Dell Edge Gateway

5000 Series

Service Manual

Computer Model: Dell Edge Gateway 5000/5100
Regulatory Model: N01G/N02G
Regulatory Type: N01G001/N02G001

Notes, cautions, and warnings

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

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

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

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Before working inside your computer

NOTE: The images in this document may differ from your computer depending on the configuration you ordered.

Before you begin

1. Save and close all open files and exit all open applications.
2. Shut down your system.

   The shut-down instruction varies depending on the operating system installed on your system.

   NOTE: For more information, see the documentation of your operating system for shut-down instructions.
3. Disconnect your computer and all attached devices from their electrical outlets.
4. Disconnect all cables such as network cables, and so on, from your system.
5. Disconnect all attached devices and peripherals, such as keyboard, mouse, monitor, and so on, from your system.
6. After the system is unplugged, press and hold the power button for 5 seconds to ground the system board.

Safety instructions

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

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

WARNING: Disconnect all power sources before opening the computer cover or panels. After you finish working inside the computer, replace all covers, panels, and screws before connecting to the electrical outlet.

CAUTION: To avoid damaging the computer, ensure that the work surface is flat and clean.

CAUTION: To avoid damaging the components and cards, handle them by their edges, and avoid touching pins and contacts.

CAUTION: You should only perform troubleshooting and repairs as authorized or directed by the Dell technical assistance team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. See the safety instructions that shipped with the product or at www.dell.com/regulatory_compliance.

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

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 or thumb-screws that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending any connector pins. When connecting cables, ensure that the ports and connectors are correctly oriented and aligned.

CAUTION: Press and eject any installed card from the media-card reader.

Recommended tools

The procedures in this document may require the following tools:

- Philips screwdriver
- Flat-head screwdriver
- Plastic scribe
- Hex screwdriver
- 8 mm open wrench

- Pliers

After working inside your computer

CAUTION: Leaving stray or loose screws inside your computer may severely damage your computer.

1. Replace all screws and ensure that no stray screws remain inside your computer.
2. Connect any external devices, peripherals, or cables you removed before working on your computer.
3. Replace any media cards, discs, or any other parts that you removed before working on your computer.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

Technical overview

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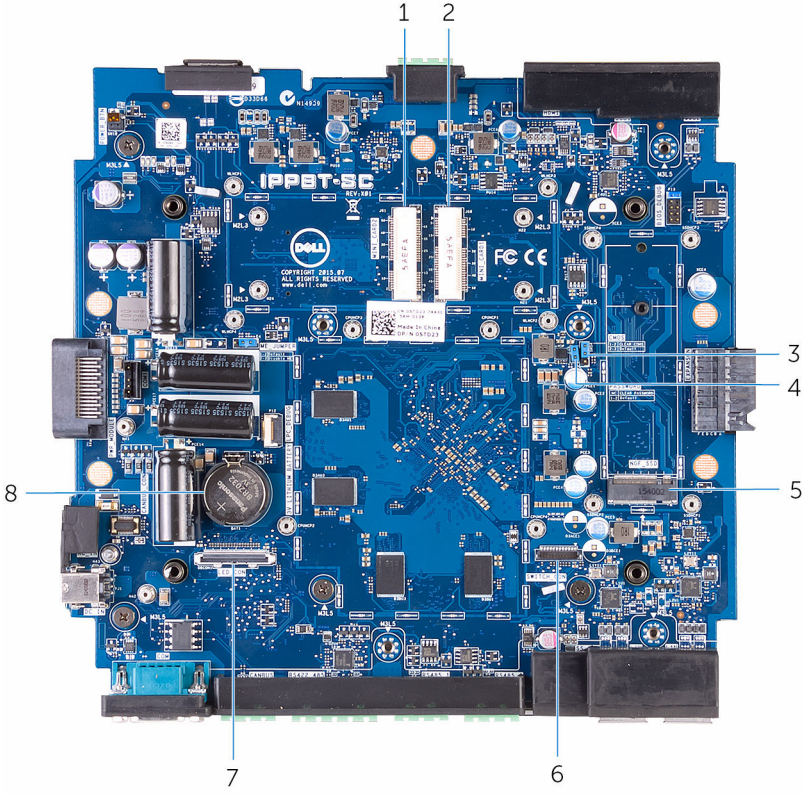
System-board components



1	mobile broadband connector (MINI_CARD2)	2	wireless card connector (MINI_CARD1)

3	CMOS reset jumper (CMOS)	4	password reset jumper (PASSWORD)
5	solid-state drive slot (NGf_SSD)	6	Dip Switch board connector (SWITCH_CON)
7	status-light board (LED_CON)	8	coin-cell battery socket (3V LITHIUM BATTERY)

Removing the top cover

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Procedure

1. Place the system on a clean and flat surface.
2. Loosen the captive screw that secures the top cover to the system base.

1	top cover	2	captive screw
3	system base		

3 Lift the top cover off the system base.

1 top cover 2 system base

Replacing the top cover

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Procedure

1. Slide the tabs on the top cover into the slots on the system base and snap the top cover into place.
2. Tighten the captive screws that secures the top cover to the system base.

Removing the solid-state drive

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CAUTION: Solid-state drives are fragile. Exercise care when handling the solid-state drive.

CAUTION: To avoid data loss, do not remove the solid-state drive while the computer is in sleep or on state.

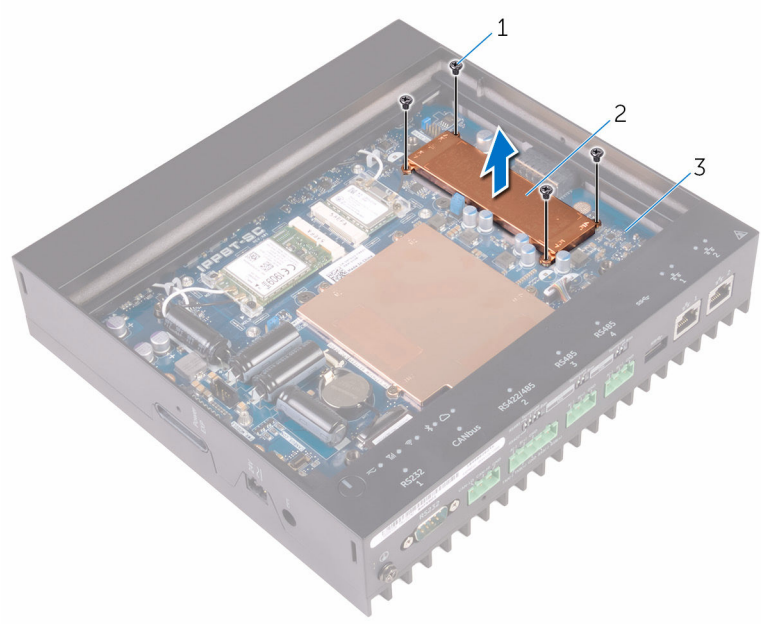
Prerequisites

Remove the top cover.

Procedure

1 Remove the screws that secure the solid-state drive heat shield to the system board.

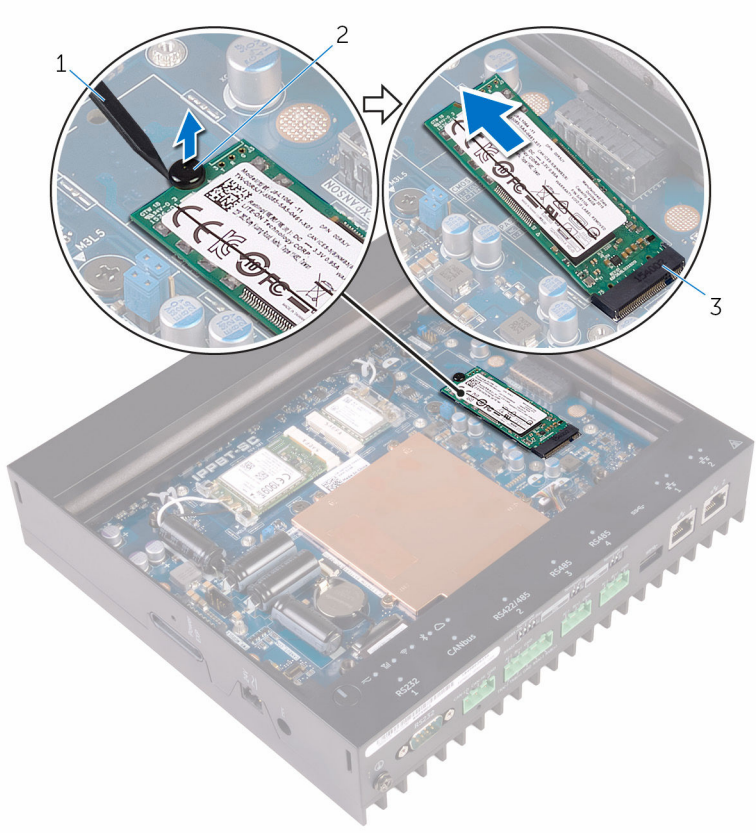
2 Lift the solid-state drive heat shield of the system board.



1	screws (4)	2	solid-state drive heat shield
3	system board		

3 Using a plastic scribe, remove the plastic grommet that secures the solid-state drive to the computer base.

4 Slide and remove the solid-state drive from the solid-state drive slot.



1 plastic scribe

2 plastic grommet

3 solid-state drive slot

Replacing the solid-state drive

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CAUTION: Solid-state drives are fragile. Exercise care when handling the solid-state drive.

Procedure

1. Slide the solid-state drive into the solid-state drive slot.
2. Replace the plastic grommet that secures the solid-state drive to the system base.
3. Place the solid-state drive heat shield on the system board.
4. Replace the screws that secure the solid-state drive heat shield to the system board.
5. Adhere the thermal pads on the solid-state drive heat shield.

Post-requisites

Replace the top cover.

Removing the wireless card

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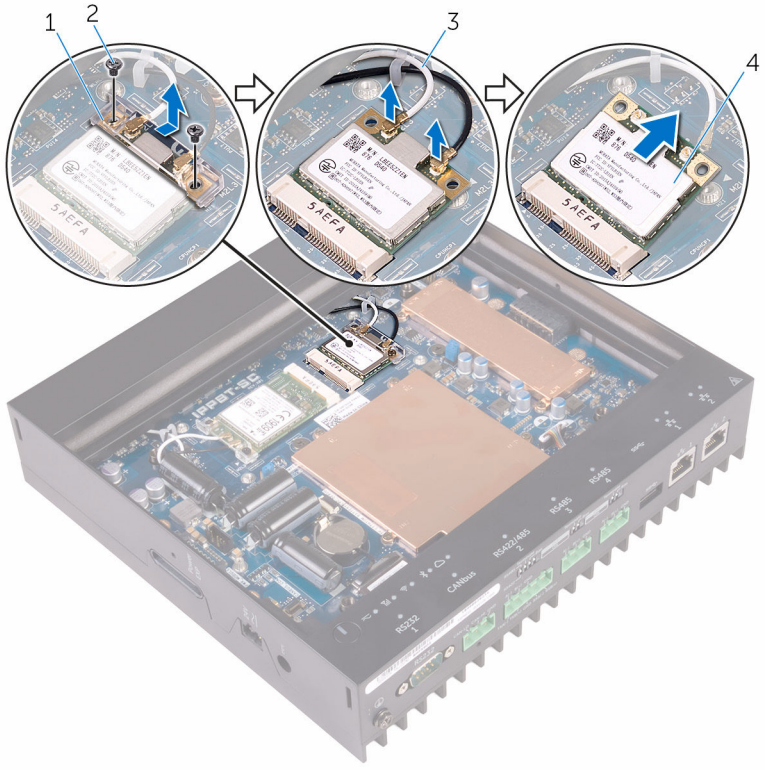
Prerequisites

Remove the top cover.

Procedure

1. Remove the screws that secures the wireless-card and bracket to the system board.
2. Remove the bracket of the system board.
3. Disconnect the antenna cables from the wireless card.

4 Slide and remove the wireless card out of the wireless-card slot.



1	wireless-card bracket	2	screws (2)
3	antenna cables (2)	4	wireless card

Replacing the wireless card

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Procedure

CAUTION: To avoid damage to the wireless card, do not place any cables under it.

1. Align the notch on the wireless card with the tab on the wireless-card slot.
2. Insert the wireless card into the wireless-card slot.
3. Connect the antenna cables to the wireless card.

   The following table provides the antenna-cable color scheme for the wireless card supported by your computer.

Connectors on the wireless card	Antenna-cable color
Main (white triangle)	white
Auxiliary (black triangle)	black

4. Replace the screws that secures the wireless card and bracket to the system board.

Post-requisites

Replace the top cover.

Removing the mobile-broadband card

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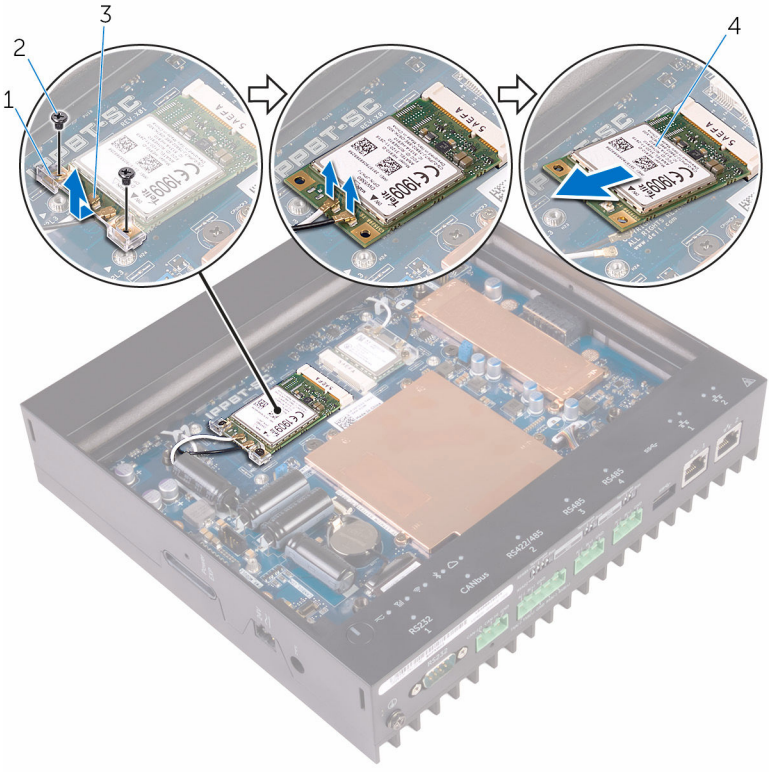
Prerequisites

Remove the top cover.

Procedure

1. Remove the screws that secures the mobile-broadband card and bracket to the system board.
2. Lift the bracket off the system board.
3. Disconnect the antenna cables from the mobile-broadband card.

4 Slide and remove the mobile-broadband card out of the mobile-broadband card-slot.



1	mobile-broadband card bracket	2	screws (2)
3	antenna cables (2)	4	mobile-broadband card

Replacing the mobile-broadband card

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Procedure

CAUTION: To avoid damage to the mobile-broadband card, do not place any cables under it.

1. Align the notch on the mobile-broadband card with the tab on the mobile broadband slot.
2. Insert the mobile-broadband card into the mobile broadband card.
3. Connect the antenna cables to the mobile-broadband card.

   The following table provides the antenna-cable color scheme for the wireless card supported by your computer.

Connectors on the mobile-broadband card	Antenna-cable color
Main (white triangle)	white
Auxiliary (black triangle)	black

4. Place the mobile-broadband card bracket on the system board.
5. Replace the screws that secures the mobile-broadband card and bracket to the system board.

Post-requisites

Replace the top cover.

Removing the coin-cell battery

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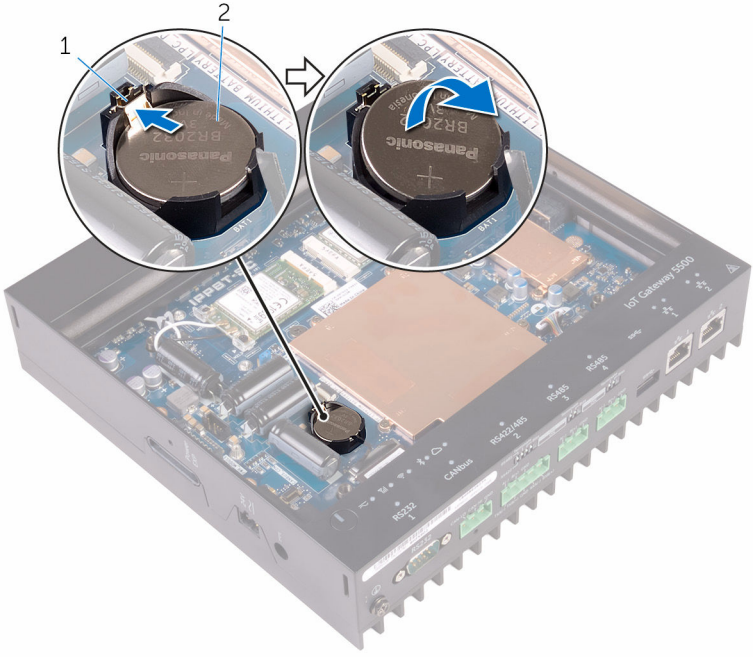
CAUTION: Removing the coin-cell battery resets the BIOS setup program's settings to default. It is recommended that you note the BIOS setup program's settings before removing the coin-cell battery.

Prerequisites

Remove the top cover.

Procedure

1 Press the battery-release lever away from the coin-cell battery until the coin-cell battery pops up.



1 battery-release lever 2 coin-cell battery

2 Lift the coin-cell battery out of its socket.

Replacing the coin-cell battery

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Procedure

With the positive-side facing up, snap the coin-cell battery into the battery socket on the computer base.

Post-requisites

Replace the top cover.

Removing the base frame

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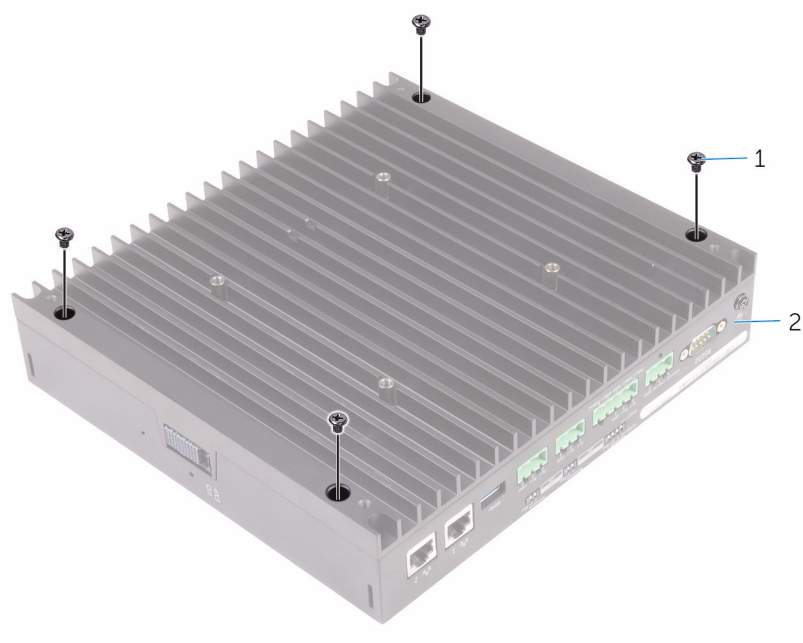
Prerequisites

1. Remove the top cover.
2. Remove the wireless card.
3. Remove the mobile broadband card.

Procedure

1. Turn the system upside down.

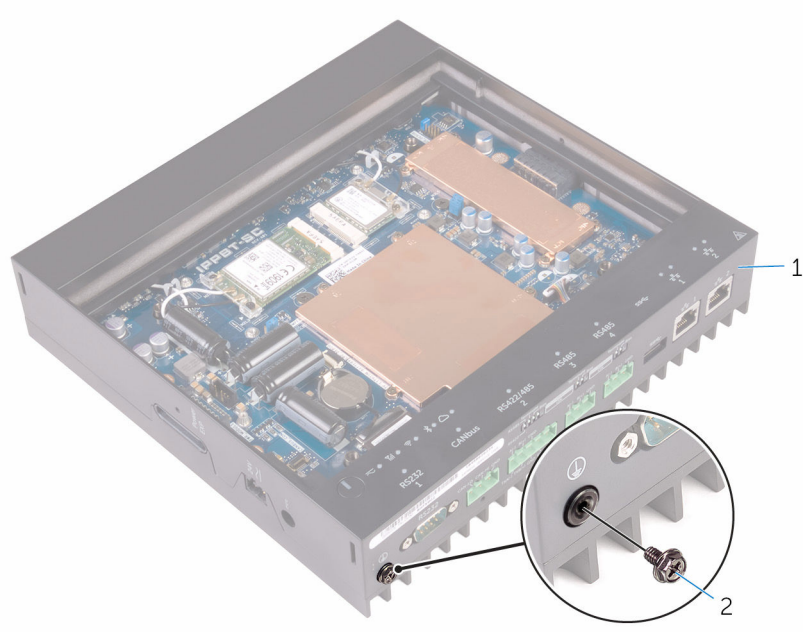
2 Remove the screws that secures the bottom cover to the base frame.



1 screws (4) 2 base frame

3 Turn the system the over.

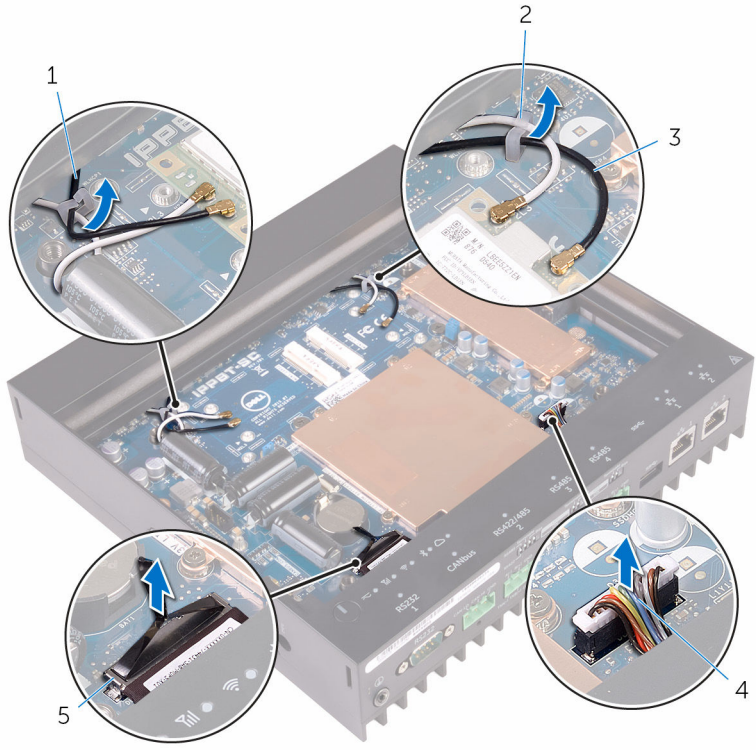
4 Remove the screw from the system grounding port.



1	base frame	2	system grounding port screw

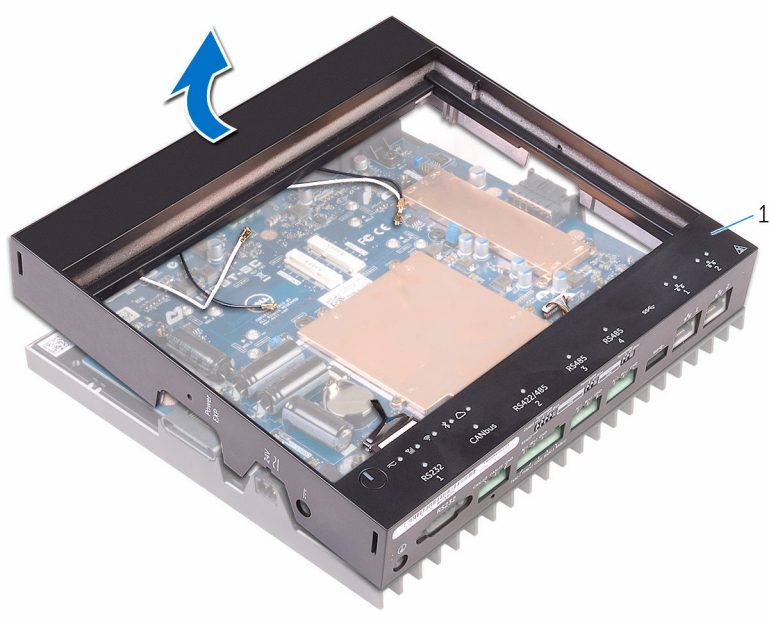
5 Remove the wireless card cables and mobile broadband card cables from the routing guides.

6 Disconnect the Dip Switch board cable and status-light board cable from the system board.



1	mobile broadband card cables (2)	2	routing guide (2)
3	wireless card cables (2)	4	Dip Switch board cable
5	status-light board cable		

7 Remove the base frame off the bottom cover.



1 base frame

Replacing the base frame

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Procedure

1. Place the base frame on the bottom cover.
2. Connect the Dip Switch board cable and status-light board cable to the system board
3. Route the wireless card cables and mobile broadband card cables through the routing guides.
4. Replace the system grounding port screw.
5. Turn the system over.
6. Replace the screws that secures the bottom cover to the base frame.
7. Turn the system right side up.

Post-requisites

1. Replace the mobile broadband card.
2. Replace the wireless card.
3. Replace the top cover.

Removing the DIP switch board

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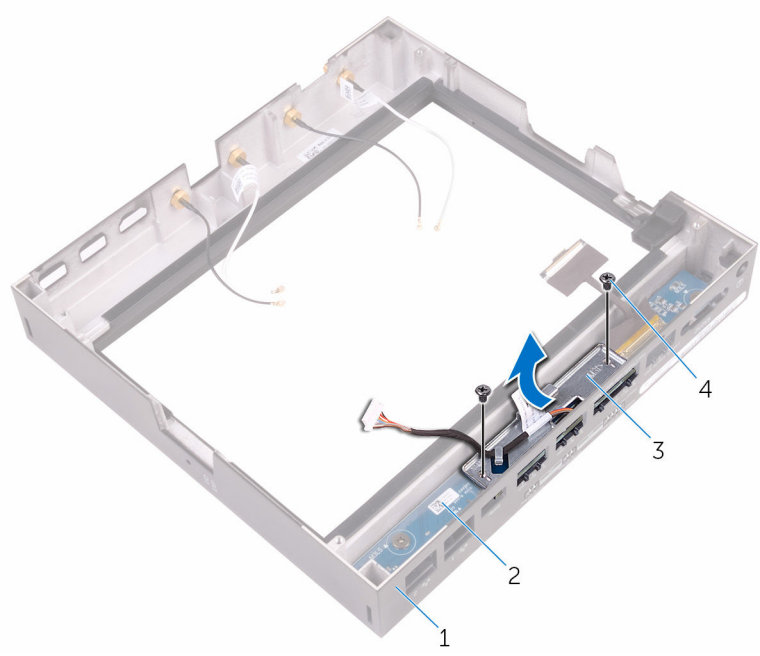
Prerequisites

1. Remove the top cover.
2. Remove the wireless card.
3. Remove the mobile broadband card.
4. Remove the base frame.

Procedure

1. Remove the screws that secure the DIP switch board assembly to the status-light board.

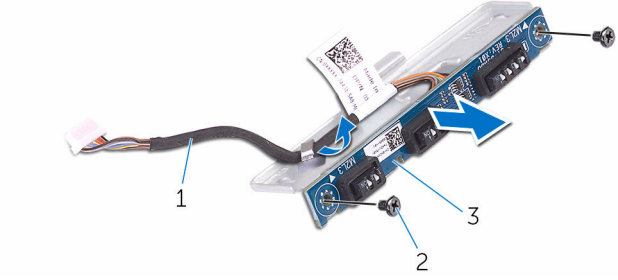
2 Lift the DIP switch board assembly of the status-light board.



1	base frame	2	status-light board
3	DIP switch board assembly	4	screws (2)

3 Remove the screws that secure that DIP switch board to the metal frame.

4 Remove the DIP switch board of the metal frame.



1	DIP switch board cable	2	screws (2)
3	DIP switch board		

Replacing the DIP switch board

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Procedure

1. Place the DIP switch board on the metal frame.
2. Replace the screws that secure the DIP switch board to the metal frame.
3. Place the DIP switch board on the status-light board.
4. Replace the screws that secure the DIP switch board assembly to the status-light board.

Post-requisites

1. Replace the base frame.
2. Replace the mobile broadband card.
3. Replace the wireless card.
4. Replace the top cover.

Removing the status-light board

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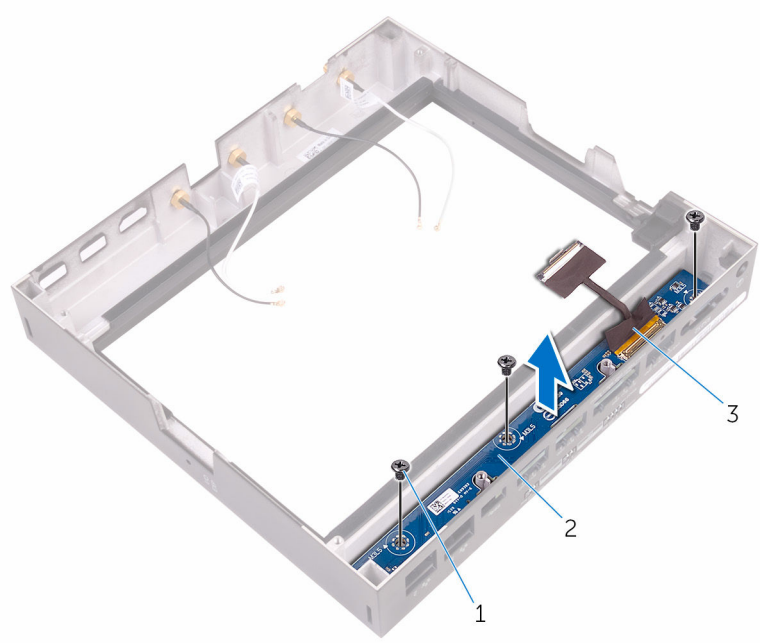
Prerequisites

1. Remove the top cover.
2. Remove the wireless card.
3. Remove the mobile broadband card.
4. Remove the base frame.
5. Remove the DIP switch board.

Procedure

1. Remove the screws that secure the status-light board to the base frame.

2 Lift the status-light board of the base frame.



1 screws (3)
2 status-light board
3 bstatus-light board cable

Replacing the status-light board

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Procedure

1. Place the status-light board on the base frame.
2. Replace the screws that secure the status-light board to the base frame.

Post-requisites

1. Replace the DIP switch board.
2. Replace the base frame.
3. Replace the mobile broadband card.
4. Replace the wireless card.
5. Replace the top cover.

Removing the system board

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NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS setup program after you replace the system board.

NOTE: Replacing the system board removes any changes you have made to the BIOS using the BIOS setup program. You must make the appropriate changes again after you replace the system board.

NOTE: Before disconnecting the cables from the system board, note the location of the connectors so that you can reconnect the cables correctly after you replace the system board.

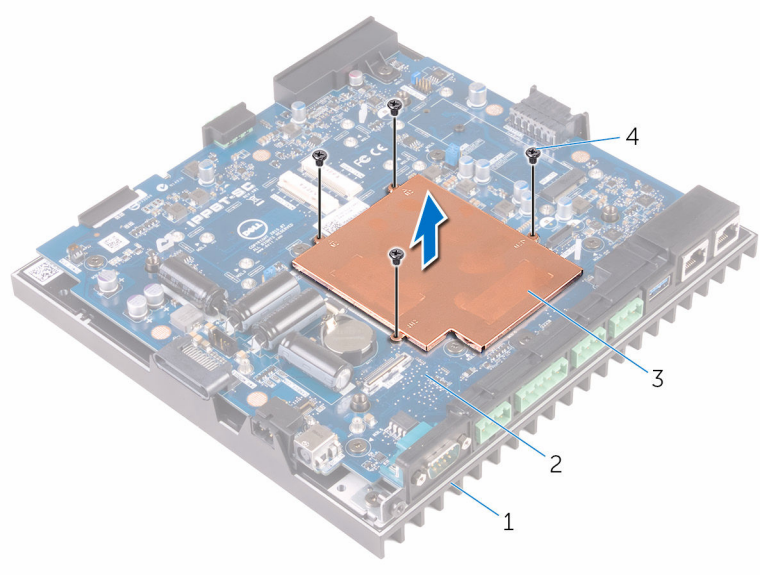
Prerequisites

1. Remove the top cover.
2. Remove the wireless card.
3. Remove the mobile broadband card.
4. Remove the base frame.

Procedure

1. Remove the screws that secure the heat shield to the system board.

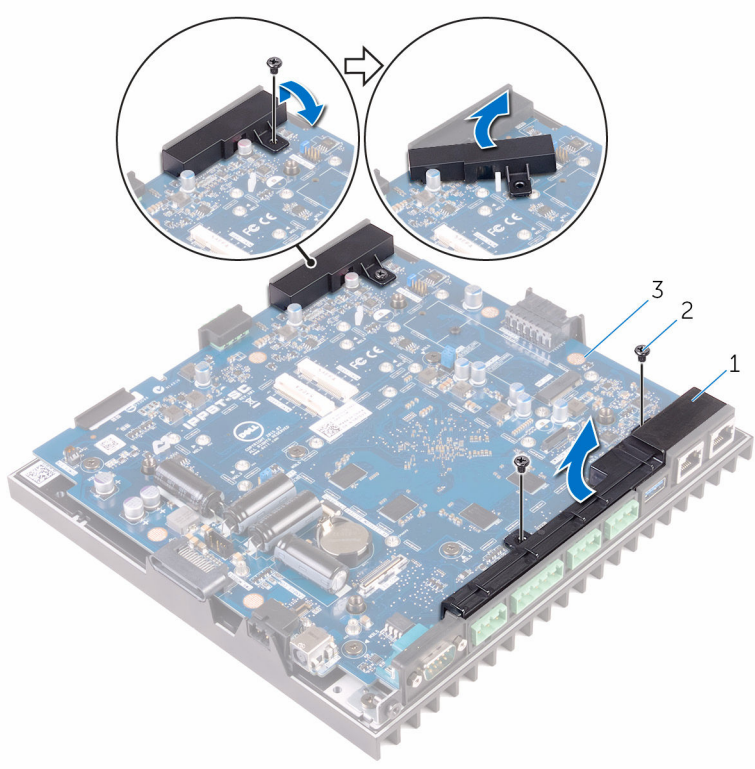
2 Remove the heat shield of the system board.



1	base frame	2	system board
3	heat shield	4	screws (4)

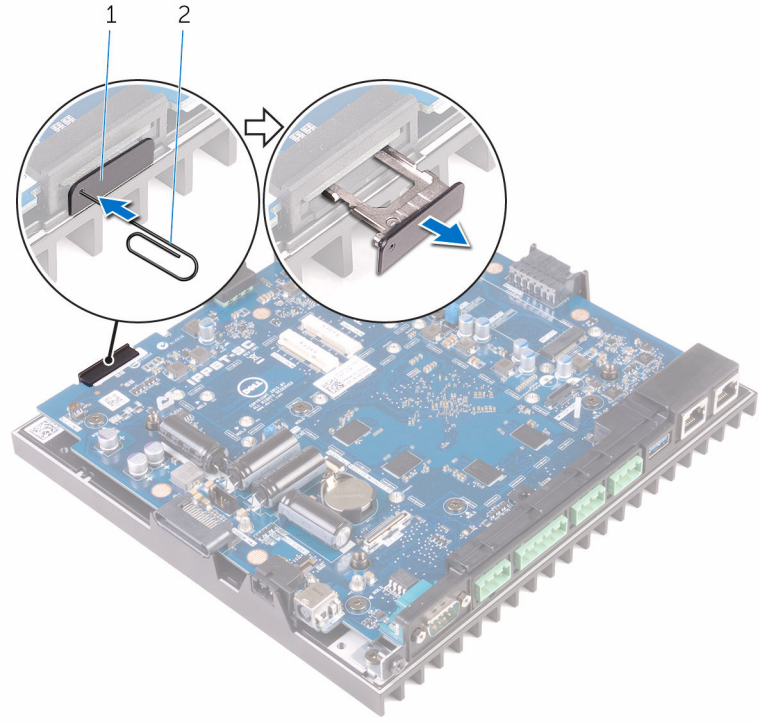
3 Remove the screws that secure the I/O port covers to the base frame.

4 Remove the I/O port covers of the system board.



1	I/O port covers (2)	2	screws (3)
3	system board		

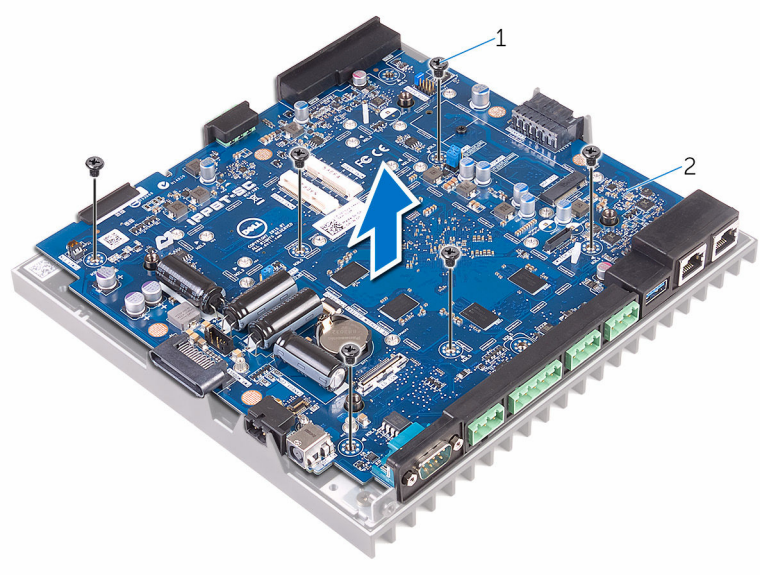
5 Using a paper-clip or sim-card ejection tool, remove the sim-card tray from the system board.



1 sim-card tray 2 paper clip

6 Remove the screws that secure the system board to the base frame.

7 Lift the system board and remove it off the base frame.



1 screws (6) 2 system board

Replacing the system board

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NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS setup program after you replace the system board.

NOTE: Replacing the system board removes any changes you have made to the BIOS using the BIOS setup program. You must make the appropriate changes again after you replace the system board.

Procedure

1. Place the system board on the base frame.
2. Replace the screws that secure the system board to the base frame.
3. Replace the sim-card tray into the system board.
4. Place the I/O port covers on the system board.
5. Replace the screws that secure the I/O port covers to the system board.
6. Place the heat shield on the system board.
7. Replace the screws that secure the heat shield to the system board.
8. Adhere the thermal pads on the system board components and the memory heat-shield.

Post-requisites

1. Replace the base frame.
2. Replace the mobile broadband card.
3. Replace the wireless card.
4. Replace the top cover.

Entering the Service Tag in the BIOS setup program

1. Turn on or restart your computer.
2. Press F2 when the Dell logo is displayed to enter the BIOS setup program.
3. Navigate to the **Main** tab and enter the Service Tag in the **Service Tag Input** field.

BIOS setup program

Overview

CAUTION: Unless you are an expert computer user, do not change the settings in the BIOS setup program. Certain changes can make your computer work incorrectly.

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

Use BIOS setup program to:

- Get information about the hardware installed in your computer, such as the amount of RAM, the size of the hard drive, and so on.
- Change the system configuration information.
- Set or change a user-selectable option, such as the user password, type of hard drive installed, enabling or disabling base devices, and so on.

Entering BIOS setup program

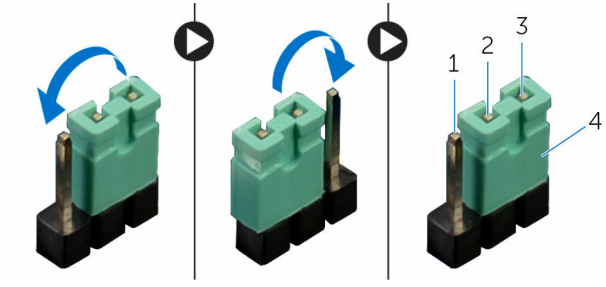
1. Turn on (or restart) your computer.
2. During POST, when the DELL logo is displayed, watch for the F2 prompt to appear, and then press F2 immediately.

   NOTE: The F2 prompt indicates that the keyboard is initialized. This prompt can appear very quickly, so you must watch for it, and then press F2. If you press F2 before the F2 prompt, this keystroke is lost. If you wait too long and the operating system logo appears, continue to wait until you see the desktop. Then, turn off your computer and try again.

Clearing CMOS Settings

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/regulatory_compliance.

1. Remove the top cover.
2. Locate the password reset jumper (PASSWORD) on the system board. See "System-board components".
3. Remove the jumper plug from pins 2 and 3 and fix it on pins 1 and 2.
4. Wait for approximately five seconds to clear the CMOS setting.
5. Remove the jumper plug from pins 1 and 2 and replace it on pins 2 and 3.



1	pin 1	2	pin 2
3	pin 3	4	jumper plug

6. Replace the top cover.

Clearing Forgotten Passwords

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin." For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

NOTE: The computer must be disconnected from the electrical outlet to clear the CMOS setting.

1. Remove the top cover.

2 Locate the password reset jumper (PASSWORD) on the system board. See "System-board components".

3 Remove the jumper plug.

4 Wait for approximately five seconds to clear the password setting.

5 Replace the jumper plug.

6 Replace the top cover.