Overview

HP 255 15.6 inch G9 Notebook PC

Left

1. Internal Dual Digital Microphone
2. Webcam LED
3. Webcam
4. Touchpad
5. Touchpad Buttons
6. Audio Combo Jack
7. Power Indicator LED
8. Hard Drive Indicator LED
9. SuperSpeed USB Type-C® 5Gbps signaling rate[1] (Data Transfer Only)
10. HDMI Port (Cable Sold Separately)
11. RJ-45 / Ethernet Port
12. Power Button

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[1] SuperSpeed USB 20Gbps is not available.

Overview

Right

1. Power Connector
2. SuperSpeed USB Type-A 5Gbps signaling rate[1] port (USB 3.2 Gen 1)
3. SuperSpeed USB Type-A 5Gbps signaling rate[1] port (USB 3.2 Gen 1)
4. SD Card slot
5. Fingerprint Reader (Selected Models)

1. SuperSpeed USB 20Gbps is not available.

Overview

AT A GLANCE

- Preinstalled with Windows 11 Pro, Windows Home or FreeDOS
- Choice of powerful AMD Ryzen™ APU processors
- Choice of 39.62 cm (15.6") diagonal HD and Ultra Wide Viewing Angle FHD 300 nit display
- Fast and dual channel DDR4 SODIMM memory up to 32 GB
- Optimize your video calls with an HD camera and temporal noise reduction that adjusts the lighting to your environment.
- Enhanced security features including discrete TPM 2.0 (select model) and optional Fingerprint reader
- Weight with basic configurations starting at 3.84 lb / 1.74 kg
- Choice of Solid State Drives up to 1 TB, Hard Drive up to 1 TB and optional dual storage support.
- Support wireless options for connectivity on the go including gigabit-speed up to Wi-Fi® 6
- Supports fast charging (50% in 45 minutes) with no impact on battery recharge cycles
- Battery Life up to 10 hours 15 mins
- Full size, optional backlit keyboard and clickpad with Precision Touchpad Supported certified
- AMD FreeSync™ makes FHD display stutter, input lag, and screen tears ancient history
- Passed 13 MIL-STD test

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

Technical Specifications

PRODUCT NAME

HP 255 15.6 inch G9 Notebook PC

OPERATING SYSTEM

Preinstalled	Windows 11 Pro [1] Windows 11 Pro Education[1] Windows 11 Home – HP recommends Windows 11 Pro for business [1] Windows 11 Home Single Language – HP recommends Windows 11 Pro for business [1,2] Windows 11 Home Education – HP recommends Windows 11 Pro for business [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 is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.
2. This computer is preinstalled with Windows 11 Home Single Language.

PROCESSORS

AMD Ryzen™ 7 5825U APU with Radeon™ (2.00 GHz base frequency, up to Standard, 16 MB L3 cache, 8 cores) [3,4,5]
AMD Ryzen™ 5 5625U APU with Radeon™ (2.30 GHz base frequency, up to Standard, 16 MB L3 cache, 6 cores)[3,4,5]
AMD Ryzen™ 3 5425U APU with Radeon™ (2.70 GHz base frequency, up to Standard, 8 MB L3 cache, 4 cores) [3,4,5]

Processor Family
AMD Ryzen™ 7 Mobile Processors [6]
AMD Ryzen™ 5 Mobile Processors [6]
AMD Ryzen™ 3 Mobile Processors [6]

3. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
4. 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. AMD's numbering is not a measurement of clock speed.
5. AMD Max Boost clock frequency performance varies depending on hardware, software and overall system configuration.
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.

Technical Specifications

GRAPHICS

Integrated
AMD Radeon™ Graphics

Supports
Support HD decode, DX12, HDMI 1.4b [7]

[7] HD content required to view HD images.

DISPLAY

Non-Touch
39.6 cm (15.6") diagonal, FHD (1920 x 1080), Low Blue Light, anti-glare, UWVA, micro-edge, 300 nits, sRGB 100% eDP 1.4+PSR2 [7,8,9]
39.6 cm (15.6") diagonal, FHD (1920 x 1080), anti-glare, SVA, micro-edge, 250 nits, 45% NTSC eDP 1.2 [7,8,9]
39.6 cm (15.6") diagonal, FHD (1920 x 1080), anti-glare, UWVA, micro-edge, 250 nits, 45% NTSC eDP 1.2 [7,8,9]
39.6 cm (15.6") diagonal, HD (1366x768), anti-glare, SVA, micro-edge, 250 nits, 45% NTSC eDP 1.2 [7,8,9]

HDMI
Port supports resolutions up to 1920 x 1080 external resolution @60 Hz

Display Size
15.6" diagonal
39.6 cm (15.6") diagonal

[7] HD content required to view HD images.
[8] Sold separately or as an optional feature.
[9] Resolutions are dependent upon monitor capability, and resolution and color depth settings.

STORAGE AND DRIVES

Primary Storage
1 TB 5400 rpm SATA [10]
500 GB 7200 rpm SATA [10]
501 GB 5400 rpm SATA [10]

Primary M.2 Storage
1 TB PCIe® NVMe™ M.2 SSD [10]
512 GB PCIe® NVMe™ M.2 QLC Solid State Drive [10]
256 GB PCIe® NVMe™ M.2 QLC Solid State Drive [10]
128 GB PCIe® NVMe™ TLC Solid State Drive [10]

Dual Storage
256 GB PCIe® NVMe™ M.2 QLC Solid State Drive + 1TB 5400rpm SATA [10]
128 GB M.2 SATA-3 TLC Solid State Drive+ 1 TB 5400 rpm SATA [10]

[10] For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 11) is reserved for system recovery software.

MEMORY

Maximum Memory
32 GB DDR4-3200 MT/s SDRAM [11,12]

Memory
32 GB DDR4-3200 MT/s SDRAM (2 X 16 GB) [11,12]
16 GB DDR4-3200 MT/s SDRAM (1 x 16 GB) [11,12]
16 GB DDR4-3200 MT/s SDRAM (2 x 8 GB) [11,12]
12 GB DDR4-3200 MT/s SDRAM (4 GB (1 x 4GB) and 8 GB (1 x 8 GB)) [11,12]
8 GB DDR4-3200 MT/s SDRAM (1 x 8 GB) [11,12]
8 GB DDR4-3200 MT/s SDRAM (2 x 4 GB) [11,12]
4 GB DDR4-3200 MT/s SDRAM (1 x 4 GB) [11,12]

Memory Slots
2 SODIMM (Ryzen 3/5/7 processors speed runs up to 3200 MT/s, Ryzen 3 3250U speed runs up to 2400 MT/s) [11,12]
All slots are customer non-accessible / non-upgradeable
Support Dual Channel Memory

[11] All slots are non-accessible / non-upgradeable.
[12] 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
Realtek RTL8822CE 802.11ac 2x2 Wi-Fi® + Bluetooth® 5.0 Wireless Card [13]
Realtek RTL8821CE 802.11a/b/g/n/ac (1x1) Wi-Fi® with Bluetooth® 4.2 Wireless Card [13]
Realtek RTL8852BE 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3 Wireless Card [14]

Miracast
Compatible with Miracast-certified devices (For Win11) [15]

Ethernet
Integrated 10/100/1000 GbE [16]

[13] Wi-Fi supporting gigabit speeds (802.11ac) is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels
[14] 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
[15] Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

Technical Specifications

[16] 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

Speaker Power
2W/4ohm

Camera
720p HD camera with Temporal Noise Reduction [7]

[7] HD content required to view HD images.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
Full Size Textured island-style Keyboard and optional Backlit[17]

Pointing Device
Touchpad with multi-touch gesture support (PTP certified)

Function Keys
F1 - Open " How to get help in Windows 11" webpage
F2 - Brightness Down
F3 - Brightness Up
F4 - Display Switching
F5 - Blank
F6 - Mute
F7 - Volume Down
F8 -Volume Up
F9 - Previous
F10 - Play/Pause
F11 - Next
F12 - Airplane mode

[17] Backlit keyboard is an optional feature.

Technical Specifications

SOFTWARE AND SECURITY

Software
MYOffice
MyHP
HP QuickDrop[18]
HP Privacy Settings
HP SUPPORT ASSISTANT [19]
HP Audio Switch
HP Connection Optimizer
HP PC Hardware Diagnostics
HP Smart Health [20]
HP Smart[21]

Manageability Features
Touchpoint Customizer for Consumer

NOTE: To enhance brightness, level go to the Intel® Graphics Command Center app, click on System and turn off the Display Power Savings function.

Security Management
McAfee Security (30 days free trial as default) [22]
Express VPN (30 days free trial)
LastPass password manager
Discrete TPM 2.0 (select model) / Firmware TPM 2.0 [23]
Fingerprint reader [24]

18. HP Quick Drop requires Internet access and Windows 10 PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and /or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.
19. HP Support Assistant requires Windows and Internet access.
20. HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights and is available preinstalled on select products, thru HP Factory Configuration Services; or it can be downloaded. For more information about how to enable HP Smart Support or for download, please visit http://www.hp.com/smart-support.
21. HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights and is available preinstalled on select products, thru HP Factory Configuration Services; or it can be downloaded. For more information about how to enable HP Smart Support or for download, please visit http://www.hp.com/smart-support.
22. 30-day McAfee® LiveSafe™ trial included. Internet access required and not included. Subscription required after expiration. See http://www.McAfee.com for more details.
23. Firmware TPM is version 2.0. Hardware TPM is v2.0.
24. HP Fingerprint Sensor is an optional feature and requires configuration at purchase.

Technical Specifications

POWER

Power Supply
HP Smart 65 W EM External AC power adapter [25]
HP Smart 45 W External AC power adapter [25]

Battery
HP Long Life 3-cell, 41 Wh Li-ion Polymer [26,27]
Compliant with UL 1642 Standard

Power Cord
1M (3.28 feet) length power cord

Battery Life
Up to 10 hours 15 mins [28]

Battery Weight
0.42 lb
0.19 kg

[25] Availability may vary by country.
[26] Battery is internal and not replaceable by customer. Serviceable by warranty.
[27] Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.
[28] Windows MM18 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 www.bapco.com for additional details.

WEIGHTS & DIMENSIONS

Product Weight- 41 Whr [29]
Starting at 3.84 lb
Starting at 1.74 kg

Product Dimensions (W x D x H)
14.09 x 9.53 x 0.78 in
35.8 x 24.2 x 1.99 cm

[29] Weight will vary by configuration. Does not include power adapter.

Technical Specifications

PORTS/SLOTS

Ports
2 SuperSpeed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1) [30]
1 SuperSpeed USB Type-C® 5Gbps signaling rate (Supports data transfer only and does not support charging or external monitors) [30]
1 HDMI v1.4b [31]
1 RJ-45
1 AC Power
1 Headphone/microphone combo jack

Expansion Slots
Support SD/SDHC/SDXC
1 Multi-format digital media reader

30. SuperSpeed USB 20Gbps is not available.
31.HDMI cable sold separately.

Technical Specifications

SERVICE AND SUPPORT

HP Services offers 1-year or 3-year limited warranties and 90 days 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.[32]

[32] 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

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	Yes
Nominal Operating Voltage	19V
Average Operating Power	4.5W@MM18
Integrated graphics	Vega7 Graphic Core
Discrete Graphics	N/A
Max Operating Power	UMA < 45W
Temperature	
Operating	41°F to 95°F (5°C to 35° C)
Non-operating	-4°F to 140°F (-20°C to 60°C)
Relative Humidity	
Operating	10% to 90%
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 grams
Non-operating	3.5 grams
Altitude (unpressurized)	
Operating	-50 to 10,000 ft (-15m to 3,048 m)
Non-operating	-50 to 40,000 ft (-15m to 12,192 m)
Planned Industry Standard Certifications	
Regulatory Model Number	TPN-C151
UL	Yes
CSA	No
FCC Compliance	Yes
ENERGY STAR®	Yes[33]
EPEAT®	Yes, EPEAT® registered[34]
ICES	Yes
Australia /	Yes
NZ A-Tick Compliance	Yes
CCC	Yes
Japan VCCI Compliance	Yes
KC	Yes
BSMI	Yes
CE Marking Compliance	Yes
CU/EAC	Yes
CIT	N/A
Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes
UKRSERTCOMPUTER	Yes

Technical Specifications

33. Configurations of the HP 255 15.6 inch G9 that are ENERGY STAR® qualified are identified as HP 255 15.6 inch G9 ENERGY STAR on HP websites and on http://www.energystar.gov.
34.Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit www.epeat.net for more information.

DISPLAYS

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

1. Actual brightness will be lower with touchscreen or HP Sure View.

15.6 in FHD (1920 x 1080) Anti-Glare UWVA Low Blue Light sRGB NWBZ 300 eDP 1.4+PSR2 100 flat LCD Panel	**Outline Dimensions (W x H)**	350.66*215.34(With PCBA) typ +/- 0.5
	Active Area	344.16 x 193.59 typ
	Weight	310g max
	Diagonal Size	15.6"
	Thickness	2.45 typ /2.6 max
	Interface	eDP1.4
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1000:1 typ
	Refresh Rate	60Hz
	Brightness	300nits typ
	Pixel Resolution	1920 x 1080 (FHD)
	Format	WLED
	Backlight	RGB
	Color Gamut Coverage	sRGB100% typ
	Color Depth	8bits
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	Yes
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.69W max / 3.34W max

Panel LCD 15.6-in FHD (1920x1080) Anti-Glare WLED SVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ ultraslim	**Outline Dimensions (W x H)**	350.96 * 216.65 (max. w/ PCB)
	Active Area	344.16 x 193.59 typ
	Weight	360g max
	Diagonal Size	15.6"
	Thickness	3.2mm max
	Interface	eDP1.2
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	300:1 typ
	Refresh Rate	60Hz
	Brightness	250nits typ
	Pixel Resolution	1920 x 1080 (FHD)
	Format	WLED
	Backlight	RGB

	Color Gamut Coverage	NTSC45%
	Color Depth	6bit
	Viewing Angle	SVA 45/45/15/35
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.67W max / 3.33W max

15.6-in FHD (1920x1080) Anti-Glare WLED UWVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ slim	**Outline Dimensions (W x H)**	350.96*216.75(max.)
	Active Area	344.16 x 193.59 (typ.)
	Weight	370g max.
	Diagonal Size	15.6"
	Thickness	3.2 max.
	Interface	eDP1.2
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	600:1 typ
	Refresh Rate	60Hz
	Brightness	250nits typ
	Pixel Resolution	1920 x 1080 (FHD)
	Format	WLED
	Backlight	RGB
	Color Gamut Coverage	NTSC45%
	Color Depth	6bits
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.75W max

15.6-in HD (1366x768) Anti-Glare WLED SVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ ultraslim	**Outline Dimensions (W x H)**	350.96 * 216.65 (max. w/ PCB)
	Active Area	344.23 x 193.54 typ
	Weight	360g max
	Diagonal Size	15.6"
	Thickness	3.2mm max
	Interface	eDP1.2
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	300:1 typ
	Refresh Rate	60Hz
	Brightness	250nits typ
	Pixel Resolution	1366 x 768 (HD)
	Format	WLED
	Backlight	RGB
	Color Gamut Coverage	NTSC45%

Technical Specifications

	Color Depth	6bits
	Viewing Angle	SVA 45/45/15/35
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.42W max / 2.98W max

Technical Specifications

STORAGE AND DRIVES

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 11) is reserved for system recovery software.

HDD 1TB 5400RPM 7mm SATA	**Drive Weight**	0.21 lbs (95 g)
	Rotation speed	5400rpm
	NAND Type	up to 128MB
	Height	0.28 in (7 mm)
	Width	2.75 in (69.85 mm)
	Weight	ATA-8, SATA 3.0
	Interface	600MB/s (Interface)
	Maximum Sequential Read	Single Track: 1.5ms Agerage: 13ms Maximum: 32ms
	Maximum Sequential Write	1,953,525,168
	Logical Blocks	0° to 60°C [case temp]
	Operating Temperature	ATA Security
	Features	S.M.A.R.T., NCQ, Ultra DMA

HDD 500GB 5400RPM 7mm SATA	**Drive Weight**	0.21 lbs (95 g)
	Rotation speed	5400rpm
	Cache Buffer	up to 128MB
	NAND Type/Size	N/A
	Height	0.28 in (7 mm)
	Width	2.75 in (69.85 mm)
	Interface	ATA-8, SATA 3.0
	Transfer Rate	600MB/s (Interface)
	Seek Time	Single Track: 1.5ms Agerage: 13ms Maximum: 32ms
	Logical Blocks	976,773,168
	Operating Temperature	0° to 60°C [case temp]
	Security Features	ATA Security
	Features	S.M.A.R.T., NCQ, Ultra DMA

HDD 500GB 7200RPM 7mm SATA	**Drive Weight**	0.21 lbs (95 g)
	Rotation speed	7200rpm
	Cache Buffer	up to 128MB
	Height	0.28 in (7 mm)
	Width	2.75 in (69.85 mm)
	Interface	ATA-8, SATA 3.0
	Transfer Rate	600MB/s (Interface)
	Seek Time	Single Track: 1.5ms Agerage: 13ms Maximum: 32ms

Technical Specifications

	Logical Blocks	976,773,168
	Operating Temperature	0° to 60°C [case temp]
	Security Features	ATA Security
	Features	S.M.A.R.T., NCQ, Ultra DMA

SSD 128GB 2280 PCIe-3x2 Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	128GB
	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 1600MB/s ±20%
	Maximum Sequential Write	up to 900MB/s ±20%
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite

SSD 1TB 2280 PCIe NVMe QLC	**Form Factor**	M.2 2280
	Capacity	1TB
	NAND Type	QLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe
	Maximum Sequential Read	up to 2300MB/s ±20%
	Maximum Sequential Write	up to 2000MB/s ±20%
	Logical Blocks	2,000,409,264
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite

SSD 256GB 2280 PCIe NVMe QLC	**Form Factor**	M.2 2280
	Capacity	256GB
	NAND Type	QLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe
	Maximum Sequential Read	up to 2300MB/s ±20%
	Maximum Sequential Write	up to 1280MB/s ±20%
	Logical Blocks	1,000,215,216
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite

Technical Specifications

SSD 512GB 2280 PCIe NVMe QLC	Form Factor	M.2 2280
	Capacity	512GB
	NAND Type	QLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe
	Maximum Sequential Read	up to 2300MB/s ±20%
	Maximum Sequential Write	up to 1400MB/s ±20%
	Logical Blocks	1,000,215,216
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite

NETWORKING/COMMUNICATIONS

Realtek 802.11a/b/g/n/ac (1x1) Wi-Fi® and Bluetooth® 4.2 Wireless Card [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 modules
	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: max 150Mbps • 802.11ac : max 433.3Mbps
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	Security[3]	• IEEE and WiFi certified 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 • WPA3 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 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. One embedded dual band 2.4/5 GHz antenna is provided to the card to support WLAN communications and Bluetooth communications
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

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)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps 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.

1. Wi-Fi 5 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.
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. 1. 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).

Technical Specifications

Realtek RTL8852BE 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3 Wireless Card (802.11ax 2x2, supporting gigabit data rate) [1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax 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 modules
	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: max 300Mbps •802.11ac: max 866.7Mbps • 802.11ax: max 1201Mbps
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security[3]	•IEEE and WiFi certified 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 •WPA3 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 • 802.11ax HE40(2.4GHz): +10dBm minimum • 802.11ax HE80(5GHz): +10dBm minimum
	Power Consumption	•Transmit mode:2.5 W

	•Receive mode:2 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 •802.11ax, MCS11(HE40): -57dBm maximum •802.11ax, MCS11(HE80): -54dBm 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
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: 2.8g 2. Type 126: 1.3g
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 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps BLE: 1 Mbps data rate; throughput up to 0.2 Mbps 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.

1.Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with

prior 802.11 specs.
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).

Realtek RTL8822CE 802.11ac 2x2 Wi-Fi® + Bluetooth® 5.0 Wireless Card [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 modules
	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: max 300Mbps • 802.11ac : max 866.7Mbps
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	Security3	• IEEE and WiFi certified 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 • WPA3 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 Power2	• 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
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
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 : 2.8g 2. Type 126: 1.3g
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 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)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps 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.

1. Wi-Fi 5 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with

prior 802.11 specs.
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).

Realtek RTK8111HSH 10/100/1000 Integrated NIC	**Ethernet Features**	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
	Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
	Performance Features	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling Jumbo Frame 9K
	Manageability	Wake-on-LAN from modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) (MSC is supported on selected model) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status

Technical Specifications

POWER

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.

HP 65W Smart AC adapter	**Dimensions (H x W x D)**	90x51x28.5mm	
	Weight	230g +/- 10g (Not including power cord. Power cord varies by country.)	
	Input	100 to 240 VAC	
		Input Efficiency	88.0 % at 115 VAC and 89.0 % at 230VAC
		Input frequency range	48 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 VAC
	Output	**Output power**	65W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<11.0A Over voltage protection- 29V 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	0 to 16,400 ft (0 to 5,000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	Eg: *CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.	

45 W AC adapter	**Dimensions**	95x40x26.5mm	
	Weight	200g +/- 10g (Not including power cord. Power cord varies by country.)	
	Input	100 to 240 VAC	
		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 VA
	Output	**Output power**	45W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<8.0A Over voltage protection- 29V 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 5,000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	Eg: *CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.	
HP 65W EM Smart AC adapter	**Dimensions**	102x55x30mm	
	Weight	250g +/- 10g (Not including power cord. Power cord varies by country.)	
	Input	100 to 240 VAC	
		Input Efficiency	88.0 % at 115 VAC and 89.0 % at 230VAC
		Input frequency range	48 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 VAC
	Output	**Output power**	65W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<11.0A Over voltage protection- 29V max automatic shutdown
	Connector	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords	
	Environmental Design	**Operating temperature**	32ºFto 95ºF (0ºto 35ºC)
		Non-operating (storage) temperature	-4ºFto 185ºF (-20ºto 85ºC)
		Altitude	1 to 16,400 ft (0 to 5,000m)
		Humidity	20% to 95
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	Eg: *CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.	

Technical Specifications

HP 3-cell Long Life Li-Ion (41 Wh[1])	**Dimensions (H x W x L)**	6.0 x 186.85 x 90.2 mm (0.23 x 7.29 x 3.52 inch)
	Weight	0.175 Kg (0.385 lb)
	Cells/Type	3cell lithium-Ion Polymer cell 515974
	Energy	
	Voltage	11.34V/11.28V
	Amp-hour capacity	3.62Ah/3.635Ah
	Watt-hour capacity	41Wh
	Temperature	
	Operating (Charging)	32˚ to 113˚ F (0˚ to 45˚ C)
	Operating (Discharging)	14˚ to 122˚ F (-10˚ to 60˚ C)
	Fuel Gauge LED	N/A
	Warranty	1-year
	Optional Travel Battery Available	No

Technical Specifications

AUDIO

HD Stereo Codec	Realtek ALC3247
Audio I/O Ports	One Headset Combo-Jack connector support CTIA spec.
Internal Speaker Amplifier	2W class D stereo amplifier for the internal speaker only. External speakers must be powered.
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the Combo jack or integrated speaker.
Sampling	4-channel DAC supports 16/20/24-bit PCM format for independent two stereo channel or 2.1 audio playback. 4-channel ADC supports 16/20/24-bit PCM format for independent two stereo channel audio inputs. All DACs support 44.1k/48k/96k/192kHz sample rate. All ADCs support 44.1k/48k/96k/192kHz sample rate.
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes.
# of Channels on Line-Out	0
Internal Speaker	Yes

FINGERPRINT READER

Sensor vendor	Elan eFSA80ST touch sensor
Sensor type	Capacitive
DPI resolution	
Scan area	
False Rejection Rate	FRR (False Reject Rate) / FAR (False Acceptance Rate): FRR ~ 2% @ 1:50K FAR
False Acceptance Rate	
Mobile Voltage Operation	Mobile Voltage Operation: 2.65V to 3.6V
Operating Temperature	Operating Temperature: 32° to 95° F (0° to 35° C)
Current Consumption Image	Current Consumption Image: 50mA peak
Low Latency Wait For Finger	Low Latency Wait For Finger: <900 uA
Capture Rate	Capture Rate: 20cm/sec
ESD Resistance	ESD Resistance: IEC 61000-4-2 (+15KV)
Detection Matrix	Detection Matrix: 508 dpi / 4x4mm sensor area

ENVIRONMENTAL DATA

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® • US Federal Energy Management Program (FEMP) • EPEAT ® registered where applicable. EPEAT ® registration varies by country. See http://www.epeat.net for registration status by country.* *Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information. • TCO- N/A • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label*		
Sustainable Impact Specifications	• 5% post-consumer recycled plastic • Low halogen • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable • Bulk packaging available		
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 (Sort idle)	5.34 W	5.27 W	5.31 W
Normal Operation (Long idle)	3.27 W	3.22 W	3.23 W
Sleep	0.53 W	0.55 W	0.53 W
Off	0.13 W	0.16 W	0.13 W
	NOTE: 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)	18.3 BTU/hr	18 BTU/hr	18.2 BTU/hr
Normal Operation (Long idle)	11.2 BTU/hr	11 BTU/hr	11 BTU/hr
Sleep	1.8 BTU/hr	1.9 BTU/hr	1.8 BTU/hr
Off	0.4 BTU/hr	0.5 BTU/hr	0.4 BTU/hr

	***NOTE:** 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	3.2	25.7	
Fixed Disk – Random writes	3.3	26.5	
Optical Drive – Sequential reads	N/A	N/A	
Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the		
	Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
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 (EPEAT) standard at the Gold level, see www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product is 94.2% recycle-able when properly disposed of at end of life.		
Packaging Materials	**External:**	PAPER/Corrugated	295 g
		PAPER/Molded Pulp	141 g
	Internal:	PLASTIC/Polyethylene low density - LDPE	10 g
		PLASTIC/Polypropylene - PP	4 g
	The plastic packaging material contains at least 0.0% recycled content.		
	The corrugated paper packaging materials contains at least 57.0% recycled content.		
RoHS Compliance	HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam. We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products. We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve. To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.		
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/supplychain/gen_specifications.html		

Technical Specifications

	): • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Bis(2-Ethylhexyl) phthalate (DEHP) • Benzyl butyl phthalate (BBP) • Dibutyl phthalate (DBP) • Diisobutyl phthalate (DIBP) • 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 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.

Technical Specifications

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://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
footnotes	• Percentage of ocean-bound plastic contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. • External power supplies, WWAN modules, power cords, cables and peripherals excluded. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Fiber cushions made from 100% recycled wood fiber and organic materials.

COUNTRY OF ORIGIN

China

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

Category	Description	Part Number
Audio/Video	HP Wired USB-A Stereo Headset	428K6AA
	HP Wired 3.5mm Stereo Headset	428K7AA
	HP 500 BT Headset	53L34AA
	HP 365 BT Speaker	567D3AA
Cases	HP Prelude Backpack 15.6	1E7D6AA
	HP Prelude Top Load 15.6	1E7D7AA
	HP Prelude Pro Recycle Backpack	1X644AA
	HP Prelude Pro Recycle Top Load	1X645AA
	HP Prelude Pro Recycle Backpack	1X644AA
	HP Prelude Pro Recycle Top Load	1X645AA
	HP Executive 15.6 Backpack	6KD07AA
	HP Executive 15.6 Top Load	6KD06AA
	HP Renew Business 17.3" Backpack	3E2U5AA
	HP Renew Business 15.6" Bag	3E5F8AA
	HP Renew Business 17.3" Bag	3E2U6AA
Hub	HP USB-C to USB-A Hub	Z6A00AA
Adapter	HP USB 3.0 to Gigabit Adapter	N7P47AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to RJ45 Adapter G2	4Z527AA
	HP USB 3.0 to Gig RJ45 Adapter G2	4Z7Z7AA
Keyboard/Combo	HP 975 USB+BT Dual-Mode Wireless Keyboard	3Z726AA
	HP 655 Wireless Keyboard and Mouse Combo	4R009AA
	HP 225 Wired Mouse and Keyboard Combo	286J4AA
	HP 235 Wireless Mouse and Keyboard Combo	1Y4D0AA
Mouse	HP USB Premium Wireless Mouse	1JR31AA
	HP 435 Multi-Device Wireless Mouse	3B4Q5AA
	HP Creator USB-A+Bluetooth 935 Wireless Mouse Black	1D0K8AA
	HP USB-A+Bluetooth Travel Bluetooth Mouse	6SP30AA
	HP 235 Slim Wireless Mouse	4E407AA
Power	HP 65W Smart AC Adapter	H6Y89AA
Commodity	HP USB DVD-Writer EXT ODD	F2B56AA

Summary of Changes

Date of change	**Version History**		**Description of change**
March 14, 2022	V1 to V2	Added	Battery Compliance in Power section; Environmental Data
April 11, 2022	V2 to V3	Added	Reference for USB ports
April 25, 2022	V3 to V4	Added	MIL-STD test in At a Glance section
June 15, 2022	V4 to V5	Added	Added note in Manageability Feature
August 5, 2022	V5 to V6	Updated	Eco-Label Certifications & declarations
August 8, 2022	V6 to V7	Updated	Memory Slots
October 20, 2022	V7 to V8	Updated	Bluetooth version
March 6, 2023	V8 to V9	Updated	Storage and Drives section
March 22, 2023	V9 to V10	Updated	USB Type C® description
April 24, 2024	V10 to V11	Updated	Memory Section