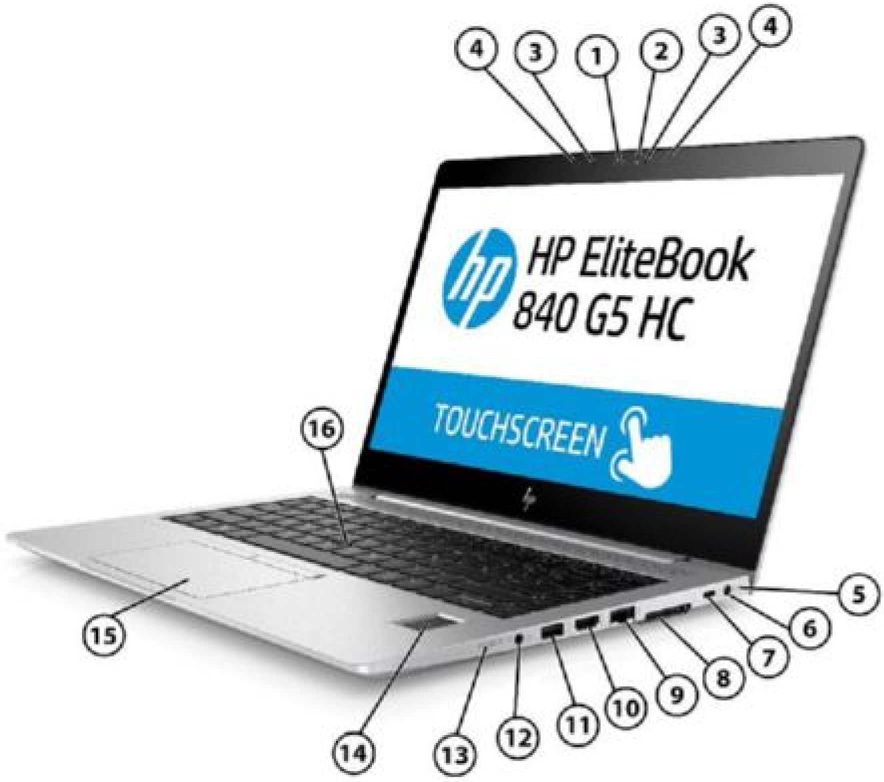
HP EliteBook 840 G5 Healthcare Edition Notebook PC



1. Webcam and IR Camera
2. Webcam LED
3. Internal microphones
4. IR Camera LEDs
5. Charging light
6. Power connector
7. USB Type-C^{TM} with Thunderbolt^{TM}
8. Docking connector

Left

9. Ethernet port
10. HDMI port (Cable not included)
11. USB 3.1 Gen 1 port
12. Audio combo jack
13. SIM card slot[1]
14. Fingerprint reader (Select models)
15. Clickpad and RFID/NFC tap area (select models)
16. Pointstick

[1] All units have a SIM card slot and icon but units that do not support WWAN are shipped with a non-removable SIM slot plug

1. Indicator LEDs:
   Power ligh
   Wireless light
   Storage usage light
2. Smartcard Reader (Select models)
3. USB 3.1 Gen 1 charging port

Right

4. Security Lock slot (Lock sold separately)
5. Power button

Overview

AT A GLANCE

- Engineered for sanitization with germicidal wipes every shift, every day (please see Cleaning Instructions for supported wipes)[4,5]
- Integrated single sign-on badge capability[1]
- Integrated FIPS-201 compliant fingerprint reader for electronic prescribing of medication[1]
- EN60601-1-2:2015 compliant for EMI safety
- World class security and manageability with HP Sure Start Gen 4, HP Sure View, HP Sure Run, HP Sure Restore, HP Sure Click, HP MIK, HP WorkWise, IR Camera, SmartCard Reader[1], Fingerprint reader[1], Self-encrypting SSDs[1], and Absolute Computrace embedded[1]
- HP Sure View 14.0" 700nit FHD IPS display
- Supports fast charging (50% in 30 minutes) with no impact on battery recharge cycles[2]
- Featuring HP Collaboration Keyboard with Clickpad to manage most commonly used conferencing functions with a single keystroke
- Experience telemedicine with an HD camera and Infrared camera with multi-array noise-cancelling microphones and loud top-firing speakers (74dB)
- Designed to support all HP docking options including HP's traditional Ultraslim mechanical dock and all-new Thunderbolt™ dock.[1]
- Choice of 8th Generation Intel® Core™ i5, i7 Quad-core Processors and 7th generation Intel® Core™ i5 Dual-core Processors
- Preinstalled with Windows 10 versions or FreeDOS
- AMD Radeon RX540 discrete graphics with 2 GB GDDR5 video memory[1]
- HP Long Life Battery
- MIL-STD testing[3]

1. Sold separately or as an optional feature.
2. Recharges your battery up to 50% within 30 minutes when the system is off or in standby mode. Power adapter with a minimum capacity of 65 watts is required. After charging has reached 50% capacity, charging will return to normal. Charging tim may vary +/-10% due to System tolerance.
The Long Life battery will have same 1-year or 3-year limited warranty as the platform. HP Long-Life Rechargeable batteries are designed to last 1,000 battery cycles based on typical use over a 3-yr period.
3. MIL-STD-810G testing is conducted on all HP EliteBook products. 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.

PRODUCT NAME

HP EliteBook 840 G5 Healthcare Edition Notebook PC

OPERATING SYSTEM

Preinstalled	Windows 10 Pro 64[1] 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 purch
updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http:

PROCESSORS

Intel® Core™ i5-7200U with Intel® HD Graphics 620 (2.5 GHz base frequency, up to 3.1 GHz with Intel® Turbo Boost Technolog
Intel® Core™ i5-7200U with AMD Radeon™ RX 540 with 2 GB GDDR5 dedicated (2.5 GHz base frequency, up to 3.1 GHz with Int
Intel® Core™ i5-7300U vPro™ processor with Intel® HD Graphics 620 (2.6 GHz base frequency, up to 3.5 GHz with Intel® Turb
Intel® Core™ i5-7300U vPro™ processor with AMD Radeon™ RX 540 with 2 GB GDDR5 dedicated (2.6 GHz base frequency, up
Intel® Core™ i5-8250U with Intel® UHD Graphics 620 (1.6 GHz base frequency, up to 3.4 GHz with Intel® Turbo Boost Technolo
Intel® Core™ i5-8250U with AMD Radeon™ RX 540 with 2 GB GDDR5 dedicated (1.6 GHz base frequency, up to 3.4 GHz with Int
Intel® Core™ i5-8350U vPro™ processor with Intel® UHD Graphics 620 (1.7 GHz base frequency, up to 3.6 GHz with Intel® Turb
Intel® Core™ i5-8350U vPro™ processor with AMD Radeon™ RX 540 with 2 GB GDDR5 dedicated (1.7 GHz base frequency, up
Intel® Core™ i7-8550U with Intel® UHD graphics 620 (1.8 GHz base frequency, up to 4 GHz with Intel® Turbo Boost Technolog
Intel® Core™ i7-8550U with AMD Radeon™ RX 540 with 2 GB GDDR5 dedicated (1.8 GHz base frequency, up to 4 GHz with Intel
Intel® Core™ i7-8650U vPro™ processor with Intel® UHD graphics 620 (1.9 GHz base frequency, up to 4.2 GHz with Intel® Turb
Intel® Core™ i7-8650U vPro™ processor with AMD Radeon™ RX 540 with 2 GB GDDR5 dedicated (1.9 GHz base frequency, up

Processor Family
7th Generation Intel® Core™ i5 processor (i5-7300, i5-7200 models)
8th Generation Intel® Core™ i5 processor (i5-8350, i5-8250 models)
8th Generation Intel® Core™ i7 processor (i7-8650, i7-8550 models)

2. Multicore is designed to improve performance of certain software products. Not all customers or software applications will
and your hardware and software configurations. Intel's numbering branding and/or naming is not a measurement of higher pe
3. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
4. NOTE: In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system
on http://www.support.hp.com.

CHIPSET

Integrated with processor

GRAPHICS

Integrated
Intel® HD Graphics 620[5]
Intel® UHD Graphics 620[5]

Discrete
AMD Radeon™ RX 540 (2 GB GDDR5 dedicated)[6,7]
Support HD decode, DX12, HDMI 1.4b[5,8]

5. HD content required to view HD images.
6. Sold separately or as an optional feature.
7. AMD Dynamic Switchable Graphics technology requires an Intel processor, plus an AMD Radeon™ discrete graphics configu
discrete graphics video and display features may not be supported on all systems (e.g. OpenGL applications will run on the in
8. HDMI cable sold separately.

DISPLAY

Touch
HP Sure View Integrated Privacy Screen 35.6 cm (14") diagonal FHD IPS LED-backlit touch screen with Corning® Gorilla® Glass

HDMI 1.4b
Supports resolution up to 4k @ 24Hz

Displays support
Supports 2 independent displays when on the HP Ultraslim Dock - Max. resolution = 2.5K @ 60Hz (DP1) & 2.5K @ 60Hz (DP2)
Supports 2 independent displays when on the HP Thunderbolt™ Dock G2 - Max. resolution = 4K @ 60Hz (DisplayPort) &
4K @ 60Hz (ThunderBolt)

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

STORAGE AND DRIVES

Primary M.2 Storage
128 GB SATA-3 SS TLC[10]
256GB PCIe NVMe Value SS TLC[10]
256 GB PCIe Gen3x4 NVMe SS TLC[10]
256 GB SATA-3 SS TLC Opal 2[10]
360 GB PCIe Gen3x4 NVMe SS TLC (Intel®) [10]
512 GB PCIe Gen3x4 NVMe SS TLC[10]
512 GB PCIe Gen3x4 NVMe SS TLC Opal 2[10]
512 GB SATA-3 SS TLC FIPS-140-2[10]
1 TB PCIe Gen3x4 NVMe SS TLC[10]

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

MEMORY

Maximum Memory
32 GB DDR4-2400 SDRAM[11]

Memory
32 GB DDR4-2400 SDRAM (2 X 16 GB)[11]
16 GB DDR4-2400 SDRAM (1 X 16 GB)[11]
16 GB DDR4-2400 SDRAM (2 X 8 GB)[11]
8 GB DDR4-2400 SDRAM (1 x 8 GB)[11]
8 GB DDR4-2400 SDRAM (2 x 4 GB)[11]
4 GB DDR4-2400 SDRAM (1 x 4 GB)[11]

Memory Slots
2 SODIMM
Both slots are upgradeable
System runs at 2133 for Intel® 7th generation processors
System runs at 2400 for Intel® 8th generation processors
Supports Dual Channel Memory.

11. Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to e

---

NETWORKING/COMMUNICATIONS

WLAN
Intel® Dual Band Wireless-AC 8265 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo, vPro$^{\text{TM}}$[12]
Intel® Dual Band Wireless-AC 8265 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo, non-vPro$^{\text{TM}}$[12]
Realtek RTL8822BE 802.11ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo, non-vPro$^{\text{TM}}$[12]

WWAN
HP lt4132 LTE/HSPA+ w/GPS M.2[13]
Intel® XMM$^{\text{TM}}$ 7360 LTE-Advanced[13]

NFC
NXP NPC300 Near Field Communication Module

Miracast
Native Miracast Support[14]

Ethernet
Intel® I219-LM 10/100/1000 GbE, vPro$^{\text{TM}}$[15]
Intel® I219-V 10/100/1000 GbE, non-vPro$^{\text{TM}}$[15]

RFID
Ritani RFIdeas HF/LF RFID Read SE Module without SE Security Access Module (SE SAM)[16]

12. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limitec
draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.
13. WWAN module requires separately purchased service contract. Check with service provider for coverage and availability i
on all products, in all regions.
14. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming media players
information: http://windows.microsoft.com/en-us/windows-8/project-wireless-screen-miracast.
15. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, an
network infrastructure is required.
16. SE Security Access Module (SE SAM) is a separate hardware SIM inserted into the RFID reader and is required to support SE

AUDIO/MULTIMEDIA

Audio
Audio by Bang & Olufsen
Integrated Multi Array Microphones (with World-facing 3rd mic)
2 Integrated Stereo Speakers

Camera
720p HD and IR webcam supporting Wide Dynamic Range[5]

5. HD content required to view HD images.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
HP Premium Collaboration Keyboard, backlit, dual point, spill resistant with drain, with HP Dura Keys

Pointing Device
Clickpad with multi-touch gestures enabled, taps enabled as default
Microsoft Precision Touchpad Default Gestures Support

Function Keys
F1 - Display Switching
F2 - Privacy
F3 - Brightness Down
F4 - Brightness Up
F5 - Audio Mute
F6 - Volume Down
F7 - Volume Up
F8 - Mic Mute
F9 - Backlit Toggle
F10 - numlk
F11 - Wireless
F12 - Calendar
Share/Present
Call Answer
Call End

Hidden Fuction Keys
Fn+R - Break
Fn+S - Sys Rq
Fn+C - Scroll Lock

SOFTWARE AND SECURITY

Preinstalled Software

BIOS

HP BIOSphere Gen4[17]

HP DriveLock & Automatic DriveLock

BIOS Update via Network

Master Boot Record Security

Power On Authentication

Secure Erase[18]

Absolute Persistence Module[19]

Pre-boot Authentication

HP Wireless Wakeup

Software

Features

HP Easy Clean[42]

HP Native Miracast Support[14]

HP LAN-Wireless Protection

HP Velocity

HP 3D DriveGuard

HP ePrint Driver + JetAdvantage[20]

HP Hotkey Support - CMIT

HP Recovery Manager

HP Jumpstart

HP Support Assistant[21]

HP Noise Cancellation Software

HP PhoneWise[28]

Buy Office

Manageability Features

HP Driver Packs[22]

HP System Software Manager (SSM)

HP BIOS Config Utility (BCU)

HP Client Catalog

HP Manageability Integration Kit Gen2[23]

Ivanti Management Suite[24]

Client Security Software

HP Client Security Suite Gen4[25] including:

HP Security Manager[26] (including Credential Manager, HP Password Manager, HP Spare Key)

FIPS-201 Compliant Fingerprint Sensor

HP Fingerprint Sensor[30]

HP Device Access Manager

HP Power On Authentication

Microsoft Defender[27]

Security Management

Secure Erase[18]

TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified)

SATA 0,1 port disablement (viaBIOS)

RAID configurations[31]

Serial, USB enable/disable (viaBIOS)

Power-on password (viaBIOS)

Setup password (viaBIOS)

Support for chassis padlocks and cable lock devices

Integrated hood sensor

HP Sure Click[32]

HP Sure Start Gen4[29]

HP Sure Run[33]

Features

HP Sure Recover[34]

TPM

Model: Infineon SLB9670

Version: 7.62.3126.0

Revision: TPM 2.0

FIPS 140-2 Compliant: Yes (select models only)

Smartcard Reader

Model number: Alcor AU9560

FIPS 201 Compliant: Yes

Fingerprint Sensor

HP Fingerprint Sensor[30]

FIPS-201 compliant fingerprint reader

IPv6 Certification:

Yes

MD5 Hash: Please follow the instructions below to access MD5 Hash.

Log-on to http://hp.com/support, enter your product name, select software and drivers, select OS, select driver. After select the appropriate "SOFTPAQ MD5:"? Field

Is the BIOS on this notebook ISO/IEC 19678:2015 (formerly NIST 800-147) compliant?:

Yes

UEFI version: 2.5

14. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming media players t information: http://windows.microsoft.com/en-us/windows-8/project-wireless-screen-miracast.
17. HP BIOSphere Gen4 features may vary depending on the PC platform and configurations requires Windows and 8th Gen Int
18. Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88.
19. Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscripti Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: http://www.absolute.com/c the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorizatio
20. HP ePrint Drive requires an Internet connection to HP web-enabled printer and HP ePrint account registration (for a list of Print times and connection speeds may vary.
21. HP Support Assistant requires Windows and Internet access.
22. HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.
23. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.h
24. Ivanti Management Suite subscription required.
25. HP Client Security Suite Gen 4 requires Windows and Intel® or AMD 8th generation processors.
26. HP Password Manager requires Internet Explorer or Chrome or FireFox. Some websites and applications may not be suppo
27. Microsoft Defender Opt in and internet connection required for updates.
28. HP PhoneWise Client is only available on select platforms. For supported platforms and HP PhoneWise system requiremen
29. HP Sure Start Gen4 is available on HP EliteBook products equipped with Intel® 8th generation processors Optional in front
30. HP Fingerprint Sensor sold separately or as an optional feature.
31. RAID configuration is optional and does require a second hard drive.
32. HP Sure Click is available on select HP platforms and supports Microsoft® Internet Explorer and Chromium™. Check http:/
33. HP Sure Run is available on HP Elite products equipped with Intel® or AMD® 8th generation processors
34. HP Sure Recover is available on HP Elite PCs with 8th generation Intel® or AMD processors and requires an open, wired net
42. HP Easy Clean requires Windows 10 RS3 and will disable the keyboard, touchscreen, and touchpad only. Ports are not disa

POWER

Power Supply

HP Smart 45W External AC power adapter, 2-prong (Japan only)[35]
HP Smart 65W External AC power adapter[35]
HP Smart 65W EM External AC power adapter[35]
HP USB Type-C™ 65W External AC power adapter[35]

Primary Battery
HP Long Life 3-cell, 50 Wh Li-ion[36]

Power Cord
2-wire plug - 1.0m (Japan only)[35]
3-wire plug - 1.0m[35]
3-wire plug - 1.8m[35]
Duckhead power cord - 1.0m[35]
Duckhead power cord - 1.8m[35]

Battery Life
MobileMark 2014 run time:
Sharing mode: 11 hours 15 minutes
Privacy mode: 9 hours[37]

35. Availability may vary by country.
36. Battery is internal and not replaceable by customer. Serviceable by warranty.
37. Windows 10 MM14 battery life will vary depending on various factors including product model, configuration, loaded appl naturally decrease with time and usage. See http://www.bapco.com for additional details.

WEIGHTS & DIMENSIONS

Weight
Starting at 3.59 lb (touch)[38]
Starting at 1.63 kg (touch)[38]

Dimensions (w x d x h)
12.84 x 9.22 x 0.71 in
326 x 234.3 x 18.05 mm

38. Weight will vary by configuration.

PORTS/SLOTS

Ports

1 Thunderbolt^{TM} (USB Type-C^{TM} connector)
2 USB 3.1 Gen 1 (1 charging)
1 HDMI 1.4b[8]
1 RJ-45
1 Docking connector
1 Headphone/microphone combo
1 AC power
SIM card slot
Smartcard reader[6]

8. HDMI cable sold separately.
6. Sold separately or as an optional feature.

ENVIRONMENTAL & INDUSTRY

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 Gold registered in the United States. See http://www.epeat.net for registration status in your country. Search keyword *generator on HP's 3rd party* option store for solar energy accessory at http://www.hp.com/go/options. • TCO or TCO Certified Edge		
	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)	8.24 W	8.11 W	7.97 W
	Normal Operation (Long idle)	3.95 W	3.41 W	3.46 W
	Sleep	0.85 W	0.88 W	0.85 W
	Off	0.50 W	0.53 W	0.50 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)	28 BTU/hr	28 BTU/hr	27 BTU/hr
Normal Operation (Long idle)	14 BTU/hr	12 BTU/hr	12 BTU/hr
Sleep	3 BTU/hr	3 BTU/hr	3 BTU/hr
Off	2 BTU/hr	2 BTU/hr	2 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	2.9	16
Fixed Disk - Random writes	3.3	22

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: CR2032 (coin cell)

Battery type: Lithium"

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 contains 0.0% post-consumer recycled plastic (by wt.)
- This product is 93.6% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	357 g
Internal:	PLASTIC/EPE (Expanded Polyethylene)	66 g
	PLASTIC/Polypropylene - PP	4 g
	PLASTIC/Polyethylene low density - LDPE	15 g

The plastic packaging material contains at least 0.0% recycled content.

The corrugated paper packaging materials contains at least 80% recycled content.

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, 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	Hewlett-Packard 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://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

SERVICE AND SUPPORT

HP Services offers 3-year and 1-year limited warranties and 90 day software limited warranty options depending on countr
is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warrant
http://www.hp.com/go/cpc.

39. HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geo
www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated t
rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your

CLEANING INSTRUCTIONS

If there is visible soiling of the computer surface:

Features

  - First turn off the computer to prevent electric shock or damage to components.

- Disconnect AC power.

- Disconnect all powered external devices.
  - Wipe the exterior of the computer with a soft, water-dampened cloth to remove the soil as needed.

- The cloth should be of dry microfiber or a chamois (static-free cloth without oil), or static-free cloth wipes.

- The cloth should be moist but not wet. Water dripping into the ventilation or other points of ingress can cause damage.

- Please do not use fibrous materials, such as paper towels, as these can scratch the computer. Over time, dirt and cleaning agents can get trapped in the scratches.
  - Allow the unit to air-dry before use or before additional cleaning with germicidal wipes.

If there is no visible soiling of the computer surface:

  - Launch the HP Easy Clean software application that came with your computer. This will disable the keyboard, display, and clickpad. (Or you could alternatively choose to put the computer in Sleep mode or turn off the computer).
  - Next, use any of the following germicidal wipe formulations to safely disinfect all exposed surfaces of your computer including the keyboard, display, clickpad, and chassis. (Refer to the directions for use provided by the manufacturer of the wipes):

  - Formula 1

- Benzyl-C12-18-alkyldimethyl ammonium chlorides: <0.1%

- Quaternary ammonium compounds, C12-14-alkyl[(ethylphenyl)methyl]di methyl, chlorides: <0.1%
  - Formula 2

- 2-Butoxyethanol: <5%

- Isopropanol: 10 - 20%

- 2-Butoxyethanol: 5%

- Benzyl-C12-18-alkyldimethyl ammonium chlorides: <0.5 %

- Quaternary ammonium compounds,C12-18-alkyl [(ethylphenyl) methyl]dimethyl, chlorides: <0.5%
  - Formula 3

- Quaternary ammonium compounds, C12-18-alkyl [(ethylphenyl) methyl] dimethyl, chlorides: <0.5%

- Benzyl-C12-18-alkyldimethyl ammonium chlorides: <0.5%
  - Formula 4

- Isopropyl alcohol: 55.0%

- Alkyl dimethyl benzyl ammonium chlorides: 0.25%

- Alkyl (68% C12, 32% C14) dimethyl ethylbenzyl ammonium chloride: 0.25%
  - Formula 5

- Isopropanol: 10 - 20%

- Ethylene Glycol Monobutyl Ether (2-Butoxyethanol): 1-5%

- Diisobutylphenoxyethoxyethyl dimethyl benzyl ammonium chloride: 0.1-0.5%

Features

  - Formula 6

- Sodium hypochlorite 0.1-1%
  - Formula 7

- Cellulose: 10-30%

- Ethyl alcohol: 0.10-1.00%
  - Formula 8

- Isopropyl alcohol: 30-40%

- Water: 60 - 70%
  - Please do not use cleaners that contain any petroleum based materials such as benzene or thinner. These may damage the notebook.
  - Do not close the computer until you've allowed it to completely air-dry.
  - Once the surface is dry, the computer is ready for use again. Depending on how you readied the computer earlier, either exit the HP Easy Clean software, remove the computer from Sleep mode, or turn the computer back on to start using your computer again

Compatible Gloves

- Touch on the screen and clickpad is tuned for support with bare hands and with the following list of surgical and exam gloves

- McKesson Perry® Performance Plus Sterile Surgical Gloves
- Smart Practice Neo Soothe Sterile Surgical Fitted Gloves
- SKINTX Nitrile Exam Gloves
- Precision Disposable Products Disposable Medical Exam Gloves
- Medline SensiCare Exam Gloves
- Kimberly Clark Safety Safeskin Exam Gloves

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	**Nominal Operating Voltage**	19V
	Average Operating Power	Win 10
	Integrated Graphics	6.78W
	Discrete Graphics	18W
	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%, 101.6° F (38.7° C) maximum wet bulb temperatur
Shock	**Operating**	40 G, 2 ms, half-sine
	Non-operating	200 G, 2 ms, half-sine
Random Vibration	**Operating**	0.75 grms
	Non-operating	1.50 grms
Altitude (unpressurized)	**Operating**	-50 to 10,000 ft (-15.24 to 3,048 m)
	Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
Planned Industry Standard Certifications	**UL**	Yes
	CSA	Yes
	FCC Compliance	Yes
	ENERGY STAR®	Select models[11]
	EPEAT®	Registered Gold in United States[8]
	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
	UKRSERTCOMPUTER	

11. Configurations of the HP Elitebook 840 G5 that are ENERGY STAR® qualified are identified as HP Elitebook 840 G5 ENERGY STA
and on http://www.energystar.gov.
8. EPEAT® registered where applicable. EPEAT registration varies by country. See http://www.epeat.net for registration status b
keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options.

DISPLAYS

Panel LCD 14 inch FHD (1920x1080) Anti-Glare WLED UWVA 72% cg 700nits eDP 1.3+PSR ultraslim Privacy	**Outline Dimensions (W x H)**	315.41x 196.14 max.
	Active Area	309.312 x 173.988
	Weight	<225g max.
	Diagonal Size	14.0"
	Thickness	3.0mm max.
	Interface	eDP 1.4a
	Surface Treatment	IPS
	Touch Enabled	Yes
	Contrast Ratio	Sharing mode, 600:1 (typ.) Privacy mode, 150:1 (typ.)
	Refresh Rate	120Hz
	Brightness	Sharing mode, 700 nits (typ.) Privacy mode, 350 nits (typ.)
	Pixel Resolution	1920 x 1080 (FHD)
	Format	RGB
	Backlight	LED
	Color Gamut Coverage	Sharing mode, 72% Privacy mode, 60%
	Color Depth	6 bits + Hi FRC
	Viewing Angle	Sharing mode, CR >10, L/R/U/D, 85/85/85/85 (typ.) Privacy mode CR>2, L/R/U/D, 50/50/85/85 (typ.)

STORAGE[1]

SSD 128 GB 2280 M2 SATA-3 TLC	**Drive Weight**	0.02 lb (10 g)
	Capacity	128 GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	ATA-8, SATA 3.0
	Maximum Sequential Read	Up To 520 MB/s
	Maximum Sequential Write	Up To 450 MB/s
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	DIPM; TRIM; DEVSLP

SSD 1 TB 2280 PCIe-3x4 NVMe TLC SS	**Drive Weight**	0.02 lb (10 g)
	Capacity	1 TB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 2900 MB/s
	Maximum Sequential Write	Up To 2000 MB/s
	Logical Blocks	2,000,409,263
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	TRIM; L1.2

SSD 256 GB 2280 M2 PCIe-3x4 SS NVMe TLC	**Drive Weight**	0.02 lb (10 g)
	Capacity	256 GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 2600 MB/s
	Maximum Sequential Write	Up To 900 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	TRIM; L1.2

Technical Specifications

SSD 256 GB 2280 M2 SATA-3 Self Encrypted OPAL2 TLC	**Drive Weight**	0.02 lb (10 g)
	Capacity	256 GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	ATA-8, SATA 3.0
	Maximum Sequential Read	Up To 530 MB/s
	Maximum Sequential Write	Up To 515 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	DIPM; TRIM; DEVSLP
256 GB 2280 PCIe NVMe Value Solid State Drive	**Drive Weight**	0.02 lb (10 g)
	Capacity	256 GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 1700 MB/s
	Maximum Sequential Write	Up To 600 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	TRIM; L1.2
SSD 360 GB 2280 PCIe-3x4 NVMe TLC	**Drive Weight**	0.02 lb (10 g)
	Capacity	360 GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 1700 MB/s
	Maximum Sequential Write	Up To 600 MB/s
	Logical Blocks	703,282,608
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	TRIM; L1.2

Technical Specifications

SSD 512 GB 2280 M2 PCIe-3x4 SS NVMe TLC	**Drive Weight**	0.02 lb (10 g)
	Capacity	512GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 2600 MB/s
	Maximum Sequential Write	Up To 1400 MB/s
	Logical Blocks	1,000,215,216
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	TRIM; L1.2

SSD 512 GB 2280 M2 SATA-3 TLC FIPS	**Drive Weight**	0.02 lb (10 g)
	Capacity	512 GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	ACS-3, SATA 3.2
	Maximum Sequential Read	Up To 530 MB/s
	Maximum Sequential Write	Up To 400 MB/s
	Logical Blocks	1,000,215,216
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	DIPM; TRIM; DEVSLP

SSD 512 GB 2280 PCIe-3x4 NVMe Self Encrypted OPAL2 TLC	**Drive Weight**	0.02 lb (10 g)
	Capacity	512 GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 2900 MB/s
	Maximum Sequential Write	Up To 1400 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	TRIM; L1.2

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

NETWORKING/COMMUNICATIONS

Intel® 802.11a/b/g/n/ac (2x2) 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
	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
	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 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 • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • 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 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 Half-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 White** - 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.

Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Electrical Interface	USB 2.0 compliant
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. The specifications for the 802.11ac WLAN are draft specifications 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 802.11ac WLAN devices
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).

Technical Specifications

HP lt4132 LTE/HSPA+ 4G- Mobile Broadband Module (Macan)[1]	**Technology/Operating bands**	LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3) MHz, 850 (Band 5), 2600 (Band 7), 900 (Band 8) MHz, 800 (Band 20), 700 (Band 28) MHz. HSPA+: 2100 (Band 1), 1900 (Band 2), 850 (Band 5), 900 (Band 8) MHz E-GPRS: 1900 (Band 2), 1800 (Band 3), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 10 LTE Specification CAT.4, 20MHz BW WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification E-GPRS: Class B, Multi-slot class 12, coding schemes CS1 - CS4 and MSC1 - MSC9
	GPS	Standalone, A-GPS (MS-B and LTO)
	GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz
	Maximum data rates	LTE: 150 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload) EDGE: 236.8 kbps (Download), 236.8 kbps (Upload) GPRS: 85.6 kbps(Download), 85.6 kbps (Upload)
	Maximum output power	LTE: 23 dBm HSPA+: 23.5 dBm E-GPRS 1900/1800: 26 dBm E-GPRS 900/850: 27 dBm GPRS 1900/1800: 29.5 dBm GPRS 900/850: 32.5 dBm
	Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average) E-GPRS: 2,600 mA (peak); 500 mA (average)
	Form Factor	M.2, 3042-S3 Key B
	Weight	6 g
	Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm

1. Wireless access point and Internet service is required. Availability of public wireless access point is limited. The specifications for the 802.11ac WLAN are draft specifications 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 802.11ac WLAN devices

Realtek 802.11b/g/n (2x2) 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[7] • 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 07, (20MHz)

Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM,
Security[3]	• IEEE and Wi-Fi® 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 • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required) GPRS 900/850: 32.5 dBm
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[2]	• 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +13dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +12dBm minimum • 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 60 mW (WLAN unassociated) Radio disabled: 30 mW
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[4]	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -86dBm maximum 802.11a, 54Mbps : -72dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded 2.4 GHz antennas are provided to the card to support WLAN and Bluetooth communications (Support Dual antenna or Single antenna, depend on platform requirement)
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight	Type 2230 : 2.8g Or Type 1630 : 2g
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 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. Wireless access point and Internet service is required. Availability of public wireless access point is limited. The specifications for the 802.11ac WLAN are draft specifications 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 802.11ac WLAN devices
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).

Technical Specifications

HP lt4210 LTE/HSPA+ 4G Mobile Broadband Module (Pandora)[1]	**Technology/Operating bands**	LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 17 lower), 800 (Band 20), 700 (Band 28). HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 10 LTE Specification CAT.4, 20MHz BW WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification 1xEVDO Release 0, A and B. E-GPRS: Class B, Multi-slot class 12, coding schemes CS1 - CS4 and MSC1 - MSC9
	GPS	Standalone, A-GPS (MS-A, MS-B and XTRA)
	GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz
	Maximum data rates	LTE: 150 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload) CDMA 1xRTT: 153.6 kbps (Download), 153.6 kbps (Upload) EVDO Rel.A: 3.1 Mbps (Download), 1.8 Mbps (Upload) EVDO Rel.B: 14.7 Mbps (Download), 5.4Mbps (Upload) EDGE: 236.8 kbps (Download), 236.8 kbps (Upload) GPRS: 85.6 kbps(Download), 85.6 kbps (Upload)
	Maximum output power	LTE: 23 dBm HSPA+: 23.5 dBm 1xRTT/EVDO: 24dBm E-GPRS 1900/1800: 26 dBm E-GPRS 900/850: 27 dBm GPRS 1900/1800: 29.5 dBm GPRS 900/850: 32.5 dBm
	Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average) 1xRTT/EVDO: 1,000 mA (peak); 700 mA (average) E-GPRS: 2,800 mA (peak); 500 mA (average)
	Form Factor	M.2, 3042-S3 Key B
	Weight	6.2 g
	Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm

1. Wireless access point and Internet service is required. Availability of public wireless access point is limited. The specifications for the 802.11ac WLAN are draft specifications 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 802.11ac WLAN devices

Near Field Communications Controller (optional)

	Dimensions (L x W x H)	Module 25 mm by 10 mm by 2.0 mm
	Chipset	NPC100
	System interface	I2C

NFC RF standards	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 ISO/IEC 18092 ECMA-340 NFCIP-1 Target and Initiator ECMA-320 NFCIP-2
NFC Forum Support	Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and NFCIP-2
Reader (PCD-VCD) Mode(1)	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 MIFARE 1K MIFARE 4K MIFARE DESFire FeliCa Jewel and Topaz cards
Card Emulation (PICC-VICC) Mode(1)	ISO/IEC 14443 A ISO/IEC 14443 B and B' MIFARE FeliCa
Frequency	13.56 MHz
NFC Modes Supported	Reader/Writer, Peer-to-Peer
Raw RF Data Rates	106, 212, 424, 848 kbps
Operating temperature	0°C to 70°C
Storage temperature	-20°C to 125°C
Humidity	10-90% operating 5-95% non-operating
Supply Operating voltage	2.97 to 5.5 Volts
I/O Voltage	1.8V or 3.3V

Power Consumption (Booster enable, VBAT= 3.3V, VCC_BOOST = 5V)

Mode	Power Consumption, Typical
Polling	7.3 mA
Detected Test Tag Type 1	Total 283.8 mA Net Module 236.8 mA
Detected Test Tag Type 2	Total 288.8 mA Net Module 241.8 mA
Detected Test Tag Type 3	Total 287.7 mA Net Module 240.7 mA
Detected Test Tag Type 4	Total 282.3 mA Net Module 235.3 mA
Antenna	Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module.

RFID Controller (optional)

Dimensions (L x W x H)	Module 50 mm by 23 mm by 2.89 mm
Chipset	SiM3U156+SiM3U154+AMS3911

System interface	USB 2.0
NFC RF standards (In reading CSN)	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 ISO/IEC 18092 ECMA-340 NFCIP-1
NFC Forum Support	Tag Type 1, Type 2, Type3 and Type 4 in reading CSN
Reader Mode	13.56MHz: ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 MIFARE 1K MIFARE 4K MIFARE DESFire FeliCa Topaz cards HID iClass ISO 125kHz: HID Prox UID AWID UID CASI-RUSCO UID EM 410x UID Indana ASP/ASP+ UID
Frequency	13.56MHz and 125kHz
NFC Modes Supported	Reader
Raw RF Data Rates	106, 212 kbps
Operating temperature	-30°C to 70°C
Storage temperature	-40°C to 80°C
Humidity	10-90% operating 5-95% non-operating
Supply Operating voltage	4.35 to 5.25 Volts

Power

Mode	Power Consumption, Typical
Polling	75mA
Comunication	85mA
Antenna	13.56MHz/125kHz combo antenna. Antenna connector, 0.5mm pitch, 16pin connector FPC.

POWER

AC Adapter 65 Watt nPFC USB type C	**Dimensions**	74x74x28.5mm	
	Weight	unit: 245g +/- 10g	
	Input	**Input Efficiency**	81.5% min at 115 Vac/ 230Vac @ 5V/3 86.7% min at 115 Vac/ 230Vac @ 9V/3 88% min at 115 Vac/ 230Vac @ 10V/5 88% min at 115 Vac/ 230Vac @ 12V/5 89% min at 115 Vac/ 230Vac @ 15V/4 89% min at 115 Vac/ 230Vac @ 20V/3
		Input frequency range	47 ~ 63 Hz
		Input AC current	1.7 A at 90 VAC and maximum load
	Output	**Output power**	65W
		DC output	5V/9V/10V/12V/15V/20V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<8.0A
	Connector	Duck head / duck head power cord, without Smart ID DC connector	
	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	5% to 95%
		Storage Humidity	5% to 95%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, S approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, C CCC, NOM-1 NYCE. MTBF - over 100,000 hours at 25°C ambient condition.	

Technical Specifications

HP 65W Smart AC adapter	**Dimensions**	107.0x47.0x30.0mm	
	Weight	unit: 250g +/- 10g	
	Input	**Input Efficiency**	88.0 % at 115 Vac and 89.0 % at 230V
		Input frequency range	47 ~ 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
	Connector	4.5mm Barrel Type	
	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%
	Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, S approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CCC, NOM-1 NYCE. MTBF - over 200,000 hours at 25°C ambient condition.	
HP 65W EM Smart AC adapter	**Dimensions**	102x55x30mm	
	Weight	270g +/- 10g	
	Input	**Input Efficiency**	87% min at 115V/230V
		Input frequency range	47 to 63 Hz
		Input AC current	1.7 A at 90 VAC and maximum load
	Output	**DC output**	65W(19.5V/3.33A)
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<11A, Over voltage protection- 29V m shutdown
	Connector	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cord	
	Environmental Design	**Operating temperature**	0° to 35° C
		Non-operating (storage) temperature	-20° to 85° C
		Altitude	0 to 5,000 m
		Humidity	0% to 95%
		Storage Humidity	0% to 95%
	Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, S approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CCC, NOM-1 NYCE. MTBF - over 200,000 hours at 25°C ambient condition.	

Battery SS 3 Cell 50 WHr Long Life -PL	**Dimensions** (H x W x L)	L 278.7mm x W 76.3mm x H 7.1mm	
	Weight	193 +/- 10g	
	Cells/Type	3cell Lithium-Ion Polymer cell / P604883A1	
	Energy	**Voltage**	11.55V/
		Amp-hour capacity	4.113Ah/ 4.330Ah
		Watt-hour capacity	50Wh
	Temperature	**Operating (Charging)**	0° to 50° C
		Operating (Discharging)	-10° to 60° C
	Fuel Gauge LED	N/A	
	Warranty	3 years	
	Optional Travel Battery Available	No	

COUNTRY OF ORIGIN

China

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

Type	Description	Part #
Cases	HP Business Case	2SC66AA
	HP Slim Top Load	F3W15AA
	HP Exec Midnight 15.6" Backpack	1KM16AA
Docking	HP Thunderbolt Dock 120W G2	2UK37AA
	HP USB-C Universal Dock	1MK33AA
	HP USB-C Dock G4	3FF69AA
	HP USB-C Mini Dock	1PM64AA
	HP UltraSlim Docking Station	D9Y32AA
Input/Output	HP Slim Wireless Keyboard and Mouse	T6L04AA
	HP Slim USB Keyboard and Mouse	T6T83AA
	HP Wireless (Link-5) Keyboard	T6U20AA
	HP Wireless Premium Mouse	1JR31AA
	HP USB Premium Mouse	1JR32AA
	HP USB 3-Button USB Laser Mouse	H4B81AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP Slim Bluetooth Mouse	F3J92AA
	HP Elite Presenter Mouse	2CE30AA
	HP USB-C to USB-A Hub	Z6A00AA
	HP USB-C to DP	N9K78AA
	HP USB-C to VGA	N9K76AA
	HP HDMI to DVI	F5A28AA
	HP HDMI to VGA	H4F02AA
	HP Stereo 3.5mm Headset	T1A66AA
	HP Stereo USB Headset	T1A67AA
Power	HP 65W Slim AC Adapter	H6Y82AA
	HP 65W Smart AC Adapter	H6Y89AA
Storage	HP USB External DVDRW Drive	F2B56AA
	HP 128 GB M2 TLC SATA-3 SSD (2280)	2JB96AA
Memory	HP 4 GB 2400MHz DDR4 Memory	Z4Y84AA
	HP 8 GB 2400MHz DDR4 Memory	Z4Y85AA
	HP 16 GB 2400MHz DDR4 Memory	Z4Y86AA
Security	HP Docking Station Cable Lock	AU656AA
	HP Keyed Cable Lock	T0Y14AA

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

	HP Keyed Cable Lock 10mm	T1A62AA
	HP Dual Head Keyed Cable Lock	T1A64AA
	HP 14.1 Privacy Filter	V8Z57AA
UCC	HP USB Collaboration Keyboard	Z9N38AA
	HP Wireless Collaboration Keyboard	Z9N39AA
	HP UC Wireless Mono Headset	W3K08AA
	HP UC Wireless Duo Headset	W3K09AA
	HP UC Speaker Phone	K7V16AA
Displays	HP HC240 24-inch Heathcare Edition Display	Z0A71A4
	HP HC270 27-inch Heathcare Edition Display	Z0A73A4
	HP HC270cr 27-inch Healthcare Edition Display	1QW03A8 (for NA) 1QW03AA (for rest of the world)

Summary of Changes

Date of change:	Version History:		Description of change:
09/04/2018	V1 to V2	Update	Processors, Cleaning instructions sections
17/04/2018	V2 to V3	Update	Cleaning Instructions
30/04/2018	V3 to V4	Update	Weight and Dimensions
08/05/2018	V4 to V5	Added	Environmental tab
18/07/2018	V5 to v6	Added	Display