Overview

HP 340S G7 Notebook PC

Left

1.	Internal Microphones (2)	5.	Power Light
2.	Webcam LED	6.	Drive Light
3.	Webcam Camera	7.	SD Card Reader
4.	Touch Pad	8.	Power Button

Overview

Right

1. Power
2. HDMI Port (Cable not included)
3. USB 3.1 Type-A Gen 1
4. USB 3.1 Type-A Gen 1
5. USB Type-C™ with Data Only
6. Audio Comb Jack
7. Optional touch Fingerprint Sensor

At a Glance

- Preinstalled Windows 10[1], FreeDOS
- Choice of 10th generation Intel® Core™ i7, i5, i3 processors
- Intel® Iris® Plus graphics for captivating visual and video experiences
- Optional backlit keyboard
- Forget about user names and passwords. Simply log on to Windows and web sites, via using an optional fingerprint sensor[2]
- Less than 18 mm
- Super-light: 1.47 Kg (3.24 lbs)
- Long battery life gets you through a day of meetings without plugging in. Quickly recharge your PC with HP Fast Charge You'll get up to 50% battery life in just 45 minutes of charging.[5]
- Get a fast and reliable connection in dense wireless environments with gigabit speed Wi-Fi 6[2, 3, 4]
- Up to 512 GB Solid State Drives
- Up to 16 GB total system memory
- 6.5mm micro-edge display w/ 79.1% screen-to-body ratio

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. Sold separately or as an optional feature.
3. Wi-Fi® supporting gigabit speeds is achievable with Wi-Fi 6 (802.11ax) when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels.
4. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 is backwards compatible with prior 802.11 specs. The specifications for Wi-Fi 6 (802.11ax) are draft and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ax devices.
5. Recharges your battery up to 50% within 45 minutes when the system is off or in standby mode. After charging has reached 50% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.

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

Technical Specifications

PRODUCT NAME

HP 340S G7 Notebook PC

OPERATING SYSTEMS

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

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™ i7-1065G7 processor with Intel® Iris® Plus Graphics (1.3 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores)[3,4,5,6]
Intel® Core™ i5-1035G1 processor with Intel® UHD Graphics (1 GHz base frequency, up to 3.6 GHz with Intel® Turbo Boost Technology, 6 MB cache, 4 cores) [3,4,5,6]
Intel® Core™ i3-1005G1 processor with Intel® UHD Graphics (1.2 GHz base frequency, up to 3.4 GHz with Intel® Turbo Boost Technology, 4 MB cache, 2 cores) [3,4,5,6]

Processors Family
10th Generation Intel® Core™ i7 processor (i7-1065G7)[6]
10th Generation Intel® Core™ i5 processor (i5-1035G1)[6]
10th Generation Intel® Core™ i3 processor (i3-1005G1)[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 http://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.

Technical Specifications

CHIPSET

Integrated with processor

GRAPHICS

Integrated
Intel® Iris® Plus Graphics
Intel® UHD Graphics (i3-1005G1/i5-1035G1), Intel Iris Plus Graphics (i7-1065G7)[7]

Supports
Support HD decode, DX12, HDMI 1.4b

[7] HD content required to view HD images.

DISPLAYS

Internal
Non-Touch
35.56 cm (14") diagonal FHD IPS eDP anti-glare WLED-backlit slim, 250 nits, 45% NTSC (1920 x 1080)[8,9]
35.56 cm (14") diagonal HD SVA anti-glare WLED-backlit slim, 220 nits, 45% NTSC (1366 x 768)[8,9]

Display Size
14"
35.56 cm (14")

[8] HD content required to view HD images.
[9] Resolutions are dependent upon monitor capability, and resolution and color depth settings.

STORAGE AND DRIVES

Primary M.2 Storage
128 GB M.2 SATA-3 TLC SSD[10]
256 GB PCIe® NVMe™ M.2 SSD[10]
256 GB PCIe® 3x2x2 NVMe™ M.2 + SSD 16 GB 3D Xpoint [10]
512 GB PCIe® NVMe™ M.2 SSD[10]
512 GB PCIe® 3x2x2 NVMe™ M.2 + SSD 32 GB 3D Xpoint[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
16 GB DDR4-2666 SDRAM[11]

Memory
12 GB DDR4-2666 SDRAM (1 X 8 GB + 1 X 4 GB)[11]
16 GB DDR4-2666 SDRAM (2 X 8 GB)[11]

Technical Specifications

8 GB DDR4-2666 SDRAM (1 x 8 GB)[11]
8 GB DDR4-2666 SDRAM (2 x 4 GB)[11]
4 GB DDR4-2666 SDRAM (1 x 4 GB)[11]

Memory Slots
2 SODIMM
DDR4 PC4 SODIMMS, system runs at 2666
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 AX201 Wi-Fi® and Bluetooth® 5 Combo, non-vPro™[12]
Realtek 802.11ac (2x2) and Bluetooth® 5 Combo (MU-MIMO supported)*

Miracast
Native Miracast Support[13]

[12] Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 is backwards compatible with prior 802.11 specs. The specifications for Wi-Fi 6 (802.11ax) are draft and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ax devices.
[13] Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
* Wireless access point and internet service required and sold separately. Availability of public wireless access points limited.

AUDIO/MULTIMEDIA

Audio
2 Integrated stereo speakers
Integrated dual array Digital Microphones

Camera
720p HD Camera[8]

[8] HD content required to view HD images.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
Full-size island-style, backlit keyboard[14]

Pointing Device
Clickpad with multi-touch gesture support

Technical Specifications

Function Keys
ESC: Blank
F1 - system information
F2 – Brightness Down
F3 – Brightness Up
F4 - Display Switching
F5 – Backlight Toggle (for backlit keyboard) or Blank
F6 - Speaker Mute
F7 – Volume Down
F8 - Volume Up
F9 – Rewind
F10 – Start/Stop
F11 – Fast-forward
F12 – Flight Mode

14. Backlit keyboard is an optional feature.

SOFTWARE AND SECURITY

Software
HP Support Assistant[15]
Buy Office (Sold separately)

Security Management
TPM 2.0
Fingerprint Sensor[16]

15. HP Support Assistant requires Windows and Internet access.
16. Fingerprint Sensor is an optional feature

POWER

HP Smart 65 W EM External AC power adapter[17,18]
HP Smart 65 W External AC power adapter[17,18]
HP Smart 45 W External AC power adapter[17]

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

Power Cord
1M length power Cord

Battery life
Up to 12 hours[20]

Battery Weight
0.43 lb
0.195 kg

17. Availability may vary by country.
18. Recharges the battery up to 50% within 30 minutes when the system is off or in standby mode. After charging has reached 50% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.
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 3.24 lb[21]
Starting at 1.47 kg[21]
Does not include power adapter.

Product Dimensions (w x d x h)
12.76 x 8.86 x 0.7 in
32.4 x 22.5 x 1.79 cm

21. Weight will vary by configuration.

PORTS/SLOTS

Ports
1 USB 3.1 Type-C™ Gen 1
2 USB 3.1 Type-A Gen 1
1 HDMI 1.4[22]
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.

SERVICE AND SUPPORT

HP Services offers 1-year limited warranties and 90 day software support depending on country. Batteries have a default one year limited warranty. 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.

Technical Specifications

COMPATIBILITY

HP USB Essential Keyboard and Mouse	H6L29AA
HP USB-C to HDMI 2.0 Adapter	1WC36AA
HDMI to VGA Adapter	H4F02AA
HP Essential Top Load Case	H2W17AA

CERTIFICATION AND COMPLIANCE

ENERGY STAR® certified
EPEAT® 2019 Silver[24]

[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.

ENVIRONMENTAL & INDUSTRY

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: •IT ECO declaration •US ENERGY STAR® •EPEAT® 2019 Silver in U.S. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit http://www.epeat.net for more information.		
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook".		
Energy Consumption (in accordance with US ENERGY STAR® test method)	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	4.14 W	4.164 W	4.056 W
Normal Operation (Long idle)	2.112 W	2.184 W	2.076 W
Sleep	0.372 W	0.384 W	0.372 W
Off	0.192 W	0.228 W	0.192 W
	Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	14 BTU/hr	14 BTU/hr	14 BTU/hr
Normal Operation (Long idle)	7 BTU/hr	7 BTU/hr	7 BTU/hr
Sleep	1 BTU/hr	1 BTU/hr	1 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr

Technical Specifications

	Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.5	25
Fixed Disk – Random writes	2.5	25

Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include: • 3 USB ports • 1 PC card slot (type I/II) • 1 ExpressCard/54 slot • 1 IEEE 1394 Port • 2 SODIMM memory slots • Optional expansion base docking station • 1 multi-bay II storage port • Interchangeable HDD Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.
Batteries	This battery(s) in this product comply with EU Directive 2006/66/EC Batteries used in the product do not contain: Mercury greater the1ppm by weight Cadmium greater than 20ppm by weight Battery size: Not Applicable Battery type: Not Applicable
Additional Information	• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680.1 (EPEAT) standard at the <Silver> level, see http://www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 2.4% post-consumer recycled plastic (by wt.) • This product is 96.2% recycle-able when properly disposed of at end of life.

Packaging Materials	**External:**	PAPER/Paper	51 g
		PAPER/Corrugated	230 g
	Internal:	PLASTIC/Polyethylene Expanded - EPE	31 g
		PLASTIC/Polyethylene low density - LDPE	9 g

Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf): • Asbestos

	• Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.
HP Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates:

	http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	
Nominal Operating Voltage	19.5 V
Average Operating Power	4.82W
Integrated graphics	Intel® Iris® Plus Graphics (ICL-i7) Intel® UHD graphics (ICL-i5/i3)
Discrete Graphics	N/A (Switchable graphics design)
Max Operating Power	UMA < 45W
Temperature	
Operating	41° to 95° F (5° to 35° C)
Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	
Operating	10% to 90%
Non-operating	5% to 95%
Shock	
Operating	40 G, 2 ms, half-sine
Non-operating	200 G, 2 ms, half-sine
Random Vibration	
Operating	1.043 grms
Non-operating	3.5 grms
Altitude (unpressurized)	
Operating	-50 to 10,000 ft (-15 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15 to 12,192 m)
Planned Industry Standard Certifications	
UL	Yes
FCC Compliance	Yes
EPEAT®	EPEAT® 2019 Silver in U.S.[25]
ICES	Yes
CCC	Yes
CE Marking Compliance	Yes
BNCI or BELUS	Yes
EAC	Yes
UKRSERTCOMPUTER	Yes

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

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 inch diagonal HD SVALED-backlight; 220 cd/m2; 45% sRGB (1366 x 768)	**Outline Dimensions (W x H x D)**	316.2 x 198 (mm) max (with PCB Board)
	Active Area	309.4 x 173.95 (mm)
	Weight	280 g max.
	Diagonal Size	14.0 (inch)
	Thickness	3.0 (mm) max
	Interface	eDP 1.2
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	None
	Contrast Ratio	500:1 (typical)
	Refresh Rate	60Hz
	Brightness	220 nit typical
	Pixel Resolution	1366 x 768 (HD)
	Backlight	RGB
	Format of LCD Pixel Arrangement	LED
	Color Gamut Coverage	45%
	Color Depth	6 bits
	Viewing Angle	45/45/20/45
14.0 inch Diagonal FHD Anti-Glare WLED UWVA 45 % cg 250 nits slim NB (1920 x 1080)	**Outline Dimensions (W x H x D)**	316.17 x 198.04 (mm) max (with PCB Board)
	Active Area	309.37 X 174.02 (mm)
	Weight	285 max.
	Diagonal Size	14.0 (inch)
	Thickness	3.0 (mm) max
	Interface	eDP1.2
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	None
	Contrast Ratio	700:1 (typical)
	Refresh Rate	60Hz
	Brightness	250 nit typical
	Pixel Resolution	1920 x1080 (FHD)
	Backlight	LED
	Format of LCD Pixel Arrangement	RGB
	Color Gamut Coverage	45% of NTSC
	Color Depth	6 bits
	Viewing Angle	UWVA 85/85/85/85

STORAGE AND DRIVES

Technical Specifications

SSD 128 GB 2280 M2 SATA-3 TLC	**Drive Weight**	0.022 lb (10 g)
	Height	0.14 in (3.58 mm)
	Width	0.87 in (22 mm)
	Interface	ATA-8, SATA 3.0
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	ATA Security
	Features	DIPM; TRIM; DEVSLP
256 GB 2280 PCIe NVMe Value	**Drive Weight**	0.022 lb (10 g)
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	ATA Security
	Features	TRIM; L1.2
256 GB 2280 PCIe-3x2x2 NVMe+SSD 16 GB 3D Xpoint	**Drive Weight**	0.022 lb (10 g)
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	ATA Security
	Features	TRIM; L1.2
512 GB 2280 M2 PCIe-3x4 SS NVMe TLC	**Drive Weight**	0.022 lb (10 g)
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	ATA Security
	Features	TRIM; L1.2

512 GB 2280 PCIe NVMe Value	**Drive Weight**	0.022 lb (10 g)
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	ATA Security
	Features	TRIM; L1.2

NETWORKING/COMMUNICATIONS

Realtek RTL8822CE 802.11ac (2 x 2) Wi-Fi® and Bluetooth® 5[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
	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)
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	Security[3]	•IEEE compliant 64 / 128 bit WEP encryption for a/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[4]	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 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 White – Radio ON	

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)

Technical Specifications

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
Bluetooth Software Supported	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)

1. Wireless access point and Internet service is required. Availability of public wireless access point is limited.
2. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
3. Check latest software/driver release for updates on supported security features.
4. 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).

Intel® Wi-Fi 6[1] AX201 and Bluetooth® 5 (802.11ax 2 x 2, non-vPro, supporting gigabit file	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax

transfer speeds) **non-vPro**		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/ax 2.402 – 2.482 GHz • 802.11a/n/ac/ax 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
	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) • 802.11ax: MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, 80MHz & 160MHz)
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security[3]	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/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 • 802.11ax HT40(2.4GHz): +10dBm minimum • 802.11ax VHT160(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/Modern Standby: 10mW • Radio disabled: 8 mW

Power Management	ACPI compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[4]	• 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 • 802.11ax, MCS11(HT40): -59dBm maximum • 802.11ax, MCS11(VHT160): -58.5dBm maximum	
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	

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1 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 + 9.5 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Bluetooth Software Supported	Microsoft Windows Bluetooth Software

Power Management Certifications	Microsoft Windows ACPI, and USB Bus Support 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)

1. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 is backwards compatible with prior 802.11 specs. The specifications for Wi-Fi 6 (802.11ax) are draft and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ax devices. Only available in countries where 802.11ax is supported. Wi-Fi® supporting gigabit speeds is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160 MHz channels.
2. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
3. Check latest software/driver release for updates on supported security features.
4. 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).

POWER

65W EM	**Dimensions (H x W x D)**	102 x 55 x 30 mm		
	Weight	270 g +/- 10 g		
	Input	100 to 240 VAC		
		Input Efficiency	88.0 % at 115 Vac and 89.0 % at 230 Vac	
		Input frequency range	47 ~ 63 Hz	
		Input AC current	Max. 1.7 A at 90 Vac	
	Output	**Output power**	65 W	
		DC output	19.5 V	
		Hold-up time	5 ms at 115 Vac input	

		Output current limit	<11.0 A Over voltage protection- 29 V max automatic shutdown
	Connector	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords	
	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	1 to 16,400 ft (0 to 5,000 m)
		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.	

45W	**Dimensions**	95 x 45 x 26.8 mm	
	Weight	200 g +/- 10 g	
	Input	100 to 240 VAC is missing	
		Input Efficiency	88.0 % at 115 VAC and 89.0 % at 230VAC
		Input frequency range	48 ~ 63 Hz
		Input AC current	Max. 1.4 A at 90 VAC
	Output	**Output power**	45 W
		DC output	19.5 V
		Hold-up time	5 ms at 115 Vac input
		Output current limit	<11.0 A Over voltage protection- 29 V max automatic shutdown
	Connector	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords	
	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	1 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**	6.0 x 186.85 x 90.2 mm (0.236 x 7.36 x 3.55 inch)
	Weight	0.195 kg (0.43 lb)
	Cells/Type	3 cell Lithium-Ion Prismatic cell / 496080/506080
	Voltage	11.55 V
	Amp-hour capacity	3.615 Ah/3.63 Ah
	Watt-hour capacity	41 Wh
	Operating (Charging)	32˚ to 113˚ F (0˚ to 45˚ C)
	Operating (Discharging)	14˚ to 122˚ F (-10˚ to 60˚ C)
	Optional Travel Battery Available	No
	Warranty	1-year[2]

1. Recharges the battery up to 50% within 30 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. After charging has reached 50% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.
2. Batteries have a default one year limited warranty.

FINGERPRINT SENSOR

Model	Elan eFSA80ST touch sensor
Mobile Voltage Operation	2.65V to 3.6V
Operating Temperature	-4° – 176°F (-20°- 80°C)
Current Consumption Image	50mA peak
Low Latency Wait for Finger	<900 uA
Capture Rate	20 cm/sec
ESD Resistance	IEC 61000-4-2 (+15KV)
Detection Matrix	508 DPI resolution / 4.0x4.0mm^2 sensor area
FRR (False Reject Rate) / FAR (False Acceptance Rate)	FRR ~ 2% @ 1:50K FAR

Country of Origin

China

Options and Accessories (sold separately and availability may vary by country)

Type	Description	Part Number
Cases	HP Essential Top Load Case	H2W17AA
	HP Essential Backpack (up to 15.6")	H1D24AA
	HP Essential Messenger Case (up to 17.3")	H1D25AA
Input/Output	HP USB Essential Keyboard and Mouse	H6L29AA
	HP Ultra Mobile Wireless Mouse	H6F25AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP USB Travel Mouse	G1K28AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HDMI to VGA Adapter	H4F02AA
	HP USB to Gigabit RJ45 Adapter	N7P47AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP Stereo USB Headset	T1A67AA
	HP Stereo 3.5mm Headset	T1A66AA
Power	HP 65W Smart AC Adapter	H6Y89AA
	HP 65W Slim AC Adapter	H6Y82AA
	HP 45W Smart Power Adapter	H6Y88AA
Storage	HP Mobile USB DVDRW	F2B56AA

Summary of Changes

Date of change:	Version History:		Description of change:
October 28, 2019	V1 to V2	Added	Environmental Section
October 30, 2019	V2 to V3	Updated	Processors Section