

Dell Dimension® XPS Dxxx Systems

REPLACING THE SYSTEM BOARD



DELL®



Warnings, Cautions, and Notes

Throughout this document, there may be blocks of text printed in bold type within boxes or in italic type. These blocks are warnings, cautions, and notes, and they are used as follows:

WARNING: A WARNING indicates the potential for bodily harm and tells you how to avoid the problem.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

NOTE: A NOTE indicates important information that helps you make better use of your computer system.

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Dell Dimension[®] XPS Dxxx Systems

Replacing the System Board

This document provides instructions for replacing a system board on Dell Dimension XPS Dxxx systems. For additional instructions, see Chapter 4, “Removing and Replacing Parts,” in your *Service Manual*.

NOTES: It is recommended that you read this entire procedure before you begin.

If possible, print the system setup screens (by pressing the <Print Screen> key) before you turn off the computer because you will have to restore the configuration information after the system board is replaced.

Safety Considerations

It is important that you take the following precautions when servicing a system board.

WARNING: For your personal safety and protection of the equipment, perform the following steps in the sequence listed before you start working on the computer.

- 1. Turn off the computer system and any attached peripherals.**
- 2. Disconnect the computer and any attached peripherals from their power sources to reduce the potential for personal injury or shock.**
- 3. Wear a wrist grounding strap and clip it to an unpainted metal surface on the computer.**

If a wrist grounding strap is not available, touch an unpainted metal surface on the back of the computer periodically to discharge any static charge from your body.

- 4. Allow the single-edge contact (SEC) cartridge and heat sink assembly (microprocessor assembly) to cool before handling it.**

Removing the Computer Cover

To remove the computer cover from a desktop or mini tower system, follow these steps:

- 1. If you are working on a mini tower system, lay the computer on its right side with the chassis foot off the edge of the work surface to allow the computer to lay flat.**
- 2. Loosen the cover-mounting thumbscrew that secures the cover to the back of the computer.**

NOTE: The thumbscrew is captive and should be retained in the cover when loosened.

- 3. Face the front of the chassis. Using the index finger of one hand, push inward on the cover release latch near the chassis foot (left side for the desktop computer) to release the cover.**

Brace the chassis to prevent it from moving while you push inward on the cover release latch.

- 4. With the fingers of the other hand, grip the back edge of the computer near the chassis foot (left side for the desktop computer) and pull up until the end of the cover is released.**
- 5. Repeat steps 3 and 4 for the cover release latch near the top of the computer (right side for the desktop computer).**
- 6. Slide the cover approximately one inch toward the back of the computer. Then lift the cover off the computer.**

Transferring Components From the Old System Board

The SEC cartridge and heat sink assembly, the guide bracket assembly, the expansion cards, and the DIMMs must be removed from the old system board and transferred to the replacement system board. These components should be removed from the system board while it is still securely mounted in the computer.

Removing the DIMMs and the SEC Cartridge and Heat Sink Assembly

To remove the DIMMs and the SEC cartridge and heat sink assembly, use the following procedure.

WARNING: The SEC cartridge and heat sink assembly can get extremely hot during system operation. Be sure the assembly has had sufficient time to cool before you touch it. Also, take care to avoid sharp edges on the heat sink.

1. Remove each DIMM by pressing down and out on the plastic securing tabs at each end of its socket.
2. Pinch the ends of the retainer bar (see Figure 1), and then slide the bar toward the front of the computer to remove it.

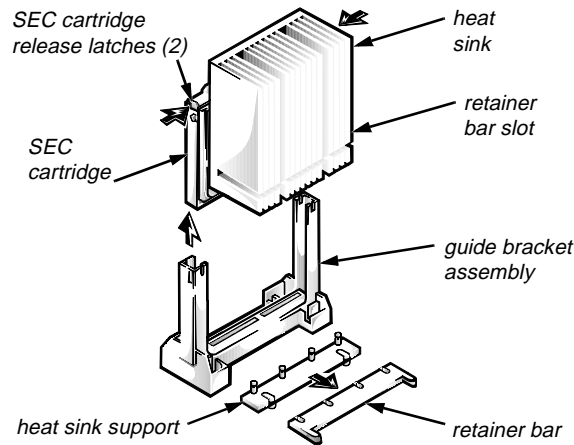


Figure 1. SEC Cartridge and Heat Sink Removal

3. Press in the SEC cartridge release latches until they snap into position. On some assemblies, you may need to hold the latches until the cartridge is removed.
4. Grasp the SEC cartridge firmly, and pull straight up on the cartridge to remove it from the guide bracket assembly.

Up to 15 pounds of force is required to disengage the SEC cartridge from its connector.

Removing the Guide Bracket Assembly

To remove the guide bracket assembly, follow these steps.

NOTE: The four nuts are captive and should be retained in the assembly when loosened. The screws are mounted on the system board.

1. Using a #2 Phillips screwdriver, loosen each of the four nuts securing the guide bracket assembly to the system board (see Figure 2).
2. Remove the assembly from the four threaded posts.

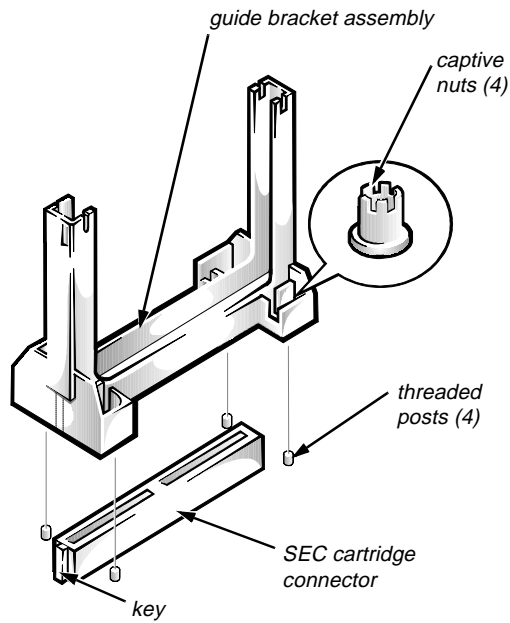


Figure 2. Guide-Bracket Assembly Removal

Removing and Replacing the System Board

To remove the system board, follow these steps:

- 1. Disconnect any cables attached to the I/O panel on the back of the computer.**
- 2. Remove any installed expansion cards.**
- 3. Disconnect all internal cables from the system board.**
- 4. Determine how the system board is mounted in the computer (see Figures 3, 4, and 5).**
 - If the system board is secured by five screws, proceed to step 5.
 - If the system board is secured by hooked standoffs, skip to step 6.
 - If the system board is secured by three screws, skip to step 7.
- 5. If the system board is secured to the chassis with five screws (see Figure 3), remove the screws and then skip to step 8.**

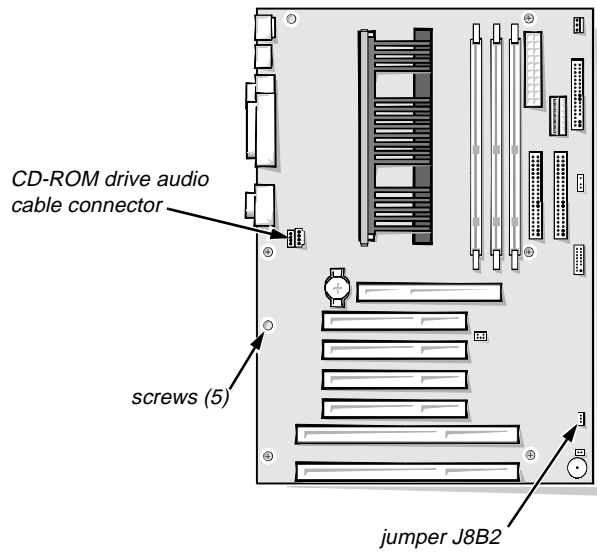


Figure 3. System Board Mountings (Five Screws)

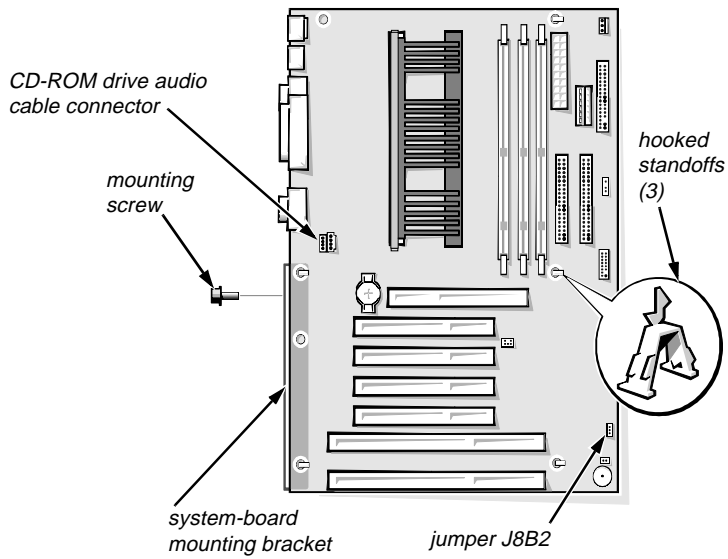


Figure 4. System Board Mountings (Hooked Standoffs)

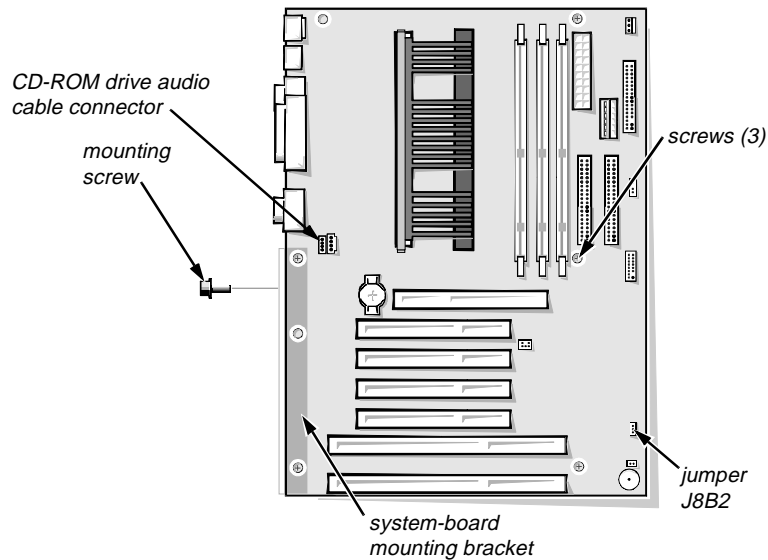


Figure 5. System Board Mountings (Three Screws)

6. If the system board is secured with hooked standoffs, remove the board-mounting screw from the back of the computer (see Figures 4 and 6). Slide the board slightly toward the front of the computer to clear the hooks. Skip to step 8.
7. If the system board is secured to the chassis with three screws, remove the screws (see Figure 5). Then remove the board-mounting screw from the back of the computer (see Figure 6), and continue with step 8.

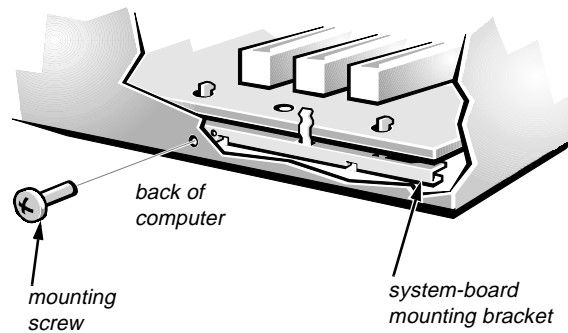


Figure 6. Mounting Screw and Bracket

8. Carefully lift the system board out from the I/O gasket, and remove the board from the computer.
9. If the system board is secured with hooked standoffs or three screws, remove the mounting bracket from the back of the system board (see Figure 7).

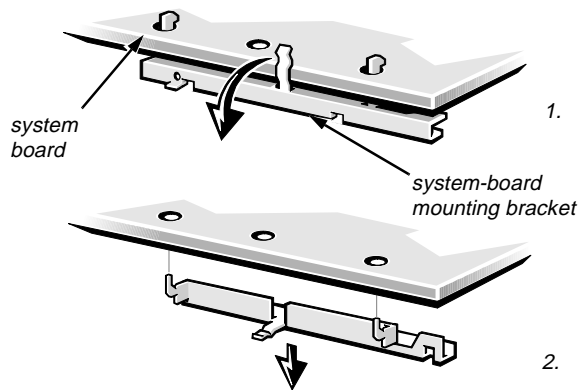


Figure 7. Bracket Removal

To install a replacement system board, install the guide bracket assembly for the SEC cartridge. The assembly is keyed for correct insertion (see Figure 2). Then install the SEC cartridge and heat sink assembly. Transfer the DIMMs to the new system board, and install the expansion cards removed from the old system board.

When installing a replacement system board that is secured with five screws, push the system board against the back of the computer so that the system board makes firm contact with the I/O gasket to prevent electromagnetic interference (EMI) leakage.

CAUTION: Failure to install the system board exactly as described may result in EMI leakage that could interfere with other electronic devices.

NOTE: If you have a computer with hooked standoffs or three screws and a system board with a mounting bracket, the mounting screw pulls the board against the I/O gasket to prevent EMI leakage.

When reconnecting the cables to a system board with integrated sound, be sure to connect the CD-ROM drive audio cable to the connector nearest the back edge of the system board (see Figures 3, 4, and 5). The modem audio cable connector may be used with a modem.

Configuring the System

Use the following procedure to configure the system after replacing the system board:

- 1. Install the jumper plug on pins 2 and 3 of system board jumper J8B2 (see Figures 3, 4, and 5) to select Maintenance mode.**
- 2. Replace the cover and boot the system.**

The computer automatically starts the system setup program, adds the Maintenance option to the menu bar, and displays the Maintenance screen.

- 3. If necessary, change the Processor Speed setting to match the speed of the installed microprocessor.**
If the speed listed is not correct, press <Enter> to display the speed settings. Select the appropriate speed and press <Enter>.
- 4. Select Clear All Passwords. Press <Enter> twice.**
- 5. Press <F10> to exit the system setup program and save any changes you made.**
- 6. Turn off the system, remove the computer cover, and replace the jumper plug on pins 1 and 2 of jumper J8B2 to select Normal mode operation.**
- 7. Replace the cover and boot the computer. If necessary, reenter the system setup program and reset the system configuration information.**

***C*hecking System Functions**

To check the installation and make sure that the system functions properly, run the Dell[®] Diagnostics as described in the *Diagnostics and Troubleshooting Guide*.



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Printed in the U.S.A.

P/N 83965 Rev. A01

