

### Overview

#### HP Stream 11 Pro G4 EE Notebook PC



#### Front Left

- |    |  |    |  |
|----|--|----|--|
| 1. | WLAN Antenna                               | 7. | USB 2.0 port   |
| 2. | Microphone                                 | 8. | Security lock mini slot (Lock must be purchased separately.) |
| 3. | Webcam                                     | 9. | Power button   |
| 4. | Clickpad with mutli-touch gestures support |    |  |
| 5. | Power LED                                  |    |  |
| 6. | Headphone / microphone in combo jack       |    |  |

### Overview



#### Front Right

1. Power connector
2. Micro SD card reader
3. USB-A 3.1 Gen 1 port
4. HDMI port (Cable not included.)

### Overview

#### At A Glance

1. Pre-installed with Windows 10 versions
2. Choice of Intel® Celeron® Braswell or Apollo Lake processors
3. Intel® HD Graphics
4. New smoke grey color with black licorice rubber trim
5. Display choices include 29.46 cm (11.6") diagonal HD touch or non-touch
6. Choice of eMMC up to 128 GB
7. Weight starting at 1.29 kg (2.84 lbs)
8. Security features including HW TPM 2.0 and security lock mini slot (Lock must be purchased separately.)
9. Full size textured island-style keyboard
10. Touchpad with gestures support
11. HP webcam with single digital microphone and VGA camera
12. One USB-A 3.1 Gen 1 port and one USB 2.0 port
13. Intel® Dual Band Wireless-AC 7265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo Adapter to keep you connected

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

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### Features

#### PRODUCT NAME

HP Stream 11 Pro G4 EE Notebook PC

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#### OPERATING SYSTEM

##### Preinstalled

Windows 10 Pro 64 – HP recommends Windows 10 Pro.<sup>1</sup>  
Windows 10 Home 64<sup>1</sup>  
Windows 10 Pro (National Academic License)<sup>1,2</sup>  
Windows 10 S<sup>1,3</sup>

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com/>.

2. Some devices for academic use will automatically be updated to Windows 10 Pro Education with the Windows 10 Anniversary Update. Features vary; see <https://aka.ms/ProEducation> for Windows 10 Pro Education feature information.

3. Windows 10 S works exclusively with apps from the Windows Store. Some accessories and apps compatible with Windows 10 may not work, and performance may vary. Certain default settings, features, and apps cannot be changed. Easily switch to Windows 10 Pro configuration (fee applies). Learn more at [Microsoft.com/Windows10S](http://Microsoft.com/Windows10S).

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#### PROCESSORS

Intel® Celeron® N3350 with Intel® HD Graphics 500 (1.1 GHz, up to 2.4 GHz, 2 MB cache, 2 cores)<sup>4,5,6</sup>  
Intel® Celeron® N3450 with Intel® HD Graphics 500 (1.1 GHz, up to 2.1 GHz, 2 MB cache, 4 cores)<sup>4,5,6</sup>

##### Processor Family

Intel® Celeron® 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. Intel's numbering is not a measurement of higher performance.

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

6. In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on <http://www.support.hp.com>.

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#### CHIPSET

Chipset is integrated with processor

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### Features

#### GRAPHICS

**Integrated**

Intel® HD Graphics 550<sup>7</sup>

**Supports**

HD Decode, DX11, and HDMI<sup>8</sup>

7. HD content required to view HD images.

8. HDMI cable not included.

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#### DISPLAY

**Panels**

29.46 cm (11.6") diagonal HD SVA eDP WLED anti-glare; 220 cd/m<sup>2</sup>; 45% sRGB (1366 x 768) <sup>7,9</sup>

**Touch Panel**

29.46 cm (11.6") diagonal HD UWVA WLED slim touch screen; 220 cd/m<sup>2</sup>; 50% sRGB (1366 x 768) <sup>7,9</sup>

**HDMI**

Port supports resolutions up to 1920 x 1080 external resolution @ 60 Hz <sup>8</sup>

**Display Size**

29.46 m (11.6")

7. HD content required to view HD images.

8. HDMI cable not included.

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

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#### STORAGE AND DRIVES

**Primary Storage**

Support eMMC

64 GB eMMC [10]

128 GB eMMC [10]

**Maximum**

Up to 128 GB eMMC

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

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### Features

#### MEMORY

**Standard**

DDR3L-1600 SDRAM (Transfer rates up to 1600 MT/s)

Dual channel support

No customer accessible / not upgradeable

Configurations

4 GB (256 M x 16 x 8pcs)

**Maximum**

4 GB DDR3L-1600 SDRAM

**Memory Slots**

On-board system memory

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#### NETWORKING/COMMUNICATIONS

**Wireless**

Intel® Dual Band Wireless-AC 7265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro™) <sup>11</sup>

11. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.

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#### AUDIO/MULTIMEDIA

**Audio**

2 integrated stereo speakers

**Webcam**

VGA camera

Indicator LED, USB 2.0

640 x 480 by 24 frames per second

Single digital microphone

Enable HP Noise Cancellation <sup>12</sup>

HP Noise Cancellation must be enabled by the customer in Audio Control Center

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### Features

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

**Keyboard**

Full size textured island-style keyboard

**Pointing Device**

Clickpad with multi-touch gestures enabled, taps enabled as default

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#### SOFTWARE AND SECURITY

**Software**

Buy Office

HP Jumpstart

HP Documentation

Retail Demo -Video Attract Loop Lite

Windows 10 Recovery Manager

Windows 10 Push Button Reset Recovery

HP Audio Switch

HP Support Assistant <sup>13</sup>

HP Sure Connect

Bing search for IE11

HP ePrint Driver + JetAdvantage<sup>14</sup>

HP School pack

**Security**

Security lock minislot (Lock must be purchased separately.)

13. HP Support Assistant requires Windows and Internet Access.

14. HP ePrint Drive requires an Internet connection to HP web-enabled printer and HP ePrint account registration (for a list of eligible printers, supported documents and image types and other HP ePrint details, see [www.hp.com/go/eprintcenter](http://www.hp.com/go/eprintcenter)). Print times and connection speeds may vary.

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#### POWER

**Power Supply**

HP 45W Smart AC adapter

**Primary Battery**

2-cell, 37.69 Wh Li-ion polymer

**Power Cord**

1 m (3.28 feet) length power cord with sticker label

**Long Life Battery**

Up to 11 hours<sup>15</sup>

15. Windows 10 MM14 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See [www.bapco.com](http://www.bapco.com) for additional details.



### Features

#### WEIGHTS & DIMENSIONS

##### Weight

Starting at 1.29 kg <sup>16</sup>

Starting at 2.84 lb <sup>16</sup>

##### Dimensions (W x D x H)

208.1 x 300 x 18 mm (8.19 x 11.81 x 0.71 in)

16. Weight will vary by configuration.

#### PORTS/SLOTS

##### Ports

1 USB-A 3.1 Gen 1 port (Right)

1 USB 2.0 port (Left)

1 HDMI 1.4b<sup>8</sup>

1 headphone/microphone combo

1 AC power connector

##### Slots

1 multi-format digital media reader

Supports SD/SDHC/SDXC

8. HDMI cable not included.

#### ENVIRONMENTAL & INDUSTRY

<b>Environmental Data</b>	<b>Eco-Label Certifications &amp; declarations</b>	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: <ul style="list-style-type: none"> <li>IT ECO declaration</li> <li>US ENERGY STAR<sup>®</sup></li> <li>EPEAT<sup>□</sup> Gold registered in the United States. See <a href="http://www.epeat.net">http://www.epeat.net</a> for registration status in your country. Search keyword <i>generator</i> on HP's 3rd party option store for solar energy accessory at <a href="http://www.hp.com/go/options">http://www.hp.com/go/options</a></li> </ul>		
	<b>System Configuration</b>	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook".		
	<b>Energy Consumption (in accordance with US ENERGY STAR<sup>®</sup> test method)</b>	<b>115VAC, 60Hz</b>	<b>230VAC, 50Hz</b>	<b>100VAC, 60Hz</b>
	Normal Operation (Short idle)	5.06 W	5.08 W	5.19 W





### Features

Normal Operation (Long idle)	2.78 W	2.83 W	2.78 W
Sleep	0.72 W	0.74 W	0.72 W
Off	0.16 W	0.24 W	0.16W
	<p><b>NOTE:</b> 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.</p>		
<b>Heat Dissipation*</b>	<b>115VAC, 60Hz</b>	<b>230VAC, 50Hz</b>	<b>100VAC, 60Hz</b>
Normal Operation (Short idle)	17 BTU/hr	17 BTU/hr	18 BTU/hr
Normal Operation (Long idle)	10 BTU/hr	10 BTU/hr	10 BTU/hr
Sleep	2 BTU/hr	3 BTU/hr	2 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr
	<p><b>NOTE:</b> Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>		
<b>Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)</b>	Sound Power (L <sub>WAd</sub> , bels)	Sound Pressure (L <sub>pAm</sub> , decibels)	
Typically Configured – Idle	1.6	16	
Fixed Disk – Random writes	1.6	16	
<b>Longevity and Upgrading</b>	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:		
	Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
<b>Batteries</b>	<p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain:            Mercury greater the 1ppm by weight            Cadmium greater than 20ppm by weight</p> <p>Battery size: CR2032 (coin cell)            Battery type: Lithium</p>		



### Features

		Battery size: CR2032 (coin cell) Battery type: Lithium	
	<b>Additional Information</b>	<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 Gold level, see <a href="http://www.epeat.net">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 0% post-consumer recycled plastic (by wt.)</li> <li>This product is 94.4% recycle-able when properly disposed of at end of life.</li> </ul>	
	<b>Packaging Materials</b>	<b>External:</b>	PAPER/Corrugated 266 g
		<b>Internal:</b>	PLASTIC/Polyethylene low density 39 g
		The plastic packaging material contains at least 50% recycled content.	
		The corrugated paper packaging materials contains at least 75% recycled content.	
	<b>Material Usage</b>	<p>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>):</p> <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> <li>Polyvinyl Chloride (PVC) – except for wires and cables, has been voluntarily removed from most applications.</li> <li>Radioactive Substances</li> <li>Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)</li> </ul>	



### Features

	<b>Packaging Usage</b>	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> <li>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.</li> <li>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.</li> <li>• Design packaging materials for ease of disassembly.</li> <li>• Maximize the use of post-consumer recycled content materials in packaging materials.</li> <li>• Use readily recyclable packaging materials such as paper and corrugated materials.</li> <li>• Reduce size and weight of packages to improve transportation fuel efficiency.</li> <li>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.</li> </ul>
	<b>End-of-life Management and Recycling</b>	<p>Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <a href="http://www.hp.com/go/reuse-recycle">http://www.hp.com/go/reuse-recycle</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>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: <a href="http://www.hp.com/go/recyclers">http://www.hp.com/go/recyclers</a>. 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.</p>
	<b>HP, Inc. Corporate Environmental Information</b>	<p>For more information about HP's commitment to the environment: Global Citizenship Report</p> <p><a href="http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html">http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html</a></p> <p>Eco-label certifications  <a href="http://www8.hp.com/us/en/hp-information/environment/ecolabels.html">http://www8.hp.com/us/en/hp-information/environment/ecolabels.html</a></p> <p>ISO 14001 certificates:  <a href="http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842">http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842</a>  <a href="http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf">http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</a></p>



### Features

#### **SERVICE AND SUPPORT**

1 year standard commercial limited warranty; 1-year limited warranty on primary battery. On-site service and optional HP Care Pack Services are available to extend your protection beyond the standard warranty. Service levels and response times for HP Care Packs may vary depending on your geographic location. Restrictions and limitations apply. Service starts at date of hardware purchase. For details, visit [www.hp.com/go/cpc](http://www.hp.com/go/cpc)<sup>17</sup>

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. 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.

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### Technical Specifications

#### DISPLAYS

<b>Panel LCD 11.6 HD AG WLED SVA 45%cg 220nits eDP Slim</b>	<b>Outline Dimensions (W x H x D)</b>	268 x 168 mm
	<b>Active Area</b>	256.125 x 144 mm
	<b>Weight</b>	210 g max.
	<b>Diagonal Size</b>	11.6 inch
	<b>Contrast Ratio</b>	500:1
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	220 nits typ.
	<b>Pixel Resolution</b>	<b>Format</b> 1366 x 768
		<b>Configuration</b> RGB
	<b>Pixel Resolution Interface</b>	eDP 1.2
	<b>Backlight</b>	LED
	<b>Color Gamut Coverage</b>	45%
	<b>Color Depth</b>	6 bit
<b>Viewing Angle</b>	SVA 45/45/20/40	

<b>Panel LCD 11.6 inch HD (1366x768) BrightView WLED UWVA 50percent cg 220nits eDP 1.2 w/o PSR slim TOP</b>	<b>Outline Dimensions (W x H x D)</b>	268 x 168 mm
	<b>Active Area</b>	255.92 x 143.88 mm
	<b>Weight</b>	200 g max.
	<b>Diagonal Size</b>	11.6 inch
	<b>Thickness</b>	3.0 mm max
	<b>Contrast Ratio</b>	800:1 typ
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	250 nits typ.
	<b>Pixel Resolution</b>	<b>Format</b> 1366 x 768
	<b>Pixel Resolution Interface</b>	<b>Configuration</b> RGB
	<b>Backlight</b>	eDP 1.2
	<b>Color Gamut Coverage</b>	LED
	<b>Color Depth</b>	50%
<b>Viewing Angle</b>	6 bit	
	UWVA 85/85/85/85	



### Technical Specifications

#### STORAGE AND DRIVES

##### HARD DRIVES

<b>eMMC 128GB M0-276 MMCv5.0</b>	Drive Weight	0.2 g
	Rotation speed	NA
	Cache Buffer	NA
	Height	1.4 mm
	Width	11.5x13 mm
	Interface	MMC potocal
	Transfer Rate	NA
	Seek Time	Maximum Sequential Read: Up to 250 MB/s Maximum Sequential Write: Up to 70 MB/s
	Logical Blocks	32 GB (31,268,536,320 Bytes)/64 GB(62,537,072,640 Bytes)
	Operating Temperature	0 to 70
	Security Features	HS400
	Features	NA

<b>eMMC 32GB M0-276 MMCv5.0</b>	Drive Weight	0.2 g
	Rotation speed	NA
	Cache Buffer	NA
	NAND Type/Size	1.4 mm
	Height	11.5x13 mm
	Width	MMC potocal
	Interface	NA
	Transfer Rate	Maximum Sequential Read: Up to 250 MB/s Maximum Sequential Write: Up to 70 MB/s
	Seek Time	32 GB (31,268,536,320 Bytes)/64 GB(62,537,072,640 Bytes)
	Logical Blocks	0 to 70
	Operating Temperature	HS400
	Security Features	NA
Features		



### Technical Specifications

<b>eMMC 64GB M0-276 MMCv5.0</b>	Drive Weight	0.2 g
	Rotation speed	NA
	Cache Buffer	NA
	Height	1.4 mm
	Width	11.5 x 13 mm
	Interface	MMC potocal
	Transfer Rate	NA
	Seek Time	Maximum Sequential Read: Up to 250 MB/s Maximum Sequential Write: Up to 70 MB/s
	Logical Blocks	32 GB (31,268,536,320 Bytes)/64 GB(62,537,072,640 Bytes)
	Operating Temperature	0 to 70
	Security Features	HS400
	Features	NA

### NETWORKING/COMMUNICATIONS

<b>Intel® Dual Band Wireless - AC 7265 802.11 ac (2x2) WiFi + Bluetooth® Combo</b>	<b>Wireless LAN Standards</b>	IEEE 802.11a 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> <p>Note:</p> <p>The FCC has declared as of January 1, 2015 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.</p>
		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> </ul> <p>Note: Indonesia no support this band)</p>
	<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> </ul>



### Technical Specifications

- 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)

<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>• 802.11b : +16dBm minimum</li> <li>• 802.11g : +14dBm minimum</li> <li>• 802.11a : +14dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +13dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +13dBm minimum</li> <li>• 802.11n HT20(5GHz) : +12dBm minimum</li> <li>• 802.11n HT40(5GHz) : +12dBm minimum</li> <li>• 802.11ac 80MHz(5GHz) : +11dBm minimum</li> </ul>
<b>Power Consumption</b>	Transmit: 2.0 W (max)  Receive: 1.6 W (max)  Idle mode (PSP): 180 mW (WLAN Associated)  Idle mode: 60 mW (WLAN unassociated)  Radio disabled: 30 mW
<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, 1Mbps : -94dBm maximum  802.11b, 11Mbps : -86dBm maximum





### Technical Specifications

802.11g, 6Mbps : -88dBm maximum  
 802.11g, 54Mbps : -74dBm maximum  
 802.11a, 6Mbps : -86dBm maximum  
 802.11a, 54Mbps : -72dBm maximum  
 802.11n, MCS07 : -69dBm maximum  
 802.11n, MCS15 : -66dBm maximum  
 802.11ac, 1SS, MCS-0 : -86dBm maximum  
 802.11ac, 1SS, MCS-9 : -61dBm maximum  
 802.11ac, 2SS, MCS-0 : -83dBm maximum  
 802.11ac, 2SS, MCS-9 : -58dBm maximum

<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 M.2 MiniCard	
<b>Dimensions</b>	Type 2230: 2.3 x 22.0 x 30.0 mm	
<b>Weight</b>	Type 2230: 2.8g	
<b>Operating Voltage</b>	3.3v +/- 9%	
<b>Temperature</b>	<b>Operating</b>	14° to 158° F (-10° to 70° C)
	<b>Non-operating</b>	-40° to 176° F (-40° to 80° C)
<b>Humidity</b>	<b>Operating</b>	10% to 90% (non-condensing)
	<b>Non-operating</b>	5% to 95% (non-condensing)
<b>Altitude</b>	<b>Operating</b>	0 to 10,000 ft (3,048 m)
	<b>Non-operating</b>	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 \(OFDM modulation\).](#)



### Technical Specifications

#### HP Integrated Module with Bluetooth 4.0+EDR Wireless Technology

**Bluetooth Specification** 4.0+EDR Compliant

**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** The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of +4 dBm for BR and EDR.

Receiver Sensitivity	Modulation	0.01% BER	0.001% BER
	GFSK	-80 dBm	-70 dBm
$\pi/4$ -DQPSK	-80 dBm	-70 dBm	

**Power Consumption** Peak (Tx) 330 mW  
Peak (Rx) 230 mW  
Selective Suspend 17 mW

**Range** Up to 33 ft (10 m)

**Electrical Interface** USB 2.0 compliant

**Bluetooth Software Supported** Microsoft Windows Bluetooth Software

**Link Topology**

**Electrical Interface** Point to Point, Multipoint Pico Nets up to 7 slaves

**Bluetooth Software Supported** Full support of Bluetooth Security Provisions

**Security**

**Power Management** Microsoft Windows ACPI, and USB Bus Support



### Technical Specifications

<b>Power Management</b>	Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
<b>Certifications</b>	
<b>Security</b>	All necessary regulatory approvals for supported countries, including:
<b>Certifications</b>	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
<b>Bluetooth Profiles Supported</b>	
<b>Power Management</b>	ETS 300 328, ETS 300 826
<b>Certifications</b>	Low Voltage Directive IEC950
<b>Certifications</b>	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> Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)



### Technical Specifications

#### POWER

<b>HP 45W AC Adapter</b>	<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	
	<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>	1.4A at 90VAC
	<b>Output</b>	<b>Output power</b>	45W
		<b>Hold-up time</b>	5m Sec. at 115 VAC input
		<b>DC output</b>	19.5V
		<b>Output current limit</b>	< 8.0A
	<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>HP 2-cell Polymer Battery (37.69 WHr)</b>	<b>Cells/Type</b>	2-cell Polymer	
	<b>Watt-hour capacity</b>	37.69Whr	
	<b>Temperature</b>		
	<b>Operating (Charging)</b>	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)	
	<b>Warranty</b>	1 year limited	

#### COUNTRY OF ORIGIN

China



### Options and Accessories (sold separately)

Category	Description	Part number
<b>Cases</b>	HP Exec Midnight 14.1" Slim Top Load	1WM82AA
	HP Essential Top Load Case	H2W17AA
<b>Docking</b>	HP USB Travel Dock	T0K30AA
	HP 3005pr USB3 Port Replicator	Y4H06AA
	HP USB-C Universal Dock	1MK33AA
<b>Input/Output</b>	HP Slim USB Keyboard & Mouse	T6T83AA
	HP USB Optical Travel Mouse	G1K28AA
	HP Ultrathin Bluetooth Mouse	L9V78AA
	HP HDMI to VGA Adapter	H4F02AA
	HP HDMI to DVI Adapter	F5A28AA
	HP USB Gigabit RJ45 Adapter	N7P47AA
	HP 45W Smart AC Adapter	H6Y88AA
<b>Storage</b>	HP External USB Optical Drive	F2B56AA
<b>UCC</b>	HP Conferencing Keyboard	K8P74AA
	HP Speaker Phone	K7V16AA
	HP Wired Headset	K7V17AA
<b>Displays</b>	HP EliteDisplay S140u USB Portable Monitor	G8R65AA
	HP ProDisplay P240VA 23.8-inch Monitor	N3H14AA
	HP ProDisplay P232 23-inch Monitor	K7X31AA
	HP ProDisplay P223 21.5-inch Monitor	X7R61AA
	HP EliteDisplay E230t 23-inch Touch Monitor	W2Z50AA
	HP EliteDisplay E240c 23.8-inch Collaboration Monitor	M1P00A8



### Summary of Changes

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
September 5, 2017	V1 to V2	Update	"HP Schoolpack for Win10 Pro OS" added to software section
September 7, 2017	V2 to V3	Update	"HP Schoolpack for Win10 Pro OS" cut to "HP School Pack" on software section
November 29, 2017	V3 to V4	Update	Dimensions fixed
May 7, 2018	V4 to V5	Added	Environmental tab

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