

## Chapter 2: Installation

### Before You Begin

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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.

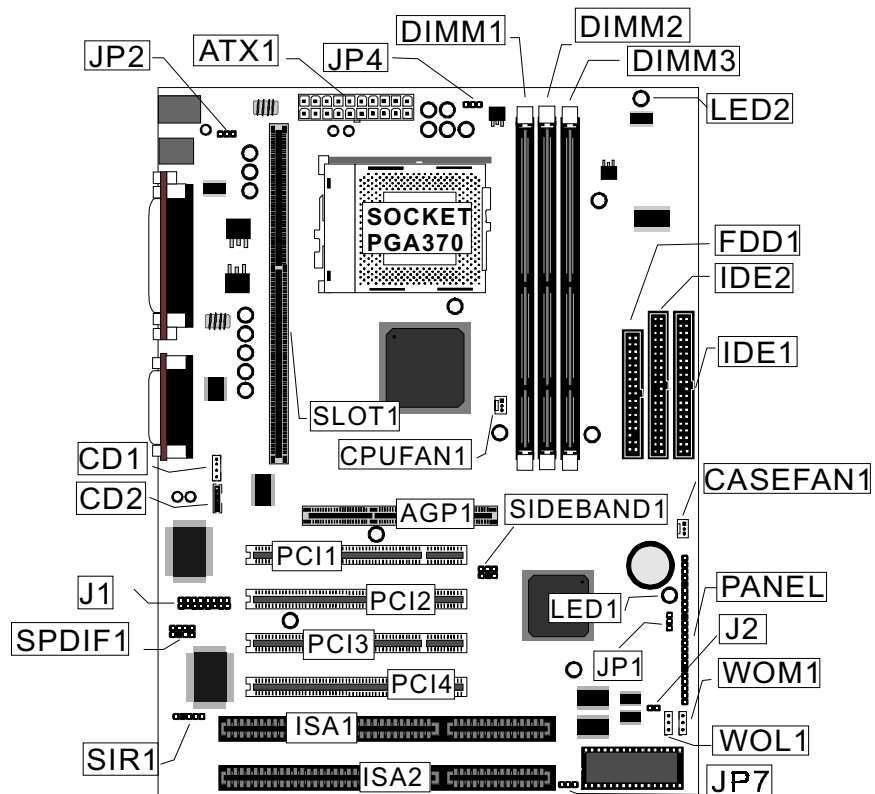
#### ***Choosing a Case***

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

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.

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



### ***Key to Mainboard Components***

<b>Component</b>	<b>Description</b>
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)
SIDEHAND1	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

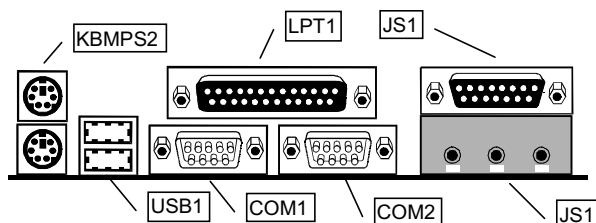
#### ***\*LED1***

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

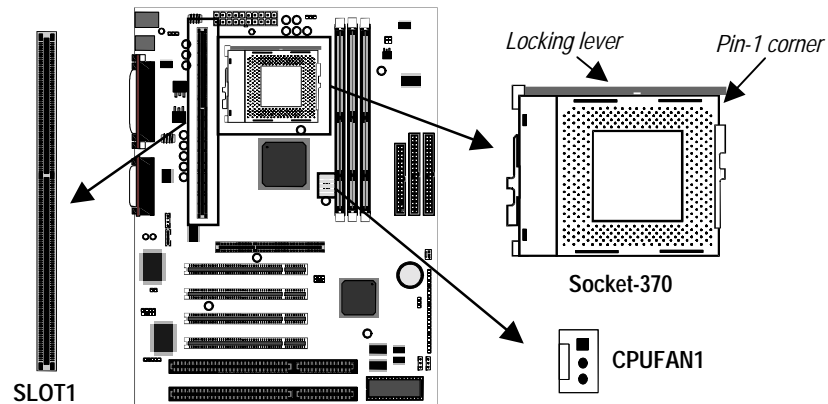
Prepare the main board by carrying out the following steps;

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

### Install the Processor

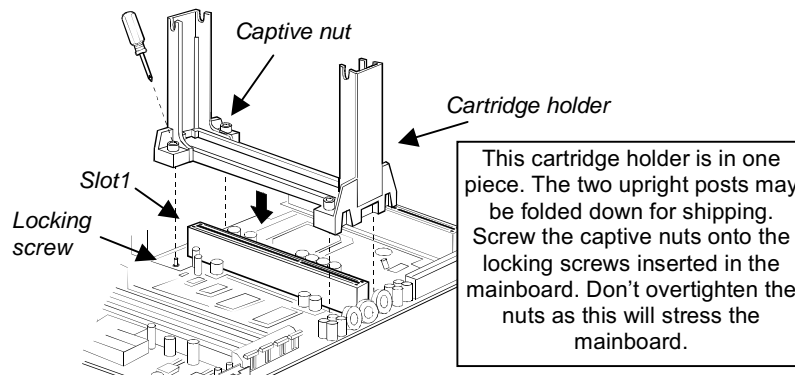
This board has a Slot1 for a processor cartridge and a socket-370 for a PPGA Celeron processor. You can install one processor cartridge or one PPGA Celeron. You cannot install both a slot-1 cartridge and a PPGA Celeron.

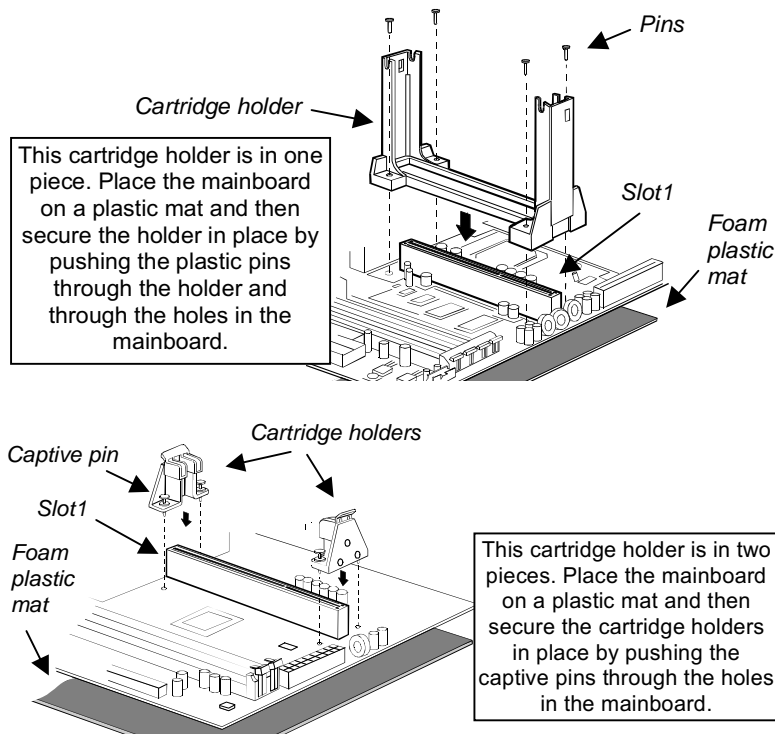
### **Locate SLOT1, Socket-370 and CPUFAN1**



### **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.





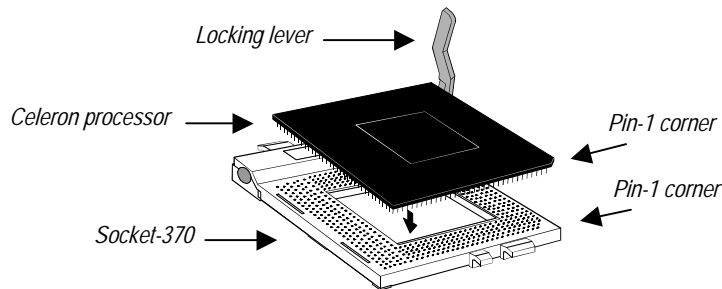
Some cartridge holders also include a support bar for the processor heat sink. This bar installs to the side of the cartridge holder. Some processor cartridges have support struts for the heat sink which lock into the support bar. The documentation supplied with the processor shows how to do this.

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 processor has a cooling fan installed, connect the cable from the cooling fan to CPU FAN1.

### ***Install the Memory Modules***

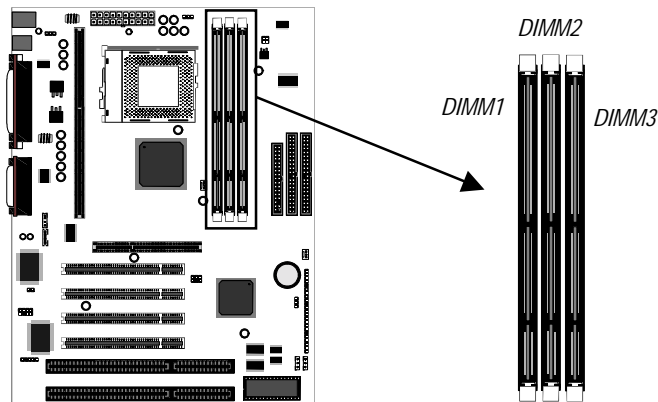
For this mainboard, you must use 168-pin 3.3V non-buffered Dual In-line Memory Modules (DIMMs). The memory chips must be standard or registered SDRAM (Synchronous Dynamic Random Access Memory). The memory bus can run at 66 MHz or 100 MHz. If your processor operates over a 100 MHz system bus, you must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

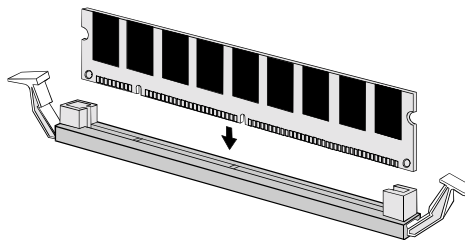
maximum capacity of each module is 128K. if the modules use registered SDRAM, the maximum capacity is 256K.

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 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.



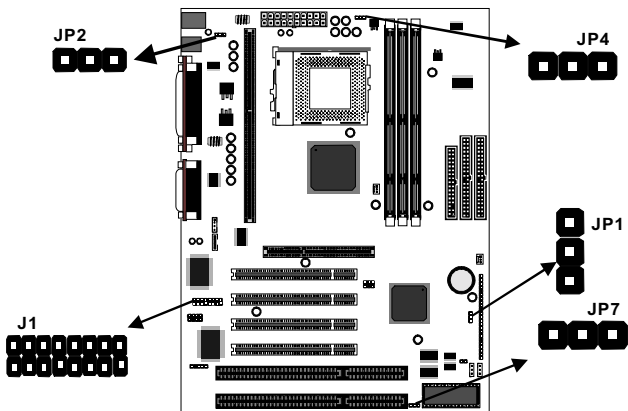
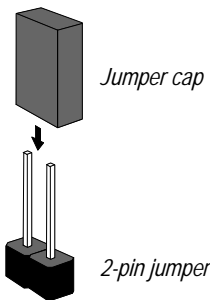


Check all the Jumper Settings

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

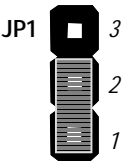
A Note on Jumpers

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.

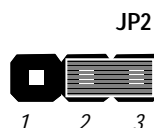


Function	Jumper Cap
Normal Operation	Short pins 1-2
Clear CMOS	Short pins 2-3

### ***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.

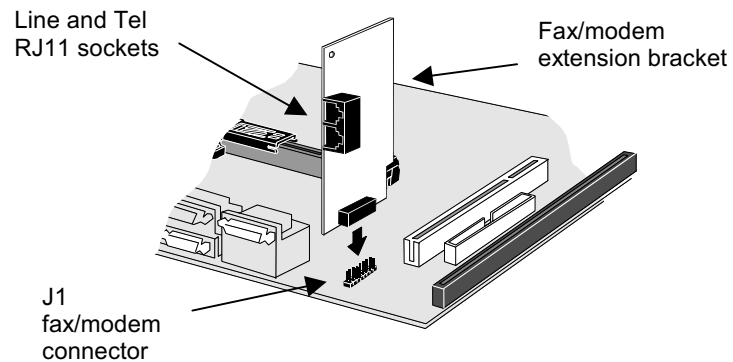
Function	Jumper Cap
Enable flash BIOS	Short pins 1-2
Disable flash BIOS	Open pins 2-3



### ***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

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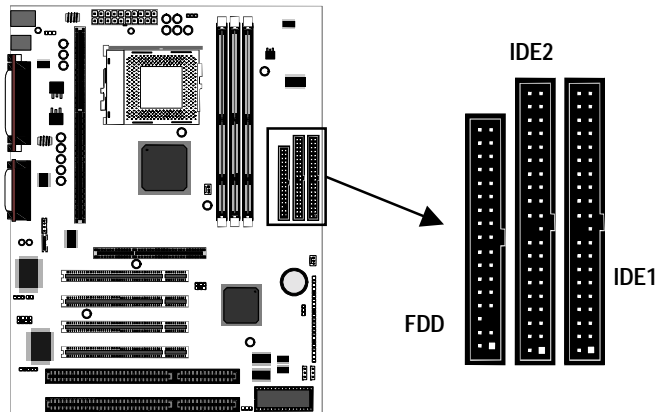
Use the screws and mounting brackets supplied with your system case to install the mainboard. Follow the instructions provided by the case manufacturer.

### **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.

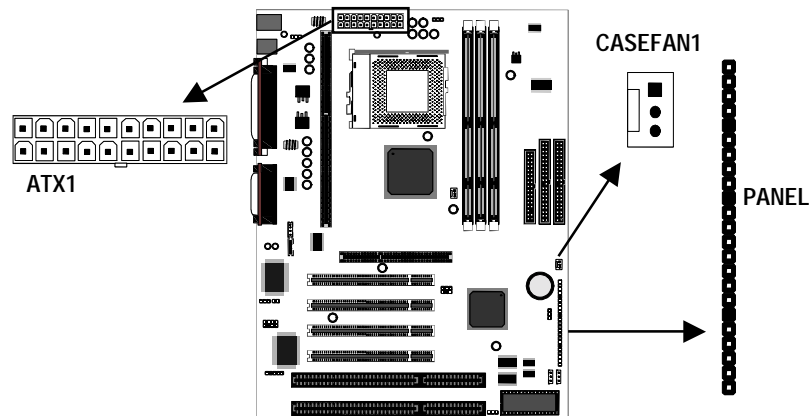
#### **IDE & FDD Drives**



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

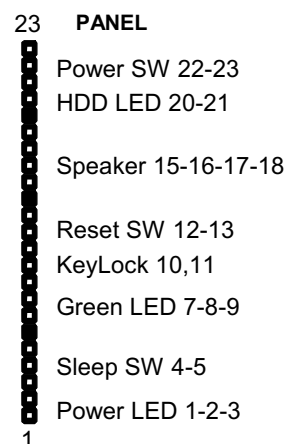
devices. If you connect two devices, you must configure one device as Master, and one device as Slave. See the documentation provided with the devices for information on this. To install more drives, use another IDE cable and connect one or two devices to IDE2.

### **Power Connector, Panel Connector & Case Fan**

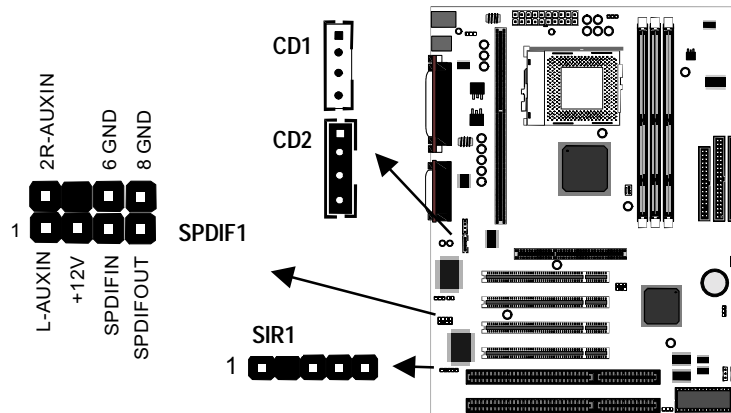


1. Locate the power connector ATX1. Connect the power cable from the power supply unit to ATX1. The connector is keyed so that it can only be installed correctly.
2. If your system case has a built-in cooling fan, you can supply power to the fan from the case fan power connector CASEFAN1. Connect the 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



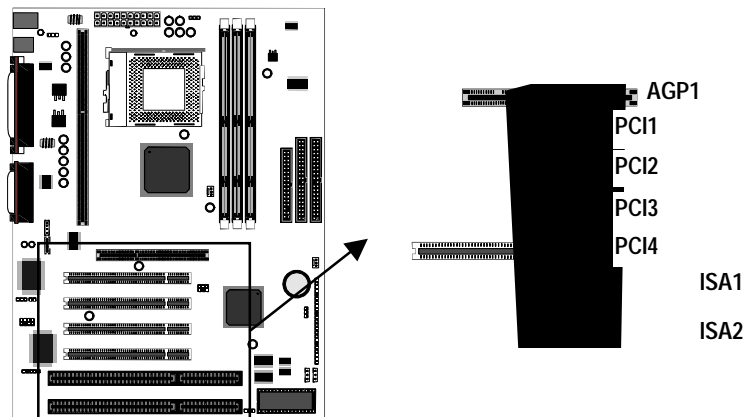
1. If you want to install an optional Serial Infrared Port, connect the cable from the optional IR port to the SIR1 connector on the mainboard.

**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.

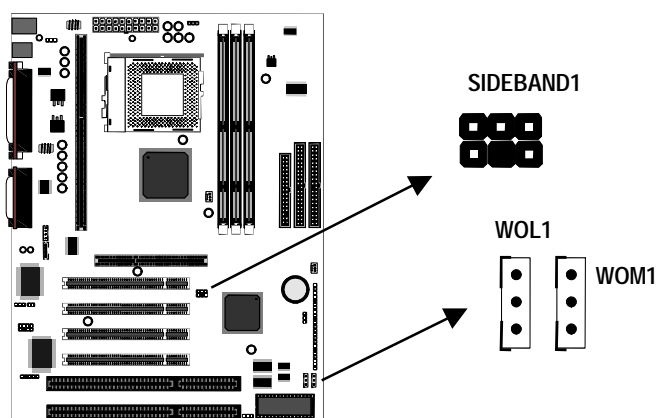


1. The AGP slot can be used by a graphics adapter with an AGP edge connector. This mainboard must be installed with a graphics adapter. You do not need to use an AGP adapter. You can also install a graphics adapter in a PCI slot or even an ISA slot.
2. If you have 32-bit PCI expansion cards, install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



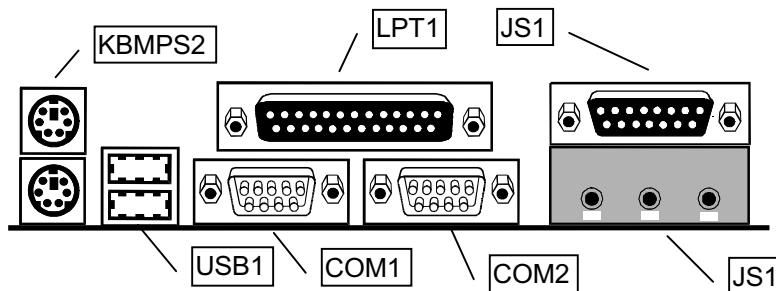
4. The mainboard has wake up connectors for an optional network adapter or an optional internal fax/modem card. If you have installed a network adapter expansion card, connect it to the wake on LAN connector WOL1. If you have installed an internal fax/modem expansion card, connect it to the wake on modem connector WOM1.
5. If you have installed a Sound Blaster PCI audio expansion card, you can connect it to the SB-Link connector SIDE BAND1. 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

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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.