

Chapter 2: Installation

Before You Begin

Before you begin to install your P6EX-Me 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.

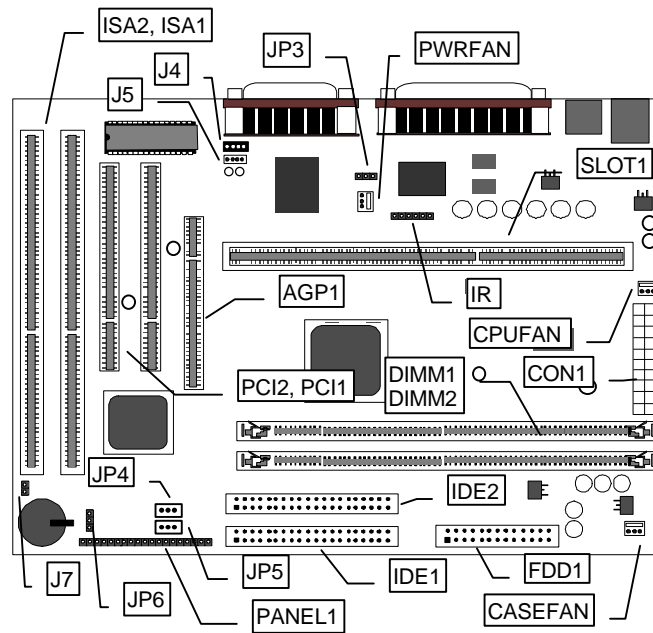
Choosing a Case

The P6EX-Me mainboard has a power connector for an ATX power supply. Ensure that your system is installed with an ATX power unit. The mainboard complies with the specifications for the micro-ATX system case, although it can also be installed in most full-size ATX case designs. The micro-ATX specifications include a maximum size of 9.6" x 9.6" (244mm x 244mm), a reduced number of expansion slots, and support for a smaller power supply 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 P6EX-Me 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.

Mainboard Guide

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

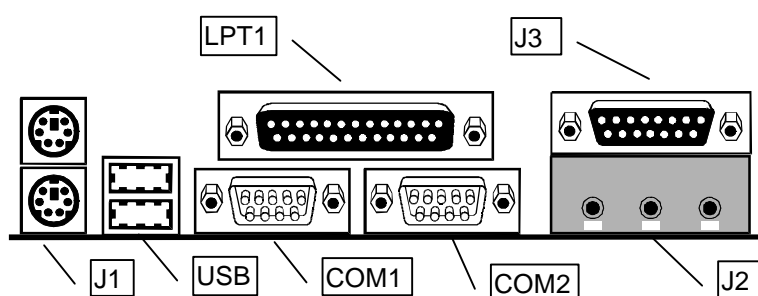


Key to Mainboard Components

Component	Description
ISA2, ISA1	2 x 8/16-bit expansion slots
PCI2, PCI1	2 x 32-bit expansion slots
SLOTT1	Slot for CPU cartridge
DIMM1, DIMM2	2 x slots for 168-pin memory modules
AGP1	Slot for AGP graphics adapter
PWRFAN	Power for power unit cooling fan
CPUFAN	Power for CPU cartridge cooling fan
CASEFAN	Power for chassis cooling fan
CON1	Connector for ATX power supply
PANEL1	Connectors for case switches and indicators
FDD1	Connector for Floppy disk drives
IDE1	Primary IDE channel
IDE2	Secondary IDE channel
IR	Connector for Fast Infrared option
J4	Connector for CD-ROM drive audio.
J5	Connector for CD-ROM drive audio.
J7	Case Open/Close connector (optional)

JP3	Enable/Disable the built-in audio
JP4	Wake on LAN connector
JP5	Wake on Modem connector
JP6	Clear CMOS memory jumper

Side View of the I/O Ports



Key to I/O Port Components

Component	Description
LPT1	Parallel Port (Bidirectional, EPP, ECP)
J3	Game/MIDI port for joystick or MIDI device
J1	Upper PS/2 port for mouse, lower PS/w port for keyboard
USB	Two Universal Serial Bus ports
COM1	Serial port for COM1 or COM 3
COM2	Serial port for COM2 or COM4
J2	Audio Jacks for Stereo Out, Stereo In, Microphone

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**.*

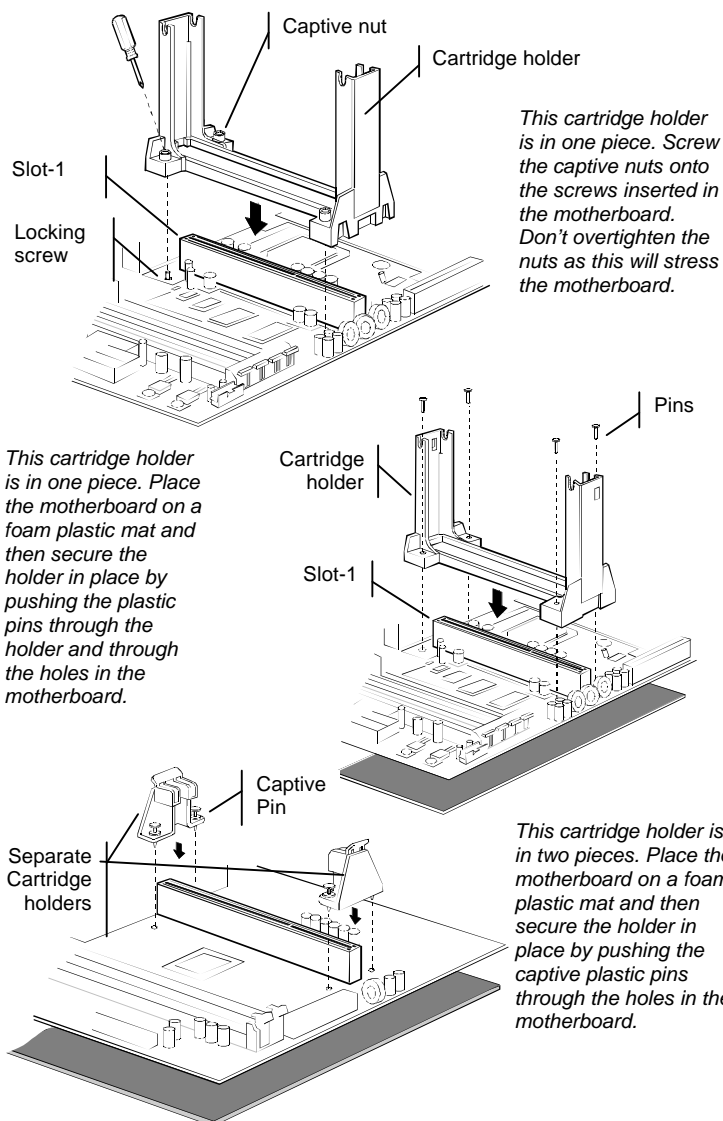
Preparing the Mainboard

Prepare the mainboard by installing the supplied Pentium-II cartridge holder. 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 (if supplied), 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 the two jumpers (audio enable/disable, and clear CMOS memory) 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.



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 P6EX-Me 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 supports 3.3 volt DRAMs operating over a 66 MHz memory bus. You can install one or two modules, and each module can have a capacity of up to 256 MB. If you only install one memory module, install it in DIMM socket 1.

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 two Jumper Settings

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

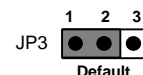
1. Locate the Clear CMOS jumper JP6. Ensure that the jumper cap is placed on pins 2-3. If you ever need to clear the system CMOS memory, you can do this by moving the jumper cap to short pins 1-2 for a few seconds. When you clear the CMOS memory, the system must be turned off and the power cord disconnected.

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



2. Locate the Audio Enable/Disable jumper JP3. You can use this jumper to disable the integrated audio system. You should disable the built-in audio if you plan on installing a sound card in one of the expansion slots. The jumper cap should be placed over pins 1-2 to enable the integrated audio system.

Function	Jumper Cap Position
Enable Audio	Short pins 1-2
Disable Audio	Short pins 2-3



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.

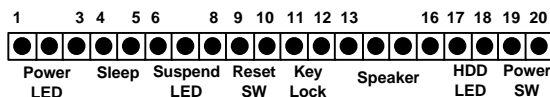
Connect Devices, Switches and Indicators to the Mainboard

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. 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 illustration below and the following table to make the connections.



Function	Pins
Power LED	+1, +2, 3
Sleep Switch	4, 5
Suspend LED	+6, +7, 8
Reset Switch	9, 10
Key Lock	11, 12
Speaker	+13, 14, 15, 16
Hard Disk LED	+17, 18
Power Switch	+19, 20

4. Locate the ATX power connector CON1. 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 two 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 2 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 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 IR (Fast Infrared). Use the cable provided with the infrared device to connect to the IR connector. Secure the infrared device to the appropriate space in the system case.

***Note:** If you install an infrared port, it must share a COM port assignment with the second external serial port COM2. You can select which port is in use by using the setup utility.*

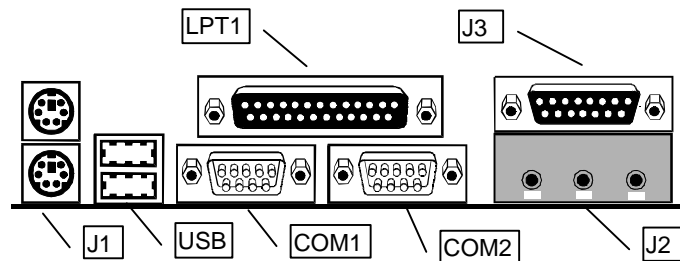
2. If you have installed a network adapter, connect the cable from the network adapter to the Wake on LAN connector JP4. This will enable your system to resume from a power saving mode when there is network traffic. When you use the LAN wake up function, you must make sure that the 5V standby current from the power supply is more than 700mA.
3. If you have installed an internal modem, connect the cable from the internal modem to the Wake on Modem Connector JP5. This will enable your system to resume from a power saving mode when there is modem traffic.
4. 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 PWRFAN. If you

have a case mounted fan, you can connect it to the case cooling fan power connector CASEFAN.

5. If your case supports a detector that indicates when the case is opened, you can connect the cable to the case open detect connector J7.
6. If you install a CD-ROM drive in your system, you can connect the audio output of the CD-ROM drive to the audio system integrated on the mainboard. Connect the CD-ROM drive audio cable to either J4 or J5.

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. J1 is two stacked PS/2 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. USB 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.
3. 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
4. COM2 is a second serial port. Your system identifies this serial port as COM2.

Note: If you install an infrared port, it must share a COM port assignment with the second external serial port COM2. You can select which port is in use by using the setup utility.

5. J2 is a set of three audio jacks. The left jack is for Stereo Out and can be connected to speakers, headphones, and so on. The middle jack is for Stereo in and can be used to input audio from external devices such as a radio or tape player. The right jack is for a microphone.
6. J3 is a Game/MIDI port. You can use this port to connect to a joystick device or a MIDI device such as a MIDI keyboard or synthesizer. The port will auto detect which kind of device is connected.
7. LPT1 is a parallel port which can be used by printers or other parallel communications devices. Your system identifies the parallel port as LPT1