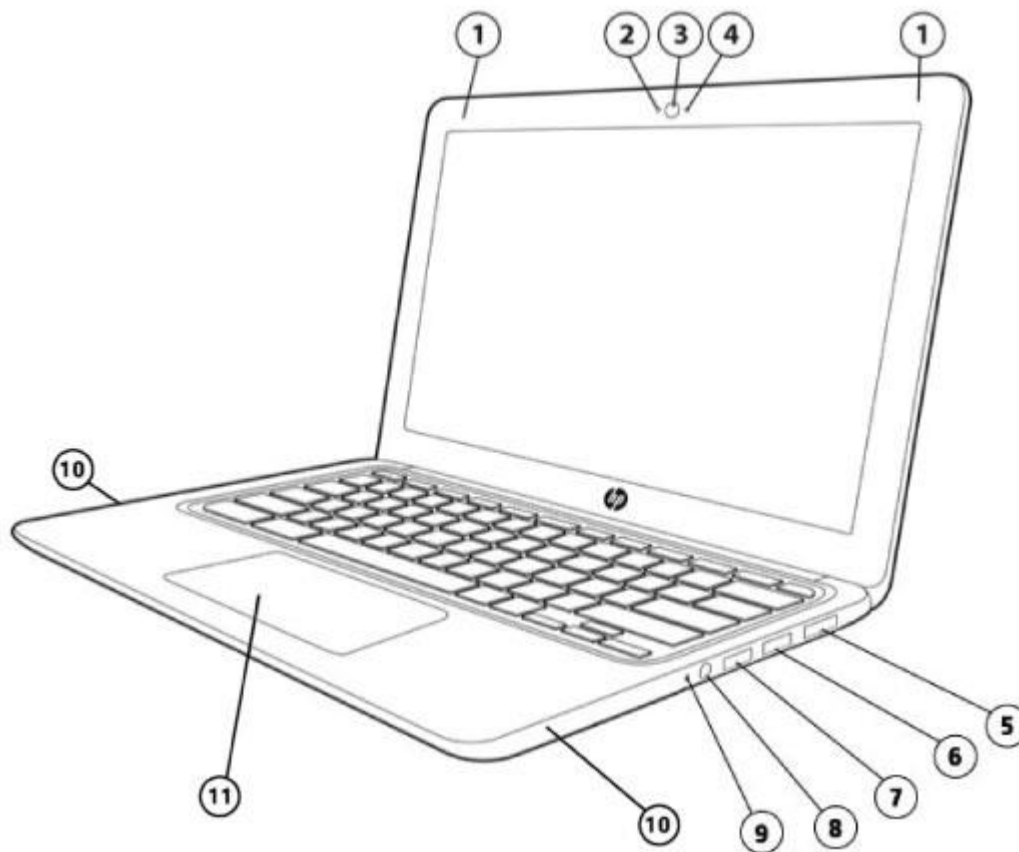


### Overview

#### HP Chromebook 11 G4 Education Edition

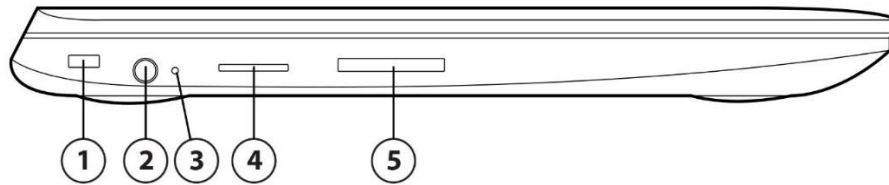


**Front Right View**

- |                          |                                    |
|--------------------------|------------------------------------|
| 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 |                                    |

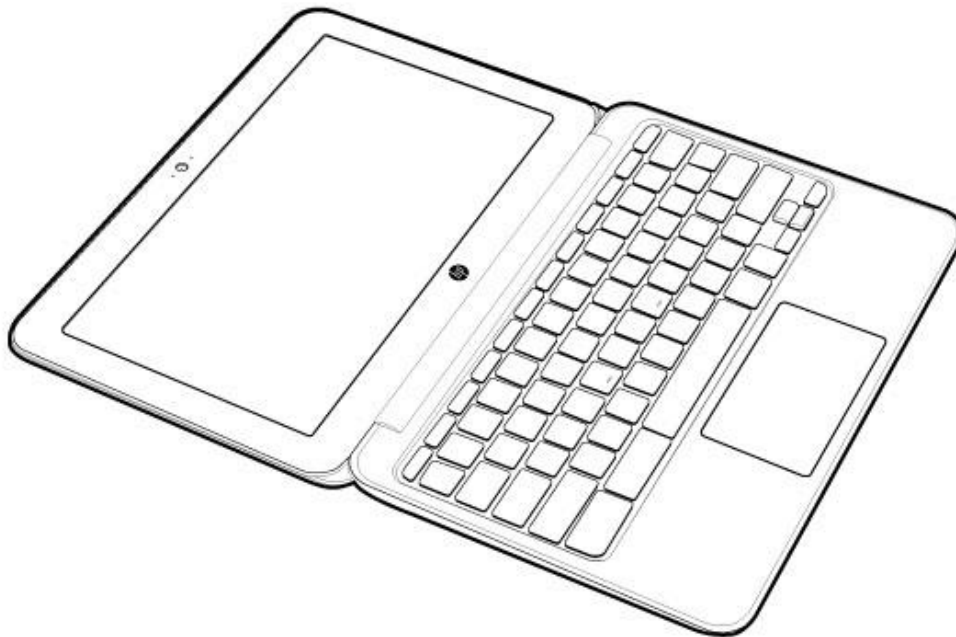


### Overview



#### 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)<sup>1</sup>

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 HD<sup>1</sup> IPS Anti-glare LED Slim UWVA (1366 x 768)

11.6" diagonal HD<sup>1</sup> 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 Card<sup>1</sup>

Store up to 100 GB with Google Drive (2-year subscription included)<sup>2</sup>

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 Combo<sup>1</sup>

Intel® Dual Band Wireless-N 7260AN 802.11 a/b/g/n (2x2) WiFi + Bluetooth 4.0 Combo<sup>1</sup>

#### Wireless WAN (WWAN)<sup>2,3</sup>

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

#### Webcam<sup>1</sup>

HP TrueVision HD<sup>2</sup>

- HD<sup>2</sup> 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 Adapter<sup>1</sup>  
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 Life<sup>1</sup>

Up to 9 hours 30 minutes

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

**Weight<sup>1</sup>**

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<sup>1,2</sup> 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](http://www.hp.com/go/cpc)



### Technical Specifications

#### SYSTEM UNIT

<b>Stand-Alone Power Requirements</b> (AC Power)	<b>Nominal Operating Voltage</b>	19.5 V
	<b>Average Operating Power</b>	27 W
	<b>Max Operating Power</b>	< 45 W
<b>Temperature</b>	<b>Operating</b>	41° to 95° F (5° to 35° C)
	<b>Non-operating</b>	-4° to 140° F (-20° to 60° C)
<b>Relative Humidity</b>	<b>Operating</b>	10% to 90%, non-condensing
	<b>Non-operating</b>	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
<b>Shock</b>	<b>Operating</b>	40 G, 2 ms, half-sine
	<b>Non-operating</b>	200 G, 2 ms, half-sine
<b>Random Vibration</b>	<b>Operating</b>	0.75 grms
	<b>Non-operating</b>	1.50 grms
<b>Altitude</b> (unpressurized)	<b>Operating</b>	-50 to 10,000 ft (-15.24 to 3,048 m)
	<b>Non-operating</b>	-50 to 40,000 ft (-15.24 to 12,192 m)
<b>Planned Industry Standard</b>	<b>UL</b>	Yes
<b>Certifications</b>	<b>CSA</b>	No
	<b>FCC Compliance</b>	Yes
	<b>ENERGY STAR®*</b>	Yes
	<b>EPEAT**</b>	Yes
	<b>ICES</b>	Yes
	<b>Australia / NZ A-Tick Compliance</b>	Yes, called RCM
	<b>CCC</b>	No
	<b>Japan VCCI Compliance</b>	Yes
	<b>KC</b>	No





### Technical Specifications

<b>BSMI</b>	Yes
<b>CE Marking Compliance</b>	Yes
<b>BNCI or BELUS</b>	Yes, called EAC or CU
<b>CIT</b>	TBD
<b>GOST</b>	Yes, called EAC or CU
<b>Saudi Arabian Compliance (ICCP)</b>	No
<b>SABS</b>	No
<b>UKRSERTCOMPUTER</b>	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](http://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**

<b>Outline Dimensions</b> (W x H x D)	278.5 x 168.5 x 3.0mm max.	
<b>Active Area</b>	256.125 x 144.0mm typ.	
<b>Weight</b>	200g max.	
<b>Diagonal Size</b>	11.6 inch	
<b>Contrast Ratio</b>	600:1	
<b>Refresh Rate</b>	60Hz	
<b>Brightness</b>	220nits typ.	
<b>Pixel Resolution</b>	<b>Format</b>	1366 x 768
	<b>Configuration</b>	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
<b>Interoperability</b>	Wi-Fi certified
<b>Frequency Band</b>	802.11b/g/n <ul style="list-style-type: none"> <li>• 2.402 – 2.482 GHz</li> </ul> 802.11a/n <ul style="list-style-type: none"> <li>• 4.9 – 4.95 GHz (Japan)</li> <li>• 5.15 – 5.25 GHz</li> <li>• 5.25 – 5.35 GHz</li> <li>• 5.47 – 5.725 GHz</li> <li>• 5.825 – 5.850 GHz</li> <li>• 2.402 – 2.482 GHz</li> </ul>
<b>Data Rates</b>	<ul style="list-style-type: none"> <li>• 802.11b: 1, 2, 5.5, 11 Mbps</li> <li>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)</li> <li>• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)</li> </ul>
<b>Modulation</b>	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
<b>Security<sup>1</sup></b>	<ul style="list-style-type: none"> <li>• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only</li> <li>• AES-CCMP: 128 bit in hardware</li> <li>• 802.1x authentication</li> <li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• IEEE 802.11i</li> <li>• Cisco Certified Extensions, all versions through CCX4 and CCX Lite</li> <li>• WAPI</li> </ul>
<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
<b>Output Power<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• 2.4G: +13.5dBm minimum</li> </ul>



### Technical Specifications

	<ul style="list-style-type: none"> <li>• 5G: +12dBm minimum</li> <li>• Maximum output power must be able to achieve modular regulatory certification with notebooks that have antennas &gt;20cm from the user and peak gain of +3dBi at 2.4GHz and +4dBi at 5GHz</li> </ul>
<b>Power Consumption</b>	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
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>3</sup></b>	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)
<b>Antenna type</b>	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
<b>Form Factor</b>	PCI-Express Half-MiniCard
<b>Dimensions</b>	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)
<b>Weight</b>	3.1g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	Operating 14° to 158° F (-10° to 70° C) Non-operating -40° to 176° F (-40° to 80° C)



### Technical Specifications

<b>Humidity</b>	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
<b>Altitude</b>	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	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

<b>Number of Available Channels</b>	79 (1 MHz) available channels
<b>Data Rates and Throughput</b>	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
<b>Transmit Power</b>	-6 dBm to 4 dBm (Bluetooth Class II)
<b>Receiver Sensitivity</b>	Better than -80 dBm at 0.1 % raw bit error rate
<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Sleep 17 mW
<b>Antenna Range</b>	Internally integrated within module Up to 33 ft (10 m)
<b>Electrical Interface</b>	USB 2.0 compliant Microsoft Windows Plug and Play compliant
<b>Bluetooth Software Supported</b>	Broadcom Bluetooth for Windows Microsoft Windows Bluetooth Software
<b>Link Topology</b>	Point to Point, Multipoint Pico Nets up to 7 slaves
<b>Security</b>	Full support of Bluetooth Security Provisions
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
<b>Certifications</b>	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
<b>Bluetooth Profiles Supported</b>	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

<b>Wireless LAN Standards</b>	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n
<b>Interoperability</b>	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 7, Windows Vista and XP (details at: <a href="http://www.hp.com/go/notebooks/WLAN">http://www.hp.com/go/notebooks/WLAN</a> )
<b>Frequency Band</b>	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
<b>Antenna Structure</b>	2 transmit; 2 receive (2x2)
<b>Data Rates</b>	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)
<b>Modulation</b>	Direct Sequence Spread Spectrum CCK, BPSK, QPSK, 16-QAM, 64-QAM



### Technical Specifications

<b>Security<sup>1</sup></b>	<ul style="list-style-type: none"><li>○ IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only</li><li>○ AES-CCMP: 128 bit in hardware</li><li>○ 802.1x authentication</li><li>○ WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li><li>○ WPA2 certification</li><li>○ IEEE 802.11i</li><li>○ Cisco Certified Extensions, all versions through CCX4 and CCX Lite</li><li>○ WAPI</li></ul>
<b>Sub-channels</b>	Multinational support with frequency bands and channels compliant to local regulations.
<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between band Access Points
<b>Output Power<sup>2</sup></b>	<ul style="list-style-type: none"><li>○ 2.4G: +13.5dBm minimum</li><li>○ 5G: +12dBm minimum</li></ul>
<b>Power Consumption</b>	Transmit: 2.0 Watts Receive: 1.6 Watts Idle mode <sup>3</sup> : 250 mW (WLAN Associated) Idle mode: 100 mW (WLAN unassociated) Radio off: 75 mW
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>4</sup></b>	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)
<b>Antenna Connections</b>	2 U.FL type connectors (output impedance of 50 ± 2 ohms)
<b>Form Factor</b>	PCI-Express Half-MiniCard
<b>Dimensions</b>	0.12 x 1.06 x 1.18 in (3.1 x 26.8 x 30.0 mm)



### Technical Specifications

<b>Weight</b>	3.1g	
<b>Operating Voltage</b>	3.3v +/- 9%	
<b>Temperature</b>	Operating	14° to 158° F (-10° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
<b>Humidity</b>	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
<b>Altitude</b>	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	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

<b>Bluetooth Specification</b>	4.0+EDR Compliant
<b>Dimensions</b>	1.18 x 0.26 x 0.13 in (30 x 6.5 x 3.25 mm)
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	79 (1 MHz) available channels
<b>Data Rates and Throughput</b>	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
<b>Transmit Power</b>	-1.5 dBm to 4 dBm (Bluetooth Class II)
<b>Receiver Sensitivity</b>	Better than -20 dBm at 0.1 % raw bit error rate





### Technical Specifications

<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
<b>Antenna</b>	Internally integrated within module
<b>Range</b>	Up to 33 ft (10 m)
<b>Electrical Interface</b>	USB 2.0 compliant  Microsoft Windows Plug and Play compliant
<b>Bluetooth Software Supported</b>	Broadcom Bluetooth for Windows  Microsoft Windows Bluetooth Software
<b>Link Topology</b>	Point to Point, Multipoint Pico Nets up to 7 slaves
<b>Security</b>	Full support of Bluetooth Security Provisions
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support  Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
<b>Certifications</b>	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
<b>Bluetooth Profiles Supported</b>	Serial Port Profile (SPP) <sup>1</sup> Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) <sup>1,2</sup> Generic Object Exchange Profile (GOEP) <sup>1,2</sup> Object Push Profile (OPP) <sup>1,2</sup> File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) <sup>1,2</sup> Personal Area Networking Profile (PAN) <sup>1,2</sup> Human Interface Device Profile (HID) <sup>1,2</sup> FAX Profile (FAX) Basic Imaging Profile (BIP) <sup>2</sup>



### Technical Specifications

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

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

<b>Technology/Operating bands</b>	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		
<b>Wireless protocol standards</b>	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		
<b>GPS</b>	Standalone, A-GPS		
<b>GPS bands</b>	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz		
<b>Maximum data rates</b>	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)		
<b>Maximum output power</b>	LTE: 23 dBm HSPA+: 23.5 dBm		





### Technical Specifications

<b>Total Harmonic Distortion + Noise</b>	-73 dB (Typ.)
<b>Noise Floor</b>	-120 dB
<b>Play/Record Sampling Rate(s)</b>	8 kHz - 96kHz
<b>DAC</b>	16, 20 or 24-bit
<b>ADC</b>	16 or 20-bit

<b>Integrated Stereo Speakers</b>	<b>Power Rating</b>	<b>2 Watts</b>
	<b>Impedance</b>	<b>4 ohms</b>

### POWER

#### HP 45W Smart AC Adapter

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



### Technical Specifications

<b>Environmental Design</b>	<b>Operating temperature</b>	32° to 95° F (0° to 35° C)
	<b>Non-operating (storage) temperature</b>	-4° to 185° F (-20° to 85° C)
	<b>Altitude</b>	0 to 16,400 ft (0 to 5,000 m)
	<b>Humidity</b>	20% to 95%
	<b>Storage Humidity</b>	10% to 95%
<b>EMI and Safety Certifications</b>	*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

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



### Technical Specifications

<b>Environmental Design</b>	<b>Operating temperature</b>	32° to 95° F (0° to 35° C)
	<b>Non-operating (storage) temperature</b>	-4° to 185° F (-20° to 85° C)
	<b>Altitude</b>	0 to 16,400 ft (0 to 5,000 m)
	<b>Humidity</b>	20% to 95%
	<b>Storage Humidity</b>	10% to 95%
<b>EMI and Safety Certifications</b>	*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.	

<b>3-cell (36 WHr) Lithium – Ion Polymer Long Life battery</b>	<b>Dimensions (H x W x L)</b>	5.9mm x 83.3mm x 281mm		
	<b>Weight (max)</b>	200g		
	<b>Cells/Type</b>	Li-ion, Prismatic Cell 496080/485780		
	<b>Energy</b>	<b>Voltage</b>	10.8V ~ 11.4V	
		<b>Amp-hour capacity</b>	3080mAh ~ 3400mAh (Min.)	
			3250mAh ~ 3490mAh (Typ.)	
	<b>Temperature</b>	<b>Watt-hour capacity</b>	35Wh ~ 36.7Wh (Min.)	
		<b>Operating (Charging)</b>	37Wh ~ 37.6Whr (Typ.)	
			0° to 45° C	
	<b>Operating (Discharging)</b>	-10° to 60° C		
<b>Non-operating</b>		-20° ~ 60° C (1 month)		
		-20° ~ 45° C (3 month)		
	-20° ~ 30° C (6 month)			



### Technical Specifications

<b>Battery Re-Charge Time</b>	<b>System in OFF or Standby Mode</b>	~2.25hrs
	<b>System ON</b>	~3.25hrs
<b>Fuel Gauge LED</b>	No	
<b>Warranty</b>	1 year	
<b>Compatible with optional Travel Battery</b>	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
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Not all configuration components are available in all regions/countries.  
c04851623 – DA 15449 – World Wide – Version 3 – June 7, 2016

### Technical Specifications

Normal Operation (Short idle)	15 BTU/hr	15 BTU/hr	40 BTU/hr
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<sub>WAd</sub>, bels)

2.7  
2.8

Sound Pressure  
(L<sub>pAm</sub>, 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 the 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](http://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

<b>External:</b>	PAPER/Corrugated	360 g
<b>Internal:</b>	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](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
<b>Carrying Case</b>	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
<b>Input/Output</b>	HP 3-Button Laser Mouse	H4B81AA#xxx
	HP Ultra Mobile Wireless Mouse	H6F25AA
	HP USB Optical Travel mouse	G1K28AA
<b>Adapter</b>	HP HDMI to VGA Adapter	H4F02AA
	HP USB Ethernet Adapter	XZ613AA
<b>Power</b>	HP 45W Smart AC Adapter (4.5mm)	H6Y88AA#xxx
<b>Cable Lock</b>	HP Keyed Cable Lock 10mm	T1A62AA
<b>Monitor</b>	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

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