Dell Pro 16 Plus

PB16255

Owner's Manual

Regulatory Model: P135F
Regulatory Type: P135F004
March 2025
Rev. A00

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

1

Views of Dell Pro 16 Plus

Right

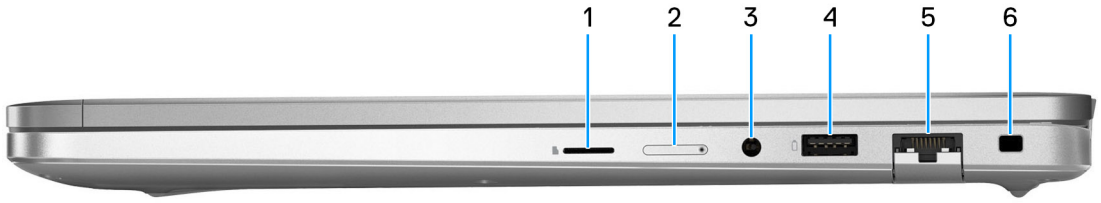


Figure 1. Right view

1. **microSD-card slot**

   Reads from and writes to the microSD-card.

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

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

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

3. **Global headset jack**

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

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

   Connect devices such as external storage devices and printers. It provides data transfer speeds up to 5 Gbps.

   PowerShare enables you to charge your USB devices even when your computer is turned off.

   NOTE: If your computer is turned off or in a hibernate state, you must connect the power adapter to charge your devices using the PowerShare port. You must enable this feature in the BIOS setup program.

   NOTE: Certain USB devices may not charge when the computer is turned off or in a sleep state. In such cases, turn on the computer to charge the device.

5. **RJ45 ethernet port (1 Gbps)**

   Connect an RJ45 ethernet cable from a router or a broadband modem for network or Internet access, with a transfer rate of 10/100/1000 Mbps (maximum 1 Gbps).

6. **Security-cable slot (wedge-shaped)**

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

Left

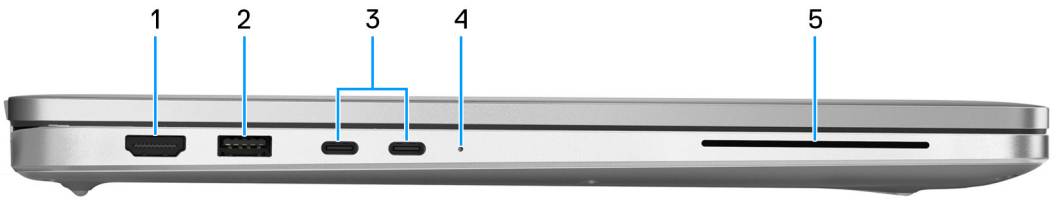


Figure 2. Left view

1. **HDMI 2.1 Transition-minimized differential signaling (TMDS) port**

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

2. **USB 3.2 Gen 1 port**

   Connect devices such as external storage devices and printers. Provides data transfer rate of up to 5 Gbps.

3. **USB (40 Gbps) Type-C with DisplayPort Alt Mode/Power Delivery ports (2)**

   Supports USB Type-C and data transfer rates of up to 40 Gbps.

   NOTE: A 40 Gbps-certified cable is required to achieve the maximum performance of 40 Gbps.

   NOTE: DisplayPort 2.1 is supported in computers shipped with AMD Ryzen AI 300 series processors. DisplayPort 1.4a is supported in computers shipped with AMD Ryzen 200 series processors. Enables you to connect to an external display using a display adapter.

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

   NOTE: Supports Power Delivery that enables two-way power supply between devices. Provides up to 5 V/3 A power output that enables faster charging.

   NOTE: AMD Ryzen AI series support maximum resolution 7680 x 4320, 60 Hz, with Display Stream Compression. AMD Ryzen series support maximum resolution 3840 x 2160, 240 Hz, with Display Stream Compression.

4. **Battery-status light**

   If the computer is connected to an electrical outlet, the battery light operates as follows:

   - Solid white — The battery is charging. When the charge is complete the LED turns off.

   If the computer is running on a battery, the battery light operates as follows:

   - Off — The battery is adequately charged (or the computer is turned off).
   - Solid amber — The battery charge is critically low. A low battery state is approximately 30 minutes or less of battery life remaining (Amber 590 nm +/- 3 nm).

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

   Using smart card provides authentication in corporate networks.

Front

Figure 3. Front view

1. **Left microphone**

   Provides digital sound input for audio recording and voice calls.

2. **Infrared camera (optional)**

   Enhances security when paired with Windows Hello face authentication.

3. **Infrared emitter (optional)**

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

4. **Camera shutter**

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

5. **Camera**

   A camera enables you to video chat, capture photos, and record videos.

6. **Camera-status light**

   Turns on when the camera is in use.

7. **Right microphone**

   Provides digital sound input for audio recording and voice calls.

Top

Figure 4. Top view

NOTE: The fingerprint reader is available either on the power button or on the palmrest depending on the configuration ordered.

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

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

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

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

2. **Fingerprint reader (optional)**

   Press your finger on FIPS 201-certified 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.

3. **NFC/Contactless smart card reader (optional)**

   Enables NFC-enabled devices to connect to your computer and supports data transfer across the devices.

4. **Touchpad**

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

Bottom

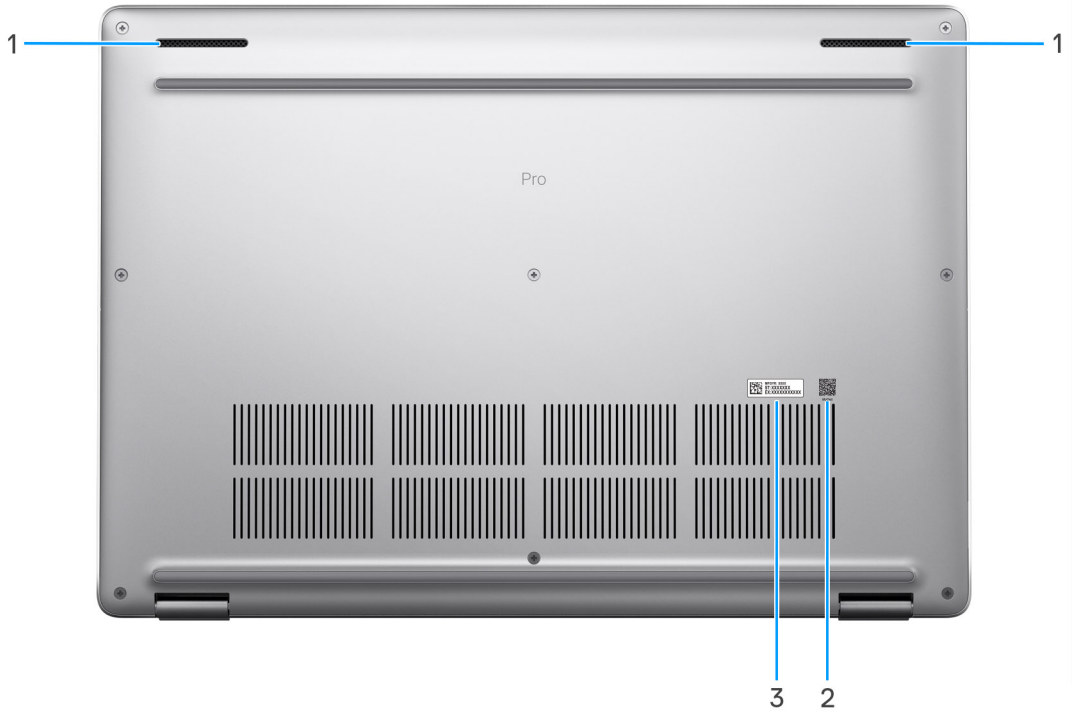


Figure 5. Bottom view

1. **Speakers (2)**

   Provide audio output.

2. **MyDell QR Code**

   MyDell is your hub for content personalized to your Dell Pro 16 Plus, including videos, articles, manuals, and easy access to support.

3. **Service Tag label**

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

Service Tag

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

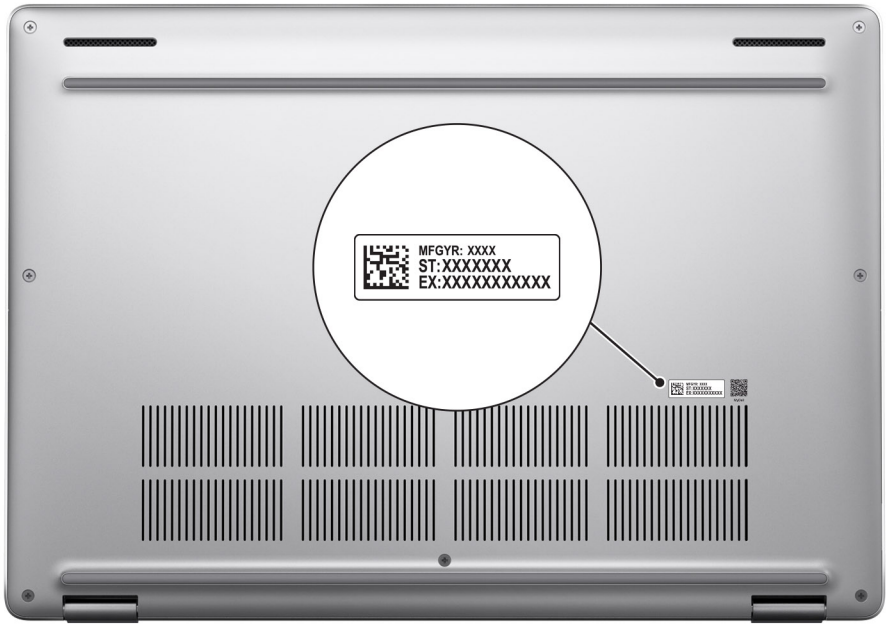


Figure 6. Service Tag location

Battery-charge status light

The following table lists the battery-charge status light of your Dell Pro 16 Plus PB16255.

Table 1. Battery-charge status light behavior

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

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

2

Set up your Dell Pro 16 Plus

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

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

2. Finish the operating system setup.

   For Ubuntu:

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

   For Windows:

   Follow the on-screen instructions to complete the setup. When setting up, it is recommended that you:

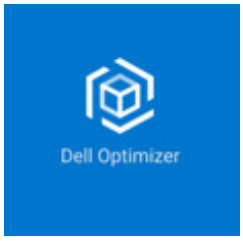
   - Connect to a network for Windows updates.

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

   - If connected to the Internet, sign-in with an existing Microsoft account or create an account. If not connected to the Internet, create an offline 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 Optimizer is an application that is designed to enhance computer performance and productivity by optimizing settings for power, battery, display, collaboration touchpad, and presence detection. It also provides access to applications purchased with your new computer. For more information, see Dell Optimizer User's Guide at Dell Support Site.
	**Dell Product Registration** Register your computer with Dell.
	**Dell Help & Support** Access help and support for your computer.
	**SupportAssist** SupportAssist is a proactive and predictive technology that offers automated technical support for Dell computers. It proactively monitors both hardware and software, addressing performance issues, preventing security threats, and automating engagement with Dell Technical Support. For more information, see SupportAssist documentation at Dell Support Site. **NOTE:** In SupportAssist, click the warranty expiry date to renew or upgrade your warranty.

3

Specifications of Dell Pro 16 Plus

Dimensions and weight

The following table lists the height, width, depth, and weight of your Dell Pro 16 Plus PB16255.

Table 3. Dimensions and weight

Description	Values
Height:	
Front height	19.85 mm (0.78 in.)
Rear height	20.55 mm (0.81 in.)
Maximum Height	21.35 mm (0.84 in.)
Width	358 mm (14.09 in.)
Depth	251.40 mm (9.89 in.)
Starting weight **NOTE:** The weight of your computer depends on the configuration that is offered.	1.86 kg (4.12 lb) (minimum)

Processor

The following table lists the details of the processors that are supported in your Dell Pro 16 Plus.

Table 4. Processor (For computers shipped with AMD Ryzen AI 300 series)

Description	Option one	Option two	Option three
Processor type	AMD Ryzen AI 5 PRO 340	AMD Ryzen AI 7 PRO 350	AMD Ryzen AI 9 HX PRO 370
Configurable Thermal Design Power (cTDP)	15 W–54 W	15 W–54 W	15 W–54 W
Thermal Mode/Thermal Design Power (TDP)			
Optimized	17 W	17 W	17 W
Performance	19 W	19 W	19 W
Processor core count	6	8	12
Processor thread count	12	16	24
Processor speed	Up to 4.8 GHz	Up to 5.0 GHz	Up to 5.1 GHz
Processor cache L2	6 MB	8 MB	12 MB
Processor cache L3	16 MB	16 MB	24 MB
Integrated graphics	AMD Radeon 840M Graphics	AMD Radeon 860M Graphics	AMD Radeon 890M Graphics
Neural Processing Units (NPU) Performance	Up to 50 TOPS	Up to 50 TOPS	Up to 50 TOPS

Table 5. Processor (For computers shipped with AMD Ryzen 200 series)

Description	Option one	Option two	Option three	Option four	Option five	Option six
Processor type	AMD Ryzen 3 210	AMD Ryzen 5 220	AMD Ryzen 5 PRO 215	AMD Ryzen 5 PRO 220	AMD Ryzen 5 PRO 230	AMD Ryzen 7 PRO 250
Configurable Thermal Design Power (cTDP)	15 W–30 W	15 W–30 W	15 W–30 W	15 W–30 W	15 W–30 W	15 W–30 W
Thermal Mode/Thermal Design Power (TDP)						
Optimized	17 W	17 W	17 W	17 W	17 W	17 W
Performance	19 W	19 W	19 W	19 W	19 W	19 W
Processor core count	4	6	6	6	6	8
Processor thread count	8	12	12	12	12	16
Processor speed	Up to 4.7 GHz	Up to 4.9 GHz	Up to 4.9 GHz	Up to 4.9 GHz	Up to 4.9 GHz	Up to 5.1 GHz
Processor cache L2	4 MB	6 MB	6 MB	6 MB	6 MB	8 MB
Processor cache L3	8 MB	16 MB	16 MB	16 MB	16 MB	16 MB
Integrated graphics	AMD Radeon 740M Graphics	AMD Radeon 740M Graphics	AMD Radeon 740M Graphics	AMD Radeon 740M Graphics	AMD Radeon 760M Graphics	AMD Radeon 780M Graphics
Neural Processing Units (NPU) Performance	Not applicable	Not applicable	Not applicable	Not applicable	Up to 16 TOPS	Up to 16 TOPS

Chipset

The following table lists the details of the chipset that is supported by your Dell Pro 16 Plus.

Table 6. Chipset

Description	Values
Chipset	Integrated in the processor
Processor	• AMD Ryzen 3/5 • AMD Ryzen 5/7 PRO • AMD Ryzen AI 5/7 PRO • AMD Ryzen AI 9 HX PRO
DRAM bus width	LPDDR5X Quad 32-bit channel
Flash EPROM	64 MB
PCIe bus	Up to Gen4

Operating system

Your Dell Pro 16 Plus supports the following operating systems:

For computers shipped with AMD Ryzen 200 series processors:

- Windows 11 Home
- Windows 11 Pro
- Windows 10 Home

- Windows 10 Pro

NOTE: If you downgrade your computer from Windows 11 to Windows 10 22H2, Dell Technologies support follows the Microsoft Windows 10 End of Support plan.

NOTE: Windows 10 Home and Windows 10 Pro is supported only on computers shipped with AMD Ryzen 200 series processors.

For computers shipped with AMD Ryzen 300 series processors:

- Windows 11 Home
- Windows 11 Pro

Memory

The following table lists the memory specifications of your Dell Pro 16 Plus.

Table 7. Memory specifications

Description	Values
Memory slots	On-board memory **NOTE:** The memory is integrated on the system board and is not upgradeable.
Memory type	LPDDR5X
Memory speed	7500 MT/s
Maximum memory configuration	64 GB
Minimum memory configuration	16 GB
Memory configurations supported	• 16 GB: LPDDR5X, 7500 MT/s • 32 GB: LPDDR5X, 7500 MT/s • 64 GB: LPDDR5X, 7500 MT/s

Ethernet

The following table lists the wired ethernet Local Area Network (LAN) specifications of your Dell Pro 16 Plus.

Table 8. Ethernet specifications

Description	Values
Model	• Realtek RTL8111EPP Integrated 10/100/1000M ethernet controller DASH configuration • Realtek RTL8111HS Integrated 10/100/1000M ethernet controller Non-DASH configuration
Transfer rate	10/100/1000 Mbps

External ports and slots

The following table lists the external ports and slots of your Dell Pro 16 Plus .

Table 9. External ports and slots

Description	Values
Network port	One RJ45 Ethernet port (optional)
USB ports	• Two USB Type-C ports with a DisplayPort Alt Mode/ Power Delivery • **NOTE:** You can connect a Dell Docking Station to this port. For more information, search in the Knowledge Base Resource at Dell Support Site. • One USB 3.2 Gen 1 (5 Gbps) port with PowerShare • One USB 3.2 Gen 1 (5 Gbps) port
Audio port	Global headset jack
Video port(s)	One HDMI 2.1 TMDS port
Media-card reader	One smart-card reader slot (optional)
Power-adapter port	USB Type-C power input
Security-cable slot	One wedge-shaped security slot
SIM-card slot	Nano-SIM card slot (optional)
SD card slot	One micro-SD card slot

Internal slots

The following table lists the internal slots of your Dell Pro 16 Plus.

Table 10. Internal slots

Description	Values
M.2	• One M.2 2230 or M.2 2280 solid state drive slot • One M.2 3042 for 4G WWAN slot (optional) **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 Dell Pro 16 Plus.

Table 11. Wireless module specifications

Description	Values
Model number	MediaTek MT7925
Transfer rate	Up to 2882 Mbps

Table 11. Wireless module specifications (continued)

Description	Values
Frequency bands supported	2.4 GHz/5 GHz/6 GHz
Wireless standards	• Wi-Fi 802.11a/b/g • Wi-Fi 4 (Wi-Fi 802.11n) • Wi-Fi 5 (Wi-Fi 802.11ac) • Wi-Fi 6E (Wi-Fi 802.11ax) • Wi-Fi 7 (Wi-Fi 802.11be)
Encryption	• 128-bit AES-CCMP • 256-bit AES-GCMP • 256-GMAC
Bluetooth wireless card	Bluetooth 5.4 wireless card

WWAN module

The following table lists the Wireless Wide Area Network (WWAN) module that is supported in your Dell Pro 16 Plus PB16255.

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

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

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

Table 12. WWAN module specifications

Description	Values
Model number	DW5826e, Qualcomm Snapdragon SDX12 Global LTE-Advanced, CAT12
Form factor	M.2 3042 Key-B
Host interface	USB 3.0/2.0
Network standard	LTE FDD/TDD, WCDMA, GPS/BDS/GLONASS/Galileo/QZSS
Transfer data rate	• Up to 600 Mbps DL (CAT12) • Up to 150 Mbps UL
Operating frequency bands	• LTE (B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B18, B19, B20, B25, B26, B28, B29, B32, B38, B39, B40, B41, B42, B43, B48, B66, B71) • WCDMA (1,2,4,5,6,8,9,19)
Power supply	DC 3.135 V to 4.4 V, Typical 3.3 V
SIM card	Supported through external SIM slot **NOTE:** The availability of eSIM functionality embedded on the module is dependent on the region and specific carrier requirements.
eSIM with dual SIM (DSSA)	Supported
Antenna diversity	Supported
Radio on/off	Supported
Wake On Wireless	Supported

Table 12. WWAN module specifications (continued)

Description	Values
Temperature	• Normal operating temperature: –30°C to +70°C • Extended operating temperature: –40°C to +85°C
Antenna connector	• WWAN Main Antenna x 1 • WWAN Diversity Antenna x 1
NOTE: For instructions to find your computer's International Mobile Equipment Identity (IMEI) number, search in the Knowledge Base Resource at Dell Support Site.	

Audio

The following table lists the audio specifications of your Dell Pro 16 Plus.

Table 13. Audio specifications

Description		Values
Audio controller		Realtek ALC3329
Stereo conversion		Supported
Internal audio interface		Soundwire interface
External audio interface		Global headset jack
Number of speakers		Two
Internal-speaker amplifier		Supported (audio codec integrated)
External volume controls		Keyboard shortcut controls
Speaker output:		
	Average	2 W
	Peak	2.5 W
Microphone		Dual-array microphones

Storage

This section lists the storage options on your Dell Pro 16 Plus.

Your computer supports one of the following storage configurations:

Table 14. Storage specifications

Storage type	Interface type	Capacity
One M.2 2280 self-encrypting drive	PCIe Gen4 NVMe, up to 64 Gbps	Up to 2 TB
One M.2 2230 self-encrypting drive	PCIe Gen4 NVMe, up to 64 Gbps	Up to 1 TB

Keyboard

The following table lists the keyboard specifications of your Dell Pro 16 Plus PB16255.

Table 15. Keyboard specifications

Description	Values
Keyboard type	• Standard backlit keyboard • Standard non-backlit keyboard
Keyboard layout	QWERTY
Number of keys	• Arabic, Canada Bilingual (MUI), Chinese-T, English International, English US, French (Canadian), Greek, Hebrew, Korean, Thai, Ukrainian, and Russian: 99 keys • Belgian, Bulgarian, Czech/Slovakian (MUI), Danish, English UK, Estonian, French European, German, Hungarian, Italian, Nordic (MUI), Norwegian, Portuguese, Spanish (Castillian), Spanish (Latin America), Swedish/Finnish, Swiss European (MUI), Turkish, Turkish F, Slovenian: 100 keys • Japanese: 103 keys • Portuguese (Brazil), French (Canadian) ACNOR: 101 keys
Keyboard size	X=18.05 mm key pitch Y=18.05 mm key pitch
Keyboard shortcuts	Some keys on your keyboard have two symbols on them. These keys can be used to type alternate characters or to perform secondary functions. To type the alternate character, press Shift and the desired key. To perform secondary functions, press Fn and the desired key. **NOTE:** You can define the primary behavior of the function keys (F1–F12) by changing the **Lock Mode standard** in the BIOS setup program. **NOTE:** If Copilot in Windows is not available on your computer, pressing the Copilot key launches Windows search. For more information about Copilot in Windows, search in the Knowledge Base Resource at the Dell Support site.

Keyboard shortcuts of Dell Pro 16 Plus

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 enable the task represented by the icon. For example, pressing F1 mutes the audio (see 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 the BIOS setup program.

Table 16. Function key primary behavior

Function key	Primary behavior
F1	Mute or unmute audio
F2	Decrease volume
F3	Increase volume
F4	Mute or unmute microphone
F5	Change the brightness of backlit keyboard (for backlit keyboard only)
F6	Decrease display brightness
F7	Increase display brightness
F8	Switch to external display
F9	Not applicable
F10	Print screen
F11	Home
F12	End

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

Table 17. 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 + F7	Operating system and application-specific F7 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 + Copilot	Operating system Context menu behavior.
Fn + Esc	Toggle Function key lock
Fn + PgUp (cursor up)	Scroll up the document or page
Fn + PgDn (cursor down)	Scroll down the document or page

Camera

The following table lists the camera specifications of your Dell Pro 16 Plus.

Table 18. Camera specifications

Description		Option 1	Option 2
Number of cameras		One	Two
Camera type		RGB camera	RGB + IR camera
Camera location		Front camera	Front camera
Camera sensor type		CMOS sensor technology	CMOS sensor technology
Camera resolution:			
	Still image	2.07 megapixels	2.07 megapixels
	Video	1920 x 1080 at 30 fps	1920 x 1080 at 30 fps
Infrared camera resolution:			
	Still image	Not applicable	0.23 megapixels
	Video	Not applicable	640 x 360 at 15 fps
Diagonal viewing angle:			
	Camera	80.2 degrees	80.2 degrees
	Infrared camera	Not applicable	86.6 degrees

Touchpad

The following table lists the touchpad specifications of your Dell Pro 16 Plus.

Table 19. Touchpad specifications

Description		Values
Touchpad resolution:		>=300 dpi
Touchpad dimensions:		
	Horizontal	125 mm (4.92 in.)
	Vertical	88 mm (3.46 in.)
Touchpad gestures		For more information about the touchpad gestures that are available on: • Windows, see the Microsoft Knowledge Base article at Microsoft Support Site. • Ubuntu, see Ubuntu Support Site.

Fingerprint reader (optional)

The following table lists the specifications of the optional fingerprint-reader of your Dell Pro 16 Plus.

Table 20. Fingerprint reader specifications

Description	Fingerprint reader on power button	FIPS 201-certified fingerprint reader on palmrest
Sensor technology	Capacitive	Capacitive
Sensor resolution	500 dpi	508 dpi
Sensor pixel size	108 mm x 88 mm	256 mm x 360 mm

Power adapter

The following table lists the power adapter specifications of your Dell Pro 16 Plus.

Table 21. Power adapter specifications

Description	Option one	Option two	Option three	Option four
Type	60 W adapter, USB-C	65 W adapter, USB-C	100 W adapter, USB-C	60 W AC adapter, USB-C
Power-adapter dimensions:				
Height	22 mm (0.87 in.)	28 mm (1.10 in.)	26.50 mm (1.04 in.)	22 mm (0.86 in.)
Width	55 mm (2.16 in.)	51 mm (2.01 in.)	60 mm (2.36 in.)	55 mm (2.16 in.)
Depth	66 mm (2.60 in.)	112 mm (4.41 in.)	122 mm (4.80 in.)	66 mm (2.60 in.)
Input voltage	100 VAC to 240 VAC	100 VAC to 240 VAC	100 VAC to 240 VAC	100 VAC to 240 VAC
Input frequency	50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz
Input current (maximum)	1.70 A	1.70 A	1.70 A	1.70 A
Output current (continuous)	• 20 V/3 A (continuous) • 15 V/3 A (continuous) • 9 V/3 A (continuous) • 5 V/3 A (continuous)	• 20 V/3.25 A (continuous) • 15 V/3 A (continuous) • 9 V/3 A (continuous) • 5 V/3 A (continuous)	• 20 V/5 A (continuous) • 15 V/3 A (continuous) • 9 V/3 A (continuous) • 5 V/3 A (continuous)	• 20 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	• 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)	0°C to 35°C (32°F to 95°F)	0°C to 35°C (32°F to 95°F)

Table 21. Power adapter specifications (continued)

Description	Option one	Option two	Option three	Option four
Storage	–20°C to 70°C (–4°F to 158°F)	–40°C to 70°C (–40°F to 158°F)	–40°C to 70°C (–40°F to 158°F)	–20°C to 70°C (–40°F to 158°F)

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

Power adapter requirements (for computers that are shipped with a 3-cell, 45 Wh battery)

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

The following table lists the power adapter requirements for your Dell Pro 16 Plus.

Table 22. Power adapter requirements

Description	Value
Power that is required from a power adapter to achieve optimal performance.	65 W
Power that charges the computer at a slower speed. **NOTE:** A warning message may appear informing you about the use of a lower-powered adapter and slower charging speed.	Less than 60 W
Minimum power that is required from a power adapter to operate the computer and charge the battery. **NOTE:** A warning message appears informing you about the use of a lower-powered adapter and slower charging speed.	45 W
USB Power Delivery (PD) fast charging	Supported
ExpressCharge mode	Supported **NOTE:** Ensure that the computer with a 45 Wh battery 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. Select **Power** > **Battery Configuration** > **ExpressCharge**, then press **Enter**.

Power adapter requirements (for computers that are shipped with a 3-cell, 55 Wh battery)

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

The following table lists the power adapter requirements for your Dell Pro 16 Plus.

Table 23. Power adapter requirements

Description	Value
Power that is required from a power adapter to achieve optimal performance.	65 W

Table 23. Power adapter requirements (continued)

Description	Value
Power that charges the computer at a slower speed. **NOTE:** A warning message may appear informing you about the use of a lower-powered adapter and slower charging speed.	Less than 60 W
Minimum power that is required from a power adapter to operate the computer and charge the battery. **NOTE:** A warning message appears informing you about the use of a lower-powered adapter and slower charging speed.	45 W
USB Power Delivery (PD) fast charging	Supported
ExpressCharge mode	Supported **NOTE:** Ensure that the computer with a 55 Wh battery is connected to a 100 W power adapter for this feature to be supported. **NOTE:** ExpressCharge mode must also be enabled in the BIOS Setup screen. Select **Power** > **Battery Configuration** > **ExpressCharge**, then press **Enter**

Battery

The following table lists the battery specifications of your Dell Pro 16 Plus.

Table 24. Battery specifications

Description		Option one	Option two	Option three	Option four
Battery type		3-cell, 45 Wh, ExpressCharge, ExpressCharge Boost	3-cell, 55 Wh, ExpressCharge, ExpressCharge Boost	3-cell, 45 Wh, Long Life Cycle, ExpressCharge, ExpressCharge Boost	3-cell, 55 Wh, Long Cycle Life, ExpressCharge, ExpressCharge Boost
Battery voltage		11.25 VDC	11.70 VDC	11.25 VDC	11.70 VDC
Battery weight (minimum)		0.20 kg (0.44 lb)	0.22 kg (0.48 lb)	0.20 kg (0.44 lb)	0.22 kg (0.48 lb)
Battery dimensions:					
	Height	72.80 mm (2.83 in.)	72.80 mm (2.83 in.)	72.80 mm (2.83 in.)	72.80 mm (2.83 in.)
	Width	254.80 mm (10.03 in.)	254.80 mm (10.03 in.)	254.80 mm (10.03 in.)	254.80 mm (10.03 in.)
	Depth	6.30 mm (0.25 in.)	6.30 mm (0.25 in.)	6.30 mm (0.25 in.)	6.30 mm (0.25 in.)
Temperature range:					
	Operating	• Charge: 0°C to 45°C (32°F to 113°F) • Discharge: 0°C to 70°C (32°F to 158°F)	• Charge: 0°C to 45°C (32°F to 113°F) • Discharge: 0°C to 70°C (32°F to 158°F)	• Charge: 0°C to 45°C (32°F to 113°F) • Discharge: 0°C to 70°C (32°F to 158°F)	• Charge: 0°C to 45°C (32°F to 113°F) • Discharge: 0°C to 70°C (32°F to 158°F)
	Storage	–20°C to 65°C (–4°F to 149°F)	–20°C to 65°C (–4°F to 149°F)	–20°C to 60°C (–4°F to 140°F)	–20°C to 60°C (–4°F to 140°F)

Table 24. Battery specifications (continued)

Description	Option one	Option two	Option three	Option four
Battery operating time	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.
Battery charging time (approximate) **NOTE:** Control the charging time, duration, start and end time, and so on using the Dell Power Manager application. For more information about Dell Power Manager, search in the Knowledge Base Resource at Dell Support Site.	**Standard charge/ Predominately AC User Charge Method:** • 0°C to15°C maximum allowable charge time from 0% to 100% RSOC is 4 hours • 16°C to 45°C maximum allowable charge time from 0% to 100% RSOC is 3 hours **Express Charge Method:** • 16°C to 45°C maximum allowable charge time from 0% to 80% RSOC is 1 hours • 16°C to 45°C maximum allowable charge time from 0% to 100% RSOC is 2 hours **Express Charge Boost charge Method:** • 16°C to 45°C maximum allowable charge time from 0% to 35% RSOC is 20 min	**Standard charge/ Predominately AC User Charge Method:** • 0°C to 15°C maximum allowable charge time from 0% to 100% RSOC is 4 hours • 16°C to 45°C maximum allowable charge time from 0% to 100% RSOC is 3 hours **Express Charge Method:** • 16°C to 45°C maximum allowable charge time from 0% to 80% RSOC is 1 hours • 16°C to 45°C maximum allowable charge time from 0% to 100% RSOC is 2 hours **Express Charge Boost charge Method:** • 16°C to 45°C maximum allowable charge time from 0% to 35% RSOC is 20 min	**Standard charge/ Predominately AC User Charge Method:** • 0°C to 15°C maximum allowable charge time from 0% to 100% RSOC is 4 hours • 16°C to 45°C maximum allowable charge time from 0% to 100% RSOC is 3 hours **Express Charge Method:** • 16°C to 45°C maximum allowable charge time from 0% to 80% RSOC is 1 hours • 16°C to 45°C maximum allowable charge time from 0% to 100% RSOC is 2 hours **Express Charge Boost charge Method:** • 16°C to 45°C maximum allowable charge time from 0% to 35% RSOC is 20 min	**Standard charge/ Predominately AC User Charge Method:** • 0°C to 15°C maximum allowable charge time from 0% to 100% RSOC is 4 hours • 16°C to 45°C maximum allowable charge time from 0% to 100% RSOC is 3 hours **Express Charge Method:** • 16°C to 45°C maximum allowable charge time from 0% to 80% RSOC is 1 hours • 16°C to 45°C maximum allowable charge time from 0% to 100% RSOC is 2 hours **Express Charge Boost charge Method:** • 16°C to 45°C maximum allowable charge time from 0% to 35% RSOC is 20 min
Coin-cell battery	No	No	No	No

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

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

Power requirements (for computers that are shipped with a 3-cell, 45 Wh battery)

NOTE: The information in this section is applicable to the European Union (EU) countries.

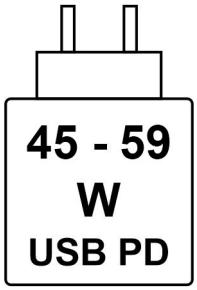


Figure 8. Pictogram for power charging requirements

The power that is delivered by the charger must be between a minimum of 45 Watts that is required by the radio equipment, and a maximum of 59 Watts in order to achieve the maximum charging speed.

This computer supports USB Power Delivery (PD) fast charging.

Power requirements (for computers that are shipped with a 3-cell, 55 Wh battery)

NOTE: The information in this section is applicable to the European Union (EU) countries.

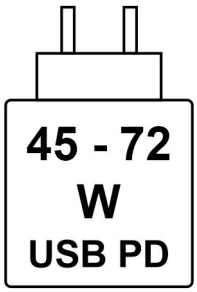


Figure 9. Pictogram for power charging requirements

The power that is delivered by the charger must be between a minimum of 45 Watts that is required by the radio equipment, and a maximum of 72 Watts in order to achieve the maximum charging speed.

This computer supports USB Power Delivery (PD) fast charging.

Display

The following table lists the display specifications of your Dell Pro 16 Plus.

Table 25. Display specifications

Description	Option one	Option two	Option three
Display type	16-inch Full High Definition Plus (FHD+)	16-inch Full High Definition Plus (FHD+)	16-inch Quad High Definition Plus (QHD+)
Touch options	No	Yes	No

Table 25. Display specifications (continued)

Description		Option one	Option two	Option three
Display-panel technology		Wide Viewing Angle (WVA)	Wide Viewing Angle (WVA)	Wide Viewing Angle (WVA)
Display-panel dimensions (active area):				
	Height	215.42 mm (8.48 in.)	215.42 mm (8.48 in.)	215.42 mm (8.48 in.)
	Width	344.68 mm (13.57 in.)	344.68 mm (13.57 in.)	344.68 mm (13.57 in.)
	Diagonal	406.46 mm (16.00 in.)	406.46 mm (16.00 in.)	406.46 mm (16.00 in.)
Display-panel native resolution		1920 x 1200	1920 x 1200	2560 x 1600
Luminance (typical)		300 nits	300 nits	300 nits
Megapixels		2.3	2.3	4.1
Color gamut		45% NTSC	45% NTSC	100% SRGB
Pixels Per Inch (PPI)		142 ppi	142 ppi	189 ppi
Contrast ratio (typical)		1000:1	1000:1	1000:1
Response time (maximum)		35 ms	35 ms	35 ms
Refresh rate		60 Hz	60 Hz	120 Hz
Horizontal view angle		+/- 80 degrees (min)	+/- 80 degrees (min)	+/- 80 degrees (min)
Vertical view angle		+/- 80 degrees (min)	+/- 80 degrees (min)	+/- 80 degrees (min)
Pixel pitch		0.18 mm x 0.18 mm	0.18 mm x 0.18 mm	0.13 mm x 0.13 mm
Power consumption (maximum)		4.45 W	5.60 W	4 W
Anti-glare vs glossy finish		Anti-glare	Anti-glare	Anti-glare

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Dell Pro 16 Plus.

Table 26. GPU—Integrated

Controller	Memory size	Processor
AMD Radeon 740M Graphics	Shared system memory	AMD Ryzen 3 210
AMD Radeon 740M Graphics	Shared system memory	AMD Ryzen 3 220
AMD Radeon 740M Graphics	Shared system memory	AMD Ryzen 5 Pro 220
AMD Radeon 740M Graphics	Shared system memory	AMD Ryzen 5 PRO 215
AMD Radeon 760M Graphics	Shared system memory	AMD Ryzen 5 Pro 230
AMD Radeon 780M Graphics	Shared system memory	AMD Ryzen 7 Pro 250
AMD Radeon 840M Graphics	Shared system memory	AMD Ryzen AI 5 PRO 340

Table 26. GPU—Integrated (continued)

Controller	Memory size	Processor
AMD Radeon 860M Graphics	Shared system memory	AMD Ryzen AI 7 PRO 350
AMD Radeon 890M Graphics	Shared system memory	AMD Ryzen AI 9 HX PRO 370

Hardware security

The following table lists the hardware security of your Dell Pro 16 Plus.

Table 27. Hardware security

Hardware security
Trusted Platform Module (TPM) 2.0 discrete
FIPS 140-2 certification for TPM
TCG Certification for TPM (Trusted Computing Group)
Finger Print Reader in Power Button available with ControlVault 3 Plus
ControlVault 3 Plus Advanced Authentication with FIPS 140-3 Level 3 Certification
Contacted smart card and ControlVault 3 Plus
Contactless smart card, NFC, and ControlVault 3 Plus
SED SSD NVMe, SSD, and hard drive (Opal and non-Opal) per SDL
FIPS 201 Full Scan FPR and ControlVault 3 Plus

Smart-card reader

Contactless smart-card reader

This section lists the contactless smart-card reader specifications of your Dell Pro 16 Plus. This module is only available in computers shipped with smart-card readers.

Table 28. 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) (125 KHz) Card support	Reader and software capable of supporting Prox Proximity/125 KHz 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

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

Title	Description	Dell controlVault 3 Plus Contactless smart-card reader with NFC
ISO/IEC 18092	Reader and software capable of supporting ISO/IEC 18092 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 use	Yes
PC/SC operating system interface	Personal Computer/Smart card specification for integration of hardware readers into personal computer environments	Yes
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for 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 29. 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 30. Supported cards

Manufacturer	Card
HID	jcop readertest3 A card (14443a)
	1430 1L
	MIFARE DESFire D8H
	MIFARE 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
	MIFARE DESFire D8P 1456CSGMN
	iCLASS MIFARE Px GM49Y 2623BNPGGBNAB
	iCLASS MIFARE Px 8M1L
	iClass SEOS JW 5006PGGMN
	Crescendo iCLASS Px G8H
	iCLASS Seos IY
	SEOS JMC4 J1Y 5806VNG1NNN4
	SEOS Key FOB 5266PNNA
	SEOS Clamshell 5656PMSAV
	SEOS + Prox 5106RGGMNN
	SEOS + MIFARE DESFire 5906PNG1ANN7
	SEOS iClass 5006PGGMN7
	Seos Essential + Prox 551PPGGANN
	iCLASS 2K 2000PGGMN
	iCLASS 2K 3000PGGMN
	MIFARE MIFARE DESFire 3700CPGGAN
	iCLASS DP
	MIFARE DESFire 1Y
NXP/Mifare	Mifare MIFARE DESFire 8K White PVC card
	MIFARE Classic 1K White PVC card
	NXP MIFARE Classic S50 ISO card
	Mifare MIFARE DESFire 2K
	Mifare Plus S 2K/4K
	Mifare Plus X 4K
G&D	idOnDemand - SCE3.2 144K

Table 30. Supported cards (continued)

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

Table 31. 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 MIFARE DESFire EV1Card 2K	Yes
Tap and do - NFC Forum Type 4 Tag - Mifare MIFARE DESFire EV1Card 4K	Yes
Tap and do - NFC Forum Type 4 Tag - Mifare MIFARE DESFire EV1Card 8K	Yes
Tap and do - ISO 15693 - Tag-it Plus	Yes

Table 31. Qualified NFC tags (continued)

NFC tag	Supported
HID I-code ISO card	Yes

Contacted smart-card reader

The following table lists the contacted smart-card reader specifications of your Dell Pro 16 Plus.

Table 32. Contacted smart-card reader specifications

Title	Description	Dell controlVault 3 Plus Contacted 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
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/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 operating system level drivers	Yes
Windows Certified	Certified by the Windows Hardware Certification program	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	The device connects to Dell ControlVault for usage and processing	Yes

Operating and storage environment

This table lists the operating and storage specifications of your Dell Pro 16 Plus.

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

Table 33. 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	–15.20 m to 3048 m (–49.87 ft to 10000 ft)	–15.20 m to 10668 m (–49.87 ft to 35000 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.

ComfortView Plus

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.
- Take an extended break for 20 minutes every two hours.
- 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.

4

Working inside your computer

Safety instructions

Use the following safety guidelines to protect your computer from potential damage and to ensure your personal safety. Unless otherwise noted, each procedure 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: 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 are 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: To avoid damaging the components and cards, handle them by their edges, and avoid touching the pins and the contacts.

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

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

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

Before working inside your computer

About this task

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

Steps

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

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

5. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.

   CAUTION: To disconnect a network cable, unplug the cable from your computer.

6. Remove any media card and optical disc from your computer, if applicable.

Safety precautions

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

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

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

Standby power

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

Bonding

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

Electrostatic discharge—ESD protection

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

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

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

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

Perform the following steps to prevent ESD damage:

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

static wrist strap to discharge the static electricity from your body. For more information about the wrist strap and ESD wrist strap tester, see Components of an ESD Field Service Kit.

- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

ESD Field Service kit

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

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

Working Environment

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

ESD Packaging

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

Components of an ESD Field Service kit

The components of an ESD Field Service kit are:

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

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

Transporting sensitive components

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

After working inside your computer

About this task

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

Steps

1. Replace all screws and ensure that no stray screws remain inside your computer.
2. Connect any external devices, peripherals, or cables you removed before working on your computer.
3. Replace any media cards, 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.

BitLocker

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

The installation of the following components triggers BitLocker:

- Hard disk drive or solid state drive
- System board

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver #0
- Phillips screwdriver #1
- Plastic scribe
- Flat-head screwdriver (<4 mm)

Screw list

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

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

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

Table 34. Screw list

Component	Screw type	Quantity	Screw image
Base cover	Captive screws	8	
Battery	M2x4 Captive screws	1 4	
Wireless antennas	M2x2.5	4	
4G WWAN-card bracket	M2x2.5	1	
Solid state drive bracket	M2x3	2	
M.2 2230 Solid state drive	M2x4	1	
M.2 2280 Solid state drive	M2x4	1	
Fan	M2x4	3	
Speaker	M1.6x3	4	
Heat sink	Captive screw	4	
System board	M2x3.5 M2x3 M2x2.5	2 8 1	
Type-C module	M2x5	3	
Power button **NOTE:** Applicable to computer shipped both with and without a fingerprint reader	M2x2.2	2	
I/O Board	M2x1.4	5	
Keyboard	M2x2.2	22	
Keyboard support bracket	M2.5x5	3	
Smart-card reader	M2x2.2	4	

Table 34. Screw list (continued)

Component	Screw type	Quantity	Screw image
Display-cable bracket	M2x3	2	
Fingerprint-reader bracket	M2x3	1	
Display panel	M2x2	2	
Display hinges	M2.5x5	6	
Hinge cap	M2.5x3.5	2	
USH daughter board	M2x2	2	

Major components of Dell Pro 16 Plus

The following image shows the major components of Dell Pro 16 Plus.

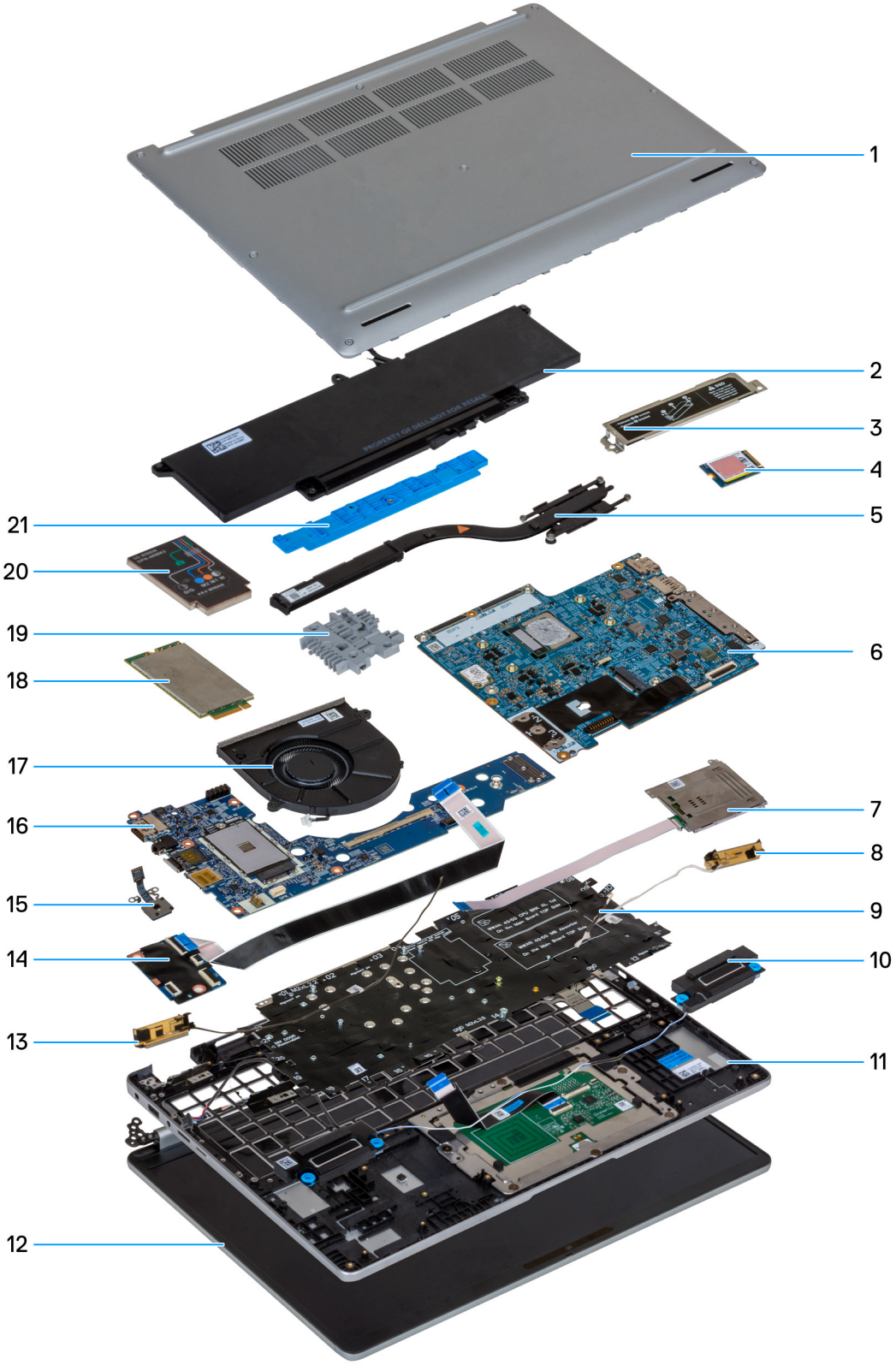


Figure 10. Major components of your Dell Pro 16 Plus

1. Base cover
2. Battery

3. M.2 2230/M.2 2280 SSD shield
4. M.2 2230/M.2 2280 SSD
5. Heat sink
6. System board
7. Smart-card reader (optional)
8. WLAN Antennas
9. Keyboard
10. Speakers
11. Palm-rest assembly
12. Display assembly
13. WLAN Antennas
14. USH board
15. Power button
16. I/O board
17. Fan
18. 4G WWAN card
19. Keyboard support bracket
20. 4G WWAN-card shield
21. Battery support bracket

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