Dell Inspiron M5040/15-N5040/ 15-N5050 Owner's Manual

Notes, Cautions, and Warnings

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

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

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

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Contents

1

Before You Begin

This manual provides procedures for removing and installing components in your computer. Before you begin any procedure in this book, ensure that:

- You have performed the steps in "Turning Off Your Computer" on page 9 and "Before Working Inside Your Computer" on page 10.
- You have read the safety information that shipped with your computer.
- A component can be replaced or—if purchased separately—installed by performing the removal procedure in the reverse order.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Plastic scribe
- BIOS executable update program available at **support.dell.com**

Turning Off Your Computer

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

1 Save and close all open files and exit all open programs.

2 Click **Start** 🔲 and then click **Shut Down**.

   The computer turns off after the operating system shutdown process is completed.

3 Ensure that the computer is turned off. If your computer did not automatically turn off when you shut down the operating system, press and hold the power button until the computer turns off.

Before Working Inside Your Computer

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

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

⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: 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.**

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

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

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

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

2 Turn off your computer (see "Turning Off Your Computer" on page 9) and all attached devices.

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

3 Disconnect all telephone or network cables from the computer.

4 Press and eject any installed cards from the 3-in-1 media card reader.

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

6 Disconnect all attached devices from your computer.

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

7 Remove the battery (see "Removing the Battery" on page 13).

8 Turn the computer top-side up, open the display, and press the power button to ground the system board.

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Battery

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⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: 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.**

Removing the Battery

1 Follow the instructions in "Before You Begin" on page 9.
2 Turn off the computer and turn it over.
3 Slide the battery lock latch to the unlock position until it clicks into place.
4 Slide and hold the battery release latch in the unlock position.
5 Slide and lift the battery out of the battery bay.
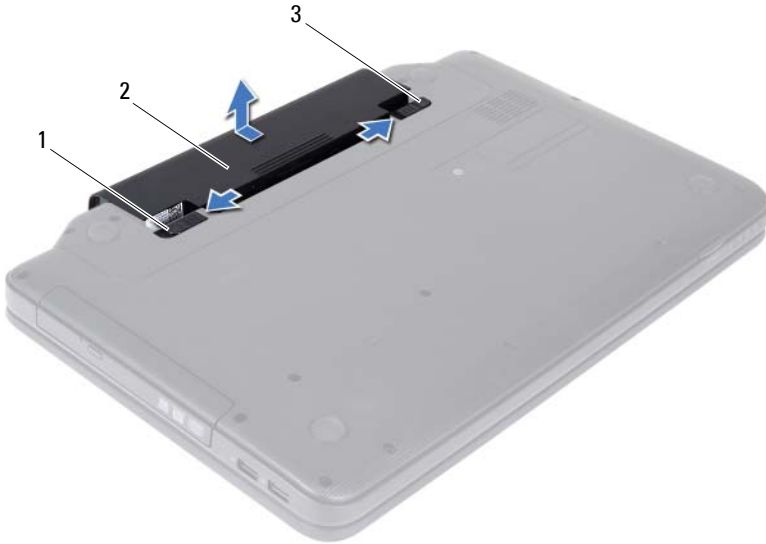
| 1 | battery release latch | 2 | battery |
| 3 | battery lock latch | | |

Replacing the Battery

1 Follow the instructions in "Before You Begin" on page 9.

2 Slide the battery into the battery bay until it clicks into place.

3 Slide the battery lock latch to the lock position.

3

Keyboard

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⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Removing the Keyboard

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the battery (see "Removing the Battery" on page 13).

⚠ **CAUTION: The keycaps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Be careful when removing and handling the keyboard.**

3 Turn the computer over and open the display as far as possible.

4 Using a plastic scribe, release the four tabs that secure the keyboard to the palm rest and ease the keyboard up until it clears off the palm rest.

| 1 | plastic scribe | 2 | tabs (4) |
| 3 | keyboard | | |

⚠ **CAUTION: The keycaps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Be careful when removing and handling the keyboard.**

5 Carefully turn the keyboard over and place it on the palm rest assembly.

6 Lift the connector latch that secures the keyboard cable to the connector on the system board and remove the keyboard cable.

7 Lift the keyboard off the computer.
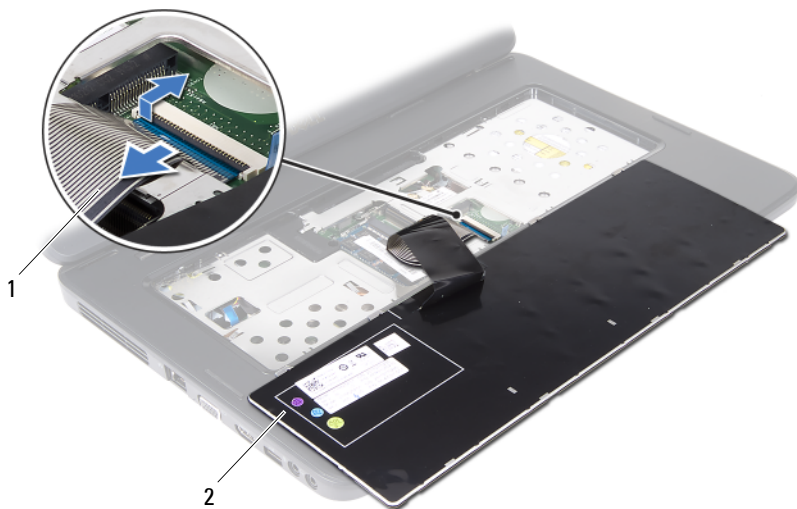
| 1 | keyboard cable | 2 | keyboard |

Replacing the Keyboard

1 Follow the instructions in "Before You Begin" on page 9.

2 Slide the keyboard cable into the connector on the system board. Press down on the connector latch to secure the keyboard cable to the connector on the system board.

3 Slide the tabs on the keyboard into the slots on the palm rest.

4 Gently press around the edges of the keyboard to lock the four tabs securing the keyboard.

5 Close the display and turn the computer over.

6 Replace the battery (see "Replacing the Battery" on page 14).

4

Memory Module(s)

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

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

⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

You can increase your computer memory by installing memory modules on the system board. See the *Specifications* at **support.dell.com/manuals** for information on the type of memory supported by your computer.

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

Your computer has two user-accessible SODIMM sockets, labeled DIMM A and DIMM B, that can be accessed from the bottom of the computer.

Removing the Memory Module(s)

  1 Follow the instructions in "Before You Begin" on page 9.

  2 Remove the battery (see "Removing the Battery" on page 13).

  3 Remove the keyboard (see "Removing the Keyboard" on page 15).

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

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

  5 Remove the memory module from the memory-module connector.
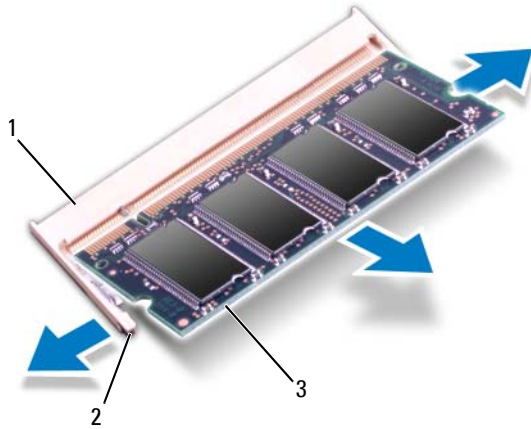
| 1 | memory-module connector | 2 | securing clips (2) |
| 3 | memory module | | |

Replacing the Memory Module(s)

⚠ **CAUTION: If you need to install memory modules in two connectors, install a memory module in the connector labeled "DIMM A" before you install a memory module in the connector labeled "DIMM B."**

1 Follow the instructions in "Before You Begin" on page 9.

2 Align the notch in the memory module with the tab in the memory-module connector.

3 Slide the memory module firmly into the slot at a 45-degree angle, and press the memory module down until it clicks into place. If you do not hear the click, remove the memory module and reinstall it.

🖉 **NOTE:** If the memory module is not installed properly, the computer may not boot.
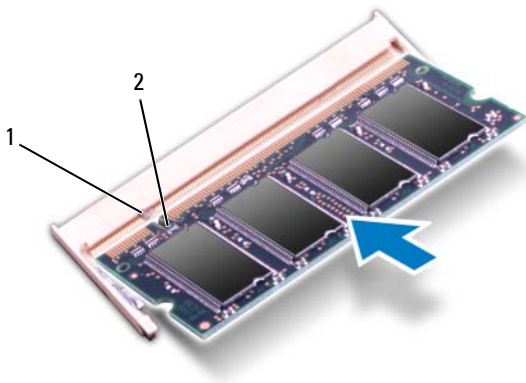
1 tab 2 notch

 4 Replace the keyboard (see "Replacing the Keyboard" on page 17).

 5 Replace the battery (see "Replacing the Battery" on page 14), or connect the AC adapter to your computer and an electrical outlet.

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

 6 Turn on the computer.

As the computer boots, it detects the memory module(s) and automatically updates the system configuration information.

To confirm the amount of memory installed in the computer:

Click **Start** → **Control Panel**→ **System and Security**→ **System**.

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Optical Drive

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⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Removing the Optical Drive

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the battery (see "Removing the Battery" on page 13).

3 Remove the keyboard (see "Removing the Keyboard" on page 15).

4 Remove the screw that secures the optical drive to the computer base.

5 Using a plastic scribe, push the notch on the optical drive to release it from the optical-drive compartment.

6 Slide the optical drive out of the optical-drive compartment.

| 1 | plastic scribe | 2 | screw |
| 3 | optical drive | 4 | notch |

Replacing the Optical Drive

1 Follow the instructions in "Before You Begin" on page 9.

2 Slide the optical drive into the optical-drive compartment until it is fully seated.

3 Replace the screw that secures the optical drive to the computer base.

4 Replace the keyboard (see "Replacing the Keyboard" on page 17).

5 Replace the battery (see "Replacing the Optical Drive" on page 24).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

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Wireless Mini-Card

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

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

⚠️ **CAUTION: 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 your computer).**

⚠️ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

📝 **NOTE:** Dell does not guarantee compatibility or provide support for Mini-Cards from sources other than Dell.

If you ordered a wireless Mini-Card with your computer, the card is already installed.

Your computer has one half Mini-Card slots for Wireless Local Area Network (WLAN)/Bluetooth combo card.

📝 **NOTE:** Depending on the configuration of the computer when it was sold, the Mini-Card slot may or may not have a Mini-Card installed.

Removing the Mini-Card

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the battery (see "Removing the Battery" on page 13).

3 Remove the keyboard (see "Removing the Keyboard" on page 15).

4 Disconnect the antenna cables from the Mini-Card.

5 Remove the screw that secures the Mini-Card to the system board.
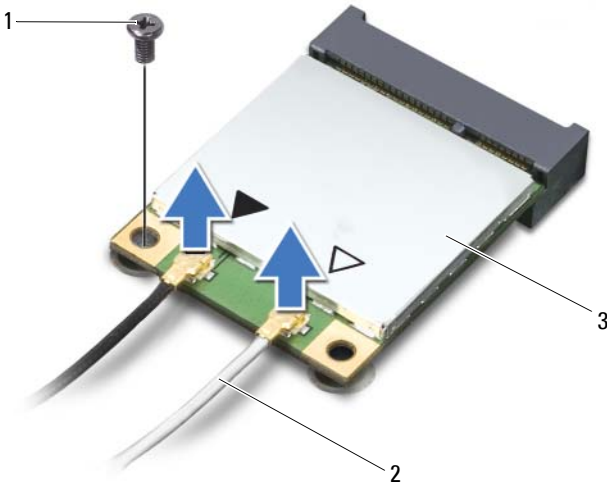
1	screw	2	antenna cables (2)
3	Mini-Card		

6 Lift the Mini-Card out of the connector on the system board.
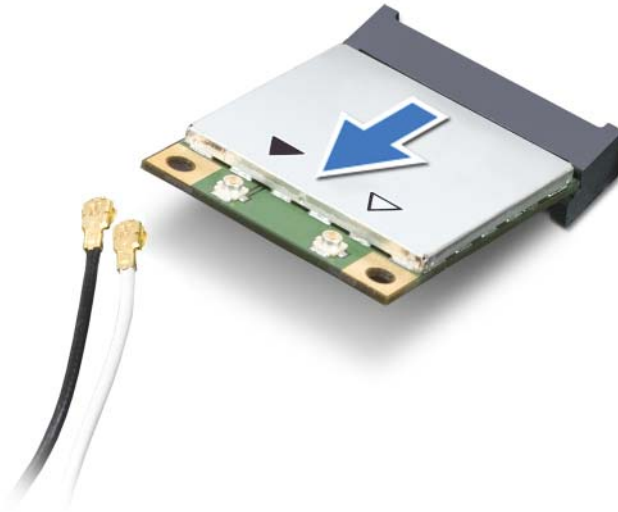
⚠ **CAUTION: When the Mini-Card is not in the computer, store it in protective antistatic packaging. For more information, see "Protecting Against Electrostatic Discharge" in the safety information that shipped with your computer.**

Replacing the Mini-Card

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the new Mini-Card from its packaging.

⚠ **CAUTION: Use firm and even pressure to slide the card into place. If you use excessive force, you may damage the connector.**

⚠ **CAUTION: 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.**

⚠ **CAUTION: To avoid damage to the Mini-Card, never place cables under the card.**

3 Insert the Mini-Card connector at a 45-degree angle into the connector on the system-board.

4 Press the other end of the Mini-Card down into the slot on the system board and replace the screw that secures the Mini-Card to the system board.

5 Connect the appropriate antenna cables to the Mini-Card you are installing. The following table provides the antenna cable color scheme for the Mini-Cards supported by your computer.

Connectors on the Mini-Card	Antenna Cable Color Scheme
WLAN (2 antenna cables)	
Main WLAN (white triangle)	white
Auxiliary WLAN (black triangle)	black

6 Replace the keyboard (see "Replacing the Keyboard" on page 17).

7 Replace the battery (see "Replacing the Battery" on page 14).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

8 Install the drivers and utilities for your computer, as required.

✍ **NOTE:** If you are installing a Mini-Card from a source other than Dell, you must install the appropriate drivers and utilities.

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Palm-Rest Assembly

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

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⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Removing the Palm-Rest Assembly

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the battery (see "Removing the Battery" on page 13).

3 Remove the 11 screws that secure the palm-rest assembly to the computer base.

4 Remove the keyboard (see "Removing the Keyboard" on page 15).

5 Remove the two screws on the palm-rest assembly.

⚠ **CAUTION: Pull on the plastic tab on top of the connectors to avoid damaging the connectors.**

6 Lift the connector latch that secures the power-button board cable and touch-pad cable to the connectors on the system board and remove the cables.

| 1 | power-button board cable | 2 | touch-pad cable |

⚠ **CAUTION: Carefully separate the palm rest from the computer base to avoid damage to the palm rest.**

7 Using a plastic scribe, carefully pry out the palm-rest assembly and then ease the palm-rest assembly from the computer base

8 Lift the palm-rest assembly off the computer base.

| 1 | palm-rest assembly | 2 | plastic scribe |

9 Remove the power button board (see "Removing the Power Button Board" on page 35).

Replacing the Palm-Rest Assembly

1 Follow the instructions in "Before You Begin" on page 9.

2 Replace the power button board (see "Replacing the Power Button Board" on page 36).

3 Align the palm-rest assembly on the computer base and gently snap the palm-rest assembly into place.

4 Slide the touch-pad cable and power-button board cable into the connectors on the system board and press down on the connector latches to secure them.

5 Replace the two screws on the palm-rest assembly.

6 Replace the keyboard (see "Replacing the Keyboard" on page 17).

7 Replace the 11 screws that secure the palm-rest assembly to the computer base.

8 Replace the battery (see "Replacing the Battery" on page 14).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

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Power Button Board

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

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

⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Removing the Power Button Board

1   Follow the instructions in "Before You Begin" on page 9.

2   Remove the battery (see "Removing the Battery" on page 13).

3   Follow the instructions from step 3 to step 8 in "Removing the Palm-Rest Assembly" on page 29.

4   Turn the palm-rest assembly over.

5   Remove the screw that secures the power button board to the palm rest.

6   Push and release the tabs that secure the power button board to the palm rest.

7   Lift the power button board along with its cable away from the palm rest.
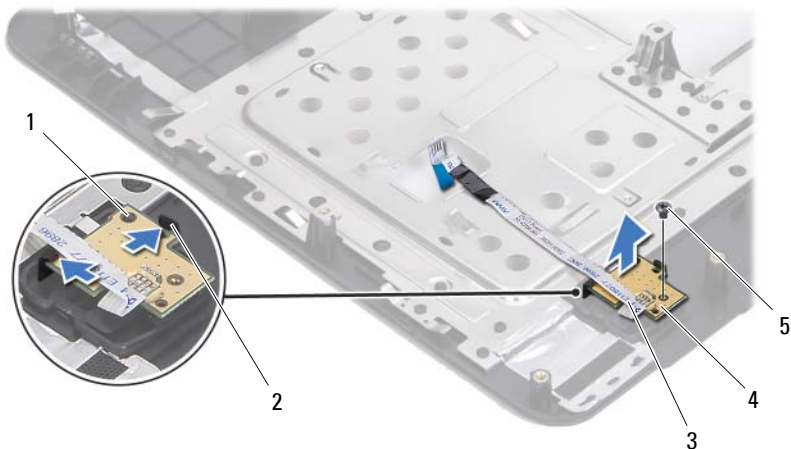
1	alignment post	2	tabs (2)
3	power-button board cable	4	power button board
5	screw		

Replacing the Power Button Board

1 Follow the instructions in "Before You Begin" on page 9.

2 Using the alignment post, place the power button board on the palm rest assembly and snap it into place.

3 Replace the screw that secures the power button board to the palm rest.

4 Turn the palm-rest assembly over.

5 Follow the instructions from step 3 to step 7 in "Replacing the Palm-Rest Assembly" on page 32.

6 Replace the battery (see "Replacing the Battery" on page 14).

⚠ CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

9

Hard Drive

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

⚠ **WARNING: If you remove the hard drive from the computer when the drive is hot, *do not touch* the metal housing of the hard drive.**

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

⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

⚠ **CAUTION: To prevent data loss, turn off your computer (see "Turning Off Your Computer" on page 9) before removing the hard-drive assembly. Do not remove the hard drive while the computer is On or in Sleep state.**

⚠ **CAUTION: Hard drives are extremely fragile. Exercise care when handling the hard drive.**

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

📝 **NOTE:** If you are installing a hard drive from a source other than Dell, you need to install an operating system, drivers, and utilities on the new hard drive.

Removing the Hard Drive

1 Follow the instructions in "Before You Begin" on page 9.
2 Remove the battery (see "Removing the Battery" on page 13).
3 Remove the two screws from the computer base.

4 Follow the instructions from step 3 to step 8 in "Removing the Palm-Rest Assembly" on page 29.

5 Slide the hard drive to the right to disconnect it from the connector on the system board.

6 Lift the hard drive out of the computer base.

1   hard drive

Replacing the Hard Drive

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the new hard drive from its packaging.

    Save the original packaging for storing or shipping the hard drive.

3 Place the hard drive on the computer base.

4 Push the hard drive towards the left to connect it to the connector on the system board.

5 Follow the instructions from step 3 to step 7 in "Replacing the Palm-Rest Assembly" on page 32.

6 Replace the two screws to the computer base.

7 Replace the battery (see "Replacing the Battery" on page 14).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

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Coin-Cell Battery

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

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⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Removing the Coin-Cell Battery

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the battery (see "Removing the Battery" on page 13).

3 Follow the instructions from step 3 to step 8 in "Removing the Palm-Rest Assembly" on page 29.

4 Using a plastic scribe, gently pry the coin-cell out of the battery socket on the system board.

5 Lift the coin-cell battery out of the battery socket on the system board.

| 1 | plastic scribe | 2 | coin-cell battery |

Replacing the Coin-Cell Battery

1 Follow the instructions in "Before You Begin" on page 9.

2 With the positive side up, snap the coin-cell battery into the battery socket on the system board.

3 Follow the instructions from step 3 to step 7 in "Replacing the Palm-Rest Assembly" on page 32.

4 Replace the battery (see "Replacing the Battery" on page 14).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

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USB Board

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

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

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Removing the USB Board

1 Follow the procedures in "Before You Begin" on page 9.

2 Remove the battery (see "Removing the Battery" on page 13).

3 Follow the instructions from step 3 to step 8 in "Removing the Palm-Rest Assembly" on page 29.

4 Remove the hard drive (see "Removing the Hard Drive" on page 37).

5 Lift the connector latch that secures the USB-board cable to the connector on the USB board and remove the USB-board cable.

6 Release the tabs that secure the USB board to the computer base and lift the USB board off the computer base.

1	USB-board cable	2	USB board
3	tabs (2)		

Replacing the USB Board

1 Follow the procedures in "Before You Begin" on page 9.

2 Slide the connectors on the USB board into the slots on the computer base and snap the USB board into place.

3 Slide the USB-board cable into the connector on the USB board. Press down on the connector latch to secure the USB-board cable to the connector on the USB board.

4 Replace the hard drive (see "Replacing the Hard Drive" on page 39).

5 Follow the instructions from step 3 to step 7 in "Replacing the Palm-Rest Assembly" on page 32.

6 Replace the battery (see "Replacing the Battery" on page 14).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

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Thermal Cooling Assembly

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⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Removing the Thermal Cooling Assembly

1   Follow the instructions in "Before You Begin" on page 9.

2   Remove the battery (see "Removing the Battery" on page 13).

3   Follow the instructions from step 3 to step 8 in "Removing the Palm-Rest Assembly" on page 29.

4   Disconnect the display cable from the connector on the system board and peel the cable off the thermal cooling assembly.

5   Disconnect the fan cable from the connector on the system board.

6   In sequential order (indicated on the thermal cooling assembly), loosen the four captive screws that secure the thermal cooling assembly to the system board.

7   Lift the thermal cooling assembly away from the computer.
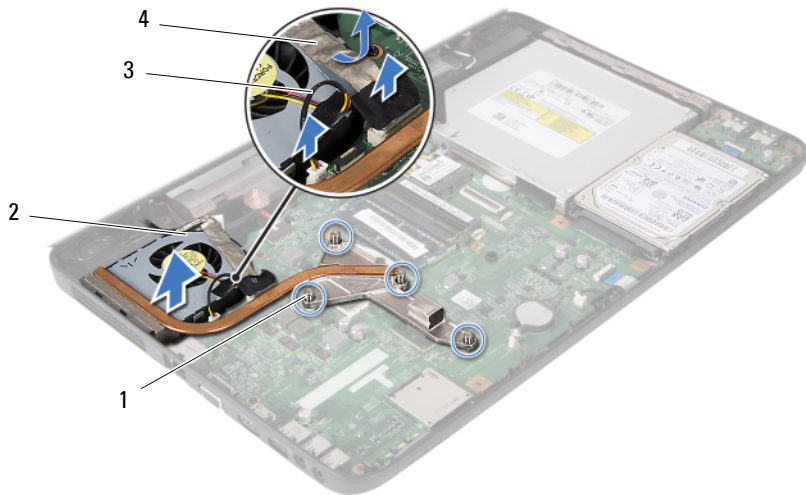
| 1 | captive screws (4) | 2 | thermal cooling assembly |
| 3 | fan cable | 4 | display cable |

Replacing the Thermal Cooling Assembly

1. Follow the instructions in "Before You Begin" on page 9.

2. Align the four captive screws on the thermal cooling assembly with the screw holes on the system board and tighten the screws in sequential order (indicated on the thermal cooling assembly).

3. Connect the fan cable to the connector on the system board.

4. Attach the display cable to the thermal cooling assembly and connect the display cable to the connector on the system board.

5. Follow the instructions from step 3 to step 7 in "Replacing the Palm-Rest Assembly" on page 32.

6. Replace the battery (see "Replacing the Battery" on page 14).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

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Processor Module (For Inspiron 15-N5050/15-N5040 Only)

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

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

⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

⚠ **CAUTION: Handle components and cards by their edges, and avoid touching pins and contacts.**

Removing the Processor Module

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the battery (see "Removing the Battery" on page 13).

3 Follow the instructions from step 3 to step 8 in "Removing the Palm-Rest Assembly" on page 29.

4 Remove the thermal cooling assembly (see "Removing the Thermal Cooling Assembly" on page 45).

5 To loosen the ZIF socket, use a small, flat-blade screwdriver and rotate the ZIF-socket cam screw counterclockwise until it comes to stop.

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

⚠️ **CAUTION: When removing the processor module, pull the module straight up. Be careful not to bend the pins on the processor module.**

6 Lift the processor module from the ZIF socket.
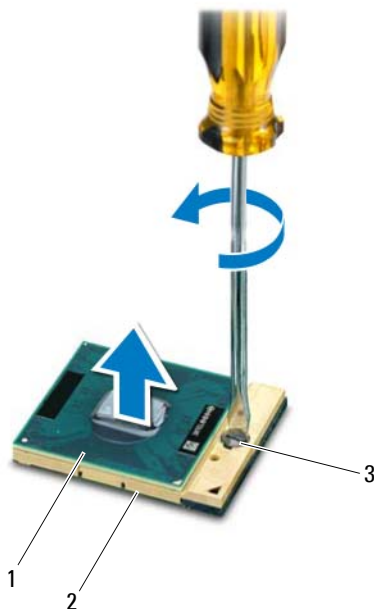
1	processor module	2	ZIF socket
3	ZIF-socket cam screw		

Replacing the Processor Module

1 Follow the instructions in "Before You Begin" on page 9.

📝 **NOTE:** If you install a new processor, a new thermal-cooling assembly including an affixed thermal pad or a new thermal pad along with documentation to illustrate proper installation is shipped.

2 Align the pin-1 corner of the processor module with the pin-1 corner of the ZIF socket, then insert the processor module.

✏️ **NOTE:** The pin-1 corner of the processor module has a triangle that aligns with the triangle on the pin-1 corner of the ZIF socket.

When the processor module is properly seated, all four corners are aligned at the same height. If one or more corners of the module are higher than the others, the module is not seated properly.

⚠️ **CAUTION: To avoid damage to the processor, hold the screwdriver perpendicular to the processor when turning the cam screw.**

3 Tighten the ZIF socket by turning the cam screw clockwise to secure the processor module to the system board.

4 Replace the thermal cooling assembly (see "Replacing the Thermal Cooling Assembly" on page 46).

5 Follow the instructions from step 3 to step 7 in "Replacing the Palm-Rest Assembly" on page 32.

6 Replace the battery (see "Replacing the Battery" on page 14).

⚠️ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

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Hinge Cover

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⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Removing the Hinge Cover

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the battery (see "Removing the Battery" on page 13).

3 Remove the screw that secures the hinge cover to the computer base.

4 Turn the computer over.

5 Pry the hinge cover off the computer base.

1

1   hinge cover

Replacing the Hinge Cover

1 Follow the instructions in "Before You Begin" on page 9.

2 Align the tabs on the hinge cover with the slots on the computer base and snap the hinge cover into place.

3 Turn the computer over.

4 Replace the screw that secures the hinge cover to the computer base.

5 Replace the battery (see "Replacing the Battery" on page 14).

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Display

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⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Display Assembly

Removing the Display Assembly

1   Follow the instructions in "Before You Begin" on page 9.

2   Remove the battery (see "Removing the Battery" on page 13).

3   Remove the two screws from the computer base.

4 Follow the instructions from step 3 to step 8 in "Removing the Palm-Rest Assembly" on page 29.

5 Remove the hinge cover (see "Removing the Hinge Cover" on page 53).

6 Disconnect the display cable from the connector on the system board.
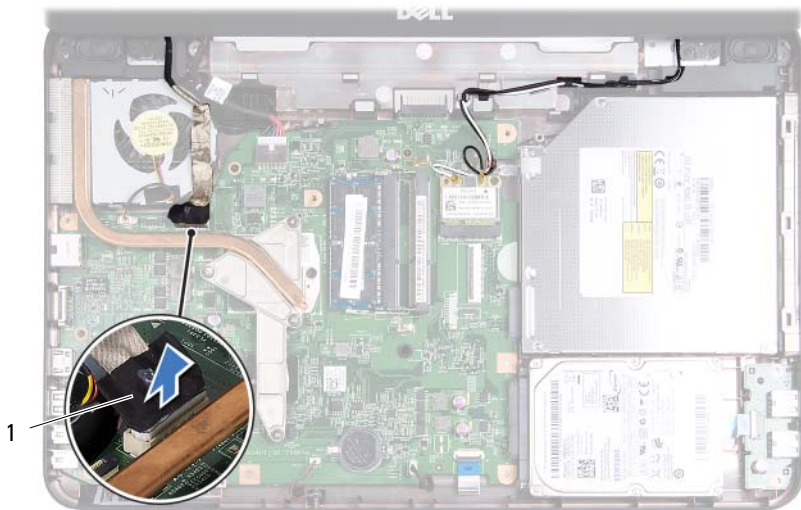
1   display cable

7 Disconnect the Mini-Card antenna cables from the connectors on the Mini-Card (see "Removing the Mini-Card" on page 25).

8 Make a note of the display cable and Mini-Card antenna cables routing and remove the cables from the routing guides.

9 Remove the four screws (two on each side) that secure the display assembly to the computer base.

10 Lift and remove the display assembly out of the computer base.

| 1 | display assembly | 2 | screws (4) |

Replacing the Display Assembly

1. Follow the instructions in "Before You Begin" on page 9.

2. Place the display assembly in position and replace the four screws (two on each side) that secure the display assembly to the computer base.

3. Route the display cable and Mini-Card antenna cables through the routing guides.

4. Connect the Mini-Card antenna cables to the Mini-Card (see "Replacing the Mini-Card" on page 27).

5. Connect the display cable to the connector on the system board.

6. Replace the hinge cover (see "Replacing the Hinge Cover" on page 55).

7. Follow the instructions from step 3 to step 7 in "Replacing the Palm-Rest Assembly" on page 32.

8 Replace the two screws to the computer base.

9 Replace the battery (see "Replacing the Battery" on page 14).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

Display Bezel

Removing the Display Bezel

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the display assembly (see "Removing the Display Assembly" on page 57).

⚠ **CAUTION: The display bezel is extremely fragile. Be careful when removing it to prevent damaging the display bezel.**

3 Using your fingertips, carefully pry up the inside edge of the display bezel.

4 Remove the display bezel.

1   display bezel

Replacing the Display Bezel

1 Follow the instructions in "Before You Begin" on page 9.

2 Realign the display bezel over the display panel and gently snap into place.

3 Replace the display assembly (see "Replacing the Display Assembly" on page 60).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

Display Panel

Removing the Display Panel

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the display assembly (see "Removing the Display Assembly" on page 57).

3 Remove the display bezel (see "Removing the Display Bezel" on page 61).

4 Disconnect the camera cable from the connector on the camera module.

5 Remove the six screws that secure the display panel to the display cover.

6 Make a note of the display cable and Mini-Card antenna cables routing and remove them from the routing guides on the display hinges.
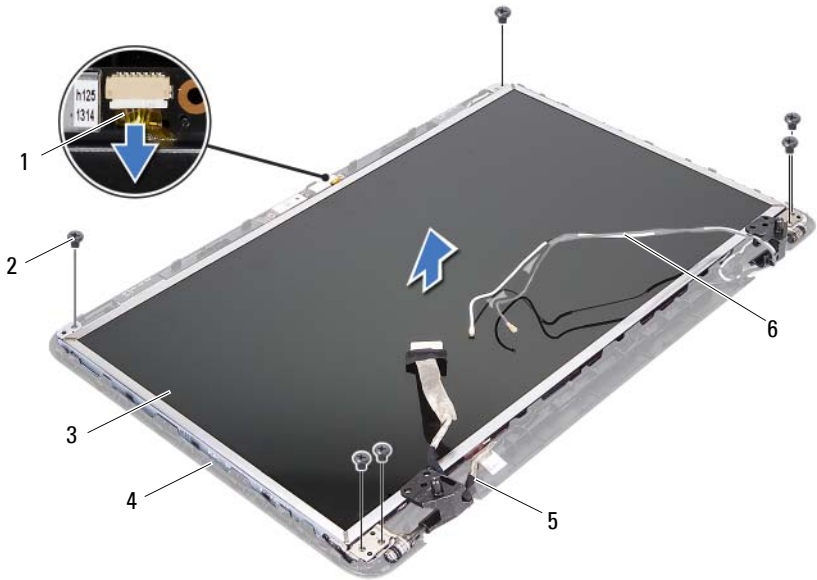
1	camera cable	2	screws (6)
3	display panel	4	display cover
5	display cable	6	Mini-Card antenna cables

7 Lift the display panel off the display cover.

8 Remove the four screws (two on each side) that secure the display-panel brackets to the display panel.

| 1 | screws (4) | 2 | display-panel brackets (2) |

9 Turn the display panel over and place it on a clean surface.

10 Peel and lift the tape that secures the display cable to the display-board connector and disconnect the display cable.

11 Make a note of the display cable routing and peel the cable from the back of the display panel.
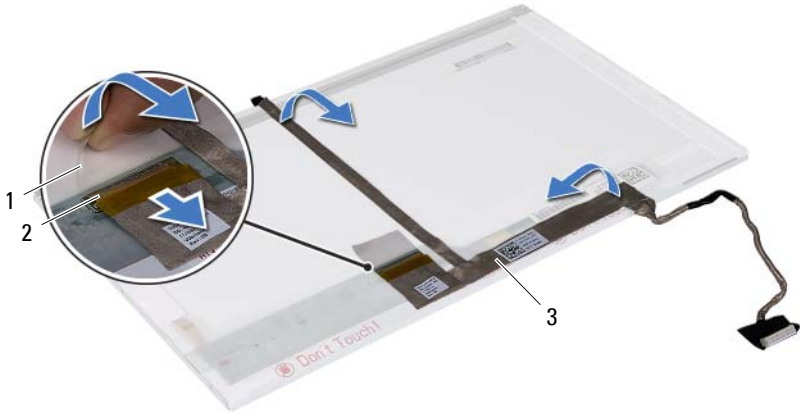
| 1 | tape | 2 | display-board connector |
| 3 | display cable | | |

Replacing the Display Panel

1 Follow the instructions in "Before You Begin" on page 9.

2 Attach the display cable to the back of the display panel.

3 Connect the display cable to the display-board connector and secure it with the tape.

4 Align the screw holes on the display bracket with the screw holes on the display panel and replace the four screws (two on each side).

5 Route the display cable and Mini-Card antenna cables through the routing guides on the display hinges.

6 Align the screw holes on the display panel with the screw holes on the display cover and replace the six screws.

7 Replace the display bezel (see "Replacing the Display Bezel" on page 62).

8 Replace the display assembly (see "Replacing the Display Assembly" on page 60).

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

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Camera Module

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⚠ **CAUTION: 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 your computer).**

⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

Removing the Camera Module

1 Follow the instructions in "Before You Begin" on page 9.

2 Remove the battery (see "Removing the Battery" on page 13).

3 Follow the instructions from step 3 to step 8 in "Removing the Palm-Rest Assembly" on page 29.

4 Remove the hinge cover (see "Removing the Hinge Cover" on page 53).

5 Remove the display assembly (see "Removing the Display Assembly" on page 57).

6 Remove the display bezel (see "Removing the Display Bezel" on page 61).

7 Disconnect the camera cable from the connector on the camera module.

8 Release the two tabs that secure the camera module to the display cover.

9 Lift the camera module from the display cover.

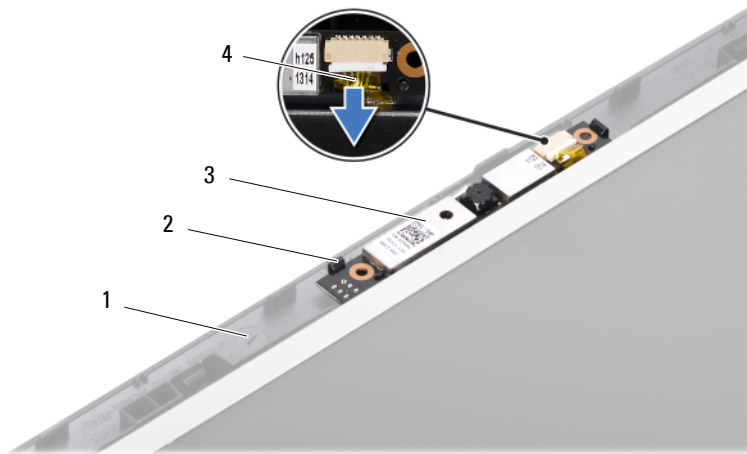| 1	display cover	2	tabs (2)
3	camera module	4	camera cable

Replacing the Camera Module

1. Follow the instructions in "Before You Begin" on page 9.

2. Connect the camera cable to the connector on the camera module.

3. Use the alignment posts on the display cover to snap the camera module into position.

4. Replace the display bezel (see "Replacing the Display Bezel" on page 62).

5. Replace the display assembly (see "Replacing the Display Assembly" on page 60).

6. Replace the hinge cover (see "Replacing the Hinge Cover" on page 55).

7. Follow the instructions from step 3 to step 7 in "Replacing the Palm-Rest Assembly" on page 32.

8. Replace the battery (see "Replacing the Battery" on page 14).

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System Board

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⚠ **CAUTION: To help prevent damage to the system board, remove the main battery (see "Removing the Battery" on page 13) before working inside the computer.**

⚠ **CAUTION: Handle components and cards by their edges, and avoid touching pins and contacts.**
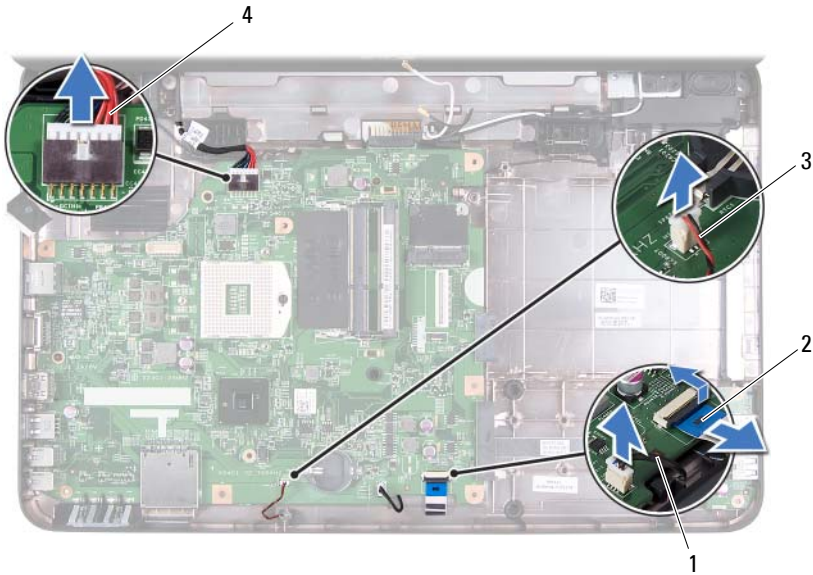
Removing the System Board

1 Follow the instructions in "Before You Begin" on page 9.

2 Press and eject any installed cards from the 3-in-1 media card reader.

3 Remove the battery (see "Removing the Battery" on page 13).

4 Remove the keyboard (see "Removing the Keyboard" on page 15).

5 Remove the memory module(s) (see "Removing the Memory Module(s)" on page 19).

6 Remove the optical drive (see "Removing the Optical Drive" on page 23).

7 Follow the instructions from step 3 to step 8 in "Removing the Palm-Rest Assembly" on page 29.

8 Follow the instructions from step 5 to step 6 in "Removing the Hard Drive" on page 37.

9 Remove the thermal cooling assembly (see "Removing the Thermal Cooling Assembly" on page 45).

10 Remove the processor (see "Removing the Processor Module" on page 49).

11 Remove the Mini-Card (see "Removing the Mini-Card" on page 25).

12 Disconnect the speakers cable, USB-board cable, microphone cable, and AC-adapter cable from the connectors on the system board.

1	speakers cable	2	USB-board cable
3	microphone cable	4	AC-adapter cable

13 Remove the two screws that secure the system board to the computer base.

14 Lift the system board at an angle and release the connectors on the system board from the slots on the computer base.

NOTE: Based on the selection you made at the time of purchase of your computer, the dimensions of the system board and the location of the system board components may vary.
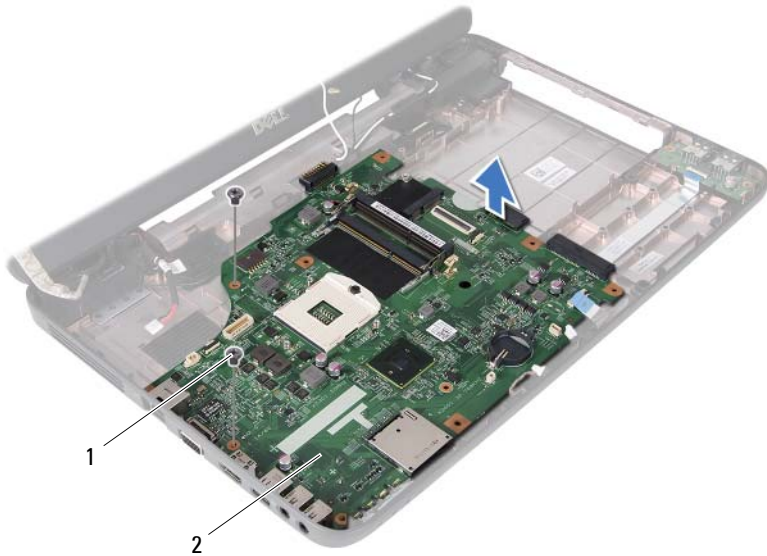
| 1 | screws (2) | 2 | system board |

Replacing the System Board

1 Follow the instructions in "Before You Begin" on page 9.

2 Slide the connectors on the system board into the slots on the computer base.

3 Replace the two screws that secure the system board to the computer base.

4 Connect the speakers cable, USB-board cable, microphone cable, and AC-adapter cable to the connectors on the system board.

5 Replace the Mini-Card (see "Replacing the Mini-Card" on page 27).

6 Replace the processor (see "Replacing the Processor Module" on page 50).

7 Replace the thermal cooling assembly (see "Replacing the Thermal Cooling Assembly" on page 46).

8 Follow the instructions from step 3 to step 4 in "Replacing the Hard Drive" on page 39.

9   Follow the instructions from step 3 to step 7 in "Replacing the Palm-Rest Assembly" on page 32.

10 Replace the optical drive (see "Replacing the Optical Drive" on page 24).

11 Replace the memory module (see "Replacing the Memory Module(s)" on page 20).

12 Replace the keyboard (see "Replacing the Keyboard" on page 17).

13 Replace the battery (see "Replacing the Battery" on page 14).

14 Replace any removed cards or blanks in the 3-in-1 media card reader.

⚠ **CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.**

15 Turn on the computer.

✎ **NOTE:** After you have replaced the system board, enter the computer Service Tag into the BIOS of the replacement system board.

16 Enter the service tag (see "Entering the Service Tag in the BIOS" on page 72).

Entering the Service Tag in the BIOS

1   Ensure that the AC adapter is plugged in and that the main battery is installed properly.

2   Turn on the computer.

3   Press <F2> during POST to enter the system setup program.

4   Navigate to the security tab and enter the service tag in the **Set Service Tag** field.

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Flashing the BIOS

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

1 Turn on the computer.

2 Go to **support.dell.com/support/downloads**.

3 Locate the BIOS update file for your computer:

> ![note icon] **NOTE:** The Service Tag for your computer is located on a label at the bottom of your computer.

If you have your computer's Service Tag:

a Click **Enter a Tag**.

b Enter your computer's Service Tag in the **Enter a service tag:** field, click **Go**, and proceed to step 4.

If you do not have your computer's Service Tag:

a Click **Select Model.**

b Select the type of product in the **Select Your Product Family** list.

c Select the product brand in the **Select Your Product Line** list.

d Select the product model number in the **Select Your Product Model** list.

> ![note icon] **NOTE:** If you have selected a different model and want to start over again, click **Start Over** on the top right of the menu.

e Click **Confirm**.

4 A list of results appear on the screen. Click **BIOS**.

5 Click **Download Now** to download the latest BIOS file.
The **File Download** window appears.

6 Click **Save** to save the file on your desktop. The file downloads to your desktop.

7 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.

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