



Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

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Model MMS

Initial release: 26 Feb 1999
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System Codes and Messages: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

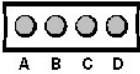
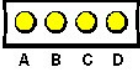
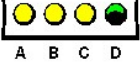
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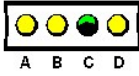
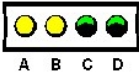

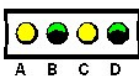
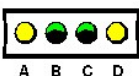


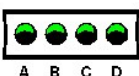




Diagnostic Codes

Your system is equipped with four diagnostic code indicators, which are labeled "A," "B," "C," and "D" on the back of the computer. Each of the four indicators can be yellow, green, or off as shown in [Table 1](#). When the computer is turned on or restarted and the system is functioning normally, the indicators flash during power-on self-test (POST). After the system starts, the indicators remain green to signify normal system operation.

If a malfunction is detected and the computer fails to start, the indicators display a code that identifies the problem. Write down the diagnostic code displayed, and look it up in Table 1.

Table 1. Diagnostic Codes

Diagnostic Code	Definition	Corrective Action
	Power up default.	<p>Make sure that the system is connected to an electrical outlet, and then check whether the front-panel power indicator (see Controls and Indicators) is on or off. If the power indicator is off, check the power supply. If the problem persists, refer to Chapter 7, "Getting Help," of the <i>Dell Dimension XPS Txxx and Txxxr Systems Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.</p> <p>If the power indicator is on, reset the microprocessor. Remove all expansion cards. If the system still does not start, refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.</p>
	System board is receiving power, but the BIOS is not executing.	<p>Set the configuration jumper to Maintenance mode and restart the system. Enter the system setup program and ensure that the microprocessor speed is set correctly. Exit and save the setting. Turn off the computer and reset the configuration jumper to Normal mode, and then restart the system. Reset the microprocessor. Remove all expansion cards and restart the system to determine if a resource conflict exists. If a conflict exists, resolve the conflict as described in "Resolving Software and Hardware Incompatibilities" in Chapter 5 of the <i>Reference and Troubleshooting Guide</i>. If the problem persists, refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.</p>
	Recovery mode from BIOS failure.	<p>Set the configuration jumper to Maintenance mode and restart the system. Enter the system setup program and ensure that the microprocessor speed is set correctly. Exit and save the setting. Turn off the computer and reset the configuration jumper to Normal mode,</p>

		and then restart the system. If the problem persists, refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.
	Microprocessor has failed a BIOS test.	Reseat the microprocessor . If the problem persists, refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.
	Memory failed to be sized or enabled.	Reseat the DIMMs . If the problem persists, remove all but one DIMM and then restart the system. Repeat this step until the malfunctioning DIMM is identified.
	PCI bus failure has occurred.	Remove all expansion cards and restart the system to determine if a resource conflict exists. If a conflict exists, resolve the conflict as described in "Resolving Software and Hardware Incompatibilities" in Chapter 5 of the <i>Reference and Troubleshooting Guide</i> . If the problem persists, refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.
	Video controller failed to initialize or respond.	Reseat the video card . If the problem persists, refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.
	IDE bus failure has occurred.	Reseat the IDE cables. If the problem persists, refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.
	USB port or a device connected to it has failed initialization.	Disconnect the device from the USB port . If the problem persists, refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.
	Other failure.	Refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.
	System has started and turned over control to the operating system.	No action is necessary.
 <p>  = yellow  = green  = off </p>		

POST Beep Codes

If the monitor cannot display errors or problems, during POST the computer may emit a series of beeps, or *beep code*, that identifies the problem. For example, one beep, a burst of three short beeps, and two more single beeps (beep code 1-3-1-1) means that the system has encountered a dynamic random-access memory (DRAM) refresh error condition.

If the system emits a beep code and then fails to start, write down the beep code and look it up in Table 2.

Table 2. System Beep Codes

Beep Codes	Possible Cause	Corrective Action
1-2	No video card detected	Reseat the video card.
1-2-2-3	BIOS ROM checksum error	Refer to Chapter 7, "Getting Help," of the <i>Reference and Troubleshooting Guide</i> for instructions on obtaining technical assistance.
1-3-1-1	DRAM refresh error	Reseat the DIMMs.
1-3-1-3	8742 keyboard controller error	Reseat the keyboard connector .
1-3-3-1	Memory defective or not present	Reseat the DIMMs.
1-3-4-1	RAM failure on line xxx	Reseat the DIMMs.
1-3-4-3	RAM failure on data bits xxx of low byte on memory bus	Reseat the DIMMs.
1-4-1-1	RAM failure on data bits xxx of high byte on memory bus	Reseat the DIMMs.

System Messages

The first column in [Table 3](#) lists (in alphabetical order) system messages that may appear on the screen during the boot routine or during normal system operation. The second column in the table lists probable causes of the messages, and the third column either provides a corrective action or refers you to a source for resolving the problem.

Table 3. System Messages

Message	Possible Cause	Corrective Action
nnnn Cache RAM Passed	nnnn KB of system cache RAM has been successfully tested.	No action is necessary.
nnnn Extended RAM Passed	nnnn KB of extended RAM has been successfully tested.	No action is necessary.
nnnn Shadow RAM Passed	nnnn KB of shadow RAM has been successfully tested.	No action is necessary.
nnnn System RAM Passed	nnnn KB of system RAM has been successfully tested.	No action is necessary.
CD ROM drive Identified	The system's automatic drive-type detection feature has identified the CD-ROM drive.	No action is necessary.
Diskette drive A error Diskette drive B error	Drive A or B is present but has failed the BIOS POST.	Ensure that the drive is installed correctly in the chassis and defined correctly in the system setup program .
Entering Setup	The system is starting the system setup program.	No action is necessary.
Extended RAM Failed at offset: nnnn	Extended memory is not working correctly or is not configured correctly at offset nnnn.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).
Failing bits: nnnn	nnnn is a map of the bits at the RAM address (in system, extended, or shadow memory) that failed the memory test. Each "1" in the map indicates a failed bit.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).
Fixed Disk n Failure Fixed Disk Controller Failure	The hard-disk drive specified by n is not working or not configured correctly.	Ensure that the drive is installed correctly in the chassis and defined correctly in the system setup program .
Fixed Disk n Identified	The system's automatic drive-type detection feature has identified the hard-disk drive(s).	No action is necessary.
Incorrect Drive x type - Run SETUP	Diskette drive x is not correctly identified in the system setup program.	Ensure that the drive is defined correctly in the system setup program .
Invalid NVRAM media type	The system is having a problem accessing NVRAM (CMOS).	Set the configuration jumper to Maintenance mode and restart the system to return all settings to their defaults.

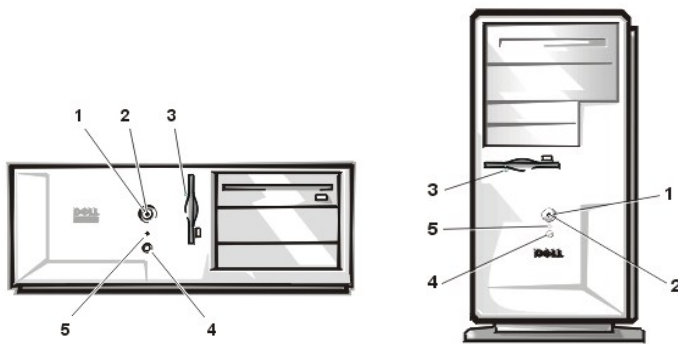
Invalid system configuration data	The system configuration information in the system setup program is incorrect, or the battery charge may be low.	Enter the system setup program and verify the system configuration; then restart the system.
Keyboard controller error	The keyboard controller failed its test.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).
Keyboard error	The keyboard is not working correctly.	The keyboard or system board may need to be replaced.
Keyboard error nn	The BIOS has detected a stuck key represented by scan code <i>nn</i> .	Make sure nothing is resting on the keyboard; if a key appears to be stuck, carefully pry it up. If the problem persists, you may need to replace the keyboard.
Mouse initialized	The system's mouse has been found and initialized.	No action is necessary.
Operating system not found	The operating system cannot be located on drive A or drive C.	Enter the system setup program and confirm that drive A or drive C is properly identified.
Parity check 1 nnnn	A parity error has been detected on the system bus. The BIOS attempts to locate the address and display it (<i>nnnn</i>); if it cannot locate the address, it displays <i>????</i> instead.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).
Parity check 2 nnnn	A parity error has been detected on the I/O bus. The BIOS attempts to locate the address and display it (<i>nnnn</i>); if it cannot locate the address, it displays <i>????</i> instead.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).
Press <F1> to resume, <F2> to Setup	This message is displayed after any recoverable error message.	Press <F1> to start the boot routine or <F2> to enter the system setup program and change any settings.
Press to enter SETUP	Optional message displayed during POST.	If desired, press to enter the system setup program .
Previous boot incomplete - Default configuration used	After an unsuccessful boot, POST loads default values and offers to run the system setup program. (POST does <i>not</i> input these default values to the system setup program.)	There may be incorrect values or incorrect settings in the system setup program . Run the system setup program and attempt to restore the incorrect setting(s). If the message reappears, set the configuration jumper to Maintenance mode and restart the system to return all settings to their defaults.
Real time clock error	The RTC has failed the BIOS test.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).
Resource allocation conflict on motherboard	The system cannot configure all system board devices without a resource conflict.	Run the system setup program and try to resolve any obvious resource conflicts. If the message reappears, set the configuration jumper to Maintenance mode and restart the system to return all settings to their defaults.
Shadow RAM failed at offset: nnnn	Shadow RAM has failed at offset <i>nnnn</i> in the 64-KB block in which the error was detected.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).
System battery is dead - Replace and run SETUP	The CMOS clock battery indicator shows the battery is dead.	Replace the battery and run the system setup program to reconfigure the system.
System BIOS shadowed	The system BIOS has been copied to shadow RAM.	No action is necessary.
System cache error - cache disabled	RAM cache failed the BIOS test; the BIOS has disabled the cache.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).
System CMOS checksum bad - run SETUP	System CMOS has been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS.	Run the system setup program and reconfigure the system by either reverting to the default values or by making your own selections.
System RAM failed at offset: nnnn	System RAM failed at offset <i>nnnn</i> in the 64-KB block in which the error was detected.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).
System timer error	The timer test failed.	If you receive this message after making changes in the system setup program , enter the program and restore the original value(s).

UMB Upper limit segment address: <i>nnnn</i>	Displays the address <i>nnnn</i> of the upper limit of the UMB, indicating released segments of the BIOS which may be reclaimed by a virtual memory manager.	No action is necessary.
Video BIOS shadowed	The video BIOS has been successfully copied to shadow RAM.	No action is necessary.

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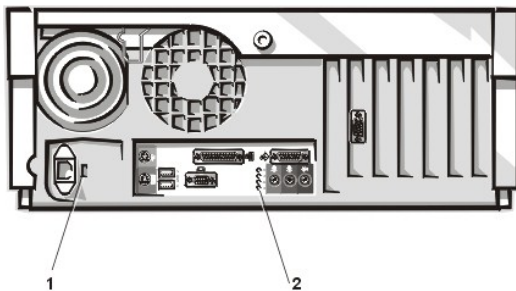
Controls and Indicators: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

Front Panel



- 1 Power button — Turns computer on and off.
- 2 Power indicator — Lights up when the computer is on.
- 3 Diskette-drive access indicator — Lights up when a diskette drive is being accessed.
- 4 Reset button — Press this button for 1 to 4 seconds to initiate a hardware reset. To avoid possible data or file structure corruption, close as many open application programs and files as possible before pressing the reset button.
- 5 Hard-disk drive access indicator — Lights up when a hard-disk drive is being accessed.

Back Panel



- 1 Voltage selection switch — Selects the [operating voltage](#) for the system.
 - 2 Diagnostic code indicators (4) — If a malfunction is detected and the computer fails to start, the indicators display a [code](#) that identifies the problem.
-

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Documentation: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

[Printed Documentation](#) • [Online Documentation](#)

Printed Documentation

- You must right-click the link for a portable document format (PDF) file and save the file to your hard-disk drive. Attempting to open large PDF files through your browser causes your system to freeze.


To save PDF files (files with an extension of .pdf) to your hard-disk drive, right-click the document title, click **Save Target As** in Microsoft® Internet Explorer or **Save Link As** in Netscape Navigator, and specify a location on your hard-disk drive.

Right-click only the following links:

[Getting Started Sheet \(.pdf\) \(5070 KB\)](#)

[Dell Dimension Systems Setup Guide \(.pdf\) \(418 KB\)](#)

[Dell Dimension XPS Txxx and Txxxr Systems Reference and Troubleshooting Guide \(.pdf\) \(3185 KB\)](#)

 **NOTES:** PDF files require Adobe™ Acrobat Reader, which can be downloaded from the Adobe World Wide Web site at <http://www.adobe.com/acrobat/>.

To view a PDF file, launch Acrobat Reader. Click **File**→ **Open** and select the PDF file.

Online Documentation

- Compiled HTML Help files (files with an extension of .chm) require Microsoft Internet Explorer 4.0 or later.

Downloading the Help and Associated Files

1. Right-click the following link to the **popup.ocx** file:
[popup.ocx](#)
2. Click **Save Target As** in Microsoft Internet Explorer or **Save Link As** in Netscape Navigator, and specify **c:\windows\system** on your hard-disk drive.
3. Click the **Start** button on the Microsoft Windows® desktop, and then click **Run**.
4. Type `regsvr32 popup.ocx` and then press <Enter>.
5. Click **OK** when the installation is complete.
6. Right-click the following link to the Help file:
[Dell Dimension XPS Txxx and Txxxr Systems Help \(.chm\) \(949 KB\)](#)
7. Click **Save Target As** in Microsoft Internet Explorer or **Save Link As** in Netscape Navigator, and specify a location on your hard-disk drive.

Viewing the Help File

To view the Help file, perform the following steps:

1. Click the **Start** button on the Windows desktop, point to **Programs**, and then click **Windows Explorer**.
 2. Navigate to the directory in which you saved the Help file.
 3. Double-click the file (**XPSTrHlp.chm**).
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Drivers: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

[Drivers For Systems Purchased After May 19, 2000](#) • [Drivers For Systems Purchased Before May 19, 2000](#)

Drivers For Systems Purchased After May 19, 2000

All of your system's drivers for Dell-installed devices are operative when you receive the system—no further installation or configuration is needed. However, if you ever need to reinstall any of these drivers, the driver files are provided on the *Dell Dimension ResourceCD*.

Device problems can often be corrected by reinstalling the appropriate drivers. Also, hardware manufacturers frequently provide updated drivers that support feature enhancements or that correct problems. Obtain updated drivers for products purchased from Dell at the support section of the Dell World Wide Web site (<http://support.dell.com>).

NOTICE: Drivers available on the Dell Web site have been validated for correct operation on Dell systems. Installing drivers obtained from other sources may cause errors or performance degradation.

Your System's Drivers

The device drivers that can be reinstalled on your system are listed below:

Yamaha Audio Driver — Enables the system's audio controller to produce sound.

Other Drivers — Control the devices, such as modem cards or network interface controller (NIC) cards, that may be installed on your system. For instructions on how to reinstall these drivers, see the device's documentation by double-clicking the **Dell Documents** icon on the Windows desktop, clicking **System Information**, and then clicking **System Documentation**.



NOTE: If a driver does not appear under a selected operating system on the Dell Dimension ResourceCD, then the driver is not required by that operating system.

Using the *Dell Dimension ResourceCD* to Reinstall Drivers

NOTICE: The *Dell Dimension ResourceCD* contains drivers for devices that might not be installed in your computer. Do not install device drivers unless you first identify the specific driver intended for the hardware installed in your computer (see "[Your System's Drivers](#)"). Installing incorrect drivers might make your computer inoperable.

1. Start the computer's operating system.
 2. If you have not initially installed the *Dell Dimension ResourceCD* application program, proceed to the next step. If you have previously installed the application program, proceed to [step 6](#).
 3. Insert the *Dell Dimension ResourceCD* into the optical drive.
The **ResourceCD Installation** application program automatically starts.
 4. Follow the instructions on your screen.
 5. When the **InstallShield Wizard Complete** window appears, remove the *Dell Dimension ResourceCD* from the optical drive, and then click **Finish** to restart the computer.
 6. After the operating system starts, insert the *Dell Dimension ResourceCD* into the optical drive.
The **Welcome Dell System Owner** screen appears.
 7. Click **Next**.
 8. Change the language in the **Language** list located in the upper-right corner of the window, if needed.
 9. Select the model of your computer in the **System Model** list.
 10. Select your computer's operating system in the **Operating System** list.
 11. Select the type of device in the **Device Type** list.
 12. Select **Drivers** in the **Topic** list.
 13. Click the name of the driver that you want to reinstall.
See "[Your System's Drivers](#)" for a list of drivers that you can reinstall on your computer.
 14. Follow the instructions on the screen.
-

Drivers For Systems Purchased Before May 19, 2000

The device drivers that can be reinstalled on your system are listed below:

[Yamaha Audio Driver](#) — Enables the system's audio controller to produce sound.

Other Drivers — Control the devices, such as video, modem, or network interface controller (NIC) cards, that may be installed on your system. For instructions on how to reinstall these drivers, see the device's documentation by double-clicking the **Dell Documents** icon on the Windows desktop, clicking **System Information**, and then clicking **System Documentation**.

Yamaha Audio Driver

Dell installed and configured your system's video driver on your hard-disk drive. No further installation or configuration is needed. If you ever need to reinstall this driver, see the appropriate procedure for the Microsoft® [Windows® 98](#), [Windows NT® 4.0](#), or [Windows 2000](#) operating systems.

Audio Drivers for Microsoft Windows 98

To reinstall the audio drivers for the Microsoft Windows 98 operating system, perform the following steps:

1. Start the Windows 98 operating system.
2. Insert the *Dell Dimension ResourceCD* into the CD-ROM drive.
When the **Dell Dimension ResourceCD** screen appears, click the right-arrow button.
3. The first time that you use the *Dell Dimension ResourceCD*, you are prompted to select a language. Select the language of your choice, and click **OK**.
4. In the **All Folders** list, click the **drivers** folder.
When an alert message appears, informing you that only knowledgeable users should install drivers, click **OK** to continue.
5. In the **All Folders** list, click the **win98** folder.
6. In the **Description** list, click **Dimension XPS-Txxx Yamaha Audio Driver**.
7. In the **All Folders** list, click **disk1**.
8. Double-click the only file that appears in the **All Files** list.
The file is named **nnnnnnnn.exe**, where **nnnnnnnn** is an eight-digit part number.
9. Follow the prompts on the screen, and accept all defaults.
10. When prompted to restart your system to complete the installation, remove the *Dell Dimension ResourceCD* from the CD-ROM drive, and then click **Finish**.

Audio Drivers for Microsoft Windows NT 4.0

To reinstall the audio drivers for Windows NT 4.0, perform the following steps:

1. Start the Windows NT 4.0 operating system.
2. Insert the *Dell Dimension ResourceCD* into the CD-ROM drive.
When the **Dell Dimension ResourceCD** screen appears, click the right-arrow button.
3. The first time that you use the *Dell Dimension ResourceCD*, you are prompted to select a language. Select the language of your choice and click **OK**.
4. In the **All Folders** list, double-click the **drivers** folder.
When an alert message appears, informing you that only knowledgeable users should install drivers, click **OK** to continue.
5. In the **All Folders** list, click the **winnt** folder.
6. In the **Description** list, click **Dimension XPS-Txxx Yamaha Audio Driver**.
7. In the **All Folders** list, click **disk1**.
8. Double-click the only file that appears in the **All Files** list.
The file is named **nnnnnnnn.exe**, where **nnnnnnnn** is an eight-digit part number.
9. When the **Welcome** window appears, click **Next** and follow any installation prompts.
10. When prompted to restart your system to complete the installation, remove the *Dell Dimension ResourceCD* from the CD-ROM drive, and then click **Finish**.
11. Click the **Start** button, point to **Settings**, and click **Control Panel**.
12. Double-click the **Multimedia** icon.
13. In the **Multimedia Properties** window, click the **Devices** tab. Then click **Add**.
14. In the **Add** dialog box, select **Unlisted or Updated Driver** and click **OK**.
15. In the **Add Unlisted or Updated Driver** dialog box, use **Browse** to select the **c:\yamaha\ds-xgl** directory and click **OK** three times to restart the system.

Audio Drivers for Microsoft Windows 2000

If you need to reinstall the audio drivers, you must reinstall Windows 2000. When you install the Windows 2000 operating system on your computer, the audio drivers are automatically installed.

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EIDE Subsystem: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

The enhanced integrated drive electronics (EIDE) subsystem includes 2 EIDE interfaces (primary and secondary), each of which can support up to 2 EIDE devices such as high-capacity EIDE hard-disk drives, CD-ROM drives, and tape drives.

Configure all EIDE devices for the Cable Select jumper position, which assigns master and slave status to devices by their position on the interface cable. In this configuration, the drive attached to the last connector on the interface cable is the master or boot drive (drive 0) and the drive attached to the middle connector on the interface cable is the slave drive (drive 1). Refer to the drive's documentation for instructions on setting the Cable Select jumper position.

When you replace a drive, refer to the jumpers on the original drive to set the jumpers on the replacement drive.



NOTE: The externally accessible drive bays at the front of the system are normally used for diskette drives, CD-ROM drives, or tape drives.


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Preface: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

[Notes, Notices, and Cautions](#) • [Typographical Conventions](#)

Notes, Notices, and Cautions

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold type or in italic type. These blocks are notes, notices, and cautions, and they are used as follows:

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

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

 **CAUTION:** A CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Typographical Conventions

The following list defines (where appropriate) and illustrates typographical conventions used as visual cues for specific elements of text throughout this document:

- 1 *Interface components* are window titles, button and icon names, menu names and selections, and other options that appear on the monitor screen or display. They are presented in bold.

Example: Click **OK**.

- 1 *Keycaps* are labels that appear on the keys on a keyboard. They are enclosed in angle brackets.

Example: <Enter>

- 1 *Key combinations* are series of keys to be pressed simultaneously (unless otherwise indicated) to perform a single function.

Example: <Ctrl><Alt><Enter>

- 1 *Commands* presented in lowercase bold are for reference purposes only and are not intended to be typed when referenced.

Example: "Use the **format** command to . . ."

In contrast, commands presented in the Courier New font are part of an instruction and intended to be typed.

Example: "Type `format a:` to format the diskette in drive A."

- 1 *Filenames* and *directory names* are presented in lowercase bold.

Examples: **autoexec.bat** and **c:\windows**

- 1 *Screen text* is a message or text that you are instructed to type as part of a command (referred to as a command line). Screen text is presented in the Courier New font.

Example: The following message appears on your screen:

`No boot device available`

Example: "Type `md c:\programs` and press <Enter>."

- 1 *Variables* are placeholders for which you substitute a value. They are presented in italics.

Example: DIMM_x (where x represents the DIMM socket designation)

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Removing and Replacing Parts: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

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Overview

Unless otherwise noted, each of the following procedures assumes:

- 1 You have the [recommended tools](#).
 - 1 You have performed the steps listed in the Caution in [Precautionary Measures](#).
 - 1 You have [removed the computer cover](#).
 - 1 You can replace or reinstall a part by performing the removal procedure in reverse order.
-

Precautionary Measures

Before you remove or replace parts in the system, read the following caution for your personal safety and to prevent damage to the system from ESD.

 **CAUTION FOR YOUR PERSONAL SAFETY AND PROTECTION OF THE EQUIPMENT:**

Before you start to work on the system, perform the following steps in the sequence listed:

1. Turn off your computer and all devices.
2. Ground yourself by touching an unpainted metal surface at the back of the computer before touching anything inside your computer.

While you work, periodically touch an unpainted metal surface on the computer to dissipate any static electricity that might harm internal components.

3. Disconnect any devices connected to the computer, including the monitor, from their electrical outlets to reduce the potential for personal injury or shock. Also, disconnect any telephone or telecommunication lines from the computer.
4. Disconnect the power cable to your computer, and then press the [power button](#) to ground the system board.

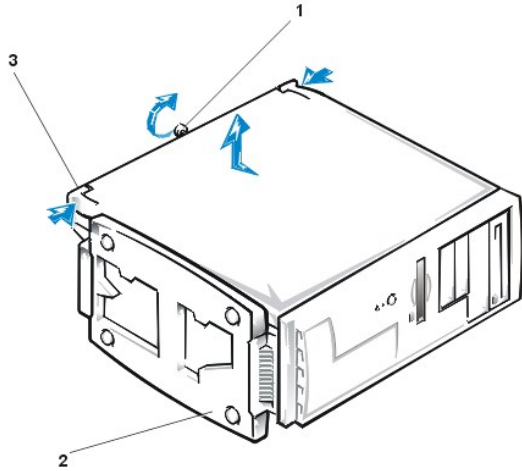
After you remove or replace parts in the system, observe the following notice to prevent damage to the system.

NOTICE: Make sure all other system cables are connected before connecting the computer to its electrical outlet.

Recommended Tools

- 1 Small flat-blade screwdriver
 - 1 Wide flat-blade screwdriver
 - 1 #1 and #2 Phillips-head screwdrivers
 - 1 1/4-inch nut driver
 - 1 Tweezers or long-nose pliers
 - 1 Wrist grounding strap
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Cover and Support Beam




- 1 Cover-mounting thumbscrew
- 2 Chassis foot
- 3 Cover release latches (2)

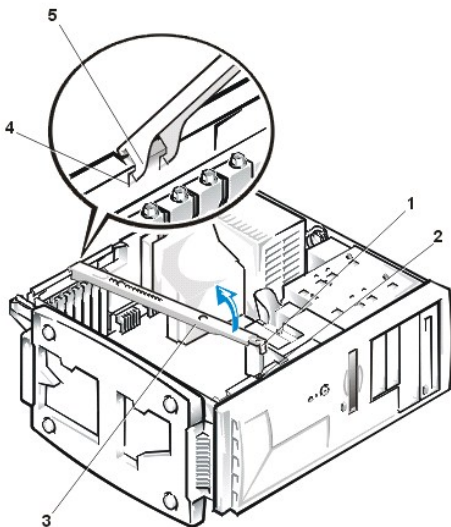
To remove the computer cover and support beam from a desktop or mini tower system, perform the following steps:

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 as shown in the illustration above.
2. Loosen the cover-mounting thumbscrew that secures the cover to the back of the computer.

 **NOTE:** The thumbscrew is captive and stays in the cover when loosened.

 **CAUTION:** To prevent cuts, keep your hands clear of the metal edges on the chassis and fan guard as you slide the cover back.

3. Face the front of the chassis. Use your thumbs to press in both cover release latches while pushing the cover backward. Move the cover back about an inch, and then lift it straight up off the chassis. If necessary, use both hands and work one side at a time.
4. Pull up the front end of the support beam until the front end snaps free from its fastener. Lift the front of the beam until the hinged tabs on the back end of the beam clear their slots as shown below.



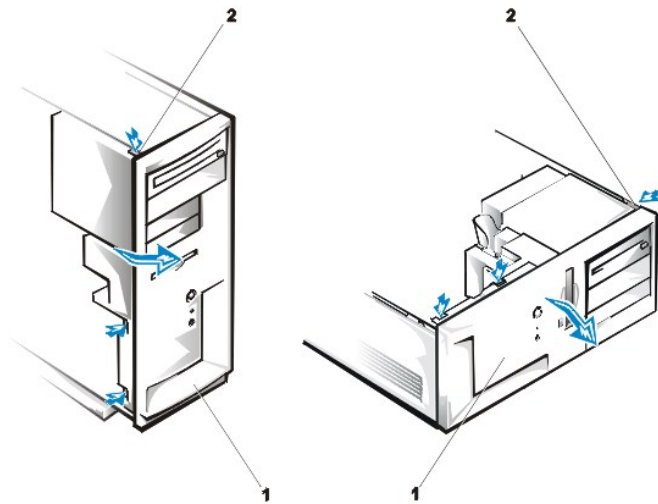
- 1 Lock tab
- 2 Fastener
- 3 Support beam
- 4 Slots (2)

5 Hinged tabs (2)

To replace the computer cover and support beam on a desktop or mini tower chassis, perform the following steps:

1. Slip the beam's hinged tabs into their slots and lower the beam. Then place the lock tab into its fastener, and press down on the front end of the beam until it snaps into position.
2. Position the cover on the chassis approximately one inch back. Slide the cover forward until it locks into place.
3. Tighten the cover-mounting thumbscrew on the back of the chassis.

Bezel

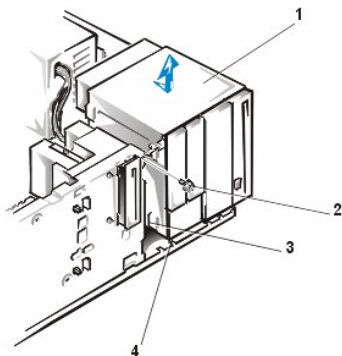


- 1 Bezel
- 2 Tabs (3)

To remove the bezel, perform the following steps:

1. With the cover removed, press in the tabs along the top and side of the bezel.
2. Swing the bezel away from the chassis, disengage the hooks, and carefully pull the bezel away from the chassis.

Drive Cage



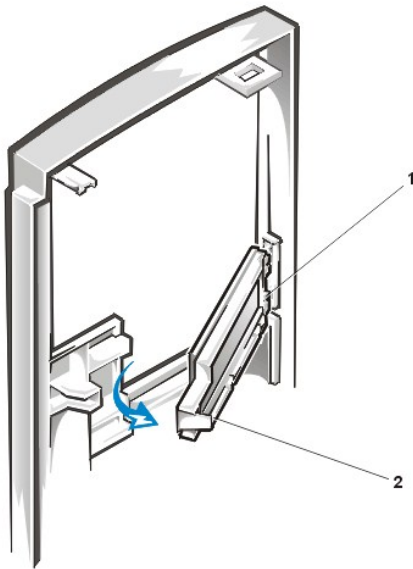
- 1 Drive cage
- 2 Screw
- 3 Drive-cage slots (6)

4 Tabs (6)

To remove the drive cage, perform the following steps:

1. [Remove the bezel.](#)
2. Note the location and orientation of all cables attached to the drives in the drive cage, then disconnect the cables.
3. Remove the screw that secures the drive cage to the chassis.
4. Slide the drive cage forward approximately 1/2-inch, then lift it up (to the side for the desktop chassis) and away from the chassis.
The side of the chassis contains three detents that secure the drive cage to the side of the chassis. The drive cage may be slightly difficult to slide forward until it detaches from these detents.


3.5-Inch Front-Panel Insert



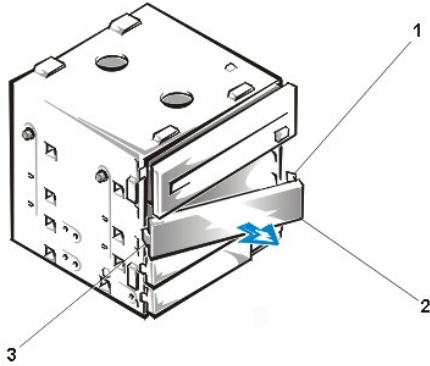
- 1 Tabs (2)
2 Release tab

To remove a 3.5-inch insert, perform the following steps:

1. [Remove the bezel.](#)
2. From the back of the bezel, as shown for the mini tower chassis, press the release tab to the side, rotate the insert toward you, and remove it from the bezel.

 **NOTE:** For mini tower computers, you must remove the upper insert to remove the lower insert.

5.25-Inch Front-Panel Insert

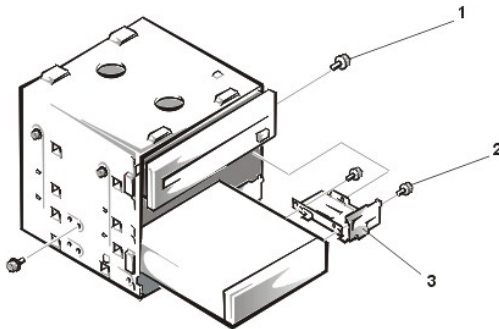


- 1 Tabs (2)
- 2 Front-panel insert
- 3 Retaining hook

The insert for the lower 5.25-inch bay is mounted to the drive cage. Press in the two tabs on the right side, and rotate the insert toward you until the retaining hook disengages from the drive cage.

Reinstall the insert by fitting the hook into the slot on the left side of the drive cage, rotating the insert into place, and snapping the tabs on the right side of the insert into the slots in the drive cage.


Upper 3.5-Inch Drive



- 1 Drive-bracket mounting screw
- 2 Drive assembly screws (3)
- 3 Drive bracket

To remove the upper 3.5-inch drive, perform the following steps:


1. [Remove the bezel.](#)
2. [Remove the drive cage.](#)
3. Remove the 6/32 x 1/4-inch screw securing the drive bracket to the drive cage, and then remove the bracket as shown.

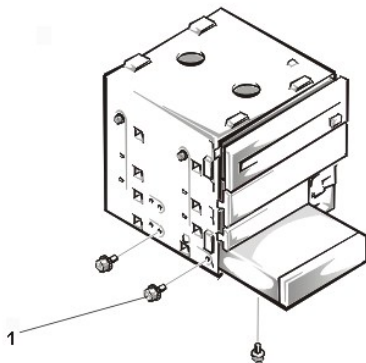
 **NOTES:** The three screws that secure the drive to the bracket and the left side of the drive cage have 3-millimeter (mm) threads. Be sure to use the correct 3 x 5-mm screws when you secure the replacement drive to the bracket and the drive cage.

Also note which 6/32 x 1/4-inch screw was used to secure the drive bracket to the drive cage in step 3, and use the same screw when you reinstall the bracket with its attached drive.

When you replace a drive, be sure to set the jumpers on the replacement drive to match the jumpers on the drive you removed. For additional information about jumper settings on enhanced integrated drive electronics (EIDE) drives, see [EIDE Subsystem](#).

Lower 3.5-Inch Drive

 **NOTE:** This drive bay is used only in mini tower systems.



1 Drive-mounting screws (3)

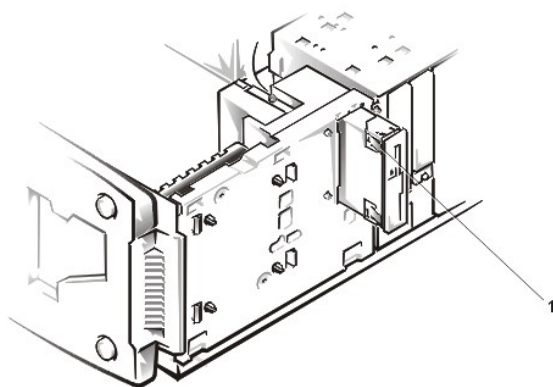
To remove the lower 3.5-inch drive, perform the following steps:

1. [Remove the bezel.](#)
2. [Remove the drive cage.](#)
3. Remove the three drive-mounting screws, one from the bottom and two from the left side.
4. Slide the drive out of the drive cage.

When you replace a drive, set the jumpers on the replacement drive to match the jumpers on the drive you removed. For additional information about jumper settings on EIDE drives, see [EIDE Subsystem](#).

To insert the bottom drive back into the bay, you must slide the drive over the two small grooves on the bottom of the bay.

3.5-Inch Diskette Drive



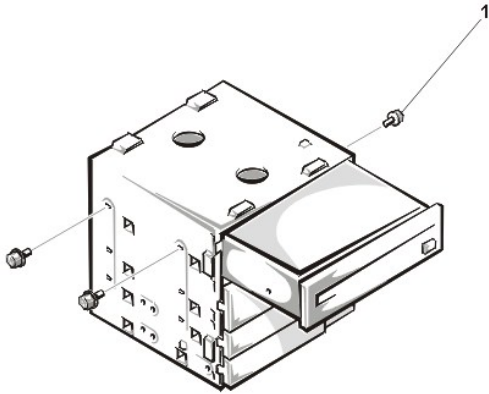
1 Drive-release tabs (2)

To remove the 3.5-inch diskette drive, perform the following steps:

1. [Remove the bezel.](#)
2. Disconnect the power and interface cables from the back of the diskette drive.
3. Press the two drive-release tabs, and slide the drive out of the drive bay.

Before you install the new drive, transfer the drive-release tabs to the replacement diskette drive.

5.25-Inch Drive



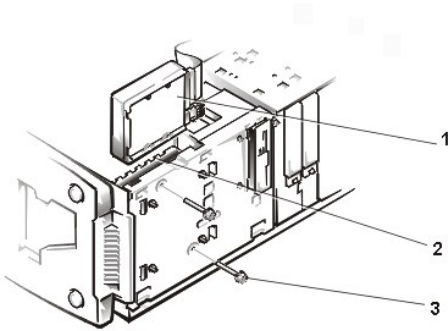
- 1 Drive-mounting screws (3)

To remove the 5.25-inch drive, perform the following steps:

1. [Remove the bezel.](#)
2. [Remove the drive cage.](#)
3. Remove the three drive-mounting screws, and slide the drive out of the drive bay.

When you replace a drive, set the jumpers on the replacement drive to match the jumpers on the drive you removed. For additional information about jumper settings on EIDE drives, see [EIDE Subsystem](#).

Primary Hard-Disk Drive



- 1 Primary hard-disk drive
2 Card guide assembly
3 Drive-assembly mounting screws (2)

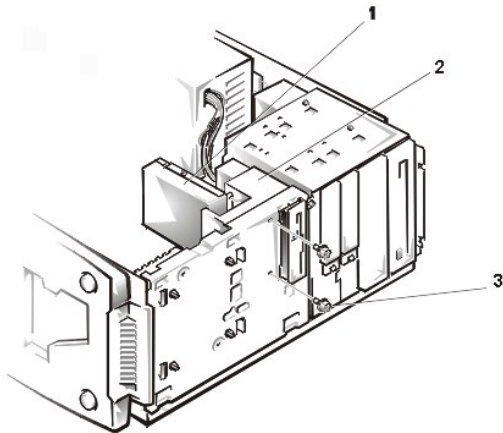
To remove the primary hard-disk drive, perform the following steps:

1. [Remove the bezel.](#)
2. Remove the two drive-assembly mounting screws.
3. Lift the primary hard-disk drive out of the card guide assembly.
4. Disconnect the DC power and interface cables from the back of the drive.

To reinstall the primary hard-disk drive, place the drive's circuit board toward the front of the chassis.

When you replace a hard-disk drive, set the jumpers on the replacement drive to match the jumpers on the drive you removed. For additional information about jumper settings on EIDE drives, see [EIDE Subsystem](#).

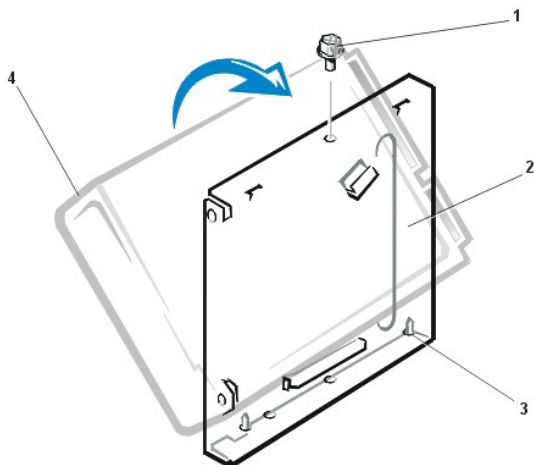
Secondary Hard-Disk Drive



- 1 Secondary hard-disk drive assembly
- 2 Card guide assembly
- 3 Drive-assembly mounting screws (2)

To remove the secondary hard-disk drive, perform the following steps:

1. [Remove the bezel.](#)
2. Disconnect the DC power and interface cables from the back of the drive.
3. Remove the two drive-assembly mounting screws.
4. Slide the hard-disk drive assembly toward the back of the chassis and lift it out.
5. Remove the drive from the drive bracket by removing the screw securing the drive to the bracket, and rotating the drive out of the bracket.



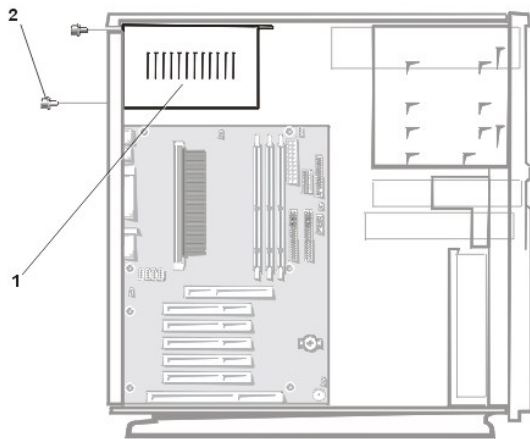
- 1 Screw
- 2 Drive bracket
- 3 Tabs (2)
- 4 Secondary hard-disk drive

When you replace a hard-disk drive, set the jumpers on the replacement drive to match the jumpers on the drive you removed. For additional information about jumper settings on EIDE drives, see [EIDE Subsystem](#).

As you insert the replacement hard-disk drive into the drive bracket, make sure that the two bracket tabs fit into the mounting holes on the side of the drive.

When you reinstall the hard-disk drive assembly, make sure that the rails on the assembly slide into the grooves of the card guide assembly.

Power Supply

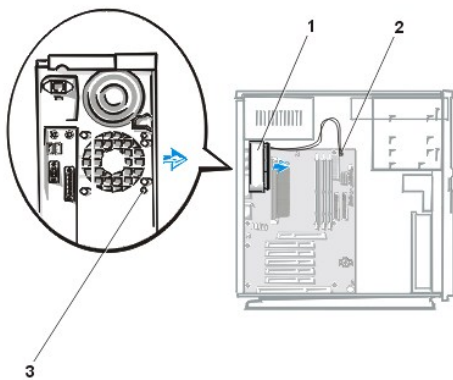


- 1 Power-supply mounting screws (2)
- 2 Power supply

To remove the power supply, perform the following steps:

1. Disconnect the AC power cable from the power supply.
 2. Disconnect the DC power cables from the POWER and 3.3V connectors on the system board.
 3. Disconnect the DC power cables from all the drives.
 4. Remove the two power-supply mounting screws from the back of the chassis.
 5. Lift the power supply out of the chassis.
-

Chassis Cooling-Fan Assembly



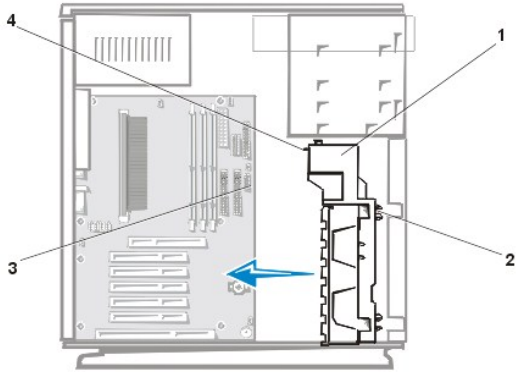
- 1 Chassis cooling-fan assembly
- 2 J7M1 connector
- 3 Release buttons

To remove the chassis cooling-fan assembly, perform the following steps:

1. Disconnect the chassis cooling-fan cable from the [J7M1 connector](#) on the system board.
2. While you push the fan assembly upward, press the two release buttons on the back of the chassis and lift the fan assembly out of the

chassis.

Card Guide Assembly

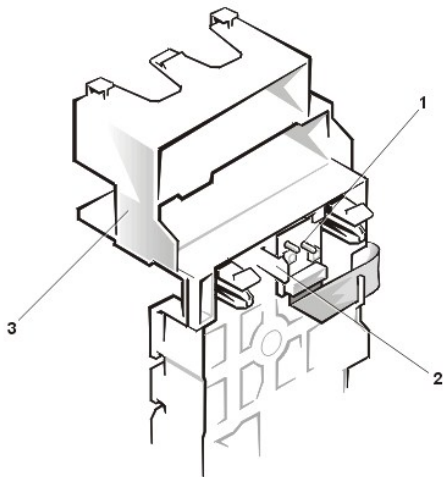


- 1 Card guide assembly
- 2 Mounting tabs (4)
- 3 J8H1 connector
- 4 Tab

To remove the card guide assembly, perform the following steps:

1. Disconnect any cables connected to full-length expansion cards, and [remove these expansion cards](#).
 2. [Remove the 3.5-inch diskette drive](#).
 3. [Remove the primary hard-disk drive](#).
 4. [Remove the secondary hard-disk drive if one is present](#).
 5. Disconnect the control panel cable from the [J8H1 connector](#) on the system board.
 6. Press the four mounting tabs that secure the card guide assembly to the front panel, and press on the tab at the back of the card guide assembly.
 7. Lift the card guide assembly, including the control panel cable, out of the chassis.
-

Control Panel Board

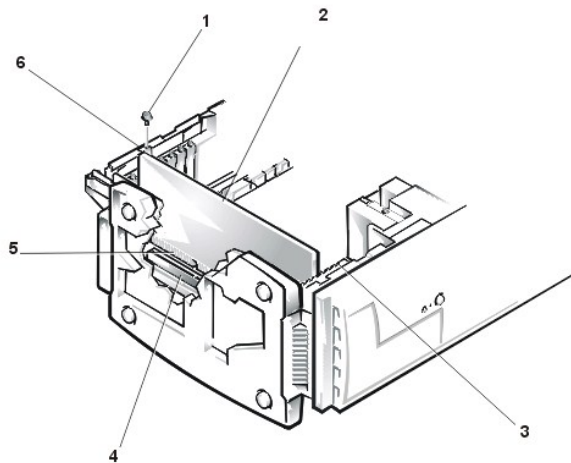


- 1 Control panel board
- 2 Mounting tab
- 3 Card guide assembly

To remove the control panel board, perform the following steps:

1. [Remove the bezel.](#)
 2. [Remove the card guide assembly.](#)
 3. Press the mounting tab to release the control panel board from the card guide assembly, and remove the control panel board.
-

Expansion Cards

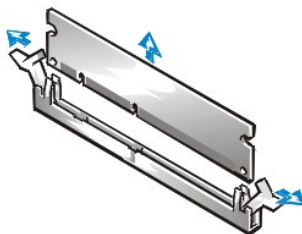


- 1 Retaining screw
- 2 Expansion card
- 3 Card guide assembly
- 4 Expansion card connector
- 5 Card-edge connector
- 6 Card-mounting bracket

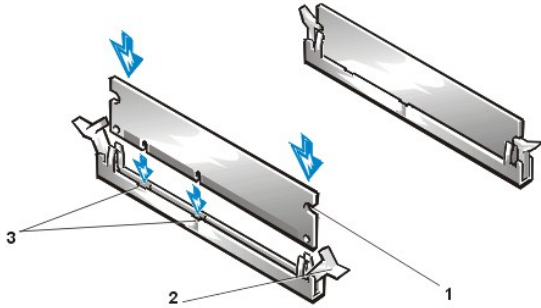
To remove an expansion card, perform the following steps:

1. Disconnect any cables from the expansion card.
 2. Remove the retaining screw from the card-mounting bracket.
 3. Grasp the expansion card by its corners, and carefully pull it out of its expansion-card connector.
-

DIMMs



To remove a dual in-line memory module (DIMM), press down and out on the securing clips at each end of the socket. The DIMM should pop up allowing you to lift it out of the socket.




- 1 Cutout
- 2 Securing tabs (2)
- 3 Crossbars in central groove of socket (2)

To install a DIMM, perform the following steps:

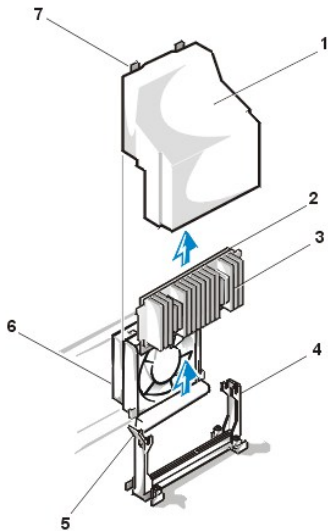
1. Orient the DIMM so that the cutouts on its edge connector align with the crossbars in the central groove of the socket.
2. Insert the DIMM straight down into the socket, making sure that it fits into the vertical guides at each end of the socket.
3. Press firmly until the DIMM snaps into place.

NOTICE: Do not press near the middle of the DIMM. Doing so may break the module.

 **NOTE:** Your system only supports 100-megahertz (MHz) DIMMs. To support error checking and correction (ECC), all installed DIMMs must be ECC-capable. Note that ECC DIMMs have an odd number of memory chips on the module and non-ECC DIMMs have an even number of chips.

If you have inserted the DIMM correctly, the securing tabs at each end of the socket snap into the cutouts at each end of the DIMM.

SECC2 Package and Heat Sink Assembly



- 1 Shroud
- 2 SECC2 package
- 3 Heat sink
- 4 Guide bracket assembly
- 5 Guide-bracket assembly latch

- 6 Fan assembly
- 7 Fan shroud tabs (2)

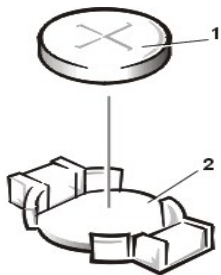
⚠ CAUTION: The single-edge contact cartridge 2 (SECC2) package and heat sink can get extremely hot during system operation. Be sure that the assembly has had sufficient time to cool before you touch it.

⚠ CAUTION: When handling the SECC2 package and heat sink assembly, take care to avoid sharp edges on the heat sink.

To reseal the SECC2 package and heat sink assembly, perform the following steps:

1. [Remove the computer cover and support beam.](#)
2. Remove the fan shroud by pressing its two tabs and gently lifting the shroud until it clears the fan and guide bracket assemblies. Set the fan shroud aside.
3. Gently pull out the guide-bracket assembly latch, grasp the SECC2 package firmly, and pull straight up to remove it from the guide bracket assembly.
You must use up to 15 pounds of force to disengage the SECC2 package from the connector. Do not rock the package while removing it.
4. Slide the SECC2 package into the guide bracket assembly, with the heat sink toward the front of the computer, and firmly seat the SECC2 package.
You must use up to 25 pounds of force to seat the SECC2 package. Do not rock the package while inserting it into the connector.
5. Place the fan shroud over the fan assembly and the guide bracket assembly. Then gently press down the shroud until the two fan shroud tabs snap into the two slots on top of the fan assembly.
6. Replace the computer cover and support beam, and reconnect the system to an electrical outlet.
7. Insert a diskette copy of the Dell Diagnostics into the diskette drive and restart the system. Run the **System Set** test group in the Dell Diagnostics.
If the tests do not complete successfully, refer to Chapter 7, "Getting Help," in the *Dell Dimension XPS Txxx and Txxxr Systems Reference and Troubleshooting Guide* for instructions on obtaining technical assistance.

Battery



- 1 Battery
- 2 Battery socket (BT7C1)

⚠ CAUTION: There is a danger of the new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

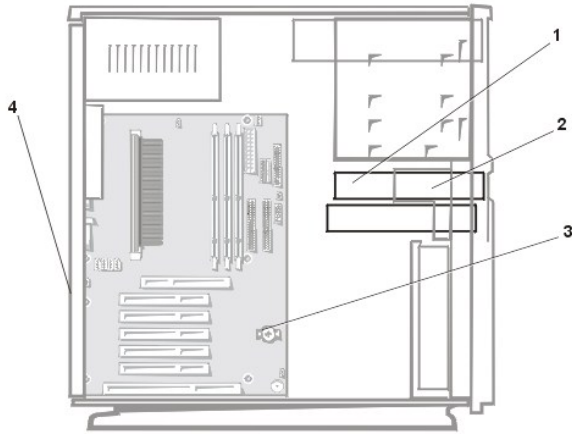
To remove the 3-volt (V), CR2032 coin-cell battery, perform the following steps:

1. If possible, enter the [system setup program](#), and print (by pressing the <Print Screen> key) or copy the system configuration information from the system setup screens.
2. [Remove the computer cover and support beam.](#)
3. Pry the battery out of its socket (BT7C1) with your fingers or with a blunt, nonconductive object such as a plastic screwdriver.

To replace the battery, perform the following steps:


1. Install the new battery with the "+" side facing up.
2. Start the [system setup program](#), and reset the [System Date and System Time settings](#).
3. Compare the system configuration settings and restore any system configuration information that was lost when you replaced the battery.

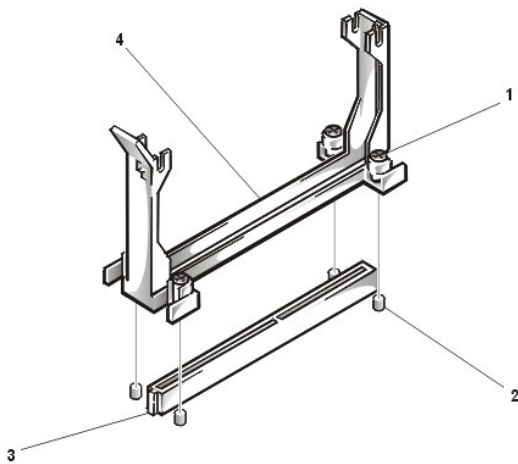
System Board



- 1 3.5-inch diskette drive
- 2 Secondary hard-disk drive bracket
- 3 System board
- 4 I/O gasket

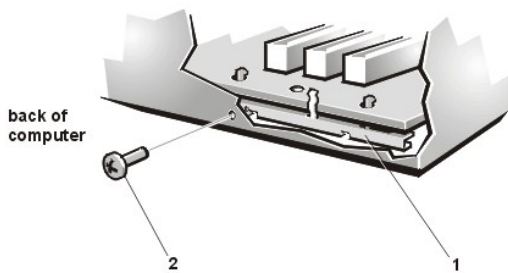
1. If possible, enter the [system setup program](#) and print the system setup screens by pressing the <Print Screen> key before you turn off the computer because you will have to restore the configuration information after the system board is replaced.
2. Disconnect any cables attached to the [input/output \(I/O\) panel on the back of the computer](#).
3. Disconnect any cables connected to expansion cards, and [remove these expansion cards](#).
4. Disconnect all internal cables from the [system board](#).
5. [Remove the SECC2 package and heat sink assembly](#).
6. Using a #2 Phillips-head screwdriver, loosen the four captive nuts securing the guide bracket assembly for the SECC2 package to the system board.
7. Remove the assembly from the four threaded posts as shown in the following figure.

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




- 1 Captive nuts (4)
- 2 Threaded posts (4)
- 3 Key
- 4 Guide bracket assembly

8. Remove the system-board mounting screw from the back of the computer, as shown in the following figure.

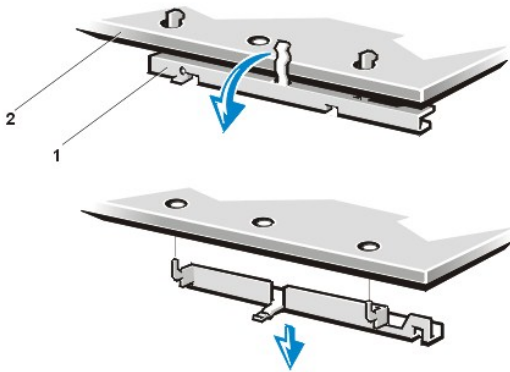


- 1 System board-mounting bracket
- 2 Mounting screw

9. Lift the system board from the three plastic standoffs that secure the system board to the chassis.
10. Carefully lift the system board out from the I/O gasket (see [System Board](#)), and remove the board from the computer.

 **NOTE:** You may need to slide the board toward the front of the computer to clear the hooked standoffs before you can lift the board from the computer.

11. Remove the mounting bracket from the back of the system board as shown in the following figure.




- 1 System board-mounting bracket
- 2 System board

Before you install a replacement system board, perform the following steps:

1. Install the guide bracket assembly for the SECC2 package. (The assembly is keyed for correct insertion.)
2. Install the SECC2 package and heat sink assembly.
3. Transfer the DIMMs to the new system board.

When you install a replacement system board, angle the back of the board downward and carefully align the connectors on the back edge of the board with the cutouts in the I/O gasket (see [System Board](#)). When properly aligned, the board connectors slide into the I/O gasket as you lower the board into position in the chassis and reseal it on the three plastic standoffs. Replace the system-board mounting screw.

 **NOTE:** The system-board mounting screw pulls the board against the I/O gasket to prevent electromagnetic interference (EMI) leakage.

After you install the replacement system board, replace the expansion cards that you removed from the old system board.

When you reconnect the cables to a system board with integrated sound, connect the CD-ROM drive audio cable to the connector nearest the back edge of the [system board](#). The middle audio connector may be used with a modem.

To configure the system after you install a replacement board, perform the following steps:

1. Install the jumper plug on pins 2 and 3 of [configuration jumper](#) J8A1 to select Maintenance mode.
2. Replace the cover and support beam, 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. Select **Clear All Passwords** and press <Enter> twice.
4. Press <F10> to exit the system setup program and save any changes you made.
5. Turn off the system, remove the computer cover and support beam, and replace the jumper plug on pins 1 and 2 of [configuration jumper J8A1](#) to select Normal mode.
6. Replace the cover and support beam and boot the system.
7. Reenter the system setup program and reset the system configuration information.

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Specifications: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

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General

Microprocessor type	Intel® Pentium® III microprocessor that runs at 100 MHz externally
Microprocessor speeds	450 MHz internal/100 MHz external 500 MHz internal/100 MHz external 550 MHz internal/100 MHz external 600 MHz internal/100 MHz external 650 MHz internal/100 MHz external 700 MHz internal/100 MHz external 750 MHz internal/100 MHz external 800 MHz internal/100 MHz external 850 MHz internal/100 MHz external
L1 cache	32 KB SRAM (16-KB data cache; 16-KB instruction cache)
L2 cache	
Dimension XPS Txxx	512-KB pipelined write-back SRAM on a separate chip on the processor card. The L2 cache runs at half the processor's internal clock speed.
Dimension XPS Txxxr	256-KB Advanced Transfer Cache that resides in the processor's core. The L2 cache runs at the processor's internal clock speed.
Microprocessor mounting	SECC2 package connected to the system board contains microprocessor and cache circuitry
Math coprocessor	internal to microprocessor

System Information

System chip set	Intel 440BX AGPset
Data bus width	64 bits
Address bus width	32 bits
DMA channels	seven
Interrupt levels	15
System BIOS chip	4 Mb (512 KB)
System clock	100 MHz (matches external processor speed)
Diskette/communications ports	48 MHz from the system clock


Expansion Bus

Bus types	PCI (version 2.1), ISA, and AGP (version 1.0)
Bus speed	AGP: 66 or 133 MHz PCI: 33 MHz ISA: 8.33 MHz
AGP expansion-card connectors	one
AGP expansion-card connector size	124 pins
AGP expansion-card connector data width (maximum)	32 bits
PCI expansion-card connectors	four
Shared PCI/ISA expansion-card connector	one
PCI expansion-card connector size	120 pins
PCI expansion-card connector data width (maximum)	32 bits
ISA expansion-card connectors	one (shares a card-slot opening with a PCI connector)
ISA expansion-card connector size	98 pins

ISA expansion-card connector data width (maximum) 16 bits

Memory

Architecture	ECC or non-ECC SDRAM modules
DIMM sockets	three; gold contacts
DIMM capacities	32, 64, 128, and 256 MB
Minimum RAM	64 MB (non-ECC)
Maximum RAM	768 MB
Frequency	100 MHz
Clock cycle	10 ns (supports 4 clocks only)
CAS latency	three
SPD revision	1.2A
Buffering	unbuffered
Voltage	3.3 V
Data bus width	8 bits
BIOS address	E8000h - FFFFFFFh

 **NOTE:** Only 100-MHz DIMMs are supported. The system can include both ECC and non-ECC memory; however, to support ECC, all installed DIMMs must be ECC-capable. ECC DIMMs have an odd number of memory chips on the module and non-ECC DIMMs have an even number of chips.

Drives

Mini tower chassis:

Externally accessible bays	five total: two 5.25-inch bays for diskette, tape, or CD-ROM drives; three 3.5-inch bays for diskette or tape drives
Internally accessible bays	two bays for 1-inch-high EIDE or SCSI hard-disk drives

Desktop chassis (available only in certain locations):

Externally accessible bays	four total: two 5.25-inch for diskette, tape, or CD-ROM drives; two 3.5-inch bays for diskette or tape drives
Internally accessible bays	two bays for 1-inch-high EIDE or SCSI hard-disk drives

Ports

Externally accessible:

Serial (DTE)	9-pin connector; 16550C-compatible
Parallel	25-hole connector (bidirectional)
PS/2-style keyboard	6-pin mini-DIN connector
PS/2-compatible mouse	6-pin mini-DIN connector
MIDI/game*	15-pin connector
Video	15-hole connector on an AGP video card
Audio*	three miniature jacks for LINE IN, LINE OUT, and MIC IN
USB	two USB-compliant connectors

Internally accessible:

Primary EIDE	40-pin connector
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Secondary EIDE	40-pin connector
Diskette drive	34-pin connector

** Available in integrated audio systems only*

Video

Video	2X AGP video card (see manufacturer's specifications for information about the card and any utilities and drivers included)
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Audio

Audio type	Integrated Yamaha XG 64 Voice Wavetable Sound
Audio chip set	Yamaha 724 DS-1 chip set

Power

DC power supply:

Wattage	200 W
Voltage (switch selectable on back panel)	90 to 135 V at 60 Hz; 180 to 265 V at 50 Hz; 100 V at 50 to 60 Hz for Japanese systems
Heat dissipation	778 BTU (fully loaded system without monitor)

Battery	3-V CR2032 coin cell
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Physical

Mini tower chassis:

Height	43.69 cm (17.2 inches)
Width (with base)	20.32 cm (8 inches)
Depth	44.45 cm (17.5 inches)
Weight	11.3 to 13.6 kg (25.0 to 30.0 lb)

Desktop chassis:

Height	16.00 cm (6.3 inches)
Width	42.42 cm (16.7 inches)
Depth	44.45 cm (17.5 inches)
Weight	11.3 to 13.6 kg (25.0 to 30.0 lb)

Environmental

Temperature:

Operating	10° to 35°C* (50° to 95°F)
Storage	-40° to 65°C (-40° to 149°F)

Relative humidity	20% to 80% (noncondensing)
Maximum vibration:	
Operating	0.25 G at 3 to 200 Hz at 1/2 octave/min
Storage	0.5 G at 3 to 200 Hz at 1/2 octave/min
Maximum shock:	
Operating	left side (for mini tower orientation) and bottom half-sine pulse with a change in velocity of 50.8 cm (20 inches)/sec
Storage	23-G faired-square wave with a velocity change of 508.0 cm (200 inches)/sec
Altitude:	
Operating	-16 to 3048 m* (-50 to 10,000 ft)
Storage	-16 to 10,600 m (-50 to 35,000 ft)

* At 35°C (95°F), the maximum operating altitude is 914 m (3000 ft).

Regulatory Notices

FCC (U.S. only)	Class B
IC Notice (Canada only)	Class B
CE Notice	Class B
VCCI Notice (Japan only)	Class B
NOM O24 Information (Mexico only)	

IRQ Assignments

IRQ Line	System Resource	IRQ Line	System Resource
IRQ0	System timer	IRQ8	RTC
IRQ1	Keyboard buffer	IRQ9	Available ²
IRQ2	Enables IRQ8 through IRQ15	IRQ10	Available
IRQ3	Available ¹	IRQ11	Default PCI IRQ ³
IRQ4	Serial port	IRQ12	Mouse port
IRQ5	Available	IRQ13	Math coprocessor
IRQ6	Diskette/tape drive controller	IRQ14	Primary EIDE channel
IRQ7	Parallel port	IRQ15	Secondary EIDE channel

¹IRQ3 is available provided that no other device in the computer (such as a modem) is using COM2 or COM4.

²IRQ9 is available to PCI cards only.

³The PCI IRQ is assigned to an available IRQ line after an ISA expansion card has been configured. If an ISA expansion card is configured for IRQ11, the PCI IRQ is assigned to another available IRQ line.

Default Dell-Installed Expansion Card Placement

Table 1 provides the default Dell-installed expansion card placements if a system is ordered with a TV tuner card. Table 2 provides the default Dell-installed expansion card placements if a system is ordered without a TV tuner card.

Table 1. Default Dell-Installed Expansion Card Placements for Systems with Optional TV Tuner Card or SwapBox

Expansion-Card Slot	Expansion Card
AGP Port	AGP video
PCI Slot 1	NIC
PCI Slot 2	DVD
PCI Slot 3	Audio
PCI Slot 4	PCI modem
PCI Slot 5/ISA Slot 1	TV Tuner

Table 2. Default Dell-Installed Expansion Card Placements for Systems with SCSI (for either SwapBox or TV Tuner Card)

Expansion-Card Slot	Expansion Card
AGP Port	AGP video
PCI Slot 1	NIC
PCI Slot 2	Audio
PCI Slot 3	SCSI
PCI Slot 4	PCI modem
PCI Slot 5/ISA Slot 1	SwapBox

DMA Channel Assignments

DREQ Line	Used By/Available
DREQ0	Default audio DMA channel assignment
DREQ1	Default audio DMA channel assignment
DREQ2	Generated by I/O controller to enable DMA cycle for attached diskette drive
DREQ3	Parallel port (ECP)
DREQ4	Reserved
DREQ5	Available
DREQ6	Available
DREQ7	Available

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System Setup Program: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

[Overview](#) • [Entering the System Setup Program](#) • [Main Screen](#) • [Advanced Screen](#) • [Security Screen](#) • [Power Screen](#) • [Boot Screen](#) • [Exit Screen](#) • [Enabling the Processor Serial Number](#) • [Clearing NVRAM](#)

Overview

Each time you turn on your computer system or press the reset button, the system compares the hardware installed in the system to the hardware listed in the configuration information stored in nonvolatile random-access memory (NVRAM) on the system board. If the system detects a discrepancy between the two, it generates error messages that identify the incorrect configuration settings. The system then prompts you to enter the system setup program to correct the setting.

You can use the system setup program as follows:

- 1 To change the system configuration information after you add, change, or remove any hardware in your system
- 1 To set or change user-selectable options — for example, the user password

Dell recommends that you print the system setup program screens (by pressing <Print Screen>) or write down the information for future reference.

The system setup screens are organized as follows:

- 1 At the top is a menu bar for accessing the main program screens.
- 1 The box on the left side of each screen lists options that define the installed hardware in the system. Fields beside the options contain settings or values. You can change those that are enclosed in brackets. Values that are not enclosed in brackets contain status information reported by the system.
- 1 The box on the right side of each screen displays help information for the option with a currently highlighted field.
- 1 The bottom area lists keys and their functions for the currently displayed screen.

The menu bar provides access to the following six screens:

- 1 [Main screen](#) — Provides settings for the basic system configuration
- 1 [Advanced screen](#) — Provides detailed settings for some system features
- 1 [Security screen](#) — Provides indications and settings for system password and setup password
- 1 [Power screen](#) — Provides settings for the system power-management features
- 1 [Boot screen](#) — Provides information about which device boots the system
- 1 [Exit screen](#) — Provides selections for saving and loading the configurations and options

In addition to these screens, options identified by a right arrow provide access to submenus.

Entering the System Setup Program

Enter the system setup program as follows:

1. Turn on (or restart) your system.
2. When the blue Dell™ logo appears, press . If you wait too long and the operating system begins to load into memory, *let the system complete the load operation*, then shut down the system and try again.

You can also enter the system setup program by responding to certain error messages.

Main Screen

Dell Dimension XPS T450 Setup

<p>Main Advanced Security Power Boot Exit</p>	
<p>BIOS Version A04 Processor Type Pentium (R) III processor Processor Speed 450 MHz Processor Serial Number [Disabled] Cache RAM 512 KB Service Tag M5JNS</p> <p>System Memory 64 MB Memory Bank 0 64 MB SDRAM Memory Bank 1 Not Installed Memory Bank 2 Not Installed</p> <p>ECC Configuration [ECC] L2 Cache ECC Support: [Auto]</p> <p>System Time: [09:28:04] System Date: [04/09/1998]</p>	<p>Item Specific Help</p>
<p>F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ► Submenu F10 Save and Exit</p>	

Table 1. Main Screen Menu Options

Option	Function
BIOS Version	Displays the version of the BIOS being used.
Processor Type	Displays the type of microprocessor installed.
Processor Speed	Displays the internal speed of the microprocessor.
Processor Serial Number	Displays the serial number of the microprocessor when set to Enabled . Disabled (default) turns off the feature. This option does not appear in the menu if the microprocessor does not support the feature.
Cache RAM	Indicates the amount of L2 cache memory installed. <i>NOTE: Depending on your system configuration, the processor may be installed with 256 KB or 512 KB cache memory installed.</i>
Service Tag	Displays the system's service tag.
System Memory	Displays the amount of system memory installed, ranging from 64 to 768 MB, in the 3 DIMM sockets on the system board.
Memory Bank <i>n</i>	Displays the size and type of memory in the DIMM sockets. If ECC DIMMs are installed in all of the banks, an option appears that allows you to enable or disable the ECC functionality. If the option is not present, then some or all of the installed memory is non-ECC.
ECC Configuration	Appears on the screen only if the system detects an all-ECC memory configuration. Leave this option set to ECC (default) for optimum performance. To disable ECC, select Non-ECC .
L2 Cache ECC Support	When Auto (default) is selected, the system first checks the type of installed DIMMs. Then if all of the DIMMs are detected as ECC, error checking is automatically allowed to occur on data accessed from the L2 cache. If one or more non-ECC DIMMs are detected, error checking is not performed. When Enabled , this option allows error checking to occur on data accessed from the L2 cache without checking the type of installed DIMMs. If set to Disabled , error checking is not performed. NOTICE: Be sure that Auto or Enabled is selected before running mathematical application programs. Otherwise, error checking will not be performed on the cache data.
System Time	Resets the time on the system's internal clock.
System Date	Resets the time on the system's internal calendar.

Advanced Screen

Dell Dimension T450 Setup

Main	Advanced	Security	Power	Boot	Exit
Setup Warning Setting Items on this menu to incorrect values may cause your system to malfunction. Plug & Play O/S: [No] Reset Configuration Data: [No] Numlock: [Auto] ▶ Peripheral Configuration ▶ IDE Configuration ▶ Diskette Options ▶ DMI Event Logging ▶ Video Configuration ▶ Resource Configuration		Item Specific Help Reset			
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ▶ Submenu F10 Save and Exit					

Table 2. Advanced Screen Menu Options

Option	Function
Plug & Play O/S	Determines whether the system is configured to support Plug and Play devices from the operating system or from the system BIOS. Leave this option set to No so the BIOS handles all Plug and Play operation. <i>NOTE: Be sure this option is set to No before running Dell Diagnostics. Otherwise, some diagnostics may incorrectly fail.</i>
Reset Configuration Data	Permits resetting Plug and Play configuration data to default values. Yes resets the data; No (default) retains the current Plug and Play settings. If set to Yes , configuration data reverts to default values the next time the system boots. This option automatically reverts back to the No setting.
Numlock	Selects the power-on state for Num Lock. The Auto (default) option turns on Num Lock for 101-key keyboards only. The On option turns Num Lock on; Off turns this feature off.
Peripheral Configuration	Displays the Peripheral Configuration submenu .
IDE Configuration	Displays the IDE Configuration submenu .
Diskette Options	Displays the Diskette Options submenu .
DMI Event Logging	Displays the DMI Event Logging submenu .
Video Configuration	Displays the Video Configuration submenu .
Resource Configuration	Displays the Resource Configuration submenu for allocating IRQs and memory ranges.

Peripheral Configuration Submenu

Dell Dimension XPS T450 Setup

Advanced	
Peripheral Configuration	Item Specific Help
Serial port A: [Auto] Parallel port: [Auto] Mode: [Bidirectional] Audio: [Enabled] Legacy USB Support: [Disabled]	Reset
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ▶ Submenu F10 Save and Exit	

Table 3. Peripheral Configuration Submenu Options

Option	Function
Serial port A	Configures the serial port. Set this option to Auto (default), Enabled , or Disabled . If set to Enabled , you can set the following additional options: <p>Base I/O Address Available I/O addresses are COM1, COM2, COM3, and COM4.</p> <p>Interrupt Available interrupts are IRQ3 and IRQ4.</p>
Parallel port	Configures the parallel port. Set this option to Auto (default), Enabled , or Disabled . Depending on the port setting, you can set the following additional options: <p>Mode If port is set to Auto or Enabled, available modes are Output Only, Bidirectional, ECP, and EPP. Bidirectional is the default setting.</p> <p><i>NOTE: Refer to the device manufacturer's documentation for information on which mode to use before changing this setting.</i></p> <p>Base I/O Address If port is set to Enabled, available I/O addresses are 378h (default), 278h, and 228h.</p>
Audio	<i>NOTE: This option is available in integrated audio systems only.</i> Determines if integrated audio controller is Enabled (default) or Disabled . Set this option to Disabled if you are using a sound card instead of the integrated audio controller or if the resources used by the controller are needed.
Legacy USB Support	Set to Disable (default) if legacy USB support is not desired. Enable allows support for legacy USB.

IDE Configuration Submenu

Dell Dimension T450 Setup	
Advanced	
IDE Configuration	Item Specific Help
<p>IDE controller [Both]</p> <p>▶ Primary IDE Master [IBM-DHEA-38451]</p> <p>▶ Primary IDE Slave [None]</p> <p>▶ Secondary IDE Master [FX 120T]</p> <p>▶ Secondary IDE Slave [None]</p>	
<p>F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults</p> <p>ESC Exit ↔ Select Menu Enter Select ▶ Submenu F10 Save and Exit</p>	

Table 4. IDE Configuration Submenu Options

Option	Function
IDE Controller	Configures the integrated primary and secondary EIDE controllers and detects the types of drives attached to them. If set to Primary , Secondary , or Both , the designated controller(s) are enabled, and the types of drives attached are displayed. If set to either Primary or Secondary , the other controller is not enabled and the IRQ it normally uses becomes available. If set to Disabled , the system cannot detect any drives attached to the controllers and displays None for all four IDE drive options.
Primary IDE Master	Identifies the first drive attached to the primary EIDE interface, usually the boot hard-disk drive. See Primary IDE Master Submenu .
Primary IDE Slave	Identifies the second drive attached to the primary EIDE interface, usually a second hard-disk drive. The format of this submenu is the same as the one described in Primary IDE Master Submenu .
Secondary IDE Master	Identifies the first drive attached to the secondary EIDE interface, usually a CD-ROM or tape drive. The format of this submenu is the same as the one described in Primary IDE Master Submenu .
Secondary IDE Slave	Identifies the second drive attached to the secondary EIDE interface, usually a CD-ROM or tape drive. The format of this submenu is the same as the one described in Primary IDE Master Submenu .

Primary IDE Master Submenu

Dell Dimension T450 Setup

Advanced	
Primary IDE Master [IBM-DHEA-38451]	Item Specific Help
Type: [Auto]	
Maximum Capacity: 8455 MB	
Multi-Sector Transfers: [16 Sectors]	
LBA Mode Control: [Enabled]	
Transfer Mode: [Fast PIO 4]	
Ultra DMA: [Mode 2]	
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ► Submenu F10 Save and Exit	

Table 5. Primary IDE Master Submenu Options

Option	Function
Type	Specifies the type of hard-disk drive. If the drive supports the auto-detect feature, set this option to Auto . For no IDE drive, set Type to None .
Maximum Capacity	Displays the drive's maximum storage capacity.
Multi-Sector Transfers	Determines the number of sectors per block during multiple-sector transfers. If Type is set to User , set Multi-Sector Transfers to 2 Sectors , 4 Sectors , 8 Sectors , or 16 Sectors or disable the feature.
LBA Mode Control	Determines LBA mode control. Set to Enable (default) unless directed to change it by a Dell technical support representative.
Transfer Mode	Selects method of moving data to and from the EIDE drive. Options include Standard and the PIO modes 1, 2, 3, and 4, which can improve the performance of a hard-disk drive. (The higher the PIO number, the faster the transfer; most newer drives support Fast PIO 4 .) For the optimum transfer mode, set Type to Auto . If Type is set to Disabled , PIO is turned off.
Ultra DMA	Sets the Ultra DMA mode for the drive.

Diskette Options Submenu

Dell Dimension XPS T450 Setup

Advanced	
Diskette Options	Item Specific Help
Diskette controller: [Enabled]	
Diskette A: [1.44/1.25 MB 3 1/2"]	
Diskette Write Protect: [Disabled]	
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ► Submenu F10 Save and Exit	

Table 6. Diskette Options Submenu Options

Option	Function
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Diskette controller	Configures diskette drive interface. Options are Auto , Enabled (default), and Disabled .
Diskette A	Identifies the boot diskette drive in the computer. The default is 1.44/1.25 MB 3 1/2" .
Diskette Write Protect	Protects a diskette from being written to when set to Enabled . When this option is set to Disabled (default), the diskette is not protected unless the write-protect tab is in place.

DMI Event Logging Submenu

Dell Dimension XPS T450 Setup	
Advanced	
DMI Event Logging	Item Specific Help
Event Log Capacity	Space available
Event Log Validity	Valid
View DMI event log	[Enter]
Clear all DMI event logs	[No]
Event Logging	[Enabled]
Mark DMI events as read	[Enter]
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ► Submenu F10 Save and Exit	

Table 7. DMI Event Logging Submenu Options

Option	Function
Event Log Capacity	Displays information about the event log.
Event Log Validity	Displays Invalid if an error was detected in the event log.
View DMI event log	Permits viewing of the DMI Event Log. Press <Enter> to view the DMI Event Log. To return to the DMI Event Logging submenu, click Continue in the Event Log window.
Clear all DMI event logs	Clears the DMI Event Log when the system restarts if set to Yes . Retains the event log information if set to No (default).
Event Logging	Permits logging of DMI events. Set this option to No if no record of DMI events is desired.
Mark DMI events as read	Press <Enter>, and then select Yes or No to mark DMI events as read.

Video Configuration Submenu

Dell Dimension XPS T450 Setup	
Advanced	
Video Configuration	Item Specific Help
Palette Snooping	[Disabled]
AGP Aperture Size:	[64 MB]
Default Primary Video Adapter:	[AGP]
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ► Submenu F10 Save and Exit	

Table 8. Video Configuration Submenu Options

Option	Function
Palette Snooping	Allows an ISA expansion card to check a PCI expansion card for an updated graphics palette. If this option is set to Disabled , the ISA expansion card may not be updated along with the PCI expansion card.
AGP Aperture Size	Sets the aperture size for the AGP video controller to 64 MB (default) or 256 MB .
Default Primary Video Adapter	Supports the Microsoft® Windows® 98 and Windows 2000 multiple-monitor feature. Select AGP (default) to specify the AGP video card as the primary video adapter. Select PCI to specify a PCI video card as the primary video adapter.

Resource Configuration Submenu

Dell Dimension XPS T450 Setup	
Advanced	
Resource Configuration	Item Specific Help
C800 - CBFF: [Available] CC00 - CFFF: [Available] D000 - D3FF: [Available] D400 - D7FF: [Available] D800 - DBFF: [Available] DC00 - DFFF: [Available] IRQ 3: [Available] IRQ 4: [Available] IRQ 5: [Available] IRQ 7: [Available] IRQ 10: [Available] IRQ 11: [Available]	
F1 Help ↑↓ Select Item -/+ Change Values ESC Exit ↔ Select Menu Enter Select ► Submenu	F9 Setup Defaults F10 Save and Exit

Table 9. Resource Configuration Submenu Options

Option	Function
xxxx-xxxx	Reserves the specified UMB (for example C800 - CBFF) for use by legacy ISA devices. Settings are Available (default) and Reserved .
IRQ <i>n</i>	Reserves the specified IRQ for use by legacy ISA devices. Settings are Available (default) and Reserved .

Security Screen

Dell Dimension XPS T450 Setup	
Main Advanced Security Power Boot Exit	
Security	Item Specific Help
User Password Is: Not Installed Setup Password Is: Not Installed Set User Password [Enter] Set Setup Password [Enter] User Setup Access: [Full Access]	
F1 Help ↑↓ Select Item -/+ Change Values ESC Exit ↔ Select Menu Enter Select ► Submenu	F9 Setup Defaults F10 Save and Exit

Table 10. Security Screen Options

Option	Function
User Password Is	Indicates whether a user password has been assigned.
Setup Password Is	Indicates whether a setup password has been assigned.

Set User Password	Allows you to assign, change, or clear a user password, which controls access to the computer at start-up.
Set Setup Password	Allows you to assign, change, or clear a setup password that provides access to both the computer and the system setup program.
User Setup Access	Controls user access to the system setup program. Full Access (default) allows full user access. Set this option to Limited Access to allow user access only to System Date , System Time , and Set User Password . Set this option to View Only to allow only user viewing access. None prevents user access to the system setup program.

Power Screen

Dell Dimension XPS T450 Setup

Main	Advanced	Security	Power	Boot	Exit
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<p>Power Management: [Enabled]</p> <p>Inactivity Timer: [Off]</p> <p>Hard Drive: [Enabled]</p> <p>VESA Video Power Down: [Enabled]</p>	<p style="text-align: center;">Item Specific Help</p>
<p>F1 Help ↑ Select Item -/+ Change Values F9 Setup Defaults</p> <p>ESC Exit ↔ Select Menu Enter Select ► Submenu F10 Save and Exit</p>	

Table 11. Power Screen Options

Option	Function
Power Management	Enables or disables Inactivity Timer and Hard Drive options.
Inactivity Timer	Determines the period of system inactivity (between 1 and 120 minutes) before certain system components enter a low-power mode. To disable power management, leave this option set to Off (default). <i>NOTE: Leave this option set to Off if the operating system has power management controls.</i>
Hard Drive	When set to Enabled (default), Hard Drive allows most EIDE hard-disk drives to automatically switch into low-power mode after a specified period of system inactivity (called a <i>time-out</i>). The time-out period is set with the Inactivity Timer option. When Hard Drive is set to Disabled , hard-disk drives do not switch into low-power mode.
VESA Video Power Down	<i>NOTES: This option is available only if the installed video card supports this feature.</i> <i>If your computer is running Windows 98, use the Display icon in the Control Panel to save monitor power instead of using the VESA Video Power Down option. If your computer is running Windows 2000, double-click the Display icon in the Control Panel and then click the Power button on the Screen Saver tab to save monitor power.</i> NOTICE: Before enabling this option, check the monitor documentation to make sure that the monitor is DPMS-compliant; otherwise, there is a risk of damaging the monitor. This option selects a VESA® power management mode for the monitor during periods of system inactivity. Settings for this option are Disabled , Standby (default), Suspend , and Sleep .

Boot Screen

Dell Dimension XPS T450 Setup

Main	Advanced	Security	Power	Boot	Exit
Boot-time Diagnostic Screen: [Disabled] QuickBoot Mode: [Disabled]				Item Specific Help	
Restore On AC/Power Loss: [Last State] On LAN: [Power On]					
First Boot Device [Removable Devices] Second Boot Device [Hard Drive] Third Boot Device [ATAPI CD-ROM Drive] Fourth Boot Device [Network Boot]					
▶Hard Drive ▶Removable Devices					
F1 Help ↑ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ▶ Submenu F10 Save and Exit					

Table 12. Boot Screen Options

Option	Function
Boot-time Diagnostic Screen	When set to Disabled (default), this option allows only the blue Dell logo screen to appear during POST. If set to Enabled , this option allows the POST diagnostics test results to be displayed on the screen during POST.
QuickBoot Mode	When set to Enabled , this option shortens POST by eliminating some tests. If set to Disabled (default), all POST tests occur.
Restore On AC/Power Loss	Determines what state the system enters when AC power is restored after a power loss. Settings are as follows: <ul style="list-style-type: none"> 1 Last State (default) – System returns to the state it was in when power was lost. 1 Stay off – System stays off when power is restored; you must press the power button to restore power. 1 Power On – System turns on when power is restored.
On LAN	Determines how the system responds to a Wakeup On LAN event. The selections are Power On (default) or Stay Off .
First Boot Device	Determines which device the system tries to boot from first. Use the up- or down-arrow key to highlight a device, and press the plus (+) or minus (-) key to move the item up or down the list. Settings for this option are as follows: <ul style="list-style-type: none"> 1 Removable Devices (default) – Normally diskette drive A 1 Hard Drive – Hard-disk drive connected to primary EIDE channel 1 ATAPI CD-ROM Drive – CD-ROM drive 1 Network Boot – Drive on the network server
Second Boot Device	Determines which device the system tries to boot from if it cannot boot from the device selected for First Boot Device . Settings for this option are the same as for First Boot Device .
Third Boot Device	Determines which device the system tries to boot from if it cannot boot from the device selected for First Boot Device or Second Boot Device . Settings for this option are the same as for First Boot Device .
Fourth Boot Device	Determines which device the system tries to boot from if it cannot boot from the device selected for First Boot Device , Second Boot Device or Third Boot Device . Settings for this option are the same as for First Boot Device .
Hard Drive	Displays order of bootable hard-disk drives. See Hard Drive submenu .
Removable Devices	Displays a list of removable devices. See Removable Devices submenu .

Hard Drive Submenu

Dell Dimension XPS T450 Setup

Hard Drive		Item Specific Help	
1. [IBM-DHEA-38451] 2. [Bootable Add-In Card]			
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults
ESC Exit	↔ Select Menu	Enter Select ► Submenu	F10 Save and Exit

Table 13. Hard Drive Submenu Options

Option	Function
<i>device designation</i>	The computer system attempts to boot the operating system from the first device listed. To select a new boot device, reorder the list: Use the up- or down-arrow key to highlight a device, and press the plus (+) or minus (-) key to move the item up or down the list. If no operating system is found on the boot device, the system attempts to boot from each successive device until an operating system is found.
Bootable Add-In Card	Same as preceding item.

Removable Devices Submenu

Dell Dimension XPS T450 Setup

Removable Devices		Item Specific Help	
1. [Legacy Floppy Drives]			
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults
ESC Exit	↔ Select Menu	Enter Select ► Submenu	F10 Save and Exit

Table 14. Removable Devices Submenu Option

Option	Function
Legacy Floppy Drives	The operating system assigns drive letters to removable devices in the order listed on the Removable Devices submenu. To change the drive designations, reorder the list: Use the up- or down-arrow key to highlight a device, and press the plus (+) key or minus (-) key to move the item up or down the list.

Exit Screen

Dell Dimension XPS T450 Setup

Main	Advanced	Security	Power	Boot	Exit
Exit Saving Changes [Enter] Exit Discarding Changes [Enter] Load Setup Defaults [Enter] Load Custom Defaults [Enter] Save Custom Defaults [Enter] Discard Changes [Enter]	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Item Specific Help</div> <div style="border: 1px solid black; height: 100px;"></div>				
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults		
ESC Exit	↔ Select Menu	Enter Select ► Submenu	F10 Save and Exit		

Table 15. Exit Screen Options

Option	Function
Exit Saving Changes	Saves any changes you have made, exits the system setup program, and restarts the system.
Exit Discarding Changes	Discards any changes you have made, exits the system setup program, and restarts the system.
Load Setup Defaults	Discards any changes you have made and reverts all options to their defaults, but does not exit the system setup program.
Load Custom Defaults	Loads settings saved using Save Custom Defaults option. Press <Enter>. Then press spacebar to select Yes or No at the confirmation pop-up menu, and press <Enter> again.
Save Custom Defaults	Saves any changes you have made, but does not exit the system setup program.
Discard Changes	Discards any changes you have made and reverts all options to their last saved settings, but does not exit the system setup program.

Enabling the Processor Serial Number

The Intel® Pentium® III microprocessor includes a processor serial number feature designed to provide additional user security and manageability benefits. By default, this feature is disabled on Dell systems to protect your privacy. However, it can be enabled through the **Processor Serial Number** option in the system setup program.

To enable the processor serial number feature, perform the following steps.

NOTICE: Do not change this setting by any means other than the system setup program. Otherwise, your system may become unusable.

1. [Enter the system setup program.](#)
2. When the **Main** screen appears, use the down-arrow key to highlight the **Processor Serial Number** option.
3. Press <Enter>, select **Enabled** from the menu, and then press <Enter> again.
4. Use the right-arrow key to highlight **Exit** and then press <Enter>.
5. When prompted to confirm the changes you made, press <Enter>.
The system restarts with the processor serial number feature enabled.

NOTE: The processor serial number feature remains enabled until you disable it in the system setup program.

To disable the processor serial number feature, repeat steps 1 through 5, selecting **Disabled** in step 3.

Clearing NVRAM

To clear NVRAM for all devices and restart the system, perform the following steps:

1. [Enter the system setup program.](#)
2. Press the right-arrow key to move to the **Advanced** menu.
3. Press the down-arrow key to highlight **Reset Configuration Data**. Then press the plus (+) key to change the setting to **Yes** (refer to [Advanced Screen Menu Options table](#)).
4. Press <F10> to exit the program and restart the system.

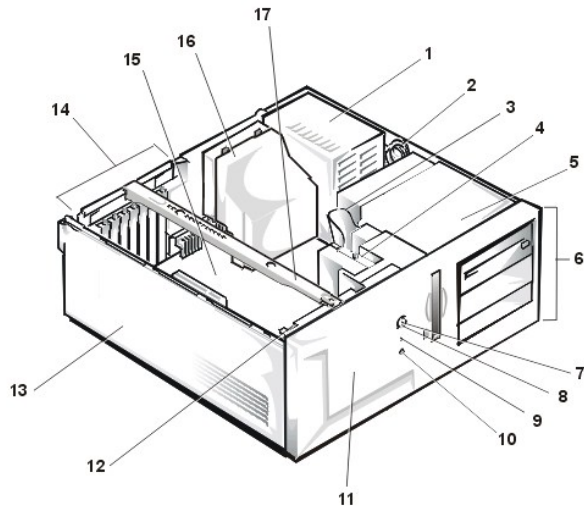
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Technical Overview: Dell™ Dimension™ XPS Txxx and Txxxr Systems Reference

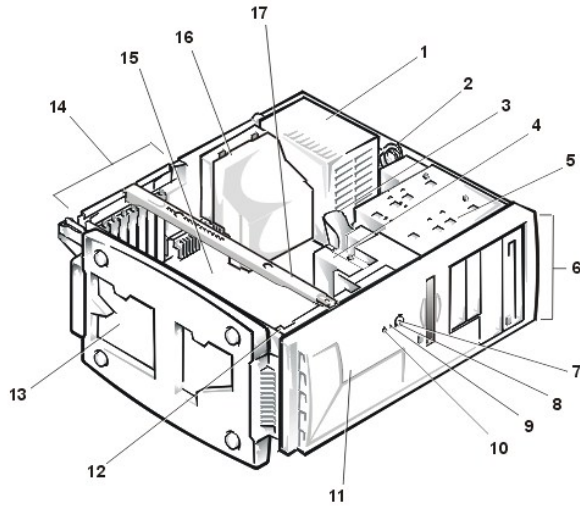
[Internal View of Desktop](#) • [Internal View of Mini Tower](#) • [Back-Panel Features](#) • [System Board Connectors and Sockets](#) • [System Board Configuration Jumper](#) • [SECC2 Package](#) • [Power Supply](#) • [DC Power Cables](#) • [DC Power Connector Pin Assignments](#)

Internal View of Desktop



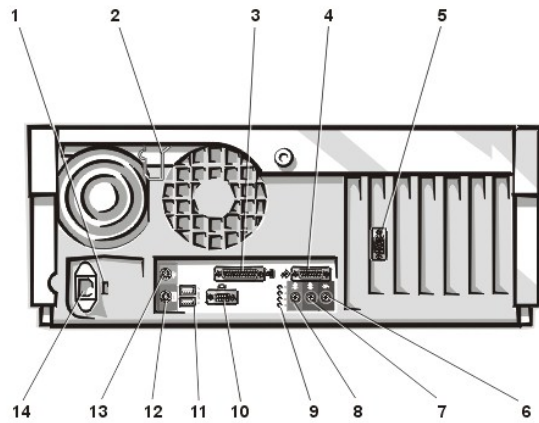
- 1 Power supply
 - 2 DC power cables
 - 3 Diskette-drive interface cable
 - 4 Secondary hard-disk drive bracket
 - 5 Drive cage
 - 6 Drive bays (typical)
 - 7 Power indicator
 - 8 Power button
 - 9 Hard-disk drive access indicator
 - 10 Reset button
 - 11 Bezel
 - 12 Card-guide assembly (contains primary hard-disk drive)
 - 13 Chassis
 - 14 Filler brackets
 - 15 System board
 - 16 Chassis cooling fan
 - 17 Support beam
-

Internal View of Mini Tower



- 1 Power supply
- 2 DC power cables
- 3 Diskette-drive interface cable
- 4 Secondary hard-disk drive bracket
- 5 Drive cage
- 6 Drive bays (typical)
- 7 Power indicator
- 8 Power button
- 9 Hard-disk drive access indicator
- 10 Reset button
- 11 Bezel
- 12 Card-guide assembly (contains primary hard-disk drive)
- 13 Chassis
- 14 Filler brackets
- 15 System board
- 16 Chassis cooling fan
- 17 Support beam (on some models)

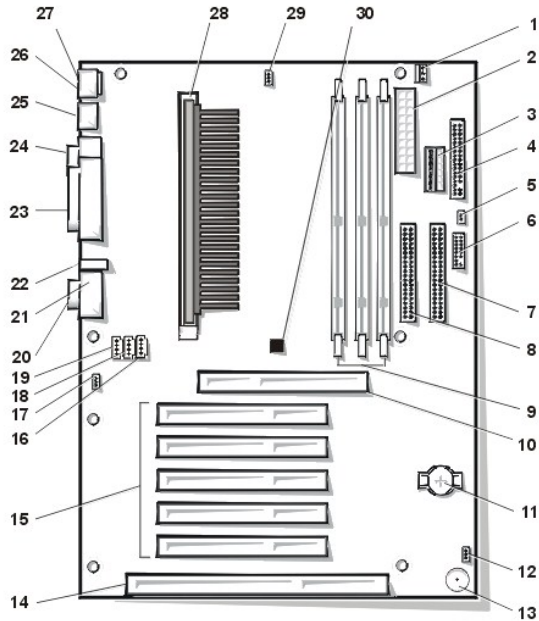
Back-Panel Features



- 1 Voltage selection switch
- 2 Security cable ring
- 3 Parallel port connector
- 4 MIDI/game port connector*
- 5 Video connector
- 6 Microphone jack*
- 7 Line-in jack*
- 8 Line-out jack*
- 9 Diagnostic code indicators (4)
- 10 Serial port connector
- 11 USB connectors (2)
- 12 Keyboard connector
- 13 Mouse connector
- 14 AC power receptacle

* Present only on systems with integrated sound.

System Board Connectors and Sockets




- 1 Chassis cooling-fan connector (J7M1)
- 2 Power input connector (POWER)
- 3 3.3-V power input connector (3.3)
- 4 Diskette-drive interface connector (FLOPPY)
- 5 SCSI hard-disk drive access-indicator cable connector (J8J1)
- 6 Control panel connector (J8H1)
- 7 Primary EIDE channel connector (PRI IDE)
- 8 Secondary EIDE channel connector (SEC IDE)
- 9 DIMM sockets (BANK *n*)
- 10 AGP connector (brown color) (AGP)
- 11 Battery socket (BT7C1)
- 12 [Configuration jumper](#) (J8A1)
- 13 Speaker (LS8A1)
- 14 ISA expansion-card connector (black color) (ISA1*)
- 15 PCI expansion-card connectors (natural color) (PCI *n**)
- 16 Auxiliary line-in audio-connector (for systems with integrated audio; natural color) (AUX IN)
- 17 Wakeup On LAN connector (J1E1)
- 18 Modem audio cable connector (for using integrated-audio system as a speaker phone; green color) (TELEPH)
- 19 CD-ROM drive audio cable connector (for systems with integrated audio; black color) (CD IN)
- 20 MIDI/game port connector (for systems with integrated audio) (GAME)
- 21 Line-in jack, line-out jack, and microphone jack (for systems with integrated audio) (LINE IN, LINE OUT, and MIC IN)
- 22 Diagnostic code indicators (4)
- 23 Parallel port connector; sometimes referred to as *LPT1* (PARALLEL)
- 24 Serial port connector (COM1)
- 25 USB connectors (USB *n*)



- 26 Mouse connector (MOUSE)
- 27 Keyboard connector (KEYBD)
- 28 Microprocessor SECC2 package connector (J4J1)
- 29 Microprocessor fan connector (J4M1)
- 30 Flea power indicator

* Connectors ISA1 and PCI5 share a single card-slot opening, so only one of the two connectors can be used at any given time.

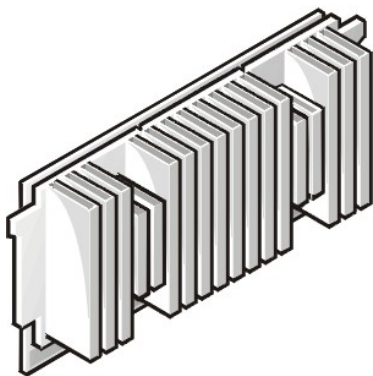
System Board Configuration Jumper

Table 1. Configuration Jumper Settings

 NOTE: The red dot in the jumper denotes pin 1.

Jumper Setting	Jumper	Description
Pins 1-2 jumpered (Normal mode)		In Normal mode, system setup settings and installed passwords are retained when the system starts up. In this mode, an automatic recovery is attempted if the BIOS detects that any of its main blocks are corrupted.
Pins 2-3 jumpered (Maintenance mode)		Starting the system with the jumper set in Maintenance mode automatically starts the system setup program, adds the Maintenance option to the menu bar, and displays the Maintenance screen. This screen provides the following option. NOTICE: Entering Maintenance mode returns all settings in the system setup program to their defaults. Dell strongly recommends that you record or print all current settings before entering this mode so you can correct them when the system is reset to Normal mode. 1 Clear All Passwords — Disables a forgotten password so that you can access the system and/or assign new passwords. For the complete password procedure, see "Disabling a Forgotten Password" in Appendix B of the <i>Dell Dimension XPS Txxx and Txxxr Systems Reference and Troubleshooting Guide</i> .

SECC2 Package



The single-edge contact cartridge 2 (SECC2) package, shown above with the heat sink attached, contains a 242-pin microprocessor card. The microprocessor card includes the following features:

- 1 Intel® Pentium® III microprocessor with integrated 32-kilobyte (KB) primary (L1) cache
- 1 Secondary (L2) cache of 256 KB full-speed or 512 KB half-speed of burst synchronous random-access memory (SRAM)
- 1 Associated circuitry

The heat sink attaches to a thermal plate on the SECC2 package. The cartridge slides into a guide bracket assembly mounted on the system board and plugs into the J4J1 connector on the [system board](#).

Power Supply

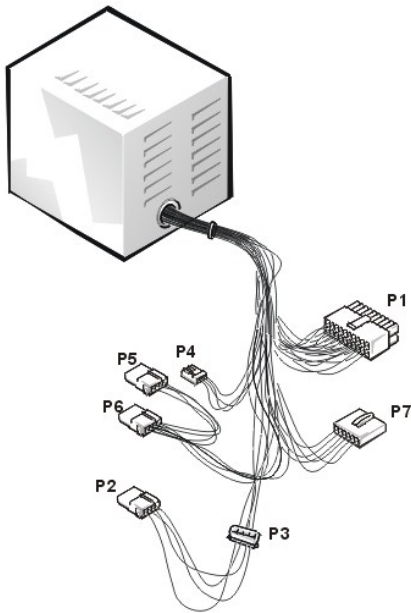
The 200-Watt (W) power supply can operate from an AC power source of 115 volts AC (VAC) at 60 hertz (Hz) or 230 VAC at 50 Hz. The power supply provides the DC operating voltages and currents listed in the following table.

NOTE: The power supply produces DC voltages only under its loaded condition. The DC power cable connectors must be connected to their corresponding power input connectors on the system board or drives in order to measure these voltages.

Table 2. DC Voltage Ranges

Voltage	Range	Maximum Output Current	Notes
+3.3 VDC	+3.14 to +3.47 VDC	14.00 A	The combined load on the +3.3-VDC and +5-VDC outputs cannot exceed 140 W.
+5 VDC	+4.90 to +5.25 VDC	22.00 A	The combined load on the +3.3-VDC and +5-VDC outputs cannot exceed 140 W.
-5 VDC	-4.50 to -5.50 VDC	0.300 A	
+12 VDC	+11.40 to +12.60 VDC	6.00 A	The +12-VDC output can withstand surges of up to 11.0 A to support disk start-up operations.
-12 VDC	-10.80 to -13.20 VDC	0.300 A	
+5 VSB	+4.75 to +5.25 VDC	1.2 A	The +5 volts standby (VSB) is sometimes called volts flea power (VFP).

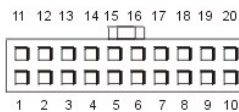
DC Power Cables



DC Power Connector Pin Assignments

The power-supply output voltages can be measured at the back (wire side) of the DC power connectors without disconnecting them. Figures 1 through 4 show the wire side of the connectors.

Figure 1. DC Power Connector P1

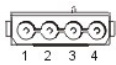


- 1 +5 VDC (red)
- 2 Common (black)
- 3 +5 VDC (red)
- 4 Common (black)
- 5 PWRGOOD¹ (orange)
- 6 +5 VFP (purple)
- 7 +12 VDC (yellow)
- 8 -12 VDC (blue)
- 9 Common (black)
- 10 Common (black)
- 11 PSON#² (brown)
- 12 Common (black)
- 13 Common (black)
- 14 Common (black)
- 15 -5 VDC (white)
- 16 +5 VDC (red)
- 17 +5 VDC (red)
- 18 +5 VDC (red)
- 19 Not connected
- 20 +5 VDC (red)

¹ Pin 5 — PWRGOOD is a status signal generated by the power supply to notify the system that the DC operating voltages are within the ranges required for proper system operation.

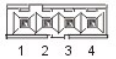
² Pin 11 — PSON# is activated by pressing and releasing the power button while the power supply is in standby state. Activating PSON# connects the power supply's PSON# input to ground, thereby switching the power supply to full-on condition.

Figure 2. DC Power Connector P2, P3, P5, and P6



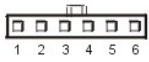
- 1 +12 VDC (yellow)
- 2 Common (black)
- 3 Common (black)
- 4 +5 VDC (red)

Figure 3. DC Power Connector P4



- 1 +12 VDC (yellow)
- 2 Common (black)
- 3 Common (black)
- 4 +5 VDC (red)

Figure 4. DC Power Connector P7



- 1 Common (black)
 - 2 Common (black)
 - 3 Common (black)
 - 4 +3.3 VDC (orange)
 - 5 +3.3 VDC (orange)
 - 6 +3.3 VDC (orange)
-

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