


Latitude 5431

Technical Guidebook

Notes, cautions, and warnings

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

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

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

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Views of Latitude 5431

Right



1. microSD-card slot
2. Headset (headphone and microphone combo) port
3. USB 3.2 Gen 1 port
4. USB 3.2 Gen 1 port with PowerShare
5. HDMI 2.0 port
6. RJ45 Ethernet port (flip-down)
7. Wedge-shaped lock slot

Left



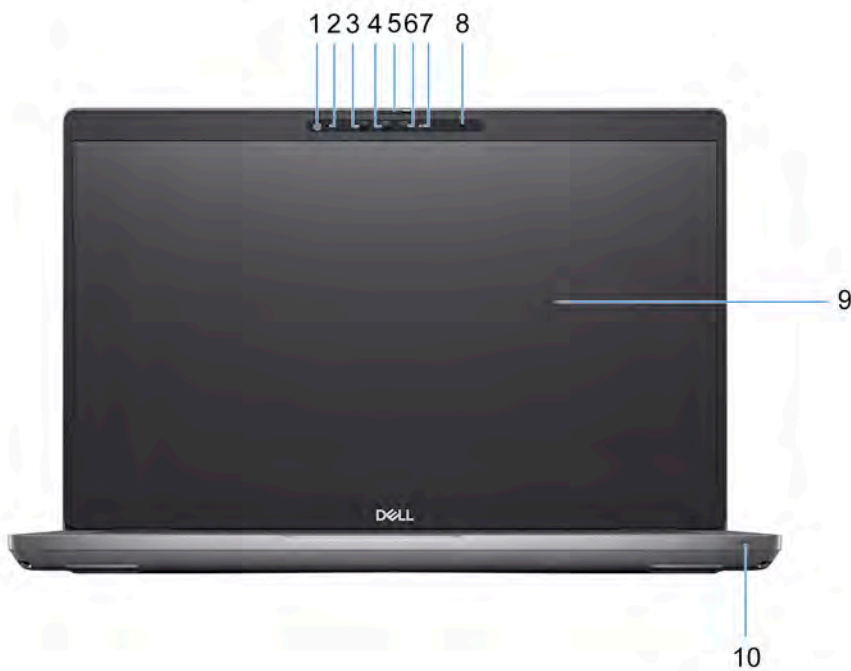
1. Thunderbolt 4 ports with DisplayPort Alt Mode/USB4/Power Delivery
2. Thunderbolt 4 ports with DisplayPort Alt Mode/USB4/Power Delivery
3. Air vents
4. Smart-card reader slot (optional)

Top



1. Power button with fingerprint reader (optional)
2. Keyboard
3. NFC (optional)
4. Clickpad

Front



1. Ambient Light Sensor (ALS)
2. Microphone

- 3. IR emitter
- 4. IR camera
- 5. Camera shutter
- 6. RGB camera
- 7. Camera indicator LED
- 8. Microphone
- 9. LCD panel
- 10. Battery indicator/diagnostic LED

Bottom



- 1. Speakers
- 2. Service tag label
- 3. Air vents

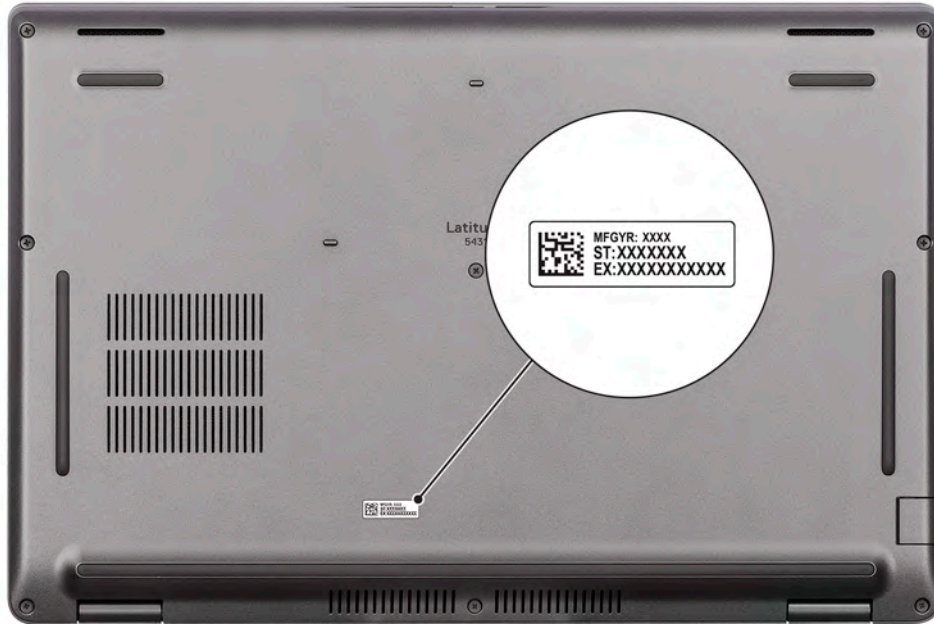
Back



- 1. microSIM-card slot

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.



Battery charge and status light

The following table lists the battery charge and status light behavior of your Latitude 5431.

Table 1. Battery charge and status light behavior

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


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

Specifications of Latitude 5431

Dimensions and weight

The following table lists the height, width, depth, and weight of your Latitude 5431.

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	212.00 mm (8.35 in.)
Weight  NOTE: The weight of your computer depends on the configuration ordered and manufacturing variability.	1.49 kg (3.30 lb)

Processor

The following table lists the details of the processors supported by your Latitude 5431.

Table 3. Processor

Description	Option one	Option two	Option three
Processor type	12 th Generation Intel Core i5-1240P	12 th Generation Intel vPro Enterprise with Intel Core i5-1250P	12 th Generation Intel vPro Enterprise with Intel Core i7-1270P
Processor wattage	28 W	28 W	28 W
Processor core count	12	12	12
Processor thread count	16	16	16
Processor speed	Up to 4.40 GHz	Up to 4.40 GHz	Up to 4.80 GHz
Processor cache	12 MB	12 MB	18 MB
Integrated graphics	Intel Iris X ^e Graphics	Intel Iris X ^e Graphics	Intel Iris X ^e Graphics

Chipset

The following table lists the details of the chipset supported by your Latitude 5431.

Table 4. Chipset

Description	Values
Chipset	Intel P28
Processor	12 th Generation Intel Core i5/i7
DRAM bus width	64-bit (for dual-channel)
Flash EPROM	<ul style="list-style-type: none">• 32 MB for non-vPro• 32 MB+16 MB for vPro
PCIe bus	Up to Gen 4.0

Operating system

Your Latitude 5431 supports the following operating systems:

- Windows 11 Home
- Windows 11 Pro
- Windows 11 Pro National Academic
- Windows 11 Pro Downgrade (Windows 10 Pro Image Factory Installed)
- Windows 10 China G-SKU
- Ubuntu 20.04 LTS

Memory

The following table lists the memory specifications of your Latitude 5431.

Table 5. Memory specifications

Description	Values
Memory slots	Two-SoDIMM
Memory type	DDR5
Memory speed	4800 MHz
Maximum memory configuration	64 GB
Minimum memory configuration	8 GB
Memory size per slot	8 GB, 16 GB, 32 GB
Memory configurations supported	<ul style="list-style-type: none">• 8 GB, 1 x 8 GB, DDR5, 4800 MHz• 16 GB, 1 x 16 GB, DDR5, 4800 MHz• 16 GB, 2 x 8 GB, DDR5, 4800 MHz, dual-channel• 32 GB, 1 x 32GB, DDR5, 4800 MHz• 32 GB, 2 x 16 GB, DDR5, 4800 MHz, dual-channel• 64 GB, 2 x 32 GB, DDR5, 4800 MHz, dual-channel

External ports

The following table lists the external ports of your Latitude 5431.

Table 6. External ports

Description	Values
Network port	One RJ45 Ethernet port
USB ports	<ul style="list-style-type: none">One USB 3.2 Gen 1 portOne USB 3.2 Gen 1 port with PowerShareTwo Thunderbolt 4 ports with DisplayPort Alt Mode/USB4/Power Delivery
Audio port	One headset (headphone and microphone combo) port
Video port	HDMI 2.0 port
Media-card reader	One microSD-card slot
SIM-card slot	One microSIM-card slot
Power-adaptor port	USB Type-C power input
Security-cable slot	One wedge-shaped lock slot

Internal slots

The following table lists the internal slots of your Latitude 5431.

Table 7. Internal slots

Description	Values
M.2	<ul style="list-style-type: none">One M.2 2230 slot for WiFi and Bluetooth cardOne M.2 2230/2280 slot for solid-state driveOne M.2 3042 Key-B slot for WWAN (optional) <p>NOTE: To learn more about the features of different types of M.2 cards, search in the Knowledge Base Resource at www.dell.com/support.</p>

Ethernet

The following table lists the wired Ethernet Local Area Network (LAN) specifications of your Latitude 5431.

Table 8. Ethernet specifications

Description	Values
Model number	Intel I219-V/Intel I219-LM
Transfer rate	10/100/1000 Mbps

Wireless module

The following table lists the Wireless Local Area Network (WLAN) module specifications of your Latitude 5431.

Table 9. Wireless module specifications

Description	Option one	Option two	Option three
Model number	Realtek RTL8822CE	Intel AX211	Intel AX211
Transfer rate	Up to 867 Mbps	Up to 2400 Mbps	Up to 2400 Mbps
Frequency bands supported	2.4 GHz/5 GHz	2.4 GHz/5 GHz/6 GHz	2.4 GHz/5 GHz/6 GHz
Wireless standards	<ul style="list-style-type: none"> WiFi 802.11a/b/g Wi-Fi 4 (WiFi 802.11n) Wi-Fi 5 (WiFi 802.11ac) 	<ul style="list-style-type: none"> WiFi 802.11a/b/g Wi-Fi 4 (WiFi 802.11n) Wi-Fi 5 (WiFi 802.11ac) Wi-Fi 6E (WiFi 802.11ax) 	<ul style="list-style-type: none"> WiFi 802.11a/b/g Wi-Fi 4 (WiFi 802.11n) Wi-Fi 5 (WiFi 802.11ac) Wi-Fi 6E (WiFi 802.11ax)
Encryption	<ul style="list-style-type: none"> 64-bit/128-bit WEP AES-CCMP TKIP 	<ul style="list-style-type: none"> 64-bit/128-bit WEP AES-CCMP TKIP 	<ul style="list-style-type: none"> 64-bit/128-bit WEP AES-CCMP TKIP
Bluetooth	Bluetooth 5.0	Bluetooth 5.2	No Bluetooth

WWAN module

The following table lists the Wireless Wide Area Network (WWAN) module supported on your Latitude 5431.

Table 10. WWAN module specifications

Description	Option one
Model number	Intel XMM 7360 Global LTE-Advanced
Transfer rate	Up to 450 Mbps DL/50 Mbps UL (Cat 9) Up to 50 Mbps UL
Frequency bands supported	<ul style="list-style-type: none"> LTE(B1, B2, B3, B4, B5, B7, B8, B11, B12, B13, B17, B18, B19, B20, B21, B26, B28, B29, B30, B38, B39, B40, B41, B66) HSPA+ (1, 2, 4, 5, 8)
Wireless standards	LTE FDD/TDD, WCDMA/HSPA+, GNSS/Beidou
Encryption	Not supported
Global Navigation Satellite System (GNSS)	Supports GPS, BDS, and GLONASS
<p>NOTE: For instructions on how to find your computer's IMEI (International Mobile Station Equipment Identity) number, see the knowledge base article 000143678 at www.dell.com/support.</p>	

Audio

The following table lists the audio specifications of your Latitude 5431.

Table 11. Audio specifications

Description		Values
Audio controller		Realtek ALC3204 with Waves MaxxAudio Pro
Stereo conversion		24-bit Digital-to-Analog (DAC) and Analog-to-Digital (ADC)
Internal audio interface		High definition audio interface
External audio interface		Universal audio jack
Number of speakers		Two
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 5431.

Table 12. Storage matrix

Storage	Single M.2 socket
M.2 SSD Boot	Yes

Table 13. Storage specifications

Storage type	Interface type	Capacity
M.2 2230, Class 35 SSD	PCIe NVMe	Up to 512 GB
M.2 2280, Class 40 SSD	PCIe NVMe	Up to 2 TB
M.2 2230, Class 35 SSD, self-encrypting drive	PCIe NVMe	256 GB
M.2 2280, Class 40 SSD, self-encrypting drive	PCIe NVMe	512 GB

Media-card reader

The following table lists the media cards supported by your Latitude 5431.

Table 14. Media-card reader specifications

Description	Values
Media-card type	One microSD 4.0 card
Media-cards supported	<ul style="list-style-type: none"> • Micro Secure Digital (mSD) • Micro Secure Digital High Capacity (mSDHC) • Micro Secure Digital Extended Capacity (mSDXC)
<p>NOTE: The maximum capacity supported by the media-card reader varies depending on the standard of the media card installed in your computer.</p>	

Keyboard

The following table lists the keyboard specifications of your Latitude 5431.

Table 15. Keyboard specifications

Description	Values
Keyboard type	<ul style="list-style-type: none"> • Standard backlit keyboard • Standard non-backlit keyboard
Keyboard layout	QWERTY
Number of keys	<ul style="list-style-type: none"> • United States and Canada: 79 keys • United Kingdom: 80 keys • Japan: 83 keys
Keyboard size	<p>X=19.05 mm key pitch</p> <p>Y=18.05 mm key pitch</p>
Keyboard shortcuts	<p>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.</p> <p>NOTE: You can define the primary behavior of the function keys (F1–F12) changing Function Key Behavior in BIOS setup program.</p>

Camera

The following table lists the camera specifications of your Latitude 5431.

Table 16. Camera specifications

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

Table 16. Camera specifications (continued)

Description		Option 1	Option 2	Option 3
Camera type		HD RGB camera	FHD 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	2.07 megapixel	2.07 megapixels
	Video	1280 x 720 (HD) at 30 fps	1920 x 1080 (FHD) at 30 fps	1920 x 1080 (FHD) at 30 fps
Infrared camera resolution:				
	Still image	NA	Yes	Yes
	Video	NA	Yes	Yes
Diagonal viewing angle:				
	Camera	78.60 degrees	87 degrees	87.60 degrees
	Infrared camera	NA	NA	NA

Clickpad

The following table lists the clickpad specifications of your Latitude 5431.



Table 17. Clickpad specifications

Description	Values
Clickpad resolution:	
Horizontal	3339
Vertical	1994
Clickpad dimensions:	
Horizontal	115 mm (4.53 in.)
Vertical	67 mm (2.64 in.)
Clickpad gestures	For more information about clickpad gestures available on Windows, see the Microsoft knowledge base article 4027871 at support.microsoft.com .

Power adapter

The following table lists the power adapter specifications of your Latitude 5431.

Table 18. Power adapter specifications

Description	Option one	Option two
Type	90 W AC adapter, USB-C  NOTE: Supported only in UMA configuration.	130 W AC adapter, USB-C
Power-adapter dimensions:		
Height	22 mm (0.87 in.)	22 mm (0.87 in.)
Width	66 mm (2.60 in.)	66 mm (2.60 in.)
Depth	130 mm (5.12 in.)	143 mm (5.63 in.)
Input voltage	100 VAC–240 VAC	100 VAC–240 VAC
Input frequency	50 Hz–60 Hz	50 Hz–60 Hz
Input current (maximum)	1.50 A	1.80 A
Output current (continuous)	<ul style="list-style-type: none"> • 20 V/4.50 A • 15 V/3 A • 9 V/3 A • 5 V/3 A 	6.50 A/1.00 A
Rated output voltage	20 VDC/15 VDC/9 VDC/5 VDC	20 VDC/5 VDC
Temperature range:		
Operating	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)
Storage	40°C to -40°C (104°F to -40°F)	40°C to -40°C (104°F to -40°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 5431.

Table 19. Battery specifications

Description	Option one	Option two
Battery type	4 cell, 64 WHr, "smart" lithium-ion, ExpressCharge capable, integrated	4 cell, 64 WHr, "smart" lithium-ion, Long Lifecycle, ExpressCharge capable, integrated
Battery voltage	15.20 VDC	15.20 VDC
Battery weight (maximum)	0.283 kg (0.62 lbs.)	0.283 kg (0.62 lbs.)
Battery dimensions:		

Table 19. Battery specifications (continued)

Description		Option one	Option two
	Height	7.60 mm (8.12 in.)	7.60 mm (8.12 in.)
	Width	226.60 mm (3.22 in.)	226.60 mm (3.22 in.)
	Depth	81.40 mm (0.22 in.)	81.40 mm (0.22 in.)
Temperature range:			
	Operating	<ul style="list-style-type: none"> Charge: 0 °C to 45 °C (32 °F to 113 °F) Discharge: 0 °C to 70 °C (32 °F to 158 °F) 	<ul style="list-style-type: none"> 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)
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) <i>i</i> 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, <i>Me and My Dell</i> on www.dell.com .		2 hours (when the computer is off)	2 hours (when the computer is off)
Coin-cell battery		CR2032	CR2032
<p>⚠ 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.</p> <p>⚠ 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.</p>			

Display

The following table lists the display specifications of your Latitude 5431.

Table 20. 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)	Full High Definition (FHD), Super Low Power (SLP), Low Blue Light	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):					

Table 20. Display specifications (continued)

Description		Option one	Option two	Option three	Option four	Option five
	Height	173.95 mm (6.84 in.)	173.95 mm (6.84 in.)	173.95 mm (6.84 in.)	173.95 mm (6.84 in.)	173.95 mm (6.84 in.)
	Width	309.6 mm (12.18 in.)	309.6 mm (12.18 in.)	309.6 mm (12.18 in.)	309.6 mm (12.18 in.)	309.4 (12.18 in.)
	Diagonal	355.6 mm (14.00 in.)	355.6 mm (14.00 in.)	355.6 mm (14.00 in.)	355.6 mm (14.00 in.)	355.6 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	300 nits	400 nits	300 nits
Megapixels		1.049	2.07	2.07	2.07	2.07
Color gamut		45% NTSC	45% NTSC	72% NTSC	100% sRGB	sRGB 100%
Pixels Per Inch (PPI)		112	157	157	157	157
Contrast ratio (min)		300:1	600:1	600:1	1000:1	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		40/40 +/- degrees	85/85 +/- degrees	85/85 +/- degrees	85/85 +/- degrees	85/85 +/- degrees
Vertical view angle		10(U)/30(D) +/- degrees	85(U)/85(D) +/- degrees	85(U)/85(D) +/- degrees	85(U)/85(D) +/- degrees	85(U)/85(D) +/- degrees
Pixel pitch		0.2265 x 0.2265 mm	0.161 x 0.161 mm	0.161 x 0.161 mm	0.161 x 0.161 mm	0.161 x 0.161
Power consumption (maximum)		2.4 W	3.1 W	4.1 W	2.5 W	3.5 W
Anti-glare vs glossy finish		Anti-glare	Anti-glare	Anti-glare	Anti-glare	Anti-glare
Touch options		No	No	Yes	No	Yes

Fingerprint reader (optional)

The following table lists the specifications of the optional fingerprint-reader of your Latitude 5431.

Table 21. Fingerprint reader specifications

Description	Values
Fingerprint-reader sensor technology	Capacitive
Fingerprint-reader sensor resolution	508 dpi
Fingerprint-reader sensor pixel size	108 x 88

Sensor

The following table lists the sensor of your Latitude 5431.

Table 22. Sensor

Sensor support
Accelerometer (ST Micro LIS2DW12TR): On the base (system board)
Accelerometer with Gyro (ST Micro LSM6DSOISTR): On the hinge-up (optional-upsell configuration with EMZA/ALS/IR camera)
GPS (through WWAN card only, optional)
Adaptive thermal performance: requires 16-bit accelerometer
Free fall sensor: On the system board
Hall effect sensor
Sensor hub

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Latitude 5431.

Table 23. GPU—Integrated

Controller	Memory size	Processor
Intel Iris X ^e Graphics	Shared system memory	12 th Generation Intel Core i5/i7 processors

GPU—Discrete

The following table lists the specifications of the discrete Graphics Processing Unit (GPU) supported by your Latitude 5431.

Table 24. GPU—Discrete

Controller	Memory size	Memory type
NVIDIA GeForce MX550	2 GB	GDDR6

Multiple display support matrix

The following table lists the multiple display support matrix for your Latitude 5431.

Table 25. Multiple display support matrix

Graphics Card	Direct Graphics Controller Direct Output Mode	Supported external displays with computer internal display on	Supported external displays with computer internal display off
Intel Iris X ^e Graphics	Not applicable	up to 3 external displays	up to 3 external displays
NVIDIA GeForce MX550	No	No	No

Hardware security

The following table lists the hardware security of your Latitude 5431.

Table 26. Hardware security

Windows Hello - Fingerprint Reader (optional)
Trusted Platform Module (TPM) 2.0 FIPS 140-2 Certified
TCG Certification for TPM (Trusted Computing Group)
One wedge-shaped lock slot
Mechanical privacy shutter for camera
One Dell Lockable port cover (optional)
Control Vault 3 Advanced Authentication (optional) FIPS 140-2 Level 3 Certified
Fingerprint Reader with Control Vault 3
Contacted Smartcard reader with Control Vault 3 (optional) FIPS 201 Certified
Contactless Smartcard, NFC/FPR with CV3 (optional)
Chassis Intrusion Detection
Battery Intrusion Detection
RPMC SPI Flash
SPI Flash Tamper Detection/Prevention Shunt Circuit
Dell Client Command Suite : On-Prem & Cloud Dell Optimizer
Dell Power Manager Support assist : PCs & 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

Table 26. Hardware security (continued)

Vmware Carbon Black Endpoint + Secureworks Threat Detection & Response
Carbonite
Dell Supply Chain Defense

Smart-card reader

Contactless smart-card reader

This section lists the contactless smart-card reader specifications of your Latitude 5431.

Table 27. Contactless smart-card reader specifications

Title	Description	Dell ControlVault 3 contactless smart-card reader with NFC
Felica Card Support	Reader and software capable of supporting Felica contactless cards	Yes
ISO 14443 Type A Card Support	Reader and software capable of supporting ISO 14443 Type A contactless cards	Yes
ISO 14443 Type B Card Support	Reader and software capable of supporting ISO 14443 Type B contactless cards	Yes
ISO/IEC 21481	Reader and software capable of supporting ISO/IEC 21481 compliant contactless cards and tokens	Yes
ISO/IEC 18092	Reader and software capable of supporting ISO/IEC 21481 compliant contactless cards and tokens	Yes
ISO 15693 Card Support	Reader and software capable of supporting ISO15693 contactless cards	Yes
NFC Tag Support	Supports reading and processing of NFC compliant tag information	Yes
NFC Reader Mode	Support for NFC Forum Defined Reader mode	Yes
NFC Writer Mode	Support for NFC Forum Defined Writer mode	Yes
NFC Peer-to-Peer Mode	Support for NFC Forum Defined Peer to Peer mode	Yes
EMVCo Compliant	Compliant with EMVCO smart card standards as posted to www.emvco.com	Yes
EMVCo Certified	Formally certified based on EMVCO smart card standards	Yes
NFC Proximity OS Interface	Enumerates NFP (Near Field Proximity) device for OS to utilize	Yes
PC/SC OS interface	Personal Computer/Smart Card specification for integration of hardware readers into personal computer environments	Yes

Table 27. Contactless smart-card reader specifications (continued)

Title	Description	Dell ControlVault 3 contactless smart-card reader with NFC
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for OS level drivers	Yes
Windows Certified	Device certified by Microsoft WHCK	Yes
Dell ControlVault support	Device connects to Dell ControlVault for usage and processing	Yes
FIDO2 compliance	Dell ControlVault 3 Smart-card reader is compliant with the FIDO SPEC	Yes


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

Table 28. Supported cards

Manufacturer	Card
HID	jCOP readertest3 A card (14443a)
	1430 1L
	DESFire D8H
	iClass (Legacy)
	iClass SEOS
NXP/Mifare	Mifare DESFire 8K White PVC Cards
	Mifare Classic 1K White PVC Cards
	NXP Mifare Classic S50 ISO Card
G&D	idOnDemand - SCE3.2 144K
	SCE6.0 FIPS 80K Dual+ 1 K Mifare
	SCE6.0 nonFIPS 80K Dual+ 1 K Mifare
	SCE6.0 FIPS 144K Dual + 1K Mifare
	SCE6.0 nonFIPS 144K Dual + 1 K Mifare
	SCE7.0 FIPS 144K
Oberthur	idOnDemand - OCS5.2 80K
	ID-One Cosmo 64 RSA D V5.4 T=0 card

Contacted smart-card reader

The following table lists the contacted smart-card reader specifications of your Latitude 5431.

Table 29. Contacted smart-card reader specifications

Title	Description	Dell ControlVault 3 smart-card reader
ISO 7816 -3 Class A Card Support	Reader capable of reading 5V powered smart mcard	Yes
ISO 7816 -3 Class B Card Support	Reader capable of reading 3V powered smart card	Yes

Table 29. Contacted smart-card reader specifications (continued)

Title	Description	Dell ControlVault 3 smart-card reader
ISO 7816 -3 Class C Card support	Reader capable of reading 1.8V powered smart card	Yes
ISO 7816-1 Compliant	Specification for the reader	Yes
ISO 7816 -2 Compliant	Specification for smart card device physical characteristics (size, location of connection points, etc.)	Yes
T=0 support	Cards support character level transmission	Yes
T=1 support	Cards support block level transmission	Yes
EMVCo Compliant	Compliant with EMVCo (for electronic payment standards) smart card standards as posted to www.emvco.com	Yes
EMVCo Certified	Formally certified based on EMVCO smart card standards	Yes
PC/SC OS interface	Personal Computer/Smart Card specification for integration of hardware readers into personal computer environments	Yes
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for OS level drivers.	Yes
Windows Certified	Device certified by WHCK	Yes
FIPS 201 (PIV/HSPD-12) Compliant via GSA	Device compliant with FIPS 201/PIV/HSPD-12 requirements	Yes
FIDO2 compliance	Dell ControlVault 3 Smart-card reader is compliant with the FIDO SPEC	Yes

Operating and storage environment

This table lists the operating and storage specifications of your Latitude 5431.

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

Table 30. Computer environment

Description	Operating	Storage
Temperature range	0°C to 35°C (32°F to 95°F)	-40°C to 65°C (-40°F to 149°F)
Relative humidity (maximum)	10% to 90% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS	1.30 GRMS
Shock (maximum)	110 G†	160 G†
Altitude range	-15.2 m to 3048 m (-49.87 ft to 10000 ft)	-15.2 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 user environment.

† Measured using a 2 ms half-sine pulse.

Engineering specifications

Ethernet

Integrated Connection I219-LM/I219-V

Table 31. Integrated Connection I219-LM/I219-V

Data Rates supported	10/100/1000 Mbps
Controller Details	
Controller Bus Architecture	PCIe-based interface for S0 state, SMBus for Sx low power state
Wake On LAN	Wake-on-LAN and remote wake-up support (Magic Packet and Pattern Match)
Integrated Memory	N/A
Interface/BUS	PCIe x1
Data Transfer Mode (example: Bus-Master DMA)	N/A
Power Consumption (full operation per data rate connection speed)	542 mW (Max.)
Power Consumption (standby operation)	1000Mb/S Idle 439mW
IEEE Standards Compliance	802.3
Hardware Certifications	N/A
Boot ROM Support	EEPROM (located in SPI)
Network Transfer Mode	
10BASE-T (half-duplex)	10 Mb (full/half-duplex)
100BASE-TX (half-duplex)	100 Mb (full/half-duplex)
1000BASE-T (full-duplex)	1000 Mb (full-duplex)
Environmental	
Operating Temperature	0° C to 85° C (32° F to 185° F)
Operating Humidity	20% to 80% (non-condensing)
Operating System Driver Support	Win7 32/64 bit, Win 8.1/10 64 bit, Linux
Manageability	WOL, PXE
Management Capabilities Alerting	Intel vPro support with appropriate Intel chipset components

This term does not connote an actual operating speed of 1 Gb per sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

Wireless module

Realtek RTL8822CE, 1x1, Wi-Fi 5 (WiFi 802.11ac), Bluetooth 5.0

The following table lists the Realtek RTL8822CE specifications.

Table 32. Realtek RTL8822CE specifications

Host interface	<ul style="list-style-type: none"> • Wi-Fi - PCIe • Bluetooth - USB
Network standard	IEEE 802.11a/b/g/n/ac, MU-MIMO
Wi-Fi Alliance certifications	<ul style="list-style-type: none"> • Wi-Fi certified a/b/g/n/ac • WMM • WPA • WPA2 • Wi-Fi Direct (Windows only)
Operating frequency bands	<ul style="list-style-type: none"> • 2.4 Ghz • 5 Ghz
Data rate	<ul style="list-style-type: none"> • 2.4 GHz 40M: Up to 300 Mbps • 5 GHz 80M: Up to 867 Mbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Authentication	<ul style="list-style-type: none"> • Open • Shared • WPA • WPA-PSK • WPA2 • WPA2-PSK
Client utility	Native Wi-Fi and Bluetooth Microsoft UI support
Software support	<ul style="list-style-type: none"> • Microsoft WHQL certified for Windows • Linux • Chrome
Radio On/Off	Supported
Roaming	Support seamless roaming between access points
Wake on wireless	supported
Wireless display	Native Miracast support by Windows
Wireless PAN standard	<ul style="list-style-type: none"> • Dual Mode Bluetooth 5.0 • BLE
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
Bluetooth data encryption	128-bit encryption
Operating temperature	0°C to + 70°C
Storage temperature	-40°C to +85°C

Intel AX211, 2x2 MIMO, 2400 Mbps, 2.4/5/6 GHz, Wi-Fi 6E (WiFi 802.11ax), Bluetooth 5.2

The following table lists the Intel AX211 specifications.

Table 33. Intel AX211 specifications


Host interface	CNVi3 (Connectivity Integration 3 rd generation)
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160MHz channel use, MU-MIMO, new 6GHz band
Wi-Fi Alliance certifications	Wi-Fi CERTIFIED 6, Wi-Fi CERTIFIED a/b/g/n/ac,WMM, WMM-Power Save, WPA2, WPA3, WPS, PMF,Wi-Fi Direct, Wi-Fi Agile Multiband  NOTE: Other names and brands may be claimed as the property of others.
Operating frequency bands	<ul style="list-style-type: none"> • 2.4 GHz • 5 GHz • 6 GHz
Data rate	<ul style="list-style-type: none"> • 2.4 GHz 40M: Up to 574 Mbps • 5/6 GHz 80M: Up to 1.2 Gbps • 5/6 GHz 160M: Up to 2.4 Gbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Security methods	<ul style="list-style-type: none"> • WPA2 Personal and Enterprise • WPA3
Authentication protocols	<ul style="list-style-type: none"> • 802.1X EAP-TLS • EAP-TTLS/MSCHAPv2 • PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA)
Encryption	<ul style="list-style-type: none"> • 64-bit and 128-bit WEP • TKIP • 128-bit AES-CCMP • 256-bit AES-GCMP
Product safety	<ul style="list-style-type: none"> • UL • C-UL • CB (IEC60950-1)
Management capabilities alerting	Support for Intel AMT
Government compliance	<ul style="list-style-type: none"> • 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
Wireless PAN standard	<ul style="list-style-type: none"> • Dual Mode Bluetooth 5.2 • BLE
Bluetooth data rates	Up to 3 Mbps

Table 33. Intel AX211 specifications (continued)

Bluetooth operating frequency bands	2.4 GHz
Bluetooth profiles supported	Support for Microsoft Inbox Bluetooth profiles in Windows
Bluetooth data encryption	128-bit encryption
Bluetooth output power	Power class 1
Operating temperature	0°C to + 50°C (Full performance at shield temperatures up to 80°C)
Storage temperature	-40°C to +70°C
Humidity	Up to 90% RH non-condensing (at temperatures of 25° C to 35° C)

Intel AX211, 2x2 MIMO, 2400 Mbps, 2.4/5/6 GHz, Wi-Fi 6E (WiFi 802.11ax), No Bluetooth

The following table lists the Intel AX211 specifications.

Table 34. Intel AX211 specifications


Host interface	CNVi3 (Connectivity Integration 3 rd generation)
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160MHz channel use, MU-MIMO, new 6GHz band
Wi-Fi Alliance certifications	Wi-Fi CERTIFIED 6, Wi-Fi CERTIFIED a/b/g/n/ac,WMM, WMM-Power Save, WPA2, WPA3, WPS, PMF,Wi-Fi Direct, Wi-Fi Agile Multiband  NOTE: Other names and brands may be claimed as the property of others.
Operating frequency bands	<ul style="list-style-type: none"> ● 2.4 Ghz ● 5 Ghz ● 6 Ghz
Data rate	<ul style="list-style-type: none"> ● 2.4 GHz 40M: Up to 574 Mbps ● 5/6 GHz 80M: Up to 1.2 Gbps ● 5/6 GHz 160M: Up to 2.4 Gbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Security methods	<ul style="list-style-type: none"> ● WPA2 Personal and Enterprise ● WPA3
Authentication protocols	<ul style="list-style-type: none"> ● 802.1X EAP-TLS ● EAP-TTLS/MSCHAPv2 ● PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA)
Encryption	<ul style="list-style-type: none"> ● 64-bit and 128-bit WEP ● TKIP ● 128-bit AES-CCMP ● 256-bit AES-GCMP
Product safety	<ul style="list-style-type: none"> ● UL ● C-UL ● CB (IEC60950-1)
Management capabilities alerting	Support for Intel AMT

Table 34. Intel AX211 specifications (continued)

Government compliance	<ul style="list-style-type: none"> • 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
Wireless PAN standard	<ul style="list-style-type: none"> • Dual Mode Bluetooth 5.2 • BLE
Bluetooth data rates	NA
Bluetooth operating frequency bands	NA
Bluetooth profiles supported	NA
Bluetooth data encryption	NA
Bluetooth output power	NA
Operating temperature	0°C to + 50°C (Full performance at shield temperatures up to 80°C)
Storage temperature	-40°C to +70°C
Humidity	Up to 90% RH non-condensing (at temperatures of 25° C to 35° C)

WWAN module

Intel XMM 7360 Global LTE-Advanced

The following table lists the Intel XMM 7360 Global LTE-Advanced specifications.

Table 35. Intel XMM 7360 Global LTE-Advanced specifications

Form factor	M.2 3042 Key-B
Host interface	<ul style="list-style-type: none"> • Windows - PCIe Gen1 • Chrome/Linux - USB 3.0/2.0
Network standard	<ul style="list-style-type: none"> • LTE FDD/TDD • WCDMA/HSPA+ • GNSS/Beidou
Transfer rate	<ul style="list-style-type: none"> • CAT9 - Up to 450 Mbps • UL - Up to 50 Mbps
Operating frequency bands	<ul style="list-style-type: none"> • LTE (B1, B2, B3, B4, B5, B7, B8, B11, B12, B13, B17, B18, B19, B20, B21, B26, B28, B29, B30, B38, B39, B40, B41, B66) • HSPA+ (1, 2, 4,5, 8)
Power supply	DC 3.135 V to 4.4 V, Typical 3.3 V
SIM card	Supported through external SIM slot
eSIM with Dual SIM (DSSA)	Not supported

Table 35. Intel XMM 7360 Global LTE-Advanced specifications (continued)



Antenna diversity	Supported
Radio On/Off	Supported
Wake on wireless	Supported
Normal operating temperature	-10°C to +55°C
Extended operating temperature	-20°C to +65°C
Antenna connector	<ul style="list-style-type: none"> • WWAN Main Antenna X 1 • WWAN Diversity Antenna X 1

GPU—Integrated

Intel Iris X^e Graphics

The following table lists the Intel Iris X^e Graphics specifications.

Table 36. Intel Iris X^e Graphics specifications

Bus type	Integrated graphics  NOTE: Intel Iris X ^e Graphics uses the computers memory as video memory.
Memory type	N/A (Unified Memory Architecture)
Memory interface	N/A (Unified Memory Architecture)
Estimated maximum power consumption (TDP)	28 W, included in the CPU power
Maximum color depth	10 bits
Maximum vertical refresh rate	Up to 120 Hz  NOTE: The refresh rate depends on the resolution.
External ports	HDMI 2.0 port, DisplayPort over USB Type-C
Multiple display support	Up to 4 displays including laptop display

GPU—Discrete

NVIDIA GeForce MX550, 2 GB, GDDR6

The following table lists the NVIDIA GeForce MX550 specifications.

Table 37. NVIDIA GeForce MX550 specifications

Feature	Values
GPU	Nvidia GeForce MX550
Cores	2G
Memory bandwidth	96 Gbps
Memory type	GDDR6
Memory size	2 GB
Memory interface	64-bit

Table 37. NVIDIA GeForce MX550 specifications (continued)

Feature	Values
TGP	30 W
GPU base clock	1065 MHz
GPU boost clock	1320 MHz
Vram clock	<ul style="list-style-type: none"> • P0 - 6001 MHz • P3 - 5501 MHz • P5 - 810 MHz • P8 - 405 MHz
PCIe	Gen 4 x 4

Video port and resolution matrix

The following table lists the Video port and resolution matrix of your Latitude 5431.

Table 38. Video port and resolution matrix

Port type	HDMI 2.0 port
Maximum resolution—single display	4096 x 2160 @ 60 Hz
Maximum resolution—dual MST	Not applicable
Maximum resolution—triple MST	Not applicable

Storage

M.2 2230, 256 GB, PCIe NVMe Gen4 x4, Class 35 SSD

The following table lists the M.2 2230, 256 GB SSD specifications.

Table 39. 256 GB SSD specifications

Capacity	256 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	500,118,192
Power source	
Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4) • Active: 4 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G

Table 39. 256 GB SSD specifications (continued)

Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 256 GB, PCIe NVMe Gen3 x4, Class 35 SSD

The following table lists the M.2 2230, 256 GB SSD specifications.

Table 40. 256 GB SSD specifications

Capacity	256 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	500,118,192
Power source	
Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4) • Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 512 GB, PCIe NVMe Gen3 x4, Class 35 SSD

The following table lists the M.2 2230, 512 GB SSD specifications.

Table 41. 512 GB SSD specifications

Capacity	512 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216

Table 41. 512 GB SSD specifications (continued)

Power source	
Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4) • Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 512 GB, PCIe NVMe Gen4 x4, Class 35 SSD

The following table lists the M.2 2230, 512 GB SSD specifications.

Table 42. 512 GB SSD specifications

Capacity	512 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4) • Active: 4 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	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, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 512 GB SSD specifications.

Table 43. 512 GB SSD specifications

Capacity	512 GB
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Table 43. 512 GB SSD specifications (continued)

Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 1 TB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 1 TB SSD specifications.

Table 44. 1 TB SSD specifications

Capacity	1 TB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	2,000,409,264
Power source	
Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C

Table 44. 1 TB SSD specifications (continued)

Relative humidity range	5% to 95%
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M.2 2280, 2 TB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 2 TB SSD specifications.

Table 45. 2 TB SSD specifications

Capacity	2 TB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	4,000,797,360
Power source	
Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 256 GB, PCIe NVMe Gen3 x4, Opal Self-Encrypting Class 35 SSD

The following table lists the M.2 2230, 256 GB SSD, self-encrypting drive specifications.

Table 46. 256 GB SSD, self-encrypting drive specifications

Capacity	256 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	500,118,192
Power source	

Table 46. 256 GB SSD, self-encrypting drive specifications (continued)

Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4) • Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 256 GB, PCIe NVMe Gen4 x4, Opal Self-Encrypting, Class 35 SSD

The following table lists the M.2 2230, 256 GB SSD specifications.

Table 47. 256 GB SSD, self-encrypting drive specifications

Capacity	256 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	500,118,192
Power source	
Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4) • Active: 4 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	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, PCIe NVMe Gen4 x4, Opal Self-Encrypting Class 40 Solid-State Drive

The following table lists the M.2 2280, 512 GB SSD, self-encrypting drive specifications.

Table 48. 512 GB SSD, self-encrypting drive specifications

Capacity	512 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	<ul style="list-style-type: none"> • Idle: 5 mW (PS4 - L12) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

Media-card reader

The following table lists the media-card reader specifications of your Latitude 5431.

Table 49. Media-card reader (standard offering)

Media supported (Maximum capacity supported will vary by Flash Media Types)	
Media Supported	SDXC, SDHC, Micro-SD Secure Digital (SD) 4.0 UHS-II Secure Digital (SD) 3.0 UHS-I
Support Specification Versions	Secure Digital (SD) 4.0
Power source	
Max Power Requirements	1.2 A
Supply Voltage Range	3.3 V
Power Consumption	MS 0.08 mA
Environmental operating conditions (Non-condensing)	
Operating Temperature Range	0°C to 70°C

Table 49. Media-card reader (standard offering) (continued)

Relative Humidity Range	N/A
Environmental non-operating conditions (Non-condensing)	
Operating Temperature Range	N/A
Relative Humidity Range	N/A

Security

Software security

The following table lists the software security details of your Latitude 5431.

Table 50. Software security

Security options
Latitude Security software per software functional plan/cycle list
McAfee Small Business Security 30-day trial
McAfee Small Business Security 24-month subscription
Dell Digital Device ID: TPM Platform Root Key provisioning
BIOS complies to 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
Dell Client System Repository Manager (RM) - client support
Dell SCOM Managability Pack (SCOM MP) - client support

Fingerprint reader

The following table lists the fingerprint reader specifications of your Latitude 5431.

Table 51. Fingerprint reader specifications

Category	Goodix—GF5288WNC
Sensor technology	Capacitive sensing
Sensor resolution	500 dpi
Sensor size	5.48 mm x 4.47 mm

Table 51. Fingerprint reader specifications (continued)

Sensor pixel size	108 x 88 pixels
Dell ControlVault support	Yes
Dell ControlVault 3.0 support	Yes
Anti-spoofing	Yes
Template storage	Dell ControlVault HW protected and encrypted
Match on chip	Yes
FIPS 201 certified	No

Dell ControlVault 3.0

The following table lists the Dell ControlVault 3.0 specifications of your Latitude 5431.

Table 52. Dell ControlVault 3.0 specifications

Title	Description	Dell ControlVault 3.0
CPU technology	N/A	1 GHz ARM Cortex A7
RAM	N/A	1 MB
ROM	N/A	16 MB
TPM included	TPM enumeration included within ControlVault	No
Host Interface	N/A	USB 2.0
Fingerprint procession on chip	Fingerprint processing occurs within secure boundary of ControlVault	Yes
Windows WBF support	Support for Windows biometric framework when Fingerprint reader is attached	Yes
FIPS 140-2 level 3 complaint	Device complaint with FIPS 140-2 level 3 requirements	Yes
FIPS 140-2 level 3 certified	Device certified with FIPS 140-2 level 3 requirements	Yes

Trusted Platform Module

The following table lists the Trusted Platform Module (TPM) of your Latitude 5431.

Table 53. Trusted Platform Module (TPM)

TPM: ST/ST33 HTPH2X32AHD8
SPI interface
TPM 2.0
FIPs 140-2 certificate

Thermal and acoustic improvements

The following table lists the thermal and acoustic improvements of your Latitude 5431.

Table 54. Thermal and acoustic improvements

100% dual heat pipe	Increase the heat capacity to improve thermal dissipation
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Table 54. Thermal and acoustic improvements (continued)

Better system tuning/setting	Get higher performance and good user experience
Pro-OS enhanced thermal setting (Dynamic PL1)	Increases boot-up time
Linear fan control	Fan speed ramp more smoothly for better user experience, no more significant acoustic changing
DDT SSD setting	Protecting the SSD device in high temperature and worse cases to prevent blue screen of death (BSOD)
IEC 60529 ingress protection: IP-54	<ul style="list-style-type: none"> • Dust protected • Protected against dripping water
Better acoustic experience	Enhance acoustic to 0.6 sone during daily working conditions and fan off when system is idle

System management features

Dell commercial systems come with a number of systems management options that are include by default for In-Band management with our Dell Client Command Suite. In-Band management meaning that the Operating System is functional and the device is connected to a network so that it can be managed. The Dell Client Command Suite of tools can be leveraged individually or with a systems management console like SCCM, LANDESK, KACE, etc.

We also offer Out-of-Band management as an option. Out-of-band management is when the system does not have a functional operating system or is turned off and you still want to be able to manage the system in that state.

Dell Client Command Suite for In-Band systems management

Dell Client Command Suite is a free toolkit available for download, for all Latitude Rugged tablets at dell.com/support, that automates and streamlines systems management tasks, saving time, money, and resources. It consists of the following modules that can be used independently, or with a variety of systems management consoles such as SCCM.

Dell Client Command Suite's integration with VMware Workspace ONE Powered by AirWatch, now allows customers to manage their Dell client hardware from the cloud, using a single Workspace ONE console.

Dell Command | Deploy enables easy operating system (OS) deployment across all major OS deployment methodologies and provides numerous system-specific drivers that have been extracted and reduced to an OS-consumable state.

Dell Command | Configure is a graphical user interface (GUI) admin tool for configuring and deploying hardware settings in a pre-OS or post-OS environment, and it operates seamlessly with SCCM and Airwatch and can be self-integrated into LANDesk and KACE. Simply, this is all about the BIOS. Command | Configure allows you to remotely automate and configure over 150+ BIOS settings for a personalized user experience.

Dell Command | PowerShell Provider can do the same things as Command | Configure, but with a different method. PowerShell is a scripting language that allows customers to create a customized and dynamic configuration process.

Dell Command | Monitor is a Windows Management Instrumentation (WMI) agent that provides IT admins with an extensive inventory of the hardware and health-state data. Admins can also configure hardware remotely by using command line and scripting.

Dell Command | Power Manager (end-user tool) is a GUI-based factory-installed battery management tool that allows end users to choose the battery management methods that meet their personal preferences or work schedule without sacrificing IT's capability to control those settings with Group Policy.

Dell Command | Update (end-user tool) is factory-installed and allows admins to individually manage and automatically present and install Dell updates to the BIOS, drivers, and software. Command | Update eliminates the time-consuming hunting and pecking process of update installation.

Dell Command | Update Catalog provides searchable metadata that allows the management console to retrieve the latest system-specific updates (driver, firmware or BIOS). The updates are then delivered seamlessly to end-users using the customer's systems management infrastructure that is consuming the catalog (like SCCM).


Dell Command | vPro Out of Band console extends hardware management to systems that are offline or have an unreachable OS (Dell exclusive features).

Dell Command | Integration Suite for System Center - This suite integrates all the key components of the Client Command Suite into Microsoft System Center Configuration Manager 2012 and Current Branch versions.

Out of Band Systems Management

Intel Standard Manageability option **must be configured in our factory at the time of purchase, as it is NOT field upgradable**. It offers out-of-band management and DASH compliance (https://registry.dmtf.org/registry/results/field_initiative_name%3A%22DASH%201.0%22).

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.

Dell Optimizer

This section details the Dell Optimizer specifications of your Latitude 5431.

On Latitude 5431 with Dell Optimizer, the following features are supported:

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

For more information about configuring and using these features, see [Dell Optimizer User Guide](#).

Color, material, and finish

This section details the color, material, and finish (CMF) specifications of your Latitude 5431.



Titan Gray

Table 55. CMF specifications

A Cover (Top)	<ul style="list-style-type: none"> • CFRP + Bi-Injection Antenna Cover • Titan Gray, Dull • 10+/-2 GU
B Cover (Bezel)	<ul style="list-style-type: none"> • PC/ ABS + Elastomer • Apollo, Resin • Bezel: MT11520, 4+/-1 GU and Bumper: MT 11510, 3+/-1 GU
C Cover (Palmrest)	<ul style="list-style-type: none"> • Plastic (Rustic Pewter, Resin) • Titan Gray Dull WUVM • 10+/-2 GU
D Cover (Bottom)	<ul style="list-style-type: none"> • Black CFRP • Titan Gray, Velvet • 10+/-2 GU

NOTE: Titan Gray, Dull – Cool Gray 9C = RGB 117 120 123 HEX/HTML 75787B CMYK 30 22 17 57

Keyboard shortcuts of Latitude 5431

NOTE: Keyboard characters may differ depending on the keyboard language configuration. Keys 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 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 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 multi-media control, as indicated by the icon at the bottom of the key. Press the function key to invoke the task represented by the icon. For example, pressing F1 mutes the audio (refer to the table below).

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

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

Table 56. List of keyboard shortcuts

Function key	Primary behavior
F1	Mute audio
F2	Decrease volume
F3	Increase volume
F4	Mic mute
F5	Keyboard backlight (optional). NOTE: Non-backlight keyboards have F5 function key without the backlight icon and do not support toggle keyboard backlight function. NOTE: Toggle to cycle the keyboard backlight status through off, low-backlight, and high-backlight.
F6	Decrease brightness
F7	Increase brightness
F8	Switch to external display
F9	Video off
F10	Print screen
F11	Home
F12	End

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

Table 57. 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

Table 57. Secondary behavior (continued)



Function key	Secondary 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 + PrtScr	Turn off/on wireless
Fn + B	Pause/Break
Fn + Insert	Sleep
Fn + S	Toggle scroll lock
Fn + H	Toggle between power and battery-status light/hard-drive activity light
Fn + R	System request
Fn + Ctrl	Open application menu
Fn + Esc	Toggle Fn-key lock
Fn + PgUp	Page up
Fn + PgDn	Page down
Fn + Home	Home
Fn + End	End
Fn + P	SafeScreen (e-Privacy)

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 58. 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 <code>Contact Support</code> , and press Enter.
Online help for operating system	www.dell.com/support/windows
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	<ol style="list-style-type: none"> 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.

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

 **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.