Overview

HP 340 G5 Notebook PC

1.	Internal Microphones (2)	**Left**	
		6.	Storage LED Indicator
2.	Webcam LED Indicator	7.	SD Card Slot
3.	Webcam	8.	USB Type-C 3.1 Gen Port
4.	Touch Pad	9.	Security Lock (Lock sold separately)
5.	Power LED Indicator	10.	Power Button

Not all configuration components are available in all regions/countries.

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Overview

Right

1. Power Connector
2. RJ-45/Ethernet Port
3. HDMI port (Cable not included)
4. USB 3.1 Gen 1 Port
5. USB 3.1 Gen 1 Port
6. Audio Combo Jack

Not all configuration components are available in all regions/countries.
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Overview

AT A GLANCE

- Preinstalled Windows 10 or FreeDOS 2.0 versions
- Choice of 8th Generation Intel® Core™ i7, i5 and i3 processors
- Display include your choice of 35.56 cm (14") diagonal narrow bezel, anti-glare, ultra-wide or standard view angle, HD or FHD
- Graphics include your choice of integrated Intel® UHD Graphics 620, Intel® HD Graphics 620, or switchable discrete graphics AMD Radeon™ 530
- Enhanced security features including TPM and mini security lock
- Integrated with 2 stereo speakers and dual array microphone for better audio experience
- Support dual storage, Solid State Drives up to 512 GB, and/or Hard Drives up to 1 TB[2]
- Up to 32 GB total system memory
- Optional 720p HD webcam or no webcam available Full-size island-style spill resistant keyboard and Clickpad with multi-touch gestures enabled, taps enabled as default.802.11b/g/n (1x1) and Bluetooth® 4.2 Combo
- Passed MIL-STD test[3]
- Up to 12 hours and 15 minutes (UMA, WHL-U processor, HD display, 4 GB*1 memory, SSD)

1. Lock sold separately.
2. Dual storage needs to be configured before purchase.
3. MIL-STD-810G testing is not intended to demonstrate fitness of U.S. Department of Defense (DoD) contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.

NOTE: See important legal disclosures for all listed specs in their respective features sections.

Not all configuration components are available in all regions/countries.
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Features

PRODUCT NAME

HP 340 G5 Notebook PC

OPERATING SYSTEM

Preinstalled
Windows 10 Pro 64[1]
Windows 10 Home Single Language 64[1]
Windows 10 Pro 64 (National Academic only)[2]
Windows 10 Home 64[1]
FreeDOS 2.0

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.
2. Some devices for academic use will automatically be updated to Windows 10 Pro Education with the Windows 10 Anniversary Update. Features vary; see https://aka.ms/ProEducation for Windows 10 Pro Education feature information.

PROCESSORS

Intel® Core™ i7-8565U with Intel® UHD Graphics 620 (1.8 GHz base frequency, up to 4.6 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores)[3,4,5,6]
Intel® Core™ i5-8265U with Intel® UHD Graphics 620 (1.6 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 6 MB L3 cache, 4 cores)[3,4,5,6]
Intel® Core™ i3-8145U with Intel® UHD Graphics 620 (2.1 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 4 MB L3 cache, 2 cores)[3,4,5,6]
Intel® Core™ i3-7020U with Intel® HD Graphics 620 (2.3 GHz, 3 MB cache, 2 cores)[3,4,6]

Processor Family
8th Generation Intel® Core™ i7 processor (i7-8565U)[6]
8th Generation Intel® Core™ i5 processor (i5-8265U)[6]
8th Generation Intel® Core™ i3 processor (i3-8145U)[6]
7th Generation Intel® Core™ i3 processor (i3-7020U)[6]

3. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
4. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
5. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See www.intel.com/technology/turboboost for more information.
6. In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on http://www.support.hp.com.

CHIPSET

Chipset is integrated with processor

Not all configuration components are available in all regions/countries.
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Features

GRAPHICS

Integrated
Intel® UHD Graphics 620 (i7-8565U, i5-8265U and i3-8145U)[7]
Intel® HD Graphics 620 (i3-7020U)[7]

Discrete
AMD Radeon™ 530 (2 GB GDDR5 dedicated)[8]

Supports
Support HD decode, DX12, HDMI 1.4b

7. HD content required to view HD images.
8. AMD Dynamic Switchable Graphics technology requires an Intel processor, plus an AMD Radeon™ discrete graphics configuration and is not available on FreeDOS and Linux OS. With AMD Dynamic Switchable Graphics technology, full enablement of all discrete graphics video and display features may not be supported on all systems (e.g. OpenGL applications will run on the integrated GPU or the APU as the case may be).

DISPLAY

Non-Touch
35.56 cm (14") diagonal HD SVA eDP anti-glare WLED-backlit slim-flat, 220 cd/m², 45% NTSC one WLAN antenna (1366 x 768)[7,9]
35.56 cm (14") diagonal HD SVA eDP anti-glare WLED-backlit slim-flat, 220 cd/m², 45% NTSC two WLAN antennas (1366 x 768) [7,9]
35.56 cm (14") diagonal FHD IPS eDP anti-glare WLED-backlit slim-flat, 250 cd/m², 45% NTSC one WLAN antenna (1920 x 1080) [7,9]
35.56 cm (14") diagonal FHD IPS eDP anti-glare WLED-backlit slim-flat, 250 cd/m², 45% NTSC two WLAN antennas (1920 x 1080) [7,9]
7. HD content required to view HD images.
9. Resolutions are dependent upon monitor capability, and resolution and color depth settings.

STORAGE AND DRIVES

Primary Storage
500 GB 7200 rpm SATA[10]
1 TB 5400 rpm SATA[10]
16 GB memory cache Intel® Optane® (Only available with HDD) to optimize HDD performance[10]

Primary M.2 Storage
128 GB SATA TLC Solid State Drive [10]
256 GB PCIe® NVMe™ Value Solid State Drive [10]
256 GB PCIe® NVMe™ TLC Solid State Drive [10]
512 GB PCIe® NVMe™ Value Solid State Drive1 [10]

10. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.

MEMORY

Maximum Memory
32 GB DDR4-2400 SDRAM (only available for 8th Generation Intel® processors)
32 GB DDR4-2133 SDRAM[11]

Not all configuration components are available in all regions/countries.
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Features

Memory
32 GB DDR4-2400 SDRAM (2 X 16 GB) (Only available for 8th Generation Intel® processors)[11]
16 GB DDR4-2400 SDRAM (1 X 16 GB) (Only available for 8th Generation Intel® processors)[11]
8 GB DDR4-2400 SDRAM (1 x 8 GB) (Only available for 8th Generation Intel® processors)[11]
4 GB DDR4-2400 SDRAM (1 x 4 GB) (Only available for 8th Generation Intel® processors)[11]
32 GB DDR4-2133 SDRAM (2 X 16 GB)[11]
16 GB DDR4-2133 SDRAM (1 X 16 GB)[11]
8 GB DDR4-2133 SDRAM (1 x 8 GB)[11]
4 GB DDR4-2133 SDRAM (1 x 4 GB)[11]

Memory Slots
2 SODIMM
Both slots are customer accessible / upgradeable
DDR4 PC4 SODIMMS, system runs at 2400 (Intel 7th Gen (KBL) runs at 2133)
Supports Dual Channel Memory

11. Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

NETWORKING/COMMUNICATIONS

WLAN
Intel® Dual Band Wireless-AC 9560 802.11ac (2x2) Wi-Fi® and Bluetooth® 5 Combo, non-vPro™ [12]
Realtek 802.11ac (1x1) and Bluetooth® 4.2 Combo [12]
Realtek 802.11b/g/n (1x1) and Bluetooth® 4.2 Combo [12]

Ethernet
Integrated 10/100/1000 GbE
Realtek RTL8111HSH-CG 10/100/1000 GbE NIC[13]

12. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited.
13. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

AUDIO/MULTIMEDIA

Audio
2 Integrated stereo speakers
Integrated dual array microphone

Camera
720p HD Camera [7,14]

7. HD content required to view HD images.
14. Sold separately or as an optional feature.

Not all configuration components are available in all regions/countries.
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Features
KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
Full-size island-style spill resistant keyboard
Pointing Device
Clickpad with multi-touch gesture support
Function Keys
ESC: System Information
F1: Windows Help
F2: Brightness Down
F3: Brightness Up
F4: Display Switching
F5: Blank
F6: Speaker Mute
F7: Volume Down
F8: Volume Up
F9: Previous track/section
F10: Starts, Pauses, or resumes playback
F11: Next track/section
F12: Airplane mode (Wireless feature on or off).

SOFTWARE AND SECURITY

Preinstalled Software

Software
HP ePrint[25]
HP Support Assistant[15]
HP Recovery Manager
Native Miracast Support[16]
sMedio True DVD for HP

Security Management
Firmware TPM
Mini security lock (Lock sold separately)
Windows Defender[17]

15. HP Support Assistant requires Windows and Internet access.
16. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
17. Windows Defender Opt In, Windows 10, and internet connection required for updates.
25. HP ePrint Driver requires an Internet connection to HP web-enabled printer and HP ePrint account registration (for a list of eligible printers, supported documents and image types and other HP ePrint details, see http://www.hp.com/go/eprintcenter). Print times and connection speeds may vary.

POWER

Power Supply
HP Smart 65 W EM External AC power adapter[18]

Primary Battery
HP Long Life 3-cell, 41 Wh Li-ion[19]

Not all configuration components are available in all regions/countries.
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Features

Battery Life
Up to 12 hours and 15 minutes (UMA, WHL–U processor, HD display, 4 GB*1 memory, SSD)[20]

Power Cord
3-wire plug - 1m[18]

Battery Weight
0.19 kg

18. Availability may vary by country.
19. Battery is internal and not replaceable by customer. Serviceable by warranty.
20. Windows 10 MM14 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See http://www.bapco.com for additional details.

WEIGHTS & DIMENSIONS

Product Weight
Starting at 3.26 lbs[21]
Starting at 1.48 kg[21]

Product Dimensions (w x d x h)
8.89 x 12.76 x 7.83 in
22.59 x 32.4 x 19.9 cm

21. Weight will vary by configuration.

PORTS/SLOTS

Ports
1 USB 3.1 Type-C™ Gen 1
2 USB 3.1 Gen 1
1 HDMI 1.4[22]
1 RJ-45
1 AC power
1 Headphone/Microphone Combo Jack

Expansion Slots
1 multi-format digital media reader
Supports SD, SDHC, SDXC

22. HDMI cable sold separately.

Not all configuration components are available in all regions/countries.
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Features
SERVICE AND SUPPORT

HP Services offers 1-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. Refer to http://www.hp.com/support/batterywarranty/ for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: http://www.hp.com/go/cpc.[23]

23. HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit http://www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Not all configuration components are available in all regions/countries.

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QuickSpecs

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	Nominal Operating Voltage	19.5 V
	Average Operating Power	Win 10
	Integrated Graphics	7.69W
	Discrete Graphics	N/A (Switchable graphics design)
	Max Operating Power	Discrete < 65W UMA < 45W
Temperature	Operating	32° to 95° F (0° to 35° C) (not writing optical) 41° to 95° F (5° to 35° C) (writing optical)
	Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	Operating	10% to 90%, non-condensing
	Non-operating	5% to 95%,
Shock	Operating	40 G, 2 ms duration, half-sine
	Non-operating	240 G, 2 ms duration, half-sine
Random Vibration	Operating	1.043 grms
	Non-operating	3.5 grms
Planned Industry Standard Certifications	UL	Yes
	CSA	No
	FCC Compliance	Yes
	ENERGY STAR®	No, but compliant with Energy Star
	EPEAT® 2019	Yes, Silver in U.S.[24]
	ICES	Yes
	Australia / NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes
	BNCI or BELUS	Yes
	CIT	Yes
	GOST	Yes
	Saudi Arabian Compliance (ICCP)	Yes
	SABS	Yes

24. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.

Not all configuration components are available in all regions/countries.
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QuickSpecs

Technical Specifications

DISPLAYS

Note: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

14.0" diagonal HD WLED Anti-Glare (1366x768) slim-flat (3.0mm) SVA, eDP, Narrow Bezel		
	Outline Dimensions (W x H)	320.9 x 205.6 (max)
	Active Area	309.4 x 173.95
	Weight	320 g max
	Diagonal Size	14 (inch)
	Thickness	3.6 mm max
	Interface	eDP 1.2
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	No
	Contrast Ratio	300:1 (typ)
	Refresh Rate	60Hz
	Brightness	220 nit typ
	Pixel Resolution	1366 x 768 (HD)
	Format of LCD Pixel Arrangement	RGB
	Backlight	LED
	Color Gamut Coverage	45% of NTSC
	Color Depth	6 bits (Hi FRC)
	Viewing Angle	SVA 40/40/15/30

14" diagonal FHD WLED Anti-Glare (1920x1080) slim-flat (3.0mm), UWVA, eDP, Narrow Bezel		
	Outline Dimensions (W x H)	320.9 x 205.6 (max)
	Active Area	309.31 x 173.99
	Weight	290 max.
	Diagonal Size	14 (inch)
	Thickness	3.0 mm max
	Interface	eDP 1.2 (2 lane)
	Surface Treatment	Anti-Glare (AG)
	Touch Enabled	No
	Contrast Ratio	600:1 (typ)
	Refresh Rate	60Hz
	Brightness	250 nit typ

Not all configuration components are available in all regions/countries.
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Technical Specifications

Pixel Resolution	1920 x 1080 (FHD)
Format of LCD Pixel Arrangement	RGB
Backlight	LED
Color Gamut Coverage	45% of NTSC
Color Depth	6 bits (Hi FRC)
Viewing Angle	UWVA 85/85/85/85

Not all configuration components are available in all regions/countries.
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QuickSpecs

Technical Specifications
STORAGE AND DRIVES

500 GB 7200 rpm SATA Hard Drive	**Drive Weight**	0.21 lb (95 g)	
	Rotation speed	7200 rpm	
	Cache Buffer	Up to 32 MB	
	Height	0.28 in (7 mm)	
	Width	2.75 in (69.85 mm)	
	Interface	ATA-8, SATA 3.0	
	Transfer Rate	600 MB/s	
	Seek Time	**Single Track**	2 ~ 1.5 ms
		Average	11 ~ 13 ms
		Maximum	18 ~ 22 ms
	Logical Blocks	976773168	
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
	Security Features	ATA Security	
	Features	S.M.A.R.T., NCQ, Ultra DMA	

1 TB 5400 rpm SATA Hard Drive	**Drive Weight**	0.21 lbs (95 g)	
	Rotation speed	5400 rpm	
	Cache Buffer	Up to128 MB	
	Height	0.28 in (7 mm)	
	Width	2.75 in (69.85 mm)	
	Interface	ATA-8, SATA 3.0	
	Transfer Rate	600 MB/s	
	Seek Time	**Single Track**	2 ms
		Average	12 ~ 13 ms
		Maximum	18 ~ 22 ms
	Logical Blocks	1953525168	
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
	Security Features	ATA Security	
	Features	S.M.A.R.T., NCQ, Ultra DMA	

128 GB 2280 M2 SATA-3 TLC Solid State Drive	**Form Factor**	M.2 2280
	Capacity	128 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)

Not all configuration components are available in all regions/countries.
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Technical Specifications

Weight	0.01 lb (6 g) ~ 0.02 lb (10 g)
Interface	ATA-8, SATA 3.0
Maximum Sequential Read	Up To 535 MB/s
Maximum Sequential Write	Up To 515 MB/s
Logical Blocks	250,069,680
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	DIPM; TRIM; DEVSLP

256 GB PCIe NVMe TLC Solid State Drive		
Form Factor	M.2 2280
Capacity	256 GB
NAND Type	TLC
Height	0.09 in (2.3 mm)
Width	0.87 in (22 mm)
Interface	PCIe NVMe Gen3x4
Maximum Sequential Read	Up To 2500 MB/s
Maximum Sequential Write	Up To 1000 MB/s
Logical Blocks	500,118,192
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	TRIM; L1.2

256 GB 2280 M2 PCIe NVMe Value Solid State Drive		
Form Factor	M.2 2280
Capacity	256 GB
NAND Type	TLC
Height	0.09 in (2.3 mm)
Width	0.87 in (22 mm)
Interface	PCIe NVMe Gen 3x2
Maximum Sequential Read	Up to 1500 MB/s
Maximum Sequential Write	Up to 1000 MB/s
Logical Blocks	500,118,192
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	TRIM, L1.2

Form Factor	M.2 2280

Not all configuration components are available in all regions/countries.
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Technical Specifications

512 GB 2280 M2 PCIe NVMe Value Solid State Drive

Capacity	512 GB
NAND Type	TLC
Height	0.09 in (2.3 mm)
Width	0.87 in (22 mm)
Interface	PCIe NVMe Gen3x2
Maximum Sequential Read	Up to 1500 MB/s
Maximum Sequential Write	Up to 1000 MB/s
Logical Blocks	1,000,215,215
Features	TRIM, L1.2

16 GB Intel® Optane™ Solution PCIe Gen3x2 M.2 SSD

Form Factor	M.2 2280
Capacity	16 GB
NAND Type	3D Xpoint
Height	80 mm
Width	22 mm
Interface	<10 grams
Maximum Sequential Read	PCIe NVMe Gen3X2
Maximum Sequential Write	Up To 900 MB/s
Logical Blocks	Up To 140 MB/s
Operating Temperature	28,181,328 LBA

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.

Not all configuration components are available in all regions/countries.
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Technical Specifications
NETWORKING/COMMUNICATIONS

Realtek 802.11b/g/n (1x1) Wi-Fi® and Bluetooth® 4.2 Combo[1]	**Wireless LAN Standards**	IEEE 802.11b IEEE 802.11g IEEE 802.11n
	Interoperability	Wi-Fi certified™
	Frequency Band	802.11b/g/n 2.402 – 2.482 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 7, (20MHz, and 40MHz)
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM
	Security	IEEE and Wi-Fi® compliant 64 / 128 bit WEP encryption for b/g mode only AES-CCMP: 128 bit in hardware 802.1x authentication WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. WPA2 certification IEEE 802.11i WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power	802.11b: +14dBm minimum 802.11g: +12dBm minimum 802.11n HT20(2.4GHz): +12dBm minimum 802.11n HT40(2.4GHz): +12dBm minimum
	Power Consumption	Transmit mode 2.0 W Receive mode 1.6 W Idle mode (PSP) 180 mW (WLAN Associated) Idle mode 50 mW (WLAN unassociated) Connected Standby 10mW Radio disabled 8mW
	Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
	Receiver Sensitivity	802.11b, 1Mbps: -93.5dBm maximum 802.11b, 11Mbps: -84dBm maximum 802.11g, 6Mbps: -86dBm maximum 802.11g, 54Mbps: -72dBm maximum 802.11n, MCS07: -67dBm maximum
	Antenna type	High efficiency antenna. One embedded dual band 2.4/5 GHz antenna is provided to the card to support WLAN communications and Bluetooth communications

Not all configuration components are available in all regions/countries.
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Technical Specifications

Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230: 2.3 x 22.0 x 30.0 mm
Weight	Type 2230: 2.8g
Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (−10° to 70° C) Non-operating: −40° to 176° F (−40° to 80° C)
Humidity	Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)
Altitude	Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED OFF – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy: 3 Mbps Signaling Data Rate[1] 2.17 Mbps BLE: 1 Mbps Signaling Data Rate[1] 0.2 Mbps 1. Actual throughput may vary. Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Electrical Interface	USB 2.0 compliant
Bluetooth Software Supported Link Topology	Microsoft Windows Bluetooth Software
Power Management	Microsoft Windows ACPI, and USB Bus Support

Not all configuration components are available in all regions/countries.
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Technical Specifications

	Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
	Power Management	ETS 300 328, ETS 300 826
	Certifications	Low Voltage Directive IEC950
		UL, CSA, and CE Mark
	Bluetooth Profiles	BT4.1-ESR 5/6/7 Compliance
	Supported	LE Link Layer Ping
		LE Dual Mode
		LE Link Layer
		LE Low Duty Cycle Directed Advertising
		LE L2CAP Connection Oriented Channels
		Train Nudging & Interlaced Scan
		BT4.2 ESR08 Compliance
		LE Secure Connection- Basic/Full
		LE Privacy 1.2 –Link Layer Privacy
		LE Privacy 1.2 –Extended Scanner Filter Policies
		LE Data Packet Length Extension
		FAX Profile (FAX)
		Basic Imaging Profile (BIP)2
		Headset Profile (HSP)
		Hands Free Profile (HFP)
		Advanced Audio Distribution Profile (A2DP)
Realtek 802.11a/b/g/n/ac (1x1) Wi-Fi® and Bluetooth® 4.2 Combo[1]	**Wireless LAN Standards**	IEEE 802.11a
		IEEE 802.11b
		IEEE 802.11g
		IEEE 802.11n
		IEEE 802.11ac
		IEEE 802.11d
		IEEE 802.11e
		IEEE 802.11h
		IEEE 802.11i
		IEEE 802.11k
		IEEE 802.11r
		IEEE 802.11v
	Interoperability	Wi-Fi certified™

	Frequency Band	• 802.11b/g/n
		  2.402 – 2.482 GHz
		• 802.11a/n/ac
		  4.9 – 4.95 GHz (Japan)
		  5.15 – 5.25 GHz
		  5.25 – 5.35 GHz
		  5.47 – 5.725 GHz
		  5.825 – 5.850 GHz

Not all configuration components are available in all regions/countries.
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Data Rates	802.11b: 1, 2, 5.5, 11 Mbps
	802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
	802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
Modulation	Direct Sequence Spread Spectrum
	BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security[3]	IEEE and Wi-Fi® compliant 64 / 128 bit WEP encryption for b/g mode only
	AES-CCMP: 128 bit in hardware
	802.1x authentication
	WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
	WPA2 certification
	IEEE 802.11i
	WAPI
Network Architecture Models	Ad-hoc (Peer to Peer)
	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[2]	802.11b: +14dBm minimum
	802.11g: +12dBm minimum
	802.11a: +12dBm minimum
	802.11n HT20(2.4GHz): +12dBm minimum
	802.11n HT40(2.4GHz): +12dBm minimum
	802.11n HT20(5GHz): +10dBm minimum
	802.11n HT40(5GHz): +10dBm minimum
	802.11ac VHT80(5GHz): +10dBm minimum
Power Consumption	Transmit mode 2.0 W
	Receive mode 1.6 W
	Idle mode (PSP) 180 mW (WLAN Associated)
	Idle mode 50 mW (WLAN unassociated)
	Connected Standby 10mW
	Radio disabled 8mW
Power Management	ACPI and PCI Express compliant power management
	802.11 compliant power saving mode
Receiver Sensitivity[3]	802.11b, 1Mbps: -93.5dBm maximum
	802.11b, 11Mbps: -84dBm maximum
	802.11a/g, 6Mbps: -86dBm maximum
	802.11a/g, 54Mbps: -72dBm maximum
	802.11n, MCS07: -67dBm maximum
	802.11n, MCS15: -64dBm maximum
	802.11ac, MCS0: -84dBm maximum
	802.11ac, MCS9: -59dBm maximum
Antenna type	High efficiency antenna.
	One embedded dual band 2.4/5 GHz antenna is provided to the card to support WLAN communications and Bluetooth communications

Not all configuration components are available in all regions/countries.
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Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230: 2.3 x 22.0 x 30.0 mm
Weight	Type 2230: 2.8g
Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (−10° to 70° C) Non-operating: −40° to 176° F (−40° to 80° C)
Humidity	Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)
Altitude	Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED OFF – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy: 3 Mbps Signaling Data Rate[1] 2.17 Mbps BLE: 1 Mbps Signaling Data Rate[1] 0.2 Mbps 1. Actual throughput may vary.
	Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Electrical Interface	USB 2.0 compliant
Bluetooth Software Supported Link Topology	Microsoft Windows Bluetooth Software
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249

Not all configuration components are available in all regions/countries.

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Power Management Certifications	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark	
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)	

Intel® 9560 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5.0 Combo[1] non-vPro	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified™
	Frequency Band	802.11b/g/n 2.402 – 2.482 GHz 802.11a/n 4.9 – 4.95 GHz (Japan) 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz

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Data Rates	802.11b: 1, 2, 5.5, 11 Mbps
	802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
	802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, 80MHz & 160MHz)
Modulation	Direct Sequence Spread Spectrum
	BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security[3]	IEEE and Wi-Fi® compliant 64 / 128 bit WEP encryption for b/g mode only
	AES-CCMP: 128 bit in hardware
	802.1x authentication
	WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
	WPA2 certification
	IEEE 802.11i
	WAPI
Network Architecture Models	Ad-hoc (Peer to Peer)
	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[2]	802.11b: +18.5dBm minimum
	802.11g: +17.5dBm minimum
	802.11a: +18.5dBm minimum
	802.11n HT20(2.4GHz): +15.5dBm minimum
	802.11n HT40(2.4GHz): +14.5dBm minimum
	802.11n HT20(5GHz): +15.5dBm minimum
	802.11n HT40(5GHz): +14.5dBm minimum
	802.11ac VHT80(5GHz): +11.5dBm minimum
	802.11ac VHT160(5GHz): +11.5dBm minimum
Power Consumption	Transmit mode: 2.0 W
	Receive mode: 1.6 W
	Idle mode (PSP) 180 mW (WLAN Associated)
	Idle mode:50 mW(WLAN unassociated)
	Connected Standby/Modern Standby: 10mW
	Radio disabled: 8 mW
Power Management	ACPI and PCI Express compliant power management
	802.11 compliant power saving mode
Receiver Sensitivity[3]	802.11b, 1Mbps: -93.5dBm maximum
	802.11b, 11Mbps: -84dBm maximum
	802.11a/g, 6Mbps: -86dBm maximum
	802.11a/g, 54Mbps: -72dBm maximum
	802.11n, MCS07: -67dBm maximum
	802.11n, MCS15: -64dBm maximum
	802.11ac, MCS0: -84dBm maximum
	802.11ac, MCS9: -59dBm maximum

Not all configuration components are available in all regions/countries.
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Technical Specifications

Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard with CNVi Interface
Dimensions	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm
Weight	1. Type 2230: 2.8 g 2. Type 126: 1.3 g
Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (−10° to 70° C) Non-operating: −40° to 176° F (−40° to 80° C)
Humidity	Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)
Altitude	Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED OFF – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2/5.0 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy: 3 Mbps Signaling Data Rate[1] 2.17 Mbps BLE: 1 Mbps Signaling Data Rate[1] 0.2 Mbps 1. Actual throughput may vary. Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW

Not all configuration components are available in all regions/countries.
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Bluetooth Software Supported Link Topology	Microsoft Windows Bluetooth Software
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

POWER

HP EM 65 W Smart AC adapter	**Dimensions (H x W x D)**	102 x 55 x 30mm	
	Weight	unit: 250g +/- 10g	
	Input	100 to 240 VAC	
		Input Efficiency	87.74 % at 115 Vac and 88.4 % at 230Vac
		Input frequency range	48 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 Vac
	Output	**Output power**	65 W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<11.0A
	Connector	C6 4.5mm Barrel Type	

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	Environmental Design	**Operating temperature**	32°F to 95°F (0° to 35°C)
		Non-operating (storage) temperature	-4°F to 185°F (-20° to 85°C)
		Altitude	0 to 16,400 ft (0 to 5000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives	
		Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE.	
		MTBF - over 200,000 hours at 25°C ambient condition.	
HP 3-cell Long Life Li-Ion (41 WHr)	**Dimensions (H x W x L)**	6.0 x 186.35 x 90.2 mm (0.236 x 7.33 x 3.55 inch)	
	Weight	0.19 kg (0.418 lb)	
	Cells/Type	3cell Lithium-Ion Polymer cell / 515974 Prismatic cell 496080	
	Voltage	11.55V/11.4V/11.34V	
	Amp-hour capacity	3.63Ah/3.6Ah/3.62Ah	
	Watt-hour capacity	41 Wh	
	Temperature	**Operating (Charging)**	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 122° F (-10° to 60° C)
		Hold-up time	5ms at 115 Vac input
		Output current limit	<11.0A
	Optional Travel Battery Available	No	

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COUNTRY OF ORIGIN

China

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QuickSpecs

Options and Accessories
Sold separately and availability may vary by country.

Category	Description	Part Number
Docking	HP 3005pr USB3 Port Replicator	Y4H06AA
	HP USB Travel Dock	T0K30AA
	HP USB-C Universal Dock	1MK33AA
	HP USB-C Universal Dock NF (non-flash)	3DV65AA
Input/Output	HP USB Essential Keyboard and Mouse	H6L29AA
	HP Ultra Mobile Wireless Mouse	H6F25AA#xxx
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP USB Travel Mouse	G1K28AA
	HP HDMI to DVI Adapter	F5A28AA
	HP Stereo USB Headset	T1A67AA
	HP Stereo 3.5mm Headset	T1A66AA
Power	HP 65W Smart AC Adapter	H6Y89AA#xxx
	HP 65W Slim AC Adapter	H6Y82AA#xxx
Storage	HP Mobile USB DVDRW	F2B56AA
UCC	HP Conferencing Keyboard	K8P74AA#xxx
	HP UC Speaker Phone	4VW02AA
Displays	HP ProDisplay P203 20-inch Monitor	X7R53AA
	HP ProDisplay P223 21.5-inch Monitor	X7R61AA
	HP ProDisplay P240va 23.8-inch Monitor	N3H14AA

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Change Log

Date of change	Version History		Description of change
June 13, 2019	V1 to V2	Updated	EPEAT
June 25, 2019	V2 to V3	Updated	Color Gamut
June 28, 2019	V3 to V4	Updated	Color Gamut
July 5, 2019	V4 to V5	Updated	Battery Life
July 31, 2019	V5 to V6	Updated	Energy Star

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