Dell Latitude 7480

Owner's Manual

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.**

Contents

Working on your computer

Before working inside your computer

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that the following conditions exist:

- You have read the safety information that shipped with your computer.
- A component can be replaced or--if purchased separately--installed by performing the removal procedure in reverse order.

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

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

⚠ **CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.**

⚠ **CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.**

⚠ **CAUTION: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.**

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

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

To avoid damaging your computer, perform the following steps before you begin working inside the computer.

1. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer.
3. If the computer is connected to a docking device (docked), undock it.

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

4. Disconnect all network cables from the computer.
5. Disconnect your computer and all attached devices from their electrical outlets.
6. Close the display and turn the computer upside-down on a flat work surface.

   ⓘ **NOTE: To avoid damaging the system board, you must remove the main battery before you service the computer.**

7. Remove the base cover.
8. Remove the main battery.
9. Turn the computer top-side up.
10. Open the display.
11. Press and hold the power button for few seconds, to ground the system board.

⚠ **CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the display.**

⚠ **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.**

12   Remove any installed ExpressCards or Smart Cards from the appropriate slots.

Safety instructions

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

After working inside your computer

After you complete any replacement procedure, ensure that you connect external devices, cards, and cables before turning on your computer.

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

1   Connect any external devices, such as a port replicator or media base, and replace any cards, such as an ExpressCard.
2   Connect any telephone or network cables to your computer.

⚠ **CAUTION: To connect a network cable, first plug the cable into the network device and then plug it into the computer.**

3   Replace the battery.
4   Connect your computer and all attached devices to their electrical outlets.
5   Turn on your computer.

Turning off your computer — Windows 10

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

1   Click or tap ▦ .

2   Click or tap ⏻ and then click or tap **Shut down**.

> ⓘ **NOTE: Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 6 seconds to turn them off.**

Removing and installing components

This section provides detailed information on how to remove or install the components from your computer.

Recommended tools

The procedures in this document require the following tools:

- Phillips #0 screwdriver
- Phillips #1 screwdriver
- Small plastic scribe

Subscriber Identification Module (SIM) card

Removing SIM card or SIM card tray

⚠ **CAUTION: Removing the SIM card when the computer is on may cause data loss or damage the card. Ensure that your computer is turned off or the network connections are disabled.**

1 Insert a paperclip or a SIM card removal tool into the pinhole on the SIM card tray.
2 Use a scribe to pull the SIM card tray
3 If a SIM card is available, remove the SIM card from the SIM card tray.

Base cover

Removing base cover

1 Follow the procedure in Before working inside your computer.
2 To release the base cover:
    a Loosen the M2.5 x 6.0 captive screws that secure the base cover to the computer [1].
    b Use a plastic scribe to release the base cover from the edge and lift it from the computer [2].

3   Lift the base cover from the computer.

Installing base cover

1   Align the base cover tabs to the slots on the edges of the computer.
2   Press the edges of the cover until it clicks into place.
3   Tighten the M2.5 x 6.0 captive screws to secure the base cover to the computer.
4   Follow the procedure in After working inside your computer.

Battery

Removing battery

1   Follow the procedure in Before working inside your computer.
2   Remove the base cover.
3   To remove the battery:
    a   Disconnect the battery cable from the connector on the system board [1].
    b   Remove the M2.0 x 5.0 screws that secure the battery to the computer [2].
    c   Lift the battery from the computer [3].
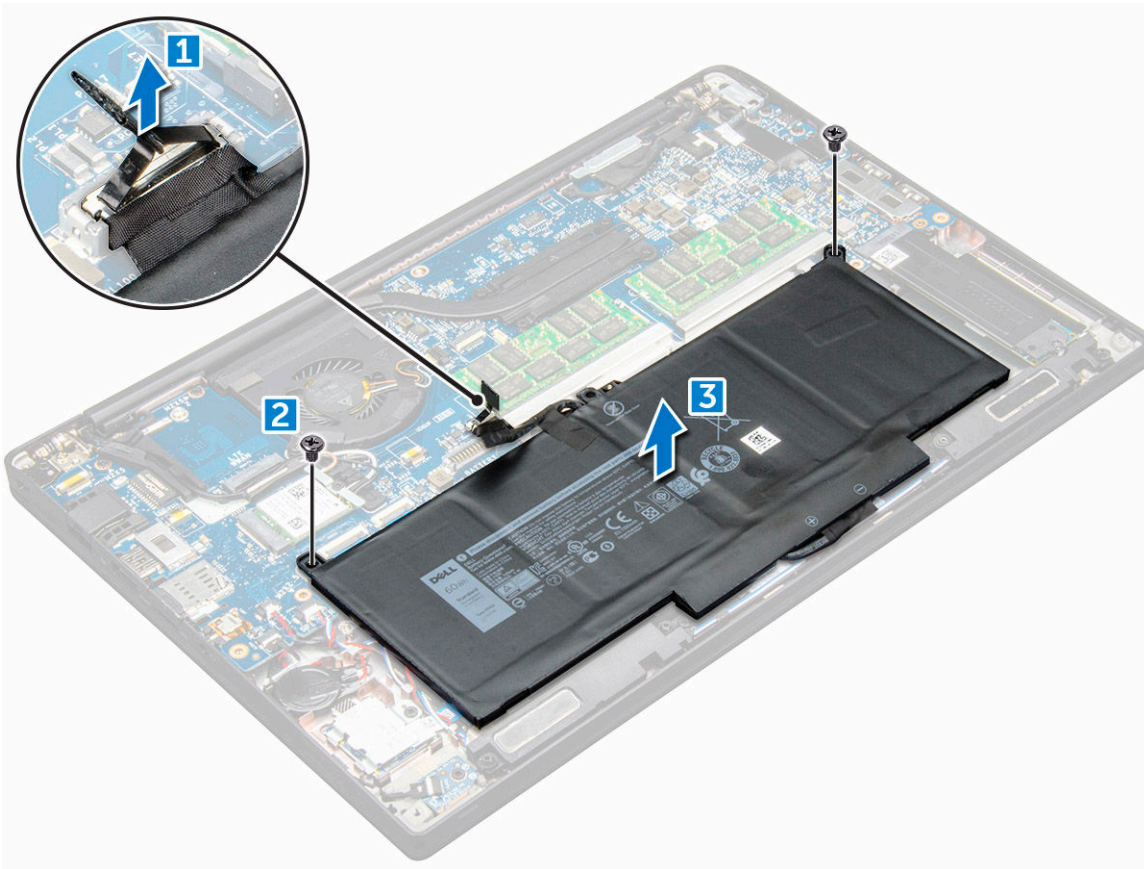
Installing battery

1   Insert the battery into the slot on the computer.
2   Route the battery cable through the routing channel and connect the battery cable to the connector on the system board.

3 Tighten the M2.0 x 5.0 screws to secure the battery to the computer.

4 Install the base cover

5 Follow the procedure in After working inside your computer.

PCIe Solid State Drive (SSD)

Removing PCIe SSD card

1 Follow the procedure in Before working inside your computer.

2 Remove the:

   a base cover
   b battery

> ⓘ NOTE: **If you have not removed the battery, you must connect the battery cable to the system board.**

3 To remove the PCIe SSD card:

   a Loosen the M2.0x3.0 captive screws that secure the SSD bracket [1].
   b Remove the SSD bracket [2].
   c Remove the PCIe SSD card from the computer [3].
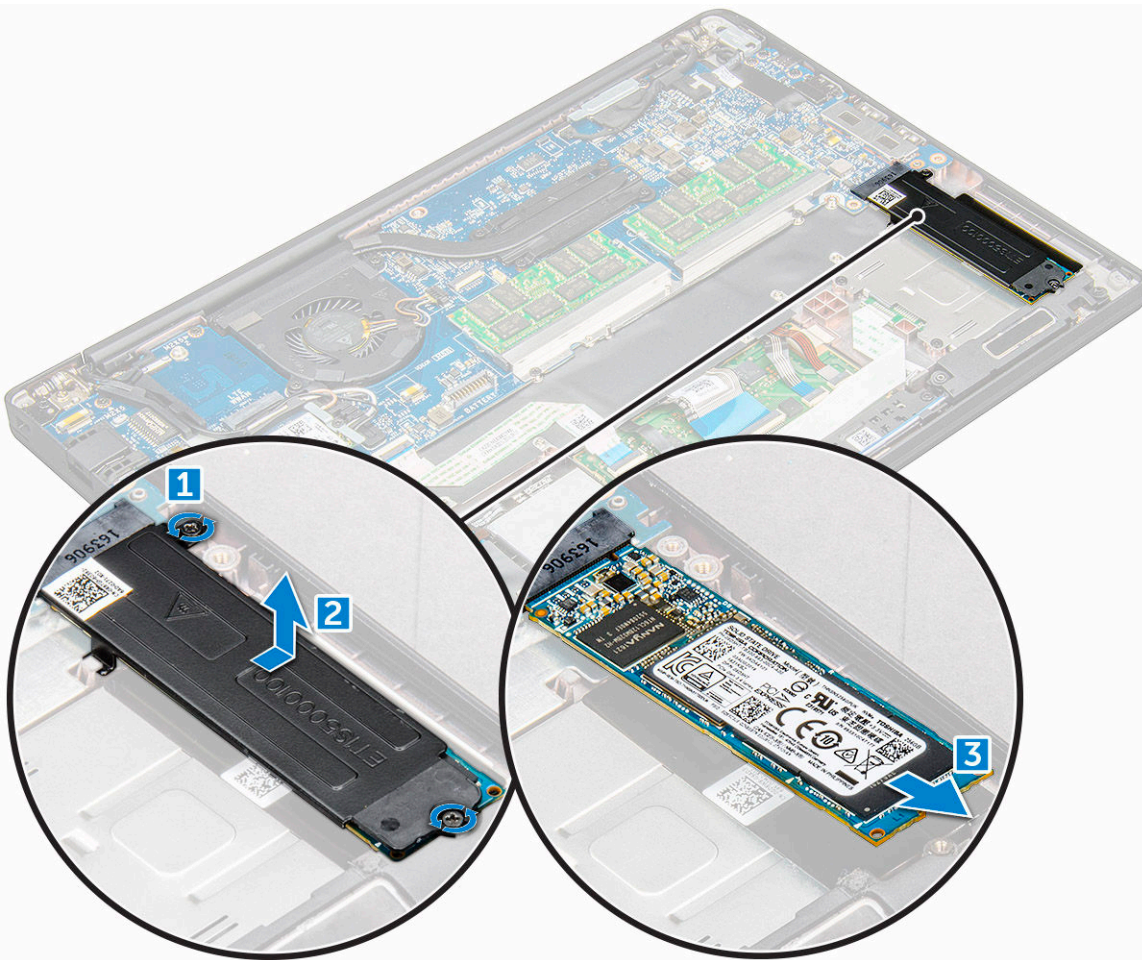
Installing PCIe SSD

1 Insert the PCIe SSD card into the connector.
2 Install the SSD bracket over the PCIe SSD card.
3 Tighten the M2.0x3.0 screws to secure it the SSD bracket.
4 Install the:
   a battery

   > ⓘ NOTE: **If you have not removed the battery, you must connect the battery cable to the system board.**

   b base cover
5 Follow the procedure in After working iinside your computer.

Speaker

Removing speaker module

1 Follow the procedure in Before working inside your computer.
2 Remove the:
   a base cover
   b battery
3 To release the speaker module:
   a Disconnect the speaker cable from the connector on the system board [1].
   b Un-route the speaker cable from the routing clips on the computer [2].
   c Remove the tape that secures the speaker cables to the computer [3].
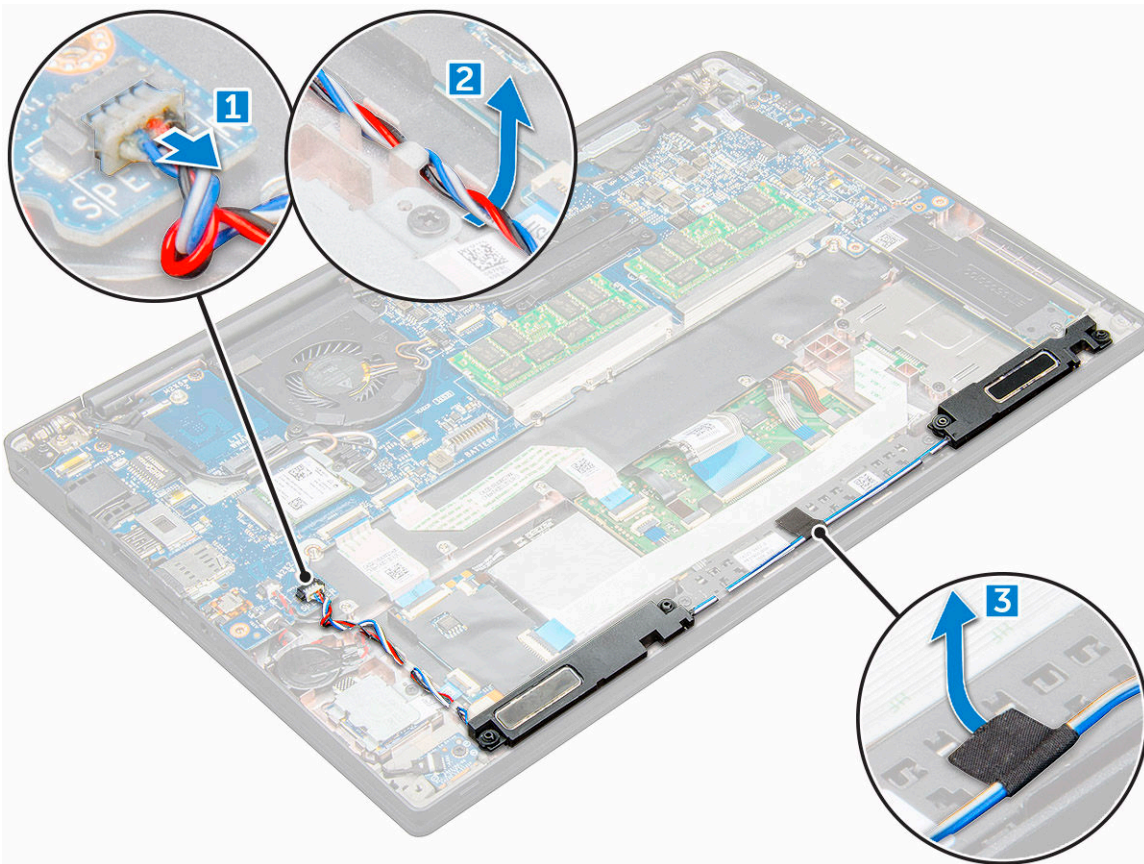
4   To remove the speaker module:

    a   Lift the speaker module from the computer .

Installing speaker module

1   Place the speaker module into the slots on the computer.
2   Route the speaker cable through the retention clips on the computer.
3   Connect the speaker cable to the connector on the system board.
4   Install the:

    a   battery
    b   base cover

5   Follow the procedure in After working inside your computer.

Coin cell battery

Removing the coin cell battery

1   Follow the procedure in Before working inside your computer.
2   Remove the:

    a   base cover
    b   battery

         ⓘ NOTE: **You need not remove the battery but instead disconnect the battery cable from the system board.**

3   To remove the coin cell battery:

    a   Disconnect the coin cell battery cable from the connector on the system board [1].

DELL

b   Lift the coin cell battery to release it from the adhesive [2].

Installing coin cell battery

1   Affix the coin cell battery on the slot inside the computer.

2   Route the coin cell battery cable through the routing channel before connecting the cable

3   Connect the coin cell battery cable to the connector on the system board.

4   Install the:

    a   base cover

ⓘ NOTE: If you have not removed the battery, you must connect the battery cable to the system board.

    b   battery

5   Follow the procedure in After working inside your computer.

WWAN card

Removing WWAN card

1   Follow the procedure in Before working inside your computer.

2   Remove the:

    a   base cover

    b   battery

3   To remove the WWAN card:

    a   Remove the M2.0 x 3.0 screw that secures the metal bracket to the WWAN card .

    b   Lift the metal bracket that secures the WWAN card .

    c   Disconnect the WWAN cables from the connectors on the WWAN card .

    d   Lift the WWAN card from the computer .

Installing WWAN card

1   Insert the WWAN card into the connector on the system board.

2   Connect the WWAN cables to the connectors on the WWAN card.

3   Place the metal bracket and tighten the M2.0 x 3.0 screw to secure it to the computer.

4   Install the:

    a   battery

ⓘ NOTE: If you have not removed the battery, you must connect the battery cable to the system board.

    b   base cover

5   Follow the procedure in After working iinside your computer.

ⓘ NOTE: The IMEI number can also be found on the WWAN card.

WLAN card

Removing WLAN card

1   Follow the procedure in Before working inside your computer.

2   Remove the:

    a   base cover

    b   battery

3   To remove the WLAN card:

    a   Remove the M2.0 x 3.0 screw that secures the metal bracket to the WLAN card [1].

    b   Lift the metal bracket [2].

    c   Disconnect the WLAN cables from the connectors on the WLAN card [3].

    d   Remove the WLAN card from the computer [4].

Installing WLAN card

1　Insert the WLAN card into the connector on the system board.
2　Connect the WLAN cables to the connectors on the WLAN card.
3　Place the metal bracket and tighten the M2.0 x 3.0 screw to secure it to the computer.
4　Install the:
   a　battery

> ⓘ NOTE: If you have not removed the battery, you must connect the battery cable to the system board.

   b　base cover
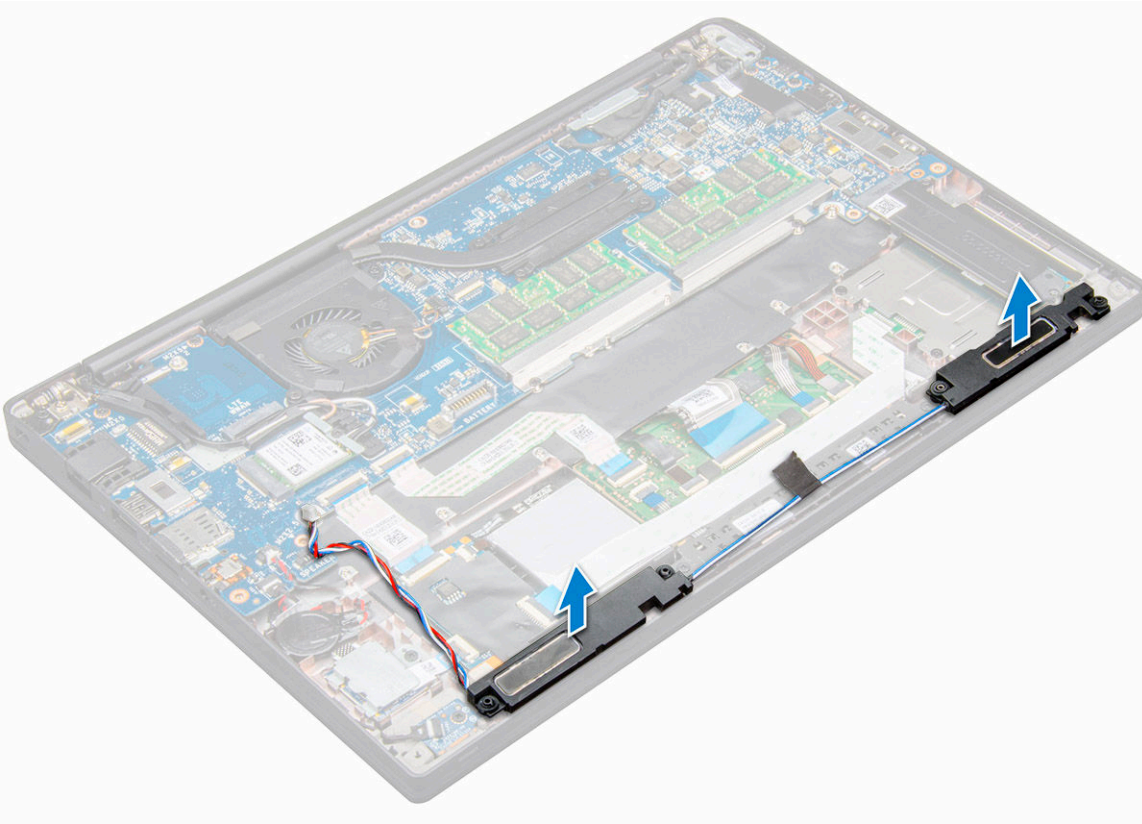5　Follow the procedure in After working iinside your computer.

Memory module

Removing memory module
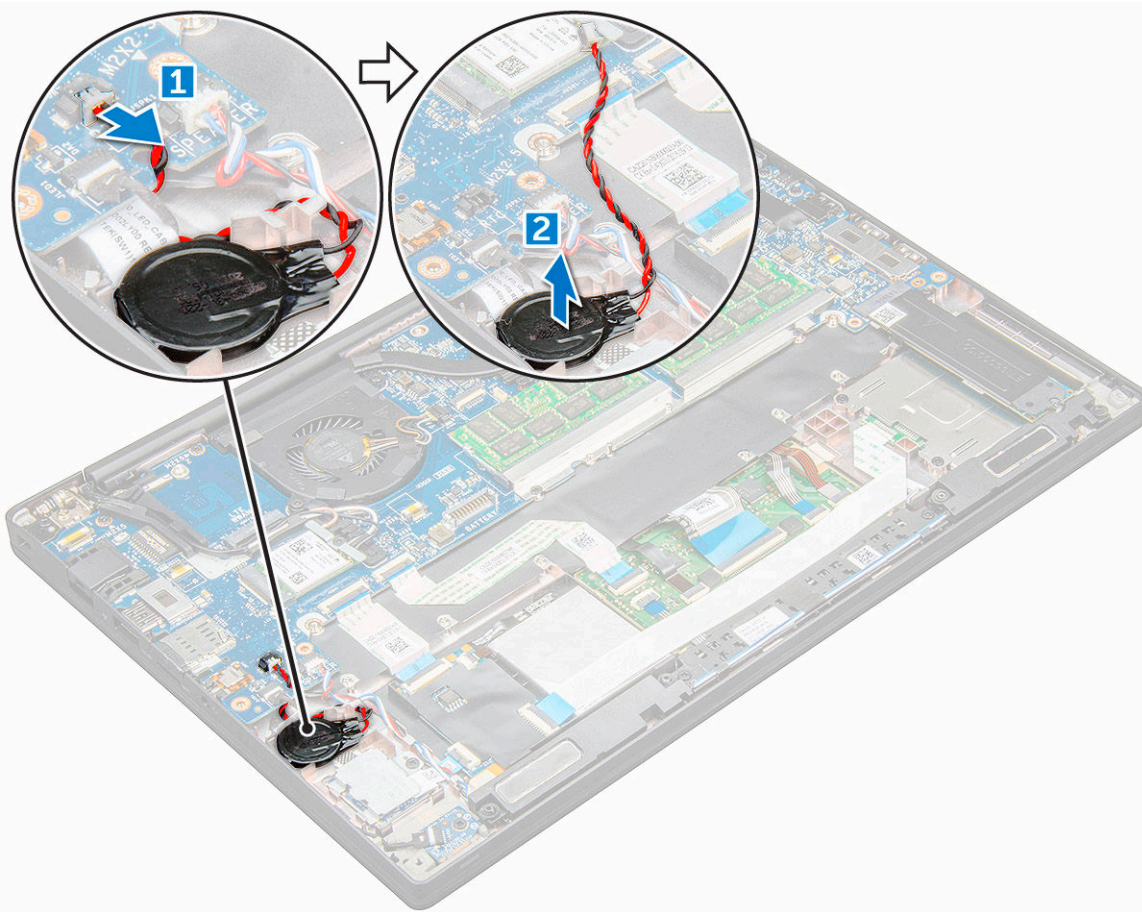
1　Follow the procedure in Before working inside your computer.
2　Remove the:
   a　base cover
   b　battery

> ⓘ NOTE: You need not remove the battery but instead disconnect the battery cable from the system board.

3   To remove the memory module:
    a   Pull the clips securing the memory module until the module snaps-out [1].
    b   Remove the memory module from the connector on the system board [2[.
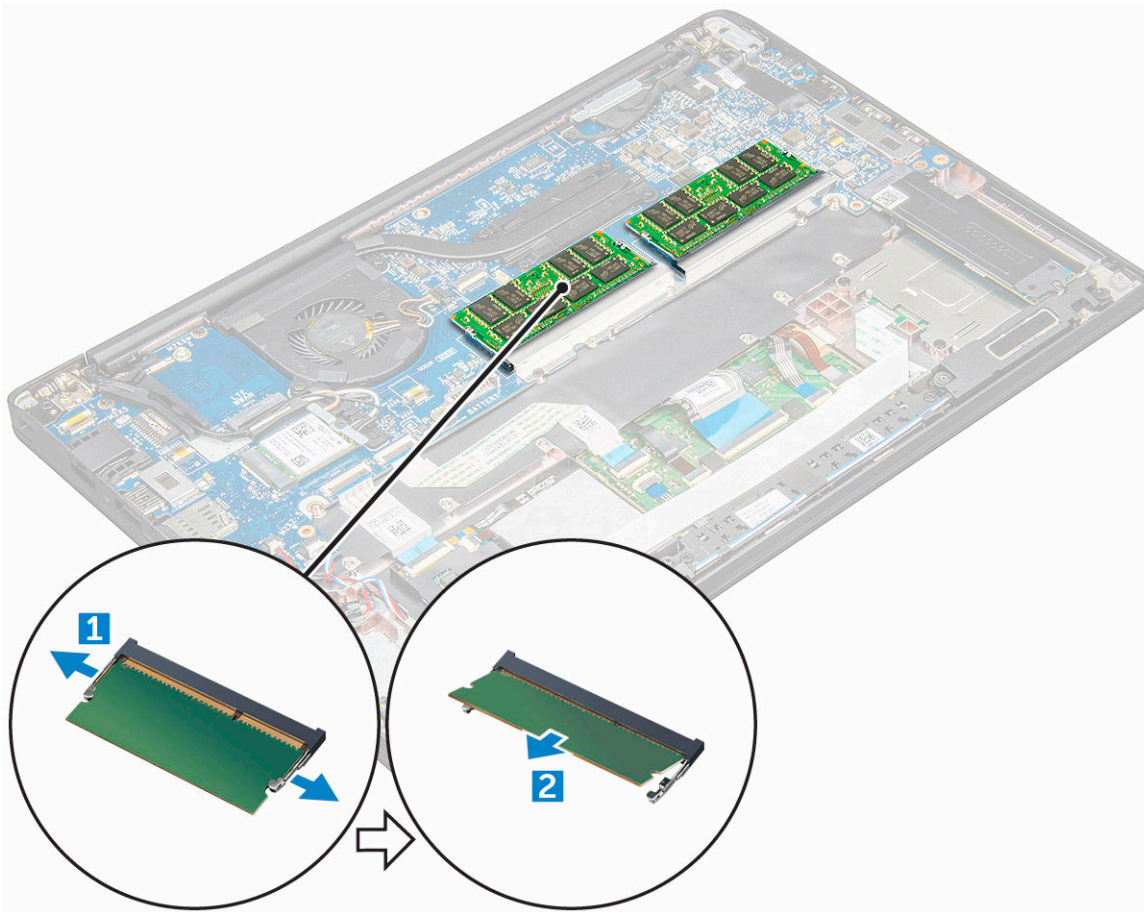
Installing memory module

1   Insert the memory module into the connector until snaps in.
2   Install the:
    a   battery

        ⓘ **NOTE: If you have not removed the battery, you must connect the battery cable to the system board.**

    b   base cover
3   Follow the procedures in After working iinside your computer.

Heat sink

Removing heat sink assembly

1   Follow the procedure in Before working inside your computer.
2   Remove the:
    a   base cover
    b   battery

3 To remove the heat sink assembly:
   a Disconnect the fan cable from the system board [1].
   b Remove the M2.0 x 5.0 screws that secure the fan to the system board.
   c Remove the M2.0 x 3.0 screws that secure the heat sink to the system board [2].
   d Lift the heat sink assembly from the system board.
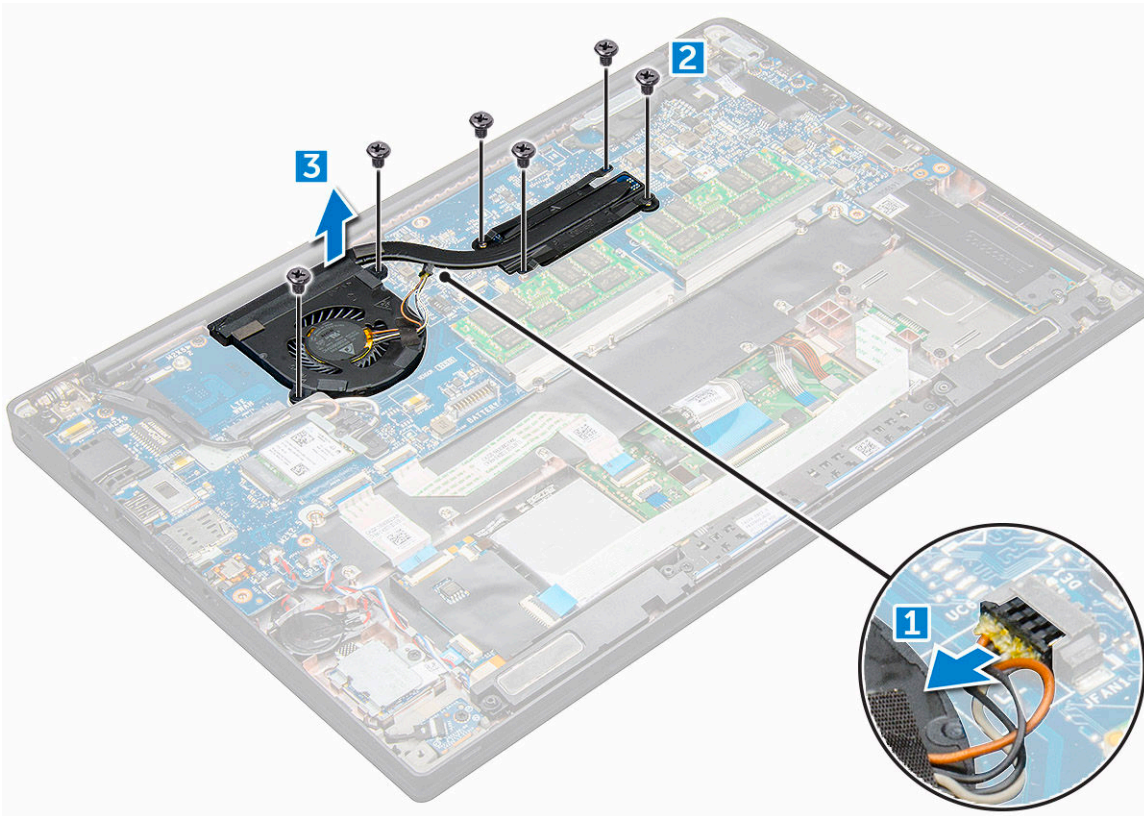
Installing heat sink assembly

1 Align the heat sink assembly with screw holders on the system board.
2 Tighten the M2.0 x 3.0 screws to secure the heat sink to the system board.

> ⓘ NOTE: **Tighten the screws on the system board in the order of the callout numbers [1, 2, 3, 4] as indicated on the heat sink.**

3 Tighten the M2.0 x 5.0 screws to secure the fan to the system board.
4 Connect the fan cable to the connector on the system board.
5 Install the:
   a battery

> ⓘ NOTE: **If you have not removed the battery, you must connect the battery cable to the system board.**

   b base cover
6 Follow the procedure in After working inside your computer.

LED board

Removing LED board

1   Follow the procedure in Before working inside your computer.
2   Remove the:
    a   base cover
    b   battery

> ⓘ NOTE: **You need not remove the battery but instead disconnect the battery cable from the system board.**

3   To remove the LED board:
    a   Disconnect the LED cable from the LED board [1].
    b   Remove the M2.0 x 3.0 screw that secures the LED board to the computer [2].
    c   Lift the LED board from the computer

Installing LED board

1   Insert the LED board into the slot on the computer.
2   Tighten the M2.0 x 3.0screw to secure the LED board.
3   Connect the LED cable to the LED board.
4   Install the:
    a   battery

(i) **NOTE:** If you have not removed the battery, you must connect the battery cable to the system board.

    b   battery

5   Follow the procedure in After working inside your computer.
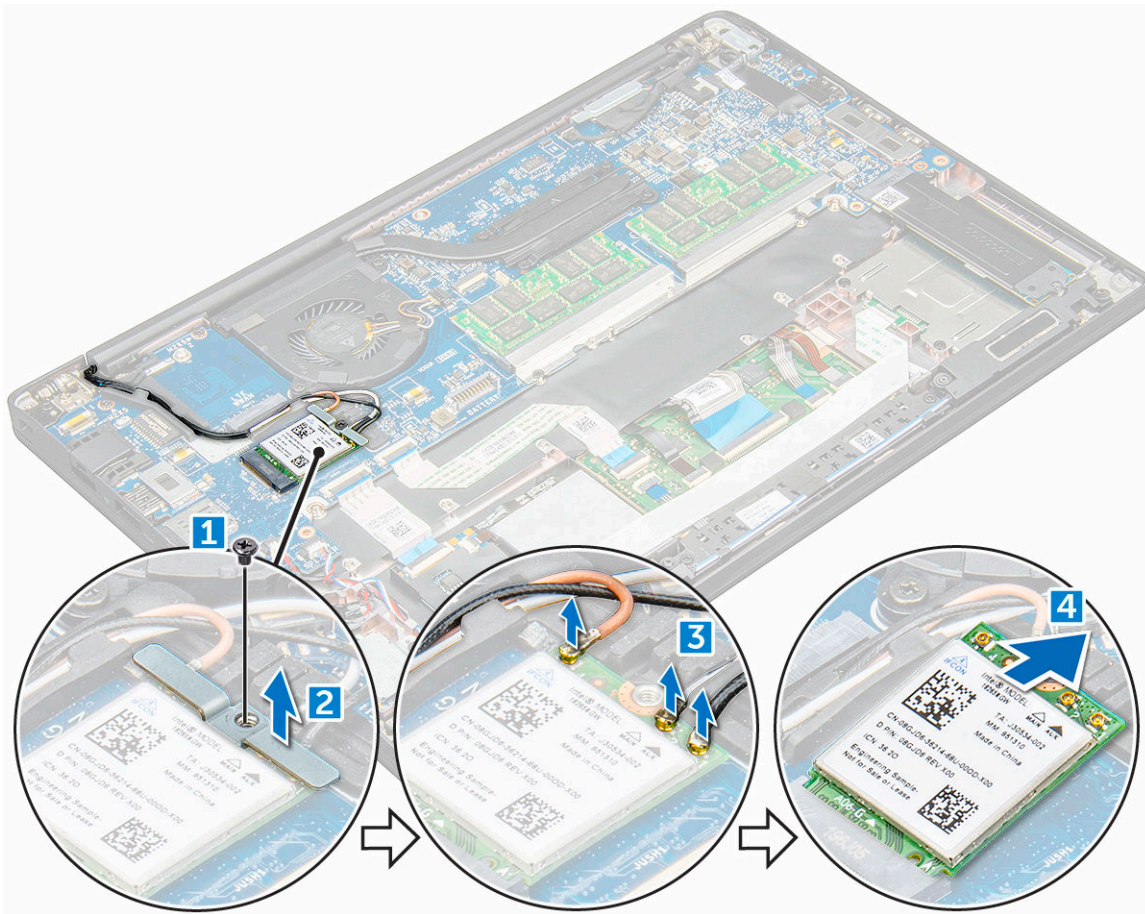
Smart card module

Removing smart card cage

1   Follow the procedure in Before working inside your computer.

2   Remove the:
    a   base cover
    b   battery
    c   PCIe SSD card

3   To disconnect the smart card cable:
    a   Disconnect the smart card cable [1].
    b   Lift the smart cable that is affixed to the computer [2].
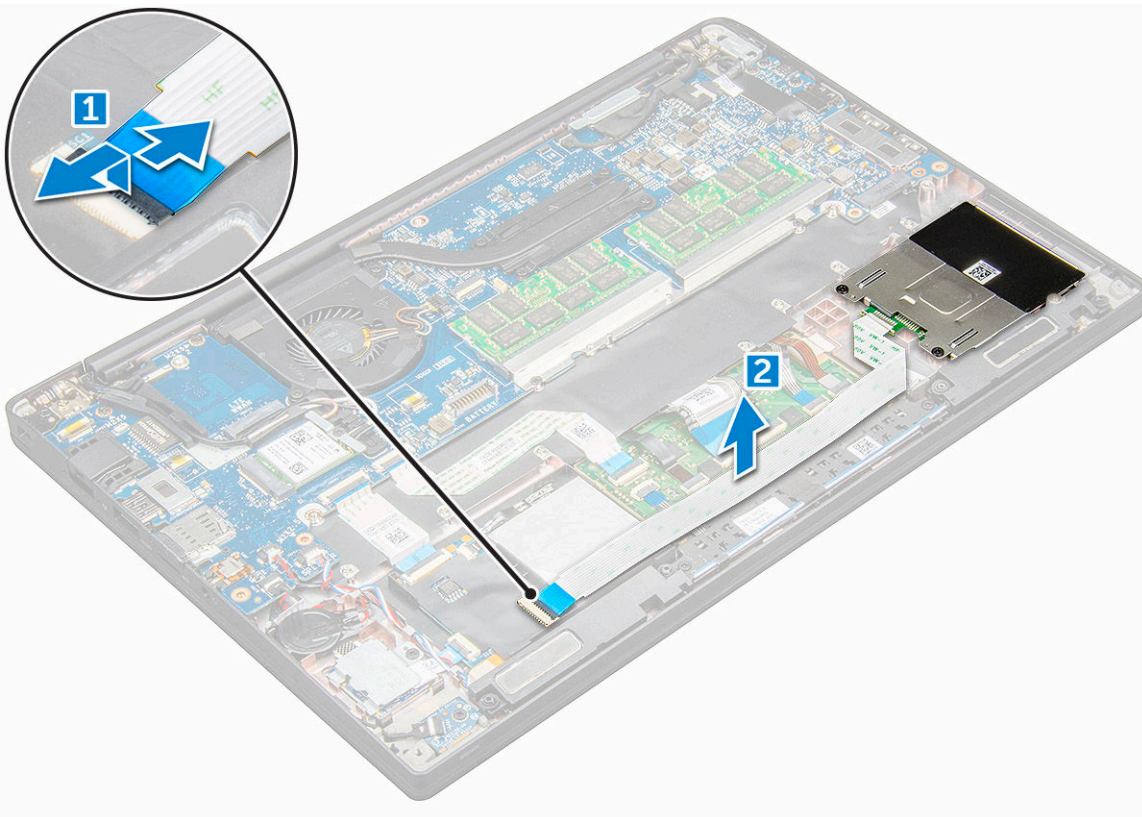
4   To remove the smart card cage:
    a   Remove the M2.0 x 3.0 screws that secure the smart card cage to the computer [1].
    b   Slide and lift the smart card cage from the computer [2].
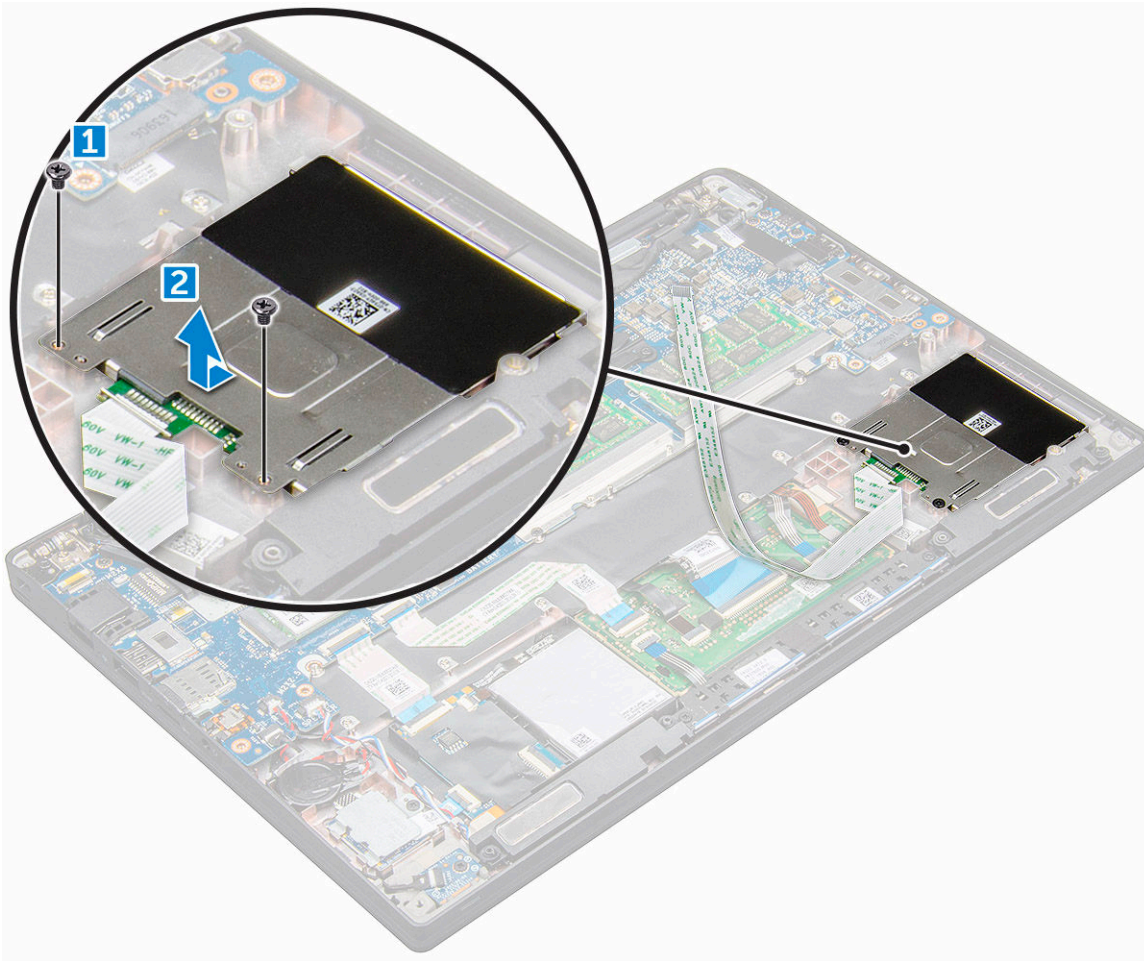
Installing smart card cage

1. Slide the smart card cage into the slot to align with the tabs on the computer.
2. Tighten the M2.0 x 3.0 screws to secure the smart card cage to the computer.
3. Affix the smart card cable and connect it to the connector on the computer .
4. Install the:
   a. PCIe SSD card
   b. battery

   > ⓘ NOTE: **If you have not removed the battery, you must connect the battery cable to the system board.**

   c. base cover
5. Follow the procedure in After working inside your computer.

Touchpad panel

Removing touchpad panel

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. speaker
   b. base cover

    c   battery

3   To disconnect the smart card cable:

    a   Disconnect the smart card cable [1].

    b   Lift the smart card cable that is affixed to the computer [2] to reveal the touchpad panel cable.
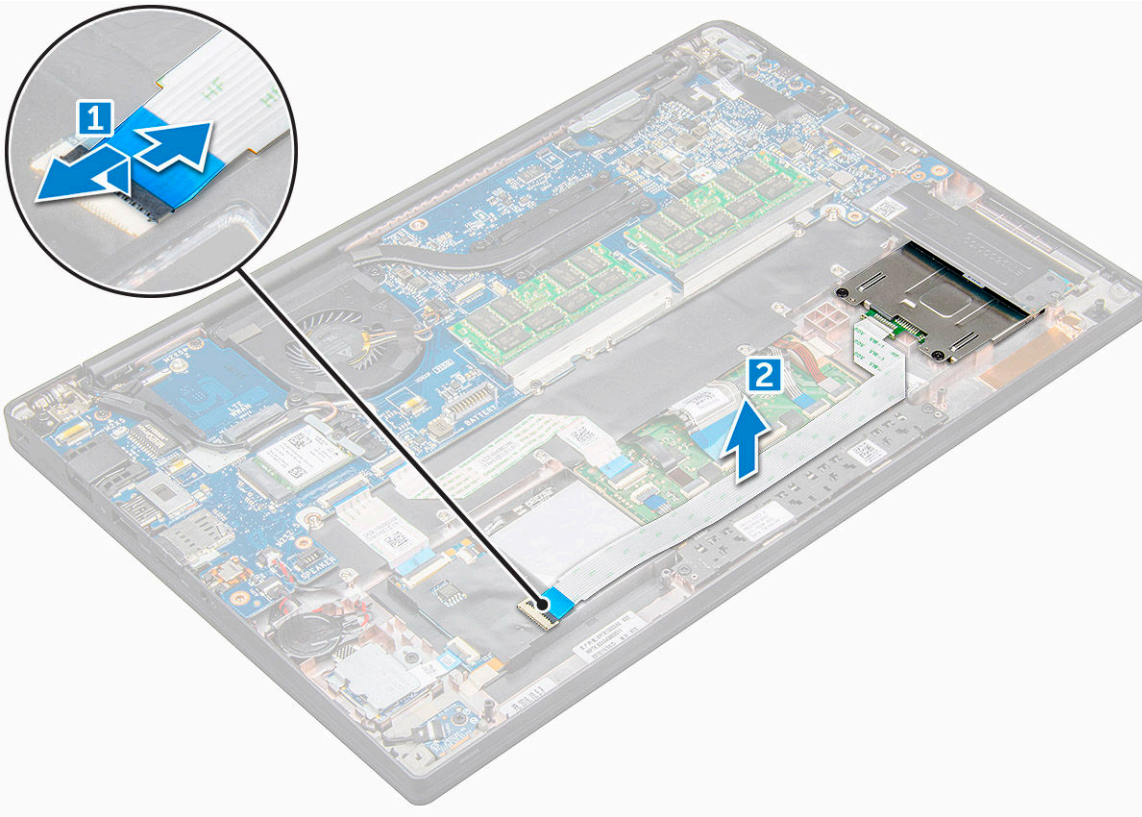
4   To remove the touchpad panel:

    a   Disconnect the touchpad panel cable from the touchpad board [1].

       ⓘ **NOTE: Touchpad panel cable is below the smart card cable.**

    b   Remove M2.0 x 3.0 screws that secure the touchpad panel [2].

    c   Lift the touchpad panel from the computer [3].
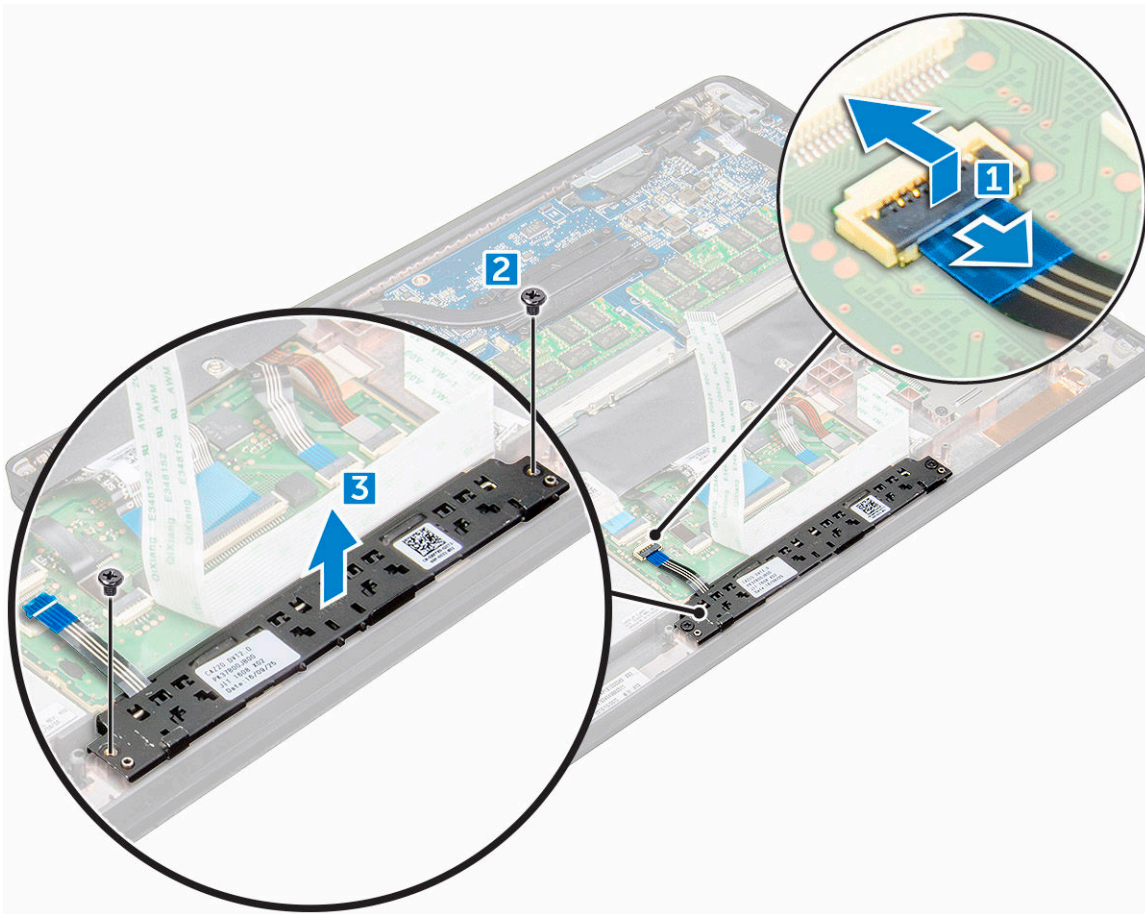
Installing touchpad panel

1. Insert the touchpad panel into the slot to align the tabs with the grooves on the computer.
2. Tighten the M2.0 x 3.0screws to secure the touchpad panel to the computer.
3. Connect the touchpad panel cable to the connector on the touchpad board.
4. Affix the smart card cable and connect it to the connector on the computer
5. Install the:
   a. battery

   ⓘ **NOTE: If you have not removed the battery, you must connect the battery cable to the system board.**

   b. base cover
6. Follow the procedure in After working inside your computer.

Power connector port

Removing power connector port

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. base cover
   b. battery

ⓘ NOTE: You need not remove the battery but instead disconnect the battery cable from the system board.

3   To remove the power connector port:

   a   Disconnect the power connector port cable from the system board [1].

   b   Remove the M2.0x3.0 screw to release the metal bracket on the power connector port [2].

   c   Lift the metal bracket from the computer [3].

   d   Remove the power connector port from the computer [4].
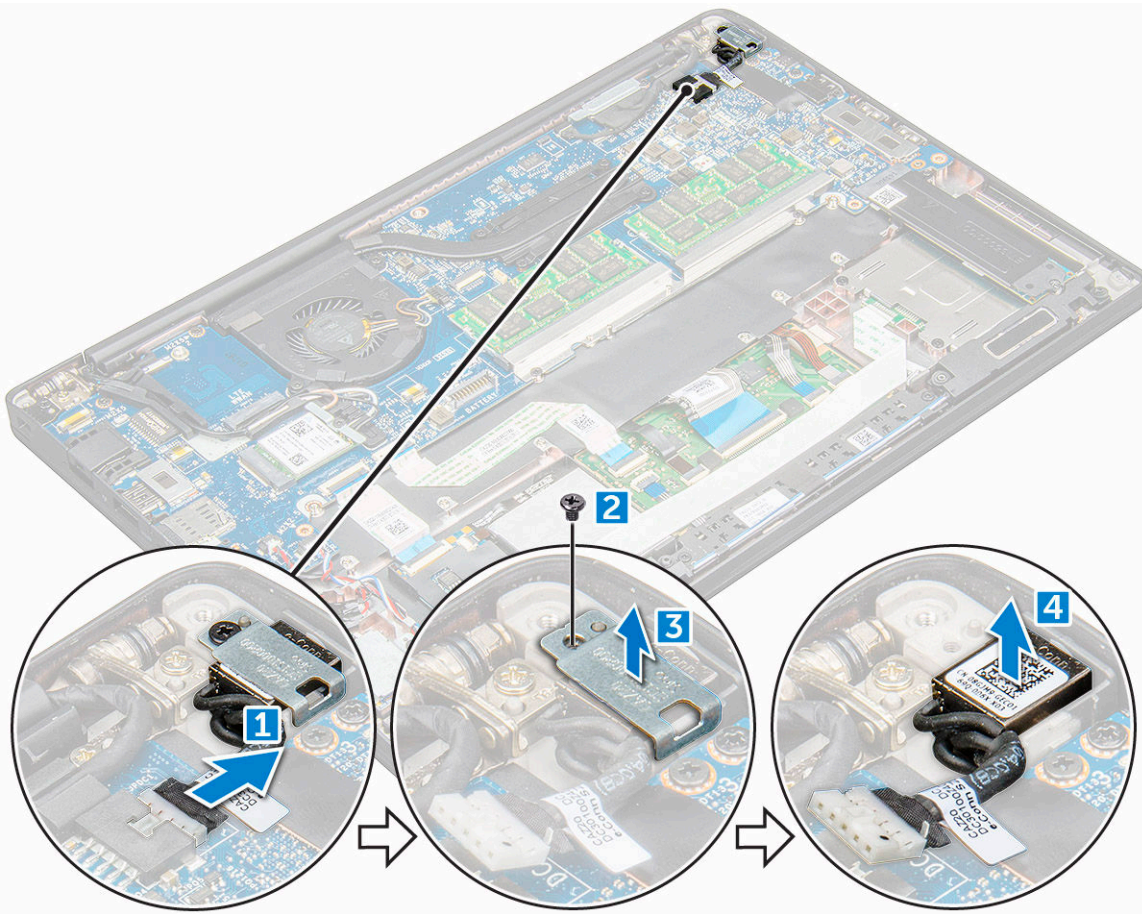
Installing power connector port

1   Install the power connector port into the slot on the computer.

2   Place the metal bracket on the power connector port.

3   Tighten the M2.0x3.0 screw to secure the power connector port to the computer.

4   Connect the power connector port cable to the connector on the system board.

5   Install the:

   a   battery

ⓘ NOTE: If you have not removed the battery, you must connect the battery cable to the system board.

   b   base cover

6   Follow the procedure in After working iinside your computer.
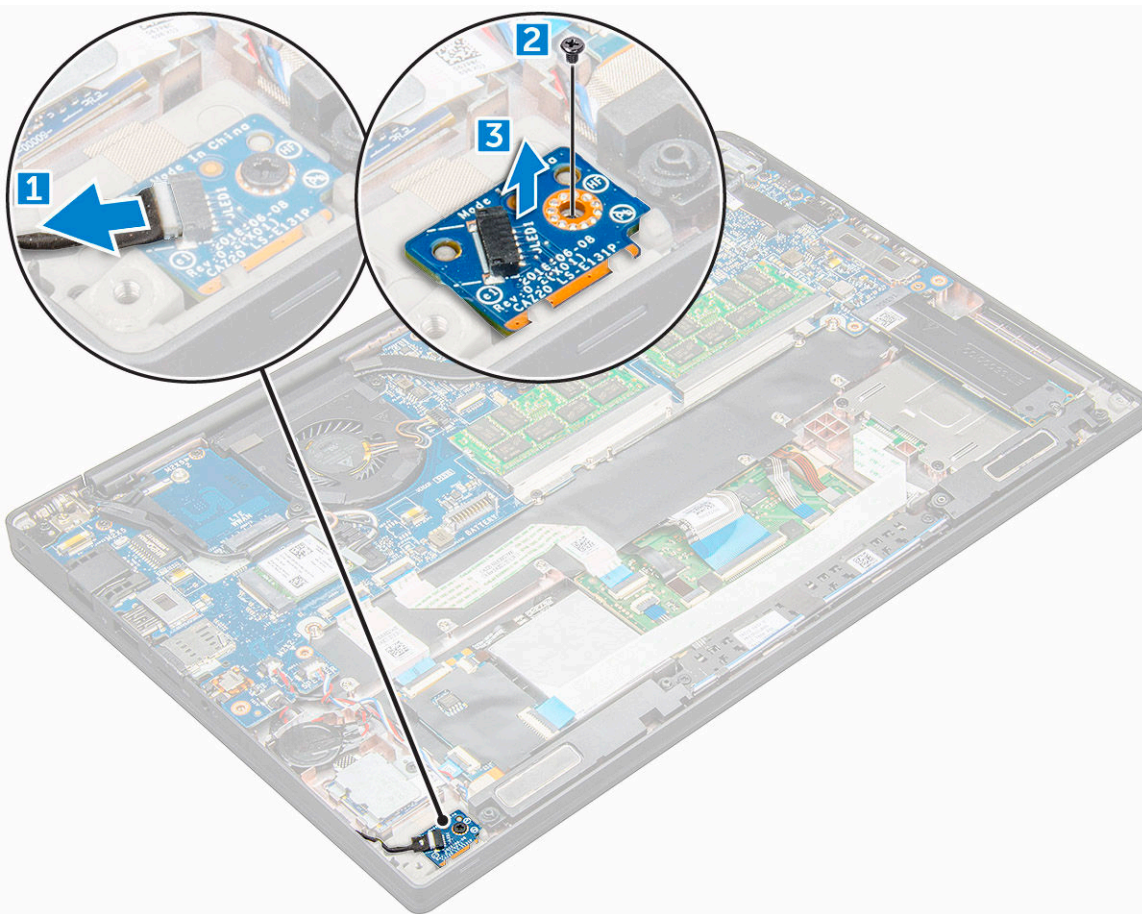
Display Assembly

Removing display assembly—with Touch

1 Follow the procedure in Before working inside your computer.
2 Remove the:
   a base cover
   b battery
   c WLAN card
   d WWAN card
3 To remove the display assembly:
   a Un route the WLAN and WWAN cables from the routing channels [1].
   b Disconnect the XXX cable from the system board [2].
   c Remove the M2.0x3.0 screw that secures the eDP bracket [3].
   d Lift the eDP bracket from the eDP cable [4].
   e Lift the eDP cable to disconnect it from the connector on the system board [5].
   f Un route the eDP cable from the routing channel [6].
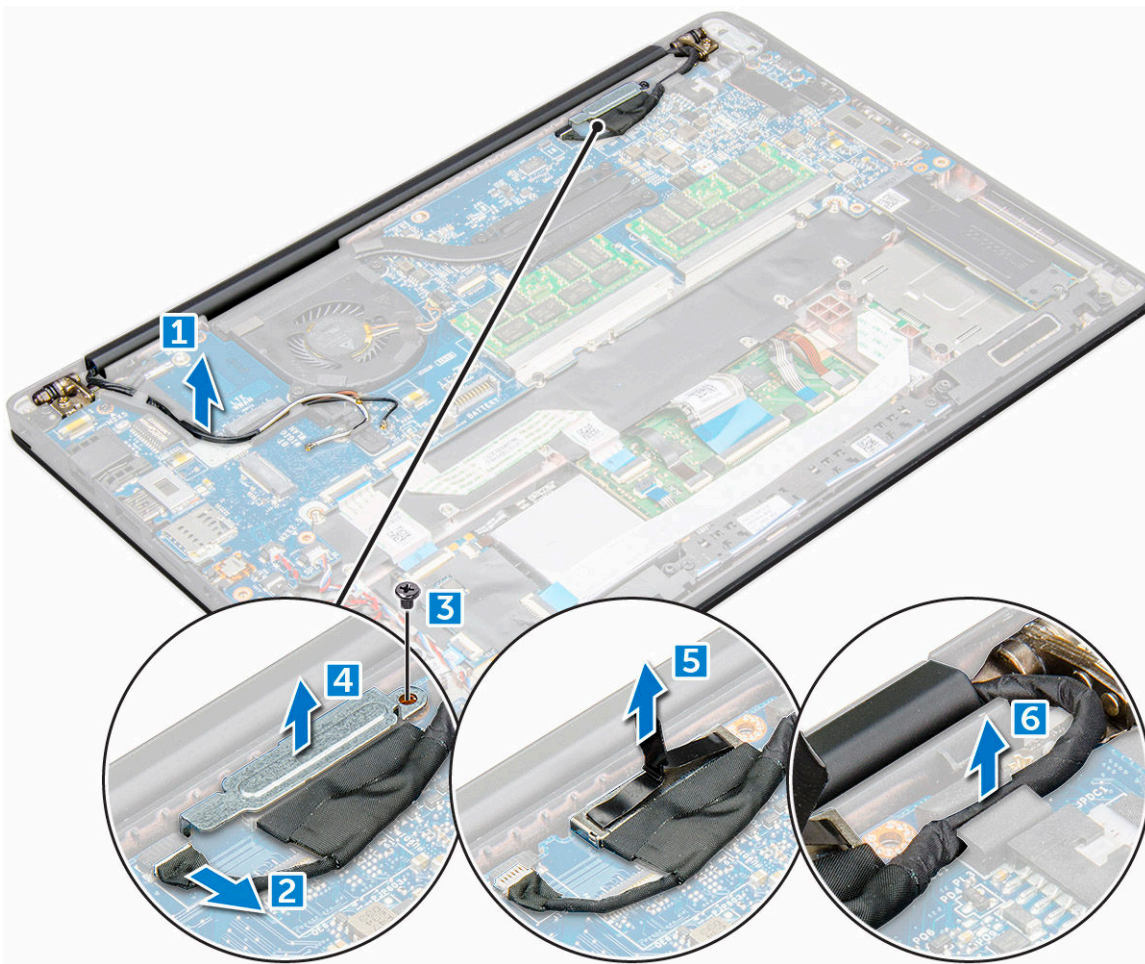
4 To remove the display assembly:
   a Place the computer on a table with the display facing down and the system board on the table.
   b Remove the M2.5 x 4.0 screws that secure the display hinge to the display assembly [1].
   c Lift the display assembly from the computer.

Installing display assembly—with touch

1   Install the display assembly to align it with the display hinge holders on the system.

2   Tighten the M2.5 x 4.0 screws to secure the display hinges on the system display assembly with the system unit.

3   Route the eDP cable through the routing channel.

4   Connect the eDP cable to the connector on the system board.

5   Install the eDP metal bracket on the eDP cable and tighten the M2.0x3.0 screws.

6   Connect the IR camera cable to the system board.

7   Route the WLAN and WWAN cables through the routing channels.

8   Install the:

    a   WLAN card

    b   WWAN card

    c   battery

    d   base cover

9   Follow the procedure in After working inside your computer.

Removing display bezel

ⓘ | **NOTE: The display bezel is available only for non-touch systems.**

1 Follow the procedure in Before working inside your computer.
2 Remove the:
   a base cover
   b battery
   c WLAN card
   d WWAN card
   e display assembly
3 To remove the display bezel:
   a Use a plastic scribe to loosen the bottom edge of the display [1].
   b Loosen the tabs on the edges of the display [2].
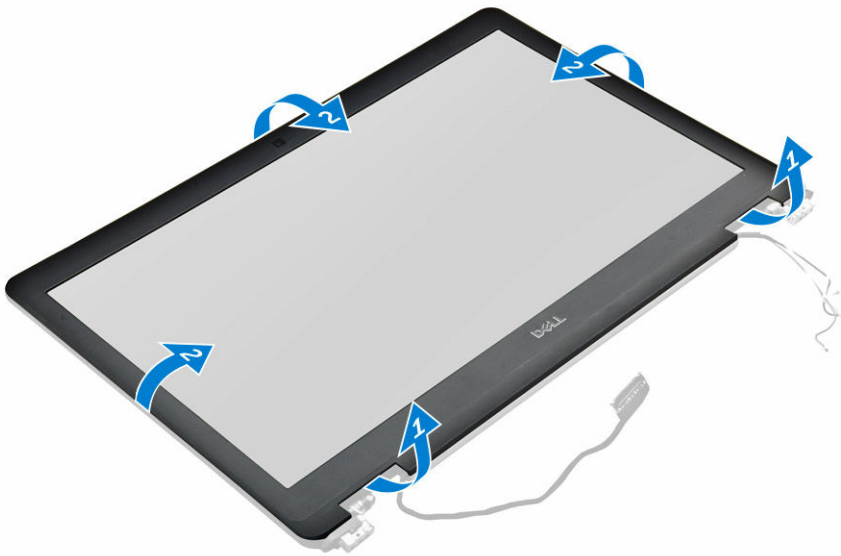
4 Remove the display bezel from the display assembly.

Installing display bezel

1 Place the display bezel on the display assembly.
2 Press the edges of the display bezel until it clicks onto the display assembly.
3 Install the:
   a Display Assembly
   b WLAN card
   c WWAN card
   d battery
   e base cover
4 Follow the procedure in After working inside your computer.

Camera

Removing camera

1 Follow the procedure in Before working inside your computer.
2 Remove the:
   a display assembly
   b WLAN card
   c WWAN card
   d battery
   e base cover
3 To remove the camera module:
   a Lift the plastic bracket to disconnect the camera cable [1].
   b Lift the camera from the display [2] .
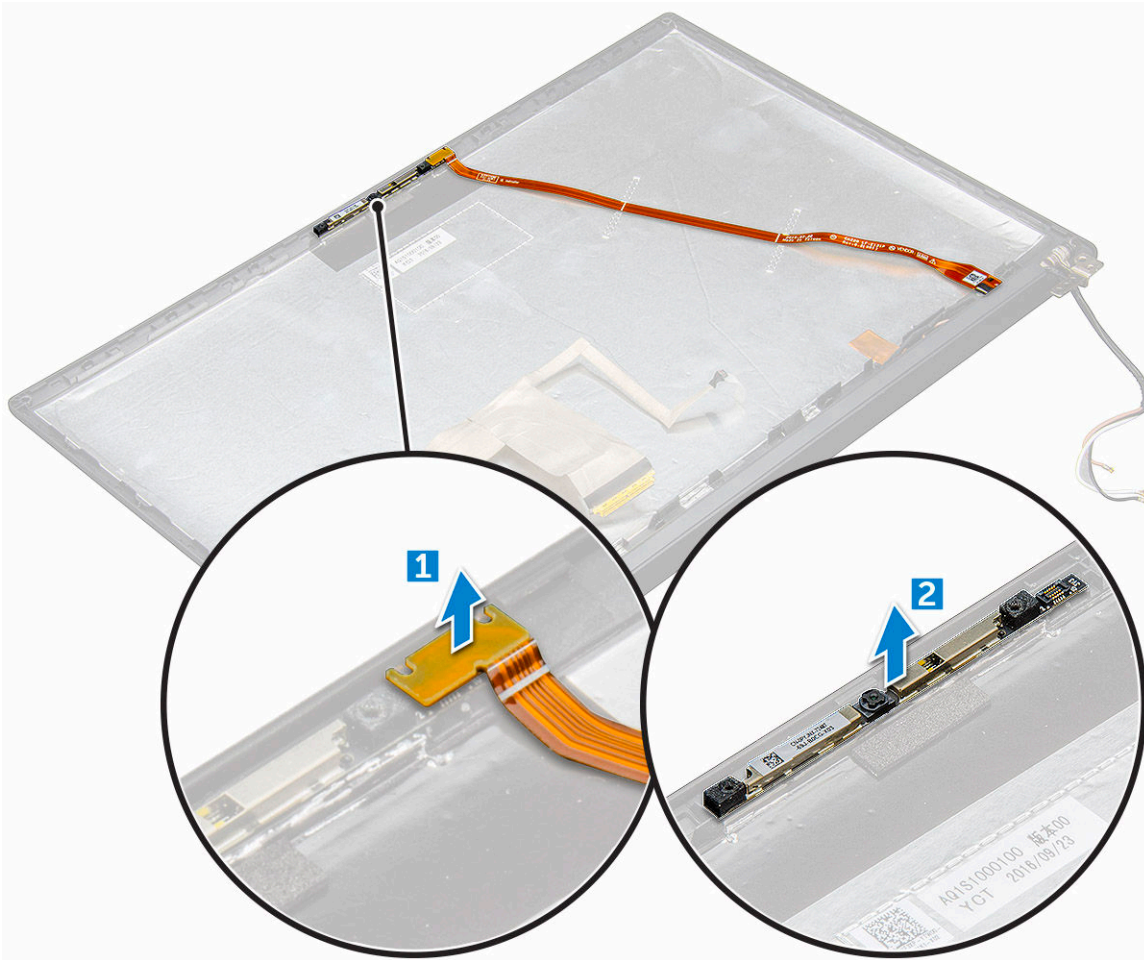
Installing camera

1 Insert the camera module into the slot on the display assembly.
2 Connect the camera cable.
3 Install the:
   a display assembly
   b WLAN card
   c WWAN card
   d battery

e   base cover
4   Follow the procedure in After working inside your computer.

System board

Removing system board

1   Follow the procedure in Before working inside your computer.
1   If your computer is shipped with a WWAN card, then the removal of a SIM card tray is a requirement.
2   Remove the:
    a   SIM card tray
    b   base cover
    c   battery
    d   memory module
    e   PCIe SSD
    f   WLAN card
    g   WWAN card
    h   heat sink assembly
    i   coin cell battery
3   Remove the M2.0 x 3.0 screws that secure memory module bracket to the system board.
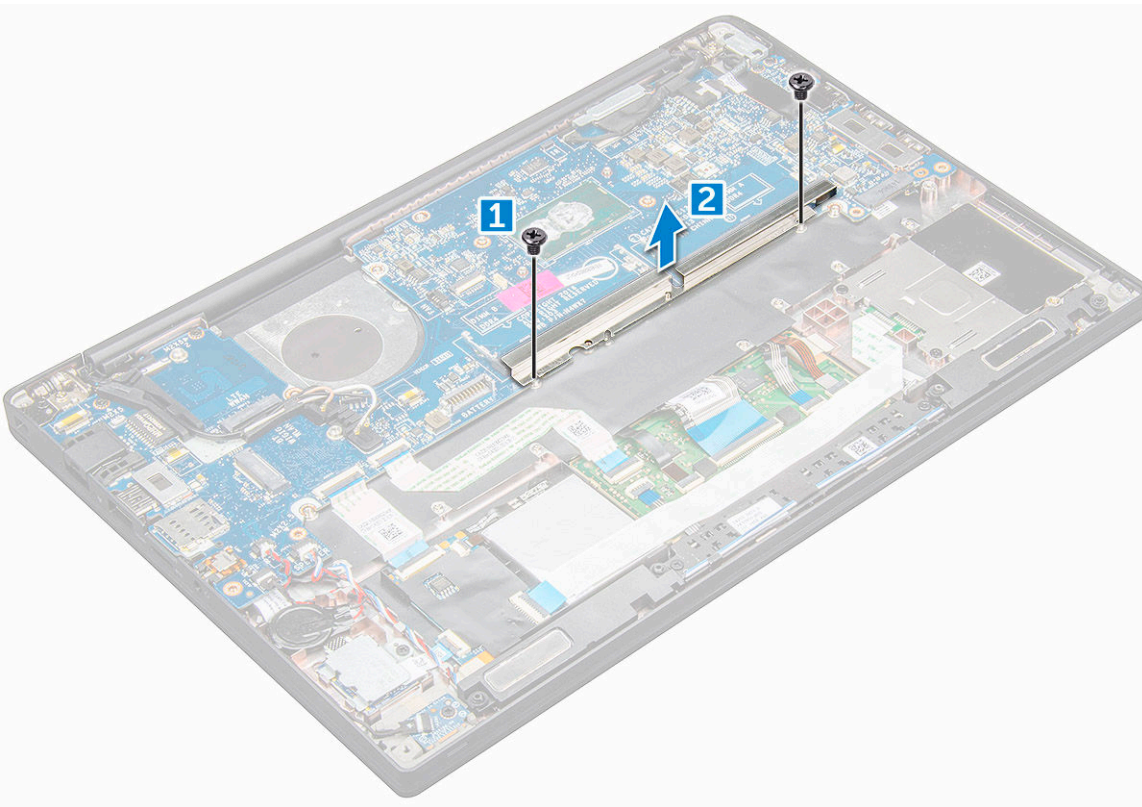
4   To disconnect the eDP cable:
    a   Un route the WLAN and WWAN cables from the routing channels [1].
    b   Disconnect the XXX cable from the system board [2].
    c   Remove the M2.0 x 3.0 screw that secures the eDP cable [3].
    d   Remove the eDP cable bracket [4].
    e   Disconnect the eDP cable from the system board [5].
    f   Un route the eDP cable from the routing clip [6].
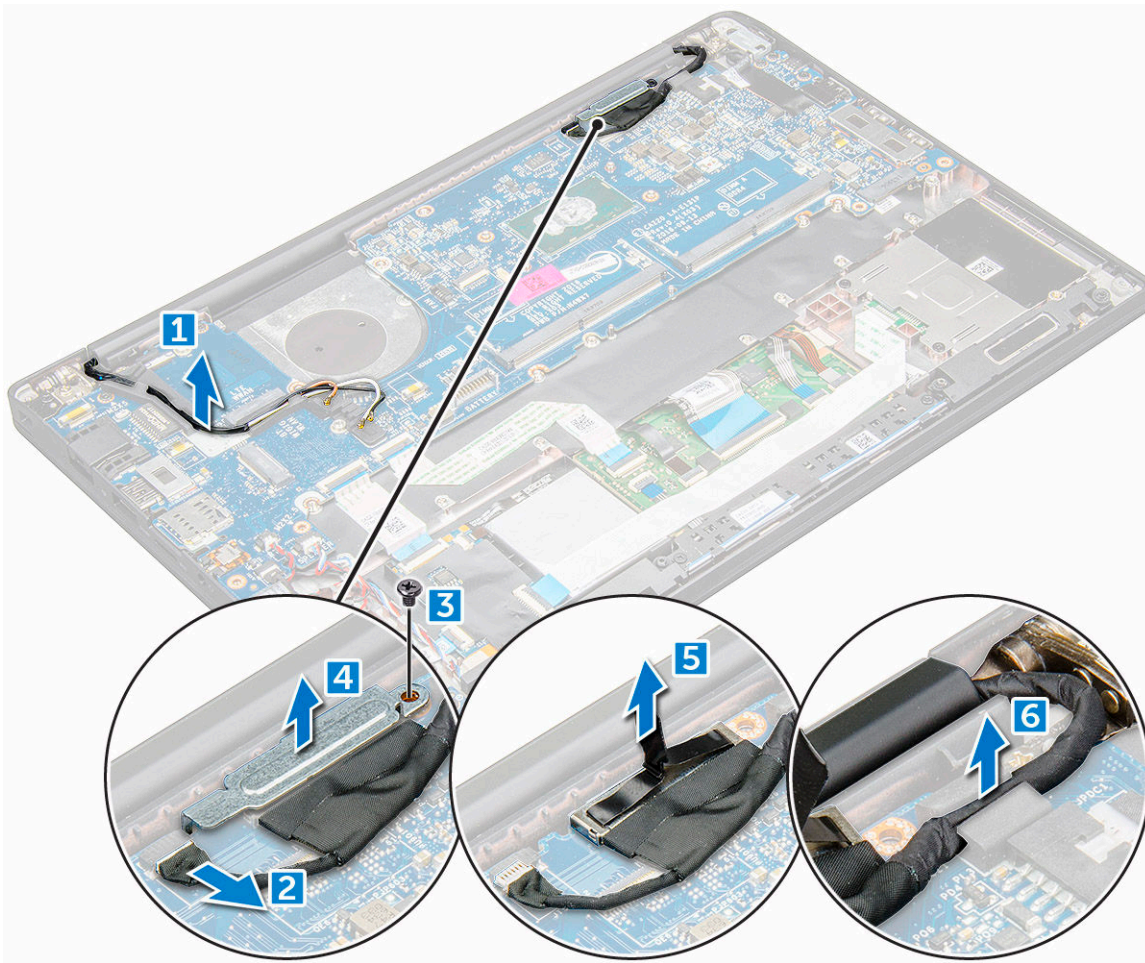
5   To disconnect the cables:

    a   Speaker cable [1]

    b   coin cell battery cable [2[

    c   LED board cable [3]

    d   touchpad cable and USH board cable [4]

    e   power connector port [5]
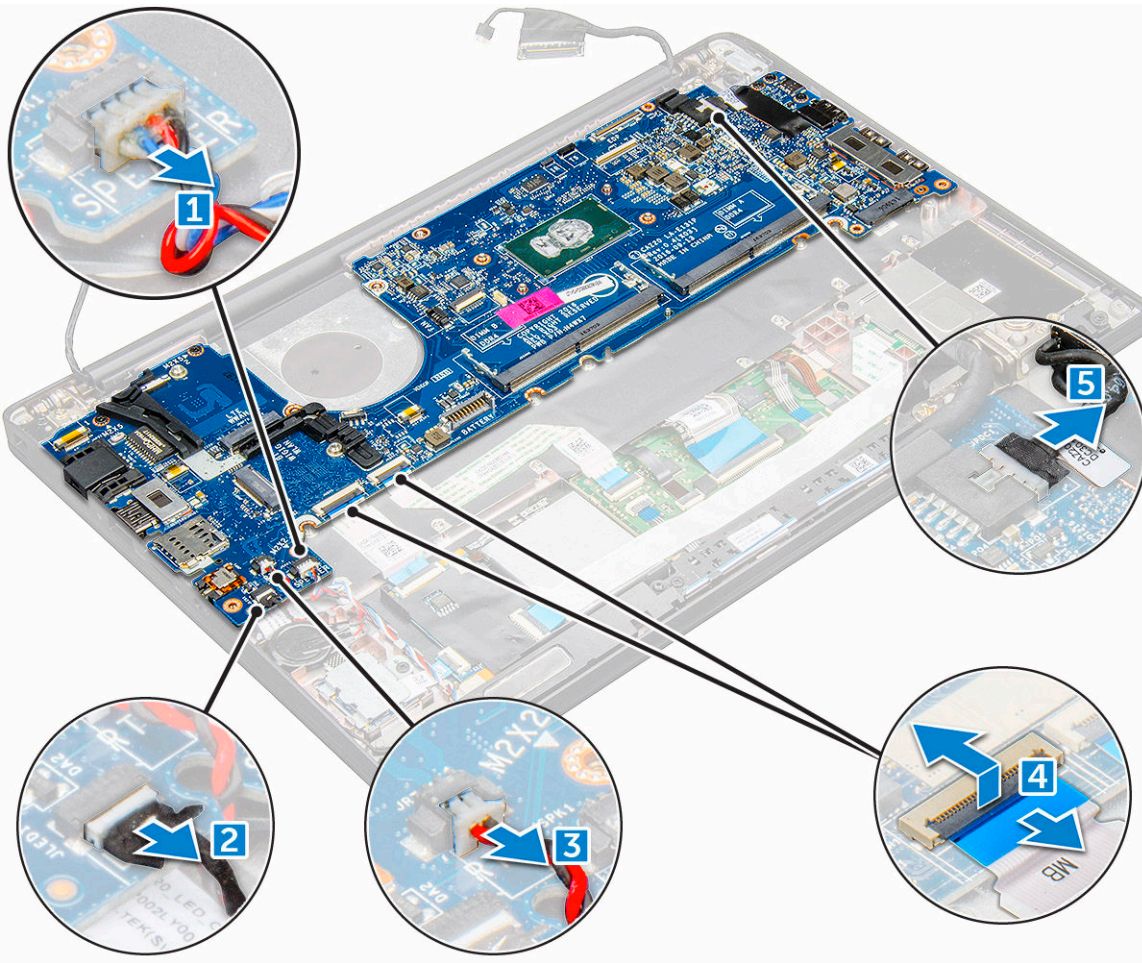
6 To remove the system board:

   a Remove the M2.0 x 5.0 screws that secure the system board.

   b Lift the system board away from the computer.
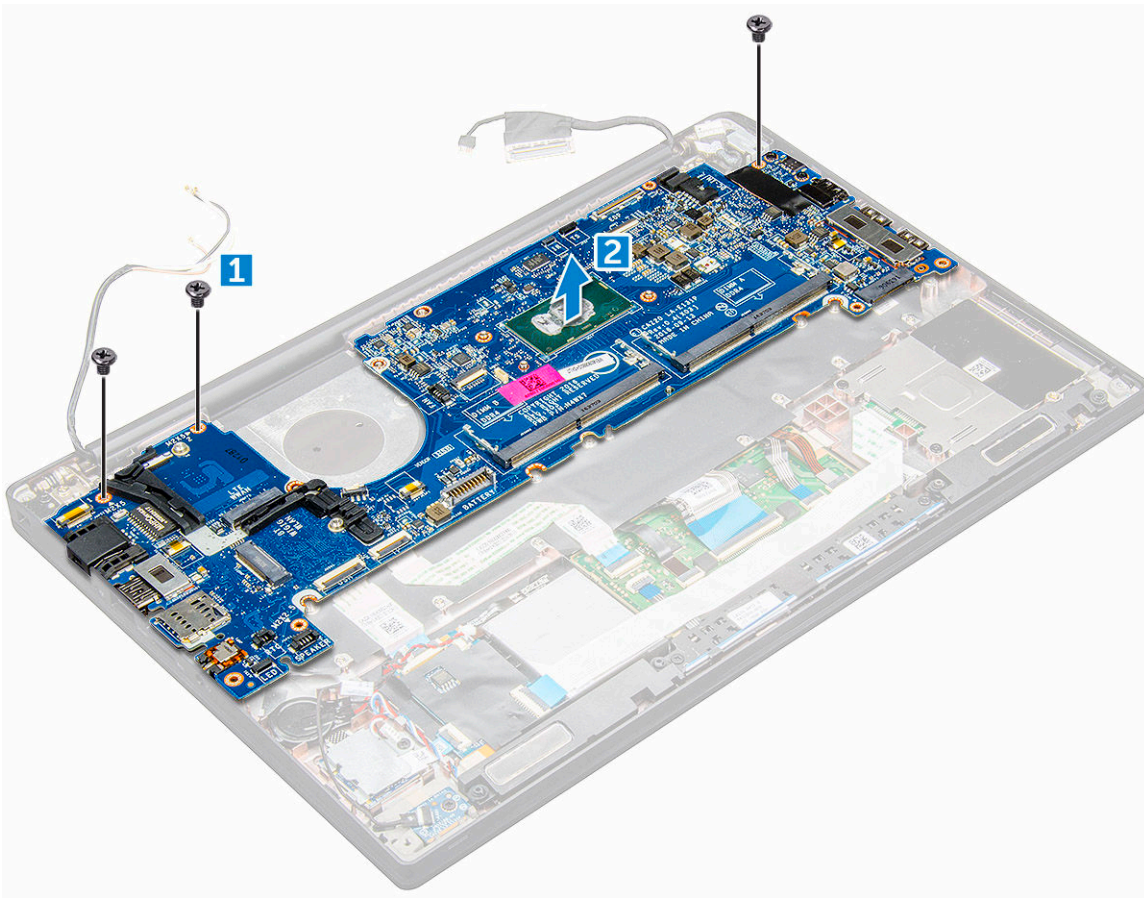
Installing system board

1   Align the system board with the screw holders on the computer.
2   Tighten the M2.0 x 5.0 screws to secure the system board to the computer.
3   Connect the speaker, power connector, LED board, touchpad, and system board cables to the connectors on the system board:
4   Connect the eDP cable to the connector on the system board.
5   Place the metal bracket over the eDP cable and tighten the M2.0 x 5.0 screws to secure it.
6   Remove the metal bracket from the memory module connectors of the system board that was removed.
7   Place the metal bracket over the memory module connectors and tighten the M2.0 x 3.0 screws to secure it to the computer.
1   ⓘ NOTE: If your computer has a WWAN card, then SIM card tray installation is a requirement.
8   Install the:
    a   coin cell battery
    b   heat sink
    c   WLAN card
    d   WWAN card
    e   SSD card
    f   memory module
    g   battery
    h   battery
    i   base cover
9   Follow the procedure in After working inside your computer.

Keyboard

Removing keyboard assembly

ⓘ **NOTE: The keyboard and the keyboard tray together are called the keyboard assembly.**

1   Follow the procedure in Before working inside your computer.
2   Remove:
    a   base cover
    b   battery
    c   memory module
    d   PCIe SSD
    e   WLAN card
    f   WWAN card
    g   power connector port
    h   heat sink assembly
    i   coin cell battery
    j   LED board
    k   speaker
    l   touchpad panel
    m   smart card cage
    n   display assembly
    o   system board
3   Disconnect the cables:
    a   Touchpad and USH board cables [1]
    b   Keyboard cables [2,3]
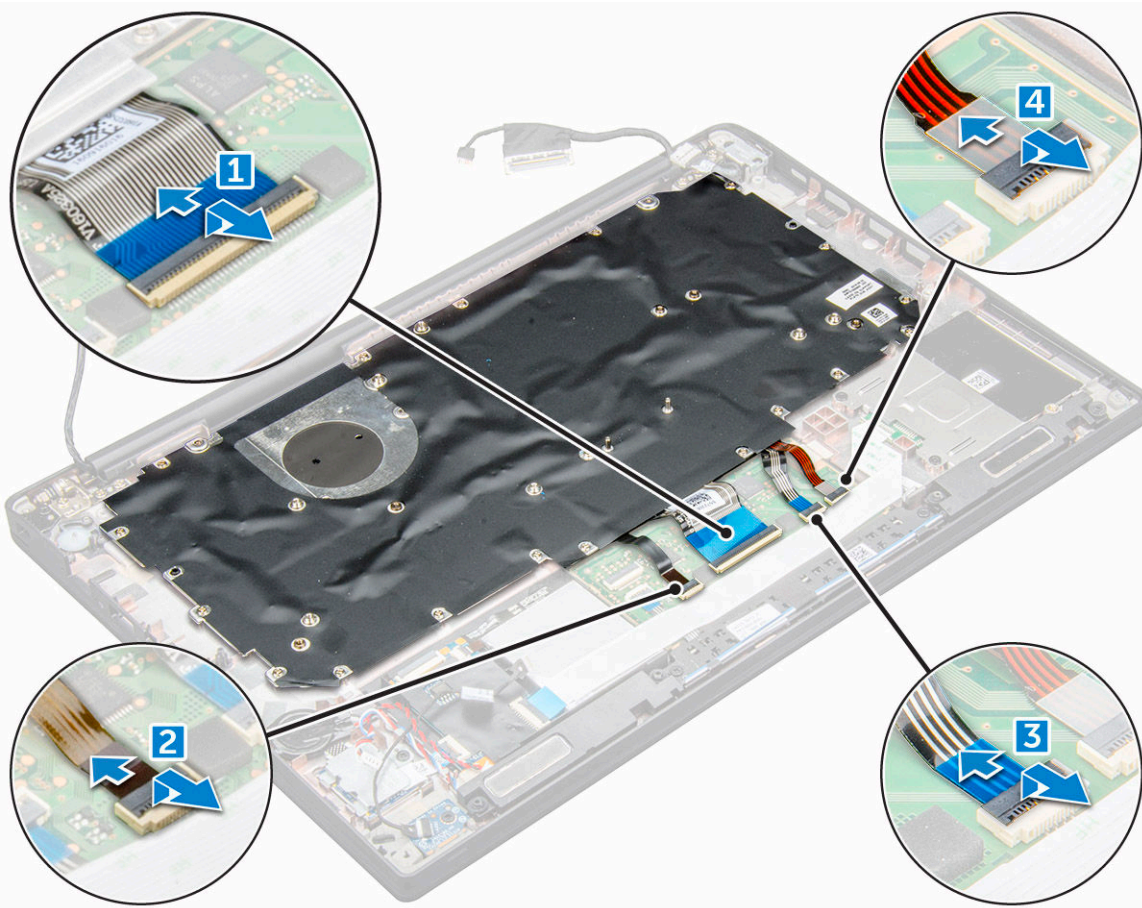
4   To remove the keyboard:
   a   Remove the M2.0 x 2.5 screws that secure the keyboard [1].
   b   Lift the keyboard from the chassis [2].
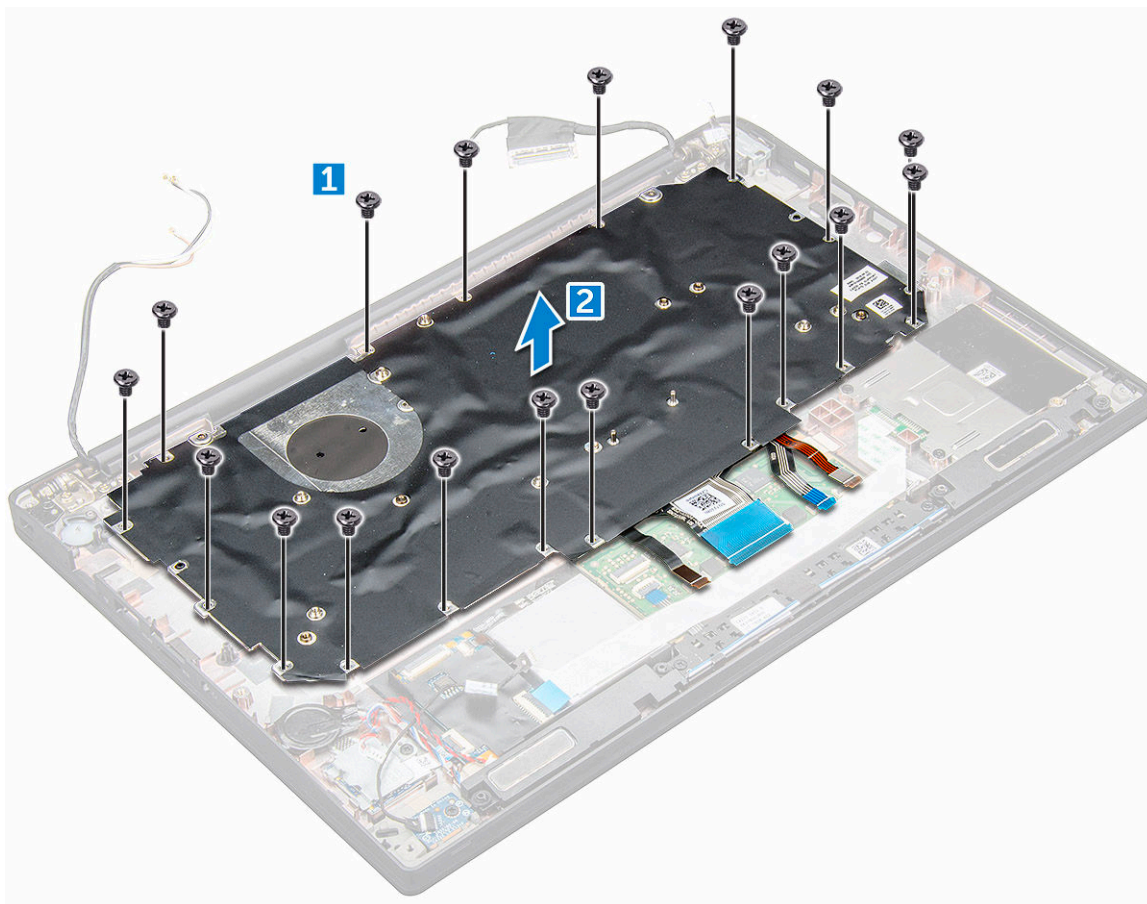
Removing keyboard from keyboard tray

1   Follow the procedure in Before working inside your computer.
2   Remove the keyboard
3   Remove the M2.0 x 2.0 screws that secure the keyboard to the keyboard assembly [1].
4   Lift the keyboard away from the keyboard tray [2].
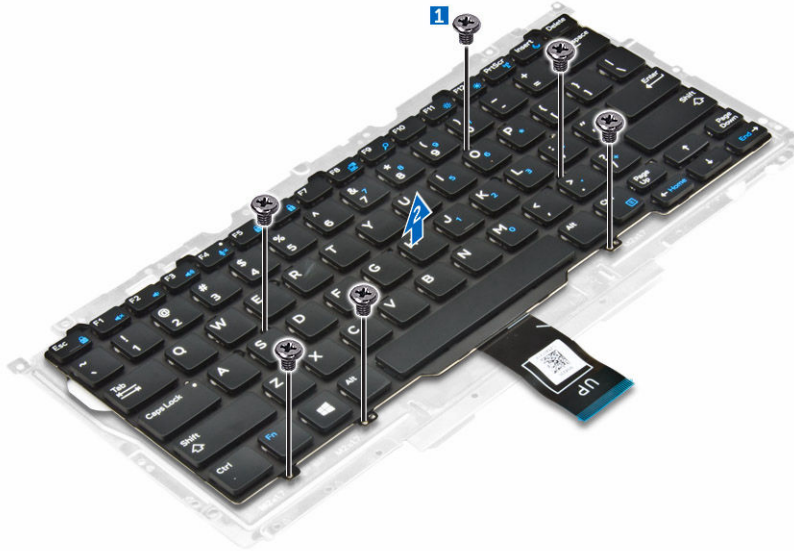
Installing keyboard to keyboard tray

1   Align the keyboard with the screw holders on the keyboard tray.
2   Tighten the M2.0 x 2.0 screws to secure the keyboard to the keyboard tray.
3   Install the keyboard.

Installing keyboard assembly

(i) NOTE: **The keyboard and the keyboard tray together are called the keyboard assembly.**

1   Align the keyboard assembly with the screw holders on the computer.
2   Tighten the M2.0 x 2.5 screws that secure the keyboard to the chassis.
3   Connect the keyboard cables to the connectors on the touchpad board.
4   Install the:
    a   system board
    b   display assembly
    c   smart card
    d   touchpad panel
    e   speaker
    f   LED board
    g   coin cell battery
    h   heat sink
    i   power connector port
    j   WLAN card
    k   WWAN card
    l   SSD card
    m   memory module
    n   battery
    o   base cover
5   Follow the procedure in After working inside your computer.

Palm rest

Replacing palmrest

1 Follow the procedure in Before working inside your computer.
2 Remove the:
   a   base cover
   b   battery
   c   memory module
   d   PCIe SSD
   e   WLAN card
   f   WWAN card
   g   power connector port
   h   heat sink assembly
   i   coin cell battery
   j   LED board
   k   speaker
   l   touchpad panel
   m   smart card cage
   n   display assembly
   o   system board
   p   keyboard
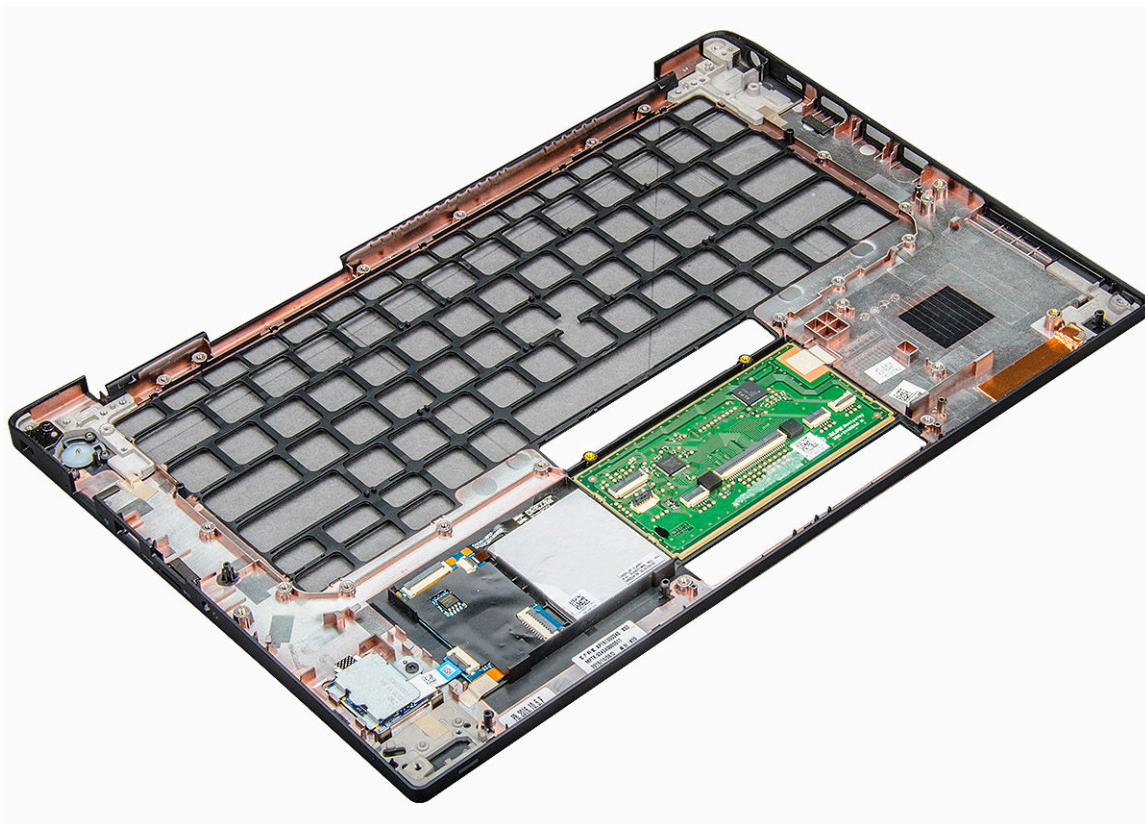
The component you are left with is the palmrest.
3 Replace the palmrest.
4 Install the:

    a   keyboard

    b   system board

    c   display assembly

    d   smart card cage

    e   touchpad panel

    f   speaker

    g   WLAN card

    h   coin cell battery

    i   heatsink

    j   power connector port

    k   WLAN card

    l   WWAN card

    m PCIe SSD

    n   memory

    o   battery

    p   base cover

5   Follow the procedure in After working inside your computer.

System Setup

Topics:

Boot Sequence

Boot Sequence allows you to bypass the System Setup-defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:

- Access System Setup by pressing F2 key
- Bring up the one-time boot menu by pressing F12 key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot menu options are:

- Removable Drive (if available)
- STXXXX Drive

  ⓘ **NOTE: XXX denotes the SATA drive number.**

- Optical Drive
- Diagnostics

  ⓘ **NOTE: Choosing Diagnostics, will display the ePSA diagnostics screen.**

The boot sequence screen also displays the option to access the System Setup screen.

Navigation keys

ⓘ **NOTE: For most of the System Setup options, changes that you make are recorded but do not take effect until you restart the system.**

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 follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
Tab	Moves to the next focus area. ⓘ **NOTE: For the standard graphics browser only.**
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 restarts the system.
F1	Displays the System Setup help file.

System setup options

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

General screen options

This section lists the primary hardware features of your computer.

Option	Description
System Information	This section lists the primary hardware features of your computer. • System Information: Displays BIOS Version, Service Tag, Asset Tag, Ownership Tag, Ownership Date, Manufacture Date, Express Service Code, the Signed Firmware update—enabled by default • Memory Information: Displays Memory Installed, Memory Available, Memory Speed, Memory Channels Mode, Memory Technology, DIMM ASize, DIMM B Size, • Processor Information: Displays Processor Type, Core Count, Processor ID, Current Clock Speed, Minimum Clock Speed, Maximum Clock Speed, Processor L2 Cache, Processor L3 Cache, HT Capable, and 64-Bit Technology • Device Information: Displays M.2 SATA, M.2 PCIe SSD-0, LOM MAC Address, Passthrough MAC address, Video Controller, Video BIOS Version, Video Memory, Panel Type, Native Resolution, Audio Controller, Wi-Fi Device, WiGig Device, Cellular Device, Bluetooth Device
Battery Information	Displays the battery status health and whether the AC adapter is installed.
Boot Sequence	Allows you to change the order in which the computer attempts to find an operating system. • Diskette Drive • Internal HDD • USB Storage Device • CD/DVD/CD-RW Drive • Onboard NIC
Boot sequence options	• Windows boot manager

Option	Description
	• WindowsIns
Boot list options	• Legacy • UEFI—selected by default
Advanced Boot Options	This option allows you the legacy option ROMs to load. By default, the **Enable Legacy Option ROMs** is disabled. Enable Attempt Legacy Boot is disabled by default.
UEFI boot path security	• Always, except internal HDD • Always • Never
Date/Time	Allows you to change the date and time.

System Configuration screen options

Option	Description
Integrated NIC	Allows you to configure the integrated network controller. The options are: • Disabled • Enabled • Enable UEFI network stack: This option is enabled by default. • Enabled w/PXE
Parallel Port	Allows you to configure the parallel port on the docking station. The options are: • Disabled • AT: This option is enabled by default. • PS2 • ECP
Serial Port	Allows you to configure the integrated serial port. The options are: • Disabled • COM1: This option is enabled by default. • COM2 • COM3 • COM4
SATA Operation	Allows you to configure the internal SATA hard-drive controller. The options are: • Disabled • AHCI • RAID On: This option is enabled by default.
Drives	Allows you to configure the SATA drives on board. All drives are enabled by default. The options are: • SATA-0 • M.2 PCI-e SSD-0

Option	Description
	• SATA-2
SMART Reporting	This field controls whether hard drive errors for integrated drives are reported during system startup. This technology is part of the SMART (Self-Monitoring Analysis and Reporting Technology) specification. This option is disabled by default.
	• Enable SMART Reporting
USB Configuration	This is an optional feature.
	This field configures the integrated USB controller. If Boot Support is enabled, the system is allowed to boot any type of USB Mass Storage Devices—HDD, memory key, floppy.
	If USB port is enabled, device attached to this port is enabled and available for OS.
	If USB port is disabled, the OS cannot see any device attached to this port.
	The options are:
	• Enable USB Boot Support—enabled by default • Enable the Thunderbolt ports—enabled by default • Always Allow dell docks—enabled by default • Enable External USB Port—enabled by default • Enable Thunderbolt Boot Support • Enable Thunderbolt (and PCIE behind TBT) Preboot • Security level-no security • Security level-user configuration—enabled by default • Security level-secure connect • Security level- Display port only
	ⓘ | **NOTE: USB keyboard and mouse always work in the BIOS setup irrespective of these settings.**
USB PowerShare	This field configures the USB PowerShare feature behavior. This option allows you to charge external devices using the stored system battery power through the USB PowerShare port. This option is disabled by default
Audio	This field enables or disables the integrated audio controller. By default, the **Enable Audio** option is selected. The options are:
	• Enable Microphone—by default enable • Enable Internal Speaker—by default enable
Keyboard Illumination	This field lets you choose the operating mode of the keyboard illumination feature. The keyboard brightness level can be set from 0% to 100%. The options are:
	• Disabled—enabled by default • Dim (50%) • Bright
Keyboard Backlight with AC	The Keyboard Backlight with AC option does not affect the main keyboard illumination feature. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. This option is enabled by default.
Keyboard Backlight Timeout on AC	The Keyboard Backlight Timeout dims out with AC option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. The options are:

Option	Description
	· 5 sec
	· 10 sec—enabled by default
	· 15 sec
	· 30 sec
	· 1 min
	· 5 min
	· 15 min
	· Never
Keyboard Backlight Timeout on Battery	The Keyboard Backlight Timeout dims out with the Battery option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. The options are:
	· 5 sec
	· 10 sec—enabled by default
	· 15 sec
	· 30 sec
	· 1 min
	· 5 min
	· 15 min
	· Never
Touchscreen	It controls whether the screen is enabled or disabled. This option is enabled by default.
Unobtrusive Mode	This option, when enabled, pressing Fn+F7 turns off all light and sound emissions in the system. To resume normal operation, press Fn+F7 again. This option is disabled by default.
Miscellaneous Devices	Allows you to enable or disable the following devices:
	· Enable Camera—enabled by default
	· Secure Digital (SD) card—enabled by default
	· Secure Digital (SD) card boot
	· Secure Digital (SD) card read-only-mode

Video screen options

Option	Description
LCD Brightness	Allows you to set the display brightness depending up on the power source—On Battery and On AC. The LCD brightness is independent for battery and AC adapter. It can be set using the slider.

ⓘ **NOTE: The video setting is visible only when a video card is installed into the system.**

Security screen options

Option	Description
Admin Password	Allows you to set, change, or delete the administrator (admin) password.

> ⓘ **NOTE: You must set the admin password before you set the system or hard drive password. Deleting the admin password automatically deletes the system password and the hard drive password.**

> ⓘ **NOTE: Successful password changes take effect immediately.**

Option	Description
	Default setting: Not set
System Password	Allows you to set, change, or delete the system password.
	(i) │ **NOTE: Successful password changes take effect immediately.**
	Default setting: Not set
Internal HDD-2 Password	Allows you to set, change, or delete the administrator password.
	(i) │ **NOTE: Successful password changes take effect immediately.**
	Default setting: Not set
Strong Password	Allows you to enforce the option to always set strong passwords.
	Default Setting: Enable Strong Password is not selected.
	(i) │ **NOTE: If Strong Password is enabled, the Admin and System passwords must contain at least one uppercase character, one lowercase character and be at least 8 characters long.**
Password Configuration	Allows you to specify the minimum and max password lengths of the Administrator and System passwords.
	· min-4—by default, if you want to change you can increase the number
	· max-32—you can decrease the number
Password Bypass	Allows you to enable or disable the permission to bypass the System and the Internal HDD password, when they are set. The options are:
	· Disabled
	· Reboot bypass
	Default setting: Disabled
Password Change	Allows you to enable the disable permission to the System and Hard Drive passwords when the admin password is set.
	Default setting: **Allow Non-Admin Password Changes** is selected.
Non-Admin Setup Changes	Allows you to determine whether changes to the setup options are allowed when an Administrator Password is set. If disabled the setup options are locked by the admin password.
	Option "allow wireless switch changes" is not selected by default.
TPM 2.0 Security	Allows you to enable the Trusted Platform Module (TPM) during POST. The options are:
	· UEFI capsule Firmware updates—enabled by default
	· TPM On—enabled by default
	· Clear
	· PPI Bypass for Enable Commands
	· PPI Bypass for Disabled Commands
	· Attestation enable—enabled by default
	· Key storage enable—enabled by default
	· SHA-256—enabled by default
	· Disabled
	· Enabled—enabled by default

Option	Description
	ⓘ **NOTE: To upgrade or downgrade TPM 2.0, download the TPM wrapper tool—software.**
Computrace	Allows you to activate or disable the optional Computrace software The options are: • Deactivate • Disable • Activate—enabled by default ⓘ **NOTE: The Activate and Disable options will permanently activate or disable the feature and no further changes are allowed**
CPU XD Support	Allows you to enable the Execute Disable mode of the processor. Enable CPU XD Support—enabled by default
OROM Keyboard Access	Allows you to set an option to enter the Option ROM Configuration screens using hotkeys during boot. The options are: • Enabled • One Time Enable • Disable Default setting: Enable
Admin Setup Lockout	Allows you to prevent users from entering Setup when an Administrator password is set. Default Setting: This option is enabled
Master password lockout	This option is not enabled by default

Secure Boot screen options

Option	Description
Secure Boot Enable	This option enables or disables the **Secure Boot** feature. • Disabled • Enabled Default setting: Enabled
Expert Key Management	Allows you to manipulate the security key databases only if the system is in Custom Mode. The **Enable Custom Mode** option is disabled by default. The options are: • PK—enabled by default • KEK • db • dbx If you enable the **Custom Mode**, the relevant options for **PK, KEK, db, and dbx** appear. The options are: • **Save to File**—Saves the key to a user-selected file • **Replace from File**—Replaces the current key with a key from a user-selected file • **Append from File**—Adds a key to the current database from a user-selected file

Option	Description
	• **Delete**—Deletes the selected key
	• **Reset All Keys**—Resets to default setting
	• **Delete All Keys**—Deletes all the keys

> ⓘ **NOTE: If you disable the Custom Mode, all the changes made are erased and the keys restore to default settings.**

Intel software guard extensions screen options

Option	Description
Intel SGX Enable	This field specifies you to provide a secured environment for running code/storing sensitive information in the context of the main OS. The options are: • Disabled • Enabled Default setting: Enabled
Enclave Memory Size	This option sets **SGX Enclave Reserve Memory Size**. The options are: • 32 MB • 64 MB • 128 MB—enabled by default

Performance screen options

Option	Description
Multi-Core Support	This field specifies whether the process has one or all cores enabled. The performance of some applications improves with the additional cores. This option is enabled by default. Allows you to enable or disable multi-core support for the processor. The installed processor supports two cores. If you enable Multi-Core Support, two cores are enabled. If you disable Multi-Core Support, one core is enabled. • Enable Multi-Core Support Default setting: The option is enabled.
Intel SpeedStep	Allows you to enable or disable the Intel SpeedStep feature. • Enable Intel SpeedStep Default setting: The option is enabled.
C-States Control	Allows you to enable or disable the additional processor sleep states. • C states Default setting: The option is enabled.
Intel TurboBoost	Allows you to enable or disable the Intel TurboBoost mode of the processor. • Enable Intel TurboBoost

Option	Description
	Default setting: The option is enabled.
HyperThread Control	Allows you to enable or disable the Hyper-Threading in the processor. • Disabled • Enabled Default setting: Enabled is selected.

Power management screen options

Option	Description
AC Behavior	Allows you to enable or disable the computer from turning on automatically when an AC adapter is connected. Default setting: Wake on AC is not selected.
Auto On Time	Allows you to set the time at which the computer must turn on automatically. The options are: • Disabled • Every Day • Weekdays • Select Days Default setting: Disabled
USB Wake Support	Allows you to enable USB devices to wake the system from Standby. ⓘ NOTE: This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed during Standby, the system setup removes power from all the USB ports to conserve battery power. • Enable USB Wake Support • Wake on Dell USB-C dock Default setting: The option is disabled.
Wireless Radio Control	Allows you to enable or disable the feature that automatically switches from wired or wireless networks without depending on the physical connection. • Control WLAN Radio • Control WWAN Radio Default setting: The options are disabled.
Wake on WLAN	Allows you to enable or disable the feature that powers on the computer from the Off state when triggered by a LAN signal. • Disabled • LAN Only • WLAN Only • LAN or WLAN Default setting: Disabled

Option	Description
Block Sleep	This option lets you block entering to sleep (S3 state) in operating system environment. Block Sleep (S3 state) Default setting: This option is disabled
Peak Shift	This option enables you to minimize the AC power consumption during the peak power times of day. After you enable this option, your system runs only in battery even if the AC is attached. • Enable peak shift • Set battery threshold (15% to 100%) - 15 % (enabled by default)
Advanced Battery Charge Configuration	This option enables you to maximize the battery health. By enabling this option, your system uses the standard charging algorithm and other techniques, during the nonwork hours to improve the battery health. Disabled Default setting: Disabled
Primary Battery Charge Configuration	Allows you to select the charging mode for the battery. The options are: • Adaptive—enabled by default • Standard—Fully charges your battery at a standard rate. • ExpressCharge—The battery charges over a shorter time using Dell's fast charging technology This option is enabled by default. • Primarily AC use • Custom If Custom Charge is selected, you can also configure Custom Charge Start and Custom Charge Stop. ⓘ **NOTE: All charging mode may not be available for all the batteries. To enable this option, disable the Advanced Battery Charge Configuration option.**
Sleep mode	• OS Automatic selection—enabled by default Force S3
Type-C connector power	• 7.5 Watts • 15 Watts—enabled by default

POST behavior screen options

Option	Description
Adapter Warnings	Allows you to enable or disable the system setup (BIOS) warning messages when you use certain power adapters. Default setting: Enable Adapter Warnings
Keypad (Embedded)	Allows you to choose one of two methods to enable the keypad that is embedded in the internal keyboard. • Fn Key Only—default. • By Numlock ⓘ **NOTE: When setup is running, this option has no effect. Setup works in Fn Key Only mode.**

Option	Description
Mouse/Touchpad	Allows you to define how the system handles mouse and touch pad input. The options are:
	• Serial Mouse
	• PS2 Mouse
	• Touchpad/PS-2 Mouse: This option is enabled by default.
Numlock Enable	Allows you to enable the Numlock option when the computer boots.
	Enable Network. This option is enabled by default.
Fn Key Emulation	Allows you to set the option where the Scroll Lock key is used to simulate the Fn key feature.
	Enable Fn Key Emulation (default)
Fn Lock Options	Allows you to let hot key combinations Fn + Esc toggle the primary behavior of F1–F12, between their standard and secondary functions. If you disable this option, you cannot toggle dynamically the primary behavior of these keys. The available options are:
	• Lock Mode Disable/Standard—enabled by default
	• Lock Mode Enable/Secondary
MEBx Hotkey	Allows you to specify whether the MEBx Hotkey function should enable, during the system boot.
	Default Setting: Enable MEBx Hotkey
Fastboot	Allows you to speed up the boot process by bypassing some of the compatibility steps. The options are:
	• Minimal
	• Thorough—enabled by default
	• Auto
Extended BIOS POST Time	Allows you to create an extra preboot delay. The options are:
	• 0 seconds—enabled by default.
	• 5 seconds
	• 10 seconds
Security audit	• Disable display of security audit display—not enabled
Full Screen Log	• Enable Full Screen Logo—not enabled
Warnings and errors	• Prompt on warnings and errors—enabled by default
	• Continue on warnings
	• Continue on warnings and errors

Manageability

Option	Description
MEBX Hotkey	Allows you to specify whether the MEBx Hotkey function should enable, during the system boot.
	• Disabled

Option	Description
	· Enabled
	Default setting: Disabled
For USB provision	Enable USB provision is not selected by default

Virtualization support screen options

Option	Description
Virtualization	Allows you to enable or disable the Intel Virtualization Technology.
	Enable Intel Virtualization Technology—default.
VT for Direct I/O	Enables or disables the Virtual Machine Monitor (VMM) from utilizing the additional hardware capabilities provided by Intel® Virtualization technology for direct I/O.
	Enable VT for Direct I/O - enabled by default.
Trusted Execution	This option specifies whether a Measured Virtual Machine Monitor (MVMM) can utilize the additional hardware capabilities provided by Intel Trusted Execution Technology. The TPM Virtualization Technology, and the Virtualization technology for direct I/O must be enabled to use this feature.
	Trusted Execution - disabled by default.

Wireless screen options

Option	Description
Wireless Switch	Allows to set the wireless devices that can be controlled by the wireless switch. The options are:
	· WWAN
	· GPS (on WWAN Module)
	· WLAN/WiGig
	· Bluetooth
	All the options are enabled by default.
	ⓘ NOTE: For WLAN and WiGig enable or disable controls are tied together and they cannot be enabled or disabled independently.
Wireless Device Enable	Allows you to enable or disable the internal wireless devices.
	· WWAN/GPS
	· WLAN/WiGig
	· Bluetooth
	All the options are enabled by default.

ⓘ NOTE: IMEI number for WWAN can be found ont the outer box or the WWAN card.

Maintenance screen options

Option	Description
Service Tag	Displays the Service Tag of your computer.
Asset Tag	Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default.
BIOS Downgrade	This controls flashing of the system firmware to previous revisions. Option 'Allow BIOS downgrade' is enabled by default.
Data Wipe	This field allows users to erase the data securely from all internal storage devices. Option 'Wipe on Next boot' is not enabled by default. The following is list of devices affected: • Internal SATA HDD/SSD • Internal M.2 SATA SDD • Internal M.2 PCIe SSD • Internal eMMC
BIOS Recovery	This field allows you to recover from certain corrupted BIOS conditions from a recover file on the user primary hard drive or an external USB key. • BIOS Recovery from Hard Drive—enabled by default • Always perform integrity check—disabled by default

System logs screen options

Option	Description
BIOS Events	Allows you to view and clear the System Setup (BIOS) POST events.
Thermal Events	Allows you to view and clear the System Setup (Thermal) events.
Power Events	Allows you to view and clear the System Setup (Power) events.

Updating the BIOS

It is recommended to update your BIOS (System Setup), on replacing the system board or if an update is available. For laptops, ensure that your computer battery is fully charged and connected to a power outlet

1. Restart the computer.
2. Go to **Dell.com/support**.
3. Enter the **Service Tag** or **Express Service Code** and click **Submit**.

   (i) **NOTE:** To locate the Service Tag, click **Where is my Service Tag?**

   (i) **NOTE:** If you cannot find your Service Tag, click **Detect My Product. Proceed with the instructions on screen.**

4. If you are unable to locate or find the Service Tag, click the Product Category of your computer.
5. Choose the **Product Type** from the list.
6. Select your computer model and the **Product Support** page of your computer appears.
7. Click **Get drivers** and click **View All Drivers**.

   The Drivers and Downloads page opens.
8. On the Drivers and Downloads screen, under the **Operating System** drop-down list, select **BIOS**.
9. Identify the latest BIOS file and click **Download File**.

You can also analyze which drivers need an update. To do this for your product, click **Analyze System for Updates** and follow the instructions on the screen.

10 Select your preferred download method in the **Please select your download method below** window, click **Download File**.

The **File Download** window appears.

11 Click **Save** to save the file on your computer.

12 Click **Run** to install the updated BIOS settings on your computer.

Follow the instructions on the screen.

ⓘ **NOTE: It is recommended not to update the BIOS version for more than 3 revisions. For example: If you want to update the BIOS from 1.0 to 7.0, then install version 4.0 first and then install version 7.0.**

System and setup password

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

Password type	Description
System password	Password that you must enter to log on to your system.
Setup password	Password that you must enter to access and make changes to the BIOS settings of your computer.

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

△ **CAUTION: Anyone can access the data stored on your computer if it is not locked and left unattended.**

ⓘ **NOTE: Your computer is shipped with the system and setup password feature disabled.**

Assigning a system password and setup password

You can assign a new **System Password** only when the status is in **Not Set**.

ⓘ **NOTE: If the password jumper is disabled, the existing System Password and Setup Password are deleted and you need not provide the system password to log on to the computer.**

To enter the system setup, press F2 immediately after a power-on or re-boot.

1 In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.

The **Security** screen is displayed.

2 Select **System Password** and create a password in the **Enter the new password** field.

Use the following guidelines to assign the system password:

- A password can have up to 32 characters.
- The password can contain the numbers 0 through 9.
- Only lower case letters are valid, upper case letters are not allowed.
- Only the following special characters are allowed: space, ("), (+), (,), (-), (.), (/), (;), ([), (\), (]), (`).

3 Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.

4 Press Esc and a message prompts you to save the changes.

5 Press Y to save the changes.

The computer reboots.

Deleting or changing an existing system and/or setup password

Ensure that the **Password Status** is Unlocked (in the System Setup) before attempting to delete or change the existing System and/or Setup password. You cannot delete or change an existing System or Setup password, if the **Password Status** is Locked.

To enter the System Setup, press F2 immediately after a power-on or reboot.

1 In the **System BIOS** or **System Setup** screen, select **System Security** and press Enter.

The **System Security** screen is displayed.

2 In the **System Security** screen, verify that **Password Status** is **Unlocked**.

3 Select **System Password**, alter or delete the existing system password and press Enter or Tab.

4 Select **Setup Password**, alter or delete the existing setup password and press Enter or Tab.

ⓘ **NOTE:** If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.

5 Press Esc and a message prompts you to save the changes.

6 Press Y to save the changes and exit from System Setup.

The computer reboots.

Technical Specifications

> ⓘ **NOTE:** Offerings may vary by region. The following specifications are only those required by law to ship with your computer. For more information about the configuration of your computer, go to Help and Support in your Windows operating system and select the option to view information about your computer.

Topics:

Processor specifications

Feature	Specification
Types	7th generation Intel Core i3 / i5 / i7

System specifications

Feature	Specification
Chipset	Integrated in the processor
DRAM bus width	64-bit
Flash EPROM	SPI 128 Mbits
PCIe bus	100 MHz
External Bus Frequency	DMI 3.0—8GT/s

Memory specifications

Feature	Specification
Memory connector	Two SoDIMM slots
Memory capacity	4 GB, 8 GB, 16 GB, and 32 GB
Memory type	DDR4 SDRAM—2133MHz
Minimum memory	4 GB
Maximum memory	32 GB

Video specifications

Feature	Specification
Type	Integrated on system board
UMA controller	Intel Integrated HD Graphics 620
External display support	• On system – eDP (internal display), HDMI • Optional Type-C port – VGA, DisplayPort 1.2, DVI ⓘ │ **NOTE: Supports one VGA, DisplayPort, HDMI through the Docking station.**

Audio specifications

Feature	Specification
Types	Four-channel high-definition audio
Controller	Realtek ALC3246
Stereo conversion	24-bit—analog-to-digital and digital-to-analog
Internal interface	High-definition audio
External interface	Microphone-in, stereo headphones, and headset combo connector
Speakers	Two
Internal speaker amplifier	2 W (RMS) per channel
Volume controls	Hot keys

Battery specifications

Feature	Specification
Type	• 3-cell Lithium Prismatic battery with ExpressCharge • 4-cell Lithium Prismatic battery with ExpressCharge
3–cell:	
Length	200.5 mm (7.89 inches)

Feature	Specification
Width	95.9 mm (3.78 inches)
Height	5.7 mm (0.22 inch)
Weight	185.0 g (0.41 lb)
Voltage	11.4 VDC

4–cell:

Feature	Specification
Length	238 mm (9.37 inches)
Width	95.9 mm (3.78 inch)
Height	5.7 mm (0.22 inch)
Weight	270 g (0.6 lb)
Voltage	7.6 VDC
Life span	300 discharge per charge cycles
Temperature range	
Operating	• Charge: 0°C to 50°C (32°F to 158°F) • Discharge: 0°C to 70°C (32°F to 122°F)
Non-operating	- 20°C to 65°C (- 4°F to 149°F)
Coin cell battery	3 V CR2032 lithium coin cell

Feature	Specification
Type	• 3-cell Lithium Prismatic battery with ExpressCharge • 4-cell Lithium Prismaticbattery with ExpressCharge

3–cell:

Feature	Specification
Depth	105.9 mm (4.17 inches)
Height	6.1 mm (0.24 inch)
Width	181.00 mm (7.13 inches)
Weight	195.0 g (0.43 lb)
Voltage	11.10 VDC

4–cell:

Feature	Specification
Depth	105.9 mm (4.17 inches)
Height	6.1 mm (0.24 inch)
Width	238.00 mm (9.37 inches)
Weight	300.00 g (0.66 lb)
Voltage	7.40 VDC
Life span	300 discharge per charge cycles
Temperature range	
Operating	• Charge: 0°C to 50°C (32°F to 158°F) • Discharge: 0°C to 70°C (32°F to 122°F)

Feature	Specification
	• Operating: 0°C to 35°C (32°F to 95°F)
Non-operating	- 20°C to 65°C (- 4°F to 149°F)
Coin cell battery	3 V CR2032 lithium coin cell

AC adapter specifications

Feature	Specification
Type	65 W and 90 W
Input voltage	100 V AC to 240 V AC
Input current—maximum	1.7 A / 2.5 A
Input frequency	50 Hz to 60 Hz
Output current	3.34 A and 4.62 A
Rated output voltage	19.5 V DC
Weight	230 g (65 W) and 320 g (90 W)
Dimensions	22 x 66 x 106 mm (65 W) and 22 x 66 x 130 (90 W)
Temperature range—Operating	0°C to 40°C (32°F to 104°F)
Temperature range—Non-Operating	−40°C to 70°C (−40°F to 158°F)

Port and connector specifications

Feature	Specification
Audio	One microphone/stereo headphone/speakers connector
Video	• HDMI 1.4
Network adapter	One RJ-45 connector
USB	Three USB 3.0 with one PowerShare
Memory card reader	Up to SD4.0
Micro Subscriber Identity Module (uSIM) card	One
Docking port	None
	ⓘ NOTE: Cable docking is available.
Express Card	None
USIM	External tray tied to WWAN hinge up

Communication specifications

Features	Specification
Network adapter	10/100/1000 Mb/s Ethernet (RJ-45)
Wireless	Internal wireless local area network (WLAN), wireless wide area network (WWAN), WiGig
	• Bluetooth 4.1 LE

Camera specifications

Feature	Specification
Type	HD fixed focus
Sensor type	CMOS sensor technology
Imaging rate	Up to 30 frames per second
Video Resolution	1280 x 720 pixels

Touchpad specifications

Feature	Specification
Active Area:	
X-axis	99.50 mm
Y-axis	53.0 mm
X/Y position resolution	X: 1048cpi; Y:984cpi
Multi-touch	Configurable single finger and multi-finger gestures

Display specifications

Feature	Specification
HD anti-glare	
Luminance	200 nits
Height	205.6 mm (8.09 inches)
Width	320.9 mm (12.63 inches)
Diagonal	355.6 mm (14.0 inches)
Maximum resolution	1366 x 768
Refresh rate	60 Hz
Maximum viewing angles—horizontal	+/-40°
Maximum viewing angles—vertical	+10/-30°

Feature	Specification
Pixel pitch	0.2265 x 0.2265 mm

FHD anti-glare:

Luminance	300 nits
Height	205.6 mm (8.09 inches)
Width	302.9 mm (12.63 inches)
Diagonal	355.6 mm (14.0 inches)
Maximum resolution	1920 x 1080
Refresh rate	60 Hz
Maximum viewing angles—horizontal	+/-80°
Maximum viewing angles—vertical	+/-80°
Pixel pitch	0.161 x 0.161 mm

Feature	Specification

HD anti-glare

Luminance	270 nits
Height	205.05 mm (8.07 inches)
Width	327.8 mm (12.90 inches)
Diagonal	355.6 mm (14.0 inches)
Maximum resolution	1920 x 1080
Refresh rate	60 Hz
Maximum viewing angles—horizontal	+/-80°
Maximum viewing angles—vertical	+/-80°
Pixel pitch	0.161 x 0.161 mm

QHD anti-glare:

Luminance	270
Height	206.5 mm (8.13 inches)
Width	327.8 mm(12.90 inches)
Diagonal	355.6 mm—14.0 inch
Maximum resolution	2560 x 1440
Refresh rate	60 Hz
Maximum viewing angles—horizontal	+/-80°
Maximum viewing angles—vertical	+/-80°

Feature	Specification
Pixel pitch	0.1209 × 0.1209 mm

Physical specifications

Feature	Specification
Front height—non-touch	11.58 mm (0.45 inch)
Back height—non-touch	18.41 mm (0.72 inch)
Back height—touch	18.41 mm (0.72 inch)
Width	331.0 mm (13.03nches)
Depth	220.9 mm (8.69 inches)
Weight—non-touch with 3–cell battery	1.36 kg (3.01 lbs)

Environmental specifications

Temperature	Specifications
Operating	0°C to 60°C (32°F to 140°F)
Storage	−51°C to 71°C (−59°F to 159°F)

Relative humidity —maximum	Specifications
Operating	10% to 90% (non-condensing)
Storage	5% to 95% (non-condensing)

Altitude— maximum	Specifications
Operating	−15.2 m to 3048 m (−50 to 10,000 ft)
	0°C to 35°C
Non-operating	−15.24 m to 10,668 m (−50 ft to 35,000 ft)
Airborne contaminant level	G2 or lower as defined by ISA S71.04–1985

System Setup

Topics:

Boot Sequence

Boot Sequence allows you to bypass the System Setup-defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:

- Access System Setup by pressing F2 key
- Bring up the one-time boot menu by pressing F12 key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot menu options are:

- Removable Drive (if available)
- STXXXX Drive

  ⓘ **NOTE: XXX denotes the SATA drive number.**

- Optical Drive
- Diagnostics

  ⓘ **NOTE: Choosing Diagnostics, will display the ePSA diagnostics screen.**

The boot sequence screen also displays the option to access the System Setup screen.

Navigation keys

ⓘ **NOTE: For most of the System Setup options, changes that you make are recorded but do not take effect until you restart the system.**

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 follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
Tab	Moves to the next focus area.
	ⓘ **NOTE: For the standard graphics browser only.**
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 restarts the system.
F1	Displays the System Setup help file.

System setup options

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

General screen options

This section lists the primary hardware features of your computer.

Option	Description
System Information	This section lists the primary hardware features of your computer.
	• System Information: Displays BIOS Version, Service Tag, Asset Tag, Ownership Tag, Ownership Date, Manufacture Date, Express Service Code, the Signed Firmware update—enabled by default
	• Memory Information: Displays Memory Installed, Memory Available, Memory Speed, Memory Channels Mode, Memory Technology, DIMM ASize, DIMM B Size,
	• Processor Information: Displays Processor Type, Core Count, Processor ID, Current Clock Speed, Minimum Clock Speed, Maximum Clock Speed, Processor L2 Cache, Processor L3 Cache, HT Capable, and 64-Bit Technology
	• Device Information: Displays M.2 SATA, M.2 PCIe SSD-0, LOM MAC Address, Passthrough MAC address, Video Controller, Video BIOS Version, Video Memory, Panel Type, Native Resolution, Audio Controller, Wi-Fi Device, WiGig Device, Cellular Device, Bluetooth Device
Battery Information	Displays the battery status health and whether the AC adapter is installed.
Boot Sequence	Allows you to change the order in which the computer attempts to find an operating system.
	• Diskette Drive
	• Internal HDD
	• USB Storage Device
	• CD/DVD/CD-RW Drive
	• Onboard NIC
Boot sequence options	• Windows boot manager

Option	Description
	· WindowsIns
Boot list options	· Legacy · UEFI—selected by default
Advanced Boot Options	This option allows you the legacy option ROMs to load. By default, the **Enable Legacy Option ROMs** is disabled. Enable Attempt Legacy Boot is disabled by default.
UEFI boot path security	· Always, except internal HDD · Always · Never
Date/Time	Allows you to change the date and time.

System Configuration screen options

Option	Description
Integrated NIC	Allows you to configure the integrated network controller. The options are: · Disabled · Enabled · Enable UEFI network stack: This option is enabled by default. · Enabled w/PXE
Parallel Port	Allows you to configure the parallel port on the docking station. The options are: · Disabled · AT: This option is enabled by default. · PS2 · ECP
Serial Port	Allows you to configure the integrated serial port. The options are: · Disabled · COM1: This option is enabled by default. · COM2 · COM3 · COM4
SATA Operation	Allows you to configure the internal SATA hard-drive controller. The options are: · Disabled · AHCI · RAID On: This option is enabled by default.
Drives	Allows you to configure the SATA drives on board. All drives are enabled by default. The options are: · SATA-0 · M.2 PCI-e SSD-0

Option	Description
	• SATA-2
SMART Reporting	This field controls whether hard drive errors for integrated drives are reported during system startup. This technology is part of the SMART (Self-Monitoring Analysis and Reporting Technology) specification. This option is disabled by default. • Enable SMART Reporting
USB Configuration	This is an optional feature. This field configures the integrated USB controller. If Boot Support is enabled, the system is allowed to boot any type of USB Mass Storage Devices—HDD, memory key, floppy. If USB port is enabled, device attached to this port is enabled and available for OS. If USB port is disabled, the OS cannot see any device attached to this port. The options are: • Enable USB Boot Support—enabled by default • Enable the Thunderbolt ports—enabled by default • Always Allow dell docks—enabled by default • Enable External USB Port—enabled by default • Enable Thunderbolt Boot Support • Enable Thunderbolt (and PCIE behind TBT) Preboot • Security level-no security • Security level-user configuration—enabled by default • Security level-secure connect • Security level- Display port only ⓘ | **NOTE: USB keyboard and mouse always work in the BIOS setup irrespective of these settings.**
USB PowerShare	This field configures the USB PowerShare feature behavior. This option allows you to charge external devices using the stored system battery power through the USB PowerShare port. This option is disabled by default
Audio	This field enables or disables the integrated audio controller. By default, the **Enable Audio** option is selected. The options are: • Enable Microphone—by default enable • Enable Internal Speaker—by default enable
Keyboard Illumination	This field lets you choose the operating mode of the keyboard illumination feature. The keyboard brightness level can be set from 0% to 100%. The options are: • Disabled—enabled by default • Dim (50%) • Bright
Keyboard Backlight with AC	The Keyboard Backlight with AC option does not affect the main keyboard illumination feature. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. This option is enabled by default.
Keyboard Backlight Timeout on AC	The Keyboard Backlight Timeout dims out with AC option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. The options are:

Option	Description
	• 5 sec
	• 10 sec—enabled by default
	• 15 sec
	• 30 sec
	• 1 min
	• 5 min
	• 15 min
	• Never
Keyboard Backlight Timeout on Battery	The Keyboard Backlight Timeout dims out with the Battery option. The main keyboard illumination feature is not affected. Keyboard Illumination will continue to support the various illumination levels. This field has an effect when the backlight is enabled. The options are:
	• 5 sec
	• 10 sec—enabled by default
	• 15 sec
	• 30 sec
	• 1 min
	• 5 min
	• 15 min
	• Never
Touchscreen	It controls whether the screen is enabled or disabled. This option is enabled by default.
Unobtrusive Mode	This option, when enabled, pressing Fn+F7 turns off all light and sound emissions in the system. To resume normal operation, press Fn+F7 again. This option is disabled by default.
Miscellaneous Devices	Allows you to enable or disable the following devices:
	• Enable Camera—enabled by default
	• Secure Digital (SD) card—enabled by default
	• Secure Digital (SD) card boot
	• Secure Digital (SD) card read-only-mode

Video screen options

Option	Description
LCD Brightness	Allows you to set the display brightness depending up on the power source—On Battery and On AC. The LCD brightness is independent for battery and AC adapter. It can be set using the slider.

ⓘ **NOTE: The video setting is visible only when a video card is installed into the system.**

Security screen options

Option	Description
Admin Password	Allows you to set, change, or delete the administrator (admin) password.

    ⓘ **NOTE: You must set the admin password before you set the system or hard drive password. Deleting the admin password automatically deletes the system password and the hard drive password.**

    ⓘ **NOTE: Successful password changes take effect immediately.**

Option	Description
	Default setting: Not set
System Password	Allows you to set, change, or delete the system password.
	ⓘ | NOTE: **Successful password changes take effect immediately.**
	Default setting: Not set
Internal HDD-2 Password	Allows you to set, change, or delete the administrator password.
	ⓘ | NOTE: **Successful password changes take effect immediately.**
	Default setting: Not set
Strong Password	Allows you to enforce the option to always set strong passwords.
	Default Setting: Enable Strong Password is not selected.
	ⓘ | NOTE: **If Strong Password is enabled, the Admin and System passwords must contain at least one uppercase character, one lowercase character and be at least 8 characters long.**
Password Configuration	Allows you to specify the minimum and max password lengths of the Administrator and System passwords.
	• min-4—by default, if you want to change you can increase the number
	• max-32—you can decrease the number
Password Bypass	Allows you to enable or disable the permission to bypass the System and the Internal HDD password, when they are set. The options are:
	• Disabled
	• Reboot bypass
	Default setting: Disabled
Password Change	Allows you to enable the disable permission to the System and Hard Drive passwords when the admin password is set.
	Default setting: **Allow Non-Admin Password Changes** is selected.
Non-Admin Setup Changes	Allows you to determine whether changes to the setup options are allowed when an Administrator Password is set. If disabled the setup options are locked by the admin password.
	Option "allow wireless switch changes" is not selected by default.
TPM 2.0 Security	Allows you to enable the Trusted Platform Module (TPM) during POST. The options are:
	• UEFI capsule Firmware updates—enabled by default
	• TPM On—enabled by default
	• Clear
	• PPI Bypass for Enable Commands
	• PPI Bypass for Disabled Commands
	• Attestation enable—enabled by default
	• Key storage enable—enabled by default
	• SHA-256—enabled by default
	• Disabled
	• Enabled—enabled by default

Option	Description
	ⓘ **NOTE: To upgrade or downgrade TPM 2.0, download the TPM wrapper tool—software.**
Computrace	Allows you to activate or disable the optional Computrace software The options are: • Deactivate • Disable • Activate—enabled by default ⓘ **NOTE: The Activate and Disable options will permanently activate or disable the feature and no further changes are allowed**
CPU XD Support	Allows you to enable the Execute Disable mode of the processor. Enable CPU XD Support—enabled by default
OROM Keyboard Access	Allows you to set an option to enter the Option ROM Configuration screens using hotkeys during boot. The options are: • Enabled • One Time Enable • Disable Default setting: Enable
Admin Setup Lockout	Allows you to prevent users from entering Setup when an Administrator password is set. Default Setting: This option is enabled
Master password lockout	This option is not enabled by default

Secure Boot screen options

Option	Description
Secure Boot Enable	This option enables or disables the **Secure Boot** feature. • Disabled • Enabled Default setting: Enabled
Expert Key Management	Allows you to manipulate the security key databases only if the system is in Custom Mode. The **Enable Custom Mode** option is disabled by default. The options are: • PK—enabled by default • KEK • db • dbx If you enable the **Custom Mode**, the relevant options for **PK, KEK, db, and dbx** appear. The options are: • **Save to File**—Saves the key to a user-selected file • **Replace from File**—Replaces the current key with a key from a user-selected file • **Append from File**—Adds a key to the current database from a user-selected file

Option	Description
	· **Delete**—Deletes the selected key
	· **Reset All Keys**—Resets to default setting
	· **Delete All Keys**—Deletes all the keys

ⓘ **NOTE: If you disable the Custom Mode, all the changes made are erased and the keys restore to default settings.**

Intel software guard extensions screen options

Option	Description
Intel SGX Enable	This field specifies you to provide a secured environment for running code/storing sensitive information in the context of the main OS. The options are:
	· Disabled
	· Enabled
	Default setting: Enabled
Enclave Memory Size	This option sets **SGX Enclave Reserve Memory Size**. The options are:
	· 32 MB
	· 64 MB
	· 128 MB—enabled by default

Performance screen options

Option	Description
Multi-Core Support	This field specifies whether the process has one or all cores enabled. The performance of some applications improves with the additional cores. This option is enabled by default. Allows you to enable or disable multi-core support for the processor. The installed processor supports two cores. If you enable Multi-Core Support, two cores are enabled. If you disable Multi-Core Support, one core is enabled.
	· Enable Multi-Core Support
	Default setting: The option is enabled.
Intel SpeedStep	Allows you to enable or disable the Intel SpeedStep feature.
	· Enable Intel SpeedStep
	Default setting: The option is enabled.
C-States Control	Allows you to enable or disable the additional processor sleep states.
	· C states
	Default setting: The option is enabled.
Intel TurboBoost	Allows you to enable or disable the Intel TurboBoost mode of the processor.
	· Enable Intel TurboBoost

Option	Description
	Default setting: The option is enabled.
HyperThread Control	Allows you to enable or disable the Hyper-Threading in the processor. • Disabled • Enabled Default setting: Enabled is selected.

Power management screen options

Option	Description
AC Behavior	Allows you to enable or disable the computer from turning on automatically when an AC adapter is connected. Default setting: Wake on AC is not selected.
Auto On Time	Allows you to set the time at which the computer must turn on automatically. The options are: • Disabled • Every Day • Weekdays • Select Days Default setting: Disabled
USB Wake Support	Allows you to enable USB devices to wake the system from Standby. ⓘ NOTE: This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed during Standby, the system setup removes power from all the USB ports to conserve battery power. • Enable USB Wake Support • Wake on Dell USB-C dock Default setting: The option is disabled.
Wireless Radio Control	Allows you to enable or disable the feature that automatically switches from wired or wireless networks without depending on the physical connection. • Control WLAN Radio • Control WWAN Radio Default setting: The options are disabled.
Wake on WLAN	Allows you to enable or disable the feature that powers on the computer from the Off state when triggered by a LAN signal. • Disabled • LAN Only • WLAN Only • LAN or WLAN Default setting: Disabled

Option	Description
Block Sleep	This option lets you block entering to sleep (S3 state) in operating system environment. Block Sleep (S3 state) Default setting: This option is disabled
Peak Shift	This option enables you to minimize the AC power consumption during the peak power times of day. After you enable this option, your system runs only in battery even if the AC is attached. • Enable peak shift • Set battery threshold (15% to 100%) - 15 % (enabled by default)
Advanced Battery Charge Configuration	This option enables you to maximize the battery health. By enabling this option, your system uses the standard charging algorithm and other techniques, during the nonwork hours to improve the battery health. Disabled Default setting: Disabled
Primary Battery Charge Configuration	Allows you to select the charging mode for the battery. The options are: • Adaptive—enabled by default • Standard—Fully charges your battery at a standard rate. • ExpressCharge—The battery charges over a shorter time using Dell's fast charging technology This option is enabled by default. • Primarily AC use • Custom If Custom Charge is selected, you can also configure Custom Charge Start and Custom Charge Stop. ⓘ **NOTE: All charging mode may not be available for all the batteries. To enable this option, disable the Advanced Battery Charge Configuration option.**
Sleep mode	• OS Automatic selection—enabled by default Force S3
Type-C connector power	• 7.5 Watts • 15 Watts—enabled by default

POST behavior screen options

Option	Description
Adapter Warnings	Allows you to enable or disable the system setup (BIOS) warning messages when you use certain power adapters. Default setting: Enable Adapter Warnings
Keypad (Embedded)	Allows you to choose one of two methods to enable the keypad that is embedded in the internal keyboard. • Fn Key Only—default. • By Numlock ⓘ **NOTE: When setup is running, this option has no effect. Setup works in Fn Key Only mode.**

Option	Description
Mouse/Touchpad	Allows you to define how the system handles mouse and touch pad input. The options are: • Serial Mouse • PS2 Mouse • Touchpad/PS-2 Mouse: This option is enabled by default.
Numlock Enable	Allows you to enable the Numlock option when the computer boots. Enable Network. This option is enabled by default.
Fn Key Emulation	Allows you to set the option where the Scroll Lock key is used to simulate the Fn key feature. Enable Fn Key Emulation (default)
Fn Lock Options	Allows you to let hot key combinations Fn + Esc toggle the primary behavior of F1–F12, between their standard and secondary functions. If you disable this option, you cannot toggle dynamically the primary behavior of these keys. The available options are: • Lock Mode Disable/Standard—enabled by default • Lock Mode Enable/Secondary
MEBx Hotkey	Allows you to specify whether the MEBx Hotkey function should enable, during the system boot. Default Setting: Enable MEBx Hotkey
Fastboot	Allows you to speed up the boot process by bypassing some of the compatibility steps. The options are: • Minimal • Thorough—enabled by default • Auto
Extended BIOS POST Time	Allows you to create an extra preboot delay. The options are: • 0 seconds—enabled by default. • 5 seconds • 10 seconds
Security audit	• Disable display of security audit display—not enabled
Full Screen Log	• Enable Full Screen Logo—not enabled
Warnings and errors	• Prompt on warnings and errors—enabled by default • Continue on warnings • Continue on warnings and errors

Manageability

Option	Description
MEBX Hotkey	Allows you to specify whether the MEBx Hotkey function should enable, during the system boot. • Disabled

Option	Description
	· Enabled
	Default setting: Disabled
For USB provision	Enable USB provision is not selected by default

Virtualization support screen options

Option	Description
Virtualization	Allows you to enable or disable the Intel Virtualization Technology.
	Enable Intel Virtualization Technology—default.
VT for Direct I/O	Enables or disables the Virtual Machine Monitor (VMM) from utilizing the additional hardware capabilities provided by Intel® Virtualization technology for direct I/O.
	Enable VT for Direct I/O - enabled by default.
Trusted Execution	This option specifies whether a Measured Virtual Machine Monitor (MVMM) can utilize the additional hardware capabilities provided by Intel Trusted Execution Technology. The TPM Virtualization Technology, and the Virtualization technology for direct I/O must be enabled to use this feature.
	Trusted Execution - disabled by default.

Wireless screen options

Option	Description
Wireless Switch	Allows to set the wireless devices that can be controlled by the wireless switch. The options are:
	· WWAN
	· GPS (on WWAN Module)
	· WLAN/WiGig
	· Bluetooth
	All the options are enabled by default.
	ⓘ **NOTE: For WLAN and WiGig enable or disable controls are tied together and they cannot be enabled or disabled independently.**
Wireless Device Enable	Allows you to enable or disable the internal wireless devices.
	· WWAN/GPS
	· WLAN/WiGig
	· Bluetooth
	All the options are enabled by default.

ⓘ **NOTE: IMEI number for WWAN can be found ont the outer box or the WWAN card.**

Maintenance screen options

Option	Description
Service Tag	Displays the Service Tag of your computer.
Asset Tag	Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default.
BIOS Downgrade	This controls flashing of the system firmware to previous revisions. Option 'Allow BIOS downgrade' is enabled by default.
Data Wipe	This field allows users to erase the data securely from all internal storage devices. Option 'Wipe on Next boot' is not enabled by default. The following is list of devices affected: • Internal SATA HDD/SSD • Internal M.2 SATA SDD • Internal M.2 PCIe SSD • Internal eMMC
BIOS Recovery	This field allows you to recover from certain corrupted BIOS conditions from a recover file on the user primary hard drive or an external USB key. • BIOS Recovery from Hard Drive—enabled by default • Always perform integrity check—disabled by default

System logs screen options

Option	Description
BIOS Events	Allows you to view and clear the System Setup (BIOS) POST events.
Thermal Events	Allows you to view and clear the System Setup (Thermal) events.
Power Events	Allows you to view and clear the System Setup (Power) events.

Updating the BIOS

It is recommended to update your BIOS (System Setup), on replacing the system board or if an update is available. For laptops, ensure that your computer battery is fully charged and connected to a power outlet

1. Restart the computer.
2. Go to **Dell.com/support**.
3. Enter the **Service Tag** or **Express Service Code** and click **Submit**.

   ⓘ **NOTE: To locate the Service Tag, click Where is my Service Tag?**

   ⓘ **NOTE: If you cannot find your Service Tag, click Detect My Product. Proceed with the instructions on screen.**

4. If you are unable to locate or find the Service Tag, click the Product Category of your computer.
5. Choose the **Product Type** from the list.
6. Select your computer model and the **Product Support** page of your computer appears.
7. Click **Get drivers** and click **View All Drivers**.

   The Drivers and Downloads page opens.
8. On the Drivers and Downloads screen, under the **Operating System** drop-down list, select **BIOS**.
9. Identify the latest BIOS file and click **Download File**.

You can also analyze which drivers need an update. To do this for your product, click **Analyze System for Updates** and follow the instructions on the screen.

10   Select your preferred download method in the **Please select your download method below** window, click **Download File**.

The **File Download** window appears.

11   Click **Save** to save the file on your computer.

12   Click **Run** to install the updated BIOS settings on your computer.

Follow the instructions on the screen.

ⓘ **NOTE: It is recommended not to update the BIOS version for more than 3 revisions. For example: If you want to update the BIOS from 1.0 to 7.0, then install version 4.0 first and then install version 7.0.**

System and setup password

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

Password type	Description
System password	Password that you must enter to log on to your system.
Setup password	Password that you must enter to access and make changes to the BIOS settings of your computer.

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

⚠ **CAUTION: Anyone can access the data stored on your computer if it is not locked and left unattended.**

ⓘ **NOTE: Your computer is shipped with the system and setup password feature disabled.**

Assigning a system password and setup password

You can assign a new **System Password** only when the status is in **Not Set**.

ⓘ **NOTE: If the password jumper is disabled, the existing System Password and Setup Password are deleted and you need not provide the system password to log on to the computer.**

To enter the system setup, press F2 immediately after a power-on or re-boot.

1   In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.

The **Security** screen is displayed.

2   Select **System Password** and create a password in the **Enter the new password** field.

Use the following guidelines to assign the system password:

- A password can have up to 32 characters.
- The password can contain the numbers 0 through 9.
- Only lower case letters are valid, upper case letters are not allowed.
- Only the following special characters are allowed: space, ("), (+), (,), (-), (.), (/), (;), ([), (\), (]), (`).

3   Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.

4   Press Esc and a message prompts you to save the changes.

5   Press Y to save the changes.

The computer reboots.

Deleting or changing an existing system and/or setup password

Ensure that the **Password Status** is Unlocked (in the System Setup) before attempting to delete or change the existing System and/or Setup password. You cannot delete or change an existing System or Setup password, if the **Password Status** is Locked.

To enter the System Setup, press F2 immediately after a power-on or reboot.

1   In the **System BIOS** or **System Setup** screen, select **System Security** and press Enter.
    The **System Security** screen is displayed.

2   In the **System Security** screen, verify that **Password Status** is **Unlocked**.

3   Select **System Password**, alter or delete the existing system password and press Enter or Tab.

4   Select **Setup Password**, alter or delete the existing setup password and press Enter or Tab.

   ⓘ **NOTE:** If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.

5   Press Esc and a message prompts you to save the changes.

6   Press Y to save the changes and exit from System Setup.
    The computer reboots.

Troubleshooting

Enhanced Pre-Boot System Assessment (ePSA) diagnostics

The ePSA diagnostics (also known as system diagnostics) performs a complete check of your hardware. The ePSA is embedded with the BIOS and is launched by the BIOS internally. The embedded system diagnostics provides a set of options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of problems encountered during testing

△ **CAUTION: Use the system diagnostics to test only your computer. Using this program with other computers may cause invalid results or error messages.**

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

Running the ePSA diagnostics

1. Power-on the computer.
2. As the computer boots, press the F12 key as the Dell logo appears.
3. On the boot menu screen, select the **Diagnostics** option.

   The **Enhanced Pre-boot System Assessment** window is displayed, listing all devices detected in the computer. The diagnostics starts running the tests on all the detected devices.
4. To run a diagnostic test on a specific device, press Esc and click **Yes** to stop the diagnostic test.
5. Select the device from the left pane and click **Run Tests**.
6. If there are any issues, error codes are displayed.

   Note the error code and contact Dell.

Contacting Dell

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

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1   Go to **Dell.com/support.**
2   Select your support category.
3   Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4   Select the appropriate service or support link based on your need.