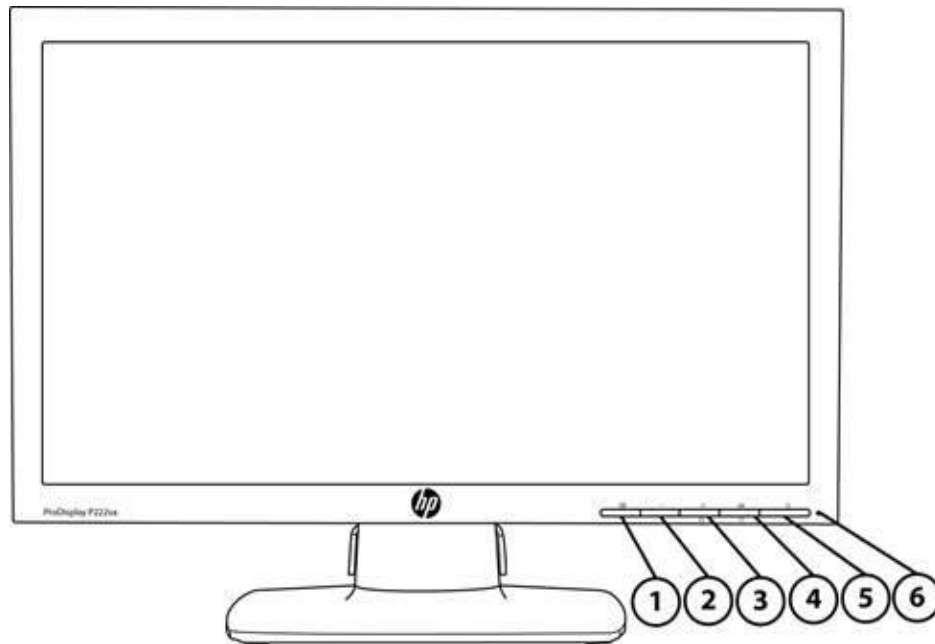
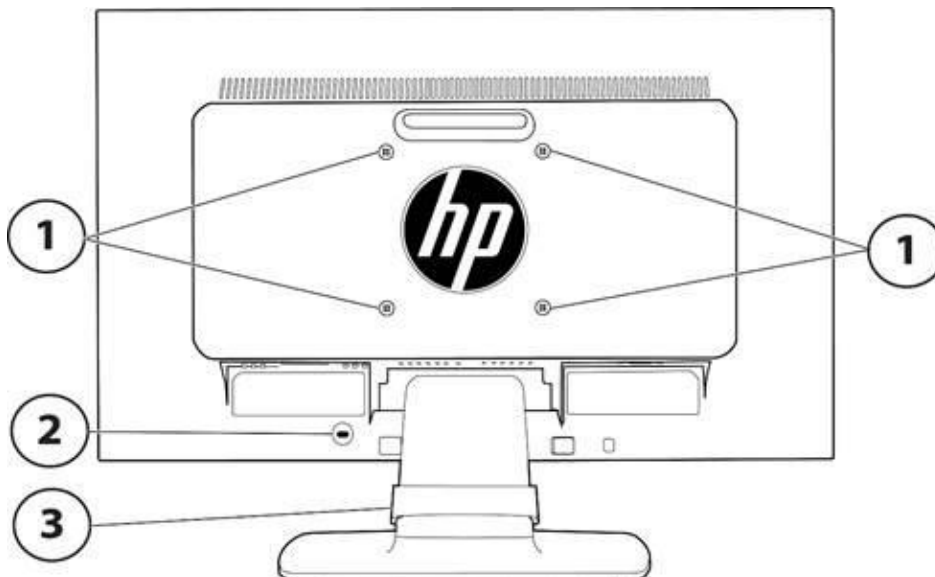


Visión de conjunto

HP ProDisplay P222va monitor de 21,5 pulgadas

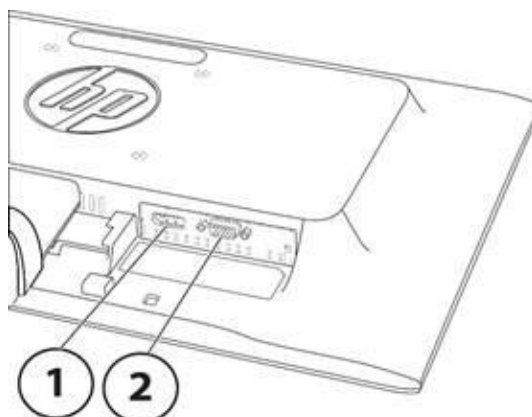


- | | | | |
|----|----------------------------------|----|---------------------------|
| 1. | Botón de menú | 4. | Aceptar / |
| 2. | Menos (" - ") | 5. | Botón de encendido |
| 3. | Más (" + ") / control de entrada | 6. | Indicador LED de |



- | | | | |
|----|---------------------------------------|----|---|
| 1. | Orificios de montaje VESA | 3. | clip de colocación de los cables
(Soporte no incluido en la cabeza
solamente
modelo) |
| 2. | Ranura de bloqueo de seguridad | | |

Visión de conjunto



1. DisplayPort v 1.2
2. VGA



HP y HP ProDisplay P222va ajustable Pantalla Doble modo de configuración de monitor dual se muestra. (Nota: Los monitores y los soportes vendidos separadamente)

Su configuración ideal en la oficina comienza con dos monitores HP ProDisplay P222va combinados con un soporte ajustable para dos pantallas HP (AW664AA) para una pequeña huella, solución de trabajo de alta productividad. *

*** NOTA: El soporte multi-monitor es dependiente en su sistema. Consulte la guía del usuario o las especificaciones técnicas de la compatibilidad. se pueden requerir accesorios opcionales.**

Visión de conjunto

Ponga su PC Pro contenido de frente y al centro de HP en una amplia pantalla diagonal de 21,5 pulgadas con el HP ProDisplay P222va Monitor.

Características principales:

- Compartir su contenido en un color brillante y nítida en la pantalla diagonal de 21,5 pulgadas con resolución 1920 x 1080, y 3000: 1 contraste ratio.¹
- Experimenta una calidad de imagen impresionante FHD, gráficos ultra rápidos de actualización y colores vivos con DisplayPort.
- Coloque su PC HP o seleccione HP Thin Client directamente detrás de la display.² ☐
- Reducir el consumo de energía y ayudar a reducir sus costes con un diseño de bajo consumo.
- Liberar espacio en el escritorio con options³ habilitado por el patrón VESA de 100 mm de montaje, o seleccione el Sólido la cabeza MODEL3 si no es necesario un soporte.
- Personalizar una solución total con options³ diseñado para su visualización. ☐
- El diseño de la pantalla de su forma de trabajar con el software HP Display Assistant. ☐
- Obtener galardonado servicio y soporte por teléfono o en línea. ☐

1 Todas las especificaciones de rendimiento representan las especificaciones típicas proporcionadas por los fabricantes de

QuickSpecs

HP ProDisplay P222va monitor de 21,5

componentes de HP; el rendimiento real puede ser mayor o menor.

- 2 Requiere HP Quick Release, que se vende por separado. Ver especificaciones r pidas de productos para PC y compatibilidad exacta de cliente ligero.
- 3 Cada accesorio se vende por separado. hardware de montaje se vende por separado. S lo la cabeza modelo se vende por separado y la disponibilidad var a seg n la regi n.



Especificaciones técnicas

modelos: K7X30AA - HP ProDisplay P222va monitor de 21,5 pulgadas
Sólo HP ProDisplay P222va 21,5 pulgadas Monitor de Cabeza - L5U12AA

Panel	Tipo	21,5 pulgadas de luz de fondo VA w / LED
	Área de imagen visualizable (diagonal)	54,61 cm (21,5 pulgadas) de pantalla ancha; medido en diagonal
	Panel de Zona Activa (W x H)	47,6 x 26,7 cm (18,74 x 10,51 cm)
	Resolución	1920 x 1080 @ 60 Hz
	Relación de aspecto	16: 9
	Ángulo de visión	Hasta 178 ° horizontal / vertical de 178 ° típico
	Brillo	250 cd / m²
	Relación de contraste (típica)	3000: 1 estática
	Tiempo de respuesta (típico): *	8 ms de gris a gris
	Tamaño de píxel	.248 mm
	Píxeles por pulgada (PPI)	102.4 DPI
	Vida de la lámpara de luz de fondo (a la mitad de brillo)	30.000 horas como mínimo
	Soporte de color	Hasta 16,7 millones de colores con el uso de la tecnología FRC
	Rango de color (típico)	72%

* Las especificaciones de rendimiento representan las especificaciones típicas proporcionadas por los fabricantes de componentes de HP; el rendimiento real puede ser mayor o menor.

Controles del usuario / Auto, Power	Botones o interruptores	Menú, de signo menos (" - "), de signo más (" + ") / control de entrada, OK
	Idiomas	10 (Inglés, español, alemán, francés, italiano, Países Bajos, Portugués, japonés, chino y T-S-china)
	Visualización en pantalla (OSD) Controles del usuario	Brillo, contraste, control de entrada, control de color, control de imagen, control de potencia, control OSD, Administración, Idioma, Información, Salir
	Modos programables por el usuario	Sí, 10
	Los controles de audio	N / A
Interfaz de señal / Rendimiento	Frecuencia horizontal	24-80 kHz
	Frecuencia vertical	50-60 Hz
	Resolución nativa	1920 x 1080 @ 60 Hz

QuickSpecs

HP ProDisplay P222va monitor de 21,5

Modos de gráficos predefinidos (No entrelazada)

640 x 480 @ 60Hz
800 x 600 @ 60Hz
1024 x 768 @ 60Hz
1280 x 720 @ 60Hz
1280 x 800 @ 60Hz



Especificaciones técnicas

		1280 x 1024 @ 60Hz
		1440 x 900 @ 60Hz
		1600 x 900 @ 60Hz
		1680 x 1050 @ 60Hz
		1920 x1080 @ 60Hz
	Anti reflej ante	S
Vídeo / Otras entradas	Conecta y reproduce	S
	Conectores de entrada	(1) DisplayPort 1.2, (1) VGA soporte HDCP en DisplayPort
	USB	N / A
	Cables de vídeo incluido	(1) DisplayPort 1,8 m (5.9 ft) (1) VGA 1,8 m (5.9 ft)
	Audio	N / A
Multimedia	altavoces	N / A
Poder	Fuente de alimentación	Interno
	Potencia de entrada	100 - 240 V CA 50/60 Hz
	Poder maximo	28 W
	Potencia típica	24 W
	El poder del sueño	0,5 W
	Longitud del cable de alimentación	1,9 m (6.2 ft)
Mecánico	Dimensiones (W x D x H)	Descomprimido w / stand (Valor m s alto) 51,8 x 18,66 x 37,92 cm (20.39 x 7.35 x 14.93 in) Descomprimido w / o soporte (S lo la cabeza) 51,8 x 4,75 x 31,52 cm x 1.87 x 12.41 in) envasada 58,9 x 13,2 x 40,9 cm (23.19 x 5.20 x 16.10 in)
	Peso	La cabeza Sólo 2,94 kg (6,48 lb) Descomprimido con el soporte 3,61 kg (7,95 lb) envasada 4,9 kg (10,79 lb)
Características ergonómicas - No disponible en cabeza único modelo	soporte desmontable	S , barcos separan * * No se incluye con el modelo nico jefe
	Ajuste de altura	N / A
	Rango de inclinación	-5 ° a + 22 ° en vertical
	Girar	N / A
	Pivote	N / A
Ambiental	Temperatura - Temperatura de operación - no operativo	5 ° a 35 ° C (41 ° a 95 ° F) -20 ° a 60 ° C (-4 ° a 140 ° F)
	Humedad - Funcionamiento	20% a 80% sin condensaci n



Especificaciones técnicas

opciones	Humedad - no operativo	5% a 95%, 38,7 ° C max de bulbo húmedo
	Altitud -	0 a 5.000 m (0 a 16.404 pies)
	Altitud - ciones operando	0 a 12.192 m (0 a 40.000 pies)
	Retroiluminación LED	S
	Panel de CCFL	No
	Sin arsénico Display Vaso	S
	halógeno bajo¹	S (con excepción de los cables)
	Sin mercurio Display Contraluz	S
	Altavoz LCD HP Barn mero -Parte NQ576AA	Se alimenta directamente por el PC conectado, la barra de coloca en el bisel inferior del monitor para ofrecer soporte de audio seleccionar monitores de pantalla plana HP. Incluye dos altavoces gama completa de sonido y auriculares externos duales. Se vende por Para obtener más información, consulte especificaciones requeridas del producto.
	HP dual ajustable Soporte de n mero AW664AA	solución de doble pantalla para ahorrar espacio Premium proporciona vigilar bienes raíces y hace que sea posible gestionar múltiples aplicaciones simultáneamente. Peso ajustable para monitores 17-24 ". Rotar las pantallas en las posiciones vertical / horizontal.
	HP Integrated Work Centro para el Mini y Delgado Cliente-N mero de pieza G1V61AA	Aprovechar al máximo los espacios de trabajo pequeños con un Mini / Thin Client que le permite crear una solución de escritorio la combinación de una pantalla compatible con hasta 24 pulgadas elección de la plataforma compatible para darle acceso frontal todas sus entradas.
	HP DisplayPort Cable Equipo n mero -Parte VN567AA	Se conecta un conector DisplayPort en un escritorio HP para computadora a un conector DisplayPort en un monitor
	HP LCD Monitor Liberación rápida - Parte	Una solución de montaje de monitor LCD fácil de usar, compatible que le permite conectar rápidamente y de forma segura un monitor LCD a una información, consulte el documento de especificaciones requeridas de este producto.
	PC HP para Empresas Kit de bloqueo de N mero de parte	Se conecta a la parte trasera de la PC con un cable de acero de se utiliza para asegurar un PC o periféricos como ratones, monitores o dispositivos de seguridad USB para protegerlos contra la retirada no autorizada de conectar físicamente el sistema a una punto de anclaje.
¿Qué hay en la	supervisar y Accesorios Documentación Software	HP ProDisplay P222va 21,5 pulgadas monitor, cable de alimentación pies, cable DisplayPort (1,8 m) de cable VGA (1,8 m) 5.9 pies CD (incluye guía del usuario, la garantía, los conductores) HP Display Assistant

Especificaciones técnicas

Otro	Guía del usuario de Idiomas	Inglés, árabe, chino S., T. chino, checo, danés, holandés, Finlandés, francés, alemán, griego, húngaro, italiano, japonés, Kazajo, coreano, noruego, polaco, portugués brasileño, ruso, esloveno, español, sueco y turco.
	garantía Idiomas	Inglés, árabe, chino S., T. chino, checo, danés, holandés, Finlandés, francés, alemán, griego, húngaro, italiano, japonés, Kazajo, coreano, noruego, polaco, portugués brasileño, ruso, esloveno, español, sueco y turco.
	Color	Negro
	montaje VESA	100 mm de montaje VESA
	Bloqueo de seguridad Listo	S
	País de origen	China
Certificación y Cumplimiento	TCO Certified, CEL Grado 1, certificación de Microsoft WHQL (Windows 8.1 y Windows 7), ENERGY STAR® Calificado, EPEAT® Gold2, CE, CB, KC, KCC, NOM, PSB, el ICE, TUV-S, CCC, CEL, CECP, SEPA, la EPA, ISC, VCCI, FCC, Taiwán: BMSI	
Compatibilidad	Compatible con las plataformas que utilizan los modos de video estándar VESA. Se recomienda su uso con productos de HP.	
Servicio y garantía	Protegido por HP, incluida una garantía limitada estándar de 3 años. Opcional HP Care Pack son contratos de servicio extendidos que se extienden su protección más allá de la norma warranties.3	

datos Ambientales

Certificaciones eco-etiquetas y declaraciones	Este producto ha recibido o está en el proceso de certificación de las siguientes homologaciones y pueden ser etiquetados con una o más de estas marcas: • TI declaración ECO □ EE.UU. ENERGY STAR® □ □ • TCO 6.0 • EPEAT® <Oro> registrada en los Estados Unidos. Ver http://www.epeat.net para el estado de registro en su país		
Consumo de energía (de conformidad con EE.UU. ENERGY STAR® método de	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Operación normal	19.3 W	19.0 W	19.4 W
Dormir	0,3 W	0,3 W	0,3 W
Apagado	0,1 W	0,2 W	0,1 W
Disipación de	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Operación normal	66 BTU / hr	65 BTU / hr	66 BTU / hr
Dormir	1 BTU /	1 BTU / hr	1 BTU / hr
Apagado	1 BTU /	1 BTU / hr	1 BTU / hr
	* NOTA: La disipación de calor se calcula en base a los vatios medidos, suponiendo que el nivel de servicio que se alcanza durante una hora.		
Información Adicional	□ Este producto cumple con las restricciones de sustancias peligrosas (RoHS) Directiva - 2002/95 / CE. □ Este producto HP está diseñado para cumplir con los residuos electrónicos y eléctricos (RAEE) Directiva - 2002/96 / CE. □ Este producto está en conformidad con la Propuesta 65 de California (Estado de California; Segura Agua Potable y cumplimiento del Acta de 1986). □ Este producto cumple con la norma IEEE 1680 (EPEAT) en el nivel Oro, ver www.epeat.net □ piezas de plástico que pesen más de 25 gramos utilizados en el producto están marcados por la norma ISO 11469 y ISO1043. □ Este producto contiene 16,8% post-consumo de plástico reciclado (en peso). □ Este producto es el 97,9% de reciclaje en el poder si se desecha adecuadamente al final de la vida.		
Materiales de embalaje	Externo:	PAPEL / corrugado	646,4 g
	Interno:	PLÁSTICO / polietileno expandido EPE-	21,7 g
		PLÁSTICO / EPS (poliestireno expandido)	207,6 g
		Plástico / Otros plásticos desconocida	3,8 g
RoHS Conformidad	Hewlett-Packard se compromete al cumplimiento de todas las leyes y reglamentos ambientales aplicables, incluida la Unión Europea Restricción de Sustancias Peligrosas (RoHS). El objetivo de HP es superar las obligaciones de cumplimiento mediante el cumplimiento de los requisitos de la Directiva RoHS a nivel mundial. Para el 1 de julio de 2006, las sustancias RoHS serán virtualmente		



datos Ambientales

	debajo de los límites legales) para todos los productos electrónicos de HP basados en la directiva RoHS, excepto cuando se reconoce ampliamente que no hay otra alternativa técnicamente factible (como se indica por una exención en virtud de la Directiva RoHS de la UE).
Uso de materiales	Este producto no contiene ninguna de las siguientes sustancias en exceso de los límites normativos (consulte la Especificación HP General de Medio Ambiente en http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf): • Amianto • Ciertos colorantes azoicos • Ciertos retardantes de llama bromados - No se puede usar como retardantes de llama • en plásticos cadmio • Hidrocarburos clorados parafinas • cloradas de formaldehído • Difenil metanos halogenados • carbonatos y sulfatos de plomo • plomo y compuestos de plomo • xido mercurio Baterías • Nquel - acabados no se deben utilizar en la superficie externa diseñado para ser manejado o llevado por el usuario con frecuencia. • Sustancias destructoras del ozono bifenilos • polibromados (PBB) polibromados de • bifeniliteres (PBBEs) Bifenilos • polibromados xidos (PBBOs) Bifenilos • policlorados (PCB) policlorados (PCT) • terfenilos • El cloruro de polivinilo (PVC) - a excepción de alambres y cables, y determinados envases al por menor ha sido retirado voluntariamente de la mayoría de las aplicaciones. • Sustancias radioactivas • Tributilo de estaño (TBT), trifenil estaño (TPT), xido de estaño tributilo (TBEO) •
embalaje	HP sigue estos consejos para disminuir el impacto medioambiental de los envases del producto: • Eliminar el uso de metales pesados tales como plomo, cromo, mercurio y cadmio en materiales de embalaje. • Eliminar el uso de sustancias que agotan el ozono (SAO) en los materiales de • envasado. materiales de embalaje de diseño para facilitar el desmontaje. • Maximizar el uso de materiales de contenido reciclado post-consumo en materiales de • embalaje. Utilizar materiales de embalaje fácilmente reciclables, como papel y materiales • corrugados. Reducir el tamaño y el peso de los paquetes para mejorar la eficiencia del • combustible de transporte. materiales de embalaje de plástico están marcados de acuerdo con la norma ISO 11469 y DIN 6120 estándares.
Fin de la vida útil de Gestión y Reciclaje	Hewlett-Packard ofrece la devolución del producto al final de su vida HP y programas de reciclaje en muchas áreas geográficas. Para reciclar el producto, por favor vaya a: http://www.hp.com/go/reuse-recycle o póngase en contacto con su oficina de ventas de HP más cercana. Los productos devueltos a HP serán reciclados, valorizados o eliminados de una manera responsable. La directiva WEEE de la UE (2002/95 / CE) exige a los fabricantes para proporcionar información sobre el tratamiento para cada tipo de producto para el uso de las instalaciones de tratamiento. Esta información (producto instrucciones de desmontaje) se publica en el sitio web de Hewlett Packard en: http://www.hp.com/go/recyclers. Estas instrucciones pueden ser utilizados por los recicladores y otras instalaciones de tratamiento de RAEE, así como clientes OEM de HP que



pulgadas

datos Ambientales

Hewlett-Packard Información Ambiental Corporativo	Para obtener más información acerca del compromiso de HP con el medio ambiente: Informe de ciudadanía global http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html certificaciones de la etiqueta ecológica http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html ISO 14001: http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html
--	--

Copyright © 2015 Hewlett-Packard Development Company, L. P.

ENERGY STAR es una marca registrada propiedad del gobierno de EE.UU.. Todas las especificaciones representan las especificaciones típicas proporcionadas por los fabricantes de componentes de HP; el rendimiento real puede ser mayor o menor. Las únicas garantías de los productos y servicios de HP se establecen en las declaraciones de garantía expresas que acompañan a dichos productos y servicios. Nada en este documento debe interpretarse como una garantía adicional. HP no será responsable de los errores u omisiones técnicos o editoriales aquí contenidos.

1. fuentes de alimentación externas, cables de alimentación, cables y periféricos no son halógeno bajo. Las piezas de repuesto obtenidas después de la compra no están halógeno bajo.
2. EPEAT® Oro donde HP registra productos de pantalla. Ver www.epeat.net para el estado de registro en su país. S
3. Los niveles de servicio y tiempos de respuesta para HP Care Pack pueden variar dependiendo de su ubicación geográfica. El servicio se inicia a partir de la fecha de compra del hardware. Restricciones y limitaciones. Ver www.hp.com/go/cpc para detalles.
4. El lanzamiento rápido de HP ha sido diseñado para soportar un máximo de hasta 24 libras (10,9 kg) para todos los dispositivos montados. Debido a superficies de montaje varían ampliamente y el método de montaje final y la configuración pueden variar, los tornillos de montaje no están suministrados (con excepción de los tornillos compatibles con VESA). HP recomienda que consulte con un profesional de ingeniería, arquitectura o construcción calificado para determinar el tipo y la cantidad apropiada de los tornillos de montaje necesarios para su aplicación y para asegurar que su solución de montaje esté correctamente instalado para soportar las cargas aplicadas.



pulgadas

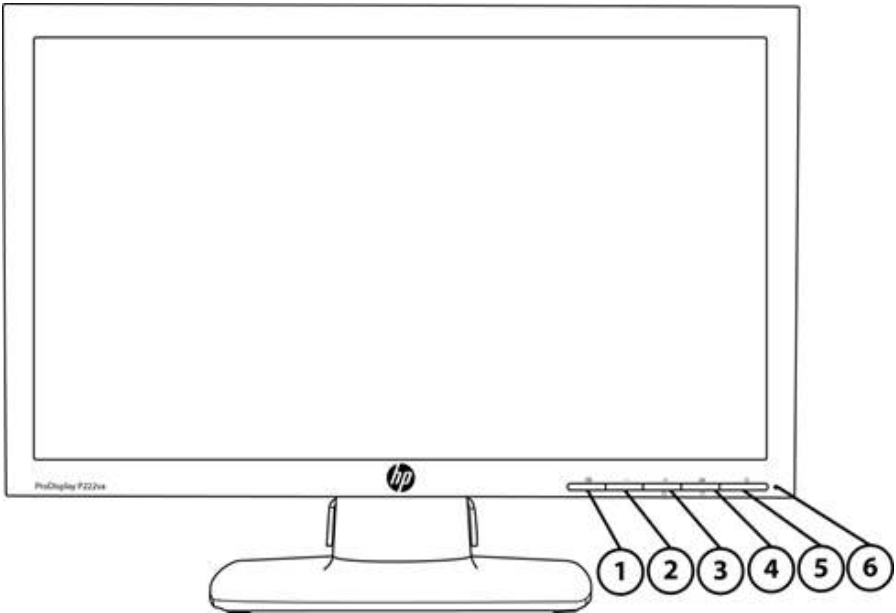
cambio de registro

cambio de registro	

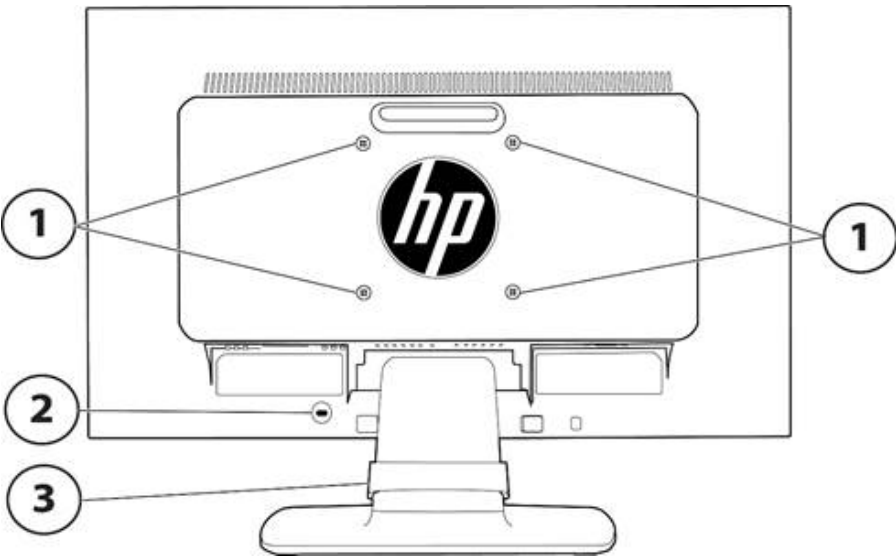


Overview

HP ProDisplay P222va 21.5-inch Monitor



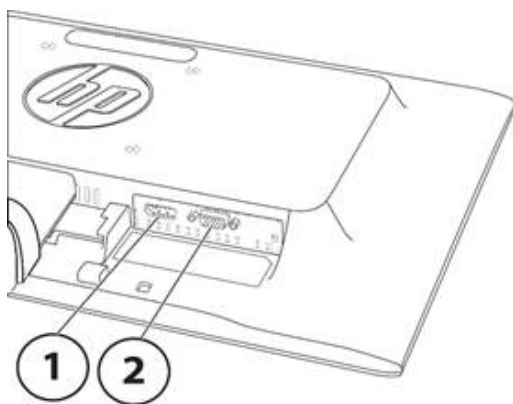
- | | |
|---------------------------------|------------------------|
| 1. Menu button | 4. OK/Auto, |
| 2. Minus (" - ") | 5. Power button |
| 3. Plus (" + ") / Input Control | 6. Power indicator LED |



- | | |
|------------------------|--|
| 1. VESA mounting holes | 3. Cable routing clip
(stand not included on head only model) |
| 2. Security lock slot | |



Overview



- 1. DisplayPort v 1.2
- 2. VGA



Your ideal office configuration begins with two HP ProDisplay P222va monitors combined with an HP Adjustable Dual Display Stand (AW664AA) for a small footprint, high productivity work solution.*

HP ProDisplay P222va and HP Adjustable Dual Display Stand dual monitor configuration shown. (Note: monitors and stands sold separately)

*NOTE: Multi-monitor support is dependent on your system. Check your user guide or technical specifications for compatibility. Optional accessories may be required.

Overview

Put your HP Pro PC content front and center on an ample 21.5-inch diagonal display with the HP ProDisplay P222va Monitor.

Key features:

- Share your content in crisp, clear color on the 21.5-inch diagonal screen with 1920 x 1080 resolution, and 3000:1 contrast ratio.¹
- Experience stunning FHD picture quality, ultra-fast graphics refresh, and vivid colors with DisplayPort.
- Attach your HP PC or select HP Thin Client directly behind the display.²
- Reduce power consumption and help lower your costs with an energy-efficient design.
- Free up valuable desk space with mounting options³ enabled by the 100-mm VESA pattern, or select the head-only model³ if you don't need a stand.
- Customize a total solution with options³ designed for your display.
- Design the screen for how you work with HP Display Assistant software.
- Get award-winning service and support by phone or online.

1 All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.
2 Requires HP Quick Release, sold separately. See product QuickSpecs for exact PC and thin client compatibility.
3 Each accessory sold separately. Mounting hardware sold separately. Head only model sold separately and availability varies by region.



Technical Specifications

Models: K7X30AA - HP ProDisplay P222va 21.5-inch Monitor
L5U12AA - HP ProDisplay P222va 21.5-inch Monitor Head Only

Panel	Type	21.5-inch VA w/LED backlight
	Viewable Image Area (diagonal)	54,61 cm (21.5-inch) widescreen; diagonally measured
	Panel Active Area (W x H)	47,6 x 26,7 cm (18.74 x 10.51 in)
	Resolution	1920 x 1080 @ 60 Hz
	Aspect Ratio	16:9
	Viewing Angle	Up to 178° horizontal/178° vertical typical
	Brightness	250 cd/m ²
	Contrast Ratio (Typical)	3000:1 Static
	Response Time (Typical):*	8 ms gray to gray
	Pixel Pitch	.248 mm
	Pixels Per Inch (PPI)	102.4 DPI
	Backlight Lamp Life (to half brightness)	30,000 hours minimum
	Color Support	Up to 16.7 million colors with the use of FRC technology
	Color Gamut (Typical)	72%
	* Performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.	
User Controls	Buttons or Switches	Menu, Minus ("-"), Plus ("+") /Input Control, OK/Auto, Power
	Languages	10 (English, Spanish, German, French, Italian, Netherlands, Portuguese, Japanese, T-Chinese and S-Chinese)
	On Screen Display (OSD) User Controls	Brightness, Contrast, Input Control, Color Control, Image Control, Power Control ,OSD control, Management, Language, Information, Exit
	User Programmable Modes	Yes, 10
	Audio Controls	N/A
Signal Interface/ Performance	Horizontal Frequency	24-80 kHz
	Vertical Frequency	50-60 Hz
	Native Resolution	1920 x 1080 @ 60 Hz
	Preset Graphic Modes (non-interlaced)	640 x 480 @ 60Hz
		800 x 600 @ 60Hz
		1024 x 768 @ 60Hz
		1280 x 720 @ 60Hz
		1280 x 800 @ 60Hz



Technical Specifications

		1280 x 1024 @ 60Hz	
		1440 x 900 @ 60Hz	
		1600 x 900 @ 60Hz	
		1680 x 1050 @ 60Hz	
		1920 x1080 @ 60Hz	
Video/Other Inputs	Anti-Glare	Yes	
	Plug and Play	Yes	
	Input Connectors	(1) DisplayPort 1.2, (1) VGA	
		HDCP support on DisplayPort	
	USB	N/A	
Multimedia	Video Cables Included	(1) DisplayPort 1,8 m (5.9 ft)	
		(1) VGA 1,8 m (5.9 ft)	
	Audio	N/A	
	Speakers	N/A	
	Power		
Power	Power Supply	Internal	
	Input Power	100 - 240 VAC 50/60 Hz	
	Maximum Power	28 W	
	Typical Power	24 W	
	Sleep Power	0.5 W	
Mechanical	Power Cable Length	1,9 m (6.2 ft)	
	Dimensions (W x D x H)	Unpacked w/stand (highest setting)	51,8 x 18,66 x 37,92 cm (20.39 x 7.35 x 14.93 in)
		Unpacked w/o stand (head only)	51,8 x 4,75 x 31,52 cm (20.39 x 1.87 x 12.41 in)
		Packaged	58,9 x 13,2 x 40,9 cm (23.19 x 5.20 x 16.10 in)
	Weight	Head Only	2,94 kg (6.48 lb)
Ergonomic Features - Not available on head only model		Unpacked with stand	3,61 kg (7.95 lb)
		Packaged	4,9 kg (10.79 lb)
	Detachable Stand	Yes, ships detached*	
		*Not included with head only model	
	Height Adjustment	N/A	
Environmental	Tilt Range	-5° to + 22° vertical	
	Swivel	N/A	
	Pivot	N/A	
	Temperature - Operating	5° to 35° C (41° to 95° F)	
	Temperature - Non-operating	-20° to 60° C (-4° to 140° F)	
	Humidity - Operating	20% to 80% non-condensing	



QuickSpecs

HP ProDisplay P222va 21.5-inch Monitor

Technical Specifications

Options	Humidity - Non-operating	5% to 95%, 38.7° C max wet-bulb
	Altitude - Operating	0 to 5,000 m (0 to 16,404 ft)
	Altitude - Non-operating	0 to 12,192 m (0 to 40,000 ft)
	White LED Backlights	Yes
	CCFL Panel	No
	Arsenic-Free Display Glass	Yes
	Low Halogen¹	Yes (except cables)
	Mercury-Free Display Backlighting	Yes
	HP LCD Speaker Bar—Part number NQ576AA	Powered directly by the connected PC, the Speaker Bar seamlessly attaches to the monitor's lower bezel to bring full audio support to select HP flat panel monitors. Features include dual speakers with full sound range and dual external headphone jacks. Sold separately. For more information, refer to the product's QuickSpecs.
	HP Adjustable Dual Display Stand—Part Number AW664AA	Premium space-saving dual screen solution provides access to more monitor real estate and makes it possible to manage multiple applications simultaneously. Weight adjustable for dual monitors from 17-24". Rotate displays into portrait/landscape positions.
What's in the box?	HP Integrated Work Center for Desktop Mini and Thin Client—Part Number G1V61AA	Make the most of small work spaces with an HP IWC Desktop Mini/Thin Client that lets you create a compact desktop solution by combining a compatible display up to 24 diagonal inches with your choice of compatible platform to give you convenient front access to all of its inputs.
	HP DisplayPort Cable Kit —Part number VN567AA	Connects a DisplayPort connector on an HP Business Desktop computer to a DisplayPort connector on a monitor
	HP LCD Monitor Quick Release — Part number EM870AA⁴	An easy-to-use, VESA-compliant, LCD monitor mounting solution that allows you to quickly and securely attach an LCD monitor to a variety of stands, brackets, arms or wall mounts. For more information, refer to this product's QuickSpecs document.
	HP Business PC Security Lock Kit — Part number PV606AA	Attaches to the rear of the PC with a six-foot steel cable that can be used to secure a PC or peripherals such as mice, keyboards, monitors or USB security devices to protect them against unauthorized removal by physically connecting the system to an anchor point.
What's in the box?	Monitor and Accessories	HP ProDisplay P222va 21.5-inch Monitor, AC power cord (1.9m) 6.2 ft, DisplayPort cable (1.8m) VGA cable (1.8m) 5.9 ft
	Documentation	CD (includes user guide, warranty, drivers)
	Software	HP Display Assistant



Technical Specifications

Other	User Guide Languages	English, Arabic, S. Chinese, T. Chinese, Czech, Danish, Dutch, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Kazakh, Korean, Norwegian, Polish, Brazilian Portuguese, Russian, Slovenian, Spanish, Swedish and Turkish.
	Warranty Languages	English, Arabic, S. Chinese, T. Chinese, Czech, Danish, Dutch, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Kazakh, Korean, Norwegian, Polish, Brazilian Portuguese, Russian, Slovenian, Spanish, Swedish and Turkish.
	Color	Black
	VESA Mounting	100 mm VESA mount
	Security Lock-Ready	Yes
	Country of Origin	China
Certification and Compliance	TCO Certified, CEL Grade 1, Microsoft WHQL Certification (Windows 8.1 and Windows 7), ENERGY STAR® Qualified, EPEAT® Gold ² , CE, CB, KC, KCC, NOM, PSB, ICE, TUV-S, CCC, CEL, CECP, SEPA, EPA, ISC, VCCI, FCC, Taiwan: BMSI	
Compatibility	Compatible with platforms using the VESA standard video modes. Recommended for use with HP products.	
Service and Warranty	Protected by HP, including a 3 year standard limited warranty. Optional HP Care Pack Services are extended service contracts that extend your protection beyond the standard warranties. ³	



QuickSpecs

HP ProDisplay P222va 21.5-inch Monitor

Environmental Data

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: - IT ECO declaration US ENERGY STAR® - TCO 6.0 - EPEAT® <Gold> registered in the United States. See http://www.epeat.net for registration status in your country		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation	19.3 W	19.0 W	19.4 W
Sleep	0.3 W	0.3 W	0.3 W
Off	0.1 W	0.2 W	0.1 W
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation	66 BTU/hr	65 BTU/hr	66 BTU/hr
Sleep	1 BTU/hr	1 BTU/hr	1 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.		
Additional Information	This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2002/95/EC. This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043. This product contains 16.8 % post-consumer recycled plastic (by wt.) This product is 97.9 % recycle-able when properly disposed of at end of life.		
Packaging Materials	External:	PAPER/Corrugated	646.4 g
	Internal:	PLASTIC/EPE-Expanded Polyethylene	21.7 g
		PLASTIC/EPS (Expanded Polystyrene)	207.6 g
		PLASTIC/Other plastics unknown	3.8 g
RoHS Compliance	Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels		



Environmental Data

	below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).
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)
Packaging	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.



Environmental Data

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://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html
--	---

© Copyright 2015 Hewlett-Packard Development Company, L.P.

ENERGY STAR is a registered mark owned by the U.S. government. All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

1. External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.
2. EPEAT® Gold where HP registers commercial display products. See www.epeat.net for registration status in your country.
3. Service levels and response times for HP Care Pack Services may vary depending on your geographic location. Service starts from date of hardware purchase. Restrictions and limitations apply. See www.hp.com/go/cpc for details.
4. The HP Quick Release has been designed to support a maximum of up to 24 lbs (10.9 kg) for all devices mounted. Because mounting surfaces vary widely and the final mounting method and configuration may vary, mounting fasteners are not supplied (other than the VESA-compliant screws). HP recommends that you consult with a qualified engineering, architectural or construction professional to determine the appropriate type and quantity of mounting fasteners required for your application and to ensure that your mounting solution is properly installed to support applied loads.

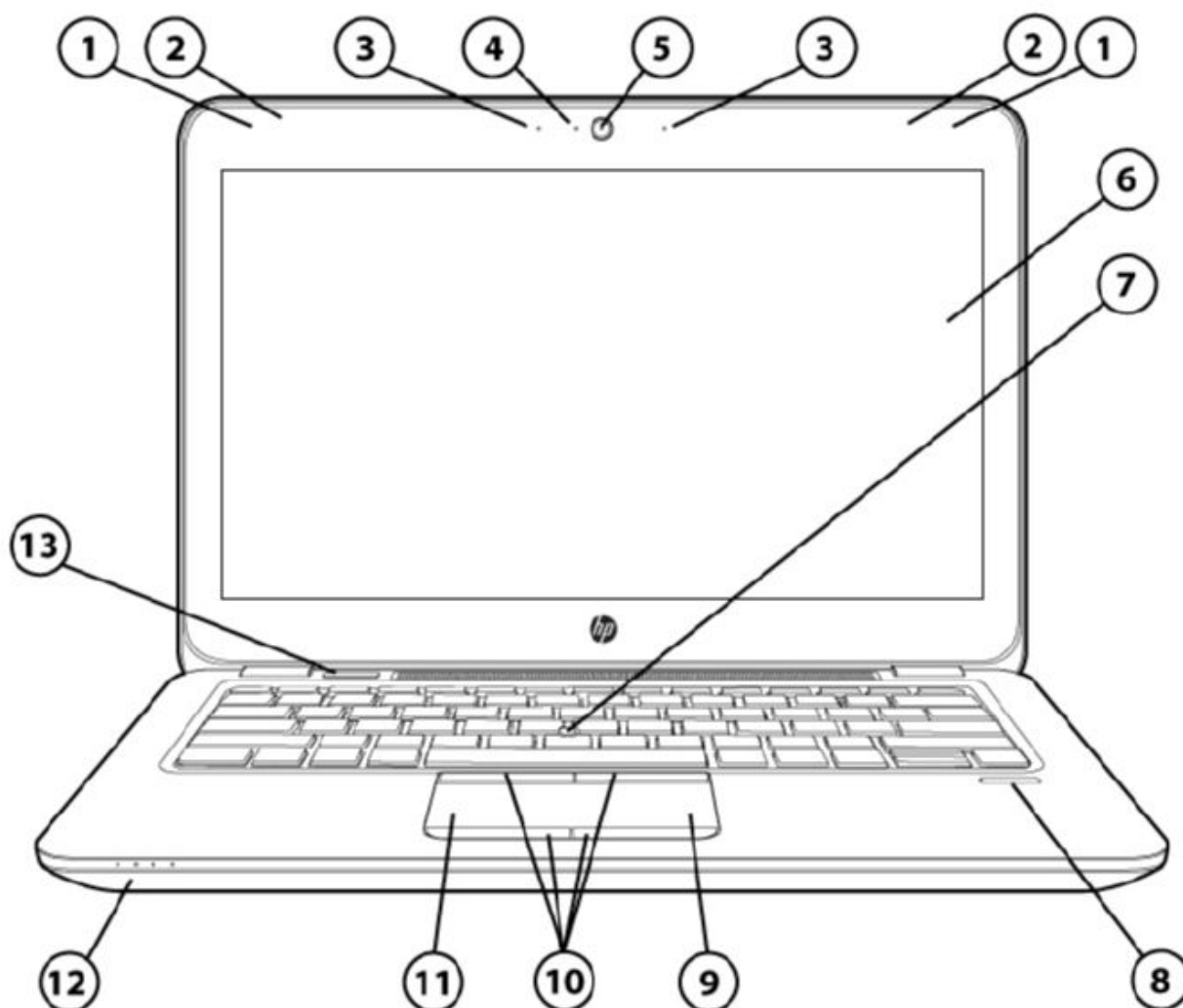


Change Log

[illegible]

Overview

HP EliteBook 725 G3 Notebook PC



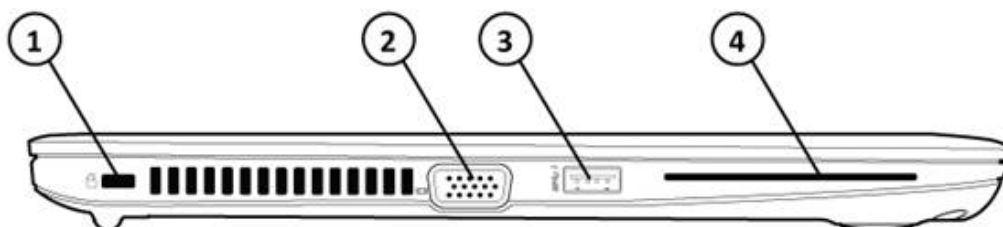
Front

Overview

- | | |
|--------------------------------------|---|
| 1. WLAN antennas (2) | 8. Fingerprint reader (select models) |
| 2. WWAN antennas (2) (select models) | 9. Touchpad |
| 3. Internal microphone (2) | 10. Touchpad buttons |
| 4. Webcam LED (select models) | 11. NFC (select models) |
| 5. Webcam (select models) | 12. Indicators LEDs : Wireless Light, Power Light, AC Adapter/Battery
Light, Storage Usage Light |
| 6. Display | 13. Power button |
| 7. Pointstick | |



Overview

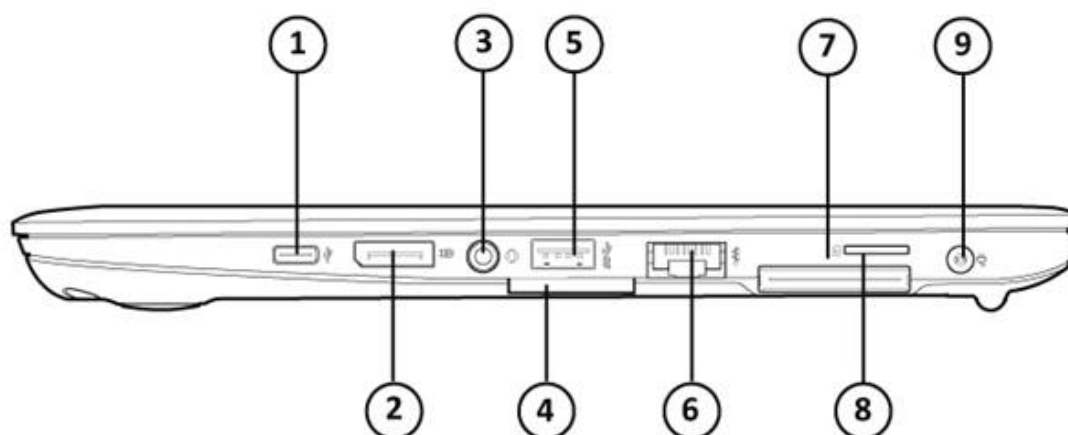


Left

1. Security lock slot
2. VGA port

3. USB 3.0 Charging port
4. Smart Card Reader

Overview



Right

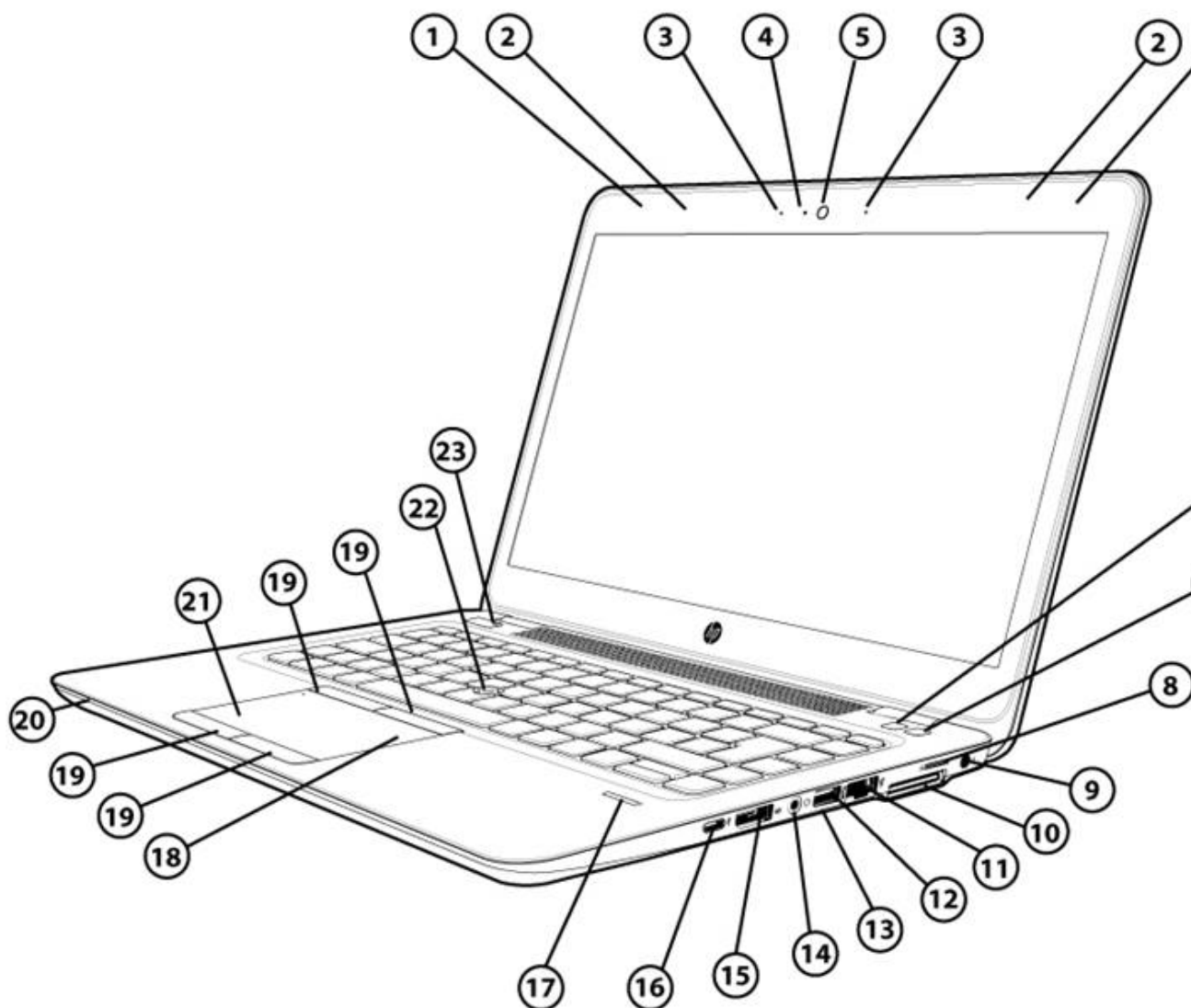
- | | |
|------------------------------------|----------------------|
| 1. USB-C port | 6. Ethernet port |
| 2. DisplayPort | 7. Docking connector |
| 3. Headphone/microphone combo jack | 8. SIM Card slot |
| 4. SD Card slot | 9. Power connector |
| 5. USB 3.0 port | |

QuickSpecs

HP EliteBook 725 G3 Notebook PC HP EliteBook
745 G3 Notebook PC HP EliteBook 755 G3
Notebook PC

Overview

HP EliteBook 745 G3 Notebook PC

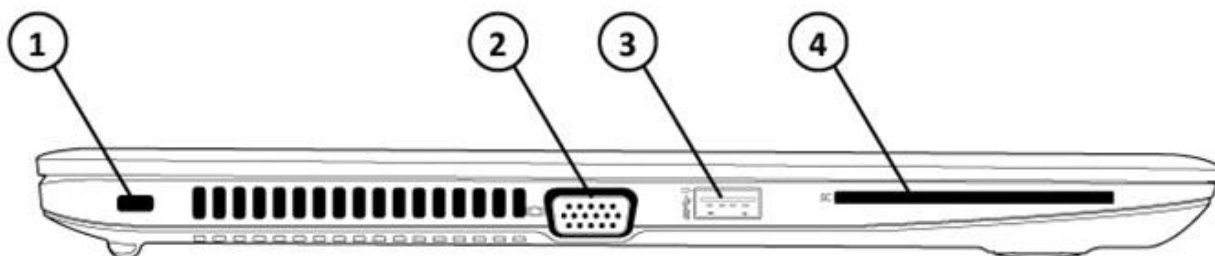


Front/Left

- | | |
|--------------------------------------|--|
| 1. WLAN antennas (2) | 13. SD card slot |
| 2. WWAN antennas (2) (select models) | 14. Microphone/ headphones combo jack |
| 3. Internal microphones (2) | 15. Display Port |
| 4. Webcam LED (select models) | 16. USB-C port |
| 5. Webcam (select models) | 17. Fingerprint reader (select models) |
| 6. Wireless on/off button | 18. Touchpad |
| 7. Speaker mute button | 19. Touchpad buttons (4) |
| 8. SIM card slot | 20. Indicator LEDs: Wireless Light, Power Light, AC Adapter/Battery Light, Storage Usage Light |
| 9. Power connector | 21. NFC (select models) |
| 10. Docking connector | 22. Pointstick |
| 11. Ethernet port | 23. Power button |
| 12. USB 3.0 port | |



Overview



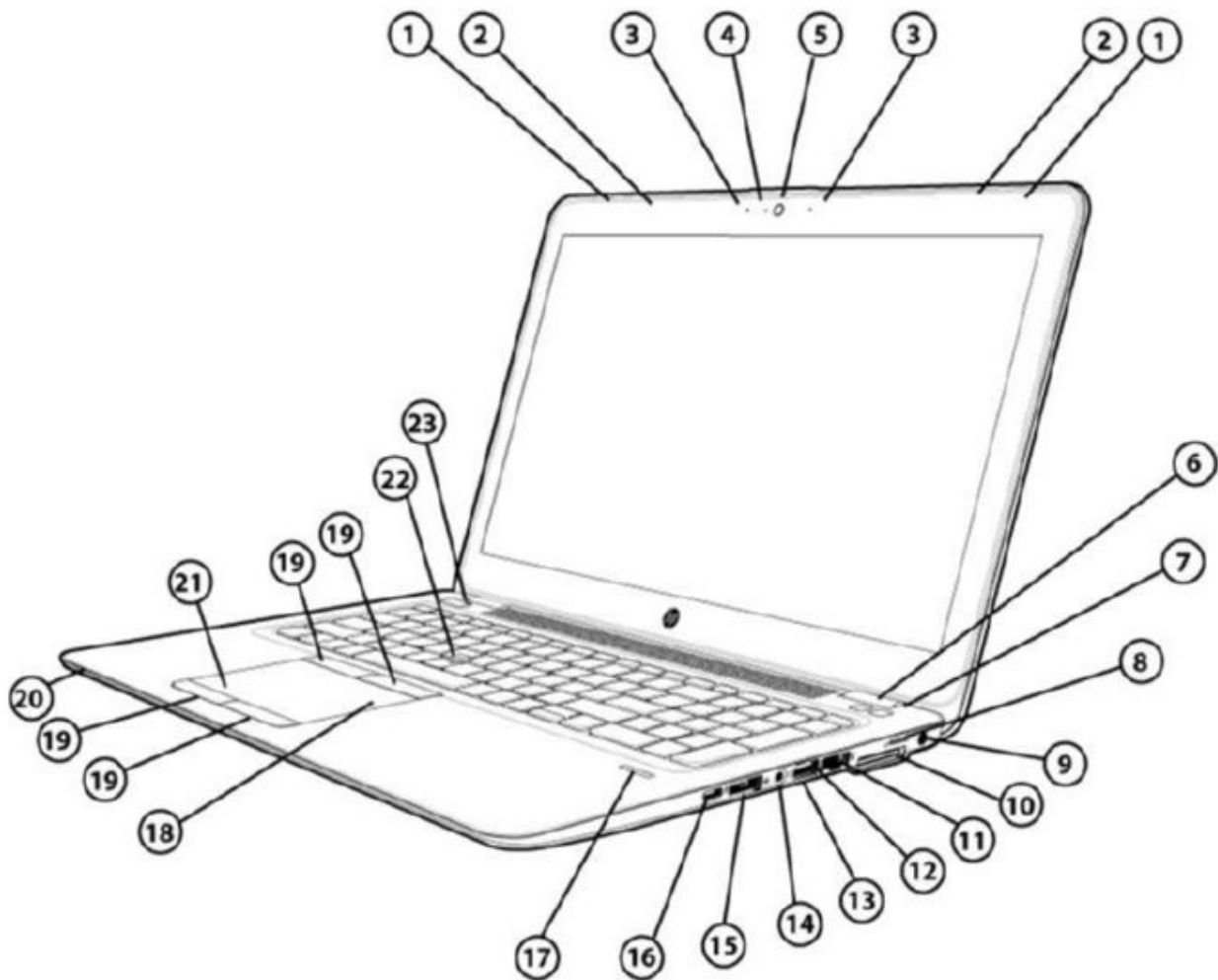
Right

1. Security lock slot
2. VGA port

3. USB 3.0 Charging port
4. Smart Card Reader

Overview

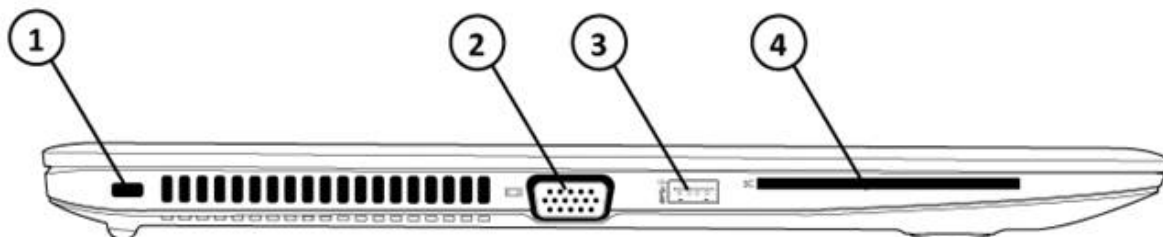
HP EliteBook 755 G3 Notebook PC



Front/Left

- | | | | |
|-----|-----------------------------------|-----|--|
| 1. | WLAN antennas (2) | 13. | SD Card slot |
| 2. | WWAN antennas (2) (select models) | 14. | Microphone/ headphones combo jack |
| 3. | Internal microphones (2) | 15. | Display port |
| 4. | Webcam LED (select models) | 16. | USB-C port |
| 5. | Webcam (select models) | 17. | Fingerprint reader (select models) |
| 6. | Wireless on/off button | 18. | Touchpad |
| 7. | Speaker mute button | 19. | Touchpad buttons (4) |
| 8. | SIM card slot | 20. | Indicator LEDs: Wireless Light, Power Light, AC Adapter/Battery Light, Storage Usage Light |
| 9. | Power connector | 21. | NFC (select models) |
| 10. | Docking Connector | 22. | Pointstick |
| 11. | Ethernet port | 23. | Power button |
| 12. | USB 3.0 port | | |

Overview



Right

- | | | | |
|----|--------------------|----|-----------------------|
| 1. | Security lock slot | 3. | USB 3.0 Charging port |
| 2. | VGA port | 4. | Smart Card Reader |

Overview

At a Glance

- Stylish, lightweight magnesium and aluminum chassis starts at 18.9 mm thin
- No dongles are needed with built-in VGA, drop-jaw RJ-45 Ethernet port, USB 3.0, USB Type-C, and full-size DisplayPort for high resolution support
- Customer serviceable and upgradeable with component accessible design
- Accelerated Processing Unit and graphics from AMD featuring the new commercial AMD PRO A12 - available first and only from HP
- Optimize your audio experience for remote collaboration with optional HD webcam, dual-microphone array, premium speakers, HP Noise Reduction Software, HP Clear Sound Amp, Audio by Bang & Olufsen
- Improved keyboard experience featuring HP Premium Keyboard with dual-point (10-key numeric keypad available on 755)
- Optional back-lit keyboard keeps you productive in all settings with HP DuraKeys to protect keys from fading
- Designed to pass MIL STD testing¹
- Enhanced security features including TPM1.2/2.0, SmartCard Reader, HP Sure Start self-healing BIOS, HP Client Security, Self-Encrypting storage drives, and optional Fingerprint reader
- HP Touchpoint Manager and DASH manageability supported
- LED-backlit displays:
 - o HP EliteBook 725: 12.5" diagonal Touch and Non-Touch
 - o HP EliteBook 745: 14.0" diagonal Touch and Non-Touch
 - o HP EliteBook 755: 15.6" diagonal Touch and Non-Touch
- Experience new vibrant color provided by AMD Vivid Color Technology
- Flexible wireless connectivity options including mobile broadband
- Easily dock with the HP UltraSlim Docking Station
- Choice of hard drives up to 1 TB and solid state drives up to 512 GB
- Memory up to 16 GB
- Preinstall Windows 10, Windows 8.1, Windows 7, or FreeDOS 2.0 versions

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

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



Features

OPERATING SYSTEM

Preinstalled

Windows 10 Pro 64¹
Windows 10 Home 64¹
Windows 8.1 Pro 64¹
Windows 8.1 64¹
Windows 7 Professional 64 (available through downgrade rights from Windows 10 Pro)²
Windows 7 Professional 32 (available through downgrade rights from Windows 10 Pro)²
Windows 7 Professional 64¹
Windows 7 Professional 32¹
FreeDOS 2.0

Web supported

Windows 10 Pro 64¹
Windows 10 Home 64¹
Windows 8.1 Pro 64¹
Windows 8.1 64¹
Windows 7 Professional 64¹
Windows 7 Professional 32¹
Windows 10 Enterprise 64¹
Windows 8.1 Enterprise 64¹
Windows 7 Enterprise 64¹
Windows 7 Enterprise 32¹

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.microsoft.com>.
2. This system is preinstalled with Windows 7 Pro software and also comes with a license and media for Windows 10 Pro software. You may only use one version of the Windows software at a time. Switching between versions will require you uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

ACCELERATED PROCESSING UNIT

AMD PRO A8 -8600B (1.6 GHz, up to 3.0 GHz, 2MB Cache, 4 Cores) with AMD Radeon™ R6 Graphics¹
AMD PRO A10-8700B (1.8 GHz, up to 3.2 GHz, 2MB Cache, 4 Cores) with AMD Radeon™ R6 Graphics¹
AMD PRO A12-8800B (2.1 GHz, up to 3.4 GHz, 2MB Cache, 4 Cores) with AMD Radeon™ R7 Graphics¹

1. This system requires a separately purchased 64-bit operating system and 64-bit software products to take advantage of the 64-bit processing capabilities of AMD technology. Multi-core processing with AMD technology is designed to improve performance of this system. Given the wide range of SW applications available, performance will vary. AMD's numbering is not a measurement of clock speed.

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

GRAPHICS



Features

Integrated Graphics

AMD PRO A8 -8600B with AMD Radeon™ R6 Graphics
AMD PRO A10-8700B with AMD Radeon™ R6 Graphics
AMD PRO A12-8800B with AMD Radeon™ R7 Graphics

AMD Vivid Color Support
AMD UMA Graphics - with shared video memory
Support dual-display ports through optional docking station¹

1. Sold separately or as an optional feature.

DISPLAY

HP EliteBook 725

Internal

Non-Touch

12.5" diagonal LED backlight HD¹ Slim eDP SVA Anti-glare (1366 x 768)
12.5" diagonal LED backlight HD¹ Slim eDP SVA Anti-glare (1366 x 768) with camera
12.5" diagonal LED backlight FHD UltraSlim eDP UWVA Anti-glare (1920 x 1080)
12.5" diagonal LED backlight FHD UltraSlim eDP UWVA Anti-glare (1920 x 1080) with camera

Touch

12.5" diagonal LED backlight FHD UltraSlim eDP UWVA (1920 x 1080) Touch with camera²

HP EliteBook 745

Internal

Non-Touch

14.0" diagonal LED backlight HD¹ Slim eDP SVA Anti-glare (1366 x 768)
14.0" diagonal LED backlight HD¹ Slim eDP SVA Anti-glare (1366 x 768) with camera
14.0" diagonal LED backlight FHD Slim eDP SVA Anti-glare (1920 x 1080)
14.0" diagonal LED backlight FHD Slim eDP SVA Anti-glare (1920 x 1080) with camera
14.0" diagonal LED backlight QHD UltraSlim eDP + PSR UWVA Anti-glare (2560 x 1440)
14.0" diagonal LED backlight QHD UltraSlim eDP + PSR UWVA Anti-glare (2560 x 1440) camera

Touch

14.0" diagonal LED backlight FHD Slim eDP SVA (1920 x 1080) Touch with camera²

HP EliteBook 755

Internal

Non-Touch

15.6" diagonal LED backlight HD¹ Slim eDP SVA Anti-glare (1366 x 768)
15.6" diagonal LED backlight HD¹ Slim eDP SVA Anti-glare (1366 x 768) with Camera
15.6" diagonal LED backlight FHD Slim eDP SVA Anti-glare (1920 x 1080)
15.6" diagonal LED backlight FHD Slim eDP SVA Anti-glare (1920 x 1080) with Camera

Touch

15.6" diagonal LED backlight FHD Slim DP SVA (1920 x 1080) Touch with Camera²
(Planned to be available November 2015)

External

Up to 32-bit per pixel color depth

VGA

Port supports resolutions up to 1900 x 1200 external resolution @60 Hz

DisplayPort

Supports resolutions up to 4096 x 2160 @ 60Hz
Resolutions are dependent upon monitor capability, and resolution and color depth settings.



Features

Number of Displays supported with Docking

Supports 3 independent displays if used with optional HP Ultralim Docking Station.³

1. HD content required to view HD images.
2. Chemically-strengthened Corning® Gorilla® Glass 4 top cover.
3. Sold separately or as an optional feature.

STORAGE AND DRIVES

Primary Storage

SATA, 2.5" Hard Drives

500 GB 7200rpm Self Encrypting Drive (FIPS-140-2) (Opal 2)
500 GB 7200rpm Hard Drive
500 GB 7200rpm Self-Encrypting Drive (Opal 2)
1 TB 5400rpm Hard Drive
500 GB Hybrid, 8 GB cache

Mini Card Solid State Drive

M.2 (NGFF) 2280 Solid State Drive
128 GB SATA-3 TLC Solid State Drive
180 GB SATA-3 MLC Solid State Drive
180 GB SATA-3 Self-Encrypting (Opal 2) MLC Solid State Drive
240 GB SATA-3 MLC Solid State Drive
256 GB SATA-3 TLC Solid State Drive
256 GB SATA-3 Self-Encrypting (Opal 2) MLC Solid State Drive
256 GB PCIe-3x4 NVMe Solid State Drive (planned to be available December 2015)
512 GB SATA-3 TLC Solid State Drive (planned to be available December 2015)

HP 3D DriveGuard (Windows and Hard Drives only)

The hard drive is mounted directly to the notebook frame, reducing the transmission of shock to the hard drive

NOTE: For Solid State Drives or Hard Drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and up to 30 GB (for Windows 8.1 and 10) is reserved for system recovery software.

MEMORY



Features

Standard

DDR3L PC3L-12800 (Transfer rates up to 1600 MT/s)
Two SODIMM slots supporting dual-channel memory
Both slots are customer accessible / upgradeable

Supports the following configurations

4096 MB Total System Memory (4096 MB x 1)
8192 MB Total System Memory (4096 MB x 2)
8192 MB Total System Memory (8192 MB x 1)
16384 MB Total System Memory (8192 MB x 2)

Maximum

Up to 16 GB

Dual-channel

Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots.

NOTE: Improved system performance when memory is added in pairs (dual channel).

Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

NETWORKING/COMMUNICATIONS

Broadband Wireless (WWAN)

HP It4120 Qualcomm® SnapdragonX5 LTE Mobile Broadband Module ^{1,2}

HP hs3110 HSPA+ Mobile Broadband Module^{1,2}

Wireless LAN (WLAN) Via MiniCard

Realtek RTL8188EE 802.11b/g/n (1x1) (Not available for Indonesia)²

Broadcom 943228 Dual Band 802.11 a/b/g/n (2x2) Bluetooth® 4.0 Combo ²

Intel® 7265 802.11ac(2x2) + Bluetooth® 4.2 Combo (Not available for Indonesia)²

Near Field Communication (NFC)¹

HP Module with NXP NFC Controller NPC100

Support for Miracast

1. Sold separately or as an optional feature.
2. Wireless access point and Internet service is required and is not included.
Availability of public wireless access points limited.

Communications

Broadcom 5762 10/100/1000 Ethernet NIC with DASH Support

NOTE: The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

AUDIO/MULTIMEDIA



Features

Audio
Audio by Bang & Olufsen
HP Clear Sound Amp
HP Noise Reduction Software
Digital Microphones (Dual Array)
2 Premium Stereo Speakers

Webcam¹
Optional² 720p webcam

1. Internet access required.
2. Sold separately or as an optional feature.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

HP Premium Keyboard
The HP spill-resistant keyboard is designed using a thin layer of Mylar film under the keyboard and includes an all-metal keyboard deck for greater rigidity. The 101/102-key compatible keyboard features a full-pitch key layout with desktop keyboard features, such as editing keys, both left and right control and alt keys, and function keys. US and International key layouts are available. Backlit keyboard with HP DuraKeys available as an option.

Pointing Devices
Glass Touchpad
On/Off button
Taps enabled as default
Gestures enabled by default - 2 Finger Scrolling, 2 Finger Zoom (Pinch)

Buttons and Function Keys
HP EliteBook 725

F1 - Sleep
F2 - Blank
F3 - Backlit Toggle
F4 - Display Switching
F5 - Brightness Down
F6 - Brightness Up
F7 - Speaker Mute
F8 - Volume Down
F9 - Volume Up
F10 - Mic Mute
F11 - Wireless
F12 - Num Lock

HP EliteBook 745



Features

F1 - Sleep
F2 - Blank
F3 - Backlit Toggle
F4 - Display Switching
F5 - Brightness Down
F6 - Brightness Up
F7 - Blank
F8 - Volume Down
F9 - Volume Up
F10 - Mic Mute
F11 - Blank
F12 - Num Lock

HP EliteBook 755

F1 - Sleep
F2 - Blank
F3 - Backlit Toggle
F4 - Display Switching
F5 - Brightness Down
F6 - Brightness Up
F7 - Blank
F8 - Volume Down
F9 - Volume Up
F10 - Mic Mute
F11 - Blank
F12 - Blank

SOFTWARE AND SECURITY

BIOS

HP BIOSphere¹
HP Sure Start
HP DriveLock | HP Automatic DriveLock (Planned to be available January 2016)
HP BIOS Protection²
BIOS Update via Network
Master Boot Record Security
Power On Authentication
Pre-Boot Security
Secure Erase³
Hybrid Boot
Measure Boot
Secure Boot
Absolute Persistence Module⁴

Multi Media

Cyberlink Power DVD, BD
Cyberlink YouCam BE (Windows 7 only)

Communication

HP GPS and Location (Windows 7 only)⁵
HP Connection Manager with support for HP Mobile Connect (Windows 7 only)⁶
HP Mobile Connect (Windows 8.1 only)⁶



Features

Native Miracast Support⁸

HP Value Add Software

HP 3D DriveGuard

HP ePrint Driver⁹

HP Pixel Sharp

HP Hotkey

HP Recovery Manager

HP Recovery Disc Creator

HP Registration App (Windows 8.1 only)

HP Support Assistant

HP Noise Reduction Software

3rd Party

Foxit PhantomPDF Express for HP

Microsoft Products

Buy Office

Bing Search

Skype¹⁰

Manageability

HP Driver Packs¹¹

HP SoftPaq Download Manager (SDM)

HP System Software Manager (SSM)¹¹

HP BIOS Config Utility (BCU)¹¹

HP Client Catalog¹¹

HP CIK for Microsoft SCCM¹¹

LANDESK Management¹²

For more information on HP Client Management Solutions refer to: <http://www.hp.com/go/clientmanagement>.

Client Security Software

HP Drive Encryption¹³ (Planned to be available December 2015)

HP Security Manager

Microsoft Security Essentials⁷

Microsoft Defender

1. Available only on business PCs with HP BIOS.
2. May require a manual recovery step if all copies of BIOS are compromised or deleted
3. For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88.
4. Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: <http://www.absolute.com/company/legal/agreements/> computrace-agreement. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.
5. GPS access requires an unobstructed path to multiple satellites. Performance may be affected if/when used inside of buildings, bridges or heavily congested metropolitan areas. Requires separately purchased GPS



Features

navigation software available from multiple GPS applications.

6. HP Mobile Connect is only available on preconfigured devices with WWAN. For geographic availability refer to <http://www.hp.com/go/mobileconnect>

7. Opt in and internet connection required for updates.

8. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming media players that also support Miracast. You can use Miracast to share what you're doing on your PC and present a slide show. For more information: <http://windows.microsoft.com/en-us/windows-8/project-wireless-screen-miracast>

9. 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 <http://www.hp.com/go/eprintcenter>). Requires optional broadband module. Broadband use requires separately purchased service contract. Check with service provider for coverage and availability in your area. Separately purchased data plans or usage fees may apply. Print times and connection speeds may vary.

10. Skype is not offered in China.

11. Not preinstalled, however available on manageability website.

12. Subscription required.

13. Data is protected prior to Drive Encryption login. Turning the PC off or into hibernate logs out of Drive Encryption and prevents data access.

Security

TPM 1.2/2.0²

Optional Fingerprint Reader¹

Integrated Smart Card Reader

Security lock slot (Lock sold separately.)

Preboot Authentication

1. Sold separately or as an optional feature.

2. This product ships with TPM 1.2 with option to upgrade to TPM 2.0. Upgrade utility is expected to be available by the second half of 2016 via HP Customer Support.

POWER

Power Supply

HP 45W Smart AC Adapter (Not available for Asia, China and India)

HP 45W 2-prong DC jack AC Adapter (Japan only)

HP 65W Smart AC Adapter EM (Asia, China and India only)

Power cord is configurable; either 3.2 feet or 6 feet (1.0 or 1.8 meter)

Total length including external AC adapter is 9.2 feet or 12 feet (2.86 or 3.66 meter)

Primary Battery

HP EliteBook 725

HP 3-cell Long Life Li-Ion (44 WHr)

HP EliteBook 745 and 755

HP 3-cell Long Life Li-Ion (46 WHr)

Battery Life



QuickSpecs

HP EliteBook 725 G3 Notebook PC HP EliteBook
745 G3 Notebook PC HP EliteBook 755 G3
Notebook PC

Features

Platform	Hard Drive or Solid State Drive Details	Battery	UMA Graphics
HP EliteBook 725 G3	HDD	3-cell (44 WHr)	Up to 7 hrs 15 mins ¹
	SSD	3-cell (44 WHr)	Up to 8 hrs 30 mins ¹
HP EliteBook 745 G3	HDD	3-cell (46 WHr)	Up to 7 hrs ¹
	SSD	3-cell (46 WHr)	Up to 8 hrs 15 mins ¹
HP EliteBook 755 G3	HDD	3-cell (46 WHr)	Up to 7 hrs ¹
	SSD	3-cell (46 WHr)	Up to 8 hrs ¹

System Standby Time²

HP EliteBook 725 G3

Up to 214 hours

HP EliteBook 745 G3

Up to 204 hours

HP EliteBook 755 G3

Up to 204 hours

1. Windows 8.1/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 for additional details.

2. Standby life will vary depending on various factors including battery, Memory, CPU, EC and LAN chip. The maximum capacity of the battery will naturally decrease with time and usage.

Power Conservation

Hibernation

Standby

ACPI compliance

WEIGHTS & DIMENSIONS



Features

HP EliteBook 725 G3 Notebook PC

Weight¹

Starting at 2.78 lbs (1.26 kg)

(3-cell battery (44WHr), UMA, no FPR, 1 SODIMM, WLAN, M.2 SSD, no camera, no WWAN, Non-Touch panel)

Starting at 3.05 lbs (1.38 kg)

(3-cell battery (44WHr), UMA, no FPR, 1 SODIMM, WLAN, M.2 SSD, no camera, no WWAN, Touch)

Dimensions² (w x d x h)

Non-Touch

12.2 x 8.6 x 0.74 in

31 x 21.89 x 1.89 cm

Touch

12.2 x 8.6 x 0.80 in

31 x 21.89 x 2.02 cm

HP EliteBook 745 G3 Notebook PC

Weight¹

Starting at 3.27 lbs (1.48 kg)

(3-cell battery (46WHr), UMA, no FPR, 1 SODIMM, WLAN, M.2 SSD, no camera, no WWAN, Non-Touch panel)

Starting at 3.75 lbs (1.70 kg)

(3-cell battery (46WHr), UMA, no FPR, 1 SODIMM, WLAN, M.2 SSD, no camera, no WWAN, Touch)

Dimensions² (w x d x h)

Non-Touch

13.3 x 9.3 x 0.74 in

33.8 x 23.7 x 1.89 cm

Touch

13.3 x 9.3 x 0.80 in

33.8 x 23.7 x 2.02 cm

HP EliteBook 755 G3 Notebook PC

Weight¹

Starting at 4.06 lbs (1.84 kg)

(3-cell battery (46WHr), UMA, no FPR, 1 SODIMM, WLAN, M.2 SSD, no camera, no WWAN, Non-Touch panel)

Starting at 4.54 lbs (2.06 kg)

(3-cell battery (46WHr), UMA, no FPR, 1 SODIMM, WLAN, M.2 SSD, no camera, no WWAN, Touch)

Dimensions² (w x d x h)

Non-Touch

15.09 x 10.10 x 0.76 in

38.33 x 25.77 x 1.94 cm

Touch

15.09 x 10.10 x 0.82 in

38.33 x 25.77 x 2.08 cm

1. Weight varies by configuration and components.

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

PORTS/SLOTS



Features

Ports

(1) USB 3.0 Charging Port
(1) USB 3.0 Port
(1) USB Basic Type-C
DisplayPort
VGA
RJ-45 / Ethernet
Docking connector
Headphone/Microphone Combo
AC Port

NOTE: Cables are not included.

Slots

External Micro SIM Slot
SD Media Reader Slot Supports SD, SDHC, SDXC

SERVICE AND SUPPORT

Limited 3-year, 1-year or 90-day limited warranty options available, depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. Optional¹ HP Care Pack Services² are extended service contracts which go beyond your 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>.

Sold separately or as an optional feature.

1. 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. Consult the HP Customer Support Center for details. <http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp>



Technical Specifications

System Unit

TBD

Displays

12.5" diagonal LED backlight HD1 Slim eDP SVA Anti-glare (1366 x 768)	Outline Dimensions (W x H x D)	291.0 x181.9mm(max) X 3.0(max) mm	
	Active Area	276.615mm x 155.52mm	
	Weight	250g max.	
	Diagonal Size	12.5"	
	Surface Treatment	AG	
	Contrast Ratio	300:1 (typ) - AG	
	Refresh Rate	60Hz	
	Response time	16ms typ.	
	Pixel Per Inch (PPI)	125	
	Brightness	220nits	
	Pixel Resolution	Format	1366 x 768 (HD)
		Configuration	RGB Stripe
	Interface	eDP 1.2 (1 lane)	
	LCD Mode	TN	
	Viewing Angle	SVA 40/40/15/30	
12.5" diagonal LED backlight FHD UltraSlim eDP UWVA Anti-glare (1920 x 1080)	Outline Dimensions (W x H x D)	282.7 x 179.82 (max) x 2.3 (max) mm	
	Active Area	276.48 typ. (W) x 155.52 typ. (H)	
	Weight	170 max	
	Diagonal Size	12.5"	
	Surface Treatment	AG	
	Contrast Ratio	600:1 (typ) - AG	
	Refresh Rate	60Hz	
	Response time	25ms typ.	
	Pixel Per Inch (PPI)	176	
	Brightness	300nits	
	Pixel Resolution	Format	1920 x 1080 (FHD)
		Configuration	RGB Stripe
	Interface	eDP 1.3 (2 lane)	
	LCD Mode	IPS/FFS/VA	
	Viewing Angle	UWVA 85/85/85/85	



Technical Specifications

12.5" diagonal LED backlightFHD UltraSlim eDP UWVA (1920 x 1080) Touch with camera	Outline Dimensions	282.7 x 179.82 (max) x 2.3 (max) mm	
	(W x H x D)		
	Active Area	276.48 typ. (W) x 155.52 typ. (H)	
	Weight	170 max	
	Diagonal Size	12.5"	
	Touch Enabled	Yes	
	TSP Type	Capacitive	
	Surface Treatment	AG	
	Contrast Ratio	600:1 (typ) - AG	
	Refresh Rate	60Hz	
	Response time	25ms typ.	
	Pixel Per Inch (PPI)	176	
	Brightness	300nits	
	Pixel Resolution	Format	1920 x 1080 (FHD)
		Configuration	RGB Stripe
	Interface	eDP 1.3 (2 lane)	
14.0" diagonal LED backlight HD1 Slim eDP SVA Anti-glare (1366 x 768)	LCD Mode	IPS/FFS/VA	
	Viewing Angle	UWVA 85/85/85/85	
	Outline Dimensions	320.9 x 205.6 (max) x 3.0mm max	
	(W x H x D)		
	Active Area	309.4 x 173.95	
	Weight	<290 max.	
	Diagonal Size	14.0"	
	Surface Treatment	AG	
	Contrast Ratio	300:1 (typ) - AG	
	Refresh Rate	60Hz	
	Response time	16ms typ.	
	Pixel Per Inch (PPI)	112	
	Brightness	220nits	
	Pixel Resolution	Format	1366 x 768 (HD)
		Configuration	RGB Stripe
	Interface	eDP 1.2 (1 lane)	
	LCD Mode	TN	
	Viewing Angle	SVA 40/40/15/30	



QuickSpecs

Technical Specifications

14.0" diagonal LED backlight FHD Slim eDP SVA Anti-glare (1920 x 1080)	Outline Dimensions	320.9 x 205.6 (max) x 3.0(max) mm	
	(W x H x D)		
	Active Area	308.851x173.73	
	Weight	<270 max	
	Diagonal Size	14"	
	Surface Treatment	AG	
	Contrast Ratio	300:1 (typ) - AG	
	Refresh Rate	60Hz	
	Response time	16ms typ.	
	Pixel Per Inch (PPI)	157	
	Brightness	300nits	
	Pixel Resolution	Format	1920 x 1080 (FHD)
		Configuration	RGB Stripe
	Interface	eDP 1.2 (2 lane)	

LCD Mode

Viewing Angle

SVA 40/40/15/30

14.0" diagonal LED backlight FHD Slim eDP SVA (1920 x 1080) Touch with camera	Outline Dimensions	320.9 x 205.6 (max) x 3.0(max) mm	
	(W x H x D)		
	Active Area	308.851x173.73	
	Weight	270g max	
	Diagonal Size	14"	
	Surface Treatment	AG	
	Touch Enabled	Yes	
	TSP Type	Capacitive	
	Contrast Ratio	300:1 (typ) - AG	
	Refresh Rate	TBD	
	Response time	16ms typ.	
	Pixel Per Inch (PPI)	157	
	Brightness	300nits	
	Pixel Resolution	Format	1920 x 1080 (FHD)

Configuration

RGB Stripe

Interface

LCD Mode

Viewing Angle

SVA 40/40/15/30



QuickSpecs

Technical Specifications

14.0" diagonal LED backlight QHD UltraSlim eDP UWVA Anti-glare (2560 x 1440)	Outline Dimensions	320.4± 0.5 x 198.6±0.5 mm typ. (w/PCB)	
	(W x H x D)		
	Active Area	309.504 mmx 174.096mm	
	Weight	270g max	
	Diagonal Size	14.0"	
	Surface Treatment	Anti-Glare	
	Contrast Ratio	600:1 (typ.)	
	Refresh Rate	60Hz	
	Response time	25ms typ.	
	Pixel Per Inch (PPI)	210	
	Brightness	340 nits typ	
	Pixel Resolution	Format	2560x1440
		Configuration	RGB
	Interface	eDP 1.3 + PSR	

LCD Mode	IPS
Viewing Angle	UWVA 85/85/85/85

14.0" diagonal LED backlight QHD UltraSlim eDP UWVA Anti-glare (2560 x 1440)	Outline Dimensions	320.4± 0.5 x 198.6±0.5 mm typ. (w/PCB)	
	(W x H x D)		
	Active Area	309.504 mmx 174.096mm	
	Weight	270g max	
	Diagonal Size	14.0"	
	Surface Treatment	Anti-Glare	
	Contrast Ratio	600:1 (typ.)	
	Refresh Rate	60Hz	
	Response time	25ms typ.	
	Pixel Per Inch (PPI)	210	
	Brightness	340 nits typ (panel)	
	Pixel Resolution	Format	2560x1440
		Configuration	RGB
	Interface	eDP 1.3 + PSR	

LCD Mode	IPS
Viewing Angle	UWVA 85/85/85/85



QuickSpecs

Technical Specifications

15.6" diagonal LED backlight HD¹ Slim eDP SVA Anti-glare (1366 x 768)	Outline Dimensions	360.0 x 224.3 x 3.2mm max
	(W x H x D)	
	Active Area	344.2 x 193.5
	Weight	370g max
	Diagonal Size	15.6"
	Surface Treatment	AG
	Contrast Ratio	300:1 (typ) - AG
	Refresh Rate	60Hz
	Response time	16ms typ.
	Pixel Per Inch (PPI)	101
	Brightness	220 nit typ
	Pixel Resolution	Format 1366 x 768 (HD)
		Configuration RGB Stripe
	Interface	eDP 1.2 (1 lane)
	LCD Mode	TN
	Viewing Angle	SVA 40/40/15/30
15.6" diagonal LED backlight FHD Slim eDP SVA Anti-glare (1920 x 1080)	Outline Dimensions	360.0 x 224.3 x 3.2 mm max
	(W x H x D)	
	Active Area	344.16 x 193.59 mm
	Weight	360 max.
	Diagonal Size	15.6"
	Surface Treatment	AG
	Contrast Ratio	400:1 (typ)
	Refresh Rate	60Hz
	Response time	16ms typ.
	Pixel Per Inch (PPI)	142
	Brightness	300nits
	Pixel Resolution	Format 1920 x 1080 (FHD)
		Configuration RGB Stripe
	Interface	eDP 1.2 (2 lane)
	LCD Mode	TN
	Viewing Angle	SVA 45/45/25/35



Technical Specifications

15.6" diagonal LED backlight FHD Slim DP SVA (1920 x 1080) Touch with Camera2	Outline Dimensions (W x H x D)	360.0 x 224.3 x 3.2 mm max
	Active Area	344.16 x 193.59 mm
	Weight	360 max.
	Diagonal Size	15.6"
	Surface Treatment	AG/BV
	Contrast Ratio	500:1 (typ) - BV, 400:1 (typ) - AG
	Touch Enabled	Yes
	TSP Type	Capacitive
	Refresh Rate	60Hz
	Response time	16ms typ.
	Pixel Per Inch (PPI)	142
	Brightness	300nits
	Pixel Resolution	Format1920 x 1080 (FHD)
		ConfigurationRGB Stripe
	Interface	eDP 1.2 (2 lane)
	LCD Mode	TN
	Viewing Angle	SVA 45/45/25/35

Note: All display specifications represent the typical specifications provided by HP's component manufacturers; act may vary either higher or lower.

Storage and Drives

500 GB 7200rpm Self Encrypting Drive (FIPS-140-2) (Opal 2)	Drive Weight	0.21 lbs (95 g)
	Capacity	500 GB
	Height	0.28 in (7 mm)
	Width	2.75 in (69.85 mm)
	Interface	ATA-8, SATA 3.0
	Transfer Rate	Synchronous600 MB/s
		(maximum)
	Seek Time	Single Track1.5 ms
	(typical reads, including settling)	Average12ms
		Maximum18mm-22ms
	Cache	32GB
	Rotational Speed	7200 rpm
	Logical Blocks	976,773,168
	Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]

Features ATA Security; TCG Opal 2.x, FIPS, S.M.A.R.T., NCQ, Ultra DMA ,



QuickSpecs

Technical Specifications

500 GB 7200rpm Hard Drive	Drive Weight	0.20 lbs (92 g)-0.21 lbs (95 g)	
	Capacity	500 GB	
	Height	0.28 in (7 mm)	
	Width	2.75 in (69.85 mm)	
	Interface	ATA-8, SATA 3.0	
	Transfer Rate	Synchronous (maximum)	600 MB/s
	Seek Time (typical reads, including settling)	Single Track	1.5ms-2.0ms
		Average	11ms-13ms
		Maximum	18ms-22ms
	Cache	32GB	
	Rotational Speed	7200 rpm	
	Logical Blocks	976,773,168	
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
500 GB 7200rpm Self- Encrypting Drive (Opal 2)	Features	ATA Security	
	Drive Weight	0.21 lbs (95 g)	
	Capacity	500GB	
	Height	0.28 in (7 mm)	
	Width	2.75 in (69.85 mm)	
	Interface	ATA-8, SATA 3.0	
	Transfer Rate	Synchronous (maximum)	600 MB/s
	Seek Time (typical reads, including settling)	Single Track	1.5ms
		Average	12ms
		Maximum	18ms- 22ms
	Cache	32GB	
	Rotational Speed	7200rpm	
	Logical Blocks	976,773,168	
	Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]	
	Features	ATA Security; TCG Opal 2.x, S.M.A.R.T., NCQ, Ultra DMA	



QuickSpecs

HP EliteBook 725 G3 Notebook PC HP EliteBook
745 G3 Notebook PC HP EliteBook 755 G3
Notebook PC

Technical Specifications

1 TB 5400rpm Hard Drive	Drive Weight	0.21 lbs (94 g)- 0.21 lbs (99 g)	
	Capacity	1TB	
	Height	0.28 in (7.2 mm)	
	Width	2.75 in (69.85 mm)	
	Interface	ATA-8, SATA 3.0	
	Transfer Rate	Synchronous (maximum)	600 MB/s
	Seek Time (typical reads, including settling)	Single Track	2ms
		Average	12ms-13ms
		Maximum	18ms-23ms
	Cache	Up to 32GB	
	Rotational Speed	5400rpm	
	Logical Blocks	1,953,525,168	
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
	Features	S.M.A.R.T., NCQ, Ultra DMA	
500 GB Hybrid, 8 GB cache	Drive Weight	0.21 lb (95 g)	
	Capacity	500 GB	
	Height	0.276 in (7 mm)	
	Width	2.76 in (70.1 mm)	
	Interface	ATA-8, SATA 2.6, 6.0 Gb/s, NCQ	
	Transfer Rate	Synchronous (maximum)	600 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	2 ms
		Average	12 ms
		Maximum	NIL ms
	Cache	64GB	
	Rotational Speed	5400 rpm	
	Logical Blocks	976,773,168	
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
	Features	ATA Security	
128 GB M2 2280 SATA-3 TLC Solid State Drive	Drive Weight	0.019 lb (8.5 g)-0.022 lb (10 g)	
	Capacity	128 GB	
	Height	0.09 in (2.23 mm)- 0.14 in (3.58 mm)	
	Width	0.87 in (22 mm)	
	Interface	ATA-8, SATA 3.0	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 540 MB/s	Up to 300 MB/s
	Logical Blocks	250,069,680	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security, DIPM; TRIM; DEVSLP	



QuickSpecs

Technical Specifications

180 GB M2 2280 SATA-3 MLC Solid State Drive	Drive Weight	0.022 lb (<10 g)	
	Capacity	180 GB	
	Height	0.09 in (2.23 mm)	
	Width	0.87 in (22 mm)	
	Interface	ATA-8, SATA 3.0	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 540 MB/s (Compressible Performance)	UP to 490 MB/s (Compressible Performance)
	Logical Blocks	351,651,888	
180 GB M2 2280 SATA-3 Self-Encrypting Drive (Opal 2) MLC Solid State Drive	Drive Weight	0.022 lb (<10 g)	
	Capacity	180GB	
	Height	0.09 in (2.23 mm)	
	Width	0.87 in (22 mm)	
	Interface	ATA-8, SATA 3.0	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 540 MB/s (Compressible Performance)	UP to 490 MB/s (Compressible Performance)
	Logical Blocks	351,651,888	
256 GB 2280 SATA-3 TLC Solid State Drive	Drive Weight	0.019 lb (8.5 g)- 0.022 lb (10 g)	
	Capacity	256GB	
	Height	0.09 in (2.3 mm)- 0.14 in (3.58 mm)	
	Width	0.87 in (22 mm)	
	Interface	ATA-8, SATA 3.0	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 540 MB/s	Up to 455 MB/s
	Logical Blocks	500,118,192	
256 GB M2 2280 SATA-3 Self-Encrypting Drive (Opal 2) MLC Solid State Drive	Drive Weight	0.02 lb (10 g)	
	Capacity	256 GB	
	Height	0.14 in (3.58 mm)- 0.09 in (2.23 mm)	
	Width	0.87 in (22 mm)	
	Interface	ATA-8, SATA 3.0	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 540 MB/s	UP to 460 MB/s
	Logical Blocks	500,118,192	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security, DIPM; TRIM; DEVSLP	



Technical Specifications

512 GB M2 2280 TLC Solid State Drive	Drive Weight	0.019 lb (8.5 g)- 0.02 lb (10 g)	
	Capacity	512 GB	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	ATA-8, SATA 3.0	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 540 MB/s	UP to 500 MB/s
	Logical Blocks	1,000,215,216	
Operating Temperature		32° to 158°F (0° to 70°C) [ambient temp]	
Features		ATA Security, DIPM; TRIM; DEVSLP	

Security

HP Fingerprint Reader (optional)	Mobile Voltage Operation	3.0V-3.6V
	Operating Temperature	14° - 167°F (-10° - 75°C)
	Current Consumption Image	36 mA peak
	Low Latency Wait for Finger	950 uA
	Capture Rate	59000 lines/sec
	ESD Resistance	IEC 61000-4-2 4B (±15KV)
	Detection Matrix	200*1 (plus another secondary line)
		508 dpi
		10*1 mm sensor area

Smart Card Reader	Smart card standard	PC/SC 2.0 for Windows smart card standard
	Dimensions (L x W x H)	0.41x 0.08 x 0.32 in (10.5 x 2 x 8.2 mm)
	Smart Card support	ISO 7816 Class A and AB smart cards
	Smart Card Interface	Smart Card Interface with T = 0 and T = 1 support
		Support I2C memory card, SLE4418, SLE4428, SLE4432, SLE4442, SLE4436, SLE5536, SLE6636, AT88SC1608, AT45D041 card and AT45DB041 card via external EEPROM
Operating systems		No driver is required for this device. Native support is provided by the operating system.
Power	Normal Mode	With card present, before being suspended: 40.9 mA
		Without card present, before being suspended: 33.16 mA
		After being suspended with smart card present: 380 µA
		After being suspended without smart card present: 380 µA



Technical Specifications

Features

- Power Saving Mode**
- With card present, before being suspended:
40.6 mA
Without card present: 380 µA
After being suspended with smart card present: 380 µA
- Support single slot
 - Support T0, T1 protocol
 - Support I2C memory card, SLE4418, SLE4428, SLE4432, SLE4442, SLE4436, SLE5536, SLE6636, AT88SC1608, AT45D041 card and AT45DB041 card via external EEPROM
 - Support ISO7816 Class A, B and C (5V/3V/1.8V) card
 - Implemented as an USB full speed device with bulk transfer endpoint, Mass storage endpoint
 - Built-in PLL for USB and Smart Card clocks requirement
 - Support EEPROM for USB descriptors customization (PID/VID/iManufacturer/iProduct/Serial Number), Direct Web Page Link, and accessing memory card module.
 - EEPROM programmable via USB interface
 - Support software update for memory card module
 - Support Direct Web Page Link via configuration in external EEPROM
 - Support short APDU and extended APDU
 - Compatible with Microsoft USB-CCID driver
 - Support remote wake up through inserting card/removing card
 - Support USB selective suspend
 - Support Power Saving Mode (Using one pin to select between Normal/PWR Saving Mode)
 - Support card power over current protection mechanism
 - Built in resonator.
 - Support USB LPM (Link Power Management) features.
 - Embedded clock source.

Networking/communications



QuickSpecs

HP EliteBook 725 G3 Notebook PC HP EliteBook 745 G3 Notebook PC HP EliteBook 755 G3 Notebook PC

Technical Specifications

HP hs3110/3114 HSPA+ Mobile Broadband Module*	Technology/Operating bands	HSPA+: 2100 (Band1), 1900 (Band 2), 1700 (Band 4), 850 (Band 5), 900 (Band 8) MHz E-GPRS: 1900 (Band 2), 1800 (Band 3), 850 MHz (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	E-GPRS: Class B, Multi-slot class 33, coding schemes CS1 - CS4 and MSC1 - MSC9. UMTS/WCDMA: Release 99 and Release 7
	GPS	Standalone, A-GPS
	GPS bands	1575.42 MHz $\pm$ 1.023 MHz, GLONASS 1596-1607MHz
	Maximum data rates	HSPA+: 21.6 Mbps (Download), 5.76 Mbps (Upload) HSPA: 7.2 Mbps (Download), 5.76 Mbps (Upload) WCDMA PS: 384 kbps (Download), 384 kbps (Upload) WCDMA CS: 64 kbps (Download), 64 kbps (Upload) E-GPRS: 296 kbps (Download), 236.8 kbps (Upload) GPRS: 107 kbps (Download), 85.6 kbps (Upload)
	Maximum output power	HSPA+: 24 dBm E-GPRS 1800/1900: 26 dBm E-GPRS 850/900: 27 dBm GPRS 1800/1900: 30 dBm GPRS 850/900: 33 dBm
	Maximum power consumption	2500 mA (peak); 600 mA (average)
	Form Factor	M.2, 3042-S3 Key B
	Weight	6 g
	Dimensions (Length x Width x Thickness)	1.65 x 1.18 x 0.09 in (42 x 30 x 2.3 mm)

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

HP It4120 Qualcomm® Snapdragon™ X5 LTE Mobile Broadband Module	Technology/Operating bands	LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 17 lower), 800 (Band 20), 700 (Band 28). HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz EV-DO: 850 (BC0), 1900 (BC1) MHz (Only work with Verizon network) E-GPRS: 1900 (Band 2), 1800 (Band 3), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 10 LTE Specification CAT.4, 20MHz BW WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification 1xEVDO Release 0, A and B. E-GPRS: Class B, Multi-slot class 12, coding schemes CS1 - CS4 and MSC1 - MSC9
	GPS	Standalone, A-GPS (MS-A, MS-B and XTRA)
	GPS bands	1575.42 MHz $\pm$ 1.023 MHz, GLONASS 1596-1607MHz
	Maximum data rates	LTE: 150 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload) CDMA 1xRTT: 153.6 kbps (Download), 153.6 kbps (Upload) EVDO Rel.A: 3.1 Mbps (Download), 1.8 Mbps (Upload)



QuickSpecs

HP EliteBook 725 G3 Notebook PC HP EliteBook
745 G3 Notebook PC HP EliteBook 755 G3
Notebook PC

Technical Specifications

	EVDO Rel.B: 14.7 Mbps (Download), 5.4Mbps (Upload) EDGE: 236.8 kbps (Download), 236.8 kbps (Upload) GPRS: 85.6 kbps(Download), 85.6 kbps (Upload)
Maximum output power	LTE: 23 dBm HSPA+: 23.5 dBm 1xRTT/EVDO: 24dBm E-GPRS 1900/1800: 26 dBm E-GPRS 900/850: 27 dBm GPRS 1900/1800: 29.5 dBm GPRS 900/850: 32.5 dBm
Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average) 1xRTT/EVDO: 1,000 mA (peak); 700 mA (average) E-GPRS: 2,800 mA (peak); 500 mA (average)
Form Factor	M.2, 3042-S3 Key B
Weight	6.2 g
Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm

* 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.

**Broadcom 943228 Wireless LAN
Dual Band 802.11 a/b/g/n (2x2)
Bluetooth 4.0
Combo**

**Interoperability
Frequency Band**

IEEE 802.11a
IEEE 802.11b
IEEE 802.11g
IEEE 802.11n
Wi-Fi certified
802.11b/g/n

2.402 - 2.482 GHz

Note:

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.

802.11a

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

Note:

Indonesia only supports 5.725 - 5.825 GHz (CH149 - CH161)

Antenna Structure

2 transmit; 2 receive (2x2)



Technical Specifications

Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
Modulation	Direct Sequence Spread Spectrum CCK, BPSK, QPSK, 16-QAM, 64-QAM
Security ¹	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK TKIP, and AES. • WPA2 certification • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between band Access Points
Output Power ²	• 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +13dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +12dBm minimum • 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 60 mW (WLAN unassociated) Radio disabled: 30 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode



QuickSpecs

Technical Specifications

Receiver Sensitivity ³	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -86dBm maximum 802.11a, 54Mbps : -72dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum												
Antenna type	High efficiency antenna with spatial diversity, multiple antennas Two embedded dual band 2.4/5 GHz antennas for MIMO and Bluetooth communications												
Form Factor	PCI-Express M.2 MiniCard												
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm												
Weight	Type 2230 : 2.8g Or Type 1630 : 2g												
Operating Voltage	3.3v +/- 9%												
Temperature	Operating Non-operating												
Humidity	Operating Non-operating												
Altitude	Operating Non-operating												
LED Activity	LED Amber - Radio OFF; LED White - Radio ON												
1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and 802.11a/g (OFDM modulation).													
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, 1 Mbps Asynchronous Connection Less links 2178.1 kbps symmetric												
Transmit Power	The Bluetooth component shall operate as a Class 2 transmit power of +4 dBm for BR and EDR.												
Receiver Sensitivity	<table><tr><th>Modulation</th><th>0.01% BER</th><th>0.001% BER</th></tr><tr><td>GFSK</td><td>-80 dBm</td><td>-70 dBm</td></tr><tr><td>π/4-DQPSK</td><td>-80 dBm</td><td>-70 dBm</td></tr><tr><td>8DPSK</td><td>-80 dBm</td><td>-70 dBm</td></tr></table>	Modulation	0.01% BER	0.001% BER	GFSK	-80 dBm	-70 dBm	π/4-DQPSK	-80 dBm	-70 dBm	8DPSK	-80 dBm	-70 dBm
Modulation	0.01% BER	0.001% BER											
GFSK	-80 dBm	-70 dBm											
π/4-DQPSK	-80 dBm	-70 dBm											
8DPSK	-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 slave												
Bluetooth Software Supported	Full support of Bluetooth Security Provisions												
Security													



Technical Specifications

	Power Management	Microsoft Windows ACPI, and USB Bus Support
	Power Management	Self-configurable to optimize power conservation
	Certifications	Standby, Hold, Park, and Sniff
	Security	All necessary regulatory approvals for supported
	Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.24
	Bluetooth Profiles Supported	ETS 300 328, ETS 300 826
	Power Management	Low Voltage Directive IEC950
	Certifications	UL, CSA, and CE Mark
	Certifications	Serial Port Profile (SPP) ¹
	Bluetooth Profiles Supported	Service Discovery Application Profile (SDAP)
	Certifications	Dial-Up Networking (DUN) ^{1,2}
	Bluetooth Profiles Supported	Generic Object Exchange Profile (GOEP) ^{1,2}
	Certifications	Object Push Profile (OPP) ^{1,2}
	Bluetooth Profiles Supported	File Transfer Profile (FTP)
	Certifications	Synchronization Profile (SYNC)
	Bluetooth Profiles Supported	Hard Copy Cable Replacement (HCRP) ^{1,2}
	Certifications	Personal Area Networking Profile (PAN) ^{1,2}
	Bluetooth Profiles Supported	Human Interface Device Profile (HID) ^{1,2}
	Certifications	FAX Profile (FAX)
	Bluetooth Profiles Supported	Basic Imaging Profile (BIP) ²
	Certifications	Headset Profile (HSP)
	Bluetooth Profiles Supported	Hands Free Profile (HFP)
	Certifications	Advanced Audio Distribution Profile (A2DP)
	Bluetooth Profiles Supported	
Realtek RTL8188EE 802.11b/g/n (1x1) (Not available with INDO)	Wireless LAN Standards	IEEE 802.11b
		IEEE 802.11g
	Interoperability	IEEE 802.11n
	Frequency Band	Wi-Fi certified
	Frequency Band	802.11b/g/n
		2.402 - 2.482 GHz
	Data Rates	Note:
		The FCC has declared as of September 1, 2014 products on channel 12/13 and are capable of transmitting must ful of 15.247 or otherwise disable those channels.
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps
		802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	Modulation	802.11n: MCS 0 ~ MCS 07, (20MHz)
		Direct Sequence Spread Spectrum
	Security¹	BPSK, QPSK, CCK, 16-QAM, 64-QAM,
		IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/
	Security¹	AES-CCMP: 128 bit in hardware
		802.1x authentication
	Security¹	WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AI
		WPA2 certification
	Security¹	IEEE 802.11i
		Cisco Certified Extensions, all versions through CCX4 and CC



Technical Specifications

Network Architecture	WAPI
Models	Ad-hoc (Peer to Peer)
Roaming	Infrastructure (Access Point Required)
Output Power²	IEEE 802.11 compliant roaming between access points 802.11b : +16dBm minimum 802.11g : +14dBm minimum 802.11a : +14dBm minimum 802.11n HT20(2.4GHz) : +13dBm minimum 802.11n HT40(2.4GHz) : +13dBm minimum 802.11n HT20(5GHz) : +12dBm minimum 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 60 mW (WLAN unassociated) Radio disabled: 30 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -86dBm maximum 802.11a, 54Mbps : -72dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in 1 Two embedded 2.4 GHz antennas are provided to the card Bluetooth communications (Support Dual antenna or Single antenna, depend on platf
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight	Type 2230 : 2.8g Or Type 1630 : 2g
Operating Voltage	3.3v +/- 9%
Temperature	Operating Non-operating
Humidity	Operating Non-operating
Altitude	Operating Non-operating
LED Activity	LED Amber - Radio OFF; LED White - Radio ON
1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 8% (OFDM modulation).	



Technical Specifications

		Serial Port Profile (SPP) ¹ Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) ^{1,2} Generic Object Exchange Profile (GOEP) ^{1,2} Object Push Profile (OPP) ^{1,2} File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) ^{1,2} Personal Area Networking Profile (PAN) ^{1,2} Human Interface Device Profile (HID) ^{1,2} FAX Profile (FAX) Basic Imaging Profile (BIP) ² Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)	
Intel® 7265 802.11ac(2x2) + Bluetooth® 4.2 Combo	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac	
	Interoperability Frequency Band	Wi-Fi certified 802.11b/g/n	
		2.402 - 2.482 GHz	
		Note: 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.	
		802.11a/n	
		4.9 - 4.95 GHz (Japan)	
		5.15 - 5.25 GHz	
		5.25 - 5.35 GHz	
		5.47 - 5.725 GHz	
		5.825 - 5.850 GHz	
	Data Rates	Note: Indonesia no support this band) 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)	
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM	
	Security ¹	IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only AES-CCMP: 128 bit in hardware	



QuickSpecs

Technical Specifications

	802.1x authentication
	WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
	WPA2 certification
	IEEE 802.11i
	Cisco Certified Extensions, all versions through CCX4 and CCX Lite
	WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	802.11b : +16dBm minimum
	802.11g : +14dBm minimum
	802.11a : +14dBm minimum
	802.11n HT20(2.4GHz) : +14dBm minimum
	802.11n HT40(2.4GHz) : +12dBm minimum
	802.11n HT20(5GHz) : +14dBm minimum
	802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connect Standby: 10 mW (WLAN+BT) Radio disabled: 5 mW
Power Management	ACPI and PCI Express compliant power management
Receiver Sensitivity³	802.11 compliant power saving mode 802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -88dBm maximum 802.11a, 54Mbps : -74dBm 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
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight	Type 2230 : 2.8g Or Type 1630 : 2g
Operating Voltage	3.3v +/- 9%



Technical Specifications

Temperature	Operating	14° to 158° F (-10° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
LED Activity	LED Amber - Radio OFF; LED White - Radio ON	
2. Check latest software/driver release for updates on supported security features.		
3. Maximum output power may vary by country according to local regulations.		
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).		
HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology		
Bluetooth Specification	4.0/4.1/4.2 Compliant	
Frequency Band	2402 to 2480 MHz	
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)	
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 BLE : 1 Mbps data rate; throughput up to 0.2 Mb Legacy : Synchronous Connection Oriented links Legacy : Asynchronous Connection Less links 2 DH5) or 864 kbps symmetric (3-EV5)	
Transmit Power	The Bluetooth component shall operate as a Clas transmit power of + 4 dBm for BR and EDR.	
Receiver Sensitivity		
Legacy		
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW	
Range	Legacy Up to 33 ft (10 m) BLE Up to 99 ft (30 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 slave	
Bluetooth Software Supported	Full support of Bluetooth Security Provisions	
Security	Microsoft Windows ACPI, and USB Bus Support Self-configurable to optimize power conservation Standby, Hold, Park, and Sniff	
Power Management	All necessary regulatory approvals for supported FCC (47 CFR) Part 15C, Section 15.247 & 15.24	
Certifications		
Security		
Certifications		
Bluetooth Profiles Supported	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark Serial Port Profile (SPP) ^{1,2} Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) ^{1,1} Generic Object Exchange Profile (GOEP) ^{1,2} Object Push Profile (OPP) ^{1,2}	
Power Management		
Certifications		
Bluetooth Profiles Supported	Hard Copy Cable Replacement (HCRP) ^{1,2} Personal Area Networking Profile (PAN) ^{1,0} Human Interface Device Profile (HID) ^{1,0}	



Technical Specifications

Hands Free Profile (HFP) 1.5/1.6
Advanced Audio Distribution Profile (A2DP) 1.3
Audio Video Remote Control Profile (AVRCP) 1.3/

Bluetooth V4.1/V4.2 support feature

V4.1: ESR5/6/7 compliant

V4.2: ESR8 compliant, LE Secure Connection - I

Near Field Communications (NFC)
HP Module with NXP NFC Controller NPC100
Supports Windows 8, Proximity Events
Support Windows 7, PC/SC
NFC Forum Compliant

Near Field Communications Controller

Dimensions (L x W x H) Module 25 mm by 10 mm by 2.0 mm

Chipset NPC100

System interface I²C

NFC RF standards

ISO/IEC 14443 A
ISO/IEC 14443 B
ISO/IEC 15693
ISO/IEC 18092
ECMA-340 NFCIP-1 Target and Initiator
ECMA-320 NFCIP-2

NFC Forum Support Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and NFCIP-2

Reader (PCD-VCD) Mode(1)

ISO/IEC 14443 A
ISO/IEC 14443 B
ISO/IEC 15693
MIFARE 1K
MIFARE 4K
MIFARE DESFire
FeliCa
Jewel and Topaz cards

Card Emulation (PICC-VICC) Mode(1)

ISO/IEC 14443 A
ISO/IEC 14443 B and B'
MIFARE
FeliCa

Frequency 13.56 MHz



Technical Specifications

NFC Modes Supported	Reader/Writer, Peer-to-Peer, Card Emulation	
Raw RF Data Rates	106, 212, 424, 848 kbps	
Operating temperature	0°C to 70°C	
Storage temperature	-20°C to 125°C	
Humidity	10-90% operating 5-95% non-operating	
Supply Operating voltage	2.97 to 5.5 Volts	
I/O Voltage	1.8V or 3.3V	
Power Consumption (Booster enable, VBAT= 3.3V, VCC_BOOST = 5V)	Mode	Power Consumption, Typical ⁽²⁾
	Polling	7.3 mA
	Detected Test Tag Type 1	Total 283.8 mA
		Net Module 236.8 mA
	Detected Test Tag Type 2	Total 288.8 mA
		Net Module 241.8 mA
	Detected Test Tag Type 3	Total 287.7 mA
		Net Module 240.7 mA
Antenna	Detected Test Tag Type 4	Total 282.3 mA
		Net Module 235.3 mA
Antenna	Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module.	

- (1) With application or UICC support
- (2) Actual Power Consumption is dependent on NFC antenna and matching circuit and on the particular polling sequence and period configured.

Audio/Multimedia

DTS Studio Sound

Hardware	Implementation	CX7501
	Function Key Volume Controls	Volume up, volume down, and mute
	Full Duplex	Yes
	Line in/Line out	Yes via dock
	Headphone/Microphone In	Yes combo jack
	Integrated Microphone	Yes, dual digital microphone array



Technical Specifications

Audio Output Quality	Frequency Response	20 Hz - 20 kHz
	Signal to Noise Ratio	>85 dB
	Total Harmonic Distortion	0.01%
	Noise Floor	-110 dB
	Play/Record Sampling Rate(s)	8 kHz - 48kHz
	DAC	16, 20 or 24-bit
	ADC	16 or 20-bit
Integrated Stereo Speakers	Power Rating	2 Watts
	Impedance	4 Ohms

Power

HP 45W Smart AC Adapter	Dimensions (H x W x D)	3.74 x 1.57 x 1.04 in (9.5 x 4.0 x 2.65 cm)
	Weight	0.386 lb (175g) max
	Input	90 to 265 VAC
		Input Efficiency 87.74% at 115Vac and 88.4% at 230Vac
	Output	Input frequency range 47 to 63 Hz
		Input AC current 1.4 A at 90 VAC
		Output power 45W
		DC output 19.5V
		Hold-up time 5 msec at 115 VAC input
		Output current limit <8.0A
	Connector	3 pin/grounded, mates with interchangeable cords
	Environmental Design	Operating temperature 32° to 95° F (0° to 35° C)
		Non-operating (storage) temperature -4° to 185° F (-20° to 85° C)
		Altitude 0 to 16,400 ft (0 to 5,000 m)
		Humidity 20% to 95%
	EMI and Safety Certifications	Storage Humidity 10% to 95%
		*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.



Technical Specifications

HP 65W Smart AC Adapter EM	Dimensions	4.98 x 1.97 x 1.18 in (12.65 x 5.0 x 3.0 cm)
	Weight	0.62 lb (290g) max
	Input	90 to 265 VAC
		Input Efficiency87% min at 115 VAC
		Input frequency range47 to 63 Hz
		Input AC current1.7 A at 90 VAC
	Output	Output power65W
		DC output19.5V
		Hold-up time5 msec at 115 VAC input
		Output current limit<11.0A
	Connector	3 pin/grounded, mates with interchangeable cords
	Environmental Design	Operating temperature32° to 95° F (0° to 35° C)
		Non-operating (storage) temperature-4° to 185° F (-20° to 85° C)
		Altitude0 to 16,400 ft (0 to 5,000 m)
		Humidity20% to 95%
	EMI and Safety Certifications	Storage Humidity10% to 95%
		*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 3-cell Long Life Li-Ion (44.5 WHr) - HP EliteBook 725 G3	Dimensions (H x W x L)	8.30 mm * 127.5 mm * 160.25 mm
	Weight	213g (ATL), 211.1g (SDI)
	Cells/Type	ATL 505295, SDI 505295
	Energy	Voltage11.4V
		Amp-hour capacity3910mAh
		Watt-hour capacity44.5Wh
	Temperature	Operating (Charging)0~45 C
		Operating (Discharging)-10~60 C
		Non-operating5~40 C
	Fuel Gauge LED	NA
	Warranty	1000 cycles >65% (at 23°C)
	Optional Travel Battery Available	No



Technical Specifications

HP 3-cell Long Life Li-Ion (46.5 WHr) - HP EliteBook 745 & 755 G3	Dimensions (H x W x L)	6.8mm x 102.8mm x 198mm
	Weight	216.3g (ATL), 217.8g (COS)
	Cells/Type	ATL 506480, COSLIGHT 506480
	Energy	Voltage 11.4V
		Amp-hour capacity 4080mAh
		Watt-hour capacity 46.5Wh
	Temperature	Operating (Charging) 0~45 C
		Operating (Discharging) -10~60 C
		Non-operating 5~40 C
	Fuel Gauge LED	NA
	Warranty	1000 cycles >65% (at 23°C)
	Optional Travel Battery Available	No

ENVIRONMENTAL

HP EliteBook 725 G3 Notebook PC

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be marks:		
	- IT ECO declaration - US ENERGY STAR® - EPEAT <Gold> registered in the United States. See http://www.epeat.net for registration status.		
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook Configured Notebook".	

Energy Consumption (in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Sort idle)	7.99 W	8.32 W	7.85 W
Normal Operation (Long idle)	5.5 W	6.45 W	5.92 W
Sleep	1.05 W	1.19 W	1.03 W
Off	0.72 W	0.85 W	0.71 W

Note:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model. ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy consumption data is for a Microsoft Windows® configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows®

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Heat Dissipation* Normal Operation (Short idle)	27 BTU/hr	28 BTU/hr	27 BTU/hr
Normal Operation (Long idle)	19 BTU/hr	22 BTU/hr	20 BTU/hr
Sleep	4 BTU/hr	4 BTU/hr	4 BTU/hr
Off	2 BTU/hr	3 BTU/hr	2 BTU/hr

*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is at



Technical Specifications

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L _{WAd} , bels)	Sound Pressure (L _{pAm} , decibels)
Typically Configured - Idle	3.0	22
Fixed Disk - Random writes	3.2	24
Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features 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 pr

Batteries This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater the1ppm by weight
- Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)

Battery type: Lithium

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (W
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking ' 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <gold> level, see w
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1
- This product contains 0% post-consumer recycled plastic (by wt.)
- This product is 95.6% recycle-able when properly disposed of at end of life.

Packaging Materials External: PAPER/Corrugated



Technical Specifications

Internal: PLASTIC/EPE (Expanded Polyethylene)
PLASTIC/Polypropylene
PLASTIC/Polyethylene low density

The plastic packaging material contains at least 50% recycled content.

The corrugated paper packaging materials contains at least 70% recycled content.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to 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 o
- 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 v 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 packagir
- 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 are to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to be disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for ea facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OE 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>

Technical Specifications

Eco-label certifications

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

ISO 14001 certificates:

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

and

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

HP EliteBook 745 G3 Notebook PC

Eco-Label
Certifications &
declarations

This product has received or is in the process of being certified to the following approvals and may be marks:

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

System
Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Note Configured Notebook" .

Energy Consumption
(in accordance with
US ENERGY STAR®
test method)

	115VAC, 60Hz	230VAC, 50Hz
Normal Operation	9.58 W	9.86 W
(Short idle)		
Normal Operation	6.61 W	6.86 W
(Long idle)		
Sleep	1.48 W	1.56 W
Off	0.72 W	0.85 W

Note:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows®

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz
Normal Operation	33 BTU/hr	34 BTU/hr
(Short idle)		
Normal Operation	23 BTU/hr	23 BTU/hr
(Long idle)		
Sleep	5 BTU/hr	5 BTU/hr
Off	2 BTU/hr	3 BTU/hr

*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is at

Declared Noise
Emissions
(in accordance with
ISO 7779 and ISO
9296)

	Sound Power (L _{WAd} , bels)	Sound (L _{pAm})
Typically Configured - Idle	3.4	
Fixed Disk - Random writes	3.4	

Longevity and
Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable featur product may include:



Technical Specifications

- 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 pr

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater the1ppm by weight
- Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)

Battery type: Lithium

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (W
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking \ 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <gold> level, see w
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1
- This product contains 0% post-consumer recycled plastic (by wt.)
- This product is 94.8% recycle-able when properly disposed of at end of life.

Packaging Materials

- External: PAPER/Corrugated
- Internal: PLASTIC/EPE (Expanded Polyethylene)
PLASTIC/Polyethylene low density

The plastic packaging material contains at least 50% recycled content.
The corrugated paper packaging materials contains at least 70% recycled content.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to 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



Technical Specifications

- 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 o
- 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 v 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 packagir
- 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: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to be disposed of in a responsible manner.

Hewlett-Packard Corporate Environmental Information

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for end-of-life facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM HP equipment.

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

and

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

Technical Specifications

HP EliteBook 755 G3 Notebook PC

Eco-Label Certifications & declarations

This product has received or is in the process of being certified to the 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> country.

System Configuration

The configuration used for the Energy Consumption and Declared Noise 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)	10.38 W	9.95 W	9.94 W
Normal Operation (Long idle)	6.75 W	6.93 W	6.72 W
Sleep	1.1 W	1.23 W	1.09 W
Off	0.75 W	0.89 W	0.73 W

Note:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered 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® energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a Microsoft Windows® operating system.

Heat Dissipation*

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	35 BTU/hr	34 BTU/hr	34 BTU/hr
Normal Operation (Long idle)	23 BTU/hr	24 BTU/hr	23 BTU/hr
Sleep	4 BTU/hr	4 BTU/hr	4 BTU/hr
Off	3 BTU/hr	3 BTU/hr	2 BTU/hr

*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service environment is 20°C (68°F).

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

	Sound Power (L _{WAd} , bels)	Sound Pressure (L _{pAm} , decibels)
Typically Configured - Idle	2.7	14
Fixed Disk - Random writes	2.8	19

Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgrades 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



QuickSpecs

Technical Specifications

Spare parts are available throughout the warranty period and or for up to "5" years after tl

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater the1ppm by weight
- Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)

Battery type: Lithium

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoH
- This HP product is designed to comply with the Waste Electrical and Electronic Ec 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Sal Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <gold>
- Plastics parts weighing over 25 grams used in the product are marked per ISO1146
- This product contains 0% post-consumer recycled plastic (by wt.)
- This product is 95.1% recycle-able when properly disposed of at end of life.

Packaging Materials

External: PAPER/Corrugated

Internal: PLASTIC/EPE (Expanded Polyethylene)
PLASTIC/Polyethylene low density

The plastic packaging material contains at least 50% recycled content.
The corrugated paper packaging materials contains at least 70% recycled content.

Material Usage

This product does not contain any of the following substances in excess of regulatory lim Specification for the Environment at <http://www.hp.com/hpinfo/globalcitizenship/environm>

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants - may not be used as flame retardants in ple
- 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 frequentl
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)



Technical Specifications

- 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 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
- 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 geographies. Please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office for more information on how to recycle, recover or dispose of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for their products. This information (product disassembly instructions) is posted on the <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other 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

and

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

Country of Origin

China



QuickSpecs

HP EliteBook 725 G3 Notebook PC HP EliteBook
745 G3 Notebook PC HP EliteBook 755 G3
Notebook PC

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

Type	Description	Part #
Cases	HP Essential Top Load Case (up to 15.6")	H2W17AA
	HP Business Backpack (up to 17.3")	H5M90AA
	HP Business Case (up to 15.6")	H5M92AA
	HP Ultrabook Sleeve (up to 12.5")	F7Z98AA
	HP Ultrabook Sleeve (up to 15.6")	F8A00AA
Docking	HP 3005pr USB 3.0 Port Replicator	H1L08AA
	HP UltraSlim Docking Station	D9Y32AA
	HP Display and Notebook Stand II	E8G00AA
	HP USB-C Travel Dock	T0K29AA
	HB USB Travel Dock	T0K30AA
Input/Output Devices	HP 2.4 GHz Keyboard and Mouse	G1K29AA
	HP Stylish Wireless Keyboard and Mouse	H4B79AA
	HP Touch to Pair Mouse	H6E52AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP USB Travel Mouse	G1K28AA
	HP Ultra Mobile Wireless Mouse	H6F25AA
	HP Slim Bluetooth Mouse	F3J92AA
	HP Ultrathin Wireless Mouse SE	L9V77AA
	HP Ultrathin Wireless Mouse	L9V787AA
	HP Wired Headset	K7V17AA
	HP Speaker Phone	K7V16AA
	HP Conferencing Keyboard	K8P74AA
Adapters	HP Wireless Display Adapter	J1V25AA
	HP USB-C to USB 3.0 Adapter	N2Z63AAA
	DisplayPort to HDMI 1.4 Adapter	F3W43AA
Power Adapters	HP 65W Slim AC Adapter	H6Y82AA
	HP 45W Smart AC Adapter	H6Y88AA
	HP 65W Smart AC Adapter	H6Y89AA
External Drives	HP USB External DVDRW Drive	F2B56AA
	HP Docking Station Cable Lock	AU656AA
Security	HP UltraSlim Keyed Cable Lock	H4D73AA
	HP EliteDisplay E232 23-in Monitor	M1N98AA
Monitors	HP EliteDisplay E222 21.5-in Monitor	M1N96AA
	HP ProDisplay P23223-in Monitor	K7X31AA



Summary of Changes

Date of change:	Version History:		Description of change:
October 13, 2015	Version 1 to 2	Added	Environmental info for the 725, 755.
October 27, 2015	V2 to V3	Updated	Disclaimer for TPM Displays in aftermarket options
October 28, 2015	V3 to V4	Updated	Specs for Audio page 49
November 11, 2015	V4 to v5	Added	Environmental info for 745.
January 19, 2016	V5 to V6	Updated	Military testing footnote page 8 Weight for the 755 page 18
March 31, 2016	V6 to v7	Changed	TPM upgrade footnote
April 6, 2016	V7 to v8	Changed	1920 x 1080 displays specs
April 25, 2016	V9 to v10	Removed Added	HP USB-C to RJ45/USB 3/USB-C - N2Z64AA HP USB-C Travel Dock - T0K29AA HB USB Travel Dock - T0K30AA
May 4, 2016	V10 to v11	Changed	BT 4.1 to 4.2 in Intel 802.11a/b/g/n/ac (2x2) and Bluetooth® 4.1 Combo, updated specs
May 16, 2016	V11 to v112	Changed	Weights

©Copyright 2016 HP Development Company, L.P. The information contained herein is subject to change without notice. The only warranties are contained in the limited warranty statements accompanying such products and services. 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. For DTS patents, see <http://patents.dts.com>. Manufactured under license from DTS Licensing Limited. DTS, the Symbol, & DTS and the Symbol together are registered trademarks, and DTS Studio Sound is a trademark of DTS, Inc. © DTS, Inc. All Rights Reserved.

Bluetooth is a trademark of its proprietor used by Hewlett-Packard Company under license.

ENERGY STAR is a registered trademark of the U.S. Environmental Protection Agency. AMD and Radeon are trademarks of Advanced Micro Devices, Inc. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Bluetooth is a trademark of its proprietor used by Hewlett-Packard Company under license.

Overview

HP Ultra-light Docking Stations

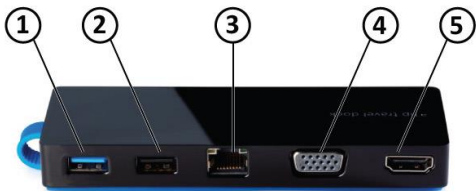
Models

HP USB-C Travel Dock	T0K29AA
HP USB Travel Dock	T0K30AA
HP Elite USB-C Dock New!	T3V74AA
HP Advanced Wireless Docking Station	F7M97AA
HP UltraSlim Docking Station	D9Y32AA
HP Elite 65W Thunderbolt 3 Dock	P5Q54AA
HP ZBook 150W Thunderbolt 3 Dock	P5Q58AA
HP ZBook 200W Thunderbolt 3 Dock	P5Q61AA

HP USB-C Travel Dock - Front side



HP USB-C Travel Dock - Rear side



- | | |
|------------------|--------------|
| 1. USB 3.0 port | 4. VGA port |
| 2. USB 2.0 port | 5. HDMI port |
| 3. Ethernet port | |

Components

Ports	2 USB ports (1 USB 3.0, 1 USB 2.0)
	1 Ethernet port (10/100/1000)
	1 VGA port
	1 HDMI

HP USB Travel Dock - Front side

Overview



- 1. USB ports (2)

HP USB Travel Dock - Rear side



- 1. Ethernet port
 - 2. VGA port
- 3. HDMI port

Components	
Ports	2 USB ports (1 USB 3.0, 1 USB 2.0) 1 Ethernet port (10/100/1000) 1 VGA port 1 HDMI

Overview

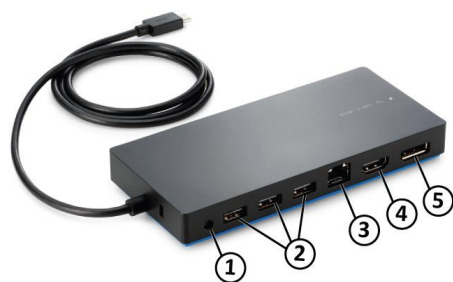
HP Elite USB-C Docking Station- Front side



1. Headphone/microphone combo

2. USB-C™ port
3. USB port

HP Elite USB-C Docking Station- Rear side



1. Power In

2. USB ports (3)

3. Ethernet port
4. HDMI port

5. DisplayPort

Components	
Ports	5 USB ports (1 USB-C, 3USB 2.0, 1 USB 3.0) 1 Ethernet port (10/100/1000) 1 HDMI 1 DisplayPort

Overview

HP Advanced Wireless Dock – Front side



- 1. Connection button
- 2. USB 3.0 Charging port

- 3. Headphone out
- 4. Microphone in

Overview

HP Advanced Wireless Dock – Rear side



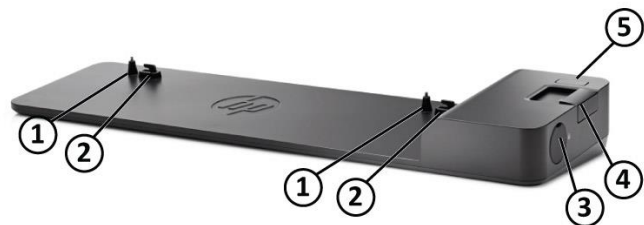
- | | |
|--------------------------|-------------------------|
| 1. Reset button | 5. VGA port |
| 2. Power button | 6. RJ45 (Ethernet) port |
| 3. Display ports 1.2 (2) | 7. DC in jack -4.5 mm |
| 4. USB 3.0 ports (3) | 8. Security lock slot |

Components	
Ports	4 USB 3.0 ports (3 std, 1 powered)
	1 RJ45 Ethernet port (10/100/1000)
	1 Security lock slot
	1 VGA port
	2 Display port 1.2
	1 Microphone in
	1 Headphone out
	1 DC in jack - 4.5mm

Note: The WiGig-compatible notebook or tablet must be positioned within 1.2 m (4 ft) and without obstruction in the line of sight of the wireless dock. HP Advanced Wireless Docking is compatible with the HP Elite x2 1011 G1 with an optional installed Intel® Tri Band Wireless AC with WiGig Combo card available at the time of purchase.

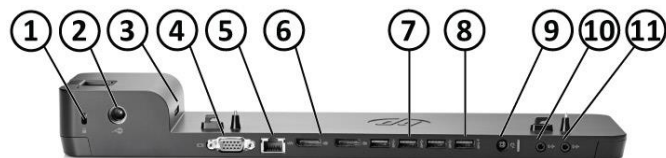
Overview

HP UltraSlim Docking Station – Front side



- | | |
|--|----------------------|
| 1. Docking posts | 4. Connection button |
| 2. Locking mechanism | 5. Power on/off |
| 3. Docking station cable lock slot (lock not included) | |

HP UltraSlim Docking Station – Rear side



- | | |
|--|------------------------------|
| 1. Lock slot (lock not included) | 7. USB 3.0 ports (3) |
| 2. Docking station cable lock slot (lock not included) | 8. USB 3.0 charging port (1) |
| 3. Side docking connector | 9. Power connector |
| 4. VGA port | 10. Line in jack |
| 5. LAN/Ethernet port | 11. Line out jack |
| 6. DisplayPort 1.2 (2) | |

HP UltraSlim Docking Station D9Y32AA

Front Components

Docking posts (2)	Align and secure the computer for proper connection to the docking station
Computer connect/ release mechanisms (2)	Connect and release the computer when you press the connection button
Docking connector	Docking connector for notebook
Connect button	Secures and releases the computer Slide in to secure the computer Slide out to release the computer
LEDs	AC present: aqua white; Dock connected: white; two RJ45 LEDs: amber/green

Overview

Rear Components	
AC power port	Energy-efficient 65W Smart AC adapter features integrated surge protection to help against power fluctuations.
Integrated cable lock slot	Supports the HP Docking Station Cable Lock with a simplified locking mechanism. Gives you two security options: lock the docking station only (which also prevents access to the Station drive bay); or lock both the docking station and your notebook for additional security. Also supports an industry standard notebook lock.
Network connectors	RJ-45 / Ethernet pass thru
USB ports	3 USB 3.0 ports, 1 USB 3.0 charging port
Audio connectors	Line-In; Line-Out
Other connectors	VGA, DisplayPort 1.1a (DP 1.2 capable)

NOTE: Your computer, docking station, and monitor must all support USB 3.0 and DisplayPort 1.2 to benefit from the advanced speeds or features that these technologies provide. If one of the devices does not support these technologies, you will still have USB 2.0 and DisplayPort 1.1 functionality.

HP Elite Thunderbolt 3 Dock and HP ZBook Thunderbolt 3 Dock– Front side



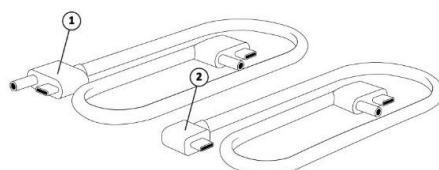
- 1. Power button
- 2. USB 3.0 ports (2)
- 3. Headphone/microphone combo jack

Overview

HP Elite Thunderbolt 3 Dock and HP ZBook Thunderbolt 3 Dock – Back side



- | | |
|-----------------------|-----------------------------------|
| 1. Security lock slot | 6. USB-C™ port |
| 2. Ethernet port | 7. Power connector for dock 4.5mm |
| 3. VGA port | 8. Thunderbolt™/ power cable |
| 4. USB ports (2) | |
| 5. DisplayPorts (2) | |



Cables Types

- | | |
|---|--|
| 1. USB-C™ with Thunderbolt 3™ power cable for HP ZBooks with Thunderbolt™ | 3. USB-C™ with Thunderbolt 3™ power cable for HP Elite x2 1012 |
|---|--|

QuickSpecs

HP Ultra-light Docking Stations

Technical Specifications

HP Elite 65W Thunderbolt 3 Dock P5Q54AA

HP ZBook 150W Thunderbolt 3 Dock P5Q58AA

HP ZBook 200W Thunderbolt 3 Dock P5Q61AA

Front Components

Power button	Turns on the power to the computer
Computer power light	Light on: docked computer is turned on Light blinking: docked computer is in standby mode
Docking Cable	Thunderbolt 3™ power cable connects the computer to the docking station
Connect light	One: a computer is fully docked the light is on and blinks in standby mode

Rear/Right-Side Components

AC power port	Energy-efficient 150W Smart AC adapter features integrated surge protection to help against power fluctuations.
Powered USB 3.0 port	One; allows you to connect to select USB devices
USB 3.0 ports	Three, allow you to connect to standard USB devices.
USB-C port	One; Provides external device charging up to 15 watts;
Video connectors	Two DisplayPort 1.2 ports, one VGA, One Thunderbolt™/Power Cable
Power connectors	One Thunderbolt™/Power combination cable connector, One 4.5mm and one 7.4mm power inputs
Integrated cable lock slot	Supports HP Cable Locks Also supports HP Dual Head Cable Lock.
Network connectors	Ethernet port
USB ports	3 USB 3.0 ports, 1 powered USB 3.0 port
Audio connector	Combo audio mic/headphones
Other connectors	VGA, Two DisplayPort 1.2

NOTE: Your Notebook must support Thunderbolt 3 to enable the docking station. Docking station, and monitor must all support USB-C, USB 3.0 and DisplayPort 1.2 to benefit from the advanced speeds or features that these technologies provide. If one of the devices does not support these technologies, you will still have USB 2.0 and DisplayPort 1.1 functionality.

To support dual 4k monitors, connect one monitor via DisplayPort and one via the USB-C connector and a USB-C to DP dongle. Dual 2k monitors can be supported using both DisplayPorts.



QuickSpecs

HP Ultra-light Docking Stations

Technical Specifications

	HP USB-C Travel Dock
Dimensions (W x D x H)	1.20 x 1.71 x .69 inches (3.06 x 4.34 x 1.75 cm)
Weight	.21 lb (95 g)
Power requirements	
Powered from VBUS	5 Volts/3 Amps
Operating Systems Supported	Microsoft-Windows XP/Vista/Win7/Win8.1/Win10 (install updated driver)
Option Kit Contents	HP USB-C Travel Dock and documentation

	HP USB Travel Dock
Dimensions (W x D x H)	5.0x1.5x0.75 inches (12.7 x 3.81 x 1.9 cm)
Weight	.21 lb (95 g)
Power requirements	
Powered from VBUS	5 Volts/3 Amps
Operating Systems Supported	Microsoft-Windows XP/Vista/Win7/Win8.1/Win10 (install updated driver)
Option Kit Contents	HP USB-C Travel Dock, documentation

	HP Elite USB-C Docking Station
Dimensions (H x W x D)	6x2.76x0.77 in (152.4x70x19.6 mm)
Weight	.66 lb (0.3kg)



QuickSpecs

HP Ultra-light Docking Stations

Technical Specifications

Stand-alone power requirements

Normal Operating Voltage	18.519.5 V
Average Operating Power	55 W
Max Operating Power	< 65 W

Temperature

Operating	32° to 95° F (0° to 35° C)
Non-operating	4° to 140° F (-20° to 60° C)

Relative humidity

Operating	10% to 90%, non-condensing
Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature

Altitude

Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)

Shock

Operating	125 G, 2 ms, half-sine
Non-operating	200 G, 2 ms, half-sine

Random vibration

Operating	0.75 grms
Non-operating	1.50 grms

Option Kit Contents

HP Elite USB-C Docking Station, AC Power Cable, 65W AC power adapter, documentation

HP UltraSlim Docking Station

Dimensions (H x W x D)	1.7 x 14.5 x 4.2 in (4.4 x 36.8x 10.7 cm)
----------------------------------	---

Weight	1.69 lb (0.76 kg)
---------------	-------------------

Stand-alone power requirements

Normal Operating Voltage	18.5 V
Average Operating Power	18.5 W
Max Operating Power	< 65 W

Temperature

Operating	32° to 95° F (0° to 35° C)
Non-operating	4° to 140° F (-20° to 60° C)

Relative humidity

Operating	10% to 90%, non-condensing
Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature

Altitude

Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)

Shock

Operating	125 G, 2 ms, half-sine
Non-operating	200 G, 2 ms, half-sine

Random vibration

Operating	0.75 grms
Non-operating	1.50 grms



Technical Specifications

Option Kit Contents

HP UltraSlim Docking Station, AC power adapter, documentation

HP Elite 65W Thunderbolt 3 Dock

Dimensions

9.06 x 2.24 x .69 in
230 x 57 x 17.5 mm(w/ feet)

Weight

.5 lb (220-227g)

Stand-alone power requirements

Normal Operating Voltage 19.5V
Average Operating Power 0.268W
Max Operating Power 65W

Temperature

Operating 32° to 95° F (0° to 35° C)
Non-operating 4° to 140° F (-20° to 60° C)

Relative humidity

Operating 10% to 90%, non-condensing
Non-operating 5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature

Altitude

Operating -50 to 10,000 ft (-15.24 to 3,048 m)
Non-operating -50 to 40,000 ft (-15.24 to 12,192 m)

Shock

Operating 125 G, 2 ms, half-sine
Non-operating 200 G, 2 ms, half-sine

Random vibration

Operating 0.75 grms
Non-operating 1.50 grms

Option Kit Contents

HP Elite 45W Thunderbolt 3 Dock, Thunderbolt/AC power cable, 65W A/C

Technical Specifications

HP ZBook 150W Thunderbolt 3 Dock

Dimensions	9.06 x 2.24 x .69 in 230 x 57 x 17.5 mm(w/ feet)
Weight	.5 lb (220-227g)
Stand-alone power requirements	
Normal Operating Voltage	19.5V
Average Operating Power	0.29W
Max Operating Power	150W
Temperature	
Operating	32° to 95° F (0° to 35° C)
Non-operating	4° to 140° F (-20° to 60° C)
Relative humidity	
Operating	10% to 90%, non-condensing
Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
Altitude	
Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
Shock	
Operating	125 G, 2 ms, half-sine
Non-operating	200 G, 2 ms, half-sine
Random vibration	
Operating	0.75 grms
Non-operating	1.50 grms
Option Kit Contents	HP ZBook 150W Thunderbolt 3 Dock, Thunderbolt/AC power cable, 150W A/C power adapter, documentation

HP ZBook 200W Thunderbolt 3 Dock

Dimensions	9.06 x 2.24 x .69 in 230 x 57 x 17.5 mm(w/ feet)
Weight	.5 lbs (220-227g)
Stand-alone power requirements	
Normal Operating Voltage	19.5V
Average Operating Power	0.368W
Max Operating Power	200W
Temperature	
Operating	32° to 95° F (0° to 35° C)
Non-operating	4° to 140° F (-20° to 60° C)
Relative humidity	
Operating	10% to 90%, non-condensing
Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature

QuickSpecs

HP Ultra-light Docking Stations

Technical Specifications

Altitude

Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)

Shock

Operating	125 G, 2 ms, half-sine
Non-operating	200 G, 2 ms, half-sine

Random vibration

Operating	0.75 grms
Non-operating	1.50 grms

Option Kit Contents

HP ZBook 200W Thunderbolt 3 Dock, Thunderbolt/AC power cable, 200W A/

Compatibility

HP Ultra-light Docking Stations are compatible with HP EliteBook Notebook and Tablet PCs as follows:

Docking Station**Compatible Notebooks**

HP USB Travel Dock
HP Advanced Wireless Docking Station
HP Elite USB-C Docking Station
HP UltraSlim Docking Station

All HP notebooks with a powered USB-A port
HP Elite x2 1011 G1***
HP Elite x2 1012, HP Pro Tablet 608 G1, HP EliteBook Folio G1
HP Elitebook 820 G1-G2, 850 G2, 840 G1-G2, 850 G1, 1020 G1-G2, 1040 G1-G2
HP Elitebook 720 G1-G2, 725 G1-G2, 750 G1-G2, 740 G1-G2, 750 G1-G2, 745 G1-G2, 755 G1-G2, 1040
HP EliteBook Folio 9480m, 9470m
HP EliteBook Revolve 810 G1, 810 G2
HP Pro x2 612 G1
HP ZBook 14, HP ZBook 15U G3 Mobile Workstation,
HP Elite x2 1012 G1
HP ZBook 15 G3 Mobile Workstation, HP ZBook Studio G3 Mobile Workstation
HP ZBook 17 G3 Mobile Workstation

HP Elite 65W Thunderbolt 3 Dock
HP ZBook 150W Thunderbolt 3 Dock

HP ZBook 200W Thunderbolt 3 Dock

NOTE: Your computer, docking station, and monitor must all support USB 3.0 and DisplayPort 1.2 to benefit from the advanced speeds or features that these technologies provide. If one of the devices does not support these technologies, you will still have USB 2.0 and DisplayPort 1.1 functionality.

***The WiGig-compatible notebook or tablet must be positioned within 1.2 m (4 ft) and without obstruction in the line of sight of the wireless dock. HP Advanced Wireless Docking is compatible with the HP Elite x2 1011 G1 with an optional installed Intel Tri Band Wireless AC with WiGig Combo card available at the time of purchase.



Technical Specifications

Service and Support

HP Ultra-light Docking Stations are supported by a one-year limited warranty. Additional support is available 24 hours a day, seven days a week by phone as well as online support forums.

NOTE: Certain restrictions and exclusions apply. Consult the [HP Customer Support Center](#) for details.

QuickSpecs

HP Ultra-light Docking Stations

Summary of Changes

Date of change	Version 1 to 2		Description of change
December 17, 2014	V11 to V12	Added	Added the HP Advanced Wireless Docking Station and specs to file.
January 23, 2015	V12 to V13	Updated	Computability for HP UltraSlim Docking
April 24, 2015	V13 to V14	Removed	2013 Ultra Slim Docking Station D9Y32AA
April 28, 2015	V14 to V15	Added	Ultra Slim Docking Station D9Y32AA
		Removed	HP UltraSlim Docking Station B9C87AA
September 24, 2015	V15 to V16	Added	New docking stations listed below HP Elite 45W Thunderbolt 3 Dock P5Q54AA HP ZBook 150W Thunderbolt 3 Dock P5Q58AA HP ZBook 200W Thunderbolt 3 Dock P5Q61AA
		Removed	HP 2570p Docking Station A9B77AA HP 2740 Ultra-Slim Expansion Base WA995AA
November 20, 2015	V16 to V17	Updated	Normal Operating Voltage from 19.7v to 19.5v for HP Elite 65W Thunderbolt 3 Dock HP ZBook 150W Thunderbolt 3 Dock HP ZBook 200W Thunderbolt 3 Dock
February 10, 2015	V17 to V18	Added	HP USB C Travel Dock TOK29AA HP USB Travel Dock TOK30AA Added USB Type-C™ and USB-C™ are trademarks of USB Implementers Forum to copyright statement
February 26, 2016	V18 to v19		Updated HP USB Travel Dock TOK30AA dims
March 10, 2016	V19 to v20	Added	HP Elite USB-C Dock T3V74AA
May 12, 2016	V20 to v21	Changed	UltraSlim Docking Station rear picture

© Copyright 2016 HP Development Company, L.P.

The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. Thunderbolt is a trademark of Intel Corporation in the U.S. and other countries. USB Type-C™ and USB-C™ are trademarks of USB Implementers Forum.



Visi n de conjunto

Bases de sobremesa ultra ligeras HP

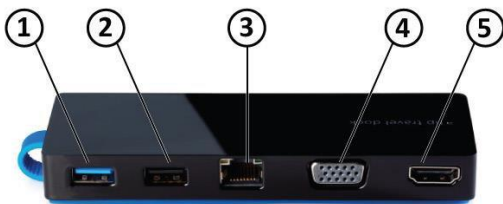
modelos

HP USB-C Travel Muelle	T0K29AA
Muelle de viaje HP USB	T0K30AA
HP Elite USB-C Muelle	T3V74AA
Nuevo	
Estaci n de acoplamiento HP Advanced Wireless	F7M97AA
Estaci n de acoplamiento HP UltraSlim	D9Y32AA
MARIDOP Elite 65W Thunderbolt 3 Muelle	P5Q54AA
MARIDOP ZBook 150W Thunderbolt 3 Muelle	P5Q58AA
MARIDOP ZBook 200W Thunderbolt 3 Muelle	P5Q61AA

HP USB-C Travel Muelle - parte delantera



HP USB-C Travel muelle - Parte trasera



1. puerto USB 3.0

2. puerto USB 2.0

3. Puerto Ethernet
4. puerto VGA

5. puerto HDMI

componentes	
puertos	2 puertos USB (1 USB 3.0, 1 puerto USB 2.0) 1 puerto Ethernet puerto VGA (10/100/1000) 1 1 HDMI

Muelle de viaje HP USB - parte delantera

Visi n de conjunto



1. Los puertos USB (2)

Muelle de viaje HP USB - Parte trasera



1. Puerto Ethernet
2. puerto VGA

3. puerto HDMI

componentes	
puertos	2 puertos USB (1 USB 3.0, 1 puerto USB 2.0) 1 puerto Ethernet (10/100/1000) 1 puerto VGA 1 HDMI

Visi n de conjunto

HP Elite USB-C de acoplamiento lado frontal Station-



1. Auricular / micr fono combinado

2. USB-C™ Puerto
3. Puerto USB

HP Elite USB-C de acoplamiento lado trasero Station-



1. Potencia En

2. Los puertos USB (3)

3. Puerto Ethernet
4. puerto HDMI

5. DisplayPort

componentes	
puertos	5 puertos USB (USB 1-C, 3USB 2.0, 1 puerto USB 3.0) 1 puerto Ethernet (10/100/1000) 1 HDMI 1 DisplayPort

Visión de conjunto

Avanzado HP Wireless Dock - parte delantera



- 1. botón de conexión
- 2. USB 3.0 puerto de carga

- 3. salida de auriculares
- 4. micrófono en

Visión de conjunto

Avanzado HP Wireless Dock - Parte trasera



1. Bot n de reinicio

2. Bot n de encendido

3. 1.2 puertos de pantalla (2)

4. puertos USB 3.0 (3)
5. puerto VGA

6. Puerto RJ45

7. DC IN -4.5 mm

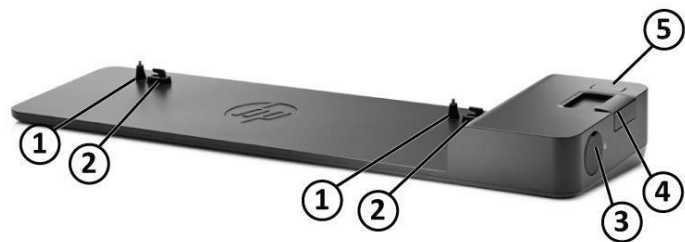
8. Ranura de bloqueo de seguridad

componentes	
puertos	4 puertos USB 3.0 (3 std, 1 powered) 1 puerto RJ45 Ethernet (10/100/1000) 1 SRanura de bloqueo ecurity puerto VGA 1 2 puerto de pantalla 1.2 1 entrada de micr fono 1 salida de auriculares 1 DC IN - 4,5 mm

Nota: Tque WiGig-compatibles port til o tableta debe ser colocado dentro de 1.2 m (4 pies) y sin obstrucci n en la l nea de visi n de la base inal mbrica. Soporte para HP inal mbrica avanzada es compatible con el HP Elite 1011 x2 G1 con un Intel® instalado triple banda AC inal mbrico con WiGig tarjeta opcional Combo disponibles en el momento de la compra.

Visi n de conjunto

Estaci n de acoplamiento HP UltraSlim - parte delantera



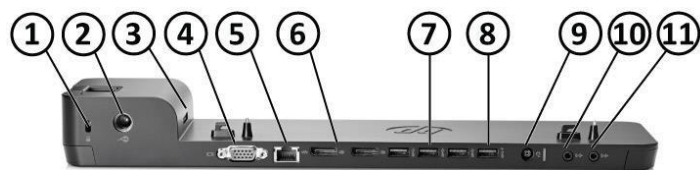
1. puntos de atraque

2. mecanismo de bloqueo

3. Ranura para cable de estaci n de acoplamiento
(candado no incluido)
4. Bot n de conexi n

5. Encendido /

Estaci n de acoplamiento HP UltraSlim - Parte trasera



1. Ranura de bloqueo (candado no incluido)

2. Ranura para cable de estaci n de acoplamiento

3. conector de acoplamiento lateral

4. puerto VGA

5. puerto LAN / Ethernet

6. DisplayPort 1.2 (2)
7. puertos USB 3.0 (3)

8. USB 3.0 puerto de carga

9. Conector de

10. Linea de la toma

11. LINE OUT

HP UltraSlim D9Y32AA estaci n de acoplamiento

componentes delanteros	
postes de conexi n (2)	Alinear y asegurar la computadora para conectarlos bien a la estaci n de acoplamiento
mecanismos	Conectar y liberar el ordenador cuando se pulsa el bot n de conexi n
ordenador conectar / liberaci n (2)	
conector de acoplamiento	Conector de acoplamiento para el cuaderno
bot n Conectar	Asegura y libera el inform ticos Deslizarse en la diapositiva para asegurar el ordenador a cabo para liberar el equipo
LEDs	CA presente: blanco negro; Muelle conectados: blanco; dos LEDs RJ45: mbar / verde

Visión de conjunto

	componentes traseras
puerto de alimentación de CA.	Características del adaptador de CA de 65 W inteligente eficiente integrado de protección contra sobretensiones para ayudar contra el poder fluctuaciones.
ranura para cable de bloqueo integrado	Es compatible con la estación de acoplamiento HP bloqueo de cable con un mecanismo de bloqueo simplificado. Le ofrece dos opciones de seguridad: Bloqueo de la estación de acoplamiento física (que también impide el acceso al compartimiento de la unidad de la extensión); o bloquear tanto la estación de acoplamiento y su ordenador portátil para mayor seguridad. También es compatible con una industria de bloqueo portátil estándar.
conectores de red	RJ-45 / Ethernet pasar a través
puertos USB	3 puertos USB 3.0, USB 3.0 1 puerto de carga
conectores de audio	En línea; Fuera de la línea
otros conectores	VGA, DisplayPort 1.1a (DP 1.2 capaz)

NOTA: Y nuestro ordenador, estación de acoplamiento y el monitor deben todo el soporte USB 3.0 y DisplayPort 1.2 para beneficiarse de las velocidades avanzadas o características que estas tecnologías ofrecen. Si uno de los dispositivos no es compatible con estas tecnologías, todavía tendrá USB 2.0 y DisplayPort 1.1 funcionalidad.

HP Elite lado Thunderbolt 3 Muelle y HP ZBook Thunderbolt 3 Dock- Frente



1. Botón de encendido
2. puertos USB 3.0 (2)

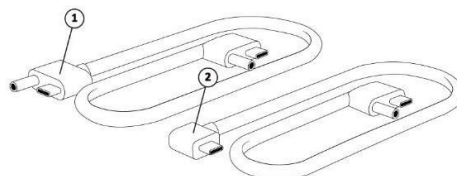
conector combinado de micrófono / auriculares 3.

Visión de
conjunto

HP Elite Thunderbolt 3 Muelle y HP ZBook Thunderbolt 3 Muelle - Back side



- | | |
|-----------------------------------|------------------------------------|
| 1. Ranura de bloqueo de seguridad | 6. puerto USB-C™ |
| 2. Puerto Ethernet | 7. Conector de alimentación de 4,5 |
| 3. puerto VGA | 8. Thunderbolt™ de cable / |
| 4. Los puertos USB (2) | |
| 5. DisplayPorts (2) | |



Cables Tipos

- | | |
|--|--|
| 1. USB-C™ con Thunderbolt™ 3 cable de alimentación para HP ZBooks con Thunderbolt™ | 2. USB-C™ con Thunderbolt™ 3 cable de alimentación para HP Elite 1012 x2 |
| 3. | |

Especificaciones técnicas

HP Elite 65W Thunderbolt 3 Muelle P5Q54AA
 HP 150W ZBook Thunderbolt 3 Muelle
 P5Q58AA HP 200W ZBook Thunderbolt 3
 Muelle P5Q61AA

componentes delanteros

Botón de encendido Activa la alimentación a la computadora

la luz de alimentación del ordenador Luz en: equipo acoplado se enciende
 El parpadeo de luz: atracado ordenador está en modo de espera

cable de acoplamiento Thunderbolt cable de alimentación 3™ conecta el equipo a la estación de acoplamiento

Conectar la luz Uno: un ordenador está totalmente acoplado la luz está encendida y parpadea en modo de espera

Componentes trasera derecha / Lado

puerto de alimentación de CA. Características del adaptador de CA inteligente 150W eficiente integrado de protección contra sobretensiones para ayudar contra el poder fluctuaciones.

puerto USB 3.0 Powered Uno; Le permite conectar dispositivos USB para seleccionar

puertos USB 3.0 Tres, le permiten conectarse a dispositivos USB estándar.

puerto USB-C Uno; Proporciona dispositivo externo de carga de hasta 15 vatios;

conectores de vídeo Dos puertos DisplayPort 1.2, VGA, un Thunderbolt™ / Cable de alimentación

conectores de alimentación Entradas de alimentación del conector del cable de combinación / Power, uno de 4,5 mm y 7,4 mm uno Thunderbolt™

ranura para cable de bloqueo integrado Es compatible con HP cable Cerraduras también es compatible con HP cabezal doble para cable de seguridad.

conectores de red Puerto Ethernet

puertos USB 3 puertos USB 3.0, 1 puerto USB 3.0 alimentado

conector de audio Combo de micrófono / auriculares de audio

otros conectores VGA, DisplayPort 1.2 Dos

NOTA: Su ordenador debe ser compatible con Thunderbolt 3 para permitir que la estación de acoplamiento. estación de acoplamiento y el monitor deben tener todo el soporte USB-C, USB 3.0 y DisplayPort 1.2 para beneficiarse de las velocidades avanzadas o características que proporcionan estas tecnologías. Si uno de los dispositivos no es compatible con estas tecnologías, todavía tendrá USB 2.0 y DisplayPort 1.1 funcionalidad.

Para apoyar monitores duales 4k, conecte un monitor a través de DisplayPort y una a través del conector USB-C y un USB dongle-C para DP. monitores 2k duales pueden ser apoyados con las dos DisplayPorts.

Especificaciones técnicas

	HP USB-C Travel Muelle
Dimensiones (W x D x H)	1.20 x 1.71 x .69 pulgadas (3,06 x 4,34 x 1,75 cm)
Peso	.21 Lb (95 g)
Requerimientos de energía	
Accionado de VBUS	5 voltios / 3 amperios
Sistemas operativos compatibles	Microsoft Windows XP / Vista / Win7 / Win8.1 / Win10 (instalar el controlador actualizado)
Contenido del Kit de Opciones	USB-C Travel Dock y documentación de HP

	Muelle de viaje HP USB
Dimensiones (W x D x H)	5.0x1.5x0.75 pulgadas (12,7 x 3,81 x 1,9 cm)
Peso	.21 Lb (95 g)
Requerimientos de energía	
Accionado de VBUS	5 voltios / 3 amperios
Sistemas operativos compatibles	Microsoft Windows XP / Vista / Win7 / Win8.1 / Win10 (instalar controlador actualizado)
Contenido del Kit de Opciones	HP USB-C Travel muelle, la documentación

Dimensiones
(H x W x D)



HP Elite	Estación de acoplamiento
USB-C	6x2.76x0.77 en (152.4x70x19.6 mm)
Peso	.66 Lb (0.3kg)



Especificaciones técnicas

Stand-alone requisitos de energía

Tensión de funcionamiento normal	18.5/19.5 V
Potencia media de operación	55 W
Potencia máxima de funcionamiento	<65 W

Temperatura

Operando	32 ° a 95 ° F (0 ° a 35 ° C)
No operacional	4 ° a 140 ° F (-20 ° a 60 ° C)

Humedad relativa

Operando	10% a 90%, sin condensación
No operacional	5% a 95%, 101,6 ° F (38,7 ° C) de temperatura máxima de bulbo húmedo

Altitud

Operando	-50 a 10.000 pies (3.048 m -15,24 a)
No operacional	-50 a 40.000 pies (-15,24 a 12192 m)

Choque

Operando	125 g, 2 ms, de media onda sinusoidal
No operacional	200 g, 2 ms, de media onda sinusoidal

vibración aleatoria

Operando	0,75 grms
No operacional	1,50 grms

Contenido del Kit de Opciones HP Elite USB Station Docking-C, cable de corriente, adaptador de alimentación de CA de 65 vatios, la documentación

Estación de acoplamiento HP UltraSlim

Dimensiones 1.7 x 14.5 x 4.2 in (4.4 x 36.8x 10.7 cm)

(H x W x D)

Peso 1,69 lb (0,76 kg)

Stand-alone requisitos de energía

Tensión de funcionamiento normal	18,5 V
Potencia media de operación	18.5 W
Potencia máxima de funcionamiento	<65 W

Temperatura

Operando	32 ° a 95 ° F (0 ° a 35 ° C)
No operacional	4 ° a 140 ° F (-20 ° a 60 ° C)

Humedad relativa

Operando	10% a 90%, sin condensación
No operacional	5% a 95%, 101,6 ° F (38,7 ° C) de temperatura máxima de bulbo húmedo

Altitud

Operando	-50 a 10.000 pies (3.048 m -15,24 a)
No operacional	-50 a 40.000 pies (-15,24 a 12192 m)

Choque

Operando	125 g, 2 ms, de media onda sinusoidal
No operacional	200 g, 2 ms, de media onda sinusoidal

vibración aleatoria

Operando	0,75 grms
----------	-----------



No operacional	1,50 grms
----------------	-----------



Especificaciones técnicas

Contenido del Kit de Opciones Estación de acoplamiento HP UltraSlim, adaptador de CA, la documentación

HP Elite 65W Thunderbolt 3 Muelle

Dimensiones	9,06 x 2,24 x 0,69 en 230 x 57 x 17,5 mm (w / pies)
Peso	.5 Lb (220-227g)
Stand-alone requisitos de energía	
Tensión de funcionamiento normal	19.5V
Potencia media de operación	0.268W
Potencia máxima de funcionamiento	65W
Temperatura	
Operando	32 ° a 95 ° F (0 ° a 35 ° C)
No operacional	4 ° a 140 ° F (-20 ° a 60 ° C)
Humedad relativa	
Operando	10% a 90%, sin condensación
No operacional	5% a 95%, 101,6 ° F (38,7 ° C) de temperatura máxima de bulbo húmedo
Altitud	
Operando	-50 a 10.000 pies (3.048 m -15,24 a)
No operacional	-50 a 40.000 pies (-15,24 a 12192 m)
Choque	
Operando	125 g, 2 ms, de media onda sinusoidal
No operacional	200 g, 2 ms, de media onda sinusoidal
vibración aleatoria	
Operando	0,75 grms
No operacional	1,50 grms
Contenido del Kit de Opciones	HP Elite 45W Thunderbolt 3 Dock, cable de alimentación del rayo / AC, 65 W A / C

Especificaciones técnicas

HP 150W ZBook Thunderbolt 3 Muelle

Dimensiones	9,06 x 2,24 x 0,69 en 230 x 57 x 17,5 mm (w / pies)
Peso	.5 Lb (220-227g)
Stand-alone requisitos de energía	
Tensión de funcionamiento normal	19.5V
Potencia media de operación	0.29W
Potencia máxima de funcionamiento	150W
Temperatura	
Operando	32 ° a 95 ° F (0 ° a 35 ° C)
No operacional	4 ° a 140 ° F (-20 ° a 60 ° C)
Humedad relativa	
Operando	10% a 90%, sin condensación
No operacional	5% a 95%, 101,6 ° F (38,7 ° C) de temperatura máxima de bulbo húmedo
Altitud	
Operando	-50 a 10.000 pies (3.048 m -15,24 a)
No operacional	-50 a 40.000 pies (-15,24 a 12192 m)
Choque	
Operando	125 g, 2 ms, de media onda sinusoidal
No operacional	200 g, 2 ms, de media onda sinusoidal
vibración aleatoria	
Operando	0,75 grms
No operacional	1,50 grms
Contenido del Kit de Opciones de energía	HP 150W ZBook Thunderbolt 3 Muelle, Thunderbolt / cable de alimentación de CA, 150W A / C adaptador, documentación

HP 200W ZBook Thunderbolt 3 Muelle

Dimensiones	9,06 x 2,24 x 0,69 en 230 x 57 x 17,5 mm (w / pies)
Peso	.5 Libras (220-227g)
Stand-alone requisitos de energía	
Tensión de funcionamiento normal	19.5V
Potencia media de operación	0.368W
Potencia máxima de funcionamiento	200W
Temperatura	
Operando	32 ° a 95 ° F (0 ° a 35 ° C)
No operacional	4 ° a 140 ° F (-20 ° a 60 ° C)
Humedad relativa	
Operando	10% a 90%, sin condensación
No operacional	5% a 95%, 101,6 ° F (38,7 ° C) de temperatura máxima de bulbo húmedo



Especificaciones técnicas

Altitud

Operando -50 a 10.000 pies (3.048 m -15,24 a)

No operacional -50 a 40.000 pies (-15,24 a 12192 m)

Choque

Operando 125 g, 2 ms, de media onda sinusoidal

No operacional 200 g, 2 ms, de media onda sinusoidal

vibración aleatoria

Operando 0,75 grms

No operacional 1,50 grms

Contenido del Kit de Opciones HP 200W ZBook Thunderbolt 3 Muelle, Thunderbolt / cable de alimentación de CA, 200W A /

Compatibilidad

Bases de sobremesa ultra ligeras HP son compatibles con HP EliteBook Notebook y PCs de la siguiente manera:

Estación de acoplamiento

Muelle de viaje HP USB

Estación de acoplamiento HP Advanced Wireless

HP Elite USB-C Estación de acoplamiento

Estación de acoplamiento HP UltraSlim

HP Elite 65W Thunderbolt 3 Muelle

HP 150W ZBook Thunderbolt 3 Muelle

HP 200W ZBook Thunderbolt 3 Muelle

Portátiles compatibles

Todos los portátiles HP con una potencia puerto USB-A

HP Elite 1011 x2 G1 ***

HP Elite x2 1012, HP Pro Tablet 608 G1, HP EliteBook Folio G1

HP Elitebook 820 G1-G2, G2 850, 840 G1-G2, G1 850, 1020 G1 G2, 1040 G1-G2

HP Elitebook 720 G1-G2, G1-G2 725, 750 G1-G2, G1-G2 740, 750 G1-G2, 745 G1-G2, 755 G1-G2, 1040

HP EliteBook Folio 9480m, 9470m HP

EliteBook Revolve 810 G1, G2 810

HP Pro x2 612 G1

HP ZBook 14, HP ZBook 15U G3 estación de trabajo móvil,

HP Elite 1012 x2 G1

HP ZBook 15 G3 estación de trabajo móvil, HP ZBook Estudio G3 estación de trabajo móvil

HP ZBook 17 G3 estación de trabajo móvil

NOTA: El ordenador, estación de acoplamiento y el monitor deben todo el soporte USB 3.0 y DisplayPort 1.2 para beneficiarse de las velocidades avanzadas o características que estas tecnologías ofrecen. Si uno de los dispositivos no es compatible con estas tecnologías, todavía tendrá USB 2.0 y DisplayPort 1.1 funcionalidad.

*** El ordenador portátil o tableta compatible con WiGig deben colocarse a 1,2 m (4 pies) y sin obstrucción en la línea de visión de la base inalámbrica. Soporte para HP inalámbrica avanzada es compatible con el HP Elite 1011 x2 G1 con un Intel instalado triple banda AC inalámbrico con WiGig tarjeta opcional Combo disponibles en el momento de la compra.



Especificaciones técnicas

Información y Ayuda

Bases de sobremesa ultra ligeras HP están respaldados por una garantía limitada de un año. El apoyo adicional está disponible 24 horas al día, siete días a la semana por teléfono, así como foros de soporte en línea.

NOTA: Se aplican ciertas restricciones y exclusiones. Consulte el Centro de atención al cliente de HP para obtener más información.

Resumen de Cambios

Fecha del cambio	Versión 1-2		Descripción de Cambio
17 de diciembre de,	V11 a V12	Adicional	Se ha añadido la estación de acoplamiento HP inalámbrica avanzada y las
23 de enero de, el	V12 a V13	Actualizado	Computabilidad para HP UltraSlim Docking
24 de abril de, el año	V13 a V14	Remoto	2013 ultra delgada D9Y32AA estación de acoplamiento
28 de abril de, el año	V14 a V15	Adicional	Ultra delgado D9Y32AA estación de acoplamiento
		Remoto	Estación de acoplamiento HP UltraSlim B9C87AA
24 de septiembre de, el año 2015	V15 a V16	Adicional	Las nuevas estaciones de conexión para enumerar a continuación HP Elite 45W Thunderbolt 3 Muelle P5Q54AA HP 150W ZBook Thunderbolt 3 Muelle P5Q58AA HP 200W ZBook
		Remoto	HP 2570p estación de acoplamiento A9B77AA MARIDOP 2740 Expansión Ultra-Slim WA995AA Base
20 de noviembre de, el año 2015	V16 a V17	Actualizado	Tensión de funcionamiento normal de 19.7v a 19.5V para HP Elite 65W Thunderbolt 3 Muelle HP 150W ZBook Thunderbolt 3 Muelle HP 200W ZBook
10 de febrero de, el año 2015	V17 a V18	Adicional	HP USB C Travel Muelle T0K29AA viaje USB de HP Muelle T0K30AA Añadido USB Tipo-C™ y USB-C™ son marcas comerciales de USB Implementers Forum a declaración de copyright
26 de febrero de, el	V18 a V19		Actualización viaje USB de HP Muelle T0K30AA atención
10 de marzo de, el año	V19 a V20	Adicional	HP Elite USB-C Muelle T3V74AA
12 de mayo de 2016	V20 a V21	cambiado	foto trasera Soporte para la estación de UltraSlim

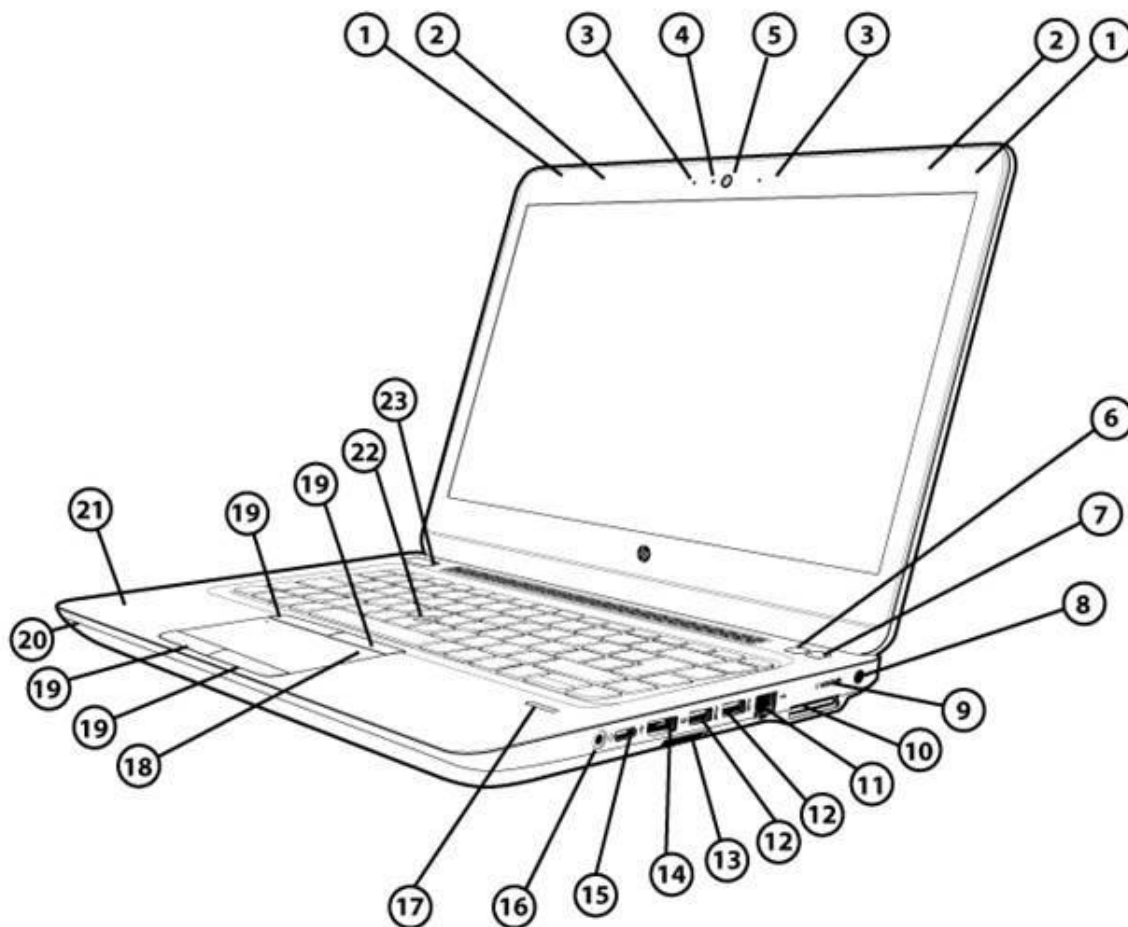
Copyright © 2016 HP Development Company, L. P.

La información contenida en este documento está sujeta a cambios sin previo aviso. Las únicas garantías de los productos y servicios de HP se establecen en las declaraciones de garantía expresas que acompañan a dichos productos y servicios. Nada en este documento debe interpretarse como una garantía adicional. HP no será responsable de los errores u omisiones técnicos o editoriales aquí contenidos. Thunderbolt es una marca comercial de Intel Corporation en los EE.UU. y otros países. Tipo-C™ USB y USB-C™ son marcas comerciales de USB Implementers Forum.

G2 PC portátil

Visión de conjunto

HP ProBook 645 G2 PC portátil



Frente derecho

- | | |
|--|---|
| 1. Antenas WLAN (2) | 13. ranura para tarjetas SD |
| 2. Antenas WWAN (2) (slo en algunos modelos) | 14. puerto de pantalla |
| 3. Micrófonos internos (2) | 15. puerto USB-C |
| 4. LED cámara web (slo en algunos modelos) | dieciséis. Micrófono / auriculares jack combo |
| 5. Cámara web (slo en algunos modelos) | 17. lector de huellas digitales (slo en algunos modelos) |
| 6. Interruptor de encendido / apagado | 18. touchpad |
| 7. Botón de silencio del altavoz | 19. botones del touchpad (4) |
| 8. Conector de alimentación | 20. Indicadores LED: luz de red inalámbrica, luz de encendido, AC |
| | Adaptador / luz de la batería, Almacenamiento de luz |
| 9. ranura para tarjetas SIM | 21. NFC (slo en algunos modelos) |
| 10. conector de acoplamiento | 22. pointstick |
| 11. Puerto Ethernet | 23. Botón de encendido |
| 12. puertos USB 3.0 (2) | |

G2 PC portátil

Visión de conjunto

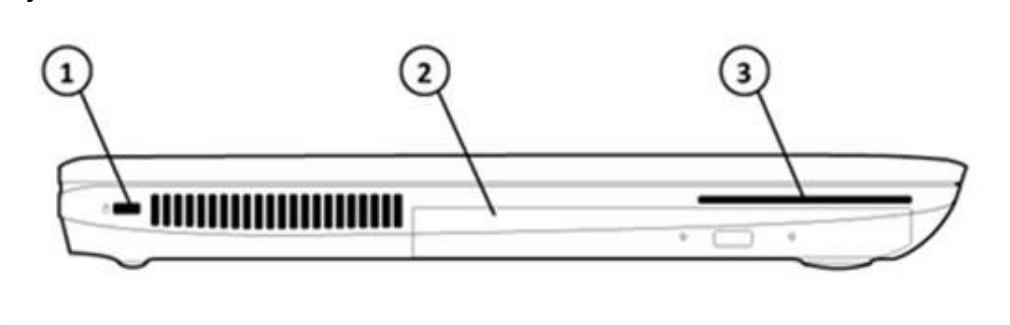
Nota: Las antenas no son visibles desde el exterior del equipo. Para lograr una transmisión óptima, mantenga el entorno de la antena libre de obstrucciones.

Los modelos que no tienen cámara web opcional de micrófono único integrado en el lado izquierdo del panel de la pantalla.



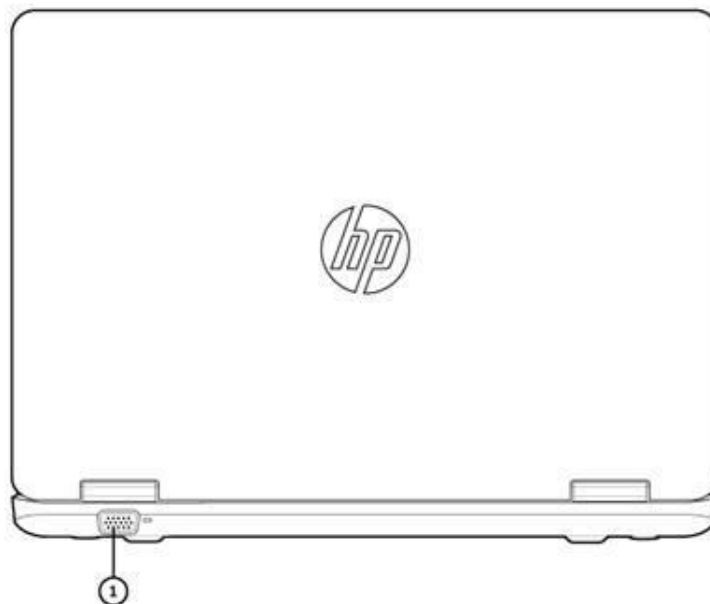
G2 PC portátil

Visión de conjunto



Izquierda

- | | | | |
|----|--------------------------------|----|---------------------------------|
| 1. | Ranura de bloqueo de seguridad | 3. | lector de tarjetas inteligentes |
| 2. | Unidad óptica | | |



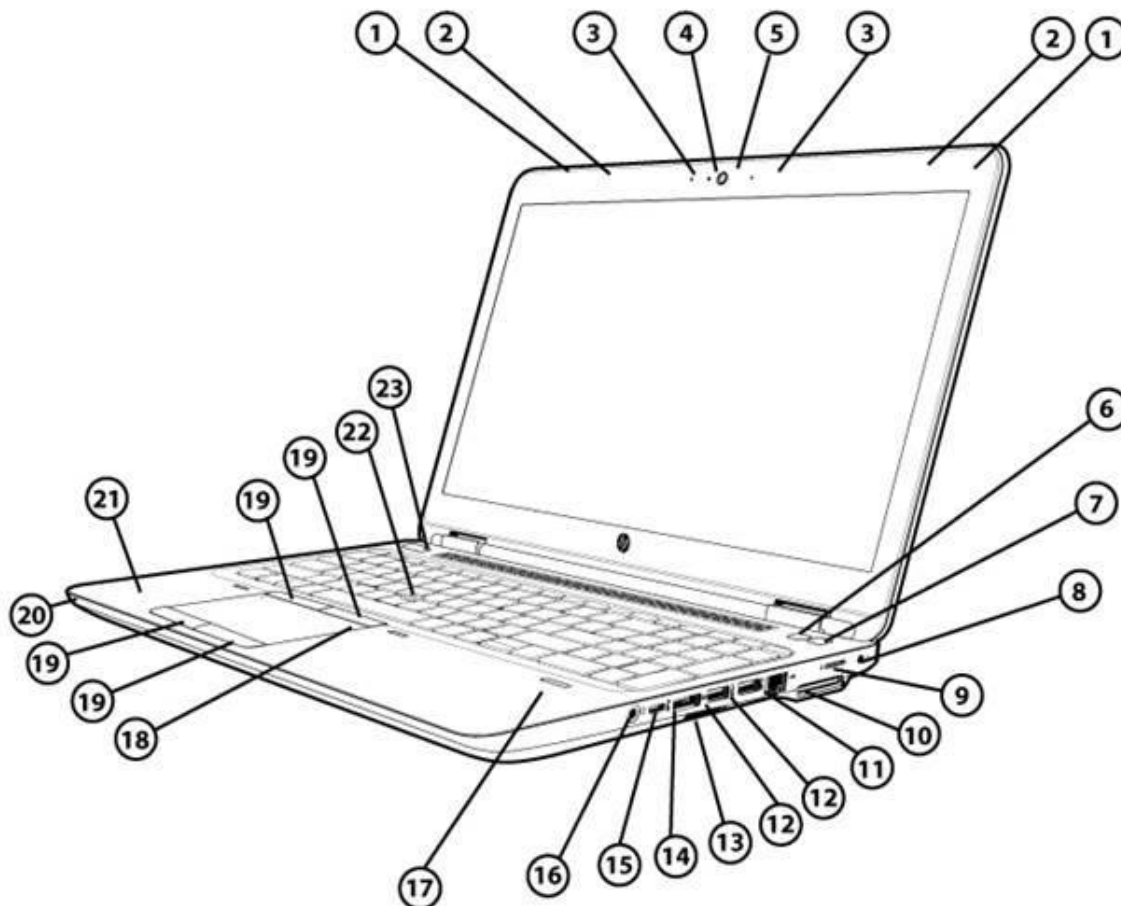
Espalda

- | | |
|----|------------|
| 1. | puerto VGA |
| 1. | puerto VGA |

G2 PC portátil

Visión de conjunto

HP ProBook 655 G2 PC portátil



Frente derecho

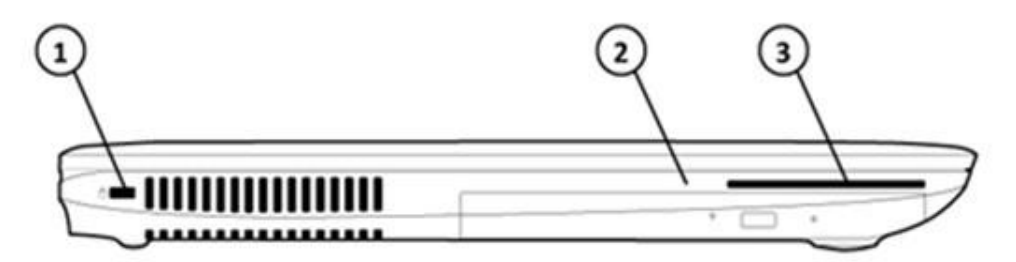
- | | |
|---|---|
| 1. Antenas WLAN (2) | 13. ranura para tarjetas SD |
| 2. Antenas WWAN (2) (sólo en algunos modelos) | 14. Display Port |
| 3. Micrófonos internos (2) | 15. puerto USB-C |
| 4. LED cámara web (sólo en algunos modelos) | dieciséis. Micrófono / auriculares jack combo |
| 5. Cámara web (sólo en algunos modelos) | 17. lector de huellas digitales (sólo en algunos modelos) |
| 6. Interruptor de encendido / apagado | 18. touchpad |
| 7. Botón de silencio del altavoz | 19. botones del touchpad (4) |
| 8. Puerto de carga | 20. Indicadores LED: luz de red inalámbrica, luz de encendido, AC |
| 9. ranura para tarjetas SIM | Adaptador / luz de la batería, Almacenamiento uso de la luz |
| 10. conector de acoplamiento | 21. NFC (sólo en algunos modelos) |
| 11. Puerto Ethernet | 22. pointstick |
| 12. puertos USB 3.0 (2) | 23. Botón de encendido |

Nota: Las antenas no son visibles desde el exterior del equipo. Para lograr una transmisión óptima, mantenga el entorno de la antena libre de obstrucciones.

G2 PC portátil

Visión de conjunto

Los modelos que no tienen cámara web opcional de micrófono único integrado en el lado izquierdo del panel de la pantalla.



1. Ranura de bloqueo de seguridad
2. Unidad óptica

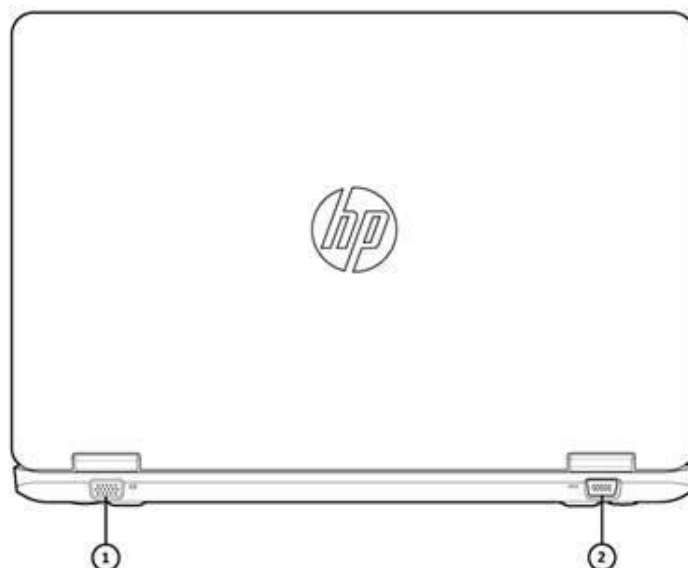
- Izquierda
3. lector de tarjetas inteligentes

1. puerto VGA

2. puerto serie opcional (655 solamente)

G2 PC portátil

Visión de conjunto



Espalda

De un vistazo

- Windows 10 versiones de Windows 8.1, versiones, versiones de Windows 7, Ubuntu Linux, Ubuntu Kylin Linux o
- FreeDOS 2.0 Delgado y ligero diseño- PC-ABS (acrilonitrilo-polycarbonato / butadieno / estireno) material duradero es casi un 20% más delgado; suave al tacto, más durable proceso de pintura de 4 pasos; botones más grandes (de potencia), teclado rediseñado (teclas de flecha); pestillo de extracción / gancho para el diseño reposamanos limpia; montaje superior altavoces para una experiencia de audio optimizado (en comparación con la generación anterior)
- El teclado HP Premium es resistente a salpicaduras y se ofrece con el diseño de iluminación de fondo opcional.
- botón de encendido / apagado con indicador LED de gran touchpad con soporte de gestos, en
- características de seguridad mejoradas como HP lector de huellas dactilares y TPM 1.2 chip de
- seguridad integrado
- Accelerated Processing Unit y los gráficos de AMD
- pantalla LED retroiluminada
- HP ProBook 645: 14.0 "HD diagonal o FHD FHD o portátil con la cámara y con WWAN
- HP ProBook 655: 15.6 "HD diagonal o FHD FHD o portátil con la cámara y con WWAN
- cámara web opcional de alta definición con micrófono doble para videoconferencias
- DisplayPort 1.2 ahora nativo con gráficos integrados
- Un USB-CTM de carga del puerto, dos puertos USB 3.0 para la transferencia rápida de datos desde dispositivos
- (1 carga)
- Audio de alta definición con sonido DTS + TM optimizado para audio de alta fidelidad
- Inalámbrico y el altavoz botón de silencio para gestionar convenientemente la conectividad y el
- altavoz. Flexibles opciones de conectividad inalámbrica:
 - Inalámbrico de banda ancha (WWAN)
 - LAN inalámbrica (WLAN)
 - red de área personal (WPAN Bluetooth®)
 - Near Field Communication (NFC)
- Elección de unidades de disco duro de hasta 1 TB o unidades de
- estado sólido de hasta 512 GB Passed MIL STD testing1

G2 PC portátil

Visión de conjunto

1. MIL STD 810G prueba no pretende demostrar que son aptas para el Departamento de Defensa de EE.UU. requisitos del contrato o de uso militar. Los resultados obtenidos no son una garantía de rendimiento futuro bajo las condiciones de ensayo. Daños en las condiciones de ensayo MIL STD o cualquier daño accidental requiere un daño accidental opcional HP Care Pack Protección.

NOTA: Ver importantes revelaciones legales para todas las características que figuran en sus secciones respectivas características.



PC portátil

Especificaciones técnicas

NOMBRES DE PRODUCTOS

HP ProBook 645 G2 PC portátil HP ProBook 655 G2 PC portátil

SISTEMA OPERATIVO

preinstalado

Windows 10 Pro 641
 Inicio de Windows 10 641
 Inicio de Windows 10 solo idioma 641
 De Windows 8.1 Pro 643
 8.1 de Windows 643
 Windows 7 Professional 32 (disponible a través de derechos de actualización desde Windows 10 Pro 64) 2 de Windows 7 Professional 32 (disponible a través de derechos de actualización desde Windows 10 Pro 64) (solo Académico Nacional) 2
 Windows 7 Professional 643
 Windows 7 Professional 323
 Windows 7 Professional 32 (National Academic solamente) 3
 FreeDOS 2.0

Soporte sólo por Internet

Windows 10 Empresa 641
 De Windows 8.1 para empresas 643
 Windows 7 Enterprise 643
 Windows 7 Enterprise 323

1. No todas las funciones están disponibles en todas las ediciones o versiones de Windows. Los sistemas pueden requerir una actualización y/o hardware adquirido por separado, controladores, software o actualización del BIOS para aprovechar al máximo la funcionalidad de Windows. Windows 10 se actualiza automáticamente, que siempre está activado. honorarios de ISP, se aplican requisitos adicionales pueden aplicar a través del tiempo para las actualizaciones. Ver <http://http://www.microsoft.com>.
2. Este sistema está preinstalado con Windows 7 Professional software y también viene con una licencia y medios para Windows 10 Pro software. Solo se puede utilizar una versión del software de Windows a la vez. El cambio entre las versiones será necesario que para desinstalar una versión e instalar la otra versión. Debe realizar una copia de seguridad de todos los datos (archivos, fotos, etc.) antes de desinstalar e instalar sistemas operativos para evitar la pérdida de sus datos.
3. No todas las funciones están disponibles en todas las ediciones o versiones de Windows. Los sistemas pueden requerir una actualización y/o hardware adquirido por separado, controladores, software o actualización del BIOS para aprovechar al máximo la funcionalidad de Windows. Ver <http://http://www.microsoft.com>.

Unidad de Procesamiento Acelerado

APU AMD Radeon con PRO A10-8700B R6 Gráficos (1,8 GHz, hasta 3,2 GHz, 2 MB de caché, 4 núcleos) 1 AMD APU PRO A8-8600B con Radeon R6 Gráficos (1,6 GHz, hasta 3 GHz, 2 MB de caché, 4 núcleos) 1
 AMD APU PRO A6-8500B con R5 Radeon Graphics (1,6 GHz, hasta 3 GHz, 2 MB de caché, 2 núcleos) 1

1. Multicore está diseñado para mejorar el rendimiento de ciertos productos de software. No todos los clientes o aplicaciones de software se beneficiarán del uso de esta tecnología. El rendimiento y la frecuencia de reloj variarán en función de la carga de trabajo de aplicaciones y configuraciones de hardware y de software. La numeración de Intel no es una medida de rendimiento superior.



PC portátil

Especificaciones técnicas

FUSION regulador del eje (FCH)

Chipset está integrado con el procesador

GRÁFICOS

Radeon R5 R6 Gráficos Radeon Gráficos

NOTA: Integrado con los procesadores. Por favor, véase la sección procesador para obtener más detalles.

MONITOR

HP ProBook 645 interna no táctil

- 14.0 "diagonal de luz de fondo LED HD1 antideslumbrante 45% CG 220 nits (1366x768)
- 14.0 "diagonal de luz de fondo LED HD1 antideslumbrante 45% CG 220 liendres (1366x768) con la cámara
- 14.0 "diagonal de luz de fondo LED HD1 antideslumbrante 45% CG 220 liendres (1366x768) con WWAN
- 14.0 "diagonal de luz de fondo LED HD1 antideslumbrante 45% CG 220 liendres (1366x768) con la cámara y con WWAN
- 14.0 "diagonal de luz de fondo LED FHD antideslumbrante 60% CG 300 nits (1920x1080)
- 14.0 "diagonal de luz de fondo LED FHD antideslumbrante 60% CG 300 nits (1920x1080) con la cámara
- 14.0 "diagonal de luz de fondo LED FHD antideslumbrante 60% CG 300 nits (1920x1080) con WWAN
- 14.0 "diagonal de luz de fondo LED FHD antideslumbrante 60% CG 300 nits (1920x1080) con la cámara y WWAN táctil
- 14.0 "LED de luz de fondo FHD 60% CG 300 nits diagonales (1920x1080) con la cámara y con WWAN

Externo

Hasta 32 bits por pixel profundidad de color

VGA

Puerto soporta resoluciones de hasta 1920 x 1200 de resolución externa @ 60 Hz

DisplayPort 1.2

Soporta resoluciones de hasta 2560 x 1600, profundidad de color de 30 bits a 60 Hz, y monitores Full HD (1920 x 1080), profundidad de color de 24 bits

@ 120 Hz

Número de pantallas compatibles

HP Ultra Delgado Docking	Gráficos UMA
ProBook 645 con A10	3

HP ProBook 655 interna no táctil

- 15.6 "diagonal de luz de fondo LED HD1 antideslumbrante 45% CG 220 nits (1366x768)
- 15.6 "diagonal de luz de fondo LED HD1 antideslumbrante 45% CG 220 liendres (1366x768) con la cámara
- 15.6 "diagonal de luz de fondo LED HD1 antideslumbrante 45% CG 220 liendres (1366x768) con WWAN
- 15.6 "diagonal de luz de fondo LED HD1 antideslumbrante 45% CG 220 liendres (1366x768) con la cámara y con WWAN
- 15.6 "diagonal de luz de fondo LED FHD antideslumbrante 60% CG 300 nits (1920x1080)
- 15.6 "diagonal de luz de fondo LED FHD antideslumbrante 60% CG 300 nits (1920x1080) con la cámara
- 15.6 "diagonal de luz de fondo LED FHD antideslumbrante 60% CG 300 nits (1920x1080) con WWAN
- 15.6 "diagonal de luz de fondo LED FHD antideslumbrante 60% CG 300 nits (1920x1080) con la cámara y WWAN táctil
- 15.6 "diagonal de luz de fondo LED FHD 60% CG 300 nits (1920 x 1080) con cámara con WWAN externa
- Hasta 32 bits por pixel profundidad de color

PC portátil

Especificaciones técnicas

VGA

Puerto soporta resoluciones de hasta 1920 x 1200 de resolución externa @ 60 Hz

DisplayPort 1.2

Soporta resoluciones de hasta 2560 x 1600, una profundidad de color de 30 bits a 60 Hz, y monitores Full HD (1920 x 1080), profundidad de color de 24 bits a 120 Hz

Número de pantallas compatibles

HP Ultra Delgado Docking	UMA
ProBook 655 con A10	3

1. Se requiere contenido HD para ver imágenes HD.

NOTA: Resoluciones dependen de la capacidad de monitorear y ajustes de resolución y profundidad de color.

Y unidades de almacenamiento

Bahía de almacenamiento primaria**duro Drives1**

Soporta SATA3, 7mm

2,5 "unidades de disco duro

500 GB 7200 rpm

500 GB 7200 rpm unidad con autocifrado (Opal 2)

500 GB 7200 rpm autocifrado Drive (Opal 2) (FIPS)

1 TB 5400 rpm

500 GB híbrido

M.2 (NGFF) Sólido Unidad1 Estado

128 GB SATA-3 TLC

180 GB SATA-3 MLC

180 GB SATA-3 MLC (Opal 2)

240 GB SATA-3 MLC

256 GB PCIe-3x4 DS NVMe

256 GB SATA-3 MLC (Opal 2)

256 GB SATA-3 TLC

512 GB SATA-3 TLC

1. Para los discos duros y unidades de estado sólido, GB = 1 billón de bytes. La capacidad formateada real es menor. Hasta 16 GB (para Windows 7) y hasta 30 GB (para Windows 8 y 10) del disco duro se reservan para el software de recuperación del sistema.

Las unidades ópticas

Fija de 9,5 mm SATA

DVD-ROM

DVD +/- RW SuperMulti DL1

ROM Blu-ray DVD +/- RW SuperMulti saver2

DL1 Peso

1. Para las unidades Blu-ray, con ciertos discos, conexión digital, compatibilidad y / o problemas de rendimiento pueden surgir, y hacer noconstitute defectos en el producto. reproducción perfecta en todos los sistemas no está garantizada. Para que algunos títulos de Blu-ray para jugar, que pueden requerir una conexión digital HDMI y su pantalla puede



PC portátil

Especificaciones técnicas

requerir soporte HDCP. Los discos HD-DVD no se pueden reproducir en esta unidad. Observe que DVD-RAM no puede leer o escribir en un 2,6 GB de una única capa / 5,2 GB de doble capa - multimedia versión 1.0. Las velocidades reales pueden variar. No copie materiales protegidos por copyright. Los discos de doble capa pueden almacenar más datos que los discos de una sola capa; Los discos grabados con esta unidad no sean compatibles con muchas unidades de DVD de una capa existentes y los jugadores.

2. No disponible con panel táctil.

MEMORIA

Estándar

DDR3L PC3-12800 (Las velocidades de transferencia de hasta 1600 MT / s)

Dos ranuras SODIMM base de la memoria de doble canal

4096 MB de memoria total del sistema (4096 MB x 1)

8192 MB de memoria total del sistema (4096 MB x 2)

8192 MB de memoria total del sistema (8192 MB x 1)

16384 MB de memoria total del sistema (8192 MB x 2)

Máximo

Hasta 16384 MB con 8192 MB SODIMMs opcionales en las ranuras 1 y 2

Doble canal

el rendimiento maximizado de doble canal requiere SODIMM del mismo tamaño y velocidad en ambas ranuras de memoria.

NOTA: Debido a la naturaleza no estándar de la industria de algunos módulos de memoria de terceros, recomendamos memoria de la marca HP para asegurar la compatibilidad. Si se mezclan las velocidades de memoria, el sistema realizará a la velocidad más baja de memoria.

REDES / COMUNICACIONES

Inalámbrico de banda ancha (WWAN) 2,3

HP lt4120 Qualcomm® Snapdragon X5 módulo de banda ancha móvil LTE

Módulo de banda ancha móvil HSPA + HP hs3110

LAN inalámbrica (WLAN) 1,2

Opciones a través de Minicard

Intel 802.11a / b / g / n / ac (2x2) y Bluetooth® 4.0 Combo

Intel 802.11a / b / g / n / ac (1x1) y Bluetooth® 4.0 Combo

Broadcom 802.11a / b / g / n (2x2) y Bluetooth® 4.0 Combo

Broadcom 802.11b / g / n (1x1) Wi-Fi y Bluetooth 4.0 Combo

Realtek 802.11b / g / n (1x1) Wi-Fi

red de área personal (WPAN Bluetooth) 1,2

Bluetooth® 4.0 compatible a través de todas las tarjetas de combo (A excepción de Intel® 802.11 ac e Intel® 802.11 a / b / g / n no vPro) Bluetooth® 4.1 apoyado a través de Intel® 802.11 ac e Intel® 802.11 a / b / g / n para no S lo - vPro

Near Field Communication (NFC) Opcional2

Módulo HP con NFC de NXP Controlador NPC100

Soporte para Miracast (Windows 8.1 y Windows 10)



PC portátil

Especificaciones técnicas

1. punto de acceso inalámbrico y servicio de Internet es necesario y no está incluido. Disponibilidad de acceso inalámbrico limitado.
2. Se vende por separado o como una característica opcional.
3. Módulo WWAN es opcional y requiere un contrato de servicio adquirido por separado. Consulte con el proveedor de servicio y disponibilidad en su área. Las velocidades de conexión varían según el lugar, el medio ambiente, condiciones de la red y otros factores. 4G LTE no está disponible en todos los productos, en todas las regiones.

comunicaciones

Realtek Gigabit RTL8111HSH Ethernet1

1. El término "10/100/1000" o Ethernet "Gigabit" indica la compatibilidad con el estándar IEEE 802.3ab para Gigabit Ethernet y no sugiere la velocidad operativa real de 1 Gb / s. Para la transmisión de alta velocidad, se requiere la conexión a una infraestructura de servidor y red Gigabit Ethernet.

AUDIO / MULTIMEDIA

Audio

Audio de alta definición con sonido DTS + TM

(2) altavoces estéreo integrados

micrófono digital (matriz de doble micrófono cuando está equipado con cámara web opcional)

teclas de función para silenciar el micrófono, volumen, bajar volumen

Auriculares estéreo / salida de línea

entrada de micrófono estéreo

Cámara web

Opcional 720p HD cámara web 1,2

- formato HD (pantalla ancha)
- Soporta la videoconferencia (no HD) y captura de imágenes fijas
- lente de foco fijo de alta calidad
- captura de video a varias resoluciones de hasta 1280x720 de resolución (720p) y hasta 30 fps
- compresión M-JPEG admite velocidades de fotogramas superior para la captura de video y
- videoconferencia
- Mejora de baja sensibilidad a la luz
- rango dinámico mejorado Skype listo

de

1. Se vende por separado o como una característica opcional.
2. Se requieren contenidos HD para ver imágenes HD.

Teclados / Dispositivos señaladores botones / Y TECLAS DE FUNCIÓN

HP teclado avanzada

El teclado resistente a derrames HP está diseñado usando una capa delgada de película de Mylar debajo del teclado. El teclado compatible 101/102 teclas cuenta con un diseño de teclado de paso completo con funciones de teclado de escritorio, tales como teclas de edición, control de izquierda y derecha y teclas ALT y teclas de función. DuraKeys solo está disponible con la opción de iluminación de fondo.

touchpad

Botón de encendido / apagado

Activado por defecto

Desplazamiento 2F - En



PC portátil

Especificaciones técnicas

2F zoom (Pinch) - En
OSD (activar / desactivar) - En
Ganar 8 2F del grifo = click
derecho - en Win 8 Swipes Edge
- En

Botones y teclas de función

F1 - Sleep
F2 - en blanco
F3 - retroiluminada
F4 - conmutación de pantalla
F5 - Bajar el brillo
F6 - brillo up
F7 - en blanco
F8 - Bajar volumen
F9 - Volumen arriba
F10 - Mic Mute
F11 - Banco
F12 - Bloqueo numérico

Software y seguridad

Software preinstalado con el sistema operativo Windows BIOS

HP bloqueo de unidad | HP Bloqueo auto Drive
HP BIOS defensa1
HP Disk Sanitizer2
HP SpareKey3
Actualización a través de la Red
Registro Maestro de Seguridad
Encendido de autenticación
Previo al inicio de Seguridad
seguro Erase4
Boot híbrido
Boot medido
Arranque seguro
Persistencia absoluta Módulo 5

Multimedia

CyberLink PowerDVD
CyberLink Power2Go (unidades ópticas)
CyberLink YouCam BE (Windows 7)

Comunicación

HP Connection Manager (solo Windows 7)
HP GPS y Location6 (Windows 7)
HP Mobile Connect7 (Windows 8 solamente)
HP Wireless Hotspot8 (Windows 8 solamente)
Intel WiDi Software9
HP Roaming Alerta (Windows 8 solamente)
Intel My WiFi y Wireless Drivers

HP Software con valor agregado

HP 3D DriveGuard (requiere Windows)
HP ePrint Driver10 (HP Exclusivo)



PC portátil

Especificaciones técnicas

HP PageLift (HP Exclusivo) 11
HP Recovery Manager (sólo Windows 7)
Asistente de soporte HP
HP Recovery Disc Creator (sólo en Windows 7)
UEFI Sistema de Diagnóstico W8

Tercera parte

Adobe Flash Player
Skype12 (requiere suscripción y se vende por separado) Comprar Oficina

Hardware de seguridad

HP Client Security13
HP Administrador de credenciales
HP Password Manager
HP Drive Encryption (FIPS 140-2) 14
El acceso de dispositivo de HP con la autenticación de Just In Time
HP File Sanitizer15
HP Spare Key
Lector de tarjetas inteligentes integrado (FIPS 201)
tornillo de seguridad para la puerta de acceso inferior
Microsoft Security Essentials (Windows 7) 16
Microsoft Defender (Windows 8)
TPM 1.2 / 2.017
lector de huellas digitales HP
Ranura de bloqueo de seguridad
Lector de tarjetas inteligentes integrado

1. HP Herramientas de partición con un BIOS HP necesario para la recuperación automática.
2. Para los casos de uso definidos en el DOD 5220.22-M Suplemento. No es compatible con unidades de estado sólido (SSD). La configuración inicial requiere historial web eliminado en los navegadores Internet Explorer y Firefox, y debe ser activada por el usuario.
3. Requiere que el usuario configure inicial.
4. Para los métodos descritos en el Instituto Nacional de Estándares y Tecnología Special Publication 800-88.
 5. El agente se entrega absoluta Persistencia apagado, y se activa cuando los clientes activan una suscripción adquirida. Las suscripciones pueden comprarse por períodos que van varios años. El servicio es limitado, verifique con Absolute la disponibilidad fuera de los EE.UU. Garantía de Recuperación El Absoluto es una garantía limitada. Se aplican ciertas condiciones. Para más detalles visite:
<http://www.absolute.com/company/legal/agreements/computraceacuerdo>. Eliminación de Datos es un servicio opcional proporcionado por Absolute Software. Si se utilizan, la garantía de recuperación es nula y sin valor. Con el fin de utilizar Borrar los datos de servicio, los clientes deben firmar primero un acuerdo de autorización previa y, o bien obtener un PIN o la compra de una o más fichas de RSA SecurID de Absolute Software.
6. Acceso GPS requiere una ruta sin obstáculos a múltiples satélites. El rendimiento puede verse afectado si / cuando usedinside de edificios, puentes o áreas metropolitanas congestionadas. Requiere el software de navegación GPS adquiere por separado disponible de diversas aplicaciones de GPS.
7. Requiere acceso a Internet.
8. El punto de acceso inalámbrico aplicación requiere una conexión a Internet activa y los datos se adquiere por separado plan.While punto de acceso inalámbrico HP está activo, en el dispositivo de aplicaciones seguirán funcionando y utilizarán el mismo plan de datos como el punto de acceso inalámbrico. el uso de datos punto de acceso inalámbrico puede incurrir en cargos adicionales. Consulte con su proveedor de servicio para detalles del plan. Requiere Windows 8.1 o HP Connection Manager para Windows 7.



PC portátil

Especificaciones técnicas

9. característica integrada Intel Wi-Fi solo está disponible en determinadas configuraciones y requiere separado purchasedprojector, televisión o monitor de ordenador con un receptor Wi-Fi integrado o externo. Externa Wi-Fi receptores se conectan al proyector, televisión o monitor de la computadora a través de un cable HDMI estándar, también se venden por separado.
10. Requiere una conexión a Internet para la impresora HP con conexión a Internet y el registro de la cuenta de HP ePrint (para obtener una lista de impresoras elegible, documentos y tipos de imágenes y otros detalles de HP ePrint, ver www.hp.com/go/eprintcenter). Requiere módulo de banda ancha opcional. uso de banda ancha requiere la compra por separado contrato de servicio. Consulte con su proveedor de servicios para la cobertura y la disponibilidad en su área. Adquirido por separado, los planes de datos, o podrá aplicar las tarifas de uso. Los tiempos de impresión y velocidades de conexión pueden variar.
11. HP PageLift requiere Windows 7 o posterior edición.
12. Skype no se ofrece en China.
13. No todas las funciones son remotamente manejable.
14. Requiere de Windows. Los datos están protegidos antes de la entrada Drive Encryption. Al girar el PC apagado o en trancos de hibernación de Cifrado de unidad e impide el acceso de datos. cifrado de unidades previsto que está disponible en octubre de 2013.
15. Para los casos de uso definidos en el DOD 5220.22-M Suplemento. No es compatible con unidades de estado sólido (SSD). La configuración inicial requiere. historial web elimina solo en los navegadores Internet Explorer y Firefox, y debe ser activada por el usuario.
16. Aceptar y requiere conexión a Internet para las actualizaciones.
Para obtener más información sobre las soluciones de seguridad de HP se refieren a:
<http://www.hp.com/go/security>.
17. Este producto envía con TPM 1.2 con opción de actualizar a TPM 2.0. Se espera que la utilidad de actualización que estará disponible en la segunda mitad de 2016 a través de asistencia técnica de HP.

PODER

Fuente de alimentación

45W Adaptador de CA inteligente HP (solo UMA)

Adaptador de CA HP 45W inteligente (Solo disponible para Japón e Inglaterra)

Adaptador de CA inteligente de 65 W HP

Adaptador EM HP Smart de 65 W (solo disponible para Asia, China e

India) Cable de alimentación incluido es de 1,8 m (+/- 0,1 m) o 1,0 m (+/- 0,1 m).

batería primaria

HP-3 celdas de larga vida prismático (48 Wh)

batería Life1

HP ProBook 645 Notebook PC	Gráficos UMA	Gráficos discretos
3 celdas (48 Wh) con SSD	Hasta 8 hrs 15 mins	N / A
3 celdas (48 Wh) con disco duro	Hasta 7 horas 15 mins	N / A
HP ProBook 655 Notebook PC	Gráficos UMA	Gráficos discretos
3 celdas (48 Wh) con SSD	Hasta 8 hrs	N / A
3 celdas (48 Wh) con disco duro	Hasta 7 horas 15 mins	N / A

Suspensión del sistema Time2

	Gráficos UMA	Gráficos discretos
HP ProBook 640 Notebook PC	Hasta 186 hrs	N / A
HP ProBook 650 Notebook PC	Hasta 186 hrs	N / A



PC portátil

Especificaciones técnicas

tiempos de recarga de la batería

	ProBook 645 G2	ProBook 655 G2
Tiempo al 90% Charge3 (minutos)	109	109
Tiempo para 100% Charge4 (minutos)	167	167

1. Ventanas vida 10 MM14 bater a puede variar dependiendo de varios factores, incluyendo el modelo del producto, configuraci n, aplicaciones cargadas, caracter sticas, uso, funcionalidad inal mbrica y la configuraci n de administraci n de energ a. La capacidad m xima de la bater a, naturalmente, disminuir con el tiempo y el uso. Ver www.bapco.com para obtener detalles adicionales.
2. la vida de espera puede variar dependiendo de varios factores, incluyendo la bater a, memoria, CPU, CE y el chip LAN. El maximumcapacity de la bater a, naturalmente, disminuir con el tiempo y el uso.
3. Se recarga su bater a hasta un 90% a menos de 109 minutos cuando el sistema est apagado. Se aplica a la bater a de 3 celdas 48WHr only.When el PC est encendido, tiempo de carga puede aumentar y variar en funci n de la carga de trabajo de la PC port til.
4. Se recarga su bater a hasta un 100% dentro de 167 minutos cuando el sistema est apagado. Se aplica a la bater a de 3 celdas 48WHr only.When el PC est encendido, tiempo de carga puede aumentar y variar en funci n de la carga de trabajo de la PC port til.

PESOS Y DIMENSIONES

HP ProBook 645 Notebook PC

Peso
A partir de 4,30 libras (1,95 kg) 1
(Bater a de 3 celdas, protector de carga ODD, UMA, sin FPR, 1 SODIMM, WLAN solamente, SSD, pantalla t ctil nica, sin c mara, sin WWAN)

Dimensiones (W x fondo x alto)
13.39 x 9.33 x 1.06 (delantero y trasero) 2
34.0 x 23.7 x 2.70 cm (delantero y trasero)

HP ProBook 655 Notebook PC

Peso
A partir de 5.1 libras (2.31 kg) 1
(Bater a de 3 celdas, protector de carga ODD, UMA, sin FPR, 1 SODIMM, WLAN solamente, SSD, pantalla t ctil nica, sin c mara, sin WWAN)

Dimensiones (W x fondo x alto)
14.88 x 10.11 x 1.07 (delantero y trasero) 2
37,8 x 25,7 x 2,74 cm (delantero y trasero)

1. El peso var a seg n la configuraci n y componentes.
2. Altura var a dependiendo de en qu parte del cuaderno se realiza la medici n.

Puertos / SLOTS

puertos
TypeCTM USB - Uno

PC portátil

Especificaciones técnicas

Puerto USB 3.0 - Una
 puerto USB 3.0 de carga - Uno
 RJ-45 / Ethernet - Una
 Conector de acoplamiento - Uno
 Auricular / micrófono (jack combo) - Uno
 puerto de CA (4.5mm) - Uno
 -Uno DisplayPort
 puerto VGA - Uno
 puerto serie opcional - (sólo HP ProBook 655 Notebook PC) Un 1

Ranura SD Media Reader

Soporta tarjetas SD, SDHC, SDXC

1. venden por separado o como una característica opcional.

SERVICIO Y SOPORTE

Limitada de 3 años, las opciones de garantía limitada de 90 días disponibles, dependiendo del país de 1 año o. Las baterías tienen una garantía limitada de un año por defecto a excepción de baterías de larga duración que tendrán la misma garantía limitada de 1 año o 3 años como el platform.Optional1 HP Care Pack SERVICES2 son contratos de servicio extendidos que van más allá de las garantías estándar limitadas. Para elegir el nivel adecuado de servicio para su producto HP, utilice la herramienta de búsqueda de Servicios HP Care Pack en <http://www.hp.com/gramopoc/CPC>.

1. Se vende por separado o como una característica opcional.
2. Los niveles de servicio y tiempos de respuesta para HP Care Packs pueden variar dependiendo de su ubicación geográfica. Servicio fecha startson de compra del hardware. Restricciones y limitaciones. Consulte el Centro de atención al cliente de HP para obtener más información. <http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp>

Unidad del sistema

TBD

* Muestra

14.0 FHD AG WLED SVA 60% 300 nits c/g EDP
delgados

Panel	
Área activa (W x H)	309.40 x 173.95 (mm)
Dimensiones (W x H)	320,9 x 205,6 (mm) m x
Tamaño en diagonal	14 pulgadas)
Espesor	3.0 (mm) m x
Peso	270 g m x
Interfaz	EDP 1.2
Tratamiento de superficies	Antideslumbrante (AG)
relación de contraste	300: 1 (t pico)
Frecuencia de actualización	60 Hz
Brillo	300 nits



PC portátil

Especificaciones técnicas

Resolución del pixel - Formato	1920 x 1080 (FHD)
PPI	157
Resolución del pixel - Configuración	RGB
Iluminar desde el fondo	LED
Gama de color Cobertura	60%
Profundidad del color	6 bits
Ángulo de visión	SVA 45/45/25/35

14.0 HD WLED AG SVA 45% 220nits cg EDP planas

Panel	
Área activa (W x H)	309.40 x 173.95 (mm)
Dimensiones (W x H)	320,9 x 205,6 (mm) m x
Tamaño en diagonal	14 pulgadas)
Espesor	3,6 (mm) m x
Peso	320 g m x
Interfaz	EDP 1.2
Tratamiento de superficies	Antideslumbrante (AG)
relación de contraste	300: 1 (t pico)
Frecuencia de actualización	60 Hz
Brillo	220 nits
Resolución del pixel - Formato	1280 x 768 (HD)
PPI	112
Resolución del pixel - Configuración	RGB
Iluminar desde el fondo	LED
Gama de color Cobertura	45%
Profundidad del color	6 bits + Hola FRC
Ángulo de visión	SVA 45/45/25/35

14.0 FHD WLED de 300 nits SVA 60% cg EDP delgado panel de tacto

Área activa (W x H)	309.40 x 173.95 (mm)
Dimensiones (W x H)	320,9 x 205,6 (mm) m x
Tamaño en diagonal	14 pulgadas)
Espesor	3.0 (mm) m x
Peso	270 g m x
Interfaz	EDP 1.2
relación de contraste	300: 1 (t pico)
Frecuencia de actualización	Brillo 60 Hz 300 nits p xeles de resoluci n - Formato 1920 x 1080 (FHD)
PPI	157
Resolución del pixel - Configuración	RGB del contraluz Cobertura gama de colores LED 60% Intensidad
del color 6 bits	
Ángulo de visión	SVA 45/45/25/35
toque Activado	Opcional Punto t ctíl compatibles 10 puntos multi-touch Otras caracter sticas AS Pen
Habilitado No	

15.6 FHD AG WLED SVA 60% 300 nits cg Panel 3.2mm EDP Delgado	rea activa (W x H) 344,2 x 193,5 (mm)
Dimensiones (W x H)	360 x 224.3 (mm) m x

PC portátil

Especificaciones técnicas

Tamaño en diagonal	15.6 (pulgadas)
Espesor	3.2 (mm) m x
Peso	360 g m x
Interfaz	EDP Tratamiento 1.2 Superficie Antideslumbrante (AG)
relación de contraste	400: 1 (t pico)
Frecuencia de actualización	Brillo 60 Hz 300 nits p xeles de resoluci n - Formato 1920 x 1080 (FHD)
PPI	142
Resolución del pixel - Configuración	RGB del contraluz Cobertura gama de colores LED 60% Intensidad
del color 6 bits	
Ángulo de visión	SVA 45/45/25/35

15.6 HD WLED AG SVA 45% 220nits cg EDP planas

Panel	
Área activa (W x H)	344,2 x 193,5 (mm)
Dimensiones (W x H)	360 x 224.3 (mm) m x
Tamaño en diagonal	15.6 (pulgadas)
Espesor	3,8 (mm) m x
Peso	420 g m x
Interfaz	EDP 1.2
Tratamiento de superficies	Antideslumbrante (AG)
relación de contraste	300: 1 (t pico)
Frecuencia de actualización	60 Hz
Brillo	220 nits
Resolución del pixel - Formato	1280 x 768 (HD)
PPI	101
Resolución del pixel - Configuración	RGB
Iluminar desde el fondo	LED
Gama de color Cobertura	45%
Profundidad del color	6 bits + Hola FRC
Ángulo de visión	SVA 45/45/25/35

15.6 FHD WLED SVA 60% 300 nits cg EDP delgado 3.2mm táctil

Panel	
Área activa (W x H)	344,2 x 193,5 (mm)
Dimensiones (W x H)	360 x 224.3 (mm) m x
Tamaño en diagonal	15.6 (pulgadas)
Espesor	3.2 (mm) m x
Peso	360 g m x
Interfaz	EDP 1.2
relación de contraste	400: 1 (t pico)
Frecuencia de actualización	60 Hz
Brillo	300 nits
Resolución del pixel - Formato	1920 x 1080 (FHD)
PPI	142
Resolución del pixel - Configuración	RGB
Iluminar desde el fondo	LED
Gama de color Cobertura	60%



PC portátil

Especificaciones técnicas

Profundidad del color	6 bits
Ángulo de visión	SVA 45/45/25/35
toque Activado	Opcional
Punto táctil compatibles	10 puntos multi-touch
Otras características	COMO
pluma Habilitado	No

* Todas las especificaciones representan las especificaciones típicas proporcionadas por los fabricantes de componentes de HP; el rendimiento real puede ser mayor o menor.



HP	Tensión móvil	3.0V-3.6V
PC portátil		
Operación de la huella digital		
Especificaciones técnicas	Temperatura	14 ° - 167 ° F (-10 ° - 75 ° C)
(Opcional)	Corriente	36 mA pico
consumo imagen		
Espere baja latencia para		
Dedo		
Velocidad de captura		
Resistencia ESD		
Matriz de detección		
Tarjeta electrónica		
Lector	estándar de tarjeta inteligente	PC / SC 2.0 para el estándar de tarjetas inteligentes de Windows
	Dimensiones (L x W x MARIDO)	0.41x 0.08 x 0.32 in (10.5 x 8.2 x 2 mm)
	Compatibilidad con tarjetas inteligentes	ISO 7816 Clase A y AB tarjetas inteligentes
	Interfaz de tarjeta inteligente	Interfaz de tarjeta inteligente con T = 0 y T = 1 apoyo Soporte para tarjetas de memoria I2C, SLE4418, SLE4428, SLE4432, SLE4442, SLE4436, SLE5536, SLE6636, AT88SC1608, la tarjeta y la tarjeta AT45D041 AT45DB041 a través de EEPROM externa
	Sistemas operativos	No se requiere ningún controlador para este dispositivo. Soporte nativo es proporcionada por el sistema operativo.
Poder		
Modo normal		
Ahorro de energía		
Modo		
Características		

Seguridad

- Apoyar sola ranura
- Soporte T0, T1 protocolo
- Soporte para tarjetas de memoria I2C, SLE4418, SLE4428, SLE4432, SLE4442, SLE4436,
- SLE5536, SLE6636, AT88SC1608, la tarjeta y la tarjeta AT45D041 AT45DB041 a través de EEPROM externa
- Soporte ISO7816 Clase A, B y C (/ / 1.8V 3V 5V) tarjeta
- Implementado como un dispositivo USB de velocidad completa con punto final de la transferencia a granel,
- Masa
- punto final de almacenamiento

PC portátil

Especificaciones técnicas

- Built-in PLL para ayuda EEPROM relojes USB y tarjetas inteligentes sin necesidad de descriptores de personalización
- USB (PID / VID / iManufacturer / iProduct / Número de serie), Página Web de enlace directo, y el acceso a módulo de tarjeta de memoria.
- programable EEPROM a través de interfaz USB
- actualización de software de soporte para el módulo de tarjeta de memoria
- El apoyo directo Enlace Página Web a través de la configuración en la EEPROM externa
- El soporte a corto APDU y APDU extendida
- Compatible con el controlador Microsoft USB CCID
- Apoyar la activación remota a través de la inserción de la tarjeta / tarjeta de la eliminación
- Soporte suspensión selectiva de USB
- Modo de ahorro de potencia de apoyo (Utilizando un pin para seleccionar entre Normal / PWR modo de ahorro)
- alimentación de la tarjeta de apoyo sobre el mecanismo
- de protección actual, construido en el resonador.
- LPM soporte para USB (Administración de energía de enlace)
- cuenta. fuente de reloj incorporado.

Redes / comunicaciones

Tecnología / bandas de operación	HP It4120 Qualcomm® Snapdragon X5 móvil LTE módulo de banda ancha * LTE: 2100 (Banda 1), 1900 (Banda 2), 1800 (Banda 3), 1700/2100 (Banda 4), 850 (Banda 5), 2600 (banda 7), 900 (banda 8), 700 (12 Banda inferior), 700 (13 Banda superior), 700 (17 Banda inferior), 800 (Banda 20), 700 (banda 28). HSPA+: 2100 (Banda 1), 1900 (Banda 2), 1700/2100 (Banda 4), 850 (Banda 5), 900 (banda 8) MHz EV-DO: 850 (BC0), 1900 (BC1) MHz (solo funciona con la red de Verizon) E-GPRS: 1900 (Banda 2), 1800 (Banda 3), 850 (Banda 5), 900 (banda 8) megahercio
normas de protocolo Wireless	LTE 3GPP Release 10 Especificación cat.4, 20 MHz BW WCDMA R99, 3GPP Release 5, 6, 7 y 8 UMTS Especificación 1xEVDO Release 0, A y B. E-GPRS: Clase B, multi-slot clase 12, esquemas de codificación CS1 - CS4 y MSC1 - MSC9
GPS bandas GPS	Autonomo, A-GPS (MS-A, MS-B y XTRA) 1575.42 MHz ± 1,023 MHz, 1596-1607MHz GLONASS

PC portátil

Especificaciones técnicas

velocidades de datos máximas	LTE: 150 Mbps (descargar), 50 Mbps (cargar) DC-HSPA +: 42 Mbps (Descargar), 5,76 Mbps (Subir) HSPA + 21Mbps: (descargar), 5,76 Mbps (cargar) CDMA 1xRTT: 153,6 kbps (Descargar), 153,6 kbps (Subir) EVDO Rel.A: 3,1 Mbps (Descargar), 1.8 Mbps (Subir) EVDO Rel.B: 14.7 Mbps (Descargar), 5.4Mbps (Subir) EDGE: 236,8 kbps (descargar), 236,8 Kbps (subida) GPRS: 85.6 kbps (descargar), 85,6 kbps (cargar)
potencia de salida máxima	LTE: 23 dBm HSPA +: 23,5 dBm 1xRTT / EVDO: 24dBm E-GPRS 1900/1800: 26 dBm E-GPRS 900/850: 27 dBm GPRS 1900/1800: 29,5 dBm GPRS 900/850: 32,5 dBm
consumo máximo de energía	LTE: 1.200 mA (pico); 900 mA (promedio) HSPA +: 1.100 mA (pico); 800 mA (promedio) 1xRTT / EVDO: 1.000 mA (pico); 700 mA (promedio) E-GPRS: 2.800 mA (pico); 500 mA (promedio)
Factor de forma	M.2, 3042-S3 Tecla B
Peso	6,2 g
Dimensiones (Largo x Ancho x Grosor)	42 x 30 x 2.3 mm

* La banda ancha móvil es una característica opcional. La conexión requiere un contrato de servicio de datos inalámbricos, soporte de red, y no es disponible en áreas de cobertura y disponibilidad. Las velocidades de conexión varían según el lugar, el medio ambiente, condiciones de la red, y otros factores.

Tecnología / bandas de operación	HP hs3110 HSPA + Intel® módulo de banda ancha móvil * HSPA +: 2100 (Band1), 1900 (Banda 2), 1700 (Banda 4), 850 (Banda 5), 900 (banda 8) MHz E-GPRS: 1900 (banda 2), 1800 (Banda 3), 850 MHz (Banda 5), 900 (banda 8) MHz
normas de protocolo Wireless	WCDMA R99, 3GPP Release 5, 6 y 7 UMTS Especificación E-GPRS: Clase B, multi-slot clase 33, esquemas de codificación CS1 - CS4 y MSC1 - MSC9
GPS	Autónomo, A-GPS
bandas GPS	1575.42 MHz ± 1,023 MHz
velocidades de datos máximas	HSPA +: 21.6 Mbps (descargar), 5,76 Mbps (cargar) E-GPRS: 296 kbps (descargar), 236,8 kbps (cargar) GPRS: 107 kbps (descargar), 85,6 kbps (cargar)



PC portátil

Especificaciones técnicas

potencia de salida máxima	HSPA +: 24 dBm E-GPRS 1800/1900: 26 dBm E-GPRS 850/900: 27 dBm GPRS 1800/1900: 30 dBm 850/900 GPRS: 33 dBm
consumo máximo de energía	HSPA +: 1.100 mA (pico); 800 mA (promedio) E- GPRS: 2.800 mA (pico); 700 mA (promedio)
Factor de forma	M.2, 3042-S3 Tecla B
Peso	6 g
Dimensiones (Largo x Ancho x Grosor)	1,65 x 1,18 x 0,09 pulg (42 x 30 x 2,3 mm)

* La banda ancha móvil es una característica opcional. La conexión requiere un contrato de servicio de datos inalámbricos, soporte de red, y es no disponible en todas las áreas. Contactar con el proveedor de servicios para determinar el área de cobertura y disponibilidad. Las velocidades de conexión varían según el lugar, el medio ambiente, condiciones de la red y otros factores.

Intel 802.11a / b / g / n / ac (2x2) y Bluetooth® 4.1 Combo

LAN inalámbrico	IEEE 802.11a
normas	IEEE 802.11b
	IEEE 802.11g
	IEEE 802.11n
	IEEE
	802.11ac
interoperabilidad	certificada Wi-Fi
Banda de frecuencia	802.11b / g / n
	• 2.402 - 2.482 GHz
	Nota:
	La FCC ha declarado a partir del 1 de enero de 2015
	productos que utilizan el examen pasivo en el canal 12/13 y
	son capaces de transmitir deben cumplir plenamente con los
	requisitos de 15.247 o de otra manera desactivar esos
	canales.
	802.11a / n
	• 4.9 - 4.95 GHz (Japón)
	• 5.15 - 5.25 GHz
	• 5.25 - 5.35 GHz
	• 5.47 - 5.725 GHz
	• 5.825 - 5.850 GHz
	Nota: Indonesia No se admite esta banda)
Tasas de transferencia	• de datos 802.11b: 1, 2, 5.5, 11 Mbps
	• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11n: AM de 0 ~ MCS 15, (20 MHz y 40 MHz)
	• 802.11ac: MCS0 ~ MCS9, (1SS, y 2SS) (20 MHz,



PC portátil

Especificaciones técnicas		40 MHz, 80 MHz y)
Modulación	1	Direct Sequence Spread Spectrum
		BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Seguridad		IEEE y Wi-Fi obediente
		encriptación WEP de 64/128 bits
Modelos de arquitectura de red	2	Ad-hoc (par a par)
		Infraestructura (Punto de Acceso Obligatorio)
Itinerancia		IEEE 802.11 itinerancia entre puntos de acceso compatible
		versiones CCX4 y WAPI CCX Lite
Potencia de		salida 802.11b: máximo + 16dBm
		802.11g: máximo + 14 dBm
El consumo de energía		802.11a: máximo + 14 dBm
		HT20 802.11n (2,4 GHz): + 14 dBm máximo
Administración de energía		HT40 802.11n (2,4 GHz): + 12dBm máximo
		HT20 802.11n (5 GHz): + 14 dBm máximo
receptor Sensitivity3		HT40 802.11n (5 GHz): + 12dBm máximo
		Transmitir: 2,0 W (max)
tipo de antena		Recibe: 1,6 W (max)
		el modo de espera (PSP): 180 mW (WLAN Asociada)
		el modo de espera: 50 mW (WLAN no asociado)
		Conectar espera: 10 mW (WLAN + BT)
		Radio desactivada: 5 mW
		el modo de ahorro de energía 802.11 compatible con ACPI y PCI Express compatible con la administración de energía
		802.11b, 1Mbps: máximo -94dBm
		802.11b, 11 Mbps: -86 dbm máximo
		802.11g, 6Mbps: máximo -88dBm
		802.11g, 54Mbps: -74dBm máximo
		802.11a, 6Mbps: máximo -88dBm
		802.11a, 54Mbps: -74dBm máximo
		802.11n, MCS07: máximo -69dBm
		802.11n, MCS15: máximo -66dBm
		802.11ac, 1SS, MCS-0: máximo -86 dbm
		802.11ac, 1SS, MCS-9: máximo -61dBm
		802.11ac, 2SS, MCS-0: máximo -83dBm
		802.11ac, 2SS, MCS-9: máximo -58dBm
		Antena de alta eficiencia con diversidad espacial, montado en el marco de la pantalla



PC portátil

Especificaciones técnicas

	Dos antenas de doble banda de 2,4 / 5 GHz embebidos se proporcionan a la tarjeta para soportar comunicaciones MIMO WLAN y las comunicaciones Bluetooth		
Factor de forma	PCI-Express M.2 MiniCard		
Dimensiones	Tipo 2230: 2.3 x 22.0 x 30.0 mm		
	O		
	Tipo 1630: 2.3 x 16.0 x 30.0 mm		
Peso	Tipo 2230: 2,8 g		
	O		
	Tipo 1630: 2g		
Tensión de funcionamiento	3.3v +/- 9%		
Temperatura	Operando	14 ° a 158 ° F (-10 ° a 70 ° C)	
	No operacional	-40 ° a 176 ° F (-40 ° a 80 ° C)	
Humedad	Operando	10% a 90% (sin condensación)	
	No operacional	5% a 95% (sin condensación)	
Altitud	Operando	0 a 10.000 pies (3.048 m)	
	No operacional	0 a 50,000 pies (15,240 m)	
LED de actividad	LED mbar - Radio OFF; LED blanco - Radio On		
1. Comprueba la versión de software / controlador para las actualizaciones en funciones de seguridad compatibles.			
2. máxima potencia de salida puede variar en cada país de acuerdo con las normativas locales.			
3. La sensibilidad del receptor se mide a una tasa de error de paquete de 8% para 802.11b (modulación CCK) y una tasa de error de paquete del 10% para 802.11a / g (modulación OFDM).			
integrado HPh Bluetooth 4.0 / 4.1 / 4.2 Tecnología inalámbrica Bluetooth Especificación 4.0 / 4.1 / 4.2 Compatible			
Banda de frecuencia	2402-2480 MHz		
Número de canales disponibles	Legado: 0 ~ 79 (1 MHz / CH)		
	BLE: 0 ~ 39 (2 MHz / CH)		
Velocidades de Datos y rendimiento	Legado: tasa de 3 Mbps de datos; un rendimiento de hasta 3 Mbps de datos; BLE: un rendimiento de hasta 0,2 Legado: síncrona orientada a conexión		
	Legado: Asíncrono Conexión Menos enlaces kbps simétrico (3-EV5)		
Potencia de transmisión	El componente Bluetooth operará como una potencia de C + 4 dBm para BR y EDR.		
Sensibilidad del receptor	Modulación	0,01% BER	0.00
Legado	GFSK -80 dBm	-70 Π / 4-DQPSK	
	-80 dBm	-70	
	8DPSK	-80 dBm	-70
El consumo de energía	Pico (Tx) 330 mW		
	Pico (Rx) 230 mW		
	Suspensión selectiva 17 mW		
Distancia	Legado hasta 33 pies (10 m)		
	BLE hasta 99 pies (30 m)		
Interfaz eléctrica	Compatible con USB 2.0		
Software Bluetooth compatible	Microsoft Windows Bluetooth Software Enlace de		
topología			
Interfaz eléctrica	Punto a Punto, Multipunto Pico redes de hasta 7 SLA		



PC portátil

Especificaciones técnicas

	Bluetooth Software Soportado Seguridad	Soporte completo de las disposiciones de seguridad de Bluetooth
Administración de energía certificaciones	Microsoft Windows ACPI y Suministros bus USB Auto-configurable para optimizar la potencia CONSERVACIÓN Parque, y de la aspiración	
	● 2.402 - 2.482 GHz	
	Nota:	
	La FCC ha declarado a partir del 1 de enero de 2012/13 y son capaces de transmitir de otra forma debe desactivar esos canales.	
	802.11a	
	● 4.9 - 4.95 GHz (Japón)	
	● 5.15 - 5.25 GHz	
	● 5.25 - 5.35 GHz	
	● 5.47 - 5.725 GHz	
Seguridad certificaciones	Todas las aprobaciones regulatorias necesarias para el apoyo de la FCC (47 CFR) Parte 15C, Sección 15.247 y 15	
Perfiles Bluetooth admitidos	ETS 300 328, ETS 300 826	
Administración de energía certificaciones	Directiva de baja tensión IEC950	
	UL, CSA y marca CE	
	Perfil de puerto serie (SPP) 1	
	Servicio de aplicación de descubrimiento perfil (SDAP)	
	Acceso telefónico a redes (DUN) 1,2	
	Perfil genérico de intercambio de objetos (GOEP) 1,2	
	Perfil Object Push (OPP) 1,2	
certificaciones	Reemplazo de cable para copias impresas (HCRP) 1,2	
Perfiles Bluetooth admitidos	Perfil Personal Area Networking (PAN) 1,2	
	Perfil de dispositivo de interfaz humana (HID) 1,2	
	Perfil de manos libres (HFP)	
	Advanced Audio Distribution Profile (A2DP)	
	Audio Video Remote Control Profile (AVRCP)	
V4.1 Bluetooth / V4.2 función de compatibilidad	V4.1: ESR5 / 6/7 compatible	
	V4.2: ESR8 compatible, LE conexión segura	

Intel 802.11a / b / g / n (2x2) y Bluetooth® 4.0 Combo



PC portátil

Especificaciones técnicas

Normas de LAN inalámbrica	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n
interoperabilidad	certificada Wi-Fi
Banda de frecuencia	802.11b / g / n 5.825 - 5.850 GHz
	Seguridad • IEEE y Wi-Fi obediente 64/128 bits W • AES-CCMP: 128 bits en el hardware • la autenticación 802.1x • WPA, WPA2: 802.1x. WPA-PSK, • WPA • certificación WPA2 • IEEE 802.11i • Extensiones Cisco Certified, todas las versiones WAPI
Potencia de salida	802.11b: mínimo + 16dBm • 802.11g: mínimo + 14 dBm • 802.11a: mínimo + 14 dBm • HT20 802.11n (2,4 GHz): + 13dBm • mínimo • HT40 802.11n (2,4 GHz): + 13dBm • mínimo • HT20 802.11n (5 GHz): + 12dBm • mínimo
	Nota: Indonesia solo es compatible con 5,725-5,825 G
estructura de la antena	2 de transmisión; 2 de recepción (2x2)
Tasas de transferencia de datos	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: AM de 0 ~ MCS 15, (20 MHz, y 40M
Modulación	Direct Sequence Spread Spectrum CCK, BPSK, QPSK, 16-QAM, 64-QAM



PC portátil

Especificaciones técnicas

	HT40 802.11n (5 GHz): + 12dBm mínimo
1. Comprueba la versión de software / controlador para las actualizaciones en funciones de seguridad compatibles.	
Subcanales	apoyo multinacional con bandas de frecuencia de una
Modelos de arquitectura de red	Ad-hoc (par a par) Infraestructura (Punto de Acceso Obligatorio)
Itinerancia	IEEE 802.11 compatible con la itinerancia entre la prohibición
2. máxima potencia de salida puede variar en cada país de acuerdo con las normativas locales.	
3. La sensibilidad del receptor se mide a una tasa de error de paquete de 8% para 802.11b	
El consumo de energía	Transmitir: 2,0 W (max) Recibe: 1,6 W (max) el modo de espera (PSP): 180 mW (Asociado WLAN) el modo de espera: 60 mW (WLAN no asociado) Radio desactivada: 30 mW
Administración de energía	el modo de ahorro de energía a 802.11 compatible con ACPI y PCI Express managing energía que cumple
Sensibilidad del receptor ³	802.11b, 1Mbps: máximo -94dBm 802.11b, 11 Mbps: -86 dbm máximo 802.11g, 6Mbps: máximo -88dBm 802.11g, 54Mbps: -74dBm máximo 802.11a, 6 Mbps: -86 dbm máximo 802.11a, 54Mbps: -72dBm máximo 802.11n, MCS07: máximo -69dBm 802.11n, MCS15: máximo -66dBm
tipo de antena	Antena de alta eficiencia con diversidad espacial, dos de doble banda incrustado 2,4 5 GHz antenas y las comunicaciones Bluetooth
Factor de forma	PCI-Express M.2 MiniCard
Dimensiones	Tipo 2230: 2.3 x 22.0 x 30.0 mm O Tipo 1630: 2.3 x 16.0 x 30.0 mm
Peso	Tipo 2230: 2,8 g O Tipo 1630: 2g
Tensión de funcionamiento	3.3v +/- 9%
Temperatura	Operando No operacional
Humedad	Operando No operacional
Altitud	Operando No operacional
LED de actividad	LED ámbar - Radio OFF; LED blanco - Radio O
(modulación CKK) una modulación).	

PC portátil

Especificaciones técnicas

2,17 Mbps

	Módulo integrado HP con Bluetooth 4.0 + EDR especificación Bluetooth										
	Tecnología inalámbrica 4.0 + EDR Compatible										
	Banda de frecuencia	2402-2480 MHz									
	Número de canales disponibles	79 (1 MHz) canales disponibles									
	Velocidades de Datos y rendimiento	velocidad de 3 Mbps de datos; un rendimiento de hasta									
		Orientado a la conexión en enlaces síncronos hasta asíncrono Conexión Menos una 2.178,1 simétrica									
	Potencia de transmisión	El componente Bluetooth operará como una Clase 2 de 4 dBm para BR y EDR.									
	Sensibilidad del receptor	<table><tr><td>Modulación</td><td>0,01% BER</td><td>0.00</td></tr><tr><td>GFSK -80 dBm -70 dBm / 4-DQPSK -80 dBm -70 dBm</td><td></td><td></td></tr><tr><td>8DPSK</td><td>-80 dBm</td><td>-70 dBm</td></tr></table>	Modulación	0,01% BER	0.00	GFSK -80 dBm -70 dBm / 4-DQPSK -80 dBm -70 dBm			8DPSK	-80 dBm	-70 dBm
Modulación	0,01% BER	0.00									
GFSK -80 dBm -70 dBm / 4-DQPSK -80 dBm -70 dBm											
8DPSK	-80 dBm	-70 dBm									
	El consumo de energía	Pico (Tx) 330 mW Pico (Rx) 230 mW Suspensión selectiva 17 mW									
	Distancia	Hasta 33 pies (10 m)									
	Interfaz eléctrica	Compatible con USB 2.0									
	Software Bluetooth compatible	Microsoft Windows Bluetooth Software Enlace de topología									
	Interfaz eléctrica	Punto a Punto, Multipunto Pico redes de hasta 7 SLA									
	Bluetooth Software Soportado Seguridad	Soporte completo de las disposiciones de seguridad de Bluetooth									
	Administración de energía	Microsoft Windows ACPI y Suministros bus USB									
	Administración de energía	Auto-configurable para optimizar la potencia CONSERVACIÓN									
	certificaciones	Parque, y de la aspiración									
	Seguridad	Todas las aprobaciones regulatorias necesarias para el apoyo									
	certificaciones	FCC (47 CFR) Parte 15C, Sección 15.247 y 15									
	Perfiles Bluetooth admitidos	ETS 300 328, ETS 300 826									
	Administración de energía	Directiva de baja tensión IEC950									
	certificaciones	UL, CSA y marca CE									
		Perfil de puerto serie (SPP) 1									
		Servicio de aplicación de descubrimiento de perfil (SDAP)									
		Acceso telefónico a redes (DUN) 1,2									
		Perfil genérico de intercambio de objetos (GOEP) 1,2									
		Perfil Object Push (OPP) 1,2									
		Perfil de transferencia de archivos (FTP)									
		Perfil de sincronización (SYNC)									
		Reemplazo de cable para copias impresas (HCRP) 1,2									
	certificaciones	Perfil Personal Area Networking (PAN) 1,2									
	Perfiles Bluetooth admitidos	Perfil de dispositivo de interfaz humana (HID) 1,2									
		Perfil de fax (FAX)									
		Perfil básico de imagen (BIP) 2									
		Perfil de auriculares (HSP)									
		Perfil de manos libres (HFP)									



PC portátil

Especificaciones técnicas

Advanced Audio Distribution Profile (A2DP)

V4.1 Bluetooth / V4.2 función de compatibilidad V4.1: ESR5 / 6/7 compatible

V4.2: ESR8 compatible, LE conexión segura

Broadcom 802.11a / b / g / n (2x2) y Bluetooth® 4.0 Combo

Nota:
Indonesia sólo es compatible con 5,725-5,825 GHz

estructura de la antena
Tasas de transferencia de datos

2 de transmisión; 2 de recepción (2x2)
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: AM de 0 ~ MCS 15, (20 MHz, y 40MHz)
Direct Sequence Spread Spectrum
CCK, BPSK, QPSK, 16-QAM, 64-QAM

Modulación
1
Normas de LAN
inalámbrica

IEEE
802.11a
IEEE
802.11b
IEEE
802.11g
IEEE
802.11n
certificada
Wi-Fi
802.11b / g / n

interoperabilidad
Banda de frecuencia

● 2.402 - 2.482 GHz
Nota:
La FCC ha declarado a partir del 1 de enero de 2012/13 y son capaces de transmitir de otra forma debe desactivar esos canales.
802.11a

- 4.9 - 4.95 GHz (Japón)
- 5.15 - 5.25 GHz
- 5.25 - 5.35 GHz
- 5.47 - 5.725 GHz
-



PC portátil

Especificaciones técnicas

5.825 - 5.850 GHz

- SeguridadIEEE y Wi-Fi obediente 64/128 bits W
- AES-CCMP: 128 bits en el hardware
 - la autenticaci n 802.1x
 - WPA, WPA2: 802.1x. WPA-PSK,
 - WPA
 - certificaci n WPA2
 - IEEE 802.11i
 - Extensiones Cisco Certified, todas las versiones
- WAPI

- Potencia de salida802.11b: m nimo + 16dBm
- 802.11g: m nimo + 14 dBm
 - 802.11a: m nimo + 14 dBm
 - HT20 802.11n (2,4 GHz): + 13dBm
 - minim
 - HT40 802.11n (2,4 GHz): + 13dBm
 - minim
 - HT20 802.11n (5 GHz): + 12dBm
 - minimu
 - HT40 802.11n (5 GHz): + 12dBm
 - minimu
- Subcanales
- apoyo multinacional con bandas de frecuencia de una
- Modelos de arquitectura de red
- Ad-hoc (par a par)
- Infraestructura (Punto de Acceso Obligatorio)
- Itinerancia
- IEEE 802.11 compatible con la itinerancia entre la prohibici n
- Sensibilidad del receptor³
- 802.11b, 1Mbps: m ximo -94dBm
- El consumo de energa
- Transmitir: 2,0 W (max)
- Recibe: 1,6 W (max)
- el modo de espera (PSP): 180 mW (Asociado WLAN)
- el modo de espera: 60 mW (WLAN no asociado)
- Radio desactivada: 30 mW
- Administraci3n de energa
- el modo de ahorro de energa a 802.11 compatible con ACPI y PCI Express man de energa a que cumple



PC portátil

Especificaciones técnicas

	802.11b, 11 Mbps: -86 dbm m ximo 802.11g, 6Mbps: m ximo -88dBm 802.11g, 54Mbps: -74dBm m ximo 802.11a, 6 Mbps: -86 dbm m ximo 802.11a, 54Mbps: -72dBm m ximo 802.11n, MCS07: m ximo -69dBm 802.11n, MCS15: m ximo -66dBm												
tipo de antena	Antena de alta eficiencia con diversidad espacial Dos de banda dual incorporado 2.4 / 5 GHz antenas y las comunicaciones Bluetooth												
Factor de forma	PCI-Express M.2 MiniCard												
Dimensiones	Tipo 2230: 2.3 x 22.0 x 30.0 mm O Tipo 1630: 2.3 x 16.0 x 30.0 mm												
Peso	Tipo 2230: 2,8 g O Tipo 1630: 2g												
Tensión de funcionamiento	3.3v +/- 9%												
Temperatura	Operando No operacional												
Humedad	Operando No operacional												
Altitud	Operando No operacional												
LED de actividad	LED mbar - Radio OFF; LED blanco - Radio O												
1. Comprueba la versi n de software / controlador para las actualizaciones en funciones de seguridad compatibles. 2. m xima potencia de salida puede variar en cada pa s de acuerdo con las normativas locales. 3. La sensibilidad del receptor se mide a una tasa de error de paquete de 8% para 802.11b (modulaci n CKK) una modulaci n).													
Módulo integrado HP con Bluetooth 4.0 + EDR especificación Bluetooth Tecnología inalámbrica 4.0 + EDR Compatible													
Banda de frecuencia	2402-2480 MHz												
Número de canales disponibles	79 (1 MHz) canales disponibles												
Velocidades de Datos y rendimiento	velocidad de 3 Mbps de datos; un rendimiento de hasta												
2,17 Mbps	Orientado a la conexi n enlaces sncronos hasta asncrono Conexi n Menos une 2.178,1 sim trica El componente Bluetooth operar como una C poder de 4 dBm para BR y EDR.												
Potencia de transmisión													
Sensibilidad del receptor	<table><tr><td>Modulación</td><td>0,01% BER</td><td>0.00</td></tr><tr><td>GFSK -80 dBm -70</td><td colspan="2">π / 4-DQPSK -80 dBm</td></tr><tr><td>-70</td><td colspan="2"></td></tr><tr><td>8DPSK</td><td>-80 dBm</td><td>-70</td></tr></table>	Modulación	0,01% BER	0.00	GFSK -80 dBm -70	π / 4-DQPSK -80 dBm		-70			8DPSK	-80 dBm	-70
Modulación	0,01% BER	0.00											
GFSK -80 dBm -70	π / 4-DQPSK -80 dBm												
-70													
8DPSK	-80 dBm	-70											
El consumo de energía	Pico (Tx) 330 mW Pico (Rx) 230 mW Suspensi n selectiva 17 mW												
Distancia	Hasta 33 pies (10 m)												
Interfaz eléctrica	Compatible con USB 2.0												



PC portátil

Especificaciones técnicas

Administración de energía
Administración de energía
certificaciones

Seguridad

certificaciones
Perfiles Bluetooth admitidos
Administración de energía
certificaciones

certificaciones
Perfiles Bluetooth admitidos

Broadcom 802.11b / g / n (1x1) Wi-Fi y Bluetooth 4.0 g Combo

Normas de LAN inalámbrica

interoperabilidad
Banda de frecuencia

Tasas de transferencia de datos

Modulación

1

Software Bluetooth compatible
Interfaz eléctrica
Software Bluetooth compatible

Microsoft Windows ACPI y Suministros bus
USB

Auto-configurable para optimizar
CONSERVACIÓN parque potencia, y de la
aspiración

Todas las aprobaciones regulatorias necesarias
para el apoyo
FCC (47 CFR) Parte 15C, Sección 15.247 y 15

ETS 300 328, ETS 300 826
Directiva de baja tensión
IEC950
UL, CSA y marca CE
Perfil de puerto serie (SPP) 1
Servicio de aplicación de descubrimiento
perfil (SDAP)
Acceso telefónico a redes (DUN) 1,2
Perfil genérico de intercambio de objetos
(GOEP) 1,2
Perfil Object Push (OPP) 1,2
Perfil de transferencia de
archivos (FTP)
Perfil de sincronización (SYNC)
Reemplazo de cable para copias impresas
(HCRP) 1,2
Perfil Personal Area Networking (PAN) 1,2
Perfil de dispositivo de interfaz humana
(HID) 1,2
Perfil de fax (FAX)
Perfil básico de imagen (BIP) 2
Perfil de auriculares (HSP)
Perfil de manos libres (HFP)
Advanced Audio Distribution Profile (A2DP)

IEEE 802.11b
IEEE 802.11g
IEEE 802.11n
certificada Wi-Fi
802.11b / g / n
Nota:

La FCC ha declarado a partir del 1 de
septiembre de canal 12/13 y son
capaces de transmitir o desactivar esos
canales.

802.11b: 1, 2, 5.5, 11 Mbps

802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

802.11n: AM de 0 ~ MCS 07, (20 MHz)
Direct Sequence Spread Spectrum
BPSK, QPSK, CCK, 16-QAM, 64-QAM,

Microsoft Windows Bluetooth Software Enlace de
topología
Punto a Punto, Multipunto Pico redes de hasta 7 SLA
Soporte completo de las disposiciones de seguridad de Bluetooth Seguridad



PC portátil

Especificaciones técnicas

●2.402 - 2.482 GHz

Seguridad	IEEE y Wi-Fi obediente 64/128 bits W	• AES-CCMP: 128 bits en el hardware • la autenticación 802.1x • WPA, WPA2: 802.1x. WPA-PSK, • WPA • certificación WPA2 • IEEE 802.11i • Extensiones Cisco Certified, todas las versiones
		WAPI
Modelos de arquitectura de red		Ad-hoc (par a par) Infraestructura (Punto de Acceso Obligatorio)
Itinerancia	IEEE 802.11 compatible con la itinerancia entre el acceso	
Potencia de salida	802.11b: mínimo +	• 16dBm • 802.11g: mínimo + 14 dBm • HT20 802.11n (2,4 GHz): + 13dBm • Mini • HT40 802.11n (2,4 GHz): + 13dBm • Mini • HT20 802.11n (5 GHz): + 12dBm mínimo



PC portátil

Especificaciones técnicas

- HT40 802.11n (5 GHz): + 12dBm minim
4. Comprueba la versión de software / controlador para las actualizaciones en funciones de seguridad compatibles.
5. máxima potencia de salida puede variar en cada país de acuerdo con las normativas

El consumo de energía	Transmitir: 2,0 W (max) Recibe: 1,6 W (max) el modo de espera (PSP): 180 mW (WLAN Asociada) el modo de espera: 60 mW (WLAN no asociado) Radio desactivada: 30 mW
Administración de energía	el modo de ahorro de energía 802.11 compatible con ACPI y PCI Express management de energía que cumple
receptor Sensitivity3	802.11b, 1Mbps: máximo -94dBm 802.11b, 11 Mbps: -86 dbm máximo 802.11g, 6Mbps: máximo -88dBm 802.11g, 54Mbps: -74dBm máximo 802.11n, MCS07: máximo -69dBm 802.11n, MCS15: máximo -66dBm

tipo de antena	Antena de alta eficiencia con diversidad espacial, mou Dos antenas integradas para 2,4 GHz se proporcionan comunicaciones. (Soporte de la antena dual o una antena individual, depender
Factor de forma	PCI-Express M.2 MiniCard
Dimensiones	Tipo 2230: 2.3 x 22.0 x 30.0 mm O Tipo 1630: 2.3 x 16.0 x 30.0 mm
Peso	Tipo 2230: 2,8 g O Tipo 1630: 2g
Tensión de funcionamiento	3.3v +/- 9%
Temperatura	Operando No operacional
Humedad	Operando No operacional
Altitud	Operando No operacional
LED de actividad	LED mbar - Radio OFF; LED blanco - Radio On locales.
6. La sensibilidad del receptor se mide a una tasa de error de paquete de 8% para 802.11b (CKK modulatio	
802.11a / g (modulación OFDM).	

Módulo integrado HP con Bluetooth 4.0 + EDR Wireless	
TechnoloEspecificación Bluetooth GY 4.0 + EDR Compatible	
Banda de frecuencia	2402-2480 MHz
Número de canales disponibles	79 (1 MHz) canales disponibles
Velocidades de Datos y rendimiento	velocidad de 3 Mbps de datos; un rendimiento de hasta

2,17 Mbps

PC portátil

Especificaciones técnicas

	Orientado a la conexión en enlaces síncronos hasta asíncrono Conexión Menos una 2.178,1 simétrica									
Potencia de transmisión	El componente Bluetooth operará como una C poder de 4 dBm para BR y EDR.									
Sensibilidad del receptor	<table><tr><td>Modulación</td><td>0,01% BER</td><td>0.00</td></tr><tr><td>GFSK -80 dBm -70</td><td>π / 4-DQPSK -80 dBm</td><td>-70</td></tr><tr><td>8DPSK</td><td>-80 dBm</td><td>-70</td></tr></table>	Modulación	0,01% BER	0.00	GFSK -80 dBm -70	π / 4-DQPSK -80 dBm	-70	8DPSK	-80 dBm	-70
Modulación	0,01% BER	0.00								
GFSK -80 dBm -70	π / 4-DQPSK -80 dBm	-70								
8DPSK	-80 dBm	-70								
El consumo de energía	Pico (Tx) 330 mW Pico (Rx) 230 mW Suspensión selectiva 17 mW									
Distancia	Hasta 33 pies (10 m)									
Interfaz eléctrica	Compatible con USB 2.0									
Software Bluetooth compatible	Microsoft Windows Bluetooth Software Enlace de topología									
Interfaz eléctrica	Punto a Punto, Multipunto Pico redes de hasta 7 SLA									
Bluetooth Software Soportado Seguridad	Soporte completo de las disposiciones de seguridad de Bluetooth									
Administración de energía	Microsoft Windows ACPI y Suministros bus USB									
Administración de energía	Auto-configurable para optimizar la potencia CONSERVACIÓN									
certificaciones	Parque, y de la aspiración									
Seguridad	Todas las aprobaciones regulatorias necesarias para el apoyo									
certificaciones	FCC (47 CFR) Parte 15C, Sección 15.247 y 15									
Perfiles Bluetooth admitidos	ETS 300 328, ETS 300 826									
Administración de energía	Directiva de baja tensión IEC950									
certificaciones	UL, CSA y marca CE									
	Perfil de puerto serie (SPP) 1									
	Servicio de aplicación de descubrimiento perfil (SDAP)									
	Acceso telefónico a redes (DUN) 1,2									
	Perfil genérico de intercambio de objetos (GOEP) 1,2									
	Perfil Object Push (OPP) 1,2									
	Perfil de transferencia de archivos (FTP)									
	Perfil de sincronización (SYNC)									
certificaciones	Reemplazo de cable para copias impresas (HCRP) 1,2									
Perfiles Bluetooth admitidos	Perfil Personal Area Networking (PAN) 1,2									
	Perfil de dispositivo de interfaz humana (HID) 1,2									
	Perfil de fax (FAX)									
	Perfil básico de imagen (BIP) 2									
	Perfil de auriculares (HSP)									
	Perfil de manos libres (HFP)									
	Advanced Audio Distribution Profile (A2DP)									

Realtek 802.11b / g / n (1x1) Wi-Fi

Normas de LAN inalámbrica	IEEE 802.11b
	IEEE 802.11g
	IEEE 802.11n



PC portátil

Especificaciones técnicas

interoperabilidad	certificada Wi-Fi
	La FCC ha declarado a partir del 1 de septiembre de canal 12/13 y son capaces de transmitir o desactivar esos canales.
Tasas de transferencia de datos	802.11b: 1, 2, 5.5, 11 Mbps
	802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Modulación	802.11n: AM de 0 ~ MCS 07, (20 MHz)
1	Direct Sequence Spread Spectrum
Banda de frecuencia	BPSK, QPSK, CCK, 16-QAM, 64-QAM,
	802.11b / g / n
	• 2.402 - 2.482 GHz Nota:
Modelos de arquitectura de red	Ad-hoc (par a par)
Itinerancia	Infraestructura (Punto de Acceso Obligatorio)
2	IEEE 802.11 compatible con la itinerancia entre el acceso
Seguridad IEEE y Wi-Fi obediente	• 64/128 bits W • AES-CCMP: 128 bits en el hardware • • • • • •



PC portátil

Especificaciones técnicas

la autenticación 802.1x
WPA, WPA2: 802.1x. WPA-PSK, WPA
certificación WPA2
IEEE 802.11i
Extensiones Cisco Certified, todas las
versiones
WAPI

Potencia de salida802.11b: máximo +
• 16dBm
• 802.11g: máximo + 14 dBm
• HT20 802.11n (2,4 GHz): + 13dBm
• Mini
• HT40 802.11n (2,4 GHz): + 13dBm
• Mini
HT20 802.11n (5 GHz): + 12dBm mínimo
HT40 802.11n (5 GHz): + 12dBm mínimo

Temperatura
Operando
No operacional
Humedad
Operando
No operacional
Altitud
Operando
No operacional

El consumo de energía
Transmitir: 2,0 W (max)
Recibe: 1,6 W (max)
LED de actividad LED - mbar -
Radio OFF; LED blanco - Radio On
el modo de espera (PSP): 180 mW (WLAN
Asociada)
el modo de espera: 60 mW (WLAN no asociado)
Radio desactivada: 30 mW

Administración de energía
el modo de ahorro de energía 802.11 compatible
con ACPI y PCI Express managem de energía
que cumple
receptor Sensitivity3
802.11b, 1Mbps: máximo -94dBm
802.11b, 11 Mbps: -86 dbm máximo
802.11g, 6Mbps: máximo -88dBm
802.11g, 54Mbps: -74dBm máximo
802.11n, MCS07: máximo -69dBm
802.11n, MCS15: máximo -66dBm

tipo de antena
Antena de alta eficiencia con diversidad
espacial, mou Dos antenas integradas para 2,4
GHz se proporcionan comunicaciones.
(Soporte de la antena dual o una antena
individual, depender

Factor de forma
Dimensiones
PCI-Express M.2 MiniCard
Tipo 2230: 2.3 x 22.0 x 30.0 mm
O
Tipo 1630: 2.3 x 16.0 x 30.0 mm
Peso
Tipo 2230: 2,8 g
O

Tensión de funcionamiento
Tipo 1630: 2g
3.3v +/- 9%

PC portátil

Especificaciones técnicas

7. Comprueba la versión de software / controlador para las actualizaciones en funciones de seguridad compatibles.

8. máxima potencia de salida puede variar en cada país de acuerdo con las normativas locales.

9. La sensibilidad del receptor se mide a una tasa de error de paquete de 8% para 802.11b (CKK modulación) 802.11a / g (modulación OFDM).

Módulo integrado HP con Bluetooth 4.0 + EDR Wireless

TechnologyEspecificación Bluetooth GY 4.0 + EDR Compatible

Banda de frecuencia2402-2480 MHz

Número de canales disponibles79 (1 MHz) canales disponibles

Velocidades de Datos y rendimientovelocidad de 3 Mbps de datos; un rendimiento de hasta

2,17 Mbps

Orientado a la conexión en enlaces sincrónicos hasta a sincronización Conexión Menos una 2.178,1 simétrica

Potencia de transmisión

El componente Bluetooth operará como una Clase 2 de 4 dBm para BR y EDR.

Sensibilidad del receptor

Modulación	0,01% BER	0.00
GFSK -80 dBm -70 dBm	π / 4-DQPSK -80 dBm	
-70		
8DPSK	-80 dBm	-70

El consumo de energía

Pico (Tx) 330 mW
Pico (Rx) 230 mW
Suspensión selectiva 17 mW

Distancia

Hasta 33 pies (10 m)

Interfaz eléctrica

Compatible con USB 2.0

Software Bluetooth compatible Microsoft Windows Bluetooth Software Enlace de topología

Interfaz eléctrica

Punto a Punto, Multipunto Pico redes de hasta 7 SLA

Bluetooth Software Soportado Seguridad

Soporte completo de las disposiciones de seguridad de Bluetooth

Administración de energía

Microsoft Windows ACPI y Suministros bus USB

Administración de energía certificaciones

Auto-configurable para optimizar la potencia CONSERVACIÓN Parque, y de la aspiración

Seguridad

Todas las aprobaciones regulatorias necesarias para el apoyo FCC (47 CFR) Parte 15C, Sección 15.247 y 15

certificaciones

Perfiles Bluetooth admitidos

Administración de energía certificaciones

ETS 300 328, ETS 300 826
Directiva de baja tensión IEC950
UL, CSA y marca CE
Perfil de puerto serie (SPP) 1
Servicio de aplicación de descubrimiento perfil (SDAP)
Acceso telefónico a redes (DUN) 1,2
Perfil genérico de intercambio de objetos (GOEP) 1,2
Perfil Object Push (OPP) 1,2
Perfil de transferencia de archivos (FTP)
Perfil de sincronización (SYNC)

certificaciones



PC portátil

Especificaciones técnicas

Perfiles Bluetooth admitidos

- Reemplazo de cable para copias impresas (HCRP) 1,2
- Perfil Personal Area Networking (PAN) 1,2
- Perfil de dispositivo de interfaz humana (HID) 1,2
- Perfil de fax (FAX)
- Perfil básico de imagen (BIP) 2
- Perfil de auriculares (HSP)
- Perfil de manos libres (HFP)
- Advanced Audio Distribution Profile (A2DP)

Certificaciones eco-etiquetas y declaraciones

Este producto ha recibido o está en el proceso de certificación de las siguientes homologaciones y puede etiquetado con una o más de estas marcas:



PC portátil

Especificaciones técnicas

AMBIENTAL

HP ProBook 645 G2 PC portátil

- TI declaración ECO
- EE.UU. ENERGY STAR®
- EPEAT <Oro> registrada en los Estados Unidos. Ver <http://www.epeat.net> para el registro

en tu país.

Configuración del sistema La configuración utilizada para el consumo de energía y las emisiones de ruido declaradas de datos para el modelo portátil se basa en un "Cuaderno configurado normalmente".

Consumo de energía
(De acuerdo a US
prueba de ENERGY STAR®

Método)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Operación Normal	7.08 W	7,64 W	6,65 W
(Ordenar inactivo)			
Operación Normal (larga inactividad)	4,38 W	5.13 W	4.28 W
Dormir	0,48 W	0,59 W	0,47 W
Apagado	0,38 W	0,49 W	0,37 W

Nota:

datos de eficiencia energética indicado es para un producto compatible con ENERGY STAR® si se ofrece dentro de la familia modelo. Los equipos HP que incluyen el logotipo ENERGY STAR® cumplen con los U Agencia de Protección Ambiental (EPA) especificaciones ENERGY STAR® aplicables para los ordenadores. Si una familia modelo no ofrece configuraciones que cumplen con ENERGY STAR®, los datos de eficiencia energética enumerados para un PC normalmente configurado con una unidad de disco duro, una fuente de alimentación de alta eficiencia, y un sistema operativo Microsoft Windows®.

Disipación de calor*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Operación Normal (inactivo corto)	BTU / hr 26 BTU / hr	23 BTU / hr	
Operación Normal (larga inactividad)	BTU / hr 18 BTU / hr	15 BTU / hr	
Dormir	BTU / hr 2 BTU / hr	2 BTU / hr	
Apagado	BTU / hr 2 BTU / hr	1 BTU / hr	

* NOTA: La disipación de calor se calcula en base a los vatios medidos, suponiendo que el nivel de servicio que se alcanza durante una hora.

Las emisiones de ruido
declaradas
(de acuerdo con
ISO 7779 e ISO 9296)

	Potencia de sonido (LWAd, belios)	Presión del sonido (LPam decibelios)
Típicamente Configurado - Idle	3.1	21
Fijo Disco - Random escribe	3.5	28



PC portátil

Especificaciones técnicas

La longevidad y la actualización Este producto se puede actualizar, posiblemente extender su vida útil por varios años. Características y / o componentes actualizables contenidos en el producto pueden incluir:

- 3 puertos USB
- 1 ranura para tarjeta de PC (tipo I / II)
- 1 ranura ExpressCard / 54
- 1 IEEE 1394 puerto
- 2 ranuras de memoria SODIMM
- expansión opcional estación de acoplamiento de base
- 1 puerto de almacenamiento II multi-bay

Los recambios están disponibles durante todo el periodo de garantía y/o hasta "5" años después del final de la producción.

baterías Esta batería (s) en este producto cumple con la Directiva 2006/66 / CE de la UE

Las baterías utilizadas en el producto no contienen:

- Mercurio mayor the1ppm en peso
- Cadmio mayor que 20 ppm en peso

Tamaño de la pila: CR2032 (pila de botón)
Tipo de batería: Litio

- intercambiables HDD

- Información Adicional** Este producto cumple con las restricciones de sustancias peligrosas (RoHS) Directiva - 2011/65 / CE.
- Este producto HP está diseñado para cumplir con la Directiva sobre residuos de aparatos eléctricos y electrónicos (RAEE) - 2002/96 / CE.
- Este producto está en conformidad con la Propuesta 65 de California (Estado de California; Agua Segura Acta de Aplicación de Tóxicos de 1986 de).
- Este producto cumple con la norma IEEE 1680 (EPEAT) en el <Oro> nivel, ver www.epeat.net
- Plásticos las piezas que pesen más de 25 gramos utilizados en el producto están marcados
-
-

Materiales de embalaje	Externo:	PAPEL / corrugado	366 g
	Interno:	PL STICO / EPE (polietileno expandido)	42 g
		PL STICO / polietileno de baja densidad	14,5 g
		PL STICO / Polipropileno	3,2 g
El material de envase plástico contiene al menos un 50% de contenido reciclado.			
Los materiales de embalaje de papel corrugado contiene al menos un 70% de contenido reciclado.			
Uso de materiales	Este producto no contiene ninguna de las siguientes sustancias en exceso de los límites normativos (consulte la Especificación HP General de Medio Ambiente en por ISO11469 y ISO1043 .		
	Este producto contiene 0.0% post-consumo de plástico reciclado (en peso).		

PC portátil

Especificaciones técnicas

Este producto es el 95,8% de reciclaje en el poder si se desecha adecuadamente al final de la vida.

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

-
-
-
- Amianto
- Ciertos colorantes azoicos
- Ciertos retardantes de llama bromados - No se puede usar como retardantes de llama en plásticos
- Cadmio
- Hidrocarburos clorados
- parafinas cloradas
- Formaldehído
- Difenil metanos halogenados
- carbonatos y sulfatos de plomo
- El plomo y sus compuestos
- Mercurio pilas de xido
- Nquel - acabados no se deben utilizar en la superficie externa diseñado para ser manejado con frecuencia realizado por el usuario.
- Sustancias destructoras del ozono
- Bifenilos polibromados (PBB)
- Polibromados de bifenilo teres (PBBEs)
- Polibromados de bifenilo xidos (PBBOs)
- Bifenilos policlorados (PCB)
- Terfenilos policlorados (PCT)
- El cloruro de polivinilo (PVC) - a excepción de alambres y cables, y determinados

Fin de la vida útil de Gestión y Reciclaje

Hewlett-Packard ofrece la devolución del producto al final de su vida HP y programas de reciclaje en muchas áreas geográficas. Para reciclar el producto, por favor vaya a: <http://www.hp.com/go/reuse-recycle> o contacte con su

envases al por menor ha sido retirado voluntariamente de la mayoría de las aplicaciones.

Sustancias radioactivas

Tributilo de estaño (TBT), trifenil estaño (TPT), xido de estaño tributilo (TBEO)

más cercana oficina de ventas de HP. Los productos devueltos a HP serán reciclados, valorizados o eliminados de una manera responsable.

La directiva WEEE de la UE (2002/95 / CE) exige a los fabricantes para proporcionar información sobre el tratamiento para cada tipo de producto para el uso de las instalaciones de tratamiento. Esta información instruccional (desmontaje producto está publicada en el sitio Web de Hewlett Packard en: <http://www.hp.com/go/recyclers>. Estos instrucciones puede ser utilizado por los recicladores y otras instalaciones de tratamiento de RAEE, así como clientes OEM de HP WH integrar y volver a vender equipos HP.

Corporativo de Hewlett-Packard Para obtener más información acerca del compromiso de HP con el medio ambiente: **Información ambiental**

Informe de ciudadano global

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



QuickSpecs

G2 PC portátil

HP ProBook 645 G2 PC portátil HP ProBook 655

Especificaciones técnicas

certificaciones de la etiqueta ecológica <http://www8.hp.com/us/en/hp->

[information/environment/ecolabels.html](http://www8.hp.com/us/en/hp-information/environment/ecolabels.html)

ISO 14001:

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842>

y

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

HP ProBook 655 G2 PC portátil

TBD **País de**

origen

China



QuickSpecs HP ProBook 645 G2 PC portátil HP ProBook 655G2 PC portátil

Opciones y accesorios (se vende por separado y la disponibilidad pueden variar según el país)

Tipo	Descripción	Número de pieza	
Unidad óptica	HP 3001pr USB 3.0 replicador de puertos	F3S42AA	
	HP 3005pr USB 3.0 replicador de puertos	H1L08AA	#
		XXX	
	HP Display y Soporte para portátil II	E8G00AA	#
		XXX	
	Universal replicador de puertos	E6D70AA	#
		XXX	
	Estación de acoplamiento HP UltraSlim	D9Y32AA	#
		XXX	
Entrada / Salida / Audio	Travel Mouse USB HP	G1K28AA	#
		XXX	
	HP ultrafino sin hilos del ratón SE	L9V77AA	
	Ratón inalámbrico ultrafino HP	L9V78AA	
	Auriculares estéreo USB HP	T1A67AA	
	DisplayPort al adaptador de HDMI	F3W43AA	
	DisplayPort a DVI	F7W96AA	
Poder	Adaptador de CA inteligente HP 45W (4,5 mm)	H6Y88AA	#
		XXX	
	HP ProDisplay P222va	K7X30AA	
	HP ProDisplay P222c	L4J08AA	



QuickSpecs

HP ProBook 645 G2 PC portátil HP ProBook 655G2 PC portátil

	Adaptador de CA inteligente de 65 W HP	H6Y89AA XXX	#
Almacenamiento - Almacenamiento Externo	HP USB DVDRW unidad externa	F2B56AA	
Seguridad	HP UltraSlim con llave de bloqueo de cable	H4D73AA	
	Lector de tarjetas inteligentes USB HP	F6V67AA	
	Estación de acoplamiento HP Cable Lock	AU656AA XXX	#
Monitor	HP ProDisplay P232	K7X31AA	



QuickSpecs HP ProBook 645 G2 PC portátil HP ProBook 655G2 PC portátil

Resumen de Cambios

Fecha del cambio:	Historial de versiones:		Descripción de Cambio:
21 de de enero de, el a o 2016	Versi n 1-2	Adicional	645 Los datos ambientales
29 de de enero de, el a o 2016	Versi n 2-3	Actualizado	pruebas MIL STD Duraci n de la bater a y el tiempo en espera descripciones de visualizaci n con CG y liendres
18 de de febrero de, el a o 2016	Versi n 3-4	Adicional	caracter sticas de seguridad a la parte posterior para lector de huellas dactilares y lector de tarjetas inteligentes
18 de de febrero de, el a o 2016	Versi n 4-5	Actualizado	Intel 802.11a espec / b / g / n / ac a 4,0
		Adicional	Especificaciones para los paneles
3 de marzo de, el a o 2016	Versi n 5-6	Adicional	tiempos de recarga de la bater a
El 31 de de marzo de, el a o 2016	Versi n 6-7	cambiado	TPM nota al pie de actualizaci n

Copyright © 2016 HP Development Company, L. P. Las nicas garant as de los productos HP se establecen en las declaraciones de garant a expresas que acompa an a dichos productos. Nada en este documento debe interpretarse como una garant a adicional. HP no ser responsable de los errores u omisiones t cnicos o editoriales aqu contenidos. Radeon y Athlon son marcas comerciales registradas o marcas comerciales de AMD Corporation en los EE.UU. y / o en



QuickSpecs **HP ProBook 645 G2 PC portátil HP ProBook 655G2 PC portátil**

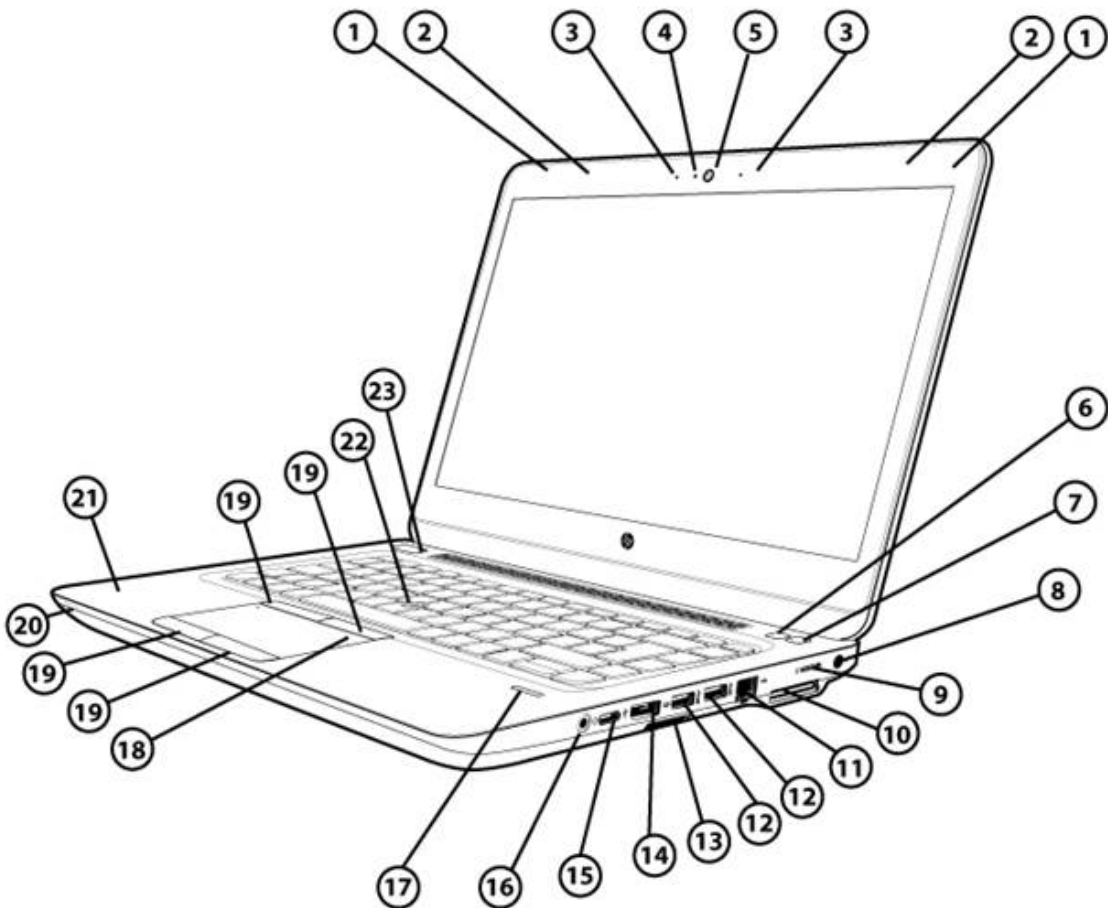
otros países. Bluetooth es una marca comercial de su propietario utilizada por Hewlett-Packard Company bajo licencia. Microsoft y Windows son marcas comerciales o marcas comerciales registradas de Microsoft Corporation en los EE.UU. y otros países. Adobe es una marca comercial de Adobe Systems Incorporated. ENERGY STAR es una marca registrada propiedad de la Agencia de Protección Ambiental de EE.UU..

Para las patentes DTS, consulte <http://patents.dts.com>. Fabricado bajo licencia de DTS Licensing Limited. DTS, el símbolo, y DTS y el símbolo juntos son marcas comerciales registradas, y DTS de sonido + es una marca comercial de DTS, Inc. © DTS, Inc. Todos los derechos reservados.



Overview

HP ProBook 645 G2 Notebook PC



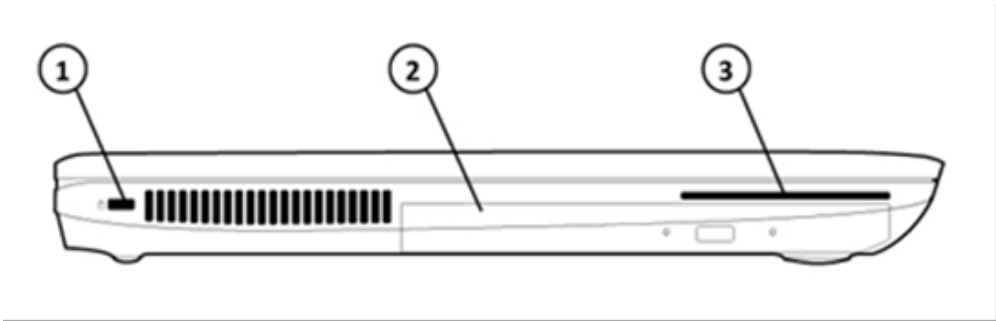
- | Front/Right | |
|--------------------------------------|--|
| 1. WLAN antennas (2) | 13. SD card slot |
| 2. WWAN antennas (2) (select models) | 14. Display port |
| 3. Internal microphones (2) | 15. USB-C port |
| 4. Webcam LED (select models) | 16. Microphone/ headphones combo jack |
| 5. Webcam (select models) | 17. Fingerprint reader (select models) |
| 6. Wireless on/off button | 18. Touchpad |
| 7. Speaker mute button | 19. Touchpad buttons (4) |
| 8. Power connector | 20. Indicator LEDs: Wireless Light, Power Light, AC Adapter/Battery Light, Storage Usage Light |
| 9. SIM card slot | 21. NFC (select models) |
| 10. Docking connector | 22. Pointstick |
| 11. Ethernet port | 23. Power button |
| 12. USB 3.0 ports (2) | |

Note: The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions.
Models without optional webcam have single integrated microphone on left side of display panel.



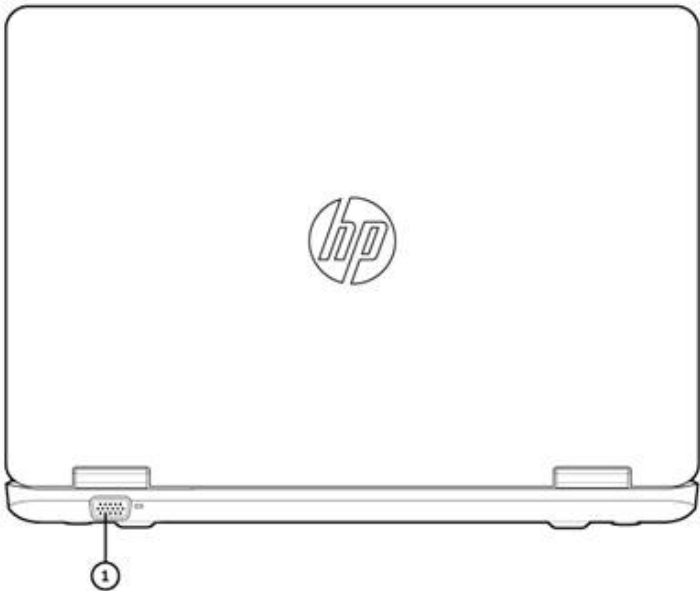


Overview



Left

- 1. Security lock slot
- 2. Optical drive
- 3. Smart card reader

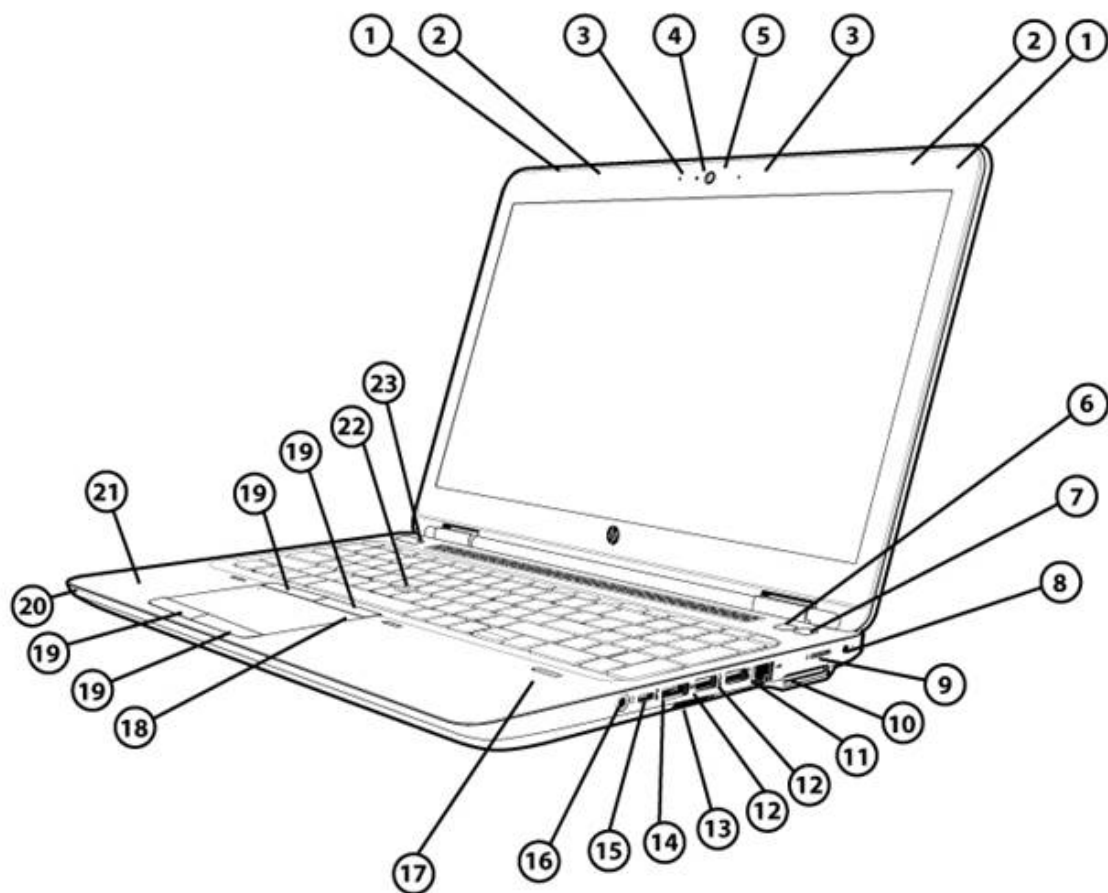


Back

- 1. VGA port

Overview

HP ProBook 655 G2 Notebook PC

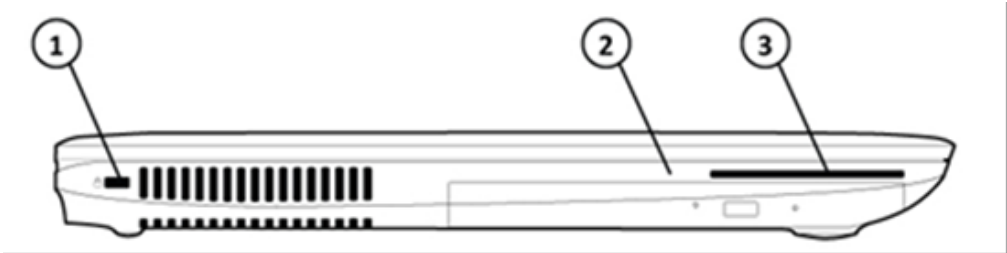


- | Front/Right | |
|-------------|--|
| 1. | WLAN antennas (2) |
| 2. | WWAN antennas (2) (select models) |
| 3. | Internal microphones (2) |
| 4. | Webcam LED (select models) |
| 5. | Webcam (select models) |
| 6. | Wireless on/off button |
| 7. | Speaker mute button |
| 8. | Power connector |
| 9. | SIM card slot |
| 10. | Docking connector |
| 11. | Ethernet port |
| 12. | USB 3.0 ports (2) |
| 13. | SD card slot |
| 14. | Display Port |
| 15. | USB-C port |
| 16. | Microphone/ headphones combo jack |
| 17. | Fingerprint reader (select models) |
| 18. | Touchpad |
| 19. | Touchpad buttons (4) |
| 20. | Indicator LEDs: Wireless Light, Power Light, AC Adapter/Battery Light, Storage Usage Light |
| 21. | NFC (select models) |
| 22. | Pointstick |
| 23. | Power button |

Note: The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions.
Models without optional webcam have single integrated microphone on left side of display panel.

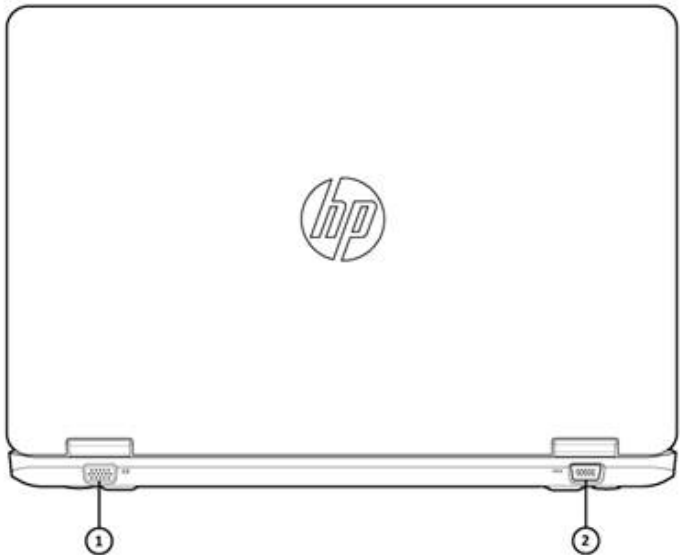


Overview



Left

1. Security lock slot
2. Optical drive
3. Smart card reader



Back

1. VGA port
2. Serial port optional (655 only)

Overview

At a Glance

- Windows 10 versions, Windows 8.1 versions, Windows 7 versions, Ubuntu Linux , Ubuntu Kylin Linux or FreeDOS 2.0
- Thin and light design- PC-ABS (Polycarbonate-Acrylnitrile/Butadiene/Styrene) durable material is nearly 20% thinner; soft-touch, more durable 4-step paint process; larger buttons (power), revamped keyboard (arrow keys); latch/hook removal for clean palmrest design; top mounted speakers for optimized audio experience (compared to previous generation)
- The HP Premium keyboard is spill-resistant and offered with optional backlit design.
- Large Touchpad with gestures support, on/off button with LED indicator
- Enhanced security features including HP Fingerprint Reader and TPM 1.2 Embedded Security Chip
- Accelerated Processing Unit and graphics from AMD
- LED-backlit display
 - HP ProBook 645: 14.0" diagonal HD or FHD or Touch FHD with camera and with WWAN
 - HP ProBook 655: 15.6" diagonal HD or FHD or Touch FHD with camera and with WWAN
- Optional HD webcam with dual-microphone array for video conferencing
- DisplayPort 1.2 now native with integrated graphics
- One USB-C™ Charging Port, two USB 3.0 ports for fast data transfer from devices (1 charging)
- HD Audio with DTS Sound+™ optimized for high fidelity audio
- Wireless and speaker mute button to conveniently manage the connectivity and speaker.
- Flexible wireless connectivity options:
 - Broadband Wireless (WWAN)
 - Wireless LAN (WLAN)
 - Personal area network (WPAN Bluetooth®)
 - Near Field Communication (NFC)
- Choice of hard drives up to 1 TB or solid state drives up to 512 GB
- Passed MIL STD testing¹

1. 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.

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



PRODUCT NAMES

- HP ProBook 645 G2 Notebook PC
- HP ProBook 655 G2 Notebook PC

OPERATING SYSTEM

Preinstalled	Windows 10 Pro 64 ¹ Windows 10 Home 64 ¹ Windows 10 Home Single Language 64 ¹ Windows 8.1 Pro 64 ³ Windows 8.1 64 ³ Windows 7 Professional 32 (Available through downgrade rights from Windows 10 Pro 64) ² Windows 7 Professional 32 (Available through downgrade rights from Windows 10 Pro 64) (National Academic only) ² Windows 7 Professional 64 ³ Windows 7 Professional 32 ³ Windows 7 Professional 32 (National Academic only) ³ FreeDOS 2.0
Web-only Support	Windows 10 Enterprise 64 ¹ Windows 8.1 Enterprise 64 ³ Windows 7 Enterprise 64 ³ Windows 7 Enterprise 32 ³

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://http://www.microsoft.com>.
2. This system is preinstalled with Windows 7 Professional software and also comes with a license and media for Windows 10 software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data
3. 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. See <http://http://www.microsoft.com>.

Accelerated Processing Unit

- AMD PRO A10-8700B APU with Radeon R6 Graphics (1.8 GHz, up to 3.2 GHz, 2 MB cache, 4 cores)¹
- AMD PRO A8-8600B APU with Radeon R6 Graphics (1.6 GHz, up to 3 GHz, 2 MB cache, 4 cores)¹
- AMD PRO A6-8500B APU with Radeon R5 Graphics (1.6 GHz, up to 3 GHz, 2 MB cache, 2 cores)¹

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



Technical Specifications

FUSION CONTROLLER HUB (FCH)

Chipset is integrated with processor

GRAPHICS

Radeon R5 Graphics
Radeon R6 Graphics

NOTE: Integrated with processors. Please see processor section for details.

DISPLAY

HP ProBook 645

Internal

Non-Touch

- 14.0" diagonal LED backlight HD¹ Anti-glare 45% CG 220 nits (1366x768)
- 14.0" diagonal LED backlight HD¹ Anti-glare 45% CG 220 nits (1366x768) with camera
- 14.0" diagonal LED backlight HD¹ Anti-glare 45% CG 220 nits (1366x768) with WWAN
- 14.0" diagonal LED backlight HD¹ Anti-glare 45% CG 220 nits (1366x768) with camera and with WWAN
- 14.0" diagonal LED backlight FHD Anti-glare 60% CG 300 nits (1920x1080)
- 14.0" diagonal LED backlight FHD Anti-glare 60% CG 300 nits (1920x1080) with camera
- 14.0" diagonal LED backlight FHD Anti-glare 60% CG 300 nits (1920x1080) with WWAN
- 14.0" diagonal LED backlight FHD Anti-glare 60% CG 300 nits (1920x1080) with camera & WWAN

Touch

- 14.0" diagonal LED backlight FHD 60% CG 300 nits (1920x1080) with camera and with WWAN

External

Up to 32-bit per pixel color depth

VGA

Port supports resolutions up to 1920 x 1200 external resolution @60 Hz

DisplayPort 1.2

Supports resolutions up to 2560 x 1600, 30-bit color depth @60 Hz, and full HD (1920 x 1080) monitors, 24-bit color depth @ 120 Hz

Number of Displays Supported

HP Ultra Slim Docking	UMA Graphics
ProBook 645 with A10	3

HP ProBook 655

Internal

Non-Touch

- 15.6" diagonal LED backlight HD¹ Anti-glare 45% CG 220 nits (1366x768)
- 15.6" diagonal LED backlight HD¹ Anti-glare 45% CG 220 nits (1366x768) with camera
- 15.6" diagonal LED backlight HD¹ Anti-glare 45% CG 220 nits (1366x768) with WWAN
- 15.6" diagonal LED backlight HD¹ Anti-glare 45% CG 220 nits (1366x768) with camera and with WWAN
- 15.6" diagonal LED backlight FHD Anti-glare 60% CG 300 nits (1920x1080)
- 15.6" diagonal LED backlight FHD Anti-glare 60% CG 300 nits (1920x1080) with camera
- 15.6" diagonal LED backlight FHD Anti-glare 60% CG 300 nits (1920x1080) with WWAN
- 15.6" diagonal LED backlight FHD Anti-glare 60% CG 300 nits (1920x1080) with camera & WWAN

Touch

- 15.6" diagonal LED backlight FHD 60% CG 300 nits (1920 x 1080) with camera with WWAN

External

Up to 32-bit per pixel color depth

VGA

Port supports resolutions up to 1920 x 1200 external resolution @60 Hz

DisplayPort 1.2



Technical Specifications

Supports resolutions up to 2560 x 1600, 30-bit color depth at 60 Hz, and full HD (1920 x 1080) monitors, 24-bit color depth at 120 Hz

Number of Displays Supported

HP Ultra Slim Docking	UMA
ProBook 655 with A10	3

1. HD content required to view HD images.

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

STORAGE AND DRIVES

Primary Storage Bay

Hard Drives¹

Supports SATA3, 7mm

2.5" Hard Drives

- 500 GB 7200 rpm
- 500 GB 7200 rpm Self-Encrypting Drive (Opal 2)
- 500 GB 7200 rpm Self Encrypting Drive (Opal 2) (FIPS)
- 1 TB 5400 rpm
- 500 GB Hybrid

M.2 (NGFF) Solid State Drive¹

- 128 GB SATA-3 TLC
- 180 GB SATA-3 MLC
- 180 GB SATA-3 MLC (Opal 2)
- 240 GB SATA-3 MLC
- 256 GB PCIe-3x4 DS NVMe
- 256 GB SATA-3 MLC (Opal 2)
- 256 GB SATA-3 TLC
- 512 GB SATA-3 TLC

1. For hard drives and solid state drives, GB = 1 billion bytes. Actual formatted capacity is less.
Up to 16 GB (for Windows 7) and up to 30 GB (for Windows 8 and 10) of system disk is reserved for the system recovery software.

OPTICAL DRIVES

Fixed 9.5 mm SATA

- DVD-ROM Drive
- DVD+/-RW SuperMulti DL¹
- Blu-ray ROM DVD+/-RW SuperMulti DL¹
- Weight saver²

1. For Blu-ray drives, certain disc, digital connection, compatibility and/or performance issues may arise, and do not constitute defects in the product. Flawless playback on all systems is not guaranteed. In order for some Blu-ray titles to play, they may require an HDMI digital connection and your display may require HDCP support. HD-DVD disks cannot be played on this drive. Note that DVD-RAM cannot read or write to 2.6 GB Single Sided/5.2 GB Double Sided - Version 1.0 media. Actual speeds may vary. Don't copy copyright-protected materials. Double Layer discs can store more data than single layer discs; discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.
2. Not available on with Touch panel.



Technical Specifications

MEMORY

Standard

DDR3L PC3-12800 (Transfer rates up to 1600 MT/s)
Two SODIMM slots supporting dual-channel memory

4096 MB Total System Memory (4096 MB x 1)
8192 MB Total System Memory (4096 MB x 2)
8192 MB Total System Memory (8192 MB x 1)
16384 MB Total System Memory (8192 MB x 2)

Maximum

Up to 16384 MB with optional 8192 MB SODIMMs in slots 1 and 2

Dual-channel

Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots.

NOTE: Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

NETWORKING/COMMUNICATIONS

Broadband Wireless (WWAN) ^{2,3}

HP It4120 Qualcomm® Snapdragon X5 LTE Mobile Broadband Module
HP hs3110 HSPA+ Mobile Broadband Module

Wireless LAN (WLAN) ^{1,2}

Options via Minicard
Intel® 802.11a/b/g/n/ac (2x2) and Bluetooth® 4.0 Combo
Intel® 802.11a/b/g/n/ac (1x1) and Bluetooth® 4.0 Combo
Broadcom 802.11a/b/g/n (2x2) and Bluetooth® 4.0 Combo
Broadcom 802.11b/g/n (1x1) WiFi and Bluetooth® 4.0 Combo
Realtek 802.11b/g/n (1x1) Wi-Fi

Personal area network (WPAN Bluetooth) ^{1,2}

Bluetooth® 4.0 supported via all combo cards (Except for Intel® 802.11 ac and Intel® 802.11 a/b/g/Non-vPro)
Bluetooth® 4.1 supported via Intel® 802.11 ac and Intel® 802.11 a/b/g/n Non-vPro only

Near Field Communication (NFC) Optional²

HP Module with NXP NFC Controller NPC100

Support for Miracast (Windows 8.1 and Windows 10)

1. Wireless access point and Internet service is required and is not included. Availability of public wireless access points is limited.

2. Sold separately or as an optional feature.

3. WWAN module is optional and requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.

Communications

Realtek RTL8111HSH Gigabit Ethernet¹

1. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.



Technical Specifications

AUDIO/MULTIMEDIA

Audio

HD Audio with DTS Sound+™

(2) Integrated stereo speakers

Integrated digital microphone (Dual-microphone array when equipped with optional webcam)

Function keys for microphone mute, volume up, volume down

Stereo headphone/line out

Stereo microphone in

Webcam

Optional 720p HD webcam ^{1,2}

- HD format (widescreen)
- Supports videoconferencing (non-HD) and still image capture
- High quality fixed focus lens
- Video capture at various resolutions up to 1280x720 resolution (720p) and up to 30fps
- M-JPEG compression supports higher frame rates for video capture and videoconferencing
- Improved low light sensitivity
- Improved dynamic range
- Skype-ready

1. Sold separately or as an optional feature.
2. HD content required to view HD images.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

HP Advanced Keyboard

The HP spill-resistant keyboard is designed using a thin layer of Mylar film under the keyboard. The 101/102-key compatible keyboard features a full-pitch key layout with desktop keyboard features, such as editing keys, both left and right control and alt keys, and function keys. DuraKeys only available with Backlit option.

Touchpad

On/Off button

Enabled by default

2F Scrolling - On

2F Zoom (Pinch) - On

OSD (enable / disable) - On

Win 8 2F tap = right click - On

Win 8 Edge Swipes - On

Buttons and Function Keys

F1 - Sleep

F2 - Blank

F3 - Backlit

F4 - Display Switch

F5 - Brightness down

F6 - Brightness up

F7 - Blank

F8 - Volume down

F9 - Volume up

F10 - Mic Mute

F11 - Bank

F12 - Num lock



Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software with Windows Operating System

BIOS

HP DriveLock | HP Automatic Drive Lock
HP BIOS Protection¹
HP Disk Sanitizer²
HP SpareKey³
Update via Network
Master Record Security
Power On Authentication
Pre-Boot Security
Secure Erase⁴
Hybrid Boot
Measured Boot
Secure Boot
Absolute Persistence Module⁵

MultiMedia

CyberLink PowerDVD
CyberLink Power2Go (Optical drives)
CyberLink YouCam BE (Windows 7 only)

Communication

HP Connection Manager (Windows 7 only)
HP GPS and Location⁶ (Windows 7 only)
HP Mobile Connect⁷ (Windows 8 only)
HP Wireless Hotspot⁸ (Windows 8 only)
Intel WiDi Software⁹
HP Roaming Alert (Windows 8 only)
Intel My WiFi and Wireless Drivers

HP Value Add Software

HP 3D DriveGuard (requires Windows)
HP ePrint Driver¹⁰ (HP Exclusive)
HP PageLift (HP Exclusive)¹¹
HP Recovery Manager (Windows 7 only)
HP Support Assistant
HP Recovery Disc Creator (Windows 7 only)
UEFI System Diagnostics W8

3rd Party

Adobe Flash Player
Skype¹² (subscription required and sold separately)
Buy Office

Security Hardware

HP Client Security¹³
HP Credential Manager
HP Password Manager
HP Drive Encryption (FIPS 140-2)¹⁴
HP Device Access Manager with Just In Time Authentication
HP File Sanitizer¹⁵
HP Spare Key
Integrated Smart Card Reader (FIPS 201)
Security screw for bottom access door
Microsoft Security Essentials (Windows 7)¹⁶



Technical Specifications

Microsoft Defender (Windows 8)
TPM 1.2/2.0¹⁷
HP Fingerprint reader
Security lock slot
Integrated Smart Card Reader

1. HP Tools partition with an HP BIOS required for automatic recovery.
2. For the use cases outlined in the DOD 5220.22-M Supplement. Does not support Solid State Drives (SSDs). Initial setup required. Web history deleted only in Internet Explorer and Firefox browsers and must be user enabled.
3. Requires initial user set up.
4. For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88.
5. The Absolute Persistence agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: <http://www.absolute.com/company/legal/agreements/computrace-agreement>. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.
6. GPS access requires an unobstructed path to multiple satellites. Performance may be affected if/when used inside of buildings, bridges or heavily congested metropolitan areas. Requires separately purchased GPS navigation software available from multiple GPS applications.
7. Internet access required.
8. The wireless hotspot application requires an active internet connection and separately purchased data plan. While HP wireless hotspot is active, on-device applications will continue to work and will use the same data plan as the wireless hotspot. Wireless hotspot data usage may incur additional charges. Check with your service provider for plan details. Requires Windows 8.1 or HP Connection Manager for Windows 7.
9. Integrated Intel Wi-Di feature is available on select configurations only and requires separately purchased projector, tv or computer monitor with an integrated or external Wi-Di receiver. External Wi-Di receivers connect to the projector, tv or computer monitor via a standard HDMI cable, also sold separately.
10. 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). Requires optional broadband module. Broadband use requires separately purchased service contract. Check with service provider for coverage and availability in your area. Separately purchased data plans or usage fees may apply. Print times and connection speeds may vary.
11. HP PageLift requires Windows 7 or higher edition.
12. Skype is not offered in China.
13. Not all features are remotely manageable.
14. Requires Windows. Data is protected prior to Drive Encryption login. Turning the PC off or into hibernate logs out of Drive Encryption and prevents data access. Drive encryption planned to be available in October 2013.
15. For the use cases outlined in the DOD 5220.22-M Supplement. Does not support Solid State Drives (SSDs). Initial setup required. Web history deleted only in Internet Explorer and Firefox browsers and must be user enabled.
16. Opt in and internet connection required for updates.
For more information on HP security solutions refer to: <http://www.hp.com/go/security>.
17. This product ships with TPM 1.2 with option to upgrade to TPM 2.0. Upgrade utility is expected to be available by the second half of 2016 via HP Customer Support.

POWER



Technical Specifications

Power Supply
HP 45W Smart AC Adapter (UMA only)
HP 45W Smart AC Adapter (Only available for Japan and England)
HP 65W Smart AC Adapter
HP 65W Smart EM Adapter (only available for Asia, China and India)
Power cord included is 1.8 m (+/- 0.1 m) or 1.0 m (+/- 0.1 m).

Primary Battery
HP 3-cell Long Life Prismatic (48 WHr)

Battery Life¹

HP ProBook 645 Notebook PC	UMA Graphics	Discrete Graphics
3-cell (48 WHr) with SSD	Up to 8 hrs 15 mins	N/A
3-cell (48 WHr) with HDD	Up to 7 hrs 15 mins	N/A
HP ProBook 655 Notebook PC	UMA Graphics	Discrete Graphics
3-cell (48 WHr) with SSD	Up to 8 hrs	N/A
3-cell (48 WHr) with HDD	Up to 7 hrs 15 mins	N/A

System Standby Time²

	UMA Graphics	Discrete Graphics
HP ProBook 640 Notebook PC	Up to 186 hrs	N/A
HP ProBook 650 Notebook PC	Up to 186 hrs	N/A

Battery recharge times

	ProBook 645 G2	ProBook 655 G2
Time to 90% Charge ³ (minutes)	109	109
Time to 100% Charge ⁴ (minutes)	167	167

. 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 for additional details.

2. Standby life will vary depending on various factors including battery, Memory, CPU, EC and LAN chip. The maximum capacity of the battery will naturally decrease with time and usage.

3. Recharges your battery up to 90% within 109 minutes when the system is off. Applies to 3-cell 48Whr battery only. When the PC is powered on, charge time may increase and will vary based on the workload of the notebook PC.

4. Recharges your battery up to 100% within 167 minutes when the system is off. Applies to 3-cell 48Whr battery only. When the PC is powered on, charge time may increase and will vary based on the workload of the notebook PC.

WEIGHTS & DIMENSIONS

Technical Specifications

HP ProBook 645 Notebook PC

Weight

Starting at 4.30 lbs (1.95 kg)¹

(3-cell battery, ODD weight saver, UMA, no FPR, 1 SODIMM, WLAN only, SSD, touchpad only, no camera, no WWAN)

Dimensions (w x d x h)

13.39 x 9.33 x 1.06 in (Front and rear)²

34.0 x 23.7 x 2.70 cm (Front and rear)

HP ProBook 655 Notebook PC

Weight

Starting at 5.1 lbs (2.31 kg)¹

(3-cell battery, ODD weight saver, UMA, no FPR, 1 SODIMM, WLAN only, SSD, touchpad only, no camera, no WWAN)

Dimensions (w x d x h)

14.88 x 10.11 x 1.07 in (Front and rear)²

37.8 x 25.7 x 2.74 cm (Front and rear)

1. Weight varies by configuration and components.
2. Height varies depending upon where on the notebook the measurement is made.

PORTS/SLOTS

Ports

USB TypeC™ - One

USB 3.0 port - One

USB 3.0 port Charging - One

RJ-45 / Ethernet - One

Docking connector - One

Headphone / Microphone (Combo jack) - One

AC port (4.5mm) - One

DisplayPort - One

VGA port - One

Serial port optional - One (HP ProBook 655 Notebook PC only)¹

SD Media Reader Slot

Supports SD, SDHC, SDXC

1. Sold separately or as an optional feature.

SERVICE AND SUPPORT

Limited 3-year, 1-year or 90-day limited warranty options available, depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. Optional¹ HP Care Pack Services² are extended service contracts which go beyond your 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 Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. Consult the HP Customer Support Center for details. <http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp>



Technical Specifications

System Unit

TBD

DISPLAYS*

14.0 FHD AG WLED SVA 60%cg 300nits eDP Slim Panel	
Active Area (W x H)	309.40 x 173.95 (mm)
Dimensions (W x H)	320.9 x 205.6 (mm) max
Diagonal Size	14 (inch)
Thickness	3.0 (mm) max
Weight	270 g max
Interface	eDP 1.2
Surface Treatment	Anti-Glare (AG)
Contrast Ratio	300:1 (typical)
Refresh Rate	60 Hz
Brightness	300 nits
Pixel Resolution - Format	1920 x 1080 (FHD)
PPI	157
Pixel Resolution - Configuration	RGB
Backlight	LED
Color Gamut Coverage	60%
Color Depth	6 bits
Viewing Angle	SVA 45/45/25/35
14.0 HD AG WLED SVA 45%cg 220nits eDP Flat Panel	
Active Area (W x H)	309.40 x 173.95 (mm)
Dimensions (W x H)	320.9 x 205.6 (mm) max
Diagonal Size	14 (inch)
Thickness	3.6 (mm) max
Weight	320 g max
Interface	eDP 1.2
Surface Treatment	Anti-Glare (AG)
Contrast Ratio	300:1 (typical)
Refresh Rate	60 Hz
Brightness	220 nits
Pixel Resolution - Format	1280 x 768 (HD)
PPI	112
Pixel Resolution - Configuration	RGB
Backlight	LED
Color Gamut Coverage	45%
Color Depth	6 bits + Hi FRC
Viewing Angle	SVA 45/45/25/35



Technical Specifications

14.0 FHD WLED SVA 60%cg 300nits eDP Slim Touch

Panel	
Active Area (W x H)	309.40 x 173.95 (mm)
Dimensions (W x H)	320.9 x 205.6 (mm) max
Diagonal Size	14 (inch)
Thickness	3.0 (mm) max
Weight	270 g max
Interface	eDP 1.2
Contrast Ratio	300:1 (typical)
Refresh Rate	60 Hz
Brightness	300 nits
Pixel Resolution - Format	1920 x 1080 (FHD)
PPI	157
Pixel Resolution - Configuration	RGB
Backlight	LED
Color Gamut Coverage	60%
Color Depth	6 bits
Viewing Angle	SVA 45/45/25/35
Touch Enabled	Optional
Touch Point Supported	10-point multi-touch
Other Features	AS
Pen Enabled	No

15.6 FHD AG WLED SVA 60%cg 300nits eDP Slim 3.2mm

Panel	
Active Area (W x H)	344.2 x 193.5 (mm)
Dimensions (W x H)	360 x 224.3 (mm) max
Diagonal Size	15.6 (inch)
Thickness	3.2 (mm) max
Weight	360 g max
Interface	eDP 1.2
Surface Treatment	Anti-Glare (AG)
Contrast Ratio	400:1 (typical)
Refresh Rate	60 Hz
Brightness	300 nits
Pixel Resolution - Format	1920 x 1080 (FHD)
PPI	142
Pixel Resolution - Configuration	RGB
Backlight	LED
Color Gamut Coverage	60%
Color Depth	6 bits
Viewing Angle	SVA 45/45/25/35

15.6 HD AG WLED SVA 45%cg 220nits eDP Flat



Technical Specifications

Panel	
Active Area (W x H)	344.2 x 193.5 (mm)
Dimensions (W x H)	360 x 224.3 (mm) max
Diagonal Size	15.6 (inch)
Thickness	3.8 (mm) max
Weight	420 g max
Interface	eDP 1.2
Surface Treatment	Anti-Glare (AG)
Contrast Ratio	300:1 (typical)
Refresh Rate	60 Hz
Brightness	220 nits
Pixel Resolution - Format	1280 x 768 (HD)
PPI	101
Pixel Resolution - Configuration	RGB
Backlight	LED
Color Gamut Coverage	45%
Color Depth	6 bits + Hi FRC
Viewing Angle	SVA 45/45/25/35
15.6 FHD WLED SVA 60%cg 300nits eDP Slim 3.2mm Touch	

Panel	
Active Area (W x H)	344.2 x 193.5 (mm)
Dimensions (W x H)	360 x 224.3 (mm) max
Diagonal Size	15.6 (inch)
Thickness	3.2 (mm) max
Weight	360 g max
Interface	eDP 1.2
Contrast Ratio	400:1 (typical)
Refresh Rate	60 Hz
Brightness	300 nits
Pixel Resolution - Format	1920 x 1080 (FHD)
PPI	142
Pixel Resolution - Configuration	RGB
Backlight	LED
Color Gamut Coverage	60%
Color Depth	6 bits
Viewing Angle	SVA 45/45/25/35
Touch Enabled	Optional
Touch Point Supported	10-point multi-touch
Other Features	AS
Pen Enabled	No

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

Security



Technical Specifications

HP Fingerprint Reader (optional)	Mobile Voltage	3.0V-3.6V
	Operation	
	Operating Temperature	14° - 167°F (-10° - 75°C)
	Current Consumption Image	36 mA peak
	Low Latency Wait for Finger	950 uA
	Capture Rate	59000 lines/sec
	ESD Resistance	IEC 61000-4-2 4B (±15KV)
	Detection Matrix	200*1 (plus another secondary line) 508 dpi 10*1 mm sensor area
Smart Card Reader	Smart card standard	PC/SC 2.0 for Windows smart card standard
	Dimensions (L x W x H)	0.41x 0.08 x 0.32 in (10.5 x 2 x 8.2 mm)
	Smart Card support	ISO 7816 Class A and AB smart cards
	Smart Card Interface	Smart Card Interface with T = 0 and T = 1 support Support I2C memory card, SLE4418, SLE4428, SLE4432, SLE4442, SLE4436, SLE5536, SLE6636, AT88SC1608, AT45D041 card and AT45DB041 card via external EEPROM
	Operating systems	No driver is required for this device. Native support is provided by the operating system.
	Power	Normal Mode With card present, before being suspended: 40.9 mA Without card present, before being suspended: 33.16 mA After being suspended with smart card present: 380 µA After being suspended without smart card present: 380 µA
		Power Saving Mode With card present, before being suspended: 40.6 mA Without card present: 380 µA After being suspended with smart card present: 380 µA
	Features	• Support single slot • Support T0, T1 protocol • Support I2C memory card, SLE4418, SLE4428, SLE4432, SLE4442, SLE4436, • SLE5536, SLE6636, AT88SC1608, AT45D041 card and AT45DB041 card via external EEPROM • Support ISO7816 Class A, B and C (5V/3V/1.8V) card • Implemented as an USB full speed device with bulk transfer endpoint, Mass • Storage endpoint • Built-in PLL for USB and Smart Card clocks requirement • Support EEPROM for USB descriptors customization (PID/VID/iManufacturer/iProduct/Serial Number), Direct Web Page Link, and accessing memory card module. • EEPROM programmable via USB interface • Support software update for memory card module • Support Direct Web Page Link via configuration in external EEPROM • Support short APDU and extended APDU • Compatible with Microsoft USB-CCID driver • Support remote wake up through inserting card/removing card • Support USB selective suspend • Support Power Saving Mode (Using one pin to select between Normal/PWR Saving Mode)



Technical Specifications

- Support card power over current protection mechanism
- Built in resonator.
- Support USB LPM (Link Power Management) features.
- Embedded clock source.

Networking/communications

HP It4120 Qualcomm® Snapdragon X5 LTE Mobile Broadband Module*

Technology/Operating bands	LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 17 lower), 800 (Band 20), 700 (Band 28). HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz EV-DO: 850 (BC0), 1900 (BC1) MHz (Only work with Verizon network) E-GPRS: 1900 (Band 2), 1800 (Band 3), 850 (Band 5), 900 (Band 8) MHz
Wireless protocol standards	3GPP Release 10 LTE Specification CAT.4, 20MHz BW WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification 1xEVDO Release 0, A and B. E-GPRS: Class B, Multi-slot class 12, coding schemes CS1 - CS4 and MSC1 - MSC9
GPS	Standalone, A-GPS (MS-A, MS-B and XTRA)
GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz
Maximum data rates	LTE: 150 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload) CDMA 1xRTT: 153.6 kbps (Download), 153.6 kbps (Upload) EVDO Rel.A: 3.1 Mbps (Download), 1.8 Mbps (Upload) EVDO Rel.B: 14.7 Mbps (Download), 5.4Mbps (Upload) EDGE: 236.8 kbps (Download), 236.8 kbps (Upload) GPRS: 85.6 kbps(Download), 85.6 kbps (Upload)
Maximum output power	LTE: 23 dBm HSPA+: 23.5 dBm 1xRTT/EVDO: 24dBm E-GPRS 1900/1800: 26 dBm E-GPRS 900/850: 27 dBm GPRS 1900/1800: 29.5 dBm GPRS 900/850: 32.5 dBm
Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average) 1xRTT/EVDO: 1,000 mA (peak); 700 mA (average) E-GPRS: 2,800 mA (peak); 500 mA (average)
Form Factor	M.2, 3042-S3 Key B
Weight	6.2 g
Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm



Technical Specifications

* 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.

	HP hs3110 HSPA+ Intel® Mobile Broadband Module*
Technology/Operating bands	HSPA+: 2100 (Band 1), 1900 (Band 2), 1700 (Band 4), 850 (Band 5), 900 (Band 8) MHz E-GPRS: 1900 (Band 2), 1800 (Band 3), 850 MHz (Band 5), 900 (Band 8) MHz
Wireless protocol standards	WCDMA R99, 3GPP Release 5, 6 and 7 UMTS Specification E-GPRS: Class B, Multi-slot class 33, coding schemes CS1 - CS4 and MSC1 - MSC9
GPS	Standalone, A-GPS
GPS bands	1575.42 MHz ± 1.023 MHz
Maximum data rates	HSPA+: 21.6 Mbps (Download), 5.76 Mbps (Upload) E-GPRS: 296 kbps (Download), 236.8 kbps (Upload) GPRS: 107 kbps (Download), 85.6 kbps (Upload)
Maximum output power	HSPA+: 24 dBm E-GPRS 1800/1900: 26 dBm E-GPRS 850/900: 27 dBm GPRS 1800/1900: 30 dBm GPRS 850/900: 33 dBm
Maximum power consumption	HSPA+: 1,100 mA (peak); 800 mA (average) E-GPRS: 2,800 mA (peak); 700 mA (average)
Form Factor	M.2, 3042-S3 Key B
Weight	6 g
Dimensions (Length x Width x Thickness)	1.65 x 1.18 x 0.09 in (42 x 30 x 2.3 mm)

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

Intel® 802.11a/b/g/n/ac (2x2) and Bluetooth® 4.1 Combo

Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
Interoperability Frequency Band	Wi-Fi certified 802.11b/g/n 2.402 - 2.482 GHz Note: 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. 802.11a/n 4.9 - 4.95 GHz (Japan) 5.15 - 5.25 GHz

Technical Specifications

	• 5.25 - 5.35 GHz • 5.47 - 5.725 GHz • 5.825 - 5.850 GHz
Data Rates	Note: Indonesia no support this band) • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
Modulation	Direct Sequence Spread Spectrum
Security ¹	BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power ²	• 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +12dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connect Standby: 10 mW (WLAN+BT) Radio disabled: 5 mW
Power Management	ACPI and PCI Express compliant power management
Receiver Sensitivity ³	802.11 compliant power saving mode 802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -88dBm maximum 802.11a, 54Mbps : -74dBm 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



Technical Specifications

Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications									
Form Factor	PCI-Express M.2 MiniCard									
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm									
Weight	Type 2230 : 2.8g Or Type 1630 : 2g									
Operating Voltage	3.3v +/- 9%									
Temperature	Operating	14° to 158° F (-10° to 70° C)								
	Non-operating	-40° to 176° F (-40° to 80° C)								
Humidity	Operating	10% to 90% (non-condensing)								
	Non-operating	5% to 95% (non-condensing)								
Altitude	Operating	0 to 10,000 ft (3,048 m)								
	Non-operating	0 to 50,000 ft (15,240 m)								
LED Activity	LED Amber - Radio OFF; LED White - Radio ON									
	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).									
HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology										
Bluetooth Specification	4.0/4.1/4.2 Compliant									
Frequency Band	2402 to 2480 MHz									
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)									
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 3 Mbps BLE : 1 Mbps data rate; throughput up to 1 Mbps Legacy : Synchronous Connection Oriented Legacy : Asynchronous Connection Less kbps symmetric (3-EV5)									
Transmit Power	The Bluetooth component shall operate at a maximum transmit power of + 4 dBm for BR and EDR.									
Receiver Sensitivity	<table><tr><th>Modulation</th><th>0.01% BER</th></tr><tr><td>GFSK</td><td>-80 dBm</td></tr><tr><td>π/4-DQPSK</td><td>-80 dBm</td></tr><tr><td>8DPSK</td><td>-80 dBm</td></tr></table>		Modulation	0.01% BER	GFSK	-80 dBm	π/4-DQPSK	-80 dBm	8DPSK	-80 dBm
Modulation	0.01% BER									
GFSK	-80 dBm									
π/4-DQPSK	-80 dBm									
8DPSK	-80 dBm									
Legacy										
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW									
Range	Legacy Up to 33 ft (10 m) BLE Up to 99 ft (30 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 7.68 Mbps									
Bluetooth Software Supported	Full support of Bluetooth Security Provision									
Security										
Power Management	Microsoft Windows ACPI, and USB Bus Suspend									
Certifications	Self-configurable to optimize power consumption Park, and Sniff									



Technical Specifications

	• AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, V • WPA2 certification • IEEE 802.11i • Cisco Certified Extensions, all versio • WAPI
Sub-channels	Multinational support with frequency band:
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between
Output Power ²	• 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +13dBm m • 802.11n HT40(2.4GHz) : +13dBm m • 802.11n HT20(5GHz) : +12dBm min • 802.11n HT40(5GHz) : +12dBm min
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Assoc Idle mode: 60 mW (WLAN unassocia Radio disabled: 30 mW
Power Management	ACPI and PCI Express compliant power m 802.11 compliant power saving mode
Receiver Sensitivity ³	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -86dBm maximum 802.11a, 54Mbps : -72dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum
Antenna type	High efficiency antenna with spatial divers Two embedded dual band 2.4/5 GHz anten and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight	Type 2230 : 2.8g Or Type 1630 : 2g
Operating Voltage	3.3v +/- 9%
Temperature	Operating Non-operating
Humidity	Operating Non-operating
Altitude	Operating Non-operating
LED Activity	LED Amber - Radio OFF; LED White - Ra
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).	



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 M Synchronous Connection Oriented links up to 2.17 M Asynchronous Connection Less links 217 Kbps symmetric								
Transmit Power	The Bluetooth component shall operate at a maximum power of +4 dBm for BR and EDR.								
Receiver Sensitivity	<table><tr><th>Modulation</th><th>0.01% BER</th></tr><tr><td>GFSK</td><td>-80 dBm</td></tr><tr><td>$\pi/4$-DQPSK</td><td>-80 dBm</td></tr><tr><td>8DPSK</td><td>-80 dBm</td></tr></table>	Modulation	0.01% BER	GFSK	-80 dBm	$\pi/4$ -DQPSK	-80 dBm	8DPSK	-80 dBm
Modulation	0.01% BER								
GFSK	-80 dBm								
$\pi/4$ -DQPSK	-80 dBm								
8DPSK	-80 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	Point to Point, Multipoint Pico Nets up to 7 devices								
Electrical Interface	Full support of Bluetooth Security Provision								
Bluetooth Software Supported	Microsoft Windows ACPI, and USB Bus Suspend								
Security	Self-configurable to optimize power consumption								
Power Management	Park, and Sniff								
Power Management	Microsoft Windows ACPI, and USB Bus Suspend								
Certifications	Self-configurable to optimize power consumption								
Security	Park, and Sniff								
Certifications	All necessary regulatory approvals for support of Bluetooth								
Bluetooth Profiles Supported	FCC (47 CFR) Part 15C, Section 15.247 and 15.248								
Power Management	ETS 300 328, ETS 300 826								
Certifications	Low Voltage Directive IEC950								
	UL, CSA, and CE Mark								
	Serial Port Profile (SPP) ¹								
	Service Discovery Application Profile (SDAP)								
	Dial-Up Networking (DUN) ^{1,2}								
	Generic Object Exchange Profile (GOEP) ¹								
	Object Push Profile (OPP) ^{1,2}								
	File Transfer Profile (FTP)								
	Synchronization Profile (SYNC)								
	Hard Copy Cable Replacement (HCRP) ^{1,2}								
	Personal Area Networking Profile (PAN) ^{1,2}								
	Human Interface Device Profile (HID) ^{1,2}								
	FAX Profile (FAX)								
	Basic Imaging Profile (BIP) ²								
	Headset Profile (HSP)								
	Hands Free Profile (HFP)								
	Advanced Audio Distribution Profile (A2DP)								
Certifications									
Bluetooth Profiles Supported									
Bluetooth V4.1/V4.2 support feature	V4.1: ESR5/6/7 compliant								
	V4.2: ESR8 compliant, LE Secure Connection								

Broadcom 802.11a/b/g/n (2x2) and Bluetooth® 4.0 Combo



Technical Specifications

Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n 2.402 - 2.482 GHz Note: The FCC has declared as of January 1, 12/13 and are capable of transmitting n otherwise disable those channels.
Antenna Structure	802.11a 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 Note: Indonesia only supports 5.725 - 5.82
Data Rates	2 transmit; 2 receive (2x2) 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
Modulation	Direct Sequence Spread Spectrum CCK, BPSK, QPSK, 16-QAM, 64-QAM
Security ¹	- IEEE and WiFi compliant 64 / 128 b - AES-CCMP: 128 bit in hardware 802.1x authentication - WPA, WPA2: 802.1x. WPA-PSK, V - WPA2 certification - IEEE 802.11i - Cisco Certified Extensions, all versio - WAPI
Sub-channels	Multinational support with frequency band:
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between
Output Power ²	802.11b : +16dBm minimum 802.11g : +14dBm minimum 802.11a : +14dBm minimum 802.11n HT20(2.4GHz) : +13dBm m 802.11n HT40(2.4GHz) : +13dBm m 802.11n HT20(5GHz) : +12dBm min 802.11n HT40(5GHz) : +12dBm min
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Assoc Idle mode: 60 mW (WLAN unassocia Radio disabled: 30 mW
Power Management	ACPI and PCI Express compliant power m 802.11 compliant power saving mode



Technical Specifications

Receiver Sensitivity ³	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -86dBm maximum 802.11a, 54Mbps : -72dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum								
Antenna type	High efficiency antenna with spatial diversity Two embedded dual band 2.4/5 GHz antennas for Wi-Fi and Bluetooth communications								
Form Factor	PCI-Express M.2 MiniCard								
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm								
Weight	Type 2230 : 2.8g Or Type 1630 : 2g								
Operating Voltage	3.3v +/- 9%								
Temperature	Operating Non-operating								
Humidity	Operating Non-operating								
Altitude	Operating Non-operating								
LED Activity	LED Amber - Radio OFF; LED White - Radio ON								
1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation).									
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 2.17 Mbps Asynchronous Connection Less links 2.17 Mbps symmetric								
Transmit Power	The Bluetooth component shall operate at a maximum power of +4 dBm for BR and EDR.								
Receiver Sensitivity	<table><tr><th>Modulation</th><th>0.01% BER</th></tr><tr><td>GFSK</td><td>-80 dBm</td></tr><tr><td>π/4-DQPSK</td><td>-80 dBm</td></tr><tr><td>8DPSK</td><td>-80 dBm</td></tr></table>	Modulation	0.01% BER	GFSK	-80 dBm	π/4-DQPSK	-80 dBm	8DPSK	-80 dBm
Modulation	0.01% BER								
GFSK	-80 dBm								
π/4-DQPSK	-80 dBm								
8DPSK	-80 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	Point to Point, Multipoint Pico Nets up to 7 devices								
Electrical Interface									
Bluetooth Software Supported									
Security	Full support of Bluetooth Security Provision								



Power Management
Power Management
Certifications
Security
Certifications
Bluetooth Profiles Supported
Power Management
Certifications

All necessary regulatory approvals for sup
FCC (47 CFR) Part 15C, Section 15.247 &

ETS 300 328, ETS 300 826
Low Voltage Directive IEC950
UL, CSA, and CE Mark
Serial Port Profile (SPP)¹
Service Discovery Application Profile (SDA)
Dial-Up Networking (DUN)^{1,2}
Generic Object Exchange Profile (GOEP)¹
Object Push Profile (OPP)^{1,2}
File Transfer Profile (FTP)
Synchronization Profile (SYNC)
Hard Copy Cable Replacement (HCRP)^{1,2}
Personal Area Networking Profile (PAN)^{1,2}
Human Interface Device Profile (HID)^{1,2}
FAX Profile (FAX)
Basic Imaging Profile (BIP)²
Headset Profile (HSP)
Hands Free Profile (HFP)
Advanced Audio Distribution Profile (A2DP)

Certifications

Bluetooth Profiles Supported

Wireless LAN Standards

IEEE 802.11b
IEEE 802.11g
IEEE 802.11n
Wi-Fi certified
802.11b/g/n

- 2.402 - 2.482 GHz

Note:

The FCC has declared as of September 2012 that all digital TV channels on channel 12/13 and are capable of transmitting or otherwise disable those channels.

Data Rates

802.11b: 1, 2, 5.5, 11 Mbps

802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

Modulation

- 802.11n: MCS 0 ~ MCS 07, (20MHz)
- Direct Sequence Spread Spectrum
- BPSK, QPSK, CCK, 16-QAM, 64-QAM,
 - IEEE and WiFi compliant 64 / 128 t
 - AES-CCMP: 128 bit in hardware
 - 802.1x authentication
 - WPA, WPA2: 802.1x. WPA-PSK, \
 - WPA2 certification
 - IEEE 802.11i
 - Cisco Certified Extensions, all versi
 - WAPI

Security¹

Network Architecture Models

Ad-hoc (Peer to Peer)
Infrastructure (Access Point Required)

Technical Specifications

Roaming	IEEE 802.11 compliant roaming between acc
Output Power ²	• 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11n HT20(2.4GHz) : +13dBm r • 802.11n HT40(2.4GHz) : +13dBm r • 802.11n HT20(5GHz) : +12dBm mi • 802.11n HT40(5GHz) : +12dBm mi
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associate Idle mode: 60 mW (WLAN unassociated Radio disabled: 30 mW
Power Management	ACPI and PCI Express compliant power manag
Receiver Sensitivity ³	802.11 compliant power saving mode 802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum
Antenna type	High efficiency antenna with spatial diversity, Two embedded antennas for 2.4GHz are prov communications.
Form Factor	(Support Dual antenna or Single antenna, dep
Dimensions	PCI-Express M.2 MiniCard Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm Type 2230 : 2.8g Or Type 1630 : 2g
Weight	3.3v +/- 9%
Operating Voltage	Operating
Temperature	Non-operating
Humidity	Operating
Altitude	Non-operating
LED Activity	Operating Non-operating LED Amber - Radio OFF; LED White - Radio C
4. Check latest software/driver release for updates on supported security features. 5. Maximum output power may vary by country according to local regulations. 6. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK mod 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 M Synchronous Connection Oriented links up to 2.17 M Asynchronous Connection Less links 217 Kbps symmetric	
Transmit Power	The Bluetooth component shall operate at a maximum power of +4 dBm for BR and EDR.	
Receiver Sensitivity	Modulation	0.01% BER
	GFSK	-80 dBm
	$\pi/4$ -DQPSK	-80 dBm
	8DPSK	-80 dBm
Power Consumption	Peak (Tx)	330 mW
	Peak (Rx)	230 mW
	Selective Suspend	17 mW
	Up to	33 ft (10 m)
Range	Up to 33 ft (10 m)	
Electrical Interface	USB 2.0 compliant	
Bluetooth Software Supported	Microsoft Windows Bluetooth Software	
Link Topology	Point to Point, Multipoint Pico Nets up to 7 devices	
Electrical Interface	Full support of Bluetooth Security Provision	
Bluetooth Software Supported	Microsoft Windows ACPI, and USB Bus Suspend	
Security	Self-configurable to optimize power consumption	
Power Management	Park, and Sniff	
Power Management	All necessary regulatory approvals for support in the U.S.	
Certifications	FCC (47 CFR) Part 15C, Section 15.247 and 15.248	
Security	All necessary regulatory approvals for support in the U.S.	
Certifications	FCC (47 CFR) Part 15C, Section 15.247 and 15.248	
Bluetooth Profiles Supported	ETS 300 328, ETS 300 826	
Power Management	Low Voltage Directive IEC950	
Certifications	UL, CSA, and CE Mark	
Certifications	Serial Port Profile (SPP) ¹	
	Service Discovery Application Profile (SDAP) ¹	
	Dial-Up Networking (DUN) ^{1,2}	
	Generic Object Exchange Profile (GOEP) ¹	
	Object Push Profile (OPP) ^{1,2}	
	File Transfer Profile (FTP)	
	Synchronization Profile (SYNC)	
	Hard Copy Cable Replacement (HCRP) ^{1,2}	
	Personal Area Networking Profile (PAN) ^{1,2}	
	Human Interface Device Profile (HID) ^{1,2}	
	FAX Profile (FAX)	
	Basic Imaging Profile (BIP) ²	
	Headset Profile (HSP)	
	Hands Free Profile (HFP)	
	Advanced Audio Distribution Profile (A2DP)	

Realtek 802.11b/g/n (1x1) Wi-Fi

Wireless LAN Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n



Technical Specifications

	2.402 - 2.482 GHz
	Note: The FCC has declared as of September 2014 that channels 12 and 13 are no longer available for use in the U.S. and are capable of transmitting on channels 12 and 13 or otherwise disable those channels.
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 07, (20MHz) Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM,
Modulation	
Security ¹	- IEEE and WiFi compliant 64 / 128 bit - AES-CCMP: 128 bit in hardware 802.1x authentication - WPA, WPA2: 802.1x. WPA-PSK, WPA2 certification - IEEE 802.11i - Cisco Certified Extensions, all versions - WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power ²	802.11b : +16dBm minimum 802.11g : +14dBm minimum 802.11n HT20(2.4GHz) : +13dBm maximum 802.11n HT40(2.4GHz) : +13dBm maximum 802.11n HT20(5GHz) : +12dBm maximum 802.11n HT40(5GHz) : +12dBm maximum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associate) Idle mode: 60 mW (WLAN unassociated) Radio disabled: 30 mW
Power Management	ACPI and PCI Express compliant power management
Receiver Sensitivity ³	802.11 compliant power saving mode 802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum
Antenna type	High efficiency antenna with spatial diversity, Two embedded antennas for 2.4GHz are provided for communications.
Form Factor	(Support Dual antenna or Single antenna, depends on configuration)
Dimensions	PCI-Express M.2 MiniCard Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight	Type 2230 : 2.8g Or Type 1630 : 2g
Operating Voltage	3.3v +/- 9%



Technical Specifications

Temperature	Operating
	Non-operating
Humidity	Operating
	Non-operating
Altitude	Operating
	Non-operating
LED Activity	LED Amber - Radio OFF; LED White - Radio C
7. Check latest software/driver release for updates on supported security features.	
8. Maximum output power may vary by country according to local regulations.	
9. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK mod 802.11a/g (OFDM modulation).	

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 M Synchronous Connection Oriented links up Asynchronous Connection Less links 217 symmetric								
Transmit Power	The Bluetooth component shall operate as power of +4 dBm for BR and EDR.								
Receiver Sensitivity	<table><tr><th>Modulation</th><th>0.01% BER</th></tr><tr><td>GFSK</td><td>-80 dBm</td></tr><tr><td>π/4-DQPSK</td><td>-80 dBm</td></tr><tr><td>8DPSK</td><td>-80 dBm</td></tr></table>	Modulation	0.01% BER	GFSK	-80 dBm	π/4-DQPSK	-80 dBm	8DPSK	-80 dBm
Modulation	0.01% BER								
GFSK	-80 dBm								
π/4-DQPSK	-80 dBm								
8DPSK	-80 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	Point to Point, Multipoint Pico Nets up to 1								
Electrical Interface	Full support of Bluetooth Security Provision								
Bluetooth Software Supported	Microsoft Windows ACPI, and USB Bus S								
Security	Self-configurable to optimize power conse								
Power Management	Park, and Sniff								
Power Management	All necessary regulatory approvals for sup								
Certifications	FCC (47 CFR) Part 15C, Section 15.247 8								
Security									
Certifications									
Bluetooth Profiles Supported	ETS 300 328, ETS 300 826								
Power Management	Low Voltage Directive IEC950								
Certifications	UL, CSA, and CE Mark								
	Serial Port Profile (SPP) ¹								
	Service Discovery Application Profile (SDA								
	Dial-Up Networking (DUN) ^{1,2}								
	Generic Object Exchange Profile (GOEP) ¹								
	Object Push Profile (OPP) ^{1,2}								
	File Transfer Profile (FTP)								
	Synchronization Profile (SYNC)								
	Hard Copy Cable Replacement (HCRP) ^{1,2}								
	Personal Area Networking Profile (PAN) ^{1,2}								
	Human Interface Device Profile (HID) ^{1,2}								
	FAX Profile (FAX)								
Certifications									
Bluetooth Profiles Supported									



Technical Specifications

Basic Imaging Profile (BIP)²
Headset Profile (HSP)
Hands Free Profile (HFP)
Advanced Audio Distribution Profile (A2DP)

ENVIRONMENTAL

HP ProBook 645 G2 Notebook PC

Eco-Label Certifications & declarations This product has received or is in the process of being certified to the following approvals and is 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 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 (Sort idle)	7.08 W	7.64 W	6.65 W
Normal Operation (Long idle)	4.38 W	5.13 W	4.28 W
Sleep	0.48 W	0.59 W	0.47 W
Off	0.38 W	0.49 W	0.37 W

Note:
Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the product family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a product family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

Heat Dissipation*

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	24 BTU/hr	26 BTU/hr	23 BTU/hr
Normal Operation (Long idle)	15 BTU/hr	18 BTU/hr	15 BTU/hr
Sleep	2 BTU/hr	2 BTU/hr	2 BTU/hr
Off	1 BTU/hr	2 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)

	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Typically Configured - Idle	3.1	21
Fixed Disk - Random writes	3.5	28



Technical Specifications

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 en production.

Batteries This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater the1ppm by weight
- Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)

Battery type: Lithium

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) dir - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipm (WEEE) Directive - 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drir Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <Gold> level, www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product contains 0.0% post-consumer recycled plastic (by wt.)
- This product is 95.8% recycle-able when properly disposed of at end of life.

Packaging Materials	External:	PAPER/Corrugated	366 g
	Internal:	PLASTIC/EPE (Expanded Polyethylene)	42 g
		PLASTIC/Polyethylene low density	14.5 g
		PLASTIC/Polypropylene	3.2 g

The plastic packaging material contains at least 50% recycled content.
The corrugated paper packaging materials contains at least 70% recycled content.

Material Usage This product does not contain any of the following substances in excess of regulatory limits (re the HP General Specification for the Environment at <http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf>):

- Asbestos



Technical Specifications

- 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 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)

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographical 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://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842>

and

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

HP ProBook 655 G2 Notebook PC

TBD

Country of Origin

China



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

Type	Description	Part Number
Docking	HP 3001pr USB 3.0 Port Replicator	F3S42AA
	HP 3005pr USB 3.0 Port Replicator	H1L08AA#xxx
	HP Display and Notebook Stand II	E8G00AA#xxx
	Universal Port Replicator	E6D70AA#xxx
	HP UltraSlim Docking Station	D9Y32AA#xxx
Input/Output/Audio	HP USB Travel Mouse	G1K28AA#xxx
	HP Ultrathin Wireless Mouse SE	L9V77AA
	HP Ultrathin Wireless Mouse	L9V78AA
	HP Stereo USB Headset	T1A67AA
	DisplayPort to HDMI Adapter	F3W43AA
	DisplayPort to DVI Adapter	F7W96AA
	HP 45W Smart AC Adapter (4.5mm)	H6Y88AA#xxx
	HP 65W Smart AC Adapter	H6Y89AA#xxx
Storage - External Storage	HP USB External DVDRW Drive	F2B56AA
Security	HP UltraSlim Keyed Cable Lock	H4D73AA
	HP USB Smart Card Reader	F6V67AA
Display	HP Docking Station Cable Lock	AU656AA#XXX
	HP ProDisplay P232	K7X31AA
	HP ProDisplay P222va	K7X30AA
	HP ProDisplay P222c	L4J08AA

Summary of Changes

Date of change:	Version History:		Description of change:
January 21, 2016	Version 1 to 2	Added	645 Environmental data
January 29, 2016	Version 2 to 3	Updated	MIL STD testing Battery life and stand by time Display descriptions with CG and nits
February 18, 2016	Version 3 to 4	Added	Security specs to the back for Finger Print Reader and Smart Card Reader
February 18, 2016	Version 4 to 5	Updated	Intel® 802.11a/b/g/n/ac specs to 4.0
		Added	Specs for panels
March 3, 2016	Version 5 to 6	Added	Battery recharge times
March 31, 2016	Version 6 to 7	Changed	TPM Upgrade footnote

Copyright © 2016 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. Radeon and Athlon are registered trademarks or trademarks of AMD Corporation in the U.S. and/or other countries. Bluetooth is a trademark owned by its proprietor and used by Hewlett-Packard Company under license. Microsoft and Windows are either trademarks or registered trademarks of Microsoft Corporation in the U.S. and other countries. Adobe is a trademark of Adobe Systems Incorporated. ENERGY STAR is a registered mark owned by the U.S. Environmental Protection Agency. For DTS patents, see <http://patents.dts.com>. Manufactured under license from DTS Licensing Limited. DTS, the Symbol, & DTS and the Symbol together are registered trademarks, and DTS Sound+ is a trademark of DTS, Inc. © DTS, Inc. All Rights Reserved.



Ficha Técnica de Producto

ginga
GROUP

Tipo de Producto

Descripcion	Modelo	Licencia
MALETIN ESSENTIAL 15.4 NYLON	TZEST01N	TECHZONE
Características del Producto	Accesorios incluidos	
Maletín con compartimento para laptop de 15.4" ,		
manija reforzada y sección porta documentos.		
Compartimentos para documentos y correa al hombro		
ajustable, cierres autoreparables de níquel.		



Especificaciones PRODUCTO CON EMPAQUE

Tamaño LxAxH	Peso GRS	Energía	Materiales	
47.5x17.5x33 cm		NA	Nylon	
Mantenimeinto y Limpieza			Observaciones	
Lavar a mano				
No usar solventes				
Transporte				
Master		Peso Master	Empaque	Peso Individual
16 Piezas		Peso Neto 20 kg		1250 gr
67x55.5x43 cm		Peso Bruto 21.5 kg		



Samsung SE-208GB Quemador de DVD, DVD-R 8x / DVD+RW 8x, USB 2.0, Externo, Negro
SE-208GB/RSBD



Especificaciones

Peso y dimensiones

Ancho	14,9 cm
Profundidad	14,6 cm
Altura	1,4 cm

Requisitos del sistema

Sistema operativo Windows soportado	Windows 7 Home Basic, Windows 7 Home Basic x64, Windows 7 Home Premium, Windows 7 Home Premium x64, Windows 7 Professional, Windows 7 Professional x64, Windows 7 Starter, Windows 7 Starter x64, Windows 7 Ultimate, Windows 7 Ultimate x64, Windows 8, Window
-------------------------------------	---

Velocidad de escritura

Velocidad de escritura en CD	24x
Velocidad de reescritura en CD	24x
DVD+R, velociad de escritura	8x
DVD-R, velocidad de escritura	8x
DVD-R Doble capa - velocidad de escritura	6x
DVD+R Doble capa - velocidad de escritura	6x
DVD+RW, velocidad de escritura	8x
DVD-RW, velocidad de escritura	6x
CD-R, velocidad de escritura	24x
CD-RW, velocidad de escritura	24x
DVD-RAM, velocidad de escritura	5x

Velocidad de lectura

Velocidad de lectura de CD	24x
DVD+R, velocidad de lectura	8x
DVD-R, velocidad de lectura	8x
DVD+RW, velocidad de lectura	8x
DVD-RW, velocidad de lectura	8x
CD-R, velocidad de lectura	24x
CD-RW, velocidad de lectura	24x
DVD-RAM, velocidad de lectura	5x
DVD-ROM, velocidad máxima	8x
CD-ROM, velocidad de lectura	24x
DVD-R Doble capa, velocidad de lectura	8x

Tiempo de acceso

DVD, tiempo promedio de acceso	220 ms
Unidad CD-ROM tiempo promedio de acceso	210 ms

Ficha Técnica de Producto

GINGA
GROUP

Tipo de Producto

Descripcion	Modelo	Licencia
BACKPACK 15.4 NEGRO	TZBTS10BLK	TECHZONE
Características del Producto	Accesorios incluidos	
Mochila con compartimento para laptop de hasta 15.4" y correas acolchonadas		
Bolsillo frontal para cartera, celular y tarjetas, bolsillo intermedio para reproductor y orificio de salida.		

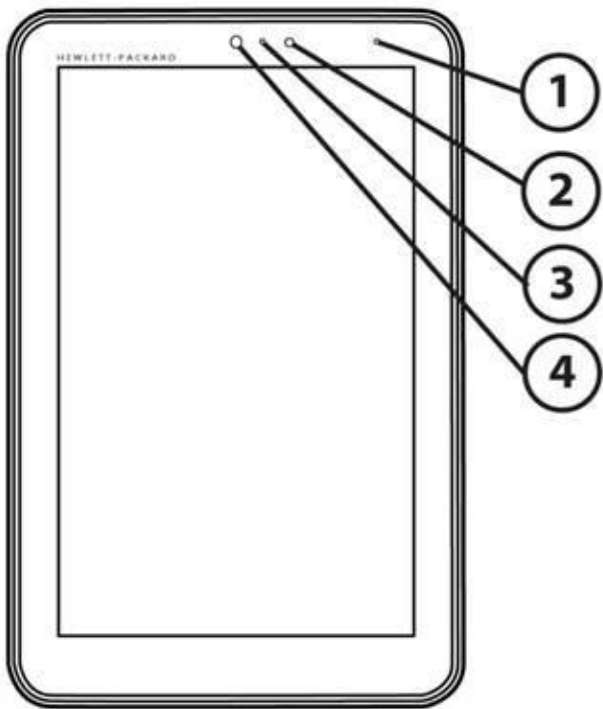


Especificaciones PRODUCTO CON EMPAQUE

Tamaño LxAxH	Peso GRS	Energía	Materiales	
30x16x50 cm	670 gr	NA	Poliéster y Nylon	
Mantenimiento y Limpieza			Observaciones	
Lavar a mano con agua, jabon y esponja				
No aplicar solventes, No exprimir, No planchar				
Transporte				
Master		Peso Master	Empaque	Peso Individual
10 Piezas		Peso Neto 8 kg	30x16x50	670 gr
48x33x49 cm		Peso Bruto 9 kg		

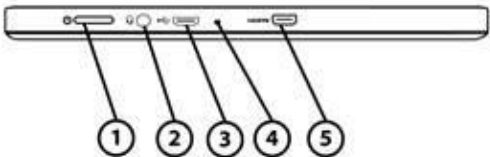
Descripción general

Tablet PC HP Pro 408 G1



Frente

- | | | | |
|----|-------------------------|----|----------------------|
| 1. | LED indicador de carga | 3. | Indicador LED Webcam |
| 2. | Sensor de luz ambiental | 4. | 2MP cámara frontal |



Top

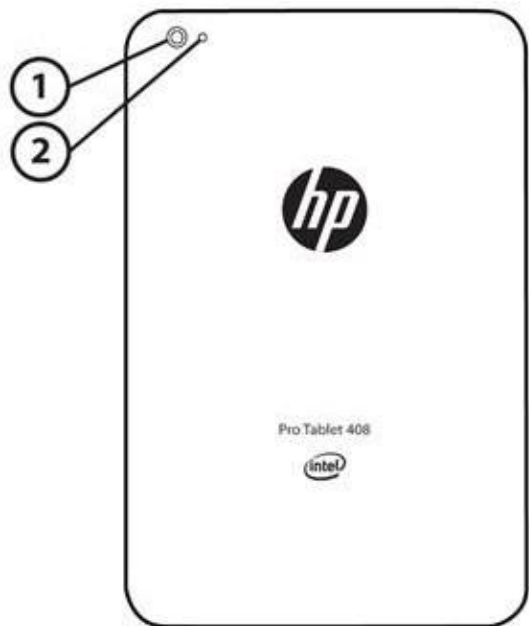
- | | |
|----|-------------------------------------|
| 1. | Botón de alimentación |
| 2. | De 3.5mm para auriculares/micrófono |
| 3. | Micro USB 2.0 |
| 4. | Micrófono integrado |
| 5. | Micro-HDMI (conector tipo D) |



Parte inferior

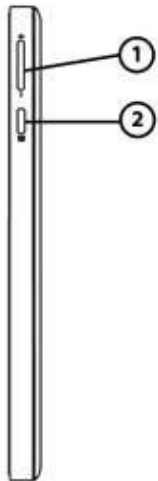
- | | |
|----|-------------|
| 1. | Altavoz (R) |
| 2. | Altavoz (L) |

Descripción general



Volver

- | | | | |
|----|----------------------------------|----|-----------------------|
| 1. | 8MP cámara orientado hacia atrás | 2. | El flash de la cámara |
|----|----------------------------------|----|-----------------------|



Lado

- | | | | |
|----|-------------------------------------|----|---------------|
| 1. | Botón de subida y bajada de volumen | 2. | Botón Windows |
|----|-------------------------------------|----|---------------|

AT A GLANCE

Descripción general

- Windows Pro 8.1 (32 bits) y Windows 10 sistema operativo Intel®
- Atom™ de cuatro núcleos Z3736F
- 8-pulgadas en diagonal de 10 puntos capacitivos toque MIPI pantalla IPS, resolución de 1280 x 800,
- una relación de aspecto de 16:10 integrada Intel® HD Graphics
- 2GB RAM DDR3L
- WWAN opcional
- 32GB/64GB embedded Multi Media Card
- Ranura para tarjeta microSD, compatible con SDXC y hasta 128 GB
- Traseros de 8MP cámara con enfoque automático de 2 MP con flash, cámara frontal con indicador LED
- 802.11 a/b/g/n dual band conectividad inalámbrica
- Bluetooth® 4.0+ LE (Bluetooth Low Energy) negro
- grafito con pintura de tacto suave

Nota: Ver importantes revelaciones legales para todos los listados de especificaciones en sus respectivas características secciones.

G1

Características

El nombre del producto

Tablet PC HP Pro 408 G1

Sistema operativo

Preinstalado.	- Windows 10 Pro 32* 32* Inicio Windows 10 - Windows 8.1 Pro 32*
Compatible Web	- Windows 10 Pro 32 - Windows 10 Inicio 32 - Windows 8.1 Pro 32 - Windows 8.1 Enterprise 32 - Windows 10 Enterprise 32 *Nota: No todas las funciones están disponibles en todas las ediciones o versiones de Windows. Los sistemas pueden Requieren actualizarse y/o adquirir por separado el hardware, controladores, software o actualización de BIOS para aprovechar al máximo la funcionalidad de Windows. Windows 10 se actualiza automáticamente, que siempre está activada. Se podrán aplicar tarifas de ISP y podrán aplicarse requisitos adicionales a lo largo del tiempo para las actualizaciones. Ver http://www.microsoft.com.

Procesador

Procesador Intel® Atom™ Quad Core* Z3736F (1,33 GHz base/ráfaga de 2,16 GHz en modo Turbo) con gráficos HD Intel® integrados

* Multi-core está diseñado para mejorar el rendimiento de determinados productos de software. No todos los clientes o aplicaciones de software se beneficiarán necesariamente del uso de esta tecnología. La informática de 64 bits en la arquitectura Intel® requiere un sistema informático con un procesador, chipset, BIOS, sistema operativo, controladores de dispositivos y aplicaciones habilitados para la arquitectura Intel® 64. Procesadores w no funciona (incluso en operación de 32 bits) sin una BIOS preparada para la arquitectura Intel® 64. El rendimiento variará dependiendo de las configuraciones de hardware y software. La numeración de Intel no refleja una medida del rendimiento.

Mostrar

Tipo	8 pulgadas de diagonal de pantalla multitáctil capacitiva con ángulo de visión amplio (1280 x 800)*.
Pantalla táctil	Pantalla multitáctil capacitiva
Relación de aspecto	16:10
Rotación autom.	Seleccionable
Material de pantalla	Vidrio de cal sodada
El tamaño de la diagonal	8 pulg.
Ángulos de visión	≥80°
La tasa de refresco	60Hz
Brillo	400 nits (típico)

* Las resoluciones dependen de la capacidad del monitor y la configuración de resolución y profundidad de color



Características

Dispositivo de almacenamiento interno

32GB o 64GB embedded Multi Media Card*

Ranura para tarjeta MicroSD que admite hasta 128 GB**

*Para la unidad de almacenamiento, 1 GB = mil millones de bytes. La capacidad formateada real es inferior. Hasta 5GB de disco de sistema está reservado para el software de recuperación del sistema.

**La tarjeta se vende por separado.

La memoria

Standard

2GB DDR3L (1600 MHz).

N/Communications ETWORKING

Wi-Fi*

802.11 a/b/g/n (2,4 Ghz, 5GHz), banda doble (2x2 MIMO)

WWAN

GSM/GPRS/EDGE de banda: 1/2/4/5/8

La tecnología Bluetooth®

Bluetooth® 4.0 + LE (baja energía Bluetooth®)

* El punto de acceso inalámbrico y el servicio de Internet y no está incluido. Disponibilidad limitada de puntos de acceso inalámbricos públicos.

AUDIO/Multimedia

Audio

(2) Altavoces estéreo (0,7 W cada uno)

(1) micrófono integrado

(1) de 3.5mm para auriculares/micrófono*

Cámaras

Cámara frontal: 2MP, con indicador LED webcam

Cámara trasera: 8MP con flash, enfoque automático

* Los auriculares se venden por separado.

Sensores



Características

Acelerómetro
brújula electrónica
AGPS/GPS, GLONASS (disponible con WWAN opcional) sensor
de luz ambiental
Sensor de efecto Hall
Sensor SAR (disponible con WWAN opcional solamente)

Software

Aplicaciones de Windows® (incluido en Windows 8.1).

Windows 8.1 con Bing para pequeñas tabletas* (con la excepción de China y Japón)*

*Office 365 1 año Personal (1 año de suscripción Personal de Office 365 incluido con Windows 8.1 con Bing 32. No olvide activar dentro de los seis meses a partir de la activación de Windows. Oficina 365 Personal Edition software no puede utilizarse con fines comerciales, organizaciones no lucrativas o actividades generadoras de ingresos).

Internet Explorer® 11
alarmas

El buscador bing para Internet Explorer® 11

Calculadora

La

cámara

de

finanzas

de

escritori

o

Alimentos &

Bebidas Juegos

+ salud ayuda

de Fitness &

Consejos

Mail

mapas

Música

Noticias

Configuraci

ón de la PC

Gente

Fotos Lista

de lectura

del lector

Scan

Skype™

Grabadora de sonidos

Deportes

Almacen

ar vídeos

de viajes

Clima

La seguridad

Firmware de TPM* 1

Multimedia

Adobe Shockwave Player



El software de HP Introducción a Win 8



Características

Descubra HP Touchpoint Manager²

Foto³ Conectado
HP ePrint de HP⁴

HP PageLift

Registro de HP

HP Recovery Manager
de HP Support
Assistant

HP Recovery Disc Creator

HP Papel tapiz

Configuración predeterminada del sistema

para Windows 8 Diagnósticos del sistema

UEFI para Windows 8

Almacenamiento cloud

SkyDrive (incluido en Windows 8.1).

1. Un subconjunto de la especificación 2.0 de TPM versión v0.89 como ejecutado por la plataforma Intel® Trust Technology (PTT).
2. HP Touchpoint Manager requiere una suscripción y soporta Android™, iOS y sistemas operativos Windows y PCs, portátiles, tablets y smartphones de diversos fabricantes. No disponible en todos los países www.hp.com/touchpoint para ver la disponibilidad de la información.
3. Disponibilidad de las funciones varía según el país. Snapfish by HP Mobile App descargar y Snapfish necesita ser miembro. Servicio de internet y no está incluido.
4. Requiere una conexión a Internet para la impresora habilitada para web de HP y HP ePrint cuenta registro (para obtener una lista de las impresoras compatibles, documentos y otros tipos de imágenes y detalles de HP ePrint, consulte www.hp.com/go/businessmobileprinting). dispositivos móviles requieren una conexión a Internet y capacidad de correo electrónico. Puede requerir un punto de acceso inalámbrico. Los planes de datos adquirido por separado o se podrán aplicar tarifas de uso. Los tiempos de impresión y la velocidad de conexión puede variar.

Manejabilidad

HP SoftPak Download Manager (SDM)*

*Descargas gratuitas disponibles en el sitio web de la CMS bajo Herramientas de gestión de hardware HP

<http://www.hp.com/go/clientmanagement>

Power



Características

Fuente de alimentación

10W (5,3 V/2A) nPFC AC adaptador con USB

Batería principal

4800 mAh batería de polímero de litio no retirables

1S1P, 1 celdas, 18.24Wh

La carga de la batería la vida

500 ciclos

Tiempo de espera

Duración variará dependiendo de varios factores, incluyendo la batería, la memoria, la CPU, la CE y el chip de LAN. La capacidad máxima de la batería disminuye de forma natural con el tiempo y el uso.

Reproducción de vídeo

Hasta 10 horas*

Conservación de energía

En espera conectado

*Pruebas de HP utilizando una continua Reproducción de vídeo HD de 720p (1280 x 720) resolución, 150 nits de brillo, el nivel de audio del sistema en un 50%, el reproductor de audio nivel al 100%, jugado desde el almacenamiento local, auriculares conectados, Red inalámbrica desactivada, atenuación automática desactivada. La duración real de la batería variará dependiendo de la configuración y capacidad máxima disminuye de forma natural con el tiempo y el uso.

Peso y dimensiones

Peso

Peso inicial: 376g (.83 lb)*

Dimensiones (W x D x H)

215 x 9 x 140 mm (8,46 x 0,35 x 5,51)*

* El peso y las dimensiones del sistema pueden variar debido a la configuración y las variaciones de fabricación

Puertos y ranuras

Puertos

(1) Micro USB 2.0

(1) Micro-HDMI (conector tipo D)*

(1) Toma de auriculares de 3,5 mm/ **

Ranuras de expansión

Ranura para tarjeta MicroSD*** ampliable hasta 128 GB

* Los cables HDMI® se venden por separado

** Los auriculares se venden por separado.

*** La tarjeta se vende por separado.

En el cuadro

Tablet PC HP Pro 408 G1

- Adaptador de CA de 10W con cable USB Guía de inicio rápido



Características

Servicio Y Soporte

HP Services ofrece 1 año de garantía limitada de opciones dependiendo del país. Garantía limitada de 90 días del software. En las instalaciones y actualizaciones de garantía de servicio también están disponibles. Los Servicios HP Care Pack amplían los contratos de servicio más allá de las garantías estándar. Para elegir el nivel adecuado de servicio para su producto HP, utilice los Servicios HP Care Pack: Herramienta de búsqueda de <http://www.hp.com/go/lookuptool>. servicios HP Care Pack adicionales información por producto se encuentra disponible en: <http://www.hp.com/go/cpc>.

Se aplican ciertas restricciones y exclusiones. Consulte el Centro de Asistencia al cliente de HP para obtener más detalles.

<http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp>



Especificaciones técnicas

La unidad del sistema

Requisitos de alimentación independiente (alimentación de CA)	Tensión nominal de funcionamiento	5,3 V
	Potencia de funcionamiento media	4W
	Potencia de funcionamiento máx.	<10W
La temperatura	Funcionamiento	32° a 122° F (0° a 40° C)
	No operativo	- 4° a 140° F (-20° a 65° C)
Humedad relativa	Funcionamiento	0%~90%
	No operativo	0%~95%
Shock	Funcionamiento	40 G, 2 ms, medio seno
	No operativo	240 g, 2 ms, medio seno
Vibración aleatoria	Funcionamiento	1.043 GRMS
	No operativo	3,5 GRMS
Altitud (no presurizadas)	Funcionamiento	0~15000 ft

Estándar de la industria planificada

Certificaciones

ENERGY STAR® 6.0
EPEAT® Gold *

Baja concentración de halógenos **

China CECP y sepa la
certificación PC Green de
Japón

Compatible con los RAEE (Residuos de Aparatos Eléctricos y
Electrónicos), compatible con RoHS 2
Compatible con E-Standby

Certificación HDMI

California Cargador de batería compatible con eficiencia energética
MSH/obl.

Alemania OBL

Australia S002

UL Class1/Div2, CSA y cUL

Batería TISI certificación de Tailandia

EFB Clase 1 requisitos (Hacer160.21/ED-14)

* EPEAT® registrado si es aplicable. Registro EPEAT varía según el país. www.epeat.net Para ver el estado de registro por país.

** fuentes de alimentación externas, cables de alimentación, cables y periféricos no son de baja emisión de halógenos. Servicio de piezas obtenidas tras la compra no podrá ser de baja emisión de halógenos.

Almacenamiento y DRIVES



Especificaciones técnicas

Almacenamiento interno

64 GB.	Peso de la unidad	0.307g	
Embedded	Capacidad	64 GB.	
Multi	Altura	Hasta 13 mm	
Media	Ancho	Hasta 11,5 mm	
Card	Interface	Bus MultiMediaCard	
(opcional)	Rendimiento	Lectura secuencial máxima	Escritura secuencial máxima
		150 MB/s	72 MB/s
32 GB	Peso de la unidad	0.252g	
Embedded	Capacidad	32 GB	
Multi	Altura	Hasta 13 mm	
Media	Ancho	Hasta 11,5 mm	
Card	Interface	Bus MultiMediaCard	
(opcional)	Rendimiento	Lectura secuencial máxima	Escritura secuencial máxima
		150 MB/s	72 MB/s

Los datos ambientales

El identificador ecológico de las certificaciones y declaraciones

Este producto ha recibido o está en proceso de certificación para las siguientes homologaciones y puede ser etiquetada con una o más de estas marcas:

- IT Eco Declaration
- Nosotros ENERGY STAR®

EPEAT Gold, registrado en los Estados Unidos. <http://www.epeat.net> Para ver el estado de registro en su país.

Configuración del sistema

La configuración utilizada para el consumo de energía y ruido declarado Datos de emisiones para el modelo de portátil se basa en una "Normalmente configurado

Ordenador portátil" .

El consumo de energía

(de acuerdo con la estadounidense Energy

Método de prueba STAR®)

	115 VCA, 60 Hz	230 VCA, 50 Hz	100 VCA, 60 Hz
Funcionamiento normal (reposo corto)	4,88 W	4,91 W	4,81 W
Funcionamiento normal (reposo largo)	1,58 W	1,60 W	1,55
W dormir	1,58 W	1,60 W	1,55
W			
Off	0,11 W	0,11 W	0,11 W

Nota: los datos de eficiencia energética enumeradas es compatible con ENERGY STAR®

Si el producto ofrecido dentro de la familia modelo. Los equipos HP marcados con el logotipo ENERGY STAR® son compatibles con las normas de la Agencia de Protección Ambiental de Estados Unidos (EPA) especificaciones ENERGY STAR® para los equipos. Si un modelo de familia no ofrecen configuraciones compatibles con ENERGY STAR® y, a continuación, se enumeran los datos de eficiencia energética para un PC generalmente configurados con una unidad de disco duro, una fuente de alimentación de alta eficiencia y un sistema operativo Microsoft Windows®.

Disipación de calor*

	115 VCA, 60 Hz	230 VCA, 50 Hz	100 VCA, 60
Funcionamiento normal (reposo corto)	17 BTU/hr	17 BTU/hr	16 BTU/hr
Funcionamiento normal (reposo largo)	5 BTU/hr	5 BTU/hr	5 BTU/hr
El sueño	5 BTU/hr	5 BTU/hr	5 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr

*NOTA: La disipación de calor se calcula según la medición de vatios, suponiendo



QuickSpecs

**Emisiones de ruido
declaradas
(de conformidad con el
ISO 7779 e ISO 9296)**

El nivel de servicio es alcanzado por una hora.
Potencia de
sonido
(L_{WAd}, bels)

HP Pro Tablet 408 G1

Presión de sonido
(L_{pAm}, decibelios)



Technical Specifications

Configura normalmente - Inactivo	0.6	6
Disco fijo - escrituras aleatorias	0.7	6
La longevidad y la actualización Este producto puede ser actualizado, posiblemente extender su vida útil por varios Años. Funciones ampliables y/o componentes contenidos en el producto pueden Incluir:		

Baterías

Las piezas de repuesto están disponibles durante todo el período de garantía, o hasta "5" años después del final de la producción.
Esta batería(s) en este producto cumple con la directiva de la UE 2006/66/EC

Las baterías usadas en los productos no
contienen mercurio: mayor1ppm de cadmio
en peso superior a 20ppm de peso

El tamaño de la batería: CR2032
(coin cell) Tipo de batería: Litio

Información adicional
sustancias peligrosas

Tamaño: batería de 6 celdas de batería de iones de litio de alta capacidad (8 celdas opcional disponible)

- Este producto está en conformidad con las restricciones de Sustancias (RoHS) - Directiva 2011/65/CE.
- Este producto HP está diseñada para cumplir con los Residuos de Aparatos Eléctricos y Electrónicos (RAEE) - Directiva 2002/96/CE.
- Este producto está en conformidad con la proposición 65 de California (Estado de California; Agua potable y tóxicos, Ley de 1986).
- Este producto está en conformidad con el estándar IEEE 1680 (EPEAT®) estándar en el nivel Oro, véase www.epeat.net
- Las piezas de plástico que pesan más de 25 gramos utilizados en el producto están marcados por la norma ISO11469 E ISO1043.
- Este producto contiene un 0 % de plástico reciclado post-consumo (por peso).
- Este producto es capaz de reciclar el 97,1 % cuando eliminados adecuadamente al final de su vida útil.

Materiales de embalaje

Externos:	Papel/Paper	726 g
Interno:	Plástico/Polietileno de baja densidad	7,8 g

El material de embalaje de plástico contiene al menos un 60 % de material reciclado.
Los materiales de embalaje de papel corrugado contiene al menos un 80 % de reciclado
Contenido.

Uso de material

Este producto no contiene ninguna de las siguientes sustancias en exceso de Los límites reglamentarios (consulte las Especificaciones generales de HP para el medio ambiente en <http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf>):

- Asbesto
- Ciertos colorantes azoicos

Technical Specifications

- Algunos retardantes de llama bromados- no pueden ser utilizados como retardantes de llama en plásticos
- Cadmio
- Los hidrocarburos
- clorados parafinas
- cloradas formaldehído
-
-

- Difenilo halogenados Methanes
- carbonatos y sulfatos de plomo
- Plomo y compuestos de plomo
- Las pilas de óxido mercúrico
- Acabados de níquel - no debe ser utilizado en la superficie externa diseñado para ser manejado con frecuencia o realizados por el usuario.
- Las sustancias que agotan la capa de ozono Los bifenilos polibromados (PBB),
- bifenilos polibromados éteres (PBEBs)
- óxidos de bifenilo polibromado (PBBOs)
- Bifenilos Policlorados (PCB),
- policloroterfenilos (PCT)
- El Cloruro de polivinilo (PVC) - excepto para alambres y cables, y ciertos embalaje minorista se ha retirado voluntariamente de la mayoría de las aplicaciones. Las sustancias radiactivas
- De tributil estaño (TBT), trifenilo Tin (TPT), el óxido de tributilo de estaño (absorben en gran medida el TBTO)

Uso de embalaje

HP sigue estas directrices para reducir el impacto medioambiental del producto Embalaje:

- Eliminar el uso de metales pesados como el plomo, cromo, mercurio y cadmio en materiales de embalaje.
- Eliminar el uso de sustancias que agotan la capa de ozono (SAO) en materiales de embalaje.
- Diseñar materiales de embalaje para facilitar el desmontaje.
- Maximizar el uso de materiales reciclados materiales en materiales de embalaje.
- Utilizar fácilmente los envases reciclables materiales tales como papel y material corrugado.
- Reducir el tamaño y el peso de los paquetes para mejorar la eficiencia del combustible de transporte.
- Materiales de embalaje de plástico están marcadas de acuerdo a la norma ISO 11469 y las normas DIN 6120.

Gestión del fin de la vida útil y el reciclaje

Hewlett-Packard ofrece fin-de-vida de devolución y reciclaje de productos HP programas en diversas áreas geográficas. Para reciclar el producto, por favor vaya a: <http://www.hp.com/go/reuse-recycle> o póngase en contacto con su oficina de ventas de HP. Los productos devueltos a HP serán reciclados, recuperados o eliminados de manera responsable.

La directiva WEEE de la UE (2002/95/CE) exige a los fabricantes para proporcionar información acerca del tratamiento para cada tipo de producto para uso de instalaciones de tratamiento. Esta información (instrucciones de desmontaje de productos) es publicada en el sitio web de Hewlett Packard en: <http://www.hp.com/go/recyclers>. Estas instrucciones pueden ser utilizadas por los recicladores y otras instalaciones de tratamiento de RAEE, así como HP clientes OEM que integrar y re-vender equipos de HP.

Hewlett-Packard información medioambiental corporativa

Para obtener más información sobre el compromiso de HP con el medio ambiente:

Informe de Ciudadanía global

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



Technical Specifications

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

Certificados ISO

14001: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf

Y

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

País de origen

China

Tipo	Descripción	Nº de pieza
Casos / protectores de pantalla	HP Pro Tablet 408 Teclado Bluetooth Caso	K8P76AA
	HP Pro Tablet 408 cubierta inteligente	L0V30AA
	HP Pro Tablet 408 resistente	L0V31AA
	Funda Tablet PC HP Pro 8	L0W35AA
/ Adaptadores de alimentación		HP Micro
	USB a USB / Ethernet Adapter	K1V16AA
	HP Micro adaptador USB a Ethernet	K2P84AA
	HP Adaptador USB a Micro USB	K2P83AA
	Adaptador de pantalla inalámbrica HP	J1V25AA
	HP Micro HDMI a HDMI/Adaptador VGA	K8E31AA
Entrada / salida	HP Pro Tablet 408 lápiz activo	K8P73AA

Copyright © 2015 Hewlett-Packard Development Company, L.P.

Microsoft y Windows son marcas comerciales registradas del grupo de compañías de Microsoft. Intel e Intel Atom son marcas comerciales de Intel Corporation en los EE.UU. y/o en otros países. Bluetooth es una marca registrada de su propietario y utilizada por Hewlett-Packard Company bajo licencia.

La información contenida en este documento está sujeta a cambios sin previo aviso. Las únicas garantías para los productos HP se establecen en las declaraciones de garantía limitada expresas que acompañan a dichos productos. Ninguna información contenida en este documento debe interpretarse como una garantía adicional. HP no será responsable de los errores técnicos o editoriales ni de las omisiones contenidas en el presente documento.



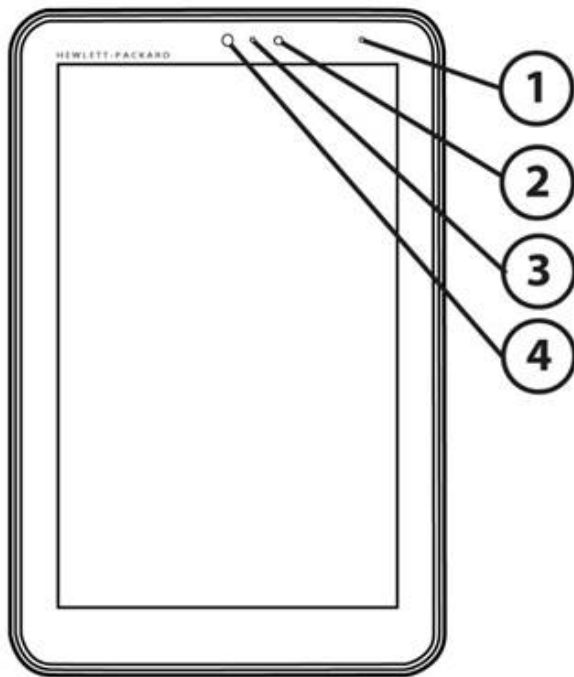
Change Log

Fecha de modificación:	Historia l de la		Descripción del cambio:
	A partir de v1 V2		
El 24 de febrero 2015	A partir de v2 V3	Además	Agregó "WWAN opcional" en "De un vistazo" Agregado en red y comunicaciones WWAN.
Mayo 8, 2015	A partir de v3 a	Además	Se ha añadido la nueva especificación de "vida" de carga de la batería bajo
Julio 28, 2015	A partir de v4 a	Cambiado	Cambiar SO para cargar Windows 10
Marzo 01, 2016	A partir de v5 V6	Eliminado	Profundidad de color en la sección Pantalla



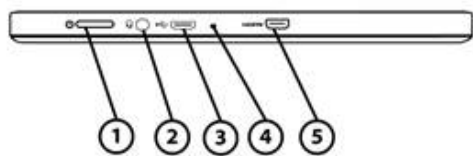
Overview

HP Pro Tablet 408 G1



Front

- | | |
|---------------------------|----------------------------|
| 1. LED Charging Indicator | 3. Webcam LED indicator |
| 2. Ambient Light Sensor | 4. 2MP front-facing camera |



Top

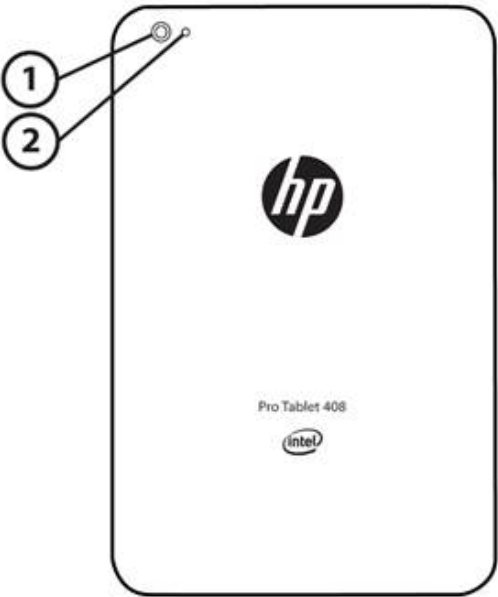
- | |
|------------------------------------|
| 1. Power button |
| 2. 3.5mm headphone/microphone jack |
| 3. Micro USB 2.0 |
| 4. Integrated microphone |
| 5. Micro-HDMI (type-D connector) |



Bottom

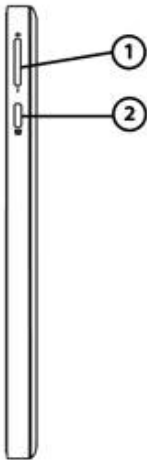
- | |
|----------------|
| 1. Speaker (L) |
| 2. Speaker (R) |

Overview



Back

1. 8MP rear-facing camera
2. Camera flash



Side

1. Volume up and down button
2. Windows button

AT A GLANCE



Overview

- Windows Pro 8.1 (32-bit) and Windows 10 operating system
- Intel® Atom™ Quad-Core Processor Z3736F
- 8-inch diagonal capacitive 10-point touch MIPI IPS display, 1280 x 800 resolution, 16:10 aspect ratio
- Integrated Intel® HD Graphics
- 2GB DDR3L RAM
- Optional WWAN
- 32GB/64GB embedded Multi Media Card
- MicroSD card slot, supports SDXC and up to 128GB
- 8MP rear-facing auto-focus camera with flash, 2MP front-facing camera with LED indicator
- 802.11 a/b/g/n dual band wireless connectivity
- Bluetooth® 4.0+ LE (Bluetooth Low Energy)
- Graphite Black with Soft Touch paint

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



Features

Product Name

HP Pro Tablet 408 G1

Operating System

- Preinstalled**
- Windows 10 Pro 32*
 - Windows 10 Home 32*
 - Windows 8.1 Pro 32*
- Web Supported**
- Windows 10 Pro 32
 - Windows 10 Home 32
 - Windows 8.1 Pro 32
 - Windows 8.1 Enterprise 32
 - Windows 10 Enterprise 32

*Note: 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.microsoft.com>.

Processor

Intel® Atom™ Quad Core Processor* Z3736F (1.33 GHz base/2.16 GHz burst in Turbo mode) with Integrated Intel® HD Graphics

* Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel® 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel's numbering is not a measurement of higher performance.

Display

- Type**
- 8-inch diagonal capacitive multi-touch display with wide viewing angle (1280 x 800)*
- Touchscreen**
- Capacitive multi-touch screen
- Aspect Ratio**
- 16:10
- Auto rotate**
- Selectable
- Screen material**
- Soda lime glass
- Diagonal Size**
- 8 inch
- Viewing Angles**
- ≥80°
- Refresh Rate**
- 60Hz
- Brightness**
- 400 nits (typical)

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

Internal Storage



Features

Internal Storage Device

32GB or 64GB embedded Multi Media Card*
MicroSD card slot supporting up to 128GB**

*For storage drive, GB = 1 billion bytes. Actual formatted capacity is less. Up to 5GB of system disk is reserved for system recovery software.

**Card sold separately

Memory

Standard

2GB DDR3L (1600 MHz)

NETWORKING/COMMUNICATIONS

Wi-Fi*

802.11 a/b/g/n (2.4GHz, 5GHz), dual band (2x2) MIMO

WWAN

GSM/GPRS/EDGE: Band 1/2/4/5/8

Bluetooth®

Bluetooth® 4.0 + LE (Bluetooth® Low Energy)

* Wireless access point and Internet service required and not included. Availability of public wireless access points limited.

AUDIO/MULTIMEDIA

Audio

(2) Stereo Speakers (0.7W each)

(1) Integrated microphone

(1) 3.5mm headphone/microphone jack*

Cameras

Front Camera: 2MP, with webcam indicator LED

Rear Camera: 8MP auto-focus with Flash

* Headphones are sold separately

Sensors



Features

- Accelerometer
- e-Compass
- GPS/AGPS, GLONASS (available with WWAN option only)
- Ambient light sensor
- Hall-effect sensor
- SAR sensor (available with WWAN option only)

Software

Windows® Apps (included in Windows 8.1)

Windows 8.1 with Bing For Small Tablets* (with the exception of China and Japan)*

*Office 365 Personal 1-year (1- Year Office 365 Personal subscription included with Windows 8.1 with Bing 32. Don't forget to activate within six months of Windows activation. Office 365 Personal edition software may not be used for commercial, non-profit or revenue-generating activities).

Internet Explorer® 11
Alarms

Bing Search for Internet Explorer® 11
Calculator
Camera
Desktop
Finance
Food & Drink
Games
Health + Fitness
Help & Tips
Mail
Maps
Music
News
PC Settings
People
Photos
Reader
Reading List
Scan
Skype™
Sound Recorder
Sports
Store
Travel
Video
Weather

Security

Firmware TPM* 1

Multimedia

Adobe Shockwave Player

HP Software

Getting Started with Win 8



Features

Discover HP Touchpoint Manager²

HP Connected Photo³
HP ePrint⁴

HP PageLift

HP Registration

HP Recovery Manager
HP Support Assistant

HP Recovery Disc Creator

HP Wallpaper

System Default Settings for Windows 8

UEFI System Diagnostics for Windows 8

Cloud Storage

SkyDrive (included in Windows 8.1)

1. A subset of the TPM 2.0 specification version v0.89 as implemented by Intel® Platform Trust Technology (PTT).
2. HP Touchpoint Manager requires a subscription and supports Android™, iOS and Windows operating systems and PCs, notebooks, tablets and smartphones from various manufacturers. Not available in all countries see www.hp.com/touchpoint for availability information.
3. Availability of features varies by country. Snapfish by HP mobile app download and Snapfish membership required. Internet service required and not included.
4. 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/businessmobileprinting). Mobile devices require Internet connection and email capability. May require wireless access point. Separately purchased data plans or usage fees may apply. Print times and connection speeds may vary.

Manageability

HP SoftPaq Download Manager (SDM)*

*Free downloads available at the CMS website under HP Hardware Management tools

<http://www.hp.com/go/clientmanagement>

POWER



Features

Power Supply

10W (5.3V/2A) nPFC AC adapter with USB

Primary Battery

4800 mAh lithium-polymer battery Non-Removable

1S1P, 1Cell, 18.24Wh

Battery Charging Life

500 cycles

Standby Time

Standby life will vary depending on various factors including battery, Memory, CPU, EC and LAN chip. The maximum capacity of the battery will naturally decrease with time and usage.

Video Playback

Up to 10 hours*

Power Conservation

Connected Standby

*Tested by HP using continuous HD video playback, 720p (1280x720) resolution, 150 nits brightness, system audio level at 50%, player audio level at 100%, played from local storage, headphone attached, wireless off, auto dimming off. Actual battery life will vary depending on configuration and maximum capacity will naturally decrease with time and usage.

Weight & Dimensions

Weight

Starting weight: 376g (.83 lb)*

Dimensions (w x d x h)

215 x 9 x 140 mm (8.46 x 0.35 x 5.51 in)*

* Weight and system dimensions may fluctuate due to configuration and manufacturing variances

Ports/Slots

Ports

(1) Micro USB 2.0

(1) Micro-HDMI (type-D connector)*

(1) 3.5mm headphone/ jack **

Expansion Slots

MicroSD card slot*** expandable up to 128GB

* HDMI cables sold separately

** Headphones are sold separately

*** Card Sold separately

In the Box

HP Pro Tablet 408 G1

AC Adapter - 10W with USB cable

Quick Start Guide



Features

SERVICE AND SUPPORT

HP Services offers limited 1-year warranty options depending on country. 90-day limited warranty on software. On-site service and warranty upgrades are also available. HP Care Pack Services extend service contracts beyond the standard 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/lookuptool>. Additional HP Care Pack Services information by product is available at: <http://www.hp.com/go/cpc>.

Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. <http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp>

Technical Specifications

System Unit

Stand-Alone Power Requirements (AC Power)	Nominal Operating Voltage	5.3V
	Average Operating Power	4W
	Max Operating Power	<10W
Temperature	Operating	32° to 122° F (0° to 40° C)
	Non-operating	- 4° to 140° F (-20° to 65° C)
Relative Humidity	Operating	0%~90%
	Non-operating	0%~95%
Shock	Operating	40 G, 2 ms, half-sine
	Non-operating	240 G, 2 ms, half-sine
Random Vibration	Operating	1.043 grms
	Non-operating	3.5 grms
Altitude (unpressurized)	Operating	0~15000 ft
Planned Industry Standard Certifications	ENERGY STAR® 6.0	
	EPEAT® Gold *	
	Low Halogen **	
	China CECP and SEPA	
	Japan PC Green label	
	WEEE compliant (Waste Electric and Electronic Equipment)	
	RoHS 2 Compliant	
	E-Standby compliant	
	HDMI Certification	
	California Battery Charger Energy Efficiency compliant	
	MSH/OBL	
	German OBL	
	Australia S002	
UL Class1/Div2, CSA, and cUL		
TISI Battery certification for Thailand		
EFB Class 1 requirements (DO160.21/ED-14)		
* EPEAT® registered where applicable. EPEAT registration varies by country. See www.epeat.net for registration status by country.		
** External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.		

STORAGE AND DRIVES



Technical Specifications

Internal Storage			
64 GB embedded Multi Media Card (optional)	Drive Weight	0.307g	
	Capacity	64 GB	
	Height	Up to 13mm	
	Width	Up to 11.5mm	
	Interface	MultiMediaCard Bus	
32 GB embedded Multi Media Card (optional)	Performance	Maximum Sequential Read	Maximum Sequential Write
		150 MB/s	72 MB/s
	Drive Weight	0.252g	
	Capacity	32 GB	
	Height	Up to 13mm	
	Width	Up to 11.5mm	
	Interface	MultiMediaCard Bus	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		150 MB/s	72 MB/s

Environmental Data

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:		
	• IT ECO declaration • US ENERGY STAR®		

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)	4.88 W	4.91 W	4.81 W
Normal Operation (Long idle)	1.58 W	1.60 W	1.55 W
Sleep	1.58 W	1.60 W	1.55 W
Off	0.11 W	0.11 W	0.11 W

Note: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	17 BTU/hr	17 BTU/hr	16 BTU/hr
Normal Operation (Long idle)	5 BTU/hr	5 BTU/hr	5 BTU/hr
Sleep	5 BTU/hr	5 BTU/hr	5 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)	Sound Power	Sound Pressure
	(L _{WAd} , bels)	(L _{pAm} , decibels)



Technical Specifications

Typically Configured - Idle	0.6	6
Fixed Disk - Random writes	0.7	6
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:		

Batteries

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 the1ppm by weight
- Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)

Battery type: Lithium

Additional Information

- Battery size: 6-cell high capacity Lithium-Ion battery (optional 8 cell available)
- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
 - This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.
 - This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
 - This product is in compliance with the IEEE 1680 (EPEAT®) standard at the gold level, see www.epeat.net
 - Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
 - This product contains 0 % post-consumer recycled plastic (by wt.)
 - This product is 97.1 % recycle-able when properly disposed of at end of life.

Packaging Materials

External: PAPER/Paper 726 g
Internal: PLASTIC/Polyethylene low density 7.8 g
The plastic packaging material contains at least 60 % 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
-
-



Technical Specifications

- 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)

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



Technical Specifications

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

ISO 14001 certificates:

[http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/](http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.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 #
Cases / Screen Protectors	HP Pro Tablet 408 Bluetooth Keyboard Case	K8P76AA
	HP Pro Tablet 408 Smart Cover	L0V30AA
	HP Pro Tablet 408 Rugged Case	L0V31AA
	HP Pro 8 Tablet Sleeve	L0W35AA
Power / Adapters	HP Micro USB to USB / Ethernet Adapter	K1V16AA
	HP Micro USB to Ethernet Adapter	K2P84AA
	HP Micro USB to USB Adapter	K2P83AA
	HP Wireless Display Adapter	J1V25AA
	HP Micro HDMI to HDMI/VGA Adapter	K8E31AA
Input / Output	HP Pro Tablet 408 Active Pen	K8P73AA

Copyright © 2015 Hewlett-Packard Development Company, L.P.

Microsoft and Windows are U.S. registered trademarks of the Microsoft group of companies. Intel and Intel Atom are trademarks of Intel Corporation in the U.S. and/or other countries. Bluetooth is a registered trademark of its proprietor and used by Hewlett-Packard Company under license.

The information contained herein is subject to change without notice.. 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.



Change Log

Date of change:	Version History:		Description of change:
	From v1 to v2		
February 24, 2015	From v2 to v3	Addition	Added "Optional WWAN" under "At a glance" Added WWAN under Network and communications
May 8,2015	From v3 to v4	Addition	Added the new spec "Battery Charging life" under "Power"
July 28, 2015	From v4 to v5	Changed	Changed OS for Windows 10 upload
March 01, 2016	From v5 to v6	Removed	Color Depth under display section



Datasheet

HP Pro Tablet 408 Rugged Case



Help protect your tablet from bumps with the stylish and sturdy HP Pro Tablet 408 Rugged Case.



Designed for function

- Simply insert the tablet into the case and attach your pen to the elastic loop. Keep all of your tablet's buttons, controls, cameras, and connectors easily accessible with a case designed specifically for your HP Pro Tablet 408.

Easy to use

- Comfortably carry the case and tablet with the convenient adjustable lanyard.

World-class support

- Rest easy with a one-year limited warranty.

HP Pro Tablet 408 Rugged Case



Compatibility	HP Pro Tablet 408 G1
Dimensions	Out of Package: 225 x 150 x 18 mm Dimensions (case or master carton, metric): 285 x 300 x 215 mm Case or master carton quantity: 10 Count of cartons per pallet layer: 10 Count of layers in pallet: 10 Quantity per Pallet: 1000 Packed: 265 x 180 x 27 mm
Weight	Out of Package: 140 g
Warranty	One-year limited warranty.
Additional information	P/N: LOV31AA UPC/EAN code: 889296036197
Country of Origin	China
What's in the box	HP Pro Tablet 408 Rugged Case; Documentation; Lanyard Strap; Warranty

¹ The case is only compatible with the HP Pro Tablet 408, sold separately.

The product could differ from the images shown. © 2015 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. Specific features may vary from model to model. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

4AA5-7863EEE, 04/15





HP Pro Tablet 408 Rugged Case

Ayudar a proteger su tableta de golpes con la tableta de 408 HP Pro Caso rugoso elegante y robusto.



Diseñado para la función

- Basta con insertar la tableta en el caso y adjuntar su pluma a la cinta elástica. Mantenga todos los botones de la tableta, controles, cámaras y conectores de fácil acceso, con una carcasa diseñada específicamente para HP Pro Tablet 408.

Fácil de usar

- Cómodamente llevar el caso y la tableta con el cordón ajustable conveniente.

soporte de clase mundial

- Estar tranquilo con una garantía limitada de un año.

HP Pro Tablet 408 Rugged Case



Dimensiones	Fuera de paquete: 225 x 150 x 18 mm Dimensiones (de cajas de cartón, métrica): 285 x 300 x 215 mm De cajas de cartón Cantidad: 10 Conde de cajas por capa de palet: 10 Conde de capas en palet: 10 Cantidad por palet: 1000 Embalado: 265 x 180 x 27 mm
Peso	Fuera de paquete: 140 g
Garantía	Garantía limitada de un año.
Información Adicional	P / N: L0V31AA UPC / EAN: 889296036197
País de origen	China
Qué hay en la caja	HP 408 Pro Caso resistente de la tableta; Documentación; Correa de la cinta; Garantía

¹El caso sólo es compatible con la
fami e HP Pro Tablet 408, se vende por separado.

El producto puede diferir de las imágenes mostradas. © 2015 Hewlett-Packard Development Company, L. P. La información contenida en este documento está sujeta a cambios sin previo aviso. Las características específicas pueden variar de un modelo a otro. Las únicas garantías de los productos y servicios de HP se establecen en las declaraciones de garantía expresas que acompañan a dichos productos y servicios. Nada en este documento debe interpretarse como una garantía adicional. HP no será responsable de los errores u omisiones técnicos o editoriales aquí contenidos.

4AA5-7863EEE, 04/15



Ficha técnica

HP Pro Tablet 408 Bluetooth Keyboard Case



Obtenga la máxima productividad en sus viajes, disfrute de una experiencia completa con su portátil y ayude a proteger su tablet HP Pro 408 G1 con la funda para teclado Bluetooth para tablet HP Pro 408 elegante y duradera, una funda y un teclado con baterías en una misma estructura que se pliega hacia fuera, para que pueda ponerse a trabajar rápidamente.



Fácil de usar

- Inserte su tablet en la funda para aumentar la productividad con un teclado Bluetooth® con todas las funciones que facilitan la entrada de datos y la creación de contenidos. Cuando quiera trabajar sin el teclado, el tablet se desliza fácilmente fuera de la funda.

Siéntase cómodo

- Abra la funda en un ángulo de visión ideal para interactuar más fácilmente con la pantalla táctil o visualice la pantalla mientras utiliza el teclado.

Asistencia de primera

- Tenga la tranquilidad de un año de garantía limitada.

HP Pro Tablet 408 Bluetooth Keyboard Case



Compatibilidad	Tablet HP Pro 408 G1
Dimensiones	Sin embalaje: 221 x 153 x 9,5 mm Dimensiones (maletín o caja principal, métrica): 195 x 290 x 220 mm Cantidad de cajas o cajas de cartón modelo: 5 Número de cajas de cartón por capa en pallet: 16 Número de capas en pallet: 8 Cantidad por pallet: 640 Empaquetado: 283 x 196 x 36 mm
Peso	Sin embalaje: 117 g
Garantía	Un año de garantía limitada.
Información adicional	P/N: K8P76AA UPC/EAN code: 888793897836
País de origen	China
Contenido de la caja	Funda para teclado Bluetooth de tablet HP Pro 408; Cable de carga micro USB; Documentación

El producto puede diferir de las imágenes que se muestran. © 2015 Hewlett-Packard Development Company, L.P. La información que contiene este documento está sujeta a cambios sin previo aviso. Las funciones específicas puede variar según el modelo. Las únicas garantías de los productos y servicios HP son las indicadas en las declaraciones expresas de garantía que acompañan a tales productos y servicios. Nada de lo aquí expuesto debe interpretarse como una garantía adicional. HP no se responsabiliza de los errores u omisiones de carácter técnico o editorial que puedan existir en este documento.