

Dell™ Latitude™ E4200 Service Manual

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Notes, Notices, and Cautions

-  **NOTE:** A NOTE indicates important information that helps you make better use of your computer.
-  **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 potential for property damage, personal injury, or death.

If you purchased a DELL™ n Series computer, any references in this document to Microsoft® Windows® operating systems are not applicable.

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Model PP15S

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Battery Slice

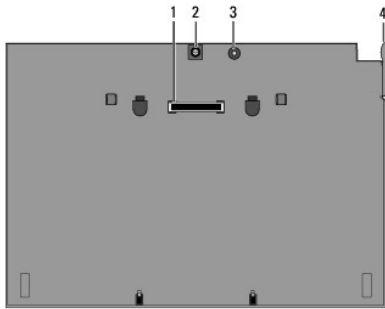
Dell™ Latitude™ E4200 Service Manual

- [Top View](#)
- [Bottom View](#)
- [Setting Up Your Battery Slice](#)
- [Attaching the Battery Slice to Your Laptop](#)
- [Detaching the Battery Slice From Your Laptop](#)
- [Charging Your Battery Slice](#)
- [Specifications](#)

The battery slice provides extended powering capacity to your Dell™ Latitude™ E4200 or E4300 laptop.

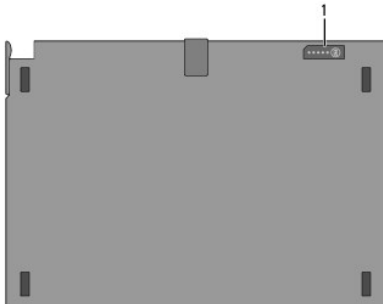
The battery slice attaches to the bottom of the laptop, and can be charged while attached to your laptop or separately.

Top View



1	docking connector	2	AC adapter connector
3	power status light	4	release lever

Bottom View



1	charge gauge lights		
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Setting Up Your Battery Slice

⚠ **CAUTION:** The AC adapter works with electrical outlets worldwide. However, power connectors and power strips vary among countries. Using an incompatible cable or improperly connecting the cable to the power strip or electrical outlet may cause fire or equipment damage.

🔌 **NOTICE:** Always use the Dell AC adapter that came with your laptop. If you use any other commercially available AC adapter—or the AC adapter from earlier models of Dell computers—you can damage the battery slice or the laptop.

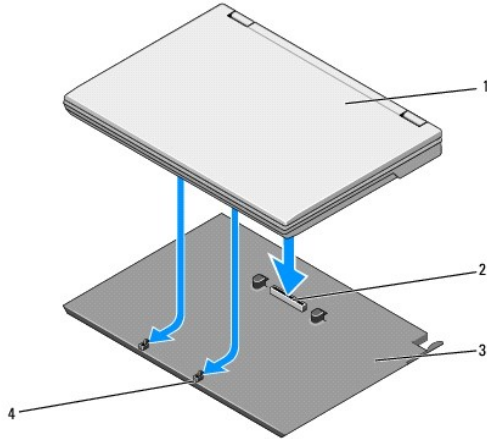
- 🔔 **NOTICE:** When you disconnect the Dell AC adapter cable from the laptop, grasp the connector, not the cable itself, and pull firmly but gently to avoid damaging the cable. When you wrap the AC adapter cable, ensure that you follow the angle of the connector on the AC adapter to avoid damaging the cable.

Connect one end of the AC adapter to the AC adapter connector on your laptop and plug the other end into an electrical outlet.

Attaching the Battery Slice to Your Laptop

- 🔔 **NOTE:** After attaching the battery slice to your laptop, the laptop AC adapter can charge the battery slice through the laptop AC adapter connector.

1. While holding the laptop at a 30-degree angle to the battery slice, set the slots on the bottom of the laptop onto the battery slice hooks, and then lower the back of the laptop onto the battery slice. The laptop docking connector should engage the battery slice docking connector.



1	laptop	2	docking connector
3	battery slice	4	battery slice hooks (2)

2. Press the laptop onto the battery slice until you feel a click to indicate that the laptop is firmly seated.
 3. Turn on the laptop.
-

Detaching the Battery Slice From Your Laptop

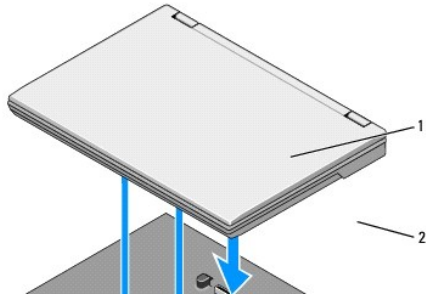
1. Before you detach the battery slice from your laptop, save and close any open files, and exit any open programs.
2. Set your laptop power management settings so that the laptop does not enter sleep, standby, or hibernate mode when you close (lower) the display:

Microsoft® Windows® XP

- a. Click **Start** → **Control Panel** → **Performance and Maintenance** → **Power Options** → **Advanced**.
- b. Under **When I close the lid of my portable computer**, select **Do nothing**.

Windows Vista®

- a. Click **Start** → **Control Panel** → **Mobile PC** → **Power Options** → **Change what closing the lid does**.
 - b. Under the **When I close the lid** drop-down menu, select **Do nothing**.
- c. Pull the laptop release lever to release the laptop from the battery slice.



1	battery slice	2	release lever
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- Lift the back edge of the laptop up and slide the laptop toward the back of the battery slice.

Charging Your Battery Slice

Your battery slice charges whenever it is attached to the laptop and the laptop is attached to an electrical outlet through the AC adapter.

You can also charge your battery slice when it is detached from your laptop using an AC adapter that is compatible with your laptop. Connect an AC adapter to the AC adapter connector on the battery slice and to an electrical outlet.

Power Status Light

When the battery slice charges, the power status light (see [Top View](#)) indicates the following states:

Status	Pattern
An unsupported, non-Dell AC adapter is attached to your laptop.	Alternately blinking amber light and blue light
Temporary battery failure with AC adapter present.	Alternately blinking amber light with steady blue light
Fatal battery failure with AC adapter present.	Constantly blinking amber light
Battery in full charge mode with AC adapter present.	Light off
Battery in charge mode with AC adapter present.	Blue light on

Charge Gauge

The operating time of a battery slice depends on the number of times it is charged. To check the battery charge, press and release the status button on charge gauge (see [Bottom View](#)) to illuminate the charge-level lights. Each light represents approximately 20 percent of total battery charge. For general battery information, see the *Dell Technology Guide* at support.dell.com.

Specifications

Latitude E4200 Battery Slice

Physical	
Height	9.5 mm (0.37 inch)
Width	297 mm (11.69 inches)
Depth	186 mm (7.32 inches)
Weight	614 g (1.35 lb) maximum

AC Adapter	

Input voltage	100–240 VAC
Input frequency	50–60 Hz
Rated output voltage	19.5 VDC

Ports and Connectors	
Docking	100-pin connector

Latitude E4300 Battery Slice

Physical	
Height	8.9 mm (0.35 inch) to 10.5 mm (0.41 inch)
Width	298.9 mm (11.8 inches)
Depth	200.33 mm (7.9 inches)
Weight	630 g (1.38 lb) maximum

AC Adapter	
Input voltage	100–240 VAC
Input frequency	50–60 Hz
Rated output voltage	19.5 VDC

Ports and Connectors	
Docking	100-pin connector

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Working on Your Computer


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- [Recommended Tools](#)
- [Before Working on Your Computer](#)
- [After Working on Your Computer](#)

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

- 1 You have performed the steps in [Before Working on Your Computer](#).
- 1 You have read the safety information that shipped with your computer.

For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

 **NOTE:** The color of your computer and certain components may appear differently than shown in this document.

Recommended Tools



The procedures in this document may require the following tools:


- 1 Small flat-blade screwdriver
 - 1 Phillips screwdriver
 - 1 Small plastic scribe
 - 1 Flash BIOS update (see the Dell Support website at support.dell.com)
-

Before Working on Your Computer

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

- ⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.
- ⚠ **CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.
- 🔌 **NOTICE:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.
- 🔌 **NOTICE:** Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.
- 🔌 **NOTICE:** When disconnecting a cable, pull on the cable's connector or on its strain-relief loop, not on the cable itself. For cable connectors with release tabs, pull gently on the release tabs to release the connector. When connecting a cable, ensure that the connectors are correctly oriented and aligned to avoid damage to the connector and/or the connector's pins.

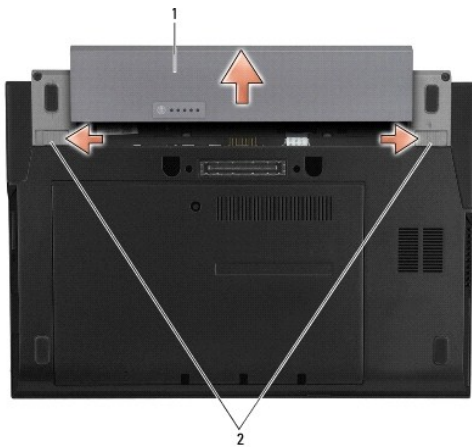
1. Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.
2. Shut down your computer.
 - 1 In Windows XP, click **Start** → **Shutdown** → **Shutdown**.
 - 1 In Windows Vista, click **Start** , click the arrow  icon, and then click **Shut Down** to turn off your computer.

 **NOTE:** Ensure that the computer is off and not in a power management mode. If you cannot shut down the computer using the operating system, press and hold the power button for 4 seconds.

3. Disconnect your computer and all attached devices from their electrical outlets.
4. Disconnect any network cables from the computer.

🔌 **NOTICE:** To help prevent damage to the system board, you must remove the battery from the battery bay before you service the computer.

5. Disconnect any external devices and remove any installed cards before working on your computer:
 - 1 To remove any installed cards, such as an ExpressCard, see the *Dell™ Technology Guide* on your computer or at support.dell.com.
 - 1 To undock from a docking station, see the *E-Port User's Guide* or the *E-Port Plus User's Guide* on support.dell.com.
 - 1 To remove a battery slice, see the documentation that shipped with your battery slice or on support.dell.com.
 - 1 To remove a media base, see the documentation that shipped with your base or on support.dell.com.
6. Turn the computer upside down.
7. Slide the battery release latches away from each other to lock them in an open position.
8. Slide the battery out of the battery bay.




1	battery	2	battery release latches (2)
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9. Turn the computer topside up, open the display, and press the power button to ground the system board.

After Working on Your Computer

After you have completed the replacement procedures, ensure you connect the external devices, cards, cables, etc. before turning on your computer.

 **NOTE:** To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

1. Replace the battery. Slide the battery into the battery bay until it clicks into place.
2. Connect any external devices, such as a docking station, battery slice, or media base, and replace any cards, such as an ExpressCard.
3. Connect any network cables to your computer.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

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Flashing the BIOS

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- [Flashing the BIOS From a CD](#)
- [Flashing the BIOS From the Hard Drive](#)
- [Flashing the BIOS From a USB Key](#)

If a BIOS-update program CD is provided with a new system board, flash the BIOS from the CD. If you do not have a BIOS-update program CD, flash the BIOS from the hard drive.

 **NOTICE:** If you are replacing the system board, make sure the correct SATA mode is selected in the system setup program. All replacement system boards for your computer have the SATA operation set to IRRT mode by default. If you have installed or deployed an image in a different SATA mode (ATA or AHCI), there is a risk of data loss upon boot, which may require you to reinstall the operating system. For more information on setting the SATA mode in the system setup program, see the Dell™ Technology Guide on your computer or at support.dell.com.

 **NOTE:** If you are replacing the system board, the replacement kit for the system board includes media that provides a utility for transferring the Service Tag to the replacement system board. Make sure that you run this utility before flashing the BIOS.

Flashing the BIOS From a CD

 **NOTICE:** Plug the AC adapter into a known good power source to prevent a loss of power. Failure to do so may cause damage to your computer.

1. Ensure that the AC adapter is plugged in and that the main battery is installed properly.
2. Press <F12> before inserting the BIOS-update program CD so that you can set up the computer to boot from a CD for one time only. Otherwise, you must enter the system setup program to change the default boot order.
3. Insert the BIOS-update program CD, and turn on the computer.

 **NOTICE:** Do not interrupt this process once it begins. Doing so may cause damage to your computer.

Follow the instructions that appear on the screen. The computer continues to boot and updates the new BIOS. When the flash update is complete, the computer will automatically reboot.

4. Remove the flash BIOS update program CD from the drive.
-

Flashing the BIOS From the Hard Drive

 **NOTICE:** Plug the AC adapter into a known good power source to prevent a loss of power. Failure to do so may cause damage to your computer.

1. Ensure that the AC adapter is plugged in, the main battery is properly installed, and a network cable is attached.
2. Turn on the computer.
3. Locate the latest BIOS update file for your computer at support.dell.com.
4. Click **Download Now** to download the file.
5. If the **Export Compliance Disclaimer** window appears, click **Yes, I Accept this Agreement**.

The **File Download** window appears.

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

The **Save In** window appears.

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


The file downloads to your desktop.

8. Click **Close** if the **Download Complete** window appears.

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

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

Flashing the BIOS From a USB Key

 **NOTICE:** Plug the AC adapter into a known good power source to prevent a loss of power. Failure to do so may cause damage to your computer.

1. Ensure that the AC adapter is plugged in and that the main battery is installed properly.
2. Verify that the USB port is enabled in the system setup program. See the *Dell™ Technology Guide* on your computer or at support.dell.com for information on enabling the USB port.
3. Insert the bootable USB key with the BIOS-update and turn on the computer.
4. Press <F12> so that you can set up the computer to boot from the USB key for one time only. Otherwise, you must enter the system setup program to change the default boot order, setting USB as the first boot device.

 **NOTICE:** Do not interrupt this process once it begins. Doing so may cause damage to your computer.

Follow the instructions that appear on the screen. The computer continues to boot and updates the new BIOS. When the flash update is complete, the computer will automatically reboot.

5. Remove the USB key from the USB port.
-

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Card With Bluetooth® Wireless Technology

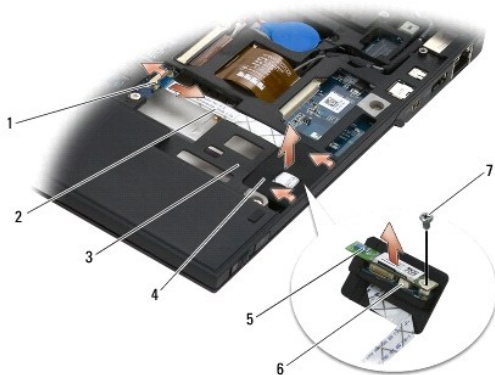
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- [Removing the Card With Bluetooth Wireless Technology](#)
- [Replacing the Card With Bluetooth Wireless Technology](#)

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

Removing the Card With Bluetooth Wireless Technology

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the LED cover (see [Removing the LED Cover](#)).
3. Remove the keyboard (see [Removing the Keyboard](#)).
4. Disconnect the cable from the system board by gently pulling up on the release latch.
5. Lift up on the module to remove it from the base assembly.
6. Turn the module upside down.
7. Remove the M2 x 3-mm screw from the card.
8. Pull up on the card to disconnect it from the connector on the module.



1	release latch	2	cable
3	base assembly	4	module
5	card	6	card connector
7	screw		

Replacing the Card With Bluetooth Wireless Technology

1. Connect the card to the card connector on the module.
2. Replace the M2 x 3-mm screw on the card.
3. Turn the module topside up, and press the module into the base assembly.
4. Connect the cable to the system board using the release latch.
5. Replace the keyboard (see [Replacing the Keyboard](#)).

6. Replace the LED cover (see [Replacing the LED Cover](#)).
7. Follow the procedures in [After Working on Your Computer](#).

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Camera

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- [Removing the Camera](#)
- [Replacing the Camera](#)

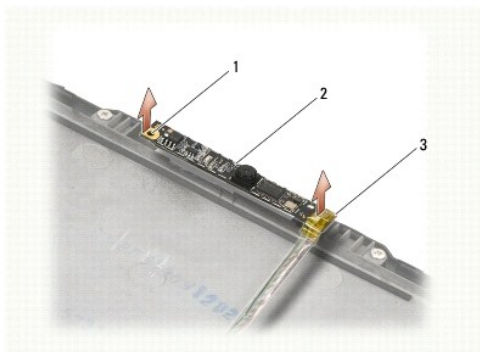
CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

If you ordered a camera with your computer, the camera is already installed.

Removing the Camera

1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the keyboard (see [Removing the Keyboard](#)).
3. Remove the display assembly (see [Removing the Display Assembly](#)).
4. Remove the display bezel (see [Removing the Display Bezel](#)).
5. Remove the display panel (see [Removing the Display Panel](#)).
6. Remove the display hinges (see [Removing the Display Hinges](#)).
7. Lift the camera board from the display back cover.
8. Free the display/camera cable assembly from the display hinges.



1	alignment post (2)	2	camera board
3	display/camera cable assembly		

Replacing the Camera

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Align the camera board to the alignment posts on the display cover.
2. Re-thread the display cables through the hinges.
3. Replace the display hinges (see [Replacing the Display Hinges](#)).

4. Replace the display panel (see [Replacing the Display Panel](#)).
 5. Replace the display bezel (see [Replacing the Display Bezel](#)).
 6. Replace the display assembly (see [Replacing the Display Assembly](#)).
 7. Follow the instructions in [After Working on Your Computer](#).
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Coin-Cell Battery

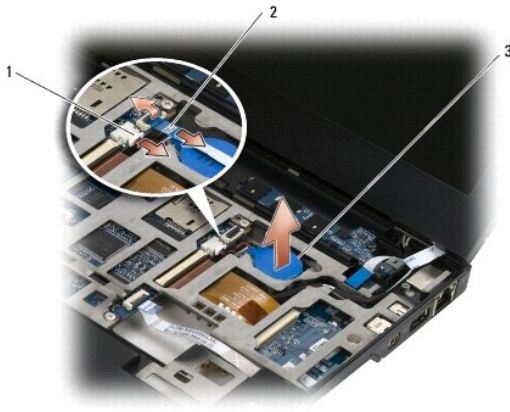
Dell™ Latitude™ E4200 Service Manual

- [Removing the Coin-Cell Battery](#)
- [Replacing the Coin-Cell Battery](#)

Removing the Coin-Cell Battery

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the LED cover (see [Removing the LED Cover](#)).
3. Remove the keyboard (see [Removing the Keyboard](#)).
4. Pry up the coin-cell battery to release the double-sided adhesive tape on the bottom.
5. Lift the coin-cell battery out of the computer.
6. Disconnect the battery cable from the system board.



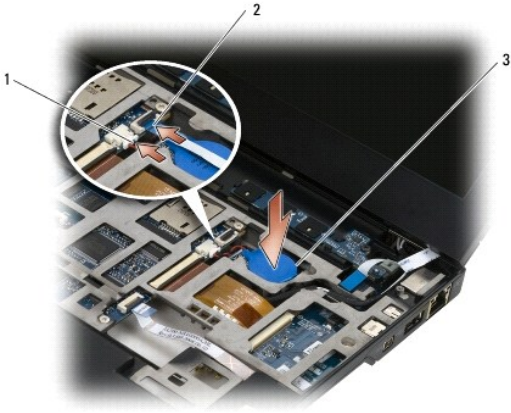
1	battery cable	2	LED board cable
3	coin-cell battery		

Replacing the Coin-Cell Battery

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Connect the coin-cell battery cable to the system board.
2. Insert the coin-cell battery into the computer.
3. If you are re-installing the old coin-cell battery, press down to seal the tape on the bottom.

If you are installing a new coin-cell battery, remove the adhesive backing from the battery and slide the battery under the tab. Press to seal the tape on the bottom.



1	battery cable	2	LED board cable
3	coin-cell battery		

4. Replace the keyboard (see [Replacing the Keyboard](#)).
5. Replace the LED cover (see [Replacing the LED Cover](#)).
6. Follow the procedures in [After Working on Your Computer](#).


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Display Assembly

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- [Types of Liquid Crystal Display \(LCD\) Covers](#)
- [Removing the Display Assembly](#)
- [Replacing the Display Assembly](#)
- [Removing the Display Bezel](#)
- [Replacing the Display Bezel](#)
- [Removing the Display Panel](#)
- [Replacing the Display Panel](#)
- [Removing the Display Hinges](#)
- [Replacing the Display Hinges](#)
- [Removing the Display Cable/Display Cable with Camera](#)
- [Replacing the Display Cable/Display cable with Camera](#)

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

Types of Liquid Crystal Display (LCD) Covers

The five LCD cover designs that can be ordered in different color options are:

- 1 WLAN support only with short antenna cable:
 - 1 No bumps
 - 1 Short antenna cable (WLAN antenna cables connect to the radio switch board)
 - 1 WWAN and WLAN support only:
 - 1 A bump on either side of the LCD top cover
 - 1 WLAN cables route to the radio switch board
 - 1 WWAN cables route to the WWAN card
 - 1 WLAN, WWAN, and Camera bump support:
 - 1 A bump on either side of the LCD top cover
 - 1 WLAN cables route to the radio switch board
 - 1 WWAN cables route to the WWAN card
-

Removing the Display Assembly

1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Disconnect the WLAN and WWAN cables.
4. Turn the computer topside up.
5. Remove the LED cover (see [Removing the LED Cover](#)).
6. Remove the keyboard (see [Removing the Keyboard](#)).
7. Disconnect the cable to the display assembly by gently pulling up on the tab near the cable's connector.
8. Disconnect the antenna cables.

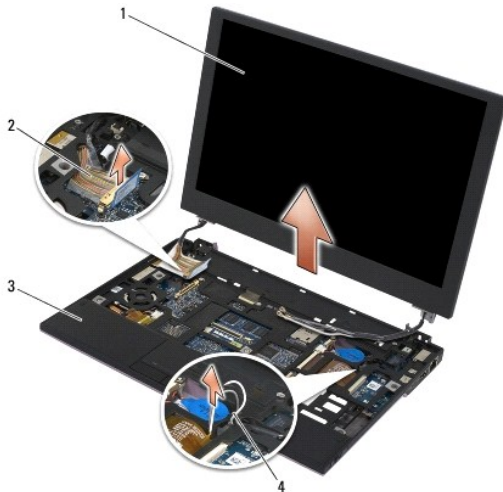
If present, remove the radio switch board (see [Removing the Radio Switch Board](#)) and disconnect and unroute the WWAN cables.

If the radio switch board is not present, disconnect and unroute the WLAN and WWAN cables.
9. Position all cables leading to the display assembly to the rear of the computer.
10. Remove the four M2.5 x 5-mm screws securing the display assembly.



1	screws (4)		
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- Open the display to 90 degrees and lift the display assembly off the base assembly.



1	display assembly	2	display cable
3	base assembly	4	wireless cables

Replacing the Display Assembly

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

- Align the display hinges with the holes in the base of the computer, and lower the display into place.
- Route the display cable under each tab in its routing channel, and connect the cable to the display cable connector on the system board.
- Route the wireless (WLAN and WWAN) cables and radio switch board cables (if applicable) under each tab in the routing channel and then under the right I/O board ribbon cable.
- Close the display and turn the computer upside down.
- Replace the four M2.5 x 5-mm screws to secure the display assembly.
- Depending on the cards in your computer configuration, connect the antenna cables to their respective cards:

For WWAN, see [Replacing a WWAN Card](#).

For radio switch board, see [Replacing the Radio Switch Board](#).

For WLAN, see [Replacing the WLAN/WiMax Card](#).

- Place any unused antenna cables in the base assembly cable holders next to the card slot.
- Replace the keyboard (see [Replacing the Keyboard](#)).
- Replace the LED cover (see [Replacing the LED Cover](#)).
- Replace the service panel (see [Replacing the Service Panel](#)).
- Follow the procedures in [After Working on Your Computer](#).

Removing the Display Bezel

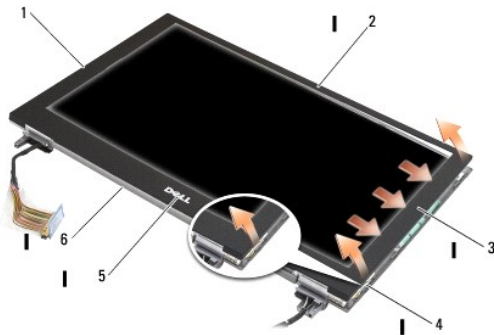
CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

- Follow the instructions in [Before Working on Your Computer](#).
- Remove the service panel (see [Removing the Service Panel](#)).
- Remove the LED cover (see [Removing the LED Cover](#)).
- Remove the keyboard (see [Removing the Keyboard](#)).
- Remove the display assembly (see [Removing the Display Assembly](#)).

NOTICE: Removal of the bezel from the display back cover requires extreme care to avoid damage to the bezel and the display panel. Special attention is required for the corners, especially for the bezels used with the LED display panels.

NOTICE: To avoid permanent damage to the display panel, do not press or rub on the center of the panel.

- Starting from one side of the bezel, use your fingers to pry the inside edges of the bezel upward and outward from the display panel. Lift up on the released side of the bezel, and continue to release the top and bottom of the bezel. Release the remaining side of the bezel last.
- Once all snaps are released, lift the bezel from the display assembly.



1	left side of display bezel	2	top of display bezel
3	right side of display bezel	4	snaps
5	bottom of display bezel	6	display assembly

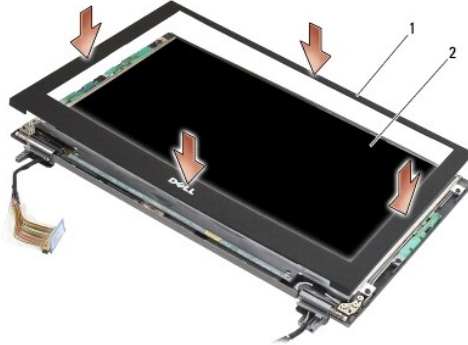
Replacing the Display Bezel

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

➔ **NOTICE:** To avoid permanent damage to the display panel, do not press or rub on the center of the panel.

➔ **NOTICE:** When replacing the display bezel, press only on the outer edges when snapping the bezel into place. Pressing on the inner edges could cause the display panel to crack.

1. Align the bezel edges with those on the display assembly, and gently snap the bezel into place around the entire perimeter of the assembly.



1	display bezel	2	display assembly
---	---------------	---	------------------

2. Replace the display assembly (see [Replacing the Display Assembly](#)).
3. Replace the keyboard (see [Replacing the Keyboard](#)).
4. Replace the LED cover (see [Replacing the LED Cover](#)).
5. Replace the service panel (see [Replacing the Service Panel](#)).
6. Follow the procedures in [After Working on Your Computer](#).

Removing the Display Panel

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

⚠ **CAUTION:** The tabs on the outer edges of the display panel are made of very thin metal, and could cut the skin if not handled with care.

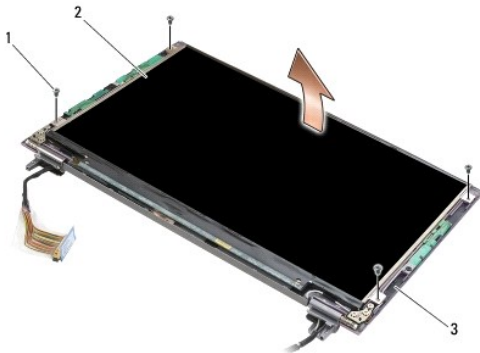
1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the LED cover (see [Removing the LED Cover](#)).
4. Remove the keyboard (see [Removing the Keyboard](#)).
5. Remove the display assembly (see [Removing the Display Assembly](#)).
6. Remove the display bezel (see [Removing the Display Bezel](#)).

➔ **NOTICE:** To avoid permanent damage to the display panel, do not press or rub on the center of the panel.

7. Remove the four M2 x 3-mm screws from the display panel.

➔ **NOTICE:** To avoid permanent damage to the display panel, lift the panel using both hands on the sides of the panel.

- Lift the display panel out of the display cover and carefully lay the display panel flat on your workspace on a clean and soft type of material. Be careful to avoid damaging the display panel with the hinges and cables on the display cover.

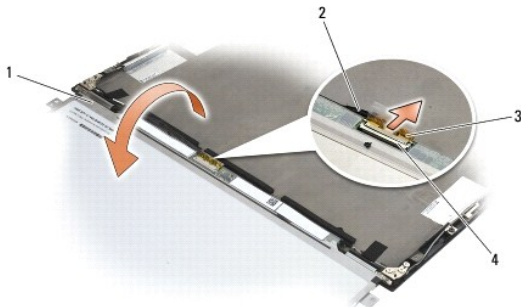


1	screws (4)	2	display panel
3	display cover		

- NOTICE:** Failure to peel back the adhesive tape prior to disconnecting the display cable can cause permanent damage to the cable.
- NOTICE:** To avoid permanent damage to the display cable and the display panel, pull evenly on the left and right sides of the cable connector when removing the cable.

- Disconnect the display cable.

Peel back the adhesive tape, then pull the cable out of the connector.



1	underside of display panel	2	display cable
3	adhesive tape	4	display cable connector

Replacing the Display Panel

- CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

- CAUTION:** The tabs on the outer edges of the display panel are made of very thin metal, and could cut the skin if not handled with care.

- NOTICE:** To avoid permanent damage to the display panel, do not press or rub on the center of the panel.
- NOTICE:** To avoid permanent damage to the display panel, lift the panel using both hands on the sides of the panel.

- Place the display panel upside down on your workspace in front of the display cover.

- NOTICE:** To avoid permanent damage to the display panel when connecting the display cable, insert the cable into the display panel connector by evenly pushing the left and right edges of the cable connector. Do not grip or hold the display panel by the circuit board on the bottom edge of the panel.

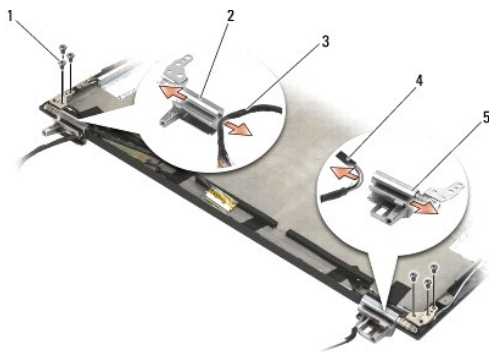
2. Connect the display cable to the connector on the back of the display panel, and secure the cable with the adhesive tape.
3. Place the display panel in the display cover.
Make sure the cables in the display cover do not become caught between the display panel and the cover.
4. Replace the four M2 x 3-mm screws to secure the display panel to the display cover.
5. Replace the display bezel (see [Replacing the Display Bezel](#)).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the keyboard (see [Replacing the Keyboard](#)).
8. Replace the LED cover (see [Replacing the LED Cover](#)).
9. Replace the service panel (see [Replacing the Service Panel](#)).
10. Follow the procedures in [After Working on Your Computer](#).

Removing the Display Hinges

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.


NOTE: The display hinge panels are labeled "L" (left) and "R" (right).


1. Follow the instructions in [Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the LED cover (see [Removing the LED Cover](#)).
4. Remove the keyboard (see [Removing the Keyboard](#)).
5. Remove the display assembly (see [Removing the Display Assembly](#)).
6. Remove the three M2 x 4-mm screws from the right hinge and the three M2 x 4-mm screws from the left hinge.
7. Unthread the cables from each hinge and remove the hinge.



1	screws (6)	2	left hinge
3	cables in left hinge	4	cables in right hinge
5	right hinge		


Replacing the Display Hinges

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

 **NOTE:** The display hinge panels are labeled "L" (left) and "R" (right).

1. Thread the cables into each hinge, then slide the hinge onto the display cover. Use the alignment pins on the display cover to place each hinge.
 2. Replace the three M2 x 4-mm screws on the right hinge and the three M2 x 4-mm screws on the left hinge.
 3. Replace the display assembly (see [Replacing the Display Assembly](#)).
 4. Replace the keyboard (see [Replacing the Keyboard](#)).
 5. Replace the LED cover (see [Replacing the LED Cover](#)).
 6. Replace the service panel (see [Replacing the Service Panel](#)).
 7. Follow the procedures in [After Working on Your Computer](#).
-

Removing the Display Cable/Display Cable with Camera

 **NOTE:** The display cable may include a system camera in some configurations.

1. Follow the instructions in [Working on Your Computer](#).
 2. Remove the service panel (see [Removing the Service Panel](#)).
 3. Remove the LED cover (see [Removing the LED Cover](#)).
 4. Remove the keyboard (see [Removing the Keyboard](#)).
 5. Remove the display assembly (see [Removing the Display Assembly](#)).
 6. Remove the display panel (see [Removing the Display Panel](#)).
 7. Unroute the display cable from the left display hinge.
 8. If present, carefully peel back the adhesive tape securing the display cable to the display back cover.
 9. Carefully peel the display panel LED board away from the display back panel, and remove the display cable.
-

Replacing the Display Cable/Display cable with Camera

 **NOTE:** The display cable may include system camera in some configurations.

1. If you are re-installing the old display cable, lower the display panel LED board onto the alignment pins in the display back panel, and gently press down to seal the adhesive on the bottom of the LED board.

If you are installing a new display cable, remove the adhesive backing from the display panel LED board, and lower the board onto the alignment pins in the display back panel. Gently press to seal the tape on the bottom of the LED board.

2. Secure the display cable to the display back panel with the adhesive tape (if present).
3. Route the display cable through the left display hinge.
4. Replace the display panel (see [Removing the Display Panel](#)).
5. Replace the display assembly (see [Replacing the Display Assembly](#)).
6. Replace the keyboard (see [Replacing the Keyboard](#)).
7. Replace the LED cover (see [Replacing the LED Cover](#)).

8. Replace the service panel (see [Replacing the Service Panel](#)).
9. Follow the procedures in [After Working on Your Computer](#).

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Fan

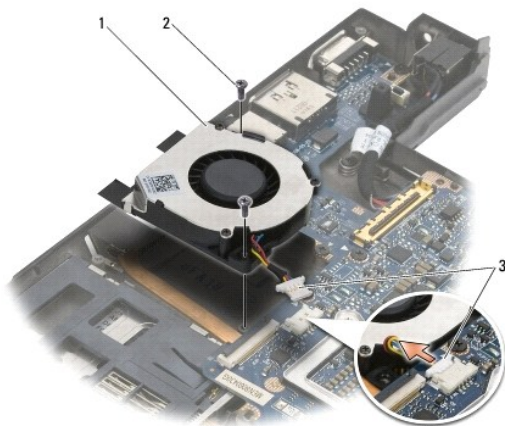
Dell™ Latitude™ E4200 Service Manual

- [Removing the Fan](#)
- [Replacing the Fan](#)

Removing the Fan


⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the WLAN and WWAN cards (see [Removing the WLAN/WiMax Card](#) and [Removing a WWAN Card](#)).
4. Remove the memory module (see [Removing the Memory Module](#)).
5. Remove the solid state drive (see [Removing the Solid State Drive and Cable Assembly](#)).
6. Remove the LED cover (see [Removing the LED Cover](#)).
7. Remove the keyboard (see [Removing the Keyboard](#)).
8. Remove the module with Bluetooth® wireless technology (see [Removing the Card With Bluetooth Wireless Technology](#)).
9. Remove the display assembly (see [Removing the Display Assembly](#)).
10. Remove the coin-cell battery (see [Removing the Coin-Cell Battery](#)).
11. Remove the palm rest assembly (see [Removing the Palm Rest Assembly](#)).
12. Remove the two M2 x 3-mm screws from the fan.
13. Disconnect the fan connector from the system board.
14. Lift the fan away from the base assembly.



1	fan	2	screws (2)
3	fan connector		

Replacing the Fan

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Hold the fan with the cable on the right side, and align the screw holes in the fan with the screw holes in the base assembly.
2. Reconnect the fan connector to the system board.
3. Replace the two M2 x 3-mm screws to secure the fan to the base assembly.
4. Replace the palm rest assembly ([Replacing the Palm Rest Assembly](#)).
5. Replace the coin-cell battery (see [Replacing the Coin-Cell Battery](#)).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the module with Bluetooth wireless technology (see [Replacing the Card With Bluetooth Wireless Technology](#)).
8. Replace the keyboard (see [Replacing the Keyboard](#)).
9. Replace the LED cover (see [Replacing the LED Cover](#)).
10. Replace the solid state drive (see [Replacing the Solid State Drive and Cable Assembly](#)).
11. Replace the memory module (see [Replacing the Memory Module](#)).
12. Replace the WLAN and WWAN cards (see [Replacing the WLAN/WiMax Card](#) and [Replacing a WWAN Card](#)).
13. Replace the service panel (see [Replacing the Service Panel](#)).
14. Follow the procedures in [After Working on Your Computer](#).

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Heatsink Assembly

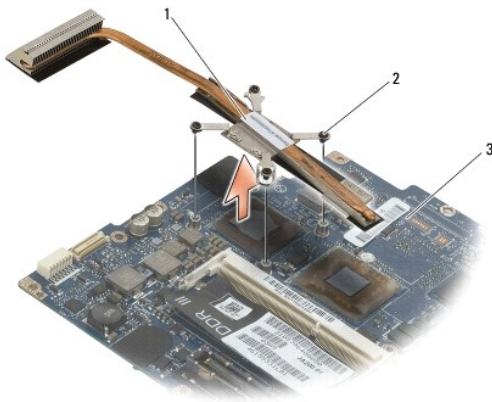
Dell™ Latitude™ E4200 Service Manual

- [Removing the Heatsink Assembly](#)
- [Replacing the Heatsink Assembly](#)

Removing the Heatsink Assembly


CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the WLAN and WWAN cards (see [Removing the WLAN/WiMax Card](#) and [Removing a WWAN Card](#)).
4. Remove the memory module (see [Removing the Memory Module](#)).
5. Remove the solid state drive (see [Removing the Solid State Drive and Cable Assembly](#)).
6. Remove the LED cover (see [Removing the LED Cover](#)).
7. Remove the keyboard (see [Removing the Keyboard](#)).
8. Remove the module with Bluetooth® wireless technology (see [Removing the Card With Bluetooth Wireless Technology](#)).
9. Remove the display assembly (see [Removing the Display Assembly](#)).
10. Remove the coin-cell battery (see [Removing the Coin-Cell Battery](#)).
11. Remove the palm rest assembly (see [Removing the Palm Rest Assembly](#)).
12. Remove the DC power cable (see [Removing the DC Power Cable](#)).
13. Remove the system board assembly (see [Removing the System Board Assembly](#)).
14. In sequential order, loosen the four numbered captive screws that secure the heatsink assembly to the system board, and carefully lift the heatsink assembly away from the system board.



1	heatsink assembly	2	captive screws (4)
3	system board		

Replacing the Heatsink Assembly

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Align the four captive screws on the heatsink assembly with the screw holes on the system board and secure the screws. Tighten the four numbered screws in sequential order.
2. Replace the system board assembly (see [Removing the System Board Assembly](#)).
3. Replace the DC power cable (see [Replacing the DC Power Cable](#)).
4. Replace the palm rest assembly ([Replacing the Palm Rest Assembly](#)).
5. Replace the coin-cell battery (see [Replacing the Coin-Cell Battery](#)).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the module with Bluetooth wireless technology (see [Replacing the Card With Bluetooth Wireless Technology](#)).
8. Replace the keyboard (see [Replacing the Keyboard](#)).
9. Replace the LED cover (see [Replacing the LED Cover](#)).
10. Replace the solid state drive (see [Replacing the Solid State Drive and Cable Assembly](#)).
11. Replace the memory module (see [Replacing the Memory Module](#)).
12. Replace the WLAN and WWAN cards (see [Replacing the WLAN/WiMax Card](#) and [Replacing a WWAN Card](#)).
13. Replace the service panel (see [Replacing the Service Panel](#)).
14. Follow the procedures in [After Working on Your Computer](#).

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Keyboard

Dell™ Latitude™ E4200 Service Manual

- [Removing the Keyboard](#)
- [Replacing the Keyboard](#)

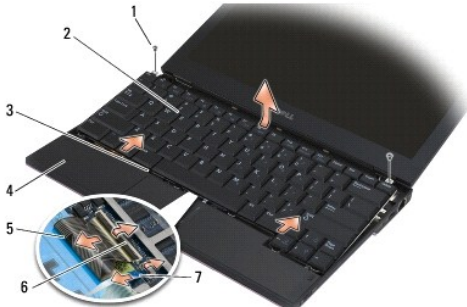
Removing the Keyboard

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the LED cover (see [Removing the LED Cover](#)).
3. Remove the two M2 x 3-mm screws along the top of the keyboard.

NOTICE: The key caps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Exercise care when removing and handling the keyboard.

4. Slide the keyboard towards the back of the computer to release the keyboard tabs from the palm rest.



1 screws (2)	2 keyboard
3 keyboard tab (5)	4 palm rest
5 keyboard cable	6 release latches (2)
7 keyboard backlight cable	

NOTICE: Lift the keyboard carefully to ensure that you do not pull on the keyboard cable.

5. Rotate the top of the keyboard away from the display, and lay it upside down on the palm rest to gain access to the keyboard connector.
6. Disconnect the keyboard cable and backlight cable (optional) from the system board by gently pulling up on the release latches.

Replacing the Keyboard

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: The key caps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Exercise care when removing and handling the keyboard.

1. Connect the keyboard cable and backlight cable (optional) to the system board using the release latches.
2. Place the keyboard tabs into the palm rest and lay the keyboard down on the palm rest.

3. Replace the two M2 x 3-mm screws at the top of the keyboard.
 4. Replace the LED cover (see [Replacing the LED Cover](#)).
 5. Follow the procedures in [After Working on Your Computer](#).
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Latitude ON™ Card

Dell™ Latitude™ E4200 Service Manual

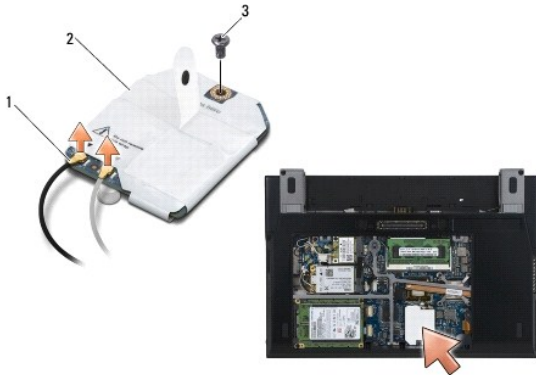
- [Removing the Latitude ON Card](#)
- [Replacing the Latitude ON Card](#)

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

NOTE: The Latitude ON™ card is optional and may not be present in some computers.

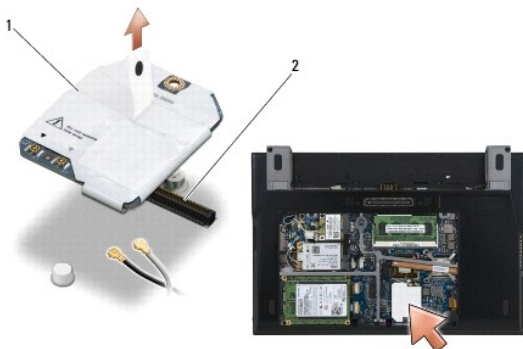
Removing the Latitude ON Card

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Disconnect the antenna cables from the card.
4. Remove the M2 x 3-mm screw.



1	antenna cables (2)	2	Latitude ON card
3	screw		

5. Pull the card up to disconnect it from the system board connector.



1	Latitude ON card	2	system board connector
---	------------------	---	------------------------

Replacing the Latitude ON Card

1. Connect the Latitude ON card connector to the system board connector.
2. Replace the M2 x 3-mm screw.
3. Connect the two antenna cables to the card.

Connect the white antenna cable to the connector marked with the white triangle, and connect the black antenna cable to the connector marked with the black triangle.

4. Replace the service panel (see [Replacing the Service Panel](#)).
 5. Follow the procedures in [After Working on Your Computer](#).
-

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LED Boards

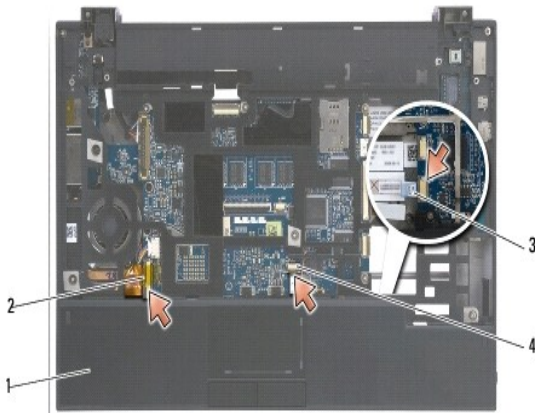
Dell™ Latitude™ E4200 Service Manual

- [Removing the Left LED Board](#)
- [Replacing the Left LED Board](#)
- [Removing the Right LED Board](#)
- [Replacing the Right LED Board](#)

Removing the Left LED Board

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the LED cover (see [Removing the LED Cover](#)).
3. Remove the keyboard (see [Removing the Keyboard](#)).
4. Remove the M2 x 3-mm screw on the left side of the LED board.
5. Slide the LED board towards the front of the computer to release it from the tabs on the palm rest.
6. Disconnect the cable to the system board by gently pulling up on the release latch.



1	screw	2	left LED board
3	tabs	4	palm rest
5	cable	6	release latch

Replacing the Left LED Board

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

🔍 **NOTICE:** Before installing the LED cover, ensure that all cables are routed correctly. Improper routing of the cables can cause damage to the cables.

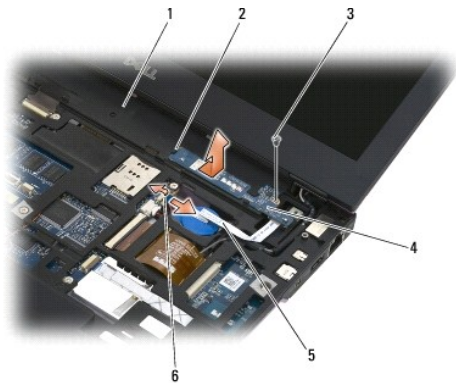
1. Holding the LED board with the cable on the upper right side, slide the back edge of the board under the tabs on the palm rest.
2. Connect the cable to the system board by gently pressing on the release latch.
3. Replace the M2 x 3-mm screw on the left side of the LED board.

4. Replace the keyboard (see [Replacing the Keyboard](#)).
5. Replace the LED cover (see [Replacing the LED Cover](#)).
6. Follow the procedures in [After Working on Your Computer](#).

Removing the Right LED Board

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the LED cover (see [Removing the LED Cover](#)).
3. Remove the keyboard (see [Removing the Keyboard](#)).
4. Disconnect the cable to the system board by gently pulling up on the release latch and pulling on the blue tab on the end of the cable.
5. Remove the M2 x 3-mm screw on the right side of the LED board.
6. Slide the board slightly to the right, and lift up the board to release the board from the tabs on the palm rest.



1	palm rest	2	tabs
3	screw	4	right LED board
5	cable	6	release latch

Replacing the Right LED Board

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: Before installing the LED cover, ensure that all cables are routed correctly. Improper routing of the cables can cause damage to the cables.

1. Lay the right LED board on the palm rest with the cable on the right side.
Place the narrow center section of the board between the two tabs on the right side of the palm rest.
2. Slide the board towards the left of the computer to secure the board under the tabs on the palm rest.
3. Replace the M2 x 3-mm screw on the right side of the LED board.
4. Connect the LED board cable to the system board using the release latch.
5. Replace the keyboard (see [Replacing the Keyboard](#)).

6. Replace the LED cover (see [Replacing the LED Cover](#)).
7. Follow the procedures in [After Working on Your Computer](#).

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LED Cover

Dell™ Latitude™ E4200 Service Manual

- [Removing the LED Cover](#)
- [Replacing the LED Cover](#)

Removing the LED Cover

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the procedures in [Before Working on Your Computer](#).
2. Open the display all the way (160 degrees).

👉 **NOTICE:** To avoid damaging the LED cover, do not lift the cover on both sides simultaneously. Removing the LED cover in a different way than described may cause the plastic to break.



1	LED cover	2	plastic scribe
3	indent		

3. Starting on the right side of the computer, use a plastic scribe (inserted into the indent) to pry up the hinge cover. Lift the bottom edge of the cover away from the keyboard going from the right to the left, and then pull the cover up and away from the display to remove it.

Replacing the LED Cover

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

👉 **NOTICE:** Before installing the LED cover, ensure that all cables are routed correctly. Improper routing of the cables can cause damage to the cables.

1. Insert the tabs on the top edge of the cover into the slots under the bottom edge of the display.
2. Press from left to right until the cover snaps into place, ensuring that the edges of the cover line up with those on the palm rest.
3. Follow the procedures in [After Working on Your Computer](#).

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Memory


Dell™ Latitude™ E4200 Service Manual

- [Removing the Memory Module](#)
- [Replacing the Memory Module](#)


Your computer has 1 GB of onboard memory and one user-accessible SODIMM socket. You can increase your computer memory by installing a memory module on the system board. See "Specifications" in your *Setup and Quick Reference Guide* for information on the memory supported by your computer. Install only memory modules that are intended for your computer.

 **NOTE:** Memory modules purchased from Dell are covered under your computer warranty.

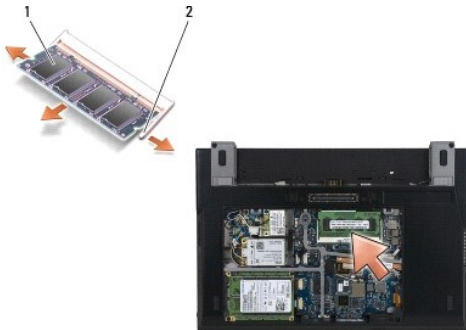
Removing the Memory Module

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).


 **NOTICE:** To prevent damage to the memory module connector, do not use tools to spread the memory module securing clips.

3. Use your fingertips to carefully spread apart the securing clips on each end of the memory module connector until the memory module pops up.
4. Remove the memory module from the connector.

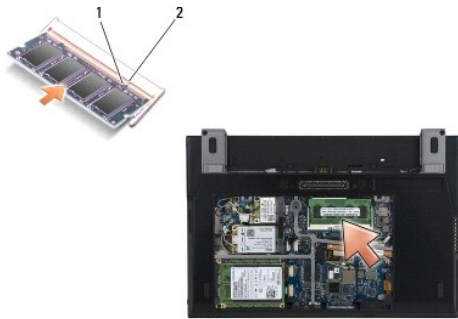


1	memory module	2	securing clips (2)
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Replacing the Memory Module

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Place the module at a 45-degree angle, and align the notch in the module with the tab on the connector.
2. Press down on the module until it clicks into place. If the module does not click into place, remove the module and reinstall it.



1	notch	2	tab
---	-------	---	-----

3. Replace the service panel (see [Replacing the Service Panel](#)).
4. Follow the procedures in [After Working on Your Computer](#).

As the computer boots, it detects the additional memory and automatically updates the system configuration information. To confirm the amount of memory installed in the computer:

- 1 In Windows® XP, right-click the **My Computer** icon on your desktop. Click **Properties**→**General**.
- 1 In Windows Vista®, click **Start** → **Help and Support**→**Dell System Information**.

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Palm Rest Assembly

Dell™ Latitude™ E4200 Service Manual

- [Removing the Palm Rest Assembly](#)
- [Replacing the Palm Rest Assembly](#)

Removing the Palm Rest Assembly

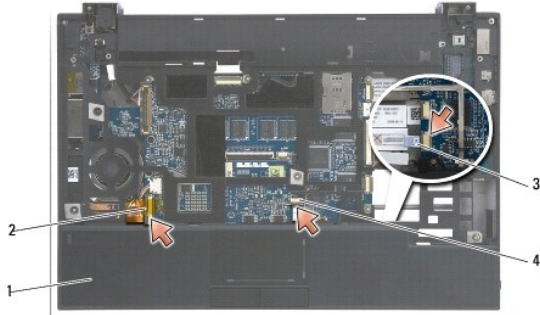
CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the WLAN and WWAN cards (see [Removing the WLAN/WiMax Card](#) and [Removing a WWAN Card](#)).
4. Remove the memory module (see [Removing the Memory Module](#)).
5. Remove the solid state drive (see [Removing the Solid State Drive and Cable Assembly](#)).
6. Disconnect the fingerprint reader/wireless switch cable from the system board by gently pulling on the connector release.
7. Remove the two silver M2 x 5-mm screws labeled "P".



1 screws (2)

8. Turn the computer topside up.
9. Remove the LED cover (see [Removing the LED Cover](#)).
10. Remove the keyboard (see [Removing the Keyboard](#)).
11. Remove the module with Bluetooth® wireless technology (see [Removing the Card With Bluetooth Wireless Technology](#)).
12. Remove the display assembly (see [Removing the Display Assembly](#)).
13. Remove the coin-cell battery (see [Removing the Coin-Cell Battery](#)).
14. Disconnect the ExpressCard and touch pad cables from the system board by gently lifting up on the latches near the cable connectors.



1	palm rest	2	ExpressCard cable
3	wireless switch cable	4	touch pad cable

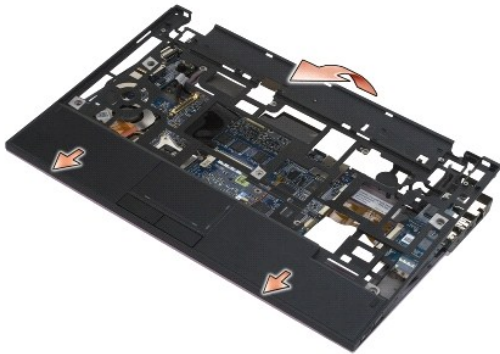
15. Remove the twelve silver M2 x 5-mm screws labeled "P".



1	2 x 5-mm screws (12)
---	----------------------

NOTICE: Do not use force to separate the palm rest from the computer. If you encounter resistance, gently flex or apply pressure to the palm rest until the palm rest is free.

16. Lift the palm rest at the rear edge, and push the palm rest slightly forward to unhook the remainder of the palm rest from the front of the base.



Replacing the Palm Rest Assembly

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Holding the palm rest at an angle, connect the front of the palm rest to the computer, securing all tabs.
2. Lower the rear edge of the palm rest into place.

3. Replace the twelve silver M2 x 5-mm screws on the palm rest in the holes labeled "P".
 4. Gently connect the ExpressCard and touch pad cables to the system board using the latches near the cable connectors.
 5. Replace the coin-cell battery (see [Replacing the Coin-Cell Battery](#)).
 6. Replace the display assembly (see [Replacing the Display Assembly](#)).
 7. Replace the module with Bluetooth wireless technology (see [Replacing the Card With Bluetooth Wireless Technology](#)).
 8. Replace the keyboard (see [Replacing the Keyboard](#)).
 9. Replace the LED cover (see [Replacing the LED Cover](#)).
 10. Turn the computer upside down.
 11. Replace the two silver M2 x 5-mm screws in the base of the computer.
 12. Gently connect the fingerprint reader/wireless switch cable to the system board using the connector release.
 13. Replace the solid state drive (see [Replacing the Solid State Drive and Cable Assembly](#)).
 14. Replace the memory module (see [Replacing the Memory Module](#)).
 15. Replace the WLAN and WWAN cards (see [Replacing the WLAN/WiMax Card](#) and [Replacing a WWAN Card](#)).
 16. Replace the service panel (see [Replacing the Service Panel](#)).
 17. Follow the instructions in [After Working on Your Computer](#).
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DC Power Cable

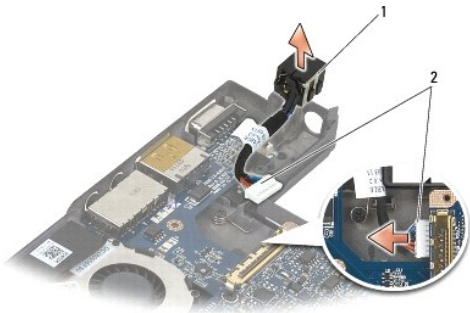
Dell™ Latitude™ E4200 Service Manual

- [Removing the DC Power Cable](#)
- [Replacing the DC Power Cable](#)

Removing the DC Power Cable

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the WLAN and WWAN cards (see [Removing the WLAN/WiMax Card](#) and [Removing a WWAN Card](#)).
4. Remove the memory module (see [Removing the Memory Module](#)).
5. Remove the solid state drive (see [Removing the Solid State Drive and Cable Assembly](#)).
6. Remove the LED cover (see [Removing the LED Cover](#)).
7. Remove the keyboard (see [Removing the Keyboard](#)).
8. Remove the module with Bluetooth® wireless technology (see [Removing the Card With Bluetooth Wireless Technology](#)).
9. Remove the display assembly (see [Removing the Display Assembly](#)).
10. Remove the coin-cell battery (see [Removing the Coin-Cell Battery](#)).
11. Remove the palm rest assembly (see [Removing the Palm Rest Assembly](#)).
12. Disconnect the DC power cable from the system board.
13. Unroute the DC power cable from the base assembly and remove it.



1	DC power connector	2	DC power cable
---	--------------------	---	----------------

Replacing the DC Power Cable

⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Place the DC power connector in the base assembly, aligning the guides on the connector sides with the base.

2. Route the DC power cable in the base assembly.
 3. Connect the DC power cable to the system board.
 4. Replace the palm rest assembly ([Replacing the Palm Rest Assembly](#)).
 5. Replace the coin-cell battery (see [Replacing the Coin-Cell Battery](#)).
 6. Replace the display assembly (see [Replacing the Display Assembly](#)).
 7. Replace the module with Bluetooth wireless technology (see [Replacing the Card With Bluetooth Wireless Technology](#)).
 8. Replace the keyboard (see [Replacing the Keyboard](#)).
 9. Replace the LED cover (see [Replacing the LED Cover](#)).
 10. Replace the solid state drive (see [Replacing the Solid State Drive and Cable Assembly](#)).
 11. Replace the memory module (see [Replacing the Memory Module](#)).
 12. Replace the WLAN and WWAN cards (see [Replacing the WLAN/WiMax Card](#) and [Replacing a WWAN Card](#)).
 13. Replace the service panel (see [Replacing the Service Panel](#)).
 14. Follow the procedures in [After Working on Your Computer](#).
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Radio Switch Board

Dell™ Latitude™ E4200 Service Manual

- [Removing the Radio Switch Board](#)
- [Replacing the Radio Switch Board](#)

The radio switch board (RSB) acts as a hub for multiple antennae/cable connections. A component of this hub is a specially designed cable that acts as a relay from the RSB to the wireless local area network (WLAN) card.

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

NOTE: The radio switch board is optional and may not be present on your computer.

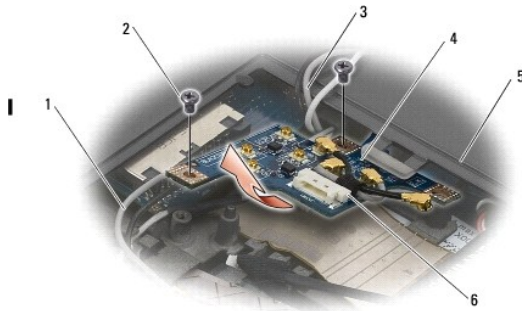
Removing the Radio Switch Board

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the WLAN/WiMax card (see [Removing the WLAN/WiMax Card](#)).

4. Disconnect the cables from the radio switch board.

Disconnect the two Latitude ON™ card cables (gray and black), and the two antenna cables (gray and black).

5. Disconnect the power cable from the radio switch board.
6. Remove the two M2 x 3-mm screws.
7. Lift the front edge of the radio switch board up and towards the front of the computer to remove it from the base assembly.



1	Latitude ON card cables (2)	2	screws (2)
3	antenna cables (2)	4	radio switch board
5	base assembly	6	power cable connector

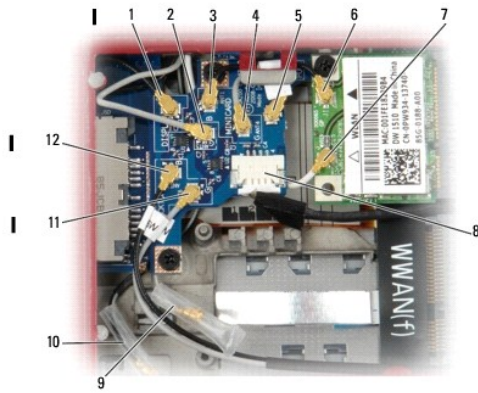
Replacing the Radio Switch Board

1. If your computer does not have a WWAN card installed, make sure that the WWAN cables are routed in the cable holders in the base assembly.
2. Lower the back edge of the radio switch board down and towards the back of the computer into the base assembly. Make sure that no other cables other than the WWAN cables are under the radio switch board when lowering it into place.
3. Replace the two M2 x 3-mm screws.
4. Connect the cables to the radio switch board.

Connect the antenna cables to the connectors on the back left side of the board, connecting the gray cable to the connector marked with a "G" and the black cable to the connector marked with a "B".

Connect the Latitude ON card cables to the connectors on the front left side of the board, connecting the gray cable to the connector marked with a "G" and the black cable to the connector marked with a "B".

NOTE: It is important to reconnect all of the cables to their correct posts when replacing related components.



1	black WLAN antenna (from LCD)	2	grey WLAN antenna (from LCD)
3	black WLAN relay cable	4	grey WLAN relay cable
5	grey WLAN antenna holder	6	black WLAN antenna post
7	white WLAN antenna cable (from LCD)	8	power cable (from system board)
9	grey and white WWAN antenna (from LCD)	10	black and grey WWAN antenna (from LCD)
11	grey cable (from Latitude ON card)	12	black cable (from Latitude ON card)

NOTE: Grey WLAN antenna holder is used as a holder if the WLAN card does not have a grey antenna post.

NOTE: The white WLAN antenna can be routed over or under the RSB.

5. Replace the WLAN/WiMax card (see [Replacing the WLAN/WiMax Card](#)).
6. Replace the service panel (see [Replacing the Service Panel](#)).
7. Follow the procedures in [After Working on Your Computer](#).

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Smart Card Reader

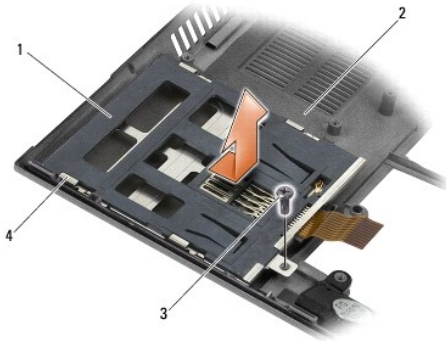
Dell™ Latitude™ E4200 Service Manual

- [Removing the Smart Card Reader](#)
- [Replacing the Smart Card Reader](#)

Removing the Smart Card Reader


⚠ **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the WLAN and WWAN cards (see [Removing the WLAN/WiMax Card](#) and [Removing a WWAN Card](#)).
4. Remove the memory module (see [Removing the Memory Module](#)).
5. Remove the solid state drive (see [Removing the Solid State Drive and Cable Assembly](#)).
6. Remove the LED cover (see [Removing the LED Cover](#)).
7. Remove the keyboard (see [Removing the Keyboard](#)).
8. Remove the module with Bluetooth® wireless technology (see [Removing the Card With Bluetooth Wireless Technology](#)).
9. Remove the display assembly (see [Removing the Display Assembly](#)).
10. Remove the coin-cell battery (see [Removing the Coin-Cell Battery](#)).
11. Remove the palm rest assembly (see [Removing the Palm Rest Assembly](#)).
12. Remove the system board assembly (see [Removing the System Board Assembly](#)).
13. Remove the M2 x 3-mm screw from the smart card reader.
14. Slide the smart card reader to the right to free the tabs from the base assembly, and lift the reader out of the base assembly.



1	smart card reader	2	base assembly
3	screw	4	tabs

Replacing the Smart Card Reader

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Holding the smart card reader with the cable on the right side, place the reader into the base assembly, and slide the reader to the left to secure the tabs in the base assembly.
2. Replace the M2 x 3-mm screw in the smart card reader.
3. Replace the system board assembly (see [Replacing the System Board Assembly](#)).
4. Replace the palm rest assembly ([Replacing the Palm Rest Assembly](#)).
5. Replace the coin-cell battery (see [Replacing the Coin-Cell Battery](#)).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the module with Bluetooth wireless technology (see [Replacing the Card With Bluetooth Wireless Technology](#)).
8. Replace the keyboard (see [Replacing the Keyboard](#)).
9. Replace the LED cover (see [Replacing the LED Cover](#)).
10. Replace the solid state drive (see [Replacing the Solid State Drive and Cable Assembly](#)).
11. Replace the memory module (see [Replacing the Memory Module](#)).
12. Replace the WLAN and WWAN cards (see [Replacing the WLAN/WiMax Card](#) and [Replacing a WWAN Card](#)).
13. Replace the service panel (see [Replacing the Service Panel](#)).
14. Follow the procedures in [After Working on Your Computer](#).

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Speaker

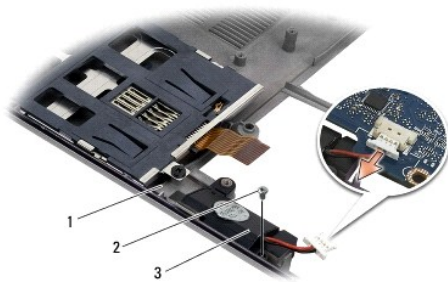
Dell™ Latitude™ E4200 Service Manual

- [Removing the Speaker](#)
- [Replacing the Speaker](#)

Removing the Speaker

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the WLAN and WWAN cards (see [Removing the WLAN/WiMax Card](#) and [Removing a WWAN Card](#)).
4. Remove the memory module (see [Removing the Memory Module](#)).
5. Remove the solid state drive (see [Removing the Solid State Drive and Cable Assembly](#)).
6. Remove the LED cover (see [Removing the LED Cover](#)).
7. Remove the keyboard (see [Removing the Keyboard](#)).
8. Remove the module with Bluetooth® wireless technology (see [Removing the Card With Bluetooth Wireless Technology](#)).
9. Remove the display assembly (see [Removing the Display Assembly](#)).
10. Remove the coin-cell battery (see [Removing the Coin-Cell Battery](#)).
11. Remove the palm rest assembly (see [Removing the Palm Rest Assembly](#)).
12. Remove the system board assembly (see [Removing the System Board Assembly](#)).
13. Remove the M2 x 3-mm screw from the speaker.
14. Lift the speaker up from the base assembly.



1	base assembly	2	screw
3	speaker		

Replacing the Speaker

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.


1. Holding the speaker facing down with the cable on the right side, align the screw holes in the speaker with the holes in the base assembly, and lower the speaker into the base assembly.
 2. Replace the M2 x 3-mm screw in the speaker.
 3. Replace the system board assembly (see [Replacing the System Board Assembly](#)).
 4. Replace the palm rest assembly ([Replacing the Palm Rest Assembly](#)).
 5. Replace the coin-cell battery (see [Replacing the Coin-Cell Battery](#)).
 6. Replace the display assembly (see [Replacing the Display Assembly](#)).
 7. Replace the module with Bluetooth wireless technology (see [Replacing the Card With Bluetooth Wireless Technology](#)).
 8. Replace the keyboard (see [Replacing the Keyboard](#)).
 9. Replace the LED cover (see [Replacing the LED Cover](#)).
 10. Replace the solid state drive (see [Replacing the Solid State Drive and Cable Assembly](#)).
 11. Replace the memory module (see [Replacing the Memory Module](#)).
 12. Replace the WLAN and WWAN cards (see [Replacing the WLAN/WiMax Card](#) and [Replacing a WWAN Card](#)).
 13. Replace the service panel (see [Replacing the Service Panel](#)).
 14. Follow the procedures in [After Working on Your Computer](#).
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Solid State Drive

Dell™ Latitude™ E4200 Service Manual

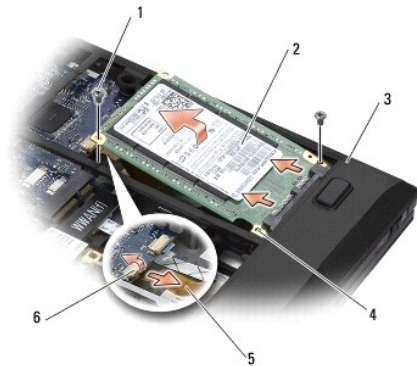
- [Removing the Solid State Drive and Cable Assembly](#)
- [Replacing the Solid State Drive and Cable Assembly](#)

 **NOTE:** Dell does not guarantee compatibility or provide support for hard drives obtained from sources other than Dell.

Removing the Solid State Drive and Cable Assembly


 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the two M2 x 3-mm screws securing the drive.
4. Lift the drive free from the alignment pins, and lift it out of the base assembly at an angle towards the middle of the computer.
5. Disconnect the Solid State Drive (SSD) cable from the system board by gently pulling on the connector release.
6. Gently slide the cable and connector from the end of the SSD. Carefully apply force to the connector and not the cable.



1	screws (2)	2	solid state drive
3	base assembly	4	alignment pins (2)
5	SSD cable	6	SSD connector release

Replacing the Solid State Drive and Cable Assembly

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Hold the drive with the label facing up.
2. Connect the SSD cable assembly to the SSD. Carefully align the connector to the replacement SSD and gently push the connector onto the device.
3. Gently connect the SSD cable to the system board using the connector release.
4. Lower the drive into the base assembly at an angle towards the outer edge of the computer and onto the alignment pins.
5. Replace the two M2 x 3-mm screws that secure the hard drive to the base assembly.

6. Replace the service panel (see [Replacing the Service Panel](#)).
 7. Follow the procedures in [After Working on Your Computer](#).
 8. Install the operating system, drivers, and utilities for your computer, as needed. For more information, see the *Setup and Quick Reference Guide* that shipped with your computer or on support.dell.com.
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Service Panel

Dell™ Latitude™ E4200 Service Manual

- [Removing the Service Panel](#)
- [Replacing the Service Panel](#)

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

Removing the Service Panel

1. Follow the procedures in [Before Working on Your Computer](#).
2. Close the display and turn the computer upside down.
3. Loosen the captive screw securing the service panel.
4. Slide the service panel towards the back of the computer, and then lift it by the captive screw to remove it from the computer.



1	service panel	2	captive screw
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Replacing the Service Panel

1. Lower the service panel into place, press down on the center of the panel, and then slide the panel towards the front of the computer.
 2. Press down on the captive screw and then tighten the screw.
 3. Follow the procedures in [After Working on Your Computer](#).
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System Board Assembly

Dell™ Latitude™ E4200 Service Manual


- [Removing the System Board Assembly](#)
- [Replacing the System Board Assembly](#)


The system board's BIOS chip contains the Service Tag, which is also visible on a barcode label on the bottom of the computer. The replacement kit for the system board includes media that provides a utility for transferring the Service Tag to the replacement system board.

The system board assembly is made up of three separate boards:


- 1 Right I/O board
- 1 System board
- 1 Left I/O board

All three boards must be replaced when replacing the system board assembly.

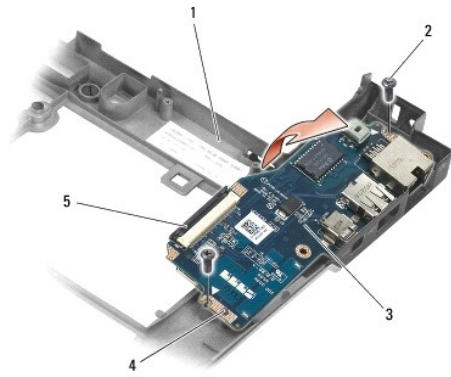
 **NOTE:** System boards sold to certain government agencies in the United States must comply with the regulations set forth in the Trade Agreements Act of 1979 (TAA).

 **NOTE:** System boards that comply with the Trade Agreements Act (TAA) of 1979, ship with a BIOS chip on a socketed daughter card that is pre-installed on the system board. Do *not* uninstall the daughter card.

Removing the System Board Assembly

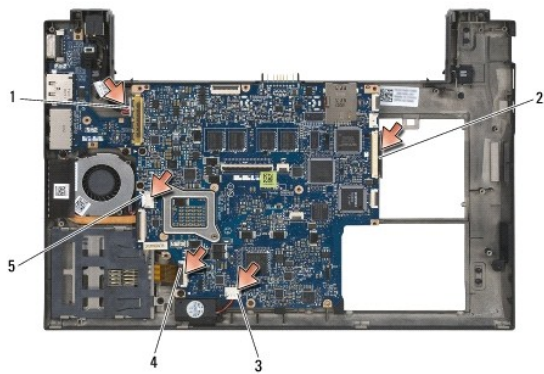
 **CAUTION:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Remove the WLAN and WWAN cards (see [Removing the WLAN/WiMax Card](#) and [Removing a WWAN Card](#)).
4. Remove the memory module (see [Removing the Memory Module](#)).
5. Remove the solid state drive (see [Removing the Solid State Drive and Cable Assembly](#)).
6. Remove the LED cover (see [Removing the LED Cover](#)).
7. Remove the keyboard (see [Removing the Keyboard](#)).
8. Remove the module with Bluetooth® wireless technology (see [Removing the Card With Bluetooth Wireless Technology](#)).
9. Remove the display assembly (see [Removing the Display Assembly](#)).
10. Remove the coin-cell battery (see [Removing the Coin-Cell Battery](#)).
11. Remove the palm rest assembly (see [Removing the Palm Rest Assembly](#)).
12. Remove the DC power cable (see [Removing the DC Power Cable](#)).
13. Disconnect the cable to the right I/O board by gently pulling on the connector release.
14. Remove the two M2 x 3-mm screws from the right I/O board.
15. Lift the left side of the right I/O board, and pull the board away from the base assembly at an angle.



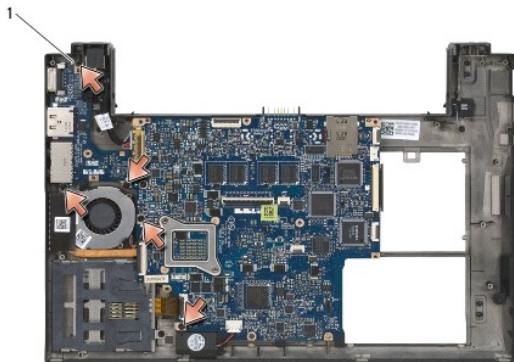
1	base assembly	2	screws (2)
3	right I/O board	4	guide pins (2)
5	connector release		

16. Disconnect the right I/O board cable from the system board by gently pulling on the connector release.
17. Disconnect the smart card reader cable from the system board by gently lifting up on the release latch.
18. Disconnect the fan and speaker cables from the system board.



1	DC power cable	2	right I/O board cable
3	speaker cable	4	smart card reader cable
5	fan cable		

19. Remove the five M2 x 3-mm screws securing the system board assembly to the base assembly.



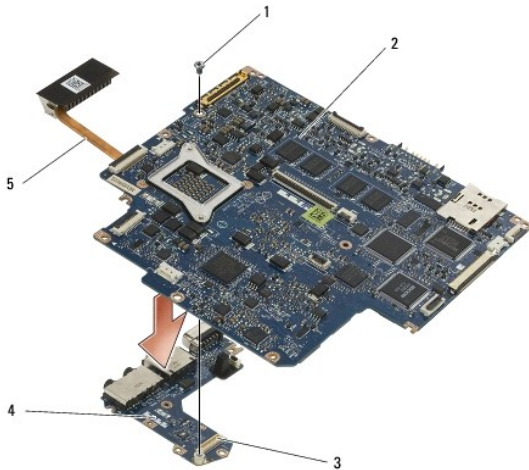
1	screws (5)		
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- Lift the right side of the system board, and lift the board (with heat sink assembly and left I/O board) up at an angle to remove it from the base assembly.



1	guide pins (2)	2	system board
3	base assembly	4	heatsink assembly

- Remove the M2 x 3-mm screw securing the left I/O board to the system board.
- Disconnect the left I/O board from the system board by pulling the two boards apart, separating the connectors.




1	screw	2	system board
3	left I/O board connector	4	left I/O board
5	heatsink assembly		

Replacing the System Board Assembly

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: Ensure that any loose cables do not get caught beneath the system board.

- Connect the connector on the left I/O board to the connector on the system board.
- Replace the M2 x 3-mm screw to secure the left I/O board to the system board.
- Lower the left edge of the left I/O board into the left side of the base assembly, aligning the connectors with their corresponding holes in the base assembly.
- Lower the system board (with heat sink assembly and left I/O board) onto the alignment pins in the base assembly.

5. Replace the five M2 x 3-mm screws on the system board assembly.
 6. Connect the fan and speaker cables to the system board.
 7. Connect the smart card reader and right I/O board cables to the system board.
 8. Lower the right side of the right I/O board in the base assembly, aligning the connectors with the holes in the base assembly.
 9. Place the right I/O board onto the guide pins on the base assembly.
 10. Replace the two M2 x 3-mm screws in the right I/O board in the holes labeled with white arrows.
 11. Gently connect the cable to the right I/O board using the connector release.
 12. Replace the DC power cable (see [Replacing the DC Power Cable](#)).
 13. Replace the palm rest assembly ([Replacing the Palm Rest Assembly](#)).
 14. Replace the coin-cell battery (see [Replacing the Coin-Cell Battery](#)).
 15. Replace the display assembly (see [Replacing the Display Assembly](#)).
 16. Replace the module with Bluetooth wireless technology (see [Replacing the Card With Bluetooth Wireless Technology](#)).
 17. Replace the keyboard (see [Replacing the Keyboard](#)).
 18. Replace the LED cover (see [Replacing the LED Cover](#)).
 19. Replace the solid state drive (see [Replacing the Solid State Drive and Cable Assembly](#)).
 20. Replace the memory module (see [Replacing the Memory Module](#)).
 21. Replace the WLAN and WWAN cards (see [Replacing the WLAN/WiMax Card](#) and [Replacing a WWAN Card](#)).
 22. Replace the service panel (see [Replacing the Service Panel](#)).
 23. Follow the procedures in [After Working on Your Computer](#).
-  **NOTE:** If you use a BIOS update program disc to flash the BIOS, press <F12> before inserting the disc in order to set the computer to boot from the disc for one time only. Otherwise, you must enter the system setup program to change the default boot order.
24. Flash update the BIOS (see [Flashing the BIOS](#) for more information).
 25. Enter the system setup program to update the BIOS on the new system board with the computer Service Tag. For information on the system setup program, see the *Dell™ Technology Guide* on your computer or at support.dell.com.
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TAA Board

Dell™ Latitude™ E4200 Service Manual

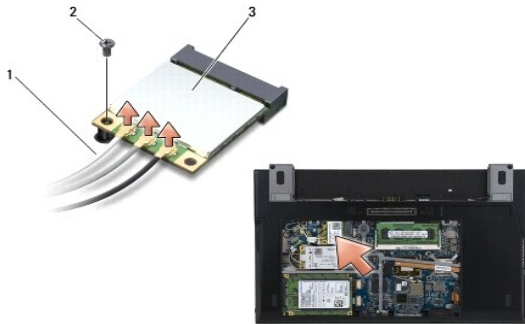
- [Removing the TAA Board](#)
- [Replacing the TAA Board](#)

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

NOTE: The Trade Agreements Act (TAA) board is optional and may not be present in some computers.

Removing the TAA Board

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Pull up on the TAA board to disconnect it from the system board.



1	TAA board	2	system board
3	connector		

Replacing the TAA Board

1. Align the connector on the TAA Board with the connector on the system board, and press the TAA board into place.
 2. Replace the service panel (see [Replacing the Service Panel](#)).
 3. Follow the procedures in [After Working on Your Computer](#).
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Dell™ Latitude™ E4200 Service Manual



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



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 potential for property damage, personal injury, or death.

If you purchased a DELL™ n Series computer, any references in this document to Microsoft® Windows® operating systems are not applicable.

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October 2009 Rev. A02

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Troubleshooting

Dell™ Latitude™ E4200 Service Manual


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Troubleshooting Tools


Diagnostic Lights




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Your computer has three keyboard status lights located above the keyboard. During normal operation, the keyboard status lights display the current status (*on* or *off*) of the Num Lock, Caps Lock, and Scroll Lock features. If the computer starts without error, the lights flash, and then turn off. If the computer malfunctions, however, you can use the status of the lights to help identify the problem.

 **NOTE:** After the computer completes POST, the Num Lock light may remain on, depending on your BIOS settings. For more information on using the system setup program, see the *Dell™ Technology Guide* on your computer or at support.dell.com.

Diagnostic Light Codes During POST

 **NOTE:** If your computer displays any of the diagnostic light codes below, try shutting down your computer, removing all external devices or the media base, and starting your computer. If the diagnostic light code is still indicating a problem, continue troubleshooting below.

To troubleshoot a problem with your computer, read the sequence of the keyboard status lights in order from left to right (Num Lock, Caps Lock, and then Scroll Lock). If the computer malfunctions the individual lights display a status of either *On* , *Off* , or *Flashing* .

Light Pattern	Problem Description	Suggested Resolution
	Memory modules are detected, but a memory failure has occurred.	<ol style="list-style-type: none">1 If available, install working memory of the same type into your computer (see Memory).1 If the problem persists, contact Dell Support.
	System board failure has occurred.	<ol style="list-style-type: none">1 Contact Dell Support.
	A possible processor failure has occurred.	<ol style="list-style-type: none">1 Contact Dell Support.
	A possible LCD failure has occurred.	<ol style="list-style-type: none">1 Reseat the display cable (see Removing the Display Assembly).1 If the problem persists, contact Dell Support.
	A possible keyboard failure has occurred.	<ol style="list-style-type: none">1 Reseat the keyboard (see Removing the Keyboard).1 If available, connect an external keyboard.1 If the problem persists, contact Dell Support.


Hardware Troubleshooter

If a device is either not detected during the operating system setup or is detected, but incorrectly configured, you can use the Hardware Troubleshooter to resolve the incompatibility.


Microsoft® Windows® XP:

1. Click **Start** → **Help and Support**.
2. Type **hardware troubleshooter** in the search field and press <Enter> to start the search.
3. In the **Fix a Problem** section, click **Hardware Troubleshooter**.
4. In the **Hardware Troubleshooter** list, select the option that best describes the problem and click **Next** to follow the remaining troubleshooting steps.

Microsoft Windows Vista®:

1. Click the Windows Vista start button , and click **Help and Support**.
2. Type `hardware troubleshooter` in the search field and press <Enter> to start the search.
3. In the search results, select the option that best describes the problem and follow the remaining troubleshooting steps.


Dell Diagnostics


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When to Use the Dell Diagnostics

If you experience a problem with your computer, perform the checks in [Solving Problems](#), and then run the Dell Diagnostics before contacting Dell for assistance.

Start the Dell Diagnostics from your hard drive or from the *Drivers and Utilities* media provided with your computer.

 **NOTE:** The *Drivers and Utilities* media is optional and may not ship with your computer.

 **NOTE:** The Dell Diagnostics only operate on Dell computers.

Starting the Dell Diagnostics From Your Hard Drive

Before running the Dell Diagnostics, enter system setup to review your computer's configuration information, and ensure that the device you want to test is displayed in system setup and is active. For more information on using the system setup program, see the *Dell™ Technology Guide* on your computer or at support.dell.com.

The Dell Diagnostics is located on a separate diagnostic utility partition on your hard drive.

 **NOTE:** If the computer is connected to a docking device (docked), undock it. See the documentation that came with your docking device for instructions.

 **NOTE:** If your computer does not display a screen image, contact Dell Support.

1. Ensure that the computer is connected to an electrical outlet that is known to be working properly.
2. Press and hold the <Fn> key and then turn on your computer.


 **NOTE:** Alternatively, you can select **Diagnostics** from the one-time boot menu at startup.

The computer runs the Pre-boot System Assessment (PSA), a series of initial tests of your system board, keyboard, display, memory, hard drive, etc.


- o During the assessment, answer any questions that appear.
- o If failures are detected during the Pre-boot System Assessment, write down the error code(s) and contact Dell Support.
- o If the Pre-boot System Assessment completes successfully, the following message appears: "Booting Dell Diagnostic Utility Partition. Press any key to continue."

 **NOTE:** If you see a message stating that no diagnostics utility partition has been found, run the Dell Diagnostics from your *Drivers and Utilities* media (see [Starting the Dell Diagnostics From the Drivers and Utilities Media](#)).

3. Press any key to start the Dell Diagnostics from the diagnostics utility partition on your hard drive.
4. Press <Tab> to select **Test System** and then press <Enter>.

 **NOTE:** It is recommended that you select **Test System** to run a complete test on your computer. Selecting **Test Memory** initiates the extended memory test, which can take up to thirty minutes or more to complete. When the test completes, record the test results and then press any key to return to the previous menu.

5. At the Dell Diagnostics Main Menu, left-click with the touch pad/mouse, or press <Tab> and then <Enter>, to select the test you want to run (see [Dell Diagnostics Main Menu](#)).

 **NOTE:** Write down any error codes and problem descriptions exactly as they appear and follow the instructions on the screen.


6. After all tests have completed, close the test window to return to the Dell Diagnostics Main Menu.
7. Close the Main Menu window to exit the Dell Diagnostics and restart the computer.

 **NOTE:** If you see a message stating that no diagnostics utility partition has been found, run the Dell Diagnostics from your *Drivers and Utilities* media (see [Starting the Dell Diagnostics From the Drivers and Utilities Media](#)).

Starting the Dell Diagnostics From the Drivers and Utilities Media


Before running the Dell Diagnostics, enter system setup to review your computer's configuration information, and ensure that the device you want to test is displayed in system setup and is active. For more information on using the system setup program, see the *Dell™ Technology Guide* on your computer or at support.dell.com.

1. Attach an external CD/DVD drive or media base if not already present.
2. Insert the *Drivers and Utilities* media into the optical drive.
3. Restart your computer.
4. When the DELL logo appears, press <F12> immediately.

 **NOTE:** Keyboard failure may result when a key is held down for extended periods of time. To avoid possible keyboard failure, press and release <F12> in even intervals to open the Boot Device Menu.

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.

5. When the boot device list appears, use the up- or down- arrow keys to highlight **CD/DVD/CD-RW Drive** then press <Enter>.

 **NOTE:** Using the one-time boot menu changes the boot sequence for the current boot only. Upon restart, the computer boots according to the boot sequence specified in system setup.


6. Press any key to confirm that you want to start from the CD/DVD.

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.


7. Type 1 to **Run the 32 Bit Dell Diagnostics**.

8. At the **Dell Diagnostics Menu**, type 1 to select **Dell 32-bit Diagnostics for Resource CD (graphical user interface)**.

9. Press <Tab> to select **Test System** and then press <Enter>.

 **NOTE:** It is recommended that you select **Test System** to run a complete test on your computer. Selecting **Test Memory** initiates the extended memory test, which can take up to thirty minutes or more to complete. When the test completes, record the test results and then press any key to return to the previous menu.

10. At the Dell Diagnostics Main Menu, left-click with the mouse, or press <Tab> and then <Enter>, to select the test you want to run (see [Dell Diagnostics Main Menu](#)).

 **NOTE:** Write down any error codes and problem descriptions exactly as they appear and follow the instructions on the screen.


11. After all tests have completed, close the test window to return to the Dell Diagnostics Main Menu.
12. Close the Main Menu window to exit the Dell Diagnostics and restart the computer.
13. Remove the *Drivers and Utilities* media from the optical drive.

Dell Diagnostics Main Menu

After the Dell Diagnostics loads, the following menu appears:


Option	Function
Test Memory	Run the stand-alone memory test
Test System	Run system diagnostics
Exit	Exit the diagnostics

Press <Tab> to select the test you want to run and then press <Enter>.

 **NOTE:** It is recommended that you select **Test System** to run a complete test on your computer. Selecting **Test Memory** initiates the extended memory test, which can take up to thirty minutes or more to complete. When the test completes, record the test results and then press any key to return to this menu.

After **Test System** is selected, the following menu appears:

Option	Function
Express Test	Performs a quick test of devices in the system. This typically can take 10 to 20 minutes. NOTE: The Express Test requires no interaction on your part. Run Express Test first to increase the possibility of tracing a problem quickly.
Extended Test	Performs a thorough check of devices in the system. This typically can take an hour or more. NOTE: The Extended Test periodically requires your input to answer specific questions.
Custom Test	Use to test a specific device or customize the tests to be run.
Symptom Tree	This option allows you to select tests based on a symptom of the problem you are having. This option lists the most common symptoms.

 **NOTE:** It is recommended that you select **Extended Test** to perform a more thorough check of devices in the computer.


For any problem encountered during a test, a message appears with an error code and a description of the problem. Write down the error code and problem description exactly as it appears and follow the instructions on the screen. If you cannot resolve the problem, contact Dell Support.

 **NOTE:** When contacting Dell Support, have your Service Tag ready. The Service Tag for your computer is located at the top of each test screen.

The following tabs provide additional information for tests run from the Custom Test or Symptom Tree option:

Tab	Function
Results	Displays the results of the test and any error conditions encountered.
Errors	Displays error conditions encountered, error codes, and the problem description.
Help	Describes the test and any requirements for running the test.
Configuration	Displays the hardware configuration for the selected device. The Dell Diagnostics obtains configuration information for all devices from System Setup, memory, and various internal tests, and displays the information in the device list in the left pane of the screen. NOTE: The device list may not display the names of all components installed on your computer or all devices attached to your computer.
Parameters	Allows you to customize the test, if applicable, by changing the test settings.

Error Messages

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

If the error message is not listed, see the documentation for the operating system or the program that was running when the message appeared.


A filename cannot contain any of the following characters: \ / : * ? " < > | — Do not use these characters in filenames.

A required .DLL file was not found — The program that you are trying to open is missing an essential file. To remove and then reinstall the program:

Windows XP:

1. Click **Start** → **Control Panel** → **Add or Remove Programs** → **Programs and Features**.
2. Select the program you want to remove.
3. Click **Uninstall**.
4. See the program documentation for installation instructions.

Windows Vista:

1. Click **Start**  → **Control Panel** → **Programs** → **Programs and Features**.
2. Select the program you want to remove.
3. Click **Uninstall**.
4. See the program documentation for installation instructions.

drive letter : \ is not accessible. The device is not ready — The drive cannot read the disk. Insert a disk into the drive and try again.

Insert bootable media — Attach an external CD/DVD drive, external floppy drive, or media base, and insert a bootable floppy disk, CD, or DVD.

Non-system disk error — If the media base or any external USB devices are connected to your computer, shut down the computer and remove these devices before restarting the computer.


Not enough memory or resources. Close some programs and try again — Close all windows and open the program that you want to use. In some cases, you may have to restart your computer to restore computer resources. If so, run the program that you want to use first.

Operating system not found — Contact Dell Support.


Solving Problems


Follow these tips when troubleshooting your computer:

- 1 If you added or removed a part before the problem started, review the installation procedures and ensure that the part is correctly installed.
- 1 If a peripheral device does not work, ensure that the device is properly connected.
- 1 If an error message appears on the screen, write down the exact message. This message may help support personnel diagnose and fix the problem(s).
- 1 If an error message occurs in a program, see the program's documentation.

 **NOTE:** The procedures in this document were written for the Windows default view, so they may not apply if you set your Dell computer to the Windows Classic view.

Battery Problems

 **CAUTION:** There is a danger of a 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.


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Check the health of the battery —

For information on checking the health of the battery, see the *Dell™ Technology Guide* on your computer or at support.dell.com.

When checking the battery charge gauge, if lights 1, 3, and 5 flash repeatedly, the battery is no longer functioning properly and needs to be replaced. Contact Dell Support.

Drive Problems

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

Ensure that Microsoft Windows Recognizes the drive —

Windows XP:

- 1 Click **Start** and click **My Computer**.

Windows Vista:

- 1 Click the Windows Vista Start button  and click **Computer**.

If the drive is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.

Test the drive —

- 1 Insert another disc to eliminate the possibility that the original drive is defective.
- 1 Insert a bootable floppy disk and restart the computer.

Clean the drive or disk —

For information on cleaning your computer, see the *Dell™ Technology Guide* on your computer or at support.dell.com.

Check the cable connections


Run the Hardware Troubleshooter —

See [Hardware Troubleshooter](#).

Run the Dell Diagnostics —

See [Dell Diagnostics](#).

Optical drive problems

 **NOTE:** High-speed optical drive vibration is normal and may cause noise, which does not indicate a defect in the drive or the media.

 **NOTE:** Because of different regions worldwide and different disc formats, not all DVD titles work in all DVD drives.

Adjust the Windows volume control —

1. Click the speaker icon in the lower-right corner of your screen.
1. Ensure that the volume is turned up by clicking the slider and dragging it up.
1. Ensure that the sound is not muted by clicking any boxes that are checked.

Check the speakers and subwoofer —

See [Sound and Speaker Problems](#).

Problems writing to an optical drive

Close other programs —

The optical drive must receive a steady stream of data during the writing process. If the stream is interrupted, an error occurs. Try closing all programs before you write to the optical.

Turn off standby mode in Windows before writing to a disc —

For information about setting power options, see the *Dell™ Technology Guide* on your computer or at support.dell.com. You can also search for the keyword *standby* in Windows Help and Support for information on power management modes.

Hard drive problems

Run Check Disk —

Windows XP:

1. Click **Start** and click **My Computer**.
2. Right-click **Local Disk C:**.
3. Click **Properties**→**Tools**→**Check Now**.
4. Click **Scan for and attempt recovery of bad sectors** and click **Start**.


Windows Vista:

1. Click **Start**  and click **Computer**.
2. Right-click **Local Disk C:**.
3. Click **Properties**→**Tools**→**Check Now**.

The **User Account Control** window may appear. If you are an administrator on the computer, click **Continue**; otherwise, contact your administrator to continue the desired action.

4. Follow the instructions on the screen.

IEEE 1394 Device Problems

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

 **NOTE:** Your computer supports only IEEE 1394a standard.

Ensure that the cable for the IEEE 1394 device is properly inserted into the device and into the connector on the computer

Ensure that the IEEE 1394 device is enabled in system setup For more information on using the system setup program, see the *Dell™ Technology Guide* on your computer or at support.dell.com.

Ensure that the IEEE 1394 device is recognized by Windows —

Windows XP:

1. Click **Start** and click **Control Panel**.
2. Under **Pick a Category**, click **Performance and Maintenance**→ **System**→ **System Properties** → **Hardware**→ **Device Manager**.

Windows Vista:

1. Click **Start**  → **Control Panel**→ **Hardware and Sound**.
2. Click **Device Manager**.


If your IEEE 1394 device is listed, Windows recognizes the device.

If you have problems with a Dell IEEE 1394 device —

Contact Dell Support.

If you have problems with an IEEE 1394 device not provided by Dell — Contact the IEEE 1394 device manufacturer.

Lockups and Software Problems

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.


The computer does not start up

Check the diagnostic lights —

See [Power Problems](#).

Ensure that the power cable is firmly connected to the computer and to the electrical outlet

The computer stops responding

 **NOTICE:** You may lose data if you are unable to perform an operating system shutdown.

Turn the computer off — If you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds (until the computer turns off), and then restart your computer.

A program stops responding

End the program —

1. Press <Ctrl><Shift><Esc> simultaneously to access the Task Manager.
2. Click the **Applications** tab.
3. Click to select the program that is no longer responding.
4. Click **End Task**.

A program crashes repeatedly

 **NOTE:** Most software includes installation instructions in its documentation or on a floppy disk, CD, or DVD.

Check the software documentation —

If necessary, uninstall and then reinstall the program.

A program is designed for an earlier Windows operating system

Run the Program Compatibility Wizard —

Windows XP:

The Program Compatibility Wizard configures a program so that it runs in an environment similar to non-XP operating system environments.

1. Click **Start** → **All Programs** → **Accessories** → **Program Compatibility Wizard** → **Next**.
2. Follow the instructions on the screen.

Windows Vista:

The Program Compatibility Wizard configures a program so that it runs in an environment similar to non-Windows Vista operating system environments.

1. Click **Start** → **Control Panel** → **Programs** → **Use an older program with this version of Windows**.
2. In the welcome screen, click **Next**.
3. Follow the instructions on the screen.

A solid blue screen appears

Turn the computer off —

If you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds (until the computer turns off), and then restart your computer.

Other software problems

Check the software documentation or contact the software manufacturer for troubleshooting information —


1. Ensure that the program is compatible with the operating system installed on your computer.
1. Ensure that your computer meets the minimum hardware requirements needed to run the software. See the software documentation for information.
1. Ensure that the program is installed and configured properly.
1. Verify that the device drivers do not conflict with the program.
1. If necessary, uninstall and then reinstall the program.

Back up your files immediately

Use a virus-scanning program to check the hard drive, floppy disks, CDs, or DVDs


Save and close any open files or programs and shut down your computer through the Start menu

Memory Problems

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

1. Remove the user-accessible memory module (see [Removing the Memory Module](#)) and run the Dell Diagnostics (see [Dell Diagnostics](#)) to test the integrated memory.
1. If the integrated memory fails the Dell Diagnostics Pre-boot System Assessment (PSA), the system board is defective and needs to be replaced (see [System Board Assembly](#)).
1. If the integrated memory passes the Dell Diagnostics PSA, ensure that the user-accessible memory module you are using is supported by your computer. For more information about the type of memory supported by your computer, see the *Setup and Quick Reference Guide* for your computer at support.dell.com.
1. If the user-accessible memory module you are using is Dell-qualified, reseal the memory module (see [Memory](#)) to ensure that your computer is successfully communicating with the memory.

Power Problems

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If the power light is blue and the computer is not responding — See [Diagnostic Lights](#).


If the power light is off — The computer is either turned off or is not receiving power.

- 1 Reseat the power cable in the power connector on the back of the computer and the electrical outlet.
- 1 Bypass power strips, power extension cables, and other power protection devices to verify that the computer turns on properly.
- 1 Ensure that any power strips being used are plugged into an electrical outlet and are turned on.
- 1 Ensure that the electrical outlet is working by testing it with another device, such as a lamp.


Eliminate interference — Some possible causes of interference are:

- 1 Power, keyboard, and mouse extension cables
- 1 Too many devices connected to the same power strip
- 1 Multiple power strips connected to the same electrical outlet

Sound and Speaker Problems

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No sound from speakers

 **NOTE:** The volume control in MP3 and other media players may override the Windows volume setting. Always check to ensure that the volume on the media player(s) has not been turned down or off.

Adjust the Windows volume control — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

Adjust the Windows volume control — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

Disconnect headphones from the headphone connector — Sound from the speakers is automatically disabled when headphones are connected to the computer's front-panel headphone connector.

Test the external speakers — If you are using external speakers, test them on another computer (if available) to ensure their functionality.

Check the external speaker audio cable connection — Ensure that the audio cable for your external speakers (see the documentation provided with your speakers) is securely inserted into your computer's headphone connector (see the *Setup and Quick Reference Guide* for your computer at support.dell.com).

Check the external speaker power cable connection — Ensure that the power cable for your external speakers is connected to a power source and that the speakers are receiving power (see the documentation provided with your speakers).

Eliminate possible interference — Turn off nearby fans, fluorescent lights, or halogen lamps to check for interference.

Run the Hardware Troubleshooter — See [Hardware Troubleshooter](#).

Run the Dell Diagnostics — Run the Dell Diagnostics Pre-boot System Assessment (see [Dell Diagnostics](#)). During the "Color Bar Test", an ascending three-tone audio beep is emitted, prompting you which action to take next.


No sound from headphones


Test the headphones — If available, test the headphones on another computer to ensure their functionality.

Check the headphone cable connection — Ensure that the headphone cable is securely inserted into the headphone connector. See the *Setup and Quick Reference Guide* for your computer at support.dell.com.

Adjust the Windows volume control — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

Video and Display Problems

 **CAUTION:** 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 on www.dell.com at: www.dell.com/regulatory_compliance.

 **NOTICE:** If your computer came with a PCI graphics card installed, removal of the card is not necessary when installing additional graphics cards; however, the card is required for troubleshooting purposes. If you remove the card, store it in a safe and secure location. For information about your graphics card, go to support.dell.com.

Check the diagnostic lights —

See [Diagnostic Lights](#).

Check the display settings —


See the *Dell™ Technology Guide* on your computer or at support.dell.com.

Adjust the Windows display settings —

Windows XP:

1. Click **Start**→ **Control Panel**→ **Appearance and Themes**.
2. Click the area you want to change or click the **Display** icon.
3. Try different settings for **Color quality** and **Screen resolution**.

Windows Vista:

1. Click **Start**  → **Control Panel**→ **Hardware and Sound**→ **Personalization**→ **Display Settings**.
2. Adjust **Resolution** and **Colors settings**, as needed.

Only part of the display is readable

Connect an external monitor —

1. Shut down your computer and connect an external monitor to the computer.
2. Turn on the computer and the monitor and adjust the monitor brightness and contrast controls.

If the external monitor works, the computer display or video controller may be defective. Contact Dell Support.

Dell Technical Update Service

The Dell Technical Update service provides proactive e-mail notification of software and hardware updates for your computer. The service is free and can be customized for content, format, and how frequently you receive notifications.

To enroll for the Dell Technical Update service, go to support.dell.com.

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WLAN/WiMax Card

Dell™ Latitude™ E4200 Service Manual

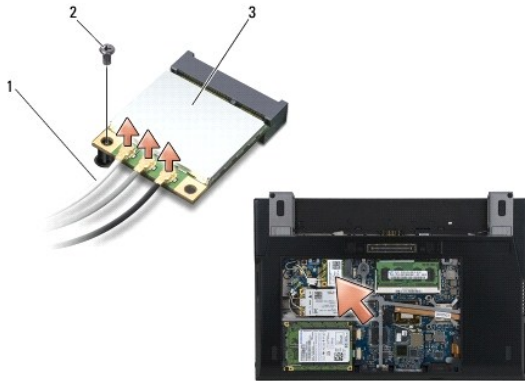
- [Removing the WLAN/WiMax Card](#)
- [Replacing the WLAN/WiMax Card](#)

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: Insert a WLAN or WiMax card only into the slot labeled WLAN/WiMax.

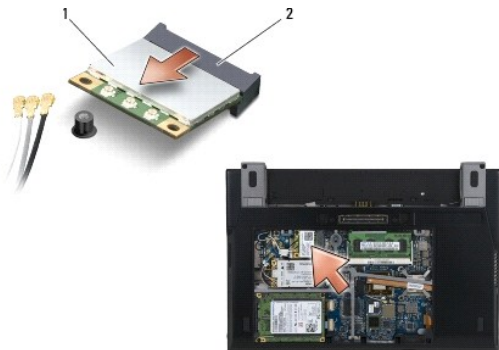
Removing the WLAN/WiMax Card

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Disconnect the antenna cables from the card.
4. Remove the M2 x 3-mm screw. The card will pop up at a 45-degree angle.



1	antenna cables (2 or 3)	2	screw
3	WLAN/WiMax card		

5. Slide the card out of the card connector on the system board.



1	WLAN/WiMax card	2	card connector
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Replacing the WLAN/WiMax Card

➔ **NOTICE:** The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the card and on the system board, and realign the card.

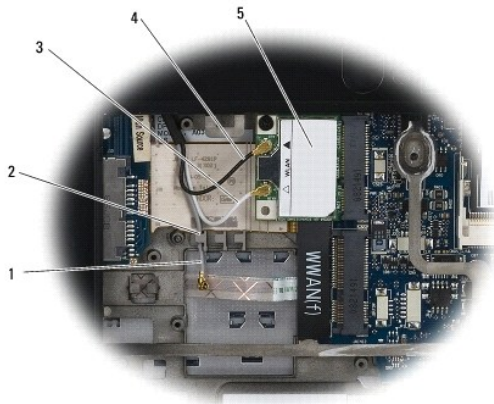
➔ **NOTICE:** To avoid damage to the WLAN or WiMax card, ensure the cables are not under the card when you replace it.

➔ **NOTICE:** Insert a WLAN or WiMax card only into the slot labeled WLAN/WiMax.

1. Slide the card into the connector labeled WLAN/WiMax.
2. Press the card down and hold it in place.
3. Replace the M2 x 3-mm screw.
4. If your computer does not have the radio switch board installed, connect the appropriate antenna cables from the display assembly to the card you are installing:

If the card has two triangles on the label (white and black), connect the white antenna cable to the connector labeled "main" (white triangle), and connect the black antenna cable to the connector labeled "aux" (black triangle). Secure the gray antenna cable in the hook in the base assembly next to the card.

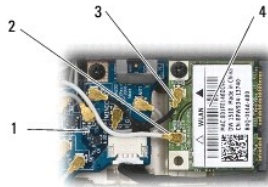
If the card has three connectors, connect the white antenna cable to connector 1, connect the black antenna cable to connector 2, and connect the gray antenna cable to connector 3.



1	gray antenna cable	2	hook by card
3	white antenna cable	4	black antenna cable
5	WLAN card		

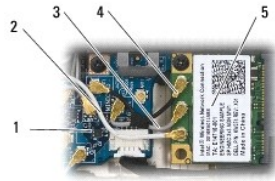
If your computer has the radio switch board installed, connect the appropriate antenna cables to the card you are installing:

If the card has two triangles on the label (white and black), connect the white antenna cable from the display assembly to the connector labeled "main" (white triangle), and connect the black antenna cable from the radio switch board to the connector labeled "aux" (black triangle).



1	radio switch board	2	white antenna cable
3	black antenna cable	4	WLAN card

If the card has three connectors, connect the white antenna cable from the display assembly to connector 1, and connect the black antenna cable from the radio switch board to connector 2. Disconnect the gray antenna cable from the connector on the right side of the radio switch board and connect it to connector 3.



1	radio switch board	2	white antenna cable
3	gray antenna cable	4	black antenna cable
5	WLAN card		

5. Replace the service panel (see [Replacing the Service Panel](#)).
6. Follow the procedures in [After Working on Your Computer](#).

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WWAN Card

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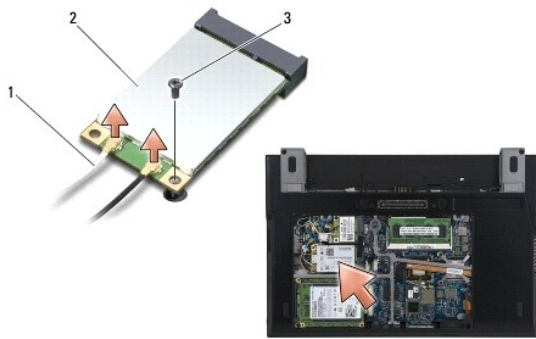
- [Removing a WWAN Card](#)
- [Replacing a WWAN Card](#)

CAUTION: 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 on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: Insert a WWAN card only into the slot labeled WWAN.

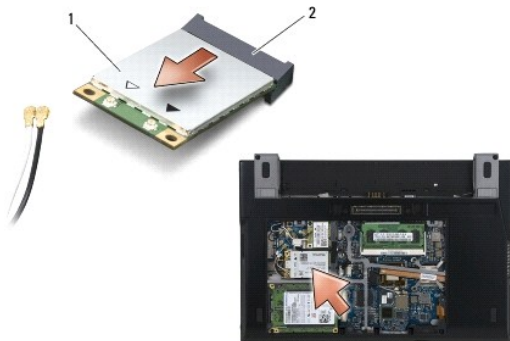
Removing a WWAN Card

1. Follow the procedures in [Before Working on Your Computer](#).
2. Remove the service panel (see [Removing the Service Panel](#)).
3. Disconnect the antenna cables from the card.
4. Remove the M2 x 3-mm screw. The card pops up at a 45-degree angle.



1	antenna cables (2)	2	WWAN card
3	screw		

5. Slide the card out of the card connector on the system board.



1	WWAN card	2	card connector
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Replacing a WWAN Card

➡ **NOTICE:** The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the card and on the system board, and realign the card.

➡ **NOTICE:** To avoid damage to the WWAN card, ensure the cables are not under the card when you replace it.

➡ **NOTICE:** Insert a WWAN card only into the slot labeled WWAN.

1. Slide the card into the connector labeled WWAN.
2. Press the card down and hold it in place.
3. Replace the M2 x 3-mm screw.
4. Connect the white antenna cable to the connector labeled "main" (white triangle), and connect the black antenna cable to the connector labeled "aux" (black triangle).
5. Replace the service panel (see [Replacing the Service Panel](#)).
6. Follow the procedures in [After Working on Your Computer](#).

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