Latitude 7350

Owner's Manual

Regulatory Model: P178G/P179G
Regulatory Type: P178G001/P178G002/P179G002
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DELL Technologies

Notes, cautions, and warnings

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

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

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

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1

Views of Latitude 7350

Right



Figure 1. Right view

1. **nano SIM-card slot**

   Insert a nano-SIM card to connect to a mobile broadband network.

   NOTE: Availability of the nano-SIM card slot depends on the region and configuration ordered.

2. **Headset port**

   Connect headphones or a headset (headphone and microphone combo).

3. **USB 3.2 Gen 1 port with PowerShare**

   Connect devices such as external storage devices, printers, and external displays. Provides data transfer rate of up to 10 Gbps. Supports DisplayPort 1.4 and also enables you to connect an external display using a display adapter.

   NOTE: A USB Type-C to DisplayPort adapter (sold seperately) is required to connect a DisplayPort device.

4. **Wedge-shaped lock slot**

   Connect a security cable to prevent unauthorized movement of your computer.

Left



Figure 2. Left view

1. **HDMI 2.1 TMDS port**

   Connect to a TV, external display or another HDMI-in enables device. Provides video and audio output.

2. **Thunderbolt 4.0 with DisplayPort Alt Mode/USB Type-C/USB4/Power Delivery**

Supports USB4, DisplayPort 1.4, Thunderbolt 4 and also enables you to connect to an external display using a display adapter. Provides data transfer rates of up to 40 Gbps for USB4 and Thunderbolt 4.

NOTE: You can connect a Dell Docking Station to the Thunderbolt 4 ports. For more information, search in the Knowledge Base Resource at Dell Support Site.

NOTE: A USB Type-C to DisplayPort adapter (sold separately) is required to connect a DisplayPort device.

NOTE: USB4 is backward compatible with USB 3.2, USB 2.0, and Thunderbolt 3.

NOTE: Thunderbolt 4 supports two 4K displays or one 8K display.

3. **Thunderbolt 4.0 with DisplayPort Alt Mode/USB Type-C/USB4/Power Delivery**

   Supports USB4, DisplayPort 1.4, Thunderbolt 4 and also enables you to connect to an external display using a display adapter. Provides data transfer rates of up to 40 Gbps for USB4 and Thunderbolt 4.

   NOTE: You can connect a Dell Docking Station to the Thunderbolt 4 ports. For more information, search in the Knowledge Base Resource at Dell Support Site.

   NOTE: A USB Type-C to DisplayPort adapter (sold separately) is required to connect a DisplayPort device.

   NOTE: USB4 is backward compatible with USB 3.2, USB 2.0, and Thunderbolt 3.

   NOTE: Thunderbolt 4 supports two 4K displays or one 8K display.

4. **Battery-status light**

   Indicates the battery-charge status.

   - Solid yellow-Battery charge is low.
   - Blinking yellow-Battery charge is critical.

5. **Smart-card reader slot (optional)**

   Using smart card provides authentication in corporate networks.

Top

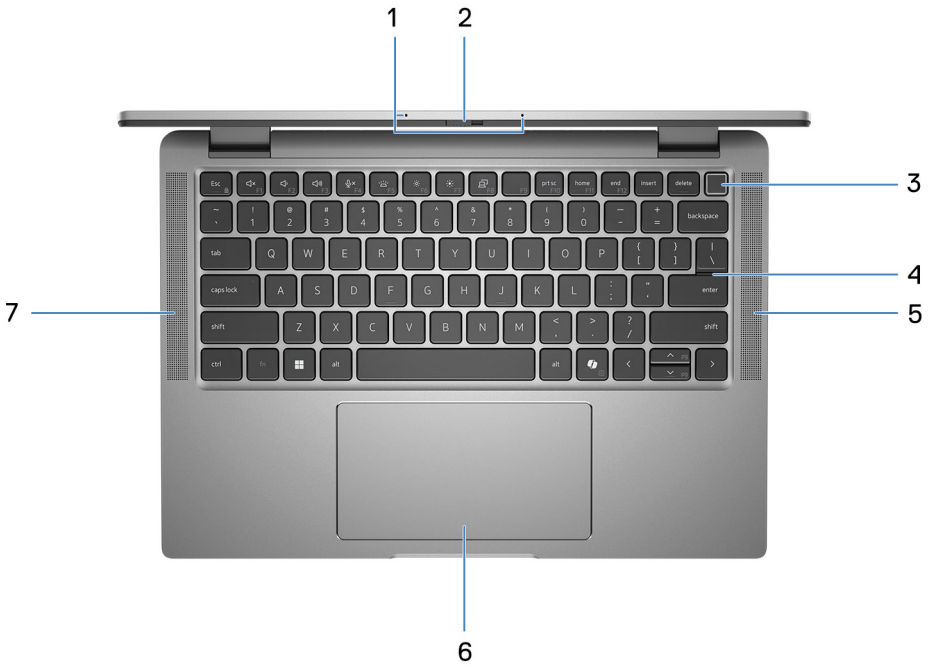


Figure 3. Top view

1. **Dual array microphone**

   Provides digital sound input for audio recording and voice calls.

2. **Camera shutter**

   Slide the privacy shutter to the left to access the camera lens.

3. **Power button with optional fingerprint reader**

   Press to turn on the computer if it is turned off, in sleep state, or in hibernate state.

   When the computer is turned on, press the power button to put the computer into sleep state; press and hold the power button for 10 seconds to force shut-down the computer.

   If the power button has a fingerprint reader, place your finger on the power button steadily to log in.

   NOTE: The power-status light on the power button is available only on computers without the fingerprint reader. Computers that are shipped with the fingerprint reader that is integrated on the power button will not have the power-status light on the power button.

   NOTE: You can customize the power-button behavior in Windows.

4. **Keyboard**
5. **Speaker**

   Provide audio output.

6. **Clickpad with optional NFC/contactless smart-card reader**

   Move your finger on the clickpad to move the mouse pointer. Tap to left-click and two fingers tap to right-click.

7. **Speaker**

   Provide audio output.

Front



Figure 4. Front view

1. **Infrared emitter (optional)**

   Emits infrared light, which enables the infrared camera to sense and track motion.

2. **Infrared camera (optional)**

   Enhances security when paired with Windows Hello face authentication.

3. **Camera**

   Enables you to video chat, capture photos, and record videos.

4. **Camera-status light**

   Turns on when the camera is in use.

5. **Ambient-light sensor**

   The sensor detects the ambient light and automatically adjusts the display brightness.

Bottom

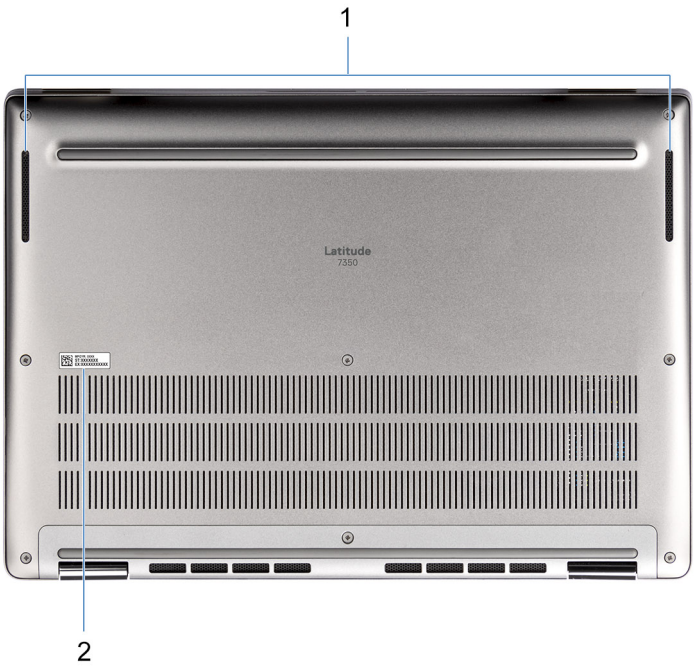


Figure 5. Bottom view

1. **Speakers**

   Provide audio output.

2. **Service Tag label**

   The Service Tag is a unique alphanumeric identifier that enables Dell service technicians to identify the hardware components in your computer and access warranty information.

Service Tag

The service tag is a unique alphanumeric identifier that allows Dell service technicians to identify the hardware components in your computer and access warranty information.

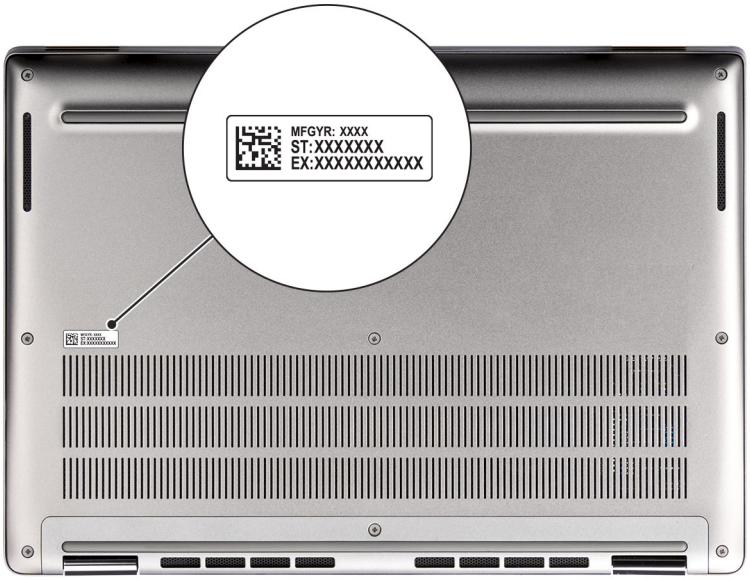


Figure 6. Service tag location

Modes

The following modes are applicable for your 2-in-1 computers.

Notebook



Figure 7. Notebook mode

Tablet



Figure 8. Tablet mode

Stand



Figure 9. Stand mode

Tent



Figure 10. Tent mode

Battery-charge status light

The following table lists the battery-charge status light of your Latitude 7350.

Table 1. Battery charge and status light behavior

Power source	LED behavior	System power state	Battery charge level
AC adapter	Off	S0 or S5	Fully charged
AC adapter	Solid white	S0 or S5	< Fully charged
Battery	Off	S0 or S5	11-100%
Battery	Solid amber (590+/-3 nm)	S0 or S5	< 10%

- S0 (ON): Computer is turned on.
- S4 (Hibernate): The computer consumes the least power in the Hibernate state than in the ON or OFF state. The computer is almost in the OFF state. The context data is written to a storage device, allowing you to resume from where you left when the computer is turned on.
- S5 (OFF): The computer is in a shutdown state.

2

Set up your Latitude 7350

About this task

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

Steps

1. Connect the power adapter and press the power button.



Figure 11. Connecting the power adapter

NOTE: The battery may go into power-saving mode during shipment to conserve charge on the battery. Ensure that the power adapter is connected to your computer when it is turned on for the first time.

2. Finish the operating system setup.

   For Ubuntu:

   Follow the on-screen instructions to complete the setup. For more information about installing and configuring Ubuntu, search in the Knowledge Base Resource at Dell Support Site.

   For Windows:

   Follow the on-screen instructions to complete the setup. When setting up, Dell Technologies recommends that you:

   - Connect to a network for Windows updates.

     NOTE: If connecting to a secured wireless network, enter the password for the wireless network access when prompted.

   - If connected to the Internet, sign-in with or create a Microsoft account.
   - On the **Support and Protection** screen, enter your contact details.

3. Locate and use Dell apps from the Windows Start menu—Recommended.

Table 2. Locate Dell apps

Resources	Description
	**Dell Product Registration** Register your computer with Dell.
	**Dell Help & Support** Access help and support for your computer.
	**SupportAssist** SupportAssist is the smart technology that keeps your computer running at its best by optimizing settings, detecting issues, removing viruses and notifies when you must make computer updates. SupportAssist proactively checks the health of your computer hardware and software. When an issue is detected, the necessary system state information is sent to Dell to begin troubleshooting. SupportAssist is preinstalled on most of the Dell devices running on Windows operating system. For more information, see SupportAssist for Business PCs manuals. **NOTE:** In SupportAssist, click the warranty expiry date to renew or upgrade your warranty.
	**Dell Update** Updates your computer with critical fixes and latest device drivers as they become available. For more information about using Dell Update, see the product guides and third-party license documents at Dell Support Site.
	**Dell Digital Delivery** Download software applications, which are purchased but not preinstalled on your computer. For more information about using Dell Digital Delivery, search in the Knowledge Base Resource at Dell Support Site.

3

Specifications of Latitude 7350

Dimensions and weight

The following table lists the height, width, depth, and weight of your Latitude 7350.

Table 3. Dimensions and weight

Description	Laptop-Mainstream Values	2-in-1	Laptop-Ultralight
Height:			
Front height	16.44 mm (0.64 in.)	16.45 mm (0.65 in.)	16.67 mm (0.65 in.)
Rear height	17.75 mm (0.69 in.)	17.75 mm (0.70 in.)	17.60 mm (0.69 in.)
Width	299 mm (11.77 in.)	299 mm (11.77 in.)	299 mm (11.77 in.)
Depth	213.16 mm (8.39 in.)	213.16 mm (8.39 in.)	212.86 mm (8.38 in.)
Weight **NOTE:** The weight of your computer depends on the configuration ordered and manufacturing variability.	2.54 lb (1.15 kg)	2.86 lbs. (1.297 kg)	2.18 lbs. (0.989 kg)

Processor

The following table lists the details of the processors that are supported in your Latitude 7350.

Table 4. Processor

Description	Option one	Option two	Option three	Option four
Processor type	Intel Core Ultra 5-125U	Intel Core Ultra 5-135U	Intel Core Ultra 7-155U	Intel Core Ultra 7-165U
Processor wattage	15 W	15 W	15 W	15 W
Processor core count	12	12	12	12
Processor thread count	14	14	14	14
Processor speed	0.8 GHz to 4.3 GHz	1.1 GHz to 4.4 GHz	1.2 GHz to 4.8 GHz	1.2 GHz to 4.9 GHz
Processor cache	12 MB	12 MB	12 MB	12 MB
Integrated graphics	Intel Graphics	Intel Graphics	Intel Graphics	Intel Graphics

Chipset

The following table lists the details of the chipset that is supported in your Latitude 7350.

Table 5. Chipset

Description	Values
Chipset	Integrated in the processor
Processor	Intel Core Ultra 5/7
DRAM bus width	Dual-channel, 64-bit
Flash EPROM	64 MB
PCIe bus	Up to Gen4.0

Operating system

Your Latitude 7350 supports the following operating systems:

- Windows 11 22H2
- Windows 11 23H2
- Ubuntu Linux 22.04 LTS

NOTE: Windows 10 22H2 is only for special configuration orders, and computers downgraded by end users from Windows 11. Support by Dell Technologies is subjected to the Microsoft Windows 10 End of Support plan.

Memory

The following table lists the memory specifications that are supported by your Latitude 7350.

Table 6. Memory specifications

Description	Values
Memory slots	On-board memory **NOTE:** The memory is integrated on the system board and is not ungradable.
Memory type	Dual-channel, LPDDR5x
Memory speed	6400 MT/s
Maximum memory configuration	64 GB
Minimum memory configuration	16 GB
Memory size per slot	16 GB, 32 GB, 64 GB
Memory configurations supported	• 16 GB, Dual-Channel LPDDR5x, 6400 MT/s • 32 GB, Dual-Channel LPDDR5x, 6400 MT/s • 64 GB, Dual-Channel LPDDR5x, 6400 MT/s

External ports and slots

The following table lists the external ports and slots of your Latitude 7350.

Table 7. External ports and slots

Description	Values
Network port	Not supported
USB ports	• Two USB Type-C ports • One USB 3.2 Gen 1 port with PowerShare
Audio port	One Universal Audio Jack
Video port(s)	One HDMI 2.1 TMDS
Media-card reader	Smart Card Reader (Contacted and Contactless + NFC) optional for Mainstream configuration, unavailable in Ultralight
Power-adapter port	60 W/65 W/100 W adapter USB-C
Security-cable slot	One wedge-shaped security lock slot
SIM-card slot	nano SIM-card slot

Internal slots

The following table lists the internal slots of your Latitude 7350.

Table 8. Internal slots

Description	Values
M.2	• One M.2 2230 slot for solid-state drive • One M.2 3042 slot for 4G WWAN card • One M.2 3042 slot for 5G WWAN card **NOTE:** To learn more about the features of different types of M.2 cards, search in the Knowledge Base Resource at Dell Support Site.

Wireless module

The following table lists the Wireless Local Area Network (WLAN) module that is supported on your Latitude 7350.

Table 9. Wireless module specifications

Description	Values
Model number	Intel BE200
Transfer rate	5760 Mbps
Frequency bands supported	2.40 GHz/5 GHz/6 GHz
Wireless standards	• WiFi 802.11a/b/g • Wi-Fi 4 (WiFi 802.11n)

Table 9. Wireless module specifications (continued)

Description	Values
	• Wi-Fi 5 (WiFi 802.11ac) • Wi-Fi 6E (WiFi 802.11ax) • Wi-Fi 7 (WiFi 802.11be)
Encryption	• 64-bit/128-bit WEP • AES-CCMP • TKIP
Bluetooth wireless card	Bluetooth 5.4 wireless card

WWAN module

The following table lists the Wireless Wide Area Network (WWAN) modules that are supported in your Latitude 7350.

NOTE: The WWAN module is available only on certain configurations and in certain regions.

NOTE: Availability of the eSIM feature on this module depends on your region.

NOTE: For instructions on how to setup SIM or eSIM connections on your computer, see the *SIM/eSIM Setup Guide for Windows* available with your product documentation at Dell Support Site.

Table 10. WWAN module specifications

Description	Option one	Option two
Model number	DW5825e, Qualcomm Snapdragon SDX12 Global LTE-Advanced, CAT12, WWAN Module	DW5932e, Qualcomm Snapdragon X62 Global 5G Modem, 3GPP Release 16, WWAN Module
Form factor	M.2 3042 Key-B	M.2 3042 Key-B
Host interface	USB 3.0/2.0	PCIe Gen3
Network standard	LTE FDD/TDD, WCDMA/HSPA+, GPS/GLONASS/BDS/Galileo	NR FR1(Sub6) FDD/TDD, LTE FDD/TDD, WCDMA/HSPA+, GPS/GLONASS/Galileo/Beidou
Transfer data rate	• Up to 600 Mbps DL(CAT12) • Up to 150 Mbps UL	• 5G NR: DL 3.5Gbps/ UL 900Mbps • LTE: DL 1.6Gbps (CAT19)/ UL 211Mbps (CAT18) • UMTS: DL DC-HSPA+ Rel8:42 Mbps / UL 5.76 Mbps
Operating frequency bands	• LTE(B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B38, B39, B40, B40, B41, B42, B43, B48, B66, B71) • HSPA+ (1, 2, 4, 5, 6, 8, 19)	• NR(n1 ,n2 ,n3, n5 ,n7, n8, n12, n13, n14, 18, n20, n25, n26, n28, n30, n38, n40, n41, n48, n53, n66, n70, n71, n75, n76, n77, n78, n79) • LTE (B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66, B71) • WCDMA/HSPA+ (1, 2, 4, 5, 8)
Power supply	DC 3.135 V to 4.4 V, Typical 3.3 V	DC 3.135 V to 3.63 V, Typical 3.30 V

Table 10. WWAN module specifications (continued)

Description	Option one	Option two
SIM card	Supported through external SIM slot	Supported through external SIM slot
eSIM with dual SIM (DSSA)	Supported	Supported
Antenna diversity	Supported	Supported
Radio on/off	Supported	Supported
Wake on wireless	Supported	Supported
Temperature	• Normal operating temperature: -10°C to +55°C (14°F to 131°F) • Extended Operating temperature: -30°C to +75°C (-22°F to 165°F)	• Normal operating temperature: -30°C to +70°C (-22°F to 158°F) • Extended Operating temperature: -40°C to +85°C (-40°F to 185°F) • Storage temperature: -40°C to +85°C (-40°F to 185°F)
Antenna connector	• WWAN Main Antenna x 1 • WWAN Diversity Antenna X 1	• WWAN Main Antenna X 1 • WWAN Diversity Antenna X 1 • 4 x 4 MIMO Antenna x 2

NOTE: For instructions to find your computer's International Mobile Equipment Identity (IMEI) number, search in the Knowledge Base Resource at Dell Support Site.

Audio

The following table lists the audio specifications of your Latitude 7350.

Table 11. Audio specifications

Description		Values
Audio controller		Realtek ALC3281 with external Amp ALC1309D
Stereo conversion		Supported
Internal audio interface		High definition audio interface
External audio interface		Universal Audio Jack
Number of speakers		Four
Internal-speaker amplifier		Supported
External volume controls		Supported
Speaker output:		
	Average	2 W
	Peak	2.5 W
Microphone		Dual-array

Storage

This section lists the storage options on your Latitude 7350.

Your computer supports the following storage configurations:

- One M.2 2230 solid-state drive

The M.2 2230 solid-state drive is the primary drive of your computer.

Table 12. Storage specifications

Storage type	Interface type	Capacity
M.2 2230 solid-state drive	PCIe NVMe Gen4 x4	256 GB/512 GB/1 TB/2 TB
M.2 2230 solid-state drive, Self-encrypting drive, Opal 2.0	PCIe NVMe Gen4 x4	Up to 256 GB

Keyboard

The following table lists the keyboard specifications of your Latitude 7350.

Table 13. Keyboard specifications

Description	Values
Keyboard type	• Standard AI hotkey backlit keyboard without fingerprint reader • Standard AI hotkey backlit keyboard with fingerprint reader • Standard AI hotkey non-backlit keyboard without fingerprint reader • Standard AI hotkey non-backlit keyboard with fingerprint reader **NOTE:** • All keyboards are spill-resistant • Copilot in Windows is available only in approved markets
Keyboard layout	QWERTY
Number of keys	• Arabic, English International, English US, French Canadian, Greek, Hebrew, Korean: 79 keys • Spanish Latin America, Belgian, Bulgarian, Czech Slovak (MUI), French European, German, Hungarian, Italian, Nordic (MUI), Spanish Castillian, Swiss/European (MUI), Turkish, and English UK: 80 keys • Japanese: 83 keys
Keyboard size	X=18.05 mm key pitch Y=18.05 mm key pitch
Keyboard shortcuts	Some keys on your keyboard have two symbols on them. These keys can be used to type alternate characters or to perform secondary functions. To type the alternate character, press Shift and the desired key. To perform secondary functions, press Fn and the desired key.

Table 13. Keyboard specifications (continued)

Description	Values
	NOTE: You can define the primary behavior of the function keys (F1–F12) changing **Function Key Behavior** in the BIOS setup program. **NOTE:** If Copilot in Windows is not available on your computer, pressing the Copilot key launches Windows search. For more information about Copilot in Windows, search in the Knowledge Base Resource at the Dell Support site.

Keyboard shortcuts of Latitude 7350

NOTE: Keyboard characters may differ depending on the keyboard language configuration. Keys that are used for shortcuts remain the same across all language configurations.

Some keys on your keyboard have two symbols on them. These keys can be used to type alternate characters or to perform secondary functions. The symbol that is shown on the lower part of the key refers to the character that is typed out when the key is pressed. If you press shift and the key, the symbol that is shown on the upper part of the key is typed out. For example, if you press **2**, **2** is typed out; if you press **Shift** + **2**, **@** is typed out.

The keys F1-F12 at the top row of the keyboard are function keys for multimedia control, as indicated by the icon at the bottom of the key. Press the function key to invoke the task represented by the icon. For example, pressing F1 mutes the audio (refer to the table below).

However, if the function keys F1-F12 are needed for specific software applications, multimedia functionality can be disabled by pressing **Fn** + **Esc**. Later, multimedia control can be invoked by pressing **Fn** and the respective function key. For example, mute audio by pressing **Fn** + **F1**.

NOTE: You can also define the behavior of the function keys (F1–F12) by changing **Function Key Behavior** in BIOS setup program.

Table 14. List of keyboard shortcuts

Keyboard shortcut	Behavior
Copilot	Launch Copilot in Windows **NOTE:** If Copilot in Windows is not available on your computer, the Copilot key launches Windows Search. For more information about Copilot in Windows, search in the Knowledge Base Resources at Dell Support Site.
F1	Mute audio
F2	Decrease volume
F3	Increase volume
F4	Mute mic
F5	Click keyboard backlight (optional) **NOTE:** Non-backlight keyboards have the F10 function key without the backlight icon and do not support the toggle keyboard backlight function. **NOTE:** Toggle to cycle the keyboard backlight status through off, lowbacklight, and high-backlight.
F6	Decrease brightness
F7	Increase brightness
F8	Win+P

Table 14. List of keyboard shortcuts (continued)

Keyboard shortcut	Behavior
F9	Null
F10	Print screen
F11	Home
F12	End

The **Fn** key is also used with selected keys on the keyboard to invoke other secondary functions.

Table 15. Secondary behavior

Keys	Behavior
Fn + F1	Operating system and application-specific F1 behavior
Fn + F2	Operating system and application-specific F2 behavior
Fn + F3	Operating system and application-specific F3 behavior
Fn + F4	Operating system and application-specific F4 behavior
Fn + F5	Operating system and application-specific F5 behavior
Fn + F6	Operating system and application-specific F6 behavior
Fn + F8	Operating system and application-specific F8 behavior
Fn + F9	Operating system and application-specific F9 behavior
Fn + F10	Operating system and application-specific F10 behavior
Fn + F11	Operating system and application-specific F11 behavior
Fn + F12	Operating system and application-specific F12 behavior
Fn + PrtScr	Turn off or on wireless
Fn + B	Pause or Break
Fn + Insert	Sleep
Fn + S	Toggle scroll lock
Fn + H	Toggle between power and battery-status light or hard drive activity light
Fn + R	System request
Fn + Ctrl	Open the application menu
Fn + Esc	Toggle Fn-key lock
Fn + PgUp	Page up
Fn + PgDn	Page down
Fn + Home	Home
Fn + End	End

Camera

The following table lists the camera specifications of your Latitude 7350.

Table 16. Camera specifications

Description		Values
Number of cameras		Three
Camera type		• FHD RGB USB Camera • FHD RGB-IR HDR Camera • 5MP RGB-IR
Camera location		Front camera
Camera sensor type		Ambient light sensor
Camera resolution:		
	Still image	2.07 megapixel
	Video	• 1920 x 1080 (FHD) at 30fps • 1920 x 1080 (FHD) at 30fps • 2560 x 1920 (5MP) at 30fps
Infrared camera resolution:		
	Still image	Not supported
	Video	Not supported
Diagonal viewing angle:		
	Camera	82 degrees
	Infrared camera	Not supported

Clickpad

The following table lists the clickpad specifications of your Latitude 7350.

Table 17. Clickpad specifications

Description		Values
Clickpad resolution:		>300 dpi
Clickpad dimensions:		
	Horizontal	125 mm (4.92 in.)
	Vertical	67 mm (2.63 in.)
Clickpad gestures		For more information about clickpad gestures available on Windows, see the Microsoft Knowledge Base article at support.microsoft.com.

Clickpad with collaboration controls

The following table lists the clickpad specifications of your Latitude 7350 Ultralight.

Table 18. Clickpad specifications

Description		Values
Clickpad type		Collaboration Touchpad
Collaboration controls on clickpad		Four controls are available to control video, share screen, chat, and mute functions during conference calls. The controls are visible on the clickpad during any conference calls. Compatible with Zoom and Teams for work or school.
Collaboration controls settings		• Control brightness manually or configure icon brightness to automatically adjust to the ambient light. • Customize settings to activate collaboration controls with a single tap or a double tap. • Customize specific controls to be activated or deactivated.
Collaboration controls functionality		• Video icon: Turn on or off the camera. ○ White icon: The camera is turned on. ○ Red icon: The camera is off. Share screen icon: Tap once to share your screen. Tap again to stop sharing. Chat icon: Show or hide the chat window. The icon blinks when you receive a new chat message. Microphone icon: Turn on or mute the microphone. ○ White icon: The microphone is turned on. ○ Red icon: The microphone is muted.
Required apps for collaboration controls		• Dell Optimizer Version 4.2.0.0 and higher • Zoom Client Version 5.9.3 and higher • Teams for work or school (Windows desktop) Version 1.6.00.24078 and higher
Clickpad resolution		>300 dpi
Clickpad dimensions:		
	Horizontal	125 mm (4.92 in.)
	Vertical	67 mm (2.63 in.)
Clickpad gestures		For more information about clickpad gestures available on Windows, see the Microsoft Knowledge Base article at Microsoft Support Site.

NOTE: To enjoy the collaboration touchpad (CTP) controls feature on your keyboard, ensure that you have the latest versions of the Dell Optimizer app and Zoom or Teams for work or school installed on your computer. Dell Optimizer offers modular installation which allows you to select the modules you want to install. Install the collaboration touchpad module within the Dell Optimizer app to enjoy the functionality of collaboration controls. For more information, search for the Dell Optimizer User 's Guide in the Knowledge Base Resource at Dell Support Site.

NOTE: For more information about how to configure and use your collaboration controls, search for the Collaboration Touchpad Reference Guide in the Knowledge Base Resource at Dell Support Site. Or, watch the Dell Collaboration Touchpad video.

NOTE: Collaboration Touchpad is supported only on Teams for work or school (Windows desktop) application. Teams for home and Teams on web are currently not supported.

Power adapter

The following table lists the power adapter specifications of your Latitude 7350.

Table 19. Power adapter specifications

Description	Option one	Option two	Option three
Type	60W AC adapter, USB Type-C	65W AC adapter, USB Type-C	100W AC adapter, USB Type-C
Power-adapter dimensions:			
Height	22.00 mm (0.86 in.)	28.00 mm (1.10 in.)	26.50 mm (1.04 in.)
Width	66.00 mm (2.59 in.)	51.00 mm (2.01 in.)	60.00 mm (2.36 in.)
Depth	55.00 mm (2.16 in.)	112.00 mm (4.41 in.)	122.00 mm (4.80 in.)
Weight	0.10 kg (0.23 lbs)	0.20 kg (0.44 lbs)	0.33 kg (0.73 lbs)
Input voltage	100 VAC – 240 VAC	100 VAC – 240 VAC	100 VAC – 240 VAC
Input frequency	50 Hz – 60 Hz	50 Hz – 60 Hz	50 Hz – 60 Hz
Input current (maximum)	1.70 A	1.70 A	1.70 A
Output current (continuous)	• 5 V/3 A • 9 V/3 A • 15 V/3 A • 20 V/3 A	• 5 V/3 A • 9 V/3 A • 15 V/3 A • 20 V/3.25 A	• 5 V/3 A • 9 V/3 A • 15 V/3 A • 20 V/5 A
Rated output voltage	• 5 VDC • 9 VDC • 15 VDC • 20 VDC	• 5 VDC • 9 VDC • 15 VDC • 20 VDC	• 5 VDC • 9 VDC • 15 VDC • 20 VDC
Temperature range:			
Operating	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)
Storage	-20°C to 70°C (-4°F to 158°F)	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)
CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.			

Power adapter requirements

This section contains the power adapter requirements for Latitude 7350.

NOTE: If you did not purchase the Dell-branded power adapter that is recommended for your computer, ensure that the power adapter you use meets the following requirements:

Table 20. Power adapter requirements for Latitude 7350

Description	Value
Power that is required from a power adapter to achieve optimal performance.	60 W
Power that is required to charge the computer at a slower speed. **NOTE:** A warning message may appear informing you about the use of a lower-powered adapter and slower charging speed.	Less than 60 W

Table 20. Power adapter requirements for Latitude 7350 (continued)

Description	Value
Minimum power that is required from a power adapter to operate the computer and charge the battery. **NOTE:** A warning message appears informing you about the use of a lower-powered adapter and slower charging speed.	27 W
USB Power Delivery (PD) fast charging	Supported
ExpressCharge mode	Supported **NOTE:** Ensure that the computer is connected to a 100 W power adapter for this feature to be supported. **NOTE:** ExpressCharge mode must also be enabled in the BIOS Setup screen by selecting **Power > Battery Configuration > ExpressCharge**, then press **Enter**.

Battery

The following table lists the battery specifications of your Latitude 7350.

Table 21. Battery specifications

Description		Option one	Option two	Option three	Option four
Battery type		2-cell, 38 Wh, lithium ion, ExpressCharge	3-cell, 57 Wh, lithium ion, ExpressCharge	2-cell, 38 Wh, lithium ion, Long Lifecycle, ExpressCharge	3-cell, 57 Wh, lithium ion, Long Lifecycle, ExpressCharge
Battery voltage		7.60 VDC	11.40 VDC	7.60 VDC	11.40 VDC
Battery weight (minimum)		0.156 Kg (0.34 lb)	0.227 kg (0.50 lb)	0.156 Kg (0.34 lb)	0.227 kg (0.50 lb)
Battery dimensions:					
	Height	6.30 mm (0.24 in.)	6.30 mm (0.24 in.)	6.30 mm (0.24 in.)	6.30 mm (0.24 in.)
	Width	210.97 mm (8.30 in.)	254.8 mm (10.03 in.)	210.97 mm (8.30 in.)	254.8 mm (10.03 in.)
	Depth	79.80 mm (3.10 in.)	79.8 mm (3.10 in.)	79.80 mm (3.10 in.)	79.8 mm (3.10 in.)
Temperature range:					
	Operating	• Charge: 0°C to 45°C (32°F to 113°F) • Discharge: 0°C to 70°C (32°F to 158°F)	• Charge: 0°C to 45°C (32°F to 113°F) • Discharge: 0°C to 70°C (32°F to 158°F)	• Charge: 0°C to 45°C (32°F to 113°F) • Discharge: 0°C to 70°C (32°F to 158°F)	• Charge: 0°C to 45°C (32°F to 113°F) • Discharge: 0°C to 70°C (32°F to 158°F)
	Storage	-20°C to 65°C (-4°F to 149°F)	-20°C to 65°C (-4°F to 149°F)	-20°C to 65°C (-4°F to 149°F)	-20°C to 65°C (-4°F to 149°F)
Battery operating time		Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.

Table 21. Battery specifications (continued)

Description	Option one	Option two	Option three	Option four
Battery charging time (approximate) **NOTE:** Control the charging time, duration, start and end time, and so on using the Dell Power Manager application. For more information about Dell Power Manager, search in the Knowledge Base Resource at Dell Support Site.	**Express Charge Method:** • 0 - 15°C maximum allowable charge time from 0 to 100% RSOC is 4 hours • 16 - 45°C normal express charge • 46 - 50°C maximum allowable charge time from 0 to 100% RSOC is 3 hours **Standard Charge/ Predominately AC User Charge Method:** • 0 - 15°C maximum allowable charge time from 0 to 100% RSOC is 4 hours • 16 - 50°C maximum allowable charge time from 0 to 100% RSOC is 3 hours **Express Charge Boost Charge Method (Fast Charge for Initial 35%):** • 16 - 45°C target charge time from 0 to 35% RSOC is 20 mins for Accelerated Charge	**Express Charge Method:** • 0 - 15°C maximum allowable charge time from 0 to 100% RSOC is 4 hours • 16 - 45°C normal express charge • 46 - 50°C maximum allowable charge time from 0 to 100% RSOC is 3 hours **Standard Charge/ Predominately AC User Charge Method:** • 0 - 15°C maximum allowable charge time from 0 to 100% RSOC is 4 hours • 16 - 50°C maximum allowable charge time from 0 to 100% RSOC is 3 hours **Express Charge Boost Charge Method (Fast Charge for Initial 35%):** • 16 - 45°C target charge time from 0 to 35% RSOC is 20 mins for Accelerated Charge	**Standard Charge/ Predominately AC User Charge Method:** • 0 - 15°C maximum allowable charge time from 0 to 100% RSOC is 4 hours • 16 - 50°C maximum allowable charge time from 0 to 100% RSOC is 3 hours	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions
Coin-cell battery	Supported	Supported	Supported	TBD

CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.

CAUTION: Dell recommends that you charge the battery regularly for optimal power consumption. If your battery charge is completely depleted, connect the power adapter, turn on your computer, and then restart your computer to reduce the power consumption.

Display

The following table lists the display specifications of your Latitude 7350.

Table 22. Display specifications

Description	Option one	Option two	Option three	Option four
Display type	Full High Definition Plus (FHD)	Full High Definition Plus (FHD)	Full High Definition Plus (FHD) light weight	Quad High Definition Plus (QHD+) 2-in-1,ComfortView Plus, Battery-saving, Gorilla® Glass Victus® with DX
Display-panel technology	Wide Viewing Angle (WVA)	Wide Viewing Angle (WVA)	Wide Viewing Angle (WVA)	Wide Viewing Angle (WVA/IPS)
Display-panel dimensions (active area):				
Height	178.78 mm (7.03 in.)	178.78 mm (7.03 in.)	178.78 mm (7.03 in.)	178.80 mm (7.03 in.)
Width	286.04 mm (11.26 in.)	286.04 mm (11.26 in.)	286.04 mm (11.26 in.)	286.08 mm (11.26 in.)
Diagonal	337.31 mm (13.30 in.)	337.31 mm (13.30 in.)	337.31 mm (13.30 in.)	337.36 mm (13.30 in.)
Display-panel native resolution	1920 x 1200	1920 x 1200	1920 x 1200	2560 x1600
Luminance (typical)	250 nits	300 nits	400 nits	500 nits
Megapixels	2.304	2.304	2.304	4.096
Color gamut	45% NTSC	72% NTSC	100% sRGB	100% sRGB
Pixels Per Inch (PPI)	170 ppi	170 ppi	170 ppi	227 ppi
Contrast ratio (typical)	600:1	700:1	1000:1	1200:1
Response time (maximum)	35 ms	35 ms	35 ms	35 ms
Refresh rate	60 Hz	60 Hz	60 Hz	60 Hz
Horizontal view angle	• 85 degrees (typical) • 80 degrees (min)	• 85 degrees (typical) • 80 degrees (min)	• 85 degrees (typical) • 80 degrees (min)	• 85 degrees (typical) • 80 degrees (min)
Vertical view angle	• 85 degrees (typical) • 80 degrees (min)	• 85 degrees (typical) • 80 degrees (min)	• 85 degrees (typical) • 80 degrees (min)	• 85 degrees (typical) • 80 degrees (min)
Pixel pitch	0.149 mm	0.149 mm	0.149 mm	0.111 mm
Power consumption (maximum)	3.25 W	3.50 W	2.90 W	3.62 W
Anti-glare vs glossy finish	Anti-glare	Anti-glare	Anti-glare	Anti-reflection

Table 22. Display specifications (continued)

Description	Option one	Option two	Option three	Option four
Touch options	No	Yes	No	Yes

Fingerprint reader (optional)

The following table lists the specifications of the optional fingerprint-reader of your Latitude 7350.

Table 23. Fingerprint reader specifications

Description	Values
Sensor technology	Trans-capacitive sensing
Sensor resolution	500/363 dpi
Sensor pixel size	• X: 108 / 76 • Y: 88 / 100

Sensor

The following table lists the sensor of your Latitude 7350.

Table 24. Sensor

Sensor support
Accelerometer (ST Micro **LIS2DW12TR**): On the base (system board) for both laptop and 2-in-1 systems
Accelerometer + Gyro (ST Micro **LSM6DS3USTR** (primary) or **LSM6DSOUSTR** (secondary)): On the hinge-up sensor board for 2-in-1 system
Accelerometer (ST Micro **LNG2DMTR-GP**): On the hinge-up mid-board in Upsell configuration for clamshell system with MIPI RGB+IR camera
Ambient Light Sensor (optional)
E-compass (ST Micro LIS2MDLTR), only for 2-in-1 system
Proximity for SAR compliance (for the WWAN module) Near Field Proximity Sensor
Hall Effect Sensor

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Latitude 7350.

Table 25. GPU—Integrated

Controller	Memory size	Processor
Intel Graphics	Shared system memory	Intel Core Ultra 5/7

Multiple display support matrix

The following table lists the multiple display support matrix of your Latitude 7350.

Table 26. Multiple display support matrix

Graphics Card	Supported external displays with computer internal display on	Supported external displays with computer internal display off
Intel Graphics	Up to 3	Up to 4

Hardware security

The following table lists the hardware security of your Latitude 7350.

Table 27. Hardware security

Hardware security
Trusted Platform Module (TPM) 2.0 discrete
FIPS 140-2 certification for TPM
Trusted Computing Group (TCG) Certification for TPM
Contacted smart card and Control vault 3
Contactless smart card, NFC, and Control vault 3
SED SSD NVMe, SSD and HDD (Opal and non-Opal) per SDL
Fingerprint reader in power button tied to Control vault 3
One wedge-shaped lock slot
SED (Opal 2.0 only - PCIe Interface)
Windows Hello - Fingerprint Reader (optional)
Mechanical privacy shutter for camera (only for metal laptops)

Smart-card reader

Contactless smart-card reader

This section lists the contactless smart-card reader specifications of your Latitude 7350. This module is only available in computers shipped with Smart-card readers.

Table 28. Contactless smart-card reader specifications

Title	Description	Dell ControlVault 3 contactless smart-card reader with NFC
Felica Card Support	Reader and software capable of supporting Felica contactless cards	Yes
Prox (Proximity) (125kHz) Card support	Reader and software capable of supporting Prox /Proximity/125kHz contactless cards	No
ISO 14443 Type A Card Support	Reader and software capable of supporting ISO 14443 Type A contactless cards	Yes

Table 28. Contactless smart-card reader specifications (continued)

Title	Description	Dell ControlVault 3 contactless smart-card reader with NFC
ISO 14443 Type B Card Support	Reader and software capable of supporting ISO 14443 Type B contactless cards	Yes
ISO/IEC 21481	Reader and software capable of supporting ISO/IEC 21481 compliant contactless cards and tokens	Yes
ISO/IEC 18092	Reader and software capable of supporting ISO/IEC 21481 compliant contactless cards and tokens	Yes
ISO 15693 Card Support	Reader and software capable of supporting ISO15693 contactless cards	Yes
NFC Tag Support	Supports reading and processing of NFC compliant tag information	Yes
NFC Reader Mode	Support for NFC Forum Defined Reader mode	Yes
NFC Writer Mode	Support for NFC Forum Defined Writer mode	Yes
NFC Peer-to-Peer Mode	Support for NFC Forum Defined Peer to Peer mode	Yes
NFC Proximity OS Interface	Enumerates NFP (Near Field Proximity) device for OS to utilize	Yes
PC/SC OS interface	Personal Computer/Smart Card specification for integration of hardware readers into personal computer environments	Yes
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for OS level drivers	Yes
Dell ControlVault support	Device connects to Dell ControlVault for usage and processing	Yes

NOTE: 125 Khz proximity cards are not supported.

Table 29. Supported cards

Manufacturer	Card
HID	jCOP readertest3 A card (14443a)
	1430 1L
	DESFire D8H
	DESFIRE 4K Standard - 1450NGGNN
	iClass 16K/16 - 2002PGGMN
	iClass SR 16K/16 - 2002HPGGMN
	iCLASS 2K tag
	iCLASS GP - 2003 PGGMN
	iClass Clamshell - 2080PMSMV
	iClass Prox 16K/16 - 2022BGGMNN

Table 29. Supported cards (continued)

Manufacturer	Card
	Mifare M1P 1430 NGGNN
	iclass Prox 2020BGGMNM
	DesFire D8P 1456CSGMN
	iCLASS MIFARE Px GM49Y 2623BNPGGBNAB
	iCLASS MIFARE Px 8M1L
	iClass SEOS JW 5006PGGMN
	Crescendo iCLASS Px G8H
	iCLASS Seos IY
	SEOS JMC4 J1Y 5806VNG1NNN4
	SEOS Key FOB 5266PNNA
	SEOS Clamshell 5656PMSAV
	SEOS + Prox 5106RGGMNN
	SEOS + DESFire 5906PNG1ANN7
	SEOS iClass 5006PGGMN7
	Seos Essential + Prox 551PPGGANN
	iCLASS 2K 2000PGGMN
	iCLASS 2K 3000PGGMN
	MIFARE DESFire 3700CPGGAN
	iCLASS DP
	DESFire 1Y
NXP/Mifare	Mifare DESFire 8K White PVC Cards
	Mifare Classic 1K White PVC Cards
	Mifare Mifare S50 ISO Cards
	Mifare DESFire 2K
	Mifare Plus S 2K/4K
	Mifare Plus X 4K
G&D	idOnDemand - SCE3.2 144K
	SCE6.0 FIPS 80K Dual+ 1 K Mifare
	SCE6.0 nonFIPS 80K Dual+ 1 K Mifare
	SCE6.0 FIPS 144K Dual + 1K Mifare
	SCE6.0 nonFIPS 144K Dual + 1 K Mifare
	SCE7.0 FIPS 144K
Oberthur	idOnDemand - OCS5.2 80K
	ID-One Cosmo 64 RSA D V5.4 T=0 card
	ID-One Cosmo 128K V5.5 card
Gemalto	TOP DL GX4 144K card
Sony	Felica RC-S962

Table 29. Supported cards (continued)

Manufacturer	Card
	Felica RC-S965
	Felica RC-S966
PIVKey	C910 PKI
NIST	PIV1
IDENTIV	PIV programmed cards
	uTrust
Transport cards	Oyster (London) MIFARE DESFire
	T-Money (Korea)
	Octopus Card (Hong Kong)
	SUICA (Japan)

Contacted smart-card reader

The following table lists the contacted smart-card reader specifications of your Latitude 7350.

Table 30. Contacted smart-card reader specifications

Title	Description	Dell ControlVault 3 smart-card reader
ISO 7816 -3 Class A Card Support	Reader capable of reading 5V powered smart mcard	Yes
ISO 7816 -3 Class B Card Support	Reader capable of reading 3V powered smart card	Yes
ISO 7816 -3 Class C Card support	Reader capable of reading 1.8V powered smart card	Yes
ISO 7816-1 Compliant	Specification for the reader	Yes
ISO 7816 -2 Compliant	Specification for smart card device physical characteristics (size, location of connection points, etc.)	Yes
ISO 7816-3 Compliant	Specification for electrical interface and transmission protocols	Yes
ISO 7816-4 Compliant	Specification for organization, security and commands for interchange	Yes
Dell ControlVault support	Device connects to Dell ControlVault for usage and processing	Yes
T=0 support	Cards support character level transmission	Yes
T=1 support	Cards support block level transmission	Yes
EMVCo Certified	Formally certified based on EMVCO smart card standards	Yes
PC/SC OS interface	Personal Computer/Smart Card specification for integration of hardware readers into personal computer environments	Yes

Table 30. Contacted smart-card reader specifications (continued)

Title	Description	Dell ControlVault 3 smart-card reader
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for OS level drivers.	Yes
Windows Certified	Device certified by WHCK	Yes
FIPS 201 (PIV/HSPD-12) Compliant via GSA	Device compliant with FIPS 201/PIV/ HSPD-12 requirements	Yes

Operating and storage environment

This table lists the operating and storage specifications of your Latitude 7350.

Airborne contaminant level: G1 as defined by ISA-S71.04-1985

Table 31. Computer environment

Description	Operating	Storage
Temperature range	0°C to 35°C (32°F to 95°F)	-40°C to 65°C (-40°F to 149°F)
Relative humidity (maximum)	10% to 90% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS	1.30 GRMS
Shock (maximum)	110 G†	160 G†
Altitude range	-15.2 m to 3048 m (4.64 ft to 5518.4 ft)	-15.2 m to 10668 m (4.64 ft to 19234.4 ft)
CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.		

* Measured using a random vibration spectrum that simulates the user environment.

† Measured using a 2 ms half-sine pulse.

Dell support policy

For information about Dell support policy, search in the Knowledge Base Resource at Dell Support Site.

Dell low blue light display

WARNING: Prolonged exposure to blue light from the display may lead to long-term effects such as eye strain, eye fatigue, or damage to the eyes.

Blue light is a color in the light spectrum which has a short wavelength and high energy. Chronic exposure to blue light, particularly from digital sources may disrupt sleep patterns and cause long-term effects such as eye strain, eye fatigue, or damage to the eyes.

The display on this computer is designed to minimize blue light and complies with TÜV Rheinland's requirement for low blue light (Hardware Solution) displays.

Low blue light (Hardware Solution) mode is enabled at the factory, so no further configuration is necessary.

To reduce the risk of eye strain, it is also recommended that you:

- Position the display at a comfortable viewing distance between 20 and 28 inches (50 cm and 70 cm) from your eyes.

- Blink frequently to moisten your eyes, wet your eyes with water, or apply suitable eye drops.
- Look away from your display, and gaze at a distant object at 20 ft (609.60 cm) away for at least 20 seconds during each break.
- Take an extended break for 20 minutes every two hours.

Dell Optimizer

Dell Optimizer is a software application that uses artificial intelligence and machine learning to optimize the performance of your computer. By analyzing computer usage and dynamically configuring the settings of your computer, it improves your experience and productivity.

For Latitude 7350 with Dell Optimizer, please refer to the following details:

- Improves user experience through computer usage analysis and learning
- Faster application launch and seamless application transition
- Intelligent battery run-time extension
- Optimized audio for best meeting experience
- Locks computer when you walk away for enhanced security
- Reduces the time it takes the computer to wake up, when the user approaches.
- Intelligently shows alerts
- Updates automatically to minimize disruption

For more information about configuring and using these features, search for the *Dell Optimizer User Guide* at Dell Support Site.

4

Working inside your computer

Safety instructions

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

NOTE: Before working inside your computer, read the safety information that is shipped with your computer. For more safety best practices, see the Regulatory Compliance home page at Dell Regulatory Compliance.

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

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

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

CAUTION: Exercise caution when handling Lithium-ion batteries in laptops. Swollen batteries should not be used and should be replaced and disposed properly. You should only perform troubleshooting and repairs as authorized or directed by the Dell technical assistance team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. See the safety instructions that is shipped with the product or at Dell Regulatory Compliance .

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

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

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

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

NOTE: The color of your computer and certain components may differ from what is shown in this document.

Before working inside your computer

Steps

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

   NOTE: If you are using a different operating system, see the documentation of your operating system for shut-down instructions.
3. Disconnect your computer and all attached devices from their electrical outlets.

4. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.
5. Remove any media card and optical drive from your computer, if applicable.
6. Enter the service mode, if you can power on your computer.

Service Mode

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

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

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

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

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

Safety precautions

This section details the primary steps to be followed before performing any disassembly instructions.

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

- Turn off the computer and all attached peripherals.
- Disconnect the computer from AC power.
- Disconnect all network cables and peripherals from the computer.
- Use an ESD field service kit when working inside any to avoid electrostatic discharge (ESD) damage.
- Place the removed component on an anti-static mat after removing it from the computer.
- Wear shoes with nonconductive rubber soles to reduce the chance of getting electrocuted.
- Unplugging, pressing, and holding the power button for 15 seconds should discharge residual power in the system board.

Standby power

Dell products with standby power must be unplugged before you open the back cover. Systems that are equipped with standby power are powered while turned off. The internal power enables the computer to be remotely turned on (Wake-on-LAN) and suspended into a sleep mode and has other advanced power management features.

Bonding

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

Electrostatic discharge—ESD protection

ESD is a major concern when you handle electronic components, especially sensitive components such as expansion cards, processors, memory modules, and system boards. A slight charge can damage circuits in ways that may not be obvious, such

as intermittent problems or a shortened product life span. As the industry pushes for lower power requirements and increased density, ESD protection is an increasing concern.

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

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

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

Perform the following steps to prevent ESD damage:

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

ESD Field Service kit

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

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

Working Environment

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

ESD Packaging

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

Components of an ESD Field Service kit

The components of an ESD Field Service kit are:

- **Anti-Static Mat** – The anti-static mat is dissipative and parts can be placed on it during service procedures. When using an anti-static mat, your wrist strap should be snug and the bonding wire should be connected to the anti-static mat and to any bare metal on the computer being worked on. Once deployed properly, service parts can be removed from the ESD bag and

placed directly on the anti-static mat. ESD-sensitive items are safe in your hand, on the anti-static mat, in the computer, or inside an ESD bag.

- **Wrist Strap and Bonding Wire** – The wrist strap and bonding wire can be either directly connected between your wrist and bare metal on the hardware if the anti-static mat is not required, or connect to the anti-static mat to protect hardware that is temporarily placed on the mat. The physical connection of the wrist strap and bonding wire between your skin, the anti-static mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, anti-static mat, and bonding wire. Never use wireless wrist straps. Always be cautious that the internal wires of a wrist strap are prone to damage from normal wear and tear, and must be checked regularly with a wrist strap tester in order to avoid accidental ESD hardware damage. It is recommended to test the wrist strap and bonding wire at least once per week.
- **ESD Wrist Strap Tester** – The wires inside an ESD strap are prone to damage over time. When using an unmonitored kit, it is a best practice to regularly test the strap prior to each service, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. To perform the test, plug the bonding-wire of the wrist-strap into the tester while it is strapped to your wrist and push the button to test. A green LED is lit if the test is successful; a red LED is lit and an alarm sounds if the test fails.

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

Transporting sensitive components

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

After working inside your computer

About this task

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

Steps

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

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

5. Press the power button to turn on the computer. Your computer will automatically return to normal functioning mode.

BitLocker

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

The installation of the following components triggers BitLocker:

- Hard disk drive or solid-state drive
- System board

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver #0
- Phillips screwdriver #1
- Plastic scribe

Screw list

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

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

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

Table 32. Screw list

Component	Screw type	Quantity	Screw image
Base cover	Captive screw	8	
M.2 SSD shielding cover	M2x3	1	
Solid-state drive	M2x4	1	
WWAN bracket	M2x3	1	
3-cell battery	Captive screw M2x4	1 4	
4-cell battery	Captive screw M2x4	1 4	
Fan	M2x4	1	
Heat-sink	Captive screw	4	
5G WLAN bracket	M2x3	1	
WLAN-antenna module bracket	M2x3	4	
EDP-cable bracket	M2x3	2	
Camera-cable bracket	M2x3	2	
Display hinges	M2.5x5	4	
Smart-card reader	M2x2	4	

Table 32. Screw list (continued)

Component	Screw type	Quantity	Screw image
System board	M2x4	1	
Power button with optional fingerprint reader	M1.2x1.5	2	
Keyboard	M1.2x1.5	29	

Major components of Latitude 7350

The following image shows the major components of Latitude 7350.

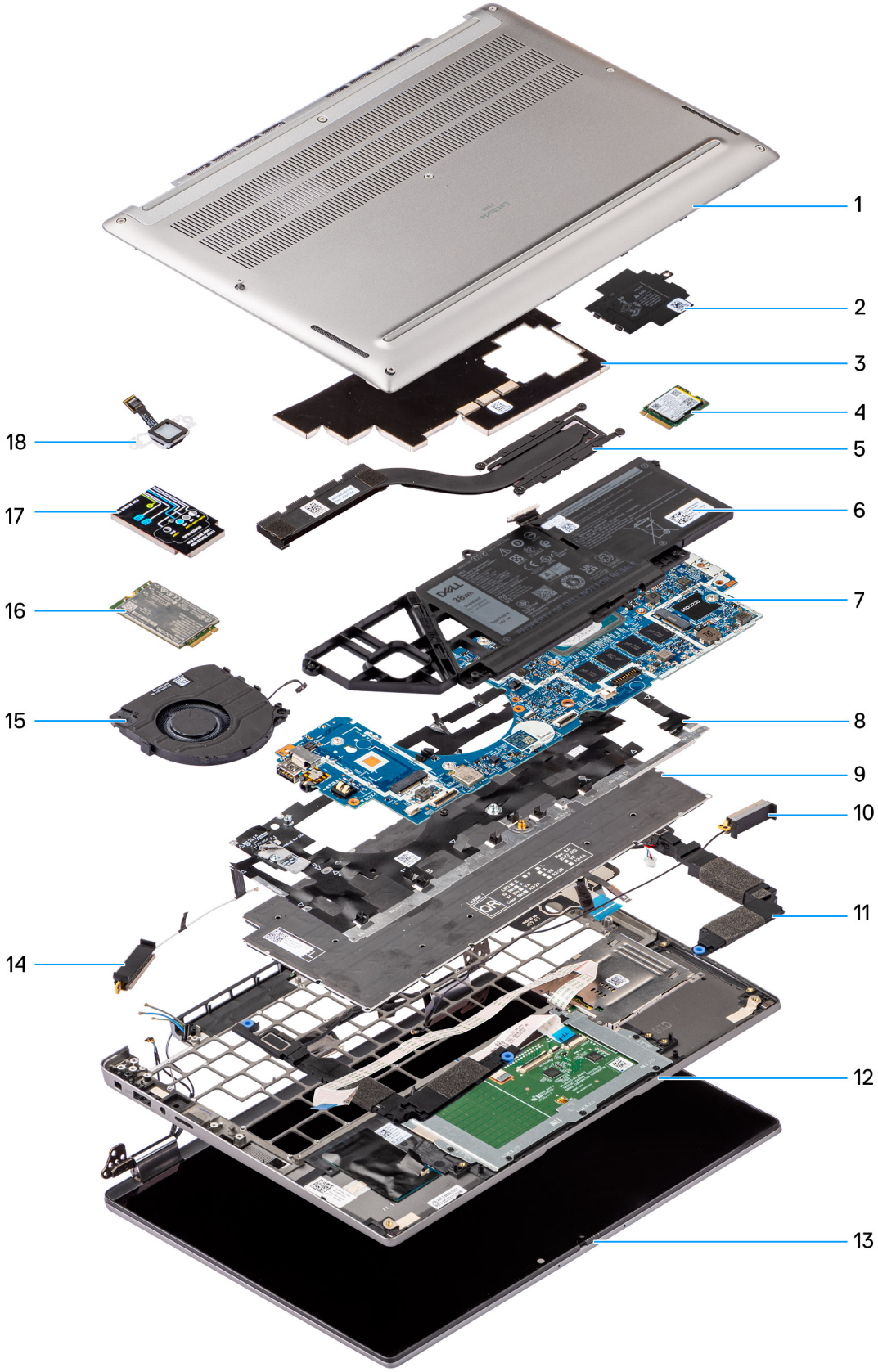


Figure 12. Major components of Latitude 7350

1. Base cover
2. Solid-state drive shield

3. Heat-sink shield
4. Solid-state drive
5. Heat sink
6. Battery
7. System board
8. Keyboard bracket
9. Keyboard
10. WLAN antenna cable
11. Speaker
12. Palm-rest and keyboard assembly
13. Display assembly
14. WLAN antenna cable
15. Fan
16. WWAN card
17. WWAN-card shield
18. Fingerprint reader

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

5

Removing and installing Customer Replaceable Units (CRUs)

The replaceable components in this chapter are Customer Replaceable Units (CRUs).

CAUTION: Customers can replace only the Customer Replaceable Units (CRUs) following the safety precautions and replacement procedures.

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

NanoSIM-card tray

Removing the nanoSIM-card tray

Prerequisites

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

About this task

NOTE: This procedure applies only to computers shipped with a nanoSIM-card tray installed. No pre-removals for models shipped without WWAN antennas.

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

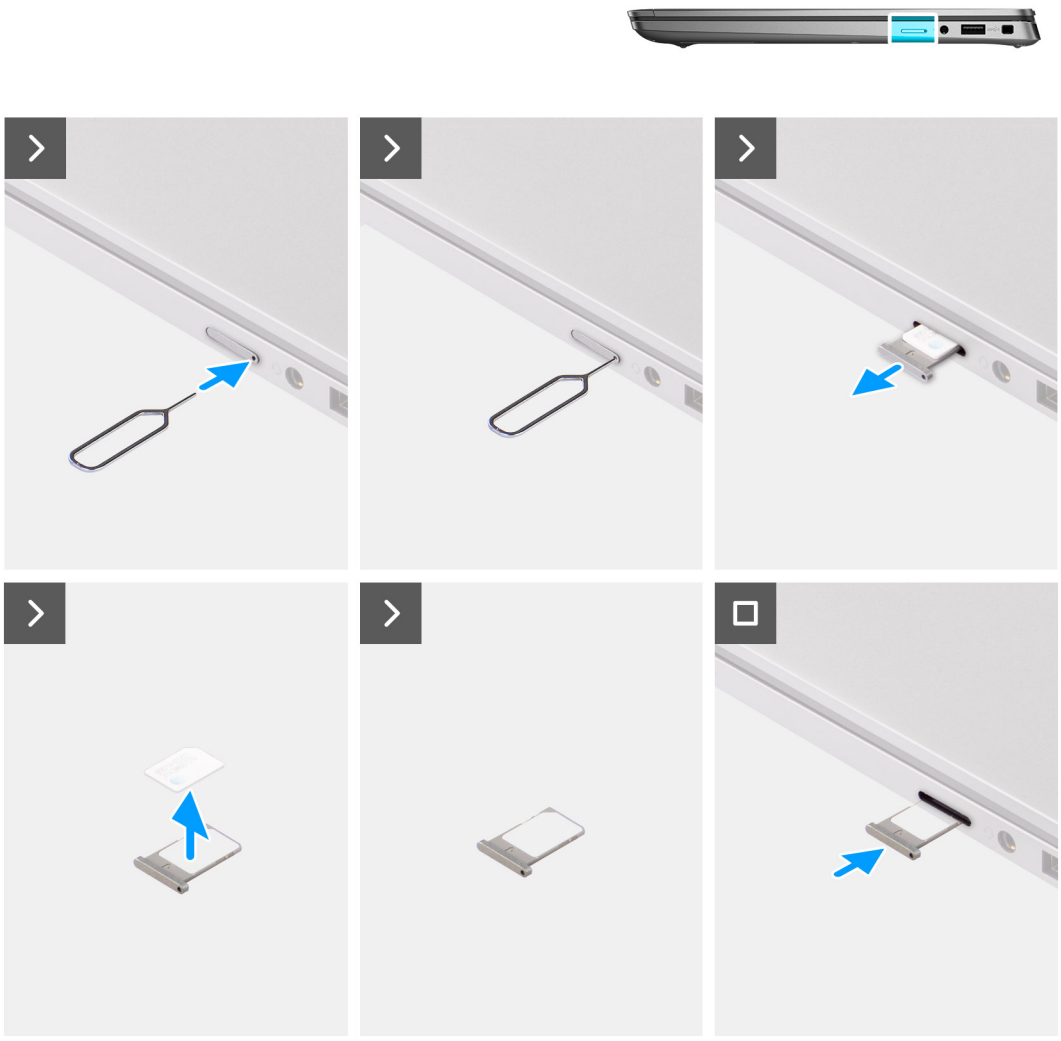


Figure 13. Removing SIM card tray

Steps

1. Insert a pin into the release hole of the nanoSIM-card tray and push inward until the tray is released.
2. Slide the nanoSIM-card tray out of the slot on the computer.
3. Remove the SIM card from the nanoSIM-card tray.
4. Slide the nanoSIM-card tray into the slot, until it clicks into place.

Installing the nanoSIM-card tray

Prerequisites

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

About this task

The following images indicate the location of the nanoSIM-card tray and provide a visual representation of the installation procedure.

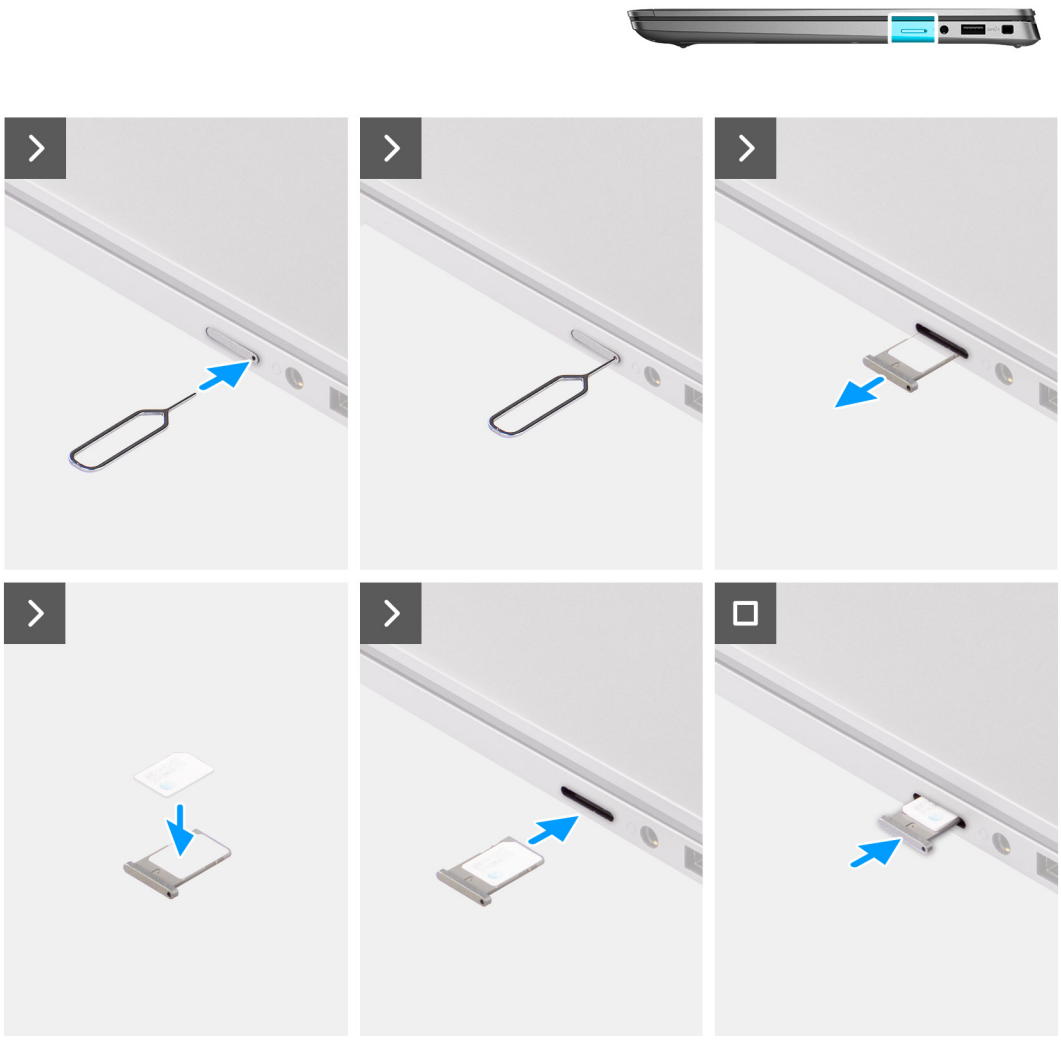


Figure 14. Installing the SIM card tray

Steps

1. Insert a pin into the hole of the nanoSIM-card tray and push inward until the tray is released.
2. Slide the nanoSIM-card tray out of the slot on the computer.
3. Place the SIM card into the nanoSIM-card tray with the metallic contact facing up.
4. Align the nanoSIM-card tray with the slot on the computer and carefully slide it in.

Next steps

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

Base cover

Removing the base cover

Prerequisites

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

About this task

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

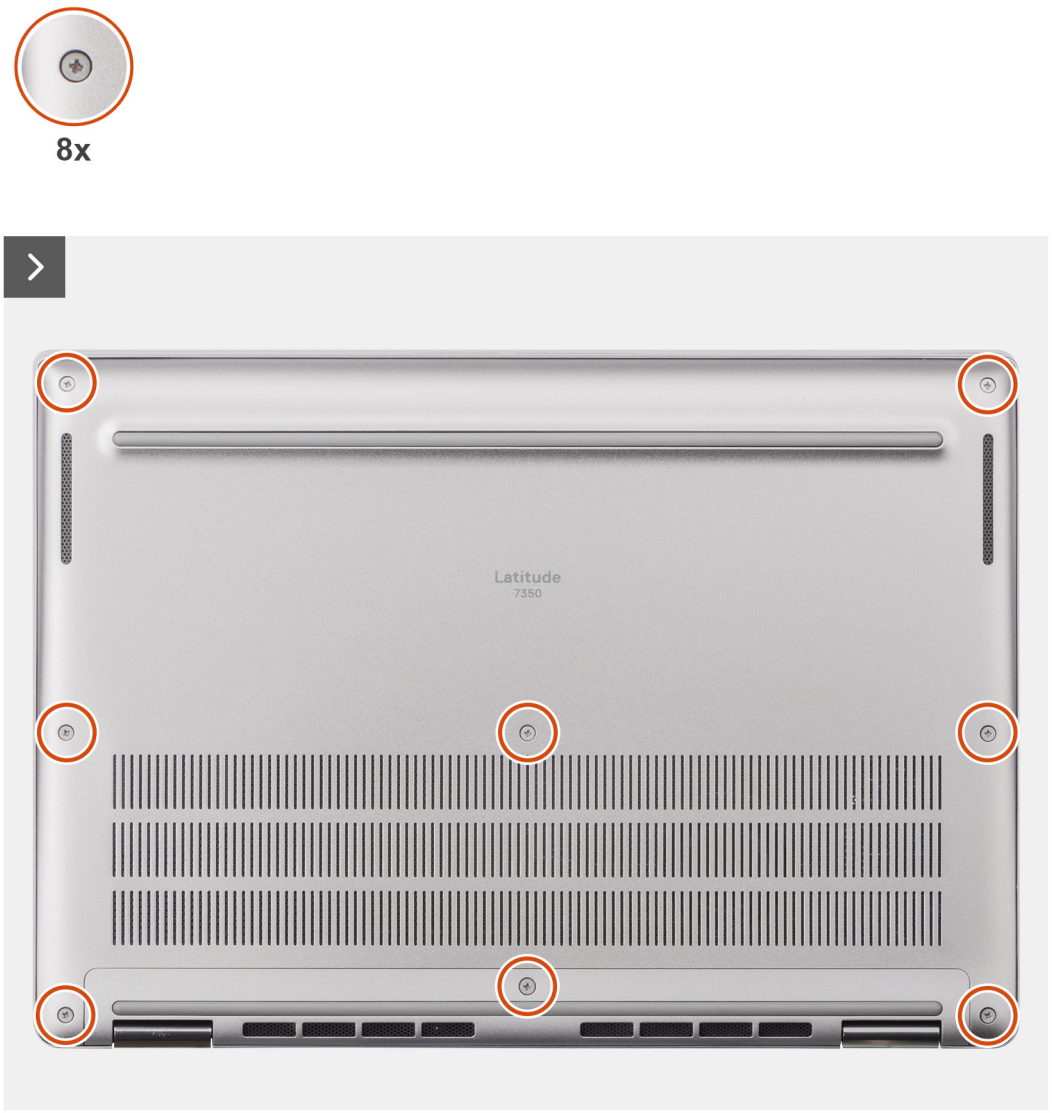


Figure 15. Base cover removal

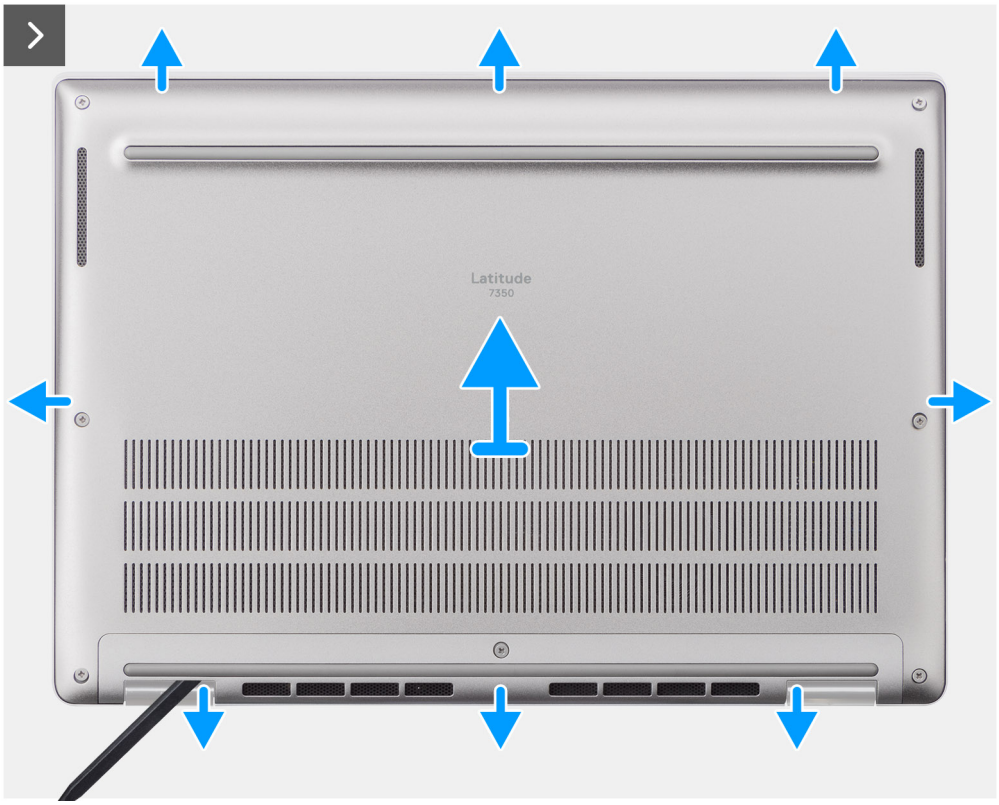


Figure 16. Base cover removal

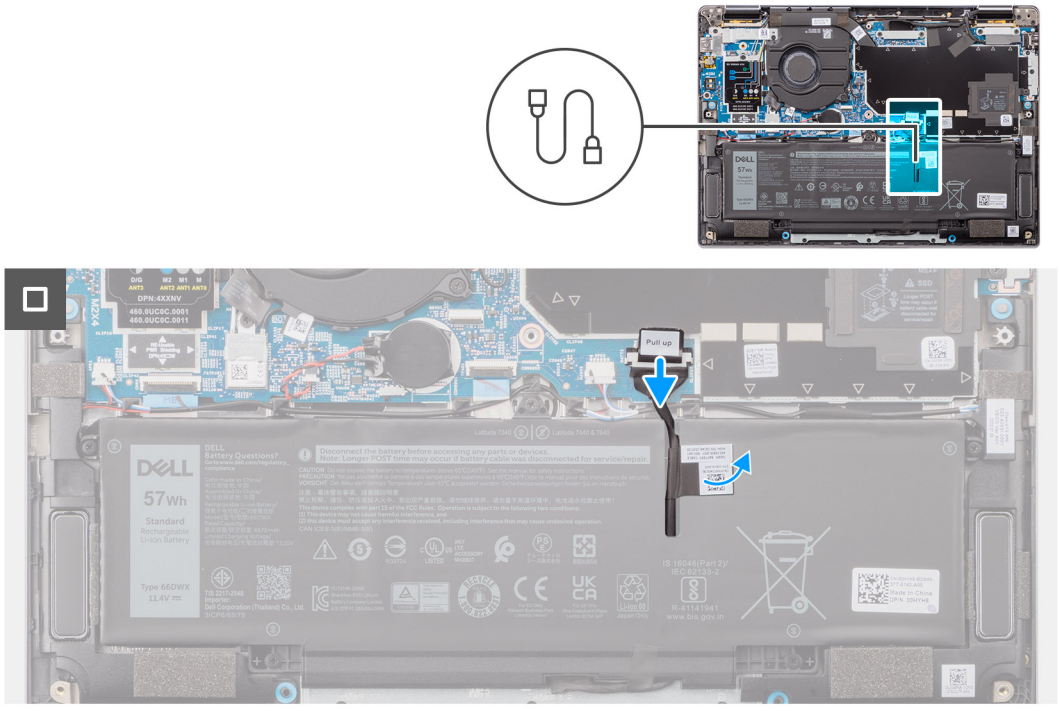


Figure 17. Base cover removal

Steps

1. Loosen the eight captive screws that secure the base cover to the palm-rest and keyboard assembly.
2. Using a plastic scribe, pry open the base cover starting from the recesses, which are in the U-shaped indents at the top edge of the base cover, near the hinges.

CAUTION: Do not slide the scribe through the edge of the top side of the base cover as it damages the latches inside the base cover.

CAUTION: Do not pry upwards from the edge near the vents, at the top side of the base cover, as it damages the base cover.

3. Pry open the top side of the base cover and continue working on the left, right and, bottom sides to open the base cover.
4. Lift the base cover from the left and right sides and remove the base cover off the palm-rest and keyboard assembly.

Installing the base cover

Prerequisites

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

About this task

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

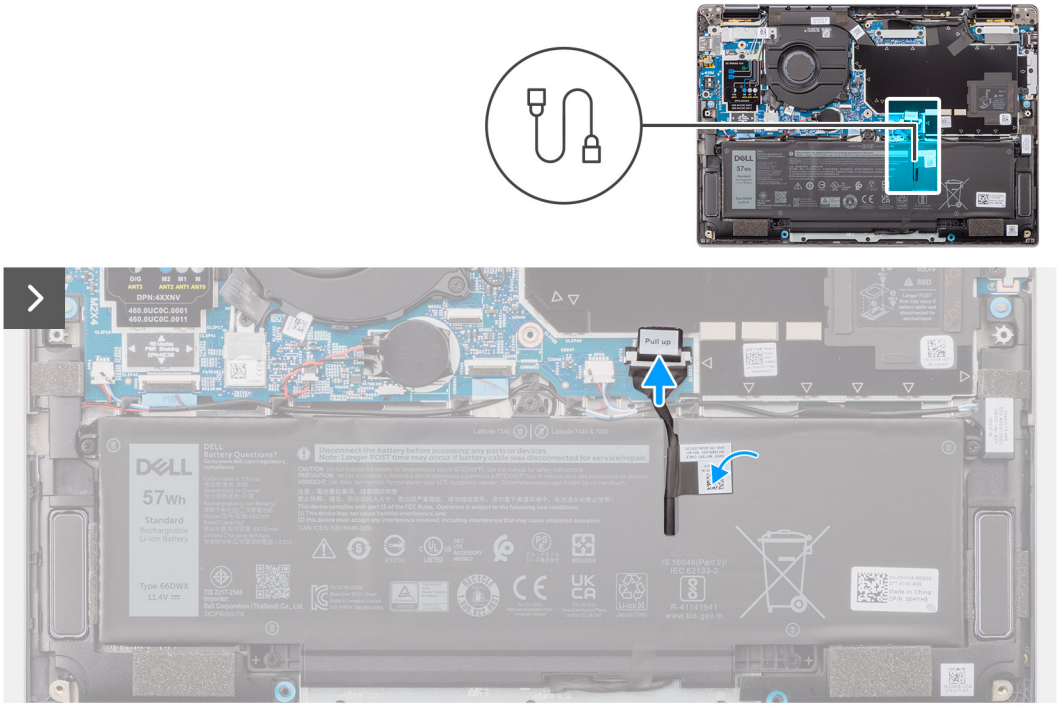


Figure 18. Installing the base cover

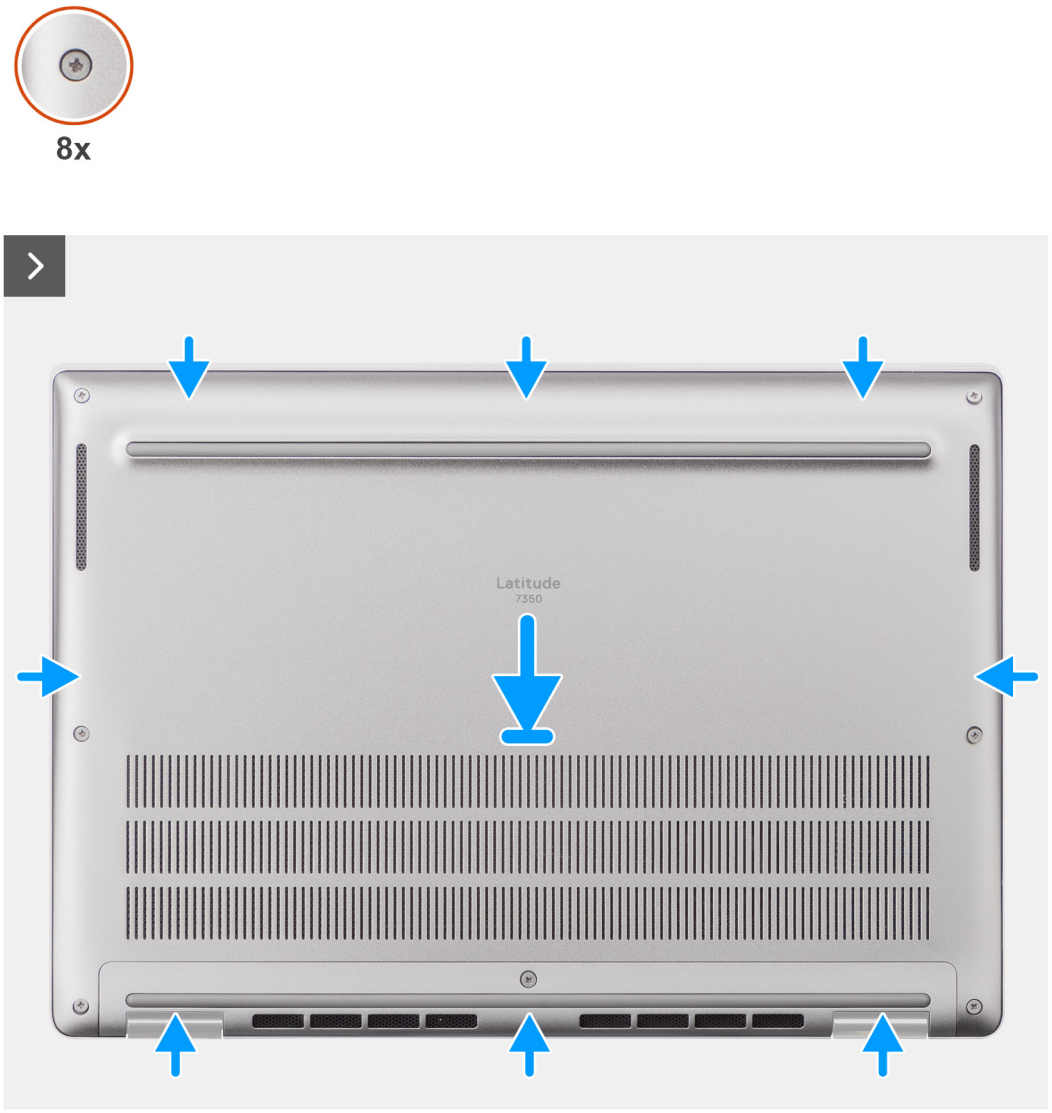


Figure 19. Installing the base cover



Figure 20. Installing the base cover

Steps

1. Place the base cover on top of the palm-rest and keyboard assembly.
2. Align the screw holes on the base cover with the screw holes on the palm-rest and keyboard assembly, and snap the base cover latches into place.
3. Tighten the eight captive screws to secure the base cover to the palm-rest and keyboard assembly.

Next steps

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

Solid-state drive

Removing the M.2 2230 solid state drive

Prerequisites

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

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

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

2. Remove the base cover.

About this task

NOTE: The M.2 card that is installed on your computer depends on the configuration ordered. Supported card configurations on the M.2 card slot are:

- M.2 2230 solid state drive

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

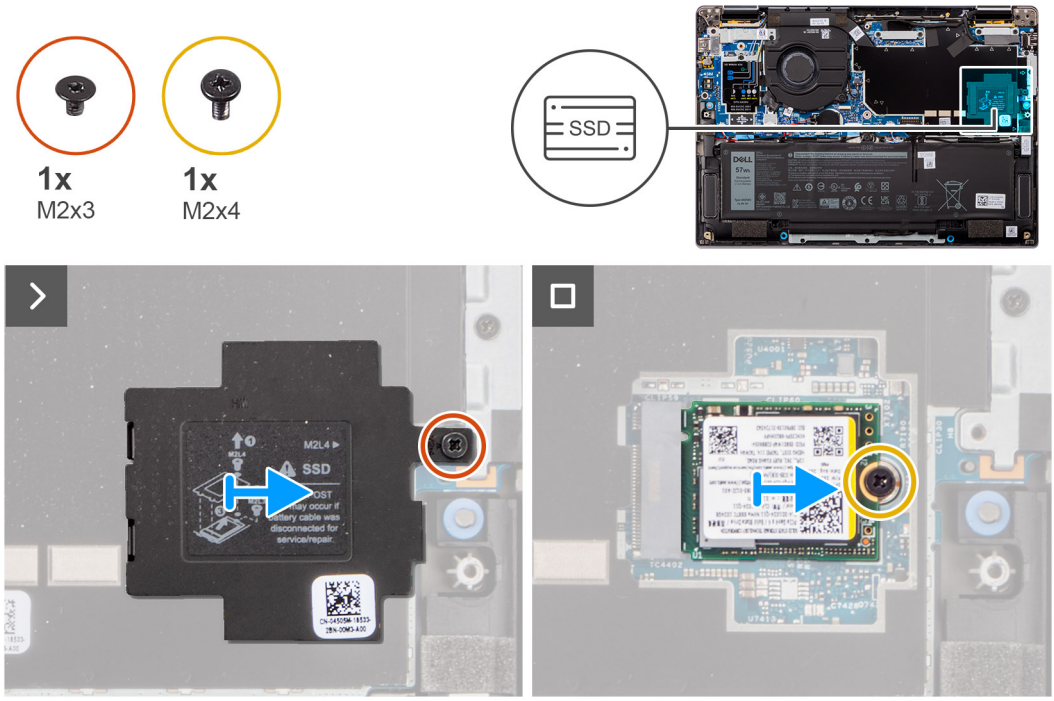


Figure 21. Removing the solid-state drive

Steps

1. Remove the screw (M2x3) to release the M.2 SSD shielding cover from the system board.
2. Remove the screw (M2x4) that secures the M.2 2230 solid state drive extension thermal plate to the system board.
3. Using a flat-headed tool, pry open the M.2 SSD shielding cover from the recess on its bottom side and remove it from the system board.
4. Slide and remove the M.2 2230 solid state drive from the M.2 card slot on the system board.

NOTE: For computers shipped without a solid state drive thermal plate, a thermal pad sticker is adhered to the system board underneath the solid state drive. If in the process of replacing the solid state drive, the thermal pad is separated from the plate or gets adhered to the solid state drive, readhere the thermal pad to the system board before reinstalling the solid state drive to the system.

Installing the M.2 2230 solid state drive

Prerequisites

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

About this task

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

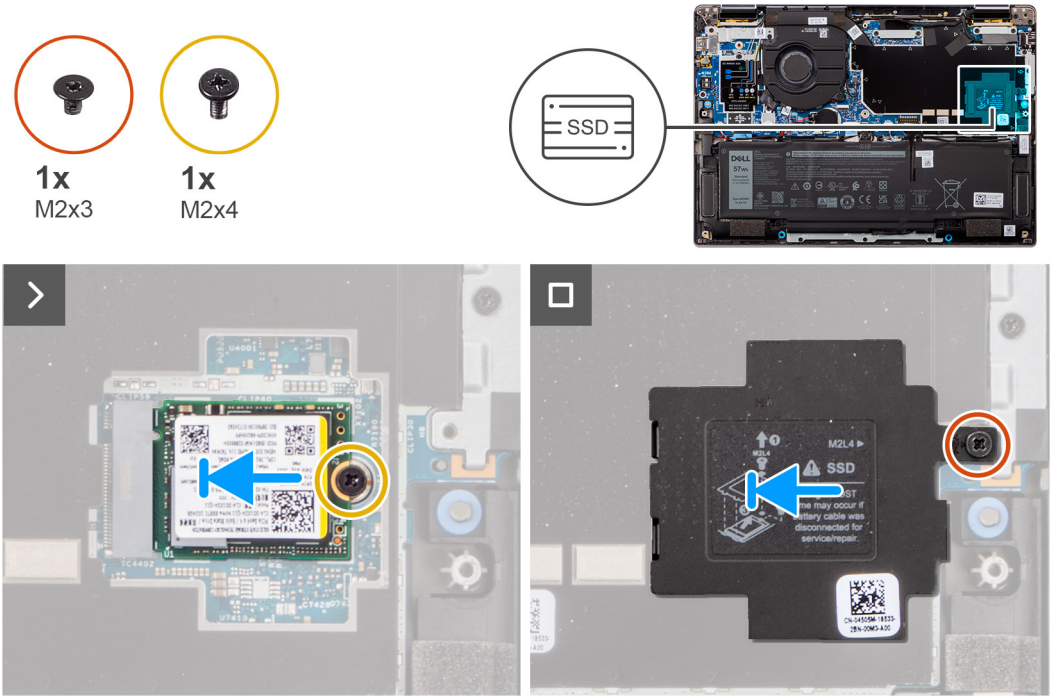


Figure 22. Installing the solid-state drive

Steps

1. Align the notch on the M.2 2230 solid state drive with the tab on the M.2 card slot on the system board.

   NOTE: For computers shipped without a solid state drive thermal plate, a thermal pad sticker is adhered to the system board underneath the solid state drive. If in the process of replacing the solid state drive, the thermal pad is separated from the plate or gets adhered to the solid state drive, readhere the thermal pad to the system board before reinstalling the solid state drive to the system.

2. Replace the screw (M2x3) that secures the M.2 SSD shielding cover from the system board.
3. Align the screw holes on the M.2 2230 solid state drive extension thermal plate with the screw holes on the system board.
4. Replace the screw (M2x4) to secure the M.2 2230 solid state drive extension thermal plate to the palm-rest and keyboard assembly.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.
3. Verify if the storage device is installed correctly:
   a. Turn on or restart your system.
   b. Press F2 when the Dell logo is displayed on the screen to enter the system setup (BIOS) program.

      NOTE: A list of storage devices are displayed under the **System Information** in the **General** group.

   c. If you have replaced the primary storage device that had the operating system installed, search in the Knowledge Base Resource at Dell Support Site.

Wireless Wide Area Network (WWAN) card

Removing the 5G WWAN card

Prerequisites

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

About this task

NOTE: This procedure applies only to computers shipped with a 5G WWAN card installed.

NOTE: 5G WWAN card is configured at point of sales for 2-in-1 computers, 5G WWAN card upgrade (CUS Kit) is not available for 2-in-1 computers.

The following images indicate the location of the 5G WWAN card and provide a visual representation of the removal procedure.

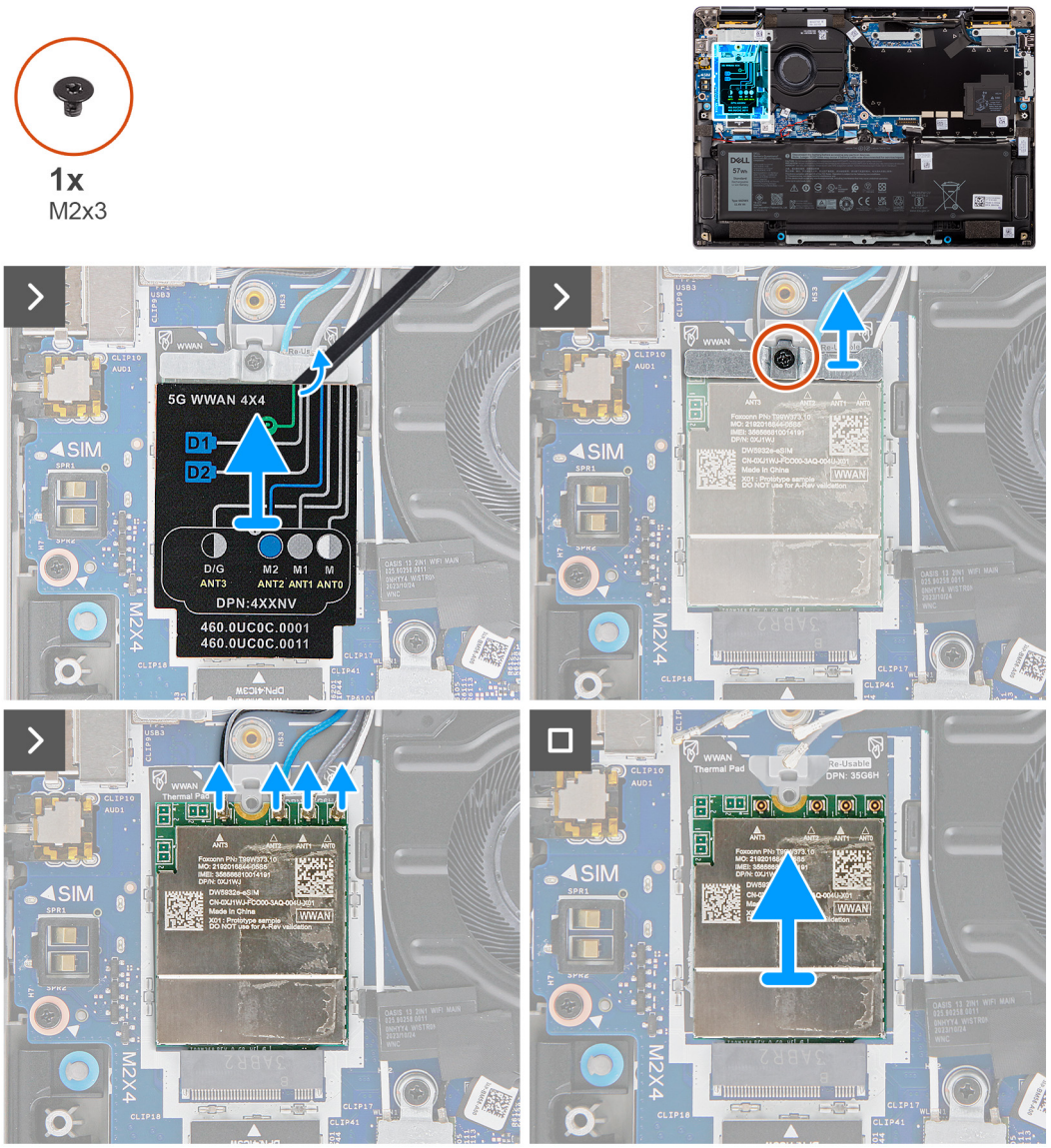


Figure 23. Removing the 5G WWAN card

Steps

1. Pry the 5G WWAN shielding cover from the top-left side of the shielding cover and remove it from the computer.
2. Lift the 5G WWAN-card bracket off the system board.
3. Remove the screw (M2x3) that secures the 5G WWAN-card bracket to the system board.
4. Disconnect the antenna cables underneath the rubber sponge from the connectors on the 5G WWAN card.
5. Slide and remove the 5G WWAN card from the M.2-card slot on the system board.

Installing the 5G WWAN card

Prerequisites

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

About this task

The following images indicate the location of the 5G WWAN card and provide a visual representation of the installation procedure.

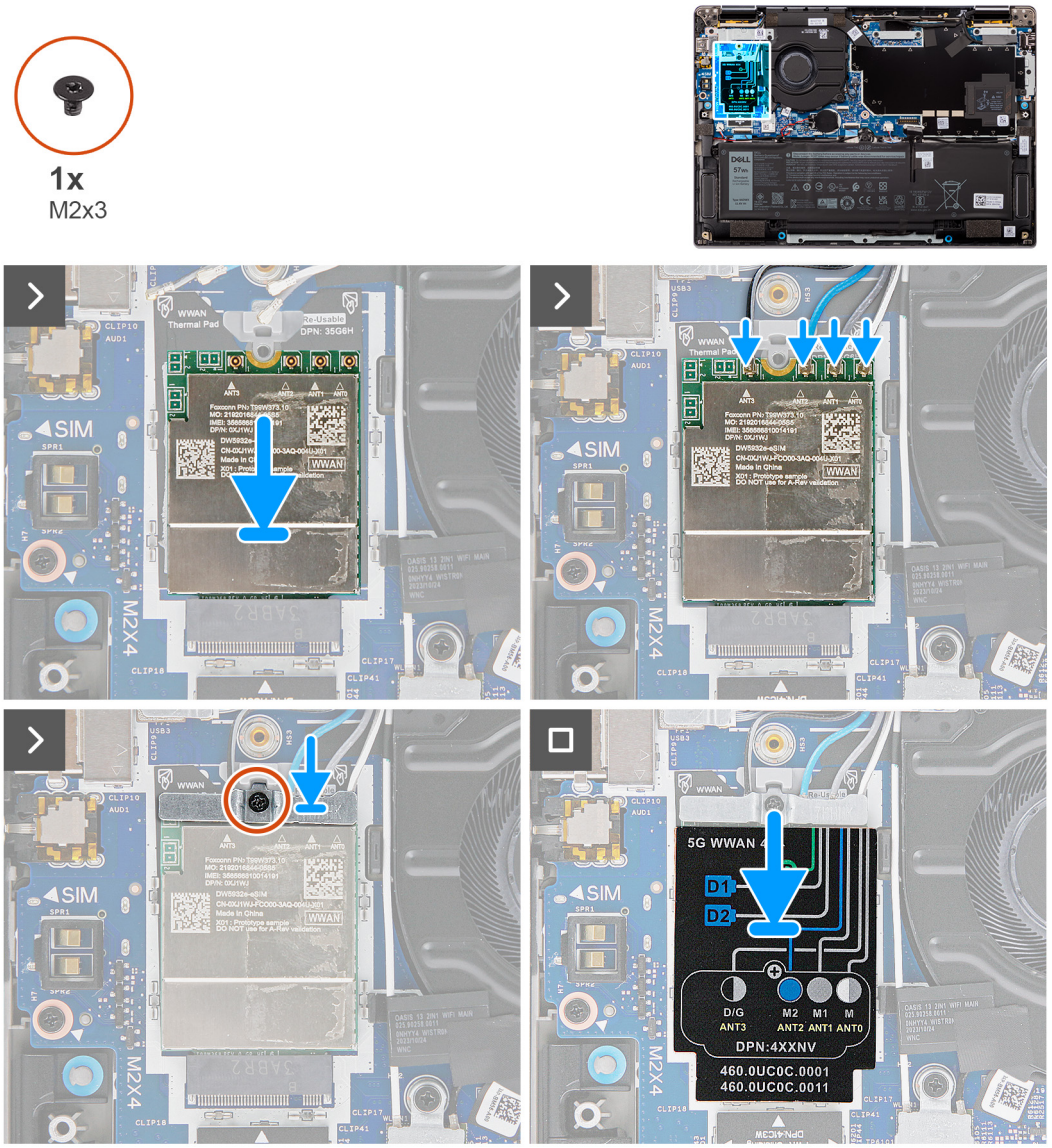


Figure 24. Installing the WWAN card

Steps

1. Align the notch on the 5G WWAN card with the tab on the M.2-card slot on the system board.
2. Slide the 5G WWAN card firmly into the M.2-card slot on the system board.
3. Connect the antenna cables to the connectors on the 5G WWAN card.
4. Place the 5G WWAN-card bracket on the 5G WWAN card.
5. Align the screw hole on the 5G WWAN-card bracket with the screw hole on the system board.
6. Replace the single screw (M2x3) that secures the 5G WWAN-card bracket to the system board.
7. Place the 5G WWAN-card shield over the 5G WWAN card and secure it in place.

NOTE: For instructions on how to find your computer's International Mobile Station Equipment Identity (IMEI) number, search in the Knowledge Base Resource at Dell Support Site.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.

Speakers

Removing the speakers for mainstream

Prerequisites

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

About this task

The following image indicates the location of the main speakers and provides a visual representation of the removal procedure.

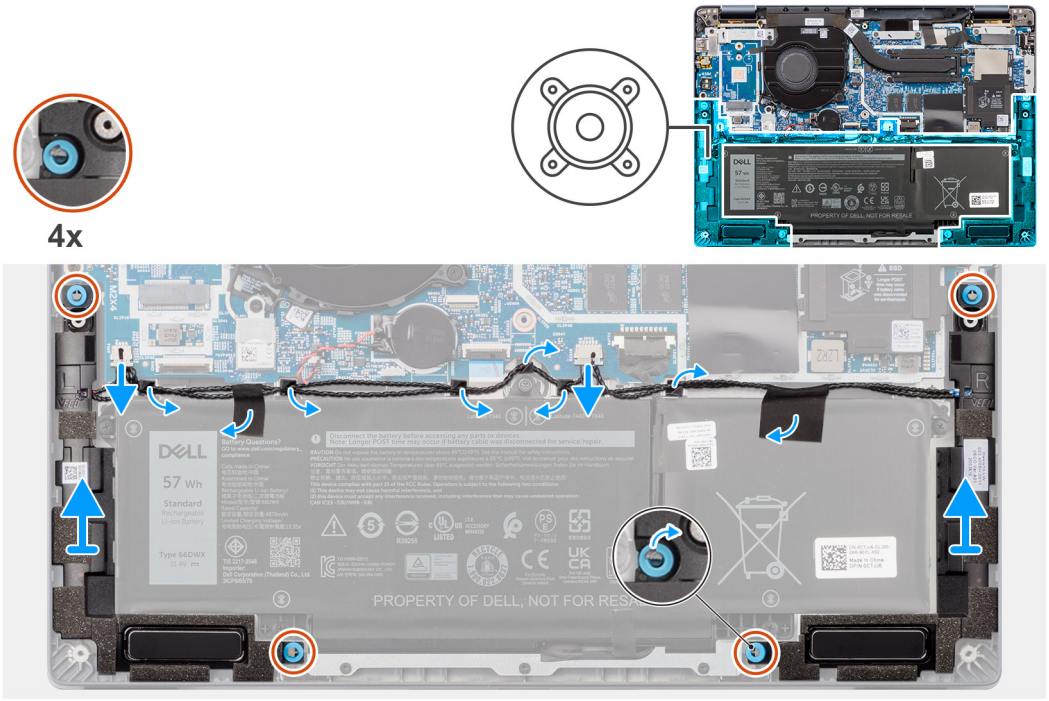


Figure 25. Removing the speakers

Steps

1. Disconnect the speaker cable from the connector on the system board.
2. Peel the tape that secures the speaker cable to the palm-rest and keyboard assembly.
3. Note the speaker cable routing, and unroute the speaker cable from the routing guides on the palm-rest and keyboard assembly.
4. Lift the speakers, along with the cable, off the palm-rest and keyboard assembly.

Installing the speakers for mainstream

Prerequisites

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

About this task

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

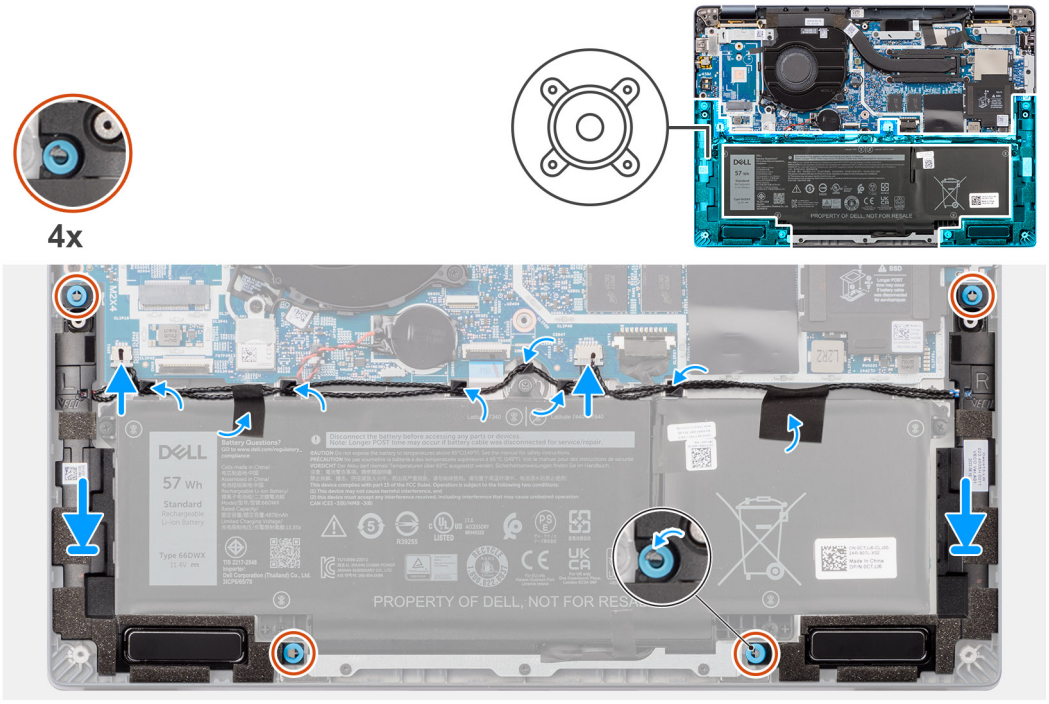


Figure 26. Installing the speakers for mainstream

Steps

1. Using the alignment posts and rubber grommets, place the speakers into the slots on the palm-rest and keyboard assembly.

   NOTE: To properly position the speakers, secure the rubber grommets into the hooks.

2. Route the speaker cable along the bottom side of the palm-rest and keyboard assembly. Then secure the speaker cable into the routing guides on the palm-rest and keyboard assembly.
3. Connect the speaker cable to the connector on the system board.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.

Coin-cell battery

Removing the coin-cell battery

Prerequisites

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

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

2. Remove the base cover.

About this task

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

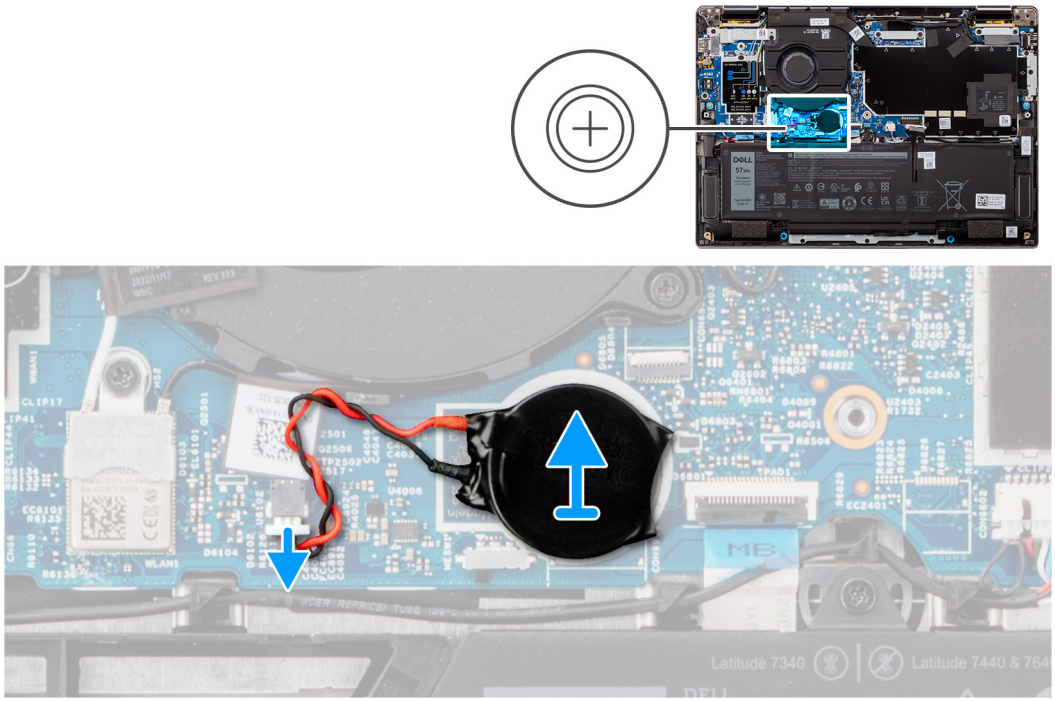


Figure 27. Removing the coin-cell battery

Steps

1. Disconnect the coin-cell battery cable from the connector on the system board.
2. Unroute the coin-cell battery cable from the routing guides on the system board.
3. Using a plastic scribe, pry the coin-cell battery off its slot on the system board.

Installing the coin-cell battery

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

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

About this task

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

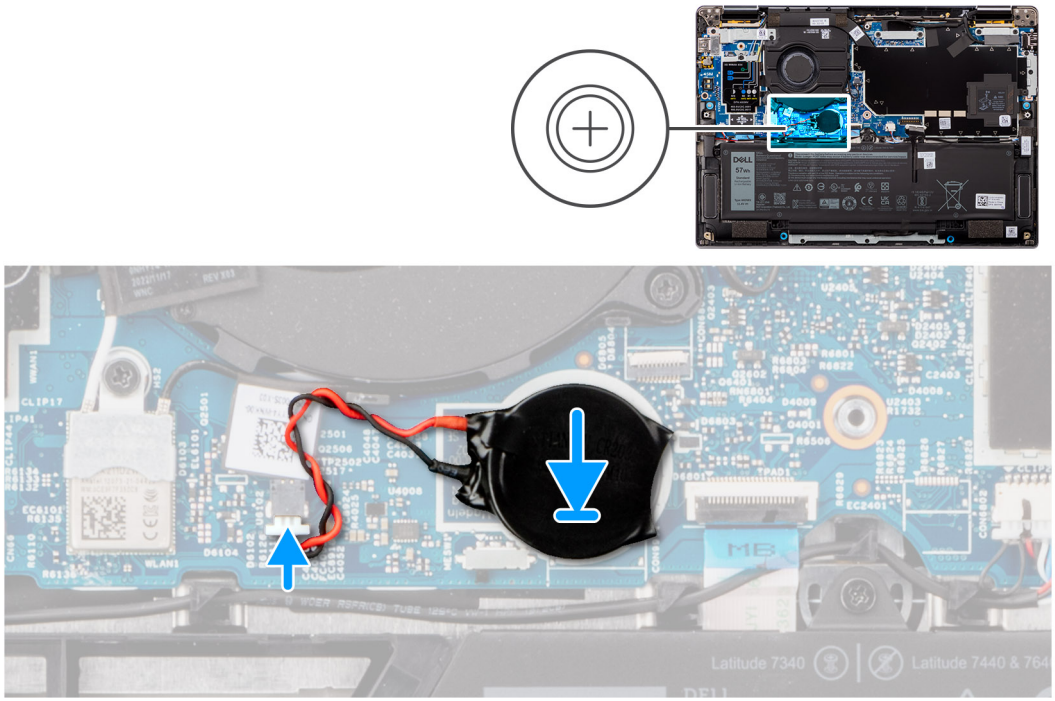


Figure 28. Installing the coin-cell battery

Steps

1. Place the coin-cell battery into its slot on the system board.
2. Route the coin-cell battery cable back to the routing guides on the system board.
3. Connect the coin-cell battery cable to the connector on the system board.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.

6

Removing and installing Field Replaceable Units (FRUs)

The replaceable components in this chapter are Field Replaceable Units (FRUs).

CAUTION: The information in this section is intended for authorized service technicians only.

CAUTION: To avoid any potential damage to the component or loss of data, ensure that an authorized service technician replaces the Field Replaceable Units (FRUs).

CAUTION: Dell Technologies recommends that this set of repairs, if needed, to be conducted by trained technical repair specialists.

CAUTION: As a reminder, your warranty does not cover damages that may occur during FRU repairs that are not authorized by Dell Technologies.

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

Battery

Rechargeable Li-ion battery precautions

CAUTION:

- **Exercise caution when handling rechargeable Li-ion batteries.**
- **Discharge the battery completely before removing it. Disconnect the AC power adapter from the computer and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button is pressed.**
- **Do not crush, drop, mutilate, or penetrate the battery with foreign objects.**
- **Do not expose the battery to high temperatures, or disassemble battery packs and cells.**
- **Do not apply pressure to the surface of the battery.**
- **Do not bend the battery.**
- **Do not use tools of any kind to pry on or against the battery.**
- **To prevent accidental puncture or damage to the battery and other components, ensure that no screws are lost or misplaced during the servicing of this product.**
- **If the battery gets stuck inside your computer as a result of swelling, do not try to release it as puncturing, bending, or crushing a rechargeable Li-ion battery can be dangerous. In such an instance, contact Dell technical support for assistance. See Contact Support at Dell Support Site.**
- **Always purchase genuine batteries from Dell Site or authorized Dell partners and resellers.**
- **Swollen batteries should not be used and should be replaced and disposed properly. For guidelines on how to handle and replace swollen rechargeable Li-ion batteries, see Handling swollen rechargeable Li-ion batteries.**

Removing the 2-cell battery

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

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

About this task

The following image indicates the location of the 2-cell battery and provides a visual representation of the removal procedure.

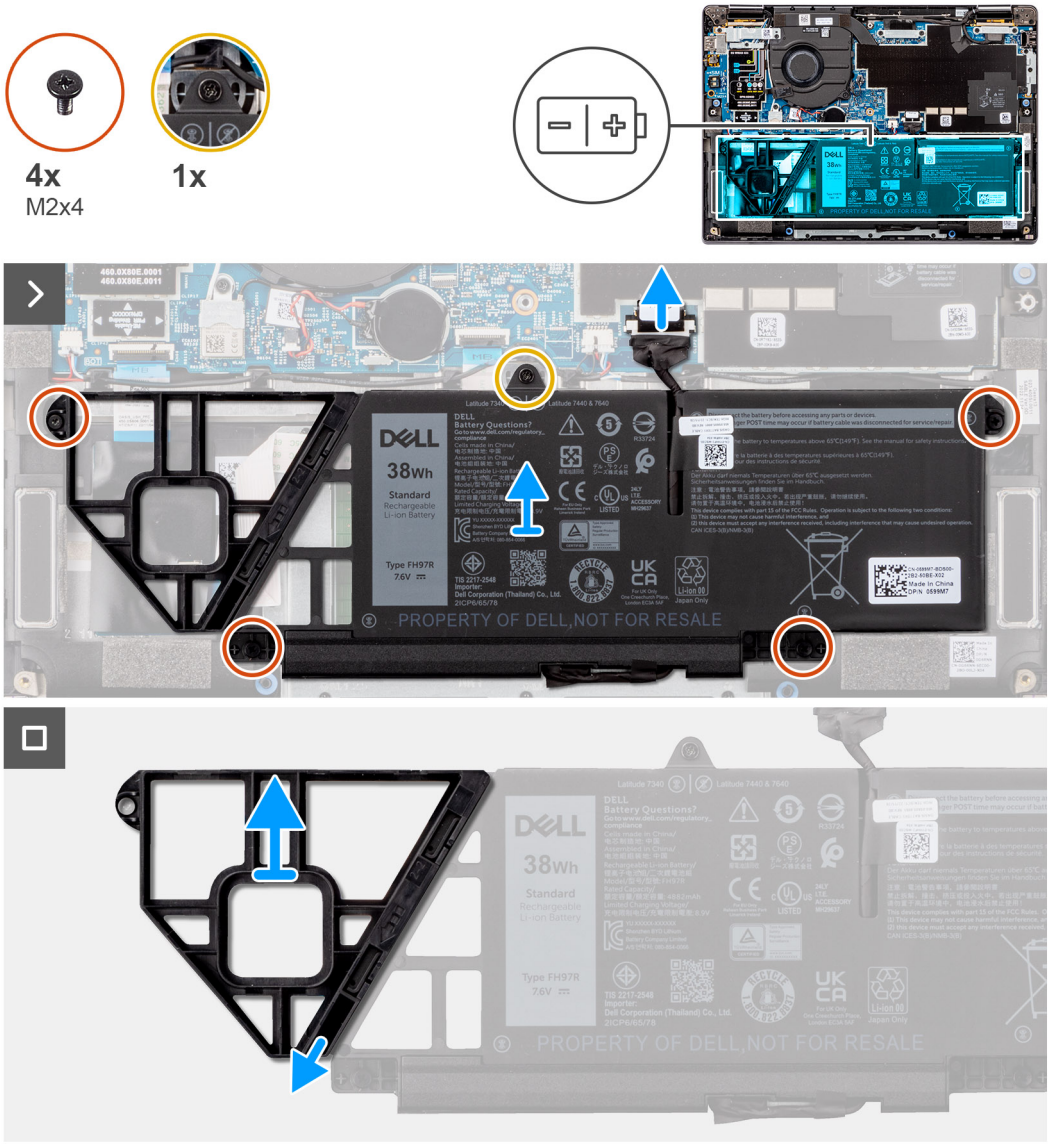


Figure 29. Removing the 2-cell battery

Steps

1. Use the pull tab to disconnect the battery cable from the connector on the system board.
2. Loosen the captive screw that secures the 2-cell battery to the palm-rest and keyboard assembly.
3. Remove the four screws (M2x4) that secure the 2-cell battery to the palm-rest and keyboard assembly.
4. Lift the 2-cell battery along with the battery cable off the palm-rest and keyboard assembly.
5. Disconnect the battery cable from the connector on the 2-cell battery.
6. Carefully push the battery filler downwards to remove it from the 2-cell battery.

Installing the 2-cell battery

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

The following image indicates the location of the 2-cell battery and provides a visual representation of the installation procedure.

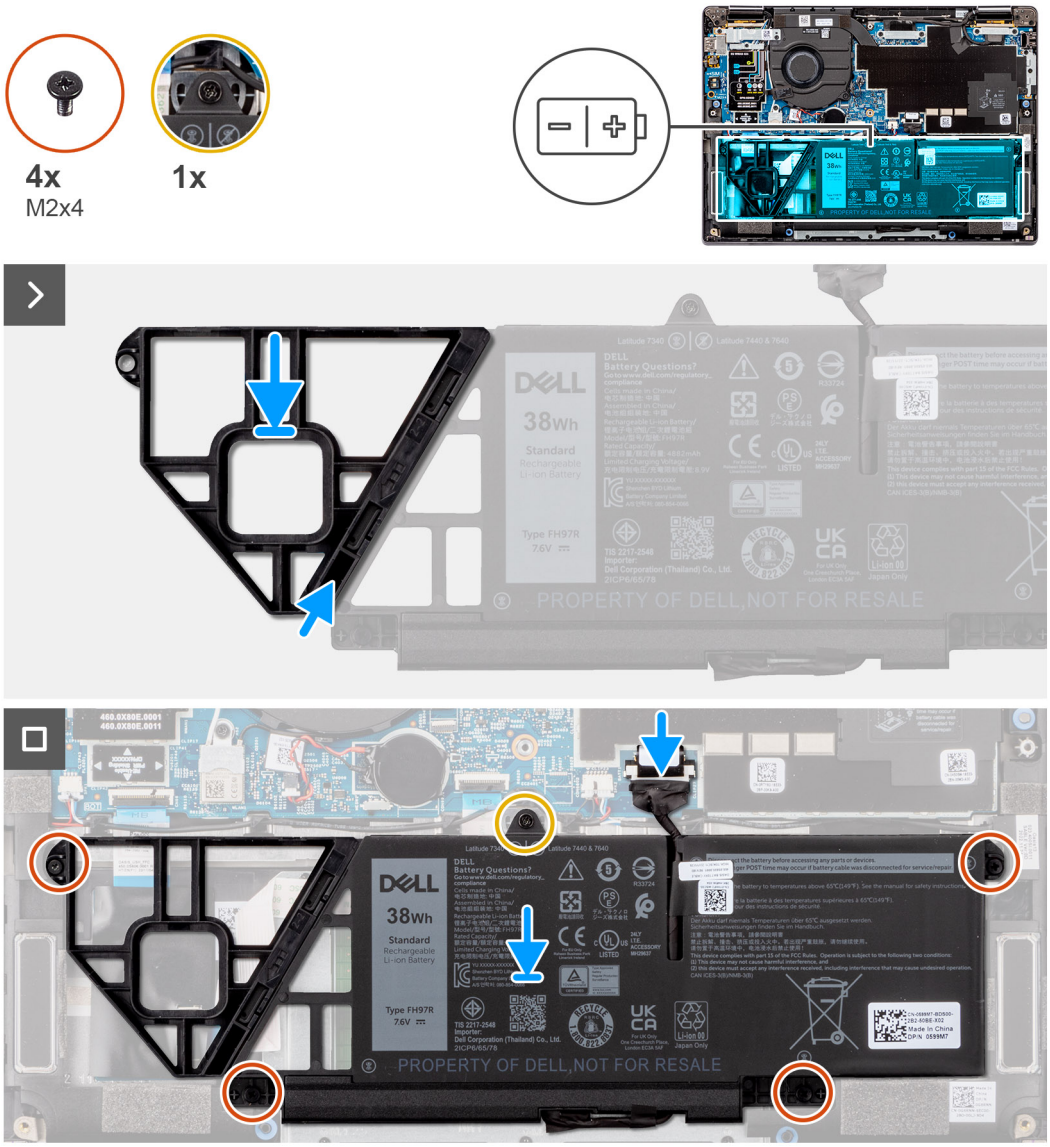


Figure 30. Installing the 2-cell battery

Steps

1. Carefully push the battery filler upwards to attach it to the 2-cell battery.
2. Place the 2-cell battery along with the battery cable on the palm-rest and keyboard assembly.
3. Align the screw holes on the 2-cell battery to the screw holes on the palm-rest and keyboard assembly.
4. Replace the four screws (M2x4) to secure the 2-cell battery to the palm-rest and keyboard assembly.
5. Tighten the captive screw to secure the 2-cell battery to the palm-rest and keyboard assembly.
6. Connect the battery cable to the connector on the system board.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.

Removing the 3-cell battery

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

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

About this task

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

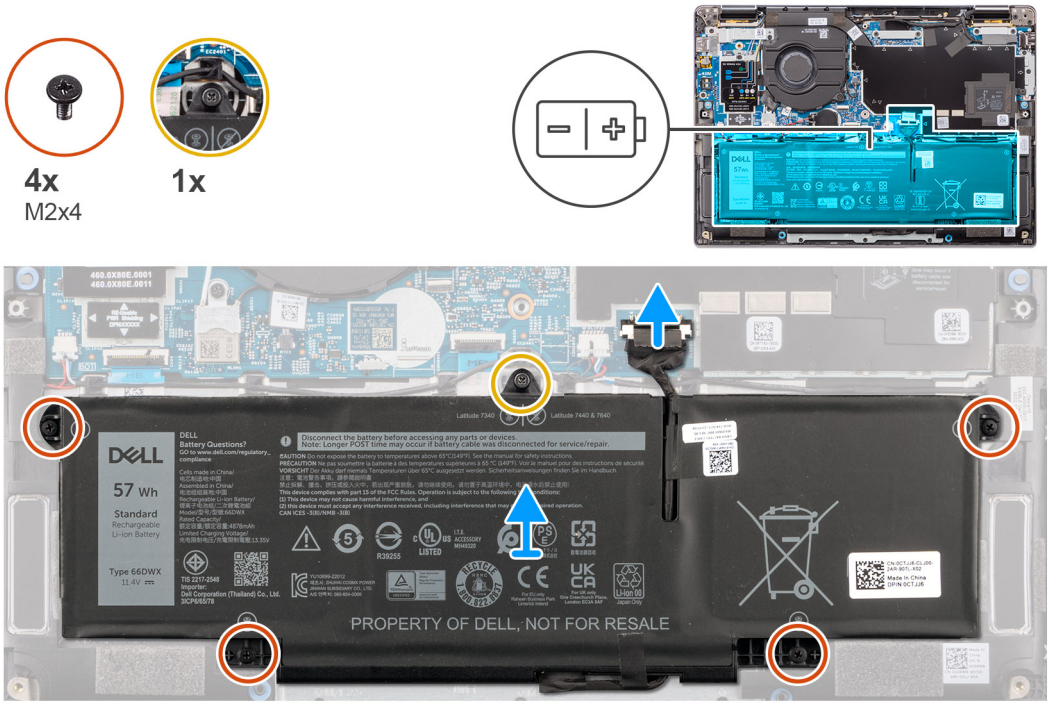


Figure 31. Removing the 3-cell battery

Steps

1. Disconnect the battery cable from the connector on the system board, if it was not disconnected earlier.
2. Loosen the captive screw that secures the 3-cell battery to the palm-rest and keyboard assembly.
3. Remove the four screws (M2x4) that secure the 3-cell battery to the palm-rest and keyboard assembly.
4. Remove the battery from the system.
5. Flip the battery, peel the tape that secures the battery cable to the battery.
6. Lift the 3-cell battery along with the battery cable off the palm-rest and keyboard assembly.

Installing the 3-cell battery

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

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

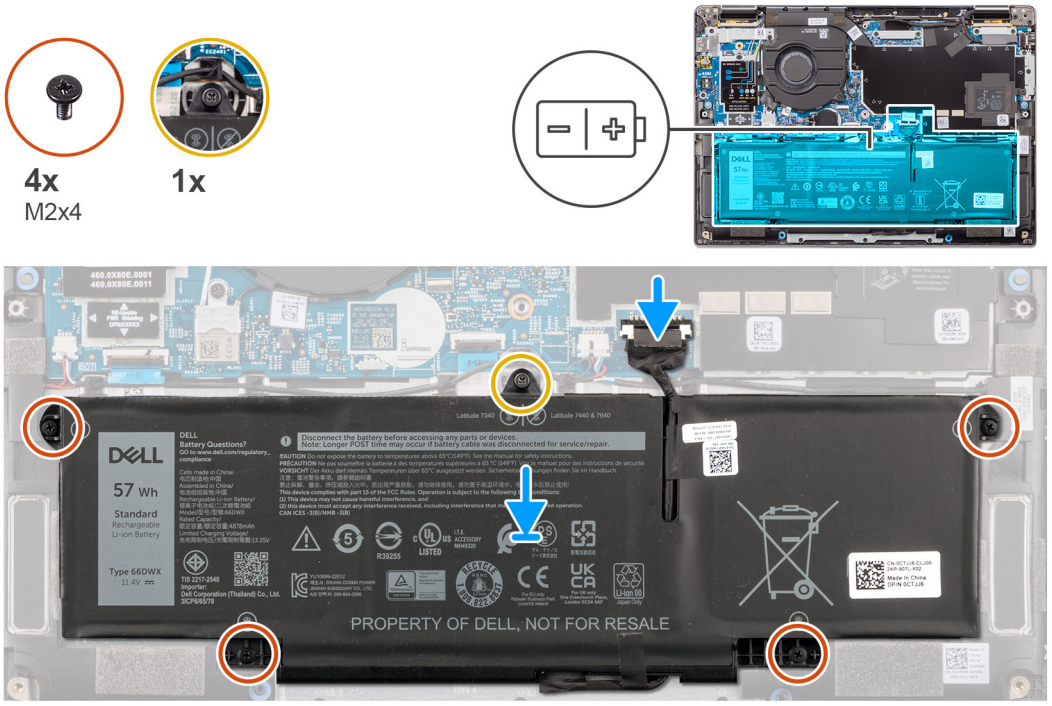


Figure 32. Installing the 3-cell battery

Steps

1. Place the 3-cell battery along with the battery cable on the palm-rest and keyboard assembly.
2. Adhere the tape to secure the battery cable to the battery.
3. Align the screw holes on the 3-cell battery to the screw holes on the palm-rest and keyboard assembly.
4. Replace the four screws (M2x4) to secure the 3-cell battery to the palm-rest and keyboard assembly.
5. Tighten the captive screw to secure the 3-cell battery to the palm-rest and keyboard assembly.
6. Connect the battery cable to the connector on the system board.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.

Battery cable

Removing the battery cable

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in Before working inside your computer..
2. Remove the base cover.
3. Remove the 3-cell battery or the 4-cell battery, whichever is applicable.

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

About this task

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

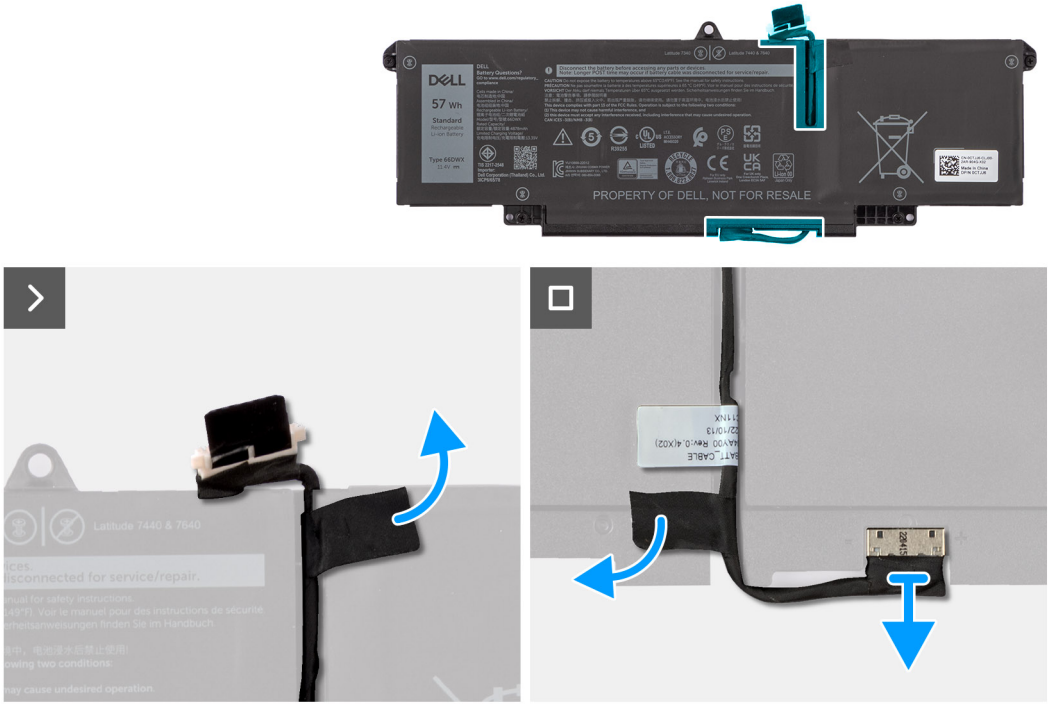


Figure 33. Removing the battery cable

Steps

1. Flip the battery and unroute the battery cable from the routing guides on the battery.
2. Peel the tape that secures the battery cable to the battery. Disconnect the battery cable from the connector (BATT1) on the battery.
3. Lift the battery cable away from the battery.

NOTE: Dummy filler for a 3-cell battery is not available for the lightweight WLAN configuration.

Installing the battery cable

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

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

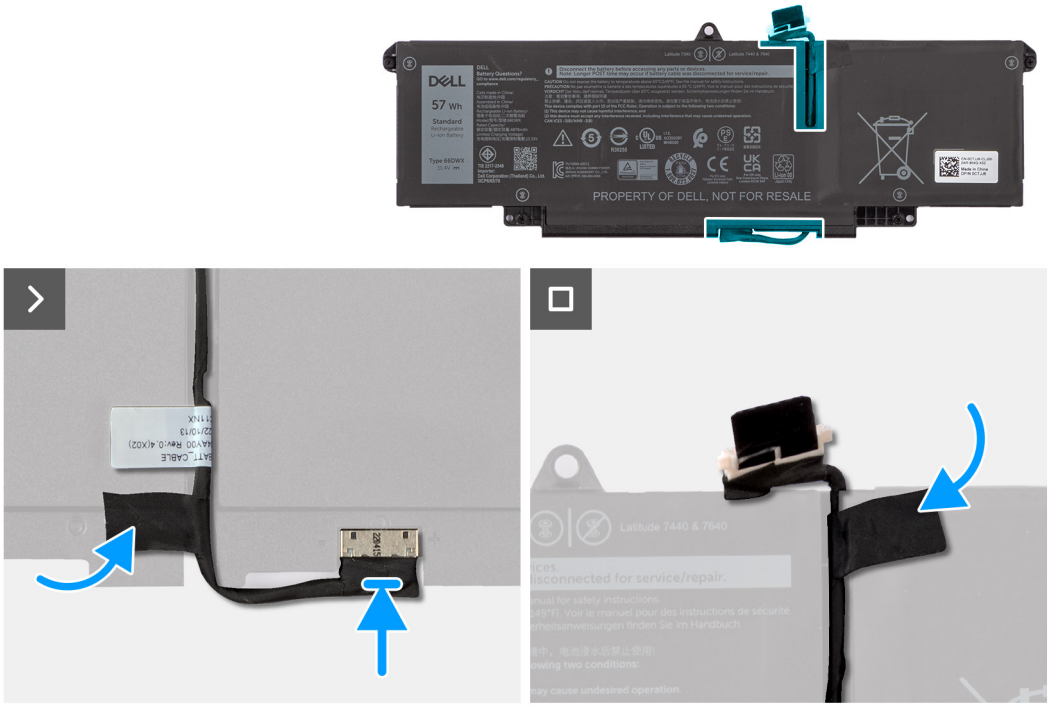


Figure 34. Installing the battery cable

Steps

1. Connect the battery cable to the connector (BATT1) on the battery.
2. Route the battery cable through the routing guides on the battery.
3. Adhere the tape to secure the battery cable to the battery.

Next steps

1. Install the 3-cell battery or the 4-cell battery, whichever is applicable.
2. Install the base cover.
3. Follow the procedure in After working inside your computer.

Fan

Removing the fan

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

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

About this task

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

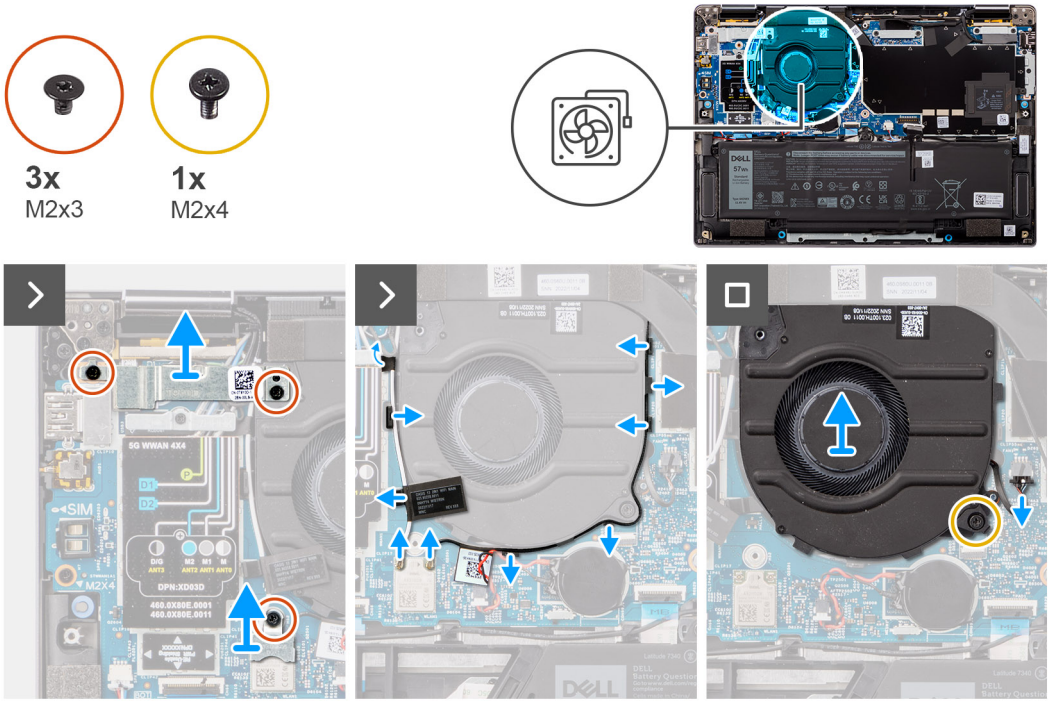


Figure 35. Removing the fan

Steps

1. Remove three screws (M2x3) that secure WLAN and WWAN brackets to the system board.
2. Disconnect the antenna cables from the connector (D1 and D2) and release the cables from the cable routing guides.
3. Remove the screw (M2x4) that secures the fan to the system board.
4. Disconnect the fan cable from the connector (FAN1) on the system board.
5. Lift and remove the fan from the system board.

Installing the fan

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

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

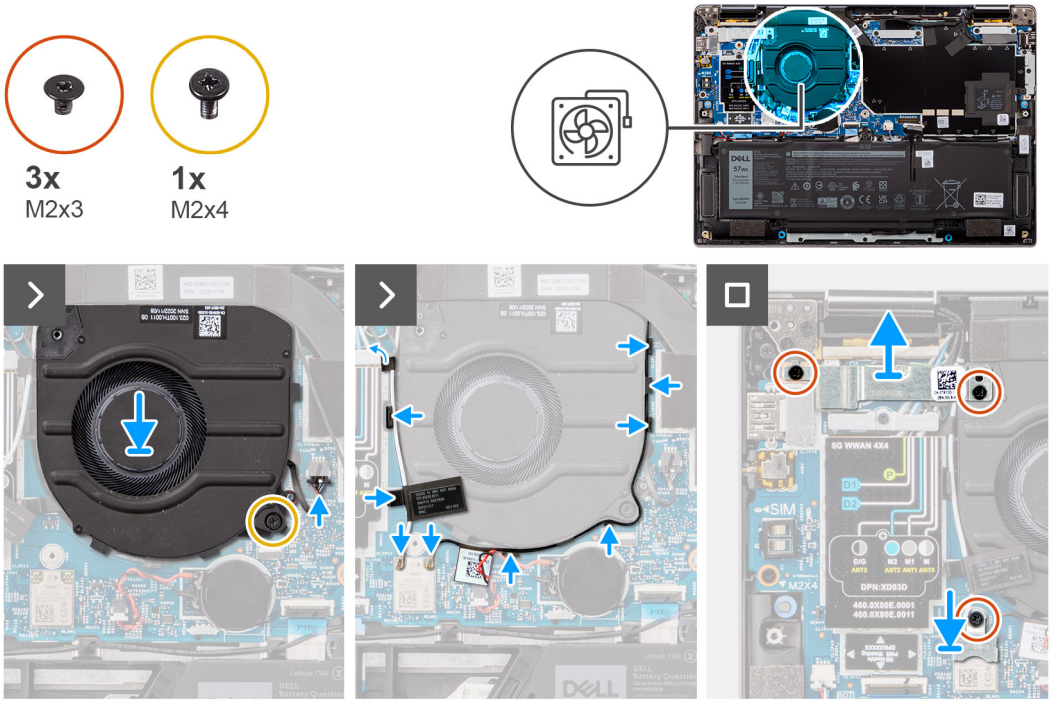


Figure 36. Installing the fan

Steps

1. Place the fan from the system board.
2. Align the screw holes on the fan to the screw holes on the system board.
3. Replace the single screw (M2x4) that secures the fan to the system board.
4. Connect the fan cable to the connector (FAN1) on the system board.
5. Connect the antenna cables to the connectors (D1 and D2) and place the cables to the cable routing guides.
6. Align the screw holes on the WLAN and WWAN brackets with the screw holes on the system board.
7. Replace three screws (M2x3) securing WLAN and WWAN brackets on the system board.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.

Heat-sink

Removing the heat-sink

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

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

About this task

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

NOTE: For maximum cooling of the processor, do not touch the heat transfer areas on the heat-sink. The oils in your skin can reduce the heat transfer capability of the thermal grease.

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

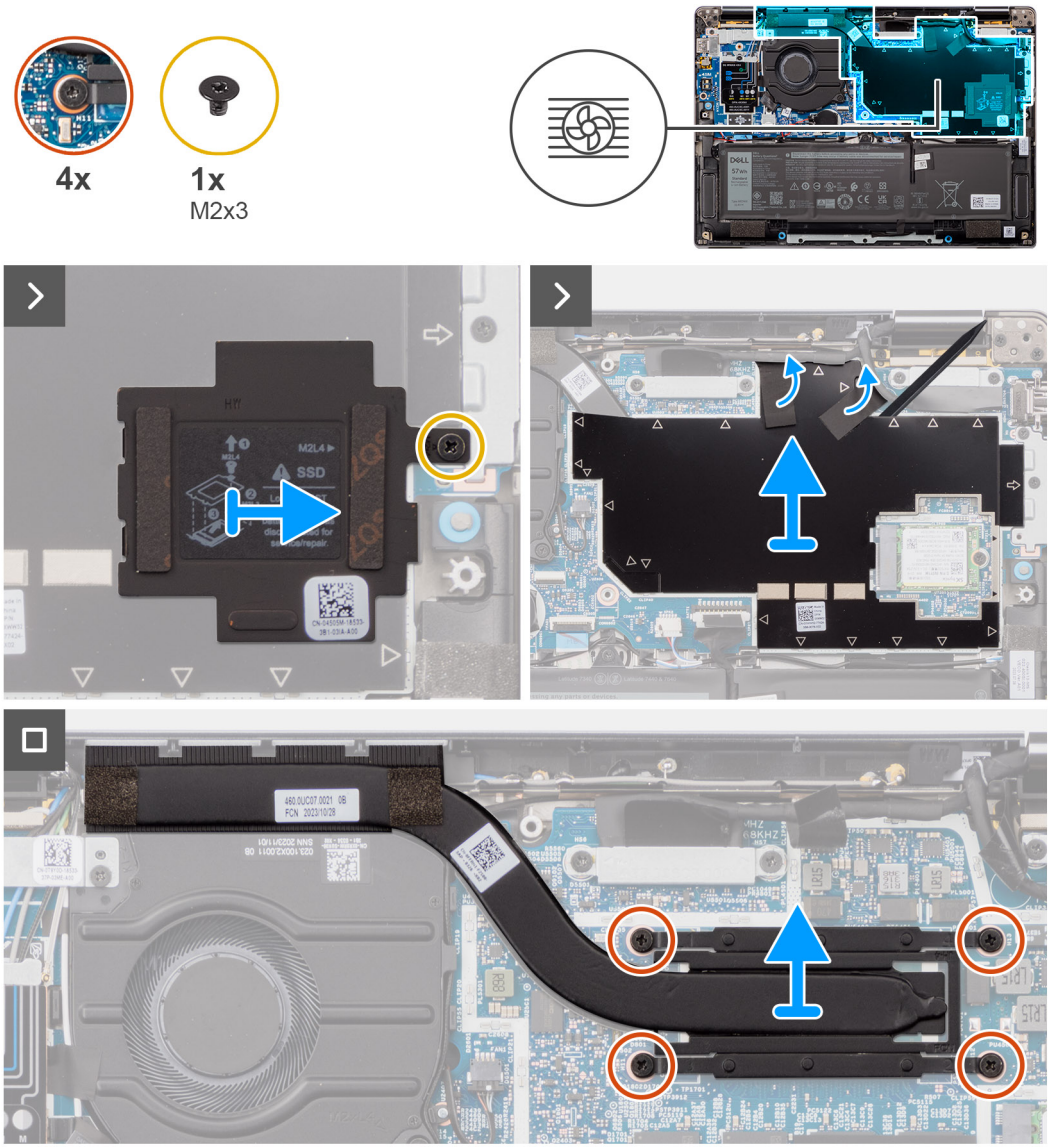


Figure 37. Removing the heat-sink

Steps

1. Remove the screw (M2x3) to open the SSD shielding cover from the system board.
2. Peel back the tape that secures the thermal module.
3. Remove the four screws (M2x4) that secures the heat-sink to the system board.
4. In reverse sequential order (as indicated on the heat-sink), loosen the four captive screws that secure the heat-sink to the system board.
5. Lift the heat-sink off the system board.

Installing the heat-sink

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

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

About this task

NOTE: If either the system board or the heat-sink is replaced, use the thermal grease that is provided in the kit to ensure that thermal conductivity is achieved.

NOTE: Incorrect alignment of the heat-sink can damage the system board and processor.

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

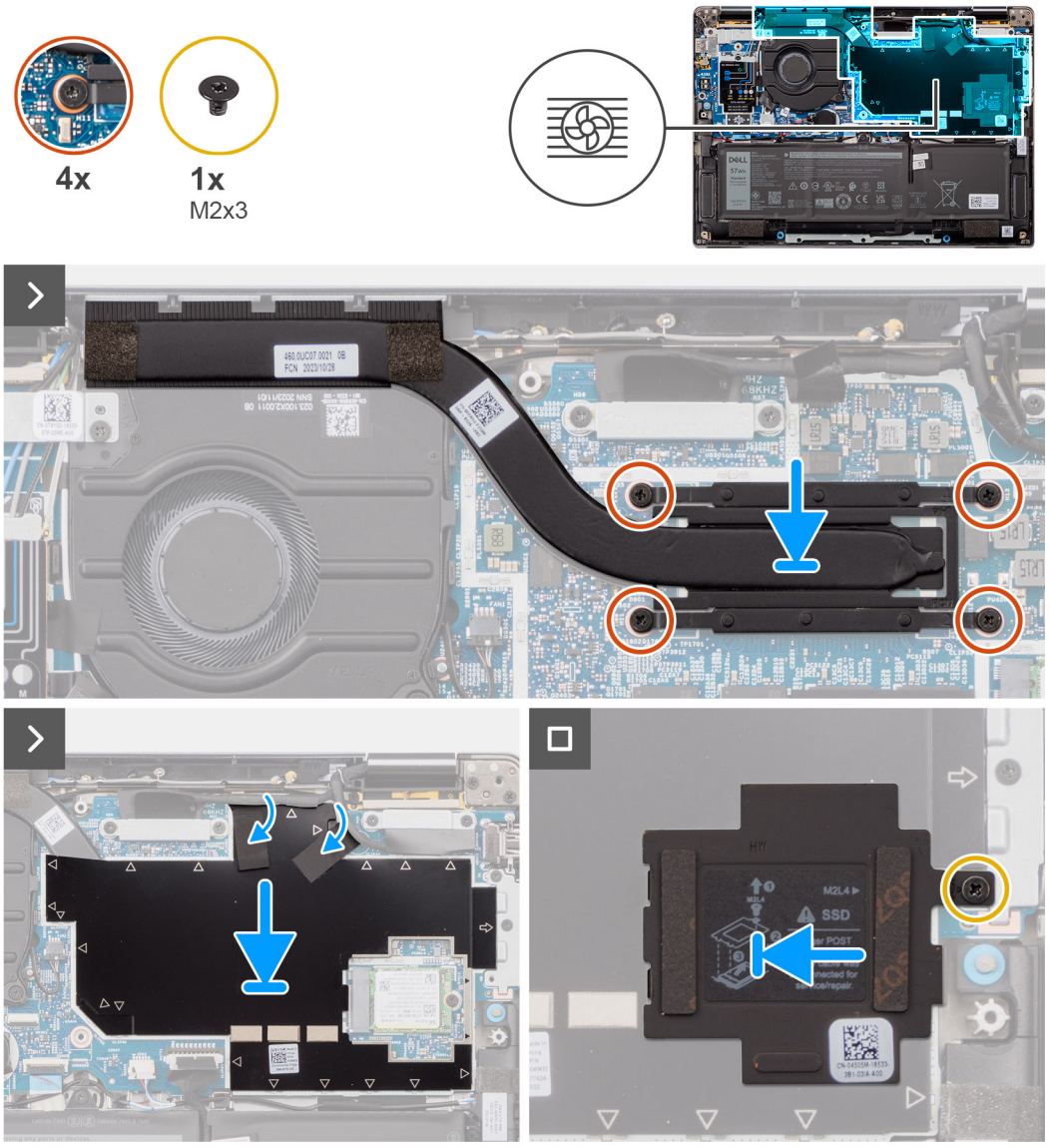


Figure 38. Installing the heat-sink

Steps

1. Place the heat-sink on the system board.
2. Align the screw holes on the heat-sink with the screw holes on the system board.
3. Replace the four screws (M2x4) that secure the heat sink to the system board.
4. In reverse sequential order (as indicated on the heat-sink), tighten the four captive screws that secure the heat-sink to the system board.
5. Replace the screw (M2x3) to cover the M.2 SSD shielding cover on the system board.

Next steps

1. Install the base cover.
2. Follow the procedure in After working inside your computer.

Speakers

Removing the speakers for Ultralight

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the base cover.
3. Remove the WWAN card.
4. Remove the 3-cell battery.
5. Remove the 4-cell battery.

About this task

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

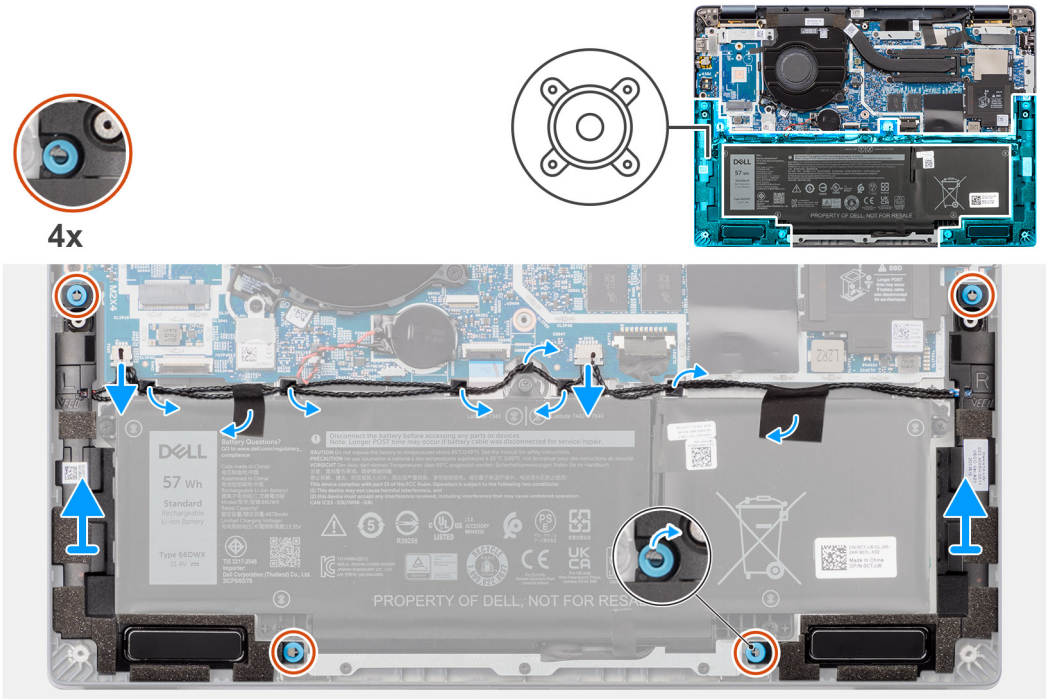


Figure 39. Removing the speakers for Ultralight

Steps

1. Unroute the antenna cables from the routing guide.
2. Disconnect the speaker cable from the connector on the I/O daughter-board.
3. Peel the tape that secures the speaker cable to the palm-rest and keyboard assembly.
4. Note the speaker cable routing, and unroute the speaker cable from the routing guides on the palm-rest and keyboard assembly.
5. Lift the speakers, along with the cable, off the palm-rest and keyboard assembly.

Installing the speakers for Ultralight

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

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

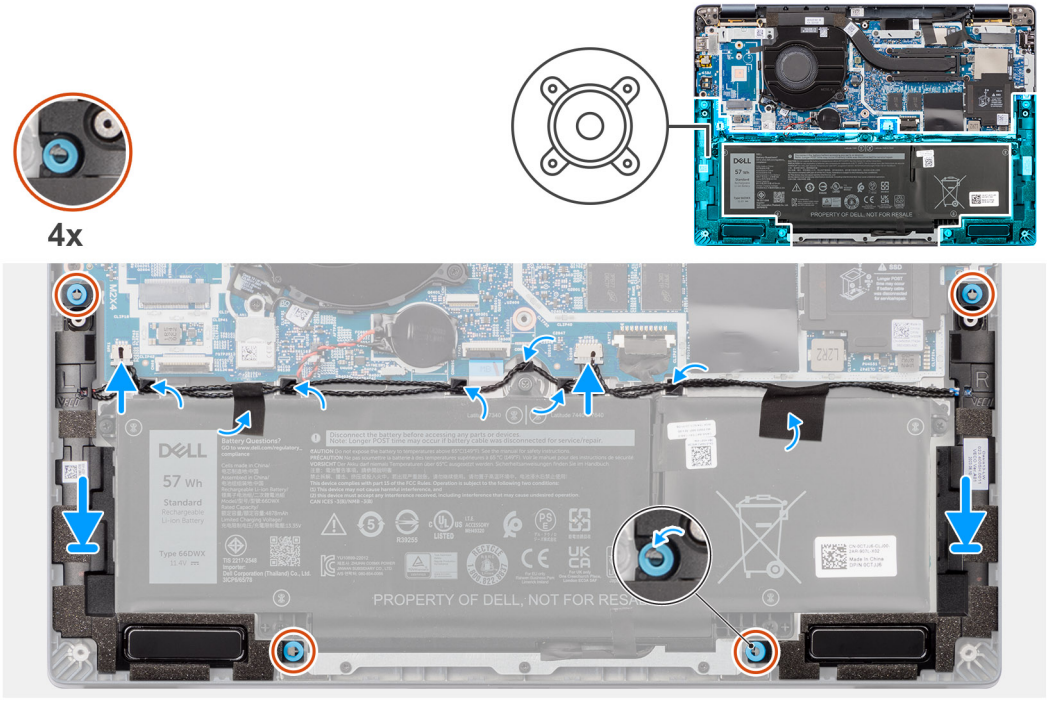


Figure 40. Installing the speakers for Ultralight

Steps

1. Route the antenna cables along the routing guide.
2. Using the alignment posts and rubber grommets, place the speakers into the slots on the palm-rest and keyboard assembly.

   NOTE: To properly position the speakers, secure the rubber grommets into the hooks.

3. Route the speaker cable along the bottom side of the palm-rest and keyboard assembly. Then secure the speaker cable into the routing guides on the palm-rest and keyboard assembly.
4. Connect the speaker cable to the connector on the I/O daughter-board.

Next steps

1. Install the base cover.
2. Install the 3-cell battery.
3. Install the 4-cell battery.
4. Install the WWAN card.
5. Follow the procedure in After working inside your computer.

Display assembly

Removing the display assembly

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the base cover.
3. Remove the WWAN card.

NOTE: This procedure applies only to computers shipped with a WWAN card installed.

About this task

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

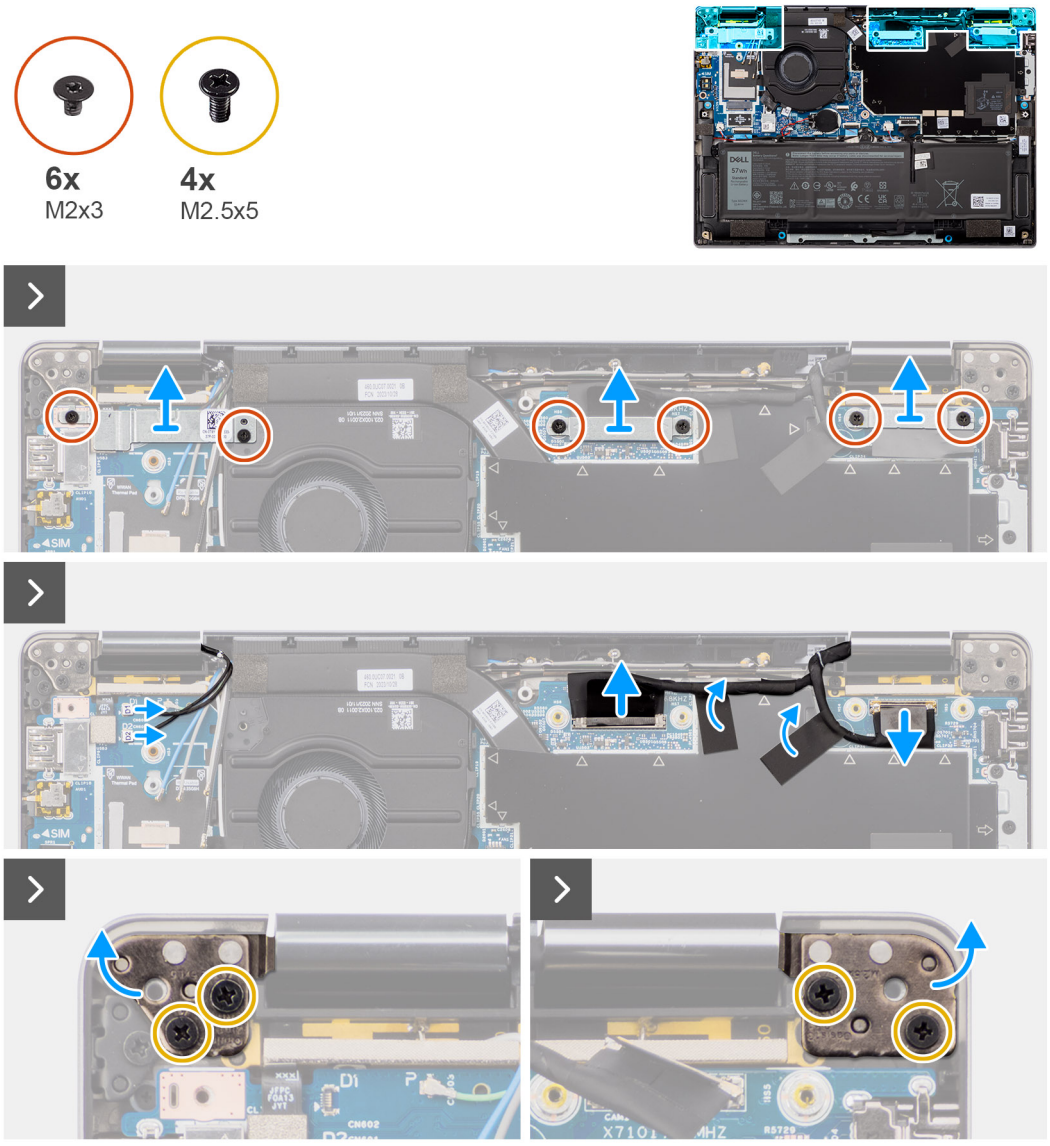


Figure 41. Removing the display assembly

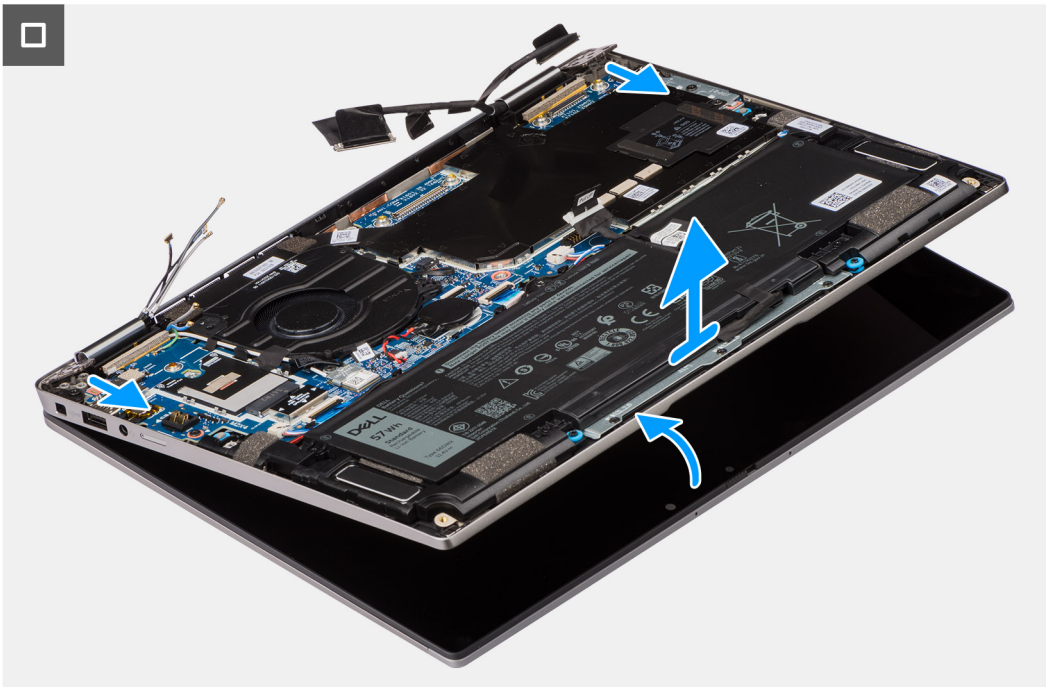


Figure 42. Removing the display assembly

Steps

1. Remove the two screws (M2x3) that secures the EDP cable bracket on the system board.
2. Remove the two screws (M2x3) that secures the camera cable bracket on the system board.
3. Disconnect the camera cable from connector (CAM1) and disconnect the display cable from connector (LCD1).
4. Peel off the camera cable and display cable from the system board.
5. Remove the four screws (M2.5x5) that secure the display hinges to the system board and lift the hinges away from base 45 to 90 degrees to allow clearance for base removal.
6. Lift the base assembly slightly at an angle.
7. Lift the base assembly away from the display assembly.

NOTE: The display assembly is a Hinge-Up Design (HUD) assembly and cannot be further disassembled once it is removed from the bottom chassis. If any components in the display assembly are malfunctioning and is required to be replaced, replace the entire display assembly.



Figure 43. Display assembly without WWAN-antenna cables

Installing the display assembly

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

NOTE: Ensure that the hinges are opened to the maximum before replacing the display assembly on the palm-rest and keyboard assembly.

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

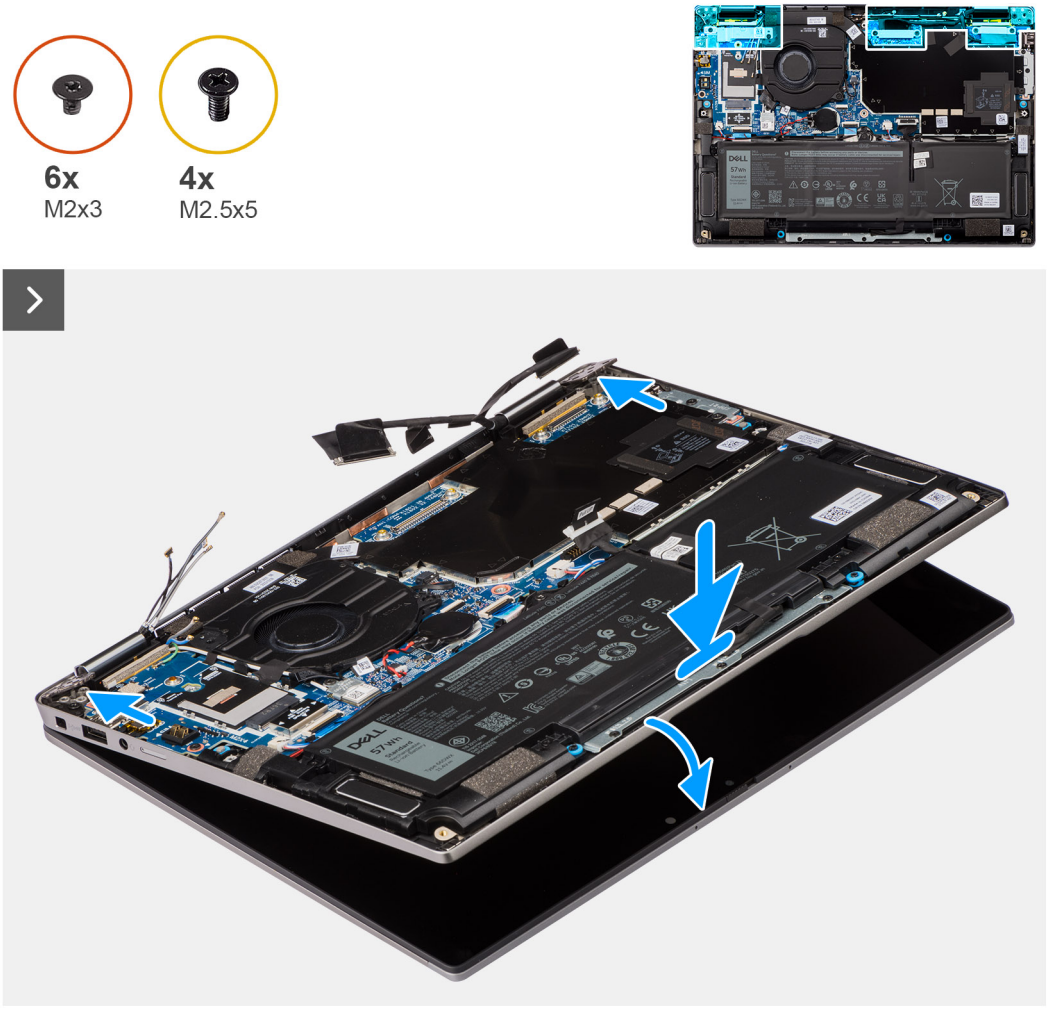


Figure 44. Installing the display assembly

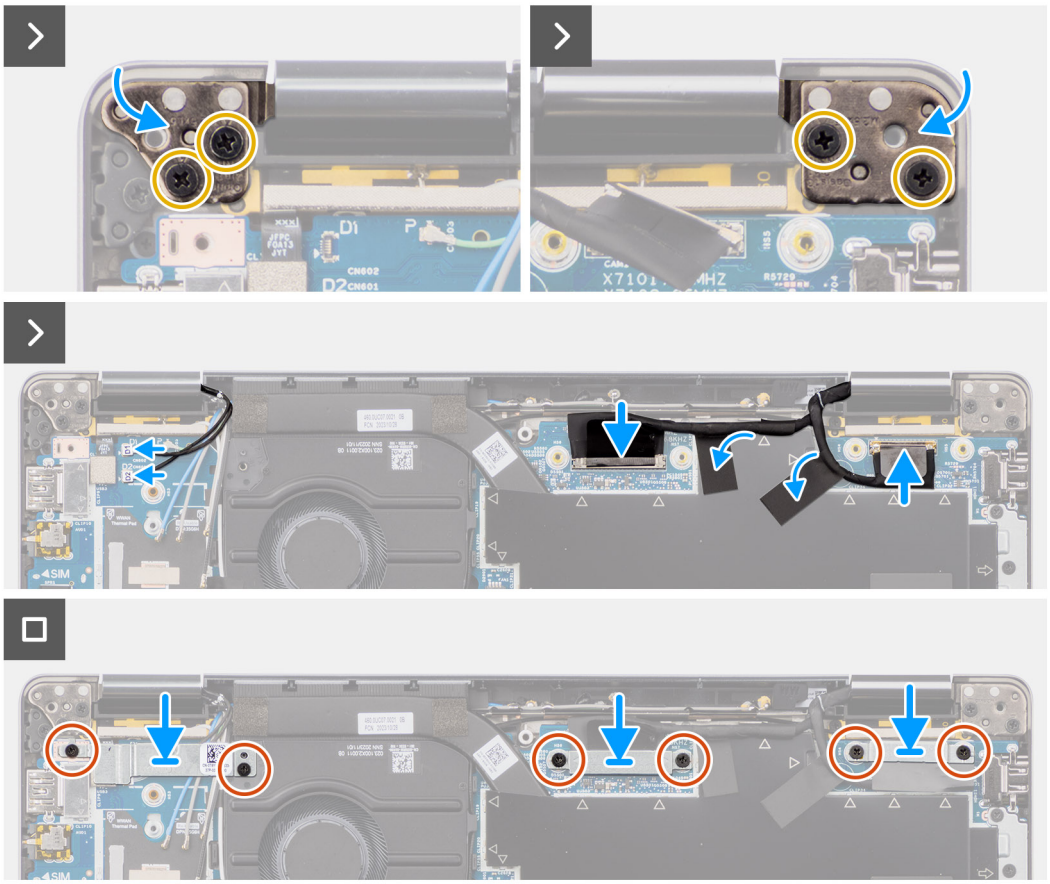


Figure 45. Installing the display assembly

Steps

1. Place the display assembly on a flat surface.
2. Slide the base assembly at an angle and gently press down on the hinges to align the screw holes on the display hinges with screw holes on the system board.
3. Replace the four screws (M2.5x5) that secure the display hinges to the system board.
4. Connect the camera cable from connector (CAM1) and disconnect the display cable from connector (LCD1).
5. Peel back the camera cable and display cable on the system board.
6. Replace the two screws (M2x3) that secures the camera cable bracket to the system board.
7. Replace the two screws (M2x3) that secures the EDP cable bracket to the system board.

Next steps

1. Install the WWAN card.

   NOTE: This procedure applies only to computers shipped with a WWAN card installed.

2. Install the base cover.
3. Follow the procedure in After working inside your computer.

Smart card reader

Removing the smart card reader

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in Before working inside your computer..
2. Remove the base cover.
3. Remove the speakers.
4. Remove the 3-cell battery or the 4-cell battery, whichever is applicable.

About this task

NOTE: This procedure applies only to computers shipped with a smart card reader installed.

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

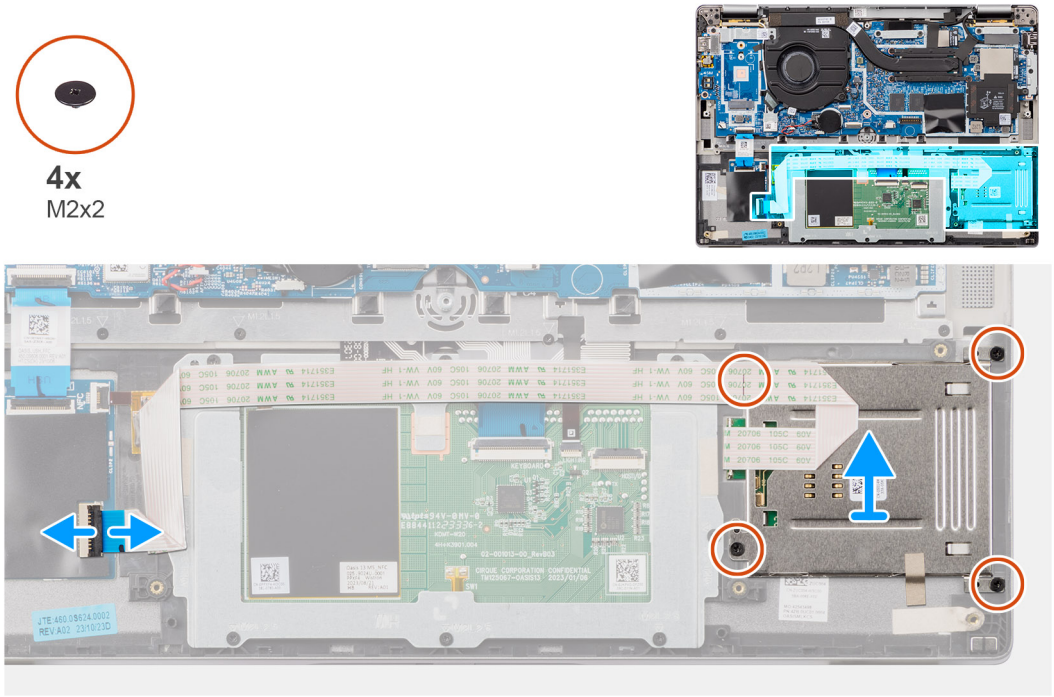


Figure 46. Removing the smart card reader

Steps

1. Open the latch and disconnect the clickpad flexible flat cable from the connector (TFAD1) on the clickpad.
2. Remove the four screws (M2x2) that secure the smart card reader to the palm-rest and keyboard assembly.
3. Remove the smart card reader from the computer.

Installing the smart card reader

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

NOTE: If the rubber grommets are pushed out when removing the left speaker, push them back in before replacing the left speaker.

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

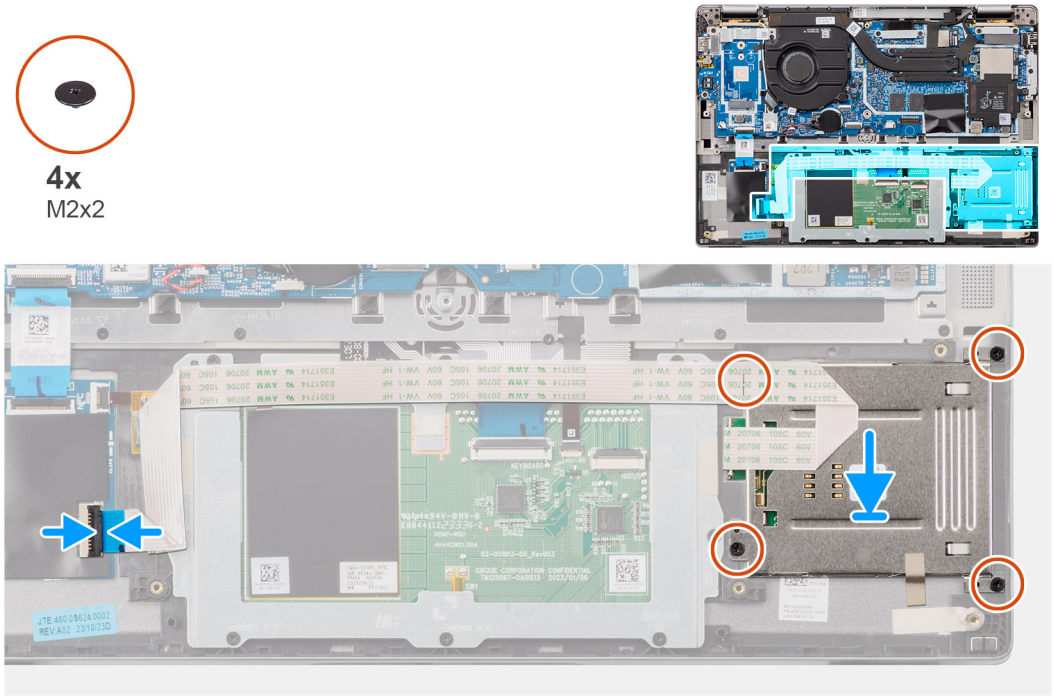


Figure 47. Installing the smart card reader

Steps

1. Align and place the smart card reader on the palm-rest and keyboard assembly.
2. Replace the four screws (M2x2) that secure the smart card reader to the palm-rest and keyboard assembly.
3. Connect the clickpad flexible flat cable to the connector (TFAD1) on the clickpad.

Next steps

1. Install the 3-cell battery or the 4-cell battery, whichever is applicable.
2. Install the speakers.
3. Install the base cover.
4. Follow the procedure in After working inside your computer.

System board

Removing the system board

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in Before working inside your computer..
2. Remove the base cover.
3. Remove the M.2 2230 solid-state drive.
4. Remove the 3-cell battery or the 4-cell battery, whichever is applicable.
5. Remove the heat-sink.

About this task

The following image indicates the connectors on your system board.

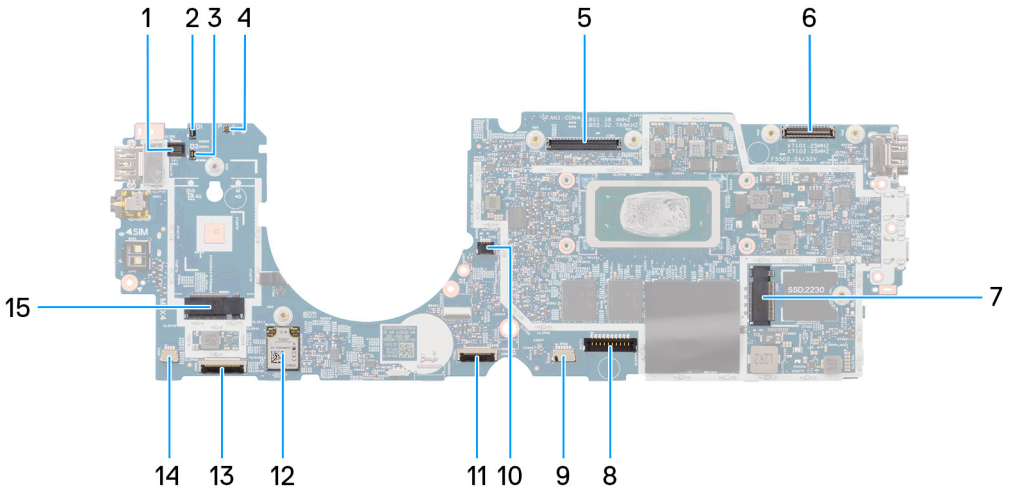


Figure 48. System board callouts

1. Fingerprint reader (FP1)
2. Darwin 1 antenna cable (D1)
3. Darwin 2 antenna cable (D2)
4. P sensor connector (P)
5. LCD connector (LCD1)
6. IR-camera cable connector (CAM1)
7. M.2 solid state drive connector (SSD1)
8. Battery cable connector (BATT1)
9. Speaker 2 (SPK2)
10. Fan connector (FAN1)
11. Click pad FFC connector (TFAD1)
12. WLAN (WLAN1)
13. USH daughter-board FFC connector (CN66)
14. Speaker 1 (SPK1)
15. 5G WWAN (WWAN1)

NOTE: For computers shipped without a 5G WWAN card, a WWAN shielding cover and WWAN bracket is preinstalled to the computer. As a result, follow the steps in the 5G WWAN card removal/installation section to remove the WWAN shielding cover and WWAN bracket before removing the system board.

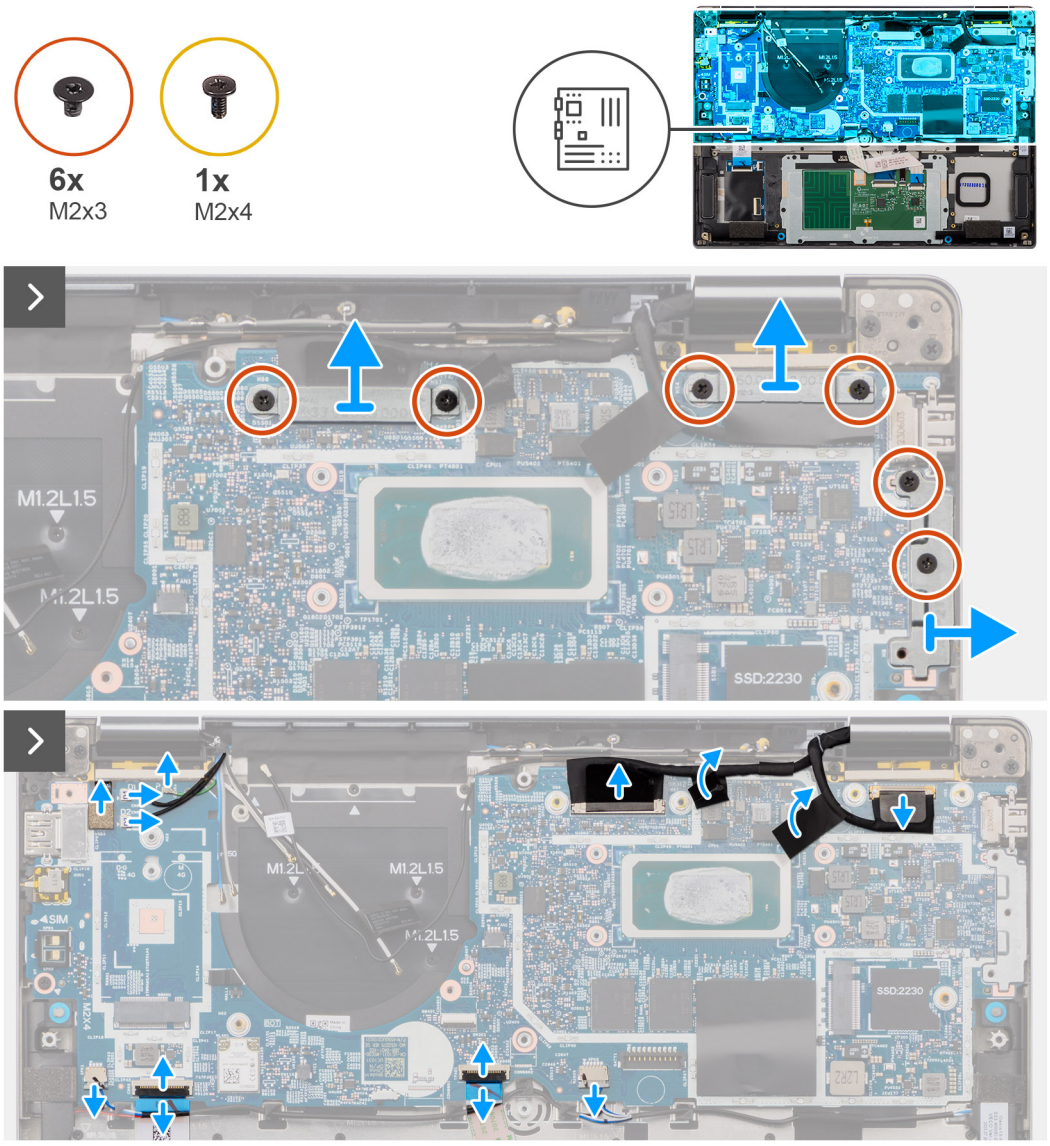


Figure 49. Removing system board

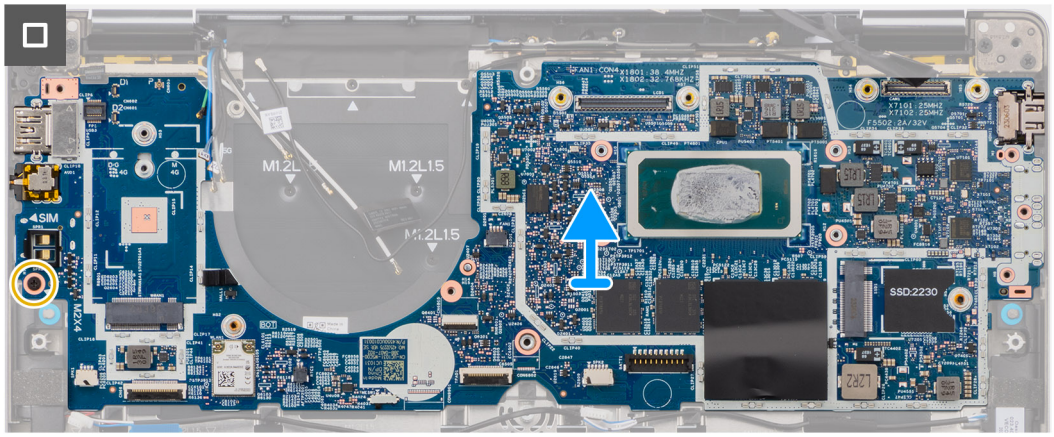


Figure 50. Removing the system board

Steps

1. Remove the six screws (M2x3) that secure the display, camera, and USB Type-C brackets.

2. Disconnect camera and display cables on the system board.
3. Disconnect the camera cable, display cable, battery cable, speaker cable, click pad flexible flat cable, USH daughter board flexible flat cable (for models shipped with a USH daughter board), RTC cable, finger print reader power button cable, Darwin cables, and P cable, from the system board.

   NOTE: There are two speaker cables to disconnect.

4. Remove the screw (M2x4) that secure the system board in place.
5. Remove the system board from the system.
6. Carefully lift and remove the system board away from the palm-rest and keyboard assembly.

   NOTE: Transfer the re-usable WLAN, WWAN (for WWAN only) absorbers (including WWAN cover), CPU absorber (for WWAN only), and CPU graphite to the new system board. CPU absorber and CPU graphite are located underneath the system board.

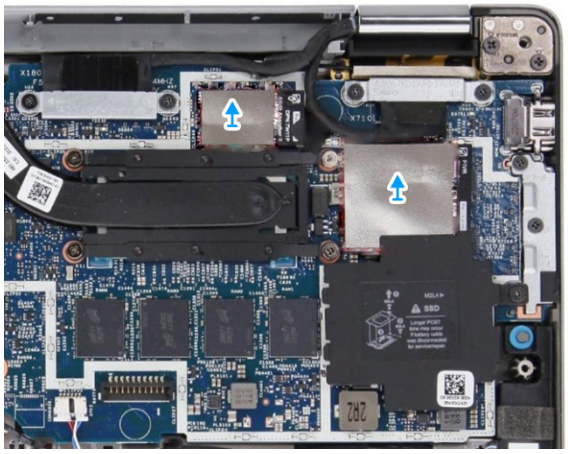


Figure 51. WLAN absorbers

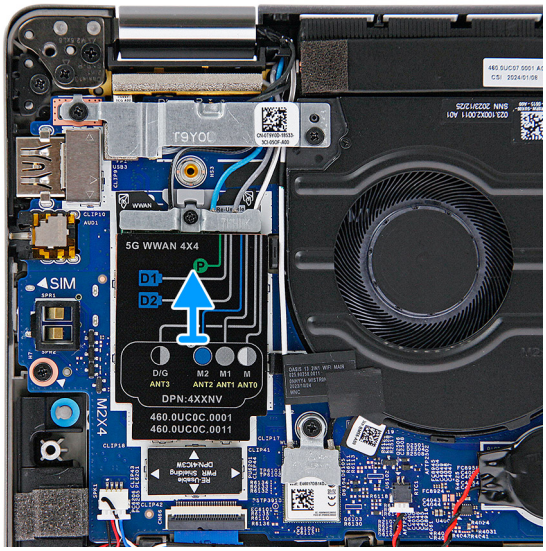


Figure 52. WWAN absorbers

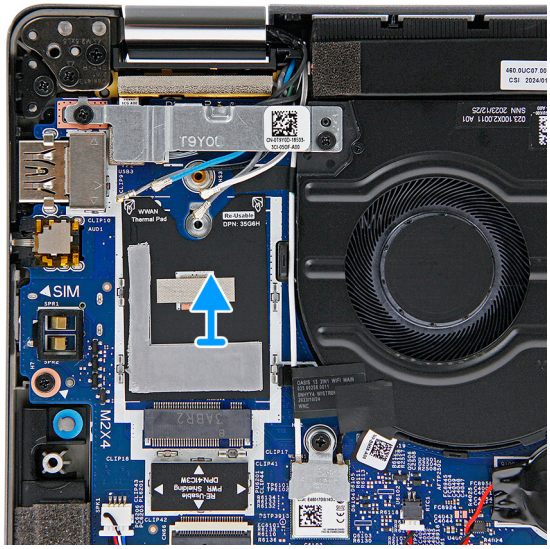


Figure 53. WWAN absorbers

NOTE: For the systems supporting the 5G configuration, the CPU absorber sticker adhered to the system board must be peeled off and transferred over to the replacement system board.

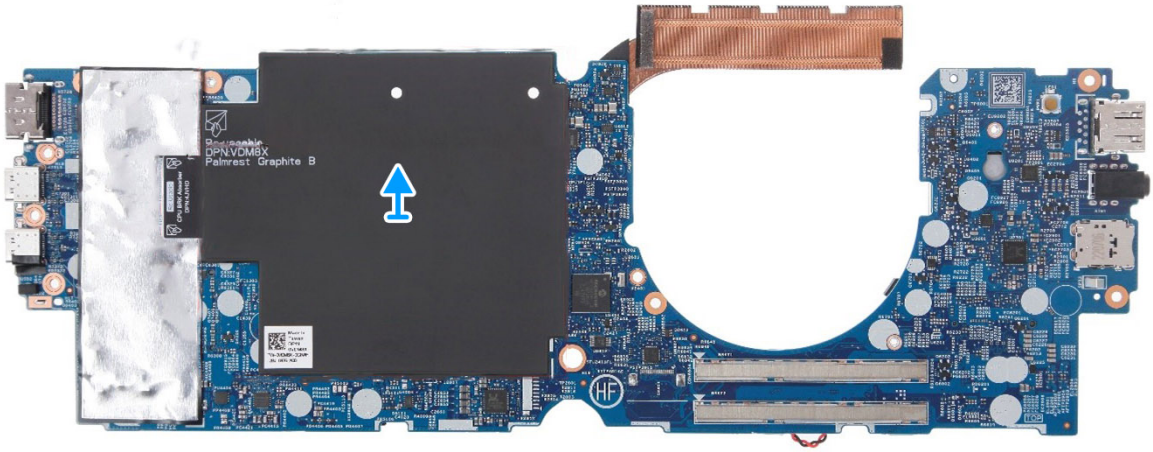


Figure 54. CPU absorber

Installing the system board

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

The following image indicates the connectors on your system board.

NOTE: When replacing the system board, the CPU absorber sticker adhered onto the system board must be peeled off and transferred over to the replacement system board.

NOTE: When replacing a system board, transfer the re-usable absorbers to the new system board . Peel to remove the re-usable absorber B. For absorber A, first remove the SSD CU plate, then peel off the absorber A.

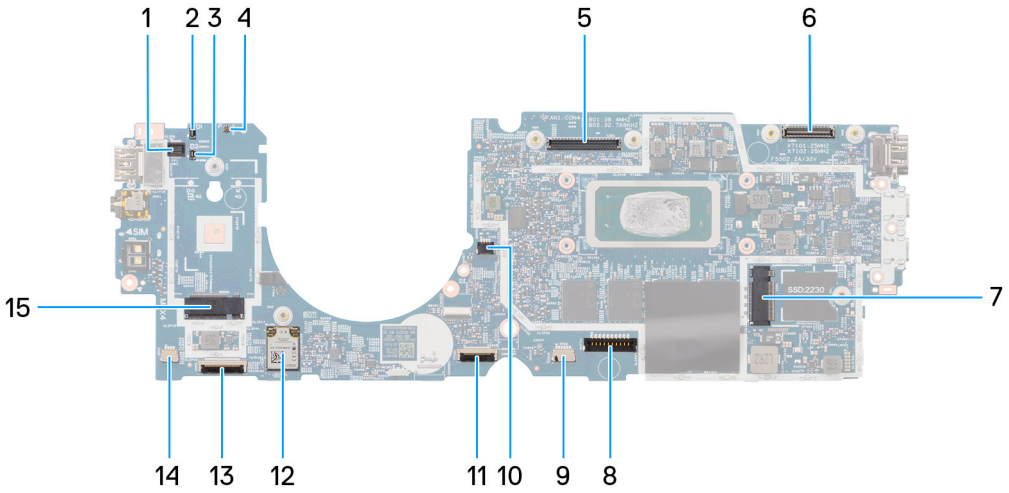


Figure 55. System board callouts

1. Fingerprint reader (FP1)
2. Darwin 1 antenna cable (D1)
3. Darwin 2 antenna cable (D2)
4. P sensor connector (P)
5. LCD connector (LCD1)
6. IR-camera cable connector (CAM1)
7. M.2 solid state drive connector (SSD1)
8. Battery cable connector (BATT1)
9. Speaker 2 (SPK2)
10. Fan connector (FAN1)
11. Click pad FFC connector (TFAD1)
12. WLAN (WLAN1)
13. USH daughter-board FFC connector (CN66)
14. Speaker 1 (SPK1)
15. 5G WWAN (WWAN1)

NOTE: For computers shipped without a 5G WWAN card, a WWAN shielding cover and WWAN bracket is preinstalled to the computer. As a result, follow the steps in the 5G WWAN card removal/installation section to remove the WWAN shielding cover and WWAN bracket before removing the system board.

CAUTION: Install the heat-sink after installing the system board as there are two screws (M2x3) underneath the heat-sink that secure the system board to the computer that need to be installed first.

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

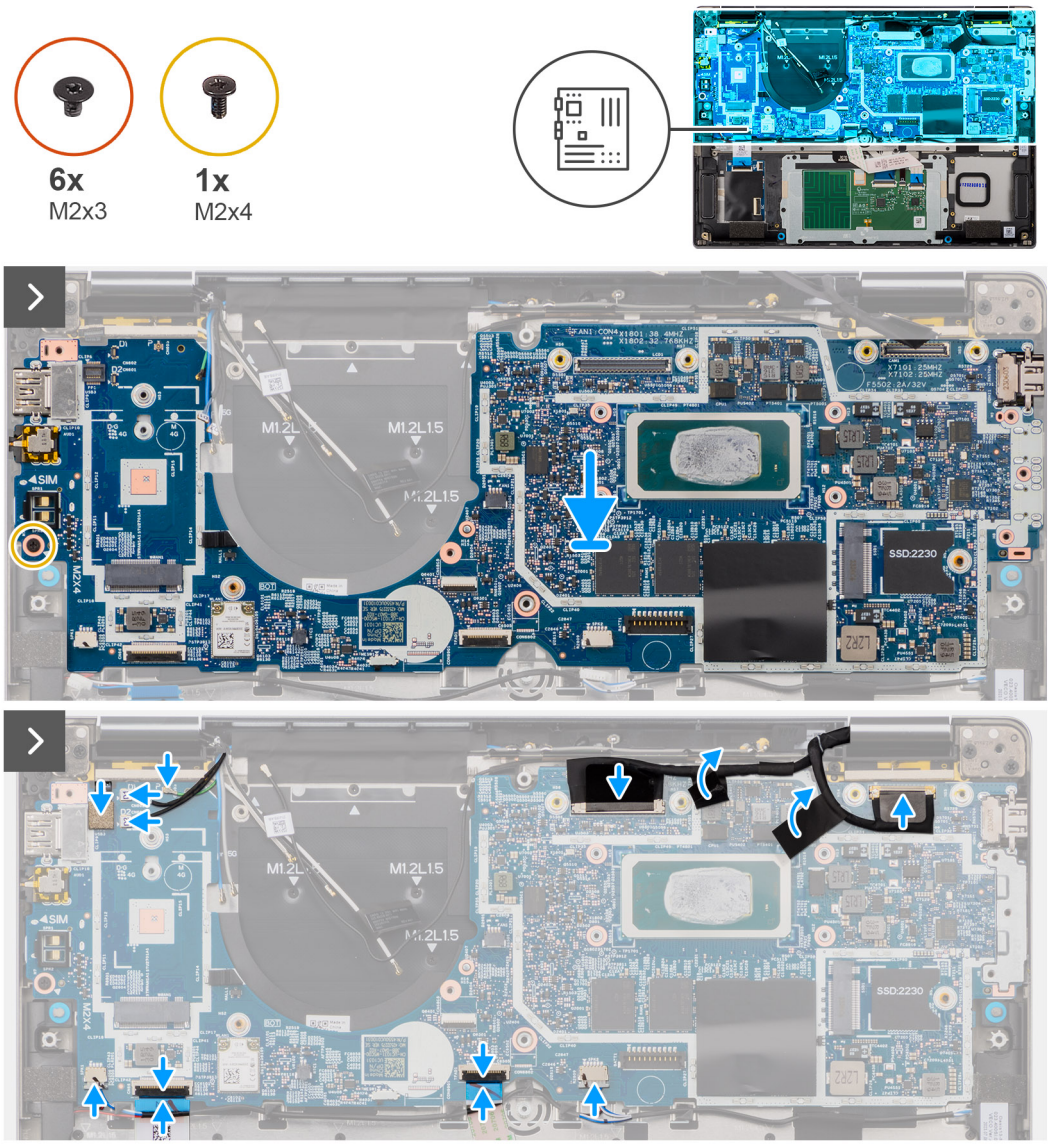


Figure 56. System board installation

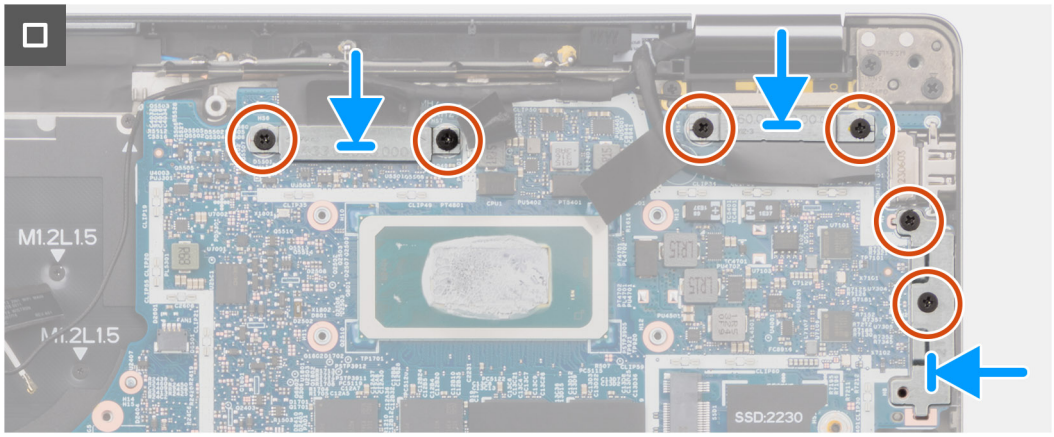


Figure 57. System board

Steps

1. Place the system board into the respective slot on the palm-rest and keyboard assembly.

NOTE: Transfer the reusable WLAN absorbers to the new system board while replacing the system board.

2. Replace the screw (M2x4) securing the system board in place.
3. Connect the camera cable, display cable, battery cable, speaker cable, click pad flexible flat cable, USH daughter board flexible flat cable (for models shipped with a USH daughter board), RTC cable, finger print reader power button cable, Darwin cables, and P cable, on the system board.
4. Connect camera and display cables on the system board.
5. Replace the six screws (M2x3) securing the display, camera, and USB Type-C brackets.

Next steps

1. Install the heat-sink.
2. Install the 3-cell battery or the 4-cell battery, whichever is applicable.
3. Install the M.2 2230 solid-state drive.
4. Install the base cover.
5. Follow the procedure in After working inside your computer.

WLAN-antenna module

Removing the WLAN-antenna module

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in Before working inside your computer..
2. Remove the base cover.
3. Remove the M.2 2230 solid-state drive.
4. Remove the WWAN card.
5. Remove the 3-cell battery or the 4-cell battery, whichever is applicable.
6. Remove the system board.

About this task

NOTE: When removing the system board to replace or access other parts, the system board can be removed without removing the heat sink. This will help in simplifying the procedure and preserve the thermal bond between the system board and heat sink.

NOTE: This procedure applies only to computers shipped with a WLAN-antenna module that is installed on the palm-rest and keyboard assembly.

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

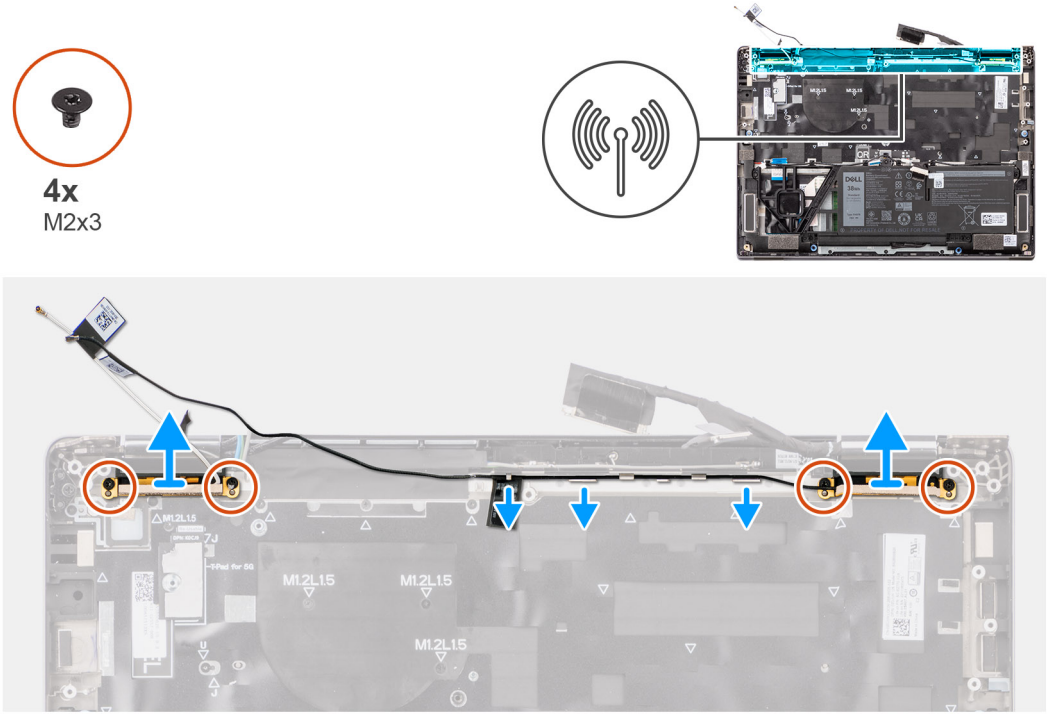


Figure 58. Removing the WLAN-antenna module

Steps

1. Remove the four screws (M2x3) that secure the WLAN-antenna module bracket to the system board.
2. Unroute the white WLAN main antenna cable and black WLAN Aux antenna cable from the routing guides on the palm rest.
3. Slide and remove the WLAN-antenna module from the WLAN-antenna module slot from the system board.

Installing the WLAN-antenna module

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

The following images indicate the location of the WLAN-antenna module and provide a visual representation of the installation procedure.

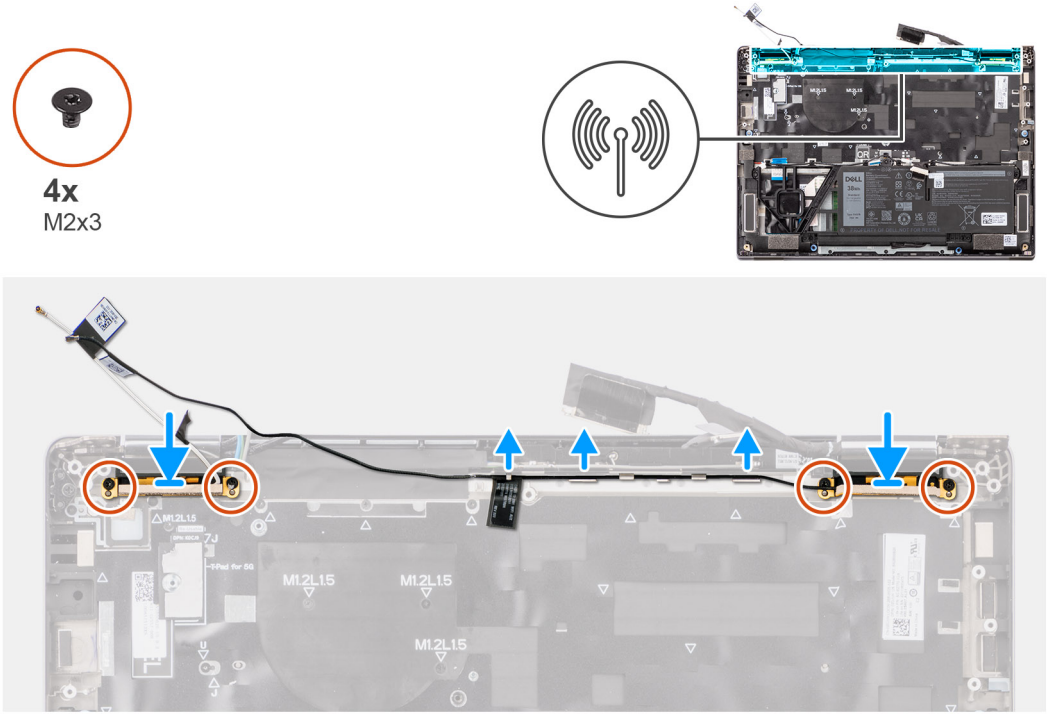


Figure 59. Installing the WLAN-antenna module

Steps

1. Slide and replace the WLAN-antenna module to the WLAN-antenna module slot on the system board.
2. Route the WLAN-antenna cables from the routing guides on the system board.
3. Replace the four screws (M2x3) that secure the WLAN-antenna module bracket on the system board.

Next steps

1. Install the system board.
2. Install the 3-cell battery or the 4-cell battery, whichever is applicable.
3. Install the WWAN card.
4. Install the M.2 2230 solid-state drive.
5. Install the base cover.
6. Follow the procedure in After working inside your computer.

Power button with optional fingerprint reader

Removing the power button with optional fingerprint reader

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in Before working inside your computer..
2. Remove the base cover.
3. Remove the WWAN card.
4. Remove the heat-sink.
5. Remove the system board.

About this task

NOTE: When removing the system board to replace or access other parts, the system board can be removed and installed with the heat sink attached to simplify the procedure and preserve the thermal bond between the system board and heat sink.

NOTE: For computers shipped with a fingerprint reader, the power button includes a fingerprint reader module.

The following images indicate the location of the power button with the optional fingerprint reader and provide a visual representation of the removal procedure.

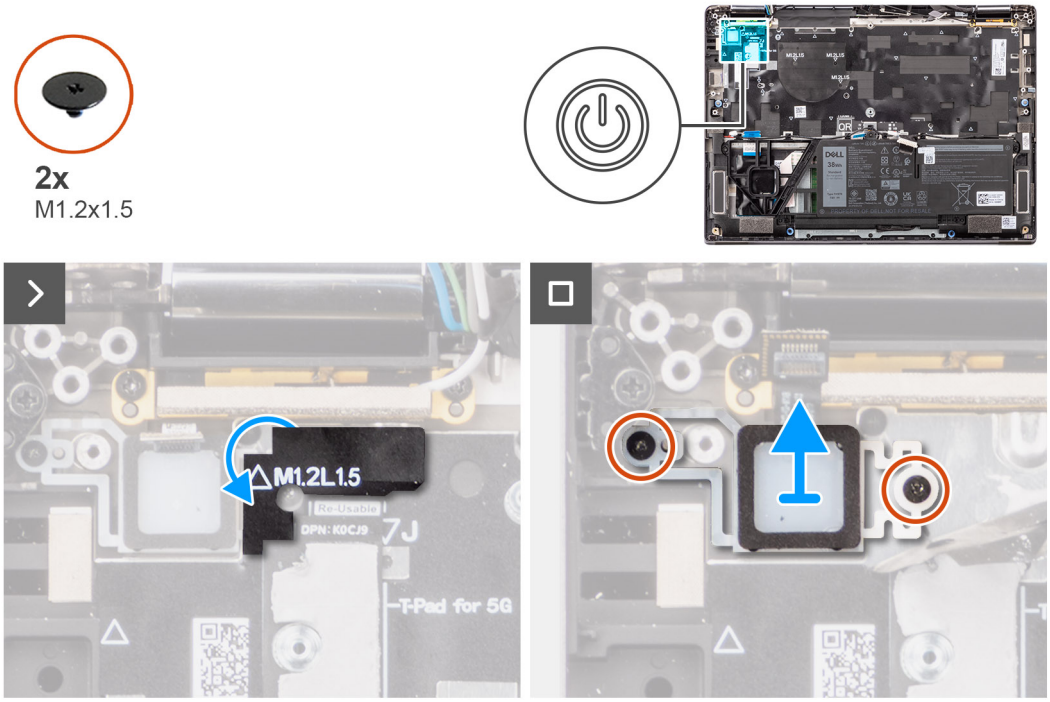


Figure 60. Removing the power button

Steps

1. Remove the two screws (M1.2x1.5) that secure the power button to the palm-rest and keyboard assembly.
2. Peel the fingerprint reader flexible printed circuits from the connector (FP1) on the palm-rest and keyboard assembly.

   NOTE: This step applies only to computers shipped with a power button with fingerprint reader installed.

3. Lift the power button off the slot on the palm-rest and keyboard assembly.

Installing the power button with optional fingerprint reader

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

The following images indicate the location of the power button with the optional fingerprint reader and provide a visual representation of the installation procedure.

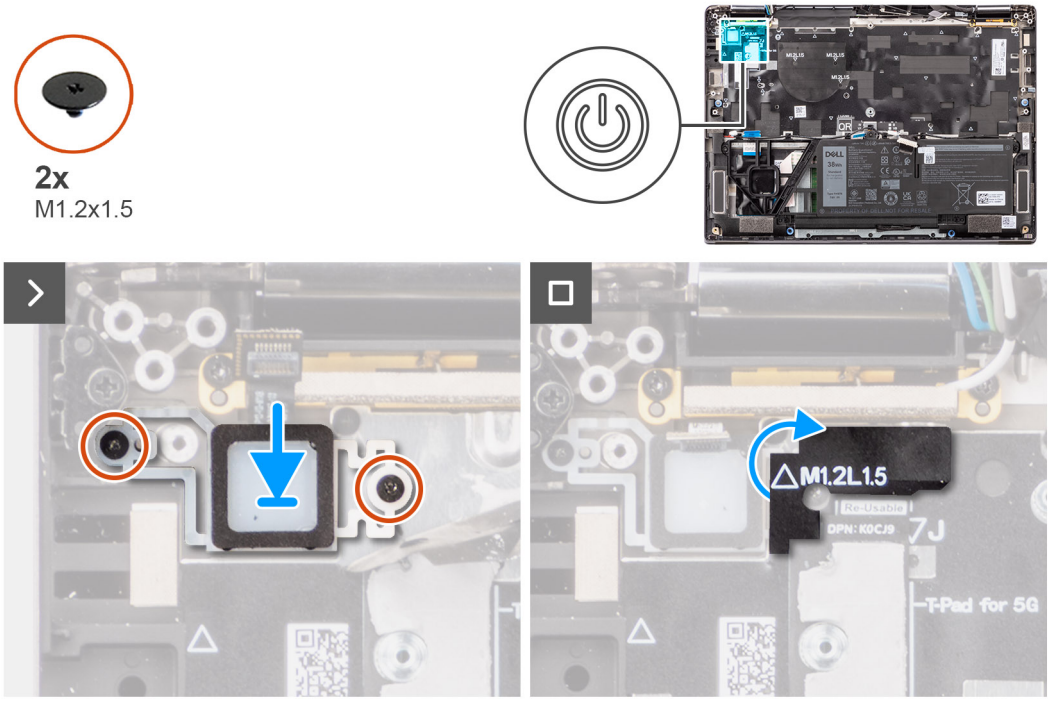


Figure 61. Installing the power button

Steps

1. Place the power button into its slot on the palm-rest and keyboard assembly.
2. Adhere the fingerprint reader flexible printed circuits to the connector (FP1) on the palm-rest and keyboard assembly.

   NOTE: This step applies only to computers shipped with a power button with fingerprint reader installed.

3. Align the screw hole on the power button with an optional fingerprint reader to the screw hole on the palm-rest and keyboard assembly.
4. Replace the two screws (M1.2x1.5) to secure the power button to the palm-rest and keyboard assembly.

Next steps

1. Install the system board.
2. Install the heat-sink.
3. Install the 5G WWAN card.

   NOTE: This procedure applies only to computers shipped with a 5G WWAN card installed.

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

Keyboard

Removing the keyboard

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

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

3. Remove the M.2 2230 solid-state drive.
4. Remove the WWAN card.

NOTE: This procedure applies only to computers shipped with a WWAN card installed.

5. Remove the 3-cell battery or the 4-cell battery, whichever is applicable.
6. Remove the heat-sink.
7. Remove the speakers.
8. Remove the Power button.
9. Remove the system board.

NOTE: When removing the system board to replace or access other parts, the system board can be removed and installed with the heat sink attached to simplify the procedure and preserve the thermal bond between the system board and heat sink.

About this task

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

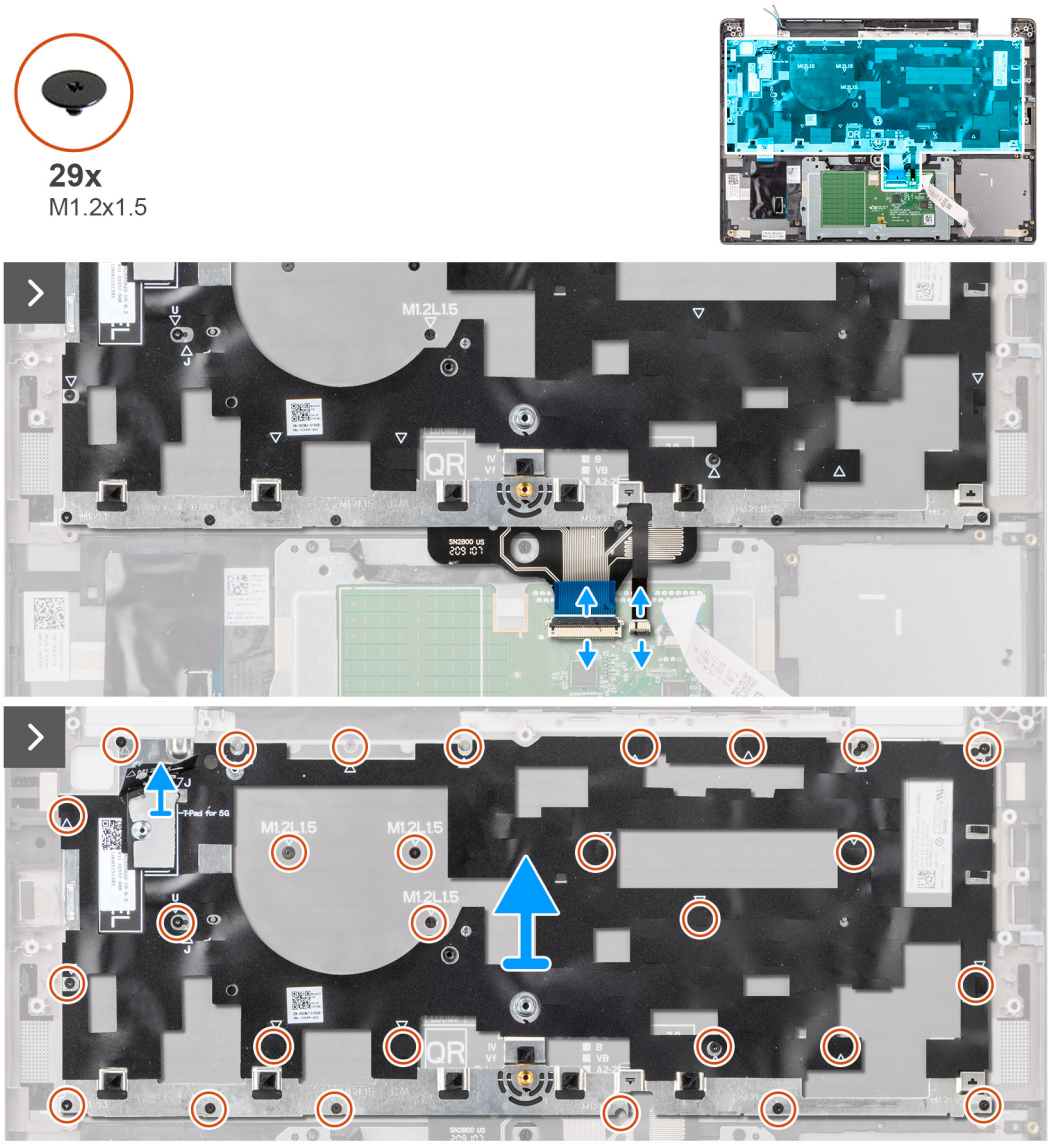


Figure 62. Removing the keyboard

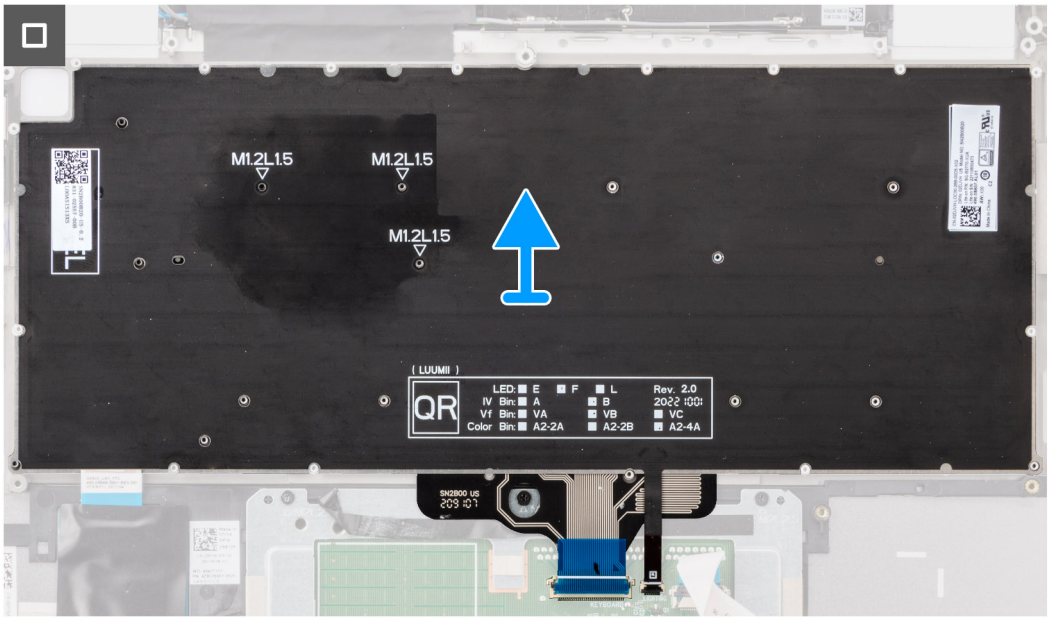


Figure 63. Removing the keyboard

Steps

1. Peel the USH daughter-board flexible flat cable from the back of the keyboard.

   NOTE: This step applies only to computers shipped with a USH daughter-board installed.

2. Open the latch and disconnect the keyboard and keyboard backlight flat cable from the connector on the clickpad.
3. Remove the twenty-nine screws (M1.2x1.5) that secure the keyboard assembly to the system.
4. Carefully lift the keyboard assembly to remove it from the computer.
5. Separate the keyboard from the keyboard support plate.

   NOTE: If the keyboard support plate is replaced, transfer the re-usable rubber filler (for WLAN, 4G WWAN) or thermal pad (for 5G WWAN) over to the new keyboard support plate.

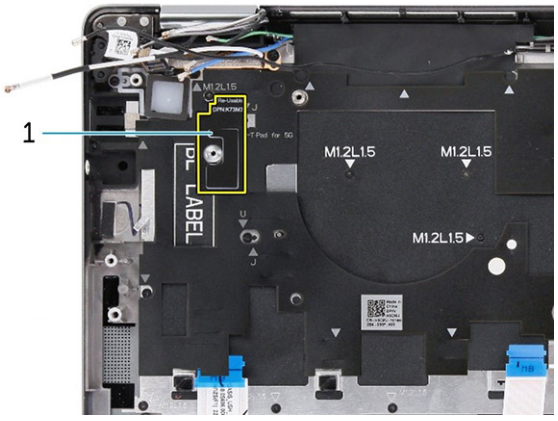


Figure 64. Keyboard Support Plate for 4G WWAN

Table 33. Keyboard support plate

No	Keyboard Support Plate for 4G WWAN Components
1	Rubber bumper for 4G WWAN

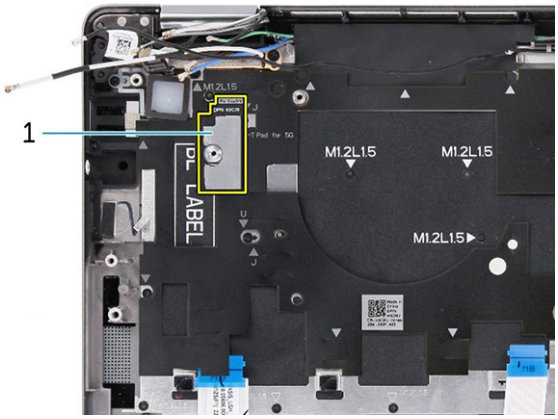


Figure 65. Keyboard Support Plate for 5G WWAN

Table 34. Keyboard support plate

No	Keyboard Support Plate for 5G WWAN Components
1	Thermal pad for 5G WWAN

Installing the keyboard

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

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

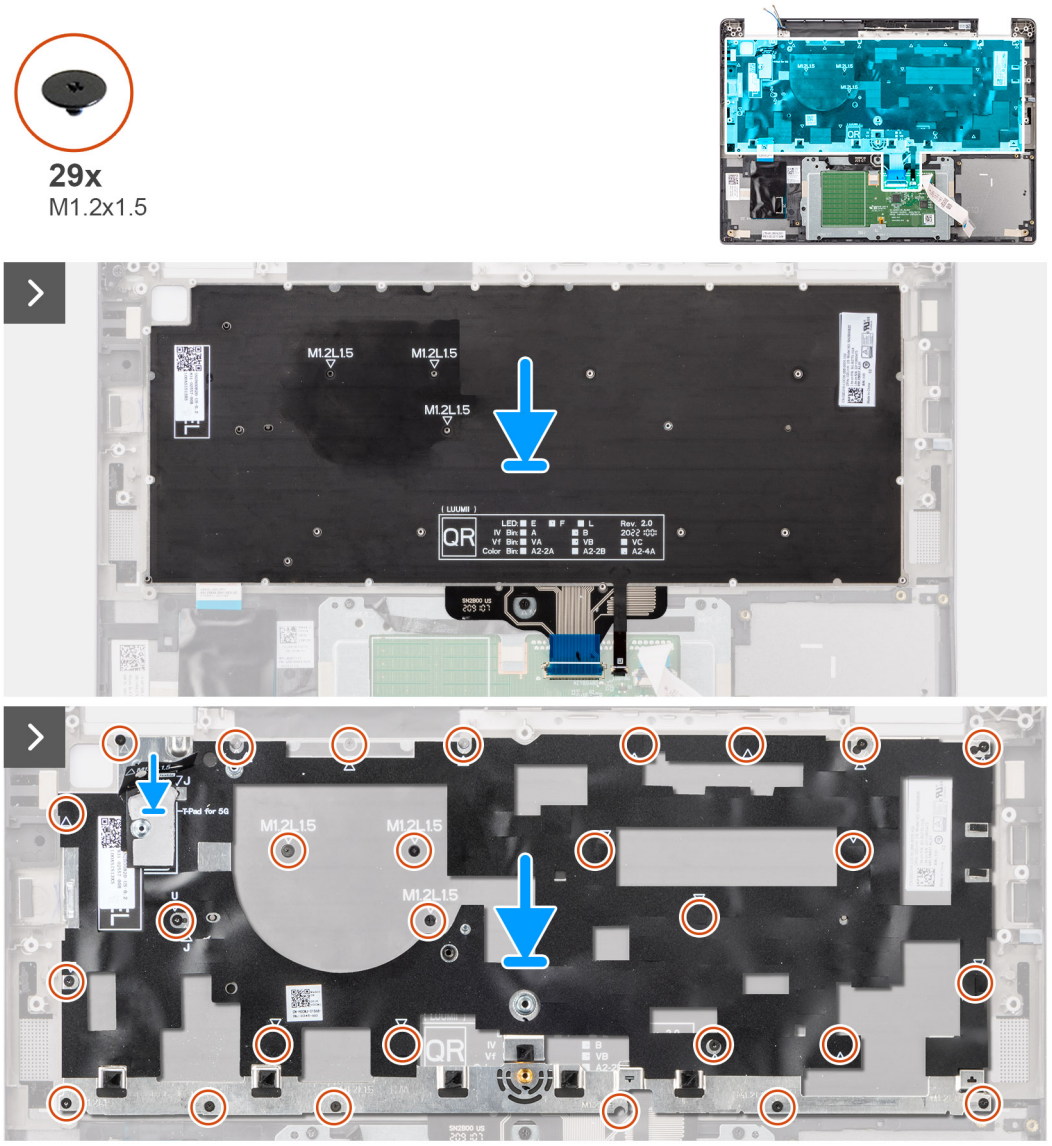


Figure 66. Installing the keyboard

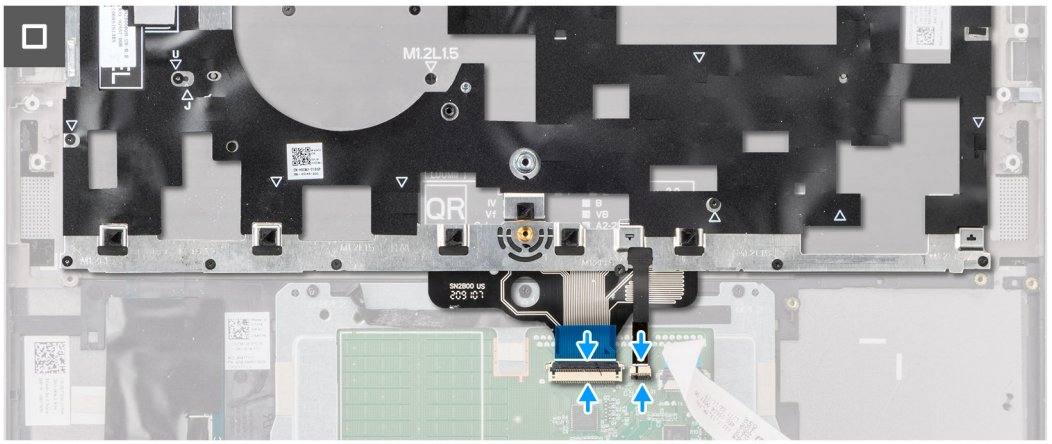


Figure 67. Installing the keyboard

Steps

1. Align the screw holes on the keyboard to the screw holes on the keyboard support plate and place the keyboard on the keyboard support plate.
2. Align and place the keyboard assembly in to its slot in the computer.
3. Replace the twenty-nine screws (M1.2x1.5) securing the keyboard assembly to the system.
4. Connect the keyboard and keyboard backlight flat cable to the back of the click pad.
5. Adhere the USH daughter-board flexible flat cable to the back of the keyboard.

NOTE: This step applies only to computers shipped with a USH daughter-board installed.

Next steps

1. Install the system board.
2. Install the Power button.
3. Install the speakers.
4. Install the heat-sink.
5. Install the 3-cell battery or the 4-cell battery, whichever is applicable.
6. Install the WWAN card.

NOTE: This procedure applies only to computers shipped with a WWAN card installed.

7. Install the M.2 2230 solid-state drive.
8. Install the base cover.
9. Follow the procedure in After working inside your computer.

Palm-rest assembly

Removing the palm-rest assembly

CAUTION: The information in this removal section is intended for authorized service technicians only.

Prerequisites

1. Follow the procedure in Before working inside your computer..
2. Remove the base cover.
3. Remove the M.2 2230 solid-state drive.
4. Remove the WWAN card, if applicable.

NOTE: This procedure applies only to computers shipped with a WWAN card installed.

5. Remove the 3-cell battery or the 4-cell battery, whichever is applicable.
6. Remove the heat-sink.
7. Remove the WLAN-antenna module.

NOTE: This procedure applies only to computers shipped with a WLAN-antenna module installed on the palm-rest and keyboard assembly.

8. Remove the display assembly.
9. Remove the speakers.
10. Remove the system board.
11. Remove the Power button.
12. Remove the keyboard.

NOTE: When removing the system board to replace or access other parts, the system board can be removed and installed with the heat sink attached to simplify the procedure and preserve the thermal bond between the system board and heat sink.

About this task

NOTE: The palm-rest assembly cannot be further disassembled once all the pre-removal parts procedures are completed. If the keyboard is malfunctioning and is required to be replaced, replace the entire palm-rest assembly.

NOTE: Smart card reader is a replaceable component for the models with security configurations.

The image below shows the palm-rest assembly after the pre-removal parts procedures have been performed for any palm-rest assembly replacement.

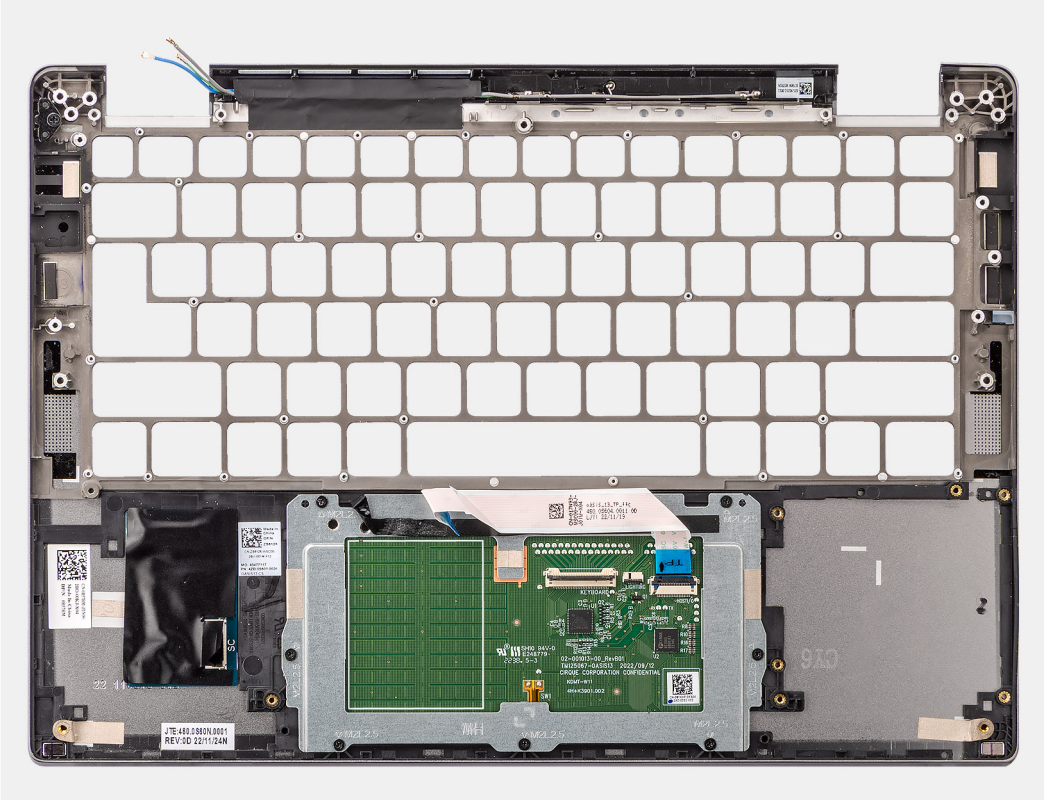


Figure 68. Removing the palm-rest assembly

Steps

1. For computers shipped with a carbon fiber palm-rest, use a fine-tipped instrument to push the nanoSIM outwards to remove it from its slot on the palm-rest assembly.
2. After performing the pre-requisites, you are left with the palm-rest assembly.

Installing the palm-rest assembly

CAUTION: The information in this installation section is intended for authorized service technicians only.

Prerequisites

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

About this task

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

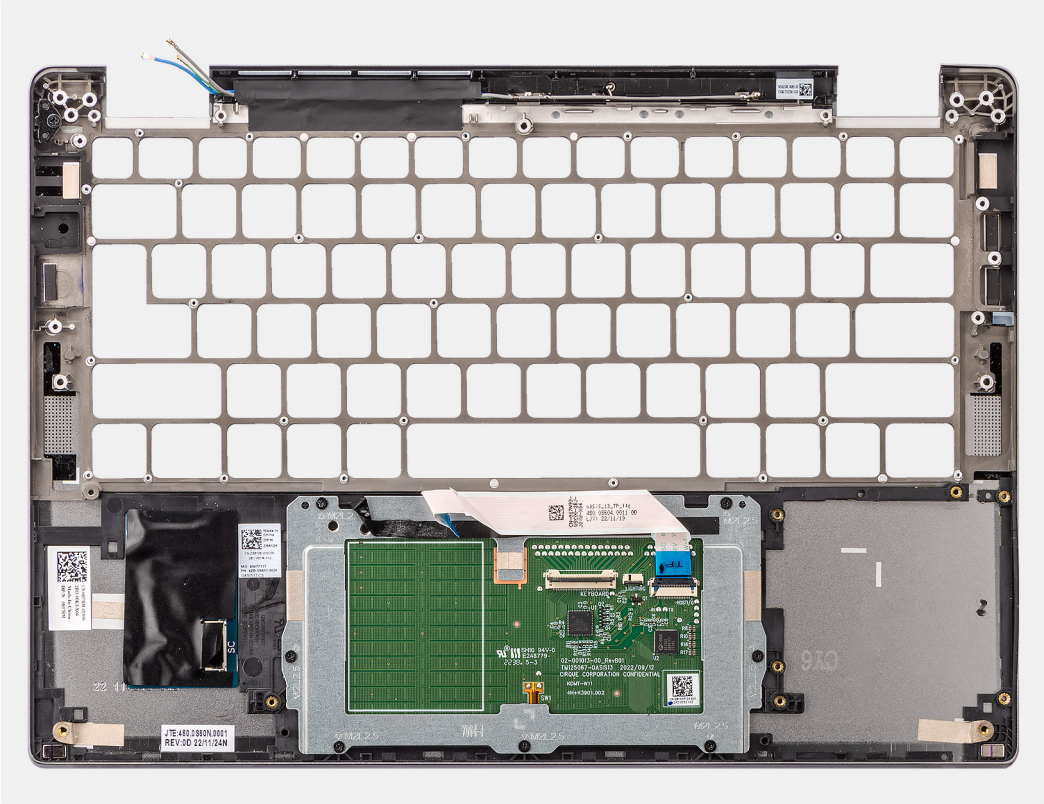


Figure 69. Installing the palm-rest assembly

Steps

1. For computers shipped with a carbon fiber palm-rest, align to the slot on the palm-rest assembly.
2. Place the palm-rest assembly on a flat surface and perform the post-requisites to install the palm-rest assembly.

Next steps

1. Install the keyboard.
2. Install the power button.
3. Install the system board.
4. Install the speakers.
5. Install the display assembly.
6. Install the WLAN-antenna module, if applicable.

   NOTE: This procedure applies only to computers shipped with a WLAN-antenna module installed on the palm-rest and keyboard assembly.

7. Install the heat-sink.
8. Install the 3-cell battery or the 4-cell battery, whichever is applicable.
9. Install the WWAN card.

   NOTE: This procedure applies only to computers shipped with a WWAN card installed.

   .

10. Install the M.2 2230 solid-state drive.
11. Install the base cover.
12. Follow the procedure in After working inside your computer.

7

Software

This chapter details the supported operating systems along with instructions on how to install the drivers.

Operating system

Your Latitude 7350 supports the following operating systems:

- Windows 11 22H2
- Windows 11 23H2
- Ubuntu Linux 22.04 LTS

NOTE: Windows 10 22H2 is only for special configuration orders, and computers downgraded by end users from Windows 11. Support by Dell Technologies is subjected to the Microsoft Windows 10 End of Support plan.

Drivers and downloads

When troubleshooting, downloading, or installing drivers, it is recommended that you read the Dell Knowledge Base article Drivers and Downloads FAQs 000123347.

8

BIOS Setup

NOTE: Depending on the computer and the installed devices, the options that are listed in this section may or may not be displayed.

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

Use BIOS Setup for the following purposes:

- Get information about the hardware installed in your computer, such as the amount of RAM and the capacity of the storage device.
- Change the system configuration information.
- Set or change a user-selectable option, such as the user password, type of storage device installed, and enable or disable base devices.

Entering BIOS Setup program

About this task

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

Navigation keys

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

Table 35. Navigation keys

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

F12 One Time Boot menu

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

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

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

- Removable Drive (if available)

- STXXXX Drive (if available)

  NOTE: XXX denotes the SATA drive number.

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

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

View Advanced Setup options

About this task

Some BIOS Setup options are only visible by enabling **Advanced Setup** mode, which is disabled by default.

NOTE: BIOS Setup options, including **Advanced Setup** options, are described in System setup options.

To enable Advanced Setup

Steps

1. Enter BIOS Setup.
   The Overview menu appears.
2. Click the **Advanced Setup** option to move it to the **ON** mode.
   Advanced BIOS Setup options are visible.

View Service options

About this task

Service options are hidden by default and only visible by entering a hotkey command.

NOTE: Service options are described in System setup options.

To view Service options:

Steps

1. Enter BIOS Setup.
   The Overview menu appears.
2. Enter the hotkey combination **Ctrl +Alt + s** to view the **Service** options.
   Service options are visible.

System Setup options

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

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

Table 36. System Setup options—Overview menu

Overview	
Latitude 7350	
BIOS Version	Displays the BIOS version number.
Service Tag	Displays the Service Tag of the computer.

Table 36. System Setup options—Overview menu (continued)

Overview	
Asset Tag	Displays the Asset Tag of the computer.
Manufacture Date	Displays the manufacture date of the computer.
Ownership Date	Displays the ownership date of the computer.
Express Service Code	Displays the Express Service Code of the computer.
Ownership Tag	Displays the Ownership Tag of the computer.
Signed Firmware Update	Displays whether the Signed Firmware Update is enabled on your computer. By default, the **Signed Firmware Update** option is enabled. **NOTE:** To view this option, enable **Service** options as described in View Service options.
BATTERY Information	
Primary	Displays the primary battery of the computer.
Battery Level	Displays the battery level of the computer.
Battery State	Displays the battery state of the computer.
Health	Displays the battery health of the computer.
AC Adapter	Displays whether an AC adapter is connected. If connected, displays the type of AC adapter that is connected.
PROCESSOR Information	
Processor Type	Displays the processor type.
Maximum Clock Speed	Displays the maximum processor clock speed. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Minimum Clock Speed	Displays the minimum processor clock speed. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Current Clock Speed	Displays the current processor clock speed. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Core Count	Displays the number of cores on the processor.
Processor ID	Displays the processor identification code.
Microcode Version	Displays the microcode version. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Intel Hyper-Threading Capable	Displays whether the processor is Hyper-Threading (HT) capable. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
MEMORY Information	
Memory Installed	Displays the total computer memory installed.
Memory Available	Displays the total computer memory available.
Memory Speed	Displays the memory speed. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 36. System Setup options—Overview menu (continued)

Overview	
Memory Channel Mode	Displays single or dual channel mode. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Memory Technology	Displays the technology that is used for the memory.
DEVICES Information	
Panel Type	Displays the panel type of the computer.
Video Controller	Displays the video controller type of the computer.
Video Memory	Displays the video memory information of the computer.
Wi-Fi Device	Displays the wireless device information of the computer.
Native Resolution	Displays the native resolution of the computer.
Video BIOS Version	Displays the video BIOS version of the computer. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Audio Controller	Displays the audio controller information of the computer.
Bluetooth Device	Displays the Bluetooth device information of the computer.
Pass Through MAC Address	Displays the MAC address of the video pass-through.

Table 37. System Setup options—Boot Configuration menu

Boot Configuration	
Boot Sequence	
Boot Mode: UEFI only	Displays the boot mode of the computer. **NOTE:** To view this option, enable **Service** options as described in View Service options.
Boot Sequence	Displays the boot sequence.
Secure Digital (SD) Card Boot	Enables or disables read-only boot from Secure Digital (SD) card. By default, the **Secure Digital (SD) Card Boot** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Secure Boot	Secure Boot is a method of guaranteeing the integrity of the boot path by performing additional validation of the operating system and PCI add-in cards. The computer stops booting to the operating system when a component is not authenticated during the boot process. Secure Boot can be enabled in BIOS setup or using management interfaces like Dell Command|Configure, but can only be disabled from BIOS setup.
Enable Secure Boot	Enables the computer to boot using only validated boot software. By default, this **Enable Secure Boot** option is disabled. For additional security, Dell Technologies recommends keeping the **Secure Boot** option enabled to ensure that the UEFI firmware validates the operating system during the boot process. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options. **NOTE:** To enable Secure Boot, the computer is required to be in UEFI boot mode and the Enable Legacy Option ROMs option is required to be turned off.

Table 37. System Setup options—Boot Configuration menu (continued)

Boot Configuration	
Enable Microsoft UEFI CA	When disabled, the UEFI CA is removed from the BIOS UEFI Secure Boot database. **NOTE:** When disabled, the Microsoft UEFI CA could render your computer unable to boot, computer graphics may not function, some devices may not function properly, and the computer could become unrecoverable. By default, the **Enable Microsoft UEFI CA** option is enabled. For additional security, Dell Technologies recommends keeping the **Microsoft UEFI CA** option enabled to ensure the broadest compatibility with devices and operating systems.
Secure Boot Mode	Enables or disables the Secure Boot operation mode. By default, the **Deployed Mode** is selected. **Deployed Mode** should be selected for normal operation of Secure Boot. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Expert Key Management	
Enable Custom Mode	Enables or disables the keys in the PK, KEK, db, and dbx security key databases to be modified. By default, the **Enable Custom Mode** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Custom Mode Key Management	Selects the custom values for expert key management. By default, the **PK** option is selected. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 38. System Setup options—Integrated Devices menu

Integrated Devices	
Date/Time	
Date	Sets the computer date in MM/DD/YYYY format. Changes to the date format take effect immediately.
Time	Sets the computer time in HH/MM/SS 24-hour format. You can switch between a 12-hour or 24-hour clock. Changes to the time format take effect immediately.
Camera	
Enable Camera	Enables the camera. By default, the **Enable Camera** option is enabled. **NOTE:** Depending on the configuration ordered, the camera setup option may not be available.
Audio	
Enable Audio	Enables all integrated audio controller. By default, all the options are enabled.
Enable Microphone	Enables the microphone. By default, the **Enable Microphone** option is enabled. **NOTE:** Depending on the configuration ordered, the microphone setup option may not be available.

Table 38. System Setup options—Integrated Devices menu (continued)

Integrated Devices	
Enable Internal Speaker	Enables the internal speaker. By default, the **Enable Internal Speaker** option is enabled.
USB/Thunderbolt Configuration	
Enable USB Boot Support	Enables booting from USB mass storage devices that are connected to external USB ports. By default, the **Enable USB Boot Support** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable External USB Ports	Enables the external USB ports. By default, the **Enable External USB Ports** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable Thunderbolt Technology Support	
Enable Thunderbolt Technology Support	Enables the associated ports and adapters for Thunderbolt Technology support. By default, the **Enable Thunderbolt Technology Support** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable Thunderbolt Boot Support	
Enable Thunderbolt Boot Support	Enables the Thunderbolt adapter-peripheral device and USB devices that are connected to the Thunderbolt adapter to be used during BIOS Preboot. By default, the **Enable Thunderbolt Boot Support** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable Thunderbolt (and PCIe behind TBT) pre-boot modules	Enables the PCIe devices that are connected through a Thunderbolt adapter to run the PCIe devices UEFI Option ROM (if present) during preboot. By default, the **Enable Thunderbolt (and PCIe behind TBT) pre-boot modules** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Disable USB4 PCIE Tunneling	Disables the USB4 PCIE Tunneling option. By default, the **Disable USB4 PCIE Tunneling** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Video/Power only on Type-C Ports	Enables or disables the Type-C port functionality to video or only power. By default, the **Video/Power only on Type-C Ports** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Type-C Dock	
Type-C Dock Override	Enables or disables to use connected Type-C Dell Dock to provide data stream with external USB ports disabled. When Type-C Dock override is enabled, the Video/Audio/LAN submenu is activated.

Table 38. System Setup options—Integrated Devices menu (continued)

Integrated Devices	
	By default, the **Type-C Dock Override** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in Entering BIOS Setup program.
Type-C Dock Audio	Enables or disables the usage of audio inputs and outputs from the connected Type-C Dell docking station. By default, the **Type-C Dock Audio** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Type-C Dock LAN	Enables or disables the usage of LAN on the external ports of the connected Type-C Dell docking station. By default, the **Type-C Dock LAN** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Miscellaneous Devices	
Enable Fingerprint Reader Device	Enables or disables the Fingerprint Reader Device option. By default, the **Enable Fingerprint Reader Device** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Unobtrusive Mode	Enables or disables the unobtrusive mode. When enabled, all system LEDs, LCD panel backlight and audio devices of the computer are turned off. By default, the **Unobtrusive Mode** option is disabled. **NOTE:** On computers with collaboration touchpad, the Collaboration Touchpad is disabled when the **Unobtrusive Mode** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 39. System Setup options—Storage menu

Storage	
SATA/NVMe Operation	
SATA/NVMe Operation	Sets the operating mode of the integrated SATA hard drive controller. By default, the **Raid On** option is selected.
Storage Interface	Displays the information of various onboard drives.
Port Enablement	Enables or disables the M.2 PCIe SSD option. By default, the **M.2 PCIe SSD** option is enabled.
Smart Reporting	Enables or disables the Smart reporting option. By default, the **Smart Reporting** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Drive Information	Displays the information of onboard drives.
Enable MediaCard	
Secure Digital (SD) Card	Enables or disables the SD card.

Table 39. System Setup options—Storage menu (continued)

Storage	
	By default, the **Secure Digital (SD) Card** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Secure Digital (SD) Card Read-Only Mode	Enables or disables the SD card read-only mode. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options. By default, the **Secure Digital (SD) Card Read-Only Mode** option is disabled.

Table 40. System Setup options—Display menu

Display	
Display Brightness	
Brightness on battery power	Enables to set the screen brightness when the computer is running on battery power. By default, the screen brightness is set to 50 when the computer is running on battery power. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Brightness on AC power	Enables to set the screen brightness when the computer is running on AC power. By default, the screen brightness is set to 100 when the computer is running on AC power. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Touchscreen	Enables or disables the touch screen option. By default, the **Touchscreen** option is enabled. **NOTE:** Only available on computers with touch screen displays. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Full Screen Logo	Enables or disables the computer to display full screen logo, if the image matches screen resolution. By default, the **Full Screen Logo** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 41. System Setup options—Connection menu

Connection	
Wireless Device Enable	
WWAN/GPS	Enables or disables the internal WWAN device. By default, the **WWAN/GPS** option is enabled.
WLAN	Enables or disables the internal WLAN device. By default, the **WLAN** option is enabled.
Bluetooth	Enables or disables the internal Bluetooth device.

Table 41. System Setup options—Connection menu (continued)

Connection	
	By default, the **Bluetooth** option is enabled.
Contactless Smartcard/NFC	Enables or disables the smartcard device. By default, the **Contactless Smartcard/NFC** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable UEFI Network Stack	Enables or disables the UEFI Network Stack and controls the onboard LAN Controller. By default, the **Enable UEFI Network Stack** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Wireless Radio Control	
Control WLAN Radio	Enables to sense the connection of the computer to a wired network and then disables the selected WLAN radio. Upon disconnection from the wired network, the selected wireless radios are reenabled. By default, the **Control WLAN Radio** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in .
Control WWAN Radio	Enables to sense the connection of the computer to a wired network and then disables the selected WWAN radios. By default, the **Control WWAN Radio** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Dynamic Wireless Transmit Power	When enabled, the computer increases the transmit power of the WLAN device to improve performance in certain computer configurations. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
HTTP(s) Boot	When enabled, supports HTTP(s) boot on the client BIOS, which offers wired or wireless and HTTP/HTTPS connection options. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
HTTP(s) Boot Modes	In Auto Mode, the boot URL is obtained from the DHCP response; the boot URL specifies the HTTP Boot Server and location of the Network Boot Program (NBP) file. In Manual mode, the user enters the URL in the text box, which must start with `http://` or `https://` and end with the NBP file name. By default, **Auto Mode** is selected. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
CA Certificate	Upload or delete the CA certificate. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 42. System Setup options—Power menu

Power	
Battery Configuration	Enables or disables the computer to run on battery during peak power usage hours. Use the table **Custom Charge Start** and **Custom Charge Stop**, to prevent AC power usage between certain times of each day. By default, the **Adaptive** option is selected. Battery settings are adaptively optimized based on your typical battery usage pattern.
Advanced Configuration	
Enable Advanced Battery Charge Configuration	Enables Advanced Battery Charge Configuration from the beginning of the day to a specified work period. When enabled, Advanced Battery Charged maximizes battery health while still supporting heavy use during the work day. By default, the **Enable Advanced Battery Charge Configuration** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Peak Shift	
Enable Peak Shift	Enables or disables the computer to run on battery during peak power usage hours. By default, the **Enable Peak Shift** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable USB PowerShare	Enables or disables the USB PowerShare on the computer. By default, the **USB Powershare** option is disabled.
Thermal Management	Enables or disables cooling of the fan and manages the processor heat to adjust the system performance, noise, and temperature. By default, the **Optimized** option is selected. Standard settings for balanced performance, noise, and temperature.
USB Wake Support	
Wake on Dell USB-C Dock	When enabled, connecting a Dell USB-C Dock wakes the computer from Standby, Hibernate, and Power Off. By default, the **Wake on Dell USB-C Dock** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Block Sleep	Enables or disables the computer from entering Sleep (S3) mode in the operating system. By default, the **Block Sleep** option is disabled. **NOTE:** When enabled, the computer does not go to Sleep, Intel Rapid Start is disabled automatically, and the operating system power option is blank if it was set to Sleep. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Lid Switch	
Enable Lid Switch	Enables or disables the Lid Switch. By default, the **Enable Lid Switch** option is enabled.
Power On Lid Open	When enabled, allows the computer to turn on from the off state whenever the lid is opened.

Table 42. System Setup options—Power menu (continued)

Power	
	By default, the **Power On Lid Open** option is enabled.
Intel Speed Shift Technology	Enables or disables the Intel Speed Shift Technology support. When enabled, the operating system selects the appropriate processor performance automatically. By default, the **Intel Speed Shift Technology** option is enabled. **NOTE:** To view this option, enable **Service** options as described in View Service options.

Table 43. System Setup options—Security menu

Security	
TPM 2.0 Security	Trusted Platform Module (TPM) is a security device that stores computer-generated keys for encryption and features such as BitLocker, Virtual Secure Mode, remote Attestation. By default, the **TPM 2.0 Security** option is enabled. For additional security, Dell Technologies recommends keeping the Trusted Platform Module (TPM) enabled to allow these security technologies to fully function.
TPM 2.0 Security On	Enables or disables the TPM. By default, the **TPM 2.0 Securty On** option is enabled. For additional security, Dell Technologies recommends keeping TPM enabled to allow these security technologies to fully function. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Attestation Enable	The **Attestation Enable** option controls the endorsement hierarchy of TPM. Disabling the **Attestation Enable** option prevents TPM from being used to digitally sign certificates. By default, the **Attestation Enable** option is enabled. For additional security, Dell Technologies recommends keeping the **Attestation Enable** option enabled. **NOTE:** When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Key Storage Enable	The **Key Storage Enable** option controls the storage hierarchy of TPM, which is used to store digital keys. Disabling the **Key Storage Enable** option restricts the ability of TPM to store owner's data. By default, the **Key Storage Enable** option is enabled. For additional security, Dell Technologies recommends keeping the **Key Storage Enable** option enabled. **NOTE:** When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems. **NOTE:** To view this option, enable **Service** options as described in View Service options.
SHA-256	Allows you to control the usage of SHA-256 by TPM. When enabled, the BIOS and TPM use the SHA-256 hash algorithm to extend measurements into the TPM PCRs during BIOS boot. When disabled, the BIOS and TPM use the SHA-1 hash algorithm to extend measurements into the TPM PCRs during BIOS boot.

Table 43. System Setup options—Security menu (continued)

Security	
	By default, the **SHA-256** option is enabled. For additional security, Dell Technologies recommends keeping the **SHA-256** option enabled. **NOTE:** To view this option, enable **Service** options as described in View Service options.
Clear	When enabled, the **Clear** option clears information that is stored in the TPM after exiting the system's BIOS. This option returns to the disabled state when the computer restarts. By default, the **Clear** option is disabled. Dell Technologies recommends enabling the **Clear** option only when TPM data is required to be cleared. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Physical Presence Interface (PPI) Bypass for Clear Commands	The PPI Bypass for Clear Commands option allows the operating system to manage certain aspects of PTT. When enabled, you are not prompted to confirm changes to the PTT configuration. By default, the **PPI Bypass for Clear Commands** option is disabled. For additional security, Dell Technologies recommends keeping the **PPI Bypass for Clear Commands** option disabled.
Intel Total Memory Encryption	Enables or disables the processor's memory encryption feature. By default, the **Intel Total Memory Encryption** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Chassis Intrusion	
Chassis Intrusion	Enables or disables the detection of chassis intrusion events. This feature notifies the user when the base cover has been removed from the computer. When set to **Enabled**, a notification is displayed on the next boot and the event is logged in the BIOS Events log. When set to **Disabled**, no notification is displayed and no event is logged in the BIOS Events log. When set to **On-Silent**, the event is logged in the BIOS Events log, but no notification is displayed. By default, the **Chassis Intrusion Detection** option is disabled. For additional security, Dell Technologies recommends keeping the **Chassis Intrusion** option enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Block Boot Until Cleared	The **Block Boot Until Clear** option is enabled when **Chassis Intrusion** is enabled. When enabled, the computer does not boot until the chassis intrusion is cleared. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
SMM Security Mitigation	Enables or disables additional UEFI SMM Security Mitigation protections. This option uses the Windows SMM Security Mitigations Table (WSMT) to confirm to the operating system that security best practices have been implemented by the UEFI firmware.

Table 43. System Setup options—Security menu (continued)

Security	
	By default, the **SMM Security Mitigation** option is enabled. For additional security, Dell Technologies recommends keeping the **SMM Security Mitigation** option enabled unless you have a specific application which is not compatible. **NOTE:** This feature may cause compatibility issues or loss of functionality with some legacy tools and applications. **NOTE:** To view this option, enable **Service** options as described in View Service options.
Data Wipe on Next Boot	
Start Data Wipe	Data Wipe is a secure wipe operation that deletes information from a storage device. **CAUTION: The Secure Data Wipe operation erases information in a way that it cannot be reconstructed.** Commands such as delete and format in the operating system may remove files from showing up in the file system, however they can be reconstructed through forensic means as they are still represented on the physical media. Data Wipe prevents this reconstruction and is not recoverable. When enabled, the BIOS will queue up a data wipe cycle for storage devices that are connected to the motherboard on the next reboot. By default, the **Start Data Wipe** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Absolute	Absolute Software provides various cyber security solutions, some requiring software preloaded on Dell computers and integrated into the BIOS. To use these features, you must enable the Absolute BIOS setting and contact Absolute forconfiguration and activation. By default, the **Absolute** option is enabled. For additional security, Dell Technologies recommends keeping the **Absolute** option enabled. **WARNING: The Permanently Disabled option can only be selected once. When Permanently Disabled is selected, Absolute Persistence cannot be reenabled. No further changes to the Enable/Disable states are allowed.** **NOTE:** The Enable/Disable options are unavailable while the computer is in the activated state. **NOTE:** When the Absolute features are activated, the Absolute integration cannot be disabled from the BIOS Setup screen.
UEFI Boot Path Security	Enables or disables the computer to prompt the user to enter the Administrator password (if set) when booting to a UEFI boot path device from the F12 boot menu. By default, the **Always Except Internal HDD** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Firmware Device Tamper Detection	Allows you to control the firmware device tamper detection feature. This feature notifies the user when the firmware device is tampered. When enabled, a screen warning message is displayed on the computer and a tamper detection event is

Table 43. System Setup options—Security menu (continued)

Security	
	logged in the BIOS Events log. The computer fails to reboot until the event is cleared. By default, the **Firmware Device Tamper Detection** option is enabled. For additional security, Dell Technologies recommends keeping the **Firmware Device Tamper Detection** option enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Clear Firmware Device Tamper Detection	Allows you to clear the events that are logged when tampering of firmware device is detected. By default, the **Clear Firmware Device Tamper Detection** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 44. System Setup options—Passwords menu

Passwords	
Administrator Password	The Administrator Password prevents unauthorized access to the BIOS Setup options. Once the administrator password is set, the BIOS Setup options can only be modified after providing the correct password. The following rules and dependencies apply to the Administrator Password - • The administrator password cannot be set if system and/or internal hard drive passwords are previously set. • The administrator password can be used in place of the system and/or internal hard drive passwords. • When set, the administrator password must be provided during a firmware update. • Clearing the administrator password also clears the system password (if set). Dell Technologies recommends using an administrator password to prevent unauthorized changes to BIOS Setup options.
System Password	The System Password prevents the computer from booting to an operating system without entering the correct password. The following rules and dependencies apply when the System Password is used - • The computer shuts down when idle for approximately 10 minutes at the system password prompt. • The computer shuts down after three incorrect attempts to enter the system password. • The computer shuts down when the **Esc** key is pressed at the **System Password** prompt. • The system password is not prompted when the computer resumes from standby mode. Dell Technologies recommends using the system password in situations where it is likely that a computer may be lost or stolen.
Hard Drive Password **NOTE:** On some computers, the **M.2 PCIe SSD-0 Password** option is shown.	The hard drive password can be set to prevent unauthorized access of the data stored on the solid-state drive. The computer prompts for the hard drive password during boot in order to unlock the drive. A password-secured hard drive stays locked even when removed from the computer or placed into another computer. It prevents an attacker from accessing data on the drive without authorization. The following rules and dependencies apply when the **Hard Drive Password** or **M.2 PCIe SSD-0 Password** option is used.

Table 44. System Setup options—Passwords menu (continued)

Passwords	
	• The hard drive password option cannot be accessed when the hard drive is disabled in the BIOS Setup. • The computer shuts down when idle for approximately 10 minutes at the hard drive password prompt. • The computer shuts down after three incorrect attempts to enter the hard drive password and treats the hard drive as not available. • The hard drive does not accept password unlock attempts after five incorrect attempts to enter the hard drive password from the BIOS Setup. The hard drive password must be reset for the new password unlock attempts. • The computer treats the hard drive as not available when the **Esc** key is pressed at the hard drive password prompt. • The hard drive password is not prompted when the computer resumes from standby mode. When the hard drive is unlocked by the user before the computer goes into standby mode, it remains unlocked after the computer resumes from standby mode. • If the system and hard drive passwords are set to the same value, the hard drive unlocks after the correct system password is entered. Dell Technologies recommends using a hard drive password to protect unauthorized data access.
Password Configuration	The Password configuration page includes several options for changing the requirements of BIOS passwords. You can modify the minimum and maximum length of the passwords as well as require passwords to contain certain character classes (upper case, lower case, digit, special character). When the **Lower Case Letter** option is enabled, the password requires at least one lower case letter. When the **Upper Case Letter** option is enabled, the password requires at least one upper case letter. When the **Digit** option is enabled, the password requires at least one numeric digit. When the **Special Character** option is enabled, the password requires at least one special character from the set: !"#$%&'()*+,-./:;<=>?@[\]^_`{|}~. When setting **Minimum Characters** for password length, Dell Technologies recommends setting the minimum password length to at least eight characters. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Password Bypass	The **Password Bypass** option allows the computer to reboot from the operating system without entering the system or hard drive password. If the computer has already booted to the operating system, it is presumed that the user has already entered the correct system or hard drive password. **NOTE:** This option does not remove the requirement to enter the password after shutting down. By default, the **Password Bypass** option is disabled. For additional security, Dell Technologies recommends keeping the **Password Bypass** option enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Password Changes	
Allow Non-Admin Password Changes	The **Allow Non-Admin Password Changes** option in BIOS Setup allows an end user to set or change the system or hard drive passwords without entering the administrator password. This gives an administrator control over the BIOS settings but enables an end user to provide their own password.

Table 44. System Setup options—Passwords menu (continued)

Passwords	
	By default, the **Allow Non-Admin Password Changes** option is enabled. For additional security, Dell Technologies recommends keeping the **Allow Non-Admin Password Changes** option disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Non-Admin Setup Changes	The **Non-Admin Setup Changes** option allows an end user to configure the wireless devices without requiring the administrator password. By default, the **Non-Admin Setup Changes** option is disabled. For additional security, Dell Technologies recommends keeping the **Non-Admin Setup Changes** option disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable Admin Setup Lockout	The **Admin Setup Lockout** option prevents an end user from even viewing the BIOS Setup configuration without first entering the administrator password (if set). By default, the **Enable Admin Setup Lockout** option is disabled. For additional security, Dell Technologies recommends keeping the **Admin Setup Lockout** option disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable Master Password Lockout	The **Master Password Lockout** option allows you to disable the Recovery Password feature. If the system, administrator, or hard drive password is forgotten, the computer becomes unusable. **NOTE:** When the owner password is set, the Master Password Lockout option is not available. **NOTE:** When an internal hard drive password is set, it must first be cleared before Master Password Lockout can be changed. By default, the **Enable Master Password Lockout** option is disabled. Dell Technologies does not recommend enabling the **Master Password Lockout** unless you have implemented your own password recovery system. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable Allow Non-Admin PSID Revert	The **Allow Non-Admin PSID Revert** option allows a user to clear the hard drive password without entering the BIOS Admin Password. When an Admin Password is set, the ability to enter the PSID is protected by requiring authentication with the Admin Password. If this option is enabled, any user can clear the drive without entering the Admin Password. By default, the **Enable Allow Non-Admin PSID Revert** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 45. System Setup options—Update, Recovery menu

Update, Recovery	
UEFI Capsule Firmware Updates	
Enable UEFI Capsule Firmware Updates	Enables or disables BIOS updates through UEFI capsule update packages.

Table 45. System Setup options—Update, Recovery menu (continued)

Update, Recovery	
	NOTE: Disabling this option blocks the BIOS updates from services such as Microsoft Windows Update and Linux Vendor Firmware Service (LVFS). By default, the **Enable UEFI Capsule Firmware Updates** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
BIOS Recovery from Hard Drive	Enables or disables the user to recover from certain corrupted BIOS conditions from a recovery file on the user primary hard drive or an external USB drive. By default, the **BIOS Recovery from Hard Drive** option is enabled. **NOTE:** BIOS Recovery from Hard Drive is not available for self-encrypting drives (SED). **NOTE:** BIOS recovery is designed to fix the main BIOS block and cannot work if the Boot Block is damaged. In addition, this feature cannot work in the event of EC corruption, ME corruption, or a hardware issue. The recovery image must exist on an unencrypted partition on the drive. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
BIOS Downgrade	
Allow BIOS Downgrade	Allows downgrading of the system firmware to previous revisions. By default, the **Allow BIOS Downgrade** option is enabled.
SupportAssist OS Recovery	Enables or disables the boot flow for SupportAssist OS Recovery tool if certain system errors occur. By default, the **SupportAssist OS Recovery** option is enabled.
BIOSConnect	Enables or disables cloud service operating system recovery if the main operating system fails to boot with the number of failures equal to or greater than the value specified by the Auto operating system Recovery Threshold setup option and local service operating system does not boot or is not installed. By default, the **BIOSConnect** option is enabled.
Dell Auto OS Recovery Threshold	Allows the control of the automatic boot flow for the SupportAssist System Resolution Console and the Dell operating system Recovery Tool. By default, the **Dell Auto OS Recovery Threshold** value is set to **2**. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 46. System Setup options—System Management menu

System Management	
Service Tag	Displays the Service Tag of the computer.
Asset Tag	Creates a computer Asset Tag that an IT administrator can use to uniquely identify a particular computer. **NOTE:** Once set in the BIOS, the Asset Tag cannot be changed.
Wake on AC	Enables or disables the computer to turn on and go to boot when AC power is supplied to the computer. By default, the **Wake on AC** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 46. System Setup options—System Management menu (continued)

System Management	
Wake on LAN	Enables or disables the computer to turn on by a special LAN signal. By default, the **Wake on LAN** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Auto On Time	Enable to set the computer to turn on automatically every day or on a preselected date and time. This option can be configured only if the Auto On Time is set to Everyday, Weekdays, or Selected Days. By default, the **Auto On Time** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Intel AMT capability	Configure Intel Active Management Technology (AMT) options, which can be enabled, disabled, or restricted. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Diagnostics OS agent requests	Enable or disable the option for applications running in the operating system to run with preboot diagnostics on subsequent boots. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Power-On-Self-Test Automatic Recovery	Enable or disable the automatic recovery of the computer from no power or no-POST failure by applying mitigation steps. By default, the **Power-On-Self-Test Automatic Recovery** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 47. System Setup options—Keyboard menu

Keyboard	
Fn Lock Options	Enables or disables the Fn Lock option. By default, the **Fn Lock** option is enabled.
Lock Mode	By default, the **Lock Mode Secondary** option is enabled. With this option, the F1-F12 keys scan the code for their secondary functions.
Keyboard Illumination	Configures the operating mode of the keyboard illumination feature. By default, the **Bright** option is selected. Enables the keyboard illumination feature at 100% brightness level.
Keyboard Backlight Timeout on AC	Sets the timeout value for the keyboard backlight when an AC adapter is connected to the computer. By default, the **10 seconds** option is selected. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Keyboard Backlight Timeout on Battery	Sets the timeout value for the keyboard backlight when the computer is running only on the battery power. The keyboard backlight timeout value is only effective when the backlight is enabled. By default, the **10 seconds** option is selected. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 47. System Setup options—Keyboard menu (continued)

Keyboard	
Device Configuration HotKey Access	Allows you to control whether you can access device configuration screens through hotkeys during system startup. By default, the **Device Configuration HotKey Access** option is enabled. **NOTE:** This setting controls only the Intel RAID (CTRL+I), MEBX (CTRL+P), and LSI RAID (CTRL+C) Option ROMs. Other preboot Option ROMs, which support entry using a key sequence, are not affected by this setting. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 48. System Setup options—Pre-boot Behavior menu

Pre-boot Behavior	
Adapter Warnings	
Enable Dock Warning Messages	Enables the warning messages during boot when the adapters with less power capacity are detected. By default, the **Enable Dock Warning Messages** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Warnings and Errors	Enables or disables the action to be taken when a warning or error is encountered. By default, the **Prompt on Warnings and Errors** option is selected. Stop, prompt, and wait for user input when warnings or errors are detected. **NOTE:** Errors deemed critical to the operation of the computer hardware stop the functioning of the computer. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
USB-C Warnings	
Enable Dock Warning Messages	Enables the warning messages during boot when the USB-C adapters with less power capacity are detected. By default, the **Enable Dock Warning Messages** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Fastboot	Configure the speed of the UEFI boot process. By default, the **Thorough** option is selected. Performs complete hardware and configuration initialization during boot. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Extend BIOS POST Time	Sets the BIOS POST (Power-On Self-Test) load time. By default, the **0 seconds** option is selected. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
MAC Address Pass-Through	Replaces the external NIC MAC address (in a supported dock or dongle) with the selected MAC address from the computer. By default, the **System Unique MAC Address** option is selected.
Mouse/Touchpad	Defines how the computer handles mouse and touchpad input.

Table 48. System Setup options—Pre-boot Behavior menu (continued)

Pre-boot Behavior	
	By default, the **Touchpad and PS/2 Mouse** option is selected. Leaves the integrated touchpad that is enabled when an external PS/2 mouse is present. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Sign of Life	
Early Logo Display	Displays the Logo Sign of Life. By default, the **Early Logo Display** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Early Keyboard Backlight	Enables or disables the Keyboard Backlight Sign of Life. By default, the **Early Keyboard Backlight** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 49. System Setup options—Virtualization menu

Virtualization Support	
Intel Virtualization Technology	
Enable Intel Virtualization Technology (VT)	When enabled, the computer can run a Virtual Machine Monitor (VMM). By default, the **Enable Intel Virtualization Technology (VT)** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
VT for Direct I/O	
Enable Intel VT for Direct I/O	When enabled, the computer can perform Virtualization Technology for Direct I/O (VT-d). VT-d is an Intel method that provides virtualization for memory map I/O. By default, the **Enable Intel VT for Direct I/O** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Intel Trusted Execution Technology (TXT)	Specifies whether a measured Virtual Machine Monitor (MVMM) can use the additional hardware capabilities provided by Intel Trusted Execution Technology. The following must be enabled in order to enable Intel TXT - • Trusted Platform Module (TPM) • Intel Hyper-Threading • All CPU cores (Multi-Core Support) • Intel Virtualization Technology • Intel VT for Direct I/O By default, the **Intel Trusted Execution Technology (TXT)** option is disabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
DMA Protection	
Enable Pre-Boot DMA Support	Allows you to control the Pre-Boot DMA protection for both internal and external ports. This option does not directly enable DMA protection in the operating system.

Table 49. System Setup options—Virtualization menu (continued)

Virtualization Support	
	NOTE: This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi). By default, the **Enable Pre-Boot DMA Support** option is enabled. For additional security, Dell Technologies recommends keeping the **Enable Pre-Boot DMA Support** option enabled. **NOTE:** This option is provided only for compatibility purposes, since some older hardware is not DMA capable. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Enable OS Kernel DMA Support	Allows you to control the Kernel DMA protection for both internal and external ports. This option does not directly enable DMA protection in the operating system. For operating systems that support DMA protection, this setting indicates to the operating system that the BIOS supports the feature. **NOTE:** This option is not available when the virtualization setting for IOMMU is disabled (VT-d/AMD Vi). By default, the **Enable OS Kernel DMA Support** option is enabled. **NOTE:** This option is provided only for compatibility purposes, since some older hardware is not DMA capable. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 50. System Setup options—Performance menu

Performance	
Multi-Core Support	
Multiple Atom Cores	Change the number of Atom cores available to the operating system. The default value is set to the maximum number of cores. By default, the **All Cores** option is selected. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Intel SpeedStep	
Enable Intel SpeedStep Technology	Enables the computer to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production. By default, the **Enable Intel SpeedStep Technology** option is enabled. **NOTE:** To view this option, enable **Service** options as described in View Service options.
C-State Control	
Enable C-State Control	Enables or disables the ability of the CPU to enter and exit low-power state. When disabled, it disables all C-states. When enabled, it enables all C-states that the chipset or platform allows. By default, the **Enable C-State Control** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Intel Turbo Boost Technology	

Table 50. System Setup options—Performance menu (continued)

Performance	
Enable Intel Turbo Boost Technology	Enables or disables the Intel TurboBoost mode of the processor. When enabled, the Intel TurboBoost driver increases the performance of the CPU or graphics processor. By default, the **Enable Intel Turbo Boost Technology** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Intel Hyper-Threading Technology	
Enable Intel Hyper-Threading Technology	Enables or disables the Intel Hyper-Threading mode of the processor. When enabled, the Intel Hyper-Threading increases the efficiency of the processor resources when multiple threads run on each core. By default, the **Intel Hyper-Threading Technology** option is enabled. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Dynamic Tuning: Machine Learning	
Enable Dynamic Tuning: Machine Learning	Enables or disables operating system capability to enhance power tuning capabilities depending on the detected workloads. **NOTE:** This option is available for development only and is not customer visible. By default, the **Enable Dynamic Tuning: Machine Learning** option is enabled. **NOTE:** To view this option, enable **Service** options as described in View Service options.

Table 51. System Setup options—System Logs menu

System Logs	
BIOS Event Log	
Clear BIOS Event Log	Select the option to keep or clear BIOS events logs. By default, the **Keep Log** option is selected. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Thermal Event Log	
Clear Thermal Event Log	Select the option to keep or clear Thermal events logs. By default, the **Keep Log** option is selected. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
Power Event Log	
Clear Power Event Log	Select the option to keep or clear Power events logs. By default, the **Keep Log** option is selected. **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Updating the BIOS

Updating the BIOS in Windows

About this task

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

Steps

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

   NOTE: If you do not have the Service Tag, use the SupportAssist to automatically identify your computer. You can also use the product ID or manually browse for your computer model.

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

   For more information, search in the Knowledge Base Resource at Dell Support Site.

Updating the BIOS using the USB drive in Windows

About this task

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

Steps

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

   NOTE: If you do not have the Service Tag, use the SupportAssist to automatically identify your computer. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**. Expand **Find drivers**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. Create a bootable USB drive. For more information, search in the Knowledge Base Resource at Dell Support Site.
8. Copy the BIOS setup program file to the bootable USB drive.
9. Connect the bootable USB drive to the computer that needs the BIOS update.
10. Restart the computer and press **F12**.

11. Select the USB drive from the **One Time Boot Menu**.
12. Type the BIOS setup program filename and press **Enter**.
    The **BIOS Update Utility** appears.
13. Follow the on-screen instructions to complete the BIOS update.

Updating the BIOS from the One-Time boot menu

You can run the BIOS flash update file from Windows using a bootable USB drive or you can also update the BIOS from the One-Time boot menu on the computer. To update your computers BIOS, copy the BIOS XXXX.exe file onto a USB drive formatted with the FAT32 file system. Then, restart your computer and boot from the USB drive using the One-Time Boot Menu.

About this task

CAUTION: If BitLocker is not suspended before updating the BIOS, the next time you reboot the computer it will not recognize the BitLocker key. You will then be prompted to enter the recovery key to progress, and the computer will ask for this on each reboot. If the recovery key is not known this can result in data loss or an unnecessary operating system reinstall. For more information about this subject, search in the Knowledge Base Resource at Dell Support Site.

BIOS Update

To confirm if the BIOS Flash Update is listed as a boot option you can boot your computer to the **One Time Boot** Menu. If the option is listed, then the BIOS can be updated using this method.

To update your BIOS from the One-Time boot menu, you need the following:

- USB drive formatted to the FAT32 file system (the drive does not have to be bootable)
- BIOS executable file that you downloaded from the Dell Support website and copied to the root of the USB drive
- AC power adapter must be connected to the computer
- A functional computer battery to flash the BIOS

Perform the following steps to update the BIOS from the One-Time boot menu:

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

Steps

1. Turn off the computer, insert the USB drive that contains the BIOS flash update file.
2. Turn on the computer and press **F12** to access the **One Time Boot** Menu. Select **BIOS Update** using the mouse or arrow keys then press Enter.
   The flash BIOS menu is displayed.
3. Click **Flash from file**.
4. Select the external USB device.
5. Select the file and double-click the flash target file, and then click **Submit**.
6. Click **Update BIOS**. The computer restarts to flash the BIOS.
7. The computer will restart after the BIOS flash update is completed.

System and setup password

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

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

Table 52. System and setup password

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

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

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

Assigning a System Setup password

Prerequisites

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

Steps

1. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
   The **Security** screen is displayed.
2. Select **System/Admin Password** and create a password in the **Enter the new password** field.
   Use the following guidelines to create the system password:
   - A password can have up to 32 characters.
   - A password can at least have one special character: "(! " # $ % & ' * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | })"
   - A password can have numbers 0 to 9.
   - A password can have an upper case letters from A to Z.
   - A password can have a lower case letters from a to z.
3. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
4. Press Y to save the changes.
   The computer restarts.

Deleting or changing an existing system password or setup password

Prerequisites

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

Steps

1. 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 the **Password Status** is Unlocked.
3. Select **System Password**. Update or delete the existing system password, and press Enter or Tab.
4. Select **Setup Password**. Update or delete the existing setup password, and press Enter or Tab.

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

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

Clearing CMOS settings

About this task

CAUTION: Clearing CMOS settings resets the BIOS settings on your computer.

Steps

1. Remove the base cover.
2. Disconnect the battery cable from the system board.
3. Remove the coin-cell battery.
4. Wait for one minute.
5. Replace the coin-cell battery.
6. Connect the battery cable to the system board.
7. Replace the base cover.

Clearing system and setup passwords

About this task

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

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

9

Troubleshooting

Handling swollen rechargeable Li-ion batteries

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

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

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

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

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

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

Locating the Service Tag or Express Service Code of your Dell computer

Your Dell computer is uniquely identified with a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, we recommend entering the Service Tag or Express Service Code at Dell Support Site.

For more information about how to find the Service Tag for your computer, see Instructions on how to find your Service Tag or Serial Number.

Dell SupportAssist Pre-boot System Performance Check diagnostics

About this task

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

- Run tests automatically or in an interactive mode.
- Repeat the tests.
- Display or save test results.
- Run thorough tests to add more options and obtain details about any failed devices.
- View status messages that inform you when the tests are completed successfully.
- View error messages that inform you of problems encountered during testing.

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

For more information, see the knowledge base article 000181163.

Running the SupportAssist Pre-Boot System Performance Check

Steps

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

Built-in self-test (BIST)

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

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

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

How to run M-BIST

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

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

Table 53. LED error codes

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

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

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

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

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

How to invoke the L-BIST

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

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

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

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

How to invoke the LCD-BIST

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

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

System-diagnostic lights

This section lists the system-diagnostic lights of your Latitude 7350.

Table 54. System-diagnostic lights

Blinking pattern		Problem description
Amber	**White**	
1	1	TPM detection failure
1	2	Unrecoverable SPI Flash Failure
1	5	EC unable to program i-Fuse
1	6	Generic catch-all for ungraceful EC code flow errors
2	1	CPU failure
2	2	System board failure (included BIOS corruption or ROM error)
2	3	No memory or RAM detected
2	4	Memory or RAM failure
2	5	Invalid memory installed
2	6	System board or Chipset Error
2	7	LCD failure (SBIOS message)
2	8	LCD failure (EC detection of power rail failure)
3	1	CMOS battery failure
3	2	PCI or Video card or chip failure
3	3	BIOS Recovery image not found
3	4	BIOS Recovery image found but invalid
3	5	Power rail failure
3	6	Flash corruption is detected by SBIOS.
3	7	Timeout waiting on ME to reply to HECI message.

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

Recovering the operating system

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

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

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

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

Recovering the operating system

If your Chromebook operating system is malfunctioning, you can recover it by removing and installing the operating system.

To know how to recover your Chromebook operating system, see Recover your Chromebook at Chromebook Help page.

Real-Time Clock (RTC Reset)

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

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

Backup media and recovery options

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

Network power cycle

About this task

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

Steps

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

Drain flea power (perform hard reset)

About this task

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

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

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

Perform the following steps to drain the flea power:

Steps

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

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

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

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

10

Getting help and contacting Dell

Self-help resources

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

Table 55. Self-help resources

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

Contacting Dell

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

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

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