

Chapter 2: Installation

Before You Begin

Before you begin to install your P6BA-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 P6BA-A+ mainboard has a power connector for an ATX power supply. Ensure that your system is installed with an ATX power unit.

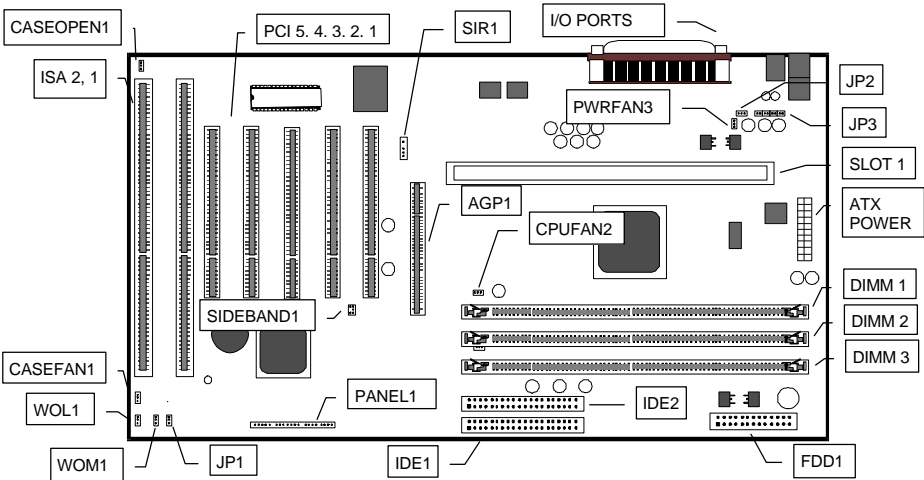
Some features on the mainboard are implemented by cabling connectors on the mainboard to indicators and switches on the system case. Ensure that your case supports all the features required.

The P6BX-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.

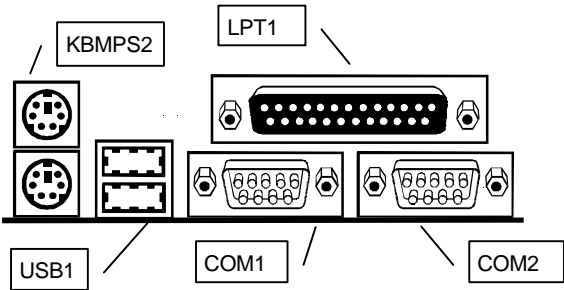
The mainboard uses a standard ATX two-level layout for the I/O ports. Ensure that your case has an I/O template that supports this arrangement of I/O ports.

Mainboard Guide

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



Side View of the I/O Ports



Key to Components

Component	Description
COM1	External serial port 1/3
COM2	External serial port 2/4
LPT1	External parallel Port
KBMPS2	External PS/2 port for keyboard (lower port)
	External PS/2 port for pointing device (upper port)
USB1	Two external universal serial bus ports
JP1	Clear CMOS memory jumper pins
JP2	Jumper pins for keyboard power on switch

JP3	Jumper pins for keyboard/mouse enable	
CASEFAN1	Power connector for internal case-mounted cooling fan	
CPUFAN2	Power connector for Pentium-II cartridge cooling fan	
PWRFAN3	Power connector for ATX power unit cooling fan	
ATX1	Power connector for ATX power supply	
SLOT 1	Slot1 for Pentium-II processor cartridge	
DIMM 1/2/3	Slots for memory modules	
IDE 1/2	Connectors for primary and secondary IDE channels	
FDD1	Connector for floppy disk drive	
AGP1	Slot for advanced graphics port (AGP) display adapter	
SIR1	Connector for standard infrared device SIR	
FIR1 (optional)	Connector for fast infrared device FIR	
SIDEHAND1	SB-Link connector (for Creative sound card use only)	
PANEL1	Case feature connectors:	
	Pins 1 to 3	Power indicator LED
	Pins 4 to 5	Sleep switch
	Pins 7 to 9	Suspend indicator LED
	Pins 10 to 11	Case key lock
	Pins 12 to 13	System reset switch
	Pins 15 to 18	System speaker connector
	Pins 20 to 21	Hard disk drive indicator LED
	Pins 22 to 23	Power On/Off switch
WOM1	Connector for modem wake-up cable	
WOL1	Connector for network wake-up cable	
CASEOPEN1	Detects when the case is opened	
ISA 1/2	Two slots for 8/16-bit ISA expansion cards	
PCI 1/2/3/4/5	Five slots for 32-bit PCI expansion cards	

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.

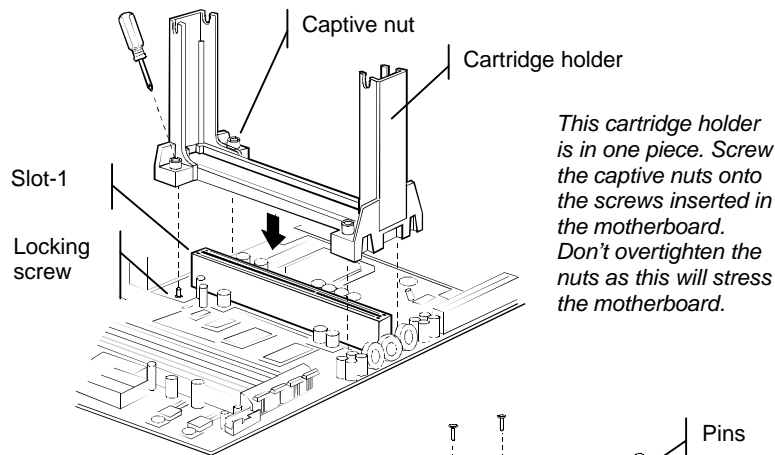
Preparing the Mainboard

Prepare the mainboard by installing the supplied Pentium-II retention module. Then install the Pentium-II cartridge according to the instructions supplied with the cartridge. Complete the processor installation by installing the supplied heat-sink support, and connecting the heat sink power cable to the mainboard connector.

After the processor cartridge is installed, insert your memory modules into the DIMM sockets on the mainboard. Finish the mainboard preparation by checking that all the mainboard jumpers are at the correct setting.

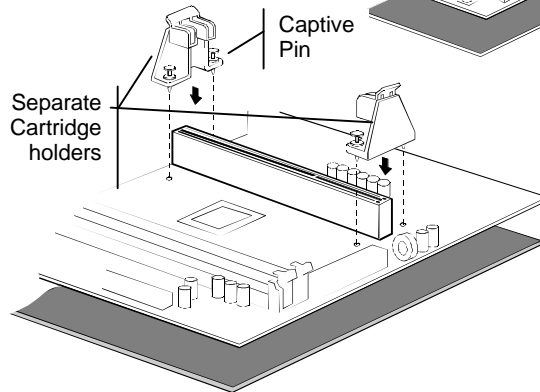
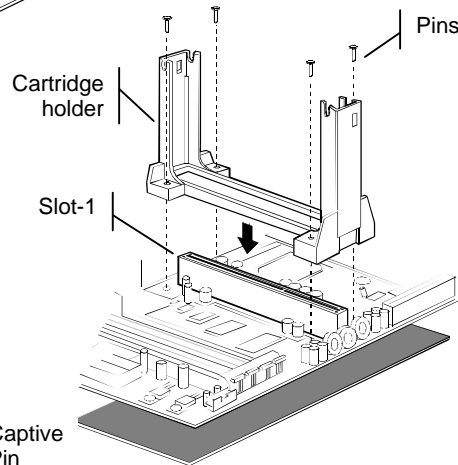
Install the Pentium-II Processor

1. This motherboard is supplied with a cartridge holder for the Pentium-II or Celeron processor cartridge. Several different kinds of cartridge holders are available. The illustration below shows how three of the most typical holders are installed.



This cartridge holder is in one piece. Screw the captive nuts onto the screws inserted in the motherboard. Don't overtighten the nuts as this will stress the motherboard.

This cartridge holder is in one piece. Place the motherboard on a foam plastic mat and then secure the holder in place by pushing the plastic pins through the holder and through the holes in the motherboard.



This cartridge holder is in two pieces. Place the motherboard on a foam plastic mat and then secure the holder in place by pushing the captive plastic pins through the holes in the motherboard.

2. Some cartridge holders also include a support bar for the heat sink. This bar installs to the side of the cartridge holder. Some Pentium-II processors have support struts for the heat sink which lock into the support bar. The documentation with the Pentium-II processor shows how to do this.
3. Follow the instructions given with your Pentium cartridge to install the processor cartridge into the cartridge holder.
4. If necessary, connect the power cable from the cartridge cooling fan to the mainboard CPU fan power supply CPUFAN.

***Note:** The P6BA-A+ does not use jumpers to set the parameters for your processor, such as the core voltage, the clock multiplier, and so on. You can set the parameters for the processor in firmware using the system BIOS. After your system is installed, the BIOS will automatically detect the kind of processor that is installed and implement the correct setting for it. See the next chapter for details.*

Install the Memory Modules

For this mainboard, you must use 168-pin Dual In-line Memory Modules (DIMMs) which are installed with SDRAM (Synchronous Dynamic Random Access Memory) (SDRAM). This mainboard can support 100MHz SDRAM and also 66MHz SDRAM. We recommend that you use 100MHz SDRAM with PC/100 compatibility so that your system can run at the maximum speed.

The DIMMs can hold memory capacities from 8 MB through to 128 MB. You can install one, two or three DIMMs in any combination. up to 384 MB of standard SDRAM. Install the first DIMM in the DIMM1 socket. If you install a second or third DIMM, install them in DIMM2 and DIMM3 respectively.

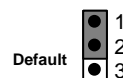
1. The SDRAM sockets are keyed with notches and the DIMMs are keyed with cut-outs so that they can only be installed correctly. Check that the cut-outs on the DIMM edge connector matches the notches in the SDRAM socket.
2. Push the latches on each side of the SDRAM socket down.
3. Install the DIMM into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

Check the Jumper Settings

This mainboard only has three jumpers. For most systems the factory defaults will be the correct configuration. Before you install the mainboard, take a moment to check that the three jumpers are at the correct setting.

1. Locate the Clear CMOS jumper JP1. Ensure that the jumper cap is placed on pins 1-2. If you ever need to clear the system CMOS memory, you can do this by moving the jumper cap to short pins 2-3 for a few seconds. When you clear the CMOS memory, the system must be turned off and the power cord disconnected.

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



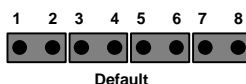
2. Locate the Keyboard Power On Switch jumper JP2. When this jumper is enabled, it allows you to create “hot keys” on your system keyboard that will act as a power On/Off switch. See the Integrated Peripherals Option in the Setup chapter for information on installing this function. As a default, the keyboard power switch is enabled. When you have enabled Keyboard Power On, you must ensure that the 5V standby current of the power supply is more than 200 mA.

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



3. Locate the Keyboard/Mouse jumper JP3. This jumper can be used to disable the external PS/2 ports. As a default, the PS/2 ports are enabled.

Function	Jumper Cap Position			
	Pins 1-2	Pins 3-4	Pins 5-6	Pins 7-8
Keyboard/Mouse Enable	Short	Short	Short	Short
Keyboard/Mouse Disable	Open	Open	Open	Open



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 to the Mainboard

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 cables are usually keyed so that they can only be installed correctly on the device connector. There is no key on the mainboard connector however, so you must manually ensure that the cable is installed correctly. 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.

Part One – Internal Connections

1. Locate the floppy diskette drive connector FDD1. Use the ribbon cable to connect the floppy diskette drive 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. If you need to install more drives, obtain another IDE cable and connect one or two devices to IDE2 following the same procedure as you used with IDE1.
3. Locate the bank of switch and indicator connectors PANEL1. These connectors provide control functions to your system case. Use the table below to make the connections.

Pins	Function
1 to 3	Power indicator LED
4 to 5	Sleep switch
7 to 9	Suspend indicator LED
10 to 11	Keyboard lock
12 to 13	System reset switch
15 to 18	System speaker connector
20 to 21	Hard disk drive indicator LED
22 to 23	Power On/Off switch

1+	2+	3-	4	5	7+	8+	9-	10	11	12	13	15	18	20+21-	22	23
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Power LED		Sleep SW			Suspend LED		KB Lock		Reset SW			Speaker		HDD LED		Power SW

4. Locate the ATX POWER connector. Connect the cable from your system ATX power supply into the connector. The connector is keyed so that it can only be installed correctly.
5. Install expansion cards into the expansion slots. The system will not operate without a display adapter. If you have an AGP display adapter, you can use the dedicated AGP slot. You can use the two ISA slots, and the five PCI slots to install a variety of expansion cards in your system, such as a sound card, a network adapter, a SCSI host adapter, an internal modem card, and so on. ISA slot 1 and PCI slot 5 are shared. This means that you can use one of these slots, but not both of them at the same time.

Part Two – Optional Internal Connections

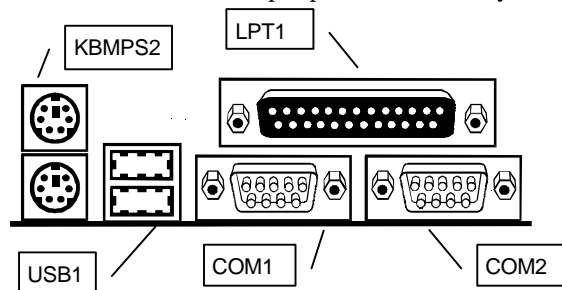
You may install optional items such as a serial or fast infrared port. If you have installed a network adapter or an internal modem, you can use the wake-up connectors so that your system will automatically resume from a power-saving mode when there is incoming network or modem traffic.

1. Locate the infrared connector SIR1 (Standard Infrared) and FIR1 (Fast Infrared). Determine if your infrared port is SIR or FIR and use the cable provided with the

- infrared device to connect to the correct connector. Secure the infrared device to the appropriate space in the system case.
2. If you have installed a network adapter, connect the cable from the network adapter to WOL1. This will enable your system to resume from a power saving mode when there is network traffic. When you use the LAN wake up function, you must make sure that the 5V standby current from the power supply is more than 700mA.
 3. If you have installed an internal modem, connect the cable from the internal modem to WOM1. This will enable your system to resume from a power saving mode when there is modem traffic.
 4. If you have installed a Creative PCI Sound Blaster card, you can cable it to the SB-Link connector SIDEBAND1. The SB-Link connector provides a PCI-compatible solution that allows your Sound Blaster to run real-mode DOS game applications.
 5. You may install extra cooling fans. Some ATX power units have a cooling fan. You can connect this to the ATX cooling fan power connector PWRFAN3. If you have a case mounted fan, you can connect it to the case cooling fan power connector CASEFAN1.
 6. If your case supports a detector that indicates when the case is opened, you can connect the cable to the case open detect connector CASEOPEN1.

Part Three – External Connections

After you have installed the mainboard and completed the internal connections, you can use the external connectors to attach peripheral devices to your system



1. COM1 is a serial port which can be used by serial devices such as a mouse, a fax/modem and so on. Your system identifies this serial port as COM1
2. COM2 is a second serial port. Your system identifies this serial port as COM2.
3. LPT1 is a parallel port which can be used by printers or other parallel communications devices. Your system identifies the parallel port as LPT1
4. USB1 is a stack of two universal serial bus (USB) ports. Some new devices now use the USB interface to take advantage of its faster transmission, and the fact that many devices can be “daisy chained” on a single cable.
5. KBMPS2 is a stack of two mini-DIN PS/2 ports. The lower port is for the use of a keyboard. The upper port can be used by any PS/2 pointing device such as a mouse or a trackball.