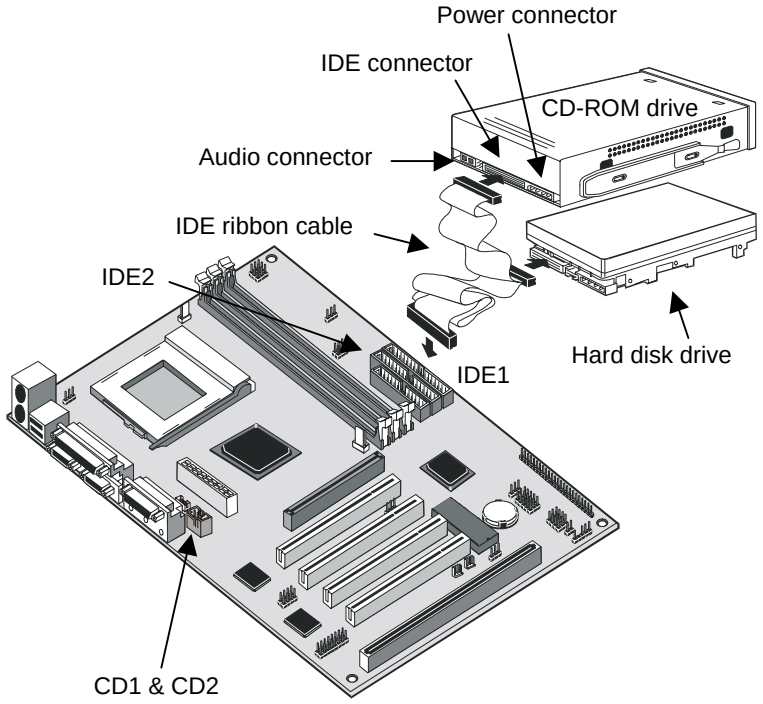
Installing a Hard Disk Drive

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 three for more information.



Installing a CD-ROM Drive

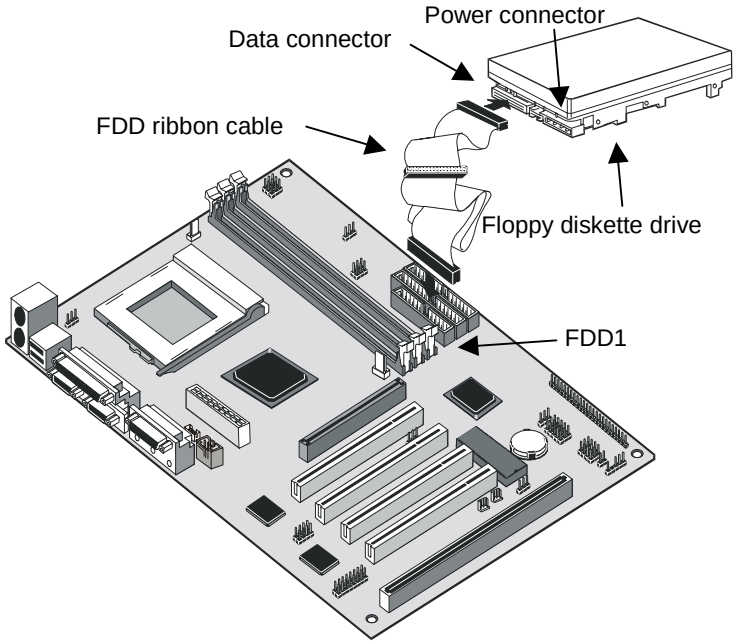
1. Install the CD-ROM drive into the drive cage in your system case.
2. Plug the IDE cable into the primary IDE channel on the mainboard IDE1.
3. Plug one of the connectors on the IDE cable into the IDE connector on the back edge of the CD-ROM drive. It doesn't matter which connector on the cable that 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 CD-ROM drive.
5. Use the audio cable provided with the CD-ROM drive to connect the audio connector on the rear edge of the CD-ROM drive to the one of the two CD connectors on the motherboard.
6. 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 three for more information.



Installing a Floppy Diskette Drive

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

1. Install the floppy diskette drive into the drive cage in your system case.
2. Plug the diskette drive cable into the diskette drive interface on the mainboard FDD1.
3. 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.
4. Plug a power cable from the case power supply unit into the power connector on the back edge of the diskette drive.



5. 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 three for more information.

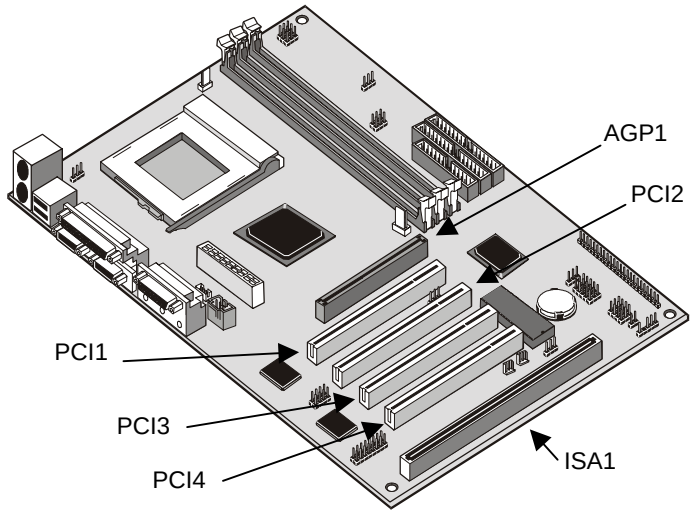
Using the Expansion Slots

This mainboard has several expansion slots. You can install add-in cards into these slots to add new features to your system. In order to get your system started, you must install an add-in graphics adapter. The mainboard has three kinds of expansion slots.

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

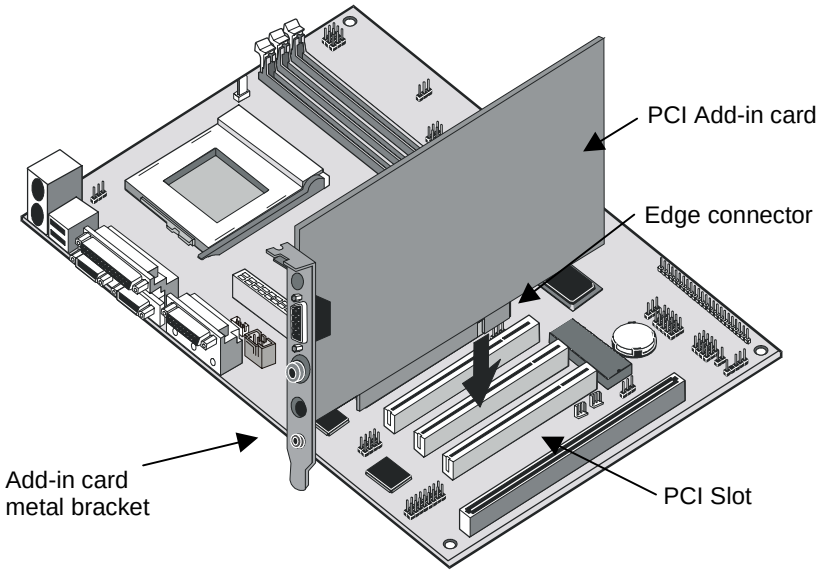
PCI Slots: The PCI slots can be used to install add-in cards that have the 32-bit PCI (Peripheral Components Interconnect) interface.

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



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

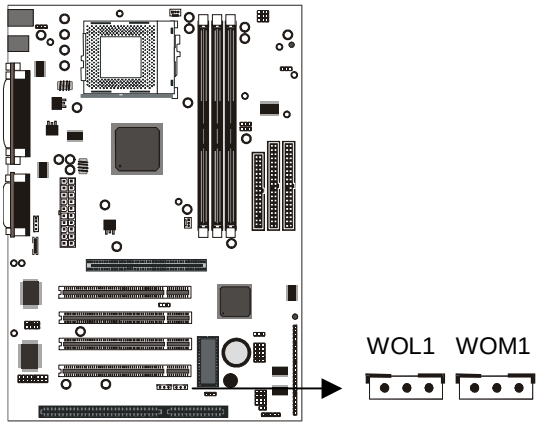
The mainboard has some features that can be used by some types of add-in cards.

WOL1: 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 WOL1 connector on the mainboard. This is the Wake On LAN feature, When your system is in a power–saving mode, any traffic through the network will automatically resume the system. You must enable this item using the Power Management page of the setup utility. See Chapter three for more information.

WOM1: Wake on Modem

If you have installed a fax/modem add-in card, you can use the cable provided with the card to plug into the WOM1 connector on the mainboard. This is the Wake On Modem feature, When your system is in a power–saving mode, an incoming call will automatically resume the system. You must enable this item using the Power Management page of the setup utility. See Chapter three for more information.



Install Options and Extension Brackets

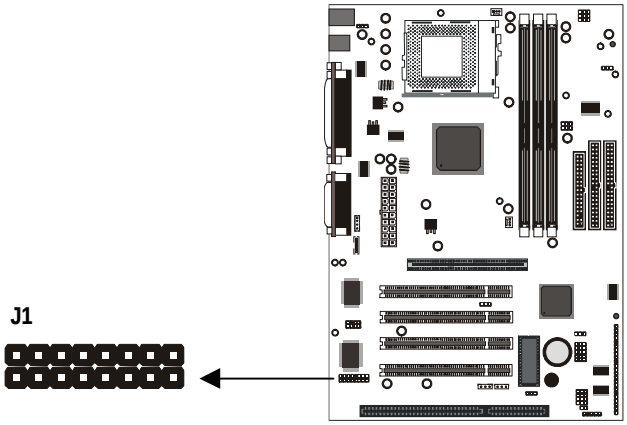
This mainboard has a number of special connectors that allow you to add optional features to your system. You can install any of the following items:

- Fax/modem card option
- Infrared port
- 24-bit digital audio extension bracket (SPDIF)

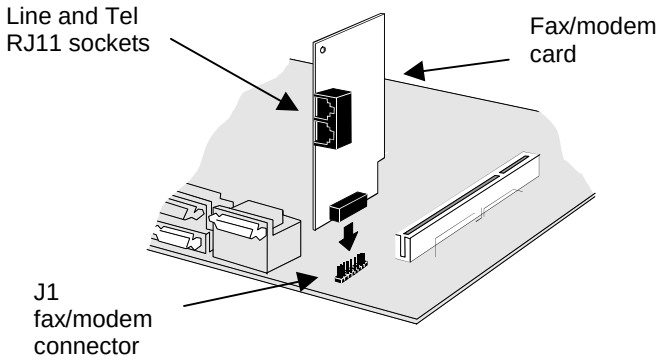
Fax/modem Card

You must install the fax/modem card in order to use the built-in fax/modem. The fax/modem card is an optional item supplied with this mainboard.

1. Locate the J1 fax/modem connector on the mainboard.



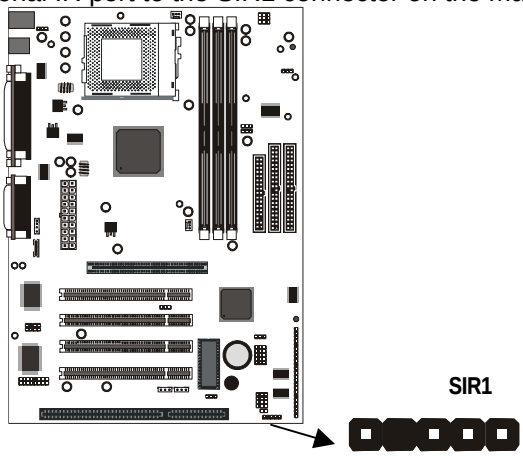
2. Remove the expansion slot blanking plate from the system chassis that is adjacent to the fax/modem connector.
3. Install the fax/modem card on to the J1 connector as shown below. The RJ11 Line and Telephone sockets on the bracket are positioned in the expansion slot with the removed blanking plate.



Infrared Port

This option can be purchased from third-party vendors.

1. If you are installing an optional serial infrared port, connect the cable from the optional IR port to the SIR1 connector on the mainboard.

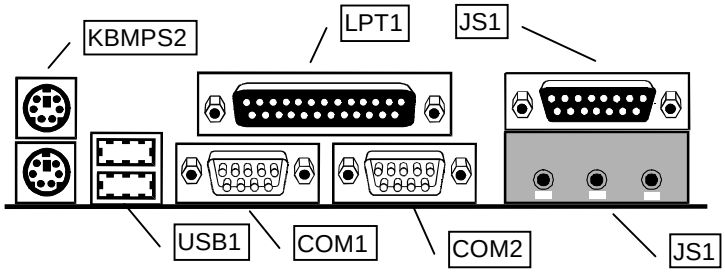


2. After you have connected the cable, secure the optional IR port to the appropriate place on your system case.

Note: *An IR port may use some of the resources required by a second serial port or 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.*

Make the External Connections

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



1. KBMPS2 is a stack of two PS/2 mini-DIN ports. The upper port can be used by a PS/2 mouse or pointing device. The lower port can be used by a PS/2 keyboard.
2. LPT1 is a parallel port that can be used by printers or other parallel communications devices. The system identifies the parallel port as LPT1.
3. The upper 15-pin port JS1 is a game/MIDI port. You can use this port to connect a joystick or a MIDI device to your system
4. The lower part of JS1 is three audio jacks. The left side jack is for a stereo line out signal. The middle jack is for a stereo line in signal. The right side jack is for a microphone.
5. COM2 is a serial port that can be used by serial devices such as a mouse, a fax/modem and so on. This serial port is identified by the system as COM2/4.
6. COM1 is a serial port that can be used by serial devices such as a mouse, a fax/modem and so on. This serial port is identified by the system as COM1/3.
7. USB1 is a stack of two Universal Serial Bus ports. Use these ports to connect to USB devices.

External Connector Color Coding

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

Connector	**Color**
Analog VGA	Blue
Audio line in	Light blue
Audio line out	Lime
Digital monitor / flat panel	White
IEEE 1394	Grey
Microphone	Pink
MIDI/Game	Gold
Parallel	Burgundy
PS/2 compatible keyboard	Purple
PS/2 compatible mouse	Green
Serial	Teal or Turquoise
Speaker out / subwoofer	Orange
Right-to-left speaker	Brown
USB	Black
Video out	Yellow
SCSI, network, telephone, modem, and so on	None

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.

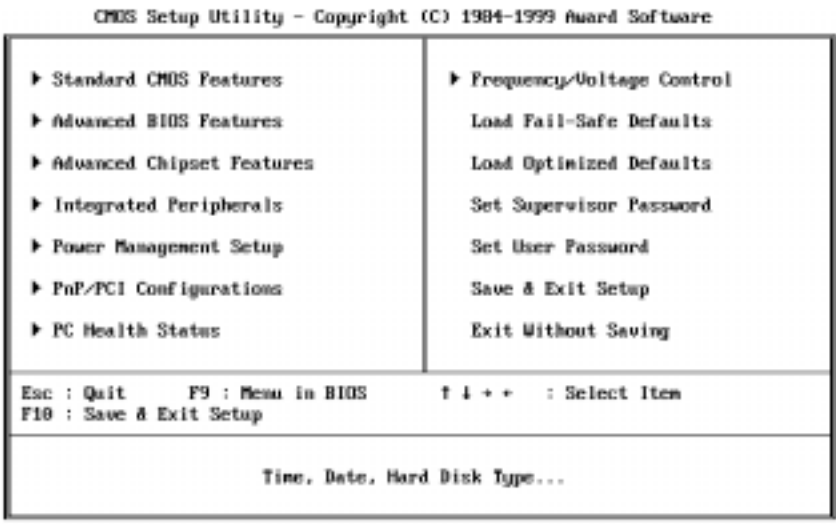
Starting the Setup Utility

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.



Some options (marked with a triangle) 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.

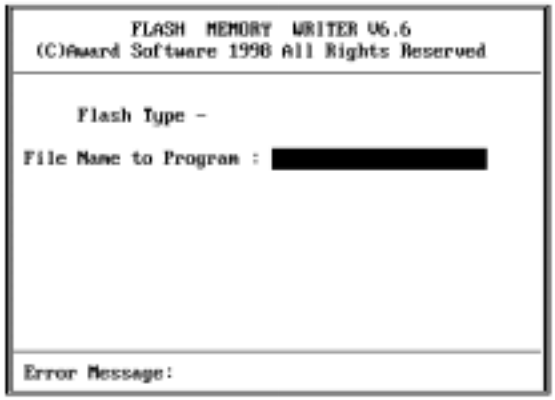
When you are in the main menu, you can exit the utility by pressing the **Escape** key. You can save the current selections and exit the utility by pressing the **F10** key. When you are in one of the options that displays a dialog box, you can return to the main menu by pressing the **Escape** key.

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 **F2** key. You can display a general help screen by pressing **F1**. 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 fail-safe 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. New BIOS may provide support for new peripherals, improvements in performance or fixes to address known bugs. Install a new BIOS as follows:

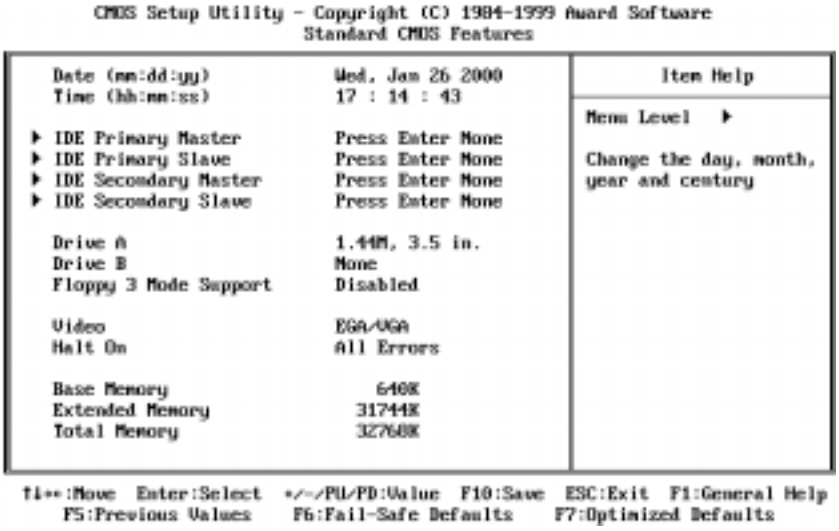
1. Some mainboards have a Flash BIOS jumper that protects the current BIOS from being changed or overwritten. If your mainboard has this jumper, change the setting to allow flashing a new BIOS.
2. Some Setup programs have an item called Firmware Write Protect that prevents the BIOS from being overwritten. If your BIOS has this item (check the Advanced BIOS Features Setup page) disable it for the present.
3. Your computer must be running in a real-mode DOS environment, not the DOS window of Windows NT or Windows 95/98. We recommend that you create a new formatted DOS system floppy diskette.
4. Locate the flash memory utility on the support CD-ROM. It's called AWD753.EXE. Copy this file to the new system diskette.
5. Copy the new BIOS file that you downloaded from the manufacturer's website to the newly formatted system diskette.
6. Turn off your computer and insert the newly formatted DOS diskette in your computer's diskette drive.
7. You might need to run the setup utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the floppy diskette drive first.
8. At the A:\ prompt, after your computer has booted a clean DOS from the diskette, type in the filename AWD753 and press **Enter**.



9. In the opening dialog box, type in the filename of the new BIOS and follow the onscreen directions to flash the new BIOS to the motherboard.
10. 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 Features Option

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

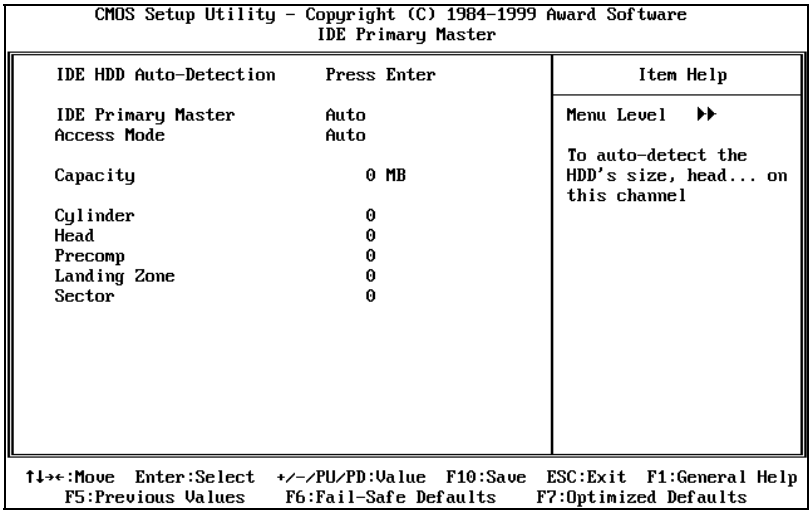


Date and Time

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.

IDE Devices ***Defaults: None***

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



IDE HDD Auto-Detection

Press **Enter** while this item is highlighted if you want the setup utility to automatically detect and configure a hard disk drive on the IDE channel.

IDE Primary/Secondary Master/Slave

If you leave this item at *Auto*, the system will automatically detect and configure any IDE devices it finds. If it fails to find a hard disk, change the value to *Manual* and then manually configure the drive be entering the characteristics of the drive in the items below (Capacity, Cylinder, Head, Precomp, etc.), If you have no device installed change the value to *None*.

Access Mode

This items defines some special ways that can be used to access IDE hard disks such as LBA (Large Block Addressing). Leave this value at *Auto* and the system will automatically decide the fastest way to access the hard disk drive.

Press **Esc** to close the IDE device sub-menu and return to the Standard CMOS Features page.

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***

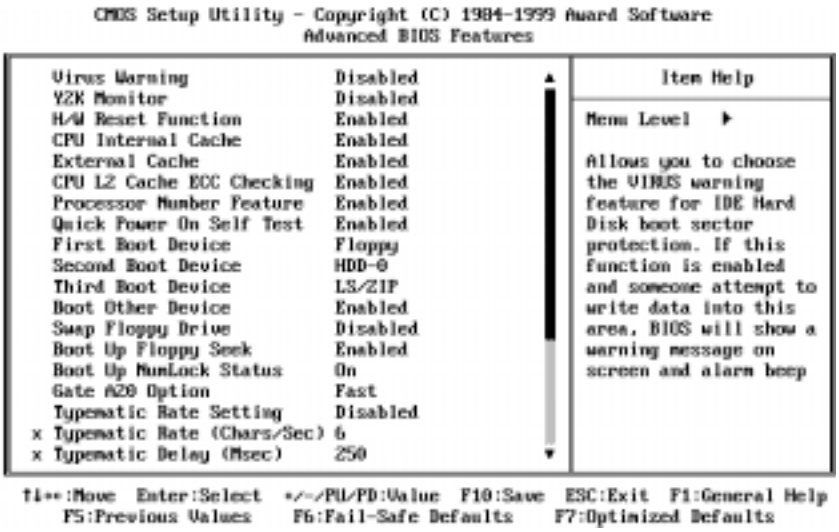
This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which kind of errors in the POST are sufficient to halt the system.

Base Memory, Extended Memory, Total Memory

These items are automatically detected by the system at start up time.

Advanced BIOS 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. Note that the page has a scroll-bar to scroll down to more items.



Virus Warning ***Default: Disabled***

When this item 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 *Disabled* as a default. You 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.

Y2K Monitor ***Default: Disabled***

Use this item to enable the onboard Y2K (Year 2000) monitor. When enabled this function can monitor the RTC (Real Time Clock) Y2K data, and avoid that it will be changed inappropriately. Some older programs have Y2K issues and will try to change this data, causing system problems.

H/W Reset Function ***Default: Enabled***

When this item is set to disabled, the Reset button connector on the board will be disabled.

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) error 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.

First/Second/Third Boot Device ***Default: Floppy/HDD-0/LS/ZIP***

Use these three items to select the priority and order of the devices that your system will search for an operating system at start-up time.

Boot Other Device ***Default: Enabled***

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

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 Floppy Seek ***Default: Enabled***

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

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

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

Gate A20 Option ***Default: Normal***

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.

Typematic Rate Setting ***Default: Disabled***

If this item is enabled, you can use the following two items to set the typematic rate and the typematic delay settings for your keyboard.

Typematic Rate (Chars/Sec) ***Default: 6***

If the item Typematic Rate Setting is enabled, you can use this item to define how many characters per second are generated by a held-down key.

Typematic Delay (Msec) ***Default: 250***

If the item Typematic Rate Setting is enabled, you can use this item to define how many milliseconds must elapse before a held-down key begins generating repeat characters.

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.

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.

Video BIOS Shadow ***Default: Enabled***

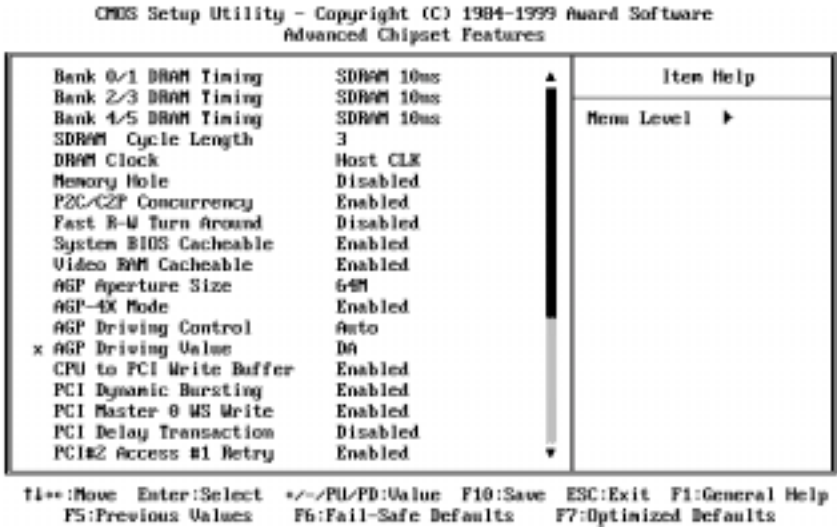
This item allows the video BIOS to be copied to system memory for faster performance.

xxxxx-xxxxx Shadow ***Default: Disabled***

These items allow the BIOS of other devices to be copied to system memory for faster performance. You can select the video areas that can be used for this purpose.

Advanced Chipset Features Option

This option displays a table of items that define critical timing parameters of the mainboard 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. If you change the values incorrectly you may introduce fatal errors or recurring instability into your system. Note that the page has a scroll-bar to scroll down to more items.



Bank 0/1 DRAM Timing ***Default: SDRAM 10ns***
Bank 2/3 DRAM Timing ***Default: SDRAM 10ns***
Bank 4/5 DRAM Timing ***Default: SDRAM 10ns***

This item allows you to set the speed of the memory used in the DIMM slots.

SDRAM Cycle Length ***Default: 3***

This item controls how often the data in memory will be accessed. You can set the value to 2 or 3 clock cycles.

DRAM Clock ***Default: Host CLK***

This item lets you set the speed of the system memory bus. You can set this item to follow the host clock, or to under/over perform the host bus by plus or minus 30 MHz. We recommend that you leave this item at the default value.

Memory Hole ***Default: Disabled***

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

P2C/C2P Concurrency ***Default: Enabled***

Use this item to enable or disable concurrent memory/PCI and CPU action.

Fast R-W Turn Around ***Default: Disabled***

This item sets a timing parameter for CPU access. Since the CPU timing is determined by the system hardware, you can set this item to Disabled.

System BIOS Cacheable ***Default: Enabled***
Video RAM Cacheable ***Default: Enabled***

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

AGP Aperture Size (MB) ***Default: 64 MB***

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

AGP 4X Mode ***Default: Enabled***

This item allows you to improve video performance by quadrupling the speed of the AGP bus. This function is supported by the mainboard, so we recommend that you set this item to enabled.

AGP Driving Control ***Default: Auto***

This item can be used to signal driving current on AGP cards auto or Manual. Some AGP cards need stronger than normal driving current in order to operate. We recommend that you set this item to Auto by default.

AGP Driving Value ***Default: DA***

When the previous item AGP Driving Control is set to manual, you can define use this item to set the AGP current driving value.

CPU to PCI Write Buffer ***Default: Enabled***

When this item is enabled, writes from the CPU to the PCI bus are buffered to compensate for the different speeds of the CPU and PCI buses. Leave this item at the default value.

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

These items determine how the system carries out read/write operations over the PCI bus. These items are normally optimally determined by the system's hardware and chipset, so we recommend that you leave these items at the manufacturers default.

AGP Master 1 WS Write ***Default: Disabled***
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 normally optimally determined by the system's hardware and chipset, so we recommend that you leave these items at the manufacturers default.

In Order Queue Depth ***Default: 4***

This item can be used to set the CPU in order queue depth. We recommend that you set this item to 4 for best performance.

P6 Lock Function ***Default: Disabled***

When this item is enabled, you can lock the signal circle of P6 and North Bridge Chip. We recommend that you leave this item set to the default value Disabled.

Delay DRAM Read Latch ***Default: No Delay***

This item allows you to set a delay when reading the memory bus. We recommend that you leave this item at the default value.

Data Drive (MD,WE#)	***Default: 6mA***
Command (SRAS#,SCA#,SWE#)	***Default: 16mA***
Address Drive (MA,WE#)	***Default: 16mA***
CAS# Drive	***Default: 8mA***
RAS# Drive	***Default: 16mA***

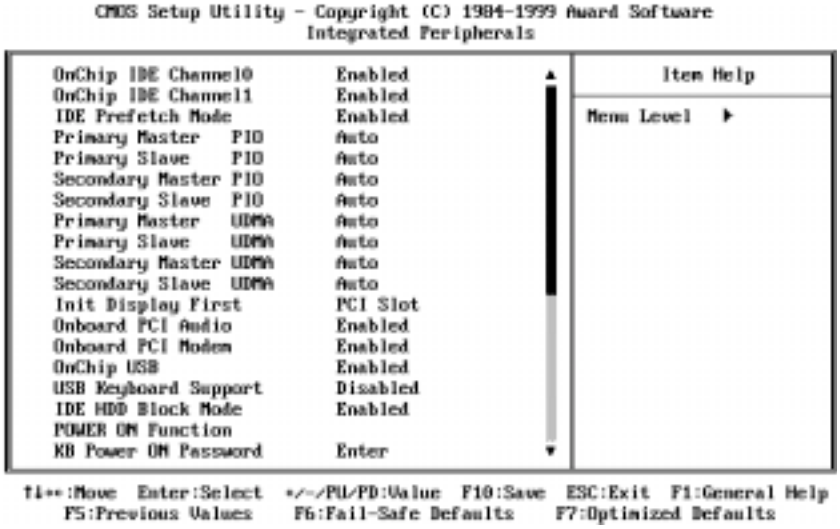
These items allow you to alter the access speeds of the different memory bus functions. These items are normally optimally determined by the system's hardware and chipset, so we recommend that you leave these items at the manufacturers default.

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

If this item is enabled it allows the system to use parity checking and ECC (Error Correcting Code) to catch errors in the system memory. Enabling this item might have an impact on overall system performance.

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.



OnChip IDE Channel0 ***Default: Enabled***

OnChip IDE Channel1 ***Default: Enabled***

Use these items to enable or disable the Primary and Secondary PCI IDE channels that are integrated on this mainboard.

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 or select Onboard if you have a graphics system integrated on the mainboard.

Onboard PCI Audio ***Default: Enabled***

Use this item to enable the onboard audio features. We recommend that you set this item to Enabled when you use an AMR card.

Onboard PCI Modem ***Default: Disabled***

Use this item to enable the onboard PCI modem feature. We recommend that you set this item to Enabled when you use an AMR card.

OnChip USB ***Default: Enabled***

Use this item to enable the USB ports that are integrated on this mainboard.

USB Keyboard Support ***Default: Disabled***

Enable this item if you are using a keyboard connected through the USB Port.

IDE HDD Block Mode ***Default: Disabled***

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

POWER ON Function ***Default: Hot KEY***
KB Power ON Password ***Default: Enter***
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. Press Enter to display the Password dialog box. If you set it to Hot Key, you can then use the item Hot Key Power On to choose which hot keys are used to power on the system.

KBC input clock ***Default: 8 MHz***

Use this item to set the clock speed for keyboard data traffic.

Onboard FDC Controller ***Default: Enabled***

Use this item to turn on or off 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***

If you have installed an optional second serial port, 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).

UART Mode Select ***Default: IrDA***
UART2 Duplex Mode ***DefaultL Half***

This item defines the operation of serial port 2. In the Normal setting, serial port 2 is assigned to the (optional) 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 following item *UR2 Duplex Mode* to define if the IR port is full duplex or half duplex.

RxD, TxD Active ***Default: Hi, Lo***

This item lets you set the Read and Transfer transmission speeds for infrared communication.

IR Transmission delay ***Default: Enabled***

This item lets you enable a transmission delay for infrared communication.

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***
ECP Mode Use DMA ***Default: 3***
EPP Mode Select ***Default: EPP1.7***

This item defines the operation of the parallel port. As a default it is 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. If you have changed the parallel port to ECP mode, use the following item *ECP Mode Use DMA* to assign a DMA channel to the port. If you are using EPP mode, use the next item to select the EPP mode version.

PWRON After PWR-Fail ***Default: Off***

If this item is enabled, the system will automatically resume when power is restored after an interruption in the power supply.

Power Management Setup Option

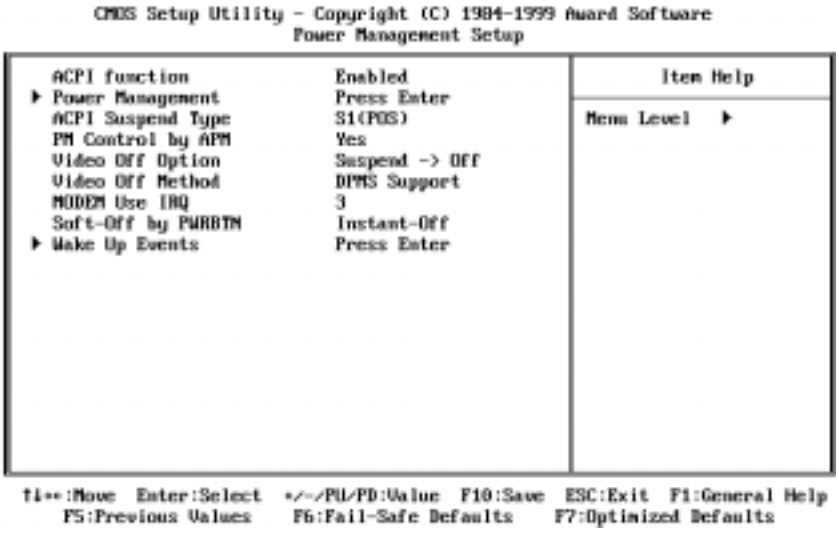
This option displays items that let you control the system power management. Modern operating systems take care of much of the power management. This mainboard supports ACPI (advanced configuration and power interface). The system has various power saving modes including powering down the hard disk,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

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 *Reload Global Timer Events* is Enabled, then any activity on that item will reset the timeout counters to zero.

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, a LAN card, a PCI card, or a fixed alarm on the system realtime clock.

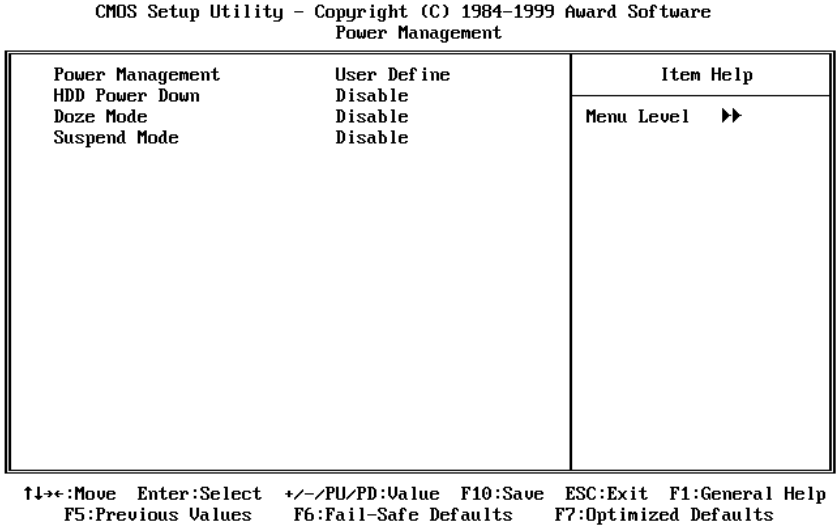


ACPI Function ***Default: Enabled***

This mainboard supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.

Power Management

Press **Enter** to display the Power Management sub-menu.



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, power-saving modes occur after a short timeout. If this item is set to Min Saving, power-saving modes occur after a longer timeout. If the item is set to User Define, you can insert your own timeouts for the power-saving modes.

HDD Power Down ***Default: Disabled***

If you have selected User Define for the Power Management item, you can set this item to 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***

Suspend Mode ***Default: Disabled***

If you have selected User Define for the *Power Management* item, you can set this item to a timeout between 1 Min to 1 Hour. The system will go into the power-saving doze or suspend mode if the timeout passes without any system activity.

Press **Esc** to close the Power Management sub-menu and return to the Power Management Setup page.

ACPI Suspend Type ***Default: S1 (POS)***

Use this item to define how your system suspends. In the default, S1(POS), the suspend mode is equivalent to a software power down. If you select S3 (STR), the suspend mode is a suspend to RAM – the system shuts down with the exception of a refresh current to the system memory.

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 your system.

Video Off Option ***Default: Suspend → Off***

This option defines how and when the video is powered down if the system is put into 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 (display power management software).

MODEM Use IRQ ***Default: 3***

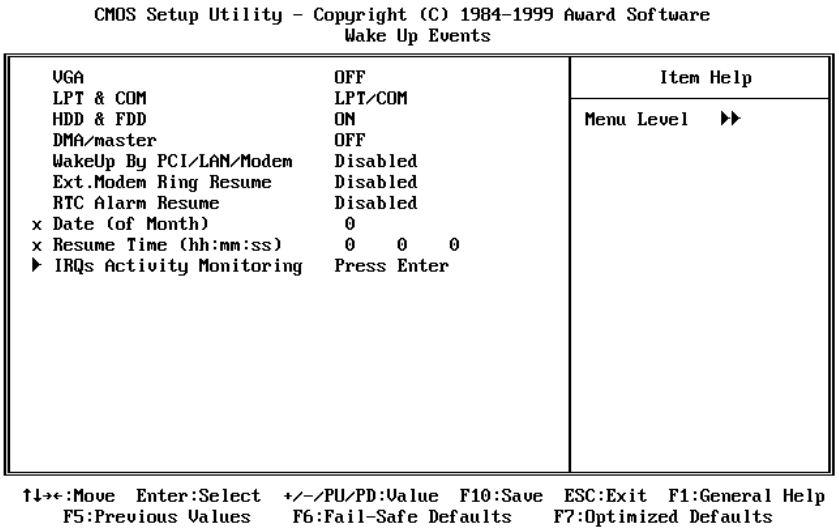
If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to a mainboard Wake On Modem connector for this feature to work.

Soft-Off by PWRBTN ***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.

Wake Up Events

Press **Enter** to display the Wake-Up Events sub-menu.



VGA ***Default: OFF***

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the video graphics system.

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

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the serial ports,or the parallel port.

HDD & FDD ***Default: ON***

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the floppy diskette drives or on the IDE drive channels.

DMA/Master ***Default: OFF***

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the DMA (Direct Memory Access) channels.

WakeUp By PCI/LAN/Modem ***Default: Disabled***

If you enable this item, it allows activity on an add-in card in one of the PCI slots to resume the system from a power-saving mode. It will also wakeup the system whenever there is traffic on an installed fax/modem or network adapter. You might have to connect the fax/modem to a mainboard Wake On Modem connector, and the LAN card to a mainboard Wake On LAN connector, for this feature to work.

Ext. Modem Ring Resume ***Default: Disabled***

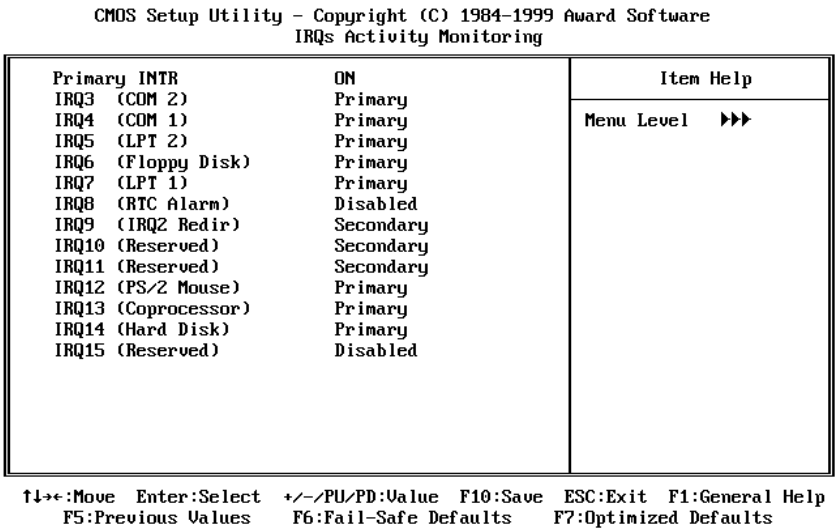
If this item is enabled, it allows the system to resume from a software powerdown or a power-saving mode whenever there is an incoming call on an installed fax/modem. You might have to connect the fax/modem to a mainboard Wake On Modem connector for this feature to work.

RTC Alarm Resume ***Default: Disabled***

If this item is Enabled, it allows you to set a date and time alarm that will automatically resume the system from a software power down. When you enable this feature, new setup items appear to let you set the alarm. Date (of Month) Alarm lets you select a day from 1 to 31. Time Alarm lets you select a time for the alarm in hours, minutes, and seconds.

IRQ Activity Monitoring

Press **Enter** to display the IRQ Activity Monitoring sub-menu.



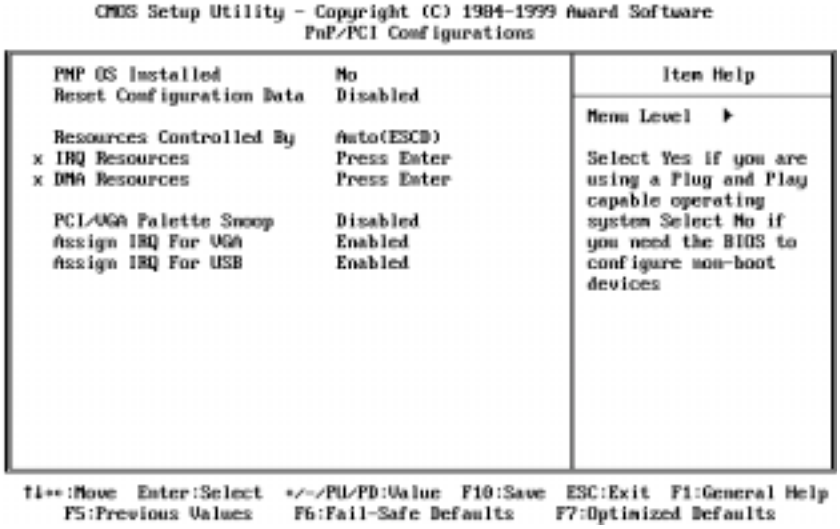
When these item are enabled, the system will restart the timeout counters when any activity is detected on the selected Interrupt request lines. When the Primary INTR item is set to OFF, then the interrupts have no effect on system power management

Press **Esc** to close the the IRQ Activity Monitoring sub-menu and return to the Wake Up Events page.

Press **Esc** to close the Wake Up Events sub-menu and return to the Power Management Setup page.

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.



PNP OS Installed ***Default: No***

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

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.

Resources Controlled By ***Default: Auto (ESCD)***

You should set this item at Auto (ESCD). Under this setting, the system dynamically allocates resources to plug and play devices as they are required. If you cannot get a legacy ISA (Industry Standard Architecture) expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up the *IRQ Resources* sub-menu.

In the *IRQ/DMA Resources* sub-menus, if you change any of the assignations to Legacy ISA, then that Interrupt Request Line/DMA address is reserved for a legacy ISA expansion card. Press **Esc** to close the IRQ/DMA Resources sub-menus.

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

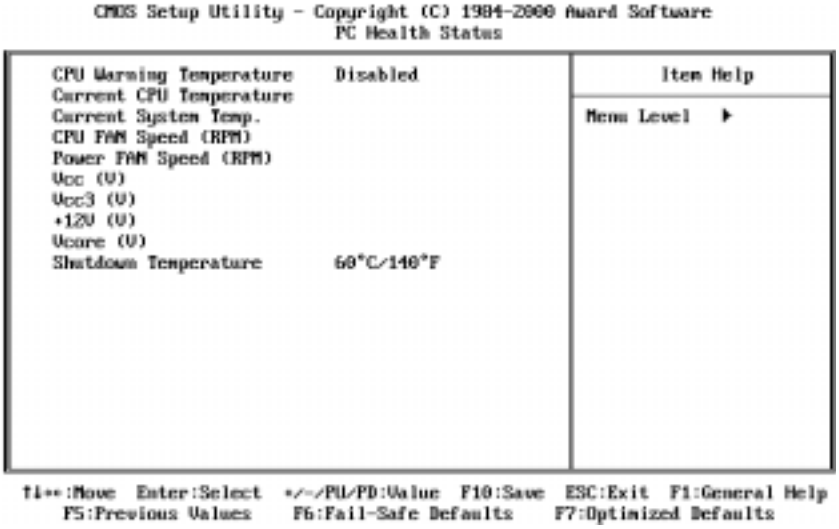
This item is designed to overcome some problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

Assign IRQ For VGA ***Default: Enabled***
Assign IRQ For USB ***Default Enabled***

Use these items to assign an IRQ line to the onboard video graphics system and USB controller.

PCI Health Status Option

On mainboards which support hardware monitoring, this item lets you set parameters for critical voltages, critical temperatures, and fan speeds.



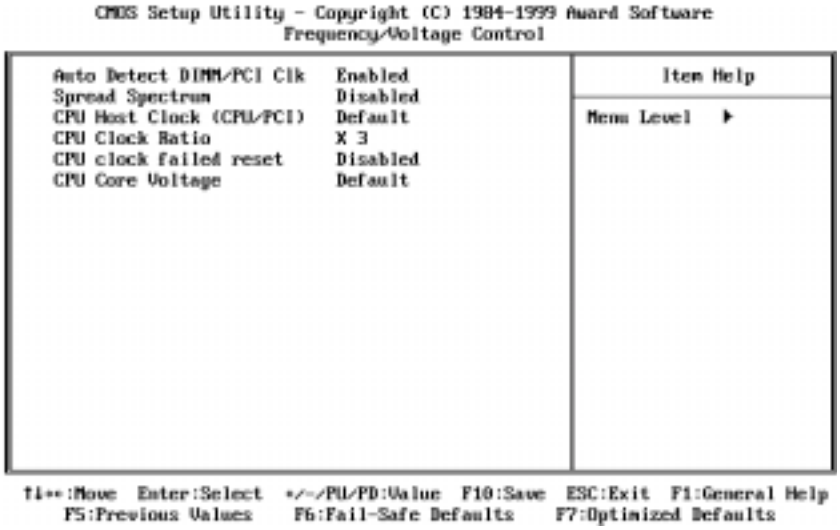
If this option is active on your system, we recommend that you accept the default values for these items that are installed by the manufacturer. The system will alert you whenever the manufacturer's safe operating parameters are exceeded.

CPU Warning Temperature ***Default: Disabled***
Shutdown Temperature ***Default: 60°C/140°F***

This item allows you to set the CPU and onboard temperature limit at which point the system should automatically shutdown the system.

Frequency / Voltage Control Option

This item allows you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.



Auto Detect DIMM/PCI Clk ***Default: Enabled***

When this item is enabled, the BIOS will disable the clock generator signal for unused DIMM and PCI slots, in order to reduce EMI (electromagnetic intererence)

Spread Spectrum ***Default: Disabled***

When this item is enabled, it can significantly reduce the EMI (electromagnetic interference) that your system generates by modulating the extreme values of the clock generator pulses. Enabling this item might cause problems with timing-critical devices such as SCSI adapters. We recommend that you leave this item at the default value disabled.

CPU Host Clock (CPU/PCI) ***Default: Default***

CPU Clock Ratio ***Default: X 3***

Use the *CPU Host/PCI Clock* to set the system bus frequency for the installed processor (usually 100 MHz or 66 MHz). Then use *CPU Clock Ratio* 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.

CPU Voltage ***Default: Auto***

The onboard hardware monitor is able to automatically detect the voltage output by the onboard voltage regulators. We recommend that you leave this item at the default value.

Load Fail-Safe Defaults Option

This option opens a dialog box that lets you install fail-safe 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 fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting your system working properly again. If you only want to install a fail-safe defaults for a specific option, select and display that option, and then press the **F6** key.

Load Optimized Defaults Option

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

Set Supervisor and User Passwords

These items can be used to install a password. A Supervisor password takes precedence over a User password, and the Supervisor can limit the activities of a User.To install a password, follow these steps:

1. Highlight the item Set Supervisor/User password 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.

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** 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 **MS7157C** 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
- **SUPER VIOCE:** Fax/Modem application software
- **GAMUT:** Audio rack for built-in sound system
- **MediaRing Talk :**PC to PC base Internet phone application software
- **Yamaha XG :** Yamaha S-YXG50 Software synthesizer

CMI8X38 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

VIA Folder

- **ACPI:** This folder contains ACPI (Advanced Configuration & Power Interface) drivers for use with the chipset used in this system.
- **AGP/AGP33:** This folder contains AGP graphics drivers for the chipset used in this system.
- **DMATool:** This folder contains bus mastering Ultra DMA drivers for IDE devices.
- **IRQ:** This folder contains PCI IRQ miniport drivers.
- **Win9x:** This folder contains the IDE driver update for use with Windows 9x.
- **Win NT:** This folder contains the IDE driver update for use with Windows NT.

MS7157C Folder

- **AUDIO, MODEM:** 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. 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.
3. 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.
4. 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 several flash memory utilities. For this mainboard you must use the **AWD753.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.

GAMUT

The Gamut audio rack software for the built-in sound system is provided for different languages. Log on to the appropriate directory for your language, then run SETUP to install the application software.

MediaRing Talk

To install the MediaRing Talk voice modem software for the built-in modem, run MRTALK99-SETUP.

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.

Super Voice

To install the Super Voice voice, fax, data communication application for use with the built-in fax/modem, run PICSHELL.

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

Locate the “My computer” icon on the desktop and right mouse click on it, next select “System Management” from the pop-up menu. Select “PCI Multimedia Audio Device”, and click properties, and finally press the “Reinstall Driver” button. Follow the instructions on the screen, and indicate the driver location on the CD-ROM \CMI8X38\AUDIO\W95-98\DRV when prompted.

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-A+dia 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

ACPI

Run the "setup" program from the VIA directory to install the proper ACPI (Advanced Configuration & Power Interface) drivers for use with the chipset used in this system.

AGP/AGP33

Run the "setup" program from the VIA directory to install the proper AGP graphics drivers for the chipset used in this system.

DMATool

Run the Setdma.exe program in this directory to install the bus mastering Ultra DMA tools for IDE devices.

IRQ

Run the "setup" program from the VIA directory to install the proper PCI IRQ miniport drivers for the chipset used in this system.

Win9x

Run the "setup" program from the VIA directory to install the IDE driver updates for use with Windows 9x.

Win NT

Run the "setup" program from the VIA directory to install the IDE driver updates for use with Windows NT.

Mainboard (MS7157C) Installation Notes

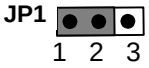
All of the sub-folders in this folder are empty, with a short README file giving directions to alternate folders for the appropriate software.

Appendix 1: Quick Jumper Setting Reference

JP1: Clear CMOS memory jumper

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

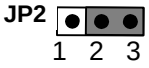
Function	Jumper Cap
Normal operation	Short pins 1-2
Clear CMOS	Short pins 2-3



JP2: Keyboard power on jumper

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

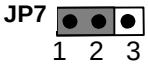
Function	Jumper Cap
Disable keyboard power on	Short pins 1-2
Enable keyboard power on	Short pins 2-3



JP7: Suspend-to-RAM jumper

Use this 3-pin jumper to enable the Suspend-to-RAM function.

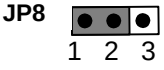
Function	Jumper Cap
Enable Suspend-to-RAM	Short pins 1-2
Disable Suspend-to-RAM	Short pins 2-3



JP8: Flash BIOS jumper

Use this 3-pin jumper to enable or disable Flash BIOS protection. If enabled, the existing BIOS cannot be flashed with another version.

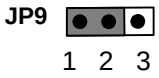
Function	Jumper Cap
Enable Flash BIOS	Short pins 1-2
Disable Flash BIOS	Short pins 2-3



JP9: Set System Bus Frequency to 100 MHz

Use this 3-pin jumper to set the system bus frequency. In the normal setting, the system automatically selects the correct frequency according to the kind of processor installed. In the Force 100 MHz setting, the system uses a 100 MHz system bus even if the processor is designed to operate with a 66 MHz bus.

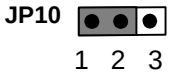
Function	Jumper Cap
Normal operation	Short pins 1-2
Force 100 MHz	Short pins 2-3



JP10: Set System Bus Frequency to 133 MHz

Use this 3-pin jumper to set the system bus frequency. In the normal setting, the system automatically selects the correct frequency according to the kind of processor installed. In the Force 133 MHz setting, the system uses a 133 MHz system bus even if the processor is designed to operate with a 100 MHz bus.

Function	Jumper Cap
Normal operation	Short pins 1-2
Force 133 MHz	Short pins 2-3

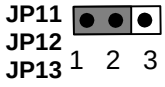


Note: *When both JP9 and JP10 have the 2-3 pins shorted, the board is set to force a 66 MHz FSB processor to run on a 133 MHz system bus.*

JP11, JP12, JP13: Select Celeron or Joshua Processor for Socket-370

Use these 3-pin jumper sets to select the processor type you are using in the PGA370 processor socket.

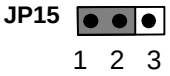
Function	Jumper Cap
Intel Celeron	Short pins 1-2
Cyrix Joshua	Short pins 2-3



JP15: Automatic (BIOS) or Manual configuration

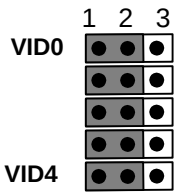
Use this 3-pin jumper to automatically (BIOS) or manually set the CPU core voltage and system bus multiplier ratio. When set to manual configuration, use the VID and BF jumpers to define proper configuration. It is recommended that you set this jumper to automatic configuration.

Function	Jumper Cap
Automatic configuration	Short pins 1-2
Manual configuration	Short pins 2-3



VID: Set CPU core voltage jumpers

Use this 3 x 5-pin jumper set to manually set the CPU core voltage. See later in this chapter for information on the core voltage setting required for the processor that you have installed.



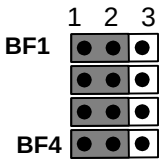
Volt.	Pin Settings				
	VID0	VID1	VID2	VID3	VID4
Auto*	1-2	1-2	1-2	1-2	1-2
2.05V	2-3	2-3	2-3	2-3	2-3
2.00V	All open	2-3	2-3	2-3	2-3
1.95V	2-3	All open	2-3	2-3	2-3
1.90V	All open	All open	2-3	2-3	2-3
1.85V	2-3	2-3	All open	2-3	2-3
1.80V	All open	2-3	All open	2-3	2-3
1.75V	2-3	All open	All open	2-3	2-3
1.70V	All open	All open	All open	2-3	2-3
1.65V	2-3	2-3	2-3	All open	2-3
1.60V	All open	2-3	2-3	All open	2-3
1.55V	2-3	All open	2-3	All open	2-3
1.50V	All open	All open	2-3	All open	2-3
1.45V	2-3	2-3	All open	All open	2-3
1.40V	All open	2-3	All open	All open	2-3
1.35V	2-3	All open	All open	All open	2-3
1.30V	All open	All open	All open	All open	2-3
3.5V	2-3	2-3	2-3	2-3	All open
3.4V	All open	2-3	2-3	2-3	All open
3.3V	2-3	All open	2-3	2-3	All open
3.2V	All open	All open	2-3	2-3	All open
3.1V	2-3	2-3	All open	2-3	All open
3.0V	All open	2-3	All open	2-3	All open
2.9V	2-3	All open	All open	2-3	All open

Volt.	Pin Settings				
	VID0	VID1	VID2	VID3	VID4
2.8V	All open	All open	All open	2-3	All open
2.7V	2-3	2-3	2-3	All open	All open
2.6V	All open	2-3	2-3	All open	All open
2.5V	2-3	All open	2-3	All open	All open
2.4V	All open	All open	2-3	All open	All open
2.3V	2-3	2-3	All open	All open	All open
2.2V	All open	2-3	All open	All open	All open
2.1V	2-3	All open	All open	All open	All open

*Auto: When all 1-2 pins are shorted, the core voltage will automatically be determined.

BF: Set system bus multiplier ratio jumpers

Use this 3 x 4-pin jumper set to manually set the system bus multiplier ratio. See later in this chapter for information on the system bus multiplier ratio setting required for the processor that you have installed.



Ratio	Pin Settings			
	BF1	BF2	BF3	BF4
Auto*	1-2	1-2	1-2	1-2
2	2-3	2-3	2-3	2-3
4	2-3	All open	2-3	2-3
3	2-3	2-3	All open	2-3
5	2-3	All open	All open	2-3
2.5	2-3	2-3	2-3	All open
4.5	2-3	All open	2-3	All open
3.5	2-3	2-3	All open	All open
5.5	2-3	All open	All open	All open
6	All open	2-3	2-3	2-3
8	All open	All open	2-3	2-3
7	All open	2-3	All open	2-3
Res.	All open	All open	All open	2-3
6.5	All open	2-3	2-3	All open
1.5	All open	All open	2-3	2-3
7.5	All open	2-3	All open	All open
2	All open	All open	All open	All open

*Auto: When all 1-2 pins are shorted, the system bus multiplier ratio will automatically be determined.