Latitude 5430

Service Manual

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DELL Technologies

Notes, cautions, and warnings

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

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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1

Working inside your computer

Safety instructions

Use the following safety guidelines to protect your computer from potential damage and to ensure your personal safety. Unless otherwise noted, each procedure in this document assumes that you have read the safety information that is shipped with your computer.

WARNING: Before working inside your computer, read the safety information that is shipped with your computer. For more safety best practices, see Dell Regulatory Compliance Home Page.

WARNING: Disconnect your computer from 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 your computer to an electrical outlet.

WARNING: For laptops, discharge the battery completely before removing it. Disconnect the AC power adapter from the computer and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button is pressed.

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

CAUTION: You should only perform troubleshooting and repairs as authorized or directed by the Dell technical support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

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

CAUTION: When you disconnect a cable, pull it by its connector or its pull tab, not the cable itself. Some cables have connectors with locking tabs or thumbscrews that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending the connector pins. When connecting cables, ensure that the connector on the cable is correctly oriented and aligned with the port.

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

CAUTION: Exercise caution when handling rechargeable Li-ion batteries in laptops. Swollen batteries should not be used and should be replaced and disposed properly.

Before working inside your computer

Steps

1. Save and close all open files and exit all open applications.
2. Shut down your computer. For Windows operating system, click **Start** > **Power** > **Shut down**.

   NOTE: If you are using a different operating system, 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 attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.
5. Remove any media card and optical disk from your computer, if applicable.

6. Enter the service mode, if you are able to power on your computer.

   Service Mode

   Service Mode is used to cut-off power, without disconnecting battery cable from system board prior conducting repairs in the computer.

   CAUTION: If you are unable to turn on the computer to put it into Service Mode or the computer does not support Service Mode then proceed to disconnect the battery cable. To disconnect the battery cable, follow the steps in Removing the battery.

   NOTE: Ensure that your computer is shut down and the AC adapter is disconnected.

   a. Hold **<B>** key on the keyboard and press the power button for 3 seconds or until the Dell logo appears on the screen.
   b. Press any key to continue.
   c. If the AC adapter is not disconnected, a message prompting you to remove the AC adapter appears on the screen. Remove the AC adapter and then press any key to continue the **Service Mode** procedure. The **Service Mode** procedure automatically skips the following step if the **Owner Tag** of the computer is not set up in advance by the user.
   d. When the ready-to-proceed message appears on the screen, press any key to proceed. The computer emits three short beeps and shuts down immediately.
   e. Once the computer shuts down, it has successfully entered Service Mode.

   NOTE: If you are unable to power on your computer or unable to enter service mode skip this process.

Safety precautions

This section details the primary steps to be followed before disassembling any device or component.

Observe the following safety precautions before any installation or break-fix procedures involving disassembly or reassembly:

- Turn off the computer and all attached peripherals.
- Disconnect the computer from AC power.
- Disconnect all network cables and peripherals from the computer.
- Use an ESD field service kit when working inside your computer to avoid electrostatic discharge (ESD) damage.
- Place the removed component on an anti-static mat after removing it from the computer.
- Press and hold the power button for 15 seconds to discharge the residual power in the system board.

Bonding

Bonding is a method for connecting two or more grounding conductors to the same electrical potential. This is done by using a field service electrostatic discharge (ESD) kit. When connecting a bonding wire, ensure that it is connected to bare metal and never to a painted or nonmetal surface. Ensure that the wrist strap is secure and in full contact with your skin. Remove all jewelry, watches, bracelets, or rings before grounding yourself and the equipment.

Electrostatic discharge—ESD protection

ESD is a major concern when you handle electronic components, especially sensitive components such as expansion cards, processors, memory modules, and system boards. A slight charge can damage circuits in ways that may not be obvious, such as intermittent problems or a shortened product life span. As the industry pushes for lower power requirements and increased density, ESD protection is an increasing concern.

Two recognized types of ESD damage are catastrophic and intermittent failures.

- **Catastrophic** – Catastrophic failures represent approximately 20 percent of ESD-related failures. The damage causes an immediate and complete loss of device functionality. An example of catastrophic failure is a memory module that has received a static shock and immediately generates a "No POST/No Video" symptom with a beep code that is emitted for missing or nonfunctional memory.
- **Intermittent** – Intermittent failures represent approximately 80 percent of ESD-related failures. The high rate of intermittent failures means that most of the time when damage occurs, it is not immediately recognizable. The memory module receives a static shock, but the tracing is merely weakened and does not immediately produce outward symptoms that are related to the damage. The weakened trace may take weeks or months to melt, and in the meantime may cause degradation of memory integrity, intermittent memory errors, and so on.

Intermittent failures that are also called latent or "walking wounded" are difficult to detect and troubleshoot.

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. Wireless anti-static straps do not provide adequate protection. Touching the chassis before handling parts does not ensure adequate ESD protection on parts with increased sensitivity to ESD damage.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, use the anti-static wrist strap to discharge the static electricity from your body.

  NOTE: You can protect against ESD and discharge static electricity from your body by touching a metal-grounded object before you interact with anything electronic, for example, an unpainted metal surface on your computer's I/O panel. When connecting a peripheral (including handheld digital assistants) to your computer, you should always ground both yourself and the peripheral before connecting it to the computer. In addition, as you work inside the computer, periodically touch a metal-grounded object to remove any static charge that your body may have accumulated.

  For more information about the wrist strap and ESD wrist strap tester, see Components of an ESD Field Service Kit.
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

ESD Field Service kit

The unmonitored field service kit is the most commonly used service kit. Each Field Service kit includes three main components: anti-static mat, wrist strap, and bonding wire.

CAUTION: It is critical to keep ESD-sensitive devices away from internal parts that are insulated and often highly charged, such as plastic heat sink casings.

Working environment

Before the ESD Field Service kit is deployed, conduct an evaluation of the site to ensure proper setup and readiness. For example, deploying the kit for a server environment is different than for a desktop or laptop environment. Servers are typically installed in a rack within a data center; desktops or laptops are typically placed on office desks or cubicles. Always look for a large open flat work area that is free of clutter and large enough to deploy the ESD kit with additional space to accommodate the type of computer that is being repaired. The workspace should also be free of insulators that can cause an ESD event. On the work area, insulators such as styrofoam and other plastics should always be moved at least 12 inches or 30 centimeters away from sensitive parts before physically handling any hardware components.

ESD packaging

All ESD-sensitive devices must be shipped and received in static-safe packaging. Metal, static-shielded bags are preferred. However, you should always return the damaged component using the same ESD bag and packaging that the new part arrived in. The ESD bag should be folded over and taped shut and all the same foam packing material should be used in the original box that the new part arrived in. ESD-sensitive devices should be removed from packaging only at an ESD-protected work surface, and parts should never be placed on top of the ESD bag because only the inside of the bag is shielded. Always place parts in your hand, on the anti-static mat, in the computer, or inside an ESD bag.

Components of an ESD Field Service kit

The components of an ESD Field Service kit are:

- **Anti-Static Mat** – The anti-static mat is dissipative and parts can be placed on it during service procedures. When using an anti-static mat, your wrist strap should be snug and the bonding wire should be connected to the anti-static mat and to any bare metal on the computer being worked on. Once deployed properly, service parts can be removed from the ESD bag and placed directly on the anti-static mat. ESD-sensitive items are safe in your hand, on the anti-static mat, in the computer, or inside an ESD bag.
- **Wrist Strap and Bonding Wire** – If an anti-static mat is not being used, the wrist strap and bonding wire should be connected directly between your wrist and an exposed metal part of the hardware. If you are using an anti-static mat, connect the wrist strap and bonding wire to the anti-static mat to ensure protection for any hardware placed on the mat.

The physical connection of the wrist strap and bonding wire between your skin, the anti-static mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, anti-static mat, and bonding wire. Never use wireless wrist straps. Always be cautious that the internal wires of a wrist strap are prone to damage from normal wear and tear, and must be checked regularly with a wrist strap tester in order to avoid accidental ESD hardware damage. It is recommended to test the wrist strap and bonding wire at least once per week.

- **ESD Wrist Strap Tester** – The wires inside an ESD strap are prone to damage over time. When using an unmonitored ESD kit, it is recommended to test the wrist strap regularly—ideally before each service session, and at a minimum, once per week. The most reliable method for testing is with a wrist strap tester. To perform the test, connect the bonding wire of the wrist strap to the tester while wearing the strap. Press the test button to initiate the check. A green LED indicates a successful test, while a red LED and audible alarm signal a failure.

NOTE: It is recommended to always use the traditional wired ESD grounding wrist strap and protective anti-static mat when servicing Dell products. In addition, it is critical to keep sensitive parts separate from all insulator parts while servicing the computer.

Transporting sensitive components

When transporting ESD sensitive components such as replacement parts or parts to be returned to Dell, it is critical to place these parts in anti-static bags for safe transport.

After working inside your computer

About this task

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

Steps

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, disks, or any other parts that you removed before working on your computer.
4. Connect your computer to their electrical outlets.

   NOTE: To exit service mode, ensure to connect the AC adapter to the power-adapter port on your computer.

5. Press the power button to turn on the computer.

Information on repairability for Québec - From Dell Canada Inc. - to Quebec consumers

Dell does not guarantee the availability of replacement parts, repair services, or information necessary for maintenance or repair.

BitLocker

When updating the BIOS on a computer with BitLocker enabled, consider the following precautions.

CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key will not be recognized the next time that you reboot the computer. You are prompted to enter the recovery key to progress, and the computer displays a prompt for the recovery key on each reboot. If the recovery key is not known, this can result in data loss or an operating system reinstall. For more information, see Knowledge Article: updating the BIOS on Dell computers with BitLocker enabled.

The installation of the following components triggers BitLocker:

- Hard disk drive or solid state drive
- System board

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Removing and installing components

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

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver #0
- Plastic scribe

Screw list

NOTE: When removing screws from a component, it is recommended to note the screw type and the quantity of screws, and then place them in a screw storage box. This is to ensure that the correct number of screws and correct screw type is restored when the component is replaced.

NOTE: Some computers have magnetic surfaces. Ensure that the screws are not left attached to such surfaces when replacing a component.

NOTE: Screw color may vary depending on the configuration ordered.

Table 1. Screw list

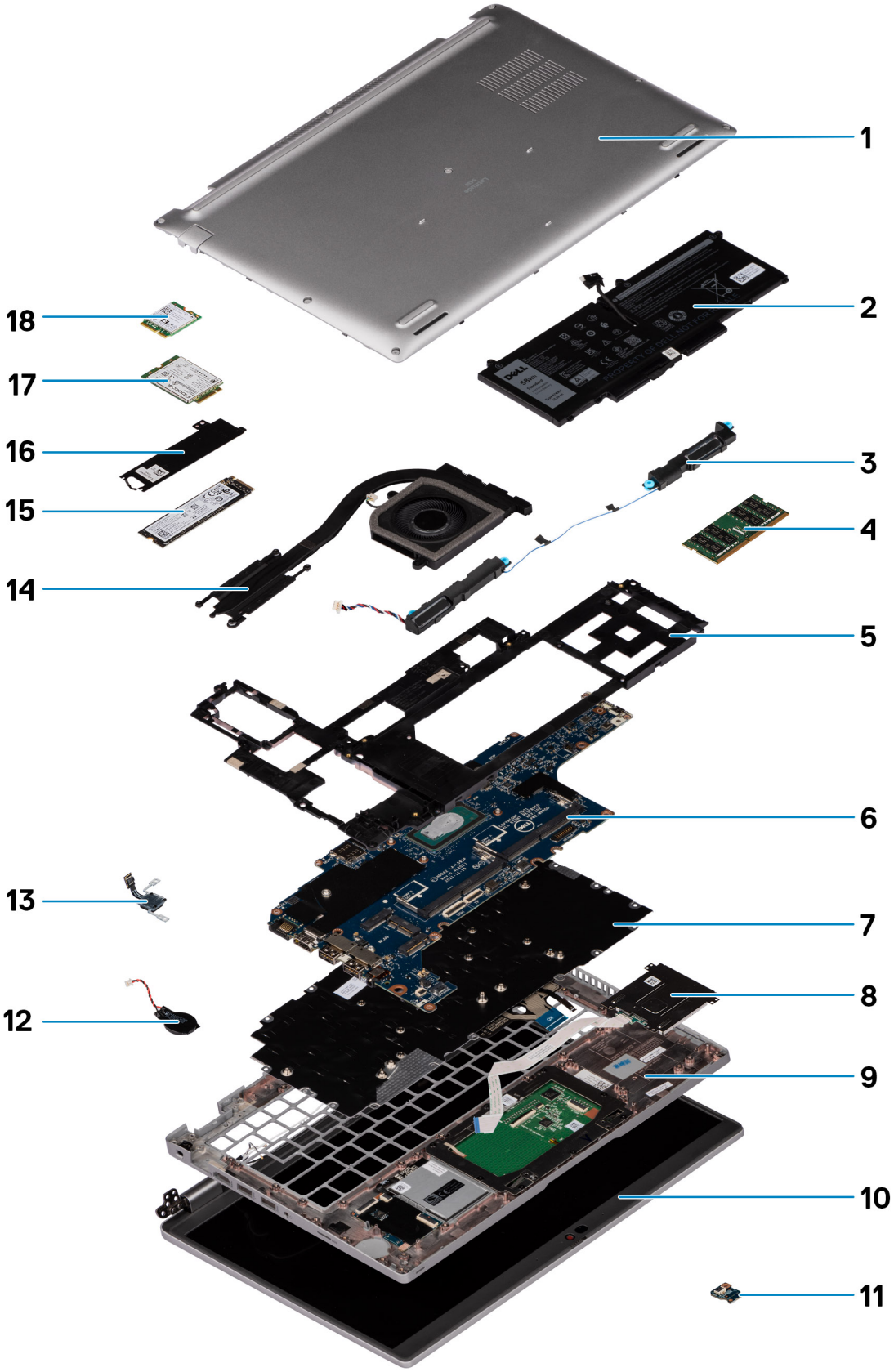
Component	Screw type	Quantity	Screw image
Base cover	Captive screw	8	Not applicable
WLAN	M2x2.5	1	
WWAN	M2x2.5	1	
M.2 2230 solid-state drive	M2x3	4	
M.2 2280 solid-state drive	M2x3	2	
Assembly inner frame	M2x3 M2x5	10 3	
3-cell battery	M2x5	3	
4-cell battery	M2x5	3	
Heat-sink assembly-integrated	Captive screw M2x5	4 2	

Table 1. Screw list (continued)

Component	Screw type	Quantity	Screw image
eDP cable/bracket	M2x3	2	
USB Type-C support bracket	M2x5	3	
System board	M2x3	4	
Power button with optional fingerprint reader	M2x2.5	2	
Smart card reader	M2x2.5	3	
LED board	M2x3	1	
Keyboard assembly	M2x2	17	
Keyboard bracket	M2x2	6	
Display assembly	M2.5x5 (display hinge to palm-rest assembly)	4	
Display hinge	M2.5x3 (display hinge to display back cover)	4	
Display panel	M2.5x3	2	

Major components of Latitude 5430

The following image shows the major components of Latitude 5430.



1. Base cover
2. Battery
3. Speakers
4. Memory modules
5. Assembly inner frame
6. System board
7. Keyboard assembly
8. Smart card reader

9. Palm-rest assembly
10. Display assembly
11. LED board
12. Coin-cell battery
13. Power button with optional fingerprint reader
14. Heat-sink assembly
15. Solid-state drive
16. Solid-state drive bracket
17. WWAN card
18. WLAN card

NOTE: Dell provides a list of components and their part numbers for the original system configuration purchased. These parts are available according to warranty coverages purchased by the customer. Contact your Dell sales representative for purchase options.

Customer Replaceable Units (CRUs) and Field Replaceable Units (FRUs) list

Table 2. CRU/FRU list

Latitude 5430	CRU component	FRU component
Sim Tray	✓	✗
Base cover	✓	✗
WLAN card	✓	✗
WWAN card	✓	✗
WLAN/WWAN card bracket	✓	✗
M.2 2230 solid-state drive	✓	✗
M.2 2280 solid-state drive	✓	✗
Solid-state drive holder	✓	✗
Solid-state drive thermal plate	✓	✗
Memory module	✓	✗
Assembly inner frame	✗	✓
Battery (3-cell and 4-cell)	✗	✓

Table 2. CRU/FRU list (continued)

Latitude 5430	CRU component	FRU component
Battery cable	✗	✓
Coin-cell battery	✗	✓
Heat-sink with fan	✗	✓
Speaker	✗	✓
eDP cable	✗	✓
eDP cable support bracket	✗	✓
System board	✗	✓
USB Type-C support bracket	✗	✓
Power button with optional fingerprint reader	✗	✓
Smart card reader	✗	✓
LED board	✗	✓
Sensor board	✗	✓
Keyboard	✗	✓
Keyboard support plate	✗	✓
Display assembly (LCD with bracket)	✗	✓
Display bezel	✗	✓

Table 2. CRU/FRU list (continued)

Latitude 5430	CRU component	FRU component
Display hinge	✗	✓
Camera	✗	✓
Display back cover	✗	✓
Dummy SIM-card slot filler	✗	✓
Palm-rest	✗	✓
eDP cable bumper sponge	✗	✓

SIM-card tray (optional)

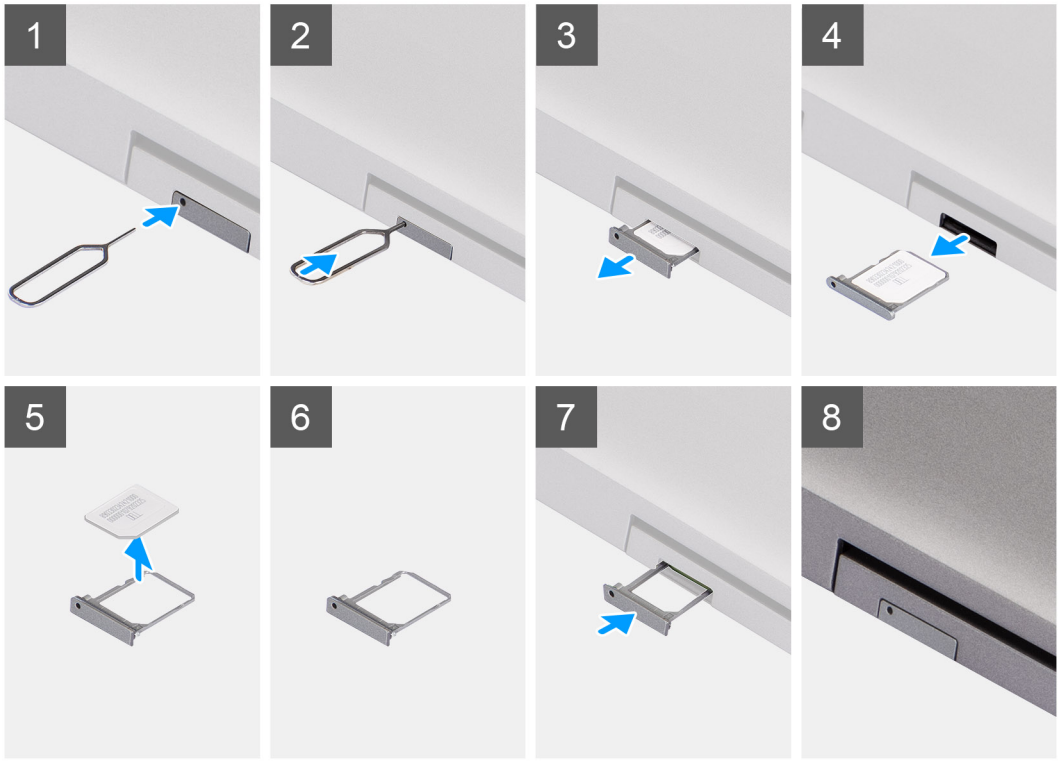
Removing the SIM card tray

Prerequisites

Follow the procedure in before working inside your computer.

About this task

The following image provides a visual representation of the SIM card tray removal procedure.



Steps

1. Insert a pin into the release hole to release the SIM card tray.
2. Push the pin to disengage the lock, and eject the SIM card tray.
3. Slide the SIM card tray out of the slot on the system.
4. Remove the SIM card from the SIM card tray.
5. Slide and push the SIM card tray back into the slot.

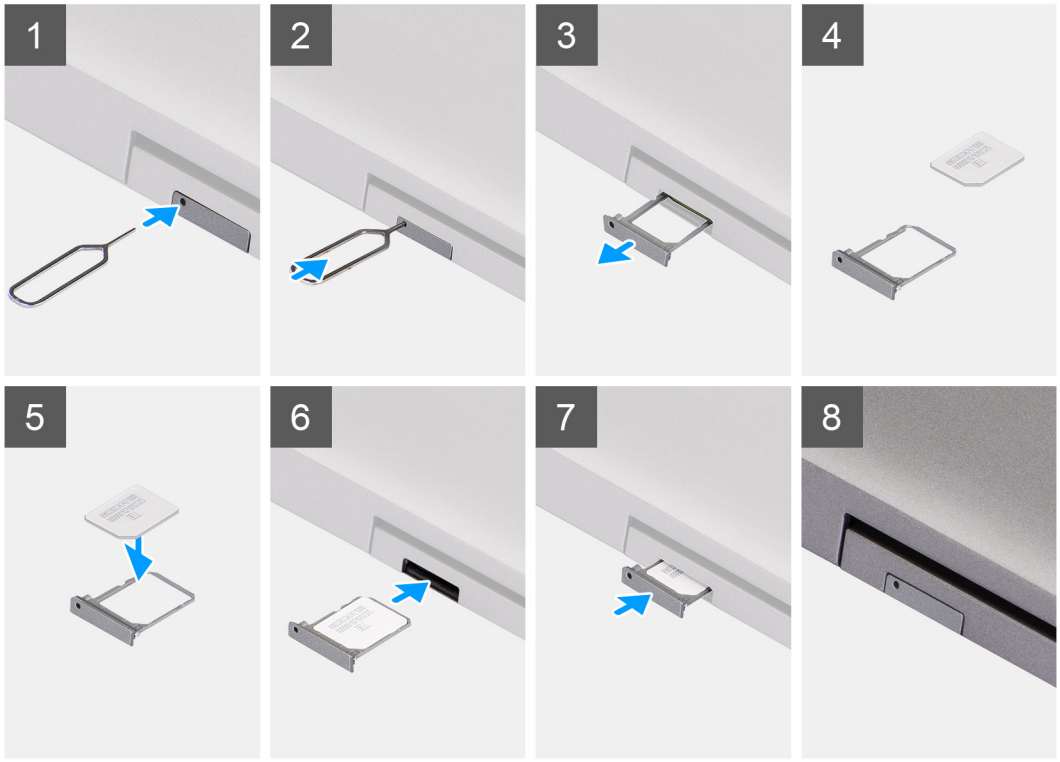
Installing the SIM card tray

Prerequisites

If you are replacing a component, remove the necessary component before the installation procedure.

About this task

The following image provides a visual representation of the SIM card tray installation procedure.



Steps

1. Align and place the SIM card in the dedicated slot on the SIM card tray.
2. Slide the SIM card tray into the slot in the system, and push it to lock in place.

Next steps

Follow the procedure in after working inside your computer.

MicroSD card

Removing the micro-SD card

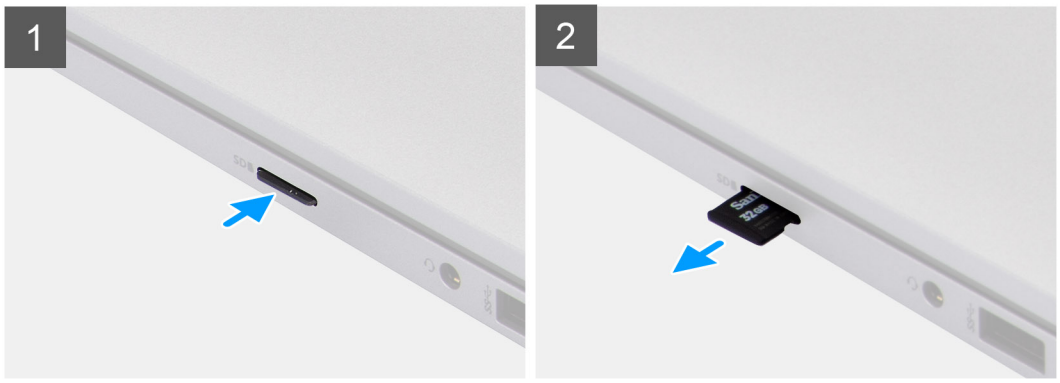
Prerequisites

Follow the procedure in before working inside your computer.

About this task

The following image provides a visual representation of the micro-SD card removal procedure.





Steps

1. Push the micro-SD card to eject it from the slot.
2. Remove the micro-SD card from the computer.

Installing the micro-SD card

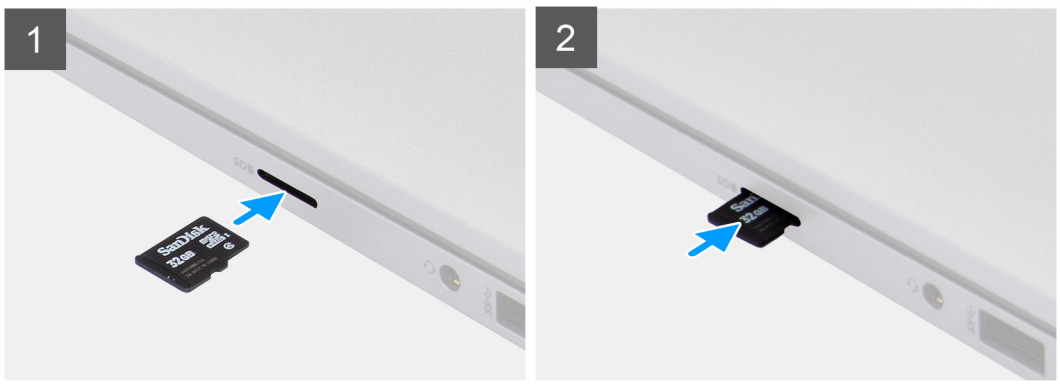
Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image provides a visual representation of the micro-SD card installation procedure.





Steps

Insert the micro-SD card into its slot until it clicks into place.

Next steps

1. Follow the procedure in after working inside your computer.

Base cover

Removing the base cover

Prerequisites

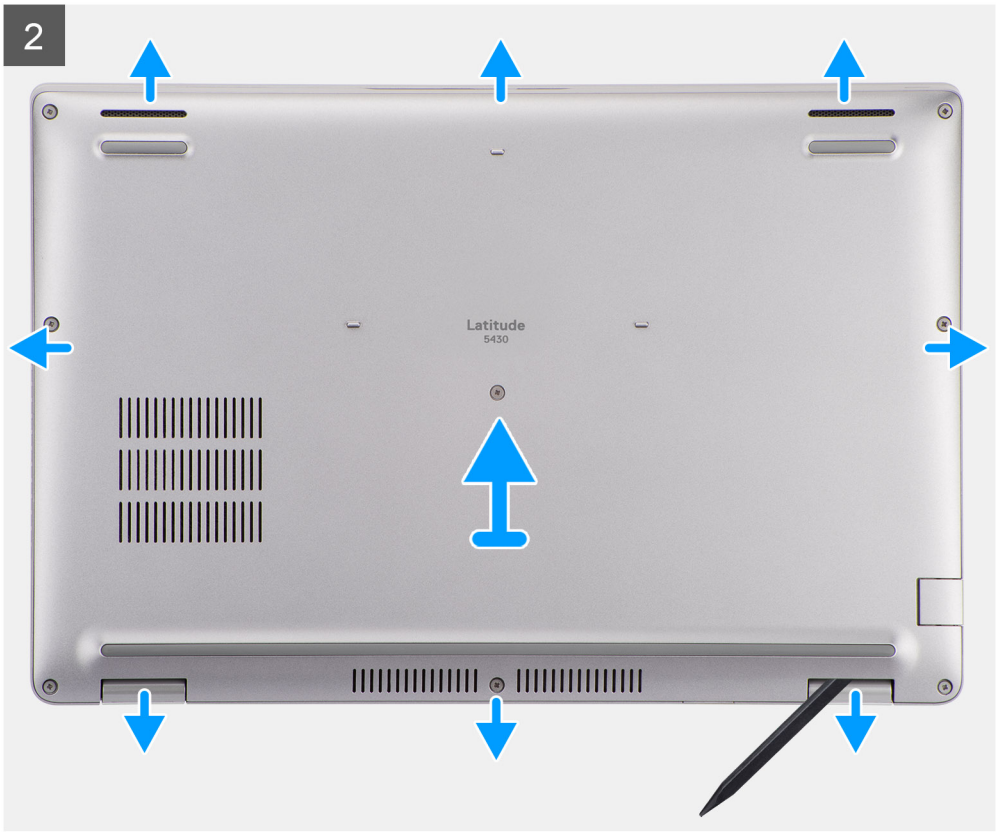
1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.

About this task

The following images indicate the location of the base cover and provide a visual representation of the removal procedure.







Steps

1. Loosen the eight captive screws that secure the base cover to the palm-rest assembly.
2. Using a plastic scribe, pry the base cover from the U-shaped indents at the top edge of the base cover to remove the base cover from the palm-rest assembly and keyboard assembly.
3. Grasp the left side and the right side of the base cover and remove the base cover from the palm-rest assembly.

Installing the base cover

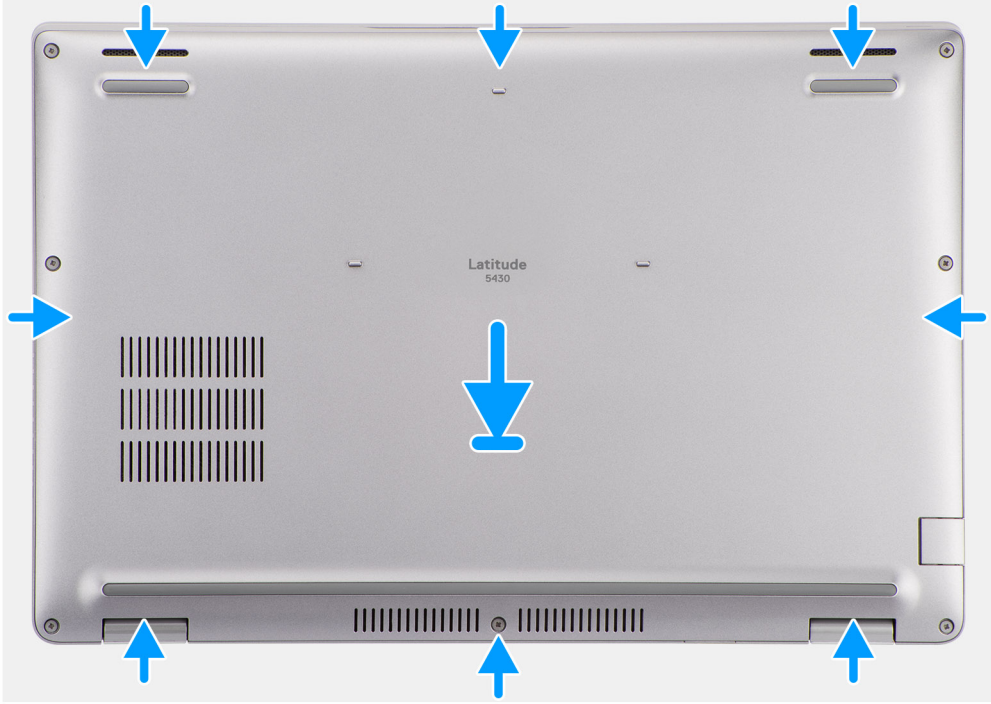
Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the base cover and provide a visual representation of the installation procedure.

2





8x

3



Steps

1. Align the screw holes on the base cover with the screw holes on the palm-rest assembly, and then snap the base cover into place.
2. Tighten the eight captive screws to secure the base cover to the palm-rest assembly.

Next steps

1. Install the microSIM card.
2. Install the microSD card.
3. Follow the procedure in after working inside your computer.

WLAN card

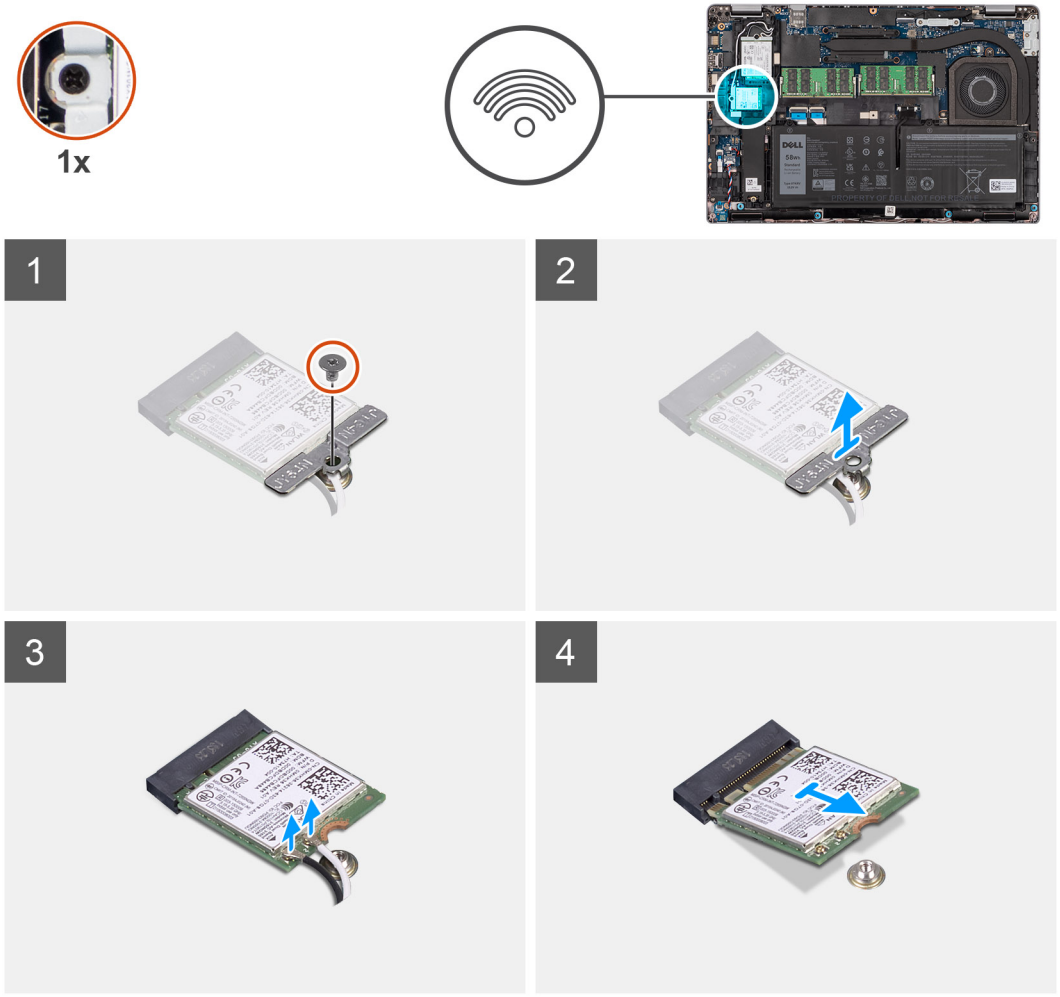
Removing the WLAN card

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.

About this task

The following images indicate the location of the WLAN card and provide a visual representation of the removal procedure.



Steps

NOTE: When removing the WLAN card from the system, if the adhesive pad which helps secure the WLAN card in place is removed from the system along with the WLAN card, adhere it back to the system.

1. Remove the (M2x2.5) screw that secures the WLAN-card bracket to the WLAN card.
2. Remove the WLAN-card bracket off the WLAN card.
3. Disconnect the antenna cables from the WLAN card.
4. Slide at an angle and remove the WLAN card from the WLAN card slot.

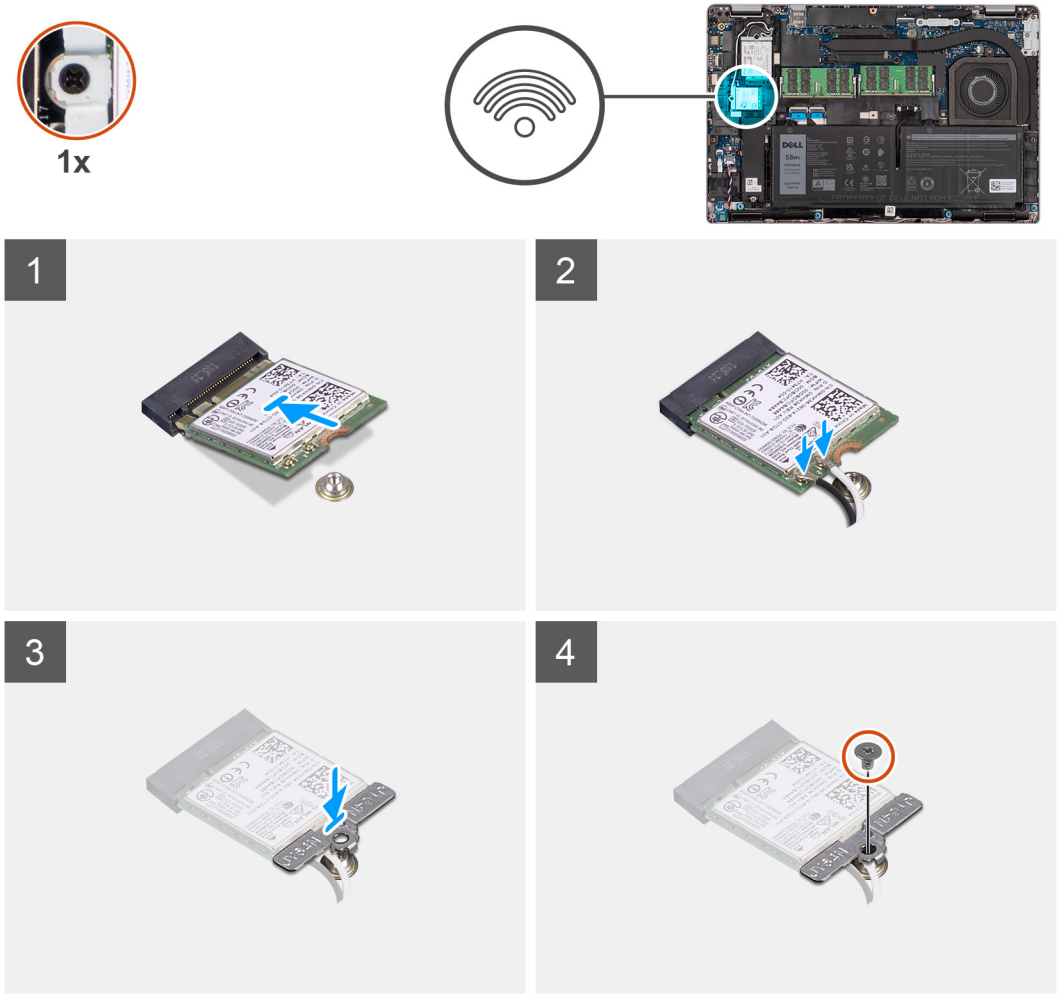
Installing the WLAN card

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the WLAN card and provides a visual representation of the installation procedure.



Steps

1. Connect the antenna cables to the WLAN card.
   The following table provides the antenna-cable color scheme:

   Table 3. Antenna-cable color scheme

Connectors on the WLAN card	Antenna-cable color
Main (white triangle)	White
Auxiliary (black triangle)	Black

2. Align the notch on the WLAN card with the tab on the WLAN card slot.

   NOTE: When removing the WLAN card from the computer, if the adhesive pad which helps secure the WLAN card in place is removed from the computer along with the WLAN card, adhere it back to the computer.

3. Slide the WLAN card at an angle into the WLAN card slot.
4. Place the WLAN-card bracket on the WLAN card.
5. Replace the (M2x2.5) screw to secure the WLAN-card bracket to the WLAN card.

Next steps

1. Install the base cover.
2. Install the microSIM card.
3. Install the microSD card.
4. Follow the procedure in after working inside your computer.

Wireless Wide Area Network (WWAN) card

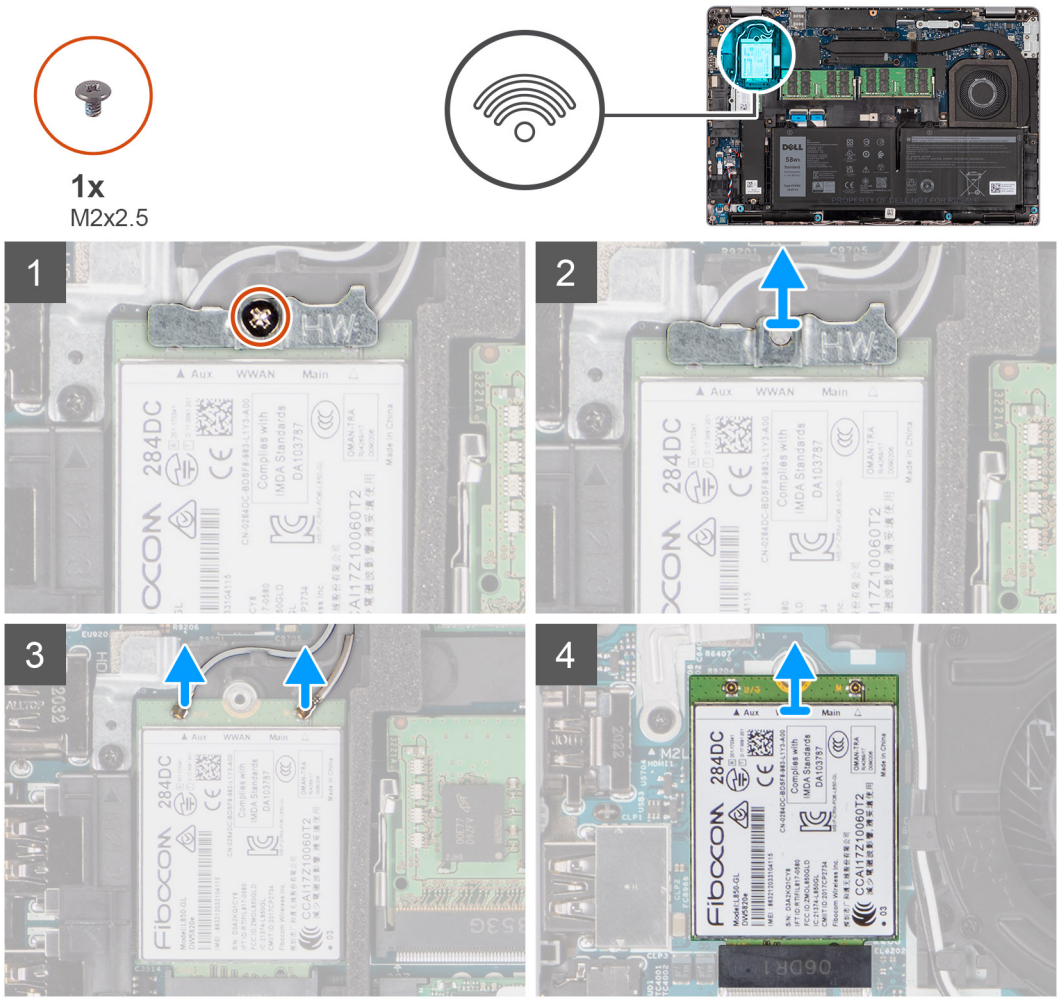
Removing the WWAN card

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.

About this task

The following image indicates the location of the WWAN card and provides a visual representation of the removal procedure.



Steps

1. Remove the (M2x2.5) screw that secures the WWAN-card bracket to the WWAN card.
2. Remove the WWAN-card bracket off the WWAN card.
3. Disconnect the antenna cables from the WWAN card.
4. Slide and remove the WWAN card from the WWAN card slot.

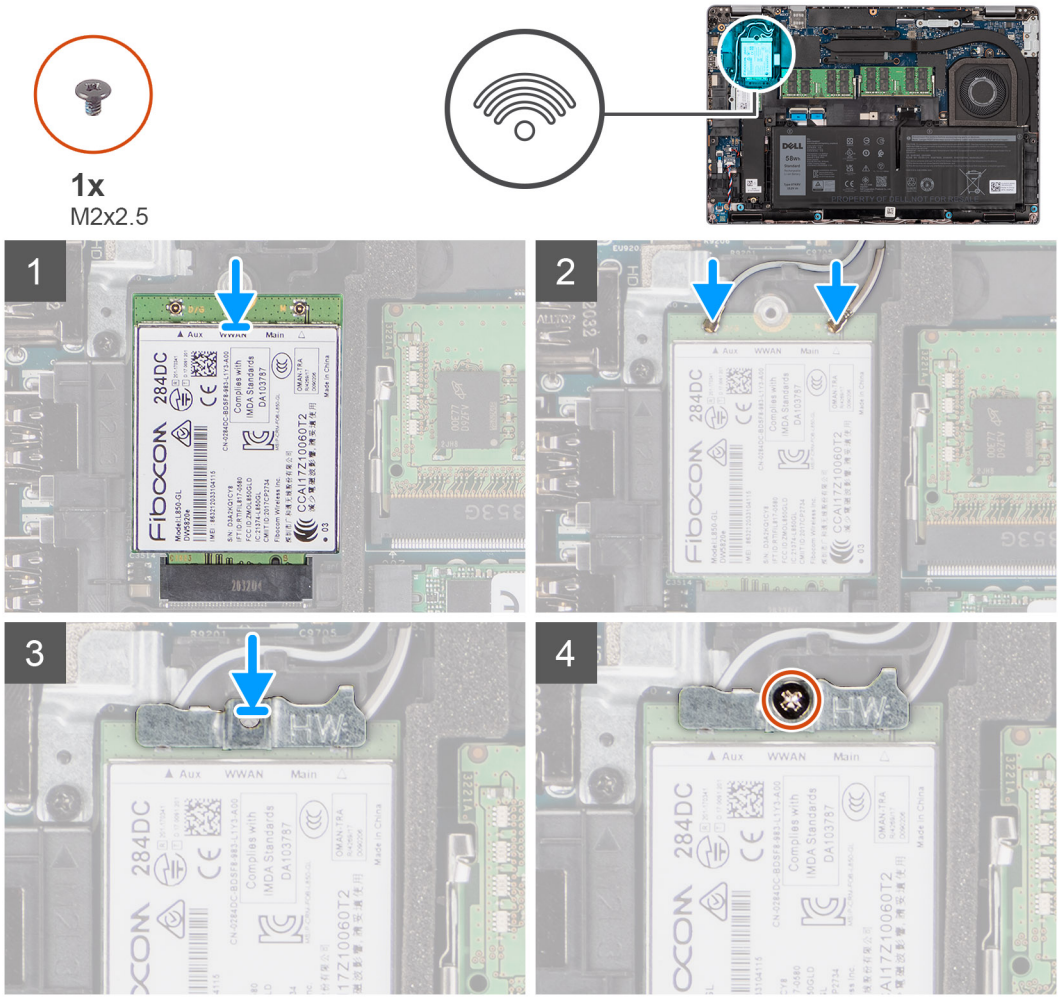
Installing the WWAN card

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the WWAN card and provides a visual representation of the installation procedure.



Steps

1. Connect the antenna cables to the WWAN card.
   The following table provides the antenna-cable color scheme:

Table 4. Antenna-cable color scheme

Connectors on the WWAN card	Antenna-cable color
Main (white triangle)	White
Auxiliary (black triangle)	Black

2. Align the notch on the WWAN card with the tab on the WWAN slot.
3. Slide the WWAN card at an angle into the WWAN slot.
4. Place the WWAN-card bracket on the WWAN card.
5. Replace the (M2x2.5) screw to secure the WWAN-card bracket to the WWAN card.

NOTE: For instructions on how to find your computer's IMEI (International Mobile Station Equipment Identity) number, see the knowledge base article 000143678 at Dell Support Site.

Next steps

1. Install the base cover.
2. Install the microSIM card.
3. Install the microSD card.
4. Follow the procedure in after working inside your computer.

Solid-state drive

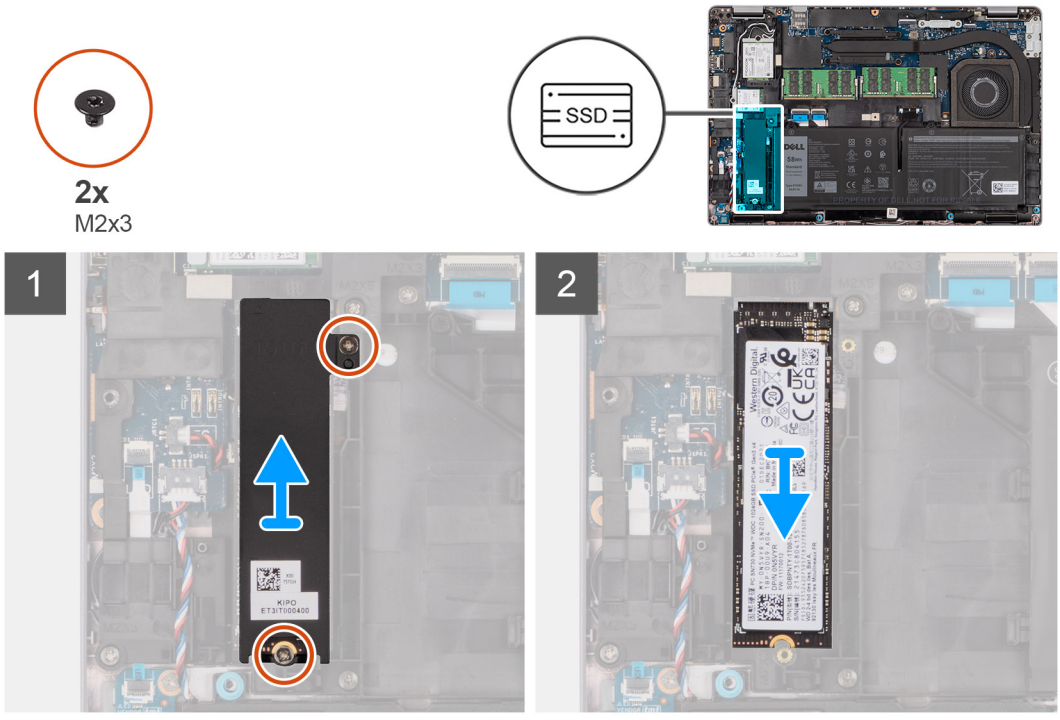
Removing the M.2 2280 solid-state drive

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.

About this task

The following images indicate the location of the M.2 2280 solid-state drive and provide a visual representation of the removal procedure.



Steps

1. Remove the two (M2x3) screws that secure the M.2 2280 solid-state drive thermal plate to the system board.
2. Lift the M.2 2280 solid-state drive thermal plate off the system board.
3. Slide and remove the M.2 2280 solid-state drive from the solid-state drive slot on the system board.

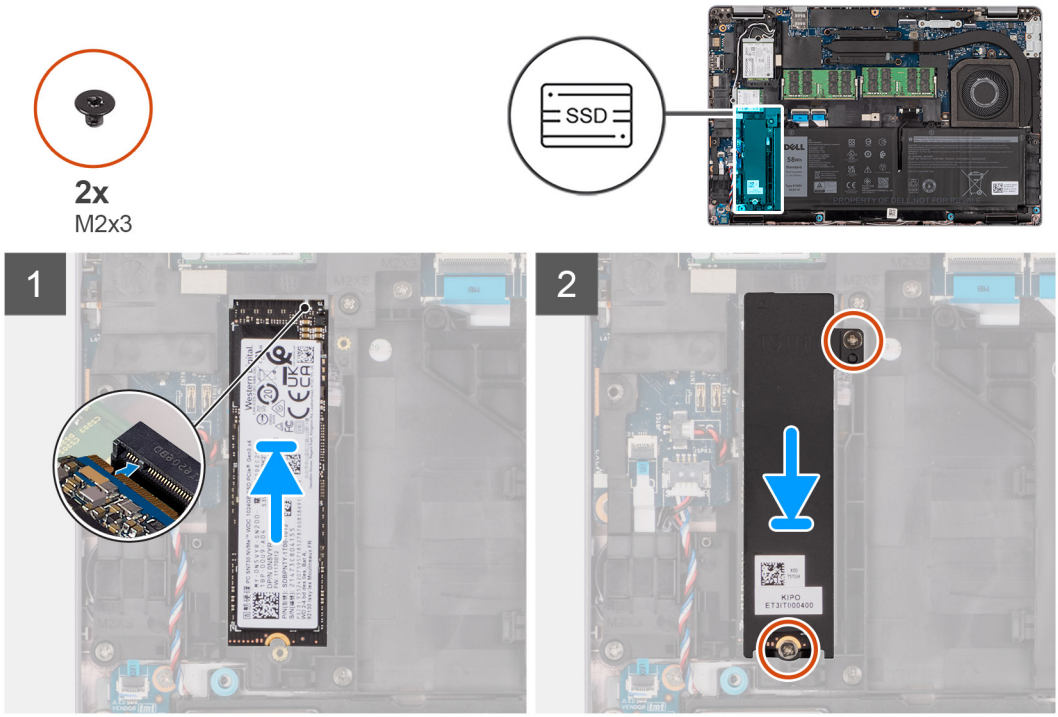
Installing the M.2 2280 solid-state drive

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the M.2 2280 solid-state drive and provides a visual representation of the installation procedure.



Steps

1. Align the notch on the M.2 2280 solid-state drive with the tab on the solid-state drive slot.
2. Slide the M.2 2280 solid-state drive into the solid-state drive slot on the system board.
3. Align the screw holes on the M.2 2280 solid-state drive thermal plate with the screw holes on the system board.
4. Replace the two (M2x3) screws to secure the M.2 2280 solid-state drive thermal plate to the system board.

Next steps

1. Install the base cover.
2. Install the microSIM card.
3. Install the microSD card.
4. Follow the procedure in after working inside your computer.

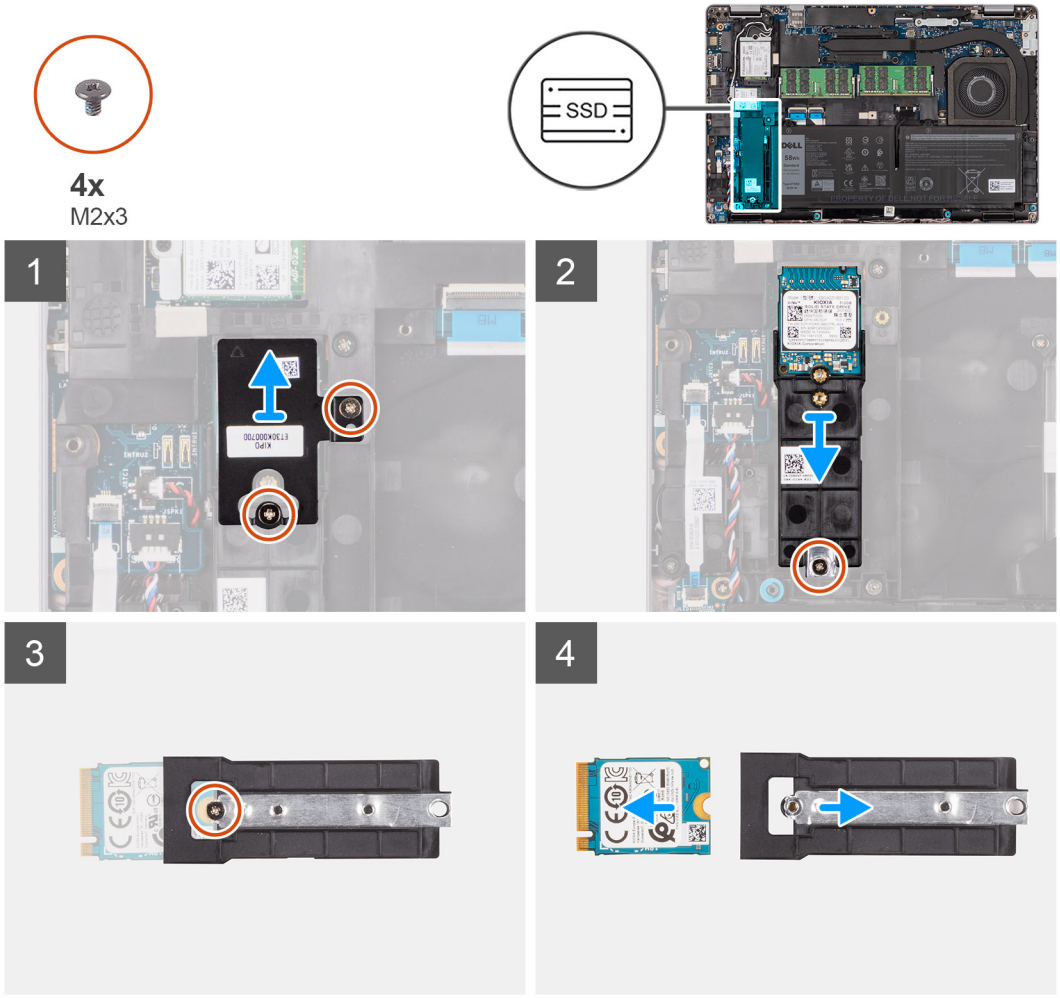
Removing the M.2 2230 solid-state drive

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.

About this task

The following images indicate the location of the M.2 2230 solid-state drive and provide a visual representation of the removal procedure.



Steps

1. Remove the two (M2x3) screws that secure the M.2 2230 solid-state drive thermal plate to the M.2 2230 solid-state drive holder.
2. Remove the (M2x3) screw that secure the M.2 2230 solid-state drive holder to the system board.
3. Lift the M.2 2230 solid-state drive holder off the system board.
4. Flip the M.2 2230 solid-state drive holder and remove the (M2x3) screw that secures the M.2 2230 solid-state drive to the M.2 2230 solid-state drive holder.
5. Slide and remove the M.2 2230 solid-state drive from the M.2 2230 solid-state drive holder.

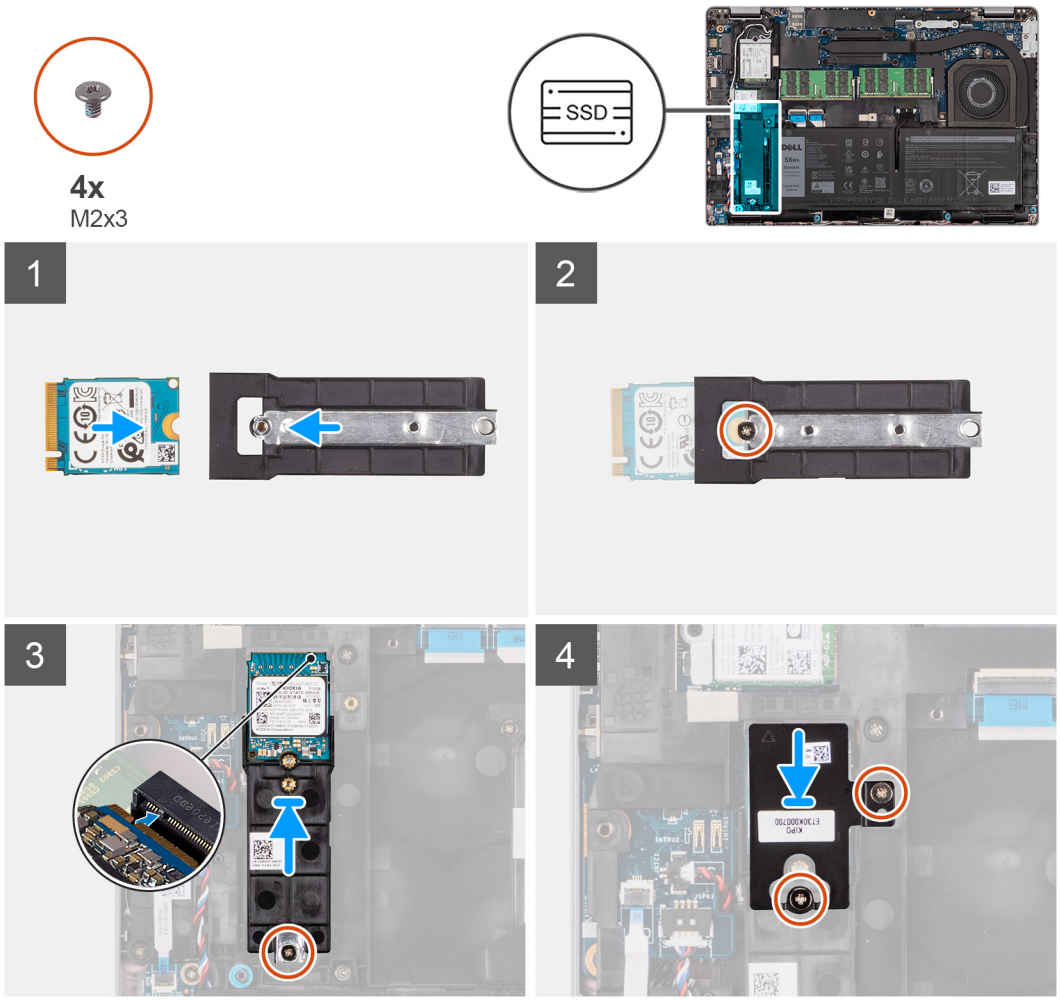
Installing the M.2 2230 solid-state drive

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the M.2 2230 solid-state drive and provides a visual representation of the installation procedure.



Steps

1. Flip the M.2 2230 solid-state drive holder and align the notch on the M.2 2230 solid-state drive with the tab on the M.2 2230 solid-state drive holder.
2. Replace the (M2x3) screw to secure the M.2 2230 solid-state drive to the M.2 2230 solid-state drive holder.
3. Align and insert the M.2 2230 solid-state drive holder to its connector on the system board to accommodate the M.2 2230 solid-state drive.
4. Replace the (M2x3) screw to secure the M.2 2230 solid-state drive holder to the system board.
5. Align the screw holes on the M.2 2230 solid-state drive thermal pad with the screw holes on the M.2 2230 solid-state drive holder.
6. Replace the two (M2x2.5) screws to secure the M.2 2230 solid-state drive thermal pad to the M.2 2230 solid-state drive holder.

Next steps

1. Install the base cover.
2. Install the microSIM card.
3. Install the microSD card.
4. Follow the procedure in after working inside your computer.

Memory module

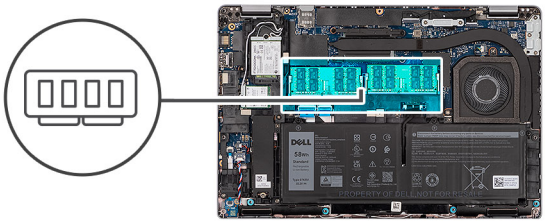
Removing the memory modules

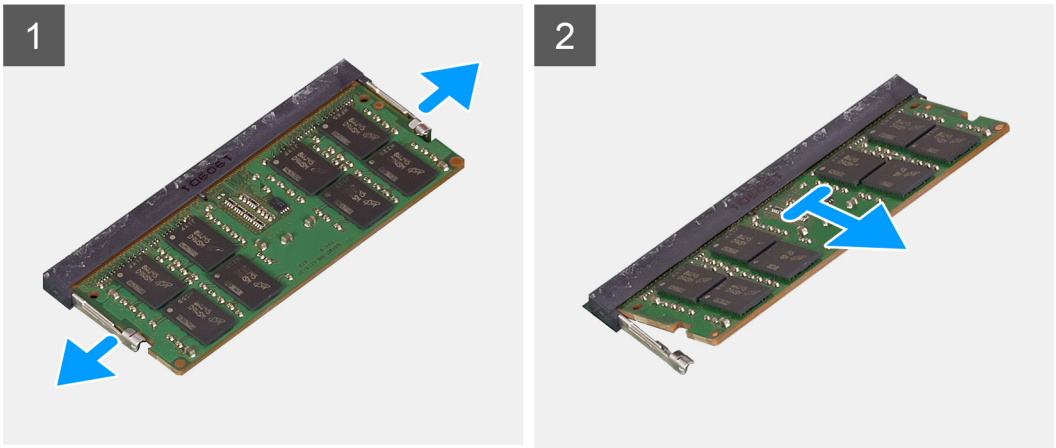
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.

About this task

The following images indicate the location of the memory modules and provide a visual representation of the removal procedure.





Steps

1. Using your fingertips, spread apart the securing clips on the memory-module slot until the memory module pops up.
2. Slide and remove the memory module from the memory-module slot on the system board.

NOTE: Repeat step 1 and 2 if there are two memory modules.

CAUTION: To prevent damage to the memory module, hold the memory module by the edges. Do not touch the components or metallic contacts on the memory module as electrostatic discharge(ESD) can inflict severe damage on the components. To read more about ESD protection, see ESD protection.

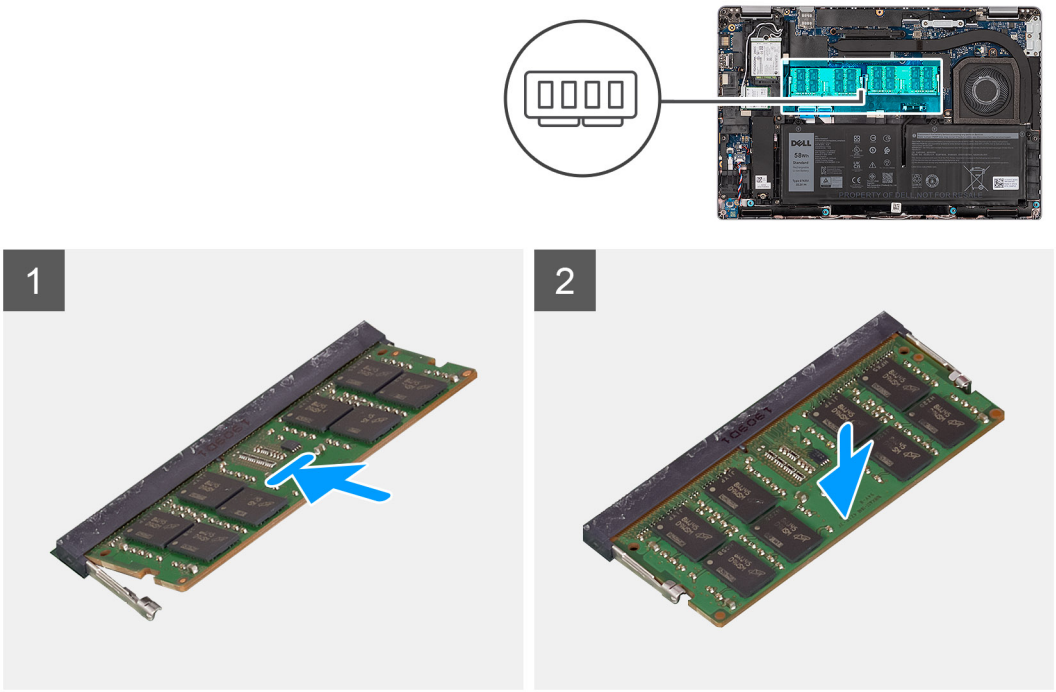
Installing the memory modules

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the memory modules and provides a visual representation of the installation procedure.



Steps

1. Align the notch on the memory module with the tab on the memory-module slot.
2. Slide the memory module firmly into the slot at an angle and press the memory module down until it clicks into place.

NOTE: If you do not hear the click, remove the memory module and reinstall it.

CAUTION: To prevent damage to the memory module, hold the memory module by the edges. Do not touch the components or metallic contacts on the memory module as electrostatic discharge(ESD) can inflict severe damage on the components. To read more about ESD protection, see ESD protection.

Next steps

1. Install the base cover.
2. Install the microSIM card.
3. Install the microSD card.
4. Follow the procedure in after working inside your computer.

Battery

Rechargeable Li-ion battery precautions

WARNING:

- **Exercise caution when handling rechargeable Li-ion batteries.**
- **Discharge the battery completely before removing it. Disconnect the AC power adapter from the computer and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button is pressed.**
- **Do not crush, drop, mutilate, or penetrate the battery with foreign objects.**

- **Do not expose the battery to high temperatures, or disassemble battery packs and cells.**
- **Do not apply pressure to the surface of the battery.**
- **Do not bend the battery.**
- **Do not use tools of any kind to pry on or against the battery.**
- **To prevent accidental puncture or damage to the battery and other components, ensure that no screws are lost or misplaced during the servicing of the computer.**
- **Always purchase genuine batteries from Dell Site or authorized Dell partners and resellers.**
- **Swollen batteries should not be used and should be replaced and disposed properly. For guidelines on how to handle and replace swollen rechargeable Li-ion batteries, see Handling swollen rechargeable Li-ion batteries.**

Removing the 3-cell battery

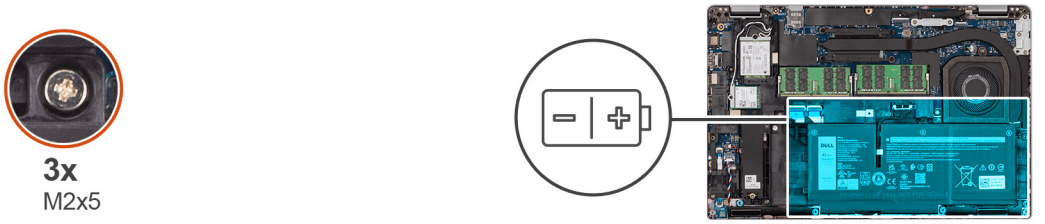
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.

NOTE: If battery is disconnected from system board for service, then there is a delay during system boot-up as the system undergoes RTC battery reset.

About this task

The following images indicate the location of the 3-cell battery and provide a visual representation of the removal procedure.





Steps

1. Disconnect the battery cable from the system board, if it was not disconnected earlier.
2. Remove the three (M2x5) screws that secure the battery to the palm-rest assembly.
3. Lift the battery off the palm-rest assembly.

Installing the 3-cell battery

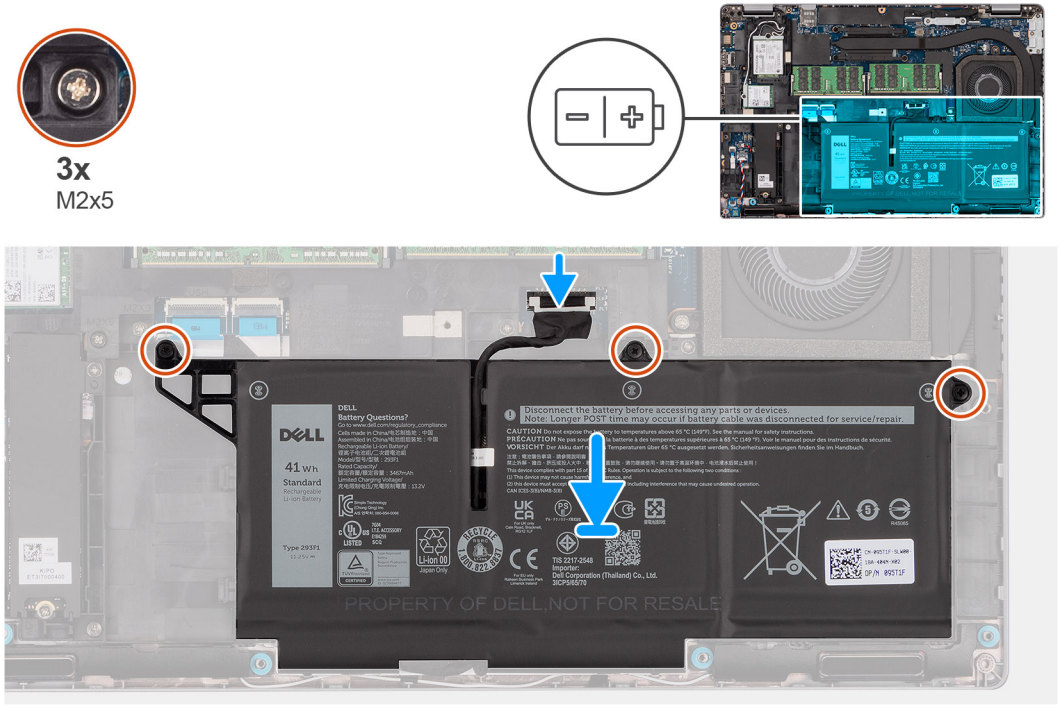
Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the 3-cell battery and provides a visual representation of the installation procedure.

NOTE: If battery is disconnected from system board for service, then there is a delay during system boot-up as the system undergoes RTC battery reset.



Steps

1. Align and place the battery from the left side on the computer.
2. Replace the three (M2x5) screws to secure the battery to the palm-rest assembly.
3. Connect the battery cable to the connector on the system board.

Next steps

1. Install the base cover.
2. Install the microSIM card.
3. Install the microSD card.
4. Follow the procedure in after working inside your computer.

Removing the 4-cell battery

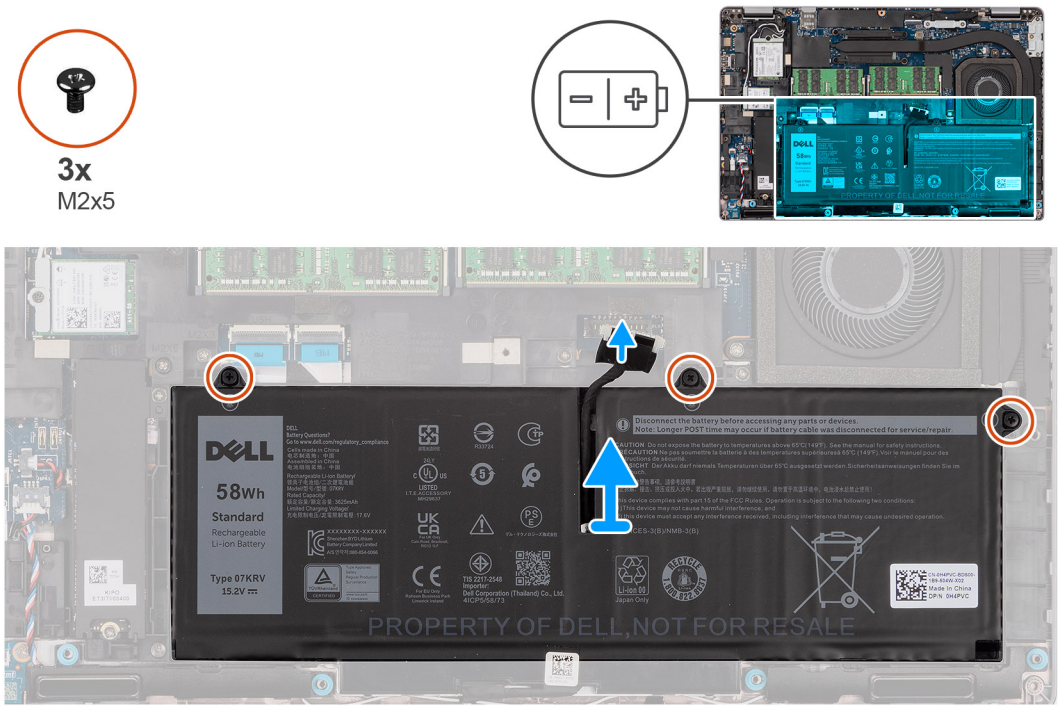
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.

NOTE: If battery is disconnected from system board for service, then there is a delay during system boot-up as the system undergoes RTC battery reset.

About this task

The following images indicate the location of the battery and provide a visual representation of the removal procedure.



Steps

1. Disconnect the battery cable from the system board, if it was not disconnected earlier.
2. Remove the three (M2x5) screws that secure the battery to the palm-rest assembly.
3. Lift the battery off the palm-rest assembly.

Installing the 4-cell battery

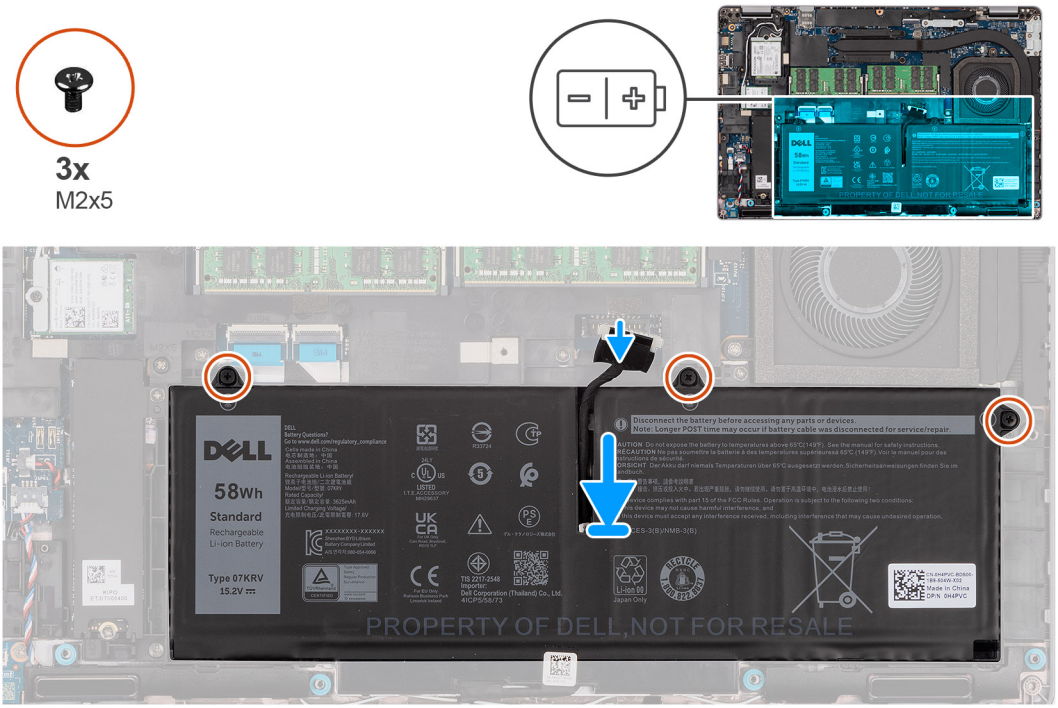
Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the 4-cell battery and provides a visual representation of the installation procedure.

NOTE: If battery is disconnected from system board for service, then there is a delay during system boot-up as the system undergoes RTC battery reset.



Steps

1. Align and place the battery from the left side on the computer.
2. Replace the three (M2x5) screws to secure the battery to the palm-rest assembly.
3. Connect the battery cable to the system board.

Next steps

1. Install the base cover.
2. Install the microSIM card.
3. Install the microSD card.
4. Follow the procedure in after working inside your computer.

Battery cable

Removing the battery cable

Prerequisites

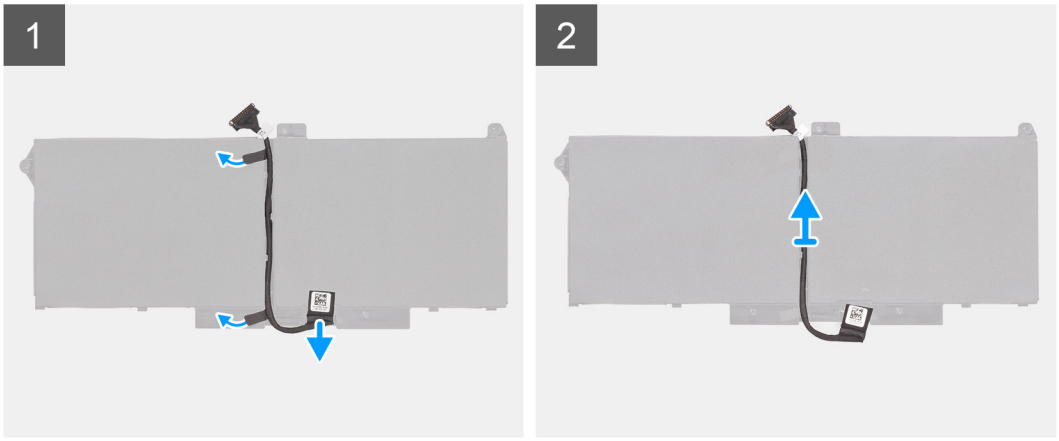
1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.

NOTE: If battery is disconnected from system board for service, then there is a delay during system boot-up as the system undergoes RTC battery reset.

About this task

The following images indicate the location of the battery cable and provide a visual representation of the removal procedure.





Steps

1. Flip the battery and unroute the battery cable from the routing guides on the battery.
2. Disconnect the battery cable from the connector on the battery.
3. Lift the battery cable away from the battery.

Installing the battery cable

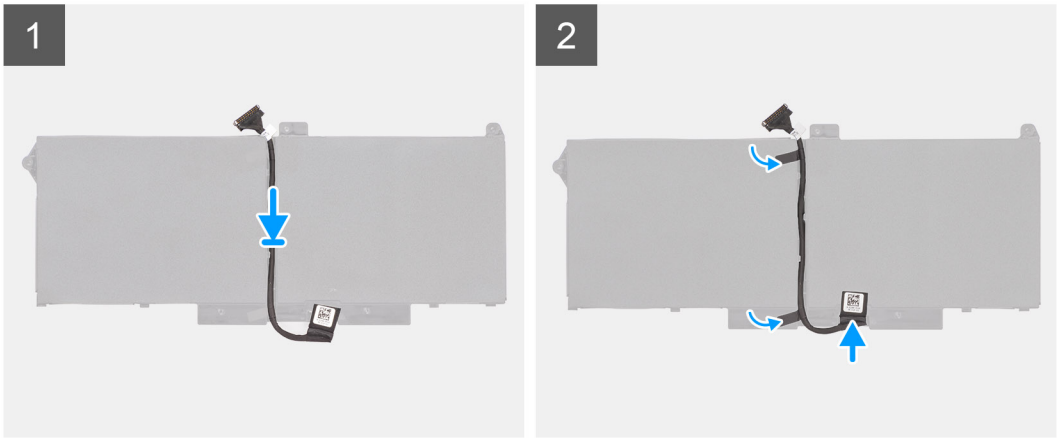
Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the battery cable and provides a visual representation of the installation procedure.





Steps

1. Align and place the battery cable on the battery.
2. Route the battery cable through the routing guides on the battery.
3. Connect the battery cable to the connector on the battery.

Next steps

1. Install the 3-cell battery or 4-cell battery.
2. Install the base cover.
3. Install the microSIM card.
4. Install the microSD card.
5. Follow the procedure in after working inside your computer.

Assembly-inner frame

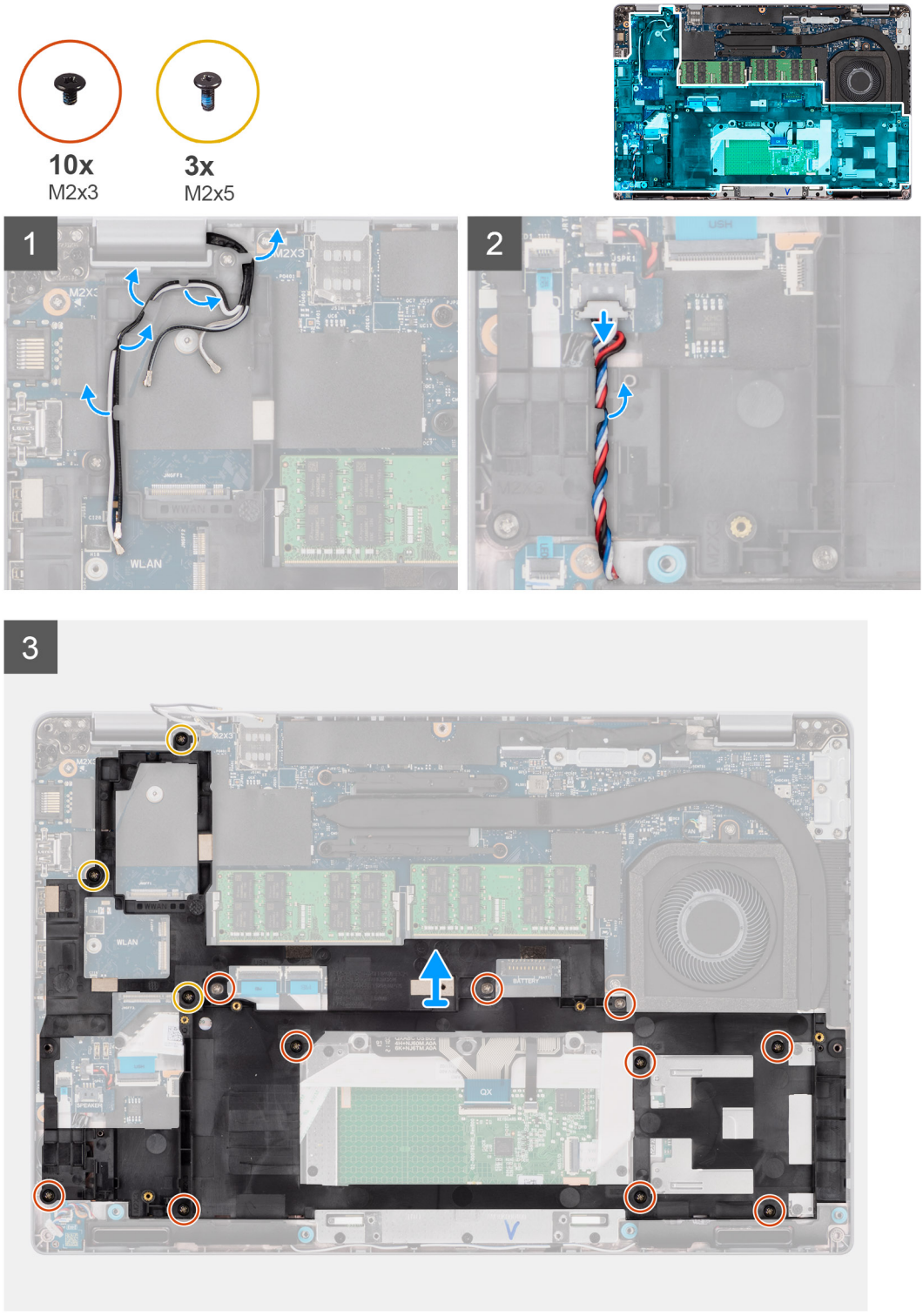
Removing the assembly inner frame

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.
6. Remove the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Remove the WLAN card.
8. Remove the WWAN card.

About this task

The following image indicates the location of the assembly inner frame and provides a visual representation of the removal procedure.



Steps

1. Unroute the antenna cables from the routing guides on the assembly inner frame.
2. Disconnect the speaker cable from the connector on the system board and unroute the cable from the routing guides on the assembly inner frame.
3. Remove the ten (M2x3) screws and three (M2x5) screws that secure the assembly inner frame to the system board and the palm-rest assembly.
4. Lift the assembly inner frame off the system board and the palm-rest assembly.

Installing the assembly inner frame

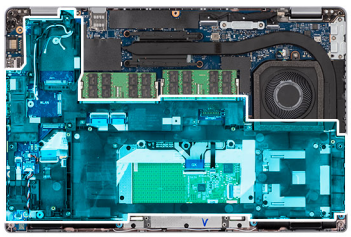
Prerequisites

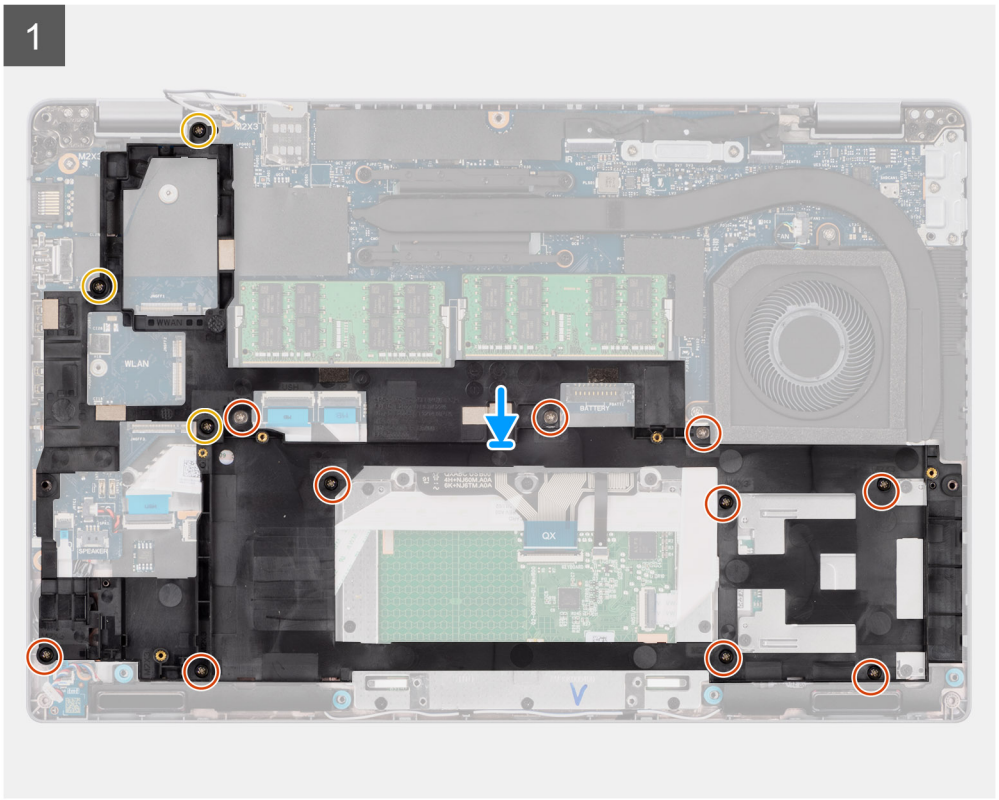
If you are replacing a component, remove the existing component before performing the installation procedure.

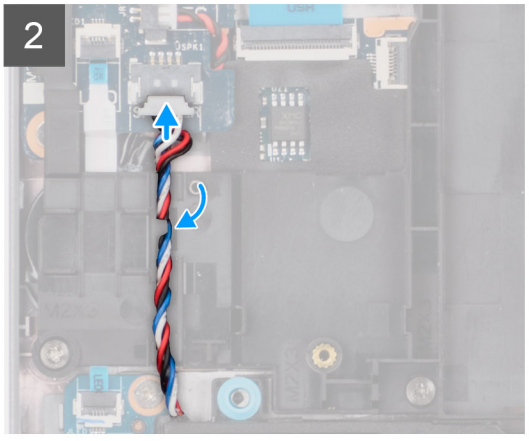
About this task

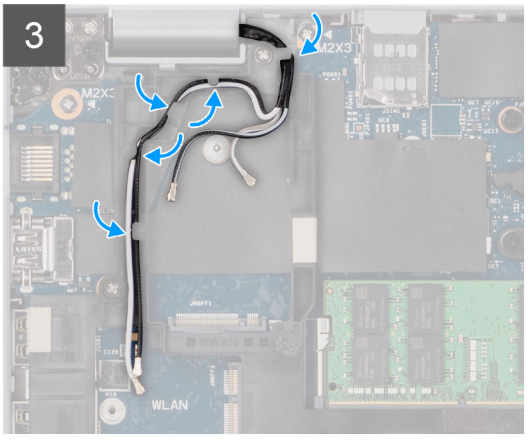
The following image indicates the location of the assembly inner frame and provides a visual representation of the installation procedure.







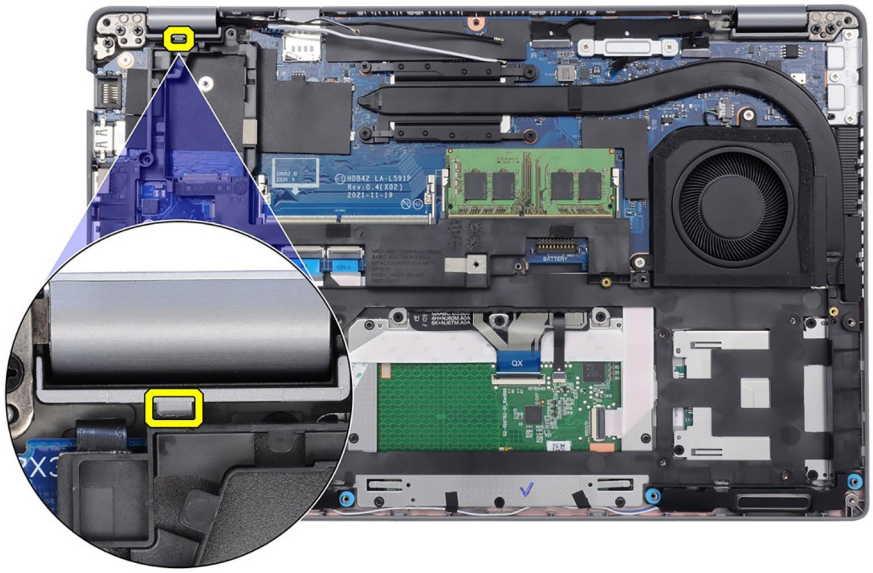




Steps

1. Align the screw holes on the assembly inner frame with the screw holes on the system board and the palm-rest assembly.

   NOTE: Ensure that the tab on the top-left corner of the assembly inner frame is installed underneath the tab on the palm-rest assembly.



2. Replace the ten (M2x3) screws and three (M2x5) screws that secure the assembly inner frame to the system board and the palm-rest assembly.
3. Route the speaker cable firmly through the routing guide on the assembly inner frame and connect the speaker cable to the connector on the system board.
4. Route the antennas cable through the routing guides on the assembly inner frame.

Next steps

1. Install the WLAN card.
2. Install the WWAN card.
3. Install the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
4. Install the 3-cell battery or 4-cell battery.
5. Install the base cover.
6. Install the microSIM card.
7. Install the microSD card.
8. Follow the procedure in after working inside your computer.

LED board

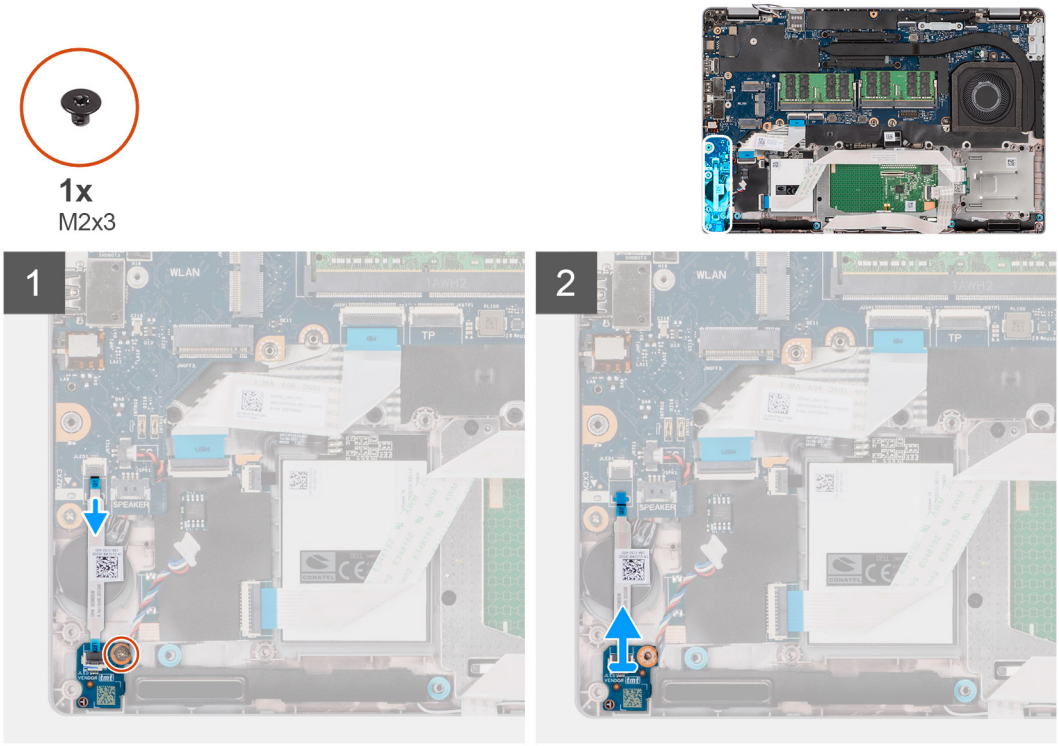
Removing the LED board

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.

About this task

The following image indicates the location of the LED board and provides a visual representation of the removal procedure.



Steps

1. Disconnect the LED-board cable from the connector on the system board.
2. Remove the (M2x3) screw that secures the LED board to the palm-rest assembly.
3. Lift the LED board and cable away from the palm-rest assembly.

Installing the LED board

Prerequisites

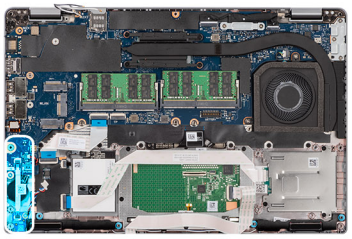
If you are replacing a component, remove the existing component before performing the installation procedure.

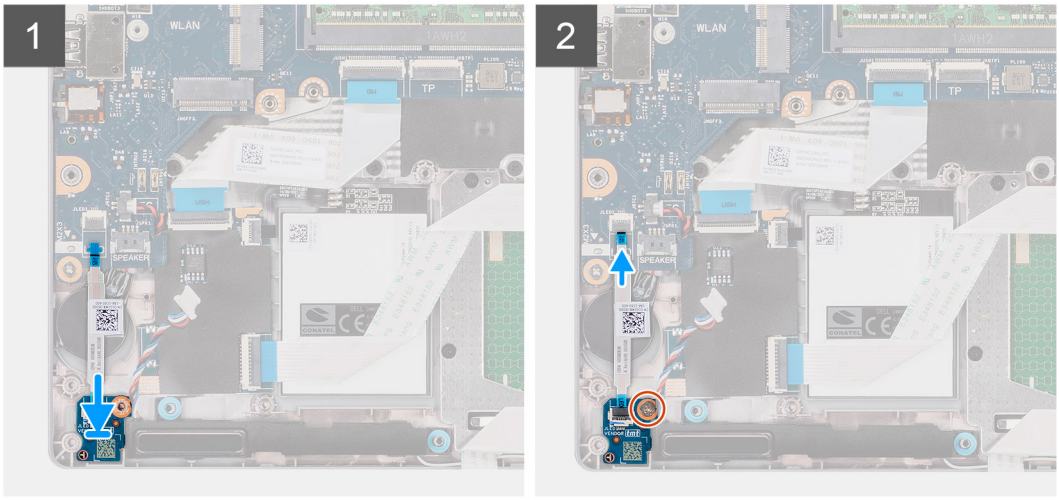
About this task

The following image indicates the location of the LED board and provides a visual representation of the installation procedure.



1x
M2x3





Steps

1. Align the screw hole on the LED board with the screw hole on the palm-rest assembly.
2. Replace the (M2x3) screw to secure the LED board to the palm-rest assembly.
3. Route the LED-board cable and connect the cable to the connector on the system board.

Next steps

1. Install the 3-cell battery or 4-cell battery.
2. Install the base cover.
3. Install the microSIM card.
4. Install the microSD card.
5. Follow the procedure in after working inside your computer.

Heat sink

Removing the heat-sink assembly

Prerequisites

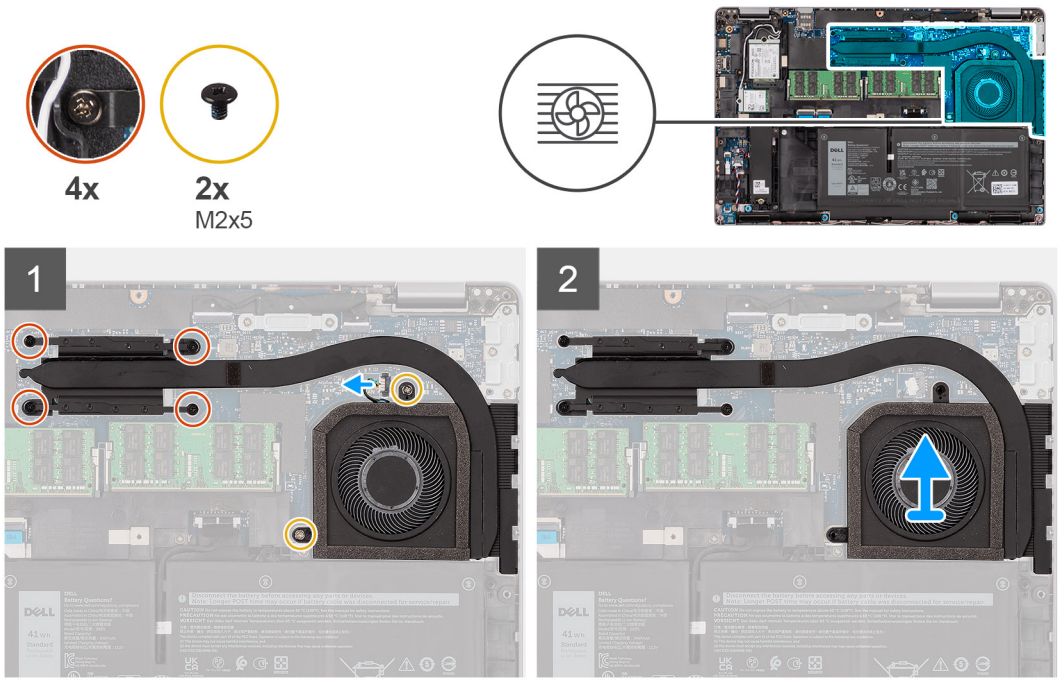
1. Follow the procedure in before working inside your computer.

CAUTION: The heat sink may become hot during normal operation. Allow sufficient time for the heat sink to cool before you touch it.

2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.

About this task

The following image indicates the location of the heat-sink assembly and provides a visual representation of the removal procedure.



Steps

1. Disconnect the system fan cable from the connector on the system board.
2. Remove the two (M2x5) screws that secures the system fan and heat-sink assembly to the system board.
3. Loosen the four captive screws that secure the heat-sink assembly to the system board.
4. Lift the heat-sink assembly off the system board.

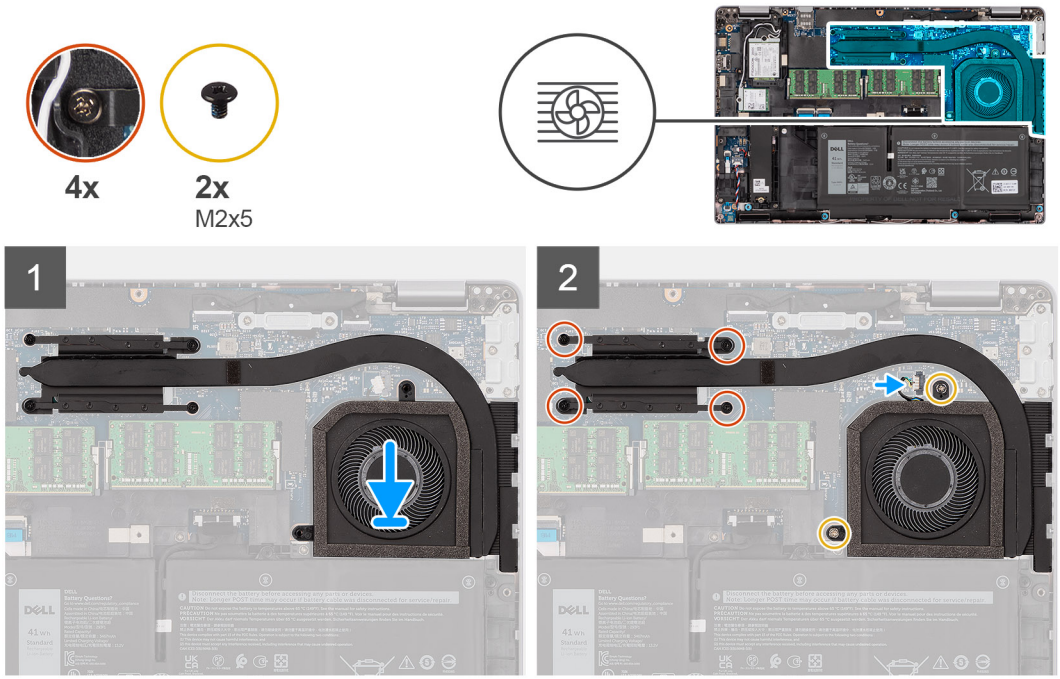
Installing the heat-sink assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the heat-sink assembly and provides a visual representation of the installation procedure.



Steps

1. Align the screw holes on the heat-sink assembly with the screw holes on the system board.
2. Connect the system fan cable to the connector on the system board.
3. Replace the two (M2x5) screws to secure the system fan and heat-sink assembly to the system board.
4. Tighten the four captive screws to secure the heat-sink assembly to the system board.

Next steps

1. Install the 3-cell battery or 4-cell battery.
2. Install the base cover.
3. Install the microSIM card.
4. Install the microSD card.
5. Follow the procedure in after working inside your computer.

Speakers

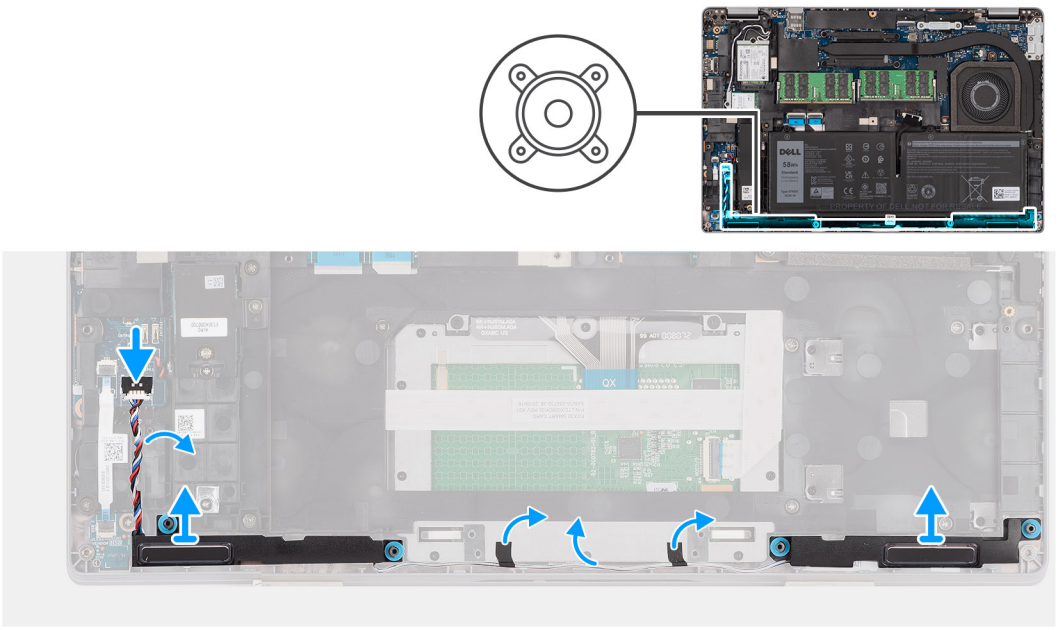
Removing the speaker

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.

About this task

The following images indicate the location of the speaker and provide a visual representation of the removal procedure.



Steps

1. Disconnect the speaker cable from the connector on the system board.
2. Unroute the speaker cable from the routing guides on the assembly inner frame and palm-rest assembly.
3. Lift the speakers along with the cable off the palm-rest assembly.

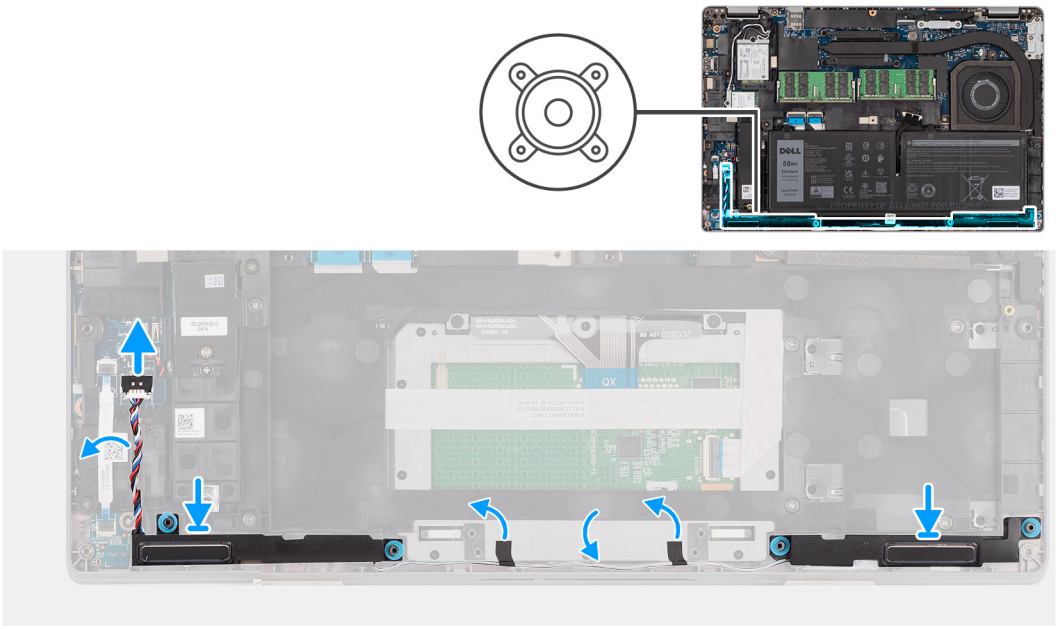
Installing the speaker

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the speaker and provides a visual representation of the installation procedure.



Steps

1. Using the alignment posts and rubber grommets, place the speakers in the slots on the palm-rest assembly.
2. Route the speaker cable through the routing guide on the assembly inner frame and palm-rest assembly.
3. Connect the speaker cable to the connector on the system board.

Next steps

1. Install the 3-cell battery or 4-cell battery.
2. Install the base cover.
3. Install the microSIM card.
4. Install the microSD card.
5. Follow the procedure in after working inside your computer.

System board

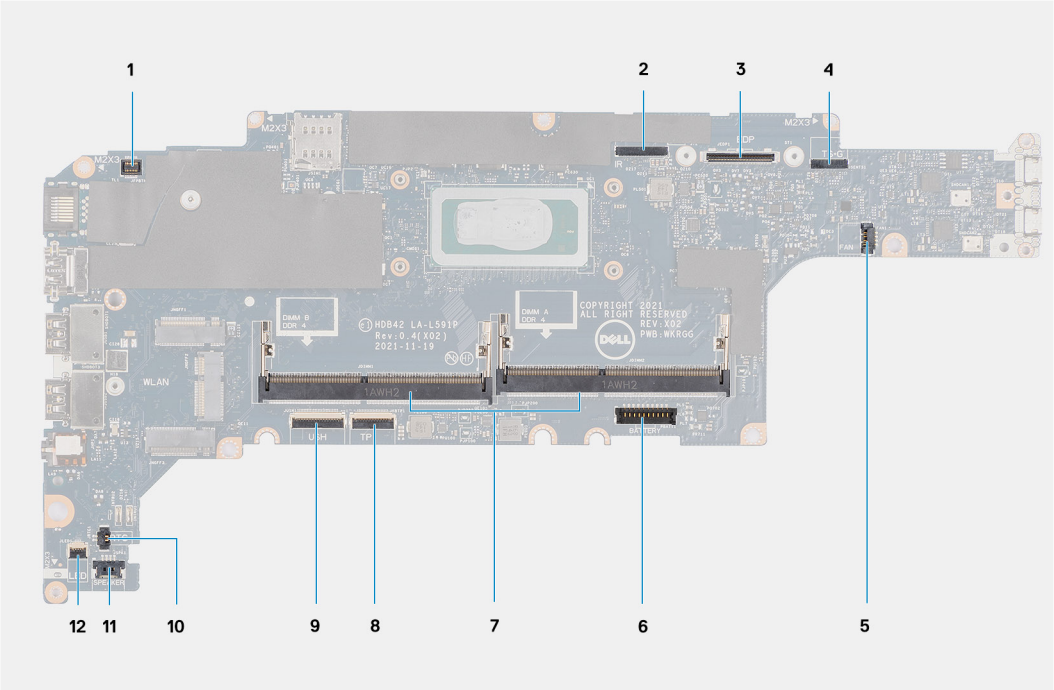
Removing the system board

Prerequisites

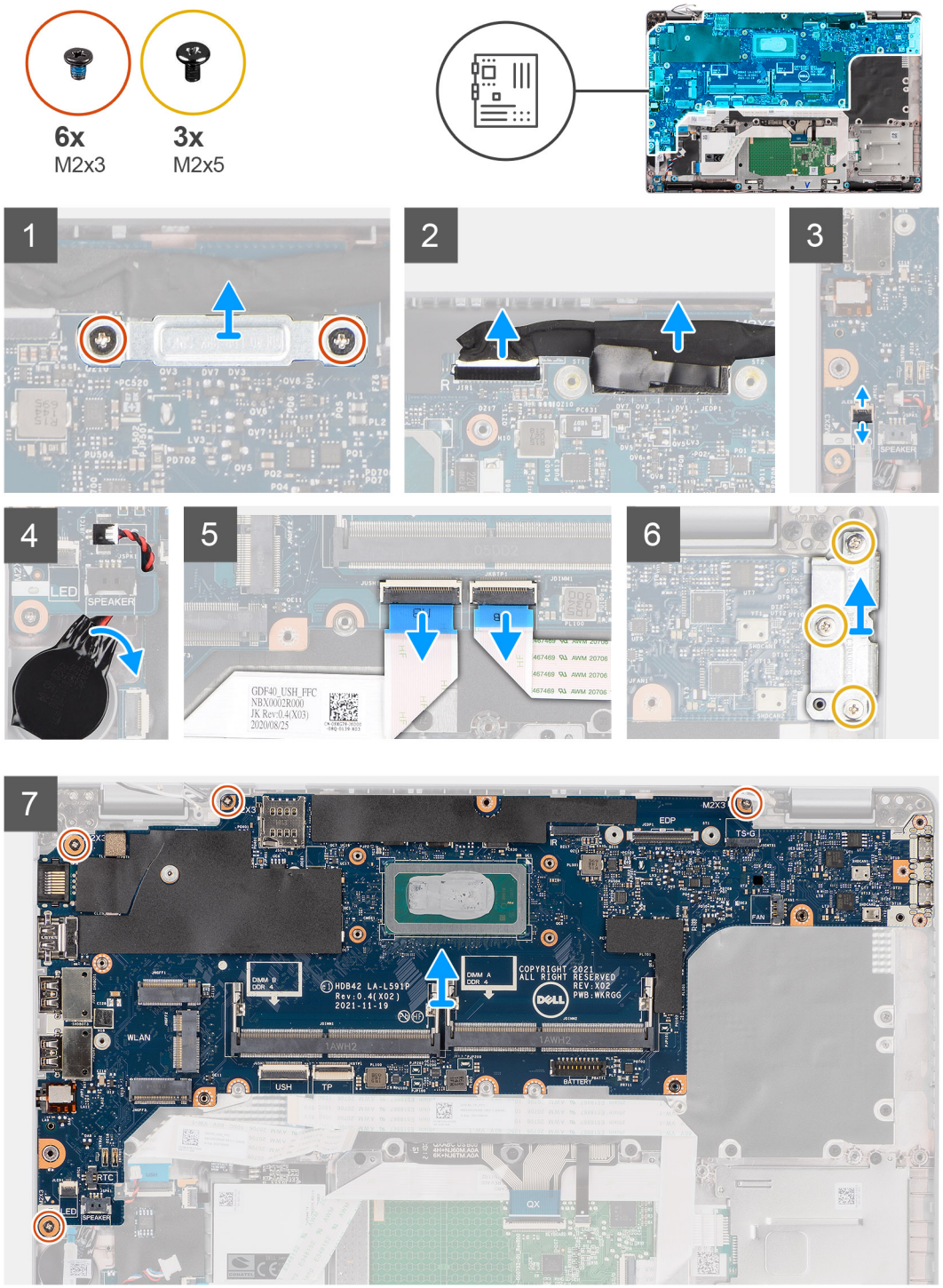
1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.
6. Remove the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Remove the WLAN card.
8. Remove the WWAN card.
9. Remove the memory module.
10. Remove the heat-sink assembly.
11. Remove the assembly inner frame.

About this task

The following images indicate the location of the system board and provide a visual representation of the removal procedure.

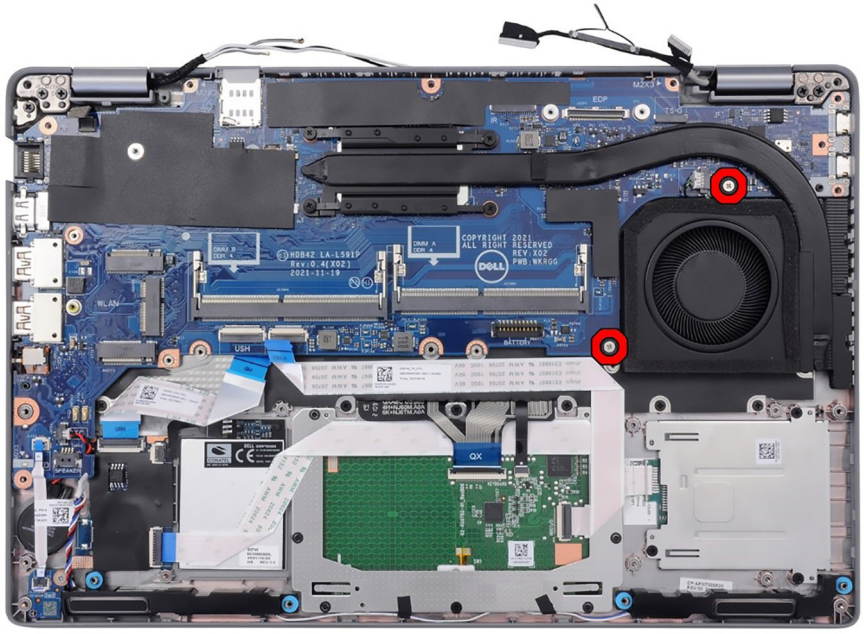


1. Fingerprint reader connector
2. Camera/IR cable connector
3. eDP cable connector
4. Touch and sensor cable connector
5. System fan connector
6. Battery cable connector
7. Memory modules
8. Touchpad cable connector
9. USH board connector
10. Coin-cell battery cable connector
11. Speaker cable connector
12. LED board connector



Steps

NOTE: The system board can be removed and installed with the heat sink attached in order to simplify the procedure and preserve the heat sink between the system board and heat-sink. In order to do so, technicians must also remove the two (M2x5) screws that secure the system fan to the system board.



NOTE: For the models shipped with a fingerprint reader, disconnect the fingerprint reader cable from the connector on the system board before removing the system board from the palm-rest assembly.

1. Remove the two (M2x3) screws that secure the eDP cable bracket to the system board.
2. Lift the eDP cable bracket away from the system.
3. Peel the tape that secures the IR camera cable to the system board.
4. Using the pull tab, disconnect the IR camera and eDP cable from the connectors on the system board.
5. Open the latch and disconnect the LED board cable from the connector on the system board.
6. Peel the coin-cell battery from the palm-rest assembly.
7. Open the latch and disconnect the USH board cable from the connector on the system board.
8. Open the latch and disconnect the touchpad cable from the connector on the system board.
9. Remove the three (M2x5) screws that secure the USB Type-C bracket to the system board.
10. Lift the USB Type-C bracket off the system board.
11. Remove the four (M2x3) screws that secure the system board to the palm-rest assembly and keyboard assembly.
12. Lift the system board off the palm-rest assembly and keyboard assembly.

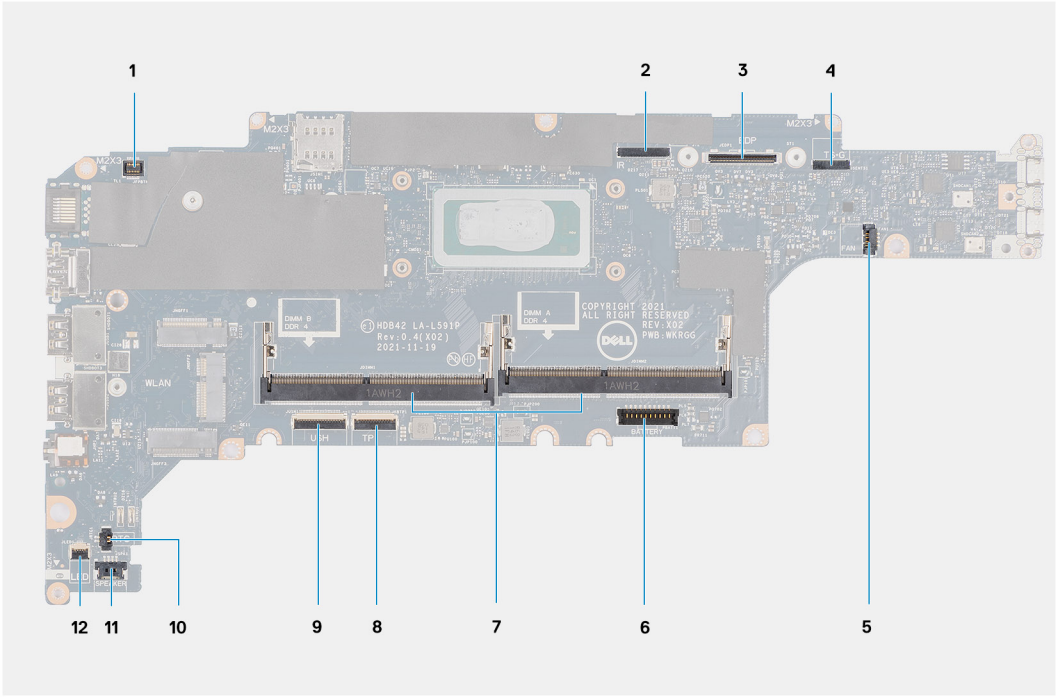
Installing the system board

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

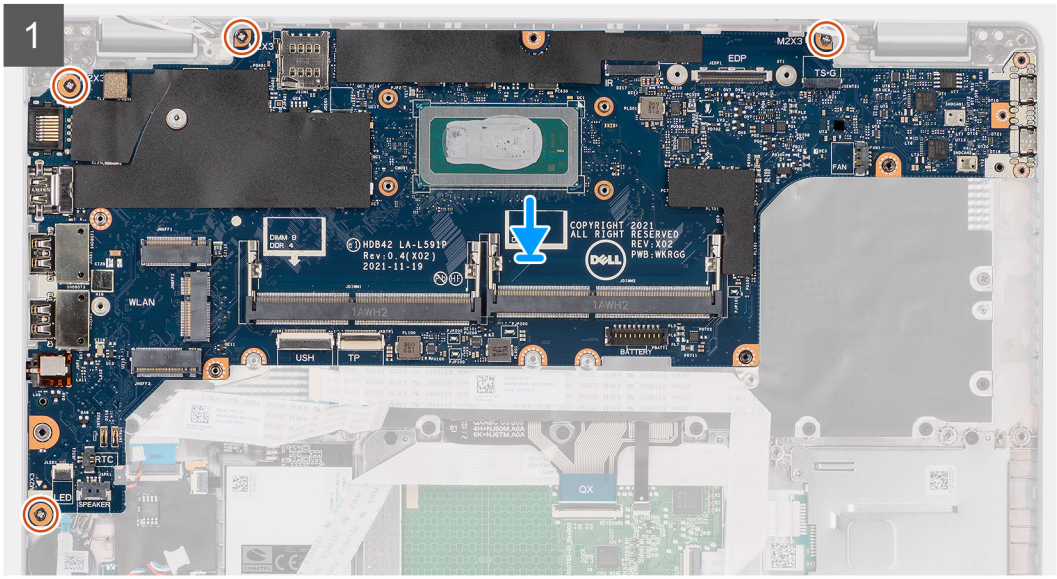
About this task

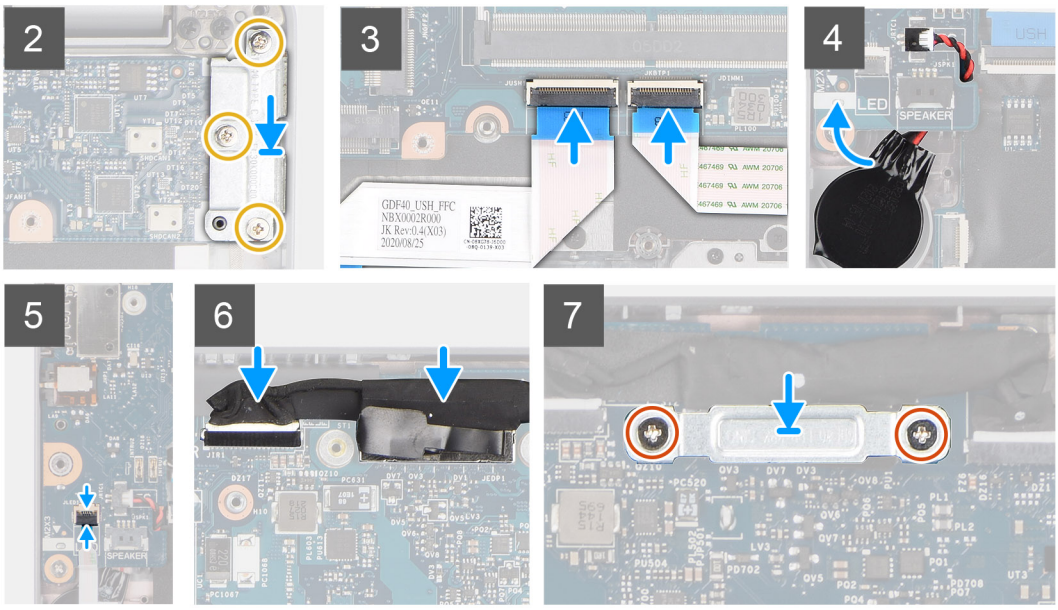
The following image indicates the location of the system board and provides a visual representation of the installation procedure.



1. Fingerprint reader connector
2. Camera/IR cable connector
3. eDP cable connector
4. Touch and sensor cable connector
5. System fan connector
6. Battery cable connector
7. Memory modules
8. Touchpad cable connector
9. USH board connector
10. Coin-cell battery cable connector
11. Speaker cable connector
12. LED board connector







Steps

NOTE: The system board can be removed and installed with the thermal module attached in order to simplify the procedure and preserve the thermal bond between the system board and heat-sink. In order to do so, technicians must also remove the two (M2x5) screws to secure the system fan to the system board.

1. Slide the system board to make the USB Type-C connector to toe-in to the hinge saddle and align the screw holes on the system board with the screw holes on the palm-rest assembly.
2. Replace the four (M2x3) screws to secure the system board to the palm-rest assembly.
3. Align and place the USB Type-C bracket on the system board.
4. Replace the three (M2x5) screws to secure the USB Type-C bracket to the system board.
5. Connect the USH board cable to the connector on the system board and close the latch to secure the cable to the system board.
6. Connect the touchpad cable to the connector on the system board and close the latch to secure the cable to the system board.
7. Route the coin-cell battery cable under the system board and adhere the coin-cell battery to the palm-rest assembly.
8. Connect the LED board cable to the connector on the system board and close the latch to secure the cable to the system board.
9. Route the IR camera and eDP cable through the routing guide on the system board.
10. Connect the eDP cable to the connector on the system board.
11. Connect the IR camera cable to the connector on the system board.
12. Adhere the tape that secures the IR camera cable to the system board.
13. Align the screw holes on the eDP cable bracket with the screw holes on the system board.
14. Replace the two (M2x3) screws to secure the eDP cable bracket to the system board.

    NOTE: For the models shipped with a fingerprint reader, connect the cable from the power button with fingerprint reader to the fingerprint reader connector on the system board.

Next steps

1. Install the assembly inner frame.
2. Install the heat sink.
3. Install the memory module.
4. Install the WLAN card.
5. Install the WWAN card.
6. Install the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Install the 3-cell battery or 4-cell battery.

8. Install the base cover.
9. Install the microSIM card.
10. Install the microSD card.
11. Follow the procedure in after working inside your computer.

Power-button with optional fingerprint reader

Removing the power button with optional fingerprint reader

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.
6. Remove the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Remove the WLAN card.
8. Remove the WWAN card.
9. Remove the memory module.
10. Remove the assembly inner frame.
11. Remove the system board.

About this task

NOTE: The system board can be removed with the heat sink attached in order to simplify the procedure and preserve the thermal bond between the system board and heat sink.

The following image indicates the location of the power button with optional fingerprint reader and provides a visual representation of the removal procedure.

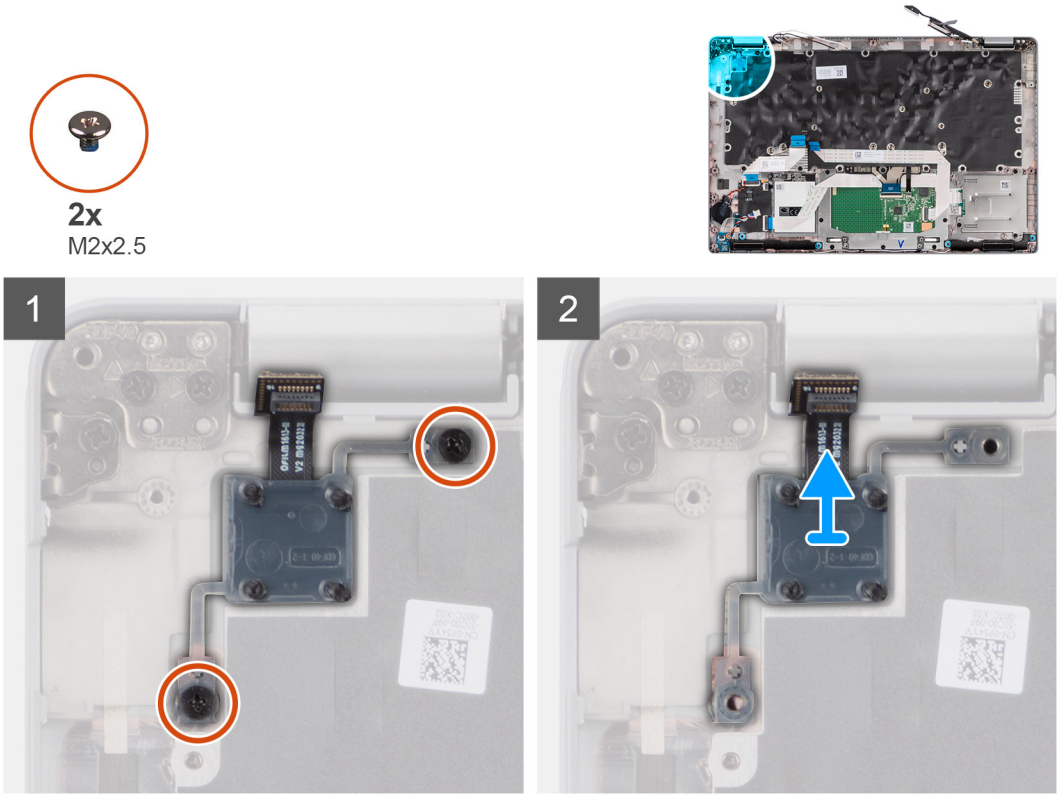


Figure 1. Removing the power button with optional fingerprint reader

Steps

1. Remove the two screws (M2x2.5) that secure the power button to the palm-rest assembly.
2. Lift the power button off the palm-rest assembly.

Installing the power button with optional fingerprint reader

About this task

NOTE: The system board can be installed with the heat sink attached in order to simplify the procedure and preserve the thermal bond between the system board and heat sink.

The following image indicates the location of the power button with optional fingerprint reader and provides a visual representation of the installation procedure.

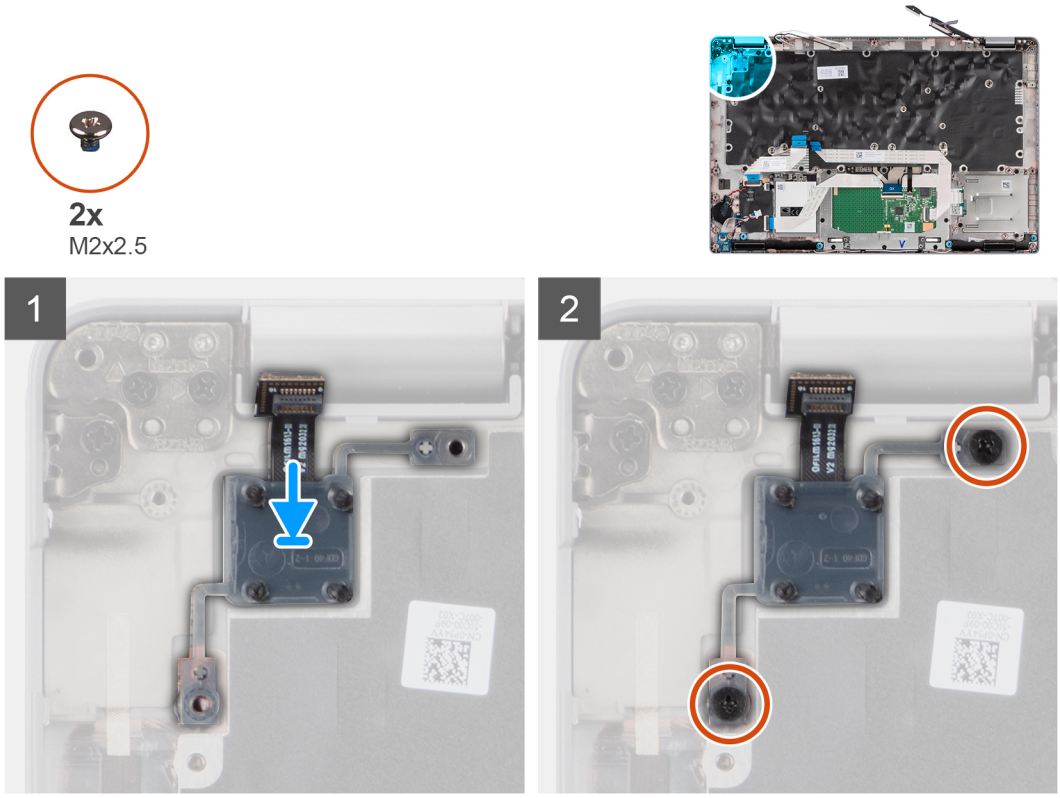


Figure 2. Installing the power button with optional fingerprint reader

Steps

1. Align and place the power button on the palm-rest assembly.
2. Replace the two screws (M2x2.5) to secure the power button to the palm-rest assembly.

Next steps

1. Install the system board.
2. Install the assembly inner frame.
3. Install the memory module.
4. Install the WLAN card.
5. Install the WWAN card.
6. Install the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Install the 3-cell battery or 4-cell battery.
8. Install the base cover.
9. Install the microSIM card.
10. Install the microSD card.

11. Follow the procedure in after working inside your computer.

Smart card reader

Removing the smart card reader

Prerequisites

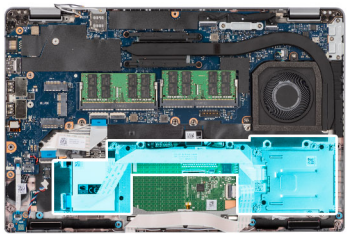
1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.
6. Remove the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Remove the WLAN card.
8. Remove the WWAN card.
9. Remove the assembly inner frame.

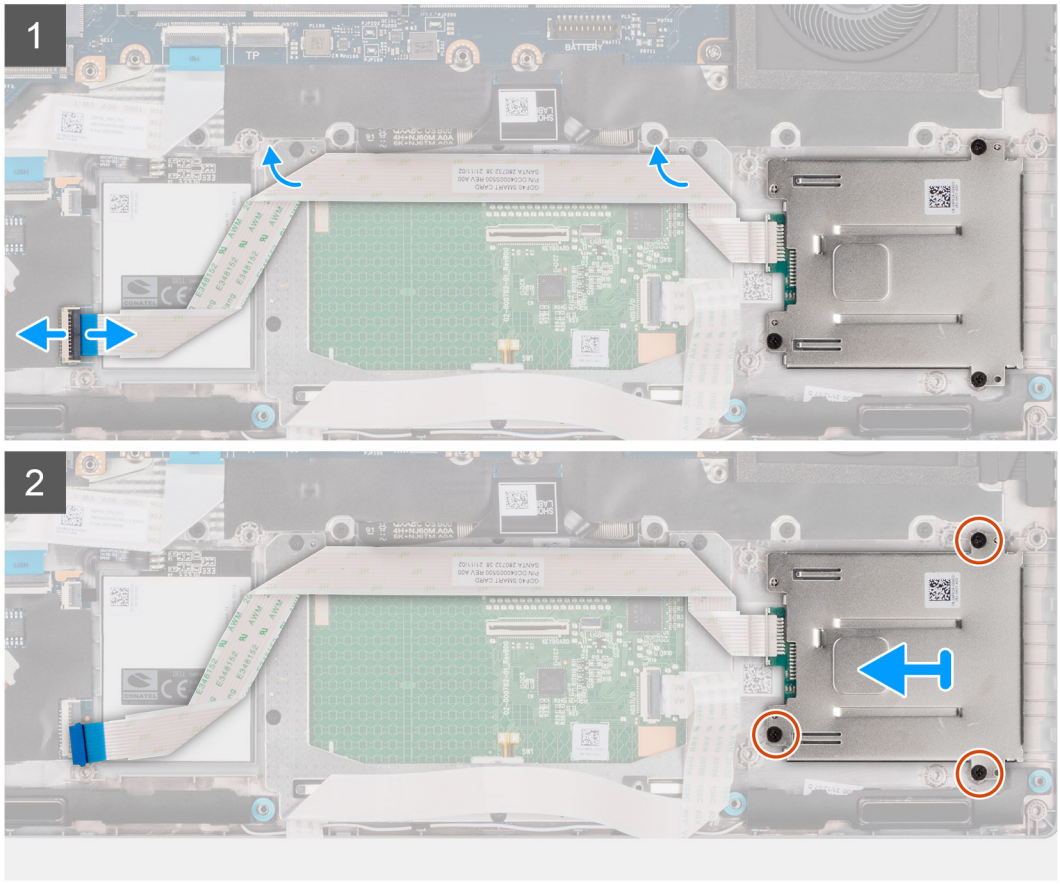
About this task

The following images indicate the location of the smart card reader and provide a visual representation of the removal procedure.



3x
M2x2.5





Steps

1. Open the latch and disconnect the smart card reader cable from the connector on the USH board.
2. Peel the smart card reader cable.
3. Remove the three (M2x2.5) screws that secure the smart card reader to the palm-rest assembly.
4. Lift the smart card reader off the palm-rest assembly.

Installing the smart card reader

Prerequisites

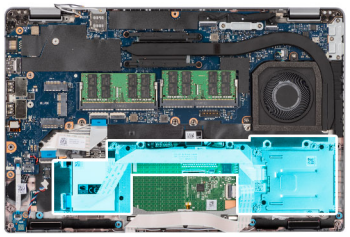
If you are replacing a component, remove the existing component before performing the installation procedure.

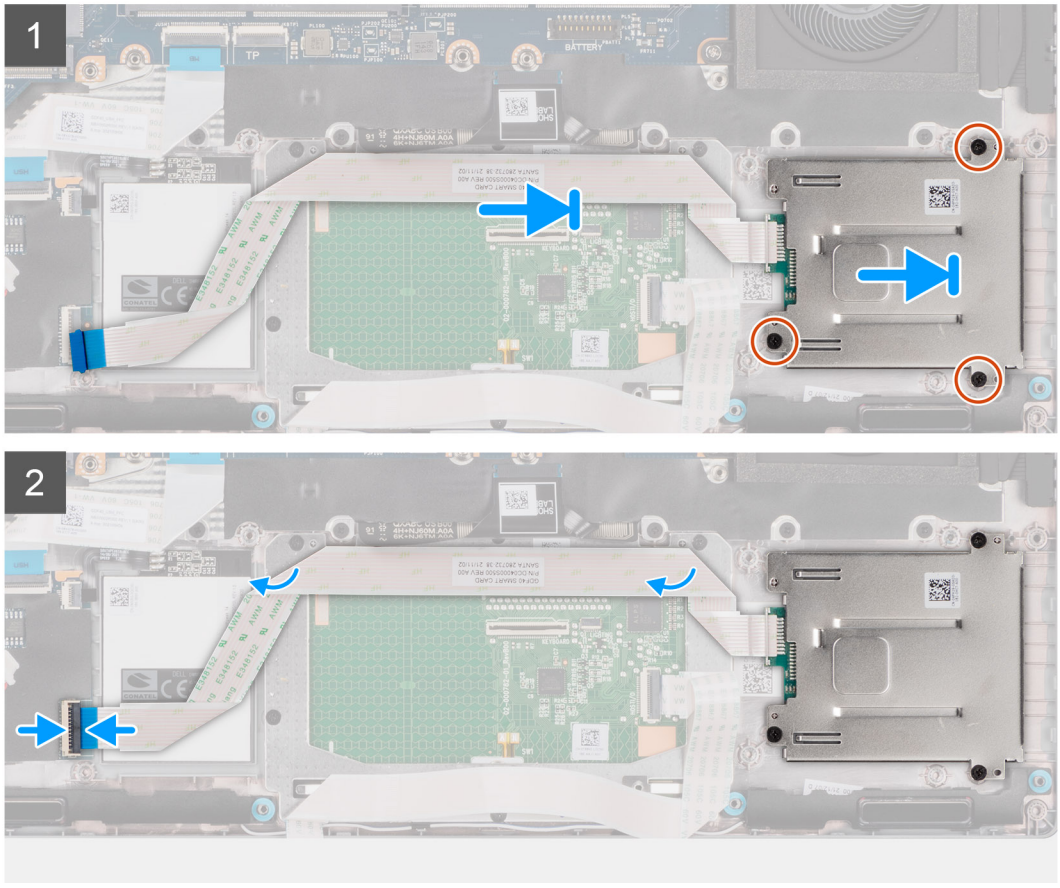
About this task

The following image indicates the location of the smart card reader and provides a visual representation of the installation procedure.



3x
M2x2.5





Steps

1. Align and place the smart card reader on the palm-rest assembly.
2. Replace the three (M2x2.5) screws to secure the smart card reader to the palm-rest assembly.
3. Adhere the smart card reader cable.
4. Connect the smart card reader cable to the connector on the USH board.

Next steps

1. Install the assembly inner frame.
2. Install the WLAN card.
3. Install the WWAN card.
4. Install the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
5. Install the 3-cell battery or 4-cell battery.
6. Install the base cover.
7. Install the microSIM card.
8. Install the microSD card.
9. Follow the procedure in after working inside your computer.

Keyboard assembly

Removing the keyboard assembly

Prerequisites

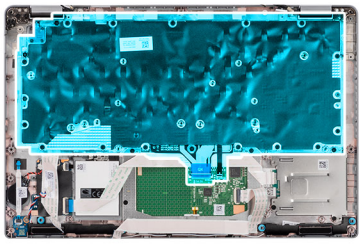
1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.
6. Remove the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Remove the WLAN card.
8. Remove the WWAN card.
9. Remove the memory module.
10. Remove the assembly inner frame.
11. Remove the system board.

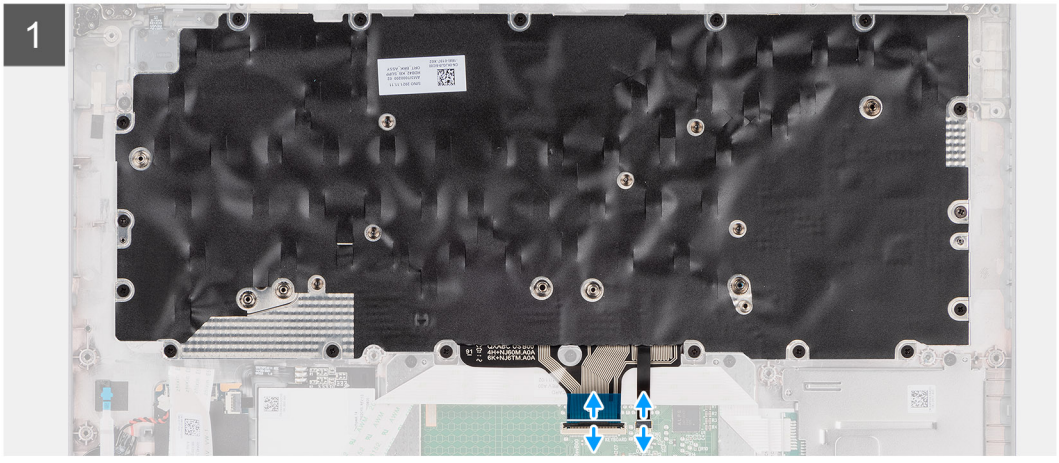
About this task

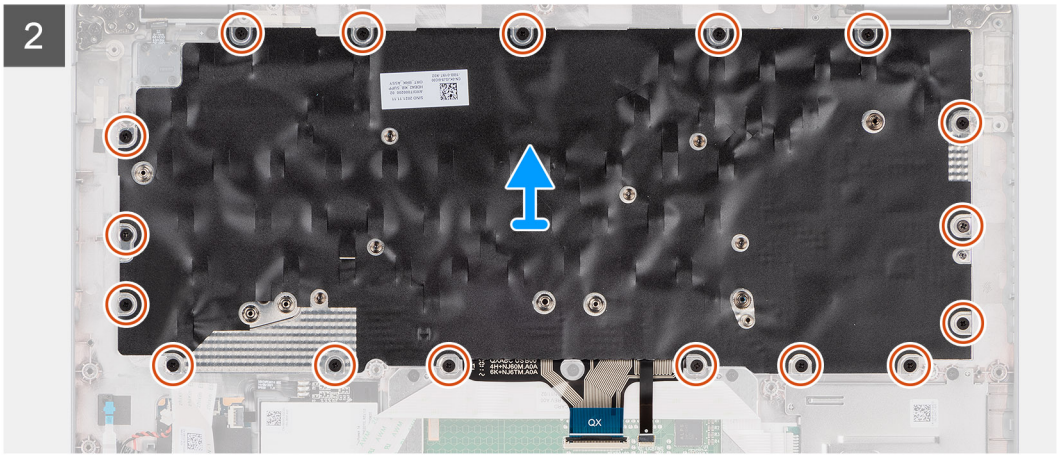
NOTE: The system board can be removed with the heat sink attached in order to simplify the procedure and preserve the thermal bond between the system board and heat sink.

The following images indicate the location of the keyboard assembly and provide a visual representation of the removal procedure.











Steps

1. Open the latch and disconnect the keyboard cable from the connector on the touchpad.
2. Disconnect the keyboard backlight cable from the connector on the touchpad.
3. Remove the seventeen (M2x2) screws that secure the keyboard assembly to the palm-rest assembly.
4. Remove the keyboard assembly off the palm-rest assembly.

5. Flip the keyboard assembly.
6. Remove the six (M2x2) screws that secure the keyboard to the keyboard bracket.
7. Remove the keyboard from the keyboard bracket.

Installing the keyboard assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

NOTE: The system board can be installed with the heat sink attached in order to simplify the procedure and preserve the thermal bond between the system board and heat sink.

The following image indicates the location of the keyboard assembly and provides a visual representation of the installation procedure.





Steps

1. Align and place the keyboard on the keyboard bracket.
2. Replace the six (M2x2) screws to secure the keyboard to the keyboard bracket.
3. Flip the keyboard assembly.
4. Align and place the keyboard assembly on the palm-rest assembly.
5. Replace the seventeen (M2x2) screws to secure the keyboard assembly to the palm-rest assembly.
6. Connect the keyboard cable and keyboard backlight cable to the connector on the touchpad.

Next steps

1. Install the system board.
2. Install the assembly inner frame.
3. Install the memory module.
4. Install the WLAN card.
5. Install the WWAN card.
6. Install the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Install the 3-cell battery or 4-cell battery.
8. Install the base cover.
9. Install the microSIM card.
10. Install the microSD card.
11. Follow the procedure in after working inside your computer.

Display assembly

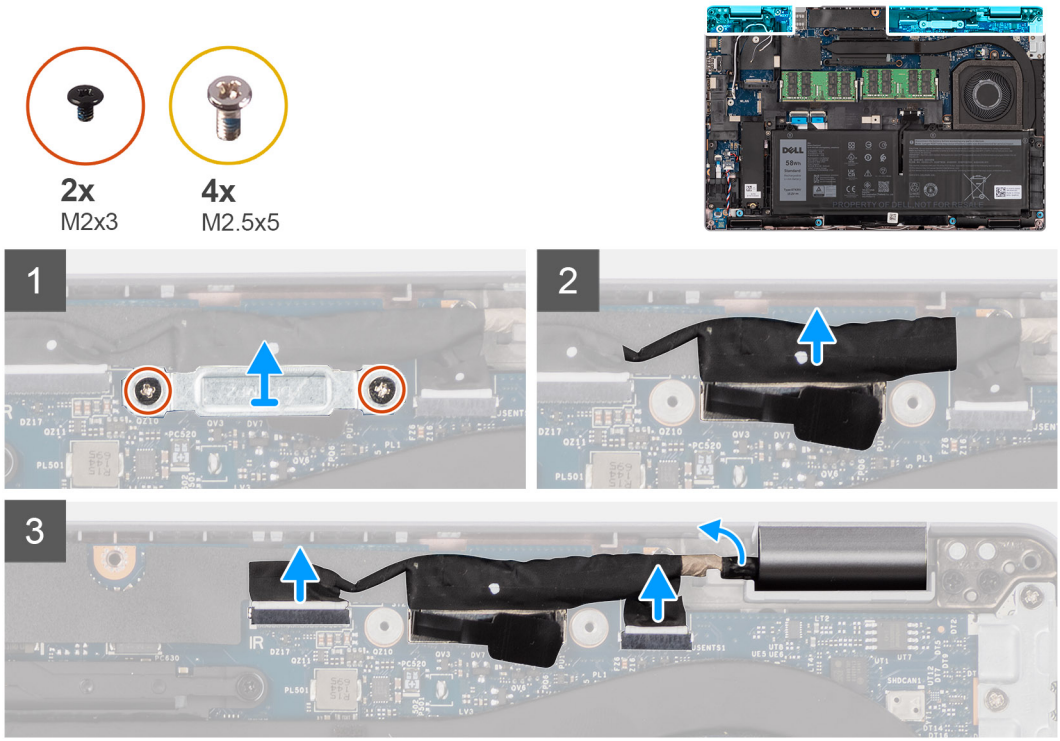
Removing the display assembly

Prerequisites

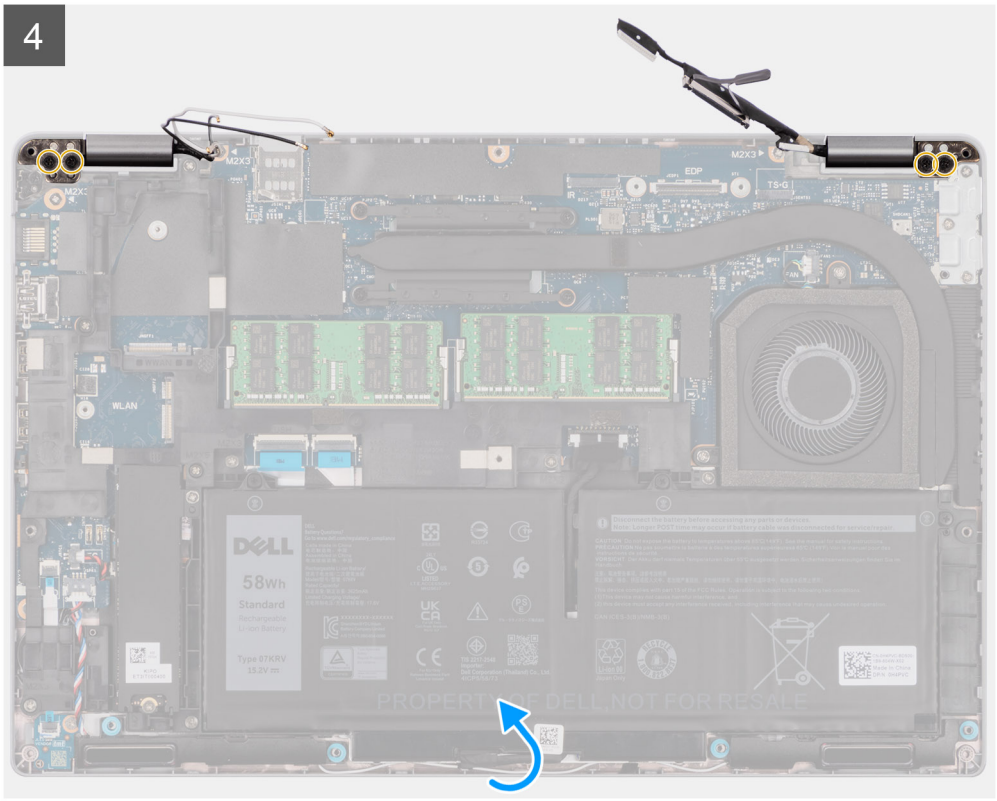
1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the WLAN card.
6. Remove the WWAN card.

About this task

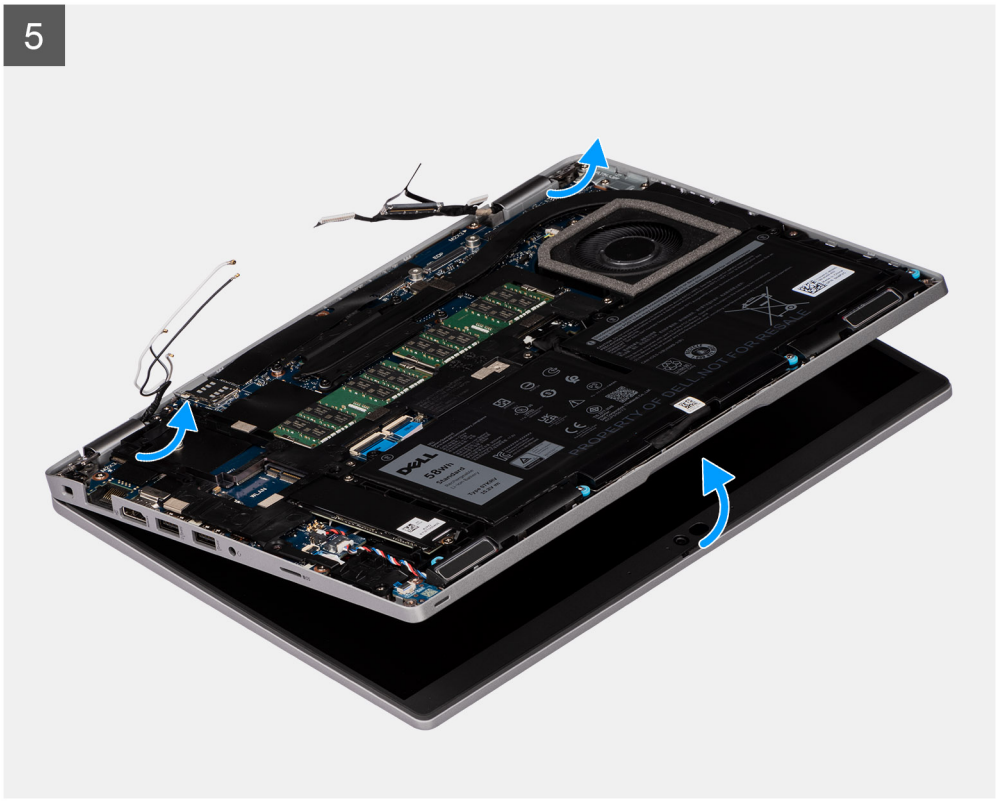
The following images indicate the location of the display assembly and provide a visual representation of the removal procedure.



4



5





Steps

1. Remove the two screws (M2x3) that secure the display cable bracket to the system board.
2. Lift the display cable bracket away from the system board.
3. Using the pull tab, gently disconnect the display cable from the connector on the system board.

   CAUTION: The display cable, sensor board cable and IR camera cable are part of the same composite cable structure. To avoid damaging the cables, and the cable connectors on the system board, do not apply tension on any of these cables until all cables in the series have been disconnected.

4. Disconnect the IR camera cable from the connector on the system board.
5. Disconnect the sensor board cable from the connector on the system board.
6. Remove the display cable, sensor board cable and IR camera cable from the routing guide on the palm-rest and keyboard assembly.
7. Remove the four (M2.5x5) screws that secure the display hinges to the system board.
8. Lift at an angle the palm-rest and keyboard assembly to pry open the display hinges.
9. Remove the palm-rest and keyboard assembly off the display assembly.

Installing the display assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

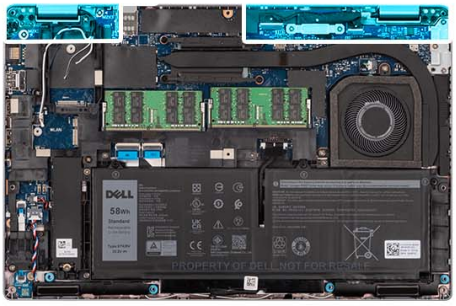
About this task

The following image indicates the location of the display assembly and provides a visual representation of the installation procedure.

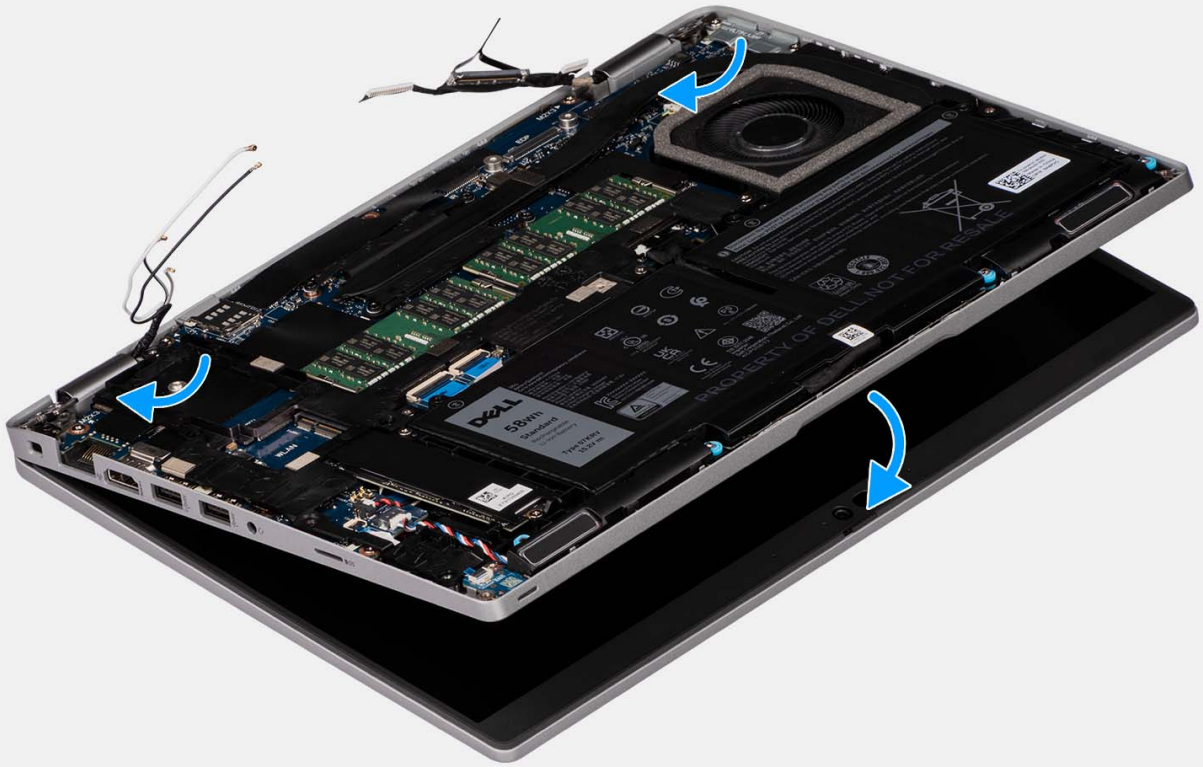


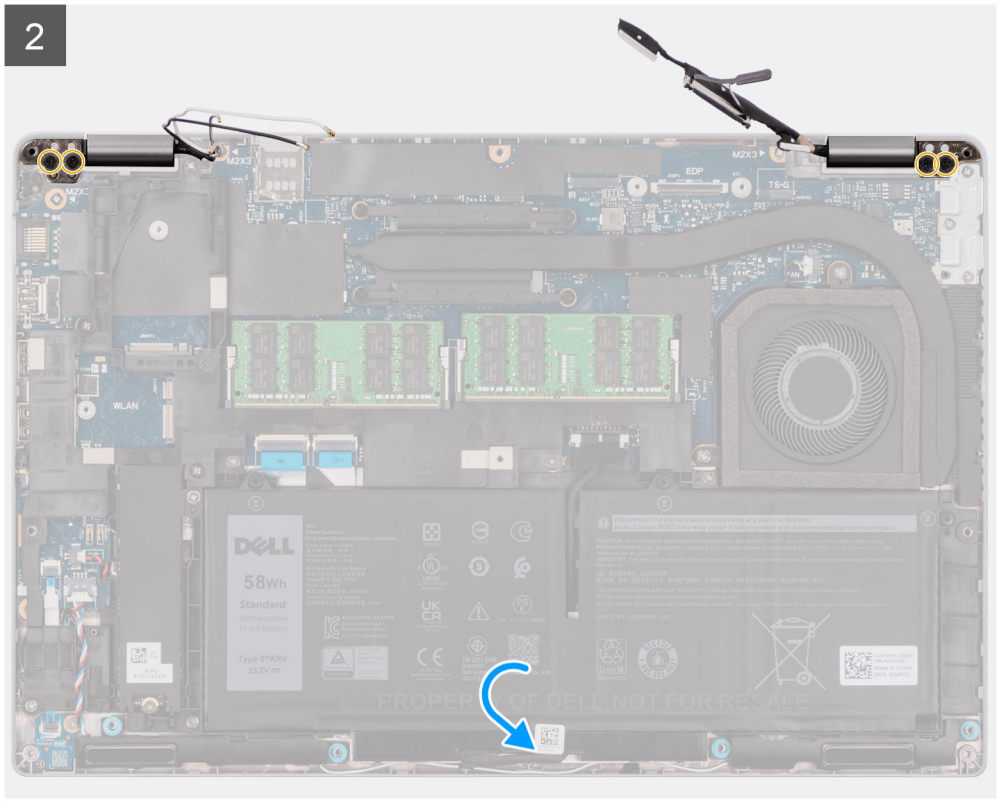
2x
M2x3

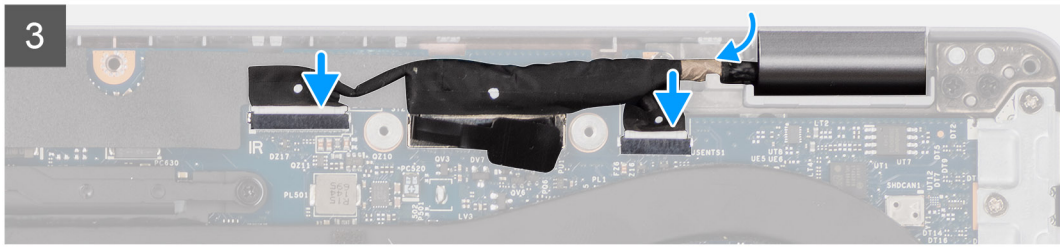
4x
M2.5x5

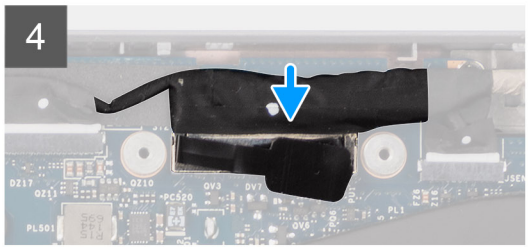


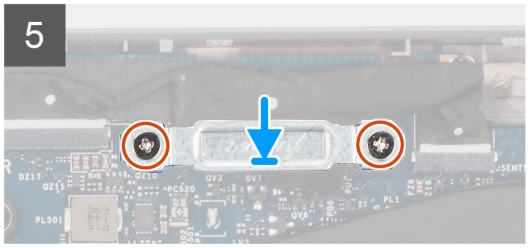
1











Steps

1. Place the palm-rest assembly on the display. Close the display hinges and align the screw holes on the display hinges with screw holes on the palm-rest assembly.
2. Replace the four (M2.5x5) screws to secure the display hinges to the palm-rest assembly.
3. Route the display cable, sensor board cable and IR camera cable through the routing guide on the system board.
4. Connect the IR camera cable to the connector on the system board.
5. Connect the sensor board cable to the connector on the system board.
6. Connect the display cable to the connector on the system board.
7. Place the display cable bracket on the system board and align the screw holes on the display cable bracket with the screw holes on the system board.
8. Replace the two screws (M2x3) that secure the display cable bracket to the system board.

Next steps

1. Install the WLAN card.

2. Install the WWAN card.
3. Install the base cover.
4. Install the microSIM card.
5. Install the microSD card.
6. Follow the procedure in after working inside your computer.

Display bezel

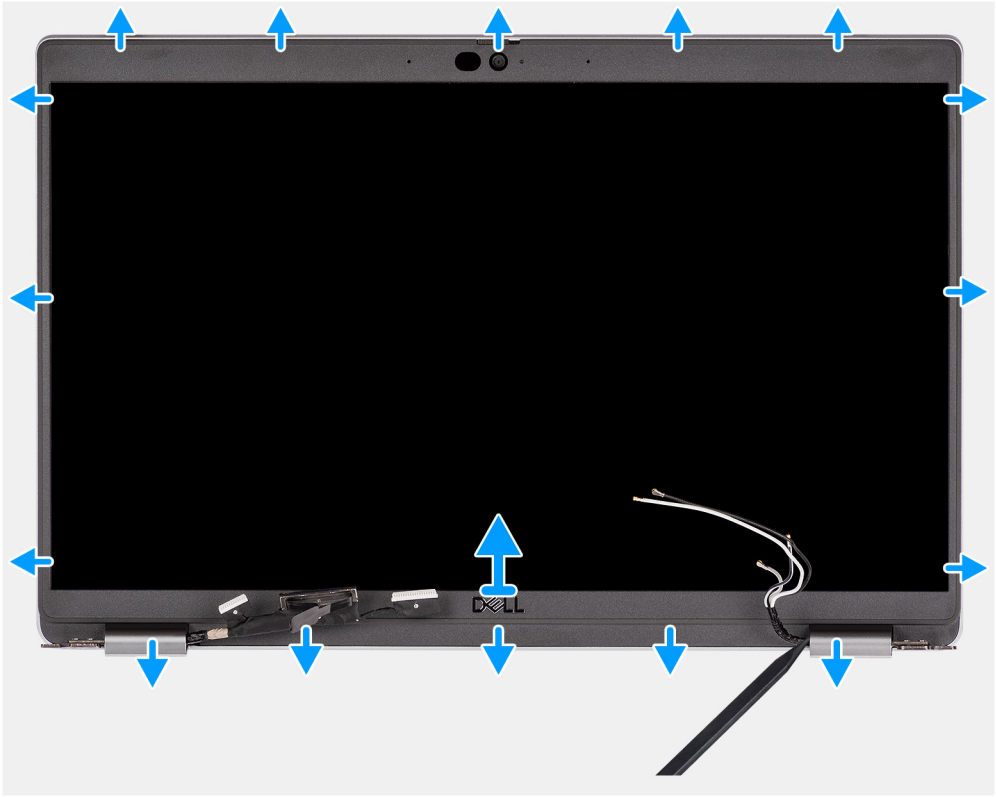
Removing the display bezel

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the WLAN card.
6. Remove the WWAN card.
7. Remove the display assembly.

About this task

The following images indicate the location of the display bezel and provide a visual representation of the removal procedure.



Steps

NOTE: The display bezel is adhered to the display panel with adhesive. Insert a plastic scribe into the recesses near both hinge caps to start the prying process to release the display bezel. Pry along the outside edge of the display bezel and work your way around the entire display bezel until the display bezel is separated from the display cover.

CAUTION: Carefully pry and remove the display bezel to minimize the risk of display panel damages.

1. Insert a plastic scribe into the recesses near both hinge caps to start the prying process to release the display bezel.
2. Pry along the outside edge of the display bezel and work your way around the entire display bezel until the display bezel is separated from the display cover.
3. Lift the display bezel from the display assembly.

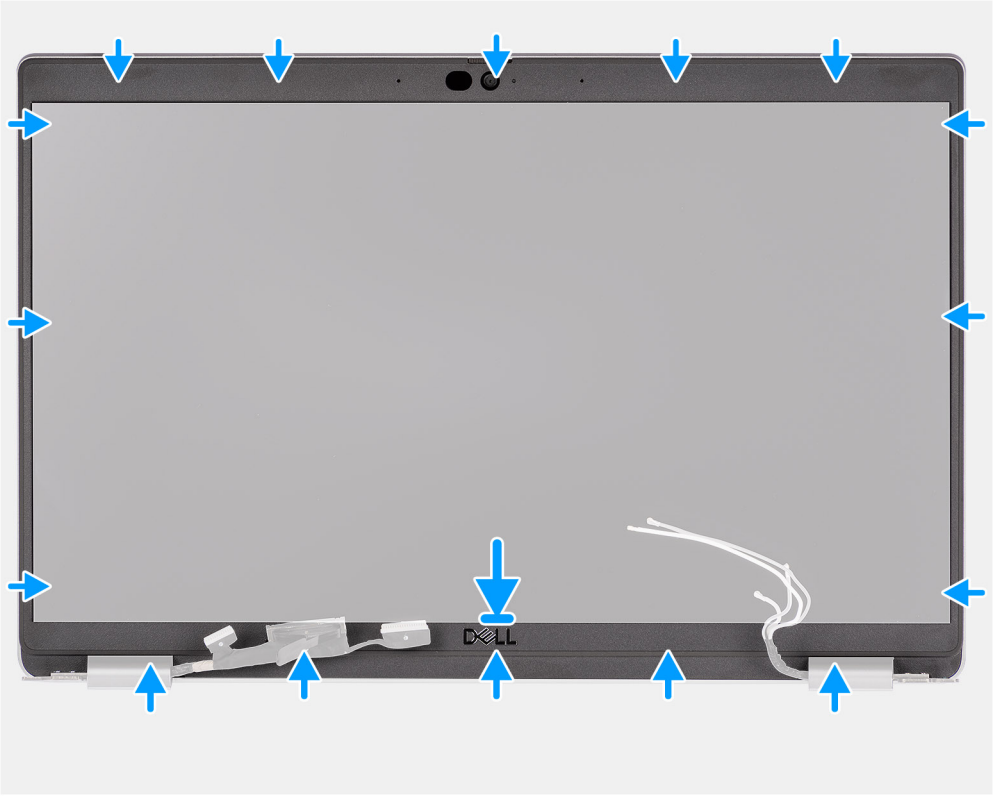
Installing the display bezel

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the display bezel and provides a visual representation of the installation procedure.



Steps

1. Align and place the display bezel on the display assembly.
2. Gently snap the display bezel into place.

Next steps

1. Install the display assembly.
2. Install the WLAN card.
3. Install the WWAN card.
4. Install the base cover.
5. Install the microSIM card.
6. Install the microSD card.
7. Follow the procedure in after working inside your computer.

Display panel

Removing the display panel

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the WLAN card.
6. Remove the WWAN card.
7. Remove the display assembly.
8. Remove the display bezel.

About this task

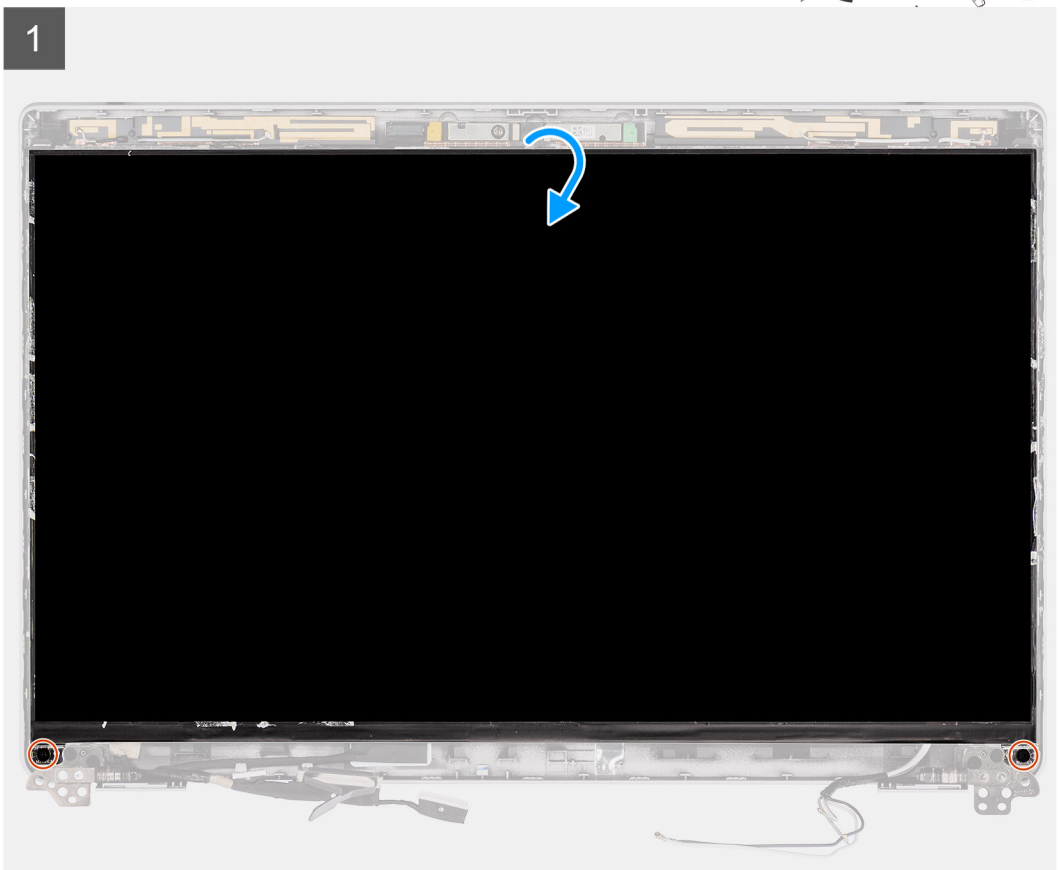
The following images indicate the location of the display panel and provide a visual representation of the removal procedure.



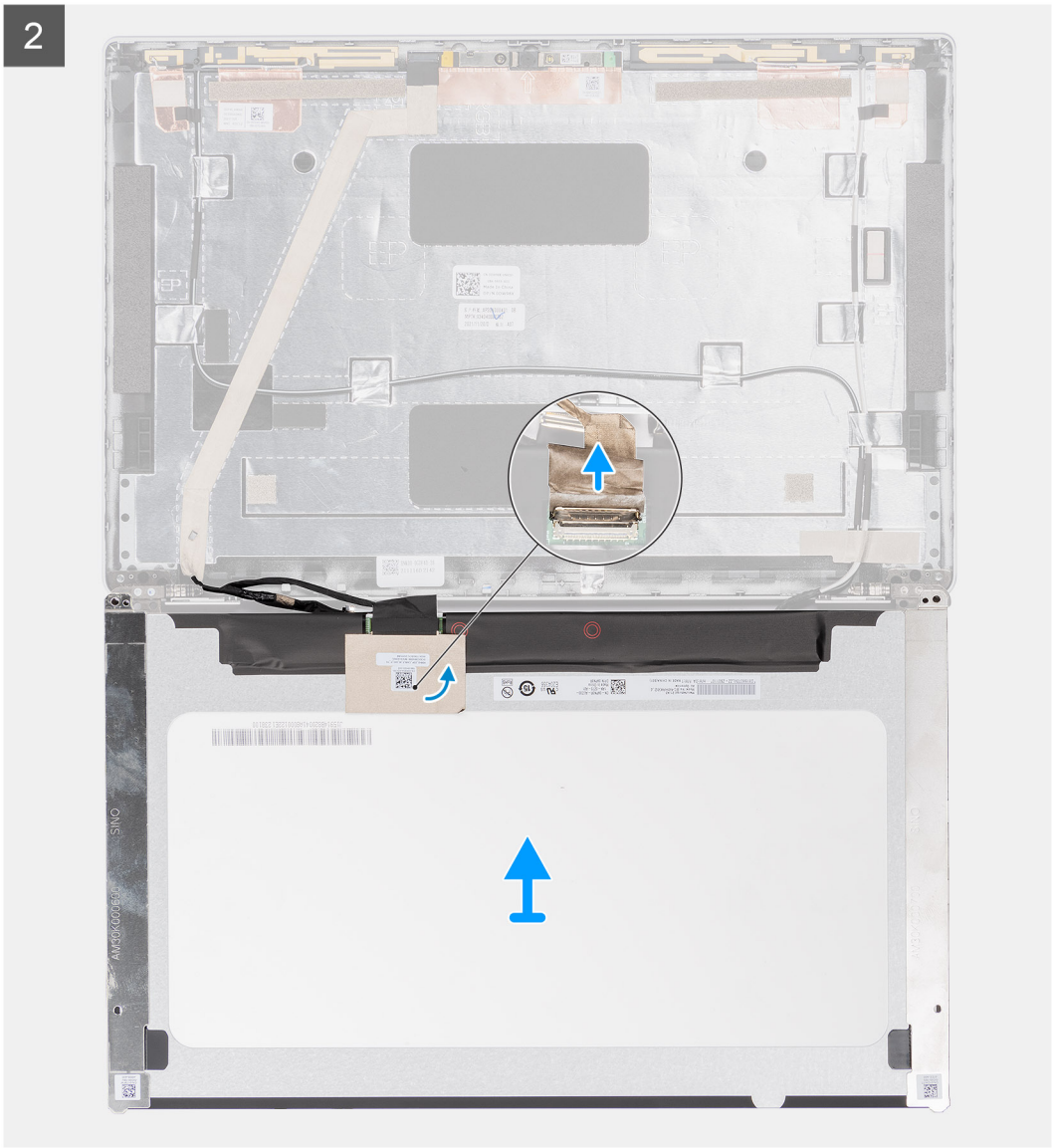
2x
M2.5x3



1



2



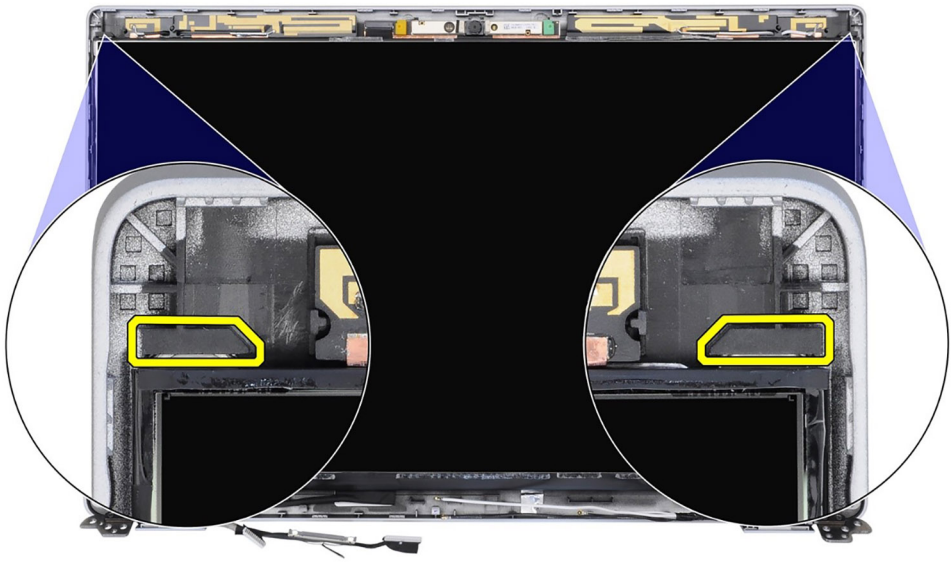


Steps

NOTE: The display panel is preassembled with the display brackets as a single service part. Do not pull the Stretch Release (SR) tapes and separate the brackets from the display panel.

1. Remove the two (M2.5x3) screws that secure the display panel to the display back cover.

   NOTE: While removing the display panel, disengage the display panel tabs from the display cover before flipping it over.



2. Lift and open the display panel to access the display cable.
3. Peel the conductive tape on the display cable connector.
4. Open the latch and disconnect the cable from the connector on the display panel.
5. Lift the display panel away from the display back cover.

Installing the display panel

Prerequisites

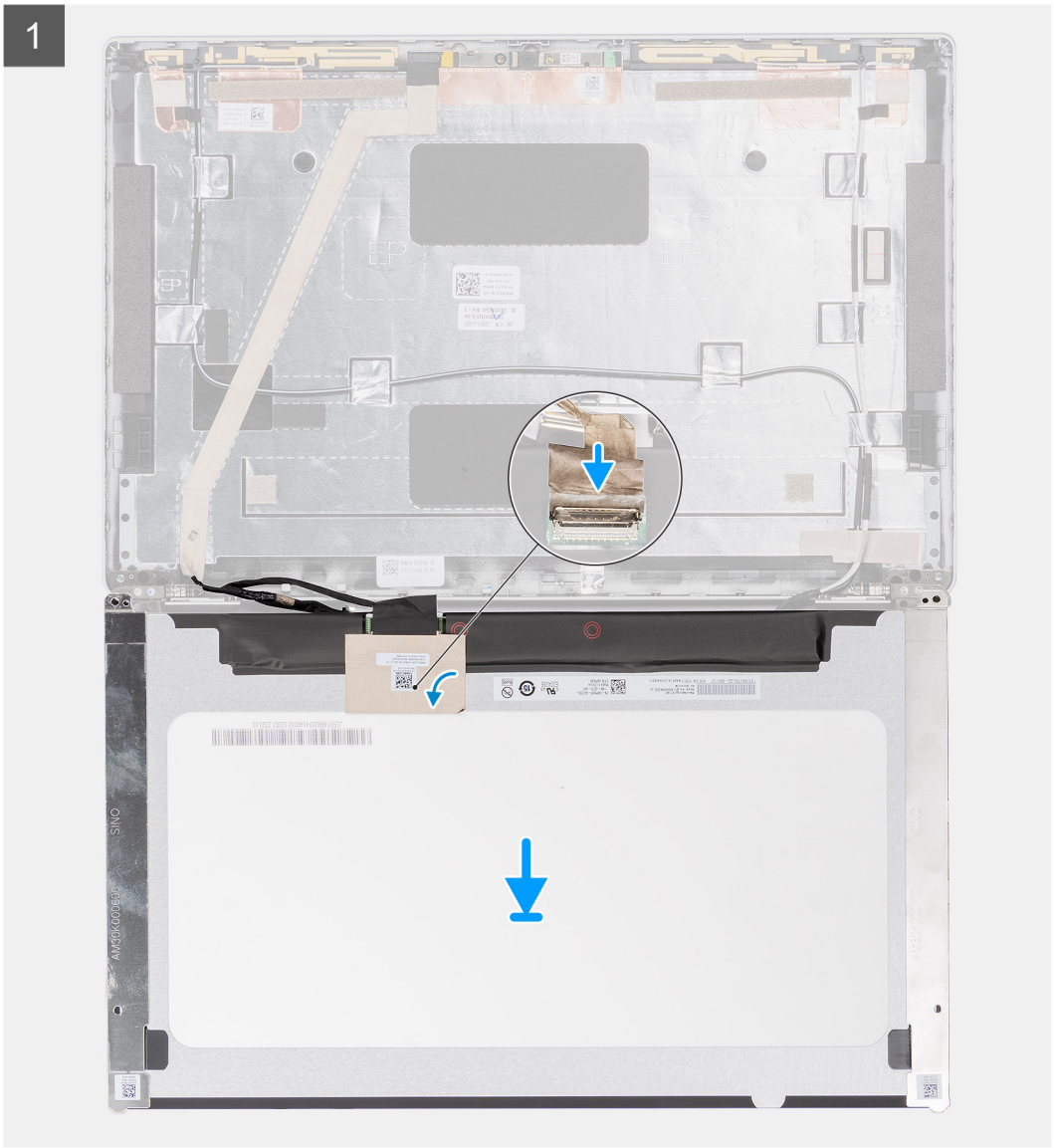
If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the display panel and provides a visual representation of the installation procedure.



1

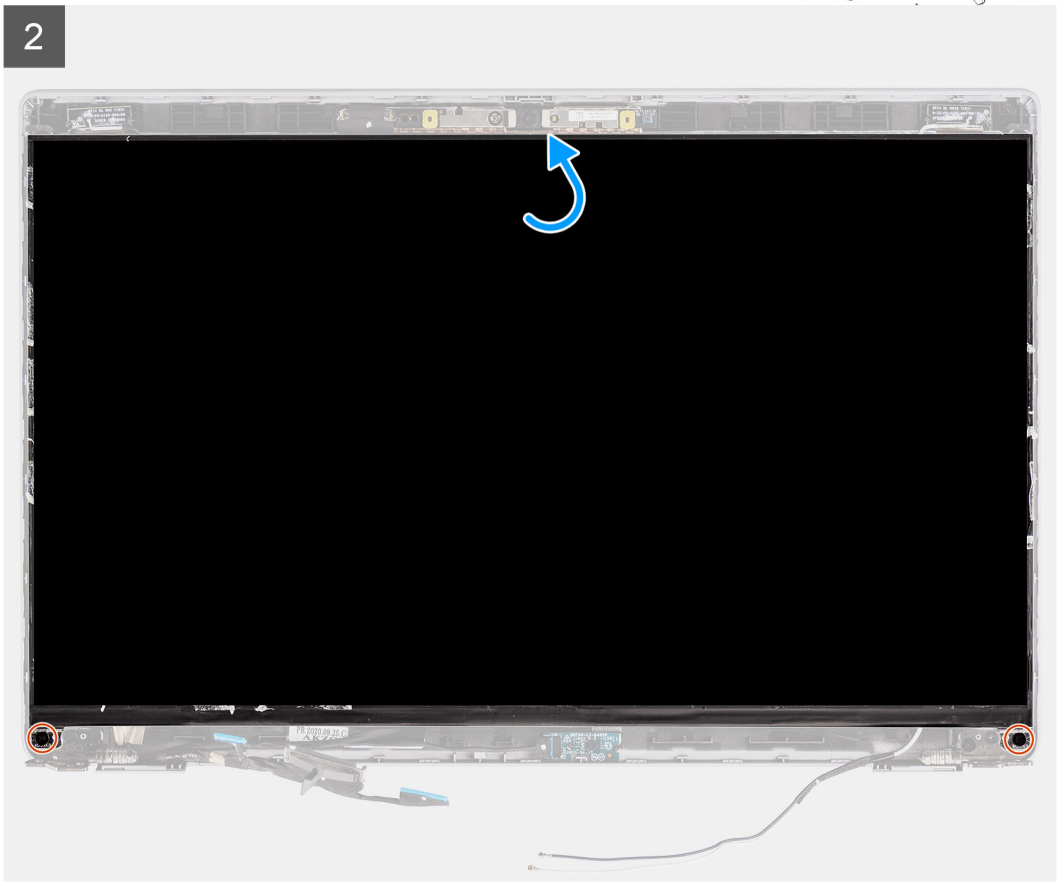




2x
M2.5x3



2



Steps

1. Connect the display cable to the connector on the display panel and close the latch.
2. Adhere the conductive tape to secure the display cable to the display panel.
3. Close the display panel and the display back cover to assemble.

   NOTE: Ensure that the display panel tabs are inserted into the slots on the display cover.

4. Replace the two (M2.5x3) screws to secure the display panel to the display back cover.

Next steps

1. Install the display bezel.
2. Install the display assembly.
3. Install the WLAN card.
4. Install the WWAN card.
5. Install the base cover.
6. Install the microSIM card.
7. Install the microSD card.
8. Follow the procedure in after working inside your computer.

Camera/microphone module

Removing the camera module

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the WLAN card.
6. Remove the WWAN card.
7. Remove the display assembly.
8. Remove the display bezel.
9. Remove the display panel.

About this task

The following images indicate the location of the camera module and provide a visual representation of the removal procedure.

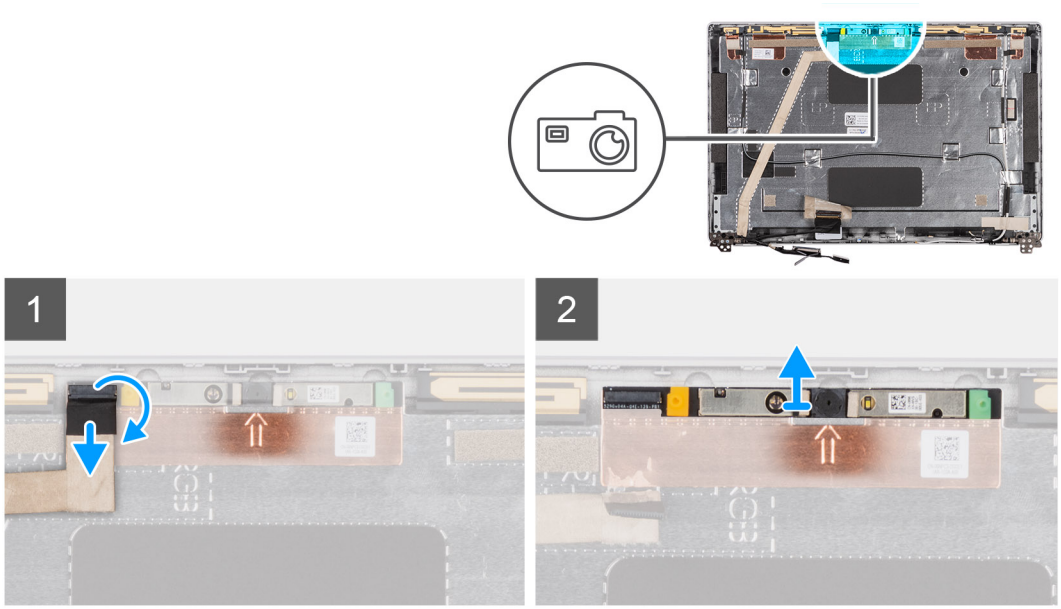


Figure 3. Removing camera module

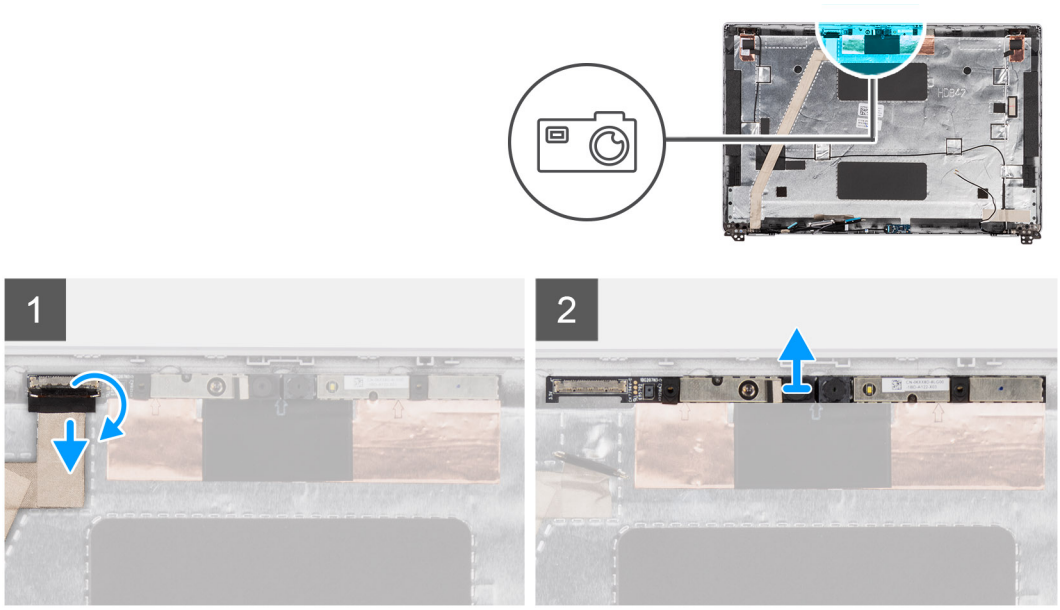


Figure 4. Removing Infrared camera module

Steps

NOTE: For models shipped with a camera/microphone, there is a recess near the camera/microphone module, indicated by an arrow etched on the grounding foil, that should be used to begin the prying process. Starting from the recess at the bottom edge of the camera/microphone module, pry up the camera/microphone module ensuring that the two tiny pegs used to secure the camera/microphone module in place is not damaged throughout the prying process.

1. Peel the two conductive tapes that secure the camera module in place.
2. Disconnect the camera module cable from the connector on the camera module.
3. Carefully lift the camera module from the display back cover.

Installing the camera module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the camera module and provides a visual representation of the installation procedure.

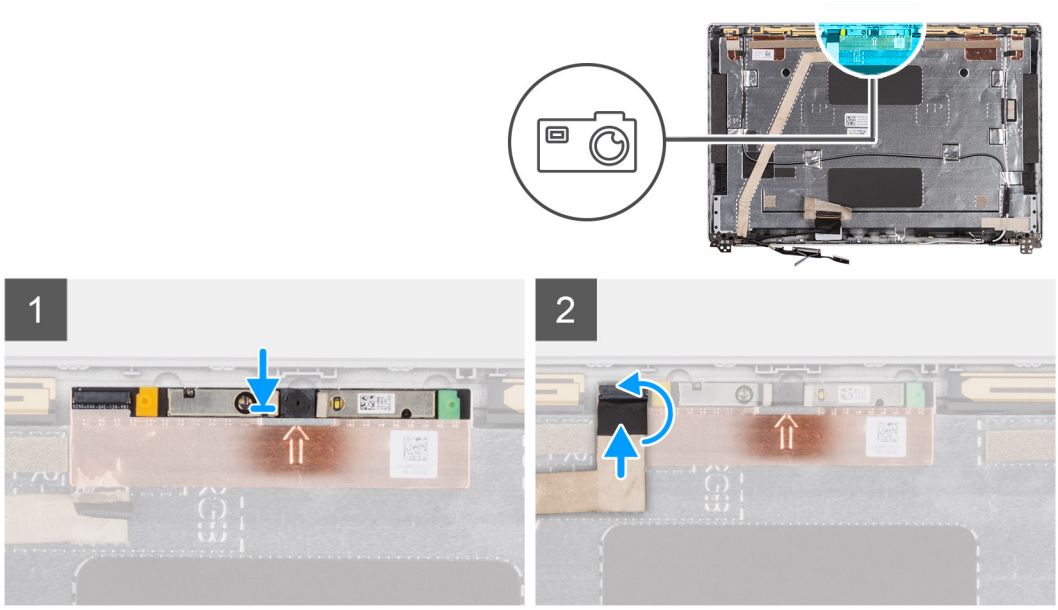


Figure 5. Installing camera module

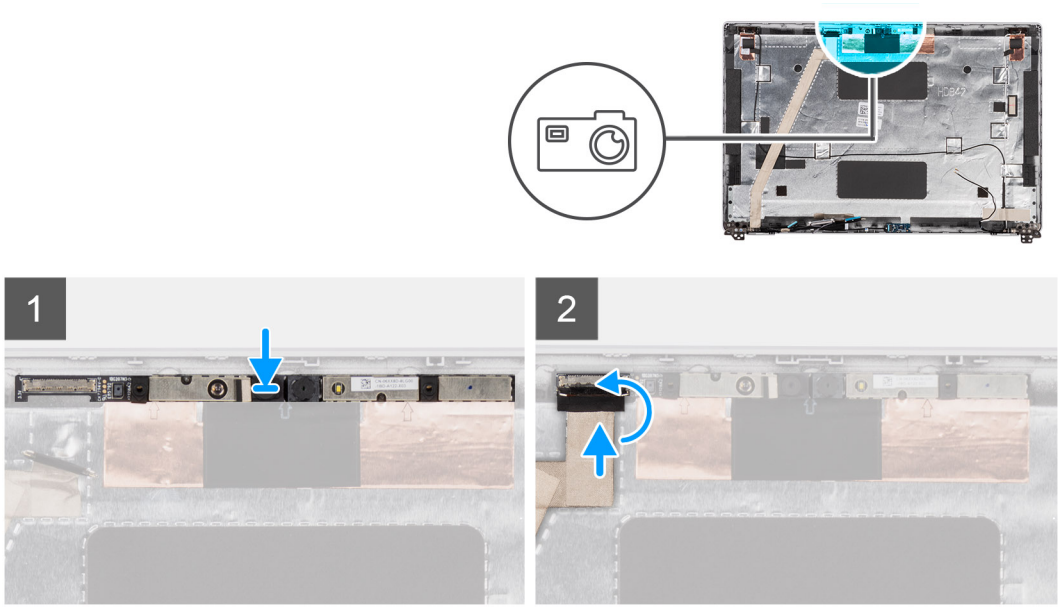


Figure 6. Installing infrared camera module

Steps

1. Align and place the camera module into the slot on the display back cover.
2. Connect the camera module cable to the connector on the camera module.

Next steps

1. Install the display panel.
2. Install the display bezel.
3. Install the display assembly.
4. Install the WLAN card.
5. Install the WWAN card.
6. Install the base cover.
7. Install the microSIM card.
8. Install the microSD card.

9. Follow the procedure in after working inside your computer.

eDP/display cable

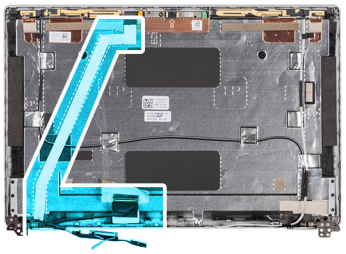
Removing the eDP cable

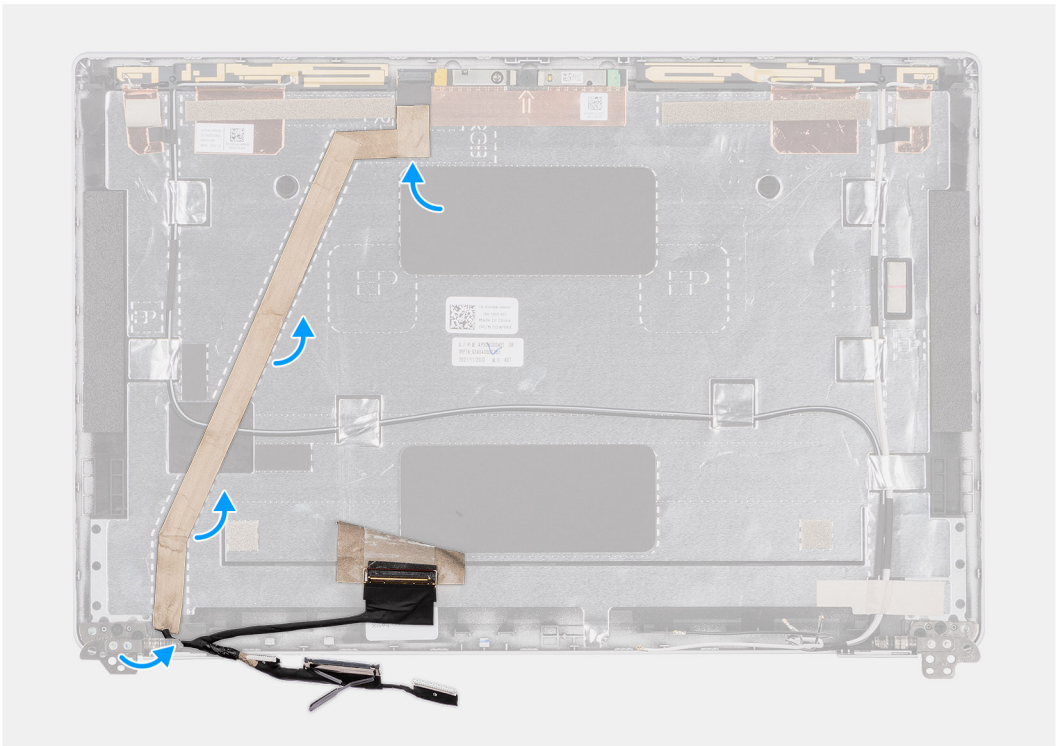
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the WLAN card.
6. Remove the WWAN card.
7. Remove the display assembly.
8. Remove the display bezel.
9. Remove the display panel.

About this task

The following images indicate the location of the eDP cable and provide a visual representation of the removal procedure.





Steps

1. Disconnect the eDP cable from the connector on the camera/microphone module.

2. Peel the conductive tape and unroute the eDP cable to release it from adhesive and lift the eDP cable from the display back cover.

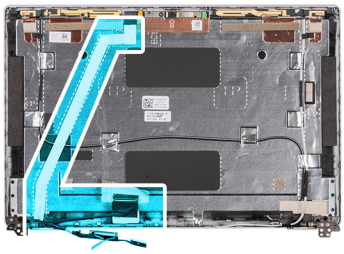
Installing the eDP cable

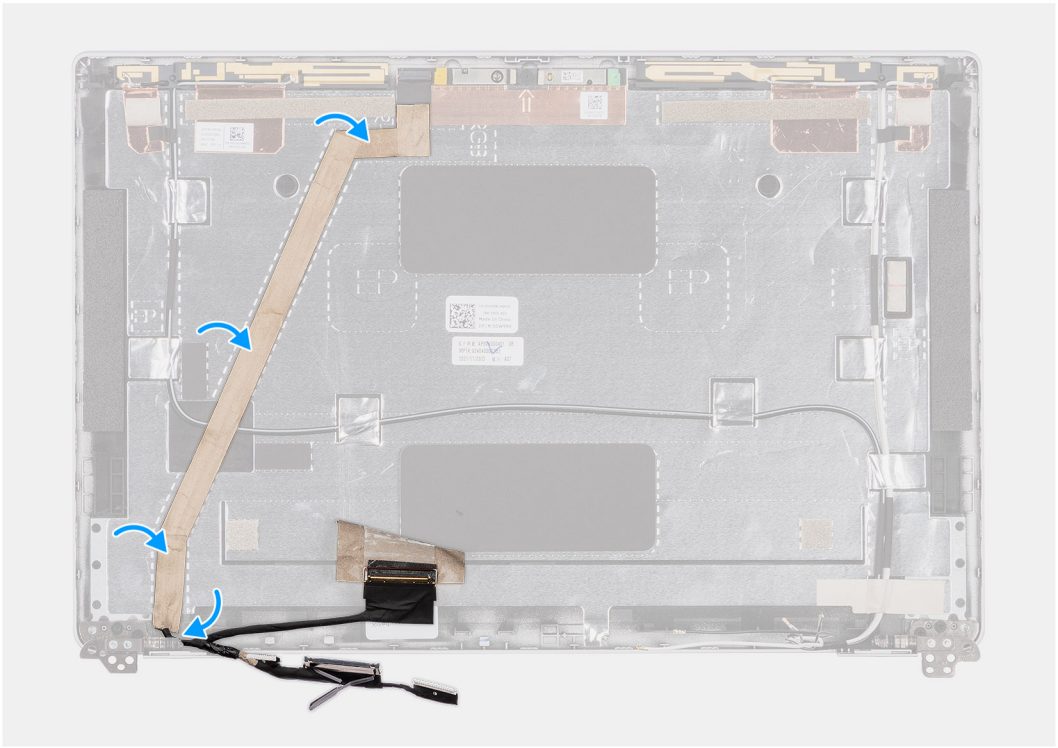
Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the eDP cable and provides a visual representation of the installation procedure.





Steps

1. Connect the eDP cable to the connector on the camera.
2. Adhere the eDP cable to the display back cover.
3. Adhere the conductive tape and route the eDP cable to the display back cover.

Next steps

1. Install the display panel.
2. Install the display bezel.
3. Install the display assembly.
4. Install the WLAN card.
5. Install the WWAN card.

6. Install the base cover.
7. Install the microSIM card.
8. Install the microSD card.
9. Follow the procedure in after working inside your computer.

Sensor board

Removing the sensor board

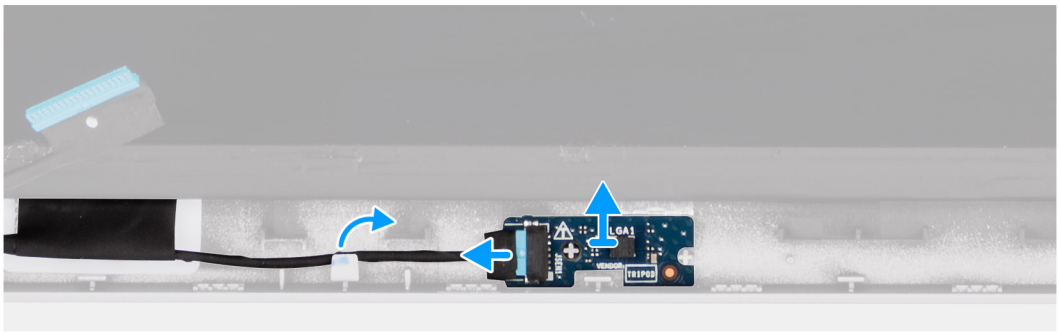
Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the WLAN card.
6. Remove the WWAN card.
7. Remove the display assembly.
8. Remove the display bezel.

About this task

The following images indicate the location of the sensor board and provide a visual representation of the removal procedure.





Steps

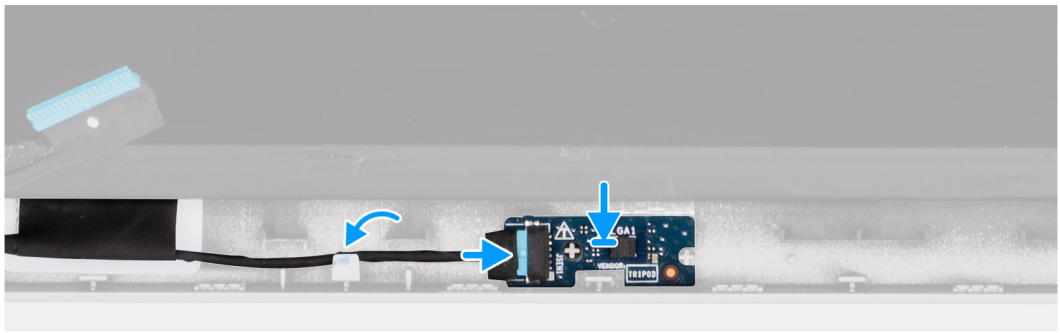
1. Open the latch and disconnect the display cable from connector on the sensor board.
2. Gently lift the sensor board away from the display back cover.

Installing the sensor board

About this task

The following images indicate the location of the sensor board and provide a visual representation of the removal procedure.





Steps

1. Align and place the sensor board on the display back cover.
2. Connect the display cable to the connector on the sensor board and close the latch.

Next steps

1. Install the display bezel.
2. Install the display assembly.
3. Install the WLAN card.
4. Install the WWAN card.
5. Install the base cover.
6. Install the microSIM card.
7. Install the microSD card.
8. Follow the procedure in after working inside your computer.

Display hinges

Removing the display hinges

Prerequisites

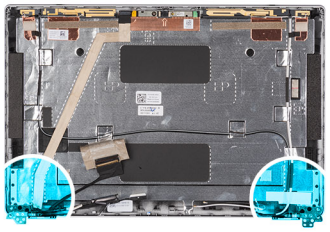
1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the WLAN card.
6. Remove the WWAN card.
7. Remove the display assembly.
8. Remove the display bezel.
9. Remove the display panel.

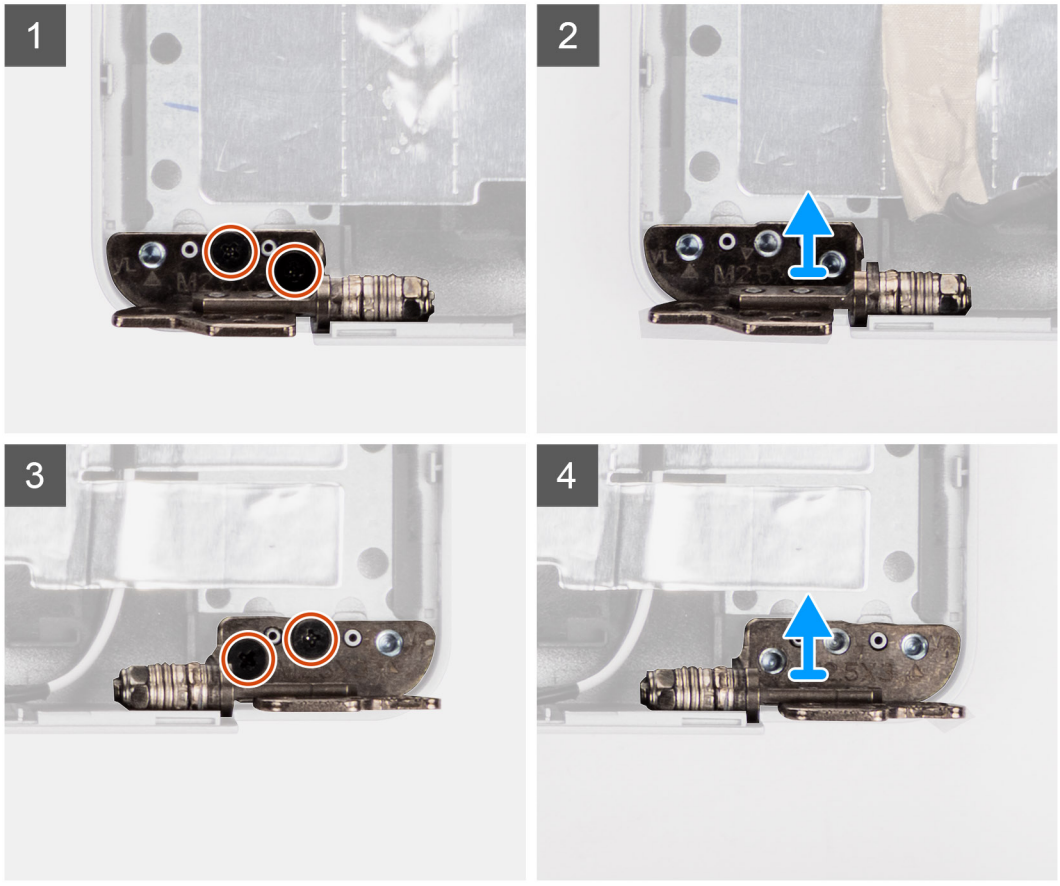
About this task

The following images indicate the location of the display hinges and provide a visual representation of the removal procedure.



4x
M2.5x3





Steps

1. Remove the two (M2.5x3) screws that secure the right hinge to the display back cover.
2. Lift and remove the right hinge from the display back cover.
3. Remove the two (M2.5x3) screws that secure the left hinge to the display back cover.
4. Lift and remove the left hinge from the display back cover.

Installing the display hinges

Prerequisites

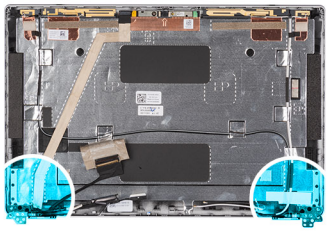
If you are replacing a component, remove the existing component before performing the installation procedure.

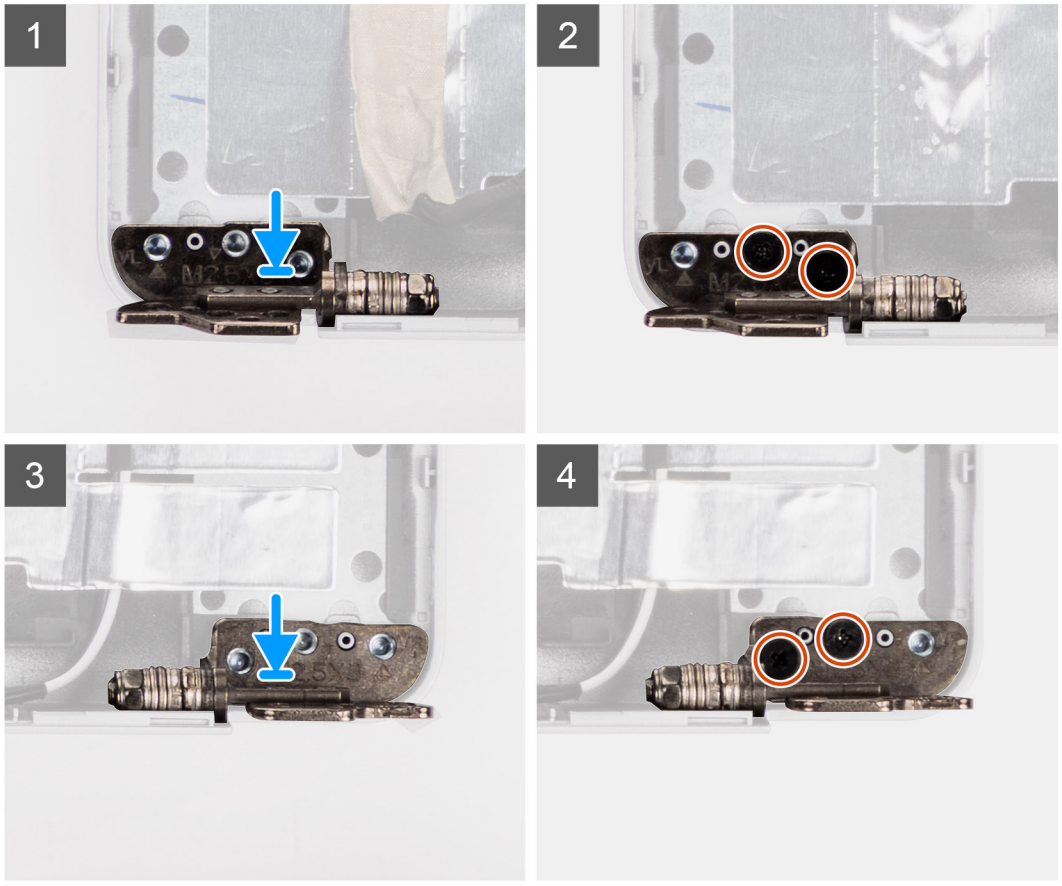
About this task

The following images indicate the location of the display hinges and provides a visual representation of the installation procedure.



4x
M2.5x3





Steps

1. Align the screw hole on the left hinge with the screw hole on the display back cover.
2. Replace the two screws (M2.5x3) to secure the left hinge to the display back cover.
3. Align the screw hole on the right hinge with the screw hole on the display back cover.
4. Replace the two screws (M2.5x3) to secure the right hinge to the display back cover.

Next steps

1. Install the display panel.
2. Install the display bezel.
3. Install the display assembly.
4. Install the WLAN card.
5. Install the WWAN card.
6. Install the base cover.
7. Install the microSIM card.
8. Install the microSD card.
9. Follow the procedure in after working inside your computer.

Display back cover

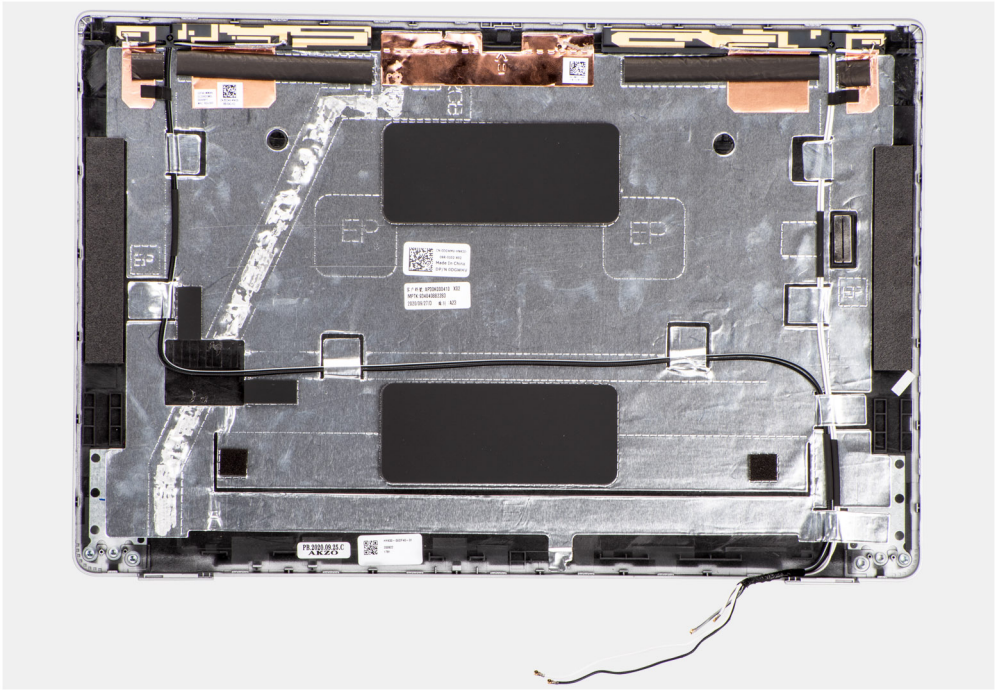
Removing the display back cover

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the WLAN card.
6. Remove the WWAN card.
7. Remove the display assembly.
8. Remove the display bezel.
9. Remove the display panel.
10. Remove the camera/microphone module.
11. Remove the eDP cable.
12. Remove the sensor board.
13. Remove the display hinges.

About this task

The following images indicate the location of the display back cover and provide a visual representation of the removal procedure.



Steps

After performing the steps in the pre-requisites, we are left with the display back cover.

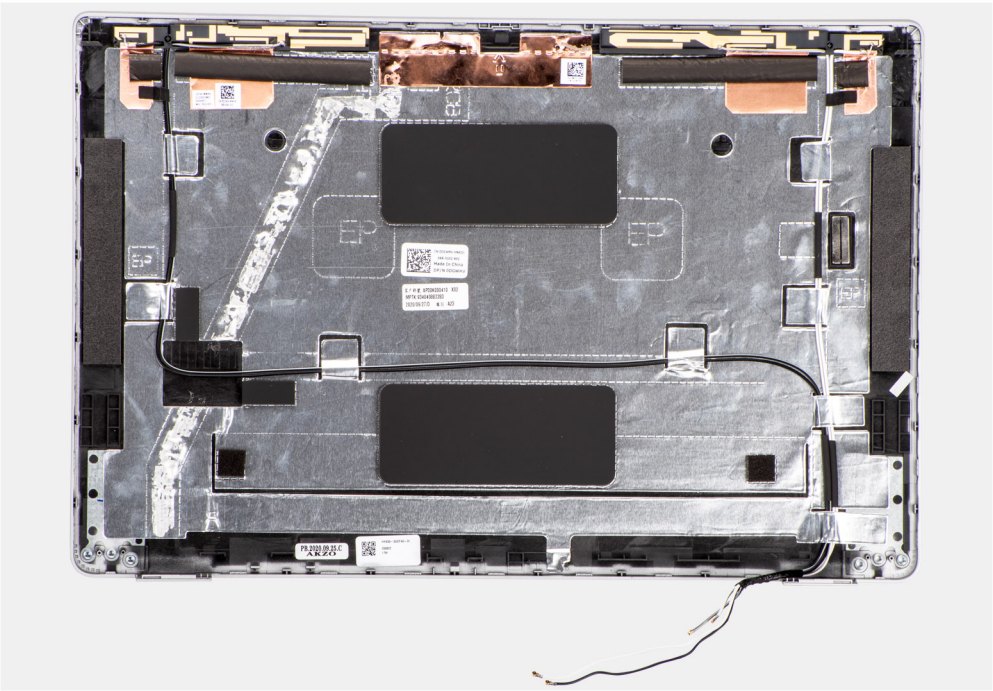
Installing the display back cover

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the display back cover and provides a visual representation of the installation procedure.



Steps

Place the display back cover on a flat surface.

Next steps

1. Install the display hinges.
2. Install the sensor board.
3. Install the eDP cable.
4. Install the camera/microphone module.
5. Install the display panel.
6. Install the display bezel.
7. Install the display assembly.
8. Install the WLAN card.
9. Install the WWAN card.
10. Install the base cover.
11. Install the microSIM card.
12. Install the microSD card.
13. Follow the procedure in after working inside your computer.

Palm-rest assembly

Removing the palm-rest assembly

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.

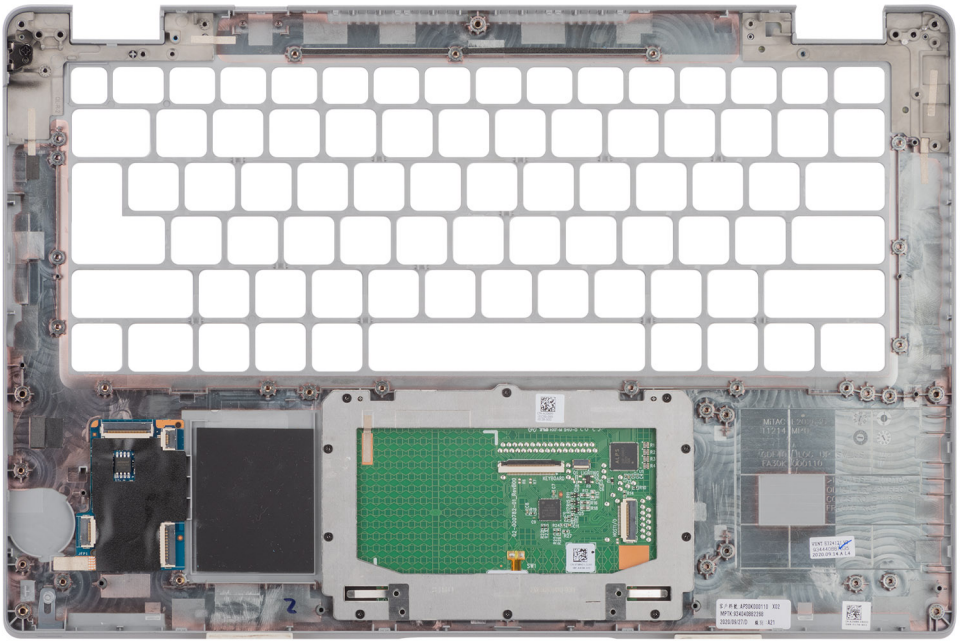
5. Remove the 3-cell battery or 4-cell battery.
6. Remove the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Remove the WLAN card.
8. Remove the WWAN card.
9. Remove the memory module.
10. Remove the system board.

> **NOTE:** The system board can be removed with the heat sink attached in order to simplify the procedure and preserve the thermal bond between the system board and heat sink.

11. Remove the assembly inner frame.
12. Remove the smart card reader.
13. Remove the LED board.
14. Remove the power button with optional fingerprint reader.
15. Remove the keyboard assembly.
16. Remove the display assembly.

About this task

The following image indicates the palm-rest assembly and provides a visual representation of the removal procedure.



Steps

After performing the steps in the pre-requisites, we are left with the palm-rest assembly.

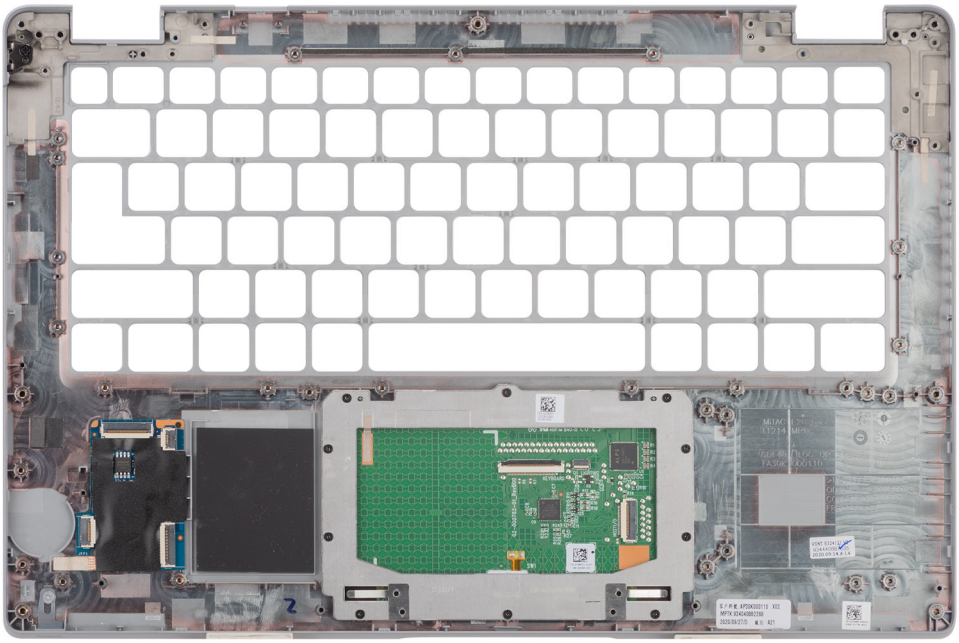
Installing the palm-rest assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the palm-rest assembly and provides a visual representation of the installation procedure.



Steps

NOTE: For non-WWAN LTE configuration, you must remove and transfer the dummy SIM card filler when replacing the palm-rest assembly.

1. Place the palm-rest assembly on a flat surface.
2. Remove the dummy SIM card filler for the non-WWAN LTE configuration.

Next steps

1. Install the display assembly.
2. Install the keyboard assembly.
3. Install the power button with optional fingerprint reader.
4. Install the smart card reader.
5. Install the LED board.
6. Install the system board.

   NOTE: The system board can be installed with the heat sink attached in order to simplify the procedure and preserve the thermal bond between the system board and heat sink.

7. Install the assembly inner frame.
8. Install the memory module.
9. Install the WLAN card.
10. Install the WWAN card.
11. Install the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
12. Install the 3-cell battery or 4-cell battery.
13. Install the base cover.
14. Install the microSIM card.
15. Install the microSD card.
16. Follow the procedure in after working inside your computer.

Dummy SIM-card slot filler

Removing the dummy SIM-card slot filler

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the microSD card.
3. Remove the microSIM card.
4. Remove the base cover.
5. Remove the 3-cell battery or 4-cell battery.
6. Remove the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
7. Remove the WLAN card.
8. Remove the WWAN card.
9. Remove the memory module.
10. Remove the system board.

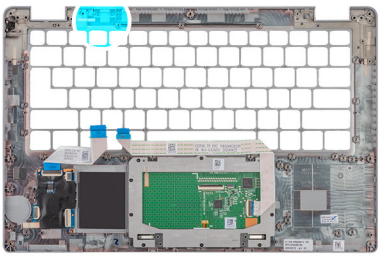
> **NOTE:** The system board can be removed with the heat sink attached in order to simplify the procedure and preserve the thermal bond between the system board and heat sink.

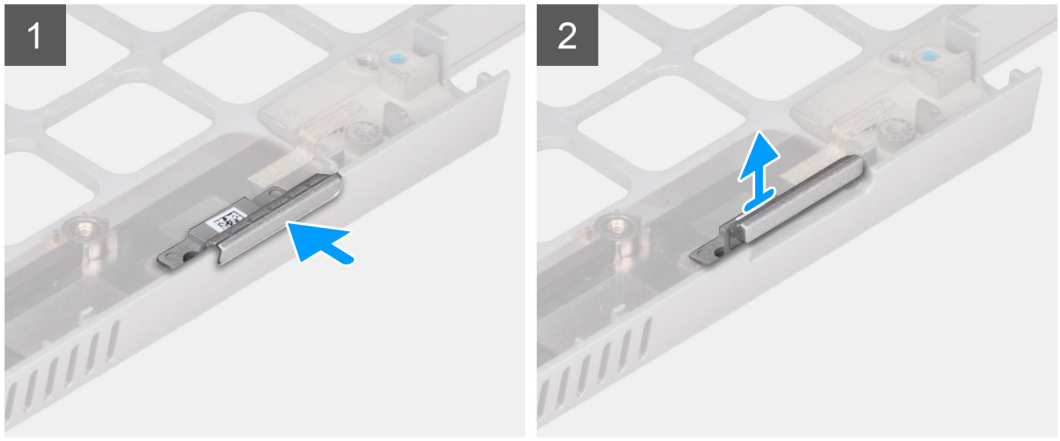
11. Remove the assembly inner frame.
12. Remove the smart card reader.
13. Remove the LED board.
14. Remove the power button with optional fingerprint reader.
15. Remove the keyboard assembly.
16. Remove the display assembly.
17. Remove the palm-rest assembly.

About this task

> **NOTE:** For models shipped with WLAN antennas only, the dummy SIM-card slot filler is a separate service part and is not included with the replacement palm rest. As a result, the dummy SIM-card slot filler must be removed and then reinstalled when replacing the palm-rest assembly.

The following image indicates the dummy SIM-card slot filler and provides a visual representation of the dummy SIM-card slot filler removal procedure.





Steps

1. Push the dummy SIM-card slot filler from the top side of the palm-rest assembly.
2. Gently lift the dummy SIM-card slot filler out of the palm-rest assembly.

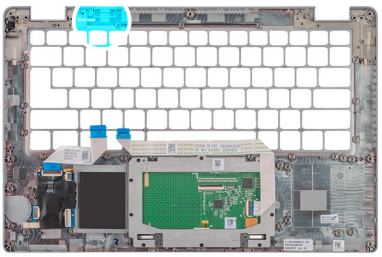
Installing the dummy SIM-card slot filler

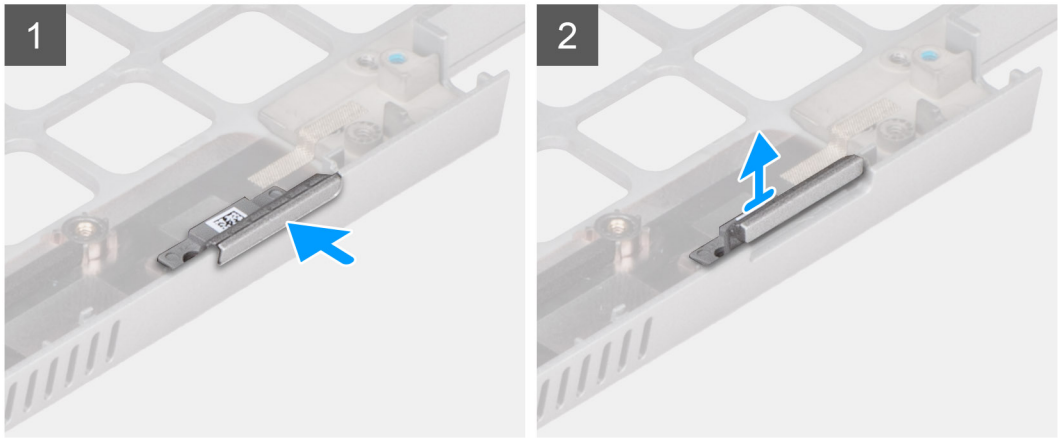
Prerequisites

If you are replacing a component, remove the necessary component before the installation procedure.

About this task

The following image indicates the location of the dummy SIM-card slot filler and provides a visual representation of the dummy SIM-card slot filler installation procedure.





Steps

1. Place the dummy SIM-card slot filler into its compartment on the palm rest.

   NOTE: Ensure that the dummy SIM-card slot filler is aligned with the ribs on the palm-rest assembly.

2. Press the dummy SIM-card slot filler until it clicks into place and ensure it fits securely into the SIM card slot.

Next steps

1. Install the palm-rest assembly.
2. Install the display assembly.
3. Install the keyboard assembly.
4. Install the power button with optional fingerprint reader.
5. Install the smart card reader.
6. Install the LED board.
7. Install the system board.

   NOTE: The system board can be installed with the heat sink attached in order to simplify the procedure and preserve the thermal bond between the system board and heat sink.

8. Install the assembly inner frame.
9. Install the memory module.
10. Install the WLAN card.
11. Install the WWAN card.
12. Install the M.2 2280 solid-state drive or M.2 2230 solid-state drive.
13. Install the 3-cell battery or 4-cell battery.
14. Install the base cover.
15. Install the microSIM card.
16. Install the microSD card.
17. Follow the procedure in after working inside your computer.

3

Drivers and downloads

When troubleshooting, downloading, or installing drivers, it is recommended that you read the Dell Knowledge Base article Drivers and Downloads FAQs.

4

BIOS Setup

CAUTION: Certain changes can make your computer work incorrectly. Before you change the settings in BIOS Setup, it is recommended that you note down the original settings for future reference.

NOTE: Depending on the computer and the installed devices, the options that are listed in this section may differ.

Use BIOS Setup for the following purposes:

- Get information about the hardware installed in your computer, such as the amount of RAM and the capacity of the storage device.
- Change the system configuration information.
- Set or change user-selectable options such as the user password, enabling or disabling base devices, and configuring hard drive settings.

BIOS overview

The BIOS manages data flow between the computer's operating system and attached devices such as hard disk, video adapter, keyboard, mouse, and printer.

Entering BIOS Setup program

About this task

Turn on (or restart) your computer and press F2 immediately.

Navigation keys

NOTE: For most of the BIOS Setup options, changes that you make are recorded but do not take effect until you restart the computer.

Table 5. Navigation keys

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
Enter	Selects a value in the selected field (if applicable) or follows the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
Tab	Moves to the next focus area.
Esc	Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restart the computer.

F12 One Time Boot menu

To enter the One Time Boot menu, turn on or restart your computer, and then press F12 immediately.

NOTE: If you are unable to enter the One Time Boot menu, repeat the above action.

The One Time Boot menu displays the devices that you can boot from and also display the options to start diagnostics. The boot menu options are:

- Removable Drive (if available)
- STXXXX Drive (if available)

  NOTE: XXXX denotes the SATA drive number.

- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics

The One Time Boot menu screen also displays the option to access BIOS Setup.

System setup options

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

Table 6. System setup options—System information menu

Overview	
Latitude 5430	
BIOS Version	Displays the BIOS version number.
Service Tag	Displays the Service Tag of the computer.
Asset Tag	Displays the Asset Tag of the computer.
Manufacture Date	Displays the manufacture date of the computer.
Ownership Date	Displays the ownership date of the computer.
Express Service Code	Displays the express service code of the computer.
Ownership Tag	Displays the Ownership Tag of the computer.
Signed Firmware Update	Displays whether the Signed Firmware Update is enabled on your computer.
Battery Information	
Primary	Displays that battery is primary.
Battery Level	Displays the battery level of the computer.
Battery State	Displays the battery state of the computer.
Health	Displays the battery health of the computer.
AC Adapter	Displays whether the AC adapter is connected or not.
Processor Information	
Processor Type	Displays the processor type.
Maximum Clock Speed	Displays the maximum processor clock speed.
Minimum Clock Speed	Displays the minimum processor clock speed.
Current Clock Speed	Displays the current processor clock speed.
Core Count	Displays the number of cores on the processor.
Processor ID	Displays the processor identification code.

Table 6. System setup options—System information menu (continued)

Overview	
Processor L2 Cache	Displays the processor L2 Cache size.
Processor L3 Cache	Displays the processor L3 Cache size.
Microcode Version	Displays the microcode version.
Intel Hyper-Threading Capable	Displays whether the processor is Hyper-Threading (HT) capable.
64-Bit Technology	Displays whether 64-bit technology is used.
Memory Information	
Memory Installed	Displays the total computer memory installed.
Memory Available	Displays the total computer memory available.
Memory Speed	Displays the memory speed.
Memory Channel Mode	Displays single or dual channel mode.
Memory Technology	Displays the technology used for the memory.
DIMM_SLOT B	Displays the DIMM B memory size.
DIMM_SLOT A	Displays the DIMM A memory size.
Devices Information	
Panel Type	Displays the Panel Type of the computer.
Video Controller	Displays the video controller type of the computer.
Video Memory	Displays the video memory information of the computer.
Wi-Fi Device	Displays the wireless device information of the computer.
Native Resolution	Displays the native resolution of the computer.
Video BIOS Version	Displays the video BIOS version of the computer.
Audio Controller	Displays the audio controller information of the computer.
Bluetooth Device	Displays the Bluetooth device information of the computer.
LOM MAC Address	Displays the LAN On Motherboard (LOM) MAC address of the computer.
Pass Through MAC Address	Displays the pass through MAC address of the computer.
Cellular Device	Displays the M.2 PCIe SSD information of the computer.

Table 7. System setup options—Boot Configuration menu

Boot Configuration	
Boot Sequence	
Boot mode	Displays the boot mode.
Boot Sequence	Displays the boot sequence.
Secure Digital (SD) Card Boot	Enable or disable the SD card read-only boot. By default, the **Secure Digital (SD) Card Boot** option is not enabled.
Secure Boot	
Enable Secure Boot	Enable or disable the secure boot feature. By default, the option is enabled.
Secure Boot Mode	Enable or disable to change the secure boot mode options. By default, the **Deployed Mode** is enabled.
Expert Key Management	

Table 7. System setup options—Boot Configuration menu (continued)

Boot Configuration	
Enable Custom Mode	Enable or disable custom mode. By default, the **custom mode** option is not enabled.
Custom Mode Key Management	Select the custom values for expert key management.

Table 8. System setup options—Integrated Devices menu

Integrated Devices	
Date/Time	Displays the current date in MM/DD/YYYY format and current time in HH:MM:SS AM/PM format.
Camera	Enables or disable the camera. By default, the **Enable Camera** option is selected
Audio	
Enable Audio	Enable or disable the integrated audio controller. By default, all the options are enabled.
USB/Thunderbolt Configuration	• Enable or disable booting from USB mass storage devices connected to external USB ports. By default, the **Enable External USB Ports** option is enabled. • Enable or disable booting from USB mass storage devices such as external hard drive, optical drive, and USB drive. By default, the **Enable USB Boot Support** option is enabled.
Enable Thunderbolt Technology Support	Enable or disable the associated ports and adapters. By default, the **Enable Thunderbolt Technology Support** option is selected.
Enable Thunderbolt Boot Support	Enable or disable the Thunderbolt adapter peripheral device and USB devices connected to the Thunderbolt adapter to be used during BIOS Pre-boot. By default, the **Enable Thunderbolt Boot Support** option is disabled.
Enable Thunderbolt (and PCIe behind TBT) pre-boot modules	Enable or disable the PCIe devices that are connected through a Thunderbolt adapter to execute the PCIe devices UEFI Option ROM (if present) during pre-boot. By default, the **Enable Thunderbolt (and PCIe behind TBT) pre-boot modules** option is disabled.
Disable USB4 PCIE Tunneling	Disable the USB4 PCIE Tunneling option. By default, the option is disabled.
Video/Power only on Type-C Ports	Enable or disable the Type-C port functionality to video or only power. By default, the **Video/Power only on Type-C Ports** option is disabled.
Type-C Dock Override	Enables to use connected Type-C Dell Dock to provide data stream with external USB ports disabled. When Type-C Dock override is enabled, the Video/Audio/Lan submenu is activated. By default, the **Type-C Dock Override** option is enabled.
Video	Enable or disable the usage of video on Dell Dock external ports. By default, the **Video** option is disabled.
Audio	Enable or disable the usage of audio on Dell Dock external ports. By default, the **Audio** option is enabled.
Lan	Enable or disable the usage of LAN on Dell Dock external ports.

Table 8. System setup options—Integrated Devices menu (continued)

Integrated Devices	
	By default, the **Lan** option is enabled.
Miscellaneous Devices	Enable or disable Fingerprint Reader device.
	By default, the **Enable Fingerprint Reader Device** option is enabled.
Unobtrusive Mode	
Enable Unobtrusive Mode	Enable or disable all the computer light and sound.
	By default, the **Enable Unobtrusive Mode** option is disabled.

Table 9. System setup options—Storage menu

Storage	
SATA/NVMe Operation	
SATA/NVMe Operation	Set the operating mode of the integrated storage device controller. By default, the RAID On option is enabled.
SMART Reporting	
Enable SMART Reporting	Enable or disable Self-Monitoring, Analysis, and Reporting Technology (SMART) during computer startup.
	By default, the **Enable SMART Reporting** option is not enabled.
Drive Information	
SATA-1	
Type	Displays the SATA-1 type information of the computer.
Device	Displays the SATA-1 device information of the computer.
M.2 PCIe SSD-1	
Type	Displays the M.2 PCIe SSD-1 type information of the computer.
Device	Displays the M.2 PCIe SSD-1 device information of the computer.
M.2 PCIe SSD-2	
Type	Displays the M.2 PCIe SSD-2 type information of the computer.
Device	Displays the M.2 PCIe SSD-2 device information of the computer.
Enable MediaCard	
Secure Digital (SD) Card	Enable or disable the SD card.
	By default, the **Secure Digital (SD) Card** option is enabled.
Secure Digital (SD) Card Read-Only Mode	Enable or disable the SD card read-only mode.
	By default, the **Secure Digital (SD) Card Read-Only Mode** option is not enabled.

Table 10. System setup options—Display menu

Display	
Display Brightness	
Brightness on battery power	Enable to set screen brightness when the computer is running on battery power.
Brightness on AC power	Enable to set screen brightness when the computer is running on AC power.
Full Screen Logo	Enable or disable full screen logo.
	By default, the option is not enabled.

Table 11. System setup options—Connection menu

Connection	
Network Controller Configuration	
Integrated NIC	Controls the on-board LAN controller. By default, the **Enabled with PXE** option is enabled.
Enable UEFI Network Stack	Enable or disable UEFI Network Stack. By default, the **Enable UEFI Network Stack** and **Enabled w/PXE** option are enabled.
Wireless Device Enable	
WWAN/GPS	Enable or disable the internal WWAN/GPS device By default, the option enabled.
WWAN Bus Mode	Set the interface type of the Wireless Wan (WWAN) card. By default, the **Bus Mode PCIe** option is enabled.
WLAN	Enable or disable the internal WLAN device By default, the option enabled.
Bluetooth	Enable or disable the internal Bluetooth device By default, the option enabled.
Contactless smartcard/NFC	Enable or disable the internal Contactless smartcard/NFC device By default, the option enabled.
Enable UEFI Network Stack	Enable or disable UEFI Network Stack and controls the on-board LAN Controller. By default, the **Enable UEFI Network Stack** option are enabled.
Wireless Radio Control	
Control WLAN radio	Sense the connection of the computer to a wired network and subsequently disable the selected wireless radios (WLAN). By default, the option is disabled.
Control WWAN radio	Sense the connection of the computer to a wired network and subsequently disable the selected wireless radios (WWAN). By default, the option is disabled.
HTTPs Boot Feature	
HTTPs Boot	Enable or disable the HTTPs Boot feature. By default, the **HTTPs Boot** option is enabled.
HTTPs Boot Mode	With Auto Mode, the HTTPs Boot extracts Boot URL from the DHCP. With Manual Mode, the HTTPs Boot reads Boot URL from the user-provided data. By default, the **Auto Mode** option is enabled.

Table 12. System setup options—Power menu

Power	
Battery configuration	Enables the computer to run on battery during peak power usage hours. Use the table **Custom Charge Start** and **Custom Charge Stop**, to prevent AC power usage between certain times of each day. By default, the **Adaptive** option is enabled.
Advanced Configuration	

Table 12. System setup options—Power menu (continued)

Power	
Enable Advanced Battery Charge Configuration	Enable or disable the advanced battery charge configuration. By default, the **Enable Advanced Battery Charge Configuration** option is disabled.
Peak Shift	Enables the computer to run on battery during peak power usage hours. By default, the **Enable Peak Shift** option is enabled.
Enable Peak Shift	
USB PowerShare	
Enable USB PowerShare	Enable or disable the USB PowerShare. By default, the **Enable USB PowerShare** option is disabled
Thermal Management	Enables to cool the fan and processor heat management to adjust the computer performance, noise, and temperature. By default, the **Optimized** option is enabled.
USB Wake Support	
Wake on Dell USB-C Dock	When enabled, connecting a Dell USB-C Dock will wake the computer from standby. By default, the **Wake on Dell USB-C Dock** option is enabled.
Block Sleep	Enables to block entering sleep (S3) mode in the operating system. By default, the **Block Sleep** option is disabled.
Lid Switch	Enable or disable the lid switch. By default, the **Lid Switch** option is enabled.
Intel Speed Shift Technology	Enable or disable the Intel speed shift technology support. By default, the **Intel Speed Shift Technology** option is enabled.
Long Life Cycle Primary Battery	By default, the **Normal Battery** option is enabled.

Table 13. System setup options—Security menu

Security	
TPM 2.0 Security	
TPM 2.0 Security On	Enable or disable TPM 2.0 security options. By default, the **TPM 2.0 Security On** option is enabled.
Attestation Enable	Enables to control whether the Trusted Platform Module (TPM) Endorsement Hierarchy is available to the operating system. By default, the **Attestation Enable** option is enabled.
Key Storage Enable	Enables to control whether the Trusted Platform Module (TPM) Storage Hierarchy is available to the operating system. By default, the **Key Storage Enable** option is enabled.
SHA-256	BIOS and the TPM will use the SHA-256 hash algorithm to extend measurements into the TPM PCRs during BIOS boot. By default, the **SHA-256** option is enabled.
Clear	Enables to clear the TPM owner information and returns the TPM to the default state. By default, the **Clear** option is disabled.

Table 13. System setup options—Security menu (continued)

Security	
PPI ByPass for Clear Commands	Controls the TPM Physical Presence Interface (PPI). By default, the **PPI ByPass for clear Commands** option is disabled.
Intel Total Memory Encryption	
Total Memory Encryption	Enable or disable you to protect memory from physical attacks including freeze spray, probing DDR to read the cycles, and others. By default, the **Total Memory Encryption** option is disabled.
Chassis intrusion	Controls the chassis intrusion feature. By default, the **On-Silent** option is enabled.
SMM Security Mitigation	Enable or disable SMM Security Mitigation. By default, the option is enabled.
Data Wipe on Next Boot	
Start Data Wipe	Enable or disable the data wipe on next boot. By default, the option is enabled.
Absolute	Enable or disable or permanently disable the BIOS module interface of the optional Absolute Persistence Module service from Absolute software. By default, the option is enabled.
UEFI Boot Path Security	Controls whether or not the computer will prompt the user to enter the admin password (if set) when booting to a UEFI boot device from the F12 boot menu. By default, the **Always Except Internal HDD** option is enabled.

Table 14. System setup options—Passwords menu

Passwords	
Admin Password	Set, change, or delete the administrator password.
System Password	Set, change, or delete the computer password.
NVMe SSD0	Set, change, or delete the NVMe SSD0 password.
Password Configuration	
Upper Case Letter	Reinforces password must have at least one upper case letter. By default, the option is disabled.
Lower Case Letter	Reinforces password must have at least one lower case letter. By default, the option is disabled.
Digit	Reinforces password must have at least one digit. By default, the option is disabled.
Special Character	Reinforces password must have at least one special character. By default, the option is disabled.
Minimum Characters	Set the minimum characters allowed for password.
Password Bypass	When enabled, this always prompts for computer and internal hard drive passwords when powered on from the off state. By default, the **Disabled** option is enabled.
Password Changes	

Table 14. System setup options—Passwords menu (continued)

Passwords	
Enable Non-Admin Password Changes	Enable or disable to change computer and hard drive password without the need for admin password. By default, the option is enabled.
Admin Setup Lockout	
Enable Admin Setup Lockout	Enables administrators control over how their users can or cannot access BIOS setup. By default, the option is disabled.
Master Password Lockout	
Enable Master Password Lockout	When enabled, this will disable the master password support. By default, the option is disabled.
Allow Non-Admin PSID Revert	
Enable Allow Non-Admin PSID Revert	Controls access to the Physical Security ID (PSID) revert of NVMe hard-drives from the Dell Security Manager prompt. By default, the option is disabled.

Table 15. System setup options—Update, Recovery menu

Update, Recovery	
UEFI Capsule Firmware Updates	Enable or disable BIOS updates through UEFI capsule update packages. By default, the option is enabled.
BIOS Recovery from Hard Drive	Enables the user to recover from certain corrupted BIOS conditions from a recovery file on the user primary hard drive or an external USB key. By default, the option is enabled.
BIOS Downgrade	
Allow BIOS Downgrade	Enable or disable the flashing of the computer firmware to previous revision is blocked. By default, the option is enabled.
SupportAssist OS Recovery	Enable or disable the boot flow for SupportAssist OS Recovery tool in the event of certain computer errors. By default, the option is enabled.
BISOConnect	Enable or disable cloud Service OS recovery if the main operating system fails to boot with the number of failures equal to or greater than the value specified by the Auto OS Recovery Threshold setup option and local Service OS does not boot or is not installed. By default, the option is enabled.
Dell Auto OS Recovery Threshold	Controls the automatic boot flow for SupportAssist System Resolution Console and for Dell OS Recovery Tool. By default, the threshold value is set to 2.

Table 16. System setup options—System Management menu

System Management	
Service Tag	Display the Service Tag of the computer.
Asset Tag	Create a computer Asset Tag.
AC Behavior	

Table 16. System setup options—System Management menu (continued)

System Management	
Wake on AC	Enable or disable the wake on AC option. By default, the option is disabled.
Wake on LAN	
Wake on LAN	Enable or disable the computer to power on by special LAN signals when it receives a wakeup signal from the WLAN. By default, the **Disabled** option is selected.
Auto on Time	Enable to set the computer to turn on automatically every day or on a preselected date and time. This option can be configured only if the Auto On Time is set to Everyday, Weekdays, or Selected Days. By default, the option is disabled.

Table 17. System setup options—Keyboard menu

Keyboard	
Numlock Enable	Enable or disable the Numlock function when the computer boots. By default, the option is enabled.
Fn Lock Options	By default, the Fn lock option is enabled.
Keyboard Illumination	Enables to change the keyboard illumination settings. By default, the **Bright** option is enabled.
Keyboard Backlight Timeout on AC	Set the timeout value for the keyboard backlight when an AC adapter is connected to the computer. By default, the **10 seconds** option is enabled.
Keyboard Backlight Timeout on Battery	Set the timeout value for the keyboard backlight when the is running only on battery power. By default, the **10 seconds** option is enabled.
Device Configuration Hotkey Access	Manages whether you can access device configuration screens through hotkeys during computer startup. By default, the option is enabled.

Table 18. System setup options—Pre-boot Behavior menu

Pre-boot Behavior	
Adapter Warnings	
Enable Adapter Warnings	Enable or disable the warning messages during boot when the adapters with less power capacity are detected. By default, the option is enabled.
Warning and Errors	Enable or disable the action to be done when a warning or error is encountered. By default, the **Prompt on Warnings and Errors** option is enabled.
Fastboot	Enable to set the speed of the boot process. By default, the **Minimal** option is enabled.
Extend BIOS POST Time	Set the BIOS POST time. By default, the **0 seconds** option is enabled.
MAC Address Pass-Through	Replaces the external NIC MAC address with the selected MAC address from the computer.

Table 18. System setup options—Pre-boot Behavior menu (continued)

Pre-boot Behavior	
	By default, the **System Unique MAC Address** option is enabled.

Table 19. System setup options—Performance menu

Performance	
Multi Core Support	
Active Cores	Enables to change the number of CPU cores available to the operating system. By default, the **All Cores** options is enabled.
Intel SpeedStep	
Enable Intel SpeedStep Technology	Enables the computer to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production. By default, the option is enabled.
C-States Control	
Enable C-State Control	Enable or disable additional processor sleep states. By default, the option is enabled.
Intel TurbocBoost Technology	
Enable Intel Turbo Boost Technology	Enable or disable Intel TurboBoost mode of the processor. By default, the option is enabled.
Intel Hyper-Threading Technology	
Enable Intel Hyper-Threading Technology	Enable or disable Hyper-Threading in the processor. By default, the option is enabled.
Dynamic Tuning:Machine Learning	
Enable Dynamic Tuning:Machine Learning	Enables the operating system capability to enhance dynamic power tuning capabilities based on detected workloads. By default, the option is disabled.

Table 20. System setup options—System Logs menu

System Logs	
BIOS Event Log	
Clear Bios Event Log	Display BIOS events. By default, the **Keep** option is enabled.
Thermal Event Log	
Clear Thermal Event Log	Display Thermal events. By default, the **Keep** option is enabled.
Power Event Log	
Clear Power Event Log	Display power events. By default, the **Keep** option is enabled.
License Information	Displays the license information of the computer.

Updating the BIOS

Updating the BIOS in Windows

About this task

CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to proceed, and the computer displays a prompt for the recovery key on each reboot. Failure to provide the recovery key can result in data loss or an operating system reinstall. For more information, refer Updating the BIOS on Dell systems with BitLocker enabled.

CAUTION: Do not turn off the computer during the BIOS flash update process. The computer may not boot if you turn off your computer.

Steps

1. Go to Dell Support Site.
2. Go to **Identify your product or ask support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.

   NOTE: If you do not have the Service Tag, click **Detect This PC**. The site automatically detects your device, and you can then click **Explore Product Support** to go to the support page for your device. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. After the download is complete, navigate to the folder where the BIOS update file has been saved.
8. Double-click the BIOS update file and follow the on-screen instructions.

   For more information, search Dell Support Site.

Updating the BIOS in Linux and Ubuntu

To update the system BIOS on a computer that is installed with Linux or Ubuntu, see How to Update the Dell BIOS in the Ubuntu or Linux Environment at Dell Support Site.

Updating the BIOS using the USB drive in Windows

About this task

CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to proceed, and the computer displays a prompt for the recovery key on each reboot. Failure to provide the recovery key can result in data loss or an operating system reinstall. For more information, refer Updating the BIOS on Dell systems with BitLocker enabled.

CAUTION: Do not turn off the computer during the BIOS flash update process. The computer may not boot if you turn off your computer.

Steps

1. Go to Dell Support Site.
2. Go to **Identify your product or ask support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.

NOTE: If you do not have the Service Tag, click **Detect This PC**. The site automatically detects your device, and you can then click **Explore Product Support** to go to the support page for your device. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. Create a bootable USB drive. For more information, search Dell Support Site.
8. Copy the BIOS setup program file to the bootable USB drive.
9. Connect the bootable USB drive to the computer that needs the BIOS update.
10. Restart the computer and press **F12**.
11. Select the USB drive from the **One Time Boot Menu**.
12. Type the BIOS setup program filename and press **Enter**.
    The **BIOS Update Utility** appears.
13. Follow the on-screen instructions to complete the BIOS update.

Updating the BIOS from the One-Time boot menu

To update the BIOS from the One-Time boot menu, see Updating the BIOS from the One Time Boot Menu at Dell Support Site..

System and setup password

CAUTION: The password features provide a basic level of security for the data on your computer.

CAUTION: Ensure that your computer is locked when it is not in use. Anyone can access the data that is stored on your computer, when left unattended.

Table 21. System and setup password

Password type	Description
System password	Password that you must enter to boot to your operating system.
Setup password	Password that you must enter to access and change the BIOS settings of your computer.

You can create a system password and a setup password to secure your computer.

NOTE: The System and setup password feature is disabled by default.

Assigning a System Setup password

Prerequisites

You can assign a new System or Admin Password only when the status is set to **Not Set**. To enter BIOS System Setup, press F2 immediately after a power-on or reboot.

Steps

1. To enter the **System Setup**, press **F2** immediately after a power-on or reboot.
2. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
   The **Security** screen is displayed.
3. Select **System/Admin Password** and create a password in the **Enter the new password** field.
   Use the following guidelines to create the system password:

- Password can be up to 32 characters.
- Password must contain at least one special character: "(! " # $ % & ' * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | })"
- The password can contain numbers from 0 to 9.
- The password can contain alphabets A to Z and a to z.

4. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
5. Press Y to save the changes.
   The computer restarts.

Deleting or changing an existing system password or setup password

Prerequisites

Ensure that the **Password Status** is Unlocked in the System Setup before attempting to delete or change the existing system password and/or setup password. You cannot delete or change an existing system password or setup password if the **Password Status** is Locked. To enter the System Setup, press F2 immediately after a power-on or reboot.

Steps

1. To enter the **System Setup**, press **F2** immediately after a power-on or reboot.
2. In the **System BIOS** or **System Setup** screen, select **System Security** and press Enter.
   The **System Security** screen is displayed.
3. In the **System Security** screen, verify that the **Password Status** is Unlocked.
4. Select **System Password**. Update or delete the existing system password, and press Enter or Tab.
5. Select **Setup Password**. Update or delete the existing setup password, and press Enter or Tab.

   NOTE: If you change the system password and/or setup password, reenter the new password when prompted. If you delete the system password and/or setup password, confirm the deletion when prompted.

6. Press Esc. A message prompts you to save the changes.
7. Press Y to save the changes and exit from **System Setup**.
   The computer restarts.

Clearing system and setup passwords

About this task

To clear the system or setup passwords, contact Dell technical support as described at Contact Support.

NOTE: For information about how to reset Windows or application passwords, see the documentation accompanying Windows or your application.

5

Troubleshooting

Handling swollen rechargeable Li-ion batteries

Like most laptops, Dell laptops use Lithium-ion batteries. One type of Lithium-ion battery is the rechargeable Li-ion battery. Rechargeable Li-ion batteries have increased in popularity in recent years and have become a standard in the electronics industry due to customer preferences for a slim form factor (especially with newer ultra-thin laptops) and long battery life. Inherent to rechargeable Li-ion battery technology is the potential for swelling of the battery cells.

A swollen battery may impact the performance of the laptop. To prevent possible further damage to the device enclosure or internal components leading to malfunction, discontinue the use of the laptop and discharge it by disconnecting the AC adapter and letting the battery drain.

Swollen batteries should not be used and must be replaced and disposed of properly. We recommend contacting Dell Support for options to replace a swollen battery under the terms of the applicable warranty or service contract, including options for replacement by a Dell authorized service technician.

The guidelines for handling and replacing rechargeable Li-ion batteries are as follows:

- Exercise caution when handling rechargeable Li-ion batteries.
- Discharge the battery before removing it from the laptop. To discharge the battery, unplug the AC adapter from the computer and operate the computer only on battery power. The battery is fully discharged when the computer no longer turns on when the power button is pressed.
- Do not crush, drop, mutilate, or penetrate the battery with foreign objects.
- Do not expose the battery to high temperatures, or disassemble battery packs and cells.
- Do not apply pressure to the surface of the battery.
- Do not bend the battery.
- Do not use tools of any type to pry on or against the battery.
- If a battery gets stuck in a device as a result of swelling, do not try to free it as puncturing, bending, or crushing a battery can be dangerous.
- Do not attempt to reassemble a damaged or swollen battery into a laptop.
- Swollen batteries that are covered under warranty should be returned to Dell in an approved shipping container (provided by Dell)—this is to comply with transportation regulations. Swollen batteries that are not covered under warranty should be disposed of at an approved recycling center. Contact Dell Support at Dell Support Site for assistance and further instructions.
- Using a non-Dell or incompatible battery may increase the risk of fire or explosion. Replace the battery only with a compatible battery purchased from Dell that is designed to work with your Dell computer. Do not use a battery from other computers with your computer. Always purchase genuine batteries from Dell Site or otherwise directly from Dell.

Rechargeable Li-ion batteries can swell for various reasons such as age, number of charge cycles, or exposure to high heat. For more information about how to improve the performance and lifespan of the laptop battery and to minimize the possibility of occurrence of the issue, search Dell laptop battery at Dell Support Site.

Dell SupportAssist Pre-boot System Performance Check diagnostics

About this task

SupportAssist diagnostics (also known as system diagnostics) performs a complete check of your hardware. The Dell SupportAssist Pre-boot System Performance Check diagnostics is embedded within the BIOS and launched by the BIOS internally. The embedded system diagnostics provides options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode.
- Repeat the tests.
- Display or save test results.
- Run thorough tests to add more options and obtain details about any failed devices.

- View status messages that inform you when the tests are completed successfully.
- View error messages that inform you of problems encountered during testing.

NOTE: Some tests for specific devices require user interaction. Always ensure that you are present at the computer when the diagnostic tests are performed.

For more information, see How to Run Dell Preboot Diagnostics and Hardware Tests on Your Dell Computer.

Running the SupportAssist Pre-Boot System Performance Check

Steps

1. Turn on your computer.
2. As the computer boots, press the F12 key.
3. On the boot menu screen, select **Diagnostics**.
   The diagnostic quick test begins.
   NOTE: For more information about running the SupportAssist Pre-Boot System Performance Check on a specific device, see Dell Support Site.
4. If there are any issues, error codes are displayed.
   Note the error code and validation number and contact Dell.

Built-in self-test (BIST)

Motherboard Built-In Self-Test (M-BIST)

M-BIST is the system board onboard self-test diagnostics tool that improves the diagnostics accuracy of system board Embedded Controller (EC) failures.

NOTE: M-BIST can be manually initiated before Power On Self-Test (POST).

How to run M-BIST

NOTE: Before initiating M-BIST, ensure that the computer is in a power-off state.

1. Press and hold both the **M** key and the power button to initiate M-BIST.
2. The battery-status light may exhibit two states:
   - Off: No fault was detected.
   - Amber and White: Indicates a problem with the system board.
3. If a failure is detected, the battery-status light flashes one of the following error codes for 30 seconds:

Table 22. LED error codes

Blinking Pattern		Possible Problem
Amber	**White**	
2	1	CPU Failure
2	8	LCD Power Rail Failure
1	1	TPM Detection Failure
2	4	Memory/RAM failure

4. If no failure is detected, the LCD cycles through the solid color screens (that are described in the LCD-BIST) for 30 seconds and then turn off.

Logic Built-in Self-test (L-BIST)

L-BIST is an enhancement to the single LED error code diagnostics and is automatically initiated during POST. L-BIST will check the LCD power rail. If there is no power being supplied to the LCD (that is if the L-BIST circuit fails), the battery status LED flashes either an error code [2,8] or an error code [2,7].

NOTE: If L-BIST fails, LCD-BIST cannot function as no power will be supplied to the LCD.

How to invoke the L-BIST

1. Turn on your computer.
2. If the computer does not start up normally, look at the battery status LED:
   - If the battery status LED flashes an error code [2,7], the display cable may not be connected properly.
   - If the battery status LED flashes an error code [2,8], there is a failure on the LCD power rail of the system board, hence there is no power that is supplied to the LCD.
3. For cases, when a [2,7] error code is shown, check to see if the display cable is properly connected.
4. For cases when a [2,8] error code is shown, replace the system board.

LCD Built-in Self-Test (LCD-BIST)

Dell laptops have a built-in diagnostic tool that helps you determine if the screen abnormality you are experiencing is an inherent problem with the LCD (screen) of the Dell laptop or with the video card (GPU) and computer settings.

When you notice screen abnormalities like flickering, distortion, clarity issues, fuzzy or blurry image, horizontal or vertical lines, color fade, it is always a good practice to isolate the LCD (screen) by running the LCD-BIST.

How to invoke the LCD-BIST

1. Turn off your computer.
2. Disconnect any peripherals that are connected to the computer. Connect only the AC adapter (charger) to the computer.
3. Ensure that the LCD (screen) is clean (no dust particles on the surface of the screen).
4. Press and hold the **D** key and press the power button to enter LCD-BIST mode. Continue to hold the **D** key until the computer boots up.
5. The screen displays solid colors and changes colors on the entire screen to white, black, red, green, and blue twice.
6. Then it displays the colors white, black, and red.
7. Carefully inspect the screen for abnormalities (any lines, fuzzy color, or distortion on the screen).
8. At the end of the last solid color (red), the computer shuts down.

NOTE: Dell SupportAssist Preboot diagnostics upon launch initiates an LCD-BIST first, expecting a user intervention to confirm functionality of the LCD.

System-diagnostic lights

This section lists the system-diagnostic lights of your Latitude 5430.

Table 23. System-diagnostic lights

Blinking pattern		Problem description	Suggested resolution
Amber	White		
1	1	TPM detection failure	Replace the system board.
1	2	Unrecoverable SPI Flash Failure	Replace the system board.
1	5	EC unable to program i-Fuse	Replace the system board.

Table 23. System-diagnostic lights (continued)

Blinking pattern		Problem description	Suggested resolution
Amber	**White**		
1	6	Generic catch-all for ungraceful EC code flow errors	Disconnect all power source (AC, battery, coin cell) and drain flea power by pressing and holding down the power button for 3~5 seconds.
2	1	CPU failure	• Run the Dell SupportAssist or Dell Diagnostics tool. • If the problem persists, replace the system board.
2	2	System board failure (included BIOS corruption or ROM error)	• Flash latest BIOS version. • If the problem persists, replace the system board.
2	3	No memory or RAM detected	• Confirm that the memory module is installed properly. • If the problem persists, replace the memory module.
2	4	Memory or RAM failure	• Reset and swap memory modules among the slots. • If the problem persists, replace the memory module.
2	5	Invalid memory installed	• Reset and swap memory modules among the slots. • If the problem persists, replace the memory module.
2	6	System board or Chipset Error	Replace the system board.
2	7	LCD failure (SBIOS message)	**Option 1:**(If a known good external monitor is available) • If the LCD panel does not show any physical damage: 1. Connect the computer to an external monitor, flash the latest BIOS version. 2. Check the diagnostic light patterns and suggested resolutions for the *4, x* codes in this table. **Option 2:** **NOTE:** Follow these steps if flashing to the latest BIOS version is not possible. • Run the LCD BIST: 1. If the computer does not show any display (no sign

Table 23. System-diagnostic lights (continued)

Blinking pattern		Problem description	Suggested resolution
Amber	**White**		
			of life), reconnect the display cable (EDP) at the system board. 2. If solid colors are displayed on-screen without any distortion and the *2,7* code persists, replace the display panel and display cable (EDP).
2	8	LCD failure (EC detection of power rail failure)	**Option 1:**(If a known good external monitor is available) 1. Connect the computer to an external monitor, flash the latest BIOS version. 2. Check the diagnostic light patterns and suggested resolutions for the *4, x* codes in this table. **Option 2:** **NOTE:** Follow these steps if flashing to the latest BIOS version is not possible. 1. If the LCD display is black or dim, replace the system board and EDP display cable. 2. If the LCD display is working but the *2,8* code persists, replace ONLY the system board.
3	1	CMOS battery failure	• Reset the main battery connection. • If the problem persists, replace the main battery.
3	2	PCI or Video card or chip failure	Replace the system board.
3	3	BIOS Recovery image not found	• Flash latest BIOS version. • If the problem persists, replace the system board.
3	4	BIOS Recovery image found but invalid.	• Flash latest BIOS version. • If the problem persists, replace the system board.
3	5	Power rail failure	Replace the system board.
3	6	Flash corruption is detected by SBIOS.	• Press the power button for over 25 seconds to do RTC reset. If the problem persists, replace the system board. • Disconnect all power source (AC, battery, coin

Table 23. System-diagnostic lights (continued)

Blinking pattern		Problem description	Suggested resolution
Amber	**White**		
			cell) and drain flea power by pressing and holding down the power button 3~5 seconds to ensure that all power is drained. • Run "BIOS recovery from USB," and the instructions are in the website Dell support. • If the problem persists, replace the system board.
3	7	Timeout waiting on ME to reply to HECI message.	Replace the system board.
4	1	Temporary Battery Failure	*4,1* code is applicable for thirty seconds. If the problem does not resolve itself within this time, the battery transitions to **Permanent Battery Failure** and the **Amber Light keeps blinking.** Replace the battery.
4	3	LCD Panel Failure (potential cracked panel)	Replace the display panel.
4	4	Power Rail Failure at system board side	Replace the system board and display cable (EDP).
4	5	LCD Panel Failure and Power Rail Failure at system board side.	Replace the system board, display panel, and display cable (EDP).
4	6	Display Cable (EDP) Failure	Reconnect the EDP display cable to the system board. If the *4,6* code persists, replace the display cable (EDP).

NOTE: Blinking 3-3-3 LEDs on Lock LED (Caps-Lock or Num-Lock), Power button LED (without Fingerprint reader), and Diagnostic LED indicates failure to provide input during LCD panel test on Dell SupportAssist Preboot System Performance Check diagnostics.

Recovering the operating system

When your computer is unable to boot to the operating system even after repeated attempts, it automatically starts Dell SupportAssist OS Recovery.

Dell SupportAssist OS Recovery is a stand-alone tool that is preinstalled on Dell computers running the Windows operating system. It consists of tools to diagnose and troubleshoot issues that may occur before your computer boots to the operating system. It enables you to diagnose hardware issues, repair your computer, back up your files, and restore your computer to its factory state.

You can also download it from the Dell Support website to troubleshoot and fix your computer when it fails to boot into the primary operating system due to software or hardware failures.

For more information about the Dell SupportAssist OS Recovery, see *Dell SupportAssist OS Recovery User's Guide* at Serviceability Tools at the Dell Support Site. Click **SupportAssist** and then click **SupportAssist OS Recovery**.

NOTE: Windows 11 IoT Enterprise LTSC 2024 and Dell ThinOS 10 do not support Dell SupportAssist. For more information about recovering ThinOS 10, see Recovery mode using R-Key.

Real-Time Clock (RTC Reset)

The Real-Time Clock (RTC) reset function enables you or the service technician to recover Dell computers from No POST/No Power/No Boot situations.

Start the RTC reset with the computer powered off and connected to AC power. Press and hold the power button for thirty seconds. The computer RTC Reset occurs after you release the power button.

Auto RTC reset

The auto RTC reset feature automates the manual process of the RTC recovery function from a No Power or No POST failures. When two instances of No Power, No POST issues are detected, the computer automatically attempts an RTC Reset.

Backup media and recovery options

It is recommended to create a recovery drive to troubleshoot and fix problems that may occur with Windows. Dell provides multiple options for recovering the Windows operating system on your Dell computer. For more information, see Dell Windows Backup Media and Recovery Options.

Network power cycle

About this task

If your computer is unable to access the Internet due to network connectivity issues, reset your network devices by performing the following steps:

Steps

1. Turn off the computer.
2. Turn off the modem.
   NOTE: Some Internet service providers (ISPs) provide a modem and router combo device.
3. Turn off the wireless router.
4. Wait for 30 seconds.
5. Turn on the wireless router.
6. Turn on the modem.
7. Turn on the computer.

Drain flea power (perform hard reset)

About this task

Flea power is the residual static electricity that remains in the computer even after it has been powered off and the battery is removed.

For your safety, and to protect the sensitive electronic components in your computer, you must drain residual flea power before removing or replacing any components in your computer.

Draining flea power, also known as a performing a "hard reset," is also a common troubleshooting step if your computer does not turn on or boot into the operating system.

Perform the following steps to drain the flea power:

Steps

1. Turn off the computer.
2. Disconnect the power adapter from the computer.
3. Remove the base cover.
4. Remove the battery.

   CAUTION: The battery is a Field Replaceable Unit (FRU) and the removal and installation procedures are intended for authorized service technicians only.

5. Press and hold the power button for 20 seconds to drain the flea power.
6. Install the battery.
7. Install the base cover.
8. Connect the power adapter to the computer.
9. Turn on the computer.

   NOTE: For more information about performing a hard reset, go to Dell Support Site. On the menu bar at the top of the Support page, select Support > Support Library. In the Search field on the Support Library page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

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Getting help and contacting Dell

Self-help resources

You can get information and help on Dell products and services using these self-help resources:

Table 24. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	Dell Site
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	Windows Support Site Linux Support Site
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals, and documents.	Your Dell computer is uniquely identified using a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, enter the Service Tag or Express Service Code at Dell Support Site. For more information about how to find the Service Tag for your computer, see Locate the Service Tag on your computer.
Dell knowledge base articles	1. Go to Dell Support Site. 2. On the menu bar at the top of the Support page, select **Support** > **Support Library**. 3. In the Search field on the Support Library page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see Contact Support at Dell Support Site.

NOTE: Availability of the services may vary depending on the country or region, and product.

NOTE: If you do not have an active Internet connection, you can find contact information in your purchase invoice, packing slip, bill, or Dell product catalog.

7

Revision history

Tracks all updates that are made to the document. It typically includes the date of change, version number, and a brief description of the modification. This log helps maintain transparency, accountability, and a clear timeline of progress.

Table 25. Revision history

Revision	Date	Description
A05	July 2026	Updated the terminology from **'power-button board'** to **'power button with optional fingerprint reader'** in the following topics: ● Customer Replaceable Units (CRUs) and Field Replaceable Units (FRUs) list ● Major components ● Removal and installation of power-button with optional fingerprint reader ● Removal and installation of palm-rest assembly ● Removal and installation of dummy SIM-card slot filler
A04	March 2026	Quebec requirement update.
A03	September 2025	Added the list of CRU and FRU components.
A00	December 2022	Original publish date.