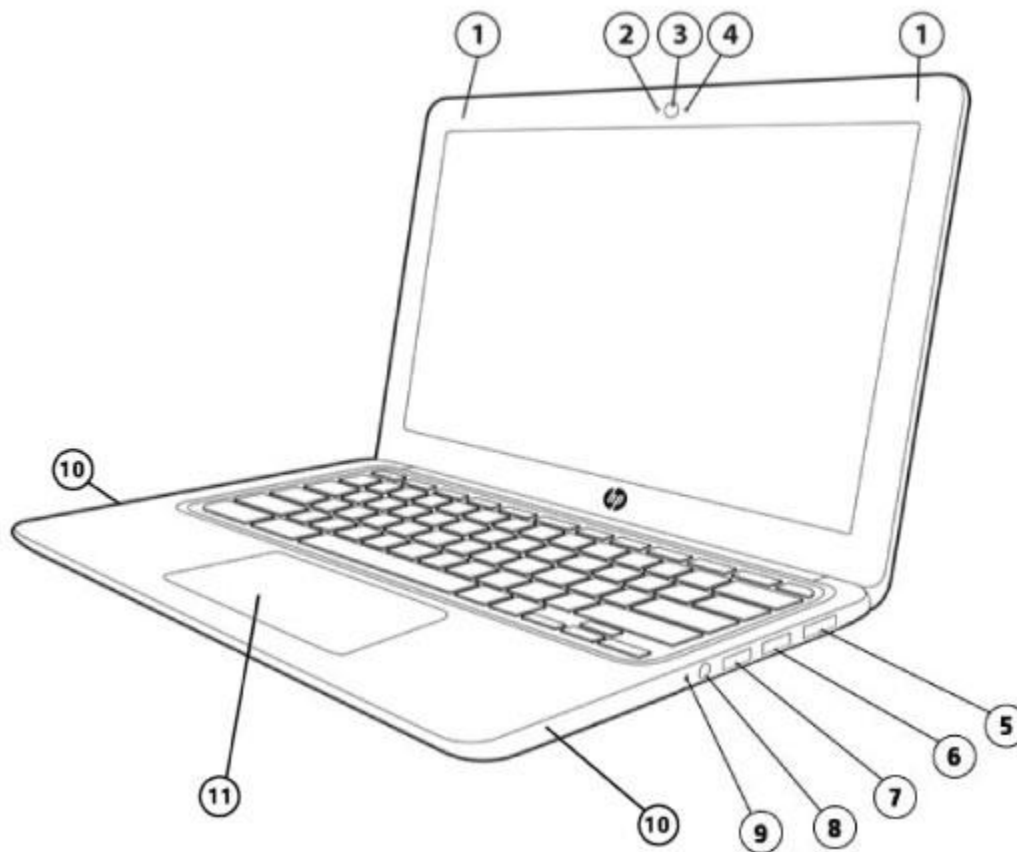


Overview

HP Chromebook 11 G4 Education Edition

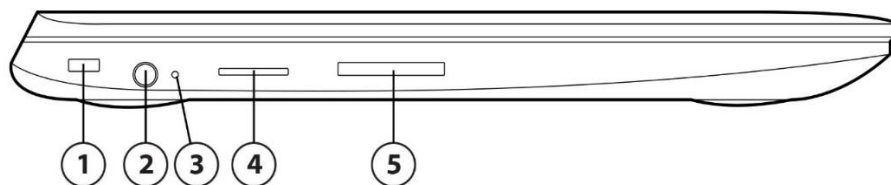


Front Right View

- | | |
|--------------------------|------------------------------------|
| 1. WLAN antennas | 7. 2.0 USB port |
| 2. Microphone | 8. Headphone/Microphone combo jack |
| 3. Webcam lens | 9. Power LED |
| 4. Webcam LED | 10. Rubber edges |
| 5. HDMI | 11. Touch pad |
| 6. 3.0 USB charging port | |

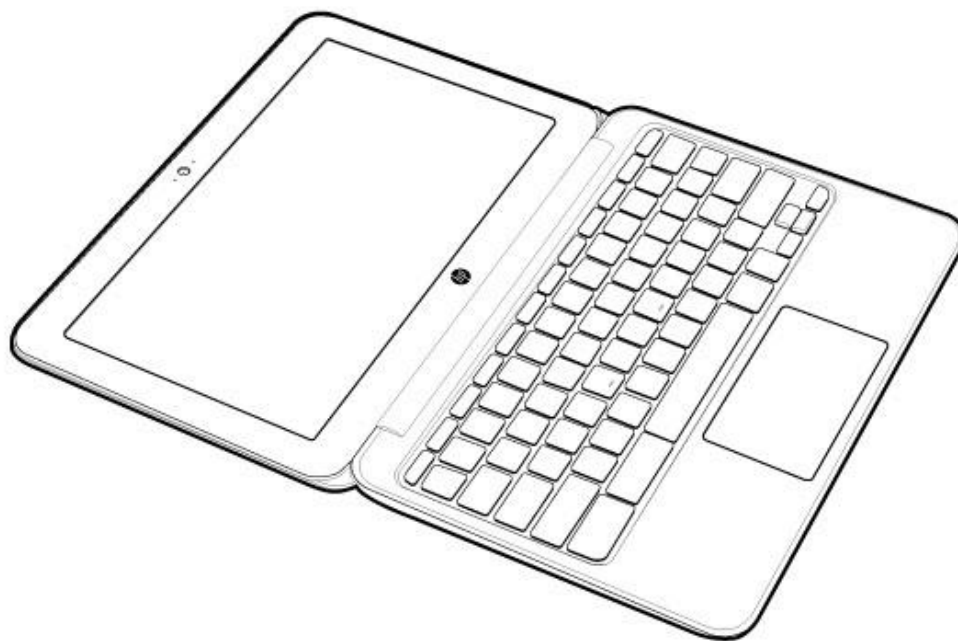


Overview



Left View

1. Security lock slot
2. AC Smart Pin adapter plug (4.5mm barrel)
3. AC Plug LED
4. SIM Card slot (WWAN models only)
5. Media Card reader



Flat View



Overview

AT A GLANCE

- Co-molded rubber edges, a 180° hinge, and a spill-resistant keyboard help keep your HP Chromebook 11 EE protected from constant travel between classrooms, backpacks, and lockers.
- Collaborate easily with the 180° opening on the HP Chromebook 11 EE with an optional IPS panel for a wide viewing angle.
- Enjoy affordable, convenient mobile productivity with Intel® Celeron® processor.
- 11.6" diagonal HD LED Anti-glare (1366 x 768) Display or 11.6" diagonal HD IPS Anti-glare (1366 x 768) Display
- Up to 9 hours and 30 minutes of battery life to comfortably last the entire school day.
- Available LTE/HSPA+ WWAN connectivity allows you to stay productive wherever work takes you.
- Your Chromebook boots up within 10 seconds and you can be browsing online and working in Google Apps just moments later.
- Store up to 100 GB of your files and content with complimentary Google Drive. Your own virtual hard drive is available anywhere the Internet is accessible with this complimentary two year promotion.
- Purchase with confidence with a limited 1-year warranty and 3-year extended service available with optional HP Care Services.
- Passed military standard MIL STD-810G testing*.

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

*MIL STD 810G testing is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Damage under the MIL STD test conditions or any accidental damage requires an optional HP Accidental Damage Protection Care Pack.



Features

PRODUCT NAME

HP Chromebook 11 G4 Education Edition

OPERATING SYSTEM

Preinstalled Chrome OS™

PROCESSOR

Intel® Celeron® N2840, (2.16 GHz, Turbo1. up to 2.58 GHz, 1 MB 1333 MHz L2 cache, 2 cores)¹

1. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering is not a measurement of higher performance.

CHIPSET

Integrated SoC PCH

GRAPHICS

Intel® HD Graphics

- Support HD Decode, DX11, and HDMI

DISPLAY

Internal

11.6" diagonal HD¹ IPS Anti-glare LED Slim UWVA (1366 x 768)

11.6" diagonal HD¹ WLED Anti-glare Flat SVA (1366 x 768)

1. High definition content is required to view high-definition images.

External

HDMI v1.4b Supporting: up to 1920 x 1080 @ 60 Hz

NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.

STORAGE AND DRIVES

Support eMMC

16 GB

32 GB

Embedded Multi Media Card¹

Store up to 100 GB with Google Drive (2-year subscription included)²

1. 5.1 GB of the eMMC are dedicated/allocated to the Chrome OS™ partition.



Features

2. This offer is tied to this device and is non-transferable. If this device is returned, the extra storage will be revoked. In order to redeem this offer, you will need to be on Chrome OSTM 23 or later. Internet access is required and not included. Additional information about storage plan refunds, renewals, cancellations and expiration is available at the Google website: <https://support.google.com/chromebook/answer/2703646?hl=en>

MEMORY

Standard

On Board system memory

DDR3L-1600 Single Channel (Transfer rates up to 1600 MT/s) For 2 GB Memory

DDR3L-1600 Dual Channel(Transfer rates up to 1600 MT/s) For 4 GB Memory

Support

Up to 4 GB max on-board system memory

2 GB (2 GB x 16 x 4 pcs)

4 GB (2 GB x 16 x 8 pcs)

NETWORKING/COMMUNICATIONS

Wireless LAN (WLAN)

Intel® Dual Band Wireless-AC 7260 802.11 ac (2x2) WiFi + Bluetooth 4.0 Combo¹

Intel® Dual Band Wireless-N 7260AN 802.11 a/b/g/n (2x2) WiFi + Bluetooth 4.0 Combo¹

Wireless WAN (WWAN)^{2,3}

HP Lt4110 LTE/HSPA+ 4G Mobile Broadband

SIM card Slot (user accessible)

1. Wireless access point and Internet service is required and is not included. Availability of public wireless access points limited.
2. WWAN modules are only available if preconfigured. WWAN connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors.
3. 4G LTE not available in all regions or countries and requires factory configuration.

Internal Card Expansion

One M.2 slot for WLAN

One M.2 slot for WWAN

AUDIO/MULTIMEDIA

Audio

HP Audio

Dual speakers

Headphone / Microphone Combo Jack

One digital microphone with echo cancellation and noise suppression appropriate software

Webcam¹

HP TrueVision HD²

- HD² camera - Fixed (no tilt) + activity LED, USB 2.0, M-JPEG
- 1280 x 720 by 30 frames per second



Features

- Single Digital Microphones w/ appropriate software - echo cancellation, noise suppression
- 1. Internet access required and not included.
- 2. High definition content is required to view high-definition images.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

The black, textured, island-style Chrome OS™ keyboard features Spill-resistant, full-pitch key layout with features such as isolated inverted-T cursor control keys, editing keys, both left and right control and alt keys, and 12 function keys. International key layouts are available. Other features include hotkeys for instant access to, brightness, etc. 19-mm x 19-mm key pitch (center-to-center spacing), 2.2-mm stroke, comfort-dished keycaps, and bright key legends for improved visibility in low light conditions.

Pointing Devices

Touchpad with multitouch gestures enabled
Taps enabled as default

Buttons and Function Keys

Power key, Search key, Back, Forward, Refresh, Full Screen, Switch window

SOFTWARE AND SECURITY

Preinstalled Software

Chrome OS™ and its default set of apps

Security

Trusted Platform Module (TPM) 1.2
Security lock slot
Optional UltraSlim Kensington Security Lock (Sold separately.)

POWER

Power Supply

HP 45W Smart AC Adapter¹
HP 65W EM Smart AC Adapter (India and China only)
Power cord included is 3.3-foot (1.0 meter)

1. AC adapter uses a 90 degree 4.5mm DC plug.

Primary Battery

3-cell (36 WHr) Lithium-Ion Polymer Long Life battery

Battery Life¹

Up to 9 hours 30 minutes

NOTE: battery is internal and not replaceable by customer.

1. Testing conducted by HP using Google Chrome OS power LoadTest. Battery life will vary and the maximum capacity of the battery will naturally decrease with time and usage. See <http://www.chromium.org/chromium-os/testing/power-testing> for test details.



Features

WEIGHTS & DIMENSIONS

Weight¹

Starting at 2.72 lbs (1.233 kg) (WiFi-only SKU)

Starting at 2.83 lbs (1.283 kg) (WWAN SKU)

Dimensions (w x d x h)

11.8 x 8.13 x 0.8 in (Rear)

300 x 206.7 x 20.45 mm (Rear)

NOTE: Height varies depending upon where on the notebook the measurement is made.

1. Weight varies by configuration and components.

PORTS/SLOTS

Ports

(1) AC Smart Pin adapter plug (4.5mm barrel)

(1) Headphone/Microphone combo jack

(1) USB 3.0 – (right side)

(1) USB 2.0 – (right side)

(1) HDMI v1.4b

HP Multi-Format Digital Media Card Reader

Support SD/SDHC/SDXC up to UHS-50

Push-Push Insertion/Removal

SERVICE AND SUPPORT

HP Services offers a 1-year limited warranty. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year limited warranty as the platform. On-site service and extended coverage is also available. HP Care Pack Services^{1,2} 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>.

1. Sold separately or as an optional feature.
2. Service levels and response times for HP Care Services may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc



Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	Nominal Operating Voltage	19.5 V
	Average Operating Power	27 W
	Max Operating Power	< 45 W
Temperature	Operating	41° to 95° F (5° to 35° C)
	Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	Operating	10% to 90%, non-condensing
	Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
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	UL	Yes
Certifications	CSA	No
	FCC Compliance	Yes
	ENERGY STAR®*	Yes
	EPEAT**	Yes
	ICES	Yes
	Australia / NZ A-Tick Compliance	Yes, called RCM
	CCC	No
	Japan VCCI Compliance	Yes
	KC	No



Technical Specifications

BSMI	Yes
CE Marking Compliance	Yes
BNCI or BELUS	Yes, called EAC or CU
CIT	TBD
GOST	Yes, called EAC or CU
Saudi Arabian Compliance (ICCP)	No
SABS	No
UKRSERTCOMPUTER	No

* Configurations of the HP Chromebook 11 G4 Education Edition is ENERGY STAR qualified and is identified as HP Chromebook 11 G4 Education Edition on HP websites and on <http://www.energystar.gov>.

** EPEAT registration varies by country. See www.epeat.net for registration status by country. EPEAT status listed above applies to U.S.

For accessibility information on HP products, please visit: <http://www.hp.com/accessibility>.

DISPLAY

11.6" diagonal HD IPS AntiGlare (1366x768) LED Slim (3.0mm), UWVA

Outline Dimensions (W x H x D)	278.5 x 168.5 x 3.0mm max.	
Active Area	256.125 x 144.0mm typ.	
Weight	200g max.	
Diagonal Size	11.6 inch	
Contrast Ratio	600:1	
Refresh Rate	60Hz	
Brightness	220nits typ.	
Pixel Resolution	Format	1366 x 768
	Configuration	RGB Stripe



Technical Specifications

Interface eDP

LCD Mode IPS

PPI 135

Viewing Angle 85/85/85/85

11.6" diagonal HD WLED Anti-Glare (1366x768) flat (3.6mm), SVA

Outline Dimensions 278.5 x 168.5 x 3.6mm max.
(W x H x D)

Active Area 256.125 x 144.0mm typ.

Weight 235g max.

Diagonal Size 11.6 inch

Contrast Ratio 300:1

Refresh Rate 60Hz

Brightness 220nits typ.

Pixel Resolution **Format** 1366 x 768

Pixel Resolution **Configuration** RGB Stripe

Interface eDP

LCD Mode TN

PPI 135

Viewing Angle 40/40/15/30

Networking/Communications

Intel® Dual Band Wireless-AC 7260 802.11 ac (2x2) WiFi + Bluetooth 4.0 Combo

Wireless LAN Standards IEEE 802.11a



Technical Specifications

	IEEE 802.11b IEEE 802.11g
	IEEE 802.11n IEEE 802.11ac
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n <ul style="list-style-type: none"> • 2.402 – 2.482 GHz 802.11a/n <ul style="list-style-type: none"> • 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 • 2.402 – 2.482 GHz
Data Rates	<ul style="list-style-type: none"> • 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
Security¹	<ul style="list-style-type: none"> • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • 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 Power²	<ul style="list-style-type: none"> • 2.4G: +13.5dBm minimum



Technical Specifications

	<ul style="list-style-type: none"> • 5G: +12dBm minimum • Maximum output power must be able to achieve modular regulatory certification with notebooks that have antennas >20cm from the user and peak gain of +3dBi at 2.4GHz and +4dBi at 5GHz
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 250 mW (WLAN Associated) Idle mode: 100 mW (WLAN unassociated) Radio disabled: 75 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	802.11b:-95 dBm (1 Mbps), -93 dBm (2 Mbps), -91 dBm (5.5 Mbps), -88 dBm (11 Mbps) 802.11a/g:-90 dBm (6 Mbps), -89 dBm (9 Mbps), -87 dBm (12 Mbps), -85 dBm (18 Mbps), -82 dBm (24 Mbps), -79 dBm (36 Mbps), -76 dBm (48 Mbps), -74 dBm (54 Mbps) 802.11n:-69 dBm (72.2 Mbps), -66 dBm (300 Mbps) 802.11ac: -83 dBm (65Mbps), -79 dBm (195Mbps), -73 dBm (390Mbps), -66 dBm (650Mbps), -60 dBm (867Mbps)
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	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)
Weight	3.1g
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)



Technical Specifications

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	

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

Bluetooth Specification

V4.0 High Speed, V2.1+EDR, backwards compatible with V1.1, 1.2 and 2.0

Number of Available Channels	79 (1 MHz) available channels
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
Transmit Power	-6 dBm to 4 dBm (Bluetooth Class II)
Receiver Sensitivity	Better than -80 dBm at 0.1 % raw bit error rate
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Sleep 17 mW
Antenna Range	Internally integrated within module Up to 33 ft (10 m)
Electrical Interface	USB 2.0 compliant Microsoft Windows Plug and Play compliant Broadcom Bluetooth for Windows
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves
Security	Full support of Bluetooth Security Provisions
Power Management	Microsoft Windows ACPI, and USB Bus Support Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
Certifications	All necessary regulatory approvals for supported countries, including: FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	Generic Access Profile (GAP) Service Discovery Application Profile (SDAP) Serial Port Profile (SPP) Dial_Up Networking Profile (DUN) Generic Object Exchange Profile (GOEP)



Technical Specifications

Object Push Profile (OPP)
 File Transfer Profile (FTP)
 Synchronization Profile (SYNC)
 Hard Copy Cable Replacement (HCRP)
 Personal Area Networking Profile (PAN)
 Human Interface Device Profile (HID)
 Generic Audio/Video Distribution Profile (GAVDP)
 Advanced Audio/Video Distribution Profile (A2DP)
 FAX Profile (FAX)
 Basic Imaging Profile (BIP)
 Headset Profile (HSP)
 Hands Free Profile (HFP)
 Basic Printing Profile (BPP)
 VDP (Video Distribution Profile)
 AVRCP (Audio Video Remote Control Profile)

Intel® Dual Band Wireless-N 7260AN 802.11 a/b/g/n (2x2) WiFi + Bluetooth 4.0 Combo

Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 7, Windows Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN)
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
Antenna Structure	2 transmit; 2 receive (2x2)
Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
Modulation	Direct Sequence Spread Spectrum CCK, BPSK, QPSK, 16-QAM, 64-QAM



Technical Specifications

Security¹	<ul style="list-style-type: none">○ IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only○ AES-CCMP: 128 bit in hardware○ 802.1x authentication○ WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.○ WPA2 certification○ IEEE 802.11i○ Cisco Certified Extensions, all versions through CCX4 and CCX Lite○ WAPI
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between band Access Points
Output Power²	<ul style="list-style-type: none">○ 2.4G: +13.5dBm minimum○ 5G: +12dBm minimum
Power Consumption	Transmit: 2.0 Watts Receive: 1.6 Watts Idle mode ³ : 250 mW (WLAN Associated) Idle mode: 100 mW (WLAN unassociated) Radio off: 75 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity⁴	802.11g:-90 dBm (6 Mbps), -89 dBm (9 Mbps), -87 dBm (12 Mbps), -85 dBm (18 Mbps), -82 dBm (24 Mbps), -79 dBm (36 Mbps), -76 dBm (48 Mbps), -74 dBm (54 Mbps) 802.11b:-95 dBm (1 Mbps), -93 dBm (2 Mbps), -91 dBm (5.5 Mbps), -88 dBm (11 Mbps) 802.11g:-90 dBm (6 Mbps), -89 dBm (9 Mbps), -87 dBm (12 Mbps), -85 dBm (18 Mbps), -82 dBm (24 Mbps), -79 dBm (36 Mbps), -76 dBm (48 Mbps), -74 dBm (54 Mbps) 802.11n:-69 dBm (150 Mbps), -66 dBm (300 Mbps)
Antenna Connections	2 U.FL type connectors (output impedance of 50 ± 2 ohms)
Form Factor	PCI-Express Half-MiniCard
Dimensions	0.12 x 1.06 x 1.18 in (3.1 x 26.8 x 30.0 mm)



Technical Specifications

Weight	3.1g	
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	

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode and on battery power.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.

HP Integrated Module with Bluetooth 4.0+EDR Wireless Technology

Bluetooth Specification	4.0+EDR Compliant
Dimensions	1.18 x 0.26 x 0.13 in (30 x 6.5 x 3.25 mm)
Frequency Band	2402 to 2480 MHz
Number of Available Channels	79 (1 MHz) available channels
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps
	Synchronous Connection Oriented links up to 3, 64 kbps, voice channels
	Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
Transmit Power	-1.5 dBm to 4 dBm (Bluetooth Class II)
Receiver Sensitivity	Better than -20 dBm at 0.1 % raw bit error rate



Technical Specifications

Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Antenna	Internally integrated within module
Range	Up to 33 ft (10 m)
Electrical Interface	USB 2.0 compliant Microsoft Windows Plug and Play compliant
Bluetooth Software Supported	Broadcom Bluetooth for Windows Microsoft Windows Bluetooth Software
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves
Security	Full support of Bluetooth Security Provisions
Power Management	Microsoft Windows ACPI, and USB Bus Support Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
Certifications	All necessary regulatory approvals for supported countries, including: FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	Serial Port Profile (SPP) ¹ Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) ^{1,2} Generic Object Exchange Profile (GOEP) ^{1,2} Object Push Profile (OPP) ^{1,2} File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) ^{1,2} Personal Area Networking Profile (PAN) ^{1,2} Human Interface Device Profile (HID) ^{1,2} FAX Profile (FAX) Basic Imaging Profile (BIP) ²



Technical Specifications

Headset Profile (HSP)
 Hands Free Profile (HFP)
 Advanced Audio Distribution Profile (A2DP)

HP It4110 LTE/HSPA+ Intel® 4G Mobile Broadband Module

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 13 upper), 700 (Band 17 lower), 800 MHz (Band 20, DD800) MHz HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 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	8
	WCDMA R99, 3GPP Release 5, 6 and 7 UMTS Specification E-GPRS: Class B, Multi-slot class 33, coding schemes CS1 - CS4 and MSC1 - MSC9		
GPS	Standalone, A-GPS		
GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz		
Maximum data rates	LTE: 100 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21.6 Mbps (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		



Technical Specifications

E-GPRS 1900/1800: 26.5 dBm

E-GPRS 900/850: 27.5 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: 2,800 mA (peak); 700 mA (average)

Form Factor

M.2, 3042-S3 Key B

Weight

6 g

Dimensions

(Length x Width x Thickness)

1.65 x 1.18 x 0.09 in (42 x 30 x 2.3 mm)

* Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Please contact your service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. Not available on all products or in all countries.

AUDIO/MULTIMEDIA

Hardware

Implementation

MAX98090 Ultra-Low Power Stereo Audio Codec

Function Key Volume Controls

Volume up, volume down, and mute

Full Duplex

Yes

Microphone In

Mono

Headphone/Line Out

Stereo

Integrated Microphone

Yes, single digital microphone

Audio Output Quality

Frequency Response

20 Hz - 20 kHz

Total Harmonic Distortion + Noise

-73 dB (Typ.)



Technical Specifications

	Noise Floor	-120 dB
	Play/Record Sampling Rate(s)	8 kHz - 96kHz
	DAC	16, 20 or 24-bit
	ADC	16 or 20-bit
Integrated Stereo Speakers	Power Rating	2 Watts
	Impedance	4 ohms

POWER

HP 45W Smart AC Adapter

Dimensions	3.74 x 1.57 x 1.04 in (9.5 x 4.0 x 2.65 cm)	
Weight	0.386 lb (175g) max	
	90 to 265 VAC	
Input	Input Efficiency	87.74% at 115Vac and 88.4% at 230Vac
	Input frequency range	47 to 63 Hz
	Input AC current	1.4 A at 90 VAC
	Output power	45W
	DC output	19.5V
	Hold-up time	5 msec at 115 VAC input
Output	Output current limit	<8.0A
	Over voltage protection	< 29V max automatic shutdown
	Over short protection	Auto-recovery and no damage
Connector	3 pin/grounded, mates with interchangeable cords	
	Operating temperature	32° to 95° F (0° to 35° C)



Technical Specifications

	Non-operating (storage) temperature	-4° to 185° F (-20° to 85° C)
Environmental Design	Altitude	0 to 16,400 ft (0 to 5,000 m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
EMI and Safety Certifications	*CE Mark - full compliance with LVD and EMC directives	
	* Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV;	
	Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE.	
	* MTBF - over 200,000 hours at 25°C ambient condition.	

HP 65W EM Smart AC Adapter

Dimensions	4.98 x 1.97 x 1.18 in (12.65 x 5.0 x 3.0 cm)	
Weight	0.62 lb (290g) max	
	90 to 265 VAC	
Input	Input Efficiency	87.74% at 115Vac and 88.4% at 230Vac
	Input frequency range	47 to 63 Hz
	Input AC current	1.7 A at 90 VAC
	Output power	65W
	DC output	19.5V
	Hold-up time	5 msec at 115 VAC input
Output	Output current limit	<11.0A
	Over voltage protection	< 29V max automatic shutdown
	Over short protection	Auto-recovery and no damage
Connector	3 pin/grounded, mates with interchangeable cords	
Environmental Design	Operating temperature	32° to 95° F (0° to 35° C)



Technical Specifications

Non-operating (storage) temperature -4° to 185° F (-20° to 85° C)

Altitude 0 to 16,400 ft (0 to 5,000 m)

Humidity 20% to 95%

Storage Humidity 10% to 95%

EMI and Safety Certifications

*CE Mark - full compliance with LVD and EMC directives

* Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE.

* MTBF - over 200,000 hours at 25°C ambient condition.

3-cell (36 WHr) Lithium – Ion Polymer Long Life battery

Dimensions (H x W x L) 5.9mm x 83.3mm x 281mm

Weight (max) 200g

Cells/Type Li-ion, Prismatic Cell 496080/485780

Energy **Voltage** 10.8V ~ 11.4V

Amp-hour capacity 3080mAh ~ 3400mAh (Min.)

3250mAh ~ 3490mAh (Typ.)

Watt-hour capacity 35Wh ~ 36.7Wh (Min.)

37Wh ~ 37.6Whr (Typ.)

Temperature **Operating (Charging)** 0° to 45° C

Operating (Discharging) -10° to 60° C

Non-operating -20° ~ 60° C (1 month)

-20° ~ 45° C (3 month)

-20° ~ 30° C (6 month)

Battery Re-Charge Time **System in OFF or Standby Mode** ~2.25hrs



Technical Specifications

	System ON	~3.25hrs
Fuel Gauge LED	No	
Warranty	1 year	
Compatible with optional Travel Battery	No	

ENVIRONMENTAL

Eco-Label Certifications & declarations This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- IT ECO declaration
- US ENERGY STAR®
- EPEAT® Gold registered in the United States. See <http://www.epeat.net> for registration status in your country.

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, 60Hz
Normal Operation (Short idle)	4.27 W	4.52 W	4.24 W
Normal Operation (Long idle)	2.46 W	2.65 W	2.48 W
Sleep	0.43 W	0.45 W	0.43 W
Off	0.21 W	0.24 W	0.21 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, 60Hz
Normal Operation (Short idle)	15 BTU/hr	15 BTU/hr	40 BTU/hr



Technical Specifications

Normal Operation (Long idle)	8 BTU/hr	9 BTU/hr	28 BTU/hr
Sleep	1 BTU/hr	1 BTU/hr	6 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 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)

Typically Configured – Idle
Fixed Disk – Random writes

Sound Power
(L_{WAd}, bels)

2.7
2.8

Sound Pressure
(L_{pAm}, decibels)

21
21

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 than 1ppm by weight
Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)
Battery type: Lithium



Technical Specifications

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% post-consumer recycled plastic (by wt.)
- This product is 95.1% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	360 g
Internal:	PLASTIC/EPE (Expanded Polyethylene)	14.4 g
	PLASTIC/Polyethylene low density	11 g

The plastic packaging material contains at least 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, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)



Technical Specifications

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.

For more information about HP's commitment to the environment:

Hewlett-Packard Corporate Environmental Information

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications

<http://www8.hp.com/us/en/hp-information/environment/ecolabels.html>

ISO 14001 certificates:

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

and

<http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf>

COUNTRY OF ORIGIN

China



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

Type	Description	Part Number
Carrying Case	HP Business Slim Top Load	H5M90AA
	HP Essential Top Load Case (up to 15.6")	H2W17AA#xxx
	HP Essential Backpack (up to 15.6")	H1D24AA
Input/Output	HP 3-Button Laser Mouse	H4B81AA#xxx
	HP Ultra Mobile Wireless Mouse	H6F25AA
	HP USB Optical Travel mouse	G1K28AA
Adapter	HP HDMI to VGA Adapter	H4F02AA
	HP USB Ethernet Adapter	XZ613AA
Power	HP 45W Smart AC Adapter (4.5mm)	H6Y88AA#xxx
Cable Lock	HP Keyed Cable Lock 10mm	T1A62AA
Monitor	HP ProDisplay P222va	K7X30AA
	HP ProDisplay P202	K7X27AA
	HP ProDisplay P222c	L4J08AA



Summary of Changes

Date of change	Version History	Change	Description of change
February 26, 2016	Version 1 to 2	Added	Environmental info
June 7, 2016	V2 to v3	Added	Military standard MIL STD-810G testing
December 7, 2017	V3 to V4	Added	Note on battery life section

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