

### Overview

#### HP Chromebook 11A G6 EE



- 1. Webcam LED
- 2. Webcam

- 3. Internal Microphone
- 4. Touchpad

#### Left

- 5. USB 2.0
- 6. USB Type-C™ 3.1 Gen1 Port (Supports Power Delivery +Display Port™)
- 7. Nano Security Lock Slot (Lock sold separately)

### Overview



1. Power Button
2. USB Type-C™ 3.1 Gen1 port (Supports Power Delivery +Display Port™)
3. USB 2.0

#### Right

4. Micro SD Card Reader
5. Stereo Headphone/Microphone combo jack

### Overview

#### AT A GLANCE

- <19 mm thin and rugged design for durability
- Enjoy affordable, convenient mobile productivity with AMD A4 processor
- Designed to pass MIL STD 810G tests<sup>1</sup>
- 2 USB-C™ ports (Supports Power Delivery +Display Port™)
- Choice of up to 32 GB eMMC storage
- Spill and pick resistant keyboard
- School-day battery life<sup>3</sup> and spend less time charging with HP Fast Charge technology<sup>2</sup>
- 180 degree hinge and optional HD IPS Touchscreen for collaboration
- Enjoy Android™ Apps\* on Chrome OS™<sup>4</sup>
- Your Chromebook boots up within 10 seconds and you can be browsing online and working in Google Apps just moments later
- Qualcomm® 2x2 AC WLAN with MIMO for easy connection in dense classroom environment

1. MIL STD 810G testing is pending and 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.
2. Recharges your battery up to 90% within 90 minutes when the system is off (using “shut down” command). Recommended for use with the HP adapter provided with the notebook, not recommended with a smaller capacity battery charger. After charging has reached 90% capacity, charging speed will return to normal speed. Charging time may vary +/-10% due to System tolerance.  
\*Apps may require purchase
3. 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.
4. The availability of Chrome OS System supporting Android Apps is dependent on Google’s Chrome OS support, readiness timeline will be announced by Google <https://sites.google.com/a/chromium.org/dev/chromium-os/chrome-os-systems-supporting-android-apps>.

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

### Technical Specifications

---

#### PRODUCT NAME

HP Chromebook 11A G6 Education Edition

---

#### OPERATING SYSTEM

**Preinstalled** Chrome OS™

---

#### PROCESSOR

AMD A4-9120C APU with Radeon™ R4 Graphics (1.6 GHz base clock, up to 2.4 GHz max boost clock, 1 MB cache, 2 cores) <sup>4,5,6</sup>

##### **Processor Family**

AMD® A-Series processor

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

5. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

6. AMD Max Boost Clock performance varies depending on hardware, software and overall system configuration.

---

#### CHIPSET

Chipset is integrated with processor

---

#### GRAPHICS

##### **Integrated**

AMD Radeon™ R4 Graphics

##### **Supports**

Support HD Decode, DX12, and HDMI 1.4b

---

### Technical Specifications

---

#### DISPLAY

##### Internal

##### Non-Touch

29.46 cm (11.6") diagonal HD SVA anti-glare WLED-backlit, 220 cd/m<sup>2</sup>, 67% sRGB (1366 x 768)<sup>7,9,10</sup>

29.46 cm (11.6") diagonal HD IPS anti-glare WLED-backlit, 220 cd/m<sup>2</sup>, 69% sRGB (1366 x 768)<sup>7,8,9,10</sup>

##### Touch

29.46 cm (11.6") diagonal HD IPS Brightview WLED-backlit slim touch screen, 220 cd/m<sup>2</sup>, 69% sRGB (1366 x 768)<sup>7,8,9,10</sup>

7. HD content required to view HD images.

8. Sold separately or as an optional feature.

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

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

---

#### STORAGE AND DRIVES

##### Primary Storage

16 GB eMMC 5.0<sup>11</sup>

32 GB eMMC 5.0<sup>11</sup>

11. For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 5.1 GB is not user available.

---

#### MEMORY

##### Maximum Memory

4 GB DDR4-1866 SDRAM

##### Memory

4 GB DDR4-1866 SDRAM

##### Memory Slots

Memory soldered down

---

### Technical Specifications

#### NETWORKING/COMMUNICATIONS

**WLAN**

Qualcomm® Wireless-AC 802.11a/b/g/n/ac (2x2) WLAN and Bluetooth® 4.2 Combo, non-vPro™<sup>12</sup>.

**Chromecast**

Chromecast Support<sup>13</sup>

NOTE: MU-MIMO supported.

12. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited.

13. Chromecast must be purchased separately.

---

#### AUDIO/MULTIMEDIA

**Audio**

HD Audio

Dual speakers

Integrated microphone

**Camera**

720p HD camera<sup>7</sup>

7. HD content required to view HD images.

---

#### KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

**Keyboard**

Full-sized island-style, spill resistant, pick resistant

**Pointing Device**

Clickpad with multi-touch gesture support

---

#### SOFTWARE AND SECURITY

**Preinstalled Software**

Store up to 100 GB with Google Drive (2-year subscription included)<sup>14</sup>

HP Classroom Manager<sup>15</sup>

**Security Management**

H1 Security IC

Nano Security lock slot<sup>16</sup>

14. Google Drive 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 OS™ 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>

15. HP Classroom Manager is sold separately. Control and device locking from the teacher's desktop requires purchase of HP Classroom Manager.

16. Lock must be purchased separately.

### Technical Specifications

#### POWER

##### Power Supply<sup>19</sup>

HP Smart 45 W USB Type-C™ AC power adapter<sup>17</sup>

##### Primary Battery

HP Long Life 2-cell, 47.36 Wh Li-ion polymer<sup>18,20</sup>

HP Fast Charge Technology (90% in 90 minutes)<sup>21</sup>

##### Power Cord

3-wire plug - 1m<sup>17</sup>

##### Battery life

Up to 10 hours<sup>19</sup>

##### Battery Weight

0.39 lb

0.18 kg

17. Availability may vary by country.

18. Battery is internal and not replaceable by customer. Serviceable by warranty.

19. 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.

20. Recharges up to 90% within 90 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. After charging has reached 90% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.

21. Recharges your battery up to 90% within 90 minutes when the system is off (using “shut down” command).

Recommended for use with the HP adapter provided with the notebook, not recommended with a smaller capacity battery charger. After charging has reached 90% capacity, charging speed will return to normal speed. Charging time may vary +/-10% due to System tolerance.

#### 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.
- TCO Certified 5.0.

##### 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

### Technical Specifications

<b>Normal Operation (Sort idle)</b>	3.92 W	4.04 W	3.96 W
<b>Normal Operation (Long idle)</b>	1.86 W	1.88 W	1.86 W
<b>Sleep</b>	0.53 W	0.53 W	0.53 W
<b>Off</b>	0.47 W	0.47 W	0.47 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.

<b>Heat Dissipation*</b>	<b>115VAC, 60Hz</b>	<b>230VAC, 50Hz</b>	<b>100VAC, 50Hz</b>
<b>Normal Operation (Short idle)</b>	13 BTU/hr	14 BTU/hr	14 BTU/hr
<b>Normal Operation (Long idle)</b>	6 BTU/hr	6 BTU/hr	6 BTU/hr
<b>Sleep</b>	2 BTU/hr	2 BTU/hr	2 BTU/hr
<b>Off</b>	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.

<b>Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)</b>	<b>Sound Power (L<sub>WAd</sub>, bels)</b>	<b>Sound Pressure (L<sub>pAm</sub>, decibels)</b>
<b>Typically Configured – Idle</b>	16.8	24
<b>Fixed Disk – Random writes</b>	16.8	24

**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



### Technical Specifications

<b>Batteries</b>	Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
	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		
<b>Additional Information</b>	Battery size: CR2032 (coin cell) Battery type: Lithium		
	<ul style="list-style-type: none"> <li>• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.</li> <li>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.</li> <li>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).</li> <li>• This product is in compliance with the IEEE 1680 (EPEAT) standard at the &lt;gold&gt; level, see <a href="http://www.epeat.net">http://www.epeat.net</a></li> <li>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.</li> <li>• This product contains 2.5% post-consumer recycled plastic (by wt.)</li> <li>• This product is 97.6% recycle-able when properly disposed of at end of life.</li> </ul>		
<b>Packaging Materials</b>	<b>External:</b>	PAPER/Corrugated	225 g
	<b>Internal:</b>	PLASTIC/Polyethylene Expanded - EPE	40 g
		PLASTIC/Polyethylene low density – LDPE	31 g
		PAPER/Paper	7 g
<b>Material Usage</b>	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 <a href="http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf">http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf</a> :		
	<ul style="list-style-type: none"> <li>• Asbestos</li> <li>• Certain Azo Colorants</li> <li>• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics</li> <li>• Cadmium</li> <li>• Chlorinated Hydrocarbons</li> <li>• Chlorinated Paraffins</li> <li>• Formaldehyde</li> <li>• Halogenated Diphenyl Methanes</li> <li>• Lead carbonates and sulfates</li> <li>• Lead and Lead compounds</li> <li>• Mercuric Oxide Batteries</li> <li>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.</li> <li>• Ozone Depleting Substances</li> <li>• Polybrominated Biphenyls (PBBs)</li> <li>• Polybrominated Biphenyl Ethers (PBBEs)</li> <li>• Polybrominated Biphenyl Oxides (PBBOs)</li> <li>• Polychlorinated Biphenyl (PCB)</li> <li>• Polychlorinated Terphenyls (PCT)</li> </ul>		

### Technical Specifications

- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

#### Packaging Usage

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

#### End-of-life Management and Recycling

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.

#### Hewlett-Packard Corporate Environmental Information

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

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

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

ISO 14001 certificates:  
[http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC\\_GBU\\_Product\\_Design\\_ISO\\_14K\\_Certificate.pdf](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>

### WEIGHTS & DIMENSIONS

#### Product Weight

Starting at 2.81 lbs<sup>22</sup>  
Starting at 1.28 kg<sup>22</sup>

#### Product Dimensions (w x d x h)

12.04 x 8.18 x 0.71 in  
30.6 x 20.8 x 1.81 cm

### Technical Specifications

22. Weight will vary by configuration.

#### PORTS/SLOTS

##### Ports

- 2 USB 3.1 Type-C™ Gen 1 (Supports Power Delivery +Display Port™)
- 2 USB 2.0
- 1 Stereo Headphone/Microphone Combo Jack

##### Expansion Slots

- 1 Micro SD multi-format digital media reader
- Supports SD, SDHC, SDXC

#### SERVICE AND SUPPORT

HP Services offers 1-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. Refer to <http://www.hp.com/support/batterywarranty/> for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: <http://www.hp.com/go/cpc>.<sup>23</sup>

23. HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit <http://www.hp.com/go/cpc>. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

#### SYSTEM UNIT

<b>Stand-Alone Power Requirements (AC Power)</b>	USB-C 45W adapter	
	<b>Nominal Operating Voltage</b>	5V/9V/12V/15V
	<b>Average Operating Power</b>	45W
	<b>Integrated Graphics</b>	Yes
<b>Temperature</b>	<b>Max Operating Power</b>	UMA < 45W
	<b>Operating</b>	32° to 95° F (0° to 35° C)
<b>Relative Humidity</b>	<b>Non-operating</b>	41° to 95° F (5° to 35° C)
	<b>Operating</b>	10% to 90%
<b>Shock</b>	<b>Non-operating</b>	5% to 95%
	<b>Operating</b>	40 G, 2 ms, half-sine
<b>Random Vibration</b>	<b>Non-operating</b>	240 G, 2 ms, half-sine
	<b>Operating</b>	1.043 grms
<b>Altitude (unpressurized)</b>	<b>Non-operating</b>	3.5 grms
	<b>Operating</b>	-50 to 10,000 ft (-15.24 to 3,048 m)
<b>Planned Industry Standard Certifications</b>	<b>Non-operating</b>	-50 to 40,000 ft (-15.24 to 12,192 m)
	<b>UL</b>	Yes
	<b>CSA</b>	No
	<b>FCC Compliance</b>	Yes

### Technical Specifications

<b>ENERGY STAR®</b>	Yes <sup>24</sup>
<b>EPEAT®</b>	Yes <sup>25</sup>
<b>ICES</b>	Yes
<b>Australia</b>	Yes
<b>NZ A-Tick Compliance</b>	Yes
<b>CCC</b>	Yes
<b>Japan VCCI Compliance</b>	No
<b>KC</b>	Yes
<b>BSMI</b>	Yes
<b>CE Marking Compliance</b>	Yes
<b>BNCI or BELUS</b>	No
<b>CIT</b>	No
<b>EAC</b>	Yes
<b>Saudi Arabian Compliance (ICCP)</b>	Yes
<b>SABS</b>	Yes
<b>UKRSERTCOMPUTER</b>	No

24. Configurations of the HP Chromebook 11A G6 EE that are ENERGY STAR® certified are identified as HP Chromebook 11A G6 EE ENERGY STAR® on HP websites and on <http://www.energystar.gov>.

25. EPEAT® registered where applicable. EPEAT® registration varies by country. See <http://www.epeat.net> for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at <http://www.hp.com/go/options>.

### Technical Specifications

#### DISPLAYS

<b>11.6 inch HD (1366 x 768) Anti-Glare WLED SVA 45percent cg 220 nits</b>	<b>Outline Dimensions (W x H x D)</b>	268.5 x 173.48 x 3.0mm
	<b>Active Area</b>	256.125 x 144mm
	<b>Weight</b>	210g max
	<b>Diagonal Size</b>	11.6 inch
	<b>Thickness</b>	3.0mm
	<b>Interface</b>	eDP1.2
	<b>Surface Treatment</b>	AG
	<b>Touch Enabled</b>	None
	<b>Contrast Ratio</b>	400:1
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	220 nits typical
	<b>Pixel Resolution</b>	1366 x 768 (HD)
	<b>Format</b>	RGB
	<b>Backlight</b>	LED
	<b>Color Gamut Coverage</b>	45%
	<b>Color Depth</b>	6bit + FRC
	<b>Viewing Angle</b>	SVA 45/45/15/35

<b>11.6 inch HD (1366 x 768) Anti-Glare WLED UWVA 50percent cg 220 nits eDP slim</b>	<b>Outline Dimensions (W x H x D)</b>	278.5 x 168.5 x 3.0 mm
	<b>Active Area</b>	256.125 x 144 mm
	<b>Weight</b>	200g max
	<b>Diagonal Size</b>	11.6 inch
	<b>Thickness</b>	3.0mm max
	<b>Interface</b>	eDP1.2
	<b>Surface Treatment</b>	AG
	<b>Touch Enabled</b>	None
	<b>Contrast Ratio</b>	800:1
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	220 nits typical
	<b>Pixel Resolution</b>	1366 x 768 (HD)
	<b>Format</b>	RGB
	<b>Backlight</b>	LED
	<b>Color Gamut Coverage</b>	50%
	<b>Color Depth</b>	6bits + FRC
	<b>Viewing Angle</b>	UWVA 85/85/85/85

### Technical Specifications

---

<b>11.6 inch HD (1366 x 768) BrightView WLED UWVA 50percent cg 220 nits eDP 1.2 w/o PSR slim TOP</b>	<b>Outline Dimensions (W x H x D)</b>	278.5 x 168.52 x 3.2 mm
	<b>Active Area</b>	256.125 x 144 mm
	<b>Weight</b>	200g max
	<b>Diagonal Size</b>	11.6 inch
	<b>Thickness</b>	3.2mm
	<b>Interface</b>	eDP1.2
	<b>Surface Treatment</b>	BV
	<b>Touch Enabled</b>	Yes
	<b>Contrast Ratio</b>	800:1
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	220nit typical
	<b>Pixel Resolution</b>	1366 x 768 (HD)
	<b>Format</b>	RGB
	<b>Backlight</b>	LED
	<b>Color Gamut Coverage</b>	50%
	<b>Color Depth</b>	6bits + FRC
	<b>Viewing Angle</b>	UWVA 85/85/85/85

---

### Technical Specifications

#### STORAGE

<b>emmc 5.0</b>	<b>Drive Weight</b>	0.2g
	<b>Height</b>	1.4mm
	<b>Width</b>	11.5 x 13mm
	<b>Interface</b>	MMC protocol
	<b>Transfer Rate</b>	HS400
	<b>Logical Blocks</b>	16 GB (15,758,000,128 Bytes) /32GB (31,268,536,320 Bytes)
	<b>Operating Temperature</b>	0 to 70 degree

#### NETWORKING

**802.11a/b/g/n/ac (2x2)  
WLAN and Bluetooth®  
4.2 Combo**

<b>Wireless LAN Standards</b>	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
<b>Interoperability</b>	QCA6174A passed Google AVL tests for Wi-Fi/BT
<b>Frequency Band</b>	IEEE 802.11a/b/g/n/ac (2.4GHz and 5GHz)
<b>Data Rates</b>	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 15, (20/40/80 MHz) 802.11ac: MCS 0 ~ MCS 9, (20/40/80 MHz), 1x1/2x2
<b>Modulation</b>	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT (20/40) mode
<b>Security<sup>3</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>• IEEE 802.11i</li> </ul>
<b>Network Architecture</b>	Infrastructure (Access Point Required)
<b>Models</b>	
<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>• 802.11b: +17dBm minimum</li> <li>• 802.11g: +14dBm minimum</li> <li>• 802.11a: +9dBm minimum</li> <li>• 802.11n HT20(2.4GHz): +14dBm minimum</li> <li>• 802.11n HT40(2.4GHz): +14dBm minimum</li> <li>• 802.11n HT20(5GHz): +7dBm minimum</li> <li>• 802.11n HT40(5GHz): +7dBm minimum</li> <li>• 802.11ac HT20(5GHz): +6dBm minimum</li> <li>• 802.11ac HT40(5GHz): +5dBm minimum</li> <li>• 802.11ac HT80(5GHz): +5dBm minimum</li> </ul>
<b>Power Consumption</b>	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode: 60 mW
<b>Power Management</b>	ACPI and PCI Express compliant power management

### Technical Specifications

<b>Antenna type</b>	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)
<b>Receiver Sensitivity<sup>3</sup></b>	802.11b, 11Mbps: -84dBm maximum 802.11g, 54Mbps: -70dBm maximum 802.11a, 54Mbps: -70dBm maximum 802.11n 2.4g, HT20: -69dBm maximum 802.11n 2.4g, HT40: -67dBm maximum 802.11n 5g, HT20: -68dBm maximum 802.11n 5g, HT40: -66dBm maximum 802.11n 5g, HT20: -63dBm maximum 802.11n 5g, HT40: -59dBm maximum 802.11n 5g, HT80: -56dBm maximum
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	Type 2230: 2.3 x 22.0 x 30.0 mm
<b>Weight</b>	Type 2230: 2.3g
<b>Operating Voltage</b>	3.3v +/- 5%
<b>Temperature</b>	Operating: 32° to 149° F (0° to 65° C) Non-operating: -40° to 185° F (-40° to 85° C)
<b>Humidity</b>	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
<b>Subtitle</b>	<b>Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology</b>
<b>Bluetooth Specification</b>	4.0/4.1/4.2 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
<b>Signaling Data Rate</b>	Legacy: 3 Mbps Signaling Data Rate 2.17 Mbps BLE: 1 Mbps Signaling Data Rate 0.2 Mbps <a href="#">1. Actual throughput may vary.</a>
	Legacy: Synchronous Connection Oriented links, 64 kbps, voice channels
	Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
<b>Transmit Power</b>	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

1. Mobile Broadband is an optional feature. 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. 4G LTE not available on all products or in all countries.

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.



### Technical Specifications

#### POWER

<b>45W PD AC adapter</b>	<b>Dimensions (H x W x D)</b>	94 x 43 x 27.8mm	
	<b>Weight</b>	200g	
	<b>Input</b>	<b>Input</b>	100 to 240 VAC
		<b>Input Efficiency</b>	5V/81.5%; 9V/86.7%; 12V/87.4%; 15V/87.8% (measured at 115Vac/60Hz and 230Vac/50Hz)
	<b>Output</b>	<b>Input frequency range</b>	47 ~ 63 Hz
		<b>Input AC current</b>	1.4 Amperes RMS at 90 VAC
		<b>Output power</b>	45W
		<b>DC output</b>	5V; 9V; 12V; 15V
		<b>Hold-up time</b>	5ms at 115 Vac input
		<b>Output current limit</b>	The power supply shall limit the maximum steady state output current to an average current of 5 Amperes. (OCP Interval: 30mS Minimum)
		<b>Connector</b>	USB Type-C™
	<b>Environmental Design</b>	<b>Operating temperature</b>	32°F to 95°F (0°C to 35°C)
		<b>Non-operating (storage) temperature</b>	-4°F to 185°F (-20°C to 85°C)
		<b>Altitude</b>	1 to 16,400 ft (0 to 5000m)
<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>HP 2-cell Long Life Li-Ion (47 Whr)</b>	<b>Dimensions</b>	5.23 x 240.8 x 76.4 mm (0.206 x 9.48 x 3 inch)
	<b>Weight</b>	0.19 kg (0.42 lb)
	<b>Cells/Type</b>	2cell Lithium-Ion Polymer cell / 4473A9
	<b>Voltage</b>	7.7V
	<b>Amp-hour capacity</b>	6.15Ah
	<b>Watt-hour capacity</b>	47Wh
	<b>Operating (Charging)</b>	32° to 113°F (0° to 45° C)
	<b>Operating (Discharging)</b>	14° to 122°F (-10° to 60° C)
	<b>Optional Travel Battery Available</b>	No

#### COUNTRY OF ORIGIN



## Technical Specifications

China

---

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

Type	Description	Part number
<b>Cases</b>	HP Business Slim Top Load	2SC65AA
	HP Essential Top Load Case (up to 15.6")	H2W17AA#xxx
	HP Essential Backpack (up to 15.6")	H1D24AA
	HP Black 11.6 Always on Case	2MY57AA
<b>Docking</b>	HP USB-C Mini Dock	1PM64AA
<b>Input/Output</b>	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP USB-C to DisplayPort Adapter	N9K78AA
	HP USB-C to USB 3.0 Adapter	N2Z63AAA#xxx
	HP USB-C to RJ45 Adapter	V7W66AA
	HP 3-Button Laser Mouse	H4B81AA#xxx
	HP Ultra Mobile Wireless Mouse	H6F25AA
	HP USB Optical Travel mouse	G1K28AA
	HP Essential USB Mouse	2TK37AA#xxx
	HP Slim Bluetooth Mouse	F3J92AA#xxx
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP Slim USB KB & Mouse	T6T83AA
<b>Power</b>	HP USB-C Notebook Power Bank	1TZ76AA
	HP 45W Type -C Straight Type	1MZ01AA#ABA
<b>Storage</b>	HP External USB Optical Drive	F2B56AA
<b>Security</b>	HP Nano Keyed Cable Lock	1AJ39AA
<b>UCC</b>	Stereo 3.5mm Headset	T1A66AA
<b>Displays</b>	HP ProDisplay P240va 23.8 inch Monitor	N3H14AA
	HP ProDisplay P232 23 inch Monitor	K7X31AA
	HP EliteDisplay E223 21.5 inch Monitor	1FH45AA
	HP EliteDisplay E243 23.8-inch Monitor	1FH47AA

### Summary of Changes

Date of change	Version History	Change	Description of change
February 19, 2019	V1 to V2	Updated	Processors Section
February 21, 2019	V2 to V3	Added	Environmental Tab
March 1, 2019	V3 to V4	Updated	Docking
April 23, 2019	V4 to V5	Added	Networking Section: Chromecast
	V5 to V6		
	V6 to V7		
	V7 to V8		
	V8 to V9		

Copyright © 2019 HP Development Company, L.P. The only warranties for HP products are set forth in the express limited warranty statements accompanying such products. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

AMD and Radeon are trademarks of Advanced Micro Devices, Inc. Bluetooth is a trademark owned by its proprietor and used by HP Inc. under license. DisplayPort™ and the DisplayPort™ logo are trademarks owned by the Video Electronics Standards Association (VESA®) in the United States and other countries. USB Type-C™ and USB-C™ are trademarks of USB Implementers Forum. SD, SDHC and SDXC are registered trademark of SD-3C in the United States, other countries or both. ENERGY STAR® is a registered trademark of the U.S. Environmental Protection Agency® 2019 Google LLC All rights reserved. Google and the Google Logo are registered trademarks of Google LLC.