Latitude 5421

Technical Guide Book

Notes, cautions, and warnings

(i) **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.**
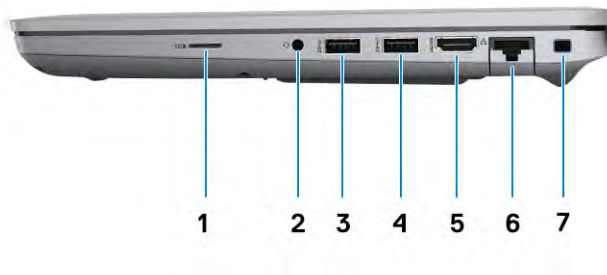
⚠ **WARNING: A WARNING indicates a potential for property damage, personal injury, or death.**

Contents

Views of Latitude 5421

Right

1. microSD-card slot
2. Universal audio jack
3. USB 3.2 Gen 1 port
4. USB 3.2 Gen 1 port with PowerShare
5. HDMI 2.0 port
6. RJ-45 Ethernet port
7. Wedge-shaped lock slot

Left
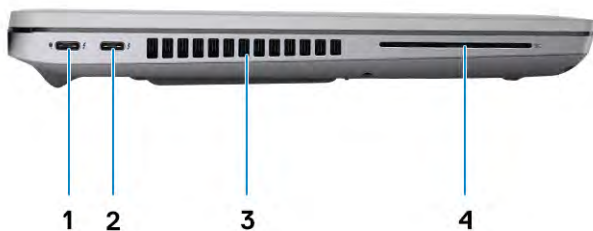
1. Thunderbolt 4 port with DisplayPort Alt Mode/USB4/Power Delivery
2. Thunderbolt 4 port with DisplayPort Alt Mode/USB4/Power Delivery
3. Thermal vents
4. Smart card reader slot (optional)

Front
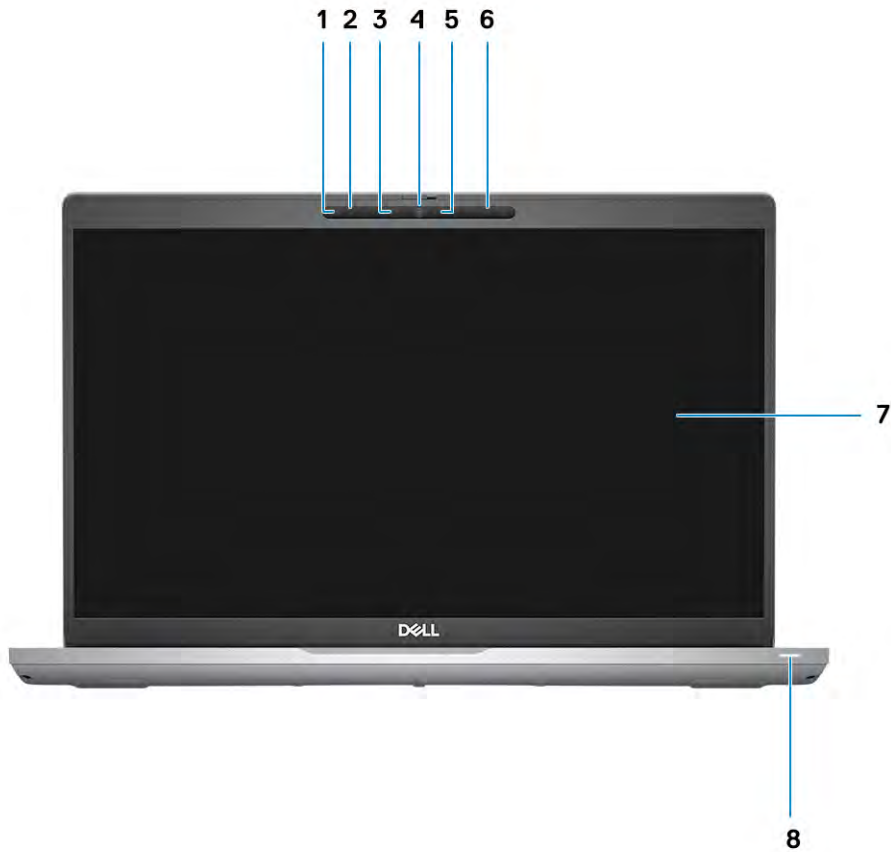
1. Proximity sensor (optional)
2. Microphone
3. IR LED (optional)
4. RGB camera/ RGB IR camera (optional)
5. Camera indicator LED (optional)
6. Microphone
7. LCD panel
8. Battery indicator LED/diagnostic LED

Base
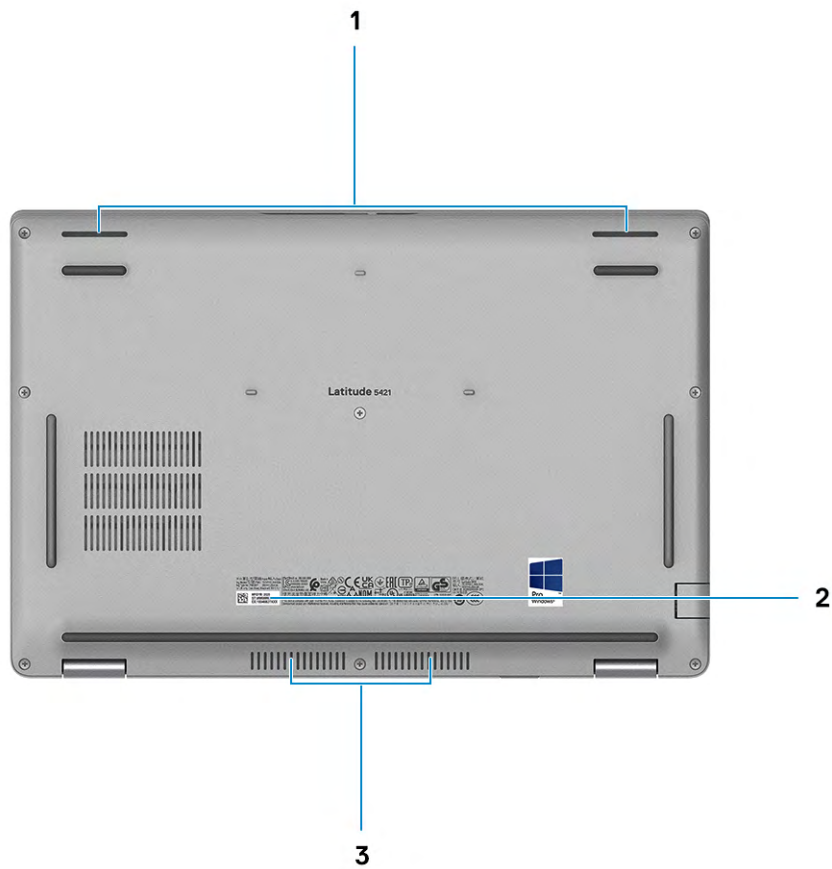
1. Speakers
2. Service Tag label
3. Thermal vent

Top
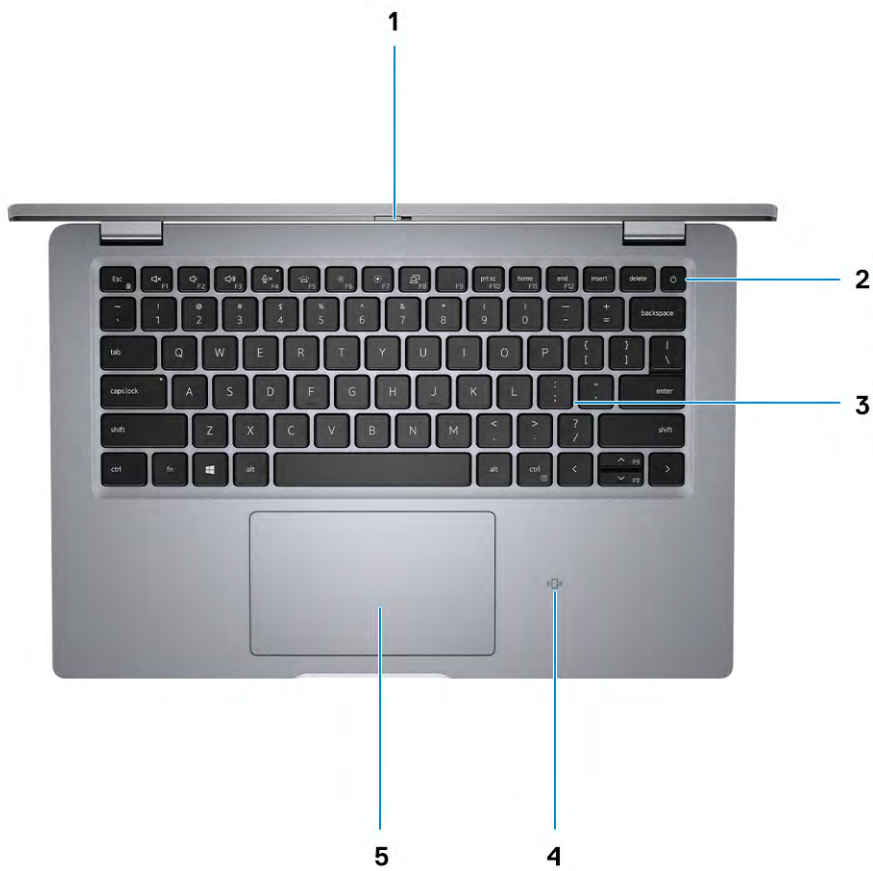
1. Privacy shutter
2. Power button with fingerprint reader (optional)
3. Keyboard
4. NFC/contactless card (optional)
5. Clickpad

Rear
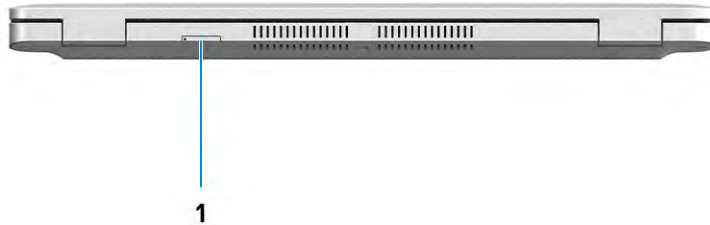
1. microSIM-card tray (optional)

Battery charge and status LED

Table 1. Battery charge and status LED Indicator

Power Source	LED Behavior	computer 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 Amber (590+/-3 nm)	S0 - S5	< 10%

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

Specifications of Latitude 5421

Dimensions and weight

The following table lists the height, width, depth, and weight of your Latitude 5421.

Table 2. Dimensions and weight

Description	Values
Height:	
Front height	20.95 mm (0.82 in)
Rear height	23.60 mm (0.92 in)
Width	321.35 mm (12.65 in)
Depth	212 mm (8.34 in)
Weight (minimum)	1.49 kg (3.30 lb)
	ⓘ **NOTE:** The weight of your computer depends on the configuration ordered and manufacturing variability.

Processor

The following table lists the details of the processors supported by your Latitude 5421.

Table 3. Processor

Description	Option one	Option two	Option three
Processor type	11th Generation Intel Core i5-11400H	11th Generation Intel Core i5-11500H	11th Generation Intel Core i7-11850H
Processor wattage	37.5 W	37.5 W	37.5 W
Processor core count	6	6	8
Processor thread count	12	12	16
Processor speed	2.70 GHz to 4.50 GHz	2.90 GHz to 4.60 GHz	2.50 GHz to 4.80 GHz
Processor cache	12 MB	12 MB	24 MB
Integrated graphics	Intel UHD Graphics	Intel UHD Graphics	Intel UHD Graphics

Chipset

The following table lists the details of the chipset supported by your Latitude 5421.

Table 4. Chipset

Description	Values
Chipset	Intel PCH H WM590
Processor	11th Generation Intel Core i5/i7
DRAM bus width	Dual channel, 64-bit
Flash EPROM	32 MB
PCIe bus	Up to Gen 4

Operating system

Your Latitude 5421 supports the following operating systems:

- Windows 10 Home, 64-bit
- Windows 10 Pro, 64-bit
- Ubuntu Linux 20.04 LTS

Memory

The following table lists the memory specifications of your Latitude 5421.

Table 5. Memory specifications

Description	Values
Memory slots	Two SO-DIMM slots
Memory type	DDR4
Memory speed	3200 MHz
Maximum memory configuration	64 GB
Minimum memory configuration	8 GB
Memory size per slot	8 GB, 16 GB, 32 GB
Memory configurations supported	8 GB, 1 x 8 GB, DDR4 8 GB, 2 x 4 GB, DDR4, dual-channel 16 GB, 1 x 16 GB, DDR4 16 GB, 2 x 8 GB, DDR4, dual-channel 32 GB, 1 x 32 GB, DDR4 32 GB, 2 x 16 GB, DDR4, dual-channel 64 GB, 2 x 32 GB, DDR4, dual-channel

External ports

The following table lists the external ports of your Latitude 5421.

Table 6. External ports

Description	Values
Network port	One RJ-45 Ethernet port
USB ports	- One USB 3.2 Gen 1 port - One USB 3.2 Gen 1 port with PowerShare - Two Thunderbolt 4 ports with DisplayPort Alt Mode/ USB4/Power Delivery
Audio port	One Universal audio jack
Video port	One HDMI 2.0 port
Media-card reader	- One microSD-card slot - One microSIM-card tray (optional) - One smart card reader (optional)
Power-adapter port	DC-in USB Type-C
Security-cable slot	One wedge-shaped lock slot

Internal slots

The following table lists the internal slots of your Latitude 5421.

Table 7. Internal slots

Description	Values
M.2	- One M.2 2230 slot for WiFi and Bluetooth combo card - One M.2 2230/2280 slot for solid-state drive - One M.2 3042 slot for upsell WWAN card (i) **NOTE:** To learn more about the features of different types of M.2 cards, see the knowledge base article 000144170 at www.dell.com/support.

Ethernet

The following table lists the wired Ethernet Local Area Network (LAN) specifications of your Latitude 5421.

Table 8. Ethernet specifications

Description	Values
Model number	Gigabit RJ-45
Transfer rate	10/100/1000 Mbps

Wireless module

The following table lists the Wireless Local Area Network (WLAN) module specifications of your Latitude 5421.

Table 9. Wireless module specifications

Description	Option one	Option two	Option three
Model number	Qualcomm QCA61x4A	Intel AX201	Intel AX210
Transfer rate	Up to 867 Mbps	Up to 2.40 Gbps	Up to 2.40 Gbps
Frequency bands supported	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz/6 GHz
Wireless standards	- Wi-Fi 802.11a/b/g - WiFi 802.11n - WiFi 802.11ac	- Wi-Fi 802.11a/b/g - Wi-Fi 4 (WiFi 802.11n) - Wi-Fi 5 (WiFi 802.11ac) - Wi-Fi 6 (WiFi 802.11ax)	- Wi-Fi 802.11a/b/g - Wi-Fi 4 (WiFi 802.11n) - Wi-Fi 5 (WiFi 802.11ac) - Wi-Fi 6 (WiFi 802.11ax)
Encryption	64-bit and 128-bit WEP 128-bit AES-CCMP - TKIP	64-bit and 128-bit WEP 128-bit AES-CCMP - TKIP	64-bit and 128-bit WEP 128-bit AES-CCMP - TKIP
Bluetooth	5.0	5.2	5.2

WWAN module

The following table lists the Wireless Wide Area Network (WWAN) module supported on your Latitude 5421.

Table 10. WWAN module specifications

Description	Values
Model number	Intel 7360 (DW5820e)
Transfer rate	Up to 450 Mbps DL/50 Mbps UL (Cat 9)
Data rate	- LTE FDD: 450 Mbps DL/50 Mbps UL (Cat 9) - LTE TDD: 347 Mbps DL/30 Mbps UL (Cat 9) - UMTS/HSPA+: UMTS 384 kbps DL/384 kbps UL
Frequency bands supported	(1, 2, 3, 4, 5, 7, 8, 11, 12, 13, 17, 18, 19, 20, 21, 26, 28, 29, 30, 38, 39, 40, 41, 66), HSPA+ (1, 2, 4, 5, 8)
Wireless standards	- LTE Category 16 - UMTS/HSPA+
Encryption	Not supported
Global Navigation Satellite System (GNSS)	Supports GPS, BDS, and GLONASS

Audio

The following table lists the audio specifications of your Latitude 5421.

Table 11. Audio specifications

Description		Values
Audio controller		Realtek ALC3204
Stereo conversion		Supported
Internal audio interface		High definition audio
External audio interface		Universal audio jack
Number of speakers		2
Internal-speaker amplifier		Supported (audio codec integrated)
External volume controls		Keyboard shortcut controls
Speaker output:		
	Average speaker output	2 W
	Peak speaker output	2.5 W
Subwoofer output		Not supported
Microphone		Dual-array microphones

Storage

This section lists the storage options on your Latitude 5421.

Your computer supports one of the following configurations:
- M.2 drive x1

The primary drive of your computer varies with the storage configuration.

Table 12. Storage specifications

Storage type	Interface type	Capacity
M.2 2230, Class 35 solid-state drive	PCIe NVMe Gen3 x4	128 GB/256 GB/512 GB
M.2 2280, Class 40 solid-state drive	PCIe NVMe Gen3 x4	256 GB/512 GB/1 TB
M.2 2280, Class 40, solid-state drive	PCIe NVMe Gen4 x4	512 GB/1 TB/2 TB
M.2 2280, Class 40 solid-state drive, self-encrypting	PCIe NVMe Gen3 x4	256 GB/512 GB

Media-card reader

The following table lists the media cards supported by your Latitude 5421.

Table 13. Media-card reader specifications

Description	Values
Media-card type	One microSD-card slot
Media-cards supported	- micro-Secure Digital (mSD) - micro-Secure Digital High Capacity (mSDHC) - micro-Secure Digital Extended Capacity (mSDXC)
ⓘ **NOTE:** The maximum capacity supported by the media-card reader varies depending on the standard of the media card installed in your computer.	

Keyboard

The following table lists the keyboard specifications of your Latitude 5421.

Table 14. Keyboard specifications

Description	Values
Keyboard type	- Standard backlit keyboard - Standard non-backlit keyboard
Keyboard layout	QWERTY
Number of keys	- United States and Canada: 79 keys - United Kingdom: 80 keys - Japan: 83 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. Keyboard shortcuts

Camera

The following table lists the camera specifications of your Latitude 5421.

Table 15. Camera specifications

Description	Option 1	Option 2	Option 3
Number of cameras	One	One	One

Table 15. Camera specifications (continued)

Description	Option 1	Option 2	Option 3
Camera type	HD RGB camera	HD RGB + Ir camera	FHD RGB + Ir camera, proximity sensor/express sign-in
Camera location	Front Camera	Front camera	Front camera
Camera sensor type	CMOS sensor technology	CMOS sensor technology	CMOS sensor technology
Camera resolution:			
Still image	0.92 megapixel	0.92 megapixel	2.07 megapixels
Video	1280 x 720 (HD) at 30 fps	1280 x 720 (HD) at 30 fps	1920 x 1080 (FHD) at 30 fps
Infrared camera resolution:			
Still image	NA	0.23	0.23
Video	NA	640 x 360 at 15 fps	640 x 360 at 15 fps
Diagonal viewing angle:			
Camera	78.60 degrees	87 degrees	87.60 degrees
Infrared camera	NA	87 degrees	87.60 degrees

Clickpad

The following table lists the Clickpad specifications of your Latitude 5421.

Table 16. Clickpad specifications

Description	Clickpad (Cirque)	Clickpad (Synaptics)
Clickpad resolution:		
Horizontal	3339	1337
Vertical	1994	761
Clickpad dimensions:		
Horizontal	115 mm (4.53 in.)	115 mm (4.53 in.)
Vertical	65 mm (2.55 in.)	65 mm (2.55 in.)
Clickpad gestures	For more information about Clickpad gestures available on Windows 10, see the Microsoft knowledge base article 4027871 at support.microsoft.com.	

Power adapter

The following table lists the power adapter specifications of your Latitude 5421.

Table 17. Power adapter specifications

Description		Option one	Option two
Type		90 W AC adapter, USB-C ⓘ **NOTE:** 90 W is supported only in UMA configuration.	130 W AC adapter, USB-C
Input voltage		100 VAC x 240 VAC	100 VAC x 240 VAC
Input frequency		50 Hz x 60 Hz	50 Hz x 60 Hz
Input current (maximum)		1.50 A	1.80 A
Output current (continuous)		20 V/4.50 A 15 V/3 A 9 V/3 A 5 V/3 A	20 V/6.50 A 5 V/1 A
Rated output voltage		20 VDC/15 VDC/9 VDC/5 VDC	20 VDC/5 VDC
Weight		0.64 lbs (0.29 kg)	0.77 lbs (0.35 kg)
Dimensions (inches)		0.87 x 2.60 x 5.12	0.87 x 2.60 x 5.63
Dimensions (mm)		22 x 66 x 130	22 x 66 x 143
Temperature range:			
	Operating	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)
	Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)
		⚠ **CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.**	

Battery

The following table lists the battery specifications of your Latitude 5421.

Table 18. Battery specifications

Description		Option one	Option two
Battery type		4-cell 64 WHr, Polymer, Long Cycle Life	4-cell 64 WHr, Polymer, non-Long Cycle Life
Battery voltage		15.20 V	15.20 V
Battery weight (maximum)		TBD	TBD
Battery dimensions:			
	Height	7.60 mm	7.60 mm
	Width	226.60 mm	226.60 mm

Table 18. Battery specifications (continued)

Description		Option one	Option two
	Depth	81.40 mm	81.40 mm
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
	Storage	-20°C (-4°F) to 65°C (149°F)	-20°C (-4°F) to 65°C (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)		2 hours (when the computer is off) ⓘ **NOTE:** Control the charging time, duration, start and end time, and so on using the Dell Power Manager application. For more information on the Dell Power Manager see, *Me and My Dell* on www.dell.com/	2 hours (when the computer is off) ⓘ **NOTE:** Control the charging time, duration, start and end time, and so on using the Dell Power Manager application. For more information on the Dell Power Manager see, *Me and My Dell* on www.dell.com/
		ⓘ **NOTE:** 0°C-15°C: 4 hours 16°C-45°C: 2 hours 46°C-60°C: 3 hours	
Approximate life span (discharge/charge cycles)		- Standard pack : 1 year warranty - LCL pack : 3 years warranty	
Coin-cell battery		CR2032 ⓘ **NOTE:** It is recommended that you use a Dell coin-cell battery for your computer. Dell does not provide warranty coverage for problems caused by using accessories, parts, or components not supplied by Dell.	CR2032
ExpressCharge		Supported	Supported
		ⓘ **NOTE:** 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. ⚠ **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.**	

Display

The following table lists the display specifications of your Latitude 5421.

Table 19. Display specifications

Description		Option one	Option two	Option three	Option four	Option five
Display type		High Definition (HD)	Full High Definition (FHD)	Full High Definition (FHD), Super Low Power (SLP), ComfortView Plus	Full High Definition (FHD)	Full High Definition (FHD), Privacy
Display-panel technology		Twisted Nematic (TN)	Wide-Viewing Angle (WVA)	Wide-Viewing Angle (WVA)	Wide-Viewing Angle (WVA)	Wide-Viewing Angle (WVA)
Display-panel dimensions (active area):						
	Height	173.95 mm (6.84 in.)	173.99 mm (6.84 in.)	173.95 mm (6.85 in.)	173.95 mm (6.84 in.)	173.95 mm (6.84 in.)
	Width	309.40 (12.18 in.)	309.35 (12.18 in.)	309.40 (12.18 in.)	309.40 (12.18 in.)	309.40 (12.18 in.)
	Diagonal	355.60 mm (14 in.)	355.6 mm (14 in.)	355.6 mm (14 in.)	355.60 mm (14 in.)	355.60 mm (14 in.)
Display-panel native resolution		1366 x 768	1920 x 1080	1920 x 1080	1920 x 1080	1920x1080
Luminance (typical)		220 nits	250 nits	400 nits	300 nits	300 nits
Megapixels		1.05	2.07	2.07	2.07	2.07
Color gamut		NTSC 45% typical	NTSC 45% typical	sRGB 100% typical	NTSC 72% typical	sRGB 100%
Pixels Per Inch (PPI)		112	157	157	157	157
Contrast ratio (typ)		300:1	600:1	1000:1	600:1	600:1
Response time (min)		25 ms	35 ms	35 ms	35 ms	35 ms
Refresh rate		60 Hz	60 Hz	60 Hz	60 Hz	60 Hz
Horizontal view angle		40 minimum	80 minimum	80 minimum	80 minimum	80 minimum
Vertical view angle		10/30 (Top/ Bottom) min	80 minimum	80 minimum	80 minimum	80 minimum
Pixel pitch		0.2265 mm x 0.2265 mm	0.161 mm x 0.161 mm	0.161 mm x 0.161 mm	0.161 mm x 0.161 mm	0.161 x 0.161
Power consumption (maximum)		2.40 W	3.60 W	2.50 W	4.10 W	3.50 W
Anti-glare vs glossy finish		Anti-glare	Anti-glare	Anti-glare	Anti-glare	Anti-glare
Touch options		No	No	No	Yes	Yes

Fingerprint reader (optional)

The following table lists the specifications of the optional fingerprint-reader of your Latitude 5421.

Table 20. 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 5421.

Table 21. GPU—Integrated

Controller	External display support	Memory size	Processor
Intel UHD Graphics	One HDMI 2.0 port	Shared system memory	11th Generation Intel Core i5/i7

GPU—Discrete

The following table lists the specifications of the discrete Graphics Processing Unit (GPU) supported by your Latitude 5421.

Table 22. GPU—Discrete

Controller	External display support	Memory size	Memory type
NVIDIA GeForce MX450	One HDMI 2.0 port	2 GB	GDDR6

Operating and storage environment

This table lists the operating and storage specifications of your Latitude 5421.

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

Table 23. Computer environment

Description	Operating	Storage
Temperature range	0°C to 40°C (32°F to 104°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	Not tested
Shock (maximum)	140 G†	Not tested
Altitude range	0 m to 3048 m (32 ft to 5518.4 ft)	0 m to 10668 m (32 ft to 19234.4 ft)

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

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

† Measured using a 2 ms half-sine pulse when the hard drive is in use.

Sensor and control

Table 24. Sensor and control

Sensor support	
Sensor	Windows Adaptive Color
	Accelerometer (G sensor): One on the base (system board) and another on the hinge-up (optional)

Engineering specifications

Communications

Wireless LAN options

Dell Qualcomm QCA61x4A, 802.11ac

Table 25. Dell Qualcomm QCA61x4A, DW1820 802.11ac

Feature	Specifications
Host interface	Qualcomm QCA61x4A
Transfer rate	Up to 867 Mbps
Wi-Fi Alliance Certifications	Wi-Fi CERTIFIED* a/b/g/n/ac with wave 2 features, WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, Wi-Fi Miracast* as Source, and Wi-Fi Direct (For Microsoft Windows* only)l
Operating Frequency Bands	Dual band 2.4 GHz/5 GHz
Data Rate	2.4 GHz 40M: Up to 300 Mbps 5 GHz 80M: Up to 867 Mbps 5 GHz 160M: Up to 1.73 Gbps
Power consumption	WPA* and WPA2*, 802.1X (EAP-TLS, TTLS, PEAP, EAP-SIM, EAP-AKA, EAP-AKA')
Authentication	Open, Shared, WPA, WPA-PSK, WPA2, WPA2-PSK
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAP*v2
Encryption	64-bit and 128-bit WEP, TKIP, 128-bit AES-CCMP
Government Compliance	FIPS 140-2, FISMA
Client Utility	Intel PRO/Set Wireless Software v20 and later
Antenna Diversity	Supported
Radio On/Off	Supported
Wake On Wireless	Supported
Wireless Display	Native Miracast support by Windows 10
Bluetooth	Bluetooth 5.0
Wireless PAN Standard	Wi-Fi 802.11ac Wi-Fi 802.11b/g/n
Bluetooth Data rates	Up to 3 Mbps
Bluetooth Operating Frequency Bands	2.4 GHz
Bluetooth Profiles Supported	Support for Microsoft Inbox Bluetooth profiles in Windows 10

Table 25. Dell Qualcomm QCA61x4A, DW1820 802.11ac (continued)

Feature	Specifications
Bluetooth Data Encryption	64/128-bit encryption
Bluetooth Output Power	Power class 1
Temperature	Operating temperature 0 to + 50 C (Full performance at shield temperatures up to 80 C)
	Storage temperature of -40 to +70 C
Humidity	Up to 90% RH non-condensing (at temperatures of 25 C to 35 C)

Intel Wi-Fi 6 AX201 802.11AX 2x2 Wi-Fi and Bluetooth 5.1

Table 26. Intel AX201 802.11AX 2x2 Wi-Fi and Bluetooth 5.1

Feature	Specifications
Type	Intel AX201
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160 MHz channel use, MU-MIMO
Wi-Fi Alliance certifications	Wi-Fi CERTIFIED* a/b/g/n/ac with wave 2 features, designed to be Wi-Fi CERTIFIED* ax (Wi-Fi 6), WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, and Wi-Fi Direct (For Microsoft Windows* only)
Transfer rate	Up to 2.40 Gbps
Operating Frequency Bands	Dual band 2.4 GHz and 5 GHz
Data Rate	2.4 GHz 40 M - Up to 574 Mbps 5 GHz 80 M - Up to 1.2 Gbps 5 GHz 160 M - Up to 2 Gbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity.
Authentication	WPA* and WPA2* Personal and Enterprise; WPA3* (pending operating system support)
Authentication Protocols	802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA')
Encryption	64-bit and 128-bit WEP, TKIP, 128-bit AES-CCMP, 256-bit AES-GCMP
Government Compliance	FIPS 140-2, FISMA
Client Utility	Intel PRO/Set Wireless Software v21 and later
Antenna Diversity	Supported
Radio On/Off	Supported
Wake On Wireless	Supported
Wireless Display	Native Miracast* support by Windows 10
Wireless PAN Standard	Wi-Fi 802.11ac, Wi-Fi 802.11b/g/n
Bluetooth	5.1
Bluetooth Data rates	Up to 3 Mbps
Bluetooth Operating Frequency Bands	2.4 GHz
Bluetooth Profiles Supported	Support for Microsoft Inbox Bluetooth profiles in Windows 10

Table 26. Intel AX201 802.11AX 2x2 Wi-Fi and Bluetooth 5.1 (continued)

Feature	Specifications
Bluetooth Data Encryption	128-bit encryption
Bluetooth Output Power	Power class 1
Temperature	● Operating temperature 0°C to + 50°C (Full performance at shield temperatures up to 80°C) ● Storage temperature of -40°C to +70°C
Humidity	Up to 90% RH non-condensing (at temperatures of 25°C to 35°C)

Intel Wi-Fi 6 AX210 160 MHz (Typhoon Peak 2) 2x2 Wi-Fi and Bluetooth 5.2 M.2 wireless card

Table 27. Intel Wi-Fi 6 AX210 160 MHz (Typhoon Peak 2) 2x2 Wi-Fi and Bluetooth 5.2 M.2 wireless card

Feature	Specifications
Type	Intel AX210
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160 MHz channel use, MU-MIMO
Wi-Fi Alliance certifications	Wi-Fi CERTIFIED* a/b/g/n/ac with wave 2 features, designed to be Wi-Fi CERTIFIED* ax (Wi-Fi 6), WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, and Wi-Fi Direct (For Microsoft Windows* only)
Transfer rate	Up to 2400 Gbps
Operating Frequency Bands	2.4 GHz, 5 GHz, and 6 GHz
Data Rate	● 2.4 GHz 40 M - Up to 574 Mbps ● 5/6 GHz 80 M - Up to 1.2 Gbps ● 5/6 GHz 160 M - Up to 2.4 Gbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity.
Authentication	WPA* and WPA2* Personal and Enterprise; WPA3* (pending operating system support)
Authentication Protocols	802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA')
Encryption	64-bit and 128-bit WEP, TKIP, 128-bit AES-CCMP, 256-bit AES-GCMP
Government Compliance	FIPS 140-2, FISMA
Client Utility	Intel PRO/Set Wireless Software v22 and later
Antenna Diversity	Supported
Radio On/Off	Supported
Roaming	Support seamless roaming between access points
Wake On Wireless	Supported
Wireless Display	Native Miracast* support by Windows 10
Wireless PAN Standard	Dual Mode bluetooth 5.2, BLE
Bluetooth	5.2
Bluetooth Data rates	Up to 3 Mbps

Feature	Specifications
Bluetooth Operating Frequency Bands	2.4 GHz
Bluetooth Profiles Supported	Support for Microsoft Inbox Bluetooth profiles in Windows 10
Bluetooth Data Encryption	128-bit encryption
Bluetooth Output Power	Power class 1
Temperature	● Operating temperature 0°C to + 50°C (Full performance at shield temperatures up to 80°C) ● Storage temperature of -40°C to +70°C
Humidity	Up to 90% RH non-condensing (at temperatures of 25°C to 35°C)

Wireless WAN options

Intel XMM 7360 Global LTE-Advanced (DW5820e) CAT9, WWAN Module

Feature	Specifications
Host interface	M.2 3042 form factor
Network standard	LTE FDD/TDD, WCDMA/HSPA+, GNSS/Beidou
Transfer rate	Up to 450 Mbps DL/50 Mbps UL (Cat 9)
Operating FrequencyBands	(1,2,3,4,5,7,8,11,12,13,17,18,19,20,21,26,28,29,30,38,39,40,41,66), HSPA+ (1, 2, 4,5, 8)
Data Rate	● LTE FDD: 450 Mbps DL/50 Mbps UL (Cat 9) ● LTE TDD: 347 Mbps DL/30 Mbps UL (Cat 9) ● UMTS/HSPA+: UMTS 384 kbps DL/384 kbps UL
Power supply	DC 3.135 V to 4.4 V, Typical 3.3 V
SIM card (Micro or Nano)	Supported[1]
eSIM card (Micro orNano)	Supported[1,2]
Antenna Diversity	Supported
Radio On/Off	Supported
Wake On Wireless	Supported
Temperature	● Normal operating temperature: -10°C to + 55°C ● Extended Operating temperature: -20°C to +65°C
Antenna connector	● WWAN Main Antenna x1 ● WWAN Diversity Antenna x1

ⓘ **NOTE:**
- [1] Use of SIM card is supported through external SIM slot, some model support Nano card only.
- [2] The availability of eSIM functionality depends on the region and carrier requirements.

Graphics options

Integrated graphics

Table 28. Integrated graphics

Feature	Intel UHD Graphics
Bus type	Integrated
Memory type	DDR4
Memory interface	N/A (Unified Memory Architecture)
Estimated Maximum Power Consumption (TDP)	37.5 W - included in the CPU power
Maximum color depth	10 bits
Maximum vertical refresh rate	Up to 120 Hz depending on resolution
External connectors	HDMI and Type-C DisplayPort alt mode
Multiple display support	Yes (Up to 4 displays - including internal panel display)

NVIDIA GeForce MX450

Table 29. NVIDIA GeForce MX450

Feature	Specifications
Bus type	PCIe 4.0
Memory type	GDDR6
Memory size	2 GB
Memory interface	64 bit
Estimated Maximum Power Consumption (TDP)	25 W
Maximum color depth	NA
Multiple display support	NA
Maximum vertical refresh rate	NA
External connectors	NA

Video port and resolution matrix

Table 30. Video port and resolution matrix

Port type	HDMI 2.0 port x1	Thunderbolt 4 port x2 type C-DP port
Maximum resolution —single display	4K 60 Hz HDR	4K 60 Hz HDR with single type C port, or 8K 60 Hz SDR with dual type C cables (tiled mode)
Maximum resolution —dual display	1 x 4K 60 Hz HDR (HDMI 2.0) +1 x 8K 60 Hz SDR with dual type C cables (tiled mode), or 1 x 4K 60 Hz HDR (HDMI 2.0) +1 x 4K 60 Hz HDR (type C-DP)	
Maximum resolution —triple display	3 x 4K 60 Hz HDR	

Table 30. Video port and resolution matrix (continued)

Port type	HDMI 2.0 port x1	Thunderbolt 4 port x2 type C-DP port
Maximum resolution —four display	4 x 4K 60 Hz HDR (One through external MST hub)	

Supported hard drives

128 GB Gen3 PCIe NVMe M.2 2230 solid-state drive

Table 31. 128 GB PCIe NVMe M.2 2230 solid-state drive

Feature	Specifications
Capacity (GB)	128 GB
Dimensions (mm) (W x D x H)	22 x 30 x 2.38
Interface type and Maximum speed	PCIe Gen3 32 Gb/s (up to 4 lanes)
MTBF	1.4 M hours
Logical Blocks	250,069,680
Power Source:	
Power Consumption (reference only)	Idle 5 mW (PS4), Active 3.5 W
Environmental Operating Conditions (Non-Condensing):	
Temperature Range	0°C to 70°C
Relative Humidity Range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing):	
Temperature Range	-40°C to 70°C
Relative Humidity Range	5% to 95%
Non-Op Shock (@0.5ms)	1,500G

256 GB Gen 3 PCIe NVMe M.2 2230 solid-state drive

Table 32. 256 GB Gen 3 PCIe NVMe M.2 2230 solid-state drive

Feature	Specifications
Capacity (GB)	256 GB
Dimensions (mm) (W x D x H)	22 x 30 x 2.38
Interface type and Maximum speed	PCIe Gen3 32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical Blocks	500,118,192
Power Source:	
Power Consumption (reference only)	Idle 5 mW (PS4), Active 3.5 W
Environmental Operating Conditions (Non-Condensing):	

Table 32. 256 GB Gen 3 PCIe NVMe M.2 2230 solid-state drive (continued)

Feature	Specifications
Temperature Range	0°C to 70°C
Relative Humidity Range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing):	
Temperature Range	-40°C to 70°C
Relative Humidity Range	5% to 95%
Non-Op Shock (@0.5 ms)	1,500G

512 GB Gen 3 PCIe NVMe M.2 2230 solid-state drive

Table 33. 512 GB Gen 3 PCIe NVMe M.2 2230 solid-state drive

Feature	Specifications
Capacity (GB)	512
Dimensions mm (W x D x H)	22 x 30 x 2.38
Interface type and Maximum speed	PCIe Gen3 32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical Blocks	1,000,215,216
Power Source:	
Power Consumption (reference only)	Idle 5 mW (PS4), Active 3.5 W
Environmental Operating Conditions (Non-Condensing):	
Temperature Range	0°C to 70°C
Relative Humidity Range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing):	
Temperature Range	-40°C to 70°C
Relative Humidity Range	5% to 95%
Non-Op Shock (@0.5 ms)	1,500G

256 GB Gen 3 PCIe NVMe M.2 2280 solid-state drive

Table 34. 256 GB Gen 3 PCIe NVMe M.2 2280 solid-state drive

Feature	Specifications
Capacity (GB)	256 GB
Dimensions (W x D x H)	22 x 80 x 2.38 mm
Interface type and maximum speed	PCIe Gen3 32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	500,118,192
Power source	

Table 34. 256 GB Gen 3 PCIe NVMe M.2 2280 solid-state drive (continued)

Feature	Specifications
Power consumption (reference only)	Idle 5 mW (PS4), Active 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%
Non-Op Shock (@ 0.5 ms)	1,500G

512 GB Gen 3 PCIe NVMe M.2 2280 solid-state drive

Table 35. 512 GB Gen 3 PCIe NVMe M.2 2280 solid-state drive

Feature	Specifications
Capacity (GB)	512 GB
Dimensions (W x D x H)	22 x 80 x 2.38 mm
Interface type and maximum speed	PCIe Gen3 32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	Idle 5 mW (PS4) , Active 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%
Non-Op Shock (@ 0.5 ms)	1,500G

1 TB Gen 3 PCIe NVMe M.2 2280 solid-state drive

Table 36. 1 TB Gen 3 PCIe NVMe M.2 2280 solid-state drive

Feature	Specifications
Capacity (GB)	1 TB

Table 36. 1 TB Gen 3 PCIe NVMe M.2 2280 solid-state drive (continued)

Feature	Specifications
Dimensions (W x D x H)	22 x 80 x 3.73 mm
Interface type and maximum speed	PCIe Gen3 32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	2,000,409,264
Power source	
Power consumption (reference only)	Idle 5 mW(PS4), Active 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%
Non-Op Shock (@ 0.5 ms)	1,500G

512 GB Gen 4 PCIe NVMe M.2 2280 solid-state drive

Table 37. 512 GB Gen 4 PCIe NVMe M.2 2280 solid-state drive

Feature	Specifications
Capacity (GB)	512 GB
Dimensions (W x D x H)	22 x 80 x 2.38 mm
Interface type and maximum speed	PCIe Gen4 64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	Idle 5 mW (PS4) , Active 5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%
Non-Op Shock (@ 0.5 ms)	1,500G

1 TB Gen 4 PCIe NVMe M.2 2280 solid-state drive

Table 38. 1 TB Gen 4 PCIe NVMe M.2 2280 solid-state drive

Feature	Specifications
Capacity (GB)	1 TB
Dimensions (W x D x H)	22 x 80 x 3.73 mm
Interface type and maximum speed	PCIe Gen4 64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	2,000,409,264
Power source	
Power consumption (reference only)	Idle 5 mW(PS4), Active 5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%
Non-Op Shock (@ 0.5 ms)	1,500G

M.2 2280 2 TB Gen 4 PCIe x4 NVMe Class 40 Solid-State Drive

Table 39. M.2 2280 2 TB Gen 4 PCIe x4 NVMe Class 40 Solid-State Drive

Feature	Specifications
Capacity (GB)	2 TB
Dimensions (W x D x H)	22 x 80 x 3.73 mm
Interface type and maximum speed	PCIe Gen4 64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	4,000,797,360
Power source	
Power consumption (reference only)	Idle 5 mW(PS4), Active 5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing)	

Table 39. M.2 2280 2 TB Gen 4 PCIe x4 NVMe Class 40 Solid-State Drive (continued)

Feature	Specifications
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%
Non-Op Shock (@ 0.5 ms)	1,500G

M.2 2280 256 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

Table 40. M.2 2280 256 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

Features	Specifications
Capacity	256 GB
Dimensions	22.00 mm x 80.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	500,118,192
Power Source	
Power consumption (reference only)	- Idle : 5 mW (PS4) - Active : 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280 512 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

Table 41. M.2 2280 512 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

Features	Specifications
Capacity	512 GB
Dimensions	22.00 mm x 80.00 mm x 2.3 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s

Table 41. M.2 2280 512 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive (continued)

Features	Specifications
MTTF	1.6 M hours
Logical blocks	1000,215,216
Power Source	
Power consumption (reference only)	● Idle : 10 mW (PS4) ● Active : 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	5% to 90%
Non-op shock (@0.5 ms)	1500G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-10°C to 85°C
Relative humidity range	5% to 95%

Accessories

Table 42. Accessories

Accessories
Dell Mobile Pro Wireless Mice-MS5120W
Dell Pro Wireless Keyboard and Mouse-KM5221W
Dell Mobile Adapter Speakerphone-MH3021P
Dell USB-C Mobile Adapter-DA310
Dell Pro Stereo Headset-UC350
Dell Thunderbolt Dock-WD19TB
Dell Thunderbolt Dock - WDTBS
Dell Pro Briefcase 14-PO1420C
Dell Pro Briefcase 15-PO1520C
Dell Pro Hybrid Briefcase Backpack 15-PO1521HB
Dell 27 USB-C Monitor-P2720DC
Dell Pro Sleeve 14
Dell Pro Sleeve 15

Security

Table 43. Hardware Security

Hardware security options
TPM 2.0 FIPS 140-2 Certified, TCG Certified
Optional Windows Hello compliant fingerprint reader
Optional Smartcard reader (SCR) FIPS201
Optional Contactless Smartcard reader (NFC)
Optional Contacted Smartcard and Contactless Smartcard/NFC with CV3
Nobel Wedge Lock Slot
Dell Client Command Suite: On-Prem and Cloud Dell Optimizer
Dell Power Manager Support assist: PCs and OS Recovery (Excalibur)
Dell SafeBIOS - Off-Host Verification
Dell SafeBIOS - Indicator of Attack
Dell SafeID Vmware Carbon Black Endpoint: Standard, Advanced, Enterprise Absolute Visibility Absolute Control Absolute Resilience
Netskope Cloud Access
Security Broker (CASB)
Netskope Secure Web Gateway
Netskope Private Access
Optional Dell Data Security and Management Software
Dell Endpoint Security Suite Enterprise
Dell Data Guardian
Dell Encryption Enterprise
Dell Encryption Personal
Dell Threat Defense
MozyPro® or MozyEnterprise®
RSA NetWitness® Endpoint
RSA SecurID Access
VMware Workspace ONE
Absolute® Endpoint Visibility and Control
Chassis Intrusion Detection
Battery Intrusion Detection
Vmware Carbon Black Endpoint + Secureworks Threat Detection and Response
Carbonite
Dell Supply Chain Defense

Table 44. Data Security

Data security options
Latitude Security software per software functional plan/cycle list

Table 44. Data Security (continued)

Data security options
D-Pedigree (Secure Supply Chain Functionality)
Dell Digital Device ID: TPM Platform Root Key provisioning
BIOS complies with Dell SMBIOS implementation spec (DSIS)
SW and Drivers MUP/DUP compliant per spec Agile S01310
Dell Power Manager 3.0 or later version (DPM)
Dell Command | Configure 4.0 or later (DCC) with Remote BIOS configuration
Dell Command | Monitor 10.0 or later (DCM)
Dell Command | Update 3.0 or later (DCU)
Dell Command | Update Catalog (DCUC)
Dell Command | Deploy (DCP)
Dell Command | Integration Suite for System Center 5.0 (DCIS)
Dell Command | Intel® vPro™ Out of Band (DCIV)
Dell Command | PowerShell Provider 2.0 or later
Dell Command | Deploy Driver Pack Catalog 1.0 or later

Systems management

Table 45. Systems management

Systems management
Dell Power Manager (DPM) version 3.0 or later
BIOS complies with Dell SMBIOS Implementation Spec (DSIS)
SW and Drivers MUP/DUP compliant
Dell Command | Configure (DCC) version 4.0 or later
Dell Command | Monitor (DCM) version 10.0 or later
Dell Command | Update (DCU) version 3.0 or later
Dell Command | Update Catalog (DCUC)
Dell Command | Deploy (DCP)
Dell Command | Integration Suite for System Center (DCIS) version 5.0
Dell Command | Intel vPro Out of Band (DCIV)
Dell Command | PowerShell Provider version 2.0 or later
Dell Command | Deploy Driver Pack Catalog version 1.0 or later
Factory Installed Dell Optimizer

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 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.

Keyboard shortcuts

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

Table 46. List of keyboard shortcuts

Keys	Primary Behavior	Secondary Behavior (fn + Key)
fn + Esc	Escape	Toggle fn-key lock
fn + F1	Mute audio	F1 behavior
fn + F2	Decrease volume	F2 behavior
fn + F3	Increase volume	F3 behavior
fn + F4	Mic Mute	F4 behavior
fn + F5	Keyboard backlight (i) **NOTE:** Not applicable for non-backlight keyboard.	F5 behavior
fn + F6	Decrease screen brightness	F6 behavior
fn + F7	Increase screen brightness	F7 behavior
fn + F8	Switch to external display	F8 behavior
fn + F10	Print Screen	F10 behavior
fn + F11	Home	F11 behavior
fn + F12	End	F12 behavior
fn + ctrl	Open application menu	Control
fn + page up	Scroll up	Page up
fn + page down	Scroll down	Page down
fn + P	SafeScreen (e-Privacy)	

Getting help

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 47. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	www.dell.com
My Dell app	
Tips	
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	www.dell.com/support/windows www.dell.com/support/linux
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 www.dell.com/support. For more information on how to find the Service Tag for your computer, see Locate the Service Tag on your computer.
Dell knowledge base articles for a variety of computer concerns	1. Go to www.dell.com/support. 2. On the menu bar at the top of the Support page, select **Support** > **Knowledge Base**. 3. In the Search field on the Knowledge Base 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 www.dell.com/contactdell.

(i) **NOTE:** Availability varies by country/region and product, and some services may not be available in your country/region.

(i) **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.