Important Information

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Version 3.0

Safety Compliance

Federal Communications Commission (FCC)

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

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

Shielded interconnect cables and shielded AC power cable must be employed with this equipment to insure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- ❑ This device may not cause harmful interference, and
- ❑ This device must accept any interference received, including interference that may cause undesired operation.

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

Contents

Chapter 1: Introduction

Welcome

Congratulations on your purchase of the P6BXT-A+ mainboard. This is a very special mainboard which allows you to install almost any kind of Intel Pentium-II/III processor. The P6BXT-A+ is a full-sized ATX board measuring 305x220mm and using 4-layer printed circuit board.

The P6BXT-A+ has a special design feature so that it includes a Pentium-II Slot-1 processor slot and a PPGA (Plastic Pin Grid Array) Celeron Socket-PGA370 processor socket. **This feature means that you can install the mainboard with either a Pentium-III cartridge, a Pentium-II cartridge, the SEPP (Single Edge Processor Package) Celeron cartridge, or one of the new generation PPGA Celeron cartridges.**

In addition, the mainboard supports a 66 MHz memory bus, or a 100 MHz memory bus, so you can use inexpensive 66MHz memory chips, or higher-performance PC-100 memory chips. The board is installed with an integrated PCI-3D sound system and has a full suite of I/O ports. Seven expansion slots are available for system development and hardware monitoring is supported.

This board allows complete flexibility. System integrators can choose the high-performance Pentium-II processor cartridge or the inexpensive PPGA Celeron processor according to the system requirements and the price/performance comparison of the two kinds of processor.

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,
- **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 P6BXT-A+ Mainboard
- ✓ 1 x Cable/Bracket Pack
  - Diskette drive ribbon cable
  - IDE drive ribbon cable
- ✓ This User's Manual
- ✓ Software Support CD-ROM Disc

Optional Items

1 x V 9.0 Fax/Modem Card

Features

The key feature of this mainboard is the dual processor sockets which allow you to install any of the Pentium-III and Pentium-II processors including Slot1 cartridges SEPP Celerons and PPGA Celerons. In addition, this is a full-sized ATX mainboard with a full set of expansion slots for maximum development potential.

Support for Pentium-III/Pentium-II Cartridges or PPGA Celeron

The principal feature of this mainboard is that it can support three kinds of processors: Pentium-III cartridges, Pentium-II cartridges and SEPP or PPGA Celerons. Pentium-III cartridges feature 512K of level-2 cache memory with improved instructions to handle 3D audio and video. Speech recognition, MPEG2 motion picture encoding/decoding, and TCP/IP internet connections. The Pentium-III runs over a 100 MHz system bus and operate at clock speeds from 450 MHz up to 600 MHz or more.

The Pentium-II cartridges are very powerful processors which include 32K of internal level-1 cache memory and 512K of external level-2 cache memory. The first generation of Pentium-II cartridges ran over a 66 MHz system bus, but current Pentium-II cartridges run over a 100 MHz system bus and operate at clock speeds from 350 MHz up to 450 MHz or more. The slot-1 processor can also be used by the SEPP Celeron processors which can operate over a 66/100 MHz system bus and operate at clock speeds up to 500 MHz.

The new generation PPGA 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 at a 66/100 MHz system bus and they currently ship a clock speeds of 466 MHz.

System assemblers can install either a Pentium-III or Pentium-II cartridge or the SEPP Celeron in the slot-1 processor slot. Alternatively, they can install a second generation PPGA Celeron in the Socket-370 processor socket. 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.

Choice of Memory Options

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.

If you are using a Pentium-III/PentiumII processor cartridge that operates over a 100 MHz system bus, you must install PC-100 compliant memory modules (memory that operates at 100 MHz). If you install the PPGA Celeron processor, you can install memory that operates at 66 MHz (you can install PC-100 memory if you wish, but the system will run the memory at 66 MHz).

You can install one, two or three modules. Each memory module can hold a maximum capacity of 128 MB of standard SDRAM chips, or 256 MB of registered SDRAM chips so maximum memory capacity is 384 MB of standard SDRAM memory or 768 MB registered SDRAM memory.

Highly Integrated Design

This mainboard uses the Intel 440BX chipset which includes the North Bridge 82443BX chip and the South Bridge 82371EB. The 82443BX provides automatic support for a 100 MHz or 66 MHz system bus frequency and memory bus frequency. It includes a memory controller with error correction support, an Accelerated Graphics Port (AGP) interface, and the PCI bus interface compliant with PCI Rev. 2.2 specifications.

The 82371EB South Bridge chip includes the ACPI (Advanced Configuration and Power management Interface) power management logic, the integrated PCI IDE interfaces (with Ultra DMA support) and the USB (Universal Serial Bus) ports.

Built-in PCI 3D Sound

The Elite PCI Audio 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 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.

Maximum Expansion Options

This is a full-sized ATX mainboard that offers the maximum in system expansion. The board has a total of 7 expansion slots. The AGP slot can be used by an AGP graphics adapter. The four 32-bit PCI slots can be used by PCI expansion cards, and the two 8/16-bit ISA slots can be used by legacy ISA expansion cards. One of the PCI slots is shared with one of the ISA slots. This means that you can use either one of these slots but not both at the same time. With six usable slots, this mainboard can be installed with a full set of optional expansion cards.

Integrated I/O

Using the Winbond W83977EF-AW I/O chip and the Intel BX chipset, 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 the GL520SM hardware monitoring chip. Using this chip and the monitoring software supplied with the system, 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 or hot key. 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.

STR (Suspend to RAM)

The “Suspend To RAM” technology offers the ‘On now” function which meets PC99 specification and provides the pure ‘ Green’ power saving mode to the system. Under the STR status, the only power consumption is on DRAM and the system can be resumed to its previous operation status within 7 seconds by pressing the “power on” hot key or turning on the system. It meets the requirement of “easy to use” for the future computing environment.

Chapter 2: Installation

Before You Begin

Before you begin to install your P6BXT-A+ 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

The P6BXT-A+ mainboard complies with the specifications for a full-sized ATX board. Make sure that your system case supports a full-size ATX board and has a power supply unit for all the expansion potential of the system.

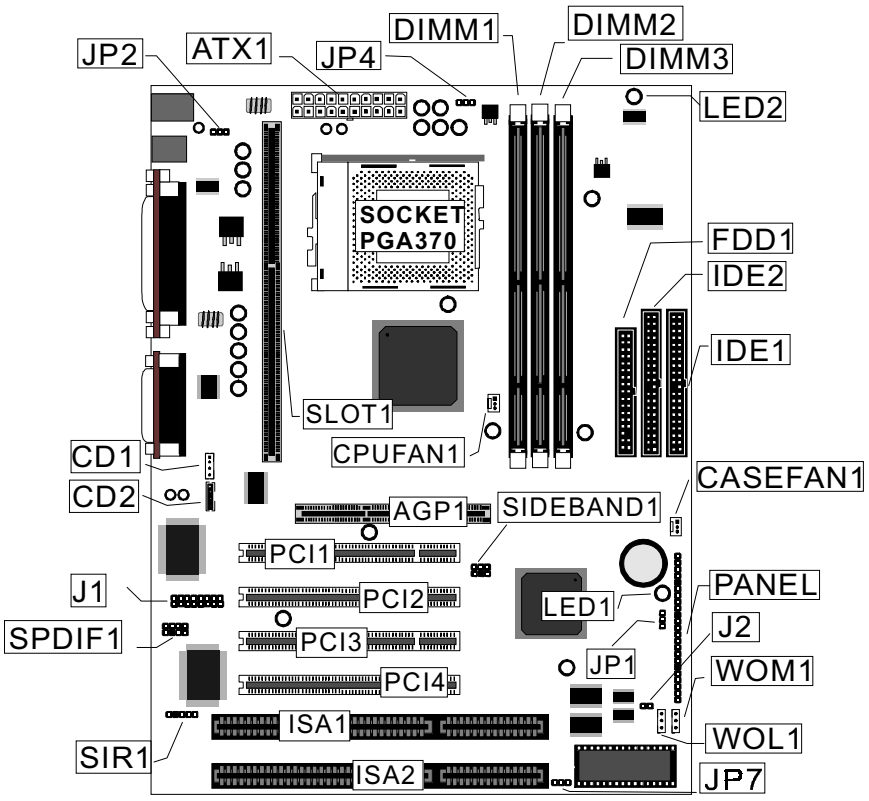
Some features on the mainboard are implemented by cabling connectors on the mainboard to indicators and switches on the system case. Ensure that your case supports all the features required. The P6BXT-A+ mainboard can support one or two floppy diskette drives and four

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.

Mainboard Guide

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



Key to Mainboard Components

Component	Description
ISA1,2	2 x 8/16-bit ISA expansion slots
AGP1	AGP graphics adapter slot
PCI 1,2,3,4	4 x 32-bit PCI expansion slots
SOCKET PGA370	Processor socket for PPGA Celeron processor
SLOT1	Slot for Pentium-II/III processor or SEPP Celeron processor
DIMM1,2,3	Slots for 168-pin memory modules
FDD1	Connector for floppy disk drives
IDE1, IDE2	Primary and secondary IDE channels
ATX1	Connector for ATX power supply
SIR1	Connector for optional IR port
PANEL	Panel connector for switches and indicators
CPUFAN1	Power connector for CPU cooling fan
CASEFAN1	Power connector for case cooling fan
WOM1	Connector for modem wake up
WOL1	Connector for LAN wake up
SPDIF1	SPDIF In/out connector (24-bit digital audio interface)
SIDEBAND1	SB-Link connector for Sound Blaster audio card
CD1	Audio connector for optional CD-ROM drive
CD2	Auxiliary audio connector for optional CD-ROM drive
J1	Connector for fax/modem Adapter Card
J2	Header for Indicator lamp for Green Mode
JP1	Clear CMOS memory jumper
JP2	Keyboard power on jumper
JP4	System Bus Frequency Selector
JP7	Flash BIOS enable/disable jumper
*LED1	Suspension indicator
**LED2	Indicator lamp for suspend to RAM

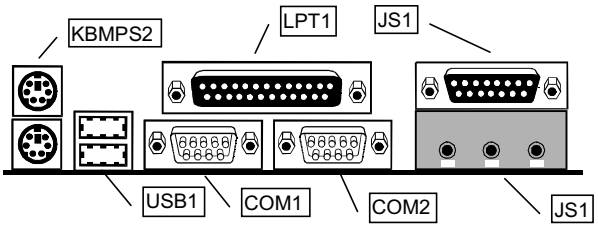
*LED1

When the system is turned on, the Suspension Indicator is lit, so the user can be alerted not to do any improper add-on card plugging/unplugging and also cable removing to prevent the system from the possible damage.

**LED2

This red indicator lamp turns on if your computer has been 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 the indicator lamp is turned on, it warns you that the computer is suspended to RAM and a refresh current is passing through the memory modules. You should not attempt to remove or install memory modules when the indicator lamp is turned on.

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 monitor port
COM1	External serial port 1/3
USB1	Two stacked Universal Serial Bus ports

Preparing the Mainboard

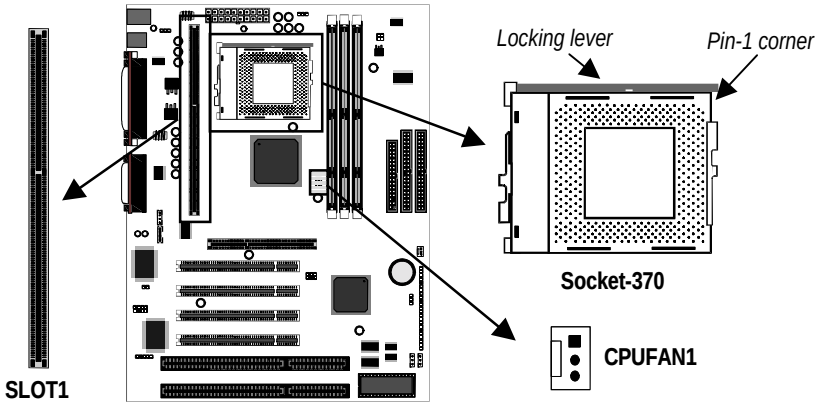
Prepare the main board by carrying out the following steps;

- Install the processor
- Install the memory module(s)
- Check the jumper settings

Install the Processor

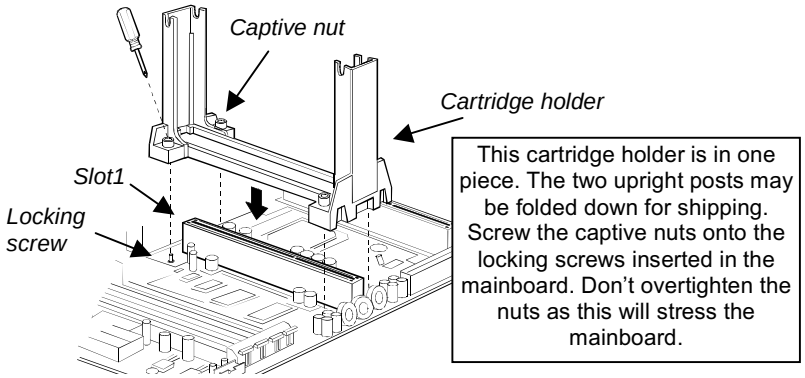
This board has a Slot1 for a processor cartridge and a socket-370 for a PPGA Celeron processor. You can install one processor cartridge or one PPGA Celeron. You cannot install both a slot-1 cartridge and a PPGA Celeron.

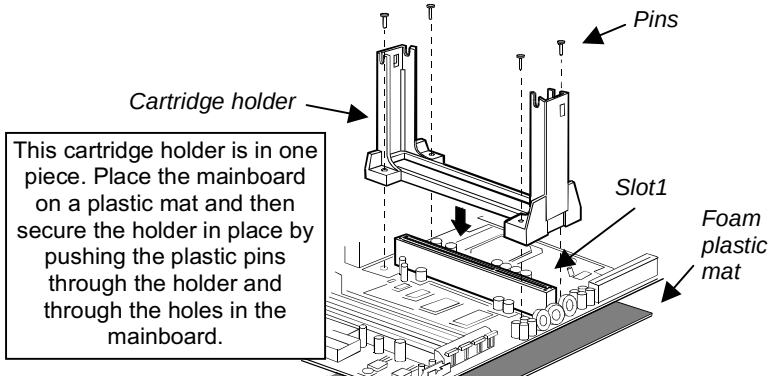
Locate SLOT1, Socket-370 and CPUFAN1

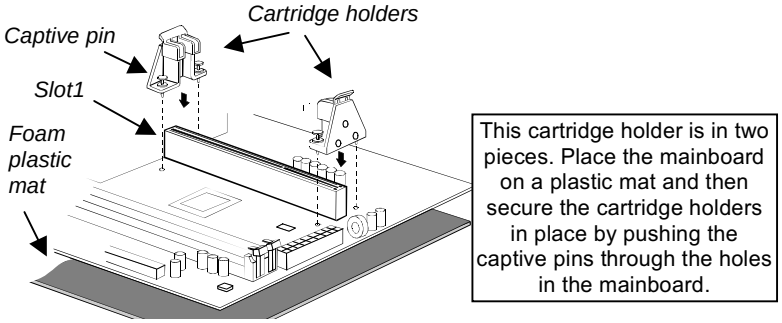


Installing a SLOT1 Cartridge Holder and Cartridge

The SLOT1 on the mainboard must be installed with a retention mechanism to support the cartridge. The illustrations below show how to install several different kinds of Slot1 cartridge holders.







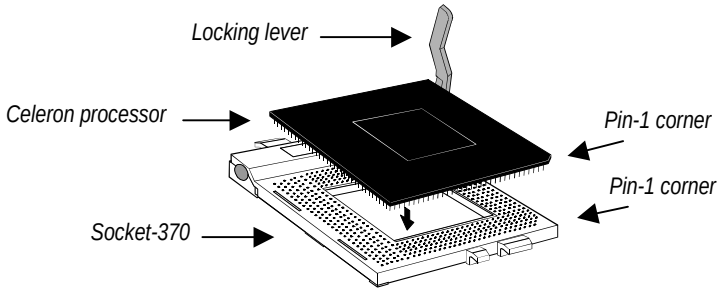
Some cartridge holders also include a support bar for the processor heat sink. This bar installs to the side of the cartridge holder. Some processor cartridges have support struts for the heat sink which lock into the support bar. The documentation supplied with the processor shows hot to do this.

After you have installed the cartridge holder, follow the instructions supplied with the processor cartridge to insert the cartridge into the holder. If the processor has a cooling fan, connect the power cable of the fan to the power supply connector on the mainboard CPUFAN1.

Installing a PPGA Celeron in the Socket-370

This mainboard is installed with a PGA370 ZIF processor socket. This socket will only support the PPGA Celeron processor. *Do not try to insert a socket-7 processor such as a Pentium or Pentium-compatible processor*. The PPGA Celeron processors all run over a 66 MHz system bus and have internal clock speeds ranging from 300 to 433 MHz. Configuration of the processor is made automatically using the mainboard BIOS (see the Setup chapter).

1. Locate the zero insertion force (ZIF) PGA370 socket for the processor.
2. On the socket and on the processor, identify the pin 1 corner. On the socket, the pin-1 corner is opposite the hinge of the locking lever, and it has one hole missing from the corner. On the processor, the pin-1 corner has a slight bevel.



3. Push the socket locking lever away from the socket to unhook it. Swing the lever into the upright position.
4. Insert the processor into the socket taking care that you have matched the pin 1 corners. No force is required, and the processor should seat smoothly into the socket.
5. Swing the locking lever down and hook it under the latch on the side of the socket to lock it in place.
6. Locate the power connector for the processor cooling fan CPU FAN1. If your processer has a cooling fan installed, connect the cable from the cooling fan to CPU FAN1.

Install the Memory Modules

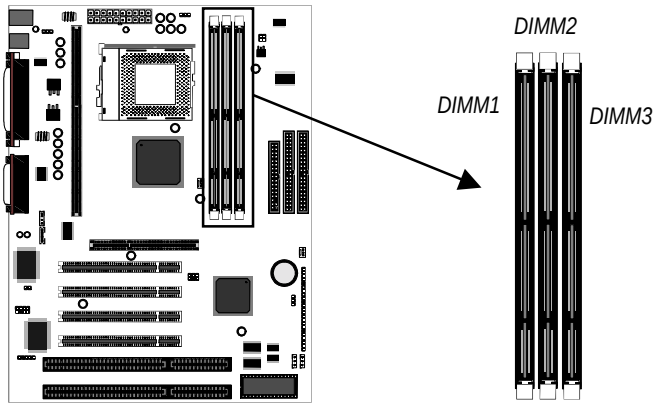
For this mainboard, you must use 168-pin 3.3V non-buffered Dual In-line Memory Modules (DIMMs). The memory chips must be standard or registered SDRAM (Synchronous Dynamic Random Access Memory). The memory bus can run at 66 MHz or 100 MHz. If your processor operates over a 100 MHz system bus, you must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

You must install at least one memory module and the first memory module should be installed in slot DIMM1, the second in slot DIMM2 and the third in slot DIMM3. If the modules use standard SDRAM, the

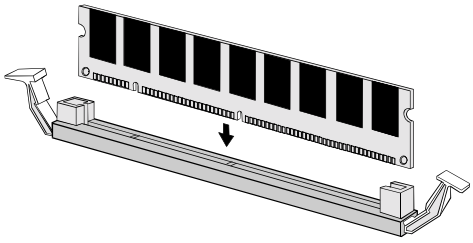
maximum capacity of each module is 128K. if the modules use registered SDRAM, the maximum capacity is 256K.

The mainboard supports memory chips that have EC (Error Correction) or ECC (Error Correction Code). If you install more than one module, the modules should can have different capacities, but the memory chips should all be the same type.

1. Locate the DIMM slots on the mainboard.



2. The DIMM slots are keyed with notches and the DIMMs are keyed with cut-outs so that they can only be installed correctly. Check that the cut-outs on the DIMM module edge connector match the notches in the DIMM slot.
3. Push the latches on each side of the DIMM slot down.
4. Install the DIMM module into the slot and press it carefully but firmly down so that it seats correctly. The latches at either side of the slot will be levered upwards and latch on to the edges of the DIMM when it is installed correctly.

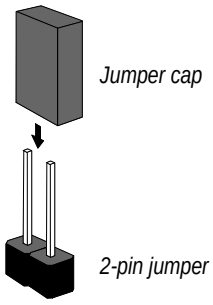


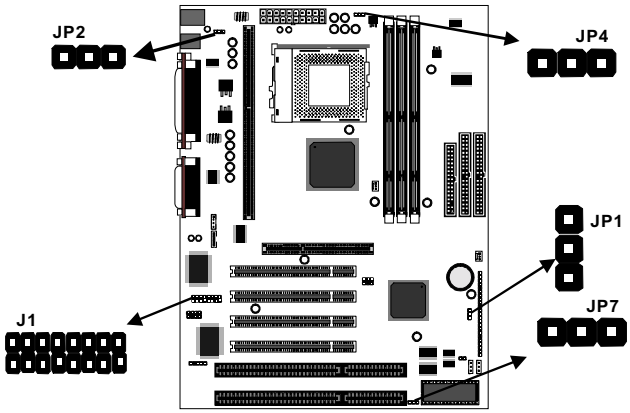
Check all the Jumper Settings

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

A Note on Jumpers

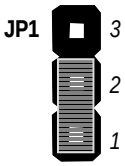
A jumper consists of two or more pins mounted on the mainboard. Some jumpers might be arranged in a series with each pair of pins numbered differently. Jumpers are used to change the electronic circuits on the mainboard. When a jumper cap is placed on two jumper pins, the pins are SHORT. If the jumper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





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.

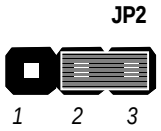


Function	Jumper Cap
Normal Operation	Short pins 1-2
Clear CMOS	Short pins 2-3

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.

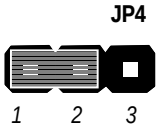
Function	Jumper Cap
Disable keyboard power on	Short pins 1-2
Enable keyboard power on	Short pins 2-3



JP4: System Bus Frequency Select Jumper

Use this jumper to select a system bus frequency of either Normal or 100 MHz. If Normal, the system automatically selects 66 or 100 MHz, according to the installed processor. If 100 MHz, the system will force a system bus of 100 MHz no matter what kind of processor is installed.

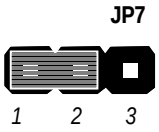
Function	Jumper Cap
Normal	Short pins 1-2
Force 100 MHz	Short pins 2-3



JP7: Flash BIOS Enable/Disable Jumper

The mainboard BIOS is stored on an Erasable Programmable Read Only Memory (EPROM) chip. This means that you can erase the current BIOS and install an updated BIOS whenever new upgrades are released. See Chapter 4 for information on using the Flash BIOS utility. Before erasing the old BIOS and flashing a new BIOS, you must set JP7 to Enable. After the new BIOS is installed, set JP7 to Disable so that the BIOS cannot be erased by accident.

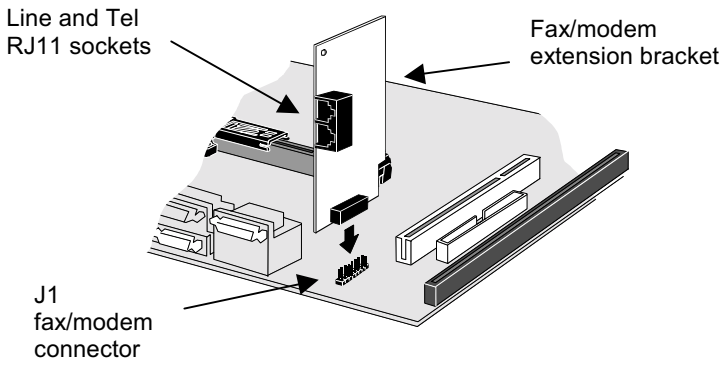
Function	Jumper Cap
Enable flash BIOS	Short pins 1-2
Disable flash BIOS	Open pins 2-3



J1: Fax/modem Extension Bracket

The fax/modem extension bracket is 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 extension bracket on to the MDM1 connector as shown below. The RJ11 Line and Telephone sockets on the bracket are positioned in the expansion slot with the removed blanking plate.



Install the Mainboard in the System Case

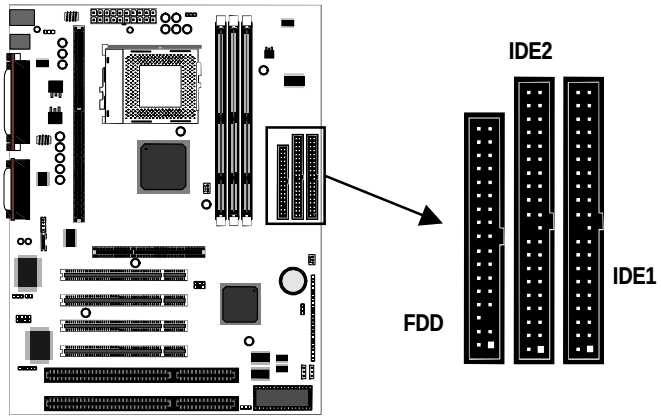
Use the screws and mounting brackets supplied with your system case to install the mainboard. Follow the instructions provided by the case manufacturer.

Connect Devices, Switches and Indicators

Note: *You might not need to carry out every step in the following procedure. It depends on the options you are installing, and the features that are supported by your system case.*

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.*

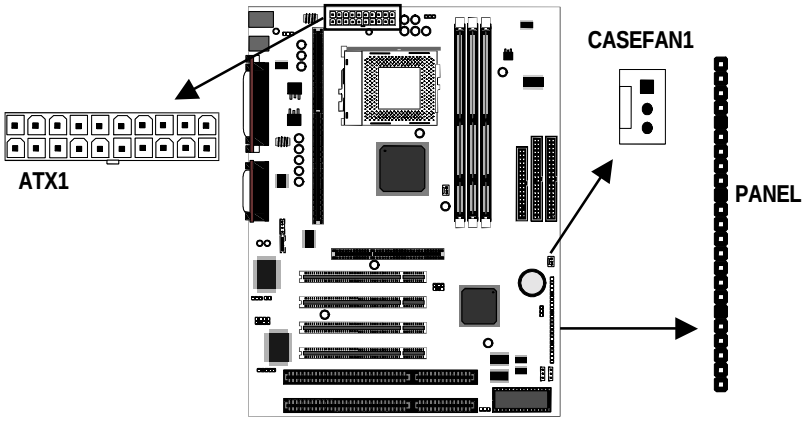
IDE & FDD Drives



1. Locate the floppy diskette drive connector FDD1. Use the ribbon cable to connect one or two floppy diskettes to the mainboard.
2. Locate the Enhanced IDE connectors IDE1 (primary) and IDE2 (secondary). A single IDE cable is provided with the mainboard. Connect the cable to IDE1. The cable has two connectors for IDE

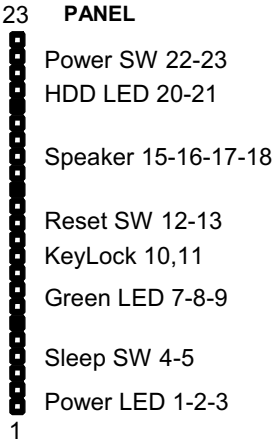
devices. If you connect two devices, you must configure one device as Master, and one device as Slave. See the documentation provided with the devices for information on this. To install more drives, use another IDE cable and connect one or two devices to IDE2.

Power Connector, Panel Connector & Case Fan

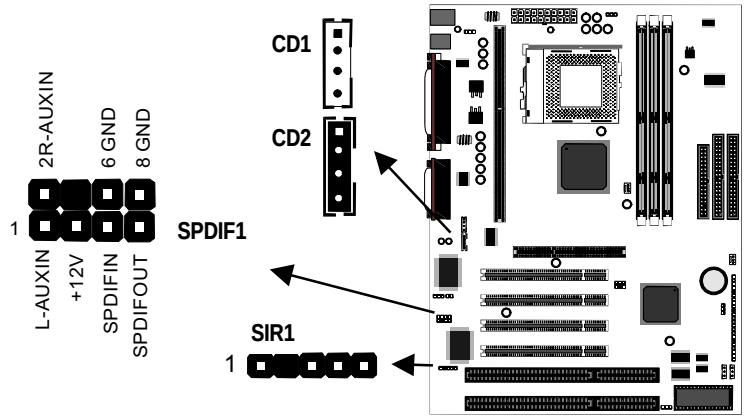


1. Locate the power connector ATX1. Connect the power cable from the power supply unit to ATX1. The connector is keyed so that it can only be installed correctly.
2. If your system case has a built-in cooling fan, you can supply power to the fan from the case fan power connector CASEFAN1. Connect the power cable from the fan to CASEFAN1.
3. Locate the bank of switch and indicator connectors PANEL. These connectors provide control functions to your system case. Use the illustration on the right and the table below to make the connections.

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



Audio Connectors & Infrared Connector



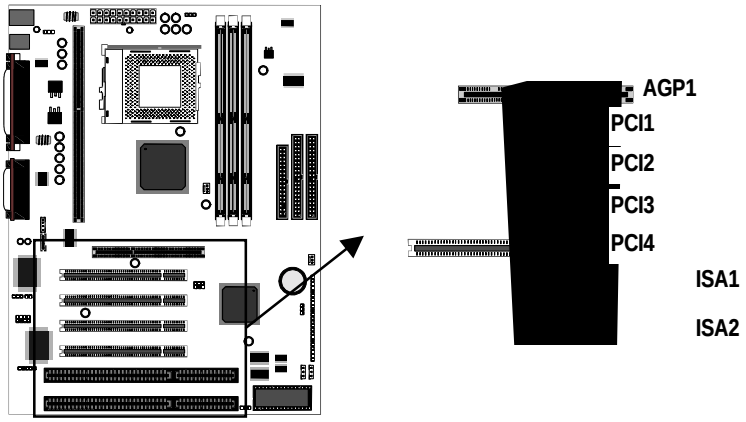
1. If you want to install an optional Serial Infrared Port, connect the cable from the optional IR port to the SIR1 connector on the mainboard.

   Note: *An infrared port (SIR1) and a second serial port (COM2) share the same resources. If you install both of these options, you cannot use them both at the same time. Use the setup utility to configure the system to use either the infrared port or the second serial port. See Chapter 3 for more information.*

2. The mainboard has three audio connectors. CD1 is a 4-pin audio connector which can be used to input the audio from a CD-ROM or DVD drive. CD2 is exactly the same, except that it supports an alternative kind of connector. Use either CD1 or CD2 to connect your CD/DVD drive audio output. If you have installed a device which supports 24-bit SPDIF digital audio, you can connect the device to the SPDIF input/output connector SPDIF1.

Expansion Slots

You can use the expansion slots to install expansion boards that add new features to your system. You must install a graphics adapter in order to use the system.

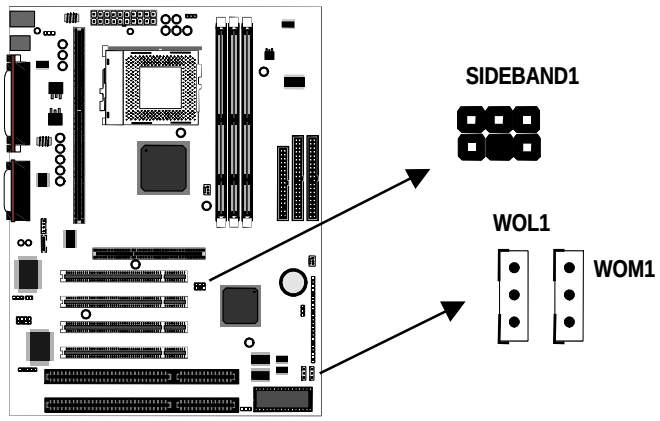


1. The AGP slot can be used by a graphics adapter with an AGP edge connector. This mainboard must be installed with a graphics adapter. You do not need to use an AGP adapter. You can also install a graphics adapter in a PCI slot or even an ISA slot.
2. If you have 32-bit PCI expansion cards, install them in on of the four PCI slots. If you have 8/16-bit legacy ISA cards, you can install them in one of the two ISA slots.

   Note: *The PCI slot PCI4 and the ISA slot ISA1 are shared slots. This means that you can use either one of these slots, but not both of them at the same time. The two slots correspond to the same expansion card opening in the system case.*

3. When you install an expansion card, remove the blanking plate from the case expansion card opening that corresponds to the expansion slot on the mainboard. Fit the bracket of the expansion card into the expansion card opening and secure it in place with a screw.

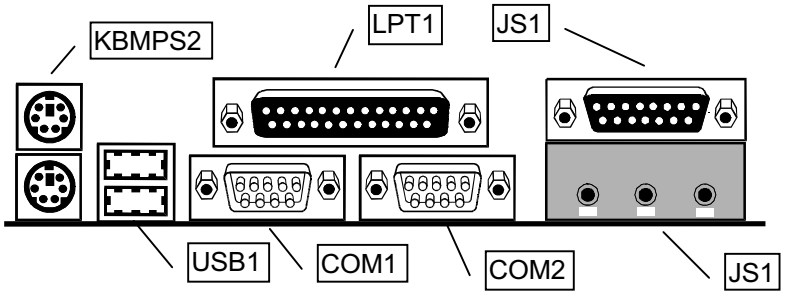
Wake-Up Connectors and SB-Link



4. The mainboard has wake up connectors for an optional network adapter or an optional internal fax/modem card. If you have installed a network adapter expansion card, connect it to the wake on LAN connector WOL1. If you have installed an internal fax/modem expansion card, connect it to the wake on modem connector WOM1.
5. If you have installed a Sound Blaster PCI audio expansion card, you can connect it to the SB-Link connector SIDEBAND1. SB-Link solves some of the problems that can occur with the audio system when you play legacy DOS real-mode games with a PCI Sound Blaster.

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.

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.

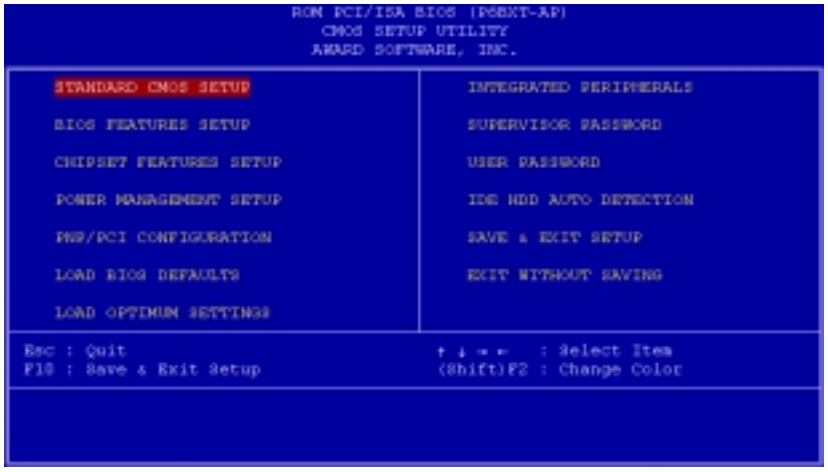
Starting the Setup Utility

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

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

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

Standard CMOS Setup 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.

Hard Disks ***Defaults: None***

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

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

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

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

Floppy 3 Mode Support ***Default: Disabled***

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

Video ***Default: EGA/VGA***

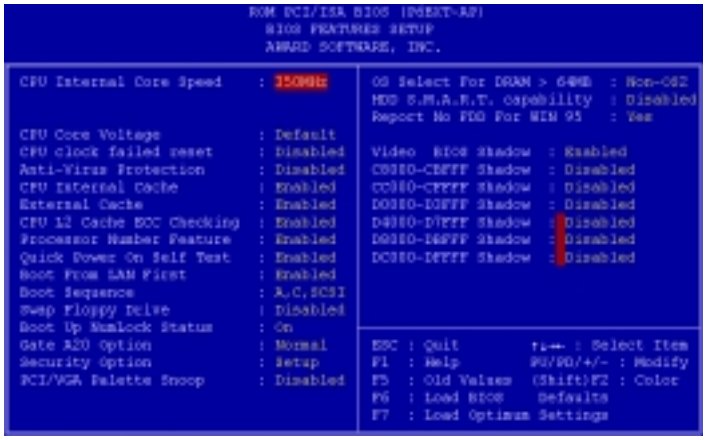
This item defines the video mode of the system. This mainboard has a built-in VGA graphics system so you must leave this item at the default value.

Halt On ***Default: All Errors***

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

BIOS Feature 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.



CPU Internal Core Speed ***Default: 350MHz***

This item should be installed with the rated internal core speed of the Pentium-II class processor that is installed in your system. The setup utility will then automatically configure the system with the correct host bus speed, and bus frequency multiplier.

If you set this item to Manual, two new items will appear: *CPU Host BUS Frequency* and *CPU Core:Bus Freq. Multiple*. You can use these two items to manually configure the mainboard for the speed of the processor. The values

available in these two items will vary, according to the kind of Pentium-II processor that is installed.

***Note**: Using the three items above, you can configure the mainboard so that it runs a processor faster than the rated clock speed. We strongly recommend that you do not overclock the processor. Overclocking can introduce excess heat, recurring instability, or even complete failure in your system.*

CPU Core Voltage ***Default: Default***

This item can be used to a set a core voltage for different kinds of processors. Leave this item at the default value and your system will automatically assign the correct voltage.

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.

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

When "Anti-Virus Protection" 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 Enabled as a default. You might need to disable it so that you can install an operating system. We recommend that you enable Anti-Virus Protection as soon as you have installed your disk with an OS.

CPU Internal Cache ***Default: Enabled***

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

External Cache ***Default: Enabled***

Most of the processor cartridges that can be installed in this mainboard have (level 2) external cache memory (the Celeron-266 MHz is an exception). Only enable this item if your processor cartridge has external cache memory.

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

This item can be used to enable ECC (Error Checking Code) for the level-2 cache memory. We recommend that you leave this item at the default value Enabled.

Processor Number Feature ***Default: Enabled***

Some new procesosrs (the Pentium-III) are installed with a unique procesosr identification number. If you disable this item, the number will be suppressed so that it cannot be read by other systems on the network.

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.

Boot from LAN First ***Default: Enabled***

This items lets you specify that the system will try to load an operating system from a network server first, before booting from any of the local drives.

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

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

Swap Floppy Drive ***Default: Disabled***

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

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

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

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

This option provides compatibility with older software written for the 286 processor. Leave this item at the default value Normal.

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

This mainboard supports memory modules that have error checking using a parity bit, or using ECC (Error Correction Code). If your memory modules have this function, you can enable this feature for greater reliability.

Security Option ***Default: Setup***

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

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

This item can help overcome problems that are caused by some non-standard VGA cards. We recommend that you leave this item at the default value Disabled.

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

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

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

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

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

When the item is enabled, the IRQ-6 can be reserved for another divice if you don't install FDD.

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

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

XXXXX-XXXXX Shadow ***Default: Disabled***

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

Chipset Features Option

This option displays a table of items that define critical timing parameters of the mainboard components including the CPU, 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.

Auto Configuration ***Default: Enabled***

Leave this item at the default value Enabled. Auto configuration installs preset default values for some of the timing parameters for EDO RAM memory.

EDO DRAM Speed Selection ***Default: 60ns***

Defines the speed of EDO DRAM chips. The default value of 60ns ensures reliability if you have slower chips installed.

EDO CASx# MA Wait State ***Default: 2***
EDO RASx# Wait State ***Default: 1***

These items set the timing of the Column Address Strobe and Row Address Strobe for EDO RAM. We recommend that you leave these items at the default.

SDRAM RAS-to-CAS Delay ***Default: 3***
SDRAM RAS Precharge Time ***Default: 3***
SDRAM CAS latency Time ***Default: 3***

These items set the timing of the Column Address Strobe and Row Address Strobe for SDRAM. We recommend that you leave these items at the default.

DRAM Data Integrity Mode ***Default: Non-ECC***

Use this item to define if your memory supports ECC (Error Correction Code) error checking.

System BIOS Cacheable ***Default: Disabled***
Video BIOS Cacheable ***Default: Disabled***

These items allow the system BIOS and Video BIOS to be cached for faster performance. We recommend that you leave these item at the default values.

8 Bit I/O Recovery Time ***Default: 1***
16 Bit I/O Recovery Time ***Default: 1***

These two items set timing parameters for 8-bit and 16-bit ISA expansion cards. We recommend that you leave these items at the default value 1.

Memory Hole at 15M-16M ***Default: Disabled***

This item can be used to reserve memory space for some ISA cards that require it. We recommend that you leave this item at the default value Disabled.

Passive Release ***Default: Enabled***

When enabled. CPU to PCI bus accesses are allowed during passive release.

Delayed Transaction ***Default: Disabled***

If the chipset has an embedded 32-bit write buffer to support delay transaction cycles, you can enable this item to provide compliance with PCI Ver. 2.1 specifications. We recommend that you leave this item at the default value.

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

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.

On Board Sound ***Default: Enabled***

Use this item to enable or disable the sound system that is integrated on this mainboard.

On Board Modem ***Default: Disabled***

Use this item to enable or disable the fax/modem that is integrated on this mainboard.

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

When this item is enalbed, it can be used to detect the clock whether you install the DIMM/PCI on your mainbord or not in order to avoid the clock interference.

Spread Spectrum ***Default: Disabled***

When this item is enabled, it modulates the system clock generator pulses and can significantly reduce the EMI (electrical magnetic interference) that your

system generates. However, it can introduce timing problems for some clock sensitive devices. We recommend that you leave this item at the default value.

Current CPU Temperature, Current System Temp., etc.

These items on the right side of the Chipset Features Setup screen can be used to set hardware monitoring parameters for your system.

Power Management Setup Option

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

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 restart the timeout counters.

Wake Up Calls

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

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

If you set this item to S3 will enter the STR (Suspend to RAM) mode.

Power Management ***Default: User Define***

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

Video Off Method ***Default: DPMS***

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

Video Off After ***Default: Standby***

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

Modem Use IRQ ***Default: 3***

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

Doze Mode ***Default: Disabled***

If you have selected User Define for the Power Management item, you can set this item to a timeouts from 10 seconds to 4 hours. The system will go into the power-saving doze mode if the timeout passes without any system activity.

Standby Mode ***Default: Disabled***

If you have selected User Define for the Power Management item, you can set this item to a timeouts from 10 seconds to 4 hours. The system will go into the power-saving standby mode if the timeout passes without any system activity.

Suspend Mode ***Default: Disabled***

If you have selected User Define for the Power Management item, you can set this item to a timeouts from 10 seconds to 4 hours. The system will go into the power-saving suspend mode if the timeout passes without any system activity.

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.

Throttle Duty Cycle ***Default: 62.5%***

This item defines what percentage of time the system will halt the processor clock when it is in power-saving mode.

VGA Active Monitor ***Default: Disabled***

When this item is Enabled. It means that any activity on the active monitor will restart the standby mode timeout counter.

PCI-VGA Act-Monitor ***Default: Disabled***

When this item is Enabled, it means that any activity on the active monitor will restart the standby mode timeout counter.

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

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

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

If this item is enabled, it allows the system to resume from a software powerdown whenever there is an incoming call to an installed fax/modem. For this feature to operate, the fax/modem card must be connected to the Wake On Modem connector on the mainboard.

Wake Up On PCI PME# ***Default: Enabled***

If this item is enabled, it allows the system to enable the LAN Power On Function when you use the PCI Ver 2.2 PCI LAN card.

Resume by Alarm ***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 8 Break Suspend ***Default: Disabled***

When this item is enabled, any activity through the system interrupt request line 8 can reset power-saving mode timeouts to zero, or resume the system from a power saving mode. IRQ 8 is normally used by the system realtime clock.

IRQ[3-7, 9-15],NMI ***Default: Disabled***

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the system interrupts (IRQs) and the non-masked interrupt (NMI).

Primary IDE 0	***Default: Disabled***
Primary IDE 1	***Default: Disabled***
Secondary IDE 0	***Default: Disabled***
Secondary IDE 1	***Default: Disabled***
Floppy Disk	***Default: Disabled***

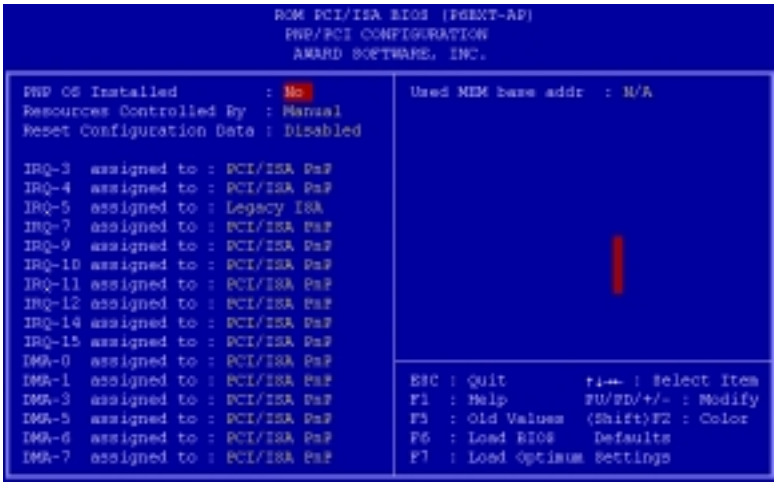
When these items are enabled, the system will restart the power-saving timeout counters when any activity is detected on any of the drives or devices on the primary or secondary IDE channels, or any of the drives connected to the floppy disk drive controller

Serial Port	***Default: Enabled***
Parallel Port	***Default: Disabled***

When these items are enabled, the system will restart the power-saving timeout counters when any activity is detected through the system's serial ports, or the parallel port.

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 set to Yes you can use

the Device Manager utility in the operating system to make changes to the configuration of expansion cards.

Resources Controlled By ***Default: Manual***

You should leave this item at the default Manual. If you find that you cannot get a particular expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and defining the characteristics of the card in the new items which appear.

In the default Manual, the display will list a series of items that allow you to define the assignments of the system interrupt lines (IRQs) and Direct Memory Access (DMA) channels. As a default, these items are set to PCI/ISA PnP. If you install an ISA-bus card that does not support PNP, and it requires a special IRQ and DMA, you can modify the list of assignments. Change the values of the IRQ and DMA that are required to Legacy ISA.

Reset Configuration Data ***Default: Disabled***

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

Used MEM base addr ***Default: N/A***

This item lets you choose 6 different types UMB (Upper Memory Block) base address and then you can set the memory size from 8K to 64K.

Load BIOS Defaults Option

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

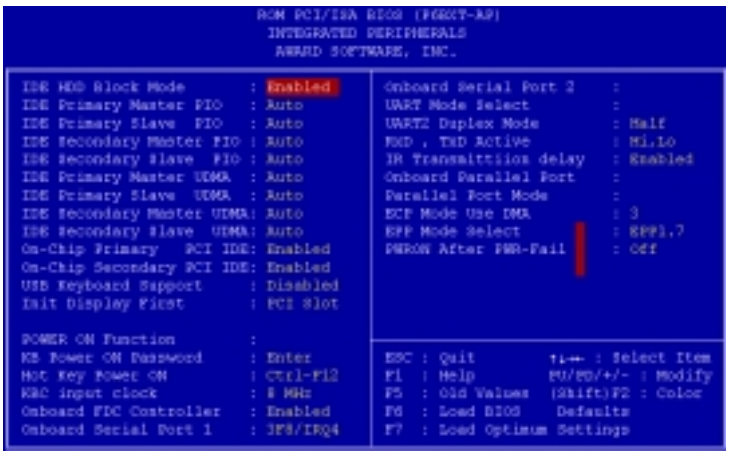
Load Optimum Settings Option

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

you only want to install setup defaults for a specific option, select and display that option, and then press the **F7** key.

Integrated Peripherals Option

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



IDE HDD Block Mode ***Default: Enabled***

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

IDE Primary Master PIO ***Default: Auto***
IDE Primary Slave PIO ***Default: Auto***
IDE Secondary Master PIO ***Default: Auto***
IDE Secondary Slave PIO ***Default: Auto***

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

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

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

On-Chip Primary PCI IDE ***Default: Enabled***
On-Chip Secondary PCI IDE ***Default: Enabled***

These items allow you to enable or disable the primary and secondary IDE channels built into this mainboard.

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

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

Init Display First ***Default: PCI Slot***

Use this item to define if your graphics adapter is installed in one of the PCI slots, or if you have installed an AGP graphics adapter into the AGP slot.

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. If you set it to Hot Key, you can then use the item Hot Key Power On to choose which hot keys are installed.

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

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

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

Use this item to 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***

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

UART Mode Select ***Default: IrDA***

This item defines the operation of serial port 2. In the Normal setting, serial port 2 is assigned to the external COM2 connector. If you have installed an optional infrared port, you must change the setting of this item to one of the Infrared settings (usually IrDA or FIR). These settings will disable the external COM2 serial port connector and assign the resources to the infrared device. If you have selected an IR mode, two items appear, RxD, TxD Active and IR Transmission delay, which let you set the duplex and transmission parameters for the Infrared port. See the documentation of your infrared port for help on these items.

UART2 Duplex Mode ***Default: Half***

This item lets you choose two types Half Duplex/Full Duplex Duplex Mode.

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

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

Parallel Port Mode ***Default: SPP***

This item defines the operation of the parallel port. 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 change the parallel port to EPP or ECP, new items appear to let you configure the EPP and ECP modes.

AC Resume After PWR-Loss ***Default: Off***

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

Supervisor and User Password Settings

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

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

IDE HDD Auto Detection Option

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

Setup will check for two devices on the primary IDE channel and then two devices on the secondary IDE channel. At each device, the system will flash an N in the dialog box. Press **Enter** to skip the device and proceed to the next device. Press **Y**, then **Enter** to tell the system to auto-detect the device.

Save And Exit Setup Option

Highlight this item and press **Enter** to save the changes that you have made in the setup utility and exit the setup program. When the Save and Exit dialog box appears, press **Y** to save and exit, or press **N** to return to the setup main menu.

Exit Without Saving Option

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

Chapter 4: Software

About the Software

The software for this mainboard is supplied on a CD-ROM. The disk has some folders that can be used by many different mainboards, for example the **UTILITY** and **PERIPHERAL** folders. Some folders can only be used by mainboards which have certain brands of chipsets, for example the **INTEL** and **VIA** folders. In addition, software that is specifically intended for one kind of mainboard is stored in a folder with the name of that board. The folder for this mainboard is stored in the **P6BXT-A+** folder.

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

Folders for this Mainboard

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

Utility Folder

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

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

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

Peripheral Folder

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

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

P6BXT-A+ Folder

The P6BXT-A+ folder has the following sub-folders:

- **AUDIO:** This folder is empty. Please use the audio software stored in the folder CMI8338 on the CD-ROM.
- **INTEL-IDE:** Alternative Bus mastering UltraDMA IDE drivers for systems that use Intel chipsets.
- **Modem:** The folder is empty. A readme file directs you to alternate location with the required software.
- **MONITOR:** Software for hardware monitoring for systems that have installed the GL520SM monitoring chip.
- **TRIONES-IDE:** Bus mastering UltraDMA IDE drivers for Windows 95/98/NT.

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

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

Running the Support CD-ROM

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

Utility Folder Installation Notes

Award Flash Memory Utility

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

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

DirectX5 Drivers

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

PC-Cillin Anti-Virus Utility

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

CMI8X38 Folder Installation Notes

Audio Software

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

DOS Installation

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

Windows 95/98 Installation

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

Windows NT 4.0 Installation

1. Press the *"Start"* button.
2. Move the highlight to *"Settings"* and select *"Control Panel".*
3. Double click on the *"Multimedia"* icon.
4. Select the *"Devices"* tab.
5. Press the *"Add..."* button.
6. Select item *"Unlisted or Updated Driver"* in the *"List of Drivers"* list box.
7. Specify the path to the PCI audio NT drivers.
8. Select *"C-Media CM8738 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.

Mainboard(P6BXT-A+) Installation Notes

Audio Software

This folder is empty. See the instructions below for installing the audio software from the CMI8338 folder.

Intel Bus Master IDE Drivers

This utility was developed for updating several Windows 95 INF files so that the latest Intel chipset components can be recognized or configured properly in the system.

Note: *This utility is designed for and tested with Windows 95 only.*

System Requirements

This section describes the system requirements for the Windows 95 INF Update Utility for Intel Chipsets program:

11. The system must contain a supported Intel processor and chipset configuration:
12. Ensure that a mouse is connected to the system.
13. One of the following versions of Windows 95 must be installed on the system prior to running utility program.
    Windows 95 4.00.950 (Retail)
    Windows 95 4.00.950b (OSR2 without USB Supplement)
    Windows 95 4.00.950b (OSR2.1 with USB Supplement)
    Windows 95 4.00.950c (OSR2.5 with or without USB Supplement)

To run the software execute the file SETUP.EXE.

System Monitoring Utility

This software is for use by mainboards that have the GL520SM system monitoring chip. Software is provided for Windows 95/98/NT. Open the WIN95/98 folder or the WINNT folder and then run the SETUP program.

Monitor Sub-folder

The software in this folder provides a graphical interface to the hardware monitoring feature of this mainboard. The software will run under Windows 95/98 or Windows NT4.0. Follow the installation instructions contained in the file INSTALL.TXT.

Triones Bus Master IDE Drivers

Drivers are provided for Windows 95/98, Windows NT 3.5, and Windows NT 4.0.

For Windows 95/98

Log on to the folder and then run the SETUP program.

For Windows NT 3.5

1. From the Program Manager, double click on *"Windows NT Setup"* in the Main group.
2. Select *"Options/Add/Remove SCSI Adapters..."* and Click on Add.
3. The *"Select SCSI Adapter Option"* dialog appears; select *"Other (Requires a disk from a hardware manufacturer)"* from the *"Adapter:"* list box.
4. Next, the *"Insert Diskette"* dialog box appears; browse to the correct folder on the support CD-ROM.
5. Next, the *"Select OEM Option"* dialog box appears; select *"PIIX/PIIX3 Bus Master EIDE/ATAPI"* and click *"OK."*
6. Next, the *"Select SCSI Adapter Option"* dialog box appears; click on the *"Install"* button in the dialog box. If installation is successful, the *"SCSI Adapter Setup"* dialog box reappears, and *"PIIX/PIIX3 Bus Master EIDE/ATAPI"* is listed. That means the driver is installed.
7. Reboot your system to load the driver.

For Windows NT 4.0

1. Insert the Support Disk into the CD-ROM drive.
2. Open *My Computer*, *Control Panel, SCSI Adapters, Drivers*.

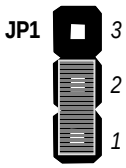
3. Select *"IDE CD-ROM (ATAPI 1.2)/Dual-channel PCI IDE Controller"* then click *"Remove"* to remove it. Click *"Add..." then "Have Disk...".*
4. Browse to the appropriate folder on the CD-ROM:, then click *"OK".*
5. Select *"PIIX Bus Master EIDE/ATAPI",* then click *"OK".*
6. Click *"Continue".* Click *"Yes"* to restart your computer to use the bus master driver.

Appendix 1: Quick Jumper Setting Reference

JP1: Clear CMOS Memory Jumper

Use this 3-pin jumper to clear the contents of the CMOS memory.

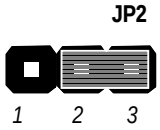
Function	Jumper Cap
Normal Operation	Short pins 1-2
Clear CMOS	Short pins 2-3



JP2: Keyboard Power On Jumper

Use this 3-pin jumper to enable a keyboard power on.

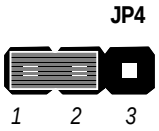
Function	Jumper Cap
Disable keyboard power on	Short pins 1-2
Enable keyboard power on	Short pins 2-3



JP4: System Bus Frequency Select Jumper

Use this jumper to select an auto-detected system bus frequency or force a frequency of 100 MHz

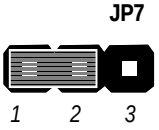
Function	Jumper Cap
Normal	Short pins 1-2
Force 100 MHz	Short pins 2-3



JP7: Flash BIOS Enable/Disable Jumper

Use this 3-pin jumper to enable or disable a flash BIOS.

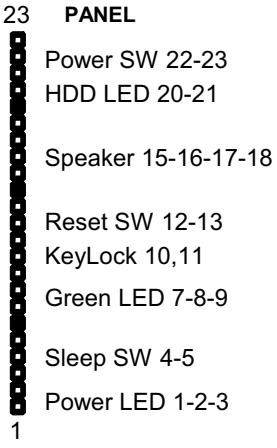
Function	Jumper Cap
Enable flash BIOS	Short pins 1-2
Disable flash BIOS	Open pins 2-3



PANEL: Case Switches and Indicators

Use the Panel connector to implement the switches and indicators on the system case.

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



Addendum

This is to inform you that the SPDIF header on the board is an optional item. If you get the board that does not has the SPDIF header that means your board does not provide the SPDIF function.