Dell Studio XPS™ 435MT Service Manual

Model DCMMF

Notes, Cautions, and Warnings

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

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

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Replacing the Badge Back Light

Dell Studio XPS™ 435T/9000 Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Remove the front panel (see Replacing the Front Panel).

4. Press the tabs away from the badge back light and lift the badge back light away from the front panel.
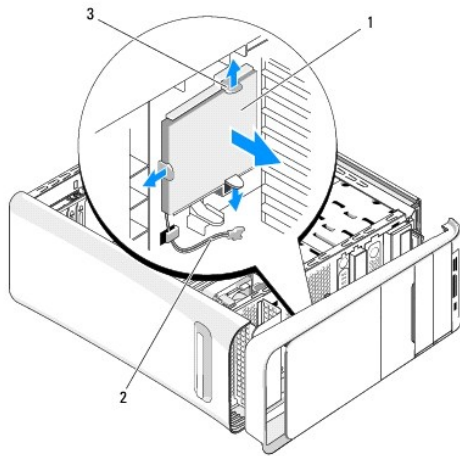
1	badge back light	2	badge back light cable
3	tabs (3)		

5. To replace the badge back light, align the holes in the badge back light to the projections on the front panel.

6. Press the badge back light down until it clicks in place.

7. Reconnect the badge back light cable.

8. Replace the front panel (see Replacing the Front Panel).

9. Replace the computer cover (see Replacing the Computer Cover).

Before You Begin
Dell Studio XPS™ 435MT Service Manual

- Technical Specifications
- Recommended Tools
- Turning Off Your Computer
- Safety Instructions

This chapter provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that the following conditions exist:

- You have performed the steps in Turning Off Your Computer and Safety Instructions.
- You have read the safety information that shipped with your computer.
- A component can be replaced or—if purchased separately—installed by performing the removal procedure in reverse order.

Technical Specifications

For information on technical specifications of your computer, see the *Setup Guide* that shipped with your computer or see the Dell Support website at **support.dell.com**.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Small Phillips screwdriver
- Small plastic scribe
- Flash BIOS executable update program on the Dell Support website at **support.dell.com**

Turning Off Your Computer

⚠ **CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.**

1. Shut down the operating system.

2. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 4 seconds to turn them off.

Safety Instructions

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your own personal safety.

Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

⚠ **CAUTION: Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell™ is not covered by your warranty.**

⚠ **CAUTION: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.**

⚠ **CAUTION: To avoid damaging the computer, perform the following steps before you begin working inside the computer.**

1. Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.

2. Turn off your computer (see Turning Off Your Computer).

CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

3. Disconnect all telephone or network cables from the computer.

4. Disconnect your computer and all attached devices from their electrical outlets.

5. Press and hold the power button while the system is unplugged to ground the system board.

CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

Replacing a PCI Express Card
Dell Studio XPS™ 435MT Service Manual

- Removing a PCI Express Card
- Installing a PCI Express Card
- Replacing the Card Retention Bracket
- Configuring Your Computer After Removing or Installing a PCI Express Card

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

Removing a PCI Express Card

1. Uninstall the PCI Express card's driver and software from the operating system. For more information, see the *Setup Guide*.

2. Follow the procedures in Before You Begin.

3. Remove the computer cover (see Replacing the Computer Cover).

4. Remove the screw that secures the card retention bracket.

5. Lift the card retention bracket and set it aside in a secure place.
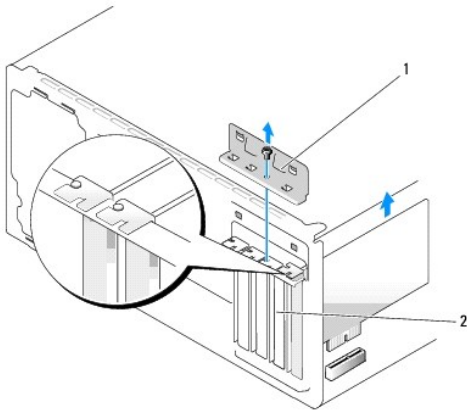
| 1 | card retention bracket | 2 | filler bracket |

6. If applicable, disconnect any cables connected to the card.

7. Press the securing tab, grasp the card by its top corners, and then ease it out of its connector.
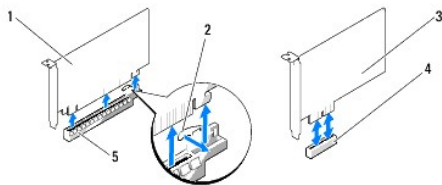
1	PCI Express x16 card	2	securing tab
3	PCI Express x1 card	4	PCI Express x1 card slot
5	PCI Express x16 card slot		

8. If you are replacing an existing card, go to step 6 of Installing a PCI Express Card.

⚠ **CAUTION: Installing filler brackets over empty card-slot openings is necessary to maintain FCC certification of the computer. The brackets also keep dust and dirt out of your computer.**

9. Install a filler bracket in the empty card-slot opening.

10. Replace the card retention bracket (see Replacing the Card Retention Bracket).

11. Replace the computer cover (see Replacing the Computer Cover).

12. Connect the computer and devices to electrical outlets, and then turn them on.

13. To complete the removal procedure, see Configuring Your Computer After Removing or Installing a PCI Express Card.

Installing a PCI Express Card

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Remove the screw that secures the card retention bracket.

4. Lift the card retention bracket and set it aside in a secure place.

5. Remove the filler bracket to create a card-slot opening.

6. Prepare the card for installation.

   See the documentation that came with the card for information on configuring, customizing, and making internal connections on the card.

7. Align the card with the connector.

   NOTE: If you are installing a PCI Express card into the x16 connector, ensure that the securing slot is aligned with the securing tab.

8. Place the card in the connector and press down firmly. Ensure that the card is fully seated in the slot.
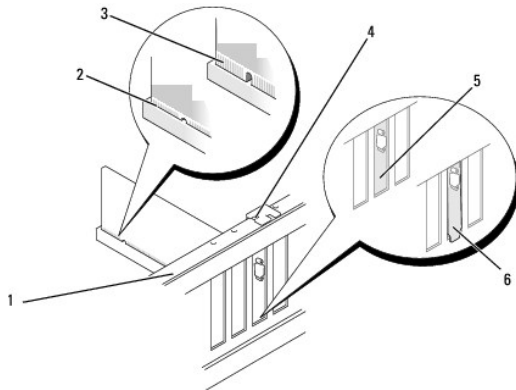
1	alignment bar	2	fully-seated card
3	not fully-seated card	4	alignment guide
5	bracket within slot	6	bracket caught outside of slot

9. Replace the card retention bracket (see Replacing the Card Retention Bracket).

⚠ CAUTION: Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

10. Connect any cables that should be attached to the card.

   See the documentation for the card for information about the card's cable connections.

11. Replace the computer cover (see Replacing the Computer Cover).

12. Connect the computer and devices to electrical outlets, and then turn them on.

13. To complete the installation, see Configuring Your Computer After Removing or Installing a PCI Express Card.

Replacing the Card Retention Bracket
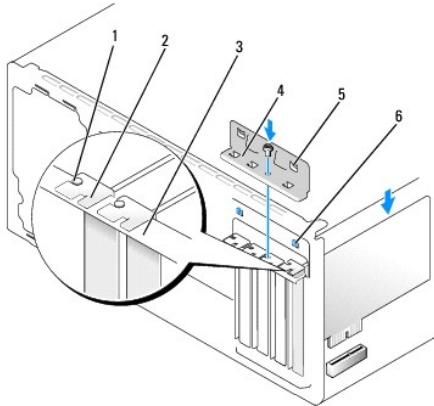
Replace the screw on the card retention bracket ensuring that:

- The notch in the top of the card or filler bracket fits around the alignment guide.
- The tops of all cards and filler brackets are flush with the alignment bar.
- The guide clamps are aligned with the guide notches.

1	alignment guide	2	filler bracket
3	alignment bar	4	card retention bracket
5	guide clamps (2)	6	guide notches (2)

Configuring Your Computer After Removing or Installing a PCI Express Card

NOTE: For information on location of connectors, see the *Setup Guide.* For information on installing drivers and software for your card, see the documentation that shipped with the card.

|	Installed	Removed
Sound Card	1. Enter system setup (see System Setup). 2. Go to **Advanced Chipset Features** and select **Onboard Audio Controller**, and then change the setting to **Disabled**. 3. Connect the external audio devices to the sound card's connectors.	1. Enter system setup (see System Setup). 2. Go to **Advanced Chipset Features** and select **Onboard Audio Controller**, and then change the setting to **Enabled**. 3. Connect the external audio devices to the computer's back panel connectors.
Network Card	1. Enter system setup (see System Setup). 2. Go to **Advanced Chipset Features** and select **Onboard LAN Controller**, and then change the setting to **Disabled**. 3. Connect the network cable to the network card's connector.	1. Enter system setup (see System Setup). 2. Go to **Advanced Chipset Features** and select **Onboard LAN Controller**, and then change the setting to **Enabled**. 3. Connect the network cable to the integrated network connector.

Replacing the Battery
Dell Studio XPS™ 435MT Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

⚠ **WARNING: A new battery can explode 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.**

1. Record all the screens in system setup (see System Setup) so that you can restore the correct settings in step 10.

2. Follow the procedures in Before You Begin.

3. Remove the computer cover (see Replacing the Computer Cover).

4. Locate the battery socket (see System Board Components).

⚠ **CAUTION: If you pry the battery out of its socket with a blunt object, be careful not to touch the system board with the object. Ensure that the object is inserted between the battery and the socket before you attempt to pry out the battery. Otherwise, you may damage the system board by prying off the socket or by breaking circuit traces on the system board.**
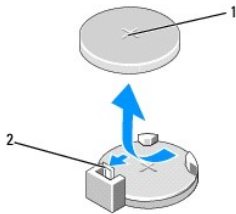
| 1 | battery (positive side) | 2 | battery release lever |

5. Carefully press the battery release lever away from the battery and the battery will pop out.

6. Remove the battery from the system and properly dispose of the battery.

7. Insert the new battery into the socket with the side labeled "+" facing up, then snap the battery into place.
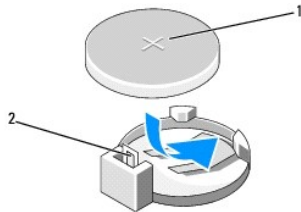
| 1 | battery (positive side) | 2 | battery release lever |

8. Replace the computer cover (see Replacing the Computer Cover).

9. Connect your computer and devices to electrical outlets, and then turn them on.

10. Enter system setup (see System Setup) and restore the settings you recorded in step 1.

Replacing the Computer Cover

Dell Studio XPS™ 435MT Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

⚠ **WARNING: To guard against likelihood of electric shock, laceration by moving fan blades or other unexpected injuries, always unplug your computer from the electrical outlet before removing the cover.**

⚠ **CAUTION: Ensure that sufficient space exists to support the system with the cover removed—at least 30 cm (1 ft.) of desk top space.**

1. Follow the procedures in Before You Begin.

2. Lay your computer on its side with the computer cover facing up.

3. Open the padlock, if applicable.

4. Remove the two screws securing the cover, using a flat-blade screwdriver.
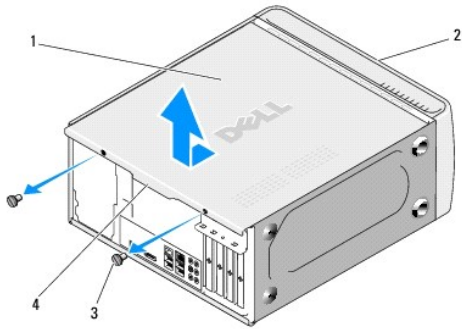
1	computer cover	2	front of the computer
3	screws (2)	4	cover grip

5. Pull the cover grip towards the back of the computer, and lift the computer cover away from the computer.

6. Set the computer cover aside in a secure location.

7. To replace the computer cover, perform the removal procedure in reverse order.

Replacing the Processor
Dell Studio XPS™ 435MT Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

⚠ **CAUTION: Do not perform the following steps unless you are familiar with hardware removal and replacement. Performing these steps incorrectly could damage your system board. For technical service, see the** *Setup Guide***.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

⚠ **WARNING: Despite having a plastic shield, the processor fan and heat sink assembly may be very hot during normal operation. Ensure that it has had sufficient time to cool before you touch it.**

3. Disconnect the power cables from the power connector for the processor (PWR2) and main power connector (PWR1) on the system board (see System Board Components).

4. Remove the processor fan and heat sink assembly from the computer (see Replacing the Processor Fan and Heat Sink Assembly).

   📝 **NOTE:** Unless a new heat sink is required for the new processor, reuse the original heat sink assembly when you replace the processor.

5. Press and push the release lever down and out to release it from the tab that secures it.

6. Open the processor cover.
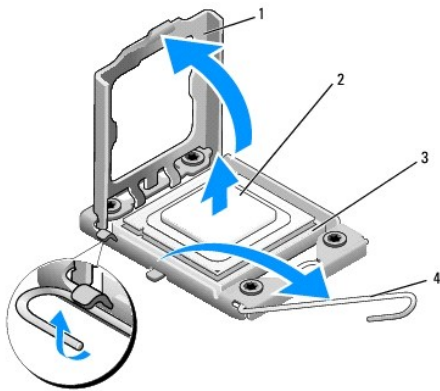
1	processor cover	2	processor
3	socket	4	release lever

7. Lift up the processor to remove it from the socket, place it aside in a safe and secure place.

   Leave the release lever extended in the release position so that the socket is ready for the new processor.

⚠ **CAUTION: When removing or replacing the processor, do not touch any of the pins inside the socket or allow any objects to fall on the pins in the socket.**

⚠ **CAUTION: Ground yourself by touching an unpainted metal surface on the back of the computer.**

8. Unpack the new processor, be careful not to touch the underside of the processor.
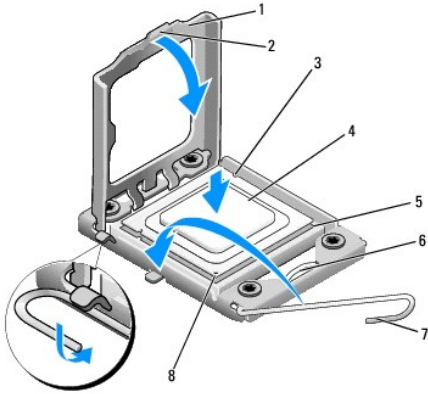
1	processor cover	2	tab
3	alignment notch (2)	4	processor
5	socket	6	center cover latch
7	release lever	8	processor pin-1 indicator

9. If the release lever on the socket is not fully extended, move it to that position.

⚠ **CAUTION: You must position the processor correctly in the socket to avoid permanent damage to the processor and the computer when you turn on the computer.**

⚠ **CAUTION: Socket pins are delicate. To avoid damage, ensure that the processor is aligned properly with the socket, and do not use excessive force when you replace the processor. Be careful not to touch or bend the pins on the system board.**

10. Orient the front and back alignment-notches on the processor with the front and back alignment-notches on the socket.

11. Align the pin-1 corners of the processor and socket.

⚠ **CAUTION: To avoid damage, ensure that the processor aligns properly with the socket, and do not use excessive force when you install the processor.**

12. Set the processor lightly in the socket and ensure that the processor is positioned correctly.

13. When the processor is fully seated in the socket, close the processor cover.

   ✍ **NOTE:** Ensure that the tab on the processor cover is positioned underneath the center cover latch on the socket.

14. Pivot the socket release lever back towards the socket, and snap it into place to secure the processor.

15. Clean the thermal grease from the bottom of the heat sink.

⚠ **CAUTION: Ensure that you apply new thermal grease. New thermal grease is critical for ensuring adequate thermal bonding, which is a requirement for optimal processor operation.**

16. Apply the new thermal grease to the top of the processor.

17. Replace the processor fan and heat sink assembly (see Replacing the Processor Fan and Heat Sink Assembly).

⚠ **CAUTION: Ensure that the processor fan and heat sink assembly is correctly seated and secure.**

18. Connect the power cables to the power for processor connector (PWR2) and the main power connector (PWR1) on the system board (see System Board Components).

19. Replace the computer cover (see Replacing the Computer Cover).

20. Connect your computer and devices to electrical outlets, and then turn them on.

Replacing Drives

Dell Studio XPS™ 435MT Service Manual

- Replacing a Hard Drive
- Replacing an Optical Drive
- Replacing the FlexDock
- Removing the FlexDock Break-Away Metal Plate
- Replacing the FlexDock Drive Inserts
- Replacing the Drive Panel Insert

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

✍ **NOTE:** The system board does not support IDE devices.

✍ **NOTE:** The 3.5-inch FlexDock is not interchangeable with the hard drive carrier.

Replacing a Hard Drive

⚠ **CAUTION: If you are replacing a hard drive that contains data you want to keep, back up your files before you begin this procedure.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Disconnect the power and data cables from the hard drive.

   ✍ **NOTE:** If you are not replacing the hard drive at this time, disconnect the other end of the data cable from the system board and set it aside. You can use the data cable to install a hard drive at a later time.
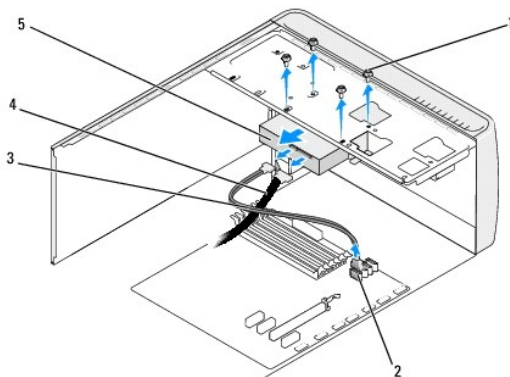
1	screws (4)	2	system board connector (any available connector SATA0, SATA1, SATA2, and SATA3)
3	data cable	4	power cable
5	hard drive		

4. Remove the four screws securing the hard drive to the chassis.

⚠ **CAUTION: Ensure that you do not scratch the hard disk's circuit board, while removing or replacing the hard drive.**

5. Slide the drive out towards the back of the computer.

6. To replace the hard drive, check the documentation for the drive to verify that it is configured for your computer.

7. Slide the hard drive into the hard drive bay.

8. Align the four screw holes on the hard drive with the screw holes on the hard drive bay.

9. Replace the four screws that secure the hard drive to the chassis.

10. Connect the power and data cables to the hard drive.

11. Ensure that all the cables are properly connected and firmly seated.

12. Replace the computer cover (see Replacing the Computer Cover).

13. Connect your computer and devices to electrical outlets, and then turn them on.

Replacing an Optical Drive

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Remove the front panel (see Replacing the Front Panel).
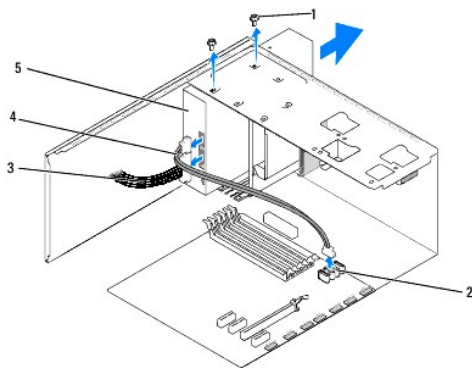
1	screws (2)	2	system board connector (any available connector SATA0, SATA1, SATA2, and SATA3)
3	power cable	4	data cable
5	optical drive		

4. Disconnect the power cable and the data cable from the back of the optical drive.

   NOTE: If you are uninstalling the only optical drive in your computer and will not replace it at this time, disconnect the data cable from the system board and set it aside.

5. Remove the two screws securing the optical drive to the chassis.

6. Push and slide the optical drive out through the front of the computer.

7. If you are not replacing the drive:
   a. Replace the drive panel insert (see Replacing the Drive Panel Insert).
   b. Go to step 12.

8. If you are replacing the optical drive or installing a new one, slide the drive into place.

9. Align the screw holes in the optical drive with the screw holes in the optical drive bay.

10. Replace the two screws that secure the optical drive to the chassis.

11. Connect the power and data cables to the optical drive.

12. Replace the front panel (see Replacing the Front Panel).

13. Replace the computer cover (see Replacing the Computer Cover).

14. Connect your computer and devices to their electrical outlets, and turn them on.

![NOTE icon] **NOTE:** If you installed a new drive, see the documentation that came with the drive for instructions on installing any software required for drive operation.

Replacing the FlexDock

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Remove the front panel (see Replacing the Front Panel).
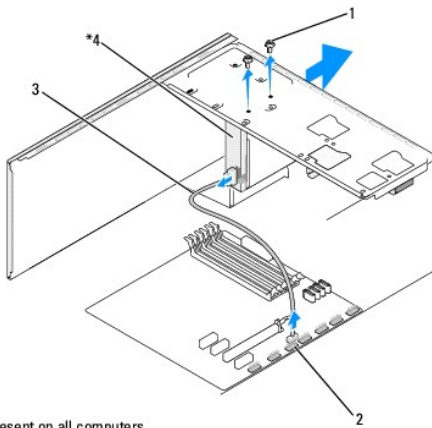
*Not present on all computers.

| 1	custom screws (2)	2	FlexDock USB connector (F_USB4)
3	FlexDock USB cable	4	FlexDock

4. Disconnect the FlexDock USB cable from the back of the FlexDock and from the FlexDock USB connector (F_USB4) on the system board (see System Board Components).

5. Remove the two screws securing the FlexDock.

6. Slide the FlexDock out through the front of the computer.

7. If you are not replacing the FlexDock, replace the drive panel insert (see Replacing the Drive Panel Insert) and proceed with step step 13.

8. If you are installing a new FlexDock:

    a. Remove the drive panel insert, if applicable (see Replacing the Drive Panel Insert).

    b. Remove the FlexDock break-away metal plate, if applicable (see Removing the FlexDock Break-Away Metal Plate).

    c. Remove the FlexDock from its packaging.

9. Gently slide the FlexDock into place in the FlexDock slot.

10. Align the screw holes on the FlexDock with the screw holes on the FlexDock slot.

11. Replace the two screws that secure the FlexDock.

    ![NOTE icon] **NOTE:** Ensure that the FlexDock is installed before the FlexDock cable is connected.

12. Connect the FlexDock USB cable to the back of the FlexDock and to the FlexDock USB connector (F_USB4) on the system board (see System Board Components).

13. Replace the front panel (see Replacing the Front Panel).

14. Replace the computer cover (see Replacing the Computer Cover).

15. Connect your computer and devices to electrical outlets, and then turn them on.

Removing the FlexDock Break-Away Metal Plate

Align the tip of a Phillips screwdriver with the slot on the break-away metal plate and rotate the screwdriver outwards to break and remove the metal plate.
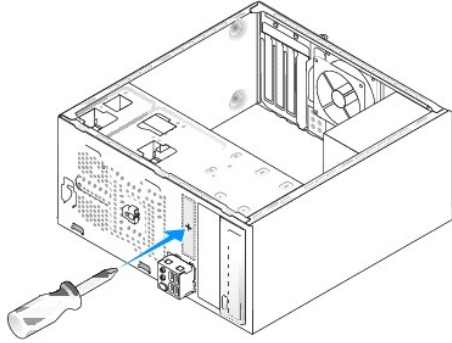
Replacing the FlexDock Drive Inserts

⚠ CAUTION: To comply with FCC regulations, it is recommended that you replace the FlexDock drive insert whenever the FlexDock is removed from the computer.

1. Remove the front panel (see Replacing the Front I/O Panel).

2. Gently press on the insert lever inward to release the lock.

3. Pull the FlexDock drive insert away from the front panel.

4. To replace the FlexDock drive insert, align the FlexDock drive insert in place.

5. Push the insert lever towards the front panel till it snaps into place.
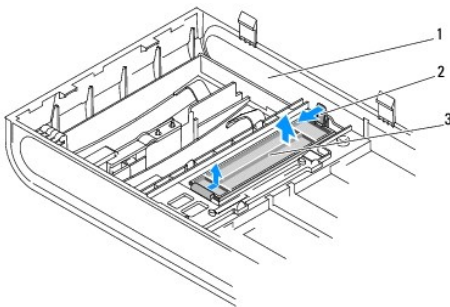
1	front panel	2	insert lever
3	FlexDock drive insert		

Replacing the Drive Panel Insert

Align the drive panel insert along the edges of the empty slot of the FlexDock or an optical drive and push the panel insert until it locks into place.

⚠ CAUTION: To comply with FCC regulations, it is recommended that you replace the drive panel insert whenever the FlexDock or optical drive is removed from the computer.
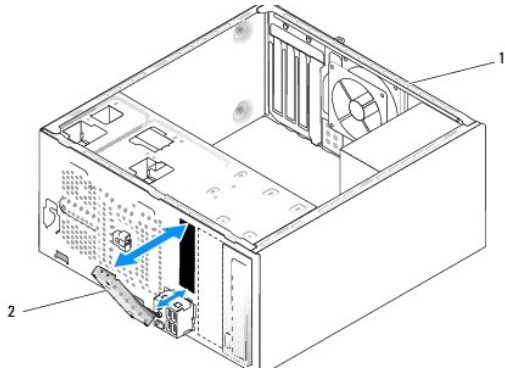
1	back of the computer	2	drive panel insert (optional)

Replacing Fans
Dell Studio XPS™ 435MT Service Manual

- Replacing the Chassis Fan
- Replacing the Processor Fan and Heat Sink Assembly

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

Replacing the Chassis Fan

⚠ **CAUTION: Do not touch the fan blades when you are removing the chassis fan. This could damage the fan.**

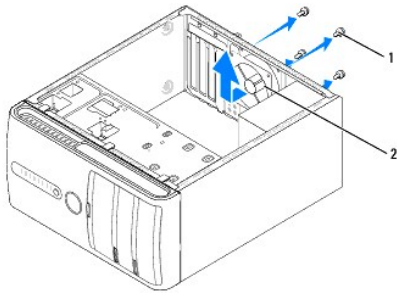1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Disconnect the chassis fan cable from the system board fan connector (AUX_FAN1).

4. Remove the four screws securing the chassis fan.

5. Lift the chassis fan away from the computer.

| 1 | screws (4) | 2 | chassis fan |

6. To replace the chassis fan, slide it in place towards the back of the computer.

7. Replace the four screws that secure the chassis fan.

8. Connect the chassis fan cable to the system board fan connector (AUX_FAN1).

9. Replace the computer cover (see Replacing the Computer Cover).

Replacing the Processor Fan and Heat Sink Assembly

⚠ **WARNING: Despite having a plastic shield, the processor fan and heat sink assembly may be very hot during normal operation. Ensure that it has had sufficient time to cool before you touch it.**

⚠ **CAUTION: The processor fan and heat sink assembly is a single unit. Do not try to remove the fan separately.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Disconnect the processor fan cable from the CPU_FAN connector on the system board (see System Board Components).

4. Carefully move away any cables that are routed over the processor fan and heat sink assembly.

⚠ **CAUTION: To ensure maximum cooling for the processor, do not touch the heat transfer areas on the processor heat sink. The oils in your skin can reduce the heat transfer capability of the thermal pads.**

5. Loosen the four captive screws securing the processor fan and heat sink assembly.

⚠ **CAUTION: When you remove the processor fan and heat sink assembly, lay it upside down or on its side to avoid damaging the heat sink thermal interface.**

6. Lift the processor fan and heat sink assembly out of the computer, and set it aside.
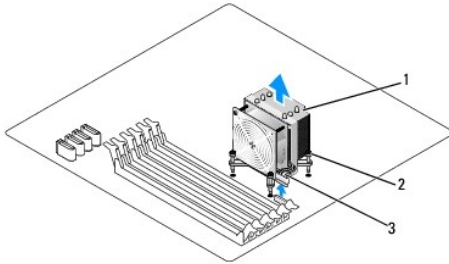
1	processor fan and heat sink assembly	2	captive screws (4)
3	processor fan and heat sink assembly cable		

 NOTE: The processor fan and heat sink assembly in your computer may not look exactly like the one shown in the illustration above.

7. To replace the processor fan and heat sink assembly, clean the thermal grease from the bottom of the heat sink.

⚠ **CAUTION: Ensure that you apply new thermal grease. New thermal grease is critical for ensuring adequate thermal bonding, which is a requirement for optimal processor operation.**

8. Apply new thermal grease to the top of the processor.

9. Align the four captive screws on the processor fan and heat sink assembly with the holes on the system board.

10. Tighten the four captive screws that secure the processor fan and heat sink assembly.

 NOTE: Ensure that the processor fan and heat sink assembly is correctly seated and secure.

11. Connect the processor fan and heat sink assembly cable to the CPU_FAN connector on the system board (see System Board Components).

12. Replace the computer cover (see Replacing the Computer Cover).

13. Connect your computer and devices to electrical outlets, and turn them on.

Back to Contents Page

Replacing the Front Panel
Dell Studio XPS™ 435MT Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).
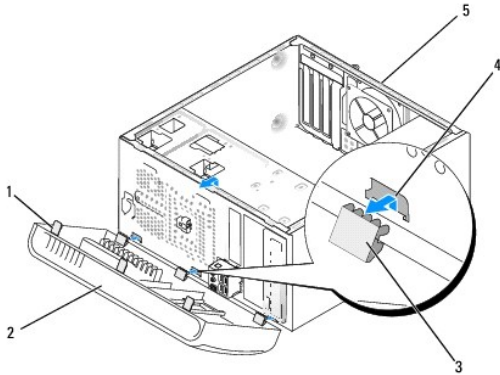
1	front panel grips (3)	2	front panel
3	front panel clamps (3)	4	clamp insert
5	back of the computer		

3. Grasp and lift the front panel grips one at a time to release it from the front of the computer.

4. Rotate and pull the front panel away from the front of the computer to release the front panel clamps from the clamp insert.

5. To replace the front panel, align and insert the front panel clamps into the clamp insert.

6. Rotate the front panel towards the computer until it snaps into place on the front of the computer.

7. Replace the computer cover (see Replacing the Computer Cover).

Replacing the Front I/O Panel
Dell Studio XPS™ 435MT Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Remove the front panel (see Replacing the Front Panel).

4. Remove any expansion cards, if necessary (see Replacing a PCI Express Card).

⚠ **CAUTION: Carefully note the routing of each cable before you disconnect it, so that you are sure to re-route cables correctly. An incorrectly routed or a disconnected cable could lead to computer problems.**

5. Disconnect the cables connected to the I/O panel from the system board.

6. Remove the screw that secures the I/O panel to the chassis.

7. Carefully remove the existing I/O panel from the computer.
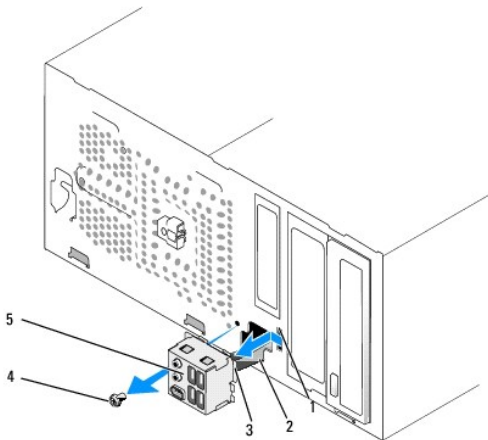
1	I/O panel clamp slot	2	cables
3	I/O panel clamp	4	screw
5	I/O panel		

8. To replace the I/O panel, align and slide the I/O panel clamp into the I/O panel clamp slot.

9. Replace the screw that secures the I/O panel to the chassis.

10. Connect the cables to the system board.

11. Replace any expansion cards, if necessary (see Replacing a PCI Express Card).

12. Replace the front panel (see Replacing the Front Panel).

13. Replace the computer cover (see Replacing the Computer Cover).

14. Connect your computer and devices to electrical outlets, and turn them on.

Replacing Memory Module(s)
Dell Studio XPS™ 435MT Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Locate the memory modules on the system board (see System Board Components).

4. Press out the securing clip at each end of the memory module connector.
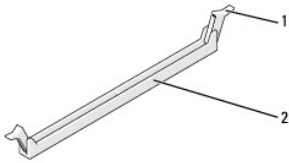
| 1	securing clip	2	memory module connector

5. Grasp the module and pull it upwards.

   If the module is difficult to remove, gently ease the module back and forth to remove it from the connector.

⚠ **CAUTION: Do not install ECC memory modules.**

⚠ **CAUTION: If you remove your original memory modules from the computer during a memory upgrade, keep them separate from any new modules that you may have, even if you purchased the new modules from Dell™. If possible, do not pair an original memory module with a new memory module. Otherwise, your computer may not start properly. The recommended memory configurations are: Matched memory modules installed in DIMM connectors 1, 2, and 3.**
or
Matched memory modules installed in DIMM connectors 1, 2, and 3 and another matched memory modules installed in DIMM connectors 4, 5, and 6.

📝 **NOTE:** If you install mixed pairs of PC3-10600 (DDR3 1333-MHz) and PC3-8500 (DDR3 1066-MHz) memory, the modules function at the speed of the slowest module installed.

6. Ensure that you install a single memory module in DIMM connector 1, the second closest connector to the processor, before you install modules in any other connector.
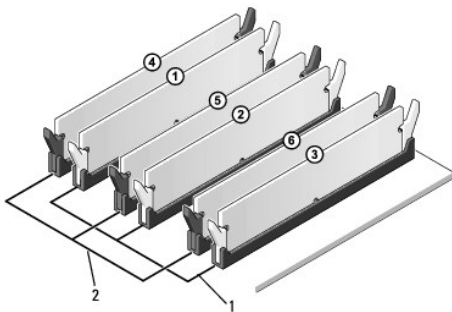
1	matched memory modules in connectors DIMM_1, DIMM_2, and DIMM_3	2	matched memory modules in connectors DIMM_4, DIMM_5, and DIMM_6

7. Align the notch on the bottom of the module with the tab on the memory module connector.
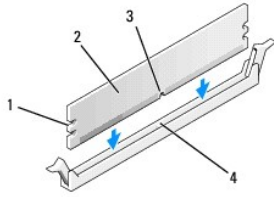
| 1 | cutouts (2) | 2 | memory module |
| 3 | notch | 4 | tab on the memory module connector |

⚠ **CAUTION: To avoid damage to the memory module, press the module straight down into the connector while you apply equal force to each end of the module.**

8. Insert the module into the connector until the module snaps into position.

   If you insert the module correctly, the securing clips snap into the cutouts at each end of the module.
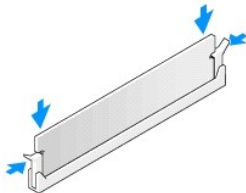
9. Replace the computer cover (see Replacing the Computer Cover).

10. Connect your computer and devices to electrical outlets, and then turn them on.

11. If a message appears stating that memory size has changed, press <F1> to continue.

12. Log on to your computer.

13. Right-click the **My Computer** icon on your Microsoft®Windows® desktop and click **Properties**.

14. Click the **General** tab.

15. To verify that the memory is installed correctly, check the amount of memory (RAM) listed.

Back to Contents Page

Replacing the Power Supply
Dell Studio XPS™ 435MT Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

⚠ **WARNING: To guard against likelihood of electric shock, laceration by moving fan blades or other unexpected injuries, always unplug your computer from the electrical outlet before removing the cover.**

⚠ **CAUTION: Do not perform the following steps unless you are familiar with hardware removal and replacement. Performing these steps incorrectly could damage your computer. For technical assistance, see the** *Setup Guide***.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

⚠ **CAUTION: Note the location and ID of each power connector before disconnecting the power supply cables.**

3. Follow the DC power cables that stem from the power supply and disconnect each connected power cable.

   📝 **NOTE:** Note the routing of the DC power cables underneath the tabs in the computer chassis as you remove them from the system board and drives. You must route these cables properly when you replace them to prevent them from being pinched or crimped.

4. Remove the four screws that secure the power supply to the back of the computer chassis.
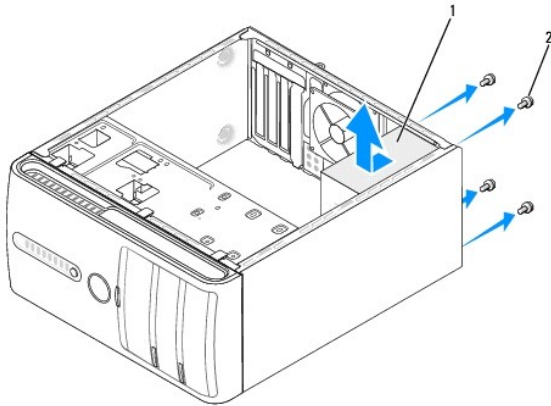
| 1 | power supply | 2 | screws (4) |

5. Slide the power supply towards the front of the computer and lift it out.

6. Slide the replacement power supply towards the back of the computer.

⚠ **WARNING: Failure to replace and tighten all screws may cause electrical shock as these screws are a key part of the system grounding.**

7. Replace the four screws that secure the power supply to the back of the computer chassis.

⚠ **CAUTION: Route the DC power cables under the chassis tabs. The cables must be properly routed to prevent the cables from being damaged.**

8. Reconnect the DC power cables to the system board and drives.

   📝 **NOTE:** Double-check all cable connections to make sure they are secure.

9. Replace the computer cover (see Replacing the Computer Cover).

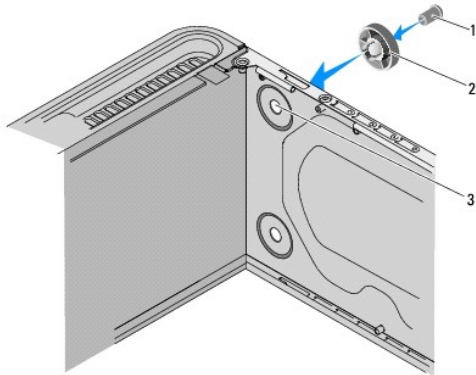10. Connect your computer and devices to electrical outlets, and turn them on.

Replacing the Rubber Foot
Dell Studio XPS™ 435MT Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

⚠ **WARNING: To guard against likelihood of electric shock, laceration by moving fan blades or other unexpected injuries, always unplug your computer from the electrical outlet before removing the cover.**

1. Follow the procedures in Before You Begin.

2. Lay your computer on its side.

3. Pull the rubber foot until it comes free.

4. To replace the rubber foot, align and insert the rubber foot into the rubber foot slot at the bottom of the computer.

5. Press the rubber foot pin into the rubber foot to secure the rubber foot to the chassis.

1	rubber foot pin	2	rubber foot
3	rubber foot slot		

Replacing the System Board
Dell Studio XPS™ 435MT Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

⚠ **CAUTION: Do not perform the following steps unless you are familiar with hardware removal and replacement. Performing these steps incorrectly could damage your system board. For technical assistance, see the *Setup Guide*.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Remove any expansion cards on the system board (see Replacing a PCI Express Card).

⚠ **WARNING: Despite having a plastic shield, the processor fan and heat sink assembly may be very hot during normal operation. Ensure that it has had sufficient time to cool before you touch it.**

4. Remove the processor (see Replacing the Processor).

5. Remove the memory modules (see Replacing Memory Module(s)), make a note of which memory module is removed from each memory socket so that the memory modules can be installed in the same location after the system board is replaced.

⚠ **CAUTION: Carefully note the routing and location of each cable before you disconnect it, so that you are sure to re-route cables correctly. An incorrectly routed or a disconnected cable could lead to computer problems.**

6. Disconnect all cables from the system board.

7. Remove the eight screws that secure the system board to the chassis.
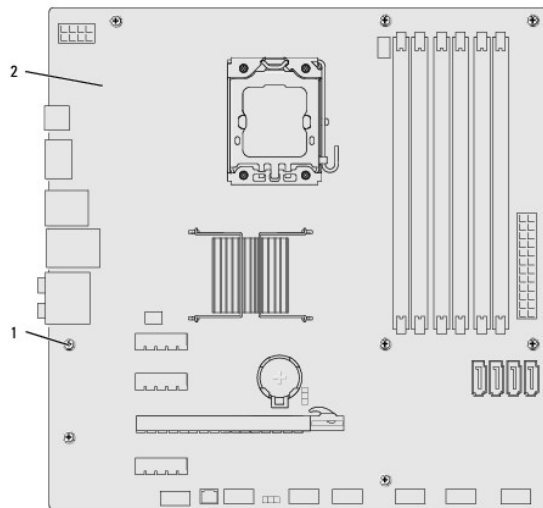
| 1 | screws (8) | 2 | system board |

8. Lift the system board up and out.

⚠ **CAUTION: If you are replacing the system board, visually compare the replacement system board to the existing system board to ensure that you have the correct part.**

📝 **NOTE:** Some components and connectors on replacement system boards may be in different locations compared to the components and connectors on the existing system board.

📝 **NOTE:** Jumper settings on replacement system boards are preset at the factory.

9. Orient the new or replacement system board by aligning the screw holes on the system board with the screw holes on the chassis.

10. Replace the eight screws that secure the system board to the chassis.

11. Connect the cables that you removed from the system board.

12. Replace the memory modules (see Replacing Memory Module(s)).

13. Replace the processor (see Replacing the Processor).

⚠ **CAUTION: Ensure that the heat sink assembly is correctly seated and secure.**

14. Replace any expansion cards on the system board (see Installing a PCI Express Card).

15. Replace the computer cover (see Replacing the Computer Cover).

16. Connect your computer and devices to electrical outlets, and turn them on.

17. Flash the system BIOS, as needed.

    ✍ **NOTE:** For information on flashing the system BIOS, see Flashing the BIOS.

System Setup
Dell Studio XPS™ 435MT Service Manual

- Overview
- Clearing Forgotten Passwords
- Clearing CMOS Settings
- Flashing the BIOS

Overview

Use system setup to:

- Change the system configuration information after you add, change, or remove any hardware in your computer

- Set or change a user-selectable option such as the user password

- Read the current amount of memory or set the type of hard drive installed

⚠ **CAUTION: Unless you are an expert computer user, do not change the settings for this program. Certain changes can make your computer work incorrectly.**

📝 **NOTE:** Before you change system setup, it is recommended that you write down the system setup screen information for future reference.

Entering System Setup

1. Turn on (or restart) your computer.

2. When the blue DELL™ logo is displayed, watch for the F2 prompt to appear and then press <F2> immediately.

   📝 **NOTE:** The F2 prompt indicates that the keyboard has initialized. This prompt can appear very quickly, so you must watch for it to display, and then press <F2>. If you press <F2> before you are prompted, this keystroke will be lost. If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop. Then, shut down your computer (see Turning Off Your Computer) and try again.

System Setup Screens

The system setup screen displays current or changeable configuration information for your computer. Information on the screen is divided into three areas: the options list, active options field, and key functions.

Menu — Appears on top of the System Setup window. This field provides a menu to access to the System Setup options. Press the <←>and<→>keys to navigate. As a Menu option is highlighted, the Options List, lists the options that define the hardware installed on you computer.		
Options List — Appears on the left side of the System Setup window. The field lists features that define the configuration of your computer, including installed hardware, power conservation, and security features. Scroll up and down the list with the up- and down-arrow keys. As an option is highlighted, the Options Field displays the option's current and available settings.	Options Field — Appears on the right side of Options List and contains information about each option listed in the Options List. In this field you can view information about your computer and make changes to your current settings. Press <Enter> to make changes to your current settings. Press <ESC> to return to the Options List. NOTE: Not all settings listed in the Options Field are changeable.	Help — Appears on the right side of the System Setup window and contains help information about the option selected in Options List.
Key Functions — Appears below the Options Field and lists keys and their functions within the active system setup field.		

System Setup Options

📝 **NOTE:** Depending on your computer and installed devices, the items listed in this section may appear, or may not appear exactly as listed.

System Info	
BIOS Info	Displays the BIOS version number and date information.
System	Displays the system model number.
Asset Tag	Displays the asset tag of the computer if present.
Service Tag	Displays the service tag of the computer.
Processor Type	Displays the processor type.
Processor Cache L2	Displays the processor L2 cache size.

Processor Cache L3	Displays the processor L3 cache size.
Memory Installed	Indicates the amount of installed memory in MB.
Memory Available	Indicates the amount of memory available in MB.
Memory Speed	Indicates the memory speed in MHz.
Memory Technology	Indicates the memory technology; DDR3.

Standard CMOS Features

Sytem Time	Displays current time in hh:mm:ss format.
System Date	Displays the current date in mm:dd:yy format.
SATA0	Displays the SATA0 drive intergrated in the computer.
SATA1	Displays the SATA1 drive intergrated in the computer.
SATA2	Displays the SATA2 drive intergrated in the computer.
SATA3	Displays the SATA3 drive intergrated in the computer.
eSATA	Displays the eSATA drive intergrated in the computer.

Advanced BIOS Features

CPU Feature	l Limit CPUID Value — Enabled or Disabled (Disabled by default) l Intel® Virtualization Tech — Enabled or Disabled (Enabled by default) l Execute Disable Bit — Enabled or Disabled (Enabled by default) l Hyper-Threading — Enabled or Disabled (Enabled by default) l Multiple CPU Core — All or 1 or 2 (All by default) l **Intel SpeedStep™ Tech** — Enabled or Disabled (Enabled by default)
USB Device Setting	l USB Controller — Enabled or Disabled (Enabled by default) l USB Operation Mode — High Speed; Full/Low Speed (High Speed by default)

Advanced Chipset Features

SATA Mode	IDE; RAID (IDE by default)
Onboard Audio Controller	Enabled or Disabled (Enabled by default)
Onboard LAN Controller	Enabled or Disabled (Enabled by default)
Onboard LAN Boot ROM	Enabled or Disabled (Disabled by default)
1394 Controller	Enabled or Disabled (Enabled by default)

Boot Device Configuration

Boot Settings Configuration	Configures the settings during system boot.
Hard Disk Boot Priority	Sets the hard drive boot priority. The items displayed are dynamically updated according to the hard drives detected.
First Boot Device	Specifies the boot sequence from the available devices. Removable; CD/DVD; Hard Drive; Disabled (Removable by default).
Second Boot Device	Specifies the boot sequence from the available devices. Removable; CD/DVD; Hard Drive; Disabled (CD/DVD by default).
Third Boot Device	Specifies the boot sequence from the available devices. Removable; CD/DVD; Hard Drive; Disabled (Hard Drive by default).
Boot Other Device	No; Yes (Yes by default).

Power Management Setup

ACPI Suspend Type	Specifies the ACPI suspend type. The default is S3.
Remote Wake Up	This option turns on the computer when a user tries to access the computer through the LAN. The default is Enabled.

AC Recovery	Specifies the behaviour of the computer after recovering from a power loss.
	
	    o On — The computer turns on after it recovers from a power failure.
	    o Off — The computer remains turned off. This is the default state.
	    o Last — The computer returns to the power state it was in before the power failure.

Auto Power On	Enables you to set an alarm to turn on the computer automatically.
Auto Power On Date	Enables you to set a date to turn on the computer automatically.
Auto Power On Time	Enables you to set a time to turn on the computer automatically.

BIOS Security Features	
Supervisor Password	Status of supervisor installed.
User Password	Status of user installed.
Set Supervisor Password	Allows to set the desired supervisor password.
User Access Level	Allows to change the access level for users only if the supervisor password is set.
Set User Password	Allows to set the desired user passwords only if the supervisor password is set.
Password Check	Setup; Always (Setup by default). This option is available only if the supervisor password is set.
Exit	
Exit Options	Provides options to **Load Default, Save and Exit Setup, and Exit Without Saving**.

Boot Sequence

This feature allows you to change the boot sequence for devices.

Boot Options

- l **Hard Drive** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer generates an error message.

- l **CD/DVD Drive** — The computer attempts to boot from the CD/DVD drive. If no CD/DVD is in the drive, or if the CD/DVD has no operating system, the computer generates an error message.

- l **USB Flash Device —** Insert the memory device into a USB port and restart the computer. When F12 = Boot Menu appears in the upper-right corner of the screen, press <F12>. The BIOS detects the device and adds the USB flash option to the boot menu.

NOTE: To boot to a USB device, the device must be bootable. To ensure that your device is bootable, check the device documentation.

Changing Boot Sequence for the Current Boot

You can use this feature to change the current boot sequence, for example, to boot from the CD/DVD drive to run the Dell Diagnostics on the Drivers and Utilities media. On completion of diagnostic tests, the previous boot sequence is restored.

1. If you are booting to a USB device, connect the USB device to a USB connector.

2. Turn on (or restart) your computer.

3. When F2 = Setup, F12 = Boot Menu appears in the upper-right corner of the screen, press <F12>.

   If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop. Then shut down your computer and try again.

   The **Boot Device Menu** appears, listing all available boot devices. Each device has a number next to it.

4. On the **Boot Device Menu** choose the device you want to boot from.

   For example, if you are booting to a USB memory key, highlight **USB Flash Device** and press <Enter>.

NOTE: To boot to a USB device, the device must be bootable. To ensure your device is bootable, check the device documentation.

Changing Boot Sequence for Future Boots

1. Enter system setup (see Entering System Setup).

2. Use the arrow keys to highlight the **Boot Device Configuration** menu option and press <Enter> to access the menu.

   NOTE: Write down your current boot sequence in case you want to restore it.

3. Press the up- and down-arrow keys to move through the list of devices.

4. Press plus (+) or minus (–) to change the boot priority of device.

Clearing Forgotten Passwords

⚠ **WARNING: The computer must be disconnected from the electrical outlet to clear the Password setting.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Locate the 3-pin password connector (PSWD) on the system board (see System Board Components).
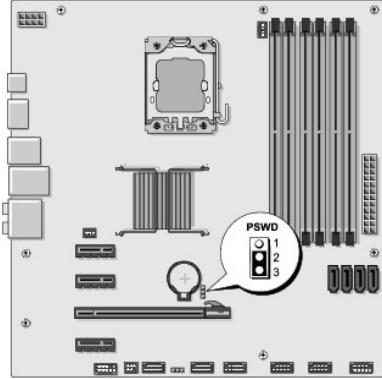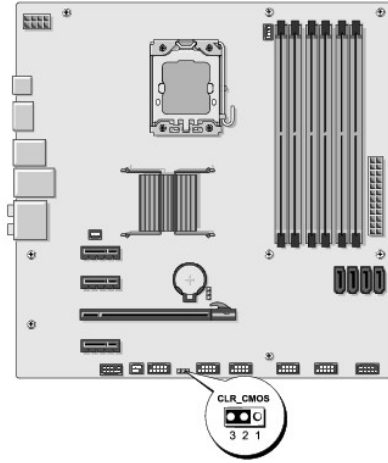

4. Remove the 2-pin jumper plug from pins 2 and 3 and fix it on pins 1 and 2.

5. Wait for approximately five seconds to clear the password.

6. Remove the 2-pin jumper plug from pins 1 and 2 and replace it on pins 2 and 3 to enable the password feature.

7. Replace the computer cover (see Replacing the Computer Cover).

8. Connect your computer and devices to electrical outlets, and turn them on.

Clearing CMOS Settings

⚠ **WARNING: Before you begin any of the procedures in this section, follow the safety instructions that shipped with your computer.**

⚠ **WARNING: The computer must be disconnected from the electrical outlet to clear the CMOS setting.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Locate the 3-pin CMOS connector (CLR_CMOS) on the system board (see System Board Components).

4. Remove the 2-pin jumper plug from pins 2 and 3 and fix it on 1 and 2.

5. Wait for approximately five seconds to clear the CMOS setting.

6. Remove the 2-pin jumper plug from pins 1 and 2 and replace it on pins 2 and 3.

7. Replace the computer cover (see Replacing the Computer Cover).

8. Connect your computer and devices to electrical outlets, and turn them on.

Flashing the BIOS

The BIOS may require flashing when an update is available or when replacing the system board.

1. Turn on the computer.

2. Locate the BIOS update file for your computer at the Dell Support website at **support.dell.com**.

    NOTE: For non U.S. regions, choose your country/region from the drop-down list at the bottom of the Dell support website and then locate the BIOS update file for your computer.

3. Click **Download Now** to download the file.

4. If the **Export Compliance Disclaimer** window appears, click **Yes, I Accept this Agreement**.

    The **File Download** window appears.

5. Click **Save this program to disk**, and then click **OK**.

    The **Save In** window appears.

6. Click the down arrow to view the **Save In** menu, select **Desktop**, and then click **Save**.

    The file downloads to your desktop.

7. Click **Close** when the **Download Complete** window appears.

    The file icon appears on your desktop and is titled the same as the download BIOS update file.

8. Double-click the file icon on the desktop and follow the instructions on the screen.

Back to Contents Page

Technical Overview

Dell Studio XPS™ 435MT Service Manual

- Inside View of Your Computer
- System Board Components

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

Inside View of Your Computer
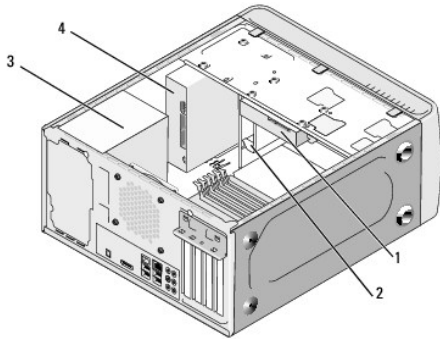
1	hard drive	2	FlexDock
3	power supply	4	optical drive

System Board Components
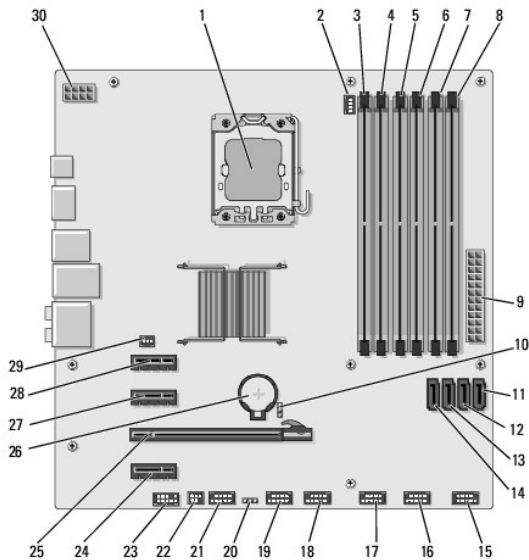
1	processor socket (CPU)	2	processor fan connector (CPU_FAN)
3	memory module connector (DIMM_4)	4	memory module connector (DIMM_1)
5	memory module connector	6	memory module connector

	(DIMM_5)		(DIMM_2)
7	memory module connector (DIMM_6)	8	memory module connector (DIMM_3)
9	main power connector (PWR1)	10	password jumper (PSWD)
11	serial ATA drive connector (SATA3)	12	serial ATA drive connector (SATA2)
13	serial ATA drive connector (SATA1)	14	serial ATA drive connector (SATA0)
15	front panel connector (FP1)	16	Card reader USB connector (F_USB1)
17	front USB connector (F_USB2)	18	front USB connector (F_USB3)
19	FlexDock USB connector (F_USB4)	20	CMOS jumper (CLR_CMOS)
21	front 1394 connector (F_1394)	22	S/PDIF out connector (SPDIF_OUT2)
23	front audio connector (F_AUDIO)	24	PCI Express x1 connector (PCI-EX1_2)
25	PCI Express x16 connector (PCI-EX16_1)	26	battery socket (BAT)
27	PCI Express x1 connector (PCI-EX1_1)	28	PCI Express x1 connector (PCI_EX1_0)
29	fan connector (AUX_FAN1)	30	power for processor (PWR2)

Dell Studio XPS™ 435T/9000 Service Manual

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

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

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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March 2009   Rev. A00

Replacing the Top Cover
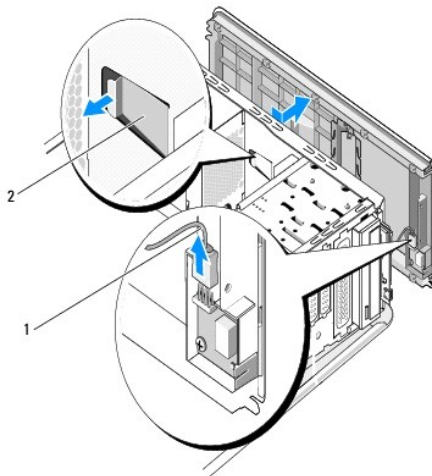**Dell Studio XPS™ 435T/9000 Service Manual**

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at ww.dell.com/regulatory_compliance.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Remove the front panel (see Replacing the Front Panel).

4. Remove the two screws that secure the top cover to the computer.

5. Disconnect the cables from the top I/O panel.
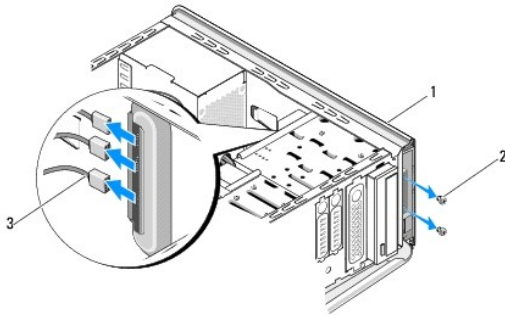
1	top cover	2	screws (2)
3	I/O panel cables		

6. Pull the release tab with one hand and slide the top cover away from the chassis.

7. Disconnect the power LED cable from the top cover.

1	power LED cable	2	release tab

8. Remove the I/O panel (see Replacing the I/O Panel).

9. Set the computer top cover aside in a secure location.

10. To replace the top cover, perform the removal procedure in reverse order.

Replacing the I/O Panel

Dell Studio XPS™ 435T/9000 Service Manual

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.**

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Replacing the Computer Cover).

3. Remove the front panel (see Replacing the Front Panel).

4. Remove the top cover (see Replacing the Top Cover).

5. Disconnect the cables connected to the I/O panel from the system board.

6. Remove the two screws that secure the I/O panel to the top cover.

7. Carefully remove the I/O panel from the computer.
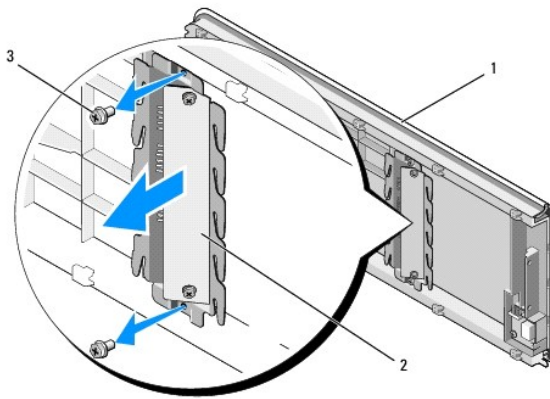
1	top cover	2	I/O panel
3	screws (2)		

8. To replace the I/O panel, replace the screws that secures the I/O panel to the top cover.

9. Replace the top cover (see Replacing the Top Cover).

10. Replace the cables.

11. Replace the front panel (see Replacing the Front Panel).

12. Replace the computer cover (see Replacing the Computer Cover).

13. Connect your computer and devices to electrical outlets, and turn them on.