

Surface Go Technical FAQ

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Processor and Performance:

Isn't the Pentium brand an older processor?

While the Pentium brand has been around since the early 90s, the processor used in Surface Go is part of the same lineup as the CPUs found in Surface Pro, Surface Laptop, and other Surface devices. The Pentium brand is today used to denote processors that fall between the Celeron and Core product lines in terms of functionality and performance. Intel further differentiates their lineup within the Pentium brand by labeling processors with either Pentium Silver or Pentium Gold. The processor used in Surface Go is the latter, a Pentium Gold.

Where does the Pentium processor fall in terms of performance with today's lineup?

The performance of the Intel Pentium Gold 4415Y processor used in Surface Go is quite amazing for a device of this size and in this form-factor. It provides a significant improvement over the Atom processor used in Surface 3. The processor performance is quite like that of the Surface Pro 3 Core i5 processor, and notably, the graphics chipset used in the processor of the Surface Go is the exact same graphics chipset used in the Core m3 processor found in the Surface Pro or Surface Laptop, Intel HD Graphics 615.

How does the Pentium processor compare to the Surface 3 Atom processor?

The Pentium processors are part of the same architecture and lineup as the Intel Core processors, an architecture shared with not only devices like Surface Pro and Laptop, but all the way up to desktop and workstation Core i7 and Xeon E3 processors. Intel's Atom processors conversely are engineered with an entirely different architecture focused on ultra-low power and ultra-mobile applications such as cellphones where they often compete with ARM processors.

How will the graphics performance of Surface Go handle intensive tasks?

The graphics chipset used in the Surface Go's Pentium Gold 4415Y processor is the same chipset found in the Surface Pro Core m3 processor, Intel HD Graphics 615. This translates to excellent graphics performance for a device in this form-factor and size.

As a device that will potentially be in the hands of students, with the graphics be able to handle games like Minecraft?

Absolutely yes, Surface Go should provide a great experience for Minecraft. It'll also provide an excellent experience with Office apps like Word, Excel, and PowerPoint. This is a great device for students that can both empower their studies and schoolwork as well as provide a great experience for entertainment and other personal tasks.

Microsoft Office:

As a 10in device, is Microsoft Office core functionality available as defined for devices under 10.1in?

Statements regarding support for core functionality on devices with displays less than 10.1in diagonal refer to the Office Mobile universal apps available in the Microsoft Store. The Office Mobile apps are supported on this device but are not a scenario we wish to promote with our customers.

The expectation for these devices is that they will be licensed either under Microsoft 365 F1 licensing for frontline workers and have access to the Office web experience, or that if they require Office support they will be licensed under full Office 365 licensing and have access to the Office desktop experience. Both desktop and web experiences provide functionality superior to the mobile experience and should be prioritized over the mobile experience.

Connectivity:

Is GPS available on WiFi SKUs or LTE-only?

LTE-only. GPS is only available on devices with the LTE chipset.

Is there support for NFC?

Yes, the device features an NFC chipset and supports NFC functionality.

What NFC functionality is available?

The NFC chipset in Surface Go provides a multitude of capabilities. One of the scenarios we've showcased is the use of RFID tags, which can be used in several ways. You can use the NFC chip to read an RFID tag on a docking solution, letting Go know it's in a kiosk or an airplane and launching the relevant kiosk or airline applications. You can also use it to read tags on boxes in a warehouse or manufacturing scenario to inform an application about which parts or inventory is being moved.

Some functions, like transferring files between devices and using RFID functionality in peripherals to initiate simple pairing, for example with a printer, are supported by the chipset and hardware, however may not be natively supported in the operating system and require third-party or custom applications to implement.

NFC payment scenarios will not be supported.

Mechanical Innovations:

Are there any mechanical innovations in the new Surface Go?

3-Bar Hinge

The hinge architecture is the same innovative hinge used in the new Surface Pro. The new hinge uses a 3-bar linkage mechanism to guide the kickstand through a smooth arc, while delivering just the right amount of frictional resistance at each position. The new hinge is designed to create a variable torque response throughout its sweep angle. When the device is nearly upright (vertical), the loading on the hinge is relatively low, and hinge frictional resistance can be kept low. When the device is nearly flat (horizontal), the hinge must provide more support to prevent the system from flattening further under its own weight and touch-loading. The new 3-bar hinge has been tailored to deliver torque levels that meet the specific system needs at each position, creating a more pleasant and natural user experience.

Weight

Weight is always a focus for Surface devices, and this generation is no exception. The external case has been optimized to reduce wall thickness and the thermal system is designed to dissipate heat and reduce weight. The system storage has is onboard, and the new hinge is composed of smaller, lighter components. All these factors combine to produce a device that is the lightest Surface yet.

Technical Specifications:

Operating System	Windows 10 Home (S-mode) (RS4) Windows 10 Pro
Exterior	Signature Unibody Mg design Dimensions and Weight: 9.6" x 6.9" x .33" (245mm x 175mm x 8.3mm) Weight: 1.15 lbs. (Wi-Fi) Hinge: 165 degrees full friction
Display	Screen: 10" diagonal, 3:2 aspect ratio PixelSense™ Display Display Resolution: 1800x1200 (218 PPI) Aspect Ratio: 3:2 Contrast ratio: 1500:1 Corning® Gorilla® Glass 3 Color calibrated for accuracy 350 nits typical at 100% brightness 1500:1 contrast ratio 100% SRGB Color – individually calibrated Compensation film for wide angle and diagonal viewing
Touch	Supports 10-point multi-touch 6th Generation Microsoft Touch Architecture Supports Surface Dial and Surface Pen (sold separately)
Pen	4096 levels of pressure 266 Hz. report rate 9gr tuned activation force Tilt support Reduced pen latency Magnetic pen storage
CPU	Intel® Pentium® Gold Processor 4415Y https://www.intel.com/content/www/us/en/products/processors/pentium/4415y.html
Graphics	Intel® HD Graphics 615
Memory	4GB / 8GB or 16GB LPDDR3 1866 MHz
Storage	64GB eMMC 126GB/256GB BGA PCIe NVMe Solid State Drive (SSD)
Keyboard and trackpad	Supports all new Surface Go Type Covers.
Security	TPM 2.0 for enterprise security Enterprise-grade protection with Windows Hello face sign-in
Thermal dissipation	Fanless thermal dissipation

Network	Wi-Fi: IEEE802.11a/b/g/n/ac Bluetooth: Bluetooth 4.1
Battery	27W Battery 9 Hrs. Local Video Playback
Cameras	Windows Hello face-authentication camera (front facing) 5MP front facing camera with 1080p Skype HD video 8MP rear facing Auto-focus camera with 1080p Full HD video
Audio	Dual Microphones 2 W Stereo speakers with Dolby® Audio™ Premium
Ports	1xUSB-C 3.1 microSDXC 3.5 mm headphone jack Surface Connect™ Cover port
Sensors	Ambient light sensor Accelerometer Gyroscope
Power supply	24W (compatible with Surface Pro, Surface Laptop and Surface Book power supply)
In the box	Surface Go Power supply Quick Start Guide Safety and warranty documents
Warranty	One-year limited hardware warranty

Pen and Touch:

The new Surface Pen - Key Features and improvements

Scenarios/Targets	Superior writing experience A great pen that works across Surface products Customer scenarios include – Office Productivity, Mobile Creatives, and Students
Pen Features	Tilt Sensitivity 266 Hz. Report rate 4096 Pressure levels Customizable pressure curves via Surface app. Improved diagonal linearity Improved ink tip accuracy 9g tuned activation force-individually calibrated for each pen at the factory Improved tip reliability Palm block Metal enclosure with a flat side for magnetic storage along edge of Surface Pro Eraser on tail button, one barrel/side buttons (for right click and select functions) Tail button is customizable. <ul style="list-style-type: none">• Default are click to Windows Ink Workspace menu,• Double click to screen capture,• Click and hold to Windows Ink workspace sticky notes, Colors – Burgundy, Cobalt Blue, Black, Platinum – anodized aluminum Single AAAA Battery LED colors – Red (low battery), White (pairing). LED visible through micro-perforations Magnetic storage with Surface Pro
Technology	Active, capacitive, battery-powered pen Host (Device) includes Microsoft G5 Touch/pen integrated digitizer solution Composed of a battery, electronic parts, and a body enclosure Transmits low power/frequency FSK radio signal through tip when operational Bluetooth connection for button reporting
Tip material	1.3mm Extruded Medium 4 Additional tips (2H, H, HB, B) – Retail pen box, and retail tips only pack
Surface Pro interfaces	Reduced HW Latency (Below) Storage: Magnetic attach on flat side (attach force 900g) Simple pairing of pen to device Basic functionality is compatible with Surface Pro 4, Surface Pro3, Surface 3, Surface Book, Surface Studio
Pairing Notification	100 ms. of use out of box (cumulative time - tapping or writing)
Battery Life	AAAA Alkaline, 750mWh, 0.9V-1.6V Life: Up to 12 months Advanced power management: Accelerometer and Magnetometer based Battery pre-installed in the pen at shipping
Networking	Bluetooth 4.1 Low Energy, Operating distance 1m Average Latency from Click Note button press: <500ms (not including OS/SW latency)
Pressure levels	4096
Sensors	Accelerometer for power management.

Surface App (on host device)	Pressure Curve selection, FW Version, Battery Level, User Education
Firmware	Over the Air Firmware (FW) Updatable. In case we need to update pen FW for updates and improvements
Accessories / Extensions	Tip kit with integrated removal tool and 4 tips: 2H, H, HB, B

Features of Pen

Features	Prior Surface Pen	New Surface Pen
Inking	Yes	Yes
Tilt / Shading	No	Yes
Simple Pair	Yes	Yes
Single Click – Windows Ink Workspace Home	Yes	Yes
Double Click – Windows Ink Workspace Screen Sketch	Yes	Yes
Press and Hold – Windows Ink Workspace Sticky Notes	Yes	Yes

Keyboard, Trackpad:

General

- Iconic, magnetic mid-spine that improves lapability and stability when engaged
- Reduced area when mid-spine attached to provide easier access to taskbar icons
- Multiple colors to choose from for individualization
- Stain resistant fabric on top surface for easy clean-up
- Great feeling micro fiber on bottom to protect contact surfaces and soften the feel when carrying
- Unique "fabric between the keys" design for a modern, integrated look
- On-board sensors turn off the device when the cover is closed and disable the keyset and trackpad when folded behind
-

Specifications:

Size (mm)	248mm x 190mm
Weight (g)	243g
Thickness (mm)	4.6mm
Colors	Black, Platinum, Cobalt Blue, Burgundy
Sensors (auto off/rotation)	Hall Effect/Accelerometer
Top Fabric	Polyurethane / PU Alcantara
Bottom Fabric	Microfiber / Alcantara

Keyset - Unique design features, meticulously combined in a compact package to provide the user the best typing experience possible

- High quality scissor mechanism for consistent and stable key travel
- Great stiffness to thickness ratio so you don't have to sacrifice comfort for stability
- Noise dampened keyset to limit typing noise
- Ergonomically designed key pitch, spacing and key dish for typing speed and accuracy
- Optimized force displacement curve to emphasize a natural, bio-mechanical keypress response
- Key painting, legends and backlight contrast enables superb readability in any lighting condition
- Additional media controls mean easier, faster access to your content playback stream
- Dedicated brightness controls to control backlighting based on user preference

Trackpad - Our largest trackpad yet with smart controls to differentiate between a deliberate click/tap and unintentional contact

- Size – 101mmx56mm
- Durable, color-matched trackpad glass surface that balances feel, speed and control
- Optimized trackpad size located at the center of the screen
- Windows OS integration for Precision Trackpad (PTP)
- High precision tuning for the best cursor speed and control experience (500 dpi)
- No unintentional tap which allows users to turn on tap by default
- Improved 5 point multi-finger gestures to enable new features like Cortana and Action center

Performance:

Go vs Surface 3

Graphics Comparison (PCMark 8 Work: Overall score):

- Go has 2X faster CPU performance than Surface 3

Go vs Surface 3 and Surface Pro 3

Graphics Comparison (3DMark : Overall score):

- Go 2X faster GPU performance than Surface 3
- Go has similar GPU performance as the Surface Pro 3 Corei7

Perf	PCMark8 Work	% vs. Go	3D Mark – Skydiver: Overall score	% vs. Go	3D Mark 11 - Overall	% vs. Go
S3	1317	114%	1169	156%	-	
Sp3-i3	2234		2251	33%	845	58%
Sp3-i5	3426		2713	10%	997	34%
Sp3-i7	3433		3041	-2%	1113	20%
Go	2814		3085		1332	
Sp4-m	3208		2965		1307	2%

PCMark 8 Work

"The PCMark 8 Work benchmark test measures your system's ability to perform basic office work tasks, such as writing documents, browsing websites, creating spreadsheets and using video chat. The Work benchmark is suitable for measuring the performance of typical office PC systems that lack media capabilities."

More information can be found here: <http://www.futuremark.com/benchmarks/pcmark8>

3DMark Sky Diver: Overall Score

3DMark Sky Diver is a DirectX 11 benchmark for gaming laptops and mid-range PCs. Use 3DMark Sky Diver to benchmark systems with mainstream graphics cards, mobile GPUs, or integrated graphics. It is especially suitable for DirectX 11 systems that cannot achieve more than single-digit frame rates in the more demanding Fire Strike test. Sky Diver is only available in the Windows editions currently.

<https://benchmarks.ul.com/3dmark>

3DMark 11: Overall Score

3DMark 11 is a DirectX 11 video card benchmark test for measuring your PC's gaming performance. 3DMark 11 makes extensive use of DirectX 11 features including tessellation, compute shaders and multi-threading. Trusted by gamers worldwide to give accurate and unbiased results, 3DMark 11 consistently and reliably tests your PC's DirectX 11 performance under game-like loads.

<https://www.futuremark.com/benchmarks/3dmark>

Weight and Thickness:

Device:

- 1.15lbs
- 9.6" x 6.9" x .33" (245mm x 175mm x 8.3mm)

Device w/ Type Cover:

- 1.69lbs

	Weight	Thickness	Display Size
Surface RT	9.4	9.4	10.6 (16:9)
Surface 2	1.49	8.9	10.6 (16:9)
Surface 3	1.37	8.7	10.8
Surface Pro 1	2.0	13.55	10.6 (16:9)
Surface Pro 2	2.0	13.55	10.6 (16:9)
Surface Pro 3	1.76	9.1	12.0
Surface Pro 4	1.73	8.45	12.3
Surface Pro (2017)	1.70	8.45	12.3
Go	1.15	8.3	10

Cameras, Audio and Video:

Speakers:

- Stereo, front firing speakers for immersive music and movie playback experience
- Dolby processing widens frequency response, enhances dialog, and maximizes loudness while controlling distortion for rich and immersive audio rendering on music, movie and audio book contents.

Microphones:

- Dual microphones processing, acoustic echo cancellation and noise cancelling optimized for Skype and Cortana usage

Cameras

- High-resolution 5MP front facing camera with 1080p HD video enhances your Skype experience.
- 8MP rear facing camera with 1080p HD video and auto-focus.
 - o Great for productivity scenarios such as whiteboard, document or bar code scanning.
- Windows Hello Face authentication camera
 - o Imagine if your computer could recognize you automatically. The face detection camera in Surface Pro and Windows Hello enable you to easily and reliably login without typing a password.
 - o Windows Hello meets the Windows enterprise security requirements.

Ports and Docking:

Surface Connect is a multi-pin connector that delivers super-speed USB 3.0 and DisplayPort data capability.

- USB 3.0: 5GHz SuperSpeed pins
- DisplayPort Signals
 - o Can drive one or more external displays up to 4K UltraHD combined resolution (60Hz) – or dual 2K displays.
- Power Pins with Authentication and Control Pins
 - o Power is used for 24W,39W or 60W power supply input
 - o All our PSU's message their power capacity
 - o The control pins are used for firmware access - which can be used to send firmware updates to docks/accessories through our device

Type Cover port is a proprietary port that enables the Surface Type Covers to magnetically attach to the Surface Go

Industry standard ports: The Surface Go includes 3 industry standard ports:

- 1x USB Type C 3.1 Port
- 3.5mm headphone jack
- microSDXC card port

External Monitors

Surface Go supports a wide variety of external monitors, including 4K HDTV displays. Display Port connections can be used to daisy-chain multiple external monitors or an Multi Stream Transport (MST) hub such as Surface Dock can be used if the monitors are not DP1.2 capable.

The following display resolutions are available on one or more external displays:

	One External Display (+ Internal LCD)	Two External Displays (+ Internal LCD)
Go	3840 x 2160 @60Hz	2x 3840 x 2160 @30Hz
	3200 x 2000 @60Hz	2x 2560 x 1600 @30Hz
	2560 x 1600 @60Hz	2x 1920 x 1200 @60Hz
	2560 x 1440 @60Hz	
	1920 x 1080 @60Hz	3840 x 2160 @30Hz +2560 x 1600 @60Hz
		+2560 x 1600 @60Hz + 2560 x 1440 @60Hz
		2560 x 1600 @60Hz + 1920 x 1200 @60Hz
		2560 x 1440 @60Hz + 1920 x 1200 @60Hz
		1920 x 1200 @60Hz + 1920 x 1080 @60Hz + 1920 x 1080 @60Hz

Battery Life:

Up to 9 hours of video playback.

Testing conducted by Microsoft in June 2018 using preproduction Intel Pentium Gold 4415Y Processor, 128GB, 8 GB RAM device. Testing consisted of full battery discharge during video playback. All settings were default except: Wi-Fi was associated with a network and Auto-Brightness disabled. Battery life varies significantly with settings, usage, and other factors.

Storage and Memory Options:

Hardware configurations:

4GB RAM, 64GB embedded Multi Media Card (eMMC) drive

Available in Wi-Fi only for consumers and commercial customers

8GB RAM, 128GB solid state drive (SSD)

Available in Wi-Fi and LTE for consumers and commercial customers

8GB RAM, 256GB solid state drive (SSD)

Available in LTE only for commercial customers

The Net storage available to the user after overheads from the disc partitioning, file system, push button restore image, and Windows 10 operating system image with Office trial in (Image code 15,43,45,105 & 155) & without Office in Image code 85.

Fabric:

Key message:

"Alcantara® is a unique and innovative 'Made in Italy' material used to enhance style and sophistication to luxury items. This device uses a special version of Alcantara® with a new touch, an extraordinary combination of aesthetics and functionality"

Alcantara as palm rest material in color blades

- Alcantara is used by luxury car and furniture manufacturers and has unique settings that made it perfect for our device
- It has a very premium feel but is yet warm and soft, it makes it feel personal. It enables the most elegant, sophisticated, pleasurable typing experience
- It also offers supreme durability properties as it's one of the strongest fabric materials yet very light
 - Premium longevity proven throughout Microsoft's relentless testing in our Reliability labs to meet highest Quality goals

We wanted to revolutionize the typing experience to make it a pure pleasure to use and type.

1. Alcantara

- Alcantara is used by luxury car and furniture manufacturers and has unique settings that made it perfect for our device
- It has a very premium feel but is yet warm and soft, it makes it feel personal. It enables the most elegant, sophisticated, pleasurable typing experience
- It also offers supreme durability properties as it's one of the strongest fabric materials yet very light
 - Premium longevity proven throughout Microsoft's relentless testing in our Reliability labs to meet highest Quality goals to ensure your product will last a lifetime
 - See below under 'Fabric'

2. Colors and finish

PERSONAL- CURATED LIFESTYLE – CELEBRATE THE EVERYDAY

Every day we pore over beautifully curated lifestyles of our friends and aspirational idols on Instagram and Pinterest. We've come to see our objects and spaces through more critical eyes, finding beauty in everyday objects is more popular than ever.

With Surface Signature Type Cover, we move from the stark and impersonal, to create more comfortable and human experiences. Beauty draws the consumer in and allows us to have the opportunity to share the whole experience- but it starts with the moment of visual connection. The colors and materials are critical to craft this moment. Here are a few important principles that have guided our choices.

SEASONAL RELEVANCE –TIMELESS AND TRANCENDING

Futuristic forms and styling are balanced with familiar colors. These colors are not only seasonally relevant but have timeless appeal. The need to be creative has exploded in our culture. People want to express themselves as never before. In their desire to become a creator, they look for tools and objects that both enable and reflect their inspired persona.

A COLLECTION OF COLORS

We've designed the colors to look beautiful as a collection. But you buy just one. Love them all? Perhaps not. Personal is polarizing. Within the collection, each color has a distinct function and personality. This strategy allows us to cover our consumer bases and find one for each person to fall in love with.

- Platinum
 - *FAMILIAR – SIMPLE - FRESH*
 - Platinum is the Surface core, heritage color. It continues to make a timeless and bright statement.
- Cobalt Blue
 - *CALM – DEEP - COOL*
 - Cobalt Blue has the depth you see in the sea or sky. It's a color inspired by nature and feels bright yet natural. While it is truly blue, it has the same everyday appeal as denim. It's a nice alternative to the neutrals, a color that is different yet familiar.
- Burgundy
 - *FASHION FORWARD – BOLD - RICH*

- o Burgundy is for those who want to stand out and make a statement. This classic color is the red of the moment. This color reflects the personality of the person who has chosen it.

3. What is unique about this material?

- a. Alcantara Pashma is the base material.
 - i. Pashma means 'felt' in Italian. The two-tone material has an aesthetic that can be 'felt'.
 - ii. This mélange of light and dark fibers gives the material an aesthetic richness and depth that is authentically unique.
- b. Base material is coated with a polyurethane "skin."
 - i. We incorporate polycarbonate into the polyurethane matrix, to optimize hydrolysis, mechanical and environmental performance.
 - ii. Small mix of Teflon and siloxane are also added to improve mechanical robustness, stain and finger print resistance.
 - iii. Material has been deeply studied to find the ultimate mix of look, feel and performance.
 - iv. The skin has a silky hand feel and the overall construction has been optimized to feel comfortable on the palm of the hand

4. Fabric and Cleanability

By design, the fabric used on Surface Laptop resists spills and absorption, so whether it's dirt from daily use, or lotion on your hands, the Alcantara® fabric used on Surface Laptop is easy to clean. For most spills, a simple solution of two parts water to one-part dishwashing detergent (or another common household cleaner) will do. Gently clean the surface using a toothbrush or other soft bristled brush with swirling motions and then wipe dry using a clean light-colored cloth.