Latitude 7350 Detachable

Owner's Manual

DELLTechnologies

Notes, cautions, and warnings

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

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

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

Contents

Views of Latitude 7350 Detachable

Right

Figure 1. Right view

1. **Thunderbolt 4.0 port with Power Delivery and DisplayPort**

   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.

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

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

   > (i) **NOTE:** USB4 is backward compatible with USB 3.2, USB 2.0, and Thunderbolt 3.

   > (i) **NOTE:** Thunderbolt 4 supports two 4K displays or one 8K display.

2. **Nano-SIM card slot (optional)**

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

   > (i) **NOTE:** Availability of the nano-SIM card slot depends on the region and configuration ordered.

Left
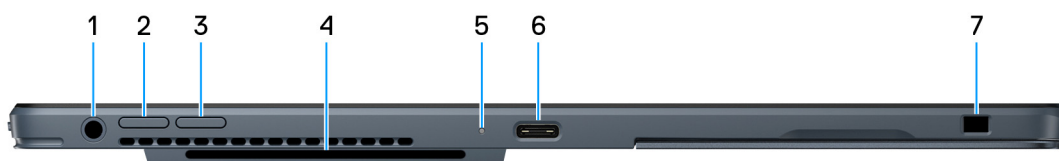
Figure 2. Left view

1. **Universal audio port**

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

2. **Increase-volume button**

   Press to increase the volume.

3. **Decrease-volume button**

   Press to decrease the volume.

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

Using smart card provides authentication in corporate networks.

(i) **NOTE:** Availability of the smart-card reader slot depends on the region and configuration ordered.

5. **Power and battery-status/Diagnostics light**

Indicates the power state and battery state of the computer.

Solid white—Power adapter is connected and the battery is charging.

Solid amber—Battery charge is low or critical.

Off—Battery is fully charged.

(i) **NOTE:** For more information about diagnostic lights and codes, see the *Troubleshooting* section in your computer's *Owner's Manual*.

6. **Thunderbolt 4.0 port with Power Delivery and DisplayPort**

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.

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

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

(i) **NOTE:** USB4 is backward compatible with USB 3.2, USB 2.0, and Thunderbolt 3.

(i) **NOTE:** Thunderbolt 4 supports two 4K displays or one 8K display.

7. **Security-cable slot**

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

Top

Figure 3. Top view

1. **Power button**

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

Press to put the computer in sleep state if it is turned on.

Press and hold to force shut-down the computer.

Front

Figure 4. Front view

1. **Ambient-light sensor**

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

2. **RGB camera**

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

3. **Infrared camera**

   Enhances security when paired with Windows Hello face authentication.

4. **Camera-status light**

   Turns on when the camera is in use.

5. **Infrared emitter**

   The infrared emitter emits infrared light, which enables the infrared camera to sense and track motion.

Back
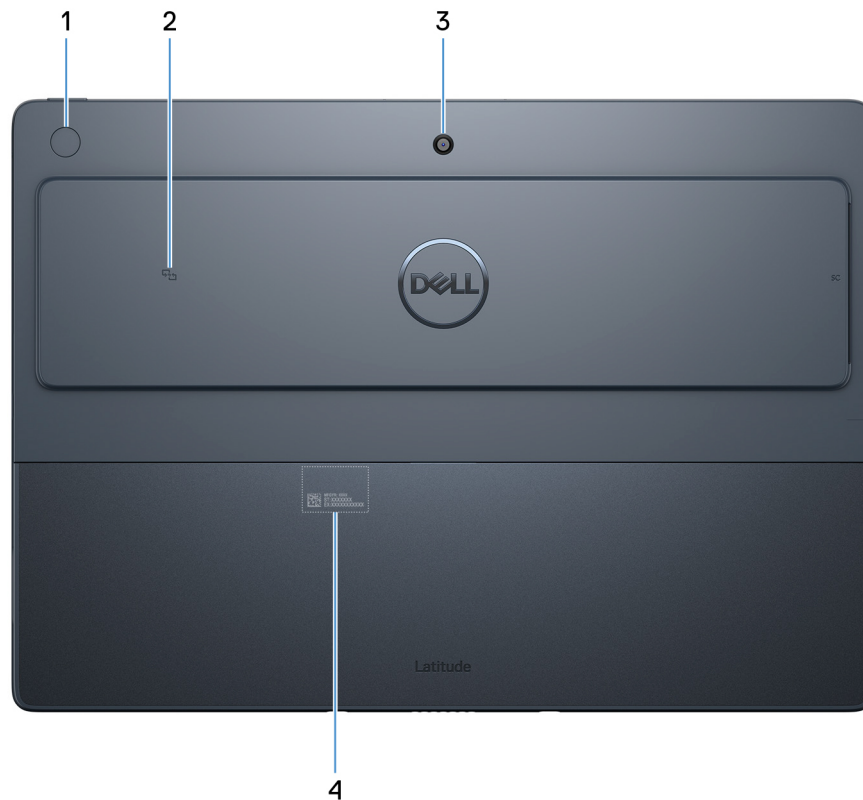
Figure 5. Back view

1. **Fingerprint reader (Optional)**

   Press your finger on the fingerprint reader to log in to your computer. The fingerprint reader enables your computer to recognize your fingerprints as a password.

   ⓘ **NOTE:** Configure the fingerprint reader to register your fingerprint and enable access.

2. **NFC-sensor area (Optional)**

   Enables NFC-enabled devices to communicate with your computer.

3. **8MP RGB rear camera with auto focus**

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

4. **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.

   ⓘ **NOTE:** The Service Tag label is located beneath the kick stand. Open the kick stand to view the Service Tag label.

Bottom
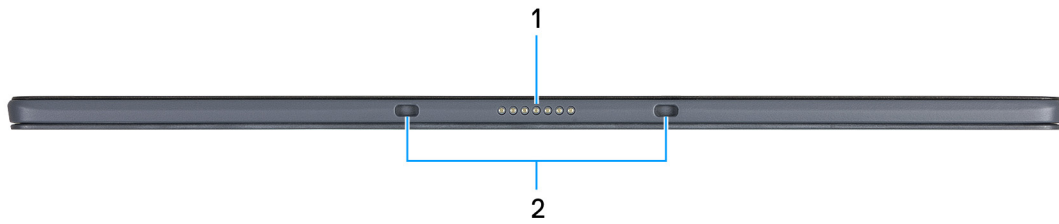
Figure 6. Bottom view

1. **Pogo connector**

   Connect the computer to the Latitude 7350 Detachable Collaboration Keyboard (sold separately).

2. **Keyboard docking guide holes**

   Connect the computer to the Latitude 7350 Detachable Collaboration Keyboard (sold separately).

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 7. Service Tag location

Battery charge and status light

The following table lists the battery charge and status light behavior of your Latitude 7350 Detachable.

Table 1. Battery charge and status light behavior

Power Source	LED Behavior	System Power State	Battery Charge Level
AC Adapter	Off	S0 - S5	Fully Charged
AC Adapter	Solid White	S0 - S5	< Fully Charged
Battery	Off	S0 - S5	11-100%
Battery	Solid Red (590+/-3 nm)	S0 - S5	< 10%

- S0 (ON) - System is turned on.
- S4 (Hibernate) - The system consumes the least power compared to all other sleep states. The system is almost at an OFF state, except for a trickle power. The context data is written to a hard drive.
- S5 (OFF) - The system is in a shutdown state.

Set up your Latitude 7350 Detachable

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 8. Connect the power adapter and press the power button

> ⓘ **NOTE:** If you have purchased this computer without a power adapter, connect your computer to a compatible, Dell-branded power adapter. For more information about the power requirements of your computer, see Power requirements of Latitude 7350 Detachable.

> ⓘ **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.
   - 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 the Windows operating system. For more information, see *SupportAssist for Business PCs* manuals at the SupportAssist for Business PCs Site. (i) **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 the 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 the Dell Support Site.

Attach the Latitude 7350 Detachable Collaboration Keyboard

About this task

(i) **NOTE:** These instructions apply only if you are connecting your computer to a Latitude 7350 Detachable Collaboration Keyboard (sold separately).

Steps

1. Lower the computer onto the keyboard as shown. Ensure the pogo connectors on the computer and keyboard are aligned and firmly attached.

   (i) **NOTE:** Your computer powers the Latitude 7350 Detachable Collaboration Keyboard when it is attached. The keyboard does not require separate charging.

2. Adjust the kick stand on the computer into a preferred position.

Figure 9. Attaching the Latitude 7350 Detachable Collaboration Keyboard

(i) **NOTE:** For a stable and comfortable typing experience, place the computer on a flat surface when in use.

(i) **NOTE:** Use a damp cloth or wet wipes with 50% alcohol or less to clean off any dust on the Latitude 7350 Detachable Collaboration Keyboard.

Docking and charging the Latitude 7350 Detachable Active Pen

(i) **NOTE:** These instructions apply only if you are connecting a Latitude 7350 Detachable Active Pen (sold separately) to your computer.

1. To charge the pen, align the connectors on the pen with the connectors on the Latitude 7350 Detachable Keyboard and dock it into the slot.

Figure 10. Docking the Latitude 7350 Detachable Active Pen

2. The LED indicator on the Latitude 7350 Detachable Active Pen lights up during charging and turns off when the pen is fully charged.

Figure 11. Charging the Latitude 7350 Detachable Active Pen

ⓘ **NOTE:** For more information about using the pen, see the *Latitude 7350 Detachable Active Pen User's Guide* available with your product documentation at the Dell Support Site.

Specifications of Latitude 7350 Detachable

Dimensions and weight

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

Table 3. Dimensions and weight

Description	Values
Height:	
Front height	- Without Smart Card reader: 8.93 mm (0.35 in.) - With Smart Card reader: 12.13 mm (0.48 in.)
Rear height	- Without Smart Card reader: 8.93 mm (0.35 in.) - With Smart Card reader: 12.13 mm (0.48 in.)
Width	- Without Smart Card reader: 292.94 mm (11.53 in.) - With Smart Card reader: 292.94 mm (11.53 in.)
Depth	- Without Smart Card reader: 207.78 mm (8.18 in.) - With Smart Card reader: 207.78 mm (8.18 in.)
Weight ⓘ **NOTE:** The weight of your computer depends on the configuration that is ordered and manufacturing variability.	- Without Smart Card reader: 0.79 kg (1.76 lb) - With Smart Card reader: 0.86 kg (1.89 lb)

Processor

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

Table 4. Processor

Description	Option one	Option two
Processor type	Intel Core Ultra 5 134U	Intel Core Ultra 7 164U
Processor wattage	9 W	9 W
Processor total core count	12	12
Performance-cores	2	2
Efficient-cores	8	8
Processor total thread counts ⓘ **NOTE:** Intel Hyper-Threading Technology is only available on Performance-cores.	14	14
Processor speed	Up to 4.4 GHz	Up to 4.8 GHz
Performance-cores frequency		
Processor base frequency	0.7 GHz	1.1 GHz
Maximum turbo frequency	4.4 GHz	4.8 GHz
Efficient-cores frequency		
Processor base frequency	0.5 GHz	0.7 GHz
Maximum turbo frequency	3.6 GHz	3.8 GHz
Processor cache	12 MB	12 MB
Integrated graphics	Intel Graphics	Intel Graphics

Chipset

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

Table 5. Chipset

Description	Values
Chipset	Integrated in the processor
Processor	Intel Core Ultra 5/7 processors
DRAM bus width	16-bit
Flash EPROM	512 MB
PCIe bus	12 lanes

Operating system

Your Latitude 7350 Detachable supports the following operating systems:

● Windows 11 Home

● Windows 11 Professional

Memory

The following table lists the memory specifications of your Latitude 7350 Detachable.

Table 6. Memory specifications

Description	Values
Memory slots	Onboard
Memory type	Dual-channel, LPDDR5, LPDDR5x
Memory speed	6400 MT/s
Maximum memory configuration	32 GB
Minimum memory configuration	8 GB
Memory configurations supported	● 8 GB: LPDDR5, 6400 MT/s, dual-channel (onboard) ● 16 GB: LPDDR5x, 6400 MT/s, dual-channel (onboard) ● 32 GB: LPDDR5x, 6400 MT/s, dual-channel (onboard) ⓘ **NOTE:** Supported memory options may differ depending on the configurations that are offered in your region.

External ports and slots

The following table lists the external ports on your Latitude 7350 Detachable.

Table 7. External ports and slots

Description	Values
USB ports	● 2 Thunderbolt 4 (40 Gbps) ports with DisplayPort Alt Mode/USB Type-C/USB4/Power Delivery 3.0 ⓘ **NOTE:** You can connect a Dell Docking Station to this port. For more information, search in the Knowledge Base Resource at the Dell Support Site.
Audio port	One Universal audio port
Video port(s)	N/A
Media-card reader	N/A
Power-adapter port	USB Type-C power input
Security-cable slot	One wedge-shaped lock slot
SIM-card slot	nano-SIM slot

Internal slots

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

Table 8. Internal slots

Description	Values
M.2	- One M.2 2230 PCIe x4 - One M.2 3042 WWAN card (Optional) (i) **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 Detachable.

Table 9. Wireless module specifications

Description	Values
Model number	Intel BE200
Transfer rate	Up to 5760 Mbps
Frequency bands supported	2.4 GHz/5 GHz/6 GHz
Wireless standards	- WiFi 802.11a/b/g - Wi-Fi 4 (WiFi 802.11n) - 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
	(i) **NOTE:** The version of the Bluetooth wireless card may vary depending on the operating system that is installed on your computer.

WWAN module

The following table lists the Wireless Wide Area Network (WWAN) module supported on your Latitude 7350 Detachable.

(i) **NOTE:** This module is only available on computers that support WWAN.

(i) **NOTE:** Availability of the eSIM feature on this module is dependent on your region and your mobile carrier's requirements.

(i) **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 the Dell Support Site.

Table 10. WWAN module specifications

Description	Values
Model number	Qualcomm Snapdragon X62 Global 5G Modem (DW5932e)
Form Factor	M.2 3042 Key-B
Host Interface	PCIe Gen3
Network Standard	NR FR1 (Sub6) FDD/TDD, LTE FDD/TDD, WCDMA/HSPA+, GPS/GLONASS/Galileo/Beidou
Transfer data rate	5G NR: DL 3.5 Gbps/ UL 900 Mbps - LTE: DL 1.6 Gbps (CAT19)/ UL 211 Mbps (CAT18) - UMTS: DL DC-HSPA+ Rel8:42 Mbps / UL 5.76 Mbps
Operating Frequency Bands	- NR (n1, n2, n3, n5, n7, n8, n20, n25, n28, n30, n38, n40, n41, n48, n66, n71, 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) *Modem hardware supports but currently disabled
Power supply	DC 3.135 V to 3.63 V, Typical 3.3 V
SIM card	Supported through external SIM slot
eSIM with Dual SIM (DSSA)	Optional (i) **NOTE:** The availability of optional eSIM functionality embedded on the module is dependent on the region and specific carrier requirements.
Antenna Diversity	Supported
Radio On/Off	Supported
Wake On Wireless	Supported
Temperature	- Normal operating temperature: -10°C to +55°C - Extended Operating temperature: -30°C to +75°C - Storage temperature: -40°C to +85°
Antenna connector	- WWAN main antenna x 1 - WWAN diversity antenna x 1 4x4 MIMO antenna x 2

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

Audio

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

Table 11. Audio specifications

Description	Values
Audio controller	Realtek ALC713 + ALC1318

Table 11. Audio specifications (continued)

Description	Values
Stereo conversion	Supported
Internal audio interface	Soundwire ACX
External audio interface	• One Universal audio port • Two Thunderbolt 4 ports
Number of speakers	2
Internal-speaker amplifier	Supported
External volume controls	• Volume-control buttons on chassis • Shortcuts on Latitude 7350 Detachable Collaboration Keyboard (sold separately)
Speaker output:	
	Average speaker output	2 W
	Peak speaker output	4 W
Subwoofer output	Not supported
Microphone	Digital-array microphones

Storage

This section lists the storage options on your Latitude 7350 Detachable.

Your Latitude 7350 Detachable supports one M.2 2230 solid-state drive.

Table 12. Storage specifications

Storage type	Interface type	Capacity
M.2 2230, Class 35 solid-state drive	PCIe Gen 4 x4, up to 64 Gbps	256 GB
M.2 2230, Class 35 solid-state drive	PCIe Gen 4 x4, up to 64 Gbps	512 GB
M.2 2230, Class 35 solid-state drive	PCIe Gen 4 x4, up to 64 Gbps	1 TB
M.2 2230, Class 25 solid-state drive	PCIe Gen 4 x4, up to 64 Gbps	2 TB
M.2 2230, Class 35 solid-state drive (self-encrypting)	PCIe Gen 4 x4, up to 64 Gbps	512 GB

Camera

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

Table 13. Camera specifications

Description	Values
Number of cameras	Two

Table 13. Camera specifications (continued)

Description		Values
Camera type		- World-facing camera: RGB camera - User-facing camera: RGB and IR camera
Camera location		- World-facing camera - User-facing camera
Camera sensor type		CMOS sensor technology
Camera resolution:		
	Still image	- World-facing camera: 3264 x 2448p (8 megapixels) - User-facing camera: 3840 x 2160p (8 megapixels)
	Video	- World-facing camera: 3264 x 2448p at 30 fps - User-facing camera (with Windows Studio Effects enabled): 2560 x 1440p at 30 fps (i) **NOTE:** Windows Studio Effects is enabled in Windows 11 by default.
Infrared camera resolution:		
	Still image	640 x 480p (0.30 megapixels)
	Video	640 x 480p at 15 fps
Diagonal viewing angle:		
	Camera	- World-facing camera: 77.30 degrees - User-facing camera: 88.10 degrees
	Infrared camera	77.30 degrees

Power adapter

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

Table 14. Power adapter specifications

Description		Option one	Option two
Type		60 W adapter, USB-C	65 W adapter, USB-C
Power-adapter dimensions:			
	Height	22 mm (0.86 in.)	28 mm (1.10 in.)
	Width	55 mm (2.16 in.)	51 mm (2.01 in.)
	Depth	66 mm (2.59 in.)	112 mm (4.41 in.)
Input voltage		100 VAC-240 VAC	100 VAC-240 VAC
Input frequency		50 Hz-60 Hz	50 Hz-60 Hz
Input current (maximum)		1.70 A	1.70
Output current (continuous)		20 V/3 A (continuous)	20 V/3.25 A (continuous)

Table 14. Power adapter specifications (continued)

Description		Option one	Option two
		• 15 V/3 A (continuous) • 9 V/3 A (continuous) • 5 V/3 A (continuous)	• 15 V/3 A (continuous) • 9 V/3 A (continuous) • 5 V/3 A (continuous)
Rated output voltage		• 20 VDC • 15 VDC • 9 VDC • 5 VDC	• 20 VDC • 15 VDC • 9 VDC • 5 VDC
Temperature range:			
	Operating	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 (-4°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 of Latitude 7350 Detachable

The following image is a pictogram of the power adapter requirements of your Latitude 7350 Detachable.

Power adapter requirements of Latitude 7350 Detachable
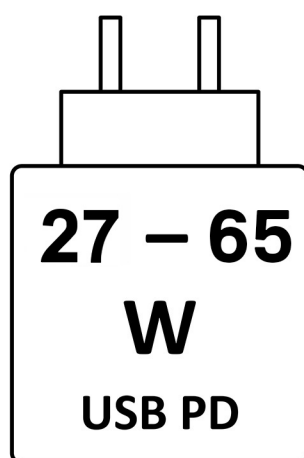
Figure 12. Pictogram of power adapter requirements

Table 15. Description of power adapter requirements

Value	Description
65 W	Power that is required from a power adapter to achieve the maximum charging speed.
Below 45 W	The computer charges at a lower speed with this power supply. ⓘ **NOTE:** A warning message may appear informing you about the use of a lower-powered adapter and slower charging speed.

Table 15. Description of power adapter requirements (continued)

Value	Description
27 W	Minimum power that is required from a power adapter to operate the computer and charge the battery. ⓘ **NOTE:** A warning message may appear informing you about the use of a lower-powered adapter and slower charging speed.
USB PD	USB Power Delivery (PD) fast charging is supported. ⓘ **NOTE:** Ensure that the computer is connected to a 65 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 pressing **Enter**.

Battery

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

Table 16. Battery specifications

Description		Option one	Option two
Battery type		3-cell, 46.5 Whr, "smart" lithium-ion (Polymer), ExpressCharge and ExpressCharge Boost	3-cell, 46.5 Whr, "smart" lithium-ion (Polymer), ExpressCharge and ExpressCharge Boost, Long Cycle Life
Battery voltage		11.55 VDC	11.55 VDC
Battery weight (maximum)		0.19 kg (0.41 lb)	0.19 kg (0.41 lb)
Battery dimensions:			
	Height	4.21 mm (0.16 in.)	4.21 mm (0.16 in.)
	Width	250.16 mm (9.85 in.)	250.16 mm (9.85 in.)
	Depth	86.73 mm (3.41 in.)	86.73 mm (3.41 in.)
Temperature range:			
	Operating	• Charge: 0°C to 50°C (32°F to 122°F) • Discharge: 0°C to 60°C (32°F to 140°F)	• Charge: 0°C to 50°C (32°F to 122°F) • Discharge: 0°C to 60°C (32°F to 140°F)
	Storage	-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.
Battery charging time (approximate) ⓘ **NOTE:** Control the charging time, duration, start and end time, and so on, using the settings on the MyDell application (Power option). For more information about MyDell		Express Charge Method: • 0% to 80% in one hour Standard Charge/Predominately AC User Charge Method: • 0% to 100% in three hours	Express Charge Method: • 0% to 80% in one hour Standard Charge/Predominately AC User Charge Method: • 0% to 100% in three hours

Table 16. Battery specifications (continued)

Description	Option one	Option two
application, search in the Knowledge Base Resource at Dell Support Site.	Express Charge Boost Charge Method (Fast Charge for Initial 35%): ● 0% to 35% in 20 minutes	Express Charge Boost Charge Method (Fast Charge for Initial 35%): ● 0% to 35% in 20 minutes
Coin-cell battery	N/A	N/A

⚠️ **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 Technologies recommends that you charge the battery regularly for optimal power consumption.**

Display

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

Table 17. Display specifications

Description		Values
Display type		3K2K
Touch options		Touch support
Display-panel technology		QHD+
Display-panel dimensions (active area):		
	Height	273.89 mm (10.78 in.)
	Width	182.59 mm (7.19 in.)
	Diagonal	329.17 mm (12.96 in.)
Display-panel native resolution		2880 x 1920
Luminance (typical)		500 nits
Megapixels		5.5
Color gamut		sRGB 100% (typical)
Pixels Per Inch (PPI)		267
Contrast ratio (minimum)		1200
Response time (maximum)		35 milliseconds
Refresh rate		60 Hz
Horizontal view angle		88 +/- degrees
Vertical view angle		88 +/- degrees
Pixel pitch		0.09 mm (0.004 in.)
Power consumption (maximum)		3.34 W

Table 17. Display specifications (continued)

Description	Values
Anti-glare vs glossy finish	Glare

Fingerprint reader

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

Table 18. Fingerprint reader specifications

Description	Values
Fingerprint-reader sensor technology	Capacitive
Fingerprint-reader sensor resolution	500 dpi
Fingerprint-reader sensor pixel size	108 x 88

GPU—Integrated

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

Table 19. GPU—Integrated

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

External display support

The following table lists the external display support for your Latitude 7350 Detachable.

Table 20. External display support

Graphics card	Supported external displays with laptop display enabled	Supported external displays with laptop display disabled
Intel Graphics	2	2
ⓘ **NOTE:** For more information about external display support, see the *External Display Connection Guide* on Dell Support Site.		

Hardware security

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

Table 21. Hardware security

Hardware security
Face IR camera (Windows Hello-compliant) with ExpressSign-in 1.0 (Proximity Sensor), ExpressSign-in 2.0 (Camera Sensing)
Optional Windows Hello-compliant Fingerprint Reader
Optional Contacted Smartcard Reader and Contactless NFC Reader

Table 21. Hardware security (continued)

Hardware security
Optional 512 GB, M.2 2230, PCIe Gen 3, Self-Encrypting, Class 35
Wedge-shaped lock slot

Smart-card reader

Contactless smart-card reader

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

Table 22. Contactless smart-card reader specifications

Title	Description	Dell ControlVault 3 Plus 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
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 operating system to utilize	Yes
PC/SC OS interface	Personal Computer/Smart Card specification for integration of hardware readers into personal computer environments	Yes

Table 22. Contactless smart-card reader specifications (continued)

Title	Description	Dell ControlVault 3 Plus contactless smart-card reader with NFC
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for operating system level drivers	Yes
Dell ControlVault support	The device connects to Dell ControlVault for usage and processing	Yes

ⓘ **NOTE:** 125 Khz proximity cards are not supported.

Table 23. Contactless card types supported

Interface	Card type	Supported functionality
NFC Forum (Microsoft Proximity Device)	Type 1 tag	Read/Write NDEF
	Type 2 tag	Read/Write NDEF
	Type 3 tag	Read/Write NDEF
	Type 4 tag	Read/Write NDEF
	Type 5 tag	Read/Write NDEF
	P2P	Exchange NDEF
RFID (Microsoft Smartcard Device)	ISO14443A	Read UUID and APDU Exchange (ISO7816)
	ISO14443B	Read UUID and APDU Exchange (ISO7816)
	Sony FeliCa	Read UUID only
	Legacy iClass (ISO15693)	Read UUID only
	Mifare Classic	Read UUID only
	Low Frequency (125 KHz)	Not supported

Table 24. 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
	Mifare M1P 1430 NGGNN
	iclass Prox 2020BGGMNM
	DesFire D8P 1456CSGMN

Table 24. Supported cards (continued)

Manufacturer	Card
	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 card
	Mifare Classic 1K White PVC card
	NXP Mifare Classic S50 ISO card
	Mifare DESFire 2K
	Mifare Plus S 2K/4K
	Mifare Plus X 4K
G&D	idOnDemand - SCE3.2 144K
	SCE6.0 FIPS 80K Dual + 1K Mifare
	SCE6.0 nonFIPS 80K Dual + 1K Mifare
	SCE6.0 FIPS 144K Dual + 1K Mifare
	SCE6.0 nonFIPS 144K Dual + 1K 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
	Felica RC-S965
	Felica RC-S966
PIVKey	C910 PKI

Table 24. Supported cards (continued)

Manufacturer	Card
NIST	PIV1
IDENTIV	PIV programmed cards
	uTrust
Transport cards	Oyster (London) MIFARE DESFire
	T-Money (Korea)
	Octopus Card (Hong Kong)
	SUICA (Japan)

Table 25. Qualified NFC tags

NFC tag	Supported
Tap and do - NFC Forum Type 1 Tag - Topaz 512 (BCM920203)	Yes
Tap and do - NFC Forum Type 1 Tag - Topaz 512 (BCM20203T512)	Yes
Tap and do - NFC Forum Type 1 Tag - Topaz (BCM20203T96)	Yes
Tap and do - NFC Forum Type 2 Tag - Mifare UltraLight	Yes
Tap and do - NFC Forum Type 2 Tag - Mifare UltraLight C	Yes
Tap and do - NFC Forum Type 2 Tag - NTAG203	Yes
Tap and do - NFC Forum Type 3 Tag - FeliCa Lite RC-S965	Yes
Tap and do - NFC Forum Type 3 Tag - FeliCa RC-S962	Yes
Tap and do - NFC Forum Type 4 Tag - Mifare DESFire EV1Card 2K	Yes
Tap and do - NFC Forum Type 4 Tag - Mifare DESFire EV1Card 4K	Yes
Tap and do - NFC Forum Type 4 Tag - Mifare DESFire EV1Card 8K	Yes
Tap and do - ISO 15693 - Tag-it Plus	Yes
HID I-code ISO card	Yes

Contacted smart-card reader

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

Table 26. Contacted smart-card reader specifications

Title	Description	Dell ControlVault 3 Plus smart-card reader
ISO 7816 -3 Class A card support	Reader capable of reading 5 V powered smart card	Yes
ISO 7816 -3 Class B card support	Reader capable of reading 3 V powered smart card	Yes
ISO 7816 -3 Class C card support	Reader capable of reading 1.8 V powered smart card	Yes
ISO 7816-1 compliant	Specification for the reader	Yes

Table 26. Contacted smart-card reader specifications (continued)

Title	Description	Dell ControlVault 3 Plus smart-card reader
ISO 7816 -2 compliant	Specification for smart card device physical characteristics (size, location of connection points, so on)	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 operating system interface	Personal Computer or 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
Windows certified	Device certified by WHCK	Yes
FIPS 201 (PIV/HSPD-12) compliant	Device compliant with FIPS 201/PIV/ HSPD-12 requirements	Yes
ISO 7816-1 compliant	Specification for the physical characteristics of integrated circuit cards with contacts	Yes
ISO 7816-2 compliant	Specification for the dimensions and location of the contacts	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

Keyboard

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

Table 27. Keyboard specifications

Description	Values
Keyboard type	Latitude 7350 Detachable Collaboration Keyboard with AI hot-key. ⓘ **NOTE:** Copilot in Windows is available only in approved markets. ⓘ **NOTE:** The Latitude 7350 Detachable Collaboration Keyboard is sold separately.
Keyboard layout	QWERTY
Number of keys	● English US, English International, Canada (Bilingual): 80 keys

Table 27. Keyboard specifications (continued)

Description	Values
	• English UK: 81 keys • Japanese: 84 keys
Keyboard size	X=19.05 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. ⓘ **NOTE:** You can define the primary behavior of the function keys (F1–F12) changing **Function Key Behavior** in BIOS setup program. ⓘ **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 Resource at the Dell Support site.

Keyboard shortcuts of Latitude 7350 Detachable

ⓘ **NOTE:** The Latitude 7350 Detachable Collaboration Keyboard is sold separately.

ⓘ **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 on 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 primary behavior of the function keys (F1–F12) by changing **Function Key Behavior** in BIOS setup program.

Table 28. List of keyboard shortcuts

Key	Primary 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 Resource at the Dell Support Site.
F1	Mute audio
F2	Decrease volume
F3	Increase volume
F4	Mute microphone

Table 28. List of keyboard shortcuts (continued)

Key	Primary behavior
F5	Toggle to cycle the keyboard backlight status through off, low-backlight, and high-backlight.
F6	Decrease display brightness
F7	Increase display brightness
F8	Switch to external display
F10	Print screen
F12	Insert

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

Table 29. Secondary behavior

Function key	Secondary 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 + Ctrl	Open the application menu
Fn + Esc	Toggle Fn-key lock
Fn + Up arrow	Page up
Fn + Down arrow	Page down

Clickpad

The following table lists the clickpad specifications of your Latitude 7350 Detachable Keyboard (sold separately).

Table 30. 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. 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 ambient light.

Table 30. Clickpad specifications (continued)

Description	Values
	● 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 and higher ● Zoom Client Version 5.9.3 and higher ● Teams for work or school (Windows desktop) ● Classic Teams: Version 1.6.00.24078 and higher ● New Teams: Version 23285.3607.2525.937 and higher
Clickpad resolution:	
Horizontal	2622 DPI
Vertical	1301 DPI
Clickpad dimensions:	
Horizontal	114 mm (4.49 in.)
Vertical	60 mm (2.36 in.)
Clickpad gestures	For more information about clickpad gestures available on Windows, see the Microsoft Knowledge Base article at the Microsoft Support Site.

(i) **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 the Dell Support Site.

(i) **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 the Dell Support Site. Or, watch the video at Dell Collaboration Touchpad Site.

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

Operating and storage environment

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

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 (-49.87 ft to 10,000 ft)	-15.2 m to 10,668 m (-49.87 ft to 35,000 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.

Low blue light

⚠ **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 displays.

Low blue light 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

This section provides the Dell Optimizer specifications of your Latitude 7350 Detachable.

On Latitude 7350 Detachable with Dell Optimizer, the following features are supported:
- **ExpressConnect**—Automatically joins the access point with the strongest signal, and directs bandwidth to conferencing applications when in use.
- **ExpressSign-in**—The Intel Context Sensing Technology's proximity sensor detects your presence to instantly wake up the computer and login using the IR camera and Windows Hello feature. Windows locks when you walk away.
- **ExpressResponse**—Prioritizes the most important applications. Applications open faster and perform better.
- **ExpressCharge**—Extends the battery runtime and improves battery performance by adapting to your patterns.

● **Intelligent Audio**—Collaborate like you're in the same room. Intelligent Audio enhances your audio quality and reduces background noises, so you can hear and be heard, creating a better conference experience for all.

For more information about configuring and using these features, see *Dell Optimizer User Guide*.

Working inside your computer

Safety instructions

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

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

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

⚠️ **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: You should only perform troubleshooting and repairs as authorized or directed by the Dell technical support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. See the safety instructions that is shipped with the product or at Dell Regulatory Compliance Home Page.**

⚠️ **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 rechargeable Li-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 instructions.

3. Disconnect your computer from their electrical outlets.
4. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.
5. Remove any media card and optical disk from your computer, if applicable.
6. Enter the service mode.

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, proceed to disconnect the battery cable. To disconnect the battery cable, follow the steps in Removing the battery.**

ⓘ **NOTE:** Ensure that your computer is shut down and the power adapter is disconnected.

a. Press and hold the B key and the power button on the keyboard for 3 seconds or until the Dell logo appears on the screen.
b. Press any key to continue.
c. If the power adapter is not disconnected, a message prompting you to remove the power adapter appears on the screen. Remove the power adapter and then press any key to continue with the Service Mode process. The Service Mode process 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.

Safety precautions

The safety precautions section details the primary steps to be taken 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.
- After removing a computer component, carefully place the removed component on an anti-static mat.
- Wear shoes with non-conductive 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 case. Systems 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 such as watches, bracelets, or rings before to 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.

Due to the increased density of semiconductors used in recent Dell products, the sensitivity to static damage is now higher than in previous Dell products. For this reason, some previously approved methods of handling parts are no longer applicable.

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 non-functional 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 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.
● 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 insulators 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 part 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 ESD mat, in the computer, or inside an anti-static 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 ESD mat is not required, or connected 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 ESD 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 aware 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 call, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. If you do not have your own wrist strap tester, check with your regional office to find out if they have one. 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, and use anti-static bags for transporting sensitive components.

Transporting sensitive components

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

After working inside your computer

About this task

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

Steps

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

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

5. Press the power button to turn on the computer. 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
- Torx #5 (T5) screwdriver
- Plastic scribe

Screw list

(i) **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.

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

(i) **NOTE:** Screw color may vary depending on the configuration ordered.

Table 32. Screw list

Component	Screw type	Quantity	Screw image
Display assembly to display back-cover	M1.6x3	4	
Display-cable bracket to the system board	M2x3	2	
Battery-cable connector to the interposer board	M1.6x3.4, T5	1	
Docking-connector bracket to the back cover	M1.6x3	2	
SSD to the system board	M1.6x2.2	1	
WWAN-card bracket to the WWAN card	M1.6x2.5	1	
Left fan to the back cover	M2x3	2	
Right fan to the back cover	M2x3	2	
Battery to the back cover	M2x3	6	
Heat sink (non-Vapor Chamber)	M1.6x2.3	3	
Heat sink (Vapor Chamber)	M1.6x2.3	3	
Kick stand to kick-stand hinges	M1.6x3	4	
Kick-stand hinges to back cover	M2x2	6	
World-facing camera to the computer	M1.6x3	2	
Darwin 1 antenna bracket to the computer	M1.6x2.5	2	
Power-button board to the computer	M1.6x1.5	2	
Darwin 2-antenna cable bracket	M1.6x2.5	1	
WLAN-module bracket	M1.6x2.5	1	

Component	Screw type	Quantity	Screw image
System board	M1.6x1.5	2 (WLAN); 1 (WWAN)	

Major components of Latitude 7350 Detachable

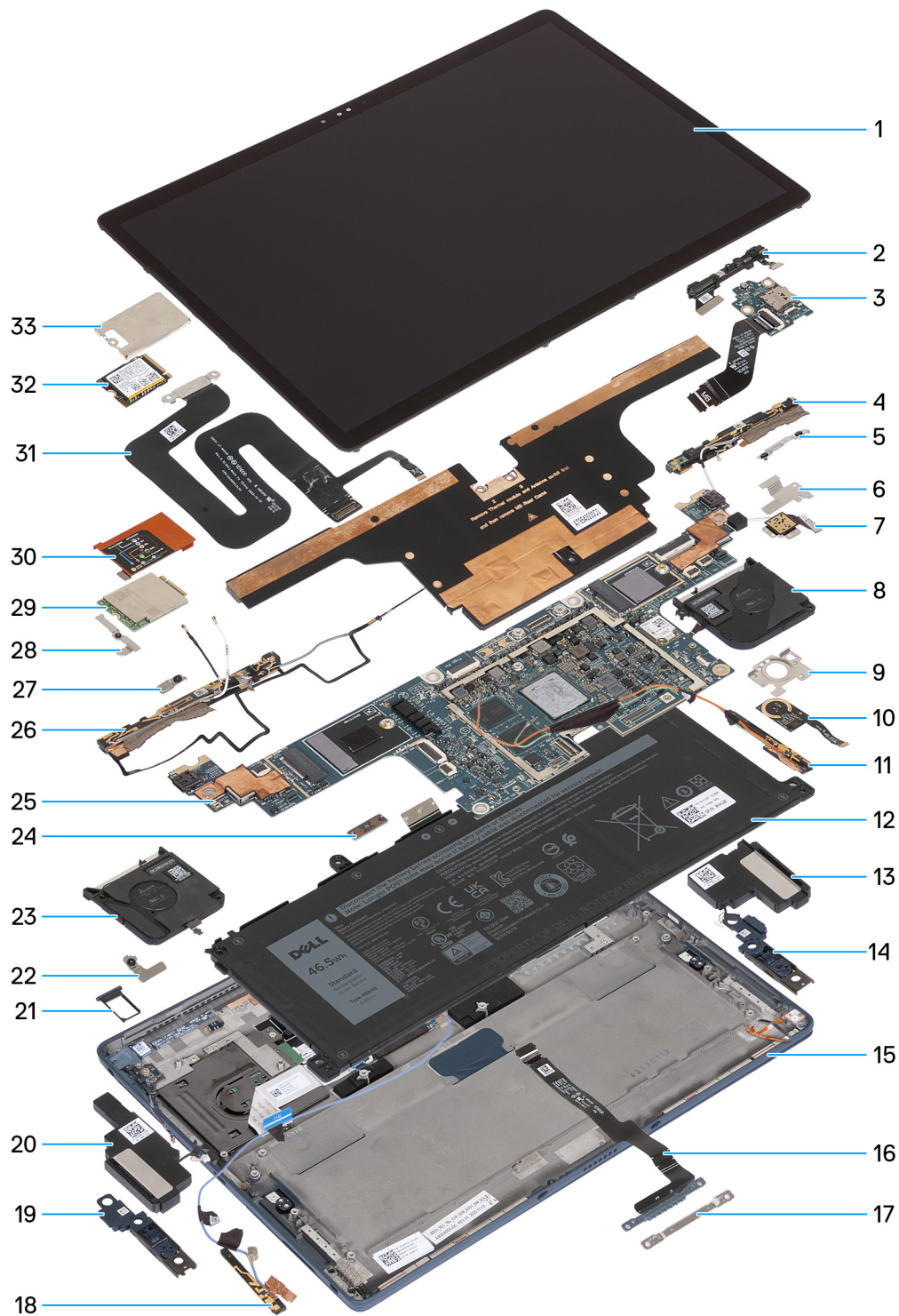The following image shows the major components of Latitude 7350 Detachable.

Figure 13. Major components of Latitude 7350 Detachable

1. Display assembly
2. User-facing camera
3. Power-button board
4. WWAN-antenna module
5. Darwin 1 antenna bracket
6. World-facing camera bracket
7. World-facing camera

8. Right fan
9. Fingerprint-reader bracket
10. Fingerprint reader
11. MIMO3 WWAN antenna
12. Battery
13. Right speaker
14. Right kick-stand hinge
15. Display-back cover
16. Docking connector
17. Docking-connector bracket
18. MIMO2 WWAN antenna
19. Left kick-stand hinge
20. Left speaker
21. SIM-card tray
22. WLAN-module bracket
23. Left fan
24. Battery-connector interposer
25. System board
26. WLAN-antenna module
27. Darwin 2 antenna bracket
28. WWAN-card bracket
29. WWAN card
30. WWAN-card shielding
31. Display cable
32. SSD card
33. SSD shield

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

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.

SIM-card tray

Removing the SIM-card tray

Prerequisites

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

ⓘ **NOTE:** SIM-card removal is only available on computers with WWAN support.

⚠️ **CAUTION: Removing the SIM card with the computer turned on may cause data loss or damage to the card. Ensure that your computer is turned off before removing the SIM card.**

About this task

The following images indicate the location of the SIM-card tray and provide a visual representation of the removal procedure.
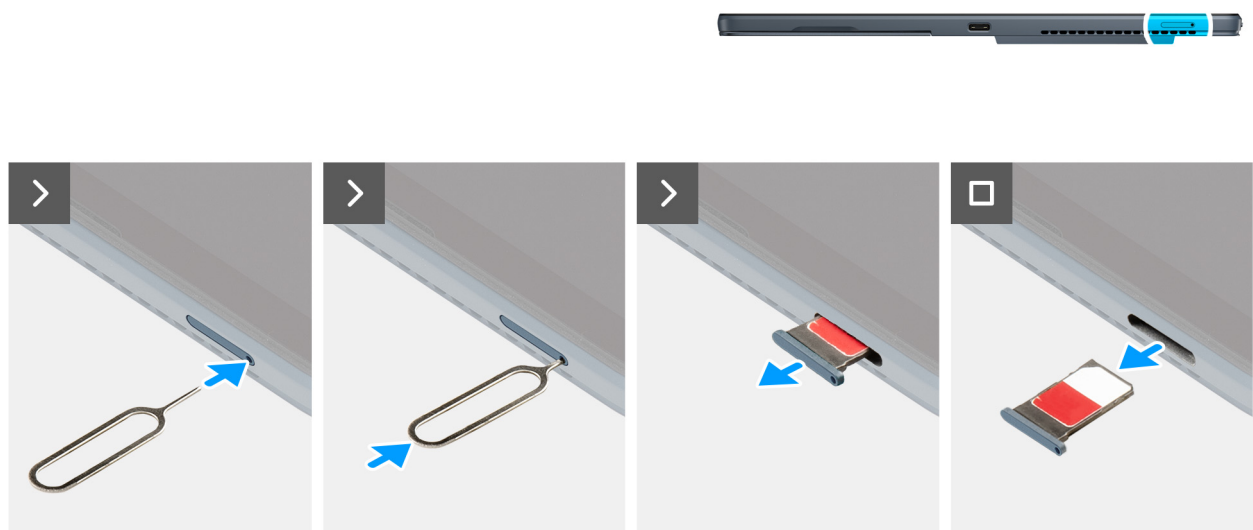
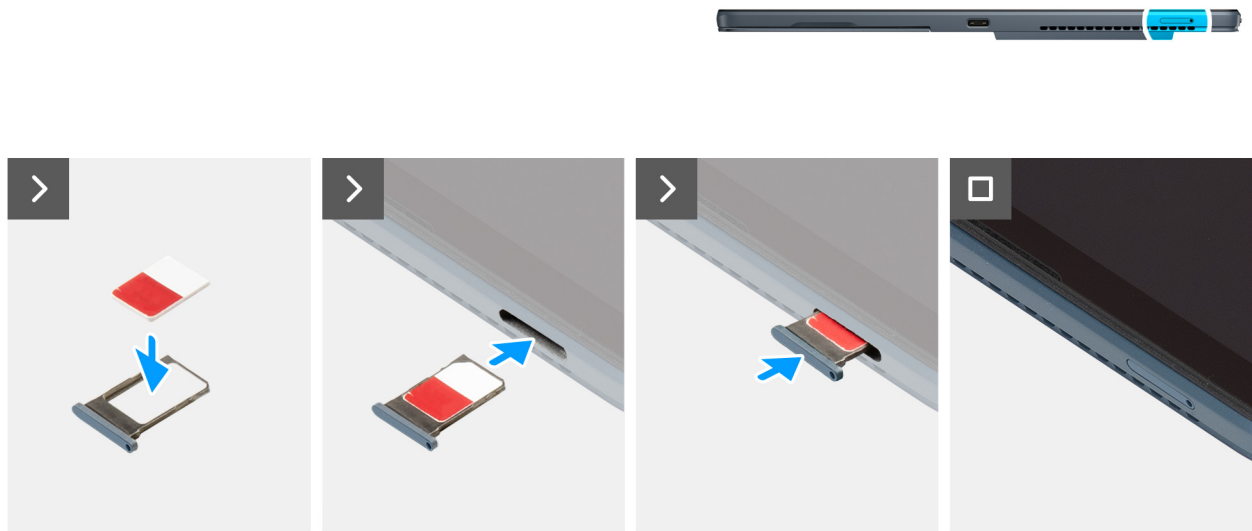**Figure 14. Removing the SIM-card tray**

Steps

1. Insert a pin into the hole of the SIM-card slot.

2. Push the pin inwards to release the SIM-card tray
3. Slide the SIM-card tray out of the slot in the computer.

Installing the SIM-card tray

Prerequisites

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

ⓘ **NOTE:** SIM-card removal is only available on computers with WWAN support.

About this task

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

Figure 15. Installing the SIM-card tray

Steps

1. Place the SIM card into the SIM-card tray with the metallic contact facing down.
2. Align the SIM-card tray with the slot in the computer and carefully slide it in.
3. Slide the SIM-card tray into the slot, until it clicks into place.

Next steps

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

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.

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 system.
2. Remove the SIM-card tray.

About this task

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

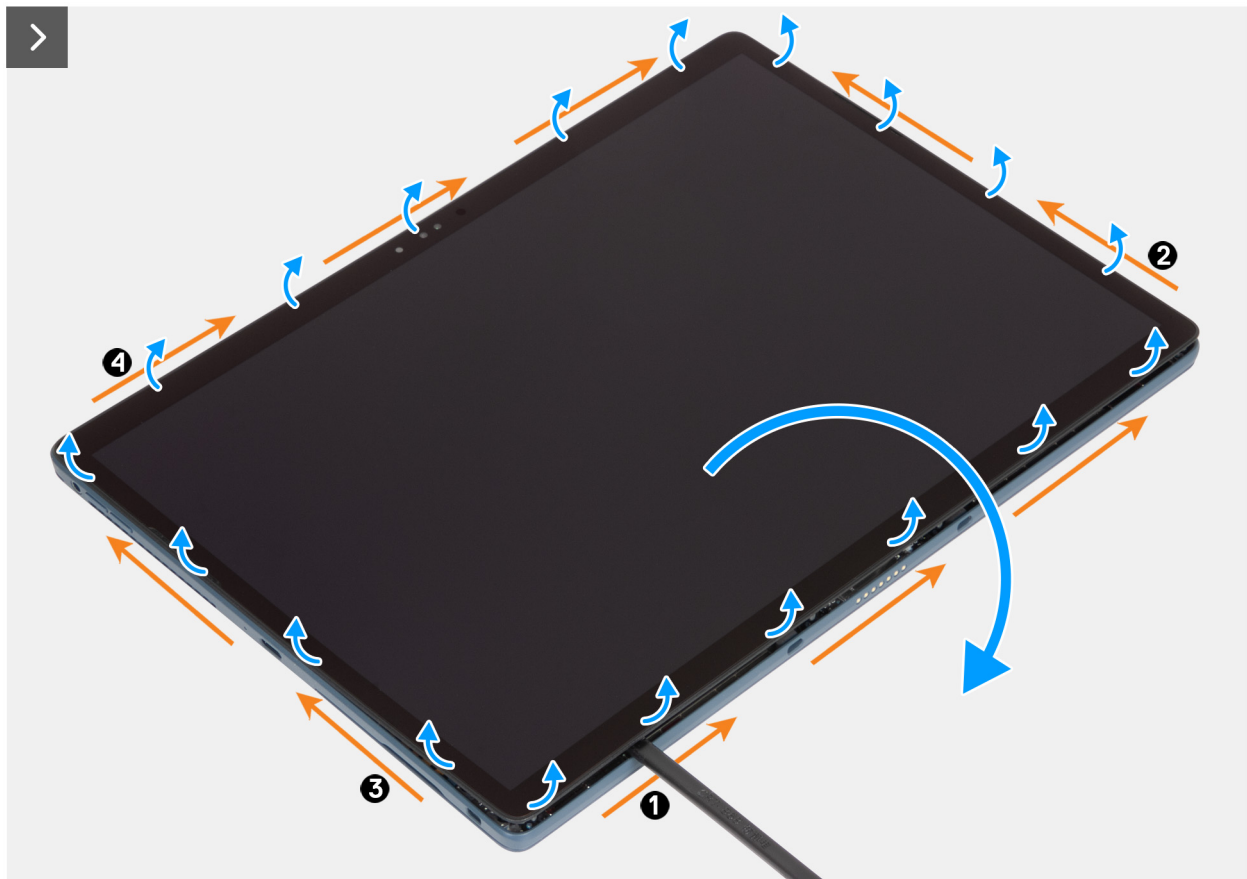Figure 16. Removing the display assembly

Figure 17. Removing the display assembly

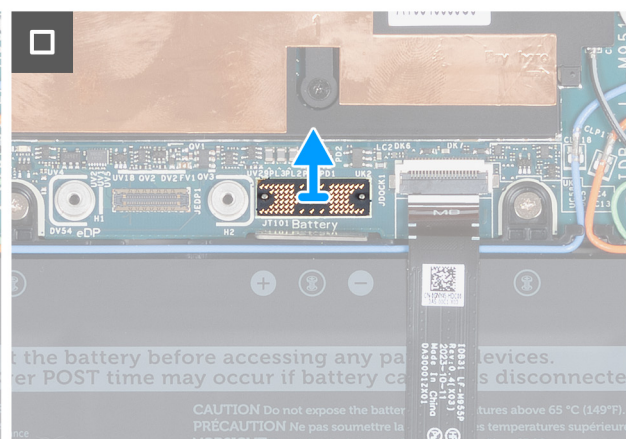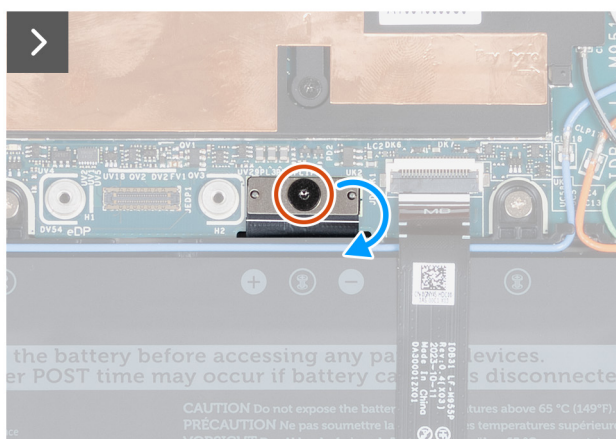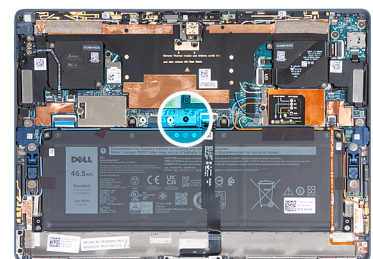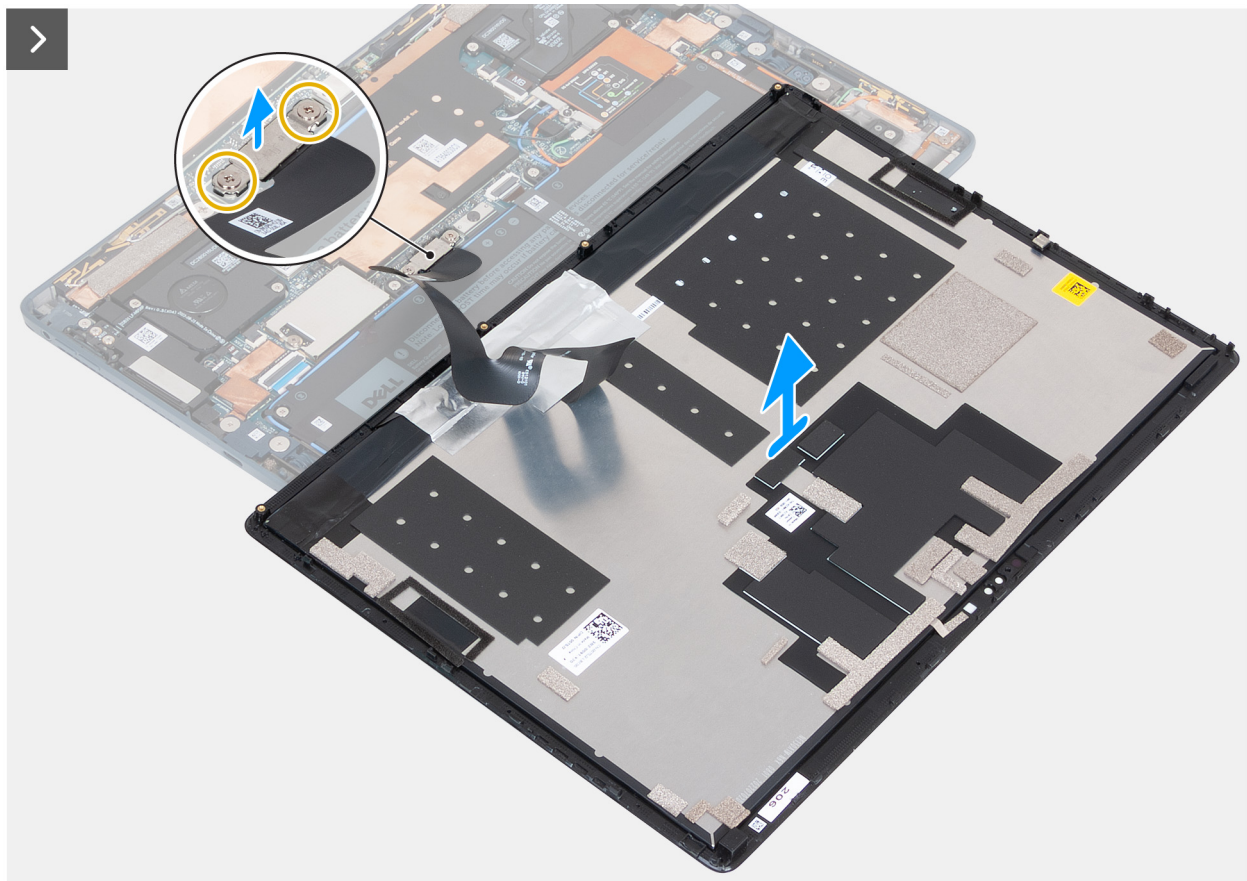**Figure 18. Removing the display assembly**

Figure 19. Removing the display assembly

Steps

1. Open the kick stand the and the computer turns on automatically.

   (i) **NOTE:** The Latitude 7350 Detachable has an automatic power-on feature. The computer powers on when the kick stand is opened. Follow the below steps to ensure that the computer does not power on while the performing replacement procedures.

2. With the kick stand open, shut down the computer using the operating system.

3. Place the computer on a padded surface with the display facing down.

4. ⚠ **CAUTION: Make sure that the computer is turned off before removing the screws.**

   Remove the four screws (M1.6x3) that secure the display assembly to the display-back cover.

5. Push the flat end of a plastic scribe into the release holes below the kick-stand hinges to loosen the display assembly from the display-back cover.

6. Close the kick stand and flip the computer over with the display facing up.

7. Using a plastic scribe, pry open the display assembly from the bottom-left corner.

8. Work your way around the top and remaining sides of the display assembly.

9. Gently flip open the display assembly from the top edge and lay the display-panel assembly face down.

   ⚠ **CAUTION: Do not pull the display panel away from the computer while the display panel is still connected to the system board.**

10. Remove the two screws (M2x3) that secure the display-cable bracket to the system board.

11. Remove the display-cable bracket from the computer.

12. Disconnect the display cable from the connector (eDP) on the system board and remove the display assembly from the computer.

13. Remove the single screw (M1.6x3.4, T5) that secures the battery-cable connector to the interposer board.

14. Gently pull back the battery-cable connector, ensuring that the battery is disconnected from the interposer board.
15. Remove the interposer board from the system board.

⚠️ **CAUTION: Remove the interposer board immediately after disconnecting the battery to prevent the board from falling out of the computer during replacement procedures. The pins on the interposer board are very fragile. Avoid contact with the pins on the interposer board and DO NOT allow the pins to come into contact with any substance that may stain or contaminate the pins. Handle the interposer board by lifting and holding from the edges or the sides.**

ⓘ **NOTE:** Be sure to set the interposer board aside for replacement procedures.

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

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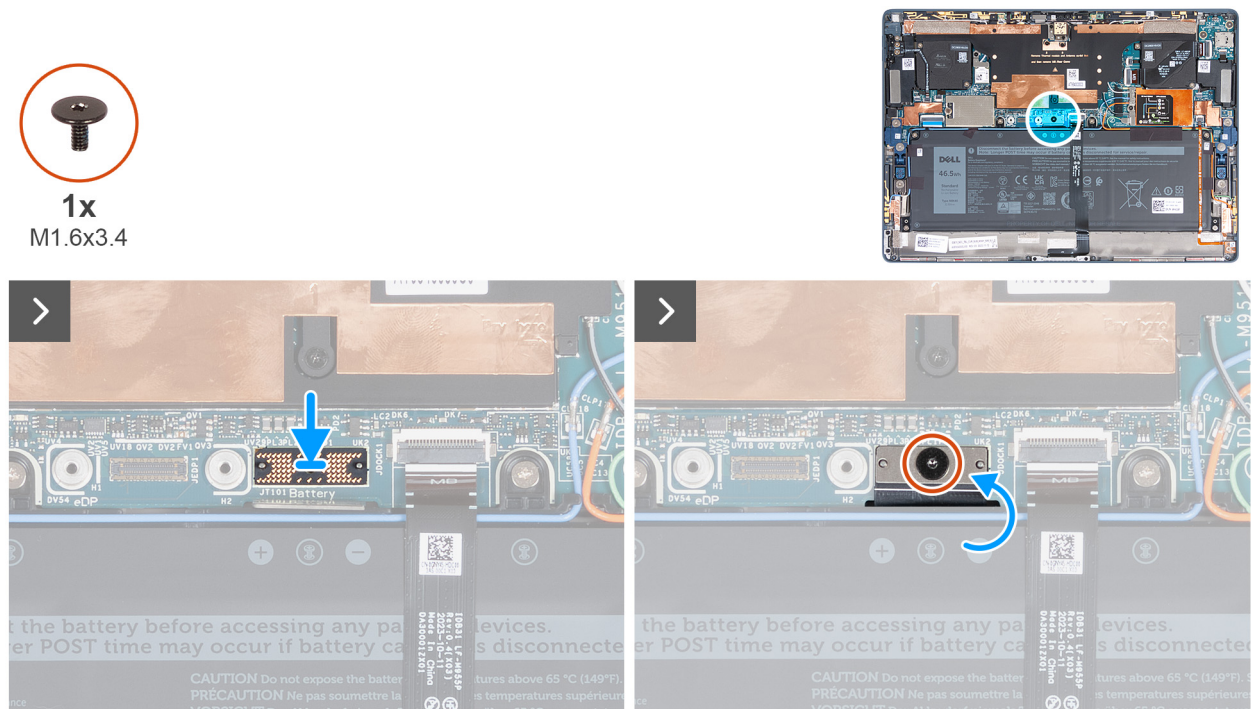

Figure 20. Installing the display assembly

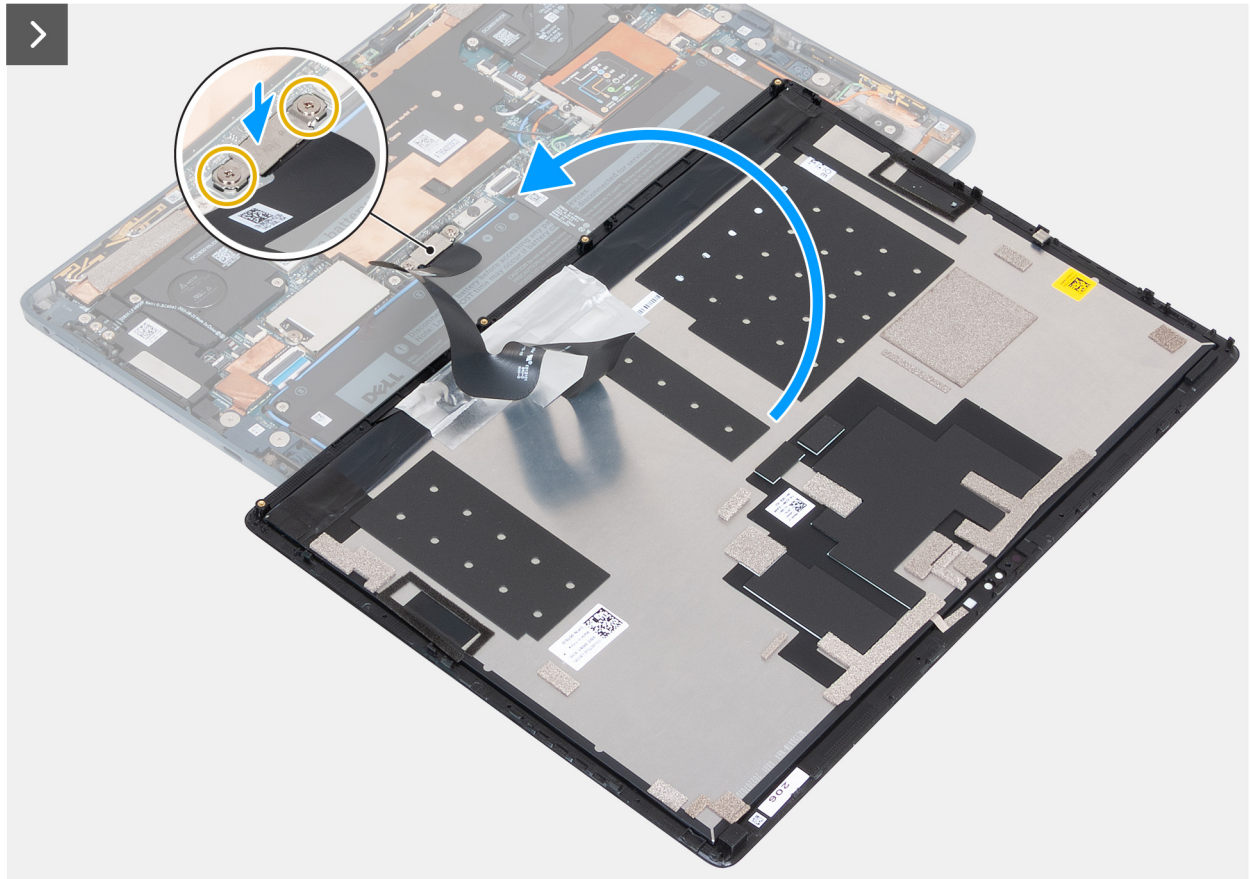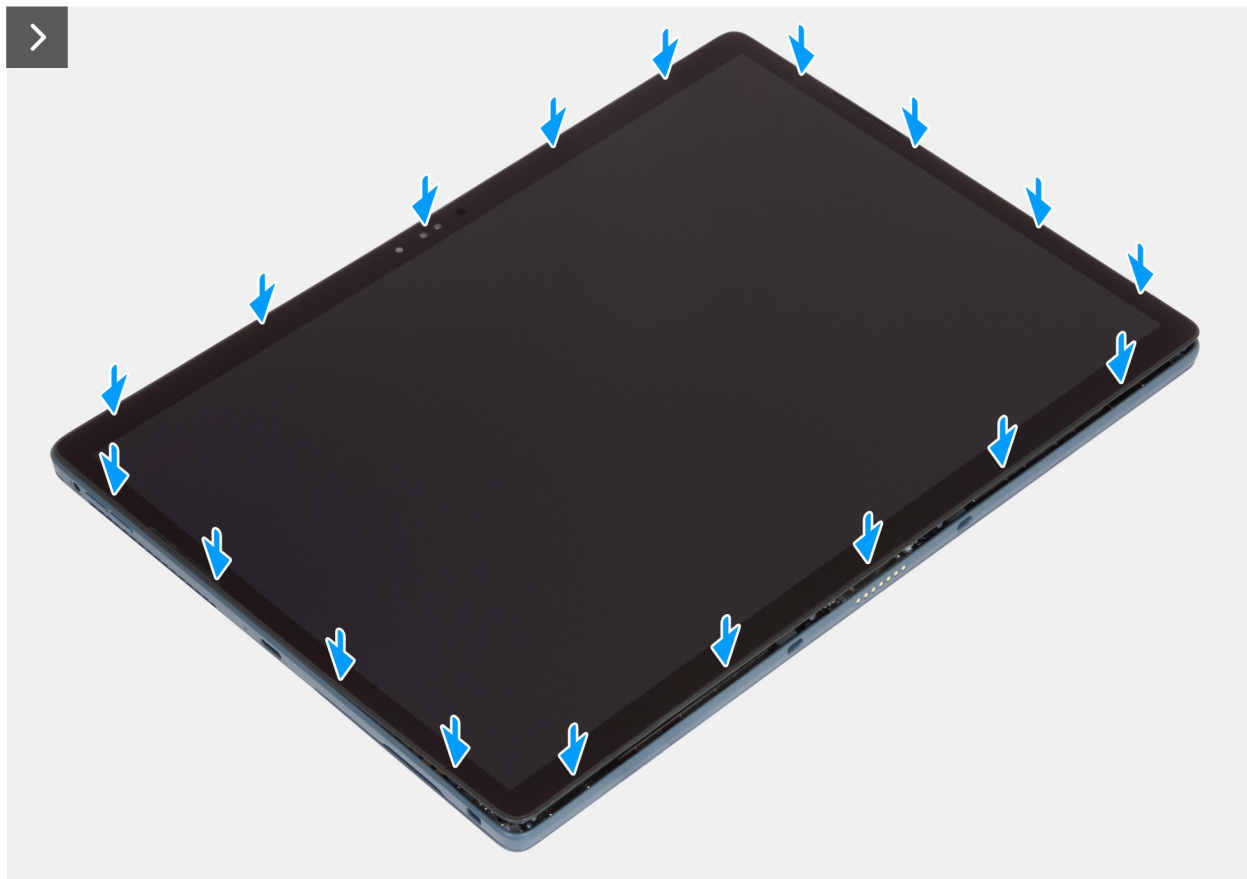**Figure 21. Installing the display assembly**

Figure 22. Installing the display assembly

Figure 23. Installing the display assembly

Steps

1. Place the display assembly face down on a padded surface just below the computer.
2. Place the interposer board on the system board (Battery).

> **CAUTION: The pins on the interposer board are very fragile. Avoid contact with the pins on the board and DO NOT allow the pins to come into contact with any substance that may stain or contaminate the pins. Handle the board by lifting and holding from the edges or the sides.**

3. Connect the battery-cable connector to the interposer board.
4. Replace the single screw (M1.6x3.4, T5) that secures the battery-cable connector to the interposer board.
5. Connect the display cable to the connector (eDP) on the system board.
6. Align and place the display-cable bracket on the display-cable connector (eDP).
7. Replace the two screws (M2x3) that secure the display-cable bracket to the system board.
8. Gently flip the display assembly onto the computer.
9. Align and slide the bottom of the display assembly into the slots on the computer frame.
10. Gently press along the edges of the display assembly until they snap securely into place.
11. Open the stand.
12. Replace the four screws (M1.6x3) that secure the display assembly to the display-back cover.
13. Close the kick stand.

Next steps

1. Install the SIM-card tray.
2. Follow the procedure in After working inside your computer.

Display cable

Removing the display 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 SIM-card tray.
3. Remove the display assembly.

About this task

The following images indicate the location of the display cable and provide a visual representation of the removal procedure.
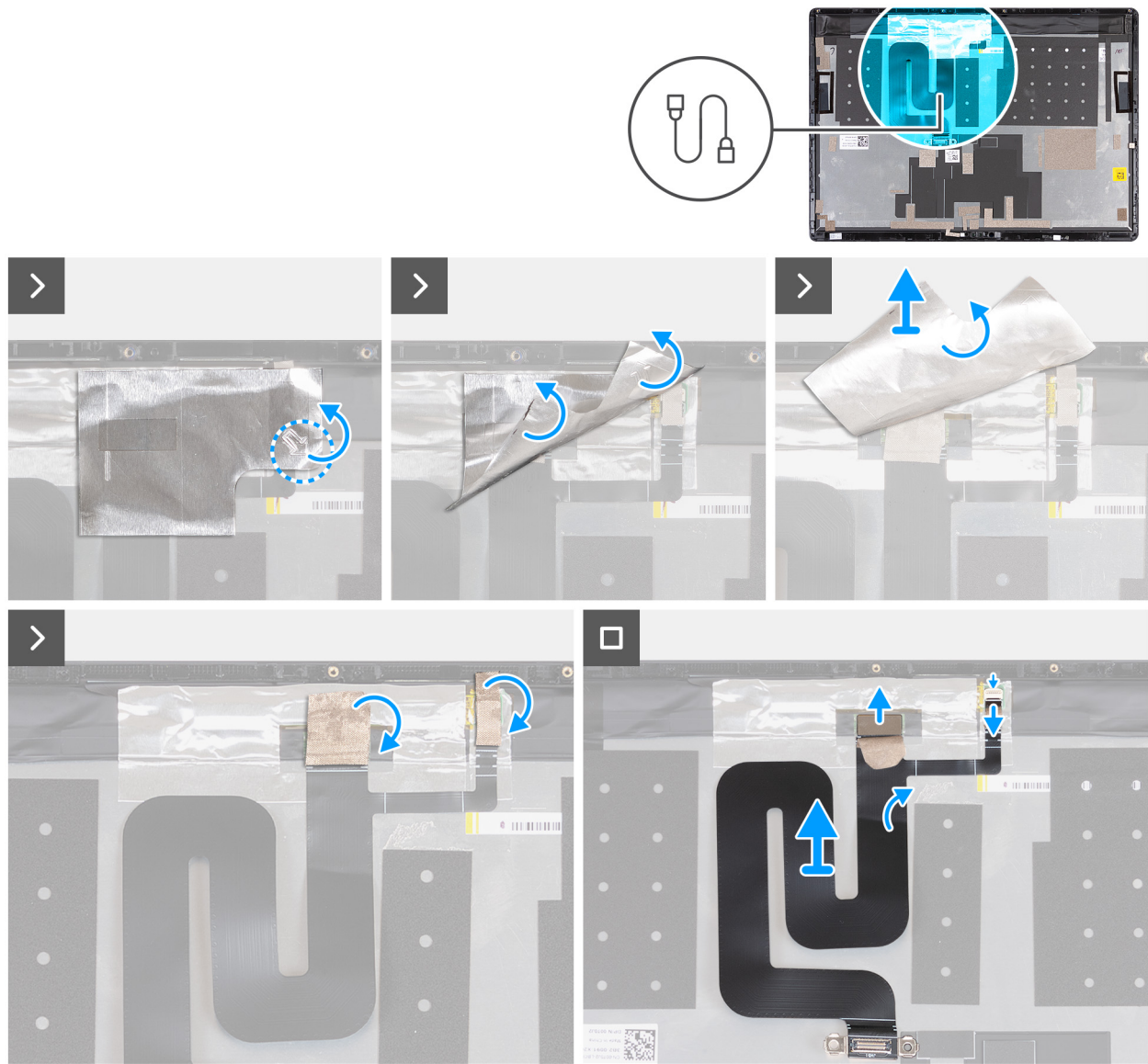
Figure 24. Removing the display cable

Steps

1. On the back of the display assembly, peel off the large mylar foil that covers both the display-cable connector and touch-module connector:

    a. Start peeling from the notch indicated by the arrow, being careful not to peel off the touch-module connector underneath.

    b. Continue peeling the other side of the large mylar foil, until the whole piece can be removed.

    > ⓘ **NOTE:** Do not discard the large mylar foil. The large mylar foil is re-useable and is to be re-adhered when the display cable is replaced.

2. Peel off the mylar foil covering the display-cable connector followed by mylar foil covering the touch-module connector.

3. Peel off the display-cable connector (CN1) from the display panel.

4. Open the latch on the touch-module connector and disconnect it from the display assembly.

5. Peel off and remove the display cable from the display assembly.

Installing the display 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 indicates the location of the display cable and provides a visual representation of the installation procedure.
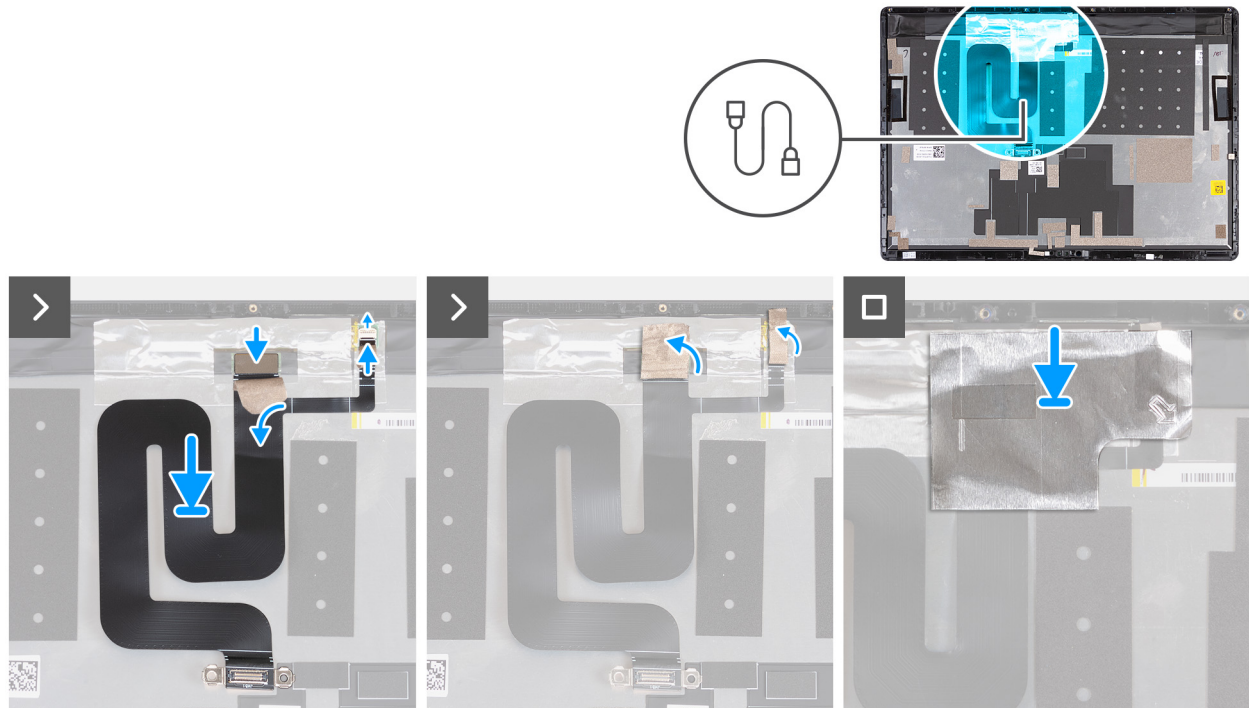

Figure 25. Installing the display cable

Steps

1. Adhere the display cable to the back of the display assembly.
2. Connect the touch-module connector (CN1) to the display assembly and close the latch.
3. Connect the display-cable connector to the display assembly.
4. Adhere the individual pieces of mylar foil to secure the display-cable connector and the touch-module connector the display panel.
5. Re-adhere the large mylar foil (from the disassembly procedure) to both the display-cable connector and the touch-module connector.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

Docking connector

Removing the docking connector

⚠ **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 SIM-card tray.
3. Remove the display assembly.

About this task

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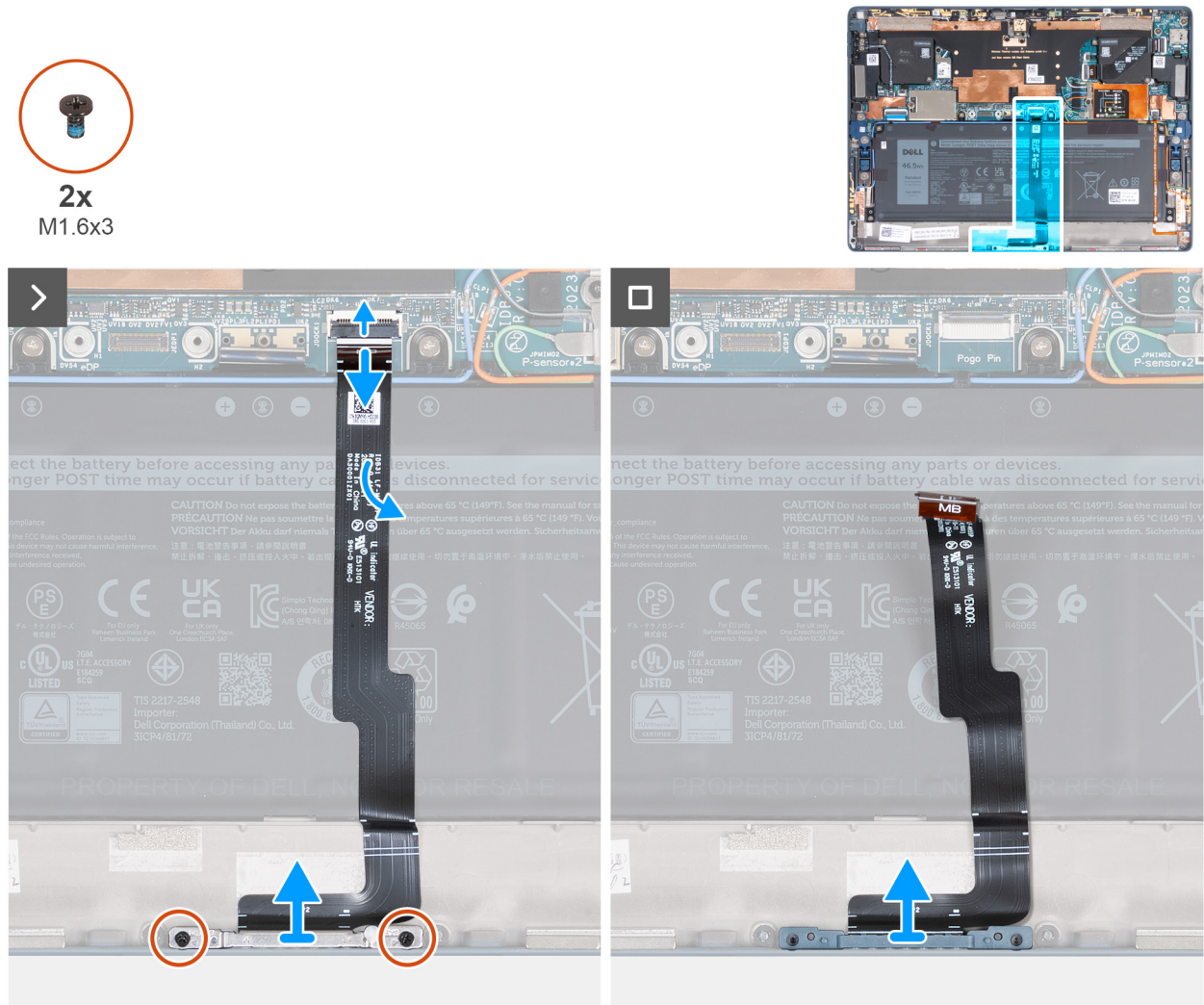

Figure 26. Removing the docking connector

Steps

1. Open the latch and disconnect the docking-connector FPC from the connector (Pogo Pin) on the system board.
2. Peel the docking-connector FPC from the battery.
3. Remove the two screws (M1.6x3) that secure the docking-connector bracket to the back cover.
4. Lift away the docking-connector bracket and slide the docking connector out of the computer.

Installing the docking connector

⚠ **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 docking connector and provides a visual representation of the installation procedure.
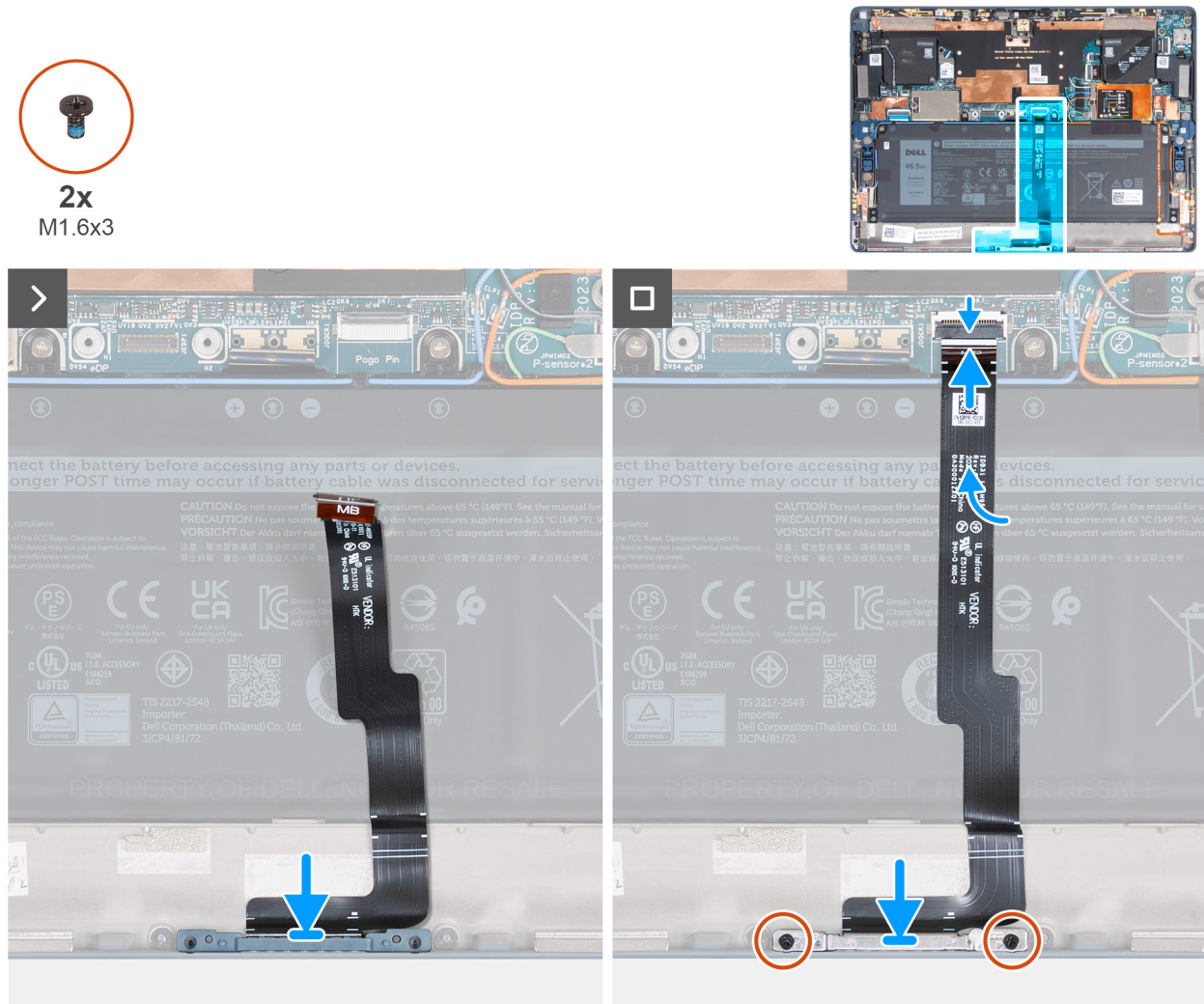

Figure 27. Installing the docking connector

Steps

1. Align the screw holes on the docking connector with the screw holes on the back cover.
2. Place the docking connector-bracket over the docking connector, ensuring the screw holes are aligned.
3. Replace the two screws (M1.6x3) that secure the docking-connector bracket to the back cover.
4. Adhere the docking-connector FPC to the battery.
5. Connect the docking-connector FPC to the connector (Pogo Pin) on the system board and close the latch.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

Solid-state drive

Removing the solid-state drive (SSD)

⚠ **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 SIM-card tray.
3. Remove the display assembly.

About this task

The following images indicate the location of the solid-state drive (SSD) and provide a visual representation of the removal procedure.
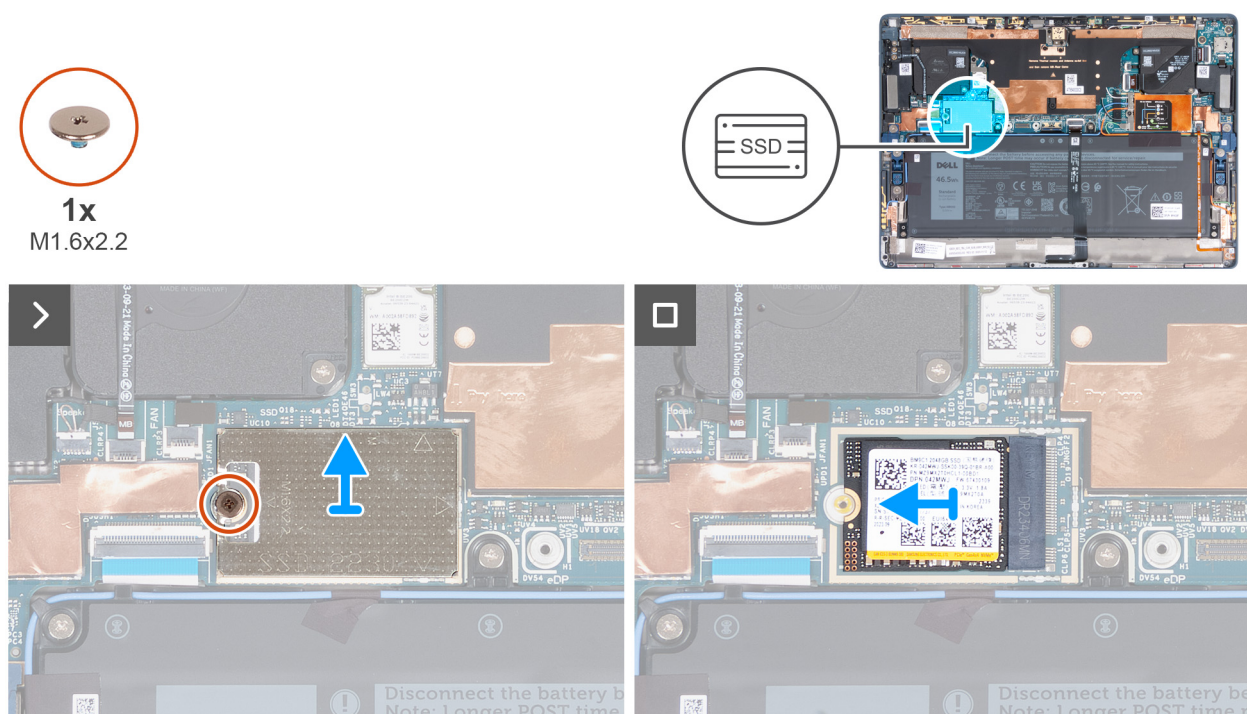

Figure 28. Removing the SSD

Steps

1. Remove the single screw (M1.6x2.2) that secures the SSD to the system board.

   ⓘ **NOTE:** An SSD shield is installed only on computers with WWAN support.

2. Remove the SSD shield away from the computer, if installed.
3. Slide the SSD out of the computer.

   ⓘ **NOTE:** If the thermal pad located under the SSD gets detached from the system board, re-adhere it to the system board.

Installing the solid-state drive (SSD)

⚠ **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 solid-state drive (SSD) and provides a visual representation of the installation procedure.
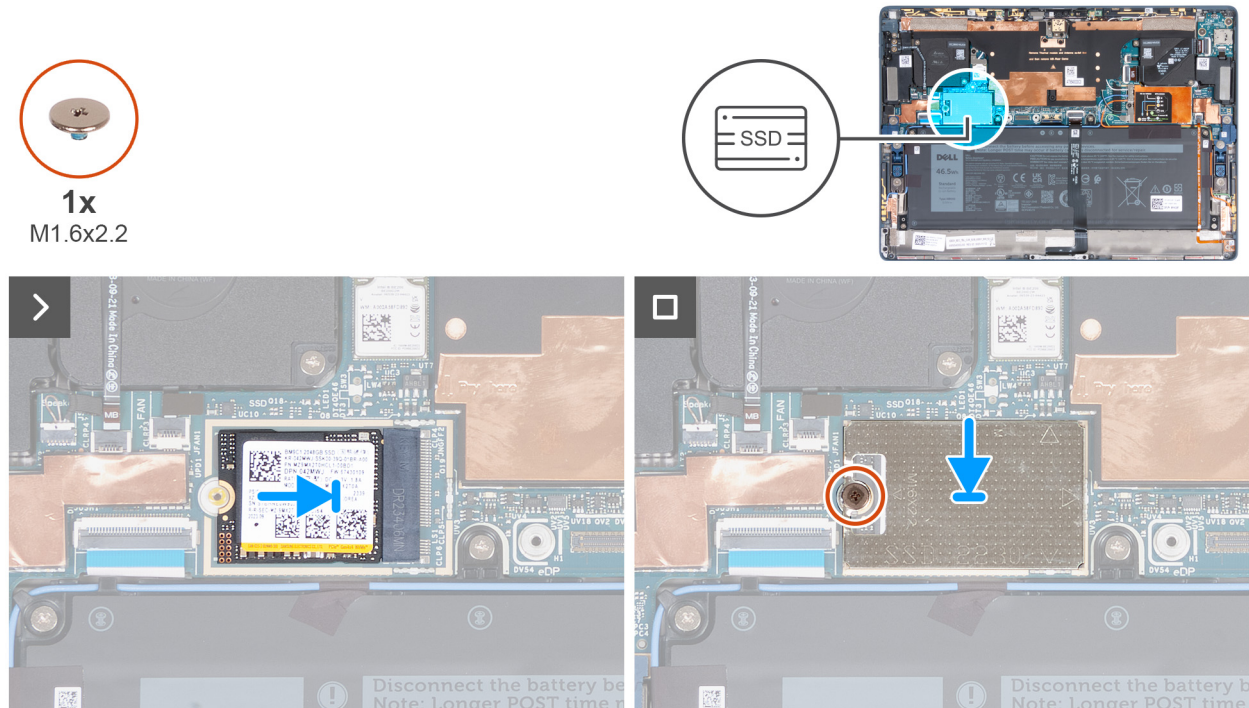

Figure 29. Installing the SSD

Steps

1. Align the notch on the SSD with the tab in the slot (SSD) on the system board and push in the SSD.
2. If applicable, align and place the SSD shield over the SSD. Ensure that the SSD shield is placed on the guiding clips of the system board.

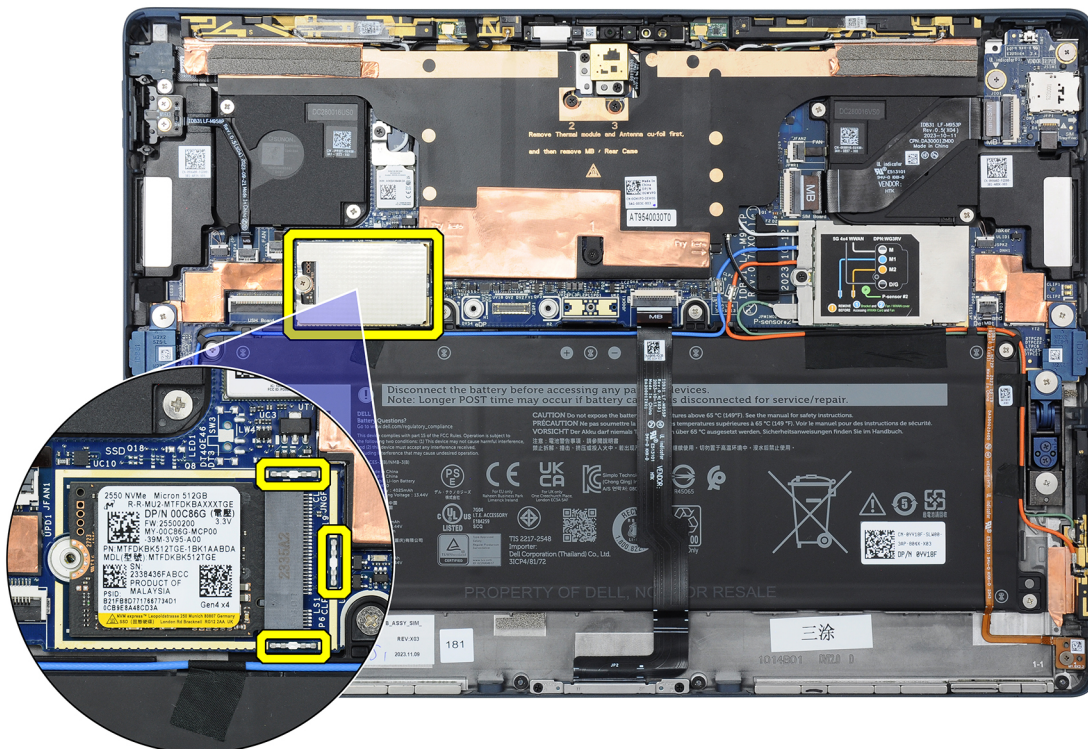   ⓘ **NOTE:** An SSD shield is installed only on computers with WWAN support.

Figure 30. Guiding clips for SSD shield

3. Replace the single screw (M1.6x2.2) that secures the SSD to the system board.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

WWAN card

Removing the WWAN card

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

ⓘ **NOTE:** These procedures only apply to computers with WWAN support.

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the SIM-card tray.
3. Remove the display assembly.

About this task

The following images indicate the location of the WWAN card and provide a visual representation of the removal procedure.
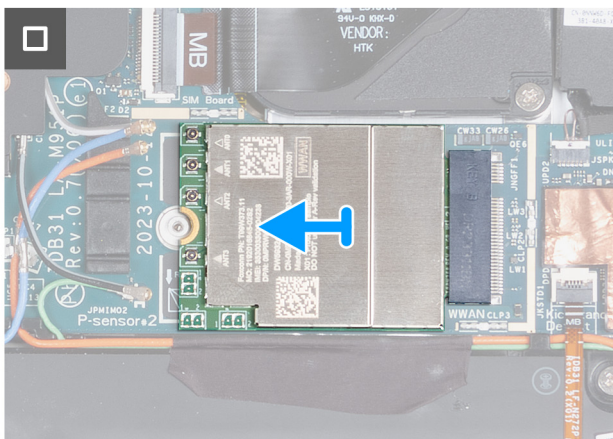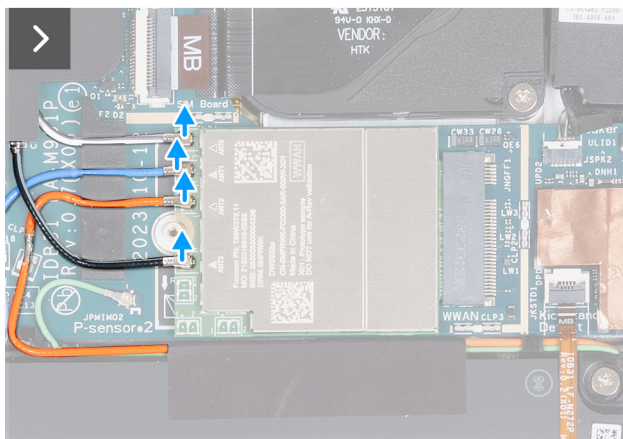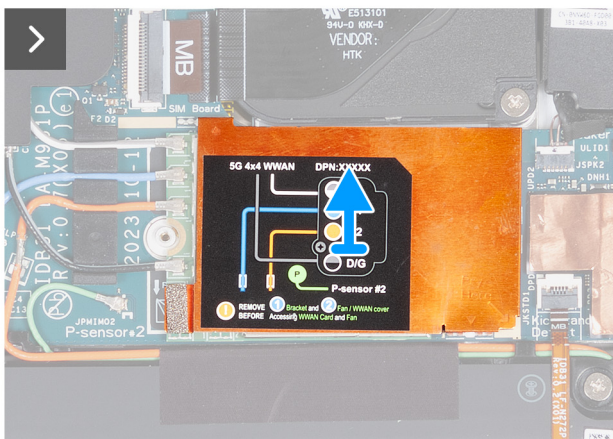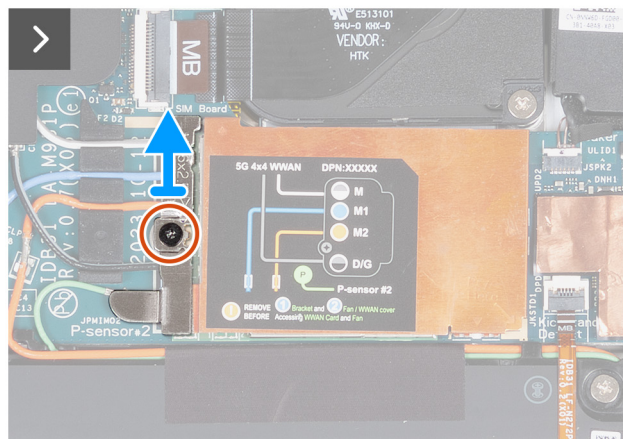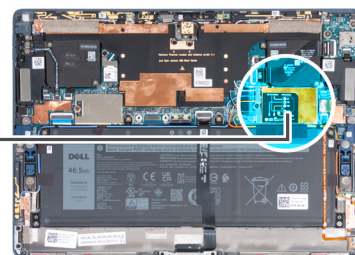
Figure 31. Removing the WWAN card

Steps

1. Loosen the single captive screw (M1.6x2.5) that secures the WWAN-card bracket to the WWAN card.
2. Slide and remove the WWAN-card bracket off the WWAN card.
3. Disconnect the antenna cables from the WWAN card.
4. Using a plastic scribe, pry the WWAN-card shield from the release point on its bottom-right corner.
5. Remove the WWAN-card shield.
6. Slide and remove the WWAN card from the WWAN-card slot.

Installing the WWAN card

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

ⓘ **NOTE:** These procedures only apply to computers with WWAN support.

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 WWAN card and provides a visual representation of the installation procedure.
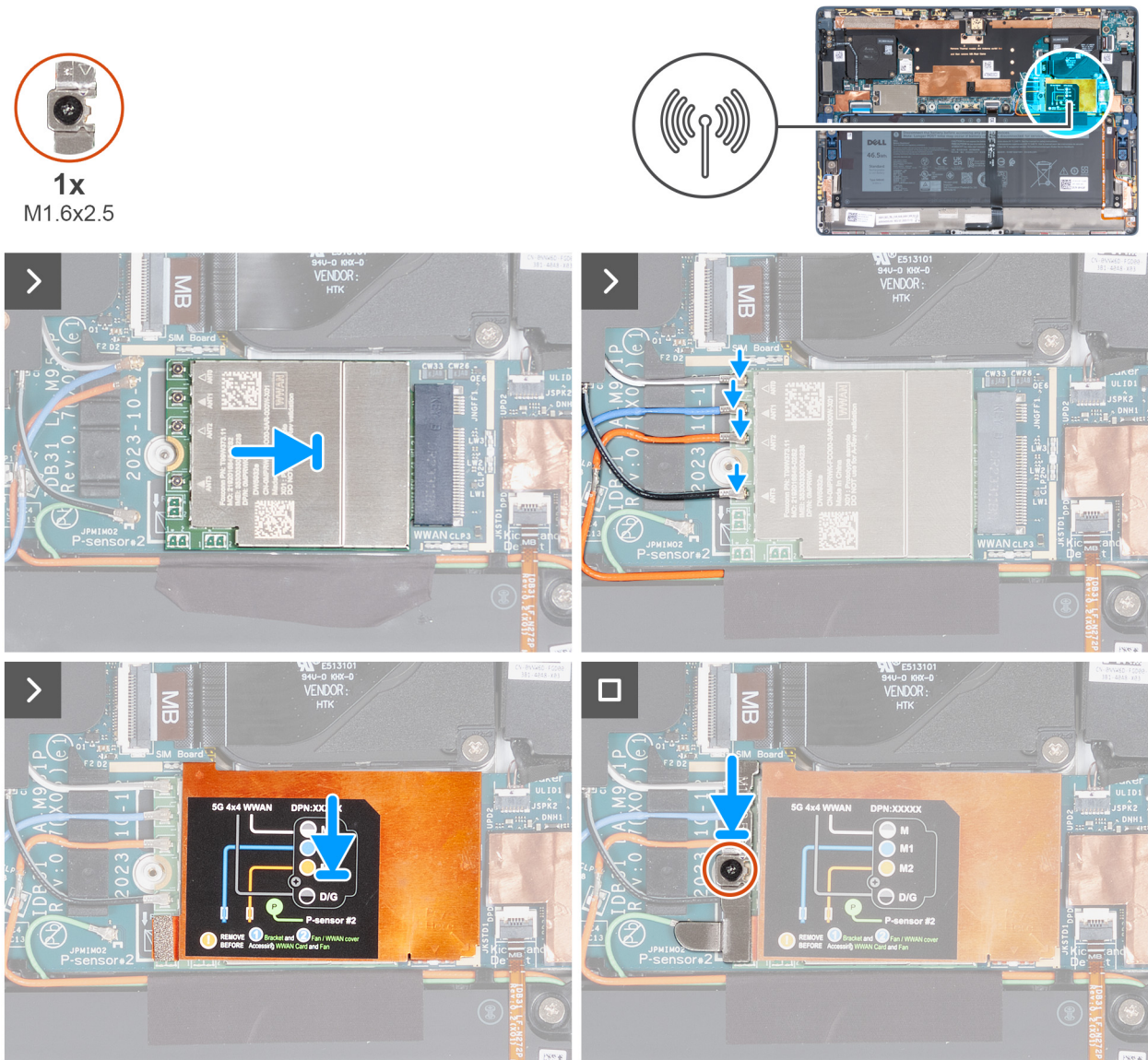

1x
M1.6x2.5

Figure 32. Installing the WWAN card

Steps

1. Align the notch on the WWAN card with the tab on the WWAN slot (WWAN) on the system board.
2. Slide the WWAN card at an angle into the WWAN slot on the system board.
3. Connect the antenna cables to the WWAN card.

   The following table provides the antenna-cable color scheme:

Table 33. Antenna-cable color scheme for WWAN card

Connectors on the WWAN card	Antenna-cable color	Silkscreen marking	
M	White with a thin gray stripe	Main WWAN	△ (white triangle)
M1	Blue	MIMO2 WWAN	△ (white triangle)
M2	Orange	MIMO3 WWAN	△ (white triangle)
D/G	Black with a thin gray stripe	Auxiliary WWAN	△ (white triangle)

4. Angle the WWAN-card shield over the WWAN card and push down into position. Ensure that the WWAN-card shield is placed on the guiding clips of the system board.
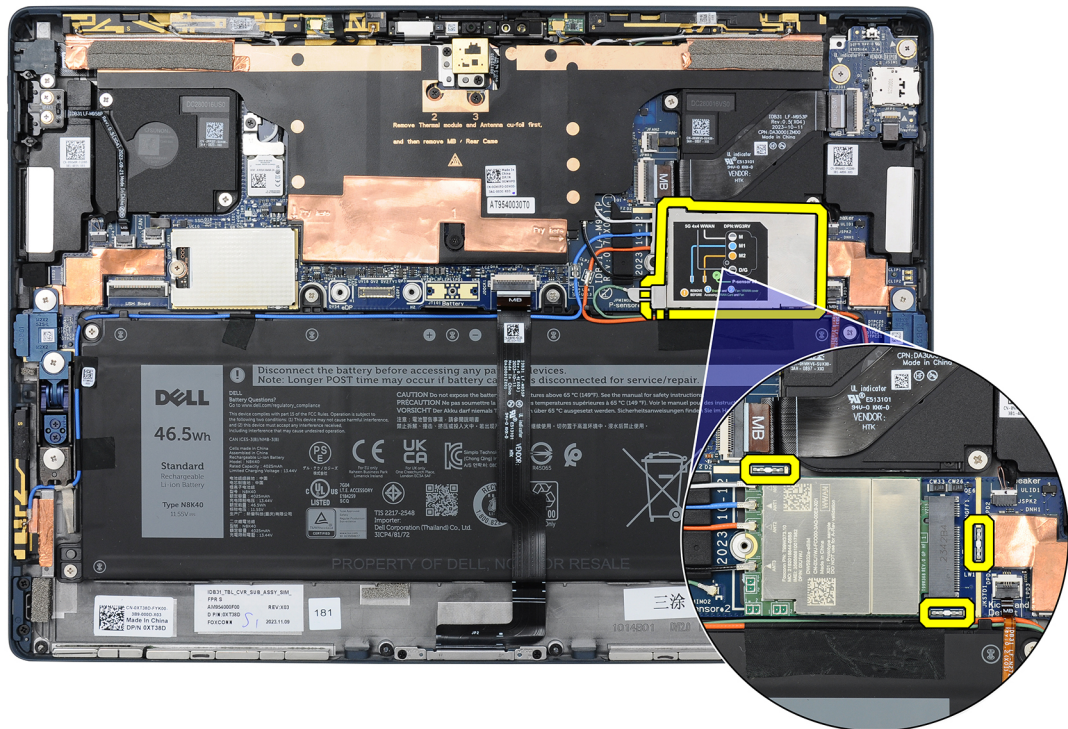

Figure 33. Guiding clips for WWAN-card shield

5. Place the WWAN-card bracket over the antenna connectors of the WWAN card.
6. Tighten the single captive screw (M1.6x2.5) that secures the WWAN and bracket to the system board.

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

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

Fans

Removing the left 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 SIM-card tray.
3. Remove the display assembly.

About this task

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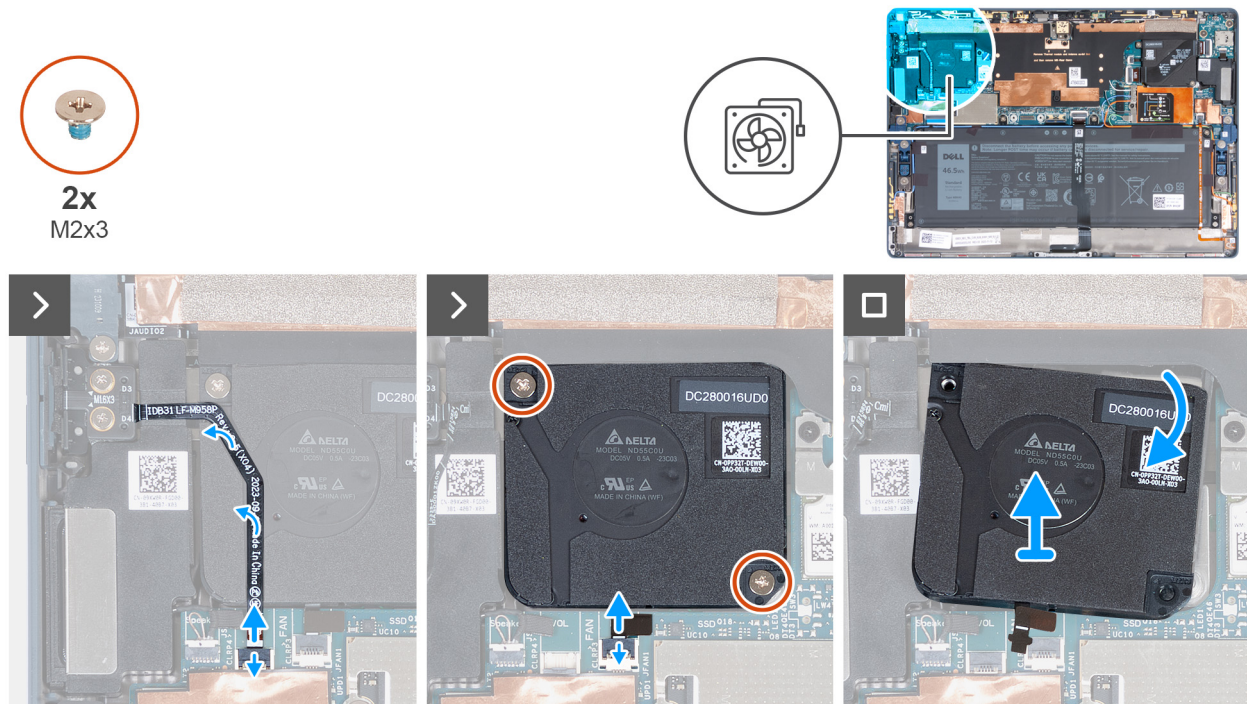

Figure 34. Removing the left fan

Steps

1. Open the latch and disconnect the volume-button FPC from the connector (VOL) on the system board.

2. Peel the FPC away from the left fan.

3. Remove the two screws (M2x3) that secure the left fan to the back cover.

4. Open the latch and disconnect the fan cable from the connector (FAN) on the system board.

5. **For computers shipped with a Vapor Chamber (VC) heatsink:**

   Slightly lift the left fan from its bottom side while simultaneously rotating it clockwise to remove it.

   For computers shipped with a non-Vapor Chamber (non-VC) heatsink:

   Slightly lift the left fan from its bottom side and slide it downward to remove it.

Installing the left 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 images indicate the location of the left fan and provide a visual representation of the installation procedure.
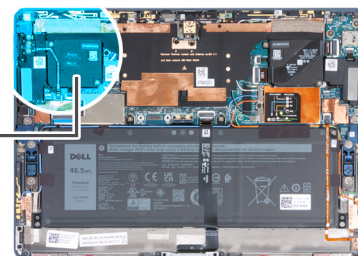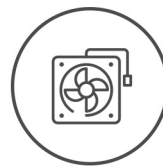
Figure 35. Installing the left fan

Steps

1. **For computers shipped with a Vapor Chamber (VC) heatsink:**

   Slightly lift the left fan from its bottom side while simultaneously rotating it counter-clockwise to fit it into the fan compartment.

   For computers shipped with a non-vapor chamber (VC) heatsink:

   Slightly lift the left fan from its bottom side and slide it upward to fit it into the fan compartment.

2. Align the screw holes on the left fan with the screw holes on the back cover.
3. Replace the two screws (M2x3) that secure the left fan to the back cover.
4. Connect the left-fan cable to the connector (FAN) on the system board and close the latch.
5. Connect the volume-button module FPC to the connector (VOL) on the system board and close the latch.
6. Adhere the volume-button FPC to the left fan.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

Removing the right 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 SIM-card tray.
3. Remove the display assembly.

About this task

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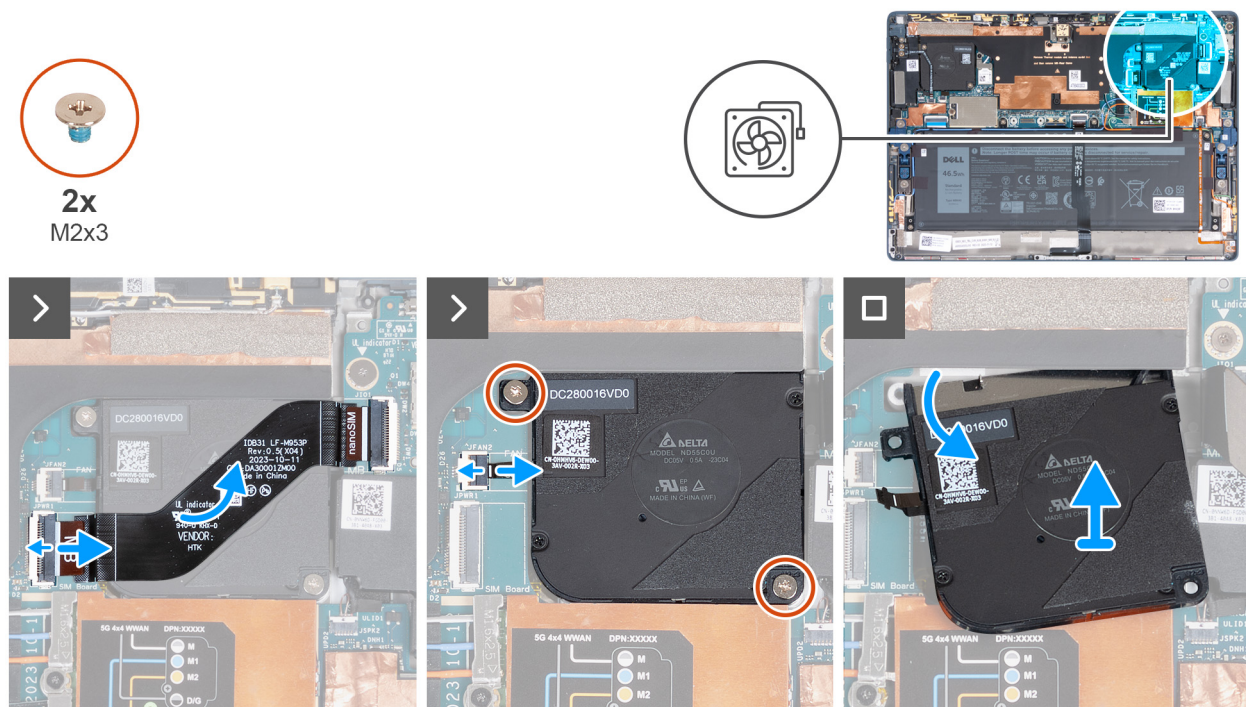

Figure 36. Removing the right fan

Steps

1. Open the latch and disconnect the power button daughter board FPC from the connector (SIM) on the system board.
2. Peel the power button daughter board FPC away from the right fan.
3. Open the latch and disconnect the right-fan cable from the connector (FAN) on the system board.
4. Slightly lift the right fan from its bottom side and slide it downward to release it.
5. Lift the right fan out of the computer.

Installing the right 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 followingimages indicate the location of the right fan and provide a visual representation of the installation procedure.
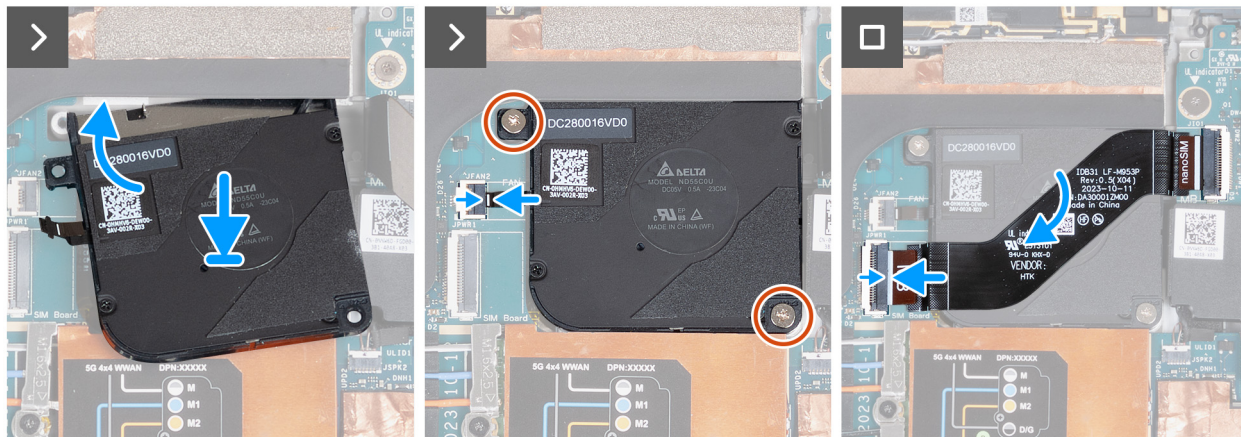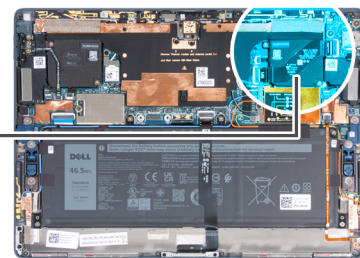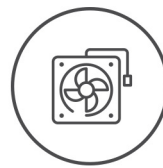
Figure 37. Installing the right fan

Steps

1. Slightly lift the right fan from its bottom side and slide it upwards to fit it into the slot.
2. Connect the right-fan cable to the connector (FAN) on the system board and close the latch.
3. Adhere the power button daughter board FPC to the right fan.
4. Connect the power button daughter board FPC to the connector (SIM) on the system board and close the latch.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

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.**
- **Ensure any screws during the servicing of this product are not lost or misplaced, to prevent accidental puncture or damage to the battery and other computer components.**

- 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 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 SIM-card tray.
3. Remove the display assembly.

   ⓘ **NOTE:** Before removing the battery, be sure to remove the interposer board from the system board as instructed in the display assembly removal procedure.

About this task

The following images indicate the location of the battery and provide a visual representation of the removal procedure.
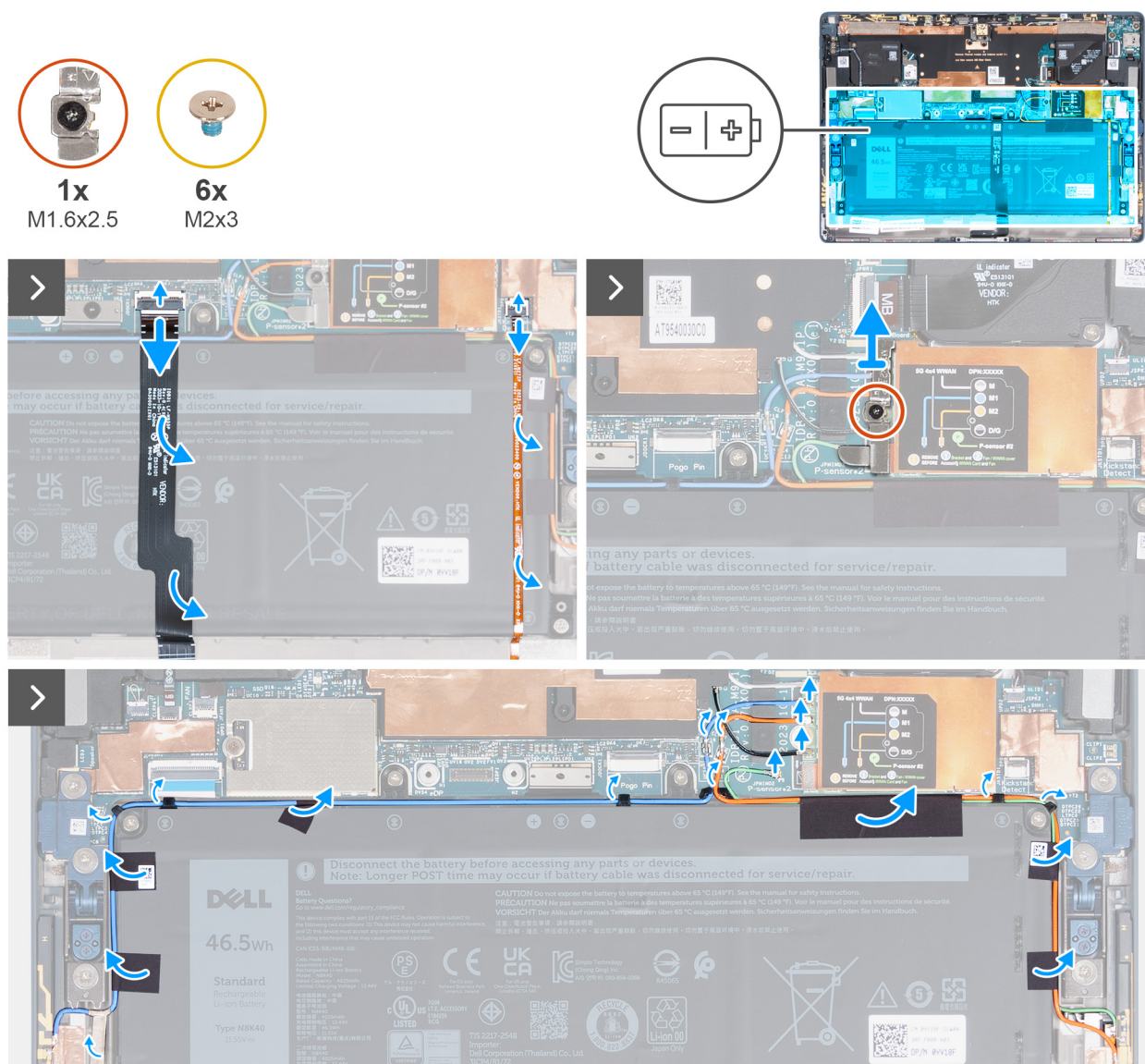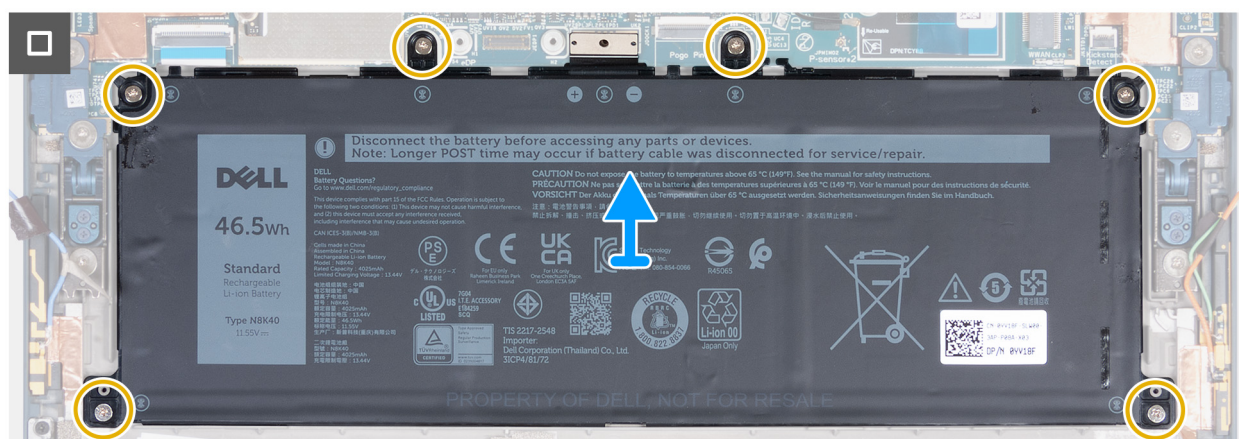
Figure 38. Removing the battery

Figure 39. Removing the battery

Steps

1. Open the latch and disconnect the docking-connector FPC from the connector (Pogo Pin) on the system board.

2. Open the latch and disconnect the HALL-sensor FPC from the connector (Kickstand Detect) on the system board.
3. Carefully peel the docking-connector FPC and HALL-sensor FPC from the battery.
4. **For computers with WWAN support:**

   ⓘ **NOTE:** Skip to the next step if your computer does not support WWAN.

   a. Loosen the captive screw (M1.6x2.5) that secures the WWAN-card bracket to the WWAN card.
   b. Slide and remove the WWAN-card bracket off the WWAN card.
   c. Disconnect the orange MIMO3 WWAN antenna and blue MIMO2 WWAN antenna cables from the WWAN card.
   d. Disconnect the green WWAN P-sensor cable from the WWAN card.
   e. Peel back the mylar on the battery that secures the antenna cables in place.
   f. Unroute the antenna cables from the clips and routing channels around the left, right and top of the battery.
5. Remove the six screws (M2x3) that secure the battery in place.
6. Remove the battery from the computer.

Installing the 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 images indicate the location of the battery and provides a visual representation of the installation procedure.
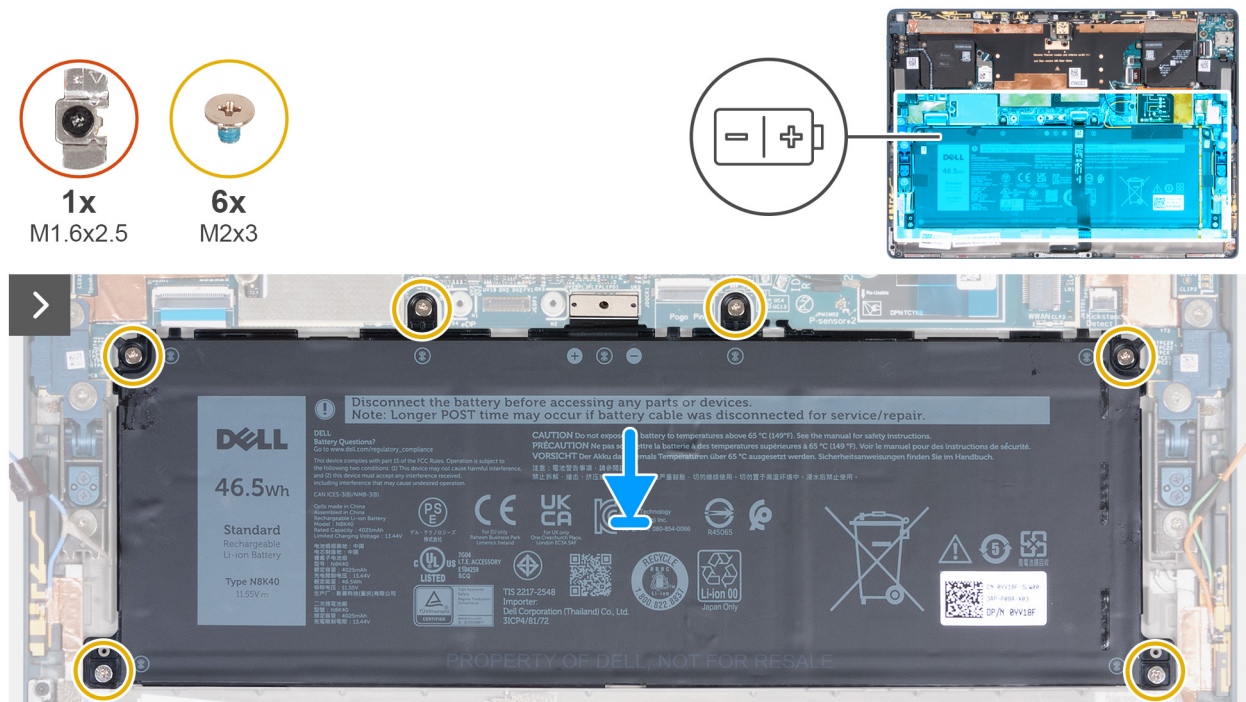

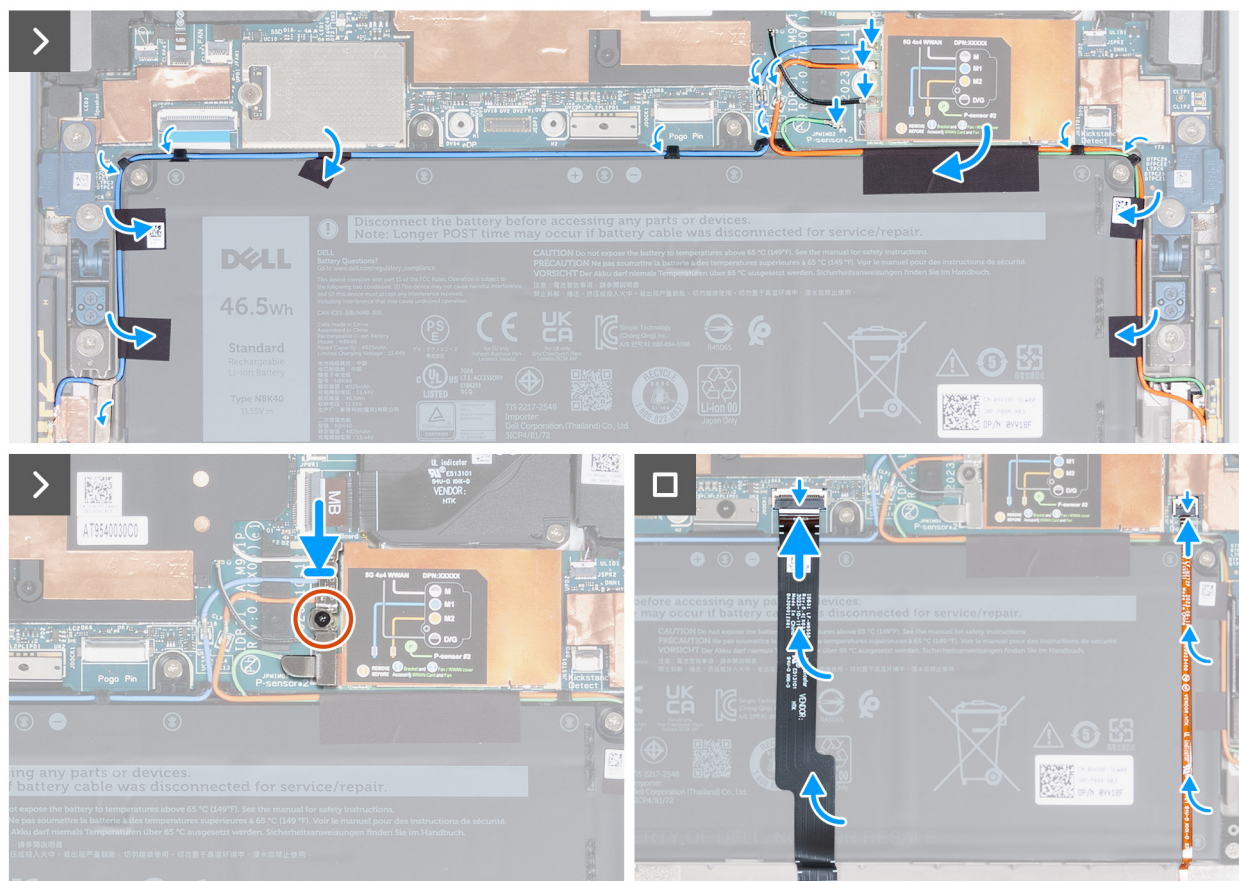**Figure 40. Installing the battery**

Figure 41. Installing the battery

Steps

1. Using the alignment posts, place the battery on the back-cover assembly.
2. Align the screw holes on the battery with the screw holes on the system board and back-cover assembly.
3. Replace the six screws (M2x3) that secure the battery to the back-cover.
4. **For computers with WWAN support:**

   (i) **NOTE:** Skip to the next step if your computer does not support WWAN.

   a. Route the orange MIMO3 WWAN antenna, green WWAN P-sensor and blue MIMO2 WWAN antenna cables through the routing channels and clips around the battery.
   b. Adhere the mylar that secures the antenna cables in place.
   c. Connect the orange MIMO3 WWAN antenna and blue MIMO2 WWAN antenna cables to the WWAN card.
   d. Connect the green P-sensor to the connector (Psensor2) on the system board.
   e. Place the WWAN-card bracket over the antenna connectors of the WWAN card.
   f. Tighten the captive screw (M1.6x2.5) that secures the WWAN and bracket to the system board.
5. Connect the HALL sensor daughter board FPC to the connector (Kickstand Detect) on the system board and close the latches.
6. Connect the HALL sensor daughter board FPC and docking-connector FPC to the connectors on the system board and close the latches.
7. Connect the docking-connector FPC to the connector (Pogo Pin) on the system board and close the latches.

Next steps

1. Install the display assembly.

   (i) **NOTE:** Be sure to replace the interposer board on the system board before reconnecting the battery as instructed in the display assembly removal procedure.

2. Install the SIM-card tray.

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

Speakers

Removing the left speaker

⚠️ **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 SIM-card tray.
3. Remove the display assembly.

About this task

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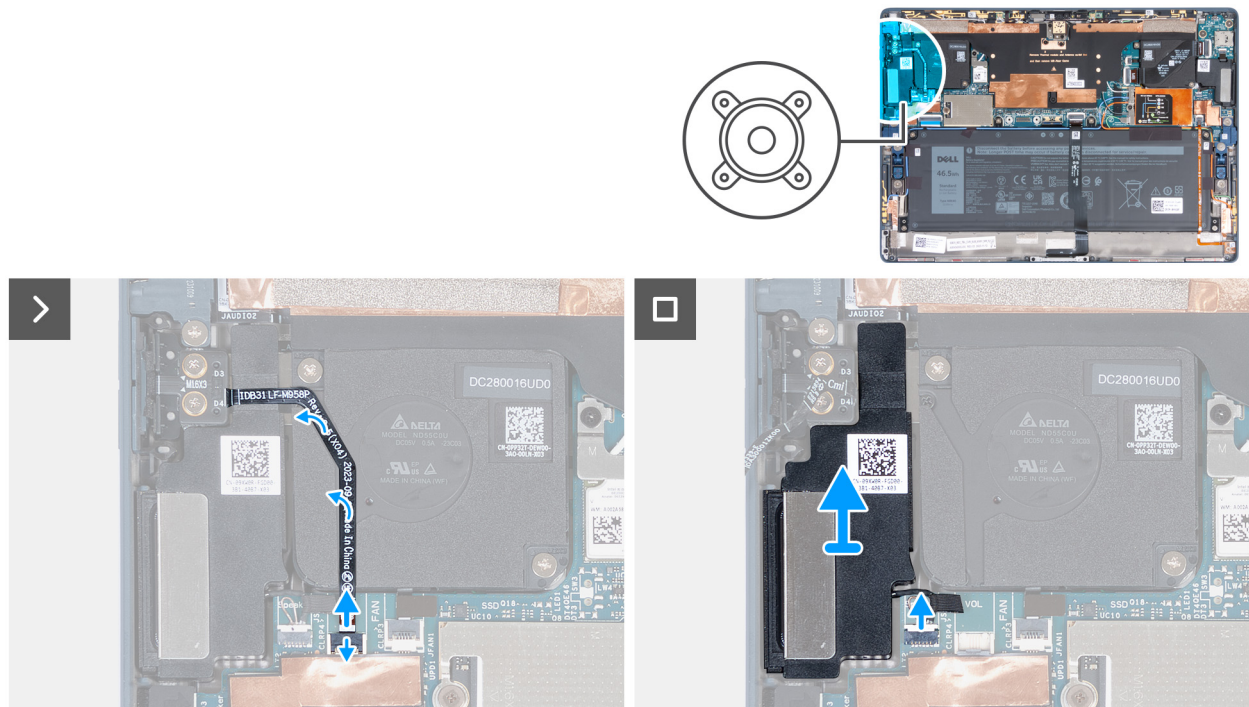

Figure 42. Removing the left speaker

Steps

1. Open the latch and disconnect the volume-button FPC from the connector (VOL) on the system board.
2. Peel the FPC away from the left fan.
3. Disconnect the left-speaker cable from the connector (Speaker) on the system board.
4. Using a plastic scribe, pry the left speaker from the computer using the gaps at the top and bottom edge of the speaker.
5. Lift the speaker along with the cable off the back-cover assembly.

Installing the left speaker

⚠️ **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 left speaker and provides a visual representation of the installation procedure.
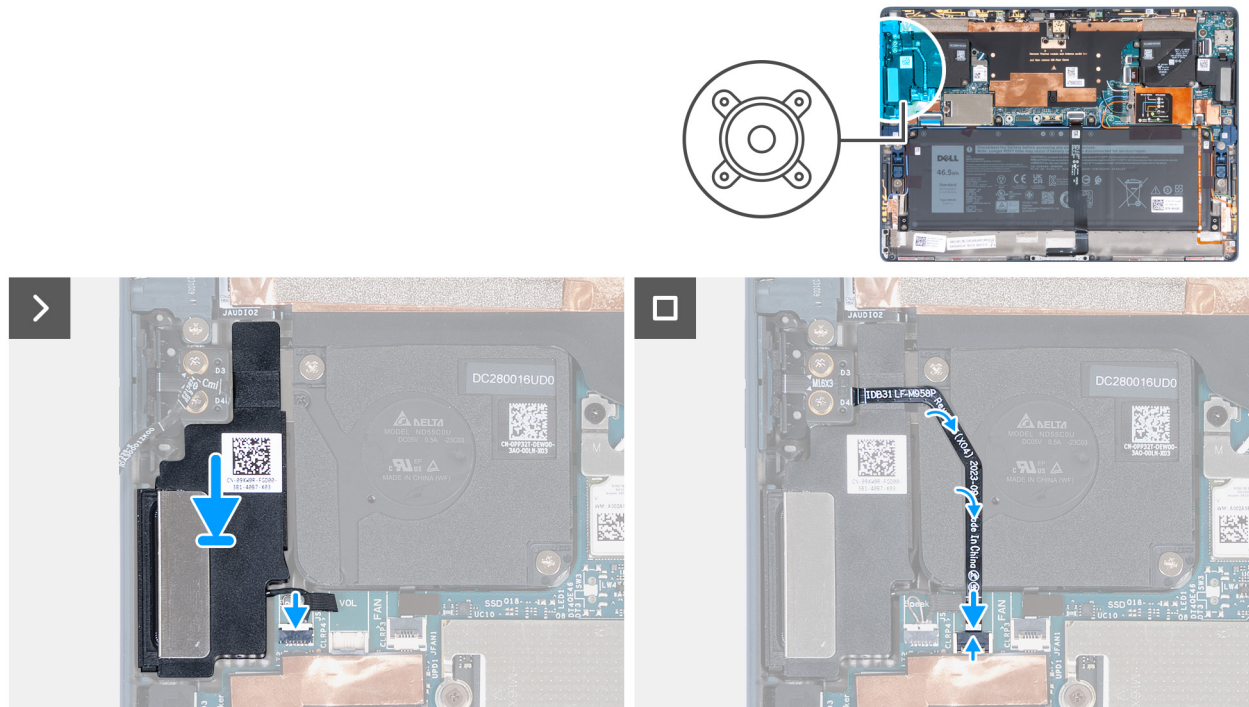

Figure 43. Installing the left speaker

Steps

1. Align and place the left speaker into position.
2. Connect the left-speaker cable to the connector (Speaker) on the system board and close the latch.
3. Connect the volume-button module FPC to the connector (VOL) on the system board and close the latch.
4. Adhere the volume-button FPC to the left fan.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

Removing the right speaker

⚠️ **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 SIM-card tray.
3. Remove the display assembly.

About this task

The following images indicate the location of the right speaker and provide a visual representation of the removal procedure.
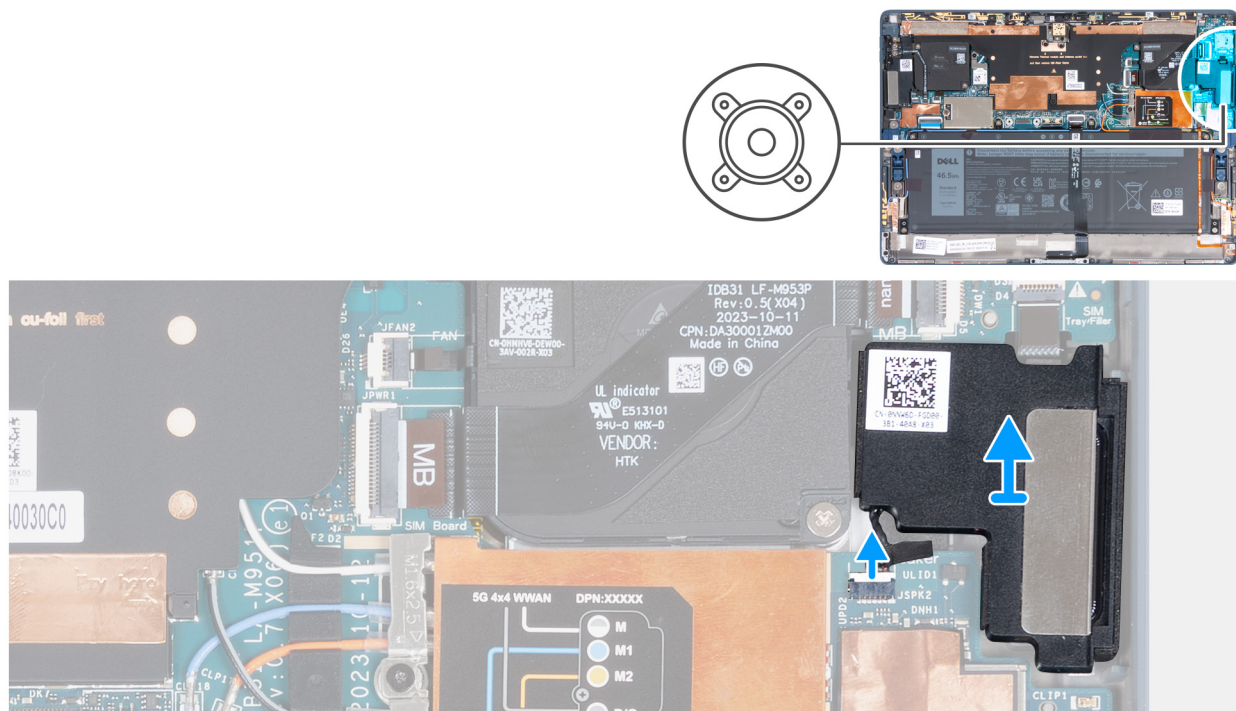
Figure 44. Removing the right speaker

Steps

1. Disconnect the right-speaker cable from the connector (Speaker) on the system board.
2. Using a plastic scribe, pry the right speaker from the system using the gaps at the top and bottom edge of the speaker.
3. Lift the speaker along with the cable off the system board.

Installing the right speaker

⚠ **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 right speaker and provides a visual representation of the installation procedure.
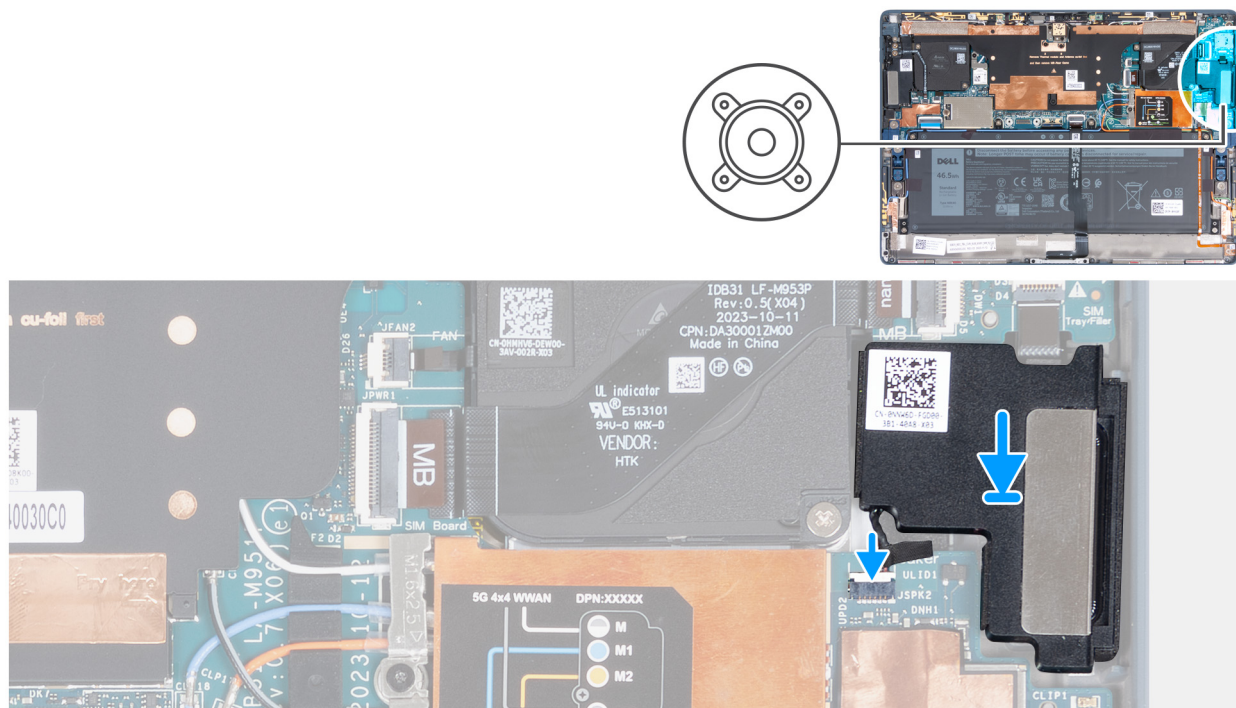
Figure 45. Installing the right speaker

Steps

1. Align and place the right speaker into position.
2. Connect the right-speaker cable to the connector (Speaker) on the system board (Speaker).

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

Heat sink

Removing the heat sink (non-Vapor Chamber)

⚠️ **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.

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

2. Remove the SIM-tray card.
3. Remove the display assembly.

About this task

The following images indicate the location of the heat sink and provides a visual representation of the removal procedure.
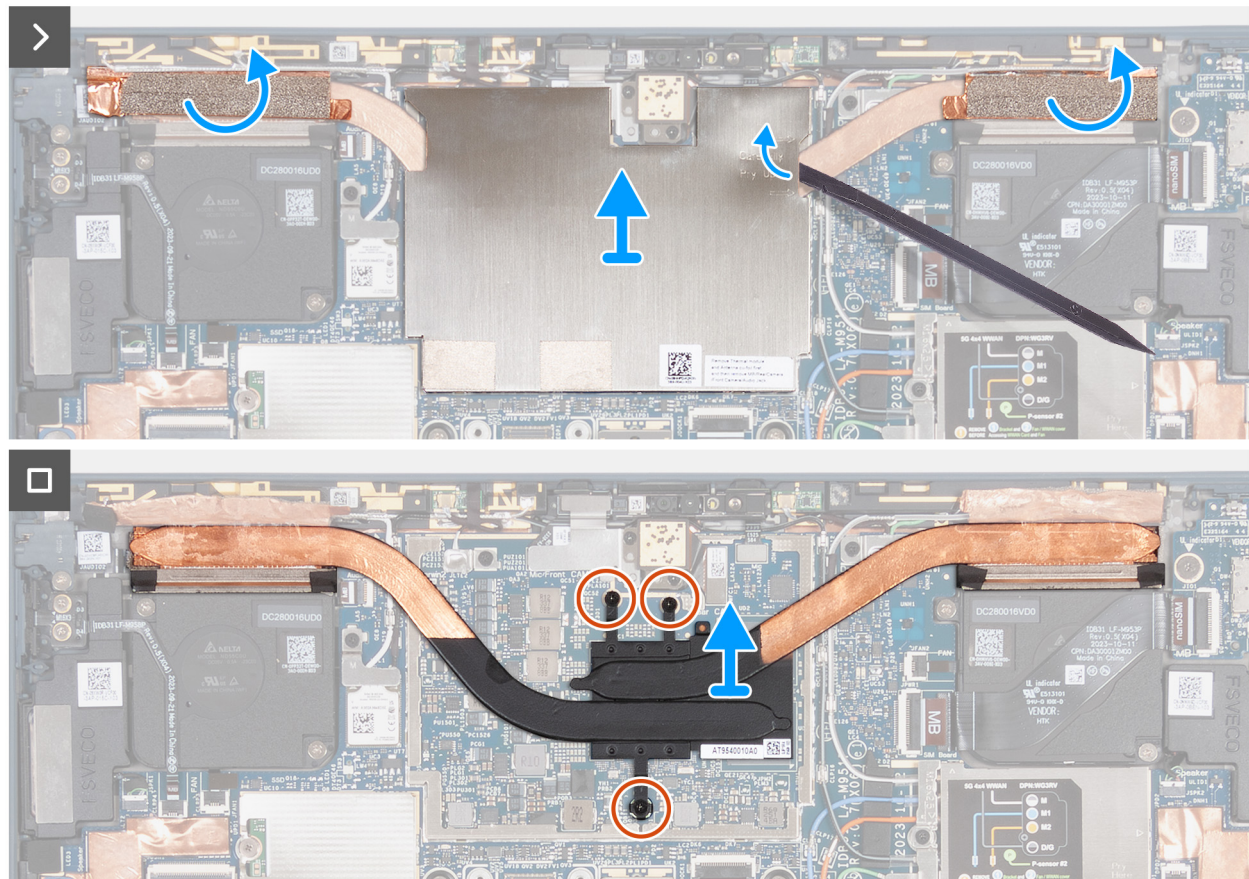
Figure 46. Removing the heat sink (non-Vapor Chamber)

Steps

1. Peel back the WLAN and the WWAN antenna grounding foil (for computers with WWAN support) from the heat sink.
2. Using a plastic scribe, pry the heat sink shield from the opening at the top-right side.
3. Remove the shielding from the computer.
4. Loosen the three captive screws (M1.6x2.3) that secure the heat sink into place in this sequence: 3 > 2 > 1.
5. Gently lift and remove the heat sink from the computer.

Installing the heat sink (non-Vapor Chamber)

> ⚠️ **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 heat sink and provides a visual representation of the installation procedure.
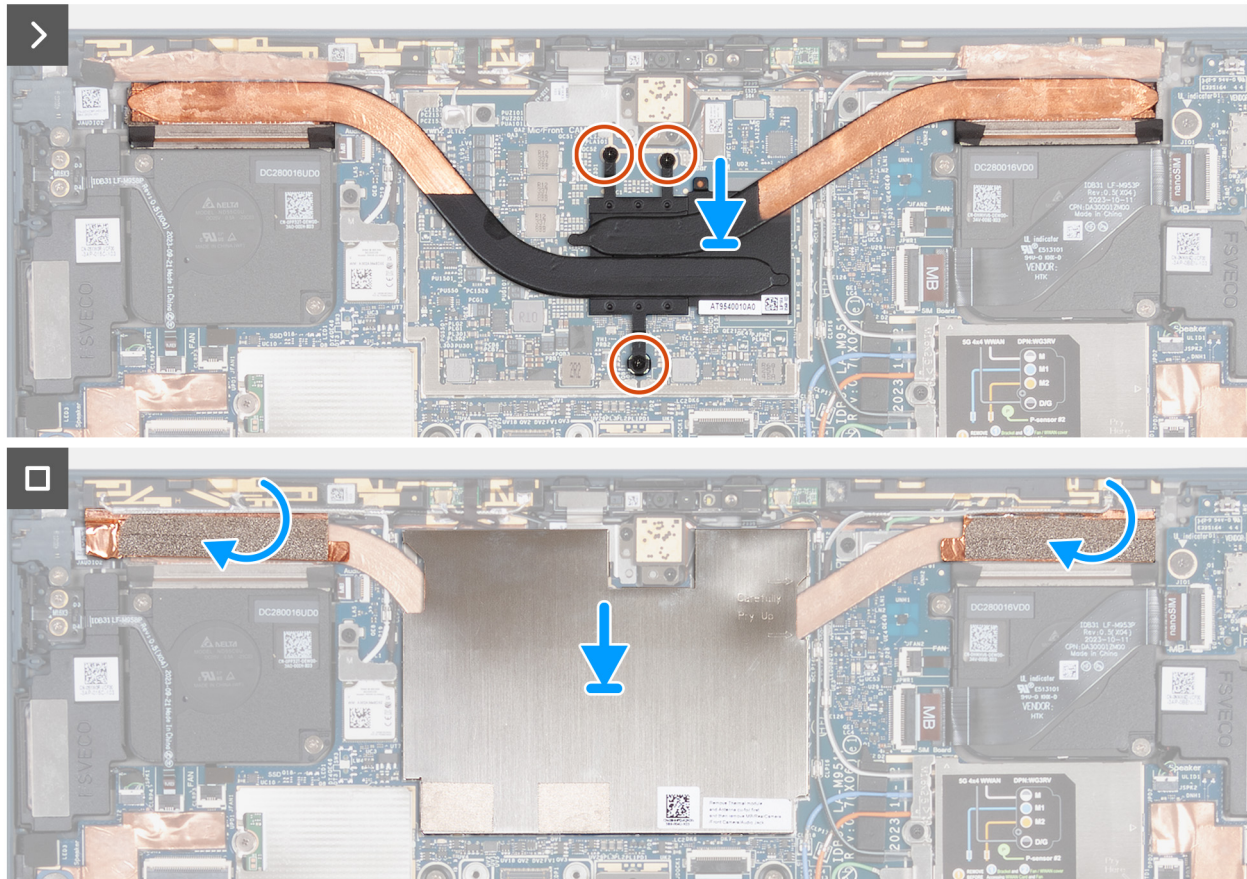
Figure 47. Installing the heat sink (non-Vapor Chamber)

Steps

1. Place the heat sink on the system board, aligning the screw holes on the heat sink with the screw holes on the system board.
2. Tighten the three captive screws (M1.6x2.3) that secure the heat sink to the system board in this sequence: 1 > 2 > 3.
3. Replace the heat sink shield over the heat sink, pressing it into position.
4. Adhere the WLAN and WWAN antenna grounding foil (for computers with WWAN support) to the heat sink.

Next steps

1. Install the display assembly.
2. Install the SIM-tray card.
3. Follow the procedure in After working inside your computer.

Removing the heat sink (Vapor Chamber)

⚠ **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.

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

2. Remove the SIM-tray card.
3. Remove the display assembly.

About this task

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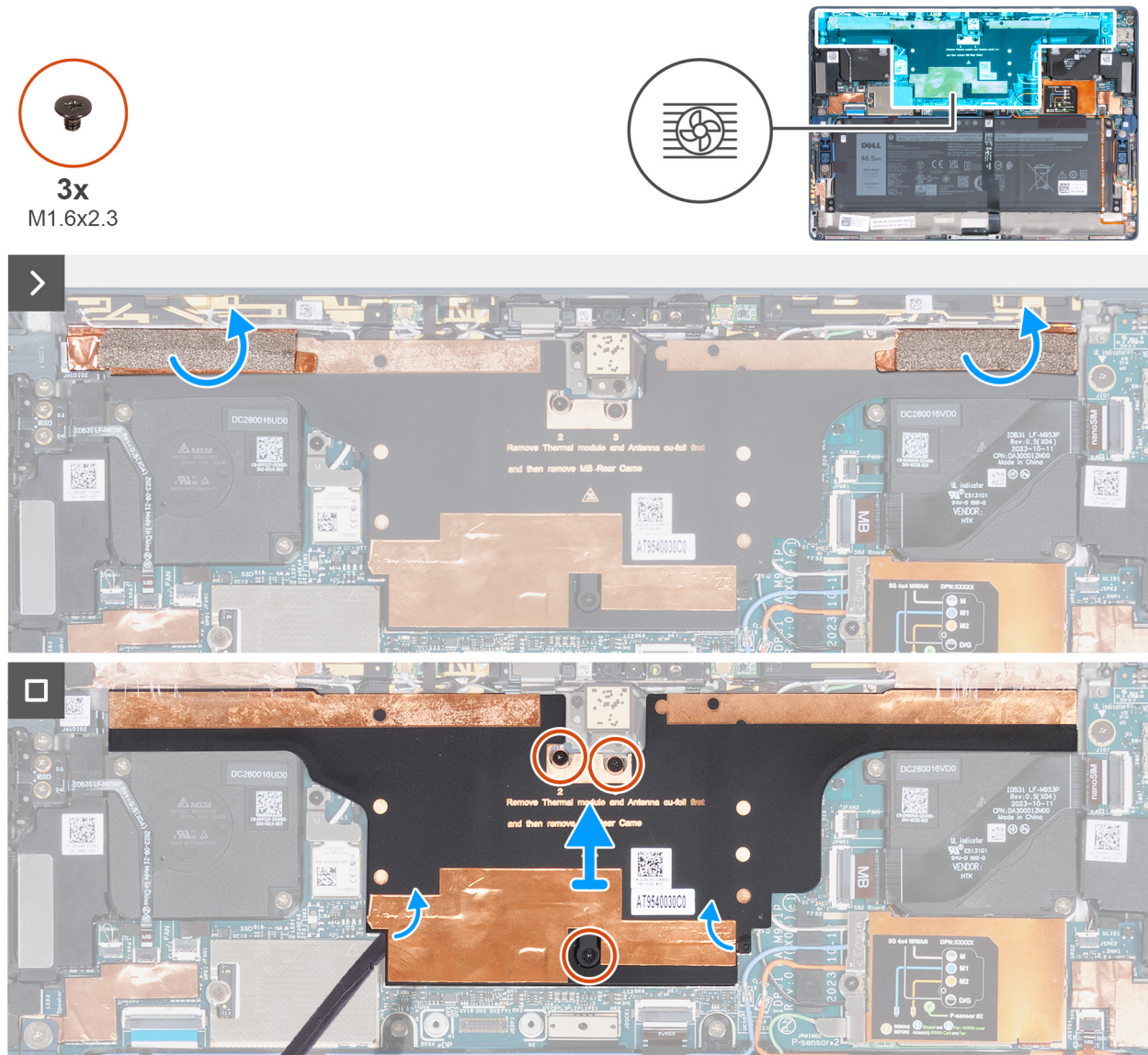

Figure 48. Removing the heat sink (Vapor Chamber)

Steps

1. Peel back the WLAN and WWAN antenna grounding foil (for computers with WWAN support) from the heat sink.
2. Remove the three screws (M1.6x2.3) that secure the heat sink in place.
3. Using a plastic scribe, pry the heat sink from the release points at the bottom-left and bottom-right corners.
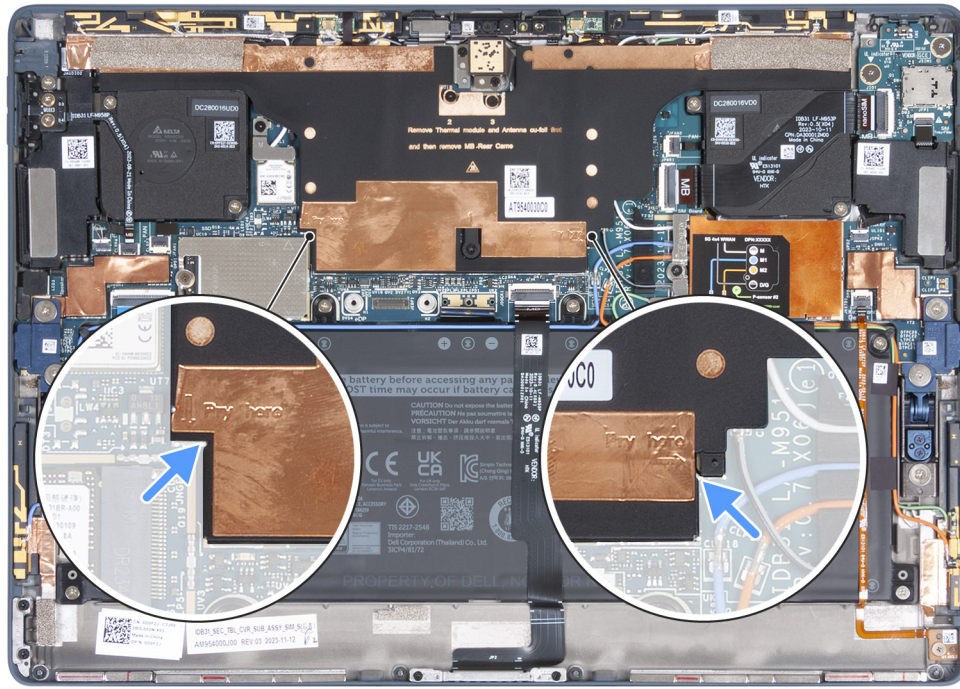
Figure 49. Pry points on heat sink (Vapor Chamber)

4. Gently lift and remove the heat sink from the computer.

Installing the heat sink (Vapor Chamber)

⚠️ **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 heat sink and provides a visual representation of the installation procedure.
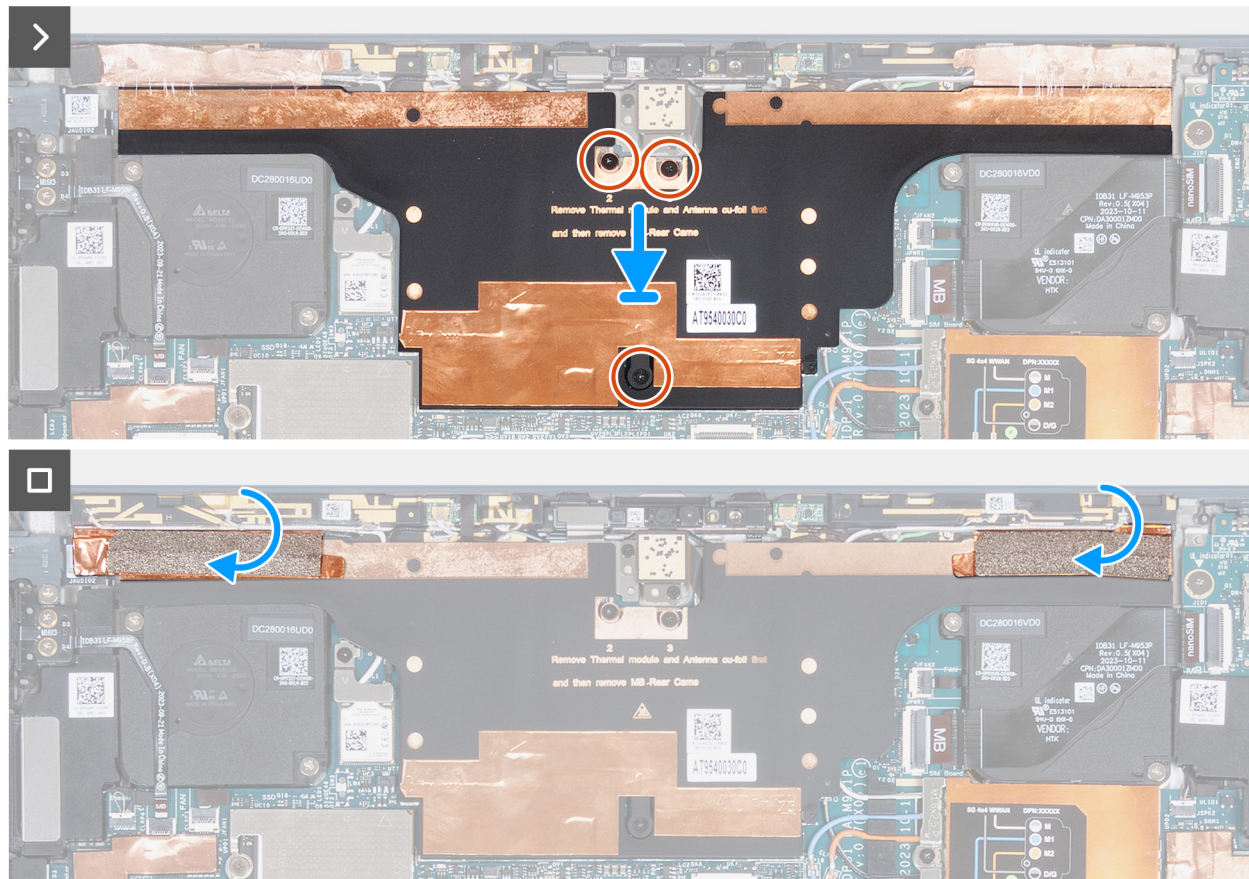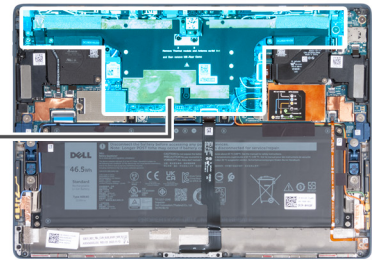
Figure 50. Installing the heat sink (Vapor Chamber)

Steps

1. Place the heat sink on the system board, aligning the screw holes on the heat sink with the screw holes on the system board.
2. Replace the three screws (M1.6x2.3) that secure the that secure the heat sink to the system board
3. Adhere the WLAN and WWAN antenna grounding foil (for computers with WWAN support) to the heat sink.

Next steps

1. Install the display assembly.
2. Install the SIM-tray card.
3. Follow the procedure in After working inside your computer.

MIMO2 WWAN antenna

Removing the MIMO2 WWAN antenna

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

ⓘ **NOTE:** These procedures only apply to computers with WWAN support.

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the SIM card.
3. Remove the display assembly.

About this task

The following images indicate the location of the MIMO2 WWAN antenna and provides a visual representation of the removal procedure.
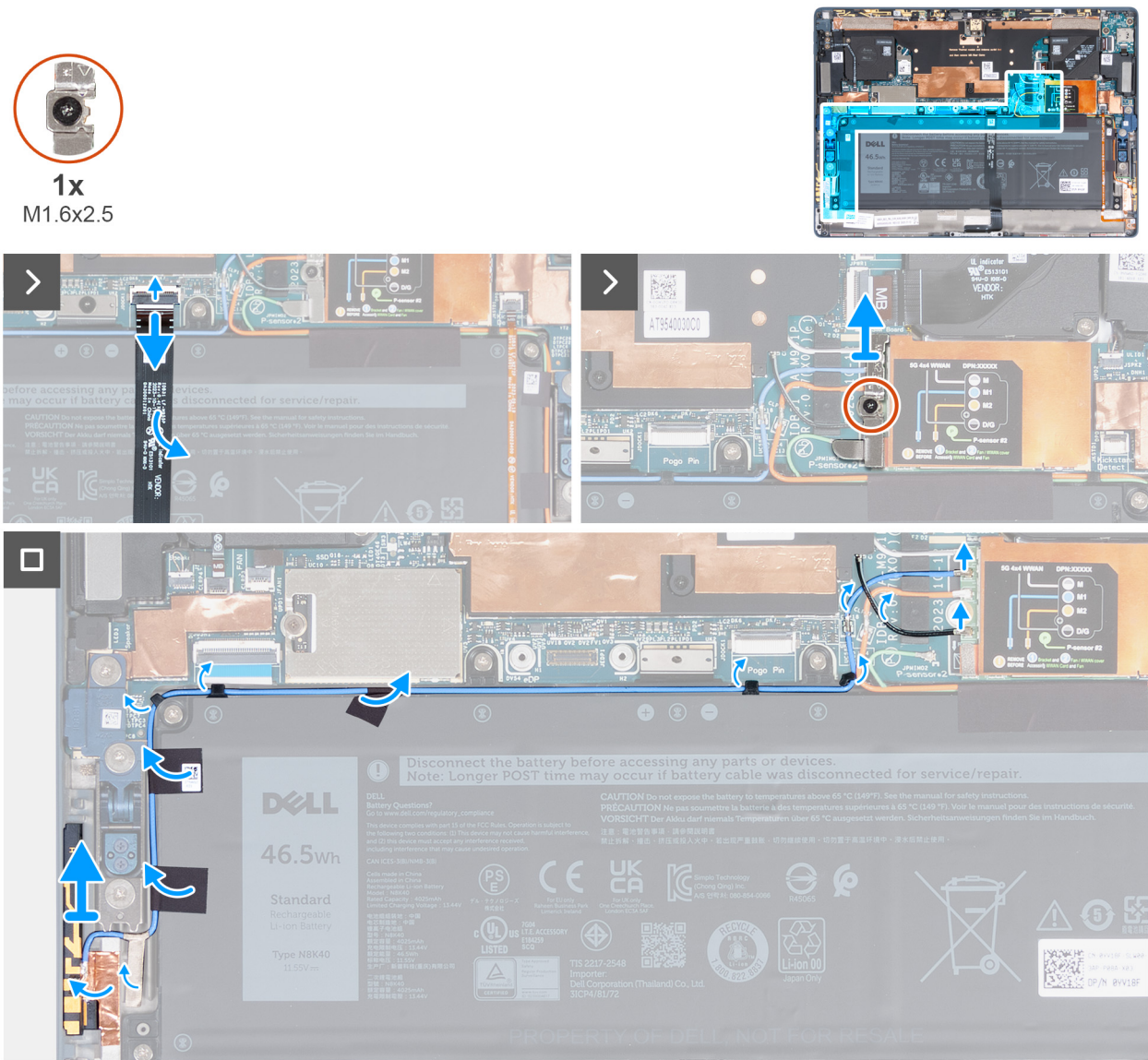

Figure 51. Removing the MIMO2 WWAN antenna

Steps

1. Open the latch and disconnect the docking-connector FPC from the connector (Pogo Pin) on the system board.
2. Carefully peel the docking-connector FPC from the battery.
3. Loosen the captive screw (M1.6x2.5) that secures the WWAN-card bracket to the WWAN card.
4. Slide and remove the WWAN-card bracket off the WWAN card.
5. Disconnect the black/grey WWAN auxiliary antenna cable and blue MIMO2 antenna cable from the WWAN card.
6. Unroute the black/grey WWAN auxiliary cable and blue MIMO2 antenna cable from the routing channels and clips on the system board and around the battery.
7. Peel back the MIMO2 WWAN antenna grounding foil.
8. Remove the MIMO2 WWAN antenna from the system.

Installing the MIMO2 WWAN antenna

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

ⓘ **NOTE:** These procedures only apply to computers with WWAN support.

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 MIMO2 WWAN antenna and provides a visual representation of the installation procedure.
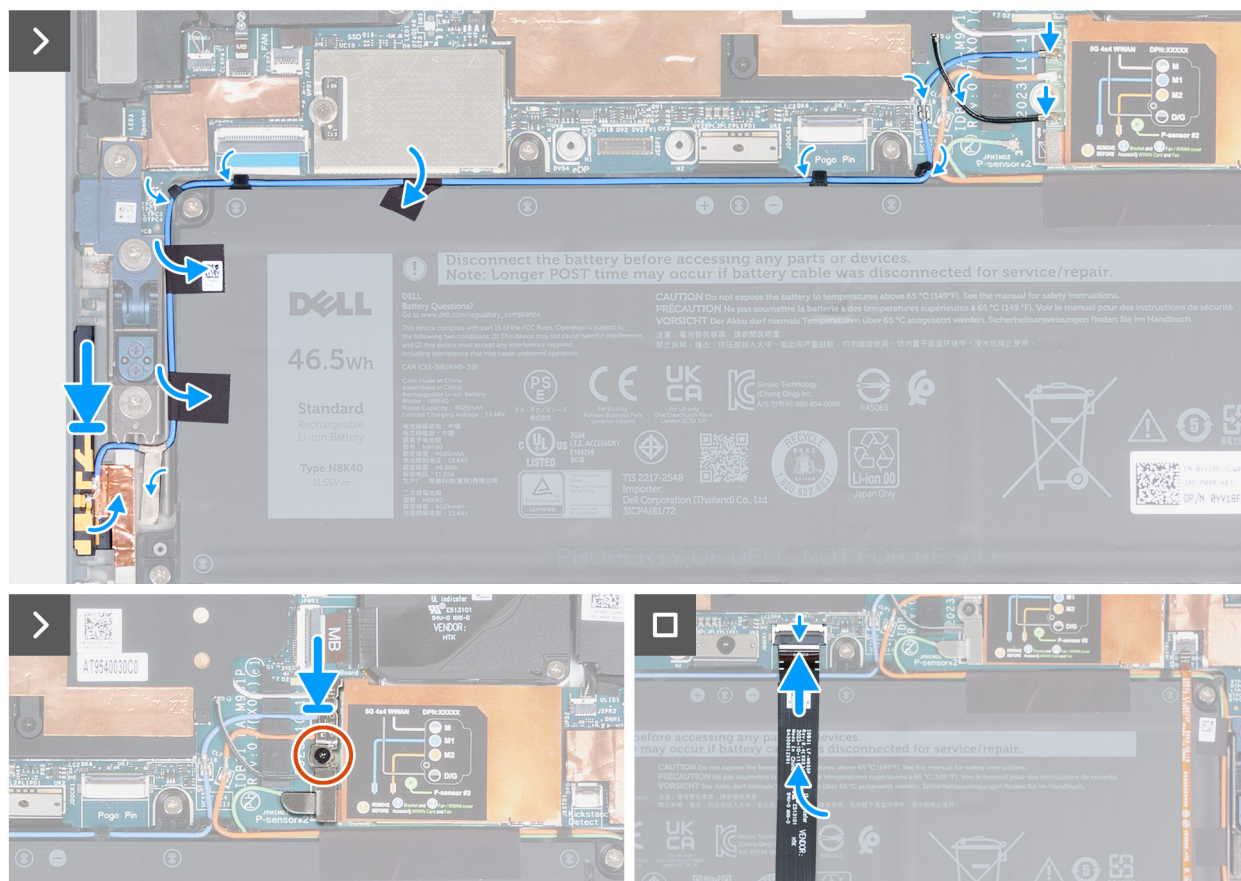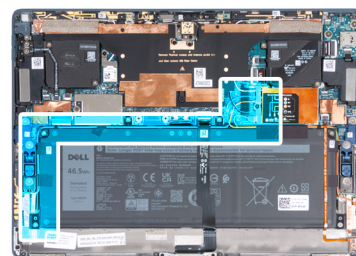
1x
M1.6x2.5

Figure 52. Installing the MIMO2 WWAN antenna

Steps

1. Insert the WWAN antenna into position on the bottom-left of the computer.
2. Adhere the MIMO2 WWAN antenna grounding foil to the computer.
3. Route the black/grey WWAN auxiliary cable and blue MIMO2 antenna cable through the routing channels and clips on the system board and around the battery.
4. Connect the antenna cables to the WWAN card.

   The following table provides the antenna-cable color scheme:

   Table 34. Antenna-cable color scheme for WWAN card

Connectors on the WWAN card	Antenna-cable color	Silkscreen marking	
M	White with a thin gray stripe	Main WWAN	△ (white triangle)
M1	Blue	MIMO2 WWAN	△ (white triangle)
M2	Orange	MIMO3 WWAN	△ (white triangle)
D/G	Black with a thin gray stripe	Auxiliary WWAN	△ (white triangle)

5. Tighten the captive screw (M1.6x2.5) that secures the WWAN-card bracket to the WWAN card.
6. Adhere the docking-connector FPC to the battery.
7. Connect the docking-connector FPC to the connector (Pogo Pin) on the system board and close the latch.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

MIMO3 WWAN antenna

Removing the MIMO3 WWAN antenna

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

ⓘ **NOTE:** These procedures only apply to computers with WWAN support.

Prerequisites

1. Follow the procedure in before working inside your computer.
2. Remove the SIM-card tray.
3. Remove the display assembly.

About this task

The following images indicate the location of the MIMO3 WWAN antenna and provides a visual representation of the removal procedure.
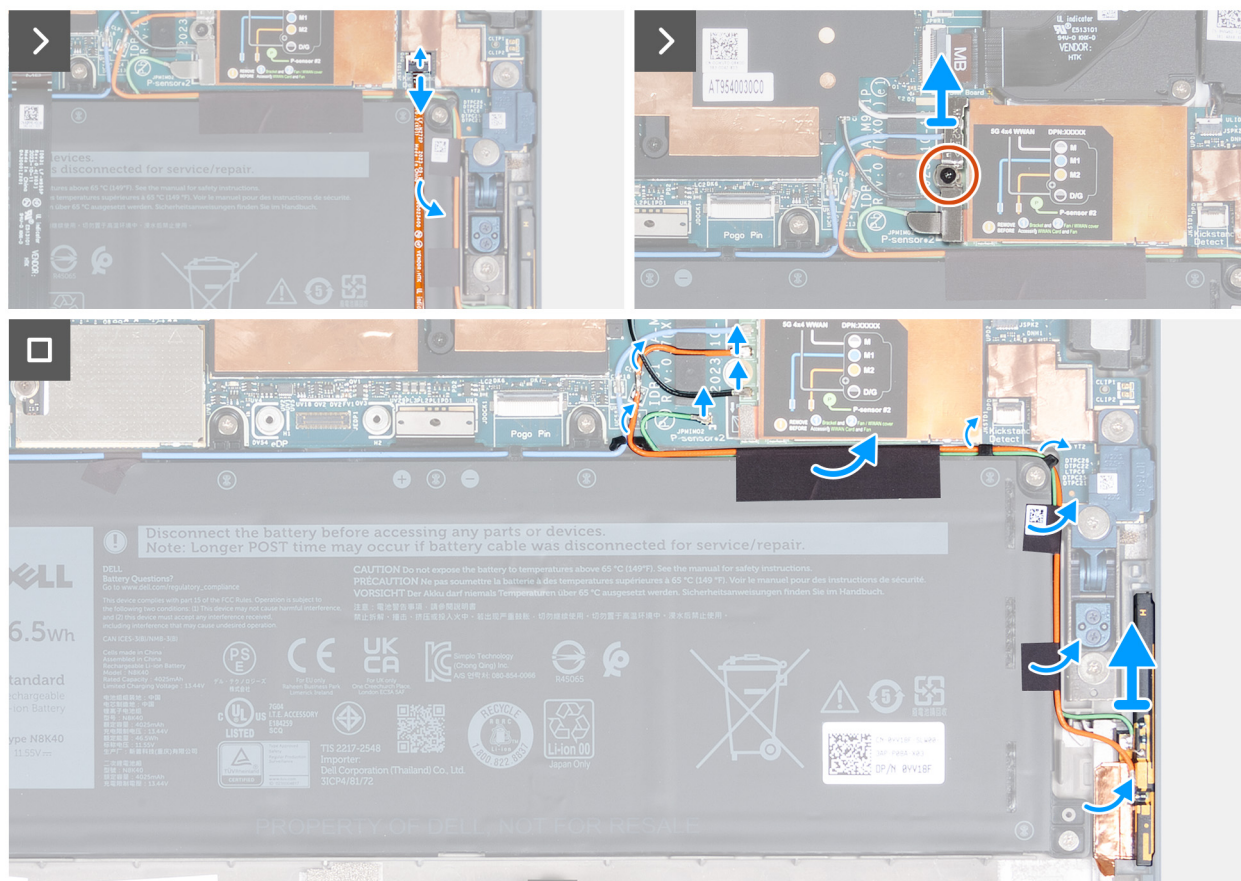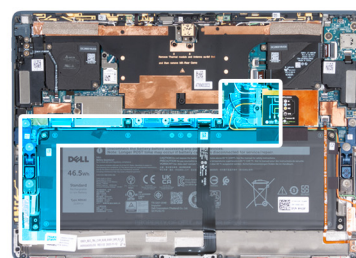
Figure 53. Removing the MIMO3 WWAN antenna

Steps

1. Open the latch and disconnect HALL-sensor FPC from the connector (Kickstand Detect) on the system board.
2. Carefully peel the HALL-sensor FPC from the battery.
3. Loosen the captive screw (M1.6x2.5) that secures the WWAN-card bracket to the WWAN card.
4. Disconnect the black/grey WWAN auxiliary antenna and orange MIMO3 WWAN antenna cables from the WWAN card.
5. Disconnect the green WWAN P-sensor cable from the system board.
6. Unroute the black/grey WWAN auxiliary antenna cable from the routing channels on the system board.
7. Unroute the orange MIMO3 WWAN antenna cable from the routing channels and metal clip on the system board.
8. Unroute the green WWAN P-sensor and orange MIMO3 WWAN antenna cables from the routing channels at the top and right side of the battery.
9. Peel back the MIMO3 WWAN antenna grounding foil from the computer.
10. Remove the MIMO3 WWAN antenna from the computer.

Installing the MIMO3 WWAN antenna

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

ⓘ **NOTE:** These procedures only apply to computers with WWAN support.

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 MIMO3 WWAN antenna and provides a visual representation of the installation procedure.
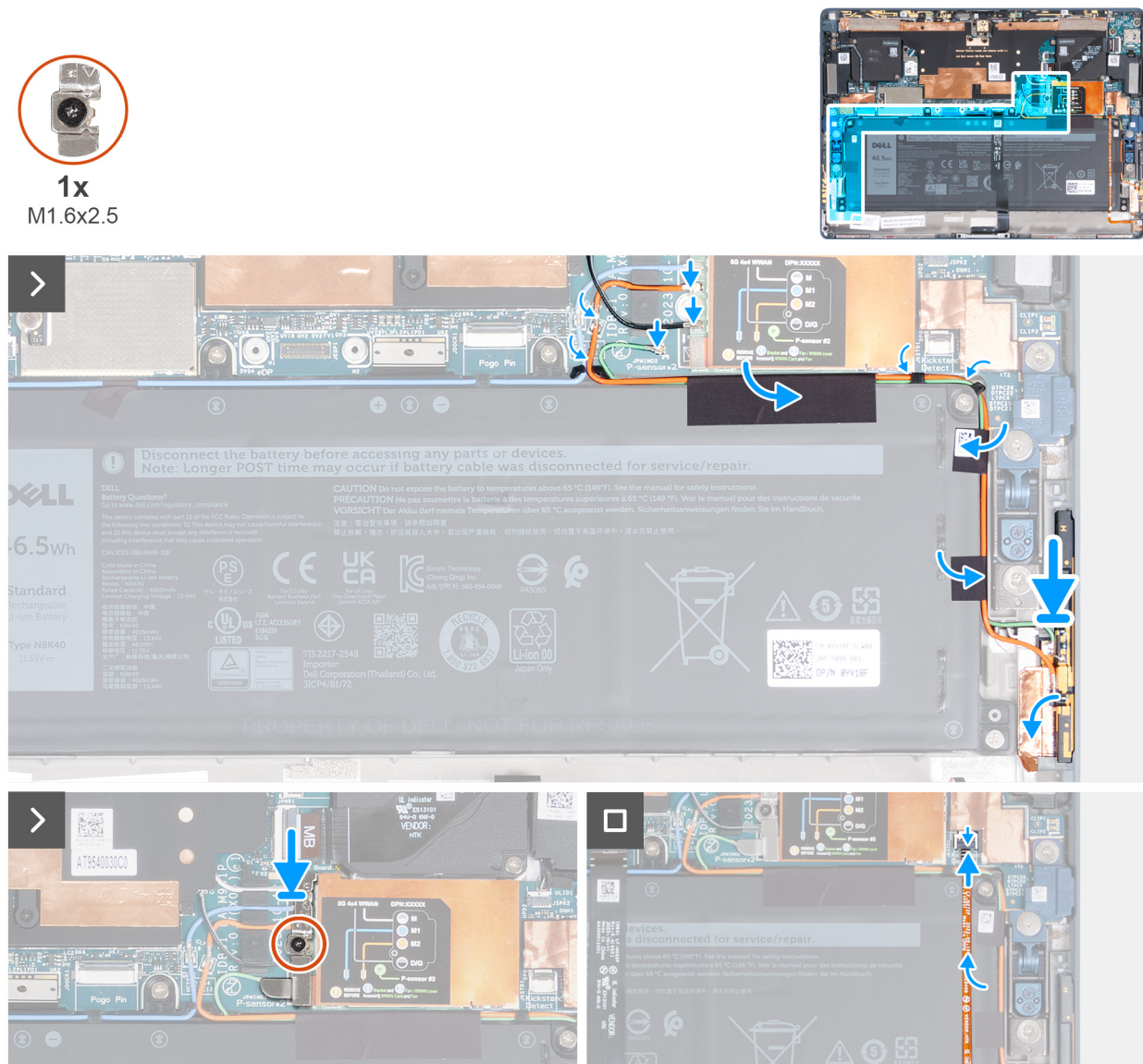

Figure 54. Installing the MIMO3 WWAN antenna

Steps

1. Position the MIMO3 WWAN antenna into the slot on the right of the computer.
2. Adhere the MIMO3 WWAN antenna grounding foil to the computer.
3. Route the green WWAN P-sensor and orange MIMO3 WWAN antenna cables through the routing channels at the top and right side of the battery.
4. Route the orange MIMO3 WWAN antenna cable through the routing channels and metal clip on the system board.
5. Route the black/grey WWAN auxiliary antenna cable through the routing channels on the system board.
6. Connect the green WWAN P-sensor cable to the connector (P-sensor) on the system board.

7. Connect the antenna cables to the WWAN card.

The following table provides the antenna-cable color scheme:

Table 35. Antenna-cable color scheme for WWAN card

Connectors on the WWAN card	Antenna-cable color	Silkscreen marking	
M	White with a thin gray stripe	Main WWAN	△ (white triangle)
M1	Blue	MIMO2 WWAN	△ (white triangle)
M2	Orange	MIMO3 WWAN	△ (white triangle)
D/G	Black with a thin gray stripe	Auxiliary WWAN	△ (white triangle)

8. Tighten the captive screw (M1.6x2.5) that secures the WWAN-card bracket to the WWAN card.
9. Adhere the HALL-sensor FPC to the battery.
10. Connect the HALL-sensor FPC to the connector (Kickstand Detect) on the system board and close the latch.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

Kick-stand hinges

Removing the kick-stand hinges

⚠️ **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 SIM-card tray.
3. Remove the display assembly.

About this task

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

Figure 55. Removing the kick-stand hinges

Steps

1. Close the kick stand.
2. Remove the four screws (M1.6x3) and six screws (M2x2) that secure the kick stand and kick-stand hinges to the back cover.
3. Lift the kick-stand hinges out of the computer.

Installing the kick-stand hinges

⚠️ **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 kick-stand hinges and provide a visual representation of the installation procedure.

Figure 56. Installing the kick-stand hinges

Steps

1. Place the kick-stand hinges into position and align the screw holes on the hinges with the screw holes on the back-cover assembly.
2. Replace the four screws (M1.6x3) and six screws (M2x2) that secure the kick stand and kick-stand hinges to the back-cover assembly.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

World-facing camera

Removing the world-facing camera

⚠️ **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 SIM-card tray
3. Remove the display assembly.
4. Remove the heat sink.

About this task

The following images indicate the location of the world-facing camera and provide a visual representation of the removal procedure.
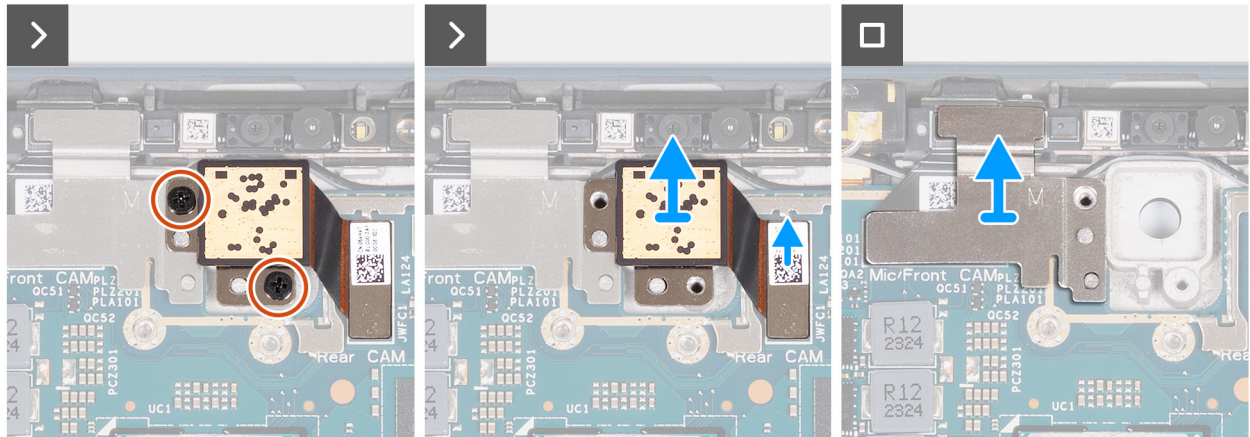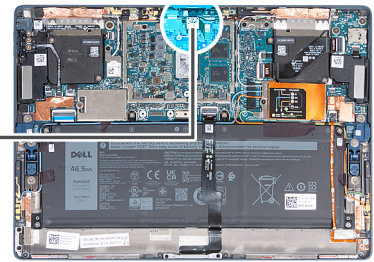
Figure 57. Removing the world-facing camera

Steps

1. Remove the two screws (M1.6x3) that secure the world-facing camera in place.
2. Disconnect the world-facing camera FPC from the connector (CAM) on the system board.
3. Lift the world-facing camera out of the computer.
4. Lift the front-facing camera bracket out of the computer.

   (i) **NOTE:** Remove the front-facing camera bracket immediately after removing the world-facing camera to prevent the bracket from falling out of the computer during replacement procedures.

Installing the world-facing camera

⚠ **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 world-facing camera and provides a visual representation of the installation procedure.
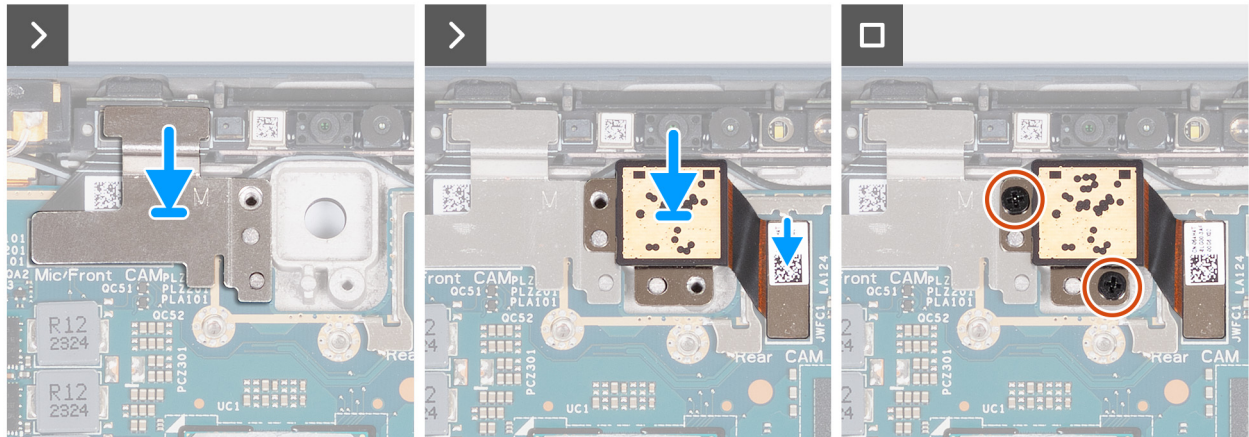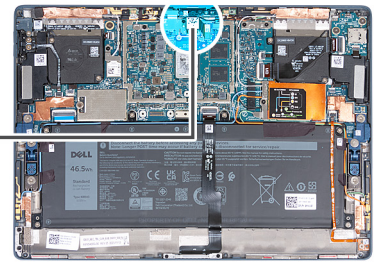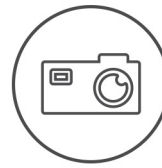
Figure 58. Installing the world-facing camera

Steps

1. Align and place the front-facing camera bracket into position, ensuring the holes on the bracket fit over the holding pins on the back cover.
2. Align and place the world-facing camera into the slot on the frame, ensuring the holes on the camera bracket fit over the holding pins on the back cover.
3. Connect the world-facing camera FPC to the connector (Rear CAM) on the system board.
4. Replace the two screws (M1.6x3) that secure the world-facing camera to the back cover.

Next steps

1. Install the heat sink.
2. Install the display assembly.
3. Install the SIM-card tray.
4. Follow the procedure in After working inside your computer.

Wireless Wide Area Network (WWAN)-antenna module

Removing the WWAN-antenna module

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

ⓘ **NOTE:** These procedures only apply to computers with WWAN support.

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the SIM-card tray.
3. Remove the display assembly.
4. Remove the heat sink.

About this task

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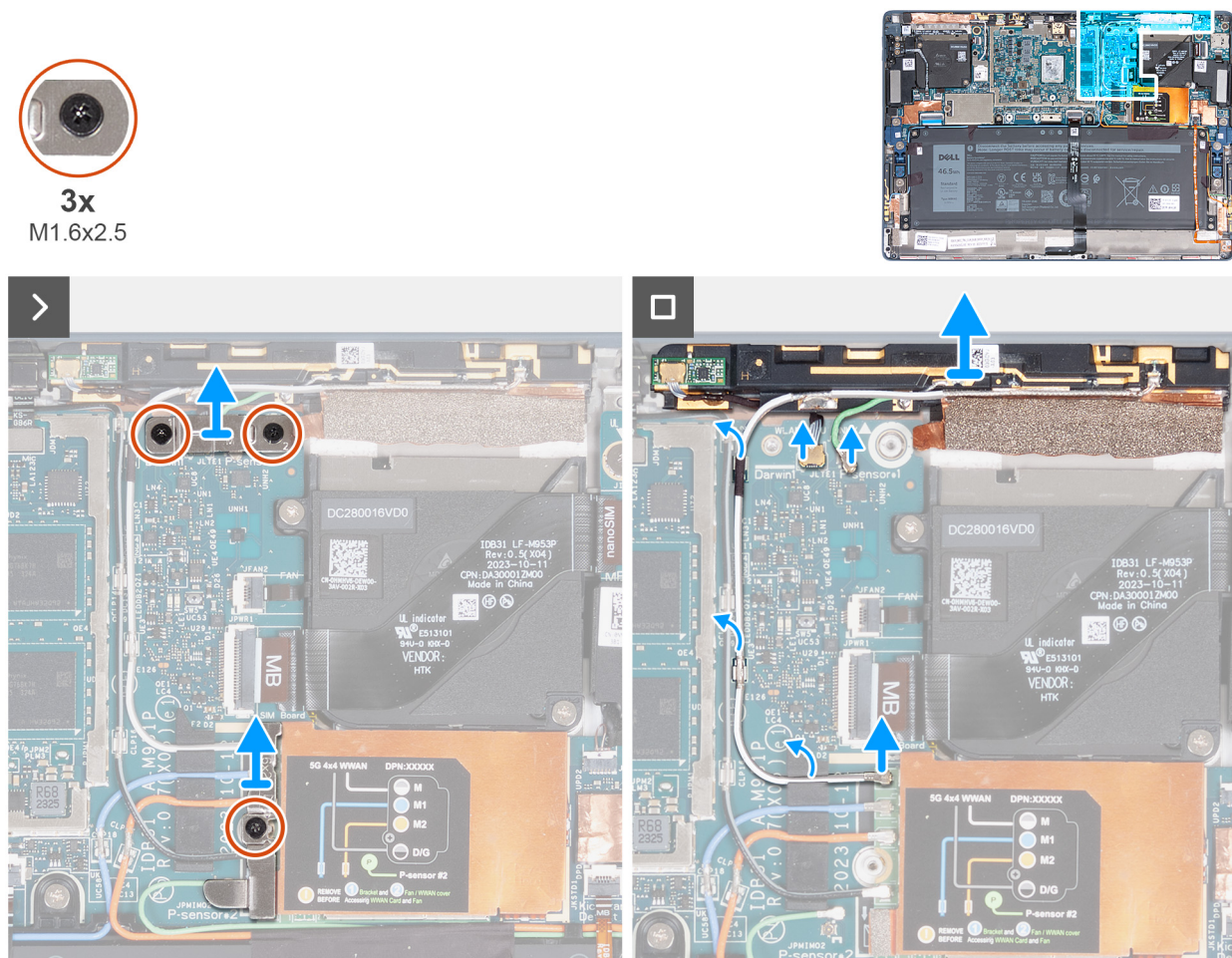

Figure 59. Removing the WWAN-antenna module

Steps

1. Loosen the captive screw (M1.6x2.5) that secures the WWAN-card bracket to the WWAN card.
2. Slide and remove the WWAN-card bracket off the WWAN card.
3. Disconnect the white/grey WWAN main antenna cable from the WWAN card.
4. Unroute the white/grey WWAN main antenna cable from the metal clips on the system board.
5. Loosen the two captive screws (M1.6x2.5) that secure the Darwin 1 antenna bracket in place.
6. Remove the Darwin 1 antenna bracket from the system.
7. Disconnect the Darwin 1 antenna cable and green P-sensor cable from the system board.
8. Remove the WWAN-antenna module from the computer.

Installing the WWAN-antenna module

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

ⓘ **NOTE:** These procedures only apply to computers with WWAN support.

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 WWAN-antenna module and provides a visual representation of the installation procedure.
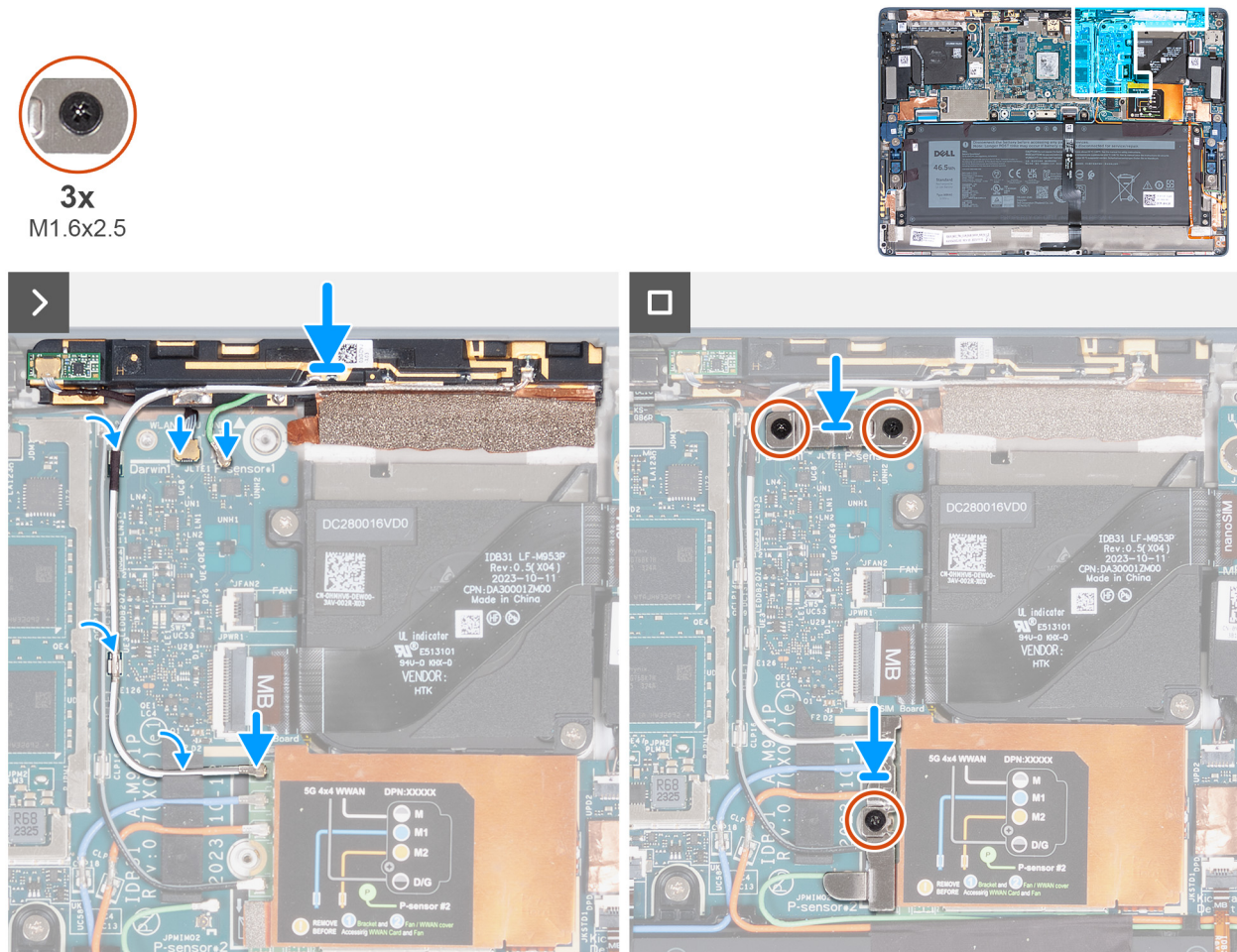

Figure 60. Installing the WWAN-antenna module

Steps

1. Insert the WWAN antenna module into position.
2. Connect the Darwin 1 antenna cable to the connector (Darwin1) on the system board.
3. Connect green P-sensor cable to the connector (P-Sensor1) on the system board.
4. Place the Darwin 1 antenna bracket over the connectors.
5. Tighten the two captive screws (M1.6x2.5) that secure the Darwin 1 antenna bracket in place.
6. Thread the white/grey WWAN main antenna cable through the metal clips on the system board.
7. Connect the white/grey WWAN main antenna cable to the WWAN card.
8. Place the WWAN-card bracket over the connectors on the WWAN card.
9. Tighten the captive screw (M1.6x2.5) that secures the WWAN-card bracket to the WWAN card.

Next steps

1. Install the heat sink.
2. Install the display assembly.
3. Install the SIM-card tray.
4. Follow the procedure in After working inside your computer.

Power-button board

Removing the power-button 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 SIM-card tray.
3. Remove the display assembly.

About this task

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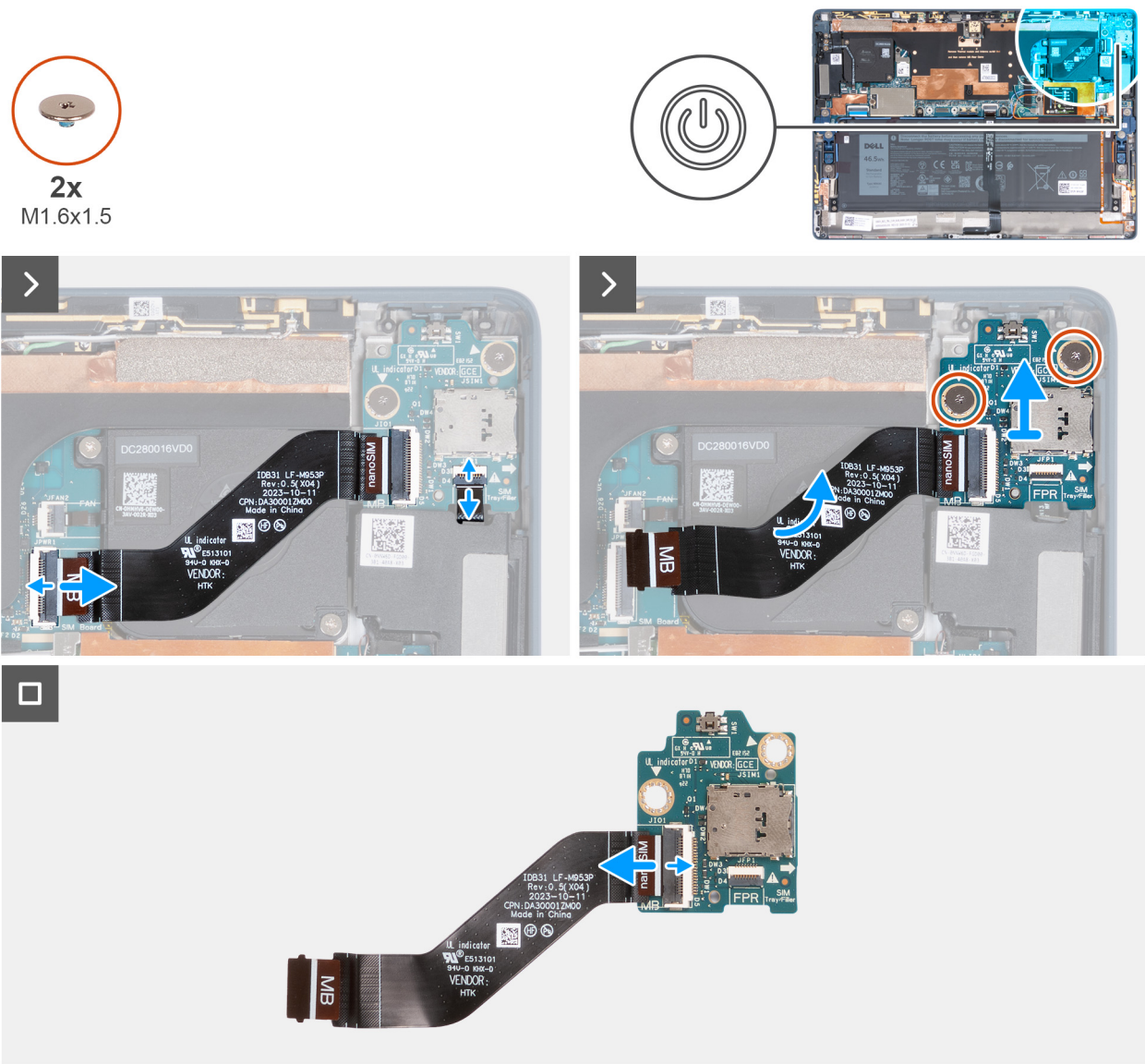

Figure 61. Removing the power-button board

Steps

1. For computers installed with a fingerprint reader, open the latch and disconnect the fingerprint-reader FPC from the connector (FPR) on the power-button board.

   (i) **NOTE:** Skip to the next step if your computer does not have a fingerprint reader installed.

2. Open the latch and disconnect the power-button board FPC from the connector (SIM Board) on the system board.
3. Peel off the power-button board FPC from the right fan.
4. Remove the two screws (M1.6x1.5) that secure the power-button board into position.
5. Remove the power-button board along with its FPC from the computer.
6. Open the latch and disconnect the power-button board FPC from the connector (MB) on the power-button board.

Installing the power-button board

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

About this task

The following images indicate the location of the power-button board and provide a visual representation of the installation procedure.
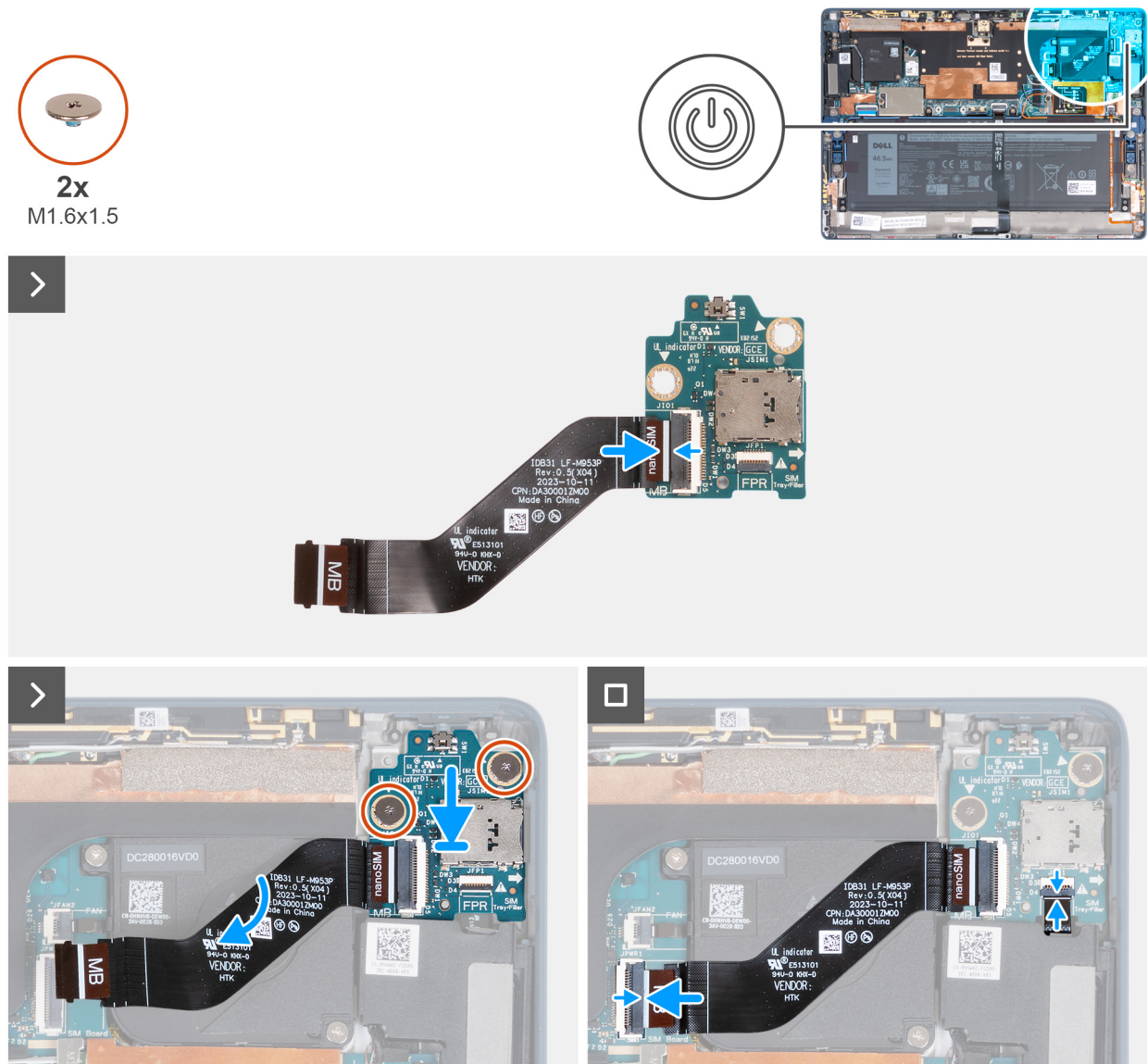
Figure 62. Installing the power-button board

Steps

1. Connect the power-button daughter board FPC to the connector (MB) on the power-button board and close the latch.
2. Place the power-button board along with its FPC into position.
3. Adhere the power-button board FPC to the right fan.
4. Replace the two screws (M1.6x1.5) that secure the power-button board into position.
5. Connect the power-button board FPC to the connector (SIM Board) on the system board and close the latch.
6. For computers installed with a fingerprint reader, connect the fingerprint-reader FPC to the connector (FPR) on the power-button board and close the latch.

   (i) **NOTE:** Skip this step if your computer does not have a fingerprint reader installed.

Next steps

1. Install the display assembly.
2. Install the SIM-card tray.
3. Follow the procedure in After working inside your computer.

Fingerprint reader

Removing the 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 SIM tray.
3. Remove the display assembly.
4. Remove the power-button board

About this task

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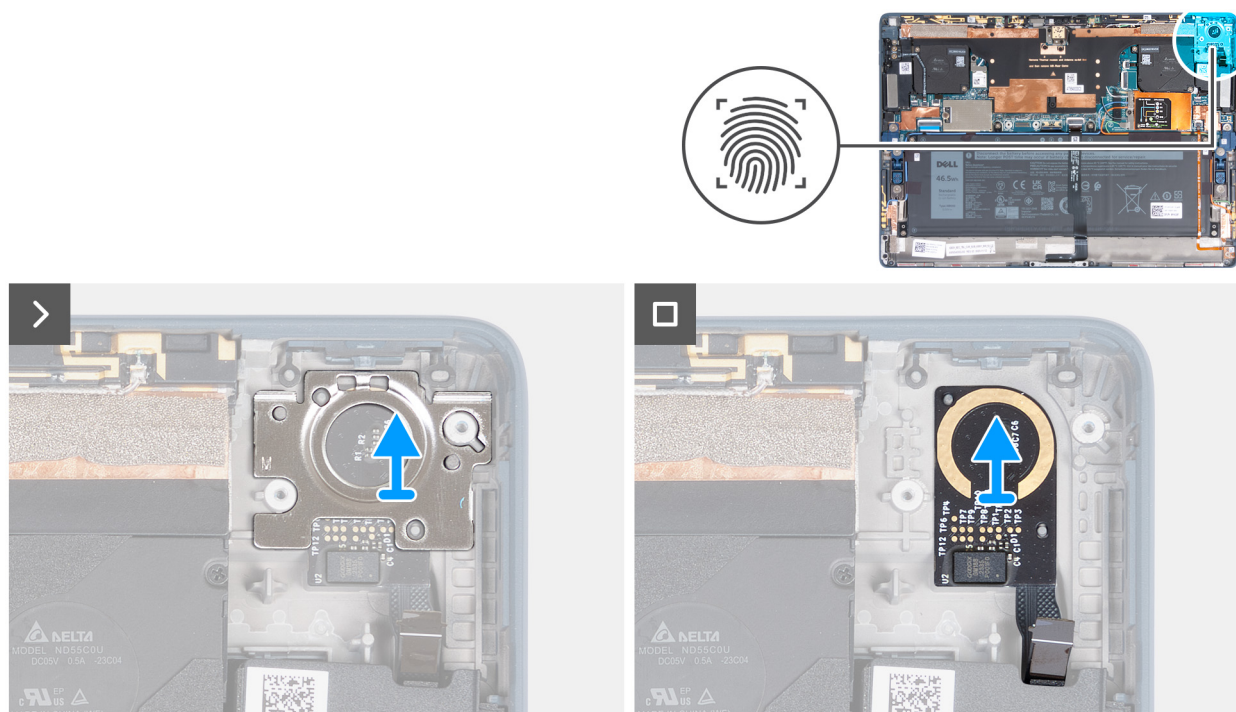

Figure 63. Removing the fingerprint reader

Steps

1. Remove the fingerprint-reader bracket.
2. Lift the fingerprint reader out of the computer.

Installing the fingerprint reader

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

About this task

The following images indicate the location of the fingerprint reader and provide a visual representation of the installation procedure.
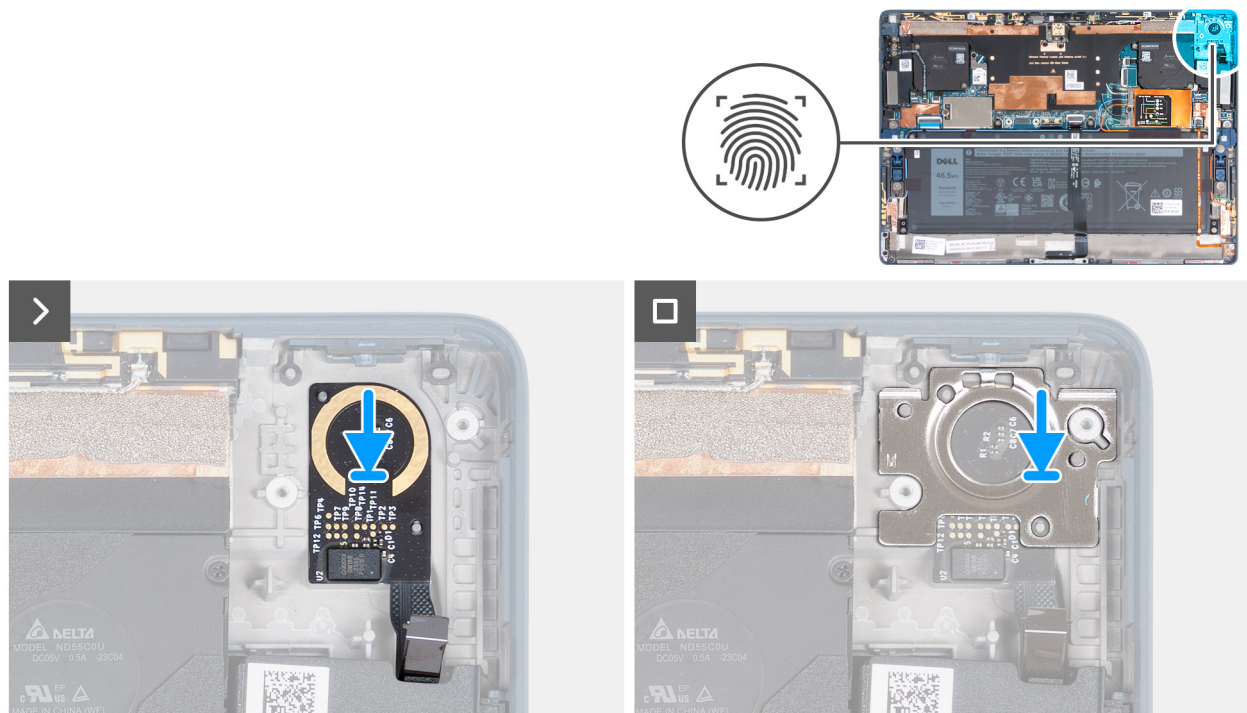
Figure 64. Installing the fingerprint reader

Steps

1. Align and place the fingerprint-reader on the back cover.
2. Push the fingerprint-reader bracket onto the fingerprint-reader card.

Next steps

1. Install the power-button board.
2. Install the display assembly.
3. Install the SIM tray.
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 SIM-card tray.
3. Remove the display assembly.
4. Remove the solid-state drive.
5. Remove the WWAN card.
6. Remove the left fan.
7. Remove the right fan.
8. Remove the battery.
9. Remove the heat sink.
10. Remove the kick-stand hinges.
11. Remove the world-facing camera.

About this task

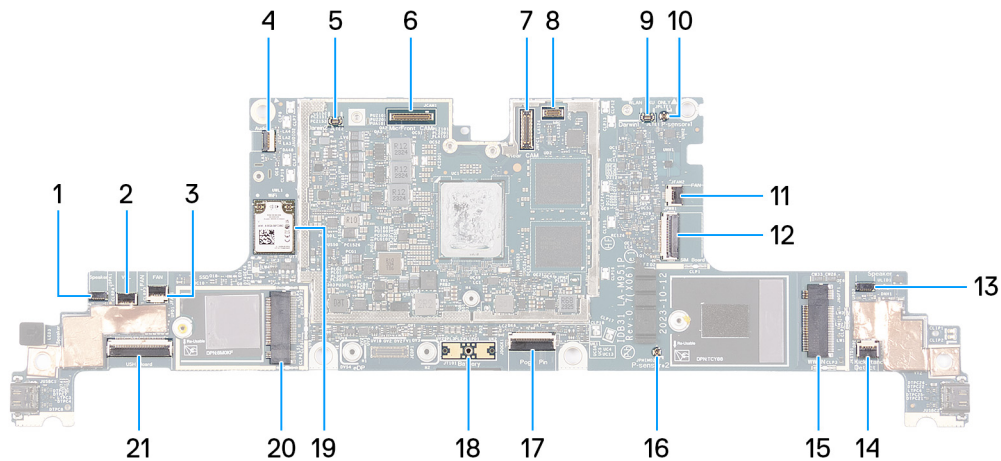The following image indicates the connectors on your system board.

Figure 65. System-board connectors

1. Left-speaker cable connector (Speaker)
2. Volume-button FPC connector (VOL)
3. Left-fan cable connector (FAN)
4. Audio-jack FPC connector (Audio)
5. Darwin 2-antenna cable connector (Darwin2)
6. Microphone FPC and User-facing camera FPC connectors (Mic/Front CAM)
7. World-facing camera FPC connector (Rear CAM)
8. Microphone-cable connector (Mic)
9. Darwin 1-antenna cable connector (Darwin1)
10. P-sensor cable connector (P-sensor1)
11. Right-fan cable connector (FAN)
12. Power-button board FPC connector (SIM Board)
13. Right-speaker connector (Speaker)
14. HALL-sensor FPC connector (Kickstand Detect)
15. WWAN slot (WWAN)
16. P-sensor cable connector (P-sensor2)
17. Docking-connector FPC connector (Pogo Pin)
18. Battery-cable connector (Battery)
19. WLAN slot (WiFi)
20. SSD slot (SSD)
21. USH daughter-board FFC connector (USH Board)

The following images indicate the location of the system board and provide a visual representation of the removal procedure.
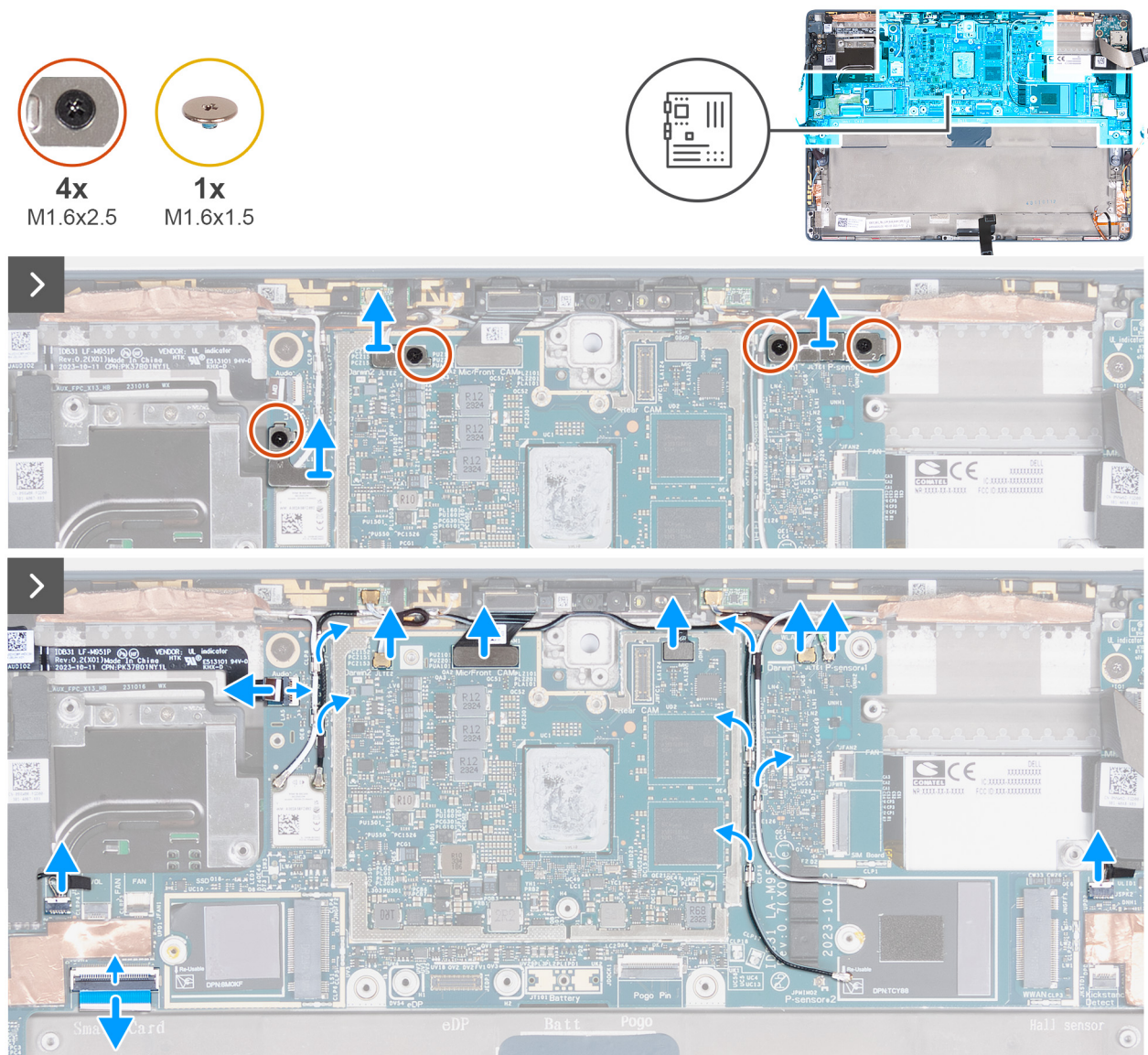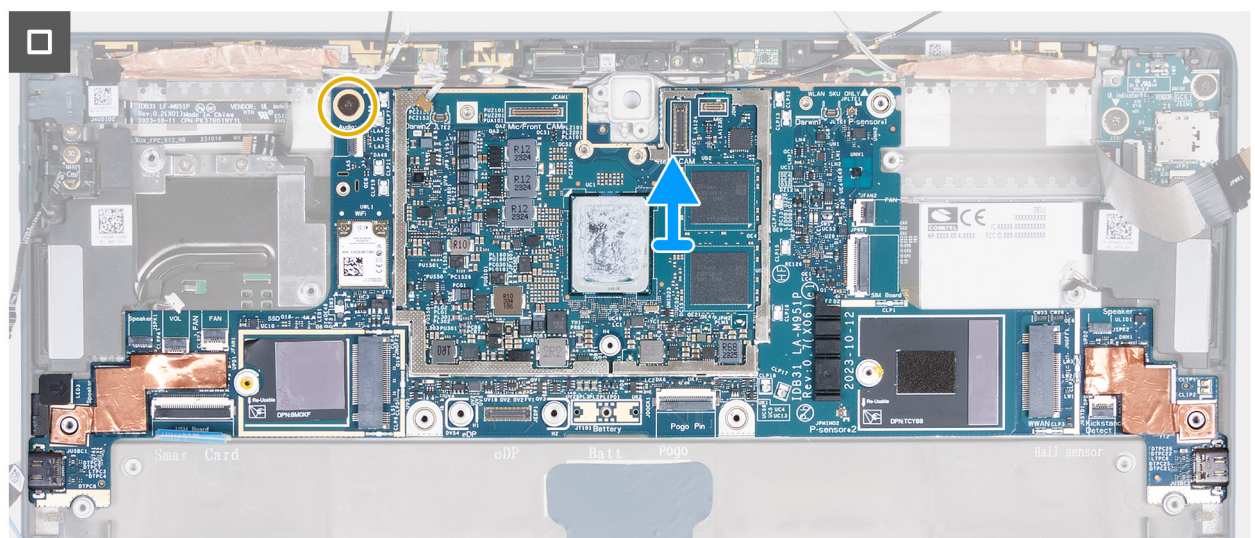
Figure 66. Removing the system board

Figure 67. Removing the system board

Steps

1. **For computers with WWAN support:**

   (i) **NOTE:** Skip to the next step if the computer does not support WWAN.

   a. Remove the two screws (M1.6x2.5) that secure the Darwin 1-antenna cable bracket to the top-right of the system board.
   b. Unroute the white/grey WWAN-main antenna cable and black/grey WWAN-auxiliary antenna cable from the routing channels and metal clips on the system board.
   c. Remove the Darwin 1-antenna cable bracket from the system.
   d. Disconnect the Darwin 1-antenna cable and green P-sensor cable from the connectors (Darwin1 and P-sensor) on the system board.
   e. Remove the single screw (M1.6x2.5) that secures the Darwin 2-antenna cable bracket to the top left of the system board.
   f. Remove the Darwin 2-antenna cable bracket from the system board.
   g. Disconnect the Darwin 2-antenna cable from the connector (Darwin2) on the system board.
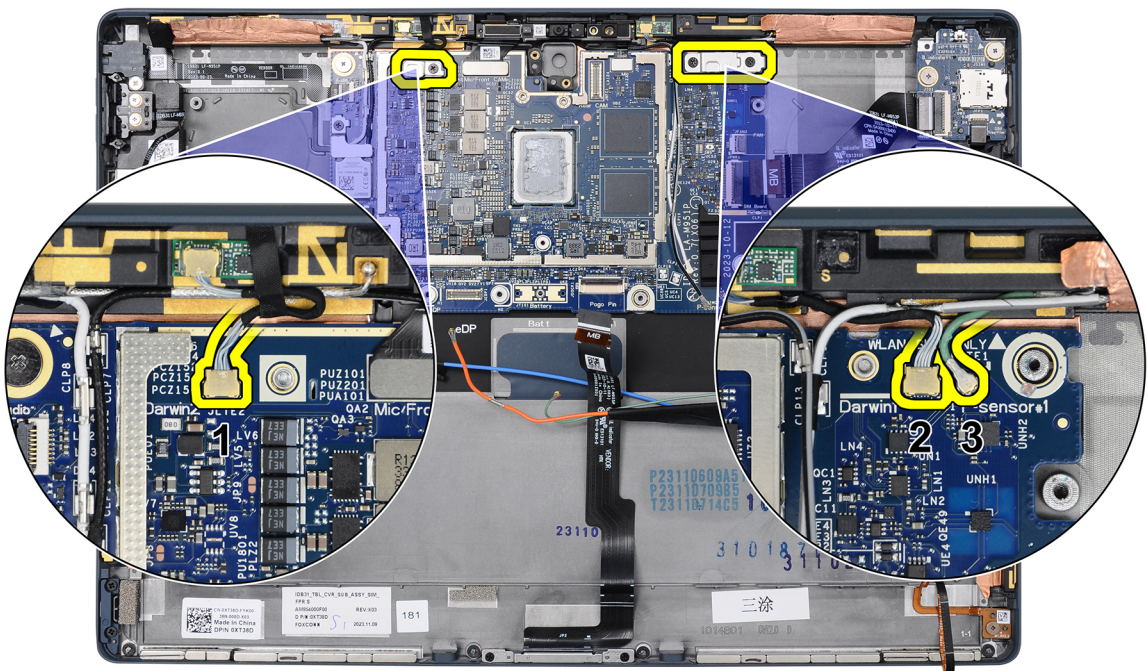

Figure 68. Darwin 1 and 2, and P-sensor cables

2. Loosen the single captive screw (M1.6x2.5) that secures the WLAN-module bracket in place.
3. Remove the WLAN-module bracket from the WLAN module.
4. Disconnect the white and black WLAN-antenna cables from the WLAN module.
5. Unroute the white and black WLAN-antenna cables from the metal clips on the system board.
6. Disconnect the following from the system board:
   - Microphone FPC (from Mic/Front CAM connector)
   - User-facing camera FPC (from Mic/Front CAM connector)
   - Audio-jack FPC (from Audio connector)
   - Left-speaker cable (from Speaker connector)
   - USH daughter board FFC, for models shipped with a USH-daughter board (from USH Board connector)
   - Right-speaker cable (from Speaker connector)
7. **For computers with WLAN support only**, remove the two screws (M1.6x1.5) that secure the system board in place; **for computers with WWAN support**, remove the single screw (M1.6x1.5) that secures the system board in place.
8. Remove the system board from the back-cover assembly.

9. **For computers with WWAN and WLAN support**, the following components must be removed and re-adhered to the replacement system board: M.2 SSD thermal pad, WWAN absorber, WWAN card thermal pad.

   For computers with WLAN support only, the M.2 SSD thermal pad must be removed and re-adhered to the replacement system board.
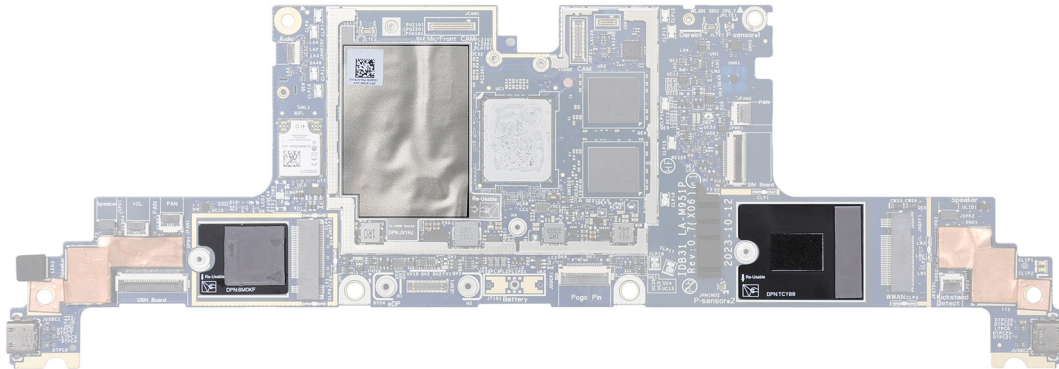

Figure 69. Left to right: M.2 SSD thermal pad, WWAN absorber, WWAN card thermal pad

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.
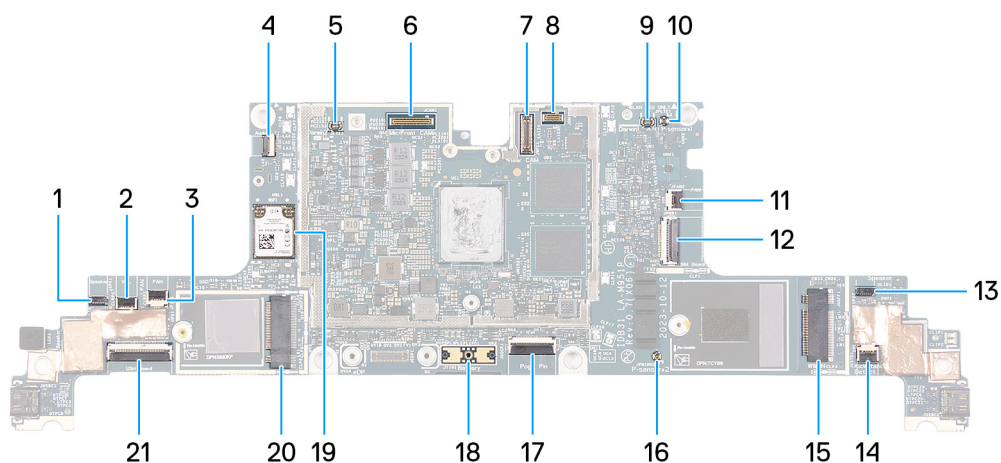

Figure 70. System-board connectors

1. Left-speaker cable connector (Speaker)
2. Volume-button FPC connector (VOL)
3. Left-fan cable connector (FAN)
4. Audio-jack FPC connector (Audio)
5. Darwin 2-antenna cable connector (Darwin2)
6. Microphone FPC and User-facing camera FPC connectors (Mic/Front CAM)

7. World-facing camera FPC connector (Rear CAM)
8. Microphone-cable connector (Mic)
9. Darwin 1-antenna cable connector (Darwin1)
10. P-sensor cable connector (P-sensor1)
11. Right-fan cable connector (FAN)
12. Power-button board FPC connector (SIM Board)
13. Right-speaker connector (Speaker)
14. HALL-sensor FPC connector (Kickstand Detect)
15. WWAN slot (WWAN)
16. P-sensor cable connector (P-sensor2)
17. Docking-connector FPC connector (Pogo Pin)
18. Battery-cable connector (Battery)
19. WLAN slot (WiFi)
20. SSD slot (SSD)
21. USH daughter-board FFC connector (USH Board)

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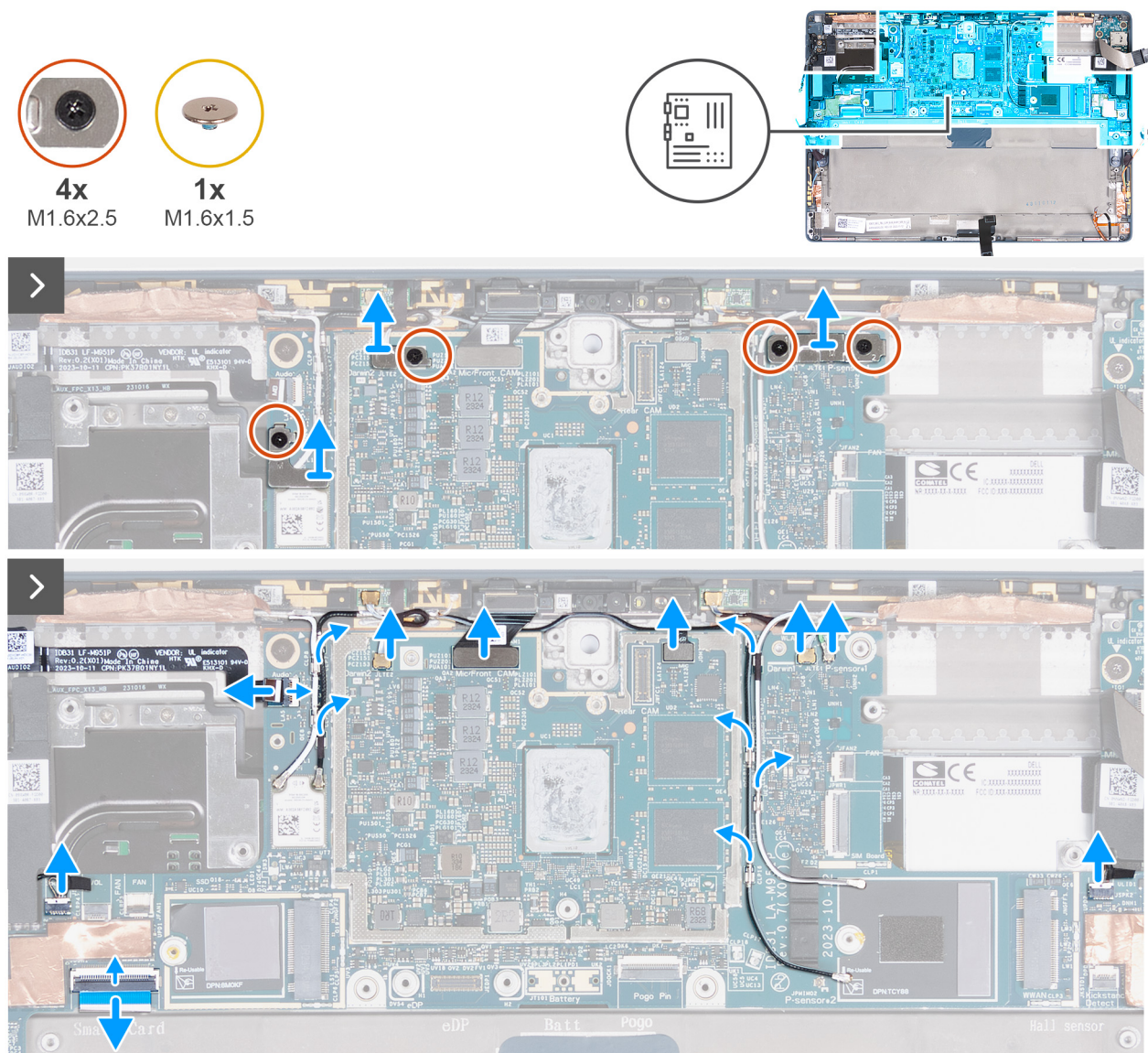

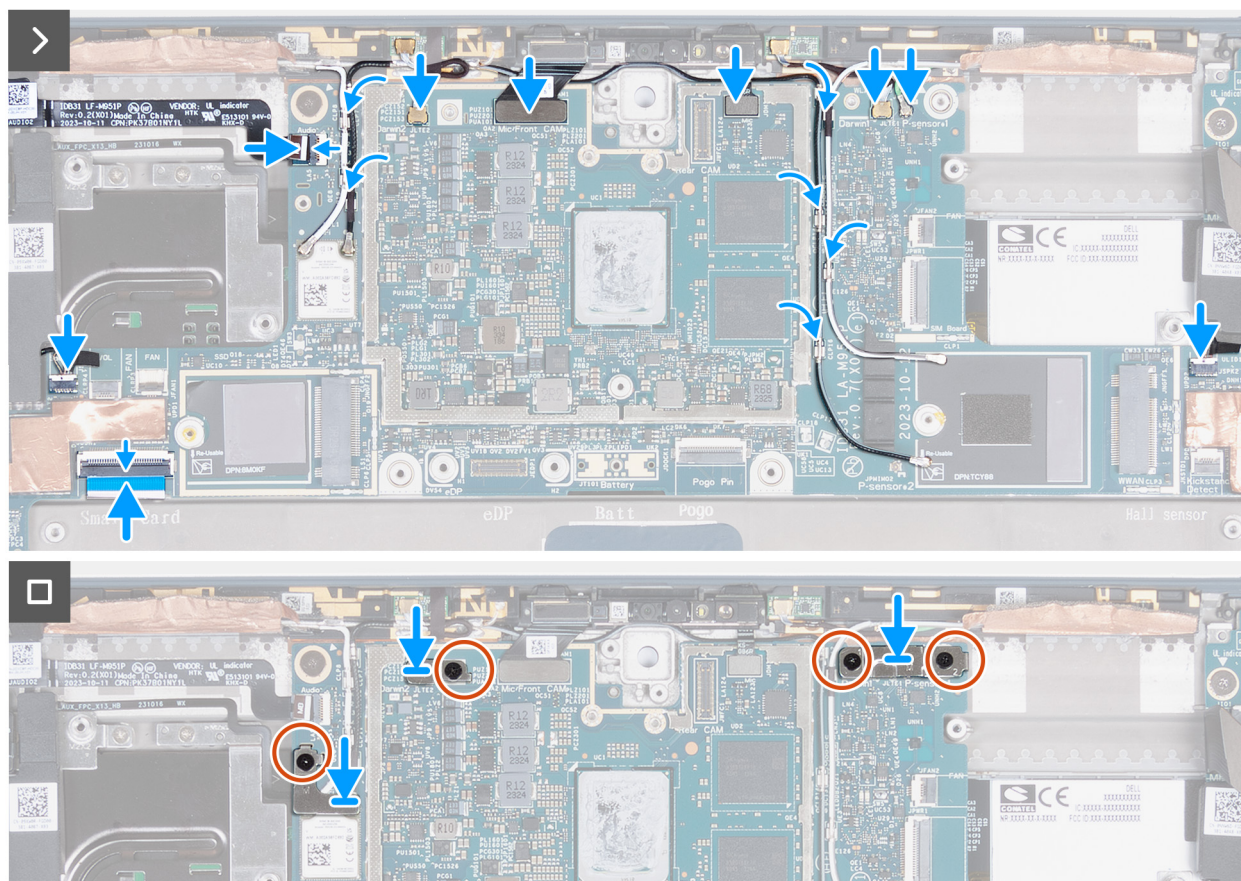**Figure 71. Installing the system board**

Figure 72. Installing the system board

Steps

1. **For computers with WWAN and WLAN support**, re-adhere the following components from the previous system board: M.2 SSD thermal pad, WWAN absorber, WWAN card thermal pad.

   For computers with WLAN support only, re-adhere the M.2 SSD thermal pad from the previous the replacement system board.

2. Align the screw holes on the system board with the screw holes on the back-cover assembly.

3. **For computers with WLAN support only**, replace the two screws (M1.6x1.5) that secure the system board in place; **for computers with WWAN support**, replace the single screw (M1.6x1.5) that secures the system board in place.

4. Connect the following to the system board:
   - Microphone FPC (to Mic/Front CAM connector)
   - User-facing camera FPC (to Mic/Front CAM connector)
   - Audio-jack FPC (to Audio connector)
   - Left-speaker cable (to Speaker connector)
   - USH daughter board FFC, for models shipped with a USH-daughter board (to USH Board connector)
   - Right-speaker cable (to Speaker connector)

5. Route the white and black WLAN-antenna cables through the metal clips on the system board.

6. Connect the white and black WLAN-antenna cables to the WLAN module.

7. Place the WLAN-module bracket on the WLAN module.

8. Tighten the captive screw (M1.6x2.5) that secures the WLAN-module bracket in place.

9. **For computers with WWAN support:**
   a. Connect the Darwin 2-antenna cable to the connector (Darwin2) on the system board.
   b. Place the Darwin 2-antenna cable bracket on the system board.
   c. Replace the single screw (M1.6x2.5) that secures the Darwin 2-antenna cable bracket to the top left of the system board.
   d. Connect the Darwin 1-antenna cable to the connector (Darwin1) on the system board.
   e. Connect green P-sensor cable (P-sensor) to the connector (P-Sensor#1) on the system board.

f. Place the Darwin 1-antenna cable bracket on the system.

g. Route the white/grey WWAN main antenna cable and black/grey WWAN auxiliary antenna cable through the routing channels and metal clips on the system board.

h. Replace the two screws (M1.6x2.5) that secure the Darwin 1-antenna cable bracket to the top-right of the system board.

Next steps

1. Install the world-facing camera.
2. Install the kick-stand hinges.
3. Install the heat sink.
4. Install the battery.
5. Install the right fan.
6. Install the left fan.
7. Install the WWAN card.
8. Install the solid-state drive.
9. Install the display assembly.
10. Install the SIM-card tray.
11. Follow the procedure in After working inside your computer.

User-facing camera

Removing the user-facing camera

⚠ **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 SIM-card tray
3. Remove the display assembly.
4. Remove the solid-state drive.
5. Remove the WWAN card.
6. Remove the left fan.
7. Remove the right fan.
8. Remove the battery.
9. Remove the heat sink.
10. Remove the kick-stand hinges.
11. Remove the world-facing camera.
12. Remove the system board.

About this task

The following images indicate the location of the user-facing camera and provide a visual representation of the removal procedure.
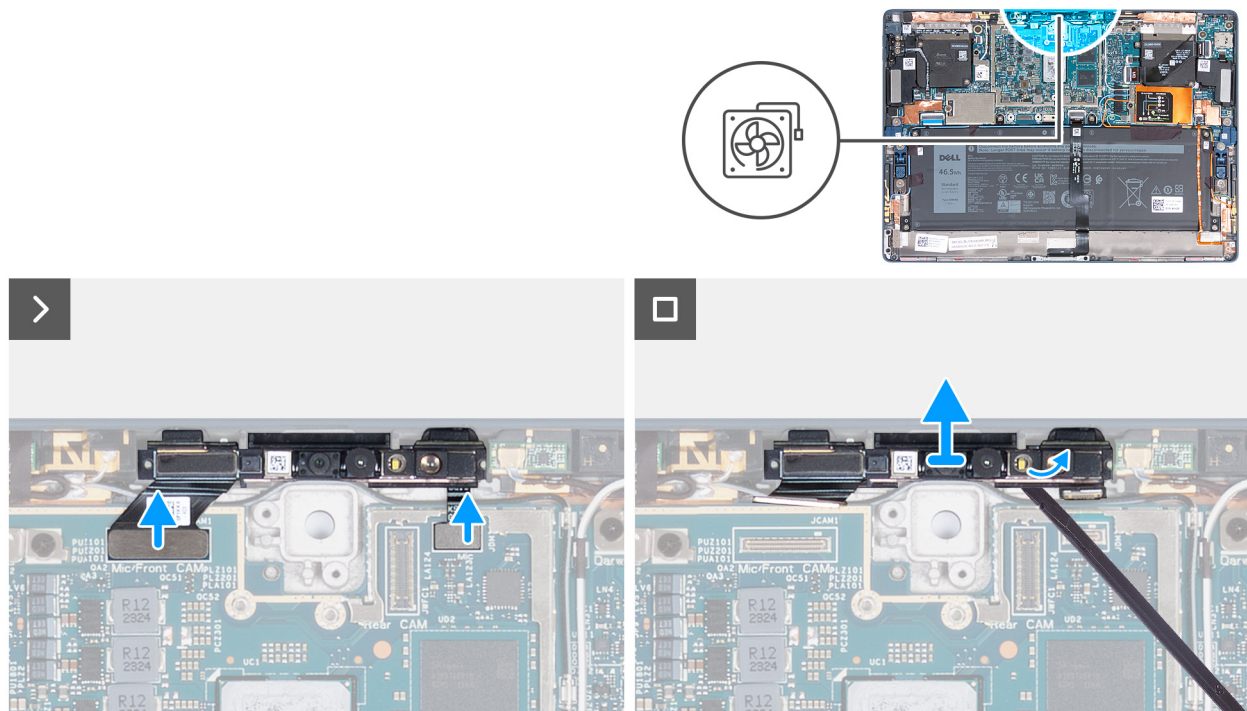
Figure 73. Removing the user-facing camera

Steps

1. Disconnect the two camera cables from the connectors (Mic/Front CAM and Mic) on the system board.
2. Using a plastic scribe, gently pry the user-facing camera from the recess.
3. Lift the user-facing camera out of the computer.

   (i) **NOTE:** If the thermal pad located under the user-facing camera gets detached during the removal process, re-adhere it back to the display-back cover.

Installing the user-facing camera

⚠ **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 user-facing camera and provides a visual representation of the installation procedure.
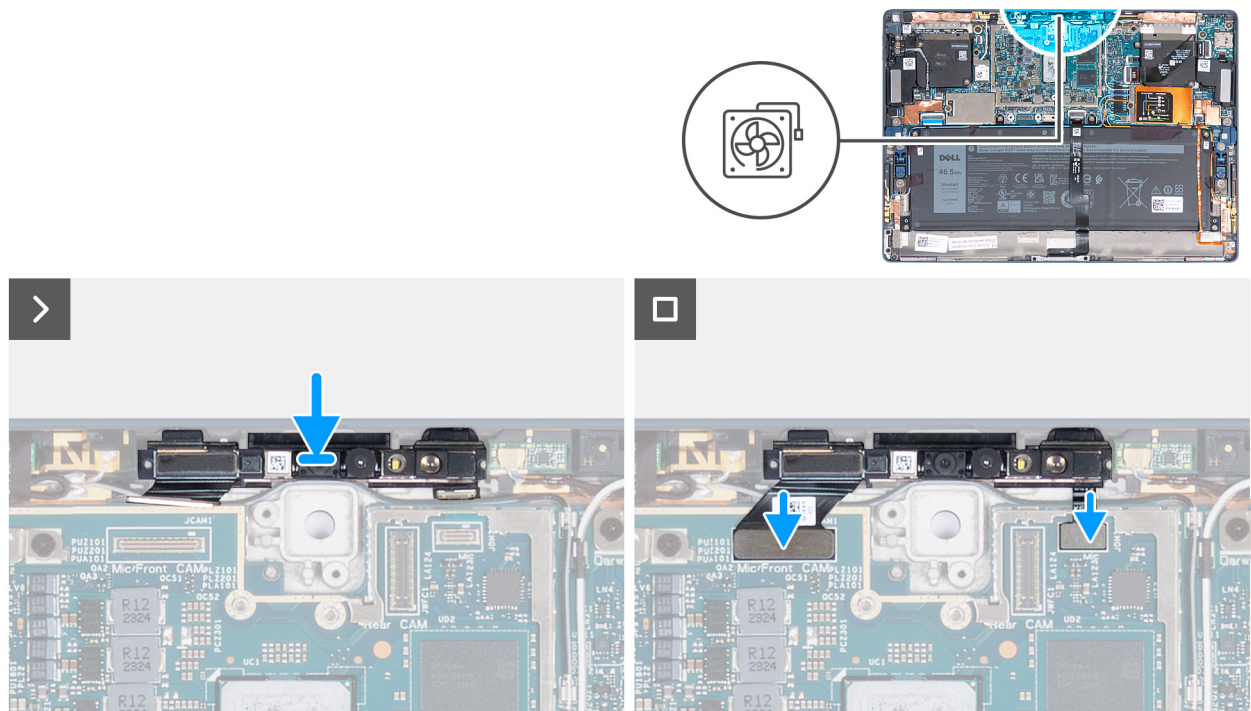
Figure 74. Installing the user-facing camera

Steps

1. Align and place the user-facing camera into position.

   ⓘ **NOTE:** If the thermal pad located under the user-facing camera was detached during the removal process, re-adhere it back to the display-back cover before placing the user-facing camera into position.

2. Gently press the edges of the user-facing camera into position.
3. Connect the camera cable to the connector (Mic/Front CAM) on the system board.
4. Connect the microphone cable to the connector (Mic) on the system board.

Next steps

1. Install the system board.
2. Install the world-facing camera.
3. Install the kick-stand hinges.
4. Install the heat sink.
5. Install the battery.
6. Install the right fan.
7. Install the left fan.
8. Install the WWAN card.
9. Install the solid-state drive.
10. Install the display assembly.
11. Install the SIM-card tray.
12. Follow the procedure in After working inside your computer.

Wireless Local Area Network (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 SIM-card tray
3. Remove the display assembly.
4. Remove the solid-state drive.
5. Remove the WWAN card.
6. Remove the left fan.
7. Remove the right fan.
8. Remove the battery.
9. Remove the heat sink.
10. Remove the kick-stand hinges.
11. Remove the world-facing camera.
12. Remove the system board.

About this task

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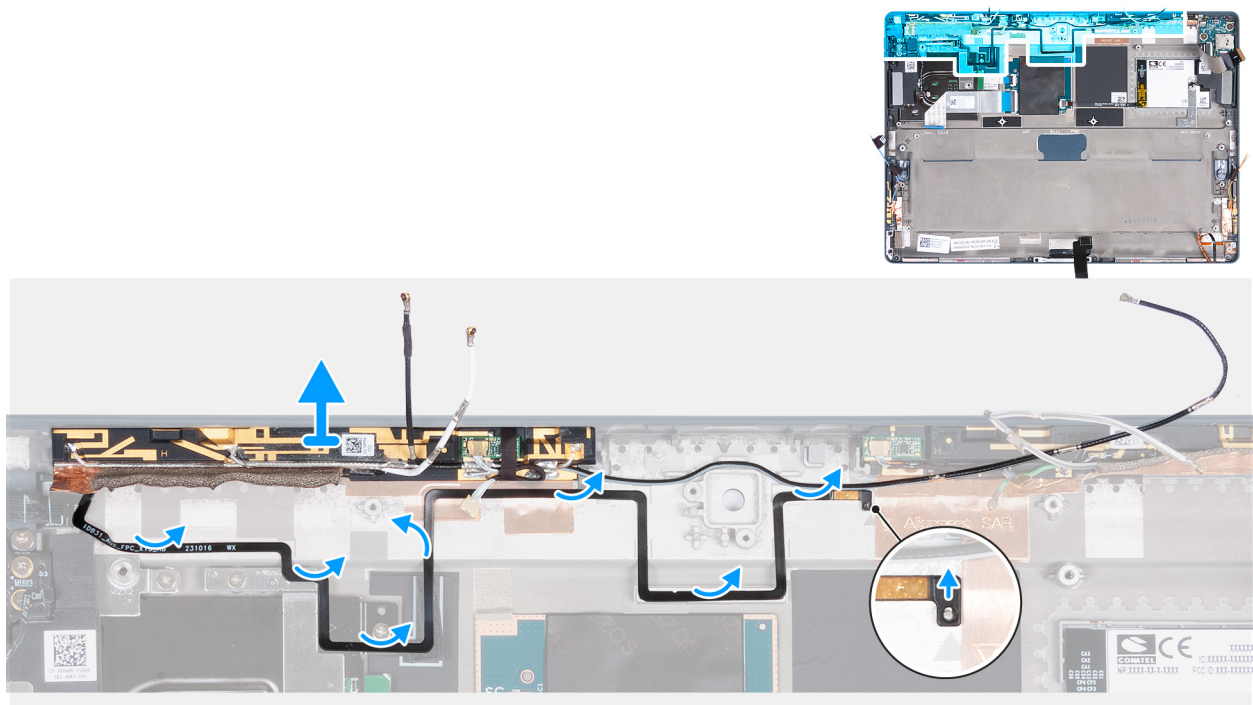

Figure 75. Removing the WLAN-antenna module

Steps

1. For computers with WWAN support, unroute the black/grey WWAN auxiliary cable from the routing channels at the top of the computer.

   ⓘ **NOTE:** Skip to the next step for computers without WWAN support.

2. Peel back the audio-jack FPC from the computer.
3. Peel back the WLAN-antenna FPC from the computer.
4. Remove the WLAN-antenna module from the computer.

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 image indicates the location of the WLAN-antenna module and provides a visual representation of the installation procedure.
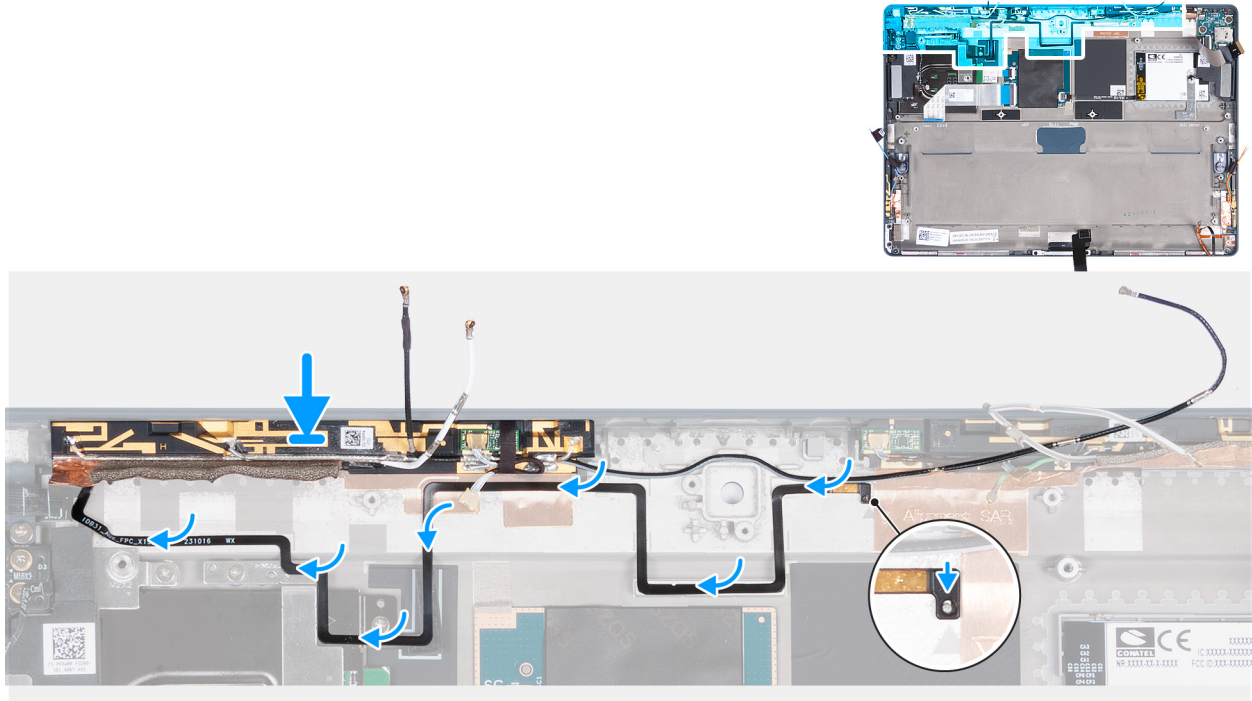

Figure 76. Installing the WLAN-antenna module

Steps

1. Place the WLAN-antenna module into position.
2. Adhere the WLAN-antenna FPC to the computer.
3. Adhere the audio-jack FPC to the computer.
4. For computers with WWAN support, route the black/grey WWAN auxiliary cable through the routing channels at the top of the computer.

   (i) **NOTE:** This step does not apply to computers without WWAN support.

Next steps

1. Install the system board.
2. Install the world-facing camera.
3. Install the kick-stand hinges.
4. Install the heat sink.
5. Install the battery.
6. Install the right fan.
7. Install the left fan.
8. Install the WWAN card.
9. Install the solid-state drive.
10. Install the display assembly.
11. Install the SIM-card tray.
12. Follow the procedure in After working inside your computer.

Display-back cover

Removing the display-back cover

⚠️ **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 SIM-card tray.
3. Remove the display assembly.
4. Remove the display cable.
5. Remove the docking connector.
6. Remove the solid-state drive.
7. Remove the WWAN card (for computers with WWAN support).
8. Remove the left fan.
9. Remove the right fan.
10. Remove the battery.
11. Remove the speakers.
12. Remove the heat sink.
13. Remove the MIMO2 WWAN antenna cable (for computers with WWAN support).
14. Remove the MIMO3 WWAN antenna cable (for computers with WWAN support).
15. Remove the kick-stand hinges.
16. Remove the world-facing camera.
17. Remove the WWAN antenna module (for computers with WWAN support).
18. Remove the power button board.
19. Remove the fingerprint reader.
20. Remove the system board.
21. Remove the user-facing camera.
22. Remove the WLAN-antenna module.

About this task

The following image indicates the location of the display-back cover and provide a visual representation of the removal procedure.

Figure 77. Removing the display-back cover

Steps

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

Installing the display-back cover

⚠️ **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 display-back cover and provides a visual representation of the installation procedure.

Figure 78. Installing the display-back cover

Steps

Place the display-back cover on a flat surface.

Next steps

1. Replace the user-facing camera.
2. Replace the WLAN-antenna module.
3. Replace the system board.
4. Replace the fingerprint reader.
5. Replace the power button daughter board.
6. Replace the WWAN antenna module (for computers with WWAN support).
7. Replace the world-facing camera.
8. Replace the kick-stand hinges.
9. Replace the heat sink.
10. Replace the battery.
11. Replace the MIMO3 WWAN antenna cable (for computers with WWAN support).
12. Replace the MIMO2 WWAN antenna cable (for computers with WWAN support) .
13. Replace the right fan.
14. Replace the left fan.
15. Replace the WWAN card (for computers with WWAN support).
16. Replace the solid-state drive.
17. Replace the docking connector.
18. Replace the display cable.
19. Replace the display assembly.
20. Replace the SIM-card tray.
21. Follow the procedure in After working inside your computer.

Software

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

Operating system

Your Latitude 7350 Detachable supports the following operating systems:

- Windows 11 Home
- Windows 11 Professional

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.

BIOS Setup

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

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

ⓘ **NOTE:** 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 size of the storage device.
● Change the system configuration information.
● Set or change a user-selectable option, such as the user password, type of hard drive installed, and enable or disable base devices.

Entering BIOS Setup without keyboard

Steps

1. Press the power button to turn on your computer.
2. Press and hold the **volume-down** button when the Dell logo appears on the screen.
3. Select the BIOS Setup menu.

Entering BIOS Setup with Latitude 7350 Detachable Collaboration Keyboard

Prerequisites

Connect a Latitude 7350 Detachable Collaboration Keyboard to the computer.

ⓘ **NOTE:** The Latitude 7350 Detachable Collaboration Keyboard is sold separately.

Steps

Press the power button to turn on your computer and press F2 immediately.

Navigation keys

ⓘ **NOTE:** Connect a Latitude 7350 Detachable Collaboration Keyboard to the computer to use these navigation keys.

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

Table 36. Navigation keys

Keys	Navigation
Up arrow	Moves to the previous field.

Table 36. Navigation keys (continued)

Keys	Navigation
Down arrow	Moves to the next field.
Enter	Selects a value in the selected field (if applicable) or follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
Tab	Moves to the next focus area. ⓘ **NOTE:** For the standard graphics browser only.
Esc	Moves to the previous page until you view the main screen. Press Esc in the main screen to display a message that prompts you to save any unsaved changes and restarts the system.

Entering One Time Boot Menu without keyboard

The One Time Boot menu displays the devices that you can boot from including the diagnostic option. The boot sequence screen also displays the option to access BIOS Setup.

Steps

1. Press the power button to turn on your computer.
2. Press and hold the **volume-up** button when the Dell logo appears on the screen.

Entering One Time Boot Menu with Latitude 7350 Detachable Collaboration Keyboard

The One Time Boot Menu displays the devices that you can boot from including the diagnostic option. The boot sequence screen also displays the option to access BIOS Setup.

Prerequisites

Connect a Latitude 7350 Detachable Collaboration Keyboard to the computer.

ⓘ **NOTE:** The Latitude 7350 Detachable Collaboration Keyboard is sold separately.

Steps

Press the power button to turn on your computer and press F12 immediately.

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.

(i) **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.

   (i) **NOTE:** To enter the hotkey combination, the computer must be connected to a Latitude 7350 Detachable Collaboration Keyboard or an external keyboard.

System Setup options

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

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

Table 37. System Setup options—Overview menu

Overview	
Latitude 7350 Detachable	
BIOS Version	Displays the BIOS version number.
Service Tag	Displays the Service Tag of the computer.
Asset Tag	Displays the Asset Tag of the computer.
Manufacture Date	Displays the manufacture date of the computer.
Ownership Date	Displays the ownership date of the computer.
Express Service Code	Displays the Express Service Code of the computer.
Ownership Tag	Displays the Ownership Tag of the computer.
Signed Firmware Update	Displays whether the Signed Firmware Update is enabled on your computer. By default, the **Signed Firmware Update** option is enabled. (i) **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.

Table 37. System Setup options—Overview menu (continued)

Overview	
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.
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.

Table 37. System Setup options—Overview menu (continued)

Overview	
Bluetooth Device	Displays the Bluetooth device information of the computer.
Pass Through MAC Address	Displays the MAC address of the video pass-through.

Table 38. 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.
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	

Table 38. System Setup options—Boot Configuration menu (continued)

Boot Configuration	
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 39. 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.
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.

Table 39. System Setup options—Integrated Devices menu (continued)

Integrated Devices	
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. (i) **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. (i) **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. (i) **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. (i) **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. (i) **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. By default, the **Type-C Dock Override** option is enabled. (i) **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
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. (i) **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.

Table 39. System Setup options—Integrated Devices menu (continued)

Integrated Devices	
	ⓘ **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 40. 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. 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 41. System Setup options—Display menu

Display	
Display Brightness	

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

Display	
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 42. 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. 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	

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

Connection	
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 View Advanced Setup options.
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 43. 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	

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

Power	
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 with Kickstand Open	When enabled, allows the computer to turn on from the off state whenever the kick-stand is opened.
	By default, the **Power On with Kickstand 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 44. 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.

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

Security	
	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. (i) **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. (i) **NOTE:** When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems. (i) **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. (i) **NOTE:** When disabled, this feature may cause compatibility issues or loss of functionality in some operating systems. (i) **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. By default, the **SHA-256** option is enabled. For additional security, Dell Technologies recommends keeping the **SHA-256** option enabled. (i) **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. (i) **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

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

Security	
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. 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.**

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

Security	
	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 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 45. 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. ● 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.

Table 45. System Setup options—Passwords menu (continued)

Passwords	
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.
	(i) **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.
	(i) **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.
	(i) **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.
	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.
	(i) **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.
	(i) **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).

Table 45. System Setup options—Passwords menu (continued)

Passwords	
	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 46. 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. ⓘ **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.

Table 46. System Setup options—Update, Recovery menu (continued)

Update, Recovery	
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**. (i) **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 47. 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. (i) **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. (i) **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
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. (i) **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. (i) **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. (i) **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.

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

System Management	
	(i) **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.
	(i) **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 48. 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.
	(i) **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.
	(i) **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.
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.
	(i) **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.
	(i) **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 49. 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.

Table 49. System Setup options—Pre-boot Behavior menu (continued)

Pre-boot Behavior	
	ⓘ **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.
	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 50. 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. ⓘ **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.

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

Virtualization Support	
	ⓘ **NOTE:** To view this option, enable **Advanced Setup** mode as described in View Advanced Setup options.

Table 51. 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	
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.

Table 51. System Setup options—Performance menu (continued)

Performance	
	ⓘ **NOTE:** To view this option, enable **Service** options as described in View Service options.

Table 52. 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 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.**

Steps

1. Go to Dell Support Site.
2. Click **Product support**. In the **Search support** box, enter the Service Tag of your computer, 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 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.**

Steps

1. Follow the procedure from step 1 to step 6 in Updating the BIOS in Windows to download the latest BIOS setup program file.
2. Create a bootable USB drive. For more information, search in the Knowledge Base Resource at Dell Support Site.
3. Copy the BIOS setup program file to the bootable USB drive.
4. Connect the bootable USB drive to the computer that needs the BIOS update.
5. Restart the computer and press **F12** .
6. Select the USB drive from the **One Time Boot Menu**.
7. Type the BIOS setup program filename and press **Enter**.
   The **BIOS Update Utility** appears.
8. Follow the on-screen instructions to complete the BIOS update.

Updating the BIOS from the F12 One-Time boot menu

Update your computer BIOS using the BIOS update.exe file that is copied to a FAT32 USB drive and booting from the F12 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 the Dell Support Site.**

ⓘ **NOTE:** It is recommended to attach the computer to the Latitude 7350 Detachable Keyboard to perform the procedures in this section.

BIOS Update

You can run the BIOS update file from Windows using a bootable USB drive or you can also update the BIOS from the F12 One-Time boot menu on the computer.

Most of the Dell computers built after 2012 have this capability, and you can confirm by booting your computer to the F12 One-Time Boot Menu to see if BIOS FLASH UPDATE is listed as a boot option for your computer. If the option is listed, then the BIOS supports this BIOS update option.

ⓘ **NOTE:** Only computers with the BIOS Flash Update option in the F12 One-Time boot menu can use this function.

Updating from the One-Time boot menu

To update your BIOS from the F12 One-Time boot menu, you need the following:

- USB drive formatted to the FAT32 file system (key 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 that is connected to the computer
- Functional computer battery to flash the BIOS

Perform the following steps to perform the BIOS update flash process from the F12 menu:

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

Steps

1. From a turn off state, insert the USB drive where you copied the flash into a USB port of the computer.
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 an 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 update is completed.

System and setup password

Table 53. System and setup password

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

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

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

⚠ **CAUTION: Anyone can access the data that is stored on your computer, when left unattended.**

ⓘ **NOTE:** System and setup password feature is disabled.

Assigning a System Setup password

Prerequisites

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

About this task

To enter the system setup, press and hold the Volume Up button during a power-on or reboot.

Steps

1. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
   The **Security** screen is visible.
2. Select **System/Admin Password** and create a password in the **Enter the new password** field.
   Use the following guidelines to assign the system password:
   - A password can have up to 32 characters.
   - At least one special character: "(! " # $ % & ' * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | })"
   - Numbers 0 to 9.
   - Upper case letters from A to Z.
   - 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 Esc and save the changes as prompted by the message.

5. Press Y to save the changes.
   The computer restarts.

Deleting or changing an existing system setup password

Prerequisites

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

About this task

To enter the system setup, press and hold the Volume Up button during 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 and/or Setup password, reenter the new password when prompted. If you delete the System 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 BIOS (System Setup) and System passwords

About this task

To clear the computer or BIOS passwords, contact Dell technical support as described at Contact Support. For more information, go to Dell Support Site.

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

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 computer. 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 with 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 introduce additional test options to provide extra information about one or more failed devices.
- View status messages that inform you the tests are completed successfully.
- View error messages that inform you of problems encountered during testing.

(i) **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 000180971.

Running the SupportAssist Pre-Boot System Performance Check

Steps

1. Turn on your computer.
2. As the computer boots, press the F12 key as the Dell logo appears.
3. On the boot menu screen, select the **Diagnostics** option.
4. Click the arrow at the bottom left corner.
   Diagnostics page is displayed.
5. Click the arrow in the lower-right corner to go to the page listing.
   The items that are detected are listed.
6. To run a diagnostic test on a specific device, press Esc and click **Yes** to stop the diagnostic test.
7. Select the device from the left pane and click **Run Tests**.
8. If there are any issues, error codes are displayed.
   Note the error code and validation number and contact Dell.

Built-in self-test (BIST)

M-BIST

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

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

How to run M-BIST

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

1. Press and hold both the **M** key on the keyboard and the power button to initiate M-BIST.
2. The battery indicator LED may exhibit two states:
   a. OFF: No fault was detected with the system board.
   b. AMBER: Amber 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 54. 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 section for 30 seconds and then turn off.

LCD Power rail 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].

(i) **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 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 (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 and so on, it is always a good practice to isolate the LCD (screen) by running the Built-In Self-Test (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 built-in self-test (BIST) mode. Continue to hold the **D** key until the computer boots up.
5. The screen displays solid colors and change 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.

(i) **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 Detachable.

ⓘ **NOTE:**

The power and battery-status light blinks amber along with beep codes indicating failures. For example, the power and battery-status light blinks amber two times followed by a pause, and then blinks white three times followed by a pause. This 2,3 pattern continues until the computer is turned off indicating no memory or RAM is detected. The following table shows different power and battery-status light patterns and associated problems of your Latitude 7350 Detachable.

Table 55. System-diagnostic lights

Blinking pattern		Problem description	Suggested resolution
Amber	White		
1	1	TPM detection failure	Replace the system board.
1	2	Unrecoverable SPI Flash Failure	Replace the system board.
1	3	Short in hinge cable tripped OCP1	Replace the system board.
1	4	Short in hinge cable tripped OCP2	Replace the system board.
1	5	EC unable to program i-Fuse	Replace the system board.
1	6	Generic catch-all for ungraceful EC code flow errors	Disconnect all power source (AC, battery, coin cell) and drain flea power by pressing and holding down the power button for 3~5 seconds.
1	7	Non-RPMC Flash on Boot Guard fused system	Disconnect all power source (AC, battery, coin cell) and drain flea power by pressing and holding down the power button for 3~5 seconds.
1	8	Catastrophic error signal has tripped	Disconnect all power source (AC, battery, coin cell) and drain flea power by pressing and holding down the power button for 3~5 seconds.
2	1	CPU failure	• Run the Dell SupportAssist or Dell Diagnostics tool. • If the problem persists, replace the system board.
2	2	System board failure (included BIOS corruption or ROM error)	• Flash latest BIOS version • If the problem persists, replace the system board.
2	3	No memory or RAM detected	• Confirm that the memory module is installed properly. • If the problem persists, replace the memory module.
2	4	Memory or RAM failure	• Reset and swap memory modules among the slots.

Table 55. System-diagnostic lights (continued)

Blinking pattern		Problem description	Suggested resolution
Amber	White		
			• If the problem persists, replace the memory module.
2	5	Invalid memory installed	• Reset and swap memory modules among the slots. • If the problem persists, replace the memory module.
2	6	System board or Chipset Error	Replace the system board.
2	7	LCD failure (SBIOS message)	Replace the LCD module.
2	8	LCD failure (EC detection of power rail failure)	Replace the system board.
3	1	CMOS battery failure	• Reset the main battery connection. • If the problem persists, replace the main battery.
3	2	PCI or Video card or chip failure	Replace the system board.
3	3	BIOS Recovery image not found	• Flash latest BIOS version • If the problem persists, replace the system board.
3	4	BIOS Recovery image found but invalid	• Flash latest BIOS version • If the problem persists, replace the system board.
3	5	Power rail failure	Replace the system board.
3	6	Flash corruption is detected by SBIOS.	• Press the power button for over 25 seconds to do RTC reset. If the problem persists, replace the system board. • Disconnect all power source (AC, battery, coin cell) and drain flea power by pressing and holding down the power button 3~5 seconds to ensure all power are drained. • Run "BIOS recovery from USB", and the instructions are in the website Dell support. • If the problem persists, replace the system board.
3	7	Timeout waiting on ME to reply to HECI message.	Replace the system board.
4	1	Memory DIMM power-rail failure	Replace the system board.

Table 55. System-diagnostic lights (continued)

Blinking pattern		Problem description	Suggested resolution
Amber	**White**		
4	2	CPU power cable connection issue	Replace the system board.

ⓘ **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 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, or 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**.

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. The legacy jumper enabled RTC reset has been retired on these models.

Start the RTC reset with the computer powered off and connected to AC power. Press and hold the power button for twenty 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.

Wi-Fi power cycle

About this task

If your computer is unable to access the Internet due to Wi-Fi connectivity issues, reset your Wi-Fi device 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 residual 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 residual 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 residual 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, search in the Knowledge Base Resource at the Dell Support Site.

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 56. 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
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals, and documents.	Your Dell computer is uniquely identified by 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 Instructions on how to find your Service Tag or Serial Number.
Dell knowledge base articles	1. Go to Dell Support Site. 2. On the menu bar at the top of the Support page, select **Support** > **Support Library**. 3. In the Search field on the Support Library page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

Contacting Dell

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

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

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