

SERRA, 04 DE SETEMBRO DE 2019

À
EMPRESA BRASILEIRA DE ADMINISTRAÇÃO DE
PETRÓLEO E GAS NATURAL S.A. – PRÉ-SAL PETRÓLEO
S.A. - PPSA
PREGÃO ELETRÔNICO 00013/2019
ABERTURA: 04/09/2019 ÀS 10H00MIN.

PROPOSTA DE PREÇO

PREZADOS SENHORES:

TENDO EXAMINADO MINUCIOSAMENTE AS NORMAS ESPECÍFICAS DO PROCESSO LICITATÓRIO ACIMA TENDO COMO OBJETO A AQUISIÇÃO DE 12 (DOZE) COMPUTADORES TIPO ESTAÇÃO DE TRABALHO (WORKSTATION) E APÓS TERMOS TOMADO CONHECIMENTO DE TODAS AS CONDIÇÕES LÁ ESTABELECIDAS, PASSAMOS A FORMULAR A SEGUINTE PROPOSTA:

1. PROPOSMOS FORNECER, SOB NOSSA INTEGRAL RESPONSABILIDADE, OS EQUIPAMENTOS, OBJETO DO REFERIDO CERTAME, CONFORME A TABELA ABAIXO:

ESPECIFICAÇÃO	QTD	VALOR UNITÁRIO (INCLUINDO DIFERENCIAL DE ICMS)	VALOR DO LANCE COMPRASNET VENCEDOR (INCLUINDO DIFERENCIAL DE ICMS)	ALÍQUOTA DE ICMS (INTERESTADUAL) (%)	VALOR UNITÁRIO P/ CONTRATO (R\$) (ABATIDO O DIFERENCIAL DE ALÍQUOTA DE ICMS)	VALOR TOTAL P/ CONTRATO (R\$) (ABATIDO O DIFERENCIAL DE ALÍQUOTA DE ICMS)	NCM
MARCA: HP INC MODELO: HP Z8 G4, 2x HP Z27n G2 DEMAIS CARACTERÍSTICAS CONFORME EDITAL.	12	R\$ 91.779,90 (noventa e um mil, setecentos e setenta e nove mil Reais e noventa centavos.)	R\$ 1.101.358,80 (hum milhão, cento e um mil, trezentos e cinquenta e oito Reais e oitenta centavos)	6	R\$ 86.273,10 (oitenta e seis mil, duzentos e setenta e três Reais e dez centavos.)	R\$ 1.035.277,20 (hum milhão, trinta e cinco mil, duzentos e setenta e sete Reais e vinte centavos)	84715010
PREÇO GLOBAL PROPOSTO DO PREGÃO			R\$ 1.101.358,80 (hum milhão, cento e um mil, trezentos e cinquenta e oito Reais e oitenta centavos)				
PREÇO GLOBAL FINAL A SER CONTRATADO						R\$ 1.035.277,20 (hum milhão, trinta e cinco mil, duzentos e setenta e sete	



		Reais e vinte centavos)	
INFORMAÇÕES SOBRE ICMS			
INFORMAR BASE LEGAL PARA TRIBUTAÇÃO POR SUBSTITUIÇÃO TRIBUTÁRIA (QUANDO HOUVER)		Não se aplica	
INFORMAR BASE LEGAL PARA TRIBUTAÇÃO REDUZIDA OU ISENÇÃO DE ICMS (QUANDO HOUVER)		Não se aplica	

2. **O VALOR TOTAL DA PROPOSTA É DE R\$ 1.101.358,80 (hum milhão, cento e um mil, trezentos e cinquenta e oito Reais e oitenta centavos)**
3. NOS PREÇOS INDICADOS ACIMA ESTÃO INCLUÍDOS, ALÉM DO FORNECIMENTO DO PRODUTO, TODOS OS DEMAIS CUSTOS COM MÃO DE OBRA, SALÁRIOS, BENEFÍCIOS, ENCARGOS DIRETOS E INDIRETOS, TRIBUTOS (QUANDO APLICÁVEL) E SEUS REFLEXOS DE SUBSTITUIÇÃO TRIBUTÁRIA INCLUÍDAS NO REGIME POR CONTA DE PROTOCOLOS E CONVÊNIOS ICMS, ALÉM DE FRETE, GARANTIA E DEMAIS CONTRIBUIÇÕES PERTINENTES. O PREÇO INDICADO JÁ CONTEMPLA QUAISQUER DESCONTOS DO VALOR APURADO, INCLUSIVE PARA ICMS/DIFAL NOS ESTADOS BENEFICIADOS COM ESTA DISPENSA. DECLARAMOS QUE CONHECEMOS A LEGISLAÇÃO DE REGÊNCIA DESTA LICITAÇÃO E QUE OS SERVIÇOS SERÃO PRESTADOS DE ACORDO COM AS CONDIÇÕES ESTABELECIDAS NESTE EDITAL, O QUE CONHECEMOS E ACEITAMOS EM TODOS OS SEUS TERMOS, INCLUSIVE QUANTO AO PAGAMENTO E OUTROS.
4. NO PREÇO FOI CONSIDERADO A ALIQUOTA INTERNA DO ICMS DO ESTADO DO RIO DE JANEIRO.
5. DECLARAMOS, TAMBÉM, QUE NENHUM DIREITO A INDENIZAÇÃO OU REEMBOLSO DE QUAISQUER DESPESAS NOS SERÁ DEVIDO, CASO A NOSSA PROPOSTA NÃO SEJA ACEITA PELA **EMPRESA BRASILEIRA DE ADMINISTRAÇÃO DE PETRÓLEO E GAS NATURAL S.A. – PRÉ-SAL PETRÓLEO S.A. - PPSA** SEJA QUAL FOR O MOTIVO.
6. A PRESENTE PROPOSTA É VALIDA POR **60 (SESSENTA) DIAS**, A CONTAR DA DATA ESTABELECIDA PARA A SUA ABERTURA.
7. OS PAGAMENTOS SERÃO REALIZADOS ATÉ **15 (QUINZE) DIAS** APÓS A EMISSÃO DO TERMO DE RECEBIMENTO DEFINITIVO ATRAVÉS DE BOLETO OU CREDITADOS NA **CONTA CORRENTE Nº 63207, AGÊNCIA Nº 2414-7 NO BANCO DO BRASIL S/A, CÓDIGO 001.**
8. O PROCURADO DA EMPRESA, CUJO CNPJ É **03.619.767/0005-15**, QUE ASSINARÁ A ATA DE REGISTRO DE PREÇO OU CONTRATO, É O **SR. RODRIGO DO AMARAL RISSIO** PORTADOR DO **CPF 220.807.218-95** E **RG 27.954.969-6 SSP/SP**;
9. GARANTIA: **36 (TRINTA E SEIS) MESES** ONSITE CONFORME EDITAL;
10. VALORES EXPRESSOS EM REAIS
11. PRAZO DE ENTREGA: CONFORME EDITAL ATÉ **60 (SETENTA) DIAS**, APÓS A DATA DE ASSINATURA DO CONTRATO E/OU RECEBIMENTO DO EMPENHO;
12. LINKS COM INFORMAÇÕES COMPLEMENTARES:
HP Z8 G4: <https://support.hp.com/br-pt/product/hp-z8-g4-workstation/16449803>
HP Z27N G2: <https://support.hp.com/br-pt/product/hp-z27n-g2-27-inch-display/18007179>

DADOS DA LICITANTE / CONTRATAÇÃO:

TORINO INFORMATICA LTDA
CNPJ 03.619.767/0005-15
IE: 083.327.90-8
IM: 4675890
AV. 600, SN – QUADRA 15 – MODULO 10 – SETOR INDUSTRIAL – TIMS
SERRA – ES – CEP 29.161-419



Torino Informática Ltda.

CNPJ 03.619.767/0005-15

I.E. 083.327.90-8

rafael.moraes@grupotorino.com.br



DADOS PARA CONTATO / INFORMAÇÕES:

TORINO INFORMATICA LTDA

CNPJ: 03.619.767/0001-91

IE: 669.369.347-110

IM: 114.058

RUA RITA DE CARVALHO MONTEIRO, 120 – RETIRO SÃO JOÃO

SOROCABA – SP – CEP 18085-750

CONTATO: RAFAEL MORAES

TEL/FAX: (15) 3233-9320

EMAIL: rafael.moraes@grupotorino.com.br

Rodrigo do Amaral Rissio
RG: 27.954.969-6 SSP/SP
Sócio / Procurador



RESUMO TÉCNICO

ITEM 01 – 12 UNIDADES:

WORKSTATION HP Z8 G4 + 2x MONITOR HP Z27N G2 - GARANTIA DE 36 (TRINTA E SEIS) MESES ONSITE, COM ATENDIMENTO E SOLUÇÃO CONFORME SOLICITADO NO EDITAL. DECLARO QUE O PRODUTO OFERTADO ATENDE AO PROCESSO PRODUTIVO BÁSICO E ATENDE AOS REQUISITOS DO ART 5º DO DECRETO 7174/2010, ESTANDO ENQUADRADO NO INCISO III DO CITADO ARTIGO, ESTANDO APTA A USUFRUIR DO TRATAMENTO FAVORECIDO ESTABELECIDO NO ARTIGO 3º DA LEI 8.248/1991.

HP Z8 G4 WORKSTATION
GABINETE TIPO DESKTOP TORRE
2x Intel Xeon Gold 5218 – 22M Cache – 2.30GHz - VPRO
HP 256GB (8x32GB) DDR4 2666 DIMM ECC Registered Memory - EXPANSÍVEL ATÉ 3TB (24 SLOTS DE MEMÓRIA DDR-4)
1x SSD HP 1TB PCIe ZTurbo Drive + 4x 1TB 7200RPM SATA + 1x 9.5mm DVDRW
CHIPSET INTEL C622
INTEGRATED HIGH DEFINITION AUDIO WITH REALTEK HD ALC221 AUDIO CODEC (ALL PORTS ARE STEREO) – WITH INTERNAL SPEAKER
NVIDIA Quadro P6000 24GB GDDR5
BAIAS: 4x INTERNA (3.5”) / 2x EXTERNA 5.25”
INTERFACES: TRASEIRA: 6 USB 3.1 Gen1 (aka USB 3.0), 1 Serial, PS/2 keyboard and mouse, 2 RJ-45 to integrated Gigabit LAN, 1 Audio Line-In (can be retasked as microphone), 1 Audio Line-Out FRONTAL: 2 USB 3.1 Gen1 Type-A connector. Left most connector has charging capability, 2 USB 3.1 Gen2 Type-CTM connector, 1 Combo Headset, 1 Optional Media Card Reader INTERNA: Internal Slot 1 CPU1: PCIe Gen3 x8 - always available, Internal Slot 2 CPU2: PCIe Gen3 x8 - available when 2nd CPU is installed, 2 USB 2.0 ports available with a single 2x5 header, 1 USB 2.0 port available with a 1x6 header, 1 USB 3.1 Gen1 and 1 USB 2.0 port available with a 2x6 header
ETHERNET – INTEL I219LM GBE PLATFORM LAN CONNECT NETWORKING CONTROLLER 10/100/1000
DISPOSITIVOS DE ENTRADA: TECLADO USB ABNT2 E MOUSE HP USB 1000dpi LASER (2 BOTÕES + SCROLL)
SISTEMA OPERACIONAL: MICROSOFT WINDOWS 10 PROFESSIONAL FOR WORKSTATION 64 BITS (PORTUGUES) + CD RECOVERY + Software LANDESK INTERNAL: 1125 watts wide-ranging, active Power Factor Correction, 90% Efficient, with 2x 6-pin graphics power cables + Solenoid
EMBEDDED TPM 2.0 COMPLIANT SECURITY MODULE
ACESSÓRIOS
2x MONITOR HP Z27N G2
MICROSOFT OFFICE PROFESSIONAL 2019


Rodrigo do Amaral Rissio
RG: 27.954.969-6 SSP/SP
Sócio / Procurador



Overview

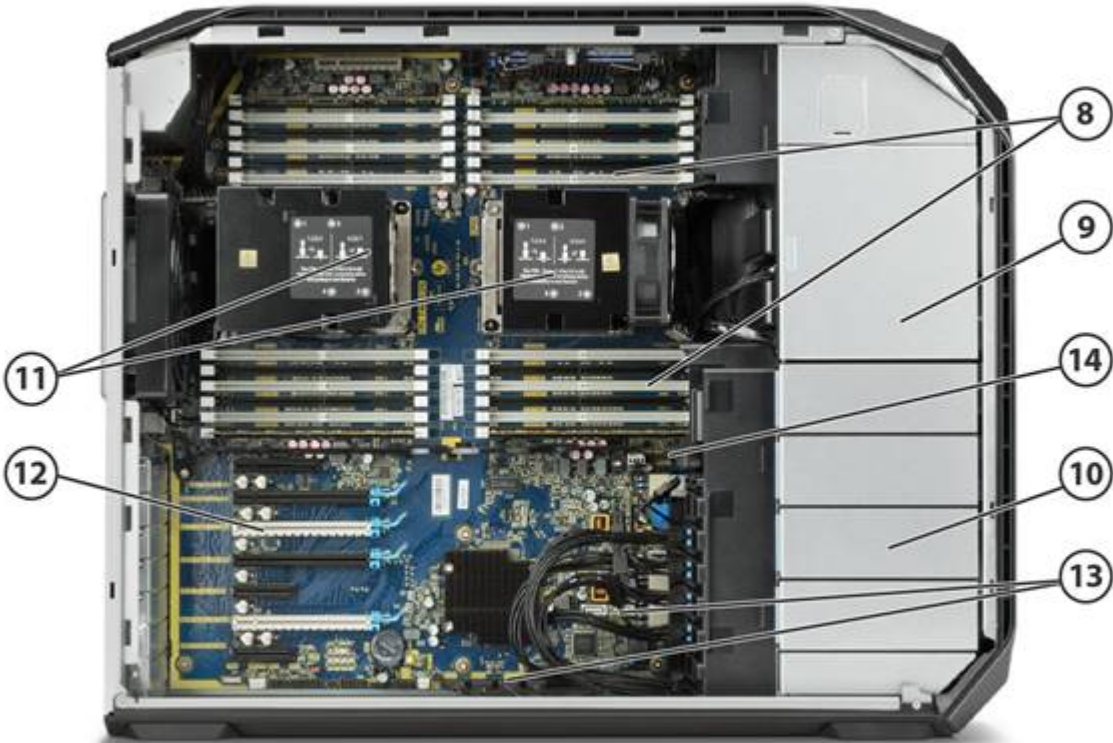
HP Z8 G4 Workstation



Front view

- | | | | |
|----|-----------------------------------|----|---|
| 1. | Integrated Front Handle | 5. | Front I/O Entry: 4 USB 3.1 Gen1 (Left-most Port has Charging Capability) |
| 2. | Dedicated 9.5mm Optical Drive Bay | | Front I/O Premium: 2x USB 3.1 Gen1, 2x USB 3.1 Gen2 Type-C™ (Left-most Type-A Port has Charging Capability) |
| 3. | Power Button | | Note: Premium Front IO is shown on Photography |
| 4. | HDD Activity LED | 6. | Media Card Reader |
| | | 7. | 1 Headset |

Overview



Internal view

8.

24 DIMM Slots for DDR4 ECC Memory
9.

2 External 5.25" Bays and Slimline Optical
10.

4 Internal 3.5" Bays
11.

2 Intel® Xeon® Processors (Skylake SP) family
12.

- Slot 1: PCIe Gen3 x4 - Transforms to PCIe Gen3 x8 when 2nd CPU is installed
 - Slot 2: PCIe Gen3 x16
 - Slot 3: PCIe Gen3 x16 - Available ONLY when 2nd processor is installed
 - Slot 4: PCIe Gen3 x16
 - Slot 5: PCIe Gen3 x4
 - Slot 6: PCIe Gen3 x16 - Available ONLY when 2nd processor is installed
 - Slot 7: PCIe Gen3 x4
13.

2 sSATA, 8 SATA (AHCI) Ports
14.

3 USB 2.0 Internal Ports, 1 USB 3.0 Gen1 Internal Port

Overview



Rear view

- 15. Choice of 1125W or 1450W, 90% Efficient Power Supplies
- 16. Rear I/O:
 - Rear Power Button
 - 6 USB 3.1 Gen1
 - 1 Serial
 - PS/2 keyboard and mouse
 - 2 RJ-45 to integrated Gigabit LAN
 - 1 Audio Line-In (can be retasked as microphone)
 - 1 Audio Line-Out
- 17. Optional: 2 10GbE LAN ports

Overview

Overview

Form Factor
Operating Systems

- Tower
- Preinstalled:
- Windows 10 Pro 64 for Workstations¹
 - HP Linux-ready (minimal OS ready for customer OS installation)
 - Red Hat® Enterprise Linux® Desktop Workstation (Paper license with 1 year support; no p
- Supported:
- Windows 7 Professional 64-bit²
 - Red Hat® Enterprise Linux® Desktop 7.4³
 - SUSE Linux® Enterprise Desktop 12 SP3³
 - Ubuntu 16.04 LTS³
- ¹Not all features are available in all editions or versions of Windows. Systems may require upgr BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updi requirements may apply over time for updates. See <http://www.windows.com>.

²For detailed Windows 7 OS hardware support information see

Available Processors

Name	Cores	Clock Speed (GHz)	Cache (MB)	Memory Speed (MT/s)	Hyper-Threading
Intel® Xeon® Platinum 8280 processor	28	2.7 GHz	38.5	2933	YES
Intel® Xeon® Platinum 8260M processor	24	2.4 GHz	35.75	2933	YES
Intel® Xeon® Platinum 8260 processor	24	2.4 GHz	35.75	2933	YES
Intel® Xeon® Platinum 8180 processor	28	2.5GHz	38.50	2666	YES
Intel® Xeon® Platinum 8160M processor	24	2.1GHz	33.00	2666	YES
Intel® Xeon® Platinum 8160 processor	24	2.1GHz	33.00	2666	YES
Intel® Xeon® Gold 6254 processor	18	3.1 GHz	24.75	2933	YES
Intel® Xeon® Gold 6252 processor	24	2.1 GHz	35.75	2933	YES
Intel® Xeon® Gold 6248 processor	20	2.5 GHz	27.5	2933	YES
Intel® Xeon® Gold 6244 processor	8	3.6 GHz	24.75	2933	YES
Intel® Xeon® Gold 6242 processor	16	2.6 GHz	22	2933	YES
Intel® Xeon® Gold 6240Y processor	18	2.6 GHz	24.75	2933	YES
Intel® Xeon® Gold 6240 processor	18	2.6 GHz	24.75	2933	YES
Intel® Xeon® Gold 6230 processor	20	2.1 GHz	27.5	2933	YES
Intel® Xeon® Gold 6152 processor	22	2.1GHz	30.25	2666	YES
Intel® Xeon® Gold 6154 processor	18	3.0GHz	24.75	2666	YES
Intel® Xeon® Gold 6148 processor	20	2.4GHz	27.50	2666	YES
Intel® Xeon® Gold 6146M processor	12	3.2GHz	24.75	2666	YES
Intel® Xeon® Gold 6146 processor	12	3.2GHz	24.75	2666	YES

Overview

Intel® Xeon® Gold 6144M processor	8	3.5GHz	24.75	2666	YES
Intel® Xeon® Gold 6144 processor	8	3.5GHz	24.75	2666	YES
Intel® Xeon® Gold 6142M processor	16	2.6GHz	22.00	2666	YES
Intel® Xeon® Gold 6142 processor	16	2.6GHz	22.00	2666	YES
Intel® Xeon® Gold 6140M processor	18	2.3GHz	24.75	2666	YES
Intel® Xeon® Gold 6140 processor	18	2.3GHz	24.75	2666	YES
Intel® Xeon® Gold 6138 processor	20	2GHz	27.5	2666	YES
Intel® Xeon® Gold 6136 processor	12	3.0GHz	24.75	2666	YES
Intel® Xeon® Gold 6134M processor	8	3.2GHz	24.75	2666	YES
Intel® Xeon® Gold 6134 processor	8	3.2GHz	24.75	2666	YES
Intel® Xeon® Gold 6132 processor	14	2.6GHz	19.25	2666	YES
Intel® Xeon® Gold 6130 processor	16	2.1GHz	22.00	2666	YES
Intel® Xeon® Gold 6128 processor	6	3.4GHz	19.25	2666	YES
Intel® Xeon® Gold 6126 processor*	12	2.6GHz	19.25	2666	YES
Intel® Xeon® Gold 5222 processor	4	3.8 GHz	16.5	2666	YES
Intel® Xeon® Gold 5220 processor	18	2.2 GHz	24.75	2666	YES
Intel® Xeon® Gold 5218 processor	16	2.3 GHz	22	2666	YES
Intel® Xeon® Gold 5215M processor	10	2.5 GHz	13.75	2666	YES
Intel® Xeon® Gold 5215 processor	10	2.5 GHz	13.75	2666	YES
Intel® Xeon® Gold 5120 processor	14	2.2GHz	19.25	2400	YES
Intel® Xeon® Gold 5118 processor	12	2.3GHz	16.50	2400	YES
Intel® Xeon® Gold 5115 processor	10	2.4	13.75	2400	YES
Intel® Xeon® Gold 5122 processor	4	3.6GHz	16.50	2666	YES
Intel® Xeon® Silver 4216 processor	16	2.1 GHz	22	2400	YES
Intel® Xeon® Silver 4215 processor	8	2.5 GHz	11	2400	YES
Intel® Xeon® Silver 4214Y processor	12	2.2 GHz	16.5	2400	YES
Intel® Xeon® Silver 4214 processor	12	2.2 GHz	16.5	2400	YES
Intel® Xeon® Silver 4210 processor ³	10	2.2 GHz	13.75	2400	YES
Intel® Xeon® Silver 4208 processor ³	8	2.1 GHz	11	2400	YES
Intel® Xeon® Silver 4116 processor	12	2.1GHz	16.50	2400	YES
Intel® Xeon® Silver 4114 processor	10	2.2GHz	13.75	2400	YES
Intel® Xeon® Silver 4112 processor	4	2.6GHz	8.25	2400	YES

Overview

Intel® Xeon® Silver 4110 processor	8	2.1GHz	11.00	2400	YES
Intel® Xeon® Silver 4108 processor	8	1.8GHz	11.00	2400	YES
Intel® Xeon® Bronze 3204 processor ³	6	1.9 GHz	8.25	2133	YES
Intel® Xeon® Bronze 3106 processor	8	1.7GHz	11.00	2133	NO
Intel® Xeon® Bronze 3104 processor	6	1.7GHz	8.25	2133	NO
All Z8G4 Intel® Xeon® CPUs Feature Intel® vPro™ Technology.					
¹ The specifications shown in this column represent the following: (all core maximum turbo stepping occurs in 100MHz increments. Processors that do not have turbo functionality					
*Intel® Xeon® Gold 6126 processor (selected North America public sector customers only)					
² Intel® Data Center Persistent Memory Modules availability will be announced at a future date					
³ Available May 2019					

Available Processors

Disclaimers

When ordering two processors, the second processor must be the same as the first. Intel processor numbers differentiate features within each processor family, not across different families. Multicore is designed to improve performance of certain software products. Not all customers can use this technology. Performance and clock frequency will vary depending on application workload. Processor numbering, branding and/or naming is not a measurement of higher performance.

Color

Black

Convertibility

No

Expansion Slots (see system board section for more details)

- Slot 1:**

PCIe Gen3 x4 - Transforms to PCIe Gen3 x8 when 2nd CPU is installed
- Slot 2:**

PCIe Gen3 x16
- Slot 3:**

PCIe Gen3 x16 - Available ONLY when 2nd processor is installed
- Slot 4:**

PCIe Gen3 x16
- Slot 5:**

PCIe Gen3 x4
- Slot 6:**

PCIe Gen3 x16 - Available ONLY when 2nd processor is installed
- Slot 7:**

PCIe Gen3 x4

Note: The PCIe x4 and PCIe x8 connectors above are open ended, allowing a PCIe x16 card to be installed.

Overview

Expansion Bays (see storage section for more details)	4 internal 3.5" bays (All 4 include acoustic dampening rail assemblies) 2 external 5.25" bays (175mm depth limit) 1 dedicated 9.5mm slim optical disk drive bay
Front I/O	<ul style="list-style-type: none">Base: 4 USB 3.1 Gen1 Type-A connector. Left most connector has charge indicator LED, 1 Optional Media Card ReaderPremium: 2 USB 3.1 Gen1 Type-A connector. Left most connector has charge indicator LED, 1 Combo Headset, 1 Optional Media Card Reader
Internal I/O	Internal Slot 1 CPU1: PCIe Gen3 x8 - always available Internal Slot 2 CPU2: PCIe Gen3 x8 - available when 2nd CPU is installed 2 USB 2.0 ports available with a single 2x5 header 1 USB 2.0 port available with a 1x6 header 1 USB 3.1 Gen1 and 1 USB 2.0 port available with a 2x6 header Notes: The 2x5 header can be converted to a standard (Type-A) USB 2.0 connector through the use of one half of the 2x5 header. The 1x6 header can be converted to a standard (Type-A) USB 2.0 connector through the use of one half of the 1x6 header. The 2x6 header can be converted to a standard (Type-A) USB 2.0 connector through the use of one HP Internal USB Port Kit (EM165AA). This port kit uses one half of the 2x6 header.
Rear I/O	6 USB 3.1 Gen1 (aka USB 3.0), 1 Serial, PS/2 keyboard and mouse, 2 RJ-45 to integrated Giga-Byte Ethernet, 1 Audio Line-Out
Interfaces Supported	Optional: 2 RJ-45 to 10GbE LAN ports 10 channel SATA 6.0 Gb/s interface Factory integrated RAID available for SATA drives (RAID 0, 1 and 10) Internal USB 3.1 Gen1, USB 3.1 Gen2, USB 2.0
On-board RAID Support	SATA RAID 0 Striped Array SATA RAID 1 Mirrored Array SATA RAID 10 Striped/Mirrored SATA RAID 5 Parity Array
Chassis Dimensions (H x W x D)	Footprint: H: 17.5" [444.5mm] W: 8.5" [215.9mm] D: 21.7" [551.2mm] (measured to the rear of service panel) Maximum: H: 17.5" [444.5mm] W: 8.5" [215.9mm] D: 21.85" [555.2mm] (measured to the embossment for the rear chassis fan)
Packaged Dimensions	H: 25" (636mm) W: 13.1" (332mm) D: 28.9" (734mm)
Rack Dimensions	5U
Weight	Exact weights depend upon configuration (System weight only). Minimum: 22.4kg (49.4lbs.) Typical: 23.7kg (52.2lbs.) Maximum: 31.7kg (70lbs.)
Temperature	Operating: 5° to 35°C (40° to 95°F) Non-operating: -40° to 60°C (-40° to 140°F)

Overview

Humidity	Operating: 10% to 85% RH, non-condensing, 35° C maximum wet bulb Non-operating: 10% to 90%, non-condensing, 35° C maximum wet bulb
Maximum Altitude (non-pressurized)	Operating: 3,048m (10,000ft) Non-operating: 9,144m (30,000ft)
Power Supply	<p>Note: Above 1524 m (5,000 feet) altitude, maximum operating temperature is reduced by 1° C per 30 m (100 feet).</p> <p>Choice of:</p> <p>1125W/100V/15A 90% Efficient wide-ranging, active Power Factor Correction The power delivery system includes four 6+2-pin graphics power cables.</p> <p>1450W/200V/10A 90% Efficient wide-ranging, active Power Factor Correction The power delivery system includes four 6+2-pin graphics power cables.</p> <p>- Available in limited regions</p> <p>1450W/100V/20A 90% Efficient wide-ranging, active Power Factor Correction The power delivery system includes four 6+2-pin graphics power cables.</p> <p>1700W/200V/10A 90% Efficient wide-ranging, active Power Factor Correction The power delivery system includes four 6+2-pin graphics power cables.</p> <p>Notes: The 1125W/100V/15A (1450W at 200V Input Voltage) power supply can also supply 105V. If the input voltage is less than 105V, but greater than 90V for any reason, the maximum output power (UPS) is highly recommended if 1275W output power is desired. The 1125W Power Supply can also supply 1450W of output power when the input voltage is 105V. The 1450W/100V/20A (1700W at 200V Input Voltage) power supply can also supply 1550W of output power when the input voltage is 105V. If the input voltage is less than 105V, but greater than 90V for any reason, the maximum output power (UPS) is highly recommended if 1550W output power is desired. The 1450W Power Supply can also supply 1700W of output power when the input voltage is 105V.</p> <p>The 1450W/100V/20A chassis is shipped with a 20A power cord and requires a 20A outlet if the power cord is not provided. A 20A outlet is required. Check with your sales lead and click here for the Site Prep Guide.</p> <p>The Z8 G4 power supply efficiency reports can be found at these links: 1125W - Link: https://plugloadsolutions.com/psu_reports/HP%20Inc_DPS-1125BB%20A_1125W_ECOS%20Z8_G4.pdf</p> <p>1450W - Link: https://plugloadsolutions.com/psu_reports/HP%20Inc_DPS-1450AB%20A_1450W_ECOS%20Z8_G4.pdf</p>
Workstation ISV Certifications	See the latest list of certifications at http://www.hp.com/united-states/campaigns/workstations/partnerships.html

Supported Components

Processors

Intel® Xeon® processor Scalable family	Factory		Option Kit	Option Kit Part Number	Support Notes
	Configured	Option Kit			
Intel® Xeon® Platinum 8280 processor	Y	Y	5YZ53AA		1
Intel® Xeon® Platinum 8260M processor	Y	Y	5YZ52AA		1
Intel® Xeon® Platinum 8260 processor	Y	Y	5YZ51AA		1
Intel® Xeon® Platinum 8180 processor	Y	Y	1XM54AA		
Intel® Xeon® Platinum 8160M processor	Y	Y	1XM55AA		
Intel® Xeon® Platinum 8160 processor	Y	Y	1XM56AA		
Intel® Xeon® Gold 6254 processor	Y	Y	5YZ50AA		1
Intel® Xeon® Gold 6252 processor	Y	Y	5YZ49AA		1
Intel® Xeon® Gold 6248 processor	Y	Y	5YZ48AA		1
Intel® Xeon® Gold 6244 processor	Y	Y	5YZ47AA		1
Intel® Xeon® Gold 6242 processor	Y	Y	5YZ46AA		1
Intel® Xeon® Gold 6240Y processor	Y	Y	5YZ45AA		1
Intel® Xeon® Gold 6240 processor	Y	Y	5YZ44AA		1
Intel® Xeon® Gold 6230 processor	Y	Y	5YZ41AA		1
Intel® Xeon® Gold 6152 processor	Y	Y	1XM57AA		
Intel® Xeon® Gold 6154 processor	Y	Y	1XM58AA		
Intel® Xeon® Gold 6148 processor	Y	Y	1XM59AA		
Intel® Xeon® Gold 6146 processor	Y	Y	2RX97AA		
Intel® Xeon® Gold 6144 processor	Y	Y	2RX96AA		
Intel® Xeon® Gold 6142M processor	Y	Y	1XM60AA		
Intel® Xeon® Gold 6142 processor	Y	Y	1XM61AA		
Intel® Xeon® Gold 6140M processor	Y	Y	1XM63AA		
Intel® Xeon® Gold 6140 processor	Y	Y	1XM64AA		
Intel® Xeon® Gold 6138 processor	Y	Y	3GG97AA		
Intel® Xeon® Gold 6136 processor	Y	Y	1XM62AA		
Intel® Xeon® Gold 6134M processor	Y	Y	1XM65AA		
Intel® Xeon® Gold 6134 processor	Y	Y	1XM66AA		
Intel® Xeon® Gold 6132 processor	Y	Y	1XM67AA		
Intel® Xeon® Gold 6130 processor	Y	Y	1XM68AA		
Intel® Xeon® Gold 6128 processor	Y	Y	1XM69AA		
Intel® Xeon® Gold 6126 processor**	Y	Y	5SC22AV		
Intel® Xeon® Gold 5222 processor	Y	Y	5YZ39AA		1
Intel® Xeon® Gold 5220 processor	Y	Y	5YZ38AA		1
Intel® Xeon® Gold 5218 processor	Y	Y	5YZ37AA		1
Intel® Xeon® Gold 5215M processor	Y	Y	5YZ36AA		1
Intel® Xeon® Gold 5215 processor	Y	Y	5YZ35AA		1
Intel® Xeon® Gold 5120 processor	Y	Y	1XM70AA		
Intel® Xeon® Gold 5118 processor	Y	Y	1XM71AA		
Intel® Xeon® Gold 5122 processor	Y	Y	1XM72AA		
Intel® Xeon® Gold 4216 processor	Y	Y	5YZ34AA		
Intel® Xeon® Gold 4215 processor	Y	Y	5YZ33AA		1
Intel® Xeon® Gold 4214Y processor	Y	Y	5ZB34AA		

Supported Components

Intel® Xeon® Gold 4214 processor	Y	Y	5YZ32AA	
Intel® Xeon® Gold 4210 processor	Y	Y	5YZ31AA	2
Intel® Xeon® Gold 4208 processor	Y	Y	5YZ30AA	2
Intel® Xeon® Silver 4116 processor	Y	Y	1XM73AA	
Intel® Xeon® Silver 4114 processor	Y	Y	1XM74AA	
Intel® Xeon® Silver 4112 processor	Y	Y	1XM75AA	
Intel® Xeon® Silver 4110 processor	Y	Y	3GG96AA	
Intel® Xeon® Silver 4108 processor	Y	Y	1XM76AA	
Intel® Xeon® Gold 3204 processor	Y	Y	5YZ29AA	2
Intel® Xeon® Bronze 3106 processor	Y	Y	1XM77AA	
Intel® Xeon® Bronze 3104 processor	Y	Y	1XM78AA	

¹ Options kits available for second processor upgrade.

Disclaimers: When ordering two processors, the second processor must be the same as the first. Intel processor numbers are not a measurement of higher performance. Processor numbers differentiate features within each processor family, not across different processor families.

Note 1: Intel® DCPMM® (Data Center Persistent Memory) Supported. Availability will be announced at a future date.

Note 2: Available May 2019

****Intel® Xeon® Gold 6126 processor (selected North America public sector customers only), Availability date TBD.**

Monitors / Displays

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
HP Z Display Z22n G2		Y	1JS05AA	
HP Z Display Z23n G2		Y	1JS06AA	
HP Z Display Z24i G2		Y	1JS08AA	
HP Z Display Z24n G2		Y	1JS09AA	
HP Z Display Z24nf G2		Y	1JS07AA	
HP Z Display Z27n G2		Y	1JS10AA	
HP Z Display Z27s (4K display)		Y	J3G07AA	

Supported by all operating systems available from HP
Screen size measured diagonally

Storage / Hard Drives

Supported Components

SAS Hard Drives

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
SAS Hard Drives for HP Workstations				
HP 300GB 15k SAS SFF	Y	Y	L5B74AA	
NOTE: SAS controller add-in card required				

SATA Hard Drives

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
SATA (Serial ATA) Hard Drives for HP Workstations				
500GB SATA 7200RPM 6Gb/s 3.5"? HDD	Y	Y	LQ036AA	
500GB SATA 7200RPM 6Gb/s OPAL2 SFF 3.5"? HDD	Y	Y	D8N29AA	
1TB SATA 7200RPM 3.5"? HDD	Y	Y	LQ037AA	
1TB SATA 7200RPM Ent 3.5"? HDD	Y	Y	W0R10AA	
2TB SATA 7200RPM HDD	Y	Y	QB576AA	
4TB SATA 7200RPM Ent 3.5"? HDD	Y	Y	K4T76AA	
6TB SATA 7200RPM Ent 3.5"? HDD	Y	Y	3DH90AA	
NOTES:				
Up to (5) 3.5-inch 7200 rpm SATA drives: 500 GB, 1.0, 2.0, 4.0 TB; 20TB max total				

SATA Solid State Drives

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
HP Solid State Drives (SSDs) for Workstations				
HP 256GB SATA SSD	Y	Y	A3D26AA	
HP 512GB SATA SSD	Y	Y	D8F30AA	
HP 1TB SATA SSD	Y	Y	F3C96AA	
HP 2TB SATA SSD	Y	Y	Y6P08AA	
HP 256GB SATA SED OPAL2 SSD	Y	Y	G7U67AA	
HP 512GB SATA SED OPAL2 SSD	Y	Y	N8T26AA	
HP 240GB SATA Enterprise SSD	Y	Y	T3U07AA	
HP 480GB SATA Enterprise SSD	Y	Y	T3U08AA	

PCIe Solid State Drives

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
PCIe SSDs for HP Workstations				
HP Z Turbo Drive 256GB MLC Z8G4 SSD Module	Y	Y	1PD50AA	
HP Z Turbo Drive 512GB MLC Z8G4 SSD Module	Y	Y	1PD51AA	
HP Z Turbo Drive 1TB MLC Z8G4 SSD Module	Y	Y	1PD52AA	
HP Z Turbo Drive 256GB TLC Z8G4 SSD Module	Y	Y	1PD53AA	

Supported Components

HP Z Turbo Drive 512GB TLC Z8G4 SSD Module	Y	Y	1PD54AA	
HP Z Turbo Drive 1TB TLC Z8G4 SSD Module	Y	Y	1PD55AA	
HP Z Turbo Drive 2TB TLC Z8G4 SSD Module	Y	Y	3KP41AA	
HP Z Turbo Drive 256GB SED Z8G4 SSD Module	Y	Y	2SA34AA	
HP Z Turbo Drive 512GB SED Z8G4 SSD Module	Y	Y	2SA36AA	
HP Z Turbo Drive 256GB MLC Z8 G4 SSD Kit	Y	Y	1PD44AA	
HP Z Turbo Drive 512GB MLC Z8 G4 SSD Kit	Y	Y	1PD45AA	
HP Z Turbo Drive 1TB MLC Z8 G4 SSD Kit	Y	Y	1PD46AA	
HP Z Turbo Drive 256GB TLC Z8 G4 SSD Kit	Y	Y	1PD47AA	
HP Z Turbo Drive 512GB TLC Z8 G4 SSD Kit	Y	Y	1PD48AA	
HP Z Turbo Drive 1TB TLC Z8 G4 SSD Kit	Y	Y	1PD49AA	
HP Z Turbo Drive 2TB TLC Z8 G4 SSD Kit	Y	Y	3KP40AA	
HP Z Turbo Drive 256GB SED Z8 G4 SSD Kit	Y	Y	2SA33AA	
HP Z Turbo Drive 512GB SED Z8 G4 SSD Kit	Y	Y	2SA35AA	
HP Z Turbo Drive Dual Pro				
HP Z Turbo Drive Dual Pro 256GB TLC SSD	Y	Y	4YF60AA	
HP Z Turbo Drive Dual Pro 512GB TLC SSD	Y	Y	4YF61AA	
HP Z Turbo Drive Dual Pro 1TB TLC SSD	Y	Y	4YF62AA	
HP Z Turbo Drive Dual Pro 2TB TLC SSD	Y	Y	4YF63AA	
HP Z Turbo Drive Quad Pro				
HP Z Turbo Drive Quad Pro 2x256GB PCIe TLC SSD	Y	Y	4YZ38AA	1
HP Z Turbo Drive Quad Pro 2x512GB PCIe TLC SSD	Y	Y	4YZ39AA	1
HP Z Turbo Drive Quad Pro 2x1TB PCIe TLC SSD	Y	Y	4YZ40AA	1
HP Z Turbo Drive Quad Pro 2x2TB PCIe TLC PCIe SSD	Y	Y	3KP42AA	
HP Z Turbo Drive Quad Pro 256GB TLC SSD module	N	Y	4YZ35AA	2
HP Z Turbo Drive Quad Pro 512GB TLC SSD module	N	Y	4YZ36AA	2
HP Z Turbo Drive Quad Pro 1TB TLC SSD module	N	Y	4YZ37AA	2
HP Z Turbo Drive Dual Pro				
HP Z Turbo Drive Dual Pro 256GB TLC SSD	Y	Y	4YF60AA	
HP Z Turbo Drive Dual Pro 512GB TLC SSD	Y	Y	4YF61AA	
HP Z Turbo Drive Dual Pro 1TB TLC SSD	Y	Y	4YF62AA	
HP Z Turbo Drive Dual Pro 2TB TLC SSD	Y	Y	4YF63AA	
Intel® 905p Series SSD (Optane SSD)				
Intel® Optane SSD 905p 280GB AiC**	Y	Y	2SC47AA	
Intel® Optane SSD 905p 480GB AiC**	Y	Y	2SC48AA	

NOTE 1: Dual M.2 SSD modules plus carrier
NOTE 2: M.2 SSD module only, designed to be installed into Quad Pro carrier

*For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of system disk is reserved for system recovery software
** PCIe card installed in standard PCIe x4 slot

Supported Components

Hard Drive Controllers

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
SAS Controller				
MicroSemi SmartHBA2100-4i4e SAS Controller	Y	Y	1FV90AA	

Graphics

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes	Supported # of cards
Graphics Cable Adapters					
HP miniDP-to-DP Adapter	Y	Y			
HP miniDP-to-DP Adapter (2-pack)	Y	N			
HP miniDP-to-DP Adapter (4-pack)	Y	N			
HP miniDP-to-DP Adapter (8-pack)	Y	N			
HP DisplayPort to Dual Link DVI Adapter	Y	Y	NR078AA		
HP DisplayPort to DVI-D Adapter	Y	Y	FH973AA		
HP DisplayPort to DVI-D Adapter (2-pack)	Y	N			
HP DisplayPort to DVI-D Adapter (4-pack)	Y	N			
HP DisplayPort to DVI-D Adapter (6-pack)	Y	N			
HP DisplayPort to VGA Adapter	Y	Y	AS615AA		
HP DisplayPort to HDMI Adapter	Y	Y	K2K92AA		
NVIDIA SLI 2-slot Graphics Connector	Y	Y	2YY84AA		
Entry 3D					
NVIDIA® Quadro® P400 2GB Graphics	Y	Y	1ME43AA		2
NVIDIA® Quadro® P600 2GB Graphics	Y	Y	1ME42AA		2
NVIDIA® Quadro® P620 2GB Graphics	Y	Y	3ME25AA		2
AMD FirePro™ W2100 2GB Graphics	Y	Y	J3G91AA		2
Mid-range 3D					
NVIDIA® Quadro® P1000 4GB Graphics	Y	Y	1ME01AA		4
NVIDIA® Quadro® P2000 5GB Graphics	Y	Y	1ME41AA		4
AMD Radeon™ Pro WX 3100 4GB Graphics	Y	Y	2TF08AA		4
AMD Radeon™ Pro WX 4100 4GB Graphics	Y	Y	Z0B15AA		4
High End 3D					
NVIDIA® Quadro® P4000 8GB Graphics	Y	Y	1ME40AA		3
NVIDIA® Quadro® P5000 16GB Graphics	Y	Y	Z0B13AA		3
NVIDIA® Quadro® P6000 24GB Graphics	Y	Y	Z0B12AA		3
NVIDIA® Quadro RTX 4000 8GB Graphics	Y	Y	5JV89AA		3
NVIDIA® Quadro RTX 5000 16GB Graphics	Y	Y	5JH81AA		2
NVIDIA® Quadro RTX 6000 24GB Graphics	Y	Y	5JH80AA		2
NVIDIA® Quadro RTX 8000 48GB Graphics	Y	Y	6NB51AA		2
NVIDIA® Quadro® GP100 16GB Graphics	Y	Y	1ZE81AA		3
NVIDIA® Quadro® GV100 32GB Graphics	Y	Y	3ME26AA		2
AMD Radeon™ Pro WX 7100 8GB Graphics	Y	Y	Z0B14AA		3
AMD Radeon™ Pro WX 9100 16GB Graphics	Y	Y	2TF01AA		2
NVIDIA® Quadro® Sync II	Y	Y	1WT20AA		

Supported Components

Memory	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
DDR4-2666 ECC Registered DIMMs				
8GB (1x8GB) DDR4-2666 ECC Reg Memory	Y	Y	1XD84AA	1, 3
16GB (1x16GB) DDR4-2666 ECC Reg Memory	N	Y	1XD85AA	1,3
32GB (1x32GB) DDR4-2666 ECC Reg Memory	N	Y	1XD86AA	1,3
64GB (1x64GB) DDR4-2666 ECC LR Memory	N	Y	1XD87AA	1,2,3
128GB (1x128GB) DDR4-2666 ECC 3DS LR Memory	N	Y	3GE82AA	1,2,3
8GB (1x8GB) DDR4-2933 ECC Reg Memory	Y	Y	5YZ56AA	1,3
16GB (1x16GB) DDR4-2933 ECC Reg Memory	N	Y	5YZ54AA	1,3
32GB (1x32GB) DDR4-2933 ECC Reg Memory	N	Y	5YZ55AA	1,3
64GB (1x64GB) DDR4-2399 ECC Reg Memory	N	Y	5YZ57AA	1,3

NOTES:

1. For details on the supported memory configurations on the HP Z8 G4 Workstation, please refer to the System Technical Specifications - System Board section of this document.
2. Sleep (S3 state) support:

- Sleep (S3 state) may not be supported with non-HP validated and qualified 64 GB LR DIMMs.

- Sleep (S3 state) is not supported with 128 GB 3DS LR DIMMs
3. You cannot intermix different types of memory. The system will not work if LR DIMMs, RDIMMs or 3DS LR DIMMs are intermixed.

DIMMs should be equally distributed across all six memory channels for optimal performance. Each processor supports up to 6 channels of DDR4 memory. To realize full performance at least 1 DIMM must be inserted into each channel.

The CPUs determine the speed at which the memory is clocked. If a 2400MT/s capable CPU is used in the system, the maximum speed the memory will run at is 2400MT/s, regardless of the specified speed of the memory.

MT/s = Million Transfers per second

The Z8 G4 is designed to work ONLY with DDR4 memory. The system will not work with DDR3 memory.

Multimedia and Audio Devices

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
Integrated Realtek HD ALC221 Audio	Y	N		

Optical and Removable Storage

Supported Components

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
HP SlimTray Optical Drives				
HP 9.5mm Slim Blu Ray Disc Writer	Y	Y	K3R65AA	1
HP 9.5mm Slim DVD ROM	Y	Y	K3R63AA	1
HP Half Height Optical Drives				
HP HH DVD Writer (16X RW DVD-R)	N	Y	4AR67AA	
HP 9.5mm Slim DVD Writer*	Y	Y	K3R64AA	1
HP SD Card Reader				
HP SD 4 Card Reader	Y	Y	Y0L99AA	
HDD Frame/Carriers				
HP DX175 Removable HDD Carrier	N	Y	1ZX72AA	
HP DX175 Removable HDD Frame/Carrier	N	Y	1ZX71AA	

NOTE 1: Installing an optical drive into Z8 G4 requires a 5.25" external bay adapter.

*Actual speeds may vary. No support for DVD-RAM (DVD Writer). Does not permit copying of commercially available DVD movies or other copyright protected materials. Intended for creation and storage of your original material and other lawful uses. Double Layer discs can store more data than single layer discs. However, double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.

With Blu-ray, 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 a DVI or HDMI digital connection and your display may require HDCP support. HD-DVD movies cannot be played on this workstation.

Networking and Communications

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
Intel® I350-T2 PCIe Dual Port Gigabit NIC	Y	Y	V4A91AA	
Intel® I350-T4 PCIe 4-Port Gigabit NIC	N	Y	W8X25AA	
Intel® Ethernet I210-T1 PCIe x1 Gb NIC	Y	Y	E0X95AA	
Aquantia® NBASE-T 5GbE PCIe NIC	N	Y	1PM63AA	
Intel® X550-T2 10GbE Dual Port NIC	Y	Y	1QL46AA	
Intel® X710-DA2 10GbE SFP+ Dual Port NIC	Y	Y	1QL47AA	1
HP 10GBASE-T Dual NIC Module Z6/8 G4	Y	Y	1QL49AA	
Intel® 8265 802.11 a/b/g/n/ac&BT PCIe	N	Y	1QL48AA	
Intel® 9260 802.11 a/b/g/n/ac&BT PCIe	N	Y	6SL33AA	US/CAN only
HP 10GbE SFP+ SR 1st Transceiver	Y	Y	C3N53AA	

Note 1: Windows 7 is NOT supported

Racking and Physical Security

Supported Components

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
Security Cable with Kensington Lock	N	Y	PC766A	1
HP Chassis Intrusion Sensor	Y	N		
HP Z640/Z840/Z8G4 Rail Rack Kit	N	Y	2FZ77AA	
HP Z8 Rack Rail Upgrade Kit	N	Y	2FZ76AA	
HP Keyed Cable Lock 10mm	N	Y	T1A62AA	
NOTE 1: Standard on all systems				

Input Devices

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
HP Wireless Business Slim Keyboard and Mouse	Y	Y	N3R88AA	
Business Slim PS/2 Wired Keyboard	Y	Y	N3R86AA	
USB Business Slim Wired Keyboard	Y	Y	N3R87AA	
USB Premium Wired Keyboard	Y	Y	Z9N40AA	
USB Wired SmartCard CCID Keyboard	Y	Y	E6D77AA	
3Dconnexion CADMouse	Y	Y	M5C35AA	
HP Optical USB Mouse	Y	Y	QY777AA	
HP PS/2 Mouse	Y	Y	QY775AA	
USB 1000dpi Laser Mouse	Y	Y	QY778AA	
HP USB Hardened Mouse	Y	Y	P1N77AA	

Other Hardware

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
HP Internal USB Port Kit	N	Y	EM165AA	Note 1
HP eSATA PCI Cable Kit	Y	Y	GM110AA	Note 2
HP Optical Bay HDD Mounting Bracket	N	Y	NQ099AA	Note 3
HP 2.5in HDD/SSD 2-in-1 ODD Bay Bracket	N	Y	K4T74AA	Note 4
HP Z Premium Front I/O 2xUSB-A 2xUSB-C	N	Y	1XM32AA	
HP Power Cord Kit	Y	N		
HP Workstation Mouse Pad	Y	N		Japan Only
HP ENERGY STAR® Certified Configuration	Y	N		

NOTE 1: The HP Internal USB Port kit has a single USB 2.0 type A connector.

NOTE 2: No hot plug / hot swap supported with eSATA

NOTE 3: NQ099AA used to install greater than four 3.5" HDDs in the factory or when purchasing Aftermarket Option (AMO) drives

NOTE 4: K4T74AA used to install greater than four 2.5" HDD/SSDs in the factory or when purchasing Aftermarket Option (AMO) drives

Supported Components

Software

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
Sobey Video Editing SW	Y	N		China Only
SW HP RGS for Z	Y	N		
HP Sure Start Gen3	Y	N		
HP Performance Advisor	Y	N		

Operating
Systems

	Support Notes
Windows 10 Pro 64	
Windows 7 Professional 64-bit	
Windows 10 Downgrade to Windows 7	
HP Linux® Installer Kit	Note 2
Red Hat® Enterprise Linux® (RHEL) Workstation - Paper License (1yr)	Note 1
NOTE 1: This second OS must be ordered with the HP Linux® Installer Kit as the first OS.	
NOTE 2: includes drivers for 64-bit OS versions of RHEL 6 & 7, SUSE Linux® Enterprise Desktop 11 and Ubuntu 14.04.	
For detailed Linux® OS/hardware support information, see: http://www.hp.com/support/linux_hardware_matrix	
For detailed Windows 7 OS hardware support information see http://h10032.www1.hp.com/ctg/Manual/c05857891.pdf .	
Intel Xeon® SP Processors: Platinum 8100, Gold 6100, Gold 5100, Silver 4100, & Bronze 3100 Family support Microsoft Windows 7 Professional 64-bit.	

System Technical Specifications

System Board

System Board Form Factor	Custom Form Factor, 16.34"?x15.25"? (415mm x 387.2mm)
Processor Socket	Dual FCLGA3647 (Socket P)
CPU Bus Speed	UPI: Up to 10.4GT/second, depending on processor
Chipset	Intel® C622 Chipset
Super I/O Controller	Nuvoton SI015
Memory Expansion Slots	24 slots (12 slots per CPU)
Memory Type Supported	DDR4 R-DIMM (Registered), ECC: 8GB, 16GB, 32GB, and 64GB DDR4 LR-DIMM (Load Reduced), ECC: 64GB DDR4 3DS LR DIMM (3D Stacked, Load Reduced), ECC: 128GB

Memory Modes	NUMA (Non-Uniform Memory Architecture), Memory Node Interleave
Memory Speed Supported	2133MT/s, 2400MT/s, and 2666MT/s, and 2933MT/s
Available Memory Configurations:	

System Memory	Single Processor												Perf Rating
	CPU 0												
	Top Slots						Bottom Slots						
	DIMM 1	DIMM 2	DIMM 3	DIMM 4	DIMM 5	DIMM 6	DIMM 7	DIMM 8	DIMM 9	DIMM 10	DIMM 11	DIMM 12	
8GB	8GB												Fair
16GB	8GB											8GB	Good
24GB	8GB		8GB		8GB								Better
32GB	8GB		8GB							8GB		8GB	Better
	16GB											16GB	Good
48GB	8GB		8GB		8GB			8GB		8GB		8GB	Best
	16GB		16GB		16GB								Better
64GB	16GB		16GB							16GB		16GB	Better
	32GB											32GB	Good
96GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	Best
	16GB		16GB		16GB			16GB		16GB		16GB	Best
	32GB		32GB		32GB								Better
128GB	32GB		32GB						32GB		32GB	Better	
192GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	Best
	32GB		32GB		32GB			32GB		32GB		32GB	Best
256GB	32GB	32GB	32GB		32GB			32GB		32GB	32GB	32GB	Better
	64GB		64GB							64GB		64GB	Better
384GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	Best
	64GB		64GB		64GB			64GB		64GB		64GB	Best
512GB	64GB	64GB	64GB		64GB			64GB		64GB	64GB	64GB	Better
768 GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	Best
	128GB		128GB		128GB			128GB		128GB		128GB	Best
1.5 TB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	Best

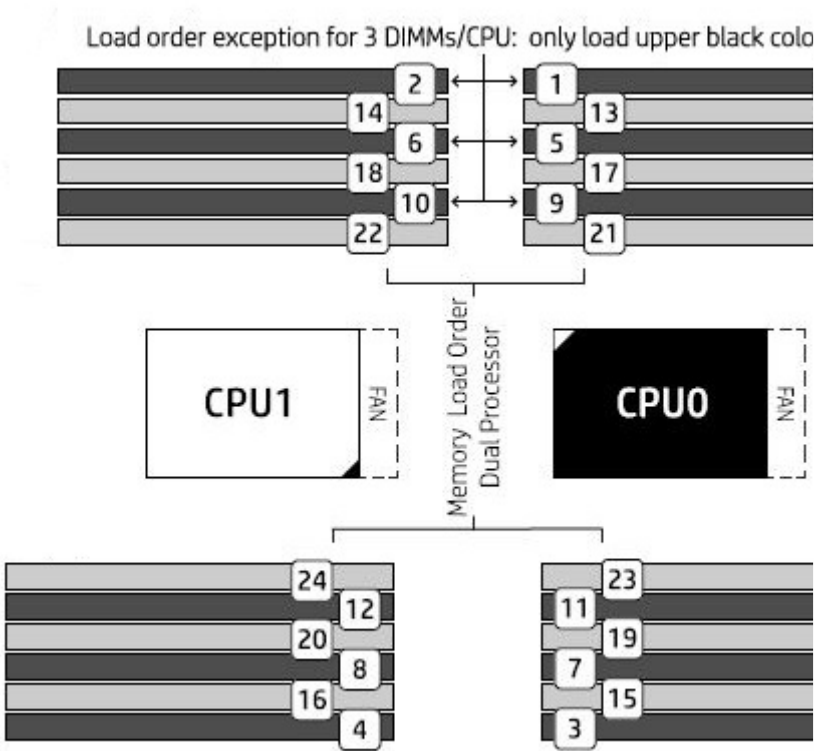
System Technical Specifications

System Memory	Dual Processor Configuration																	
	CPU 0												CPU 1					
	Top Slots						Bottom Slots						Top Slots					
	DIMM 1	DIMM 2	DIMM 3	DIMM 4	DIMM 5	DIMM 6	DIMM 7	DIMM 8	DIMM 9	DIMM 10	DIMM 11	DIMM 12	DIMM 1	DIMM 2	DIMM 3	DIMM 4	DIMM 5	DIMM 6
16GB	8GB												8GB					
32GB	8GB											8GB	8GB					
48GB	8GB		8GB		8GB								8GB		8GB		8GB	
64GB	8GB		8GB							8GB		8GB	8GB		8GB			
	16GB											16GB	16GB					
96GB	8GB		8GB		8GB			8GB		8GB		8GB	8GB		8GB		8GB	
	16GB		16GB		16GB								16GB		16GB		16GB	
128GB	16GB		16GB							16GB		16GB	16GB		16GB			
	32GB											32GB	32GB					
192GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB
	16GB		16GB		16GB			16GB		16GB		16GB	16GB		16GB		16GB	
	32GB		32GB		32GB								32GB		32GB		32GB	
256GB	32GB		32GB							32GB		32GB	32GB		32GB			
	64GB											64GB	64GB					
384GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB
	32GB		32GB		32GB			32GB		32GB		32GB	32GB		32GB		32GB	
	64GB		64GB		64GB								64GB		64GB		64GB	
512GB	64GB		64GB							64GB		64GB	64GB		64GB			
768GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB
	64GB		64GB		64GB			64GB		64GB		64GB	64GB		64GB		64GB	
	128GB		128GB		128GB								128GB		128GB		128GB	
1TB	64GB	64GB	64GB		64GB			64GB		64GB	64GB	64GB	64GB	64GB	64GB		64GB	
1.5TB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB
	128GB		128GB		128GB			128GB		128GB		128GB	128GB		128GB		128GB	
3TB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB	128GB

Memory Loading Order:

Load Order for Single and Dual Processor Configuration

System Technical Specifications



Maximum Memory Supports up to 1.5TB with two processors, using RDIMMs
Supports up to 3TB with two processors, using 3DS LR DIMMs

Memory Configuration (Supported) Only ECC Registered DIMMs are supported.

- RDIMM (Registered) ,LR DIMM (Load Reduction) and 3DS LR DIMM (3D Stacked) are supported. All memory installed in the system must be either RDIMM , LR DIMM or 3DS LR DIMM.
- Do not install memory modules into memory slots if corresponding processor is not installed.
- Dual processor configurations with memory modules installed for only one processor are not supported.

Notes

For systems installed with Microsoft Windows 7 (Ultimate, Enterprise or Pro), the maximum access

- Sleep (S3 state) support:
- Sleep (S3 state) may not be supported with non-HP validated and qualified 64 GB LR DIMMs.
- Sleep (S3 state) not supported with 128 GB LR DIMMs

PCI Express Connectors

Two PCIe Gen3 x16 with latch
Two PCIe Gen3 x16 with latch.

- Enabled only with optional 2nd CPU is installed.

One PCIe Gen3 x8 open-ended connector.

- Enabled for One PCIe Gen2 x4 slot with 1 CPU
- Enabled for One PCIe Gen3 x8 with optional 2nd CPU installed

Two PCIe Gen3 x4 open-ended connectors

Supported Drive Interfaces

SATA 2 sSATA @6Gb/s, supports RAID 0, 1.
8 SATA @6Gb/s, supports RAID 0, 1, 5, 10.
Factory integrated Intel® SATA RAID is Microsoft Windows only.

External SATA (eSATA)* Supported on all SATA and sSATA ports configurable with option
* hot plug / hot swap not supported with eSATA

System Technical Specifications

	Factory Configured RAID	SATA: RAID 0, 1, 10
Network Controller	Integrated Intel I219LM	Memory Integrated 3KB receive buffer and 3KB transmit buffer Data rates supported: 10/100/1000 Mb/s Compliance IEEE 802.1as/1588, 802.1p, 802.1Q, 802.3, 802.3ab, 802.3ae Up to 32 programmable filters Bus architecture PCIe 1.0 x1 and SMBus UEFI and PXE Boot ROM support Network transfer rates: 10BASE-T (half-duplex) 10 Mb/s 10BASE-T (full-duplex) 20 Mb/s 100BASE-TX (half-duplex) 100 Mb/s 100BASE-TX (full-duplex) 200 Mb/s 1000BASE-T (full-duplex) 2000 Mb/s Management capabilities: WOL (All Power States, including Max Power Savings), vPro compliant Advanced cable diagnostics, AMT 11.2x support, vPro compliant
	Integrated Intel X722 for 1GbE	Data rates supported: 1000 Mb/s Compliance IEEE 802.1as/1588v2, 802.1p, 802.1Q, 802.3, 802.3ae Up to 16 UDP/TCP programmable filters Bus architecture: PCIe 3.0 UEFI and PXE Boot ROM support Intel iWARP Support (RDMA) Network transfer rates: 1000BASE-T (full-duplex) 2000 Mb/s Management capabilities: WOL (Excluding Max Power Savings), vPro compliant Advanced cable diagnostics
Integrated Graphics	None	
PCI-X Connectors	None	
PCI Card Guide	Yes	
Wake on LAN	Yes, both ports	
Integrated Trusted Platform Module	Trusted Platform Module (TPM) 2.0 (Infineon SLB 9670) Common Criteria EAL4+ Certified FIPS 140-2 Certified TPM Certified products list: https://trustedcomputinggroup.org/membership/certification/tpm-certified-products/ CG TPM Certified products list: http://www.trustedcomputinggroup.org/certification/tpm-certified-products/	
IEEE 1394 Connector(s)	Front Rear Internal	None None None
USB Connector(s)	Front	Front I/O Entry: 4 USB 3.1 Gen1 (Left-most Port has Charging Capabilities) Front I/O Premium: 2x USB 3.1 Gen1, 2x USB 3.1 Gen2 Type-C™ (with Thunderbolt™ 3) <ul style="list-style-type: none">• Charging Ports provide 1.5 Amps @ 5 Volts• Standard USB Type A Ports provide 900mA @ 5 Volts• USB Type C Ports provide 3 Amps @ 5 Volts
	Rear	6 USB 3.1 Gen1, Type A
	Internal	1 USB 3.1 Gen1 available with a single 12-pin shrouded connector 1 USB 2.0 single-port header 1x USB 2.0 dual-port header

System Technical Specifications

HD Integrated Audio	Realtek ALC221		
Flash ROM	Yes		
CPU Fan Header	Two headers for CPU fans		
Memory Fan Header	Two headers		
Chassis Fan Header	One Rear Chassis Fan Header		
Front PCI Fan Header	One Front and one Aux Fan Header		
Front User Interface Header	Power Button; Power and HDD Activity LEDs; Power for USB Ports		
Front Audio Header	FIO Headset/Mic and Speaker		
CMOS Battery Holder - Lithium	Yes		
Power Supply Headers	Yes		
Clear Password Jumper	Yes		
Serial Port	Yes, on rear panel		
Parallel Port	No		
Keyboard/Mouse	Yes		
Power Supply	1125W/1275W*/1450W* 90% Efficient, Custom PSU (Wide-Ranging, Active PFC) 90-269 VAC		
Operating Voltage Range	100-127 VAC		
Rated Voltage Range	200-240 VAC		
Rated Line Frequency	50-60 Hz		
Operating Line Frequency Range	47-66 Hz		
Rated Input Current	12A @ 100-127 VAC		
Heat Dissipation (Configuration and software dependent)	10A @ 200-240 VAC		
Power Supply Fan	(2) Blowers variable speed		
ENERGY STAR Qualified (Configuration dependent)	Yes		
Power Supply Efficiency	90% Efficient		
The Z8 G4 1125W (1450W at 200V Input Voltage) power supply efficiency report can be found at this link: https://plugloadsolutions.com/psu_reports/HP%20Inc_DPS-1125BB%20A_1125W_ECOS%204825_Report.pdf			The Z8 G4 supply efficiency report can be found at this link: https://plugloadsolutions.com/psu_reports/HP%20Inc_DPS-1125BB%20A_1125W_ECOS%204825_Report.pdf
FEMP Standby Power Compliant @115V (<2W in S5 - Power Off)	Yes		
EuP Compliant @ 230V (<0.5 W in S5 - Power Off)	Yes		
CECP Compliant @ 220V (<4W in S3 - Suspend to RAM)	Yes; Configuration dependent		

System Technical Specifications

Power Consumption in sleep mode (as defined by ENERGY STAR) - Suspend to RAM (S3) (Instantly Available PC)	TBD
Built-in Self-Test LED	Yes
Surge Tolerant Full Ranging Power Supply (withstands power surges up to 2000V)	Yes

*Input voltage restriction

NOTE: The 1125W (1450W at 200V Input Voltage) power supply can also supply 1450W of output power when the input voltage is greater than 105V. If the input voltage is less than 105V, but greater than 90V, the power drawn is 1125W. An uninterruptible power supply (UPS) is highly recommended. The 1125W Power Supply can also supply 1450W of output power when the input voltage is greater than 105V. If the input voltage is less than 105V, but greater than 90V, the power drawn is 1125W. An uninterruptible power supply (UPS) is highly recommended.

NOTE: The 1450W (1700W at 200V Input Voltage) power supply can also supply 1700W of output power when the input voltage is greater than 105V. If the input voltage is less than 105V, but greater than 90V, the power drawn is 1450W. An uninterruptible power supply (UPS) is highly recommended.

The 1450W Power Supply can also supply 1700W of output power when the input voltage is greater than 180V under all conditions.

AUX IN (audio)	No
Clear CMOS Button	Yes
Multibay Header	No
Integrated Gigabit Ethernet	Yes, dual port.
Access Panel Solenoid Lock Header	No
Access Panel Intrusion Sensor Header	Yes, as part of Front UI (Control Panel) cable header
Memory Fan Connector	Yes, blind-mate

System Configurations

Example Z8 G4 Configuration #1	Processor Info	1x Intel Xeon 3106 1.7 2133 8C 85 1stCPU					
	Memory Info	16GB DDR4-2666 (2x8GB) RegRAM CPU1					
	Graphics Info	1x NVIDIA Quadro P600					
	Disks/Optical/Floppy	1x 256GB SATA 1st SSD /1x DVD-ROM SATA					
	Power Supply	1125W 90% Custom PSU					
	Other	-					
		115 VAC		230 VAC		100 VAC	
Energy Consumption		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled
	Windows Idle (S0)	75.4		74.8		75.7	
	Windows Busy Typ(S0)	122.04		111.9		113.6	
	Windows Busy Max (S0)	125.4		124.6		126.6	
	Sleep (S3)	6.22	6.26	6.26	6.26	6.33	6.25
	Off (S5)	4.23	4.19	4.19	4.16	4.13	4.12
	Zero Power Mode (ErP)	0.31		0.40		0.29	
Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled	LAN Disabled	LAN Enabled
	Windows Idle (S0)	257.5		255.3		258.5	
	Windows Busy Typ(S0)	416.4		382.0		387.6	
	Windows Busy Max (S0)	427.9		425.1		432.0	
	Sleep (S3)	21.2	21.1	21.3	21.2	21.6	21.3
	Off (S5)	14.4	14.0	14.3	14.2	14.1	14.1

System Technical Specifications

	Zero Power Mode (ErP)	1.04	1.38	0.99
--	-----------------------	------	------	------

Example Z8 G4 Configuration #2	Processor Info	2x Intel Xeon 4114 2.2 2400 10C 85 1stCPU					
	Memory Info	48GB DDR4-2666 (6x8GB) RegRAM CPU2					
	Graphics Info	1x NVIDIA Quadro P2000					
	Disks/Optical/Floppy	4x 512GB SATA 1st SSD /1x DVD-ROM SATA					
	Power Supply	1125W 90% Custom PSU					
	Other	-					
		115 VAC		230 VAC		100 VAC	
Energy Consumption		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled
	Windows Idle (S0)	105.2		103.3		102.5	
	Windows Busy Typ(S0)	257.4		246.3		260.9	
	Windows Busy Max (S0)	296.2		289.9		297.6	
	Sleep (S3)	8.46	8.35	8.57	8.45	8.58	8.57
	Off (S5)	4.15	4.14	4.31	4.19	4.21	4.15
	Zero Power Mode (ErP)	0.31		0.40		0.29	
		115 VAC		230 VAC		100 VAC	
Heat Dissipation (Btu/hr)		LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled	LAN Disabled	LAN Enabled
	Windows Idle (S0)	359.0		352.5		349.8	
	Windows Busy Typ(S0)	878.3		840.5		890.2	
	Windows Busy Max (S0)	1010.7		989.1		1015.6	
	Sleep (S3)	28.8	28.5	29.2	28.8	29.2	29.2
	Off (S5)	14.1	14.1	14.6	14.2	14.3	14.1
	Zero Power Mode (ErP)	1.04		1.36		0.99	
		115 VAC		230 VAC		100 VAC	

Example Z8 G4 Configuration #3	Processor Info	2x Intel Xeon 5120 2.2 2400 14C 105 1stCPU					
	Memory Info	96GB DDR4-2666 (12x8GB) RegRAM CPU2					
	Graphics Info	1x NVIDIA Quadro P4000					
	Disks/Optical/Floppy	4x 2TB 7200 RPM SATA 1st HDD /1x DVDRW SATA					
	Power Supply	1125W 90% Custom PSU					
	Other	-					
		115 VAC		230 VAC		100 VAC	
Energy Consumption		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled
	Windows Idle (S0)	125.7		123.6		125.8	
	Windows Busy Typ(S0)	340.7		332.9		343.7	
	Windows Busy Max (S0)	417.1		411.8		426.1	
	Sleep (S3)	9.28	9.10	9.24	9.15	9.49	9.26
	Off (S5)	4.15	4.14	4.32	4.10	4.21	4.16
	Zero Power Mode (ErP)	0.31		0.41		0.30	
		115 VAC		230 VAC		100 VAC	
Heat Dissipation (Btu/hr)		LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled	LAN Disabled	LAN Enabled
	Windows Idle (S0)	429.3		422.0		429.5	
	Windows Busy Typ(S0)	1162.7		1136.0		1172.9	
	Windows Busy Max (S0)	1423.4		1405.3		1453.9	
	Sleep (S3)	31.6	31.0	31.5	31.2	32.4	31.5
	Off (S5)	14.1	14.1	14.7	13.9	14.3	14.2
	Zero Power Mode (ErP)	1.05		1.38		1.03	
		115 VAC		230 VAC		100 VAC	

System Technical Specifications

Example Z8 G4 Configuration #4	Processor Info	2x Intel Xeon 6152 2.1 2666 22C 140 CPU					
	Memory Info	192GB DDR4-2666 (24x8GB) ReqRAM CPU					
	Graphics Info	2x NVIDIA Quadro P5000					
	Disks/Optical/Floppy	6x 1 TB SATA SSD /1x DVDRW SATA					
	Power Supply	1125W 90% Custom PSU					
	Other	-					
	Energy Consumption		115 VAC		230 VAC		100 VAC
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled
Windows Idle (S0)		161.1		157.8		160.4	
Windows Busy Typ(S0)		524.7		500.7		496.1	
Windows Busy Max (S0)		644.2		624.2		652.7	
Sleep (S3)		10.3	10.2	10.2	10.1	10.1	10.1
Off (S5)		4.14	4.01	4.19	4.19	4.16	4.15
Zero Power Mode (ErP)		0.31		0.41		0.31	
Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled	LAN Disabled	LAN Enabled
	Windows Idle (S0)	549.6		538.4		547.5	
	Windows Busy Typ(S0)	1790.4		1708.6		1692.6	
	Windows Busy Max (S0)	2198.1		2129.8		2227.0	
	Sleep (S3)	35.3	34.9	35.0	34.7	34.5	134.3
	Off (S5)	14.1	13.6	14.3	14.3	14.2	14.1
	Zero Power Mode (ErP)	1.06		1.39		1.04	

Example Z8 G4 Configuration #5	Processor Info	2x Intel Xeon 6136 3.0 2666 12C 150 CPU					
	Memory Info	768GB DDR4-2666 (24x32GB) RegRAM CPU2					
	Graphics Info	2x NVIDIA Quadro P6000					
	Disks/Optical/Floppy	HP Z Turbo Quad Pro 4x1TB + 4x 1 TB SATA SSD /1x DVDRW SATA					
	Power Supply	1450W 90% Custom PSU					
	Other	-					
		115 VAC		230 VAC		100 VAC	
Energy Consumption		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled
	Windows Idle (S0)	194.0		192.6		197.0	
	Windows Busy Typ(S0)	640.2		622.0		647.0	
	Windows Busy Max (S0)	788.0		761.3		800.6	
	Sleep (S3)	21.1	19.7	19.7	18.8	21.3	19.8
	Off (S5)	4.24	4.22	4.53	4.51	4.24	4.21
Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Enabled	LAN Disabled	LAN Enabled
	Windows Idle (S0)	662.1		657.2		672.3	
	Windows Busy Typ(S0)	2184.3		2122.3		2207.7	
	Windows Busy Max (S0)	2688.8		2597.8		2731.7	
	Sleep (S3)	72.3	67.5	67.5	64.1	72.6	67.7
	Off (S5)	14.4	14.4	15.4	15.4	14.4	14.3

NOTE: Power consumption measurements do not take advantage of the Intel Turbo Boost Technology. As a result, power consumption measurements may be higher.

Declared Noise Emissions

System Technical Specifications

System Configuration (Entry level)	Processor Info	2-Intel® Xeon® Gold 6134 pr
	Memory Info	96GB (12x8GB) DDR4-2666
	Graphics Info	1-NVIDIA® Quadro
	Disks/Optical	1-500GB SATA 7200RPM 3.5"? HDD / 1-
	Power Supply	1125 V

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)		Sound Power (LWAd, bels)	Deskside Sound Pressure (LpAm, decibels)
	Idle	3.6	19
	Hard drive Operating (random reads)	3.7	19

System Configuration (Mid-range)	Processor Info	2-Intel® Xeon® Gold 6146 pro
	Memory Info	384GB (24x16GB) DDR4-2666
	Graphics Info	1-NVIDIA® Quadro®
	Disks/Optical	2-300GB 12Gb/s 15KRPM SAS HDD / 1-
	Power Supply	1450 V

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)		Sound Power (LWAd, bels)	Deskside Sound Pressure (LpAm, decibels)
	Idle	3.6	20
	Hard drive Operating (random reads)	3.8	23

Environmental Data

System Technical Specifications

Environmental Requirements	Temperature	Operating: 5° to 35° C (40° to 95° F) Non-operating: -40° to 60° C (-40° to 140° F)
	Humidity	Operating: 8% to 85% RH, non-condensing Non-operating: 8% to 90% RH, non-condensing
	Maximum Altitude	Operating: 3,048 m (10,000 feet) Non-operating: 9,144 m (30,000 feet)
	Dynamic (new)	Shock Operating: ½-sine: 40g, 2-3ms (~62 cm/sec) Non-operating: ½-sine: 160 cm/s, 2-3ms (~105g) square: 422 cm/s, 20g NOTE: Values represent individual shock events and do not indicate repetitive shock events.
	Cooling	Vibration Operating random: 0.5g (rms), 5-300 Hz, up to 0.0025g²/Hz Non-operating random: 2.0g (rms), 5-500 Hz, up to 0.0150 g²/Hz NOTE: Values do not indicate continuous vibration. Above 1524 m (5,000 feet) altitude, the maximum operating temperature is reduced by 1° C (1.8° F) for every 305 m (1,000 feet) increase in elevation, up to 3048 m (10,000 feet)

Physical Security and Serviceability

Access Panel	Tool-less Includes system board and memory information.
Optical Drive	Tool-less, 2 nd Optical Drive requires a 5.25" bay carrier
Hard Drives	Tool-less
Expansion Cards	Tool-less
Processor Socket	Tool-less
Blue User Touch Points	Yes, on tool-free internal chassis components.
Color-coordinated Cables and Connectors	Yes
Memory	Tool-less
System Board	Tool-less, retained by Front Card Guide and Top Memory Fan Holder
Dual Color Power and HD LED on Front of Computer	No
Configuration Record SW	Yes
Over-Temp Warning on Screen	Yes. Temp-Caution and Temp Critical are provide via the WMI interface. Tools like the HPPA can display the Critical and Caution state.
Restore CD/DVD Set	Restores the computer to its original factory shipping image; can be obtained via HP Support.
Dual Function Front Power Switch	Yes, causes a fail-safe power off when held for 4 seconds
Padlock Support	No
Cable Lock Support	Yes, Kensington Cable Lock (optional): Prevents entire system theft only. 3mm x 7mm slot at rear of system
Universal Chassis Clamp Lock Support	No
Solenoid Lock and Hood Sensor	No
Rear Port Control Cover	No

System Technical Specifications

Serial, USB, Audio, Network, Enable/Disable Port Control	Yes. USB disablement zones are Front, Rear and Internal
Removable Media Write/Boot Control	No
Power-On Password Setup Password	Yes, prevents an unauthorized person from booting up the workstation Yes, prevents an unauthorized person from changing the workstation configuration
3.3V Aux Power LED on System PCA	No
NIC LEDs (integrated) (Green & Amber)	Yes
CPU(s) and Heatsinks	A torx driver (T30) is needed to remove the heatsink(s). CPU attached to heatsink via tool-less clip
Power Supply Diagnostic LED	Yes
Front Power Button	Yes
Front Power LED	Yes, white (normal), red (fault)
Front Hard Drive Activity LED	Yes, white
Front ODD Activity LED	Yes
Internal Speaker	Yes
System/Emergency ROM Flash Recovery	Recovers corrupted system BIOS
Cooling Solutions	Air cooled forced convection
Power Supply Fans	2x - Dual Side Inlet Blowers
CPU Heatsink Fan	80mm x 25mm 5-wire PWM for each CPU
Chassis Fan	Rear: 120mm x 38mm Front: 120mm x 25mm (PCIe zone)
Memory Heatsink Fan	Front 92mm x 25mm (upper memory bank); Front 80mm x 25mm (lower memory bank)
HP PC Hardware Diagnostics UEFI	HP PC Hardware Diagnostics (UEFI) enables hardware level testing outside the operating system on many components. The diagnostics can be invoked by pressing ESC then F2 upon the PC reboot, and is available as a download from HP Support.
Access Panel Key Lock	Yes, prevents removal of the access panel and all internal components including optical and storage devices
ACPI-Ready Hardware	Advanced Configuration and Power Management Interface (ACPI). <ul style="list-style-type: none">Allows the system to wake from a low-power mode.Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system
Trusted Platform Module Chip	Yes
Integrated Chassis Handles	Yes, front and rear
Power Supply	Tool-less, rear access direct-connect (blind-mate)
PCIe Card Retention	Yes, tool-less Rear (all) Middle (full-height cards) Front (full-length cards with extenders)
Flash ROM	Yes.SPI ROM

System Technical Specifications

Diagnostic Power Switch	Yes
LED on board	
Clear Password Jumper	Yes
Clear CMOS Button	Yes
CMOS Battery Holder	Yes
DIMM Connectors	Yes

BIOS

BIOS 32-bit Services	Standard BIOS 32-bit Service Directory Proposal v0.4 BIOS supports 32 and 64-bit Operating systems.
PCI 3.0 Support	Full BIOS support for PCI Express through industry standard interfaces.
ATAPI	ATAPI Removable Media Device BIOS Specification Version 1.0.
BBS	BIOS Boot Specification v1.01.
WMI Support	WMI is Microsoft's implementation of Web-Based Enterprise Management (WBEM) for Windows. WMI is fully compliant with the Distributed Management Task Force (DMTF) Common Information Model (CIM) and WBEM specifications.
BIOS Boot Spec 1.01+	Provides more control over how and from what devices the workstation will boot.
BIOS Power On	Users can define a specific date and time for the system to power on.
ROM Based Computer Setup Utility (F10)	Review and customize system configuration settings controlled by the BIOS.
System/Emergency ROM Flash Recovery with Video	Recovers system BIOS in corrupted Flash ROM.
Replicated Setup	Saves BIOS settings to USB flash device in human readable file (HpSetup.txt). BiosConfigurationUtility.exe utility can then replicate these settings on machines being deployed without entering Computer Configuration Utility (F10 Setup).
SMBIOS	System Management BIOS 2.8, for system management information.
Boot Control	Disables the ability to boot from removable media on supported devices.
Memory Change Alert	Alerts management console if memory is removed or changed.
Thermal Alert	Monitors the temperature state within the chassis. Three modes: <ul style="list-style-type: none">• NORMAL - normal temperature ranges.• ALERTED - excessive temperatures are detected. Raises a flag so action can be taken to avoid shutdown or provide for a smoother system shutdown.• SHUTDOWN - excessive temperatures are encountered. Automatically shuts down the computer without warning before hardware component damage occurs.
Remote ROM Flash	Provides secure, fail-safe ROM image management from a central network console.
ACPI (Advanced Configuration and Power Management Interface)	Allows the system to enter and resume from low power modes (sleep states). Enables an operating system to control system power consumption based on the dynamic workload. Makes it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system. Supports ACPI 5.0 for full compatibility with 64-bit operating systems.
Ownership Tag	A user-defined string stored in non-volatile memory that is displayed in the BIOS splash screen.
Remote Wakeup/Remote Shutdown	System administrators can power on, restart, and power off a client computer from a remote location.
Instantly Available PC (Suspend to RAM - ACPI sleep state S3)	Allows for very low power consumption with quick resume time.
Remote System Installation via F12 (PXE 2.1) (Remote Boot from Server)	Allows a new or existing system to boot over the network and download software, including the operating system.

System Technical Specifications

ROM revision levels	Reports the system BIOS revision level in Computer Configuration Utility (F10 Setup). Version is available through an industry standard interface (SMBIOS and WMI) so that management SW applications can use and report this information.
System board revision level	Allows management SW to read revision level of the system board. Revision level is digitally encoded into the HW and cannot be modified.
Start-up Diagnostics (Power-on Self-Test)	Assesses system health at boot time with selectable levels of testing.
Auto Setup when new hardware installed	System automatically detects addition of new hardware.
Keyboard-less Operation	The system can be booted without a keyboard.
Localized ROM Setup	Common BIOS image supports System Configuration Utility (F10 Setup) menus in 14 languages with local keyboard mappings.
Asset Tag	The user or MIS to set a unique tag string in non-volatile memory.
Per-slot Control	Allows I/O slot parameters (option ROM enable/disable, bus latency) to be configured individually.
Adaptive Cooling	Control parameters are set according to detected hardware configuration for optimal acoustics.
Pre-boot Diagnostics	(Pre-video) critical errors are reported via beeps and blinks on the power LED.
Industry Standard Specification Support	
Industry Standard UEFI Specification Revision	Revision Supported by the BIOS 2.5
ACPI	Advanced Configuration and Power Management Interface, Version 5.0
ATA (IDE)	AT Attachment 6 with Packet Interface (ATA/ATAPI-6), Revision 3b
CD Boot	"El Torito" Bootable CD-ROM Format Specification Version 1.0
EDD	- Enhanced Disk Drive Specification Version 1.1 - BIOS Enhanced Disk Drive Specification Version 3.0
EHCI	Enhanced Host Controller Interface for Universal Serial Bus, Revision 1.0
PCI	PCI Local Bus Specification, Revision 2.3 PCI Power Management Specification, Revision 1.1 PCI Firmware Specification, Revision 3.0, Draft .7
PCI Express	PCI Express Base Specification, Revision 2.0 PCI Express Base Specification, Revision 3.0
PMM	POST Memory Manager Specification, Version 1.01
SATA	Serial ATA Specification, Revision 1.0a Serial ATA 3 Gb/s: Serial ATA Specification, Revision 2.5 Serial ATA 6 Gb/s: Serial ATA Specification, Revision 3.0
SPD	PC SDRAM Serial Presence Detect (SPD) Specification, Revision 1.2B
TPM	Trusted Computing Group TPM Specification Version 2.0 (Infineon SLB 9670). Common Criteria EAL4+ certified. FIPS 140-2 Certification TCG TPM Certified products list: http://www.trustedcomputinggroup.org/certification/tpm-certified-products/
UHCI	Universal Host Controller Interface Design Guide, Revision 1.1
USB	Universal Serial Bus Revision 1.1 Specification Universal Serial Bus Revision 2.0 Specification Universal Serial Bus Revision 3.1 Specification
SMBIOS	System Management BIOS Reference Specification, Version 2.8 External BIOS simulator found at: http://csrsm1.itcs.hp.com/

System Technical Specifications

Social and Environmental Responsibility

Eco-Label Certifications & Declarations

This product has received or is in the process of being certified to the following approvals and ma

- ENERGY STAR® (energy-saving features available on selected configurations-Windows only)
- US Federal Energy Management Program (FEMP)
- China Energy Conservation Program
- The ECO declaration (TED)

The Z8 G4 is registered EPEAT® Gold in the US and Canada. EPEAT® registration varies by country country. Search keyword generator on HP's 3rd party option store for solar generator accessorie
The battery in this product complies with EU Directive 2006/66/EC

Battery size: CR2032 (coin cell)

Battery mass: 3g

Battery type: Lithium Metal

The battery in this product does not contain:

- Mercury greater than 5ppm by weight
- Cadmium greater than 10ppm by weight
- Lead greater than 40ppm by weight

Restricted Material Usage

This product meets the material restrictions specified in HP's General Specification for the Enviro
HP Inc. is committed to compliance with all applicable environmental laws and regulations, includ
Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requir

Low Halogen Statement

This product is low-halogen except for power cords, external cables and peripherals. The followi
not be low-halogen: 3 1/2" SAS HDDs. Service parts obtained after purchase may not be low-halog
HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To
<http://www.hp.com/recycle> or contact your nearest HP sales office. Products returned to HP will
manner. This product is greater than 90% recyclable by weight when properly disposed of at end

For more information about HP's commitment to the environment:
[Sustainability Report](#)

End-of-Life Management and Recycling

HP Inc. Corporate Environmental Information

Eco-label certifications: <http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign>
ISO 14001 certificate: <http://www.hp.com/hpinfo/globalcitizenship/environment/operations/en>

- This HP product is designed to comply with the Waste Electrical and Electronic Equipment [Instructions](#)
- Plastic parts weighing over 25 grams used in the product are marked per ISO 11469 and IS
- This product is >90% recycle-able when properly disposed of at end of life.

Additional Information

HP Workstation product packaging meets the [HP's General Specification for the Environment](#)

Packaging

- Does not contain restricted substances listed in HP Standard 011-1 General Specification f
 - Does not contain ozone-depleting substances (ODS)
 - Does not contain heavy metals (lead, mercury, cadmium or hexavalent chromium) in exces
 - Maximizes the use of post-consumer recycled content materials in packaging materials
 - All packaging material is recyclable
 - All packaging material is designed for ease of disassembly
 - Reduced size and weight of packages to improve transportation fuel efficiency
 - Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards fo
 - A multi-unit eco packaging option is available to institutional customers that uses less pac
- conventional single-unit packaging. Please contact your sales representative for additiona

Packaging Materials
Internal
External

Cushions and plastic bags made of low density polyethylene (LDPE).
Outer carton, accessories carton, and insert made of corrugated paper board.

Manageability

System Technical Specifications

Industry Standard Specifications	<p>This product meets the following industry standard specifications for manageability functionality:</p> <ul style="list-style-type: none">• DASH 1.1 (via Intel® LAN on motherboard)
Intel® Active Management Technology (AMT)	<p>Intel® Active Management Technology (AMT) 11.2x</p> <p>An advanced set of remote management features and functionality providing IT administrators the latest and most effective tools to remotely discover, heal, and protect networked client systems regardless of the system's health or power state. AMT 11.2x includes the following advanced management functions:</p> <ul style="list-style-type: none">• Power Management (on, off, reset, graceful shutdown, sleep and hibernate)<ul style="list-style-type: none">○ Support in Max Power Savings (Shutdown and Hibernate Modes)• Hardware Inventory (includes BIOS and firmware revisions)• Hardware Alerting• Agent Presence• System Defense Filters• Serial Over LAN (SOL)• USB Redirect (Media Redirection)• ME Wake-on-LAN (WOL), even with Maximum Power Savings Enabled• DASH 1.1 compliance• IPv6 Support• Fast Call for Help - a client inside or outside the firewall may initiate a call for help via BIOS screen, periodic connections, or alert triggered connection• Remote Scheduled Maintenance - pre-schedule when the system connects to the IT or service provider console for maintenance.• Remote Alerts - automatically alert IT or service provider if issues arise• Access Monitor - Provides oversight into Intel® AMT actions to support security requirements• PC Alarm Clock• Microsoft NAP Support• Host Base set-up and configuration• Management Engine (ME) firmware roll back• Local Time Sync to UTC• Remote Memory Dump Command - Creates memory dump for debug
Intel® vPro™ Technology	<p>The HP Z8 G4 Workstation supports Intel® vPro™ technology when configured as outlined below:</p> <ul style="list-style-type: none">• Intel® Xeon® processor E5-1600 v5 or E5-2600 v5 product family featuring Intel® vPro™ Technology• Intel® C622 chipset• Intel® I219LM GbE LAN
Remote Manageability Software Solutions	<p>The HP Z8 G4 Workstation is supported on the following remote manageability software consoles:</p> <ul style="list-style-type: none">• LANDesk Management Suite (HP recommended solution)• Microsoft System Center Configuration Manager• HP Client Automation Enterprise <p>For questions or support for manageability needs, please visit http://www.hp.com/go/clientmanagement</p>
System Software Manager Service, Support, and Warranty	<p>For questions or support for SSM, please visit: http://www.hp.com/go/ssm</p> <p>On-site Warranty and Service (Note 1): Three-years, limited warranty and service offering delivers on-site, next business-day (Note 2) service for parts and labor and includes free telephone support (Note 3) 8am - 5pm. Global coverage (Note 2) ensures that any product purchased in one country and transferred to another, non-restricted country will remain fully covered under the original warranty and service offering. 24/7 operation will not void the HP warranty.</p>

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply.

NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

NOTE 3: Technical telephone support applies only to HP-configured, HP and HP-qualified, third-party hardware and software. Toll-free calling and 24x7 support service may not be available in some countries.

HP Care Pack Services are extended service contracts that go beyond the standard limited warranties. Service starts from date of hardware purchase. 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

System Technical Specifications

Services information by product is available at: <http://www.hp.com/hps/carepack>. Service levels and response times for HP Care Packs may vary depending on your geographic location. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Product Change Notification

- Program to proactively communicate Product Change Notifications (PCNs) and Customer Advisories by email to customers, based on a user-defined profile.
- PCNs provide advance notification of hardware and software changes to be implemented in the factory providing time to plan for transition.
- Customer Advisories provide concise, effective problem resolution, greatly reducing the need to call technical support.

Stable & Consistent Offerings

Global Series SKUs As part of its commitment to hardware, software, and solution innovation, HP is proud to introduce this breakthrough platform configuration stability to HP Workstation customers. HP Stable & Consistent Offerings are built on the foundation of a carefully chosen set of hardware and software designed and tested to work with all HP Z Workstation platforms through their end of life. These components and their corresponding HP Workstation platform compatibility are outlined in this section.

Stable & Consistent Offerings HP Stable & Consistent Offerings are available worldwide to all HP Workstation customers-no special programs, no additional cost-no kidding. Simply select your hardware and software components when you customize your HP Workstation and be assured that you'll be able to buy that same configuration throughout the lifecycle of the product.

Processors	Product #	Offering
	2DL76AV	Intel® Xeon® Gold 6128 processor
	2DL77AV / 1XM69AA	Intel® Xeon® Gold 6128 2 nd processor
	2DL66AV	Intel® Xeon® Silver 4114 processor
	2DL67AV / 1XM74AA	Intel® Xeon® Silver 4114 2 nd processor
	2DL62AV	Intel® Xeon® Silver 4108 processor
	2DL63AV / 1XM76AA	Intel® Xeon® Silver 4108 2 nd processor

Hard Drives	Product #	Offering
	Z5J60AV / LQ037AA	1TB SATA 7200 RPM 3.5"? HDD

Graphics	Product #	Offering
	2TF08AA	AMD Radeon™ Pro WX 3100 4GB Graphics

Memory	Product #	Offering
	TBD	TBD

Optical and Removable Storage	Product #	Offering
	TBD	TBD

Technical Specifications - Processors

- Intel® Xeon® Platinum 8280 processor
- Intel® Xeon® Platinum 8260M processor
- Intel® Xeon® Platinum 8260 processor
- Intel® Xeon® Platinum 8180 processor
- Intel® Xeon® Platinum 8160M processor
- Intel® Xeon® Platinum 8160 processor
- Intel® Xeon® Gold 6254 processor
- Intel® Xeon® Gold 6252 processor
- Intel® Xeon® Gold 6248 processor
- Intel® Xeon® Gold 6244 processor
- Intel® Xeon® Gold 6242 processor
- Intel® Xeon® Gold 6240Y processor
- Intel® Xeon® Gold 6240 processor
- Intel® Xeon® Gold 6230 processor
- Intel® Xeon® Gold 6152 processor
- Intel® Xeon® Gold 6154 processor
- Intel® Xeon® Gold 6148 processor
- Intel® Xeon® Gold 6146 processor
- Intel® Xeon® Gold 6144 processor
- Intel® Xeon® Gold 6142M processor
- Intel® Xeon® Gold 6142 processor
- Intel® Xeon® Gold 6140M processor
- Intel® Xeon® Gold 6140 processor
- Intel® Xeon® Gold 6138 processor
- Intel® Xeon® Gold 6136 processor
- Intel® Xeon® Gold 6134M processor
- Intel® Xeon® Gold 6134 processor
- Intel® Xeon® Gold 6132 processor
- Intel® Xeon® Gold 6130 processor
- Intel® Xeon® Gold 6128 processor
- Intel® Xeon® Gold 6126 processor*
- Intel® Xeon® Gold 5222 processor
- Intel® Xeon® Gold 5220 processor
- Intel® Xeon® Gold 5218 processor
- Intel® Xeon® Gold 5215M processor
- Intel® Xeon® Gold 5215 processor
- Intel® Xeon® Gold 5120 processor
- Intel® Xeon® Gold 5118 processor
- Intel® Xeon® Gold 5122 processor
- Intel® Xeon® Gold 4216 processor
- Intel® Xeon® Gold 4215 processor
- Intel® Xeon® Gold 4214Y processor
- Intel® Xeon® Gold 4214 processor
- Intel® Xeon® Gold 4210 processor
- Intel® Xeon® Gold 4208 processor
- Intel® Xeon® Silver 4116 processor

Technical Specifications - Processors

Intel® Xeon® Silver 4114 processor

Intel® Xeon® Silver 4112 processor

Intel® Xeon® Silver 4110 processor

Intel® Xeon® Silver 4108 processor

Intel® Xeon® Gold 3204 processor

Intel® Xeon® Bronze 3106 processor

Intel® Xeon® Bronze 3104 processor

*Intel® Xeon® Gold 6126 processor (selected North America public sector customers only), Availability date TBD.

**Available May 2019



Storage/Hard Drives

HP SAS (Serial Attached SCSI) Hard Drives for HP Workstations	HP 300GB SAS 15K SFF HDD	Capacity	300GB	
		Height	5.9 in; 15 cm	
		Width	Media Diameter	3.5 in; 8.9 cm
		Interface	12Gb/s SAS	
		Synchronous Transfer Rate (Maximum)	Up to 1200 MB/s (SAS single port)*	
		Buffer	128MB	
		Seek Time (typical reads, includes controller overhead, including settling)	Average	2.0ms *
		Rotational Speed	15K rpm	
		Operating Temperature	41° to 131° F (5° to 55° C)	
		*Actual performance may vary.		

SATA (Serial ATA) Hard Drives for HP Workstations	500GB SATA 7200 rpm 6Gb/s 3.5" HDD	Capacity	500GB	
		Height	1 in; 2.54 cm	
		Width	Media Diameter	3.5 in; 8.9 cm
			Physical Size	4 in; 10.17 cm
		Interface	Serial ATA (6.0Gb/s), NCQ enabled	
		Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
		Buffer	16MB	
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track	2 ms*
			Average	11 ms*
			Full Stroke	21 ms*
	Rotational Speed	7,200 rpm		
	Logical Blocks	976,773,168		
	Operating Temperature	41° to 131° F (5° to 55° C)		
*Actual performance may vary.				

	1TB SATA 7200 rpm 6Gb/s 3.5" HDD	Capacity	1TB	
		Height	1 in; 2.54 cm	
		Width	Media Diameter	3.5 in; 8.9 cm
			Physical Size	4 in; 10.17 cm
		Interface	Serial ATA (6.0Gb/s), NCQ enabled	
		Synchronous Transfer Rate (Maximum)	Up to 600 MB/s*	
		Buffer	64MB	
		Cache	Adaptive	

Technical Specifications - Hard Drives

Seek Time (typical reads, includes controller overhead, including settling)	Single Track	2 ms*
	Average	11 ms*
	Full Stroke	21 ms*
Rotational Speed	7,200 rpm	
Operating Temperature	41° to 131° F (5° to 55° C)	
*Actual performance may vary.		

2.0TB SATA 7200 rpm 6Gb/s 3.5" HDD	Capacity	2.0TB	
	Height	1 in; 2.54 cm	
	Width	Media Diameter	3.5 in; 8.9 cm
		Physical Size	4 in; 10.17 cm
	Interface	Serial ATA (6.0 Gb/s), NCQ Enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600 MB/s*	
	Buffer	64MB	
	Seek Time (typical reads, includes controller overhead, including settling)	Single Track	1.0 ms*
		Average	11 ms*
		Full Stroke	18 ms*
	Rotational Speed	7,200 rpm	
	Logical Blocks	3,907,029,168	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	*Actual performance may vary.		

1TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Capacity	1TB	
	Protocol	SATA	
	Form Factor	3.5"	
	Controller	AHCI	
	Reliability (MTBF)	2.0M hours	
	Rated Power On Hours	8760/yr	
	Annualized Failure Rate (based on Rated POH)	<0.62%	
	Rated for 24/7/365 operation	YES	
	Physical Size (Height)	1 in; 2.54 cm	
	Physical Size (Width)	4 in; 10.17 cm	
	Media Diameter	3.5 in; 8.9 cm	
	Interface	Serial ATA (6Gb/s), NCQ enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Buffer	128MB	
	Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.32ms*
		Average	7.45ms*
		Full Stroke	14.2ms*
	Operating Temperature	41° to 140° F (5° to 60° C)	

Technical Specifications - Hard Drives

4TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Performance	Sequential Read	up to 226MB/s*
		Sequential Write	up to 226MB/s*
	Enterprise Class Features	High Reliability	
	*Actual performance may vary.		
	Capacity	4TB	
	Height	0.275 in; 0.7 cm	
	Width	Media Diameter	2.5 in; 6.36 cm
		Physical Size	2.75 in; 6.99 cm
	Interface	Serial ATA (6Gb/s), NCQ enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
Buffer	128MB		
Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.7ms*	
	Average	8.5ms*	
	Full Stroke	15.7ms*	
Rotational Speed	7,200 rpm		
Operating Temperature	32° to 140° F (0° to 60° C)		
*Actual performance may vary.			

500GB SATA 7.2K SED SFF HDD	Capacity	500GB	
	Height	0.275 in; 0.7 cm	
	Width	Media Diameter	2.5 in; 6.36 cm
		Physical Size	2.75 in; 6.99 cm
	Interface	Serial ATA (6Gb/s)	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Buffer	32MB	
	Seek Time (typical reads, includes controller overhead, including settling)	Single Track	1ms*
		Average	4.2ms*
		Full Stroke	25ms (typical)*
Rotational Speed	7,200 rpm		
Operating Temperature	32° to 140° F (0° to 60° C)		
*Actual performance may vary.			

Technical Specifications - Hard Drives

SATA SSDs for HP Workstations	HP 256GB SATA 6Gb/s SSD	Capacity	256GB	
		Protocol	SATA	
		Form Factor	2.5"	
		Controller	AHCI	
		NAND Type	3D TLC	
		Endurance	192TBW (TB Written)	
		Reliability (MTTF)	1.5M hours	
		Physical Size (Height)	0.28 in; 0.7 cm	
		Physical Size (Width)	2.5 in; 6.36 cm	
		Interface	SATA 6Gb/s	
		Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
		Operating Temperature	32° to 158° F (0° to 70° C)	
		Performance	Sequential Read	530MB/s (max)*
			Sequential Write	500MB/s (max)*
			Random Read	55K IOPS (max)*
			Random Write	83K IOPS (max)*

*Actual performance may vary.

HP 256GB SATA 6Gb/s SED Opal 2 SSD	Capacity	256GB	
	Protocol	SATA	
	Form Factor	2.5"	
	Controller	AHCI	
	NAND Type	3D TLC	
	Endurance	192TBW (TB Written)	
	Reliability (MTTF)	1.5M hours	
	Physical Size (Height)	0.28 in; 0.7 cm	
	Physical Size (Width)	2.5 in; 6.36 cm	
	Interface	6Gb/s SATA	
	Synchronous Transfer Rate (Maximum)	Up to 550MB/s (Sequential Read)*	
	Operating Temperature	32° to 158° F (0° to 70° C)	
	Performance	Sequential Read	530MB/s*
		Sequential Write	500 MB/s*
		Random Read	55K IOPS*
		Random Write	83K IOPS*
	Self-Encrypting Drive Support	OPAL 2	

*Actual performance may vary.

Technical Specifications - Hard Drives

HP 512GB SATA 6Gb/s SSD	Capacity	512GB	
	Protocol	SATA	
	Form Factor	2.5"	
	Controller	AHCI	
	NAND Type	3D TLC	
	Endurance	388TBW (TB Written)	
	Reliability (MTTF)	1.5M hours	
	Physical Size (Height)	0.28 in; 0.7 cm	
	Physical Size (Width)	2.5 in; 6.36 cm	
	Interface	SATA 6Gb/s	
	Synchronous Transfer Rate (Maximum)	Up to 550MB/s (Sequential Read)*	
	Operating Temperature	32° to 158° F (0° to 70° C)	
	Performance	Sequential Read	530 MB/s*
		Sequential Write	500 MB/s*
Random Read		95K IOPS*	
Random Write		83K IOPS*	

*Actual performance may vary.

HP 512GB SATA SED SSD	Capacity	512GB	
	Protocol	SATA	
	Form Factor	2.5"	
	Controller	AHCI	
	NAND Type	3D TLC	
	Endurance	388TBW (TB Written)	
	Reliability (MTTF)	1.5M hours	
	Physical Size (Height)	0.28 in; 0.7 cm	
	Physical Size (Width)	2.5 in; 6.36 cm	
	Interface	SATA 6Gb/s	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Operating Temperature	32° to 158° F (0° to 70° C)	
	Performance	Sequential Read	530 MB/s*
		Sequential Write	500 MB/s*
		Random Read	95K IOPS*
		Random Write	83K IOPS*
	Self-Encrypting Drive Support	OPAL 1 and 2	

*Actual performance may vary.

Technical Specifications - Hard Drives

HP 1TB SATA 6Gb/s SSD	Capacity	1TB	
	Protocol	SATA	
	Form Factor	2.5"	
	Controller	AHCI	
	NAND Type	3D TLC	
	Endurance	400TBW (TB Written)	
	Reliability (MTTF)	1.5M hours	
	Physical Size (Height)	0.28 in; 0.7 cm	
	Physical Size (Width)	2.5 in; 6.36 cm	
	Interface	SATA 6Gb/s	
	Synchronous Transfer Rate (Maximum)	Up to 550MB/s (Sequential Read)*	
	Operating Temperature	32° to 158° F (0° to 70° C)	
	Performance	Sequential Read	530 MB/s*
		Sequential Write	500 MB/s*
		Random Read	95K IOPS*
		Random Write	83K IOPS*

*Actual performance may vary.

HP 2TB SATA 6Gb/s SSD	Capacity	2TB	
	Protocol	SATA	
	Form Factor	2.5"	
	Controller	AHCI	
	NAND Type	3D TLC	
	Endurance	400TBW (TB Written)	
	Reliability (MTTF)	1.5M hours	
	Physical Size (Height)	0.28 in; 0.7 cm	
	Physical Size (Width)	2.5 in; 6.36 cm	
	Interface	SATA 6Gb/s	
	Synchronous Transfer Rate (Maximum)	Up to 550MB/s (Sequential Read)*	
	Operating Temperature	32° to 158° F (0° to 70° C)	
	Performance	Sequential Read	530 MB/s*
		Sequential Write	500 MB/s *
Random Read		95K IOPS*	
Random Write		83K IOPS*	

*Actual performance may vary.

Technical Specifications - Hard Drives

HP Enterprise Class 240GB SATA SSD	Capacity	240GB
	Protocol	SATA
	Form Factor	2.5"
	Controller	AHCI
	NAND Type	3D TLC
	Endurance	2,200TBW (TB Written)
	Reliability (MTTF)	2.0M hours
	Physical Size (Height)	0.28 in; 0.7 cm
	Physical Size (Width)	2.5 in; 6.36 cm
	Interface	6Gb/s SATA
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read 540 MB/s*
		Sequential Write 310 MB/s*
		Random Read 93K IOPS*
		Random Write 48K IOPS*
	Enterprise Class Features	High Endurance NAND Power Loss Protection End-to-End Data Protection

*Actual performance may vary.

HP Enterprise Class 480GB SATA SSD	Capacity	480GB
	Protocol	SATA
	Form Factor	2.5"
	Controller	AHCI
	NAND Type	3D TLC
	Endurance	4,400TBW (TB Written)
	Reliability (MTTF)	2.0M hours
	Physical Size (Height)	0.28 in; 0.7 cm
	Physical Size (Width)	2.5 in; 6.36 cm
	Interface	6Gb/s SATA
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read 540 MB/s*
		Sequential Write 460 MB/s*
		Random Read 93K IOPS*
		Random Write 74K IOPS*
	Enterprise Class Features	High Endurance NAND Power Loss Protection End-to-End Data Protection

*Actual performance may vary.

Technical Specifications - Hard Drives

PCIe SSDs for HP Workstations	HP Z Turbo Drive G2 256GB SSD	Capacity	256GB
		Protocol	PCIe
		Form Factor	M.2
		Controller	NVMe
		NAND Type	MLC
		Endurance	150TB
		Reliability (MTBF)	1.5M hours
		Interface	PCI Express 3.0 x4 electrical x4 physical
		Operating Temperature	32° to 158° F (0° to 70° C)
		Performance	Sequential Read2800 MB/s *
			Sequential Write1100 MB/s *
			Random Read250K IOPS *
			Random Write180K IOPS *
		*Actual performance may vary.	
	HP Z Turbo Drive G2 512GB SSD	Capacity	512GB
		Protocol	PCIe
		Form Factor	M.2
		Controller	NVMe
		NAND Type	3D MLC
		Endurance	300TB
		Reliability (MTBF)	1.5M hours
		Interface	PCI Express 3.0 x4 electrical x4 physical
		Operating Temperature	32° to 158° F (0° to 70° C)
		Performance	Sequential Read2800 MB/s*
			Sequential Write1600 MB/s*
			Random Read260K IOPS*
			Random Write260K IOPS*
		*Actual performance may vary.	
	HP Z Turbo Drive G2 1TB SSD	Capacity	1TB
		Protocol	PCIe
		Form Factor	M.2
		Controller	NVMe
		NAND Type	3D MLC
		Endurance	600TB
		Reliability (MTTF)	1.5M hours
		Interface	PCI Express 3.0 x4 electrical x4 physical
		Operating Temperature	32° to 158° F (0° to 70° C)
		Performance	Sequential Read3000 MB/s*
			Sequential Write1700 MB/s*
			Random Read360K IOPS*
			Random Write330K IOPS*
		*Actual performance may vary.	

Technical Specifications - Hard Drives

HP Z Turbo Drive Quad Pro 2x256GB PCIe SSD	Capacity	512GB
	Protocol	PCIe
	Form Factor	PCIe Card, Full Height PCIe Slot
	Controller	NVMe
	NAND Type	MLC
	Endurance	150TB
	Reliability (MTBF)	1.5M hours
	Interface	PCIe Gen3 x4 architecture
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read 2800 MB/s* Sequential Write 1100 MB/s* Random Read 250K IOPS* Random Write 180K IOPS*

*Actual performance may vary.

HP Z Turbo Drive Quad Pro 2x512GB PCIe SSD	Capacity	1TB
	Protocol	PCIe
	Form Factor	PCIe Card, Full Height PCIe Slot
	Controller	NVMe
	NAND Type	3D MLC
	Endurance	300TB
	Reliability (MTBF)	1.5M hours
	Interface	PCIe Gen3 x4 architecture
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read 2800 MB/s* Sequential Write 1600 MB/s* Random Read 260 K IOPS* Random Write 260K IOPS*

*Actual performance may vary.

HP Z Turbo Drive Quad Pro 2x1TB PCIe SSD	Capacity	2TB
	Protocol	PCIe
	Form Factor	PCIe Card, Full Height PCIe Slot
	Controller	NVMe
	NAND Type	3D MLC
	Endurance	600TB
	Interface	PCI Express 3.0 x4 electrical x4 physical
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read 3000 MB/s* Sequential Write 1700 MB/s* Random Read 360 K IOPS* Random Write 330K IOPS*

*Actual performance may vary.

Technical Specifications - Hard Drives

HP Z Turbo Drive G2 256GB SED SSD	Capacity	256GB
	Protocol	PCIe
	Form Factor	M.2
	Controller	NVMe
	NAND Type	MLC
	Endurance	150TBW (TB Written)
	Reliability (MTBF)	1.5M hours
	Interface	PCI Express 3.0 x4 electrical x4 physical
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read 2800 MB/s*
		Sequential Write 1100 MB/s*
		Random Read 250K IOPS*
		Random Write 180K IOPS*
	Self-Encrypting Drive Support	OPAL 2
	*Actual performance may vary.	

HP Z Turbo Drive G2 512GB SED SSD	Capacity	512GB
	Protocol	PCIe
	Form Factor	M.2
	Controller	NVMe
	NAND Type	MLC
	Endurance	300TBW (TB Written)
	Reliability (MTBF)	1.5M hours
	Interface	PCI Express 3.0 x4 electrical x4 physical
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read 2800 MB/s*
		Sequential Write 1600 MB/s*
		Random Read 260K IOPS*
		Random Write 260K IOPS*
	Self-Encrypting Drive Support	OPAL 2
	*Actual performance may vary.	

Technical Specifications - Hard Drives

HP Z Turbo Drive G2 256GB TLC SSD	Capacity	256GB
	Protocol	PCIe
	Form Factor	M.2
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	75TBW (TB Written)
	Reliability (MTBF)	1.5M hours
	Interface	PCI Express 3.0 x4 electrical x4 physical
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read3000 MB/s* Sequential Write320 MB/s (1300 MB/s max/Turbo)* Random Read130K IOPS* Random Write310K IOPS*

*Actual performance may vary.

HP Z Turbo Drive G2 512GB TLC SSD	Capacity	512GB
	Protocol	PCIe
	Form Factor	M.2
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	150TBW (TB Written)
	Reliability (MTBF)	1.5M hours
	Interface	PCI Express 3.0 x4 electrical x4 physical
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read3000 MB/s* Sequential Write660 MB/s (1800 MB/s max/Turbo)* Random Read270K IOPS* Random Write420K IOPS*

*Actual performance may vary.

Technical Specifications - Hard Drives

HP Z Turbo Drive G2 1TB TLC SSD	Capacity	1TB	
	Protocol	PCIe	
	Form Factor	M.2	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	300TBW (TB Written)	
	Reliability (MTBF)	1.5M hours	
	Interface	PCI Express 3.0 x4 electrical x4 physical	
	Operating Temperature	32° to 158° F (0° to 70° C)	
	Performance	Sequential Read	3200 MB/s*
		Sequential Write	1150 MB/s (2400 MB/s max/Turbo)*
		Random Read	380K IOPS*
		Random Write	440K IOPS*

*Actual performance may vary.

HP Z Turbo Drive G2 2TB TLC SSD	Capacity	2TB	
	Protocol	PCIe	
	Form Factor	M.2	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	600TBW (TB Written)	
	Reliability (MTBF)	1.5M hours	
	Interface	PCI Express 3.0 x4 electrical x4 physical	
	Operating Temperature	32° to 158° F (0° to 70° C)	
	Performance	Sequential Read	3000 MB/s*
		Sequential Write	1000 MB/s (2100 MB/s max/Turbo)*
		Random Read	320K IOPS*
		Random Write	265K IOPS*

*Actual performance may vary.

Technical Specifications - Hard Drives

HP Z Turbo Drive Quad Pro 256GB SSD module	Capacity	256GB (one M.2 PCIe NVMe module)
	Interface	PCI Express 3.0 x4 electrical x4 physical
	Operating Temperature	32° to 158° F (0° to 70° C)
HP Z Turbo Drive Quad Pro 512GB SSD module	Capacity	512GB (one M.2 PCIe NVMe module)
	Interface	PCI Express 3.0 x4 electrical x4 physical
	Operating Temperature	32° to 158° F (0° to 70° C)
HP Z Turbo Drive Quad Pro 1TB SSD module	Capacity	1TB (one M.2 PCIe NVMe module)
	Interface	PCI Express 3.0 x4 electrical x4 physical
	Operating Temperature	32° to 158° F (0° to 70° C)
HP Z Turbo Drive Quad Pro 2TB SSD module	Capacity	2TB (one M.2 PCIe NVMe module)
	Interface	PCI Express 3.0 x4 electrical x4 physical
	Operating Temperature	32° to 158° F (0° to 70° C)

HP Z Turbo Drive Dual Pro 256GB SSD

Capacity:	256GB (one M.2 PCIe NVMe module)
Interface	PCI Express 3.0 x4 electrical x4 physical
Operating Temperature	32° to 158° F (0° to 70° C)

HP Z Turbo Drive Dual Pro 512GB SSD

Capacity:	512GB (one M.2 PCIe NVMe module)
Interface	PCI Express 3.0 x4 electrical x4 physical
Operating Temperature	32° to 158° F (0° to 70° C)

HP Z Turbo Drive Dual Pro 1TB SSD

Capacity:	1TB (one M.2 PCIe NVMe module)
Interface	PCI Express 3.0 x4 electrical x4 physical
Operating Temperature	32° to 158° F (0° to 70° C)

HP Z Turbo Drive Dual Pro 2TB SSD

Capacity:	2TB (one M.2 PCIe NVMe module)
Interface	PCI Express 3.0 x4 electrical x4 physical
Operating Temperature	32° to 158° F (0° to 70° C)

Technical Specifications - Hard Drives

Intel® 905p Series AIC PCIe SSD	Intel® 905p Series AIC 280GB PCIe SSD	Capacity	280GB	
		Protocol	PCIe	
		Form Factor	PCIe Card, Half Height	
		Controller	NVMe	
		NVM Type	3DXPoint	
		Endurance	5.11 PBW (PB Written)	
		Reliability (MTBF)	1.6M hours	
		Operating Temperature	32° to 185° F (0° to 85° C)	
		Performance	Sequential Read	2730 MB/s*
			Sequential Write	2280 MB/s*
			Random Read	587K IOPS*
			Random Write	559K IOPS*

*Actual performance may vary.

Intel® 905p Series AIC 480GB PCIe SSD	Intel® 905p Series AIC 480GB PCIe SSD	Capacity	480GB	
		Protocol	PCIe	
		Form Factor	PCIe Card, Half Height	
		Controller	NVMe	
		NVM Type	3DXPoint	
		Endurance	8.76 PBW (PB Written)	
		Reliability (MTBF)	1.6M hours	
		Operating Temperature	32° to 185° F (0° to 85° C)	
		Performance	Sequential Read	2710 MB/s*
			Sequential Write	2280 MB/s*
			Random Read	582K IOPS*
			Random Write	561K IOPS*

*Actual performance may vary.

Hard Drive Controllers

MicroSemi 2100-4i4e 8-port SAS 12Gb/s RAID Card	PCI Bus	8 lanes, PCI Express 3.0	
	RAID Levels	Offers Integrated RAID (0, 1, and 10)	
	PCI Data Burst Transfer Rate	Half Duplex x8, PCIe, 8000 MB/s	
	SAS Bandwidth	Half Duplex	1200 MB/s per lane
	PCI Card Type	3.3V Add-in Card	
	PCI Voltage	12 V ± 10%	
	PCI Power	9.8W typical, Airflow min 200 LFM	
	Bracket	Full height and low profile	
	Certification Level	PCI Express 3.0 compliant	
	SAS Processor	MicroSemi Series 8 SAS Controller	
	Internal Connectors	One x4 internal mini-SASHD (SFF-8643)	
	External Connectors	One x4 external mini-SASHD (SFF-8644)	
	Maximum Number of SCSI Devices	256 Non-RAID SAS/SATA devices	
	LED Indicators	Connector for Drive Activity Light	

Graphics

NVIDIA® Quadro® P400 2GB Graphics	Form Factor	Dimensions: 2.713"? H x 5.7"? L Single Slot, Low Profile Cooling: Active Weight: 129 grams
	Graphics Controller	NVIDIA® Quadro® P400 Graphics Card GP107 GPU 256 NVIDIA® CUDA® cores Max Power: 30 Watts
	Bus Type	PCI Express 3.0 x16
	Memory	Size: 2 GB GDDR5, 2000 MHz Memory Interface: 64-bit Memory Bandwidth: 32 GB/s
	Connectors	3mDP Outputs
	Maximum Resolution	DisplayPort™ 1.4: - up to 3x 5120 x 2880 x 24 bpp @ 60Hz - supports Multi-Stream Transport (MST)
	Image Quality Features	10-bit internal display processing pipeline 10-bit scan-out support
	Display Output	3 mDP Connectors
	Shading Architecture	Full Microsoft DirectX® 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL® 4.5 DirectX® 12 Vulkan™ 1.0 API support includes: CUDA C, CUDA C++, DirectCompute , OpenCL™
	Available Graphics Drivers	Microsoft Windows 10 Microsoft Windows 8.1 Microsoft Windows 7 Linux®
		HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
Notes		

Technical Specifications - Graphics

NVIDIA® Quadro® P600 2GB Graphics	Form Factor	Dimensions: 2.713"? H x 5.7"? L Single Slot, Low Profile Cooling: Active Weight: 129 grams
	Graphics Controller	NVIDIA® Quadro® P600 Graphics Card GP107 GPU 384 NVIDIA® CUDA® cores Max Power: 40 Watts
	Bus Type	PCI Express 3.0 x16
	Memory	Size: 2 GB GDDR5, 2000 MHz Memory Interface: 128-bit Memory Bandwidth: 64 GB/s
	Connectors	4mDP Outputs
	Maximum Resolution	DisplayPort™ 1.4: - up to 4x 5120 x 2880 x 24 bpp @ 60Hz - supports Multi-Stream Transport (MST)
	Image Quality Features	10-bit internal display processing pipeline 10-bit scan-out support
	Display Output	4 mDP Connectors
	Shading Architecture	Full Microsoft DirectX® 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL® 4.5 DirectX® 12 Vulkan™ 1.0 API support includes: CUDA C, CUDA C++, DirectCompute , OpenCL™
	Available Graphics Drivers	Microsoft Windows 10 Microsoft Windows 8.1 Microsoft Windows 7 Linux® HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
	Notes	

Technical Specifications - Graphics

NVIDIA® Quadro® P620 2GB Graphics	Form Factor	Dimensions: 2.713"? H x 5.7"? L Single Slot, Low Profile Cooling: Active Weight: 129 grams
	Graphics Controller	NVIDIA® Quadro® P620 Graphics Card GP107 GPU 512 CUDA cores Max Power: 40 Watts
	Bus Type	PCI Express 3.0 x16
	Memory	Size: 2 GB GDDR5, 2000 MHz Memory Interface: 128-bit Memory Bandwidth: 64 GB/s
	Connectors	4mDP Outputs *
	Maximum Resolution	DisplayPort™ 1.4: - up to 4x 5120 x 2880 x 24 bpp @ 60Hz - supports Multi-Stream Transport (MST)
	Image Quality Features	10-bit internal display processing pipeline 10-bit scan-out support
	Display Output	4 mDP Connectors
	Shading Architecture	Full Microsoft DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.5 DirectX 12 Vulkan 1.0 API support includes: CUDA C, CUDA C++, DirectCompute , OpenCL
	Available Graphics Drivers	Microsoft Windows 10 Microsoft Windows 7 Linux® HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
	Notes	*P620 only have mini-DisplayPort™ (mDP) video ports. Factory Configured (Z4 G4/ Z6 G4/ Z8 G4 Workstations): No adapters included After market option kit:Two mDP-to-DP Adapters included Additional mDP-to-DP Adapters are available as Factory Configuration or Option Kit accessories: <ul style="list-style-type: none">- 2MY05AA - HP miniDP-to-DP Adapter Cables- 2KW87A6 - HP (Bulk 12) miniDP-to-DP Adapter Cables

AMD FirePro™ W2100 2GB Graphics	Form Factor	Low Profile, half length (full-height bracket included)
	Graphics Controller	AMD FirePro™ W2100 professional graphics based on Oland GPU. GPU: 320 Stream Processors organized into 5 Compute Units GPU Frequency: 630Mhz Power: 26W Cooling: Active

Technical Specifications - Graphics

Bus Type	PCI Express® x8, Generation 3.0
Memory	2GB DDR3 memory Memory Bandwidth: up to 28.8 GB/s Memory Width: 128 bit
Connectors	2x DisplayPort™ 1.2 connectors Factory Configured: No video cable adapter included After market option kit: No video cable adapter included Additional DisplayPort™-to-VGA or DisplayPort™-to-DVI adapters are available as Factory Configuration or Option Kit accessories.
Maximum Resolution	DisplayPort™ 1.2: - up to 4096x2160 x 24 bpp @ 60Hz Dual Link DVI(I) (requires adapter cable): - up to 2560 x 1600 x 32 bpp @ 60Hz Single Link-DVI(I)(requires adapter cable): - up to 1920 x 1200 x 32 bpp @ 60Hz VGA (requires adapter cable): - up to 1920 x 1200 x 32 bpp @ 60Hz
Image Quality Features	Advanced support for 8-bit, 10-bit, and 16-bit per RGB color component. High bandwidth scaler for high quality up and downscaling.
Display Output	2 x DisplayPort™ 1.2a Maximum number of displays: 2
Shading Architecture	Shader Model 5.0
Supported Graphics APIs	OpenCL™ 1.2, DirectX® 11.2/12, OpenGL® 4.4 OpenGL® 4.4 support with driver release 14.301.xxx OpenCL™ 1.2 conformance expected with drive release 14.301.xxx
Available Graphics Drivers	Windows10 (64-bit) Windows 7 (64-bit) Linux® HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
Notes	Depending on the card model, native DisplayPort™ connectors and/or certified DisplayPort™ active or passive adapters to convert your monitor's native input to your card's DisplayPort™ or Mini-DisplayPort™ connector(s) may be required. See www.amd.com/FirePro ™ for details.

Technical Specifications - Graphics

NVIDIA® Quadro® P1000 4GB Graphics	Form Factor	Dimensions:2.713"? H x 5.7"? L Single Slot, Low Profile Cooling: Active Weight: 129 grams
	Graphics Controller	NVIDIA® Quadro® P1000 Graphics Card GP107-860 GPU 640 NVIDIA® CUDA® cores Max Power: 47 Watts
	Bus Type	PCI Express 3.0 x16
	Memory	Size: 4 GB GDDR5, 2500 MHz Memory Interface: 128-bit memory interface Memory Bandwidth: 80 GB/s memory bandwidth
	Connectors	4mDP Outputs
	Maximum Resolution	DisplayPort™ 1.4: - up to 4x 5120 x 2880 x 24 bpp @ 60Hz - supports Multi-Stream Transport (MST)
	Image Quality Features	10-bit internal display processing pipeline 10-bit scan-out support
	Display Output	4 mDP Connectors
	Shading Architecture	Full Microsoft DirectX® 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL® 4.5 DirectX® 12 Vulkan™ 1.0 API support includes: CUDA C, CUDA C++, DirectCompute , OpenCL™
	Available Graphics Drivers	Microsoft Windows 10 Microsoft Windows 7 Linux® HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
	Notes	
NVIDIA® Quadro® P2000 5GB Graphics	Form Factor	Dimensions: 4.4"?Hx7.9"?L Single Slot Cooling: Active Weight: 260 grams
	Graphics Controller	NVIDIA® Quadro® P2000 Graphics Card Power: 75 Watts
	Bus Type	PCI Express 3.0 x16
	Memory	Size: 5GB GDDR5 Memory Bandwidth: 140 GB/s Memory Width: 160-bit
	Connectors	4x DisplayPort™ 1.4 Factory Configured Option: No adapter included with card After Market Option: No video cable adapter included Additional DVI to VGA, DisplayPort™ to VGA, DisplayPort™ to DVI, and DisplayPort™ to Dual-Link DVI adapters available as accessories.
	Maximum Resolution	DisplayPort™:

Technical Specifications - Graphics

	<ul style="list-style-type: none">- up to 5120 x 2880 x 24 bpp @ 60Hz- supports High Bit Rate 2 (HBR2) and Multi-Stream Transport (MST) DP 1.3 & 1.4 ready.
	DL-DVI(I) output: <ul style="list-style-type: none">- up to 2560 x 1600 x 32 bpp @ 60 Hz
	Single Link-DVI(I) output: <ul style="list-style-type: none">- up to 1920 x 1200 x 32 bpp @ 60Hz
	HDMI 2.0 (requires DP to HDMI adapter): 5120 x 2880 x 24 bpp @ 60Hz
Image Quality Features	12-bit internal display pipeline (hardware support for 12-bit scanout on supported panels, applications and connection)
	Stereoscopic 3D display support including NVIDIA® 3D Vision™ technology, NVIDIA® Mosaic and nView.
Display Output	Maximum number of displays <ul style="list-style-type: none">- 4 direct attached monitors
	Maximum number of monitors across all available NVIDIA® Quadro® P2000 outputs is 4.
Shading Architecture	Shader Model 5.1
Supported Graphics APIs	OpenGL® 4.5 DirectX® 12
	API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL™, Java, Python, and Fortran software
Available Graphics Drivers	Microsoft Windows 10 Microsoft Windows 7 Professional 64bit Linux® - Full OpenGL® implementation, complete with NVIDIA® Quadro® and ARB extensions
	HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
Notes	

Technical Specifications - Graphics

AMD Radeon™ Pro WX 3100 4GB Graphics	Form Factor	Low-Profile Single Slot (6.6"? Length)
	Graphics Controller	Polaris12 GL GPU: 512 Stream Processors organized into 8 Compute Units Power: 50 Watts Cooling: Active
	Memory	4GB GDDR5 memory Memory Bandwidth: 6 Gbps / 96 GB/s Memory Width: 128 bit
	Connectors	2x Mini DisplayPort™ 1.4 plus 1x DisplayPort™ 1.4 - HDR ready connectors with HBR3 and MST support. Factory Configured: No adapters included After market option kit: One mDP-to-DP cable adapters included
	Maximum Resolution	Additional Mini DisplayPort™-to-DisplayPort™, DisplayPort™-to-VGA or DisplayPort™-to-DVI adapters are available as Factory Configuration or Option Kit accessories. 5K support @ 60Hz <ul style="list-style-type: none">1x single-cable 5K monitor, or 2x dual-cable 5K monitors 3x 4K support @ 60Hz
	Image Quality Features	Advanced support for 8-bit and 10-bit per RGB color component. High bandwidth scaler for high quality up and downscaling
	Display Output	3 full physical DP1.3 HBR3 / DP1.4 HDR outputs FreeSync support
	GPU Architecture	Polaris
	Supported Graphics APIs	DirectX®12 OpenGL® 4.5 OpenCL™ 2.0 Vulkan™ 1.0
	Available Graphics Drivers	Windows 10 64-bit (Windows® 7 64-bit available from AMD) Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
Notes		
<ol style="list-style-type: none">HDR content requires that the system be configured with a fully HDR-ready content chain, including: graphics card, monitor/TV, graphics driver and application. Video content must be graded in HDR and viewed with an HDR-ready player. Windowed mode content requires operating system support.AMD PowerTune and AMD ZeroCore Power are technologies offered by certain FirePro™ and Radeon™ Pro products, which are designed to intelligently manage GPU power consumption in response to certain GPU load conditions.As of September 2016, certified for DisplayPort™ 1.4 HBR3 and ready for DisplayPort™ 1.4 HDR based on independent verification by DisplayPort™ testing authority. HDR content requires that the system be configured with a fully HDR- ready content chain, including: graphics card, monitor/TV, graphics driver and application. Video content must be graded in HDR and viewed with an HDR-ready player. Windowed mode content requires operating system support.		

Technical Specifications - Graphics

AMD Radeon™ Pro WX 4100 4GB Graphics	Form Factor	Low-Profile Single Slot (6.6"? Length)
	Graphics Controller	Polaris 11 Baffin GL XT GPU: 1024 Stream Processors organized into 16 Compute Units Power: 50 Watts Cooling: Active
	Memory	4GB GDDR5 memory Memory Bandwidth: 6 Gbps / 96 GB/s Memory Width: 128 bit
	Connectors	4x Mini DisplayPort™ 1.4 - HDR ready connectors with HBR3 and MST support. Factory Configured: Four mDP-to-DP cable adapters included After market option kit: Four mDP-to-DP cable adapters included Additional DisplayPort™-to-VGA or DisplayPort™-to-DVI adapters are available as Factory Configuration or Option Kit accessories.
	Maximum Resolution	5K support @ 60Hz
	Image Quality Features	<ul style="list-style-type: none">1x single-cable 5K monitor, or 2x dual-cable 5K monitors 4x 4K support @ 60Hz
	Display Output	Advanced support for 8-bit and 10-bit per RGB color component. High bandwidth scaler for high quality up and downscaling 4 full physical DP1.3 HBR3 / DP1.4 HDR outputs FreeSync support
	GPU Architecture	GCN 4th Generation
	Supported Graphics APIs	DirectX® 12 OpenGL® 4.5 OpenCL™ 2.0 Vulkan™ 1.0
	Available Graphics Drivers	Windows 10 64-bit Windows® 7 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
Notes		
<div>4. HDR content requires that the system be configured with a fully HDR-ready content chain, including: graphics card, monitor/TV, graphics driver and application. Video content must be graded in HDR and viewed with an HDR-ready player. Windowed mode content requires operating system support.</div> <div>5. AMD PowerTune and AMD ZeroCore Power are technologies offered by certain FirePro™ and Radeon™ Pro products, which are designed to intelligently manage GPU power consumption in response to certain GPU load conditions.</div> <div>6. As of September 2016, certified for DisplayPort™ 1.4 HBR3 and ready for DisplayPort™ 1.4 HDR based on independent verification by DisplayPort™ testing authority. HDR content requires that the system be configured with a fully HDR- ready content chain, including: graphics card, monitor/TV, graphics driver and application. Video content must be graded in HDR and viewed with an HDR-ready player. Windowed mode content requires operating system support.</div>		

NVIDIA® Quadro® P4000	Form Factor	Dimensions: 4.4"?H x 9.5"?L
-----------------------	-------------	-----------------------------

Technical Specifications - Graphics

8GB Graphics	Single-slot, full-height Weight: 475 grams (without extender)
Graphics Controller	NVIDIA® Quadro® P4000 Graphics Card GPU: GP104 with 1792 CUDA cores Power: 120 Watts
Bus Type	PCI Express 3.0 x16
Memory	Size: 8GB GDDR5 Memory Bandwidth: 243 GB/s Memory Width: 256-bit
Connectors	4 x DisplayPort 1.4 3-pin mini-DIN connector via optional bracket 1 x 6-pin auxiliary power connector 4-pin header for stereo signal SYNC connector for Quadro® Sync II 2 x SLI connectors Factory Configured Option: No video cable adapter included After Market Option: No video cable adapter included Additional DisplayPort-to-VGA, DisplayPort-to-HDMI, or DisplayPort-to- DVI adapters are available as accessories
Maximum Resolution	Dual-link internal TMDS (DVI 1.0): - up to 2560 x 1600 x 32 bpp @ 60 Hz Single-link internal TMDS (DVI 1.0): - up to 1920 x 1200 x 32 bpp @ 60 Hz HDMI™ 2.0b (requires DP to HDMI adapter): - up to 5120 x 2880 x 24 bpp @ 60Hz DisplayPort: - up to 4096 x 2160 x 30 bpp @ 60Hz - up to 2560 x 1600 x 30 bpp @ 120 Hz - supports High Bit Rate 2 (HBR2) and Multi-Stream Transport (MST) Using two DP outputs, the P4000 can drive one dual DP input display with 5120 x 2880 x 30 bpp @ 60Hz resolution.
Image Quality Features	Advanced support for 8-bit, 10-bit, and 12-bit per RGB color component. HDCP 2.2 support over DisplayPort, DVI, and HDMI connectors NVIDIA 3D Vision™ and other 3D stereo technologies NVIDIA Mosaic and nView
Display Output	Maximum number of displays - 4 direct attached monitors
Shading Architecture	Maximum number of monitors across all available Quadro P4000 outputs is 4. Shader Model 5.1
Supported Graphics APIs	OpenGL 4.5 DirectX 12 Vulkan 1.0 API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL, Java, Python, and Fortran

Technical Specifications - Graphics

	Available Graphics Drivers	Microsoft Windows 10 Microsoft Windows 7 Linux® - Full OpenGL implementation, complete with NVIDIA and ARB extensions HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
	Notes	<ol style="list-style-type: none">1. Quadro P4000 offered as Factory Configured Option does not include a video cable adapter. Video cable adapters must be ordered separately.2. Quadro P4000 offered as an After Market Option does not include video cables. Video cable adapters must be ordered separately.

NVIDIA® Quadro® P5000 16GB Graphics	Form Factor	Full-Height Dual Slot (4.4"? Height x 10.5"? Length) Weight: 815 grams / 1.80 lbs
	Graphics Controller	NVIDIA® Quadro® P5000 graphics GPU: 2560 NVIDIA® CUDA® Parallel Processing Cores Power: 180 Watts Cooling: Active
	Memory	16GB GDDR5X memory Memory Bandwidth: Up to 288 GB/s Memory Width: 256 bit ECC Memory (disabled by default)
	Connectors	DP (x4) with HDR support DL-DVI(D) 3-pin mini-DIN connector SLI connector NVIDIA® Quadro® Sync connector (compatible with NVIDIA® Quadro® II Sync) One 8-pin auxiliary power connector Factory configured option: No video cable adapter included with card. After market option Kit: No video cable adaptor included with card. DVI to VGA, DisplayPort™ to VGA, DisplayPort™ to DVI, and DisplayPort™ to Dual-Link DVI adapters available as accessories.
	Maximum Resolution	5K support @ 60Hz 1x single-cable 5K monitor, or 2x dual-cable 5K monitors
	Image Quality Features	Advanced support for 8-bit, 10-bit, and 12-bit per RGB color component. HDCP 2.2 support over DisplayPort™, DVI, and HDMI connectors NVIDIA 3D Vision™ and other 3D stereo technologies NVIDIA® Mosaic and nView Desktop Management

Technical Specifications - Graphics

Display Outputs ¹	4x DP1.4 HDR outputs (up to 3840x2160 UHD @ 120Hz refresh, or up to 8K at 30Hz) 1x Dual-link DVI-D output (up to 2560 x 1600 @ 60 Hz and 1920x1200 @ 120 Hz)
GPU Architecture	NVIDIA Pascal™
Supported Graphics APIs	DirectX® 12 , OpenGL® 4.5, OpenCL™ 1.0, Vulkan™ 1.0 Developer API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL™, Java, Python, and Fortran
Available Graphics Drivers	Windows® 10 64-bit Windows® 7 64-bit Linux® 64-bit HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
Notes	1- Supports up to a total of 4 displays

NVIDIA® Quadro®
P6000 24GB Graphics

Form Factor	Full-Height Dual Slot (4.4"? Height x 10.5"? Length) Weight: 967 grams / 2.14 lbs
Graphics Controller	NVIDIA® Quadro® P6000 graphics GPU: 3840 NVIDIA® CUDA® Parallel Processing Cores Power: 250 Watts Cooling: Active
Memory	24GB GDDR5X memory Memory Bandwidth: Up to 432 GB/s Memory Width: 384 bit ECC Memory (disabled by default)
Connectors	DP (x4) with HDR support DL-DVI(D) 3-pin mini-DIN connector SLI connector NVIDIA® Quadro® Sync connector (compatible with NVIDIA® Quadro® II Sync) One 8-pin auxiliary power connector Factory configured option: No video cable adapter included with card. After market option Kit: No video cable adaptor included with card. DVI to VGA, DisplayPort™ to VGA, DisplayPort™ to DVI, and DisplayPort™ to Dual-Link DVI adapters available as accessories.
Maximum Resolution	5K support @ 60Hz 1x single-cable 5K monitor, or 2x dual-cable 5K monitors
Image Quality Features	Advanced support for 8-bit, 10-bit, and 12-bit per RGB color component.

Technical Specifications - Graphics

	<div>HDCP 2.2 support over DisplayPort™, DVI, and HDMI connectors</div> <div>NVIDIA 3D Vision™ and other 3D stereo technologies</div> <div>NVIDIA® Mosaic and nView</div>
Display Outputs ¹	<div>4x DP1.4 HDR outputs (up to 3840x2160 UHD @ 120Hz refresh, or up to 8K at 30Hz)</div> <div>1x Dual-link DVI-D output (up to 2560 x 1600 @ 60 Hz and 1920x1200 @ 120 Hz)</div>
GPU Architecture	<div>NVIDIA Pascal™</div>
Supported Graphics APIs	<div>DirectX®12 , OpenGL® 4.5, OpenCL™ 1.0, Vulkan™ 1.0</div> <div>Developer API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL™, Java, Python, and Fortran</div>
Available Graphics Drivers	<div>Windows® 10 64-bit</div> <div>Windows® 7 64-bit</div> <div>Linux® 64-bit</div>
Notes	<div>HP qualified drivers may be preloaded or available from the HP support Web site:</div> <div>http://welcome.hp.com/country/us/en/support.html</div> <div>1- Supports up to a total of 4 displays</div>

NVIDIA® Quadro® RTX 4000 8GB Graphics	Form Factor	<div>Full-Height Single Slot (4.4"? Height x 9.5"? Length)</div> <div>Weight: 550 grams / 1.21 lbs</div>
	Graphics Controller	<div>NVIDIA® Quadro® RTX 4000 Graphics</div> <div>TU104 GPU</div> <div>GPU: 2304 NVIDIA® CUDA® Parallel Processing Cores</div> <div>Power: 160 Watts</div> <div>Cooling: Active</div>
	Memory	<div>8GB GDDR6 memory</div> <div>Memory Bandwidth: Up to 416 GB/s</div> <div>Memory Width: 384 bit</div>
	Connectors	<div>3x DP 1.4a and VirtualLink</div> <div>Quadro Sync connector (compatible with Quadro II Sync)</div> <div>One 8-pin auxiliary power connector</div>
		<div>Factory configured option: No video cable adapter included with card.</div> <div>After market option Kit: No video cable adaptor included with card.</div>
		<div>DVI to VGA, DisplayPort™ to VGA, DisplayPort™ to DVI, and DisplayPort™ to Dual-Link DVI adapters available as accessories.</div>
	Maximum Resolution	<div>7680x4320 @ 60Hz</div>
	Image Quality Features	<div>Advanced support for 8-bit, 10-bit, and 12-bit per RGB color component.</div> <div>HDCP 2.2 support over DisplayPort™, DVI, and HDMI</div>

Technical Specifications - Graphics

	connectors NVIDIA® 3D Vision™ and other 3D stereo technologies NVIDIA® Mosaic and nView
Display Outputs ¹	3x DP 1.4a and VirtualLink (7680x4320 @ 60Hz)
Supported Graphics APIs	DirectX®12, OpenGL® 4.5, OpenCL™ 1.0, Vulkan™ 1.0 Developer API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL™, Java, Python, and Fortran
Available Graphics Drivers	Windows® 10 64-bit Windows® 7 64-bit Linux® 64-bit
	HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
Notes	1- Supports up to a total of 4 displays

NVIDIA® Quadro® RTX 5000 16GB Graphics	Form Factor	Full-Height Dual Slot (4.4"? Height x 10.5"? Length) Weight: 1050 grams / 2.31 lbs
	Graphics Controller	NVIDIA® Quadro® RTX 5000 Graphics TU104 GPU GPU: 3072 NVIDIA® CUDA® Parallel Processing Cores Power: 265 Watts Cooling: Active
	Memory	16GB GDDR6 memory Memory Bandwidth: Up to 448 GB/s Memory Width: 384 bit
	Connectors	4x DP 1.4a and VirtualLink Quadro Sync connector (compatible with Quadro II Sync) One 8-pin + 6-pin auxiliary power connector Factory configured option: No video cable adapter included with card. After market option Kit: No video cable adaptor included with card. DVI to VGA, DisplayPort™ to VGA, DisplayPort™ to DVI, and DisplayPort™ to Dual-Link DVI adapters available as accessories.
	Maximum Resolution	7680x4320 @ 60Hz
	Image Quality Features	Advanced support for 8-bit, 10-bit, and 12-bit per RGB color component. HDCP 2.2 support over DisplayPort™, DVI, and HDMI connectors NVIDIA® 3D Vision™ and other 3D stereo technologies NVIDIA® Mosaic and nView
	Display Outputs ¹	4x DP 1.4a and VirtualLink (7680x4320 @ 60Hz)

Technical Specifications - Graphics

	Supported Graphics APIs	DirectX®12, OpenGL® 4.5, OpenCL™ 1.0, Vulkan™ 1.0 Developer API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL™, Java, Python, and Fortran
	Available Graphics Drivers	Windows® 10 64-bit Windows® 7 64-bit Linux® 64-bit HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
	Notes	1- Supports up to a total of 4 displays

NVIDIA® Quadro® RTX 6000 24GB Graphics	Form Factor	Full-Height Dual Slot (4.4"? Height x 10.5"? Length) Weight: 1070 grams / 2.35 lbs
	Graphics Controller	NVIDIA® Quadro® RTX 6000 Graphics TU102 GPU GPU: 4608 NVIDIA® CUDA® Parallel Processing Cores Power: 295 Watts Cooling: Active
	Memory	24GB GDDR6 memory Memory Bandwidth: Up to 672 GB/s Memory Width: 384 bit
	Connectors	4x DP 1.4a and VirtualLink Quadro Sync connector (compatible with Quadro II Sync) One 8-pin + 6-pin auxiliary power connector Factory configured option: No video cable adapter included with card. After market option Kit: No video cable adaptor included with card. DVI to VGA, DisplayPort™ to VGA, DisplayPort™ to DVI, and DisplayPort™ to Dual-Link DVI adapters available as accessories.
	Maximum Resolution	7680x4320 @ 60Hz
	Image Quality Features	Advanced support for 8-bit, 10-bit, and 12-bit per RGB color component. HDCP 2.2 support over DisplayPort™, DVI, and HDMI connectors NVIDIA® 3D Vision™ and other 3D stereo technologies NVIDIA® Mosaic and nView
	Display Outputs¹	4x DP 1.4a and VirtualLink (7680x4320 @ 60Hz)
	Supported Graphics APIs	DirectX®12, OpenGL® 4.5, OpenCL™ 1.0, Vulkan™ 1.0 Developer API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL™, Java, Python, and Fortran
	Available Graphics Drivers	Windows® 10 64-bit Windows® 7 64-bit Linux® 64-bit

Technical Specifications - Graphics

HP qualified drivers may be preloaded or available from the HP support Web site:
<http://welcome.hp.com/country/us/en/support.html>

Notes

- 1- Supports up to a total of 4 displays

NVIDIA® Quadro® RTX 8000 48GB Graphics

Form Factor	Full-Height Dual Slot (4.4"? Height x 10.5"? Length) Weight: 1070 grams / 2.35 lbs
Graphics Controller	NVIDIA® Quadro® RTX 8000 Graphics GPU: 4608 NVIDIA® CUDA® Parallel Processing Cores Power: 295 Watts Cooling: Active
Memory	48GB GDDR6 memory Memory Bandwidth: Up to 672 GB/s Memory Width: 384 bit
Connectors	4x DP 1.4a and VirtualLink Quadro Sync connector (compatible with Quadro II Sync) One 8-pin + 6-pin auxiliary power connector Factory configured option: No video cable adapter included with card. After market option Kit: No video cable adaptor included with card. DVI to VGA, DisplayPort™ to VGA, DisplayPort™ to DVI, and DisplayPort™ to Dual-Link DVI adapters available as accessories.
Maximum Resolution	7680x4320 @ 60Hz
Image Quality Features	Advanced support for 8-bit, 10-bit, and 12-bit per RGB color component. HDCP 2.2 support over DisplayPort™, DVI, and HDMI connectors NVIDIA® 3D Vision™ and other 3D stereo technologies NVIDIA® Mosaic and nView
Display Outputs¹	4x DP 1.4a and VirtualLink (7680x4320 @ 60Hz)
Supported Graphics APIs	DirectX® 12, OpenGL® 4.5, OpenCL™ 1.0, Vulkan™ 1.0 Developer API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL™, Java, Python, and Fortran
Available Graphics Drivers	Windows® 10 64-bit Linux® 64-bit

HP qualified drivers may be preloaded or available from the HP support Web site:
<http://welcome.hp.com/country/us/en/support.html>

Notes

- 1- Supports up to a total of 4 displays
- 2- VirtualLink's USB-C™ (data) cannot be disabled at a hardware level

NVIDIA® Quadro® GP100 16GB Graphics

Form Factor	Dual Slot (4.4"? Height x 10.5"? Length) Weight: 989 grams +72 grams extender
-------------	--

Technical Specifications - Graphics

Graphics Controller	NVIDIA® QUADRO® GP100 GPU: 3584 NVIDIA CUDA® Parallel Processing Cores Power: 235 Watts Cooling: Active
Memory	16GB HBM2 Memory Bandwidth: Up to 717 GB/s Memory Width: 4096-bit ECC Memory (disabled by default)
Connectors	DP (x4) with HDR support DL-DVI(D) 3-pin mini-DIN connector via optional bracket 4-pin header for stereo signal Quadro Sync connector (compatible with Quadro II Sync) One 8-pin auxiliary power connector (2x) NVLink connectors Factory configured option: 8-pin power adapter included with card. After market option Kit: 8-pin power adapter included with card. DVI to VGA, DisplayPort™ to VGA, DisplayPort™ to DVI, and DisplayPort™ to Dual-Link DVI adapters available as accessories.
Maximum Resolution	5K support @ 60Hz 1x single-cable 5K monitor, or 2x dual-cable 5K monitors
Image Quality Features	HDR support over DisplayPort™ 1.4 (SMPTE 2084/2086, BT. 2020) (4K @ 60 Hz 10b/12b HEVC Decode, 4K @ 60 Hz 10b HEVC Encode) HDCP 2.2 support over DisplayPort™, DVI, and HDMI connectors NVIDIA 3D Vision™ technology NVIDIA Mosaic and nView Desktop Management
Display Outputs	4x DP1.4 MST & HDR2 outputs (up to 5120 x 2880 @ 60Hz) 1x Dual-link DVI-D output (up to 2560 x 1600 @ 60 Hz) 1x Single-link DVI-D output (up to 1920 x 1200 @ 60 Hz) HDMI™ 2.0b (up to 5120 x 2880 @ 60Hz)* *requires DP to HDMI adapter
GPU Architecture	NVIDIA Pascal™
Supported Graphics APIs	DirectX®12 , OpenGL® 4.5, Vulkan™ 1.0 Developer API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL, Java, Python, and Fortran
Available Graphics Drivers	Windows® 10 Windows® 7 Professional 64-bit Linux® HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html

Factory Configured (Z840 Workstations): No adapters included

Technical Specifications - Graphics

Factory Configured (Z4 G4/ Z6 G4/ Z8 G4 Workstations): No adapters included
After market option kit: No adapters included

NVIDIA® Quadro® GV100 32GB Graphics	Form Factor	Dual Slot (4.4"? Height x 10.5"? Length) Weight: 980 grams + 72 gram extender
	Graphics Controller	NVIDIA® QUADRO® GV100 GPU: 5120 NVIDIA® CUDA® Parallel Processing Cores Power: 250 Watts Cooling: Active
	Memory	32GB HBM2 memory Memory Bandwidth: Up to 870 GB/s Memory Width: 5120-bit ECC Memory (disabled by default)
	Connectors	DP (x4) with HDR support 3-pin mini-DIN connector via optional bracket 4-pin header for stereo signal Quadro Sync connector (compatible with Quadro II Sync) One 8-pin auxiliary power connector (2x) NVLink for GV100 connectors (via optional kit) After market option Kit: no power adapter included with card. DisplayPort™ to VGA, DisplayPort™ to DVI (single-link and dual-link), and DisplayPort™ to HDMI adapters available as accessories.
	Maximum Resolution	5K support @ 60Hz 1x single-cable 5K monitor, or 2x dual-cable 5K monitors
	Image Quality Features	HDR support over DisplayPort™ 1.4 (SMPTE 2084/2086, BT. 2020) (4K @ 60 Hz 10b/12b HEVC Decode, 4K @ 60 Hz 10b HEVC Encode) HDCP 2.2 support over DisplayPort™ and HDMI connectors NVIDIA 3D Vision™ technology NVIDIA Mosaic and nView Desktop Management
	Display Outputs	4x DP1.4 HDR2 outputs (up to 5120 x 2880 @ 60Hz)
	GPU Architecture	NVIDIA® Volta™
	Supported Graphics APIs	DirectX®12, OpenGL® 4.5 Developer API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL™, Java, Python, and Fortran
	Available Graphics Drivers	Windows® 10 64-bit Windows® 7 64-bit Linux® 64-bit HP qualified drivers may be preloaded or available from the HP

Technical Specifications - Graphics

support Web site:
<http://welcome.hp.com/country/us/en/support.html>

Factory Configured (Z4/Z8 G4 Workstation): No adapters included
After market option kit: No adapters included

AMD Radeon™ Pro WX 7100 8GB Graphics	Form Factor Graphics Controller	Full-Height Single Slot (9.5"? Length) Radeon™ Pro WX 7100 graphics GPU: 2304 Stream Processors organized into 36 Compute Units Power: 130 Watts Cooling: Active
	Memory	8GB GDDR5 memory Memory Bandwidth: 7 Gbps / 224 GB/s Memory Width: 256 bit
	Connectors	4x Display Port 1.4 - HDR ready connectors with HBR3 and MST support. Factory Configured: No video cable adapter included After market option kit: No video cable adapter included Additional DisplayPort™-to-VGA or DisplayPort™-to-DVI adapters are available as Factory Configuration or Option Kit accessories.
	Maximum Resolution	5K support @ 60Hz <ul style="list-style-type: none">1x single-cable 5K monitor, or 2x dual-cable 5K monitors
	Image Quality Features	Advanced support for 8-bit, 10-bit, and 16-bit per RGB color component. High bandwidth scaler for high quality up and downscaling
	Display Output	4 full physical DP1.3 HBR3 / DP1.4 HDR outputs FreeSync support
	GPU Architecture Supported Graphics APIs	GCN 4th Generation DirectX®12 OpenGL® 4.5 OpenCL™ 2.0 Vulkan™ 1.0
	Available Graphics Drivers	Windows 10 64-bit Windows® 7 64-bit Linux® 64-bit HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
	Notes	<div>7. HDR content requires that the system be configured with a fully HDR-ready content chain, including: graphics card, monitor/TV, graphics driver and application. Video content must be graded in HDR and viewed with an HDR-ready player. Windowed mode content requires operating system support.</div> <div>8. Radeon VR Ready Creator Products are select Radeon Pro and AMD FirePro™ GPUs that meet or exceed the Oculus Rift or HTC Vive recommended specifications for video cards/GPUs. Other hardware (including CPU) and system requirements recommended by Oculus Rift or HTC Vive should also be met in order to operate the applicable HMDs as intended. As VR</div>

Technical Specifications - Graphics

technology, HMDs and other VR hardware and software evolve and/or become available, these criteria may change without notice.

- 9. AMD PowerTune and AMD ZeroCore Power are technologies offered by certain FirePro™ and Radeon™ Pro products, which are designed to intelligently manage GPU power consumption in response to certain GPU load conditions.
- 10. As of September 2016, certified for DisplayPort™ 1.4 HBR3 and ready for DisplayPort™ 1.4 HDR based on independent verification by DisplayPort™ testing authority. HDR content requires that the system be configured with a fully HDR-ready content chain, including: graphics card, monitor/TV, graphics driver and application. Video content must be graded in HDR and viewed with an HDR-ready player. Windowed mode content requires operating system support.

AMD Radeon™ Pro WX 9100 16GB Graphics	Form Factor	Dual Slot (4.4"? Height x 10.5"? Length)
	Graphics Controller	Radeon™ Pro WX 9100 graphics GPU: 4096 Stream Processors Power: 250 Watts Cooling: Active
	Memory	16GB HBM2 memory Memory Bandwidth: Up to 483 GB/s Memory Width: 2048 bit
	Connectors	6x Mini DisplayPort 1.4 - HDR ready connectors with HBR3 and MST support. Factory Configured: No video cable adapter included After market option kit: No video cable adapter included Additional DisplayPort-to-VGA or DisplayPort-to-DVI adapters are available as Factory Configuration or Option Kit accessories.
	Maximum Resolution	8K support @ 60Hz Single monitor, single or dual-cable
	Image Quality Features	Advanced support for 8-bit, 10-bit, and 16-bit per RGB color component. High bandwidth scaler for high quality up and downscaling
	Display Output	6 full physical mDP 1.4 HDR Ready outputs FreeSync support
	GPU Architecture	Vega™
	Supported Graphics APIs	DirectX® 12.1 OpenGL® 4.5 OpenCL™ 2.0 Vulkan™ 1.0
	Available Graphics Drivers	Windows 10 64-bit Windows 7 available from AMD Linux® 64-bit HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html

Notes1. HDR content requires that the system be configured with a fully

Technical Specifications - Graphics

HDR-ready content chain, including: graphics card, monitor/TV, graphics driver and application. Video content must be graded in HDR and viewed with an HDR-ready player. Windowed mode content requires operating system support.

- 2. Radeon VR Ready Creator Products are select Radeon Pro and AMD FirePro™ GPUs that meet or exceed the Oculus Rift or HTC Vive recommended specifications for video cards/GPUs. Other hardware (including CPU) and system requirements recommended by Oculus Rift or HTC Vive should also be met in order to operate the applicable HMDs as intended. As VR technology, HMDs and other VR hardware and software evolve and/or become available, these criteria may change without notice.
- 3. AMD PowerTune and AMD ZeroCore Power are technologies offered by certain FirePro™ and Radeon™ Pro products, which are designed to intelligently manage GPU power consumption in response to certain GPU load conditions.
- 4. As of September 2016, certified for DisplayPort™ 1.4 HBR3 and ready for DisplayPort™ 1.4 HDR based on independent verification by DisplayPort™ testing authority. HDR content requires that the system be configured with a fully HDR-ready content chain, including: graphics card, monitor/TV, graphics driver and application. Video content must be graded in HDR and viewed with an HDR-ready player. Windowed mode content requires operating system support.

NVIDIA® Quadro® Sync II	Part number	1WT20AA
	Dimensions (HxD)	6.0 inches × 4.2 inches
	Devices Supported	NVIDIA® Quadro® P4000 NVIDIA® Quadro® P5000 NVIDIA® Quadro® P6000
	Bus Type	Requires one free mechanical PCIe bus slot. 6-pin PCI or SATA power connector
	PCI Form Factor	Full Height, half length, single slot
	Ports	2 RJ45 connectors for carrying frame lock signals over CAT5 cables. BNC Connector for external house synchronization.
	Internal Connectors	6 NVIDIA SLI® style edge fingers for connection to compatible GPUs
		<ul style="list-style-type: none">• Included with the board are 4 12-Inch Short Sync Cables to connect to GPU's• Included with the board are 2 24-Inch Long Sync Cables to connect to GPU's
	System Requirements	Requires one free mechanical PCIe bus slot. 6-pin PCI or SATA power connector Must be used with NVIDIA Quadro P4000, P5000 or P6000 graphics cards. Requires Quadro driver version R375 or later.
	Temperature - Operating	0° to 55° C
	Temperature - Storage	-40° to 60° C
	Relative Humidity - Operating	10% to 80%
	Power Requirements	Board power dissipation: <15W
	Operating Systems Supported	Windows 10 64-bit Windows 7 64-bit Linux® 64-bit

Technical Specifications - Graphics

Kit Contents

Contains:

- Quadro Sync II Card
 - 4 x 12-Inch Short Sync Cables
 - 2 x 24-Inch Long Sync Cables (Two)
 - Quick Start Guide
-

Optical and Removable Storage

HP 9.5mm Slim DVD Writer	Description		9.5mm height, tray-load
	Mounting Orientation		Either horizontal or vertical
	Interface Type		SATA/ATAPI
	Dimensions (WxHxD)		128 x 9.5 x 127mm
	Supported Media Types		DVD+R
			DVD+RW
			DVD+R DL
			DVD-R DL
			DVD-R
			DVD-RW
			CD-R
			CD-RW
	Disc Capacity	DVD-ROM	8.5 GB DL or 4.7 GB standard
		Full Stroke DVD	< 200 ms (seek)
	Maximum Data Transfer Rates	Full Stroke CD	< 200 ms (seek)
		CD ROM Read	CD-ROM, CD-R Up to 24X CD-RW Up to 24X
		DVD ROM Read	DVD+RW Up to 8X
			DVD-RW Up to 8X
			DVD+R DL Up to 8X
			DVD-R DL Up to 8X
			DVD-ROM Up to 8X
			DVD-ROM DL Up to 8X
			DVD+R Up to 8X
			DVD-R Up to 8X
Power	Source	SATA DC power receptacle	
	DC Power Requirements	5 VDC ± 5%-100 mV ripple p-p	
	DC Current	5 VDC -< 800 mA typical, <1600 mA maximum	
Operating Environmental (all conditions non-condensing)	Temperature	41° to 122° F (5° to 50° C)	
	Relative Humidity	10% to 80%	
	Maximum Wet Bulb Temperature	84° F (29° C)	
Operating Systems Supported	Windows 10, Windows 7 Professional 64-bit, Windows Vista Business 64*, Windows 2000. Red Hat® Enterprise Linux® (RHEL) 6, 7 Desktop/Workstation SUSE Linux® Enterprise Desktop 12		
	* No driver is required for this device. Native support is provided by the operating system.		
Kit Contents	HP SATA DVD Writer drive, installation guide.		

Technical Specifications – Optical and Removable Storage

HP 9.5mm Slim DVD-ROM Drive	Description	9.5mm height, tray-load		
	Mounting Orientation	Either horizontal or vertical		
	Interface Type	SATA / ATAPI		
	Dimensions (WxHxD)	128 x 9.5 x 127mm		
	Disc Capacity	DVD-ROM	Single layer: Up to 4.7 GB Double layer: Up to 8.5 GB	
	Access Times	DVD-ROM Single Layer	< 110 ms (typical)	
		CD-ROM Mode 1	< 110 ms (typical)	
		Full Stroke DVD	< 230 ms (typical)	
		Full Stroke CD	< 220 ms (typical)	
	Power	Source	SATA DC power receptacle	
		DC Power Requirements	5 VDC ± 5%-100 mV ripple p-p	
		DC Current	5 VDC - <800mA typical, < 1600 mA maximum	
Operating Environmental (all conditions non-condensing)	Temperature	41° to 122° F (5° to 50° C)		
	Relative Humidity	10% to 80%		
	Maximum Wet Bulb Temperature	84° F (29° C)		
Operating Systems Supported	Windows 10, Windows 8.1, Windows 7 Professional 64-bit Red Hat® Enterprise Linux® (RHEL) 6, 7 Desktop/Workstation SUSE Linux® Enterprise Desktop 12 No driver is required for this device. Native support is provided by the operating system.			
Kit Contents	9.5mm Slim DVD-ROM Drive, 5.25" ODD Bay adapter/carrier, slim SATA data/power cable, installation guide			

HP HH DVD Writer (16X RW DVD-R)	Description	HP Half Height DVD Writer	
	Mounting Orientation	Either Horizontal or vertical	
	Interface Type	SATA	
	Dimensions (WxHxD)	146x42x165mm	
	Supported Media Types	DVD+R	
		DVD+RW	
		DVD+R DL	
		DVD-R DL	
		DVD-R	
		DVD-RW	
	Disc Capacity	CD-R	
		CD-RW	
		DVD-ROM	
		Full Stroke DVD	
		Full Stroke CD	
		8.5 GB DL or 4.7 GB standard	
Maximum Data Transfer Rates	CD ROM Read	145ms (seek)	
		120ms (seek)	
	DVD ROM Read	CD-ROM, CD-R Up to 24X	
		CD-RW Up to 24X	
		DVD+RW Up to 13X	
		DVD-RW Up to 13X	
		DVD+R DL Up to 12X	
		DVD-R DL Up to 12X	
	DVD-ROM Read	DVD-ROM Up to 12X	
		DVD-ROM DL Up to 12X	

Technical Specifications – Optical and Removable Storage

	Power	Source	DVD+R Up to 16X DVD-R Up to 16X
		DC Power Requirements	SATA DC power receptacle 5 VDC ± 5% -100 mV ripple p-p 12 VDC ± 10% -200 mV ripple p-p
	Operating Environmental (all conditions non-condensing)	DC Current	5 VDC -<1500mA typical, <2000 mA maximum.
		Temperature	41° to 122° F (5° to 50° C)
Operating Systems Supported	Relative Humidity		10% to 90% (Non-Condensing)
	Windows 10, Windows 7 Professional 64-bit. Red Hat Enterprise Linux WS4**,5,6 Desktop/Workstation.		
	No driver is required for this device, Native support is provided by operating system.		
Kit Contents		HP SATA DVD Writer drive, Installation guide.	

HP 9.5mm Slim BDXL Blu-Ray Writer

Description	9.5mm height, tray-load	
Mounting Orientation	Either horizontal or vertical	
Interface Type	SATA/ATAPI	
Dimensions (WxHxD)	128 x 9.5 x 127mm	
Supported Media Types	BD-ROM	
	BD-R	
	BD-RE	
	DVD+R	
	DVD+RW	
	DVD+R DL	
	DVD-R DL	
	DVD-R	
	DVD-RW	
	CD-R	
	CD-RW	
Disc Capacity	DVD-ROM	8.5 GB DL or 4.7 GB standard
	Blu-ray	25 GB (single-layer)
		50 GB (dual-layer)
		100/128 GB (BDXL)
	Full Stroke DVD	< 230 ms (seek)
	Full Stroke CD	< 220 ms (seek)
	Blu-ray	< 230 ms (seek) (Full Stroke Blu-ray)
	Startup Time	(Time to drive ready from tray loading)
		BD-ROM (SL/DL) 25S / 28S
		BD-R (SL/DL) 25S / 28S
		BD-RE (SL/DL) 25S / 28S
		DVD-ROM (SL/DL) 18S / 18S
		DVD-R (SL/DL) 25S / 25S
		DVD-RW 25S
		DVD+R (SL/DL) 25S / 25S
		DVD+RW 25S
		CD-ROM 15S
Maximum Data Transfer	CD ROM Read	CD-ROM, CD-R Up to 24X

Technical Specifications – Optical and Removable Storage

Rates	DVD ROM Read	CD-RW Up to 24X DVD+RW Up to 8X DVD-RW Up to 8X DVD+R DL Up to 8X DVD-R DL Up to 8X DVD-ROM Up to 8X DVD-ROM DL Up to 8X DVD+R Up to 8X DVD-R Up to 8X
	Blu-ray	BD-ROM Up to 6X BD-ROM DL Up to 6X BD-R Up to 6X BD-R DL Up to 6X BD-R Up to 6X BD-RE SL/DL Up to 6X
Power	Source	SATA DC power receptacle
	DC Power Requirements	5 VDC ± 5%-100 mV ripple p-p
	DC Current	5 VDC -900 mA typical, 2000mA maximum
Operating Environmental (all conditions non-condensing)	Temperature	41° to 122° F (5° to 50° C)
	Relative Humidity	10% to 80%
	Maximum Wet Bulb Temperature	84° F (29° C)
Operating Systems Supported	Windows 10, Windows 7 Professional 64-bit, Red Hat® Enterprise Linux® (RHEL) 6, 7 Desktop/Workstation SUSE Linux® Enterprise Desktop 12	
	No driver is required for this device. Native support is provided by the operating system.	
Kit Contents	9.5mm Slim BDXL Blu-Ray Writer, 5.25" ODD Bay adapter/carrier, slim SATA data/power cable, installation guide	
	As Blu-ray is a new format containing new technologies, 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 a DVI or HDMI digital connection and your display may require HDCP support. HD-DVD movies cannot be played on this workstation.	

Technical Specifications – Optical and Removable Storage

HP SD Card Reader	Description	Supports hardware ECC (Error Correction Code) function Supports hardware CRC (Cyclic Redundancy Check) function Supports SD 4-bit parallel transfer mode
	Interface Type	USB 3.1 Gen 1 High-speed interface
	Dimensions (WxHxD)	1.15 x .9 x .15 in (29.00 x 23.6 x 3.15 mm) Fits conveniently in the Front IO Bay
	Supported Media Types	Secure Digital Card (SD) Secure Digital High Capacity (SDHC) SD Extended Capacity Memory Card (SDXC) SD Ultra High Speed II(SD UHSII)
		These additional media types are supported with a card adapter. Memory Stick Micro (M2) miniSD miniSD High Capacity Micro SD Memory Card (MicroSD) Micro SD High Capacity Memory Card (MicroSDHC)
	Operating Systems Supported	Test Parameters/Conditions - Power applied, unit operating on system ±5% Windows 10
		No driver is required for this device. Native support is provided by the operating system.
	Kit Contents	Media card reader
	Approvals	USB-IF, WHQL, Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0, Compliant Intel Front Panel I/O Connectivity Design Guide V. 1.3, FCC, CE, BSMI, C-Tick, VCCI, MIC, cUL, TUVT
	Weight	0.35 lbs. (0.16 kg)

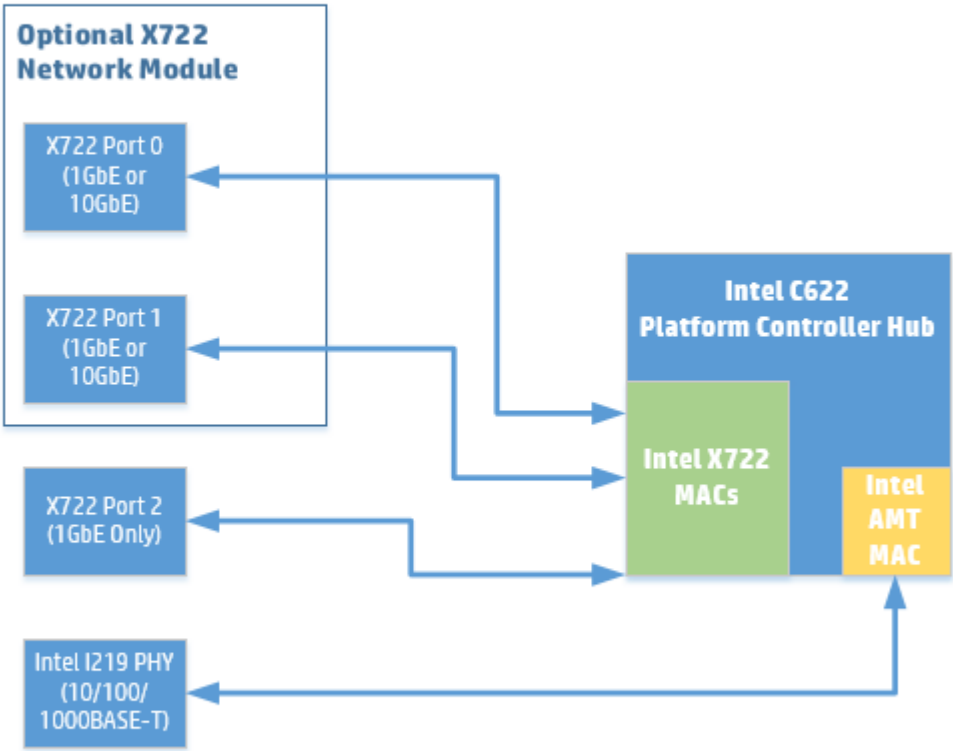
Controller Cards

HP Thunderbolt-3 Dual Port2 PCIe 1-port I/O Card	Data Transfer Rate	Supports up to 40 Gb/s (40,000 Mb/s)
	Devices Supported	Thunderbolt™, Thunderbolt™ 2 and Thunderbolt™ 3 certified for Windows devices
	Bus Type	PCIe card, full height PCIe slots
	Ports	Two Thunderbolt™ 3 external USB type-C output connectors (Rear) Two full size DisplayPort input connectors (Rear)
	Internal Connectors	One 2x5-Pin header connector
	System Requirements	Windows 10 Professional 64-bit, available dedicated PCH PCIe slot.
	Temperature - Operating	50° to 131° F (10° to 55° C)
	Temperature - Storage	-22° to 140° F (-30° to 60° C)
	Relative Humidity - Operating	20% to 80%
	Compliances	FCC Part 15B, cULus 60950, CE Mark EN55022B(1995)/EN55024-1998 STD, Taiwan BSMI CNS13438, Korea MIC
	Operating Systems Supported	Genuine Windows 10 Professional 64-bit.
	Kit Contents	HP Thunderbolt™ 3 Dual Port PCIe I/O Card, 2- DisplayPort cables, GPIO (General-Purpose Input/Output) cables, Installation documentation and warranty card.

*Maximum speed requires DisplayPort™ and PCIe aggregation.

Networking and Communications

HP Z6 Gen4 and HP Z8 Gen 4
Integrated Network Architecture



Note: When an optional X722 network module is not installed in the system, a “dummy” port is enumerated as Function 0 of the Intel X722 MACs, which allows for the X722 Port 2 on the Motherboard to enumerate.

Integrated Intel I219LM	Connector	RJ-45
	Controller	Intel I219LM
	Data Rates Supported	10/100/1000 Mbps
	Boot ROM Support	PXE, UEFI
	Connect Speed LED	Link/Activity LED
	Indicators	<ul style="list-style-type: none">• Off = No link• Blinking = Activity Speed LED <ul style="list-style-type: none">• Off = 10Mbps• Amber = 100Mbps• Green = 1000Mbps

Management Capabilities Intel® Active Management Technology™ 11

Technical Specifications - Networking and Communications

Integrated Intel X722 for 1GbE	Connector	1 RJ-45
	Controller	Intel X722 for 1GbE
	Data Rates Supported	1000 Mbps
	Boot ROM Support	PXE, UEFI
	Connect Speed LED Indicators	Link/Activity LED <ul style="list-style-type: none">• Off = No link• Blinking = Activity Speed LED <ul style="list-style-type: none">• Off = No Link• Green = 1000Mbps
	Management Capabilities	Wake-On-LAN

HP Z Dual 10GbE Network Module	Networking Interface	2 RJ-45
	System Interface	Cabled from Dedicated Rear I/O Slot
	Networking Speeds Supported	1Gbps, 10Gbps
	Cabling (up to 100m)	Cat5e (or higher) for 1Gbps Cat6a (or higher) for 10Gbps
	Power Consumption (active-typical)	5.5W at 1Gbps 11.2W at 10Gbps
	Physical Dimensions	0.875 in x 3 in x 2.75 in
	Connect Speed LED Indicators	Link/Activity LED <ul style="list-style-type: none">• Off = No link• Blinking = Activity Speed LED <ul style="list-style-type: none">• Amber = 1Gbps• Green = 10Gbps
	Operating Temperature	0 °C to 55 °C (32 °F to 131 °F)

Technical Specifications - Networking and Communications

Intel® I210-T1	Networking Interface	1 RJ-45
	System Interface	PCI Express 2.1 x1
	Networking Speeds Supported	10Mbps, 100Mbps, 1Gbps
	Cabling (up to 100m)	Cat3 (or higher) for 10Mbps Cat5 (or higher) for 100Mbps Cat5e (or higher) for 1Gbps
	Power Consumption (active-typical)	0.81W
	Physical Dimensions	Length: 6.7cm (2.64 inches) (Bracket) Width: 1.8cm (0.709 inches) Full-height end bracket: 12.07cm (4.755 inches) Low-profile end bracket: 8cm (3.15 inches)
	Connect Speed LED Indicators	Link/Activity LED
		<ul style="list-style-type: none">• Off = No link• Blinking = Activity
		Speed LED
		<ul style="list-style-type: none">• Off = 10Mbps• Green = 100Mbps• Amber = 1Gbps
	Operating Temperature	0 °C to 55 °C (32 °F to 131 °F)
	Hardware Certifications	USA: FCC B, EU: UL CE, Japan: VCCI, Taiwan: BSMI, Australia/New Zealand: CTICK, Korea: KCC, Canada: ICES-003/NMB-003

Intel® I350-T2	Networking Interface	2 RJ-45
	System Interface	PCI Express 2.1 x4
	Networking Speeds Supported	10Mbps, 100Mbps, 1Gbps
	Cabling (up to 100m)	Cat3 (or higher) for 10Mbps Cat5 (or higher) for 100Mbps Cat5e (or higher) for 1Gbps
	Power Consumption (active-typical)	4.4W
	Physical Dimensions	Length: 13.54cm (5.33 inches) Width: 6.89 (2.71 inches) Full-height end bracket: 12.0cm (4.725 inches) Low-profile end bracket: 7.92cm (3.117 inches)
	Connect Speed LED Indicators	Link/Activity LED
		<ul style="list-style-type: none">• Off = No link• Blinking = Activity
		Speed LED
		<ul style="list-style-type: none">• Off = 10Mbps• Green = 100Mbps• Amber = 1Gbps

Technical Specifications - Networking and Communications

Operating Temperature	0 °C to 55 °C (32 °F to 131 °F)
Hardware Certifications	USA: FCC B, EU: UL CE, Japan: VCCI, Taiwan: BSMI, Australia/New Zealand: CTICK, Korea: KCC, Canada: ICES-003/NMB-003

Intel® I350-T4	Networking Interface	4 RJ-45
	System Interface	PCI Express 2.1 x4
	Networking Speeds Supported	10Mbps, 100Mbps, 1Gbps
	Cabling (up to 100m)	Cat3 (or higher) for 10Mbps Cat5 (or higher) for 100Mbps Cat5e (or higher) for 1Gbps
	Power Consumption (active-typical)	5W
	Physical Dimensions	Length: 13.54cm (5.33 inches) Width: 6.89 (2.71 inches) Full-height end bracket: 12.0cm (4.725 inches) Low-profile end bracket: 7.92cm (3.117 inches)
	Connect Speed LED Indicators	Link/Activity LED <ul style="list-style-type: none">Off = No linkBlinking = Activity Speed LED <ul style="list-style-type: none">Off = 10MbpsGreen = 100MbpsAmber = 1Gbps
	Operating Temperature	0 °C to 55 °C (32 °F to 131 °F)
	Hardware Certifications	USA: FCC B, EU: UL CE, Japan: VCCI, Taiwan: BSMI, Australia/New Zealand: CTICK, Korea: KCC, Canada: ICES-003/NMB-003

Technical Specifications - Networking and Communications

Aquantia® AQN-108	Networking Interface	RJ-45
	System Interface	PCI Express 3 x1
	Networking Speeds Supported	100Mbps, 1Gbps, 2.5Gbps, 5Gbps
	Cabling (up to 100m)	Cat5e (or higher) for all speeds
	Power Consumption (active-typical)	3.5W at 5Gbps, 3.0W at 2.5Gbps
	Physical Dimensions	3.72 in x 3.18 in (without bracket)
	Connect Speed LED Indicators	Link/Activity LED
		<ul style="list-style-type: none">Off = No linkBlinking = Activity
		Speed LED
	<ul style="list-style-type: none">Off = No linkAmber = <5GbpsGreen = 5Gbps	
Operating Temperature	0 °C to 55 °C (32 °F to 131 °F)	
Hardware Certifications	USA: FCC B, EU: UL CE, Japan: VCCI, Taiwan: BSMI, Australia/New Zealand: CTICK, Korea: KCC, Canada: ICES-003/NMB-003	
<hr/>		
Intel® X550-T2	Networking Interface	2 x RJ-45
	System Interface	PCI Express 3 x4
	Networking Speeds Supported	100Mbps, 1Gbps, 2.5Gbps, 5Gbps, 10Gbps
	Cabling (up to 100m)	Cat5 (or higher) for 100Mbps Cat5e (or higher) for 1Gbps, 2.5Gbps, or 5Gbps Cat6a (or higher) for 10Gbps
	Power Consumption (active-typical)	3.9W at 100Mbps 5.5W at 1Gbps 11.2W at 10Gbps
	Physical Dimensions	5.2 in x 2.7 in (without bracket)
	Connect Speed LED Indicators	Link/Activity LED
		<ul style="list-style-type: none">Off = No linkBlinking = Activity
		Speed LED
	<ul style="list-style-type: none">Off = No linkAmber = <10GbpsGreen = 10Gbps	
Operating Temperature	0 °C to 55 °C (32 °F to 131 °F)	
Hardware Certifications	USA: FCC B, EU: UL CE, Japan: VCCI,	

Technical Specifications - Networking and Communications

Taiwan: BSMI,
Australia/New Zealand: CTICK,
Korea: KCC,
Canada: ICES-003/NMB-003

Intel® X710-DA2 10GBASE-SR Converged Network Adapter	Networking Interface	2 SFP+ Ports for LC SFP+ Transceivers
	System Interface	PCI Express 3.0 x8
	Networking Speeds Supported	1Gbps, 10Gbps
	Cabling	LC fiber optic cabling with LC SFP+ Transceivers
	Power Consumption (active-typical)	4.3W
	Physical Dimensions	6.578 in x 2.703 in
	Connect Speed LED Indicators	Link/Activity LED
		<ul style="list-style-type: none">Off = No linkBlinking = Activity
		Speed LED
		<ul style="list-style-type: none">Off = 10MbpsGreen = 100MbpsAmber = 1Gbps
	Operating Temperature	0 °C to 55 °C (32 °F to 131 °F)
	Hardware Certifications	USA: FCC B, EU: UL CE, Japan: VCCI, Taiwan: BSMI, Australia/New Zealand: CTICK, Korea: KCC, Canada: ICES-003/NMB-003

Note: Windows 7 is NOT supported

10GbE SFP+ SR Transceiver	Connector Type	LC
	Cable Type	62.5/125um or 50/125um (core/cladding), graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively.
	Cable Length	2-300m
	Wavelength	850nm
	Form Factor	SFP+
	Physical Dimensions	0.47(h) x 0.54(w) x 2.19(d) inches (1.19 x 1.38 x 5.57 cm)
	Operating Temperature	0C to 45C (32F to 113F)
	Operating Humidity	0% to 85%, noncondensing

Technical Specifications - Networking and Communications

Intel® 8265 WLAN	Networking Speeds	802.11ac MU-MIMO (up to 867 Mbps) Bluetooth 4.2
	IEEE WLAN Standard	IEEE 802.11a/b/g/n/ac, 802.11d, 802.11e, 802.11h, 802.11i, 802.11w; 802.11r, 802.11k, 802.11v pending
	Bluetooth	4.2
	System Interface	PCI Express 2.1 x1
	Antenna	2x2

Intel® 9260 WLAN	Networking Speeds	802.11ac MU-MIMO (up to 1.73Gbps using 160MHz channels)
	IEEE WLAN Standards	IEEE 802.11a/b/g/n/ac
	Bluetooth	5.0
	System Interface	PCI Express 2.1 x1
	Antenna	2x2

Summary of Changes

Summary of Changes

Date of change:	Version History:		Description of change:
September 20, 2017	From v1 to v2	Added	Specs for the Power Supply section
		Changed	The System Configurations section and changed notes for the NVIDIA Quadro P4000, P5000 & P6000 Graphics
November 1, 2017	From v2 to v3	Added	HP DisplayPort to HDMI Adapter, NVIDIA SLI 2-slot Graphics Connector and NVIDIA Quadro Sync II to Graphics section
		Changed	Graphics, Storage / Hard Drives, Networking and Communications, Other Hardware and Memory sections, changed Front view info on the Overview section, changed Operating Systems section, changed Processors section, changed System Board section, Physical Security and Serviceability section
November 10, 2017	From v3 to v4	Added	Windows 10 to the supporting systems by the 9.5mm Slim DVD-ROM drive
		Removed	Microsemi 3152-8i SAS ROC RAID Controller from SAS controller on the Hard Drive Controllers section.
November 29, 2017	From v4 to v5	Added	Processors, hard drives and graphics to offerings, added Declared Noise Emissions information
		Changed	Wattage links on power supply section updated and Voltage links on efficiency section updated
January 30, 2018	From v5 to v6	Changed	Factory configured option to yes on Networking and communications for : Intel® 8265 802.11 a/b/g/n/ac&BT PCIe
		Removed	NVIDIA SLI Graphics Connector from Graphics Cable Adapters section
February 14, 2018	From v6 to v7	Removed	RAID 5 and 10 references from "Factory integrated"? in interfaces supported section
March 27, 2018	From v7 to v8	Added	NVIDIA Quadro GP100 16GB Graphics, NVIDIA Quadro GV100 32GB Graphics and AMD Radeon Pro WX 9100 16GB Graphics as High End 3D in Graphics section
		Added	Intel Xeon processors added
August 13, 2018	From v8 to v9	Added	Footnote to Networking and Communications section
		Changed	Operating Systems section
September 6, 2018	From v9 to v10	Added	Integrated Network Architecture Diagram on The Networking and Communications section
September 6, 2018	From v10 to v11	Changed	Power Supply section
September 21, 2018	From v11 to v12	Added	Intel Optane SSD 905p AiC 280GB & 480GB
November 19, 2018	From v12 to v13	Added	Intel Xeon Gold 6128 processor
		Changed	NVIDIA Quadro P6000 Graphics specs
January 2, 2019	From v13 to v14	Added	NVIDIA Quadro P620 2GB Graphics
January 8, 2019	From v14 to v15	Added	HP DX175 Removable HDD Carrier into the HDD Frame/Carriers section
		Changed	Intel Xeon Gold 6126 processor specs
January 9, 2019	From v15 to v16	Added	Intel Xeon Gold 6126 processor footnote
January 23, 2019	From v16 to v17	Added	Intel 9260 802.11 a/b/g/n/ac&BT PCIe to Networking section and added HP Z Turbo Drive Dual Pro series to Storage section
April 8, 2019	From v17 to v18	Added	New Intel Xeon Processors and graphics
		Changed	Storage / Hard Drives, Memory sections and format changes
May 15, 2019	From v18 to v19	Added	NVIDIA Quadro RTX 8000 48GB Graphics
		Changed	Networking and Communications section and changed External BIOS simulator link on Physical Security and Serviceability section
June 12, 2019	From v19 to v20	Changed	Storage section
July 15, 2019	From v20 to v21	Changed	Corrected Intel 905p Series AIC 480GB PCIe SSD
August 1, 2019	From v21 to v22	Changed	Processors Matrix
August 6, 2019	From v22 to v23	Changed	Graphics section

title

© 2019 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. Intel, Xeon, and Thunderbolt are trademarks of Intel Corporation in the U.S. and other countries. Microsoft and Windows are U.S. registered trademarks of Microsoft Corporation. Red Hat is a registered trademark of Red Hat, Inc. in the United States and other countries. Firewire is a trademark of Apple Inc. Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries. Bluetooth is a trademark of its proprietor used by HP Inc. under license.



Monitor HP Z27n G2 de 27 polegadas

Seja uma potência produtiva com o elegante monitor HP QHD Z27n G2 de 27 polegadas. Esse monitor praticamente perfeito é testado na fábrica para confiabilidade e longevidade com calibração de cores integrada, posicionamento lado a lado de várias telas sem interrupção¹ e conexões de dispositivo expansivas, incluindo USB-C™.



Produtividade com várias telas sem interrupções

- Otimize várias tarefas em vários monitores¹ com uma microborda de 3 lados e faça um encadeamento em série de até 2 monitores por estação de trabalho com o DisplayPort™. Obtenha imagens incríveis de resolução de 2560 x 1440², proporção de tela de 16:9 e mais de 3 milhões de pixels.

Cores de outro mundo, sempre

- Cor consistente e precisa entre monitores e de projeto a projeto é mais fácil do que nunca com a calibração de cores de fábrica desde a primeira utilização.

Qualidade desde o início

- Testamos rigorosamente cada monitor HP Z para ajudar a garantir que ele é uma solução visual confiável e de longa duração respaldado com a garantia Zero Pontos Brilhantes da HP³, a política de pixels mais rígida da HP, que substitui a tela se mesmo um sub-pixel brilhante falhar.⁴

Conectividade preparada para o futuro

- Mantenha tudo organizado com uma única conexão de vídeo e dados com um cabo USB-C™ que está pronto para as gerações futuras das estações de trabalho HP. VGA, HDMI e DisplayPort™ são compatíveis com várias gerações, e um hub USB 3.0 de três portas oferece suporte a conectividade de dispositivo conveniente.

Recursos

- Aproveite o máximo de seu espaço de trabalho disponível montando computadores poderosos como a mini estação de trabalho HP Z2 diretamente atrás do monitor para uma solução compacta, eficiente e com alcance único.
- Trabalhe confortavelmente com inclinação personalizável, rotação e ajuste de altura de até 150 mm. Simplifique o seu fluxo de trabalho com rotação de conteúdo automática entre os modos retrato e paisagem.
- Deixe a tela do seu jeito de trabalhar, com o software HP Display Assistant, que permite o particionamento de tela e ajuda a impedir roubos apagando um monitor que seja desconectado sem aprovação.
- Reduza o consumo de energia e ajude a diminuir os custos com um design inteligente, com eficiência energética e pouco halogênio e com certificação ENERGY STAR®, qualificado para TCO e registrado no EPEAT® Gold e retroiluminação de tela sem mercúrio e vidro do monitor sem arsênio.
- Crie uma solução completa com acessórios da HP opcionais projetados e testados para funcionar com seu monitor.
- Fique tranquilo, pois o seu investimento em TI conta com o suporte de uma garantia limitada padrão de três anos. Para estender sua proteção, selecione um serviço HP Care opcional.

Monitor HP Z27n G2 de 27 polegadas Tabela de especificações



Tipo do visor	IPS com iluminação por LED
Área Ativa do Pannel	23,49 x 13,21 in 59,67 x 33,56 cm
Tamanho da tela (diagonal)	68,58 cm (27")
Ângulo de visualização	178° horizontal; 178° vertical
Brilho	350 cd/m² ¹
Relação de contraste	1000:1 estático; 10000000:1 dinâmico ¹
Taxa de resposta	5 ms cinza p/ cinza ^{1,3}
Cor do produto	Prata
Relação largura-altura	16:9
Resolução nativa	QHD (2560 x 1440 a 60 Hz)
Resoluções admitidas	2560 x 1440; 1920 x 1200; 1920 x 1080; 1680 x 1050; 1600 x 900; 1440 x 900; 1280 x 1024; 1280 x 800; 1280 x 720; 1024 x 768; 800 x 600; 720 x 480; 640 x 480
Características do visor	Antirreflexo; IPS (In plane switching); Seleção de idioma; Retroiluminação LED; Controles na tela; Rotação em pivô; Plug and Play; Programável pelo usuário; Baixa distorção
Controles do usuário	Brilho; Contraste; Controle de cor; Controle de entrada; Controle de imagem; Liga/desliga; Menu; Gerenciamento; Idioma; Informações; Sair; OK
Sinal de entrada	1 DVI-D; 1 HDMI 2.0; 1 DisplayPort™ 1.2 com suporte a HDCP
Portas e conectores	1 saída de áudio analógico; 3 USB 3.0 (downstream); 1 USB 3.1 Type-C™ (lateral, downstream, fornecimento de alimentação de até 10 W); 1 USB 3.1 Type-C™ (traseira, downstream e upstream, fornecimento de alimentação de até 15 W) ¹
Potência de entrada	Tensão de entrada: 100 a 240 VCA
Consumo de energia	96 W (máximo), 45 W (típico), 0,5 W (estado de espera)
Dimensões com o suporte (L x P x A)	24,1 x 8,4 x 20 in 61,3 x 21,4 x 50,9 cm
Dimensões sem o suporte (L x P x A)	24,1 x 1,85 x 14,33 pol. 61,3 x 4,71 x 36,4 cm
Peso	17,6 lb. 8 kg Com suporte
Funcionalidades ergonômicas	Inclinação: -5 a +22° ; Rotação: ± 45° ; Rotação em pivô: 90° ; Altura: 150 mm
Funcionalidades de segurança física	Pronto para trava de segurança (trava vendida separadamente)
Ambiental	Temperatura de funcionamento: 5 a 35° C Umidade de funcionamento: 20 a 80% RH
Conformidade com standards de eficiência energética	Certificação ENERGY STAR®; EPEAT® Gold
Certificações e conformidades	BSMI; CB; CCC; CE; CEL; cTUVus; CU; ErP; FCC; ICES; ISC; ISO 9241-307; CoC (México); Certificação Microsoft WHQL (Windows 10 e Windows 7); MSIP; RCM; SmartWay Transport Partnership — somente AN; VCCI; WEEE
Especificações ambientais	Vidro do monitor sem arsênio; Iluminação do monitor sem mercúrio; Baixo teor de halogênio
Conteúdo da caixa	Monitor; Cabo de alimentação CA; Cabo USB Type-C™ para A; Cabo DisplayPort™ 1.2; CD (inclui manual do usuário, garantia, drivers); HP Display Assistant; Adaptador para montagem VESA

Acessórios e serviços recomendados

HP B300 PC Mounting Bracket

Referência: 2DW53AA

Alto-falante HP S100

Adicione áudio estéreo rico para selecionar monitores HP ProDisplays, HP EliteDisplays e HP Z 2017 e 2018¹ sem lotar sua mesa com o HP S100 Speaker Bar, que cabe perfeitamente debaixo do monitor e se conecta por USB.

Referência: 2LC49AA

Braço para um único monitor HP



O braço para um único monitor é o acessório de mesa perfeito para sua vida profissional. Elegante e aerodinâmico, o braço para um único monitor é projetado para complementar a maneira que você trabalha.

Referência: BT861AA

Adaptador gráfico USB HP UHD



Aumente a produtividade estendendo ou espelhando o desktop em uma tela UHD com o adaptador gráfico HP UHD USB.

Referência: N2U81AA

Kit de trava de segurança para PC comercial HP v2



Ajude a evitar violações de chassi e proteja o seu PC e o monitor em espaços de trabalho e áreas públicas, com o Kit de Trava de Segurança para PC Comercial HP v2.

Referência: N3R93AA

Notas de rodapé de mensagens

¹ Monitores adicionais são necessários e vendidos separadamente.

² Todas as especificações de desempenho representam as especificações típicas fornecidas pelos fabricantes dos componentes utilizados nos produtos HP; o desempenho real pode ser maior ou menor.

³ A Política de Pixel HP não permite defeitos de sub-pixel brilhante para monitor. Para detalhes completos, consulte <http://support.hp.com/us-en/document/c00288895>.

⁴ Os HP Care Packs são vendidos separadamente. Os níveis dos serviços e os tempos de resposta dos HP Care Packs podem variar de acordo com sua localização geográfica. O serviço tem início na data da compra do hardware. Restrições e limitações se aplicam. Para detalhes, visite www.hp.com/go/cpc. Os serviços HP são regidos pelos termos e condições de serviço aplicáveis da HP, fornecidos ou indicados ao cliente no momento da compra. O cliente pode ter direitos legais adicionais, conforme as leis locais aplicáveis, e tais direitos não são afetados de nenhuma forma pelos termos e condições HP de serviços ou pela garantia limitada HP fornecida com o seu produto HP.

⁵ Estação de trabalho vendida separadamente. Requer suporte de montagem de PC HP B300, vendido separadamente.

⁶ Para um uso ideal, emparelhe com o Assistente de Monitor HP e um dispositivo executando um sistema operacional Windows. Consulte o guia do usuário para obter instruções exatas.

⁷ Fontes de alimentação externas, cabos de alimentação, cabos e periféricos incluem quantidades maiores de halogênio. As peças de manutenção obtidas após a compra podem incluir uma quantidade maior de halogênio.

⁸ Registro EPEAT® onde aplicável. O registro EPEAT varia de acordo com o país. Acesse www.epeat.net para ver o status do registro em seu país. Pesquise usando a palavra-chave "gerador" na loja de opcionais de terceiros da HP para ver os geradores solares em www.hp.com/go/options.

⁹ Cada um vendido separadamente.

Notas de rodapé das especificações técnicas

¹ Todas as especificações representam as especificações típicas fornecidas pelos fabricantes dos componentes utilizados nos produtos HP; o desempenho real pode variar para mais ou para menos.

² Fontes de alimentação externas, cabos de alimentação, cabos e periféricos incluem quantidades maiores de halogênio. As peças de serviço obtidas após a compra podem incluir uma quantidade maior de halogênio.

³ O produto-padrão tem um tempo de resposta de 14,0ms e pode ser ajustado para um mínimo de 5,4ms no menu da tela. Consulte o Guia do Usuário, para mais informações.

Receba atualizações
hp.com/go/getupdated

Aprenda mais em
hp.com

© Copyright 2018 HP Development Company, L.P. As informações contidas neste documento estão sujeitas a alterações sem aviso. As únicas garantias de produtos e serviços da HP são aquelas estabelecidas nas declarações de garantia expressas que acompanham tais produtos e serviços. Nada aqui contido deve ser interpretado como constituindo uma garantia adicional. A HP não se responsabiliza por omissões, erros técnicos ou erros editoriais contidos neste documento. Com registro EPEAT® sempre que aplicável. O registro EPEAT varia de acordo com o país. Acesse www.epeat.net para ver o status do registro por país. Pesquise pela palavra-chave "gerador" na loja de opcionais de terceiros da HP para ver os geradores solares disponíveis www.hp.com/go/options

ENERGY STAR® e a marca ENERGY STAR® são marcas comerciais registradas da Agência de Proteção Ambiental dos EUA. DisplayPort™ e o logotipo do DisplayPort™ são marcas comerciais pertencentes à Video Electronics Standards Association (VESA®) nos Estados Unidos e em outros países.





HP Brasil Indústria e Comércio de
Equipamentos Eletrônicos Ltda.
Alameda Xingu, n.º 350, 8º andar
Alphaville Industrial, Barueri/SP
CEP: 06455-030
Brasil

declaração

Barueri, 28 de Agosto de 2019.

A

**EMPRESA BRASILEIRA DE ADMINISTRAÇÃO DE PETRÓLEO E GÁS NATURAL - PRÉ SAL
PETRÓLEO - PPSA**

Assunto:
PREGÃO /RFP Nº 013/2019

BDI 10874

A HP BRASIL INDÚSTRIA E COMÉRCIO DE EQUIPAMENTOS ELETRÔNICOS LTDA. (HP), em atendimento ao quanto solicitado pelo Parceiro **HP Torino Informatica Ltda**, declara que:

A empresa **Torino Informática Ltda**, inscrita no CNPJ **03.619.767/0001-91** sediada na RUA RITA DE CARVALHO MONTEIRO, 120, RETIRO SÃO JOÃO, SOROCABA, SP - CEP 18085-750 com filial inscrita no CNPJ **03.619.767/0005-15** situada a Avenida 600, s/n, Quadra 15, Módulo 10, Setor Industrial, TIMS, Serra, ES, CEP 29161-419, é um **PARCEIRO AUTORIZADO HP, PARA COMPRA DIRETA DE PRODUTOS DA HP**, estando apto a comercializar as linhas de produtos HP de nossa fabricação descritas abaixo.

Declaramos ainda que a **TORINO INFORMÁTICA LTDA.** é o parceiro de serviços do programa **PARTNER FIRST**, autorizado a prestar serviço de assistência técnica dos produtos que comercializa no telefone 0800 201-5666.

Produtos:

7ZU51LA#AC4 - HP Z8 G4 Workstation – garantia padrão do Fabricante.
1JS10A4#ABA - HP Z27n G2 Display US – garantia padrão do Fabricante.

Declaramos que o produto **7ZU51LA#AC4** - HP Z8 G4 Workstation:

- Possui BIOS do mesmo Fabricante
- Possui BIOS UEFI
- Possui placa mãe do Fabricante
- Pertence à linha Corporativa
- Possui Logística Reversa
- Está em Linha de produção
- Suporta boot por pendrive ou disco conectado a uma porta USB
- Possui ferramentas de diagnóstico ou verificação do disco rígido e memória, bem como informações detalhadas sobre equipamento
- Possui 01 (uma) controladora de unidade de disco SATA, integrada a placa mãe, com no mínimo 03 (três) canais, sendo no mínimo 02 (dois) canais SATA III 6,0 Gb/s
- Possui teclado com bloco numérico e com caracteres estabelecidos pela ABNT II

Página 1 de 9

- Possui teclado com caracteres estabelecidos pela ABNT II
- Possui Mouse 1000 dpis e um botão de rolagem "scroll" (garantir que esteja no CTO)
- Possui Tool Less que permite a abertura do equipamento e a troca de componentes internos (disco rígido, unidade de mídia óptica, memórias e placas de expansão) sem a utilização de ferramentas
- Todos os itens e seus acessórios são novos, não reconicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, marcas e falhas de fabricação, devidamente acondicionados, acompanhados de todos os seus acessórios, apresentados com nota fiscal.
- Possui memória RAM totalmente compatível com o processador e placa mãe;
- Acompanha cabos de alimentação do equipamento de acordo com a norma do INMETRO NBR 14136.
- É capaz de funcionar na vertical e na horizontal sem prejuízo no desempenho e comprometimento de componentes internos
- Possui Indicadores LED na parte frontal: liga/desliga e acesso ao HD
- Possui emissão mensagens de relativas ao diagnósticos de problemas e funcionamento do computador
- Possui desativação automática do alto falante quando ocorrer a conexão de um fone de ouvido
- Todos os drivers dos componentes do equipamento para os sistemas operacionais suportados estão disponíveis para download no site do fabricante do equipamento durante todo o período de garantia
- Suporta plug & play
- Possui ACPI
- Possui sistema de ventilação projetada pela HP
- Atende a diretiva ROHS
- Possui HD de regime OEM da HP
- Possui sistema de dissipação de calor para a perfeita refrigeração do processador considerando que esteja trabalhando em sua capacidade máxima pelo período de 8 horas por dia consecutivas em ambiente não refrigerado
- O BIOS do equipamento foi desenvolvida em UEFI com suporte a tecnologia Wake on Lan com controle de habilitação/deshabilitação de portas USB
- O BIOS do equipamento possui suporte a tecnologia PXE
- O HD fornecido no equipamento tem suporte as tecnologias S.M.A.R.T
- O equipamento possui sistema de monitoramento de temperatura controlada pelo BIOS e fluxo de ar dentro do equipamento de acordo com as especificações do fabricante do processador
- Possui acabamento interno composto de superfícies não cortantes
- Possui cores neutras como preto e grafite
- É entregue devidamente acondicionados em embalagens individuais adequadas
- O BIOS do equipamento é do tipo flash memory, não volátil e reprogramável
- O BIOS do equipamento foi lançado a partir de 2011 e está sendo entregue com a versão mais atual disponível
- A unidade de DVD fornecida possui mecanismo de emergência para abertura da unidade de DVD em caso de travamento
- Pode ser desligado ao pressionar o botão de liga/desliga e prevenção de desligamento acidental
- As teclas do equipamento possuem impressão permanente e não apresentam desgaste por abrasão ou uso prolongado
- Possui base antiderrapante
- Possui DVD que tem trava para a mídia para o caso de posicionamento vertical da unidade;
- Possui fonte de alimentação que é capaz de suportar a configuração máxima do equipamento
- Possui sistema de monitoramento de temperatura controlada pela BIOS;

huf

adequado ao processador, fonte e demais componentes internos ao gabinete. O fluxo do ar interno deve seguir as orientações do fabricante do microprocessador.

- Possui teclas Windows logo e teclas de acesso a aplicações
- Não possui teclas exclusivas de hibernação e espera
- É entregue com todos os cabos, conectores e acessórios necessários para o funcionamento;
- Possui BIOS do tipo flash memory, atualizável via software, com suporte à tecnologia SMART para discos rígidos e à ACPI, versão 2.0. O acesso à configuração de BIOS pode ser configurado para ser protegido por sistema de permissão através do uso de senha de acesso, com possibilidade de alteração da senha via rede;
- BIOS com possibilidade de inserção de código de identificação do equipamento (número de registro patrimonial, por exemplo) dentro da própria BIOS, com extensão mínima de oito dígitos, sendo tais informações recuperáveis por software de gerenciamento;
- Suporta boot por dispositivo de armazenamento móvel padrão USB (versão 2.0 ou superior), como flash drive (pendrive) e HDs externo;
- Possui possibilidade de acesso remoto mesmo com o computador desligado ou com o sistema operacional inacessível; (vPro ou DASH deverá ter na máquina)
- Possui chip de segurança TPM (Trusted Platform Module), versão 2.0 ou superior, integrado à placa principal, acompanhado de drivers e software para sua utilização
- Fonte de alimentação compatível com o conjunto, com capacidade de fornecer energia suficiente para suportar todos os componentes do computador em sua performance máxima (placa-principal, interfaces, discos rígidos, memória RAM, periféricos conectados via portas com alimentação direta de energia), com expectativa de funcionamento de no mínimo 10 (dez) horas diárias, 5 (cinco) dias por semana
- O gabinete é feito em chapas de aço

Declaramos que o produto **1JS10A4#ABA** - HP Z27n G2 Display US:

- Pertence à linha Corporativa
- Possui Logística Reversa
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, marcas e falhas de fabricação, devidamente acondicionados, acompanhados de todos os seus acessórios, apresentados com nota fiscal.
- Acompanha cabos de alimentação do equipamento de acordo com a norma do INMETRO NBR 14136.
- Atende a diretiva ROHS
- Possui cores neutras como preto e grafite
- É entregue devidamente acondicionados em embalagens individuais adequadas
- Possui tela com tratamento antirreflexo
- Pode ser desligado ao pressionar o botão de liga/desliga e prevenção de desligamento acidental
- Possui base antiderrapante
- É entregue com todos os cabos, conectores e acessórios necessários para o funcionamento;

Durante o período de garantia do Produto HP, a Fabricante HP responsabiliza-se pela garantia no prazo e condições padrão HP, conforme especificado no termo de garantia que acompanha o Produto HP e no manual técnico do Produto HP.

Ruf

Serviços adicionais ao especificado na garantia padrão da Fabricante HP poderão ser adquiridos pelo Parceiro HP, com prazos e condições customizados.

Declaramos que os equipamentos fabricados pela HP são novos, que não foram submetidos a uso, nem recondição, ressalvados os testes de fábrica.

Os Produtos da marca HP são de fabricação própria ou homologados por regime de O&M e estão em linha de produção atual.

Declaramos, ainda, que a HP possui site na internet - www.hp.com.br - onde pode ser efetuado download de drivers para os Produtos HP e número de telefone para Grande São Paulo - (011) 4004-7751 e demais regiões - 0800 709 77 51 - para informações e aberturas de chamados técnicos.

A Rede de Serviços Autorizados HP está distribuída em todo território nacional, ou conforme indicado a seguir, com uso de peças e componentes originais e com técnicos devidamente treinados pela HP:

01. **ACRE**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

02. **ALAGOAS**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

03. **AMAZONAS**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

04. **AMAPÁ**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

05. **BAHIA**
Nome: UNISYS BRASIL LTDA



CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119


06. **CEARÁ**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

07. **BRASÍLIA - DF**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0024-80
Endereço: Q SAAN QD 03, Lote 1250/60 s/n
Cidade: Brasília, Distrito Federal, CEP: 70632-320
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 61 3202-6666

08. **ESPÍRITO SANTO**
Nome: MAVIX SECURITY SOLUTIONS LTDA - EPP (Unisys ES)
CPNJ: 36.325.942/0001-97
Endereço: RUA ANTONIO ATAIDE, 1415 - EDIFÍCIO BETA
LJS 02-03 - Bairro: Divino Espírito Santo
Cidade: Vitória - ES - CEP: 29107-215
Contato: Gabriel Daletrane
E-mail: gdaletrane@mavix.com.br
Telefone: (27) 2125-0900

09. **GOIÁS**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

10. **MARANHÃO**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

 11. **MINAS GERAIS**
Nome: PROCEDATA INFORMATICA LTDA. (Belo Horizonte)
CPNJ: 65.181.075/0001-61

Endereço: Avenida Nossa Senhora do Carmo, 45 - SALAS 501 à 504
Carmo Sion
Cidade: Belo Horizonte, MG - CEP: 30310-000
Contato: Feres Maron Salim
E-mail: at@procedata.com.br
Telefone: (31) 3211-5900

Nome: PROCEDATA INFORMATICA LTDA. (Juiz de Fora)
CPNJ: 65.181.075/0004-04
Endereço: Avenida Brasil, 1438 - Sobreloja - Bairro Costa Carvalho
Cidade: Juiz de Fora, MG - CEP: 36070-060
Contato: Alessandro Fernandes de Souza
E-mail: JF_Filial@procedata.com.br
Telefone: (32) 3215-7632

Nome: PROCEDATA INFORMATICA LTDA. (Montes Claros)
CPNJ: 65.181.075/0005-95
Endereço: Avenida Dulce Sarmento, 140 sala 312
Cidade: Montes Claros, MG - CEP: 39400-318
Contato: Luciene / Debora / Larissa
Telefone: (38) 3222-3995

12. **MATO GROSSO DO SUL**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

13. **MATO GROSSO**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

14. **PARÁ**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

15. **PARAÍBA**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com



Telefone: 55 11 4680-6119

16. **PERNAMBUCO**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

17. **PIAUÍ**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

18. **PARANÁ**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

19. **RIO DE JANEIRO**
Nome: MÚTIPLUS SERVICOS DE INFORMATICA LTDA
(FILIAL VOLTA REDONDA)
CPNJ: 68.588.326/0002-04
Endereço: Rua Luiz Alves Pereira, 115 - Sala 207 - Aterrado
Cidade: Volta Redonda, RJ - CEP: 27295-570
Contato: Nei Ferreira Monteiro
E-mail: nei@multiplusrj.com.br
Telefone: (21) 2543-7516

Nome: MÚTIPLUS SERVICOS DE INFORMATICA LTDA
(MATRIZ CAPITAL)
CPNJ: 68.588.326/0001-15
Endereço: Rua da Passagem, 83 - 3º Andar - Botafogo
Cidade: Rio de Janeiro, RJ - CEP: 22290-030
Contato: Nei Ferreira Monteiro
E-mail: nei@multiplusrj.com.br
Telefone: (21) 2543-7516

20. **RIO GRANDE DO NORTE**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

Handwritten signature

21. **RONDÔNIA**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

22. **RORAIMA**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

23. **RIO GRANDE DO SUL**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

24. **SANTA CATARINA**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

25. **SERGIPE**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

26. **SÃO PAULO**
Nome: ATS SOLUÇÕES EM INFORMÁTICA LTDA (Ribeirão Preto)
CPNJ: 07.882.993/0004-64
Endereço: Rua Prudente de Moraes, 1570 Sala 701 - Centro
Cidade: Ribeirão Preto - SP - CEP: 14015-100
Contato: Renato
E-mail: filial.ribpreto@ativats.com.br
Telefone: (16) 3441-6726

Nome: ATS SOLUÇÕES EM INFORMÁTICA LTDA (São José do Rio Preto)

CPNJ: 07.882.993/0002-00
Endereço: Rua XV de Novembro, 3057, Sala 1107 – Centro
Cidade: São José do Rio Preto – SP - CEP: 15015-907
Contato: Camila
E-mail: filial.sjriopreto@ativats.com.br
Telefone: (17) 3301-2935

Nome: ATS SOLUÇÕES EM INFORMÁTICA LTDA (Santo André)
CPNJ: 07.882.993/0009-79
Endereço: R. JOAO RIBEIRO 191, CAMPESTRE
Cidade: SANTO ANDRE, SP - 09070-250
Contato: Taiane / Michel
E-mail: fiscal@ativats.com.br
Telefone: (11) 3621-2484 / 2324-4485 / 2677-6572

Nome: ATS SOLUÇÕES EM INFORMÁTICA LTDA (Campinas)
CPNJ: 07.882.993/0007-07
Endereço: Rua Doutor Las Casas dos Santos, 113 – sala 02
Vl. São Bernardo
Cidade: Campinas, SP– CEP 13030490
Contato: Cristina
E-mail: filial.campinas@ativats.com.br
Telefone: (19) 3272-2280 / 3958-7402

Nome: ATS SOLUÇÕES EM INFORMÁTICA LTDA (Bauru)
CPNJ: 07.882.993/0006-26
Endereço: Rua 1º de Agosto, 4-47, Sala 501 – Centro
Cidade: Bauru – SP - CEP: 17010-011
Contato: Letícia
E-mail: filial.bauru@ativats.com.br
Telefone: (14) 3222-6289

27. **TOCANTINS**
Nome: UNISYS BRASIL LTDA
CPNJ: 33.426.420/0001-93
Endereço: Rua Teixeira de Freitas, 31, Andar 10, Andar 12 - Centro
Cidade: Rio de Janeiro - RJ - CEP: 20021-350
Contato: Natanael Melo
E-mail: Natanael.Melo@BR.unisys.com
Telefone: 55 11 4680-6119

Esta declaração é válida por 30 (trinta) dias corridos, a contar da data de sua emissão.

Atenciosamente,



Luana Melatto Vilas Boas
Representante Legal
HP Indústria e Comércio de Equipamentos Eletrônicos Ltda.

Reduce your downtime with HP PC Hardware Diagnostics



Check your HP PC for hardware failures using these comprehensive tests



Diagnose hardware problems

Determine if your HP hardware is defective with HP PC Hardware Diagnostics – a proprietary tool that helps diagnose problems. The tool is built using the Unified Extensible Firmware Interface (UEFI) specification, and is non-Windows based. That means you can use HP PC Hardware Diagnostics even if a computer doesn't open to Windows.

HP PC Hardware Diagnostics comes preinstalled on all HP notebooks, desktops and workstations built on ARM, Intel and AMD platforms, but not on Android™ or Chrome™ devices.

Save time by testing your hardware

Running these diagnostics tests allows you to:

- Quickly know if you have a hardware failure
- Simplify troubleshooting to streamline support calls to HP
- Avoid returns of working components

Get the tools you need

If you are having issues with a system or suspect a component is failing, running HP's Diagnostics will provide you with tools that can help pinpoint the problem. Within moments, you can be testing a specific component – or multiple components.

- Products with a UEFI BIOS include the diagnostics within the BIOS
- The latest diagnostics can be quickly downloaded online
- The diagnostics can be accessed immediately on your hard drive

Choose which tests to run

The menu-driven interface provides easy access to the hardware test of your choice, and running each hardware test is a simple one-click operation. You can also choose quick or extensive tests. Here's a partial list of hardware you can test:

- Processors
- Batteries (notebooks)
- Hard drives
- Optical drives
- Memory
- Video components
- System boards
- I/O devices

Get started now

Download the latest version of HP PC Diagnostics, plus find more information and resources at hp.com/go/techcenter/pcdiags.

Sign up for updates
hp.com/go/getupdated



Share with colleagues



Rate this document

© Copyright 2014 Hewlett-Packard 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.

Windows is a trademark of the Microsoft group of companies. Android and Chrome are registered trademarks of Google, Inc., used with permission.

4AA5-3192ENW, June 2014



HP PC Hardware Diagnostics UEFI

Versão 7.1.0.0


Para obter mais informações e atualizações, acesse www.hp.com/go/techcenter/PCDiags.

Informações do sistema

Testes do sistema

Testes de componentes

Registros dos testes

 Idioma

Sair





Testes de componentes

Selecione um dos seguintes testes para verificar o subsistema associado.

Processador

Memória

Armazenamento

Unidade de disco

Alimentação

Áudio

Módulo de Bluetooth

Leitor de digitais

Teclado

Mouse/TouchPad

Rede

Placa de sistema

Porta USB

Vídeo

Webcam

Menu principal





Testes de alimentação

Os testes de alimentação verificarão o sistema para garantir que os componentes de alimentação estejam funcionando adequadamente. É possível selecionar os seguintes testes.

Teste de fonte de alimentação

Bateria

Adaptador de CA

Voltar





HP PC Hardware Diagnostics UEFI

Please select a Language.

English

العربية

български

简体中文

Čeština

Dansk

Deutsch

Nederlands

Español

eesti keel

Suomi

Français

ελληνικά

עברית

Hrvatski

Magyar

Italiano





HP PC Hardware Diagnostics UEFI

Please select a Language.

Hrvatski



Magyar

Italiano

日本語

한국어

Latviešu valoda

Lietuvių kalba

Norsk

Polski

Português (Portugal)

Português (Brasil)

Română

Русский язык

Slovenčina

Slovenščina

српски

Svenska





HP PC Hardware Diagnostics UEFI

Versão 6.0.0.0

Para obter mais informações e atualizações, acesse www.hp.com/go/techcenter/PCDiags.

Informações do sistema

Testes do sistema

Testes de componentes

Registros dos testes

Idioma

Sair



Testes do sistema

O teste do sistema verificará os subsistemas para garantir que estejam funcionando corretamente. Selecione o Teste rapidíssimo para executar uma verificação rápida do hardware. Selecione o Teste rápido para executar uma verificação rápida do hardware. Selecione o teste extenso para executar uma verificação completa de hardware. O teste extenso pode demorar duas ou mais horas para ser concluído.

Teste rapidíssimo

Teste rápido

Teste extenso

Menu principal



Testes de componentes

Selecione um dos seguintes testes para verificar o subsistema associado.

Processador

Memória

Unidade de disco

Áudio

Teclado

Mouse

Rede

Unidade óptica

Placa de sistema

Porta USB

Vídeo

Módulo sem fio

Menu principal



Intel® Xeon® Gold 5218 Processor

22M Cache, 2.30 GHz

Specifications

Export specifications

Essentials

Product Collection	2nd Generation Intel® Xeon® Scalable Processors
Code Name	Products formerly Cascade Lake
Vertical Segment	Server
Processor Number	5218
Status	Launched
Launch Date	Q2'19
Lithography	14 nm
Recommended Customer Price	\$1273.00 - \$1280.00

Performance

# of Cores	16
# of Threads	32
Processor Base Frequency	2.30 GHz
Max Turbo Frequency	3.90 GHz
Cache	22 MB
# of UPI Links	2
TDP	

Supplemental Information

Embedded Options Available	No
----------------------------	----

Memory Specifications

Max Memory Size (dependent on memory type)	1 TB
Memory Types	DDR4-2667
Maximum Memory Speed	2667 MHz
Max # of Memory Channels	6
ECC Memory Supported ‡	Yes
Intel® Optane™ DC Persistent Memory Supported	Yes

Expansion Options




Scalability	4S
PCI Express Revision	3.0
Max # of PCI Express Lanes	48

Package Specifications

Sockets Supported	FCLGA3647
T _{CASE}	87°C
Package Size	76.0mm x 56.5mm

Advanced Technologies

Intel® Deep Learning Boost (Intel® DL Boost)	Yes
Intel® Speed Select technology - Performance Profile	No
Intel® Speed Select technology - Base Frequency	No
Intel® Resource Director Technology (Intel® RDT)	Yes

Intel® Speed Shift Technology	USA (English)	  es 
Intel® Turbo Boost Max Technology 3.0 ‡		No
Intel® Turbo Boost Technology ‡		2.0
Intel® vPro™ Platform Eligibility ‡		Yes
Intel® Hyper-Threading Technology ‡		Yes
Intel® Virtualization Technology (VT-x) ‡		Yes
Intel® Virtualization Technology for Directed I/O (VT-d) ‡		Yes
Intel® VT-x with Extended Page Tables (EPT) ‡		Yes
Intel® TSX-NI		Yes
Intel® 64 ‡		Yes
Instruction Set Extensions	Intel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512	
# of AVX-512 FMA Units		1
Enhanced Intel SpeedStep® Technology		Yes
Intel® Volume Management Device (VMD)		Yes

Security & Reliability

Intel® AES New Instructions	Yes
Intel® Trusted Execution Technology ‡	Yes
Execute Disable Bit ‡	Yes
Intel® Run Sure Technology	Yes
Mode-based Execute Control (MBE)	Yes

Ordering and Compliance

Compatible products

All information provided is subject to change at any time, without notice. Intel may make changes to manufacturing life cycle, specifications, and product descriptions at any time, without notice. The information herein is provided "as-is" and Intel does not make any representations or warranties whatsoever regarding accuracy of the information, nor on the product features, availability, functionality, or compatibility of the products listed. Please contact system vendor for more information on specific products or systems.

Intel classifications are for informational purposes only and consist of Export Control Classification Numbers (ECCN) and Harmonized Tariff Schedule (HTS) numbers. Any use made of Intel classifications are without recourse to Intel and shall not be construed as a representation or warranty regarding the proper ECCN or HTS. Your company as an importer and/or exporter is responsible for determining the correct classification of your transaction.

Refer to Datasheet for formal definitions of product properties and features.

‡ This feature may not be available on all computing systems. Please check with the system vendor to determine if your system delivers this feature, or reference the system specifications (motherboard, processor, chipset, power supply, HDD, graphics controller, memory, BIOS, drivers, virtual machine monitor-VMM, platform software, and/or operating system) for feature compatibility. Functionality, performance, and other benefits of this feature may vary depending on system configuration.

Max Turbo Frequency refers to the maximum single-core processor frequency that can be achieved with Intel® Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

System and Maximum TDP is based on worst case scenarios. Actual TDP may be lower if not all I/Os for chipsets are used.

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See <http://www.intel.com/content/www/us/en/processors/processor-numbers.html> for details.

"Announced" SKUs are not yet available. Please refer to the Launch Date for market availability.

Processors that support 64-bit computing on Intel® architecture require an Intel 64 architecture-enabled BIOS.

See <http://www.intel.com/content/www/us/en/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading>

for more information including details on which processors support Intel® HT Technology.

Some products can support AES New Instructions with a Processor Configuration update, in particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Please contact OEM for the BIOS that includes the latest Processor configuration update.

Company Information

Our Commitment

Communities

Investor Relations

Contact Us

Newsroom

Jobs





USA (English)   



© Intel Corporation

*Trademarks

Cookies

Site Map

Terms of Use

Privacy

Supply Chain Transparency



A LOJA autorizada para produtos e soluções profissionais NVIDIA



NVIDIA Quadro P6000

SKU: VCQP6000-PB

MODELO: P6000

DISPONIBILIDADE: 10 dias úteis

GARANTIA: 3 anos

CUDA Cores: 3840

Memória: 24GB GDDR5X

Conectores: DP1.4 (4)/DVI-D/Stereo

Res. DP: 7680 x 4320 @ 30Hz





POR: R\$39.829,00
10X DE R\$3.982,90

R\$33.854,65 15% à vista no boleto

COMPRAR

Parcelamento

Descrição completa



Recomendado para você



Atendimento

Vendas: (11) 3900-7360

Sac: (11) 2387-4489

de Seg. à Sex. das 09h às 18h

contato@nvidiastore.com.br

Ajuda e Suporte

A Empresa

Troca, Devolução e Garantia

Segurança e Privacidade

Política de Pagamento

Política de Entrega

Nossas Tecnologias

QUADRO - Visualização Profissional

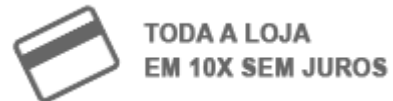
GRID - Cloud & Visualização

Tesla - Computação de Alto Desempenho

Formas de Pagamento



Formas de Envio



Os produtos comprados nesta loja poderão ser enviados por critério de disponibilidade de um dos centros de distribuição abaixo: São Paulo CNPJ: 12.580.606/0001-22 ou Espírito Santo CNPJ: 12.580.606/0002-03.

Caso o cliente tenha Inscrição Estadual será acrescido Substituição Tributária ou diferencial de alíquotas SOMENTE nos estados de AL, AP, MT, MS, MG, PR, RJ, RS, SC, SE, não sendo devido à Pessoas Físicas, empresas sem Inscrição Estadual e demais Estados.

NÃO ATENDEMOS REVENDAS. Ofertas válidas até o termino de nossos estoques. Vendas sujeitas à análise confirmação de dados. Todos os preços e condições comerciais estão sujeitos à alteração sem aviso prévio. As imagens dos produtos são meramente ilustrativas.

E-CrownGroup - Rua Dr Neto de Araujo, 263 - São Paulo - SP - CNPJ 12.580.606/0001-22. (Não realizamos venda no local).



HP Secure Erase for SSDs & HDDs

Safely and effectively erase sensitive data from solid state and hard drives

HP Secure Erase¹ is a critical resource for IT administrators tasked with protecting sensitive data, and a key component of HP system security. HP Secure Erase makes it easy to sanitize local magnetic hard disk drives (HDD) or solid-state drives (SSDs) to industry standards before disposal or recycling.

Local storage sanitation—an important last step in the PC lifecycle

In an environment where sensitive user information is under attack at every stage of the system lifecycle, ensuring that data can be securely erased from a data storage device is paramount. Information can be vulnerable if left on a storage drive when a system is recycled, disposed of, or re-provisioned for another user. Properly sanitizing storage drives according to industry standards is a critical step in the PC lifecycle.

In addition to meeting industry standards for data erasure in standard magnetic hard disk drives (HDDs), HP has taken the additional step of extending HP Secure Erase to also support industry-standard solid state drives (SSDs). HP Secure Erase is a standard feature in all HP business notebooks, supporting the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. Manufacturers of industry-standard SSDs approved for use in HP business notebook products have verified that running HP Secure Erase on their SSDs fully removes all user data so that it cannot be recovered.

Erasing SSDs vs. HDDs

Using HP Secure Erase on standard HDDs, data is overwritten using a data-removal algorithm that writes multiple patterns on every sector, cluster, and bit of the hard drive. This process is documented in the Department of Defense (DOD) 5220.22-M Chapter 8 specification.² This overwrite-based process is only effective on standard HDDs. Writing a predetermined data pattern to a NAND flash-based SSD does not result in an empty drive. Instead it results in a drive full of data that must be erased before new user data can be written, which massively shortens the service life.

Industry-standard disk sanitation

To securely erase all user data from an SSD and restore the drive to a fresh-out-of-box (FOB) performance state, the National Institute of Standards Technology (NIST) supports the following commands that meets the minimum guideline for media sanitization of SSDs (NIST SP800- 88 Rev. 1).

Block Erase is a function enabled only in SATA SSDs. Using the ATA command BLOCK ERASE EXT, Block Erase will instruct the SSDs controller to apply an erase voltage to all NAND cells of the device (including any cells which form blocks that have been retired, re-allocated, involved in garbage collection or over-provisioning or are part of a reserved pool of spare blocks). This functionality provides a very fast, complete and robust erasure of the SSD.

Crypto Erase is a function enabled only in SATA SED SSDs. Using the ATA command CRYPTO SCRAMBLE EXT, this function removes the encryption key effectively making it impossible to reconstruct any of the data on the storage device. Crypto Scramble is implemented on both HDD and SSD SED devices.

¹ For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. Secure Erase does not support platforms with Intel® Optane™. HP Secure Erase does not support platforms with Intel® Optane.

² Specification 5220.22-M no longer exists. The DoD has subsequently decided that secure information must be destroyed to remain secure. The NIST guidelines restate in clear terms that a two-person rule (read human verification) shall be implemented but did not establish guidelines on the method of sanitization (it could be a single wipe with dual human verification, or a single destruction with the same).

Block Erase and Crypto Erase Sanitize Operation is a function enabled only in PCIe NVMe SSDs. NVMe does not follow conventional ATA feature sets. Instead, NVMe devices support a sanitization function, inside their FORMAT NVM command structure that includes BLOCK ERASE SANITIZE and CRYPTO ERASE SANITIZE operation. So, by setting some specific bits in this command structure, a function similar to Secure Erase can be carried out.

What data is not erased?

After deploying HP Secure Erase on an SSD, all data in the user space is completely and irretrievably erased, and every block in the user space is ready to accept new host-written data, which moves the drive to its highest performance state (FOB). However, some data must be left in place, including data required for normal drive operation: SSD firmware copies that reside in the NAND, all SMART data, and retired NAND block mapping tables.

Conclusion

Writing or overwriting data to drive is the accepted practice of securely eliminating data from an HDD. However, in the case of NAND flash-based SSDs, overwriting is redundant, unnecessary, and a potentially insecure method of eliminating data. By using HP Secure Erase, users can ensure that SSD drives are completely sanitized and meet the minimum industry standards HP Secure Erase is easily enabled through the standard F10 BIOS setup process on most HP business PCs.

Learn more

hp.com/go/computersecurity

© Copyright 2018, 2019 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.



Intel, Pentium, Intel Inside, and the Intel Inside logo are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.

HP Sure Start

Automatic firmware intrusion detection and repair



HP Sure Start can automatically detect, stop, and recover from a BIOS attack or corruption without IT intervention and with little or no interruption to user productivity. Every time the PC powers on, HP Sure Start automatically validates the integrity of the BIOS code to help ensure that the PC is safeguarded from malicious attacks. Once the PC is operational, runtime intrusion detection constantly monitors memory. In the case of an attack, the PC can self-heal using an isolated “golden copy” of the BIOS in less than a minute.

Table of contents

- Why is BIOS protection important? 2
- HP Sure Start provides superb firmware protection 2
- Architectural overview and capabilities 3
 - Firmware integrity verification—the core of HP Sure Start 3
 - Machine unique data integrity 5
 - Descriptor region..... 5
 - Network controller protection 5
 - BIOS setting protection 5
 - HP Sure Start–protected storage..... 5
 - Secure boot keys protection 6
 - Runtime Intrusion Detection (RTID) 7
- User notifications, event logging, and policy management 8
 - HP Sure Start end user notifications..... 8
 - HP Sure Start event logging..... 8
 - HP Sure Start policy controls 9
 - Remote management of HP Sure Start policy controls 12
- Conclusion 12
- Appendix A—HP Sure Start, Gen by Gen 13
- Appendix B—System Management Mode (SMM) overview 14
- Appendix C—NIST SP 800-193: Platform Firmware Resiliency Guidelines 15

Why is BIOS protection important?

As our world becomes more connected, cyber-attacks are targeting client device firmware and hardware with increasing frequency and sophistication. Tools and techniques to attack firmware were once theoretical and thought only to be available to nation-states. Such tools and techniques have since been shown to not only exist, but to be readily available in the public domain.

The device firmware (or BIOS) is an attractive target for attackers because of the potential advantages a successful breach could provide:

- **Persistence:** Firmware resides in a nonvolatile memory on the circuit board and can't be removed simply by erasing the hard drive.
- **Control:** Firmware executes at the highest privilege level—outside of the OS domain—which enables the possibility of OS-independent malware.
- **Stealth:** Firmware occupies a region of memory that is completely inaccessible to the operating system and system software; since it can't be scanned by antivirus it may never be detected.
- **Difficulty of recovery:** All these aspects make it extremely difficult to recover from this type of infection without resorting to a service event that includes a system board replacement.

The ideal solution to protect devices against this type of attack is designed from the hardware up using “cyber resiliency” principles. These principles acknowledge that it is extremely difficult, if not impossible, to foresee and prevent every possible attack. The ideal solution not only provides enhanced protection of the firmware, but also includes a hardware-rooted ability to both detect a successful attack and recover from it.

HP Sure Start provides superb firmware protection

HP Sure Start is HP's unique and groundbreaking approach to provide advanced firmware protection and resiliency to HP PCs. It uses hardware enforcement via the HP Endpoint Security Controller (HP ESC) to provide protection of the BIOS that reaches well beyond the industry standard and ensures that the system will only boot Genuine HP BIOS. Additionally, if HP Sure Start detects tampering with BIOS, firmware, or runtime System Management Mode (SMM) BIOS code, it can recover using a protected backup copy.

Summary of HP Sure Start features

- **HP core platform firmware authenticity enforcement and tamper protection**—HP Endpoint Security Controller hardware enforcement of the system boot, so only authentic and unmodified HP firmware and HP BIOS are loaded
- **Firmware health monitoring and compliance**—Logging of firmware health-related events via isolated HP Endpoint Security Controller; presents the platform firmware state along with any anomalies that could indicate thwarted attacks
- **Self-healing**—Automatic repair of HP BIOS and HP firmware corruption, using the HP Endpoint Security Controller isolated backup copy of HP BIOS and HP firmware
- **BIOS setting protection**—Extension of the HP Endpoint Security Controller protection of the BIOS code to include HP ESC backup and integrity-checking of all user or admin-configured BIOS settings
- **Runtime Intrusion Detection**—Ongoing monitoring of critical BIOS code in runtime memory (SMM) while the OS is running
- **Secure boot keys protection**—Significantly enhanced protection of databases and keys stored by the BIOS that are critical to the integrity of the OS secure boot feature versus standard UEFI BIOS implementation
- **Protected storage**—Strong cryptographic methods to store BIOS settings, user credentials, and other settings in the HP Endpoint Security Controller hardware to provide integrity protection, tamper detection, and confidentiality protection for that data
- **Intel® Management Engine firmware protection**—Enhanced protection and recovery of the Intel Management Engine firmware
- **Manageability**—Administrator management of HP Sure Start capabilities with the Manageability Integration Kit (MIK) plug-in for Microsoft® System Center Configuration Manager (SCCM)

For a summary of capabilities added in each generation of HP Sure Start, see Appendix A on page [13](#).

Third-party security certification

The HP Endpoint Security Controller hardware used in HP Sure Start has undergone third-party security assessment and has been certified to provide hardware enforcement so that only authorized firmware can start on the target PC.¹

Assurance that a security solution works as stated is a critical piece of any purchase decision related to security products. And because a reputation for quality can only go so far, HP has exposed the HP Endpoint Security Controller inner workings for review and testing by an independent and accredited laboratory to validate that it works as claimed per publicly available criteria, methodology, and processes.

Cyber-resilient design

Not only does HP Sure Start provide enhanced BIOS protection beyond the industry standard approach, but it is designed from the hardware up to provide unmatched platform cyber-resilience to ensure BIOS recovery even in the event of a breach or destructive attack. HP business PCs with HP Sure Start exceed the National Institute of Standards and Technology (NIST) Platform Firmware Resiliency guidelines (Special Publication 800-193) for host processor boot firmware and other critical platform device firmware, as discussed in Appendix C. NIST SP 800-193 is one of the leading public sector efforts to formalize requirements for cyber-resilient platforms. For more details about HP Sure Start and NIST 800-193, see Appendix C.

HP Sure Start—supported models

HP introduced Sure Start in 2014. Since that time, HP has enhanced Sure Start and expanded the number of products that include it. HP Sure Start is provided across the entire 2018 Elite product lineup, including tablets, notebooks, desktops, and all-in-ones (AIOs). HP Sure Start Gen4 is available on HP Elite and HP Pro 600 products equipped with 8th generation Intel or AMD® processors.

Architectural overview and capabilities

HP Sure Start consists of two major architectural components:

- **HP Endpoint Security Controller** running HP Sure Start firmware
- **HP Sure Start BIOS** working in conjunction with the HP Endpoint Security Controller hardware and firmware

Firmware integrity verification—the core of HP Sure Start

The HP Endpoint Security Controller (HP ESC) is the first device in the system to execute firmware when the system powers up, active well before the system boots. The HP ESC activities include, but are not limited to, monitoring the system power button and power sequencing the start of the host CPU execution when the user presses the power button.

When power is first applied to the platform (before the system is turned on), the HP ESC validates that its own firmware is authentic HP code before loading and executing the code. The HP ESC hardware uses industry-standard, strong cryptographic methods to perform the integrity verification. The method employs a 2048-bit HP RSA public key contained within internal permanent read-only memory. Therefore, the HP ESC is the built-in hardware-based Root of Trust (RoT) for the platform, used to validate its firmware and the HP BIOS before they are executed. This hardware Root of Trust

¹ The HP Sure Start controller hardware has been certified per the CSPN certification framework.

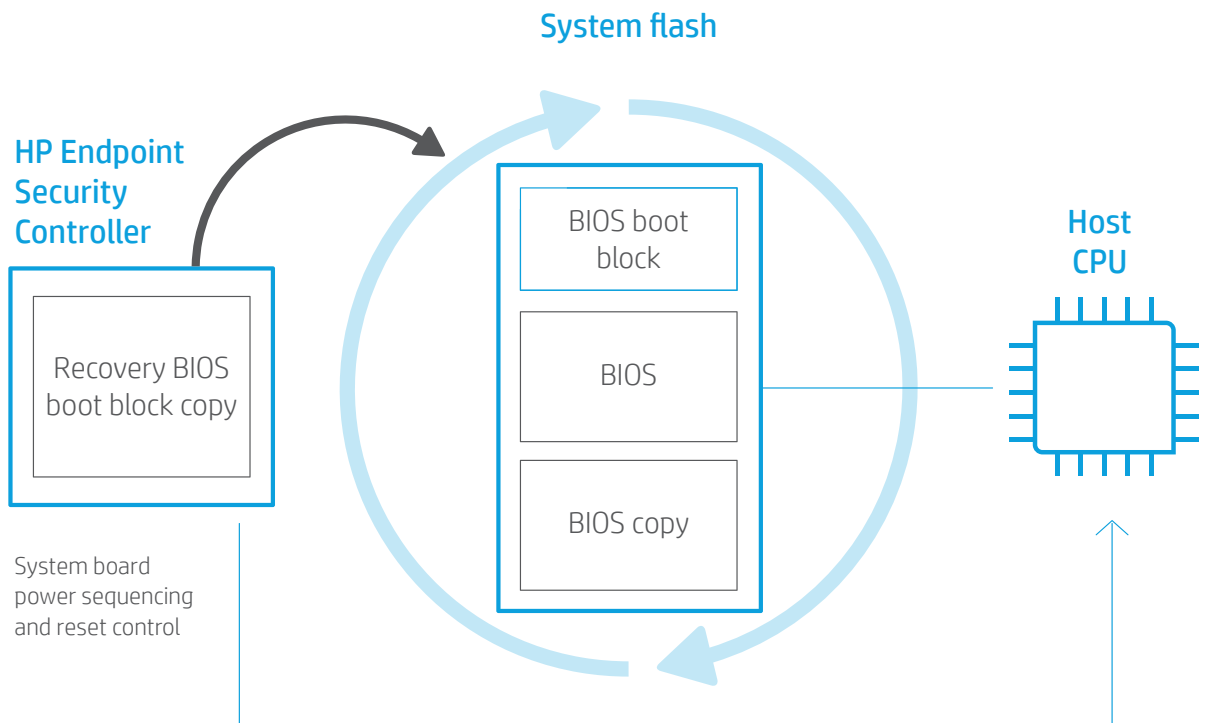


Figure 1. Firmware integrity verification process.

protects against firmware replacement attacks regardless of their deployment method and serves as the foundation upon which HP platform security is built.

Figure 1 illustrates the firmware integrity verification process. Once the HP ESC authenticates and starts executing the HP Sure Start firmware, that firmware uses the same strong cryptographic operations to verify the integrity of the system flash BIOS boot block. If a single bit is invalid, the HP ESC replaces the system flash contents with its own copy of the HP BIOS boot block that is stored within an isolated nonvolatile memory (NVM) dedicated to the HP ESC.

The HP Sure Start design ensures that all the firmware and BIOS code running on both the HP ESC and the host CPU is the code HP intended to be on the device.

Note: The system flash boot block integrity checking, and any needed recovery performed by the HP ESC, take place while the host CPU is off. Therefore, from a user point of view, the entire operation takes place when the system is still off, in sleep mode, or hibernate mode.

The system flash BIOS boot block is the foundation of the HP BIOS. The HP ESC hardware ensures that the BIOS boot block is the first code that the CPU executes after a reset. Once the HP ESC determines that the BIOS boot block contains authentic HP code, it allows the system to boot as it normally would.

The HP ESC also checks the integrity of the system flash boot block code each time the system is turned off or put into a hibernate or sleep mode. Since the CPU is powered off in each of these states and the CPU is therefore required to re-execute BIOS boot block code to resume, it is crucial to re-verify the integrity of the BIOS boot block each time to check for tampering.

Additionally, for HP Intel models, HP Sure Start checks the integrity of the system flash BIOS boot block every 15 minutes while the system is running.²

Machine-unique data integrity

The HP ESC and BIOS work together to provide advanced protection of factory-configured critical variables unique to each machine that are intended to be constant over the life of any specific platform. In the factory, a backup copy of this variable data is saved in the HP ESC nonvolatile memory store. The backup is made available to the HP Sure Start BIOS component on a read-only basis to perform integrity checking of the data on every boot. If any setting in the shared flash is different from the factory settings, the HP Sure Start BIOS components will automatically restore the data in the System Flash from the backup copy provided by the HP ESC.

Descriptor region

For HP Intel models, HP Sure Start protects the descriptor region of the system flash. Unique to Intel architecture, the descriptor region contains critical configuration parameters that are sampled by the Intel Core™ logic at reset and used thereafter to configure the Core logic. The descriptor region also includes partitioning information for the system flash that is used by the Intel Core logic to determine where the BIOS region resides within the flash and therefore where their CPU retrieves code for execution from reset. HP Sure Start monitors the integrity of this region and recovers it to the intended configuration in the event of tampering or corruption.

Network controller protection

In addition, for HP Intel models, HP Sure Start protects the network controller (NIC) settings contained with the system flash. Some HP customers have use cases that require legitimate changes to factory configured NIC settings. Therefore, HP Sure Start does not prevent changes to NIC settings by default. Instead, HP Sure Start provides a feature that, when enabled, warns the user that NIC settings have changed. In addition, HP Sure Start provides a method to restore the NIC settings to factory values. Protected settings include the MAC address, the Pre-boot Execution Environment (PXE) settings, and the remote initial program load (RPL). This restoration is possible via a read-only backup copy protected by the HP ESC.

BIOS setting protection

As previously described, HP Sure Start verifies the integrity and authenticity of the HP BIOS code. Since this code is static after it is created by HP, digital signatures can be used to confirm both attributes of the code. The dynamic and user-configurable nature of BIOS settings, however, create additional challenges to protecting those settings. Digital signatures cannot be generated by HP and used by the HP Sure Start ESC hardware to verify those settings.

HP Sure Start BIOS setting protection provides the capability to configure the system so the HP ESC hardware is used to back up and check the integrity of all the BIOS settings preferred by the user.

When this feature is enabled on the platform, all policy settings used by BIOS are subsequently backed up and an integrity check is performed on each boot to ensure that none of the BIOS policy settings have been modified. If a change is detected, the system uses the backup from the HP Sure Start–protected storage to automatically revert to the user-defined setting.

The HP Sure Start BIOS setting protection feature generates events to the HP Sure Start ESC hardware when an attempt to modify the BIOS settings is detected. The event is logged in the HP Sure Start audit log, and the local user will receive a notification from BIOS during boot.

HP Sure Start–protected storage

Protected storage rooted in the HP Endpoint Security Controller hardware provides the highest level of protection for BIOS/firmware data and settings protected by HP Sure Start. HP Sure Start–protected storage is designed to provide confidentiality, integrity, and tamper detection even if an attacker disassembles the system and establishes a direct connection to the nonvolatile storage device on the circuit board.

Data integrity

The integrity of the dynamic data stored in nonvolatile memory by firmware and used to control the state of various

² HP Sure Start with Dynamic Protection is available on HP Elite products equipped with 6th generation Intel Core processors and higher.

capabilities is critical to the security posture of the overall platform. Dynamic data includes all BIOS settings that can be modified by the end user or administrator of the device. Examples include (but are not limited to) boot options such as the secure boot feature, BIOS administrator password and related policies, Trusted Platform Module–state control, and HP Sure Start policy settings.

Any successful attack that bypasses the existing access restrictions designed to prevent unauthorized modifications to these settings could defeat the platform security. As an example, consider a scenario where an attacker makes an unauthorized modification to the secure boot state to disable it without being detected. In this scenario, the platform would boot the attacker's root kit before the OS starts, without the user's knowledge.

Industry-standard Unified Extensible Firmware Interface (UEFI) BIOS does implement access restrictions that should prevent unauthorized modifications to these variables, and HP implements these just like the rest of the PC industry. However, given the risks a breach of these mechanisms poses to the platform, HP Sure Start provides secondary defenses that are stronger than the baseline industry standard.

BIOS settings and other dynamic data used by firmware to control the state that is protected by HP Sure Start are stored in the isolated nonvolatile memory of the HP Endpoint Security Controller that is not directly accessible to software running on the host CPU.

Additionally, the HP ESC creates and appends unique integrity measurements each time a data element is stored in this nonvolatile memory store. The integrity measurements are based on a strong cryptographic algorithm (hashed-based message authentication code utilizing SHA-256 hashing) that is rooted to a secret contained within the HP ESC. The secret is unique to each HP ESC, such that each controller generates a unique integrity measurement given an identical element. When the data element is read back from the nonvolatile memory, the HP ESC recalculates the integrity measurement for that data element and compares it to the integrity measurement that is appended to the data. Any unauthorized changes to the data in the nonvolatile memory store result in a mis-compare. Using this approach, the HP ESC can detect tampering with data elements stored in the nonvolatile memory store.

Data confidentiality

For many of the data elements stored by the platform, maintaining confidentiality is critical. Examples include BIOS administrator password hashes, user credentials, and secrets optionally stored by firmware on behalf of the user for firmware-based features such as HP Sure Run and HP Sure Recovery.

Protection of these secrets is challenging when industry-standard UEFI BIOS approaches are used, since the nonvolatile storage is typically readable by software running on the host processor. HP Sure Start–protected storage is intended to provide much greater protection of this confidential data than a standard UEFI BIOS implementation.

In addition to a separate isolated storage, HP Sure Start leverages the Advanced Encryption Standard (AES) hardware block contained within the HP ESC to perform AES-256 encryption on all confidential data elements stored in the HP Sure Start nonvolatile memory, in addition to the data integrity measurements for those elements. The encryption key used is unique to each HP ESC and never leaves that controller, so data encrypted by any individual HP ESC component can only be decrypted by that same HP ESC.

Secure boot keys protection

Compared to the industry-standard UEFI secure boot implementation, HP Sure Start provides enhanced protection of the UEFI secure boot key databases that are stored by the firmware. These variables are critical to proper operation of the UEFI secure boot feature that verifies integrity and authenticity of the OS bootloader before allowing it to start at boot.

HP Sure Start protects UEFI secure boot key databases by maintaining a master copy in HP Sure Start–protected storage. Any authorized modifications to the UEFI standard secure boot key databases by the OS during runtime are tracked by HP Sure Start and applied to the master copy by the HP ESC. HP Sure Start then uses the master copy in HP Sure Start–protected storage to identify and reject any unauthorized changes to the UEFI standard secure boot keys databases.

This capability, enabled by default, covers the following databases:

- Signature database (db)
- Revoked signatures database (dbx)
- Key Enrollment Key (KEK)
- Platform Key (PEK) updated dynamically at runtime by the OS

Runtime Intrusion Detection (RTID)

On each boot, the BIOS code starts execution from flash memory at a fixed address. This is known as the BIOS boot code and provides capabilities needed before the OS starts. However, a portion of BIOS remains in DRAM that is needed to provide advanced power-management features, OS services, and other OS-independent functions while the OS is running. This BIOS code, referred to as System Management Mode (SMM) code, resides in a special area within the DRAM that is hidden from the OS. We also refer to this code as “runtime” BIOS code in the context of HP Sure Start’s Runtime Intrusion Detection feature. (For more details on SMM and how it works, please see Appendix B on page 14).

The integrity of SMM code is critical to the client device security posture. HP Sure Start checks to make sure HP SMM BIOS code is intact at OS start. By adding new protection capabilities and/or providing a means to detect any attack to that code, Runtime Intrusion Detection provides mechanisms to ensure that the SMM BIOS code remains intact while the OS is running.

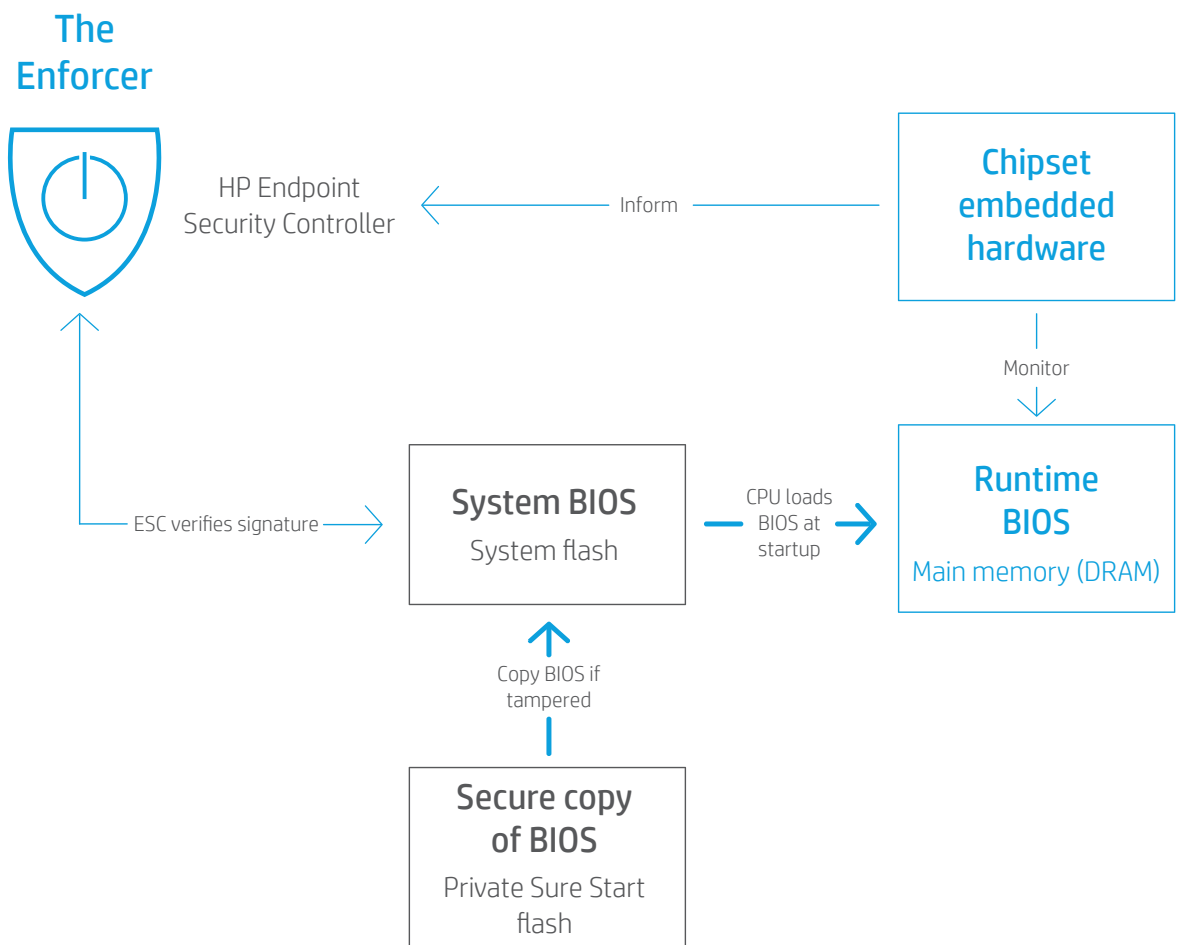


Figure 2. Runtime Intrusion Detection uses specialized hardware embedded within the platform chipset to monitor SMM code for any changes.

Runtime Intrusion Detection architecture

The RTID feature utilizes specialized hardware in the platform chipset to detect anomalies in the Runtime HP SMM BIOS. Detection of any anomalies results in a notification to the HP Endpoint Security Controller, which can take the configured policy action independent of the CPU.

User notifications, event logging, and policy management

HP Sure Start end user notifications

Under normal operating conditions, HP Sure Start is invisible to the user. When HP Sure Start identifies a problem, recovery operations are automatic, using the default settings with no end user or IT interaction usually required.

Users may see runtime notifications in the event of a BIOS integrity problem detected via the HP Sure Start Dynamic Protection or the Runtime Intrusion Detection features while the OS is running. If any significant event is detected or action is taken, HP Sure Start displays a warning message via Windows® notifications on the next boot. HP Notifications Software is required to enable the viewing of these Windows notifications.

HP Sure Start event logging

The HP Endpoint Security Controller records critical events related to the firmware/BIOS code and data monitored by HP Sure Start. These events are stored within the Sure Start nonvolatile memory store. When HP Notifications software is installed, the events are copied from the HP ESC to the Windows Event Viewer to facilitate access to these events by the local user as well as the customer's preferred manageability agent.

The following events trigger the HP Notifications Software to gather all events from the HP Sure Start subsystem and ensure that the Windows Event Viewer is updated with any events that are not already recorded there:

- Windows Boot
- Windows Resume from Sleep/Hibernate
- HP Sure Start with dynamic protection runtime event notifications
- HP Sure Start Runtime Intrusion Detection (RTID)

HP Notifications Software populates HP Sure Start events into a unique "HP Sure Start" application event log. Only HP Sure Start events will be included in this log. The Windows Event Viewer path to the HP Sure Start events is the following: System Tools/Event Viewer/Applications and Services Logs/HP Sure Start.

The Windows Event Viewer level categories related to HP Sure Start events are defined in the table on the next page.

The events are populated into Windows Event Viewer in the order that they were generated by HP Sure Start. The oldest event in the HP Sure Start subsystem is added to the Windows Event Viewer first and the most recent event is added last.

The timestamp for each Windows Event Viewer entry is the time it was added to that log, NOT the time the event occurred. Each Sure Start Windows Event Viewer entry includes detailed data within the event details, which includes the timestamp of the actual occurrence.

Note: Events are persistent in the HP Endpoint Security Controller even after being copied to the Windows Event Viewer. If the Windows Event Viewer is cleared, the HP Notifications Software application will replace all HP Sure Start entries on the next event that triggers it to check for HP Sure Start event logs.

Types of HP Sure Start Windows Event Viewer events

Event Level	Definition
Info	Events that are expected to occur during the normal course of operation (e.g., updating the BIOS).
Warning	Unexpected events that have occurred but were fully recovered from by HP Sure Start and no user/admin action is required for the platform to be fully operational. These events are anomalous operations that the user/admin may want to investigate further, especially if there is a trend of these events across multiple machines.
Error	Events that require the admin/HP service to act on the platforms to fully recover.

HP Sure Start policy controls

Out of the box, the HP system BIOS enables and optimizes HP Sure Start policies for the typical user. Since HP Sure Start is enabled by default, the typical user is protected by HP Sure Start without having to modify the settings. For advanced users, the system BIOS provides some control of HP Sure Start behavior, using policy settings in the (F10) BIOS Setup. Unless otherwise noted, these settings and functions are located under Security/BIOS Sure Start.

Note: Policies are stored within the HP ESC nonvolatile memory that is not directly accessible by the host CPU; therefore, a reboot is required before any Sure Start settings take effect.

The following HP Sure Start settings and functions are available:

- Verify Boot Block on Every Boot
- BIOS Data Recovery Policy
- Network Controller Configuration Restore (Intel only)
- Prompt on Network Controller Configuration Change (Intel only)
- Dynamic Runtime Scanning of Boot Block (Intel only)
- HP Sure Start BIOS Setting Protection
- HP Sure Start Secure Boot Keys Protection
- Enhanced HP Firmware Runtime Intrusion Prevention and Detection (Intel only)
- HP Firmware Runtime Intrusion Detection (AMD only)
- HP Sure Start Security Event Policy
- HP Sure Start Security Event Boot Notification
- Lock BIOS Version
- Save/Restore MBR of System Hard Drive
- Save/Restore GPT of System Hard Drive
- Boot Sector (MBR/GPT) Recovery Policy

Verify Boot Block on Every Boot

HP Sure Start always verifies the integrity of the system flash BIOS boot block before resuming from sleep, hibernate, or power-off. When set to **enable**, HP Sure Start will also verify the integrity of the boot block on each warm boot (Windows restart). The trade-off to consider is faster restart time versus more security. The default setting of this feature is **disable**.

BIOS Data Recovery Policy

When set to **Automatic**, HP Sure Start automatically repairs the BIOS or the Machine Unique Data when necessary. When set to **Manual**, HP Sure Start requires a special key sequence to proceed with the repair. In the case of an issue with the boot block code, the system will refuse to boot, and a unique blink sequence will flash on the system LED. The system LED that lights may vary by platform and by instance. In the case of an issue with the Machine Unique Data, the system will display a message on the screen. The key sequence required, and the blink sequence displayed, vary depending whether the system is a notebook, a desktop, or a tablet. Manual mode is useful to users who can perform forensics on the system flash contents before repair. Typical users are not encouraged to use manual mode. The default setting of this feature is **Automatic**.

Network Controller Configuration Restore (Intel only)

When selected, HP Sure Start immediately restores the network controller configuration to factory defaults.

Prompt on Network Controller Configuration Change (Intel only)

HP provides a factory-defined network controller configuration which includes the MAC address. When this setting is set to **enable**, the system monitors the state of the network controller configuration and prompts the user in the event of a change from the factory-configured state. The default setting of this feature is **disable**.

Dynamic Runtime Scanning of Boot Block (Intel only)

When in the default setting of **enable**, HP Sure Start periodically checks the integrity of the BIOS boot block while the OS is running. When in the **disable** setting, HP Sure Start only checks the integrity before a boot or resume from sleep or hibernate.

HP Sure Start BIOS Setting Protection

The BIOS setting protection policy is **disabled** by default. To enable the feature, the owner/administrator of the client device should first configure all BIOS policies to the preferred setting. The owner/administrator also must configure a BIOS setup administrator password.

Once that is completed, the BIOS setting protection policy should be changed to "Enable." At this point, a backup copy of all BIOS settings is created in the HP Sure Start-protected storage. Going forward, none of the BIOS settings can be modified locally or remotely. On each boot, the BIOS policy settings are verified to be in the desired state, and if there is any discrepancy, the BIOS settings are restored from the HP Sure Start-protected storage.

To modify a BIOS setting, the BIOS administrator password must be provided and BIOS setting protection subsequently disabled, at which point changes can be made to the BIOS settings.

HP Sure Start Secure Boot Keys Protection

With this setting at the factory default of **enable**, HP Sure Start provides enhanced protection of the secure boot databases and keys used by BIOS to verify the integrity and authenticity of the OS bootloader before launching it at boot. When set to **disable**, only standard UEFI secure boot variable protection is used and no backup copy is kept by the HP Sure Start subsystem.

Enhanced HP Firmware Runtime Intrusion Prevention and Detection (Intel only) and HP Firmware Runtime Intrusion Detection (AMD only)

The RTID feature is **enabled** by default for all platforms shipped from the HP factory. There is no need for the end customer/administrator to enable or otherwise deploy the feature to take advantage of HP Sure Start RTID.

The RTID feature can be optionally be set to **disable** by the platform owner/administrator.

HP Sure Start Security Event Policy

This BIOS policy setting controls what action is taken when HP Sure Start detects an attack or attempted attack while the

OS is running. There are three possible configurations for this policy:

- **Log event only:** When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer.³
- **Log event and notify user:** This is the default setting. When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer. Additionally, the user is notified within Windows that the event occurred.⁴
- **Log event and power off system:** When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer. Additionally, the user is notified within Windows that the event occurred, and that system shutdown is imminent.

HP Sure Start Security Event Boot Notification

This BIOS policy setting controls whether HP Sure Start warnings and error messages that are displayed when the system is booted require the local user to acknowledge the error before the boot continues. With the default **Require Acknowledgement** setting, the system halts with the error message displayed. The local user must press a key to continue the boot. If changed to **Time out after 15 seconds**, the message is displayed, but the boot process continues automatically after the message is displayed for 15 seconds.

Lock BIOS Version

In the (F10) BIOS setup, this feature is located in Main/Update System BIOS.

When set to **disable**, you can update the BIOS using any supported process. When the HP ESC detects a valid boot block update in the system flash, it updates the backup copy of the boot block.

When set to **enable**, all HP BIOS update tools refuse to update the BIOS. In addition, HP Sure Start protects the BIOS from attempts to change the BIOS version by removing the system flash via an unauthorized method. The HP ESC records the locked-down version of BIOS. When the HP ESC detects that the BIOS in the system flash changed, the HP ESC overwrites the BIOS boot block with the HP ESC copy of the boot block. The HP ESC copy of the boot block executes and recovers the remainder of the correct version of the BIOS. The default setting of this feature is **disable**.

Save/Restore MBR of System Hard Drive and Save/Restore GPT of System Hard Drive

In the (F10) BIOS setup, this feature is located in Security/Hard Drive Utilities. Only one of these capabilities is available, depending on the partition type of the primary drive (GPT or MBR), as detected by HP Sure Start.

When set to **enable**, HP Sure Start maintains a protected backup copy of the MBR/GPT partition table from the primary drive and compares the backup copy to the primary on each boot. If a difference is detected, the user is prompted and can choose to recover from the backup to the original state, or to update the protected backup copy with the changes. The **Boot Sector (MBR/GPT) Recovery Policy** can optionally be used to remove the user decision for the action taken in the event of a discrepancy found by HP Sure Start.

When set to **disable** (default), no MBR/GPT protection is provided by HP Sure Start.

Boot Sector (MBR/GPT) Recovery Policy

When set to **Local User Control** (default) the user is prompted for the action to take when HP Sure Start detects a change in the MBR/GPT partition table. When set to **Recover in the event of corruption**, HP Sure Start automatically restores the MBR/GPT to the saved state any time differences are encountered.

³ HP Notification Software must be installed to view HP Sure Start events in the Windows Event Viewer.

⁴ HP Notification Software must be installed to receive notifications.

Remote management of HP Sure Start policy controls

Out of the box, HP Sure Start policies are optimized for the typical user. Since HP Sure Start is enabled by default, there is no need for the remote administrator to take any action to enable (“deploy”) HP Sure Start. If a remote administrator wants to modify HP Sure Start policy settings, the same Windows Management Instrumentation (WMI) APIs or HP BIOS Configuration Utility scripts that are used to manage other platform BIOS policies can be used to manage HP Sure Start policies. In addition, administrators can remotely manage HP Sure Start capabilities with the Manageability Integration Kit (MIK) plug-in for Microsoft System Center Configuration Manager (SCCM).

Also, administrators can remotely manage HP Sure Start capabilities and view HP Sure Start events with the Manageability Integration Kit (MIK) plug-in for Microsoft System Center Configuration Manager (SCCM).

Conclusion

HP Sure Start delivers these key benefits:

- Uninterrupted productivity—HP Sure Start maintains business continuity in the event of an attack or accidental corruption by eliminating downtime waiting for an IT/Service event.
- Lower cost—HP Sure Start’s ability to recover automatically reduces calls to the IT Help Desk and enhances productivity, which ultimately helps lower the maintenance cost for the platform.
- Peace of mind—HP Sure Start has multiple security features that run across a wide variety of software and hardware platforms.

Protect critical BIOS firmware from malware with the industry-leading firmware intrusion detection and automatic repair offered by HP Sure Start, exclusively available on select HP Elite PCs.

Learn more

hp.com/go/computersecurity

Links to technical content

support.hp.com/us-en/topic/goIT

Appendix A—HP Sure Start, Gen by Gen

HP introduced Sure Start in 2014. Since that time, HP has enhanced Sure Start and expanded the number of products that use it. The table below provides a summary of the capabilities that were added with each generation.

Generation	Release date	Capabilities added
HP Sure Start	2014	<ul style="list-style-type: none"> Firmware and BIOS authenticity enforcement, with the ability to self-heal Firmware monitoring and compliance
HP Sure Start with Dynamic Protection	2015	<ul style="list-style-type: none"> Windows Event Viewer support Dynamic Protection (for select Intel products)
HP Sure Start Gen3 (select Intel products) ⁵	2017	<ul style="list-style-type: none"> Runtime Intrusion Detection BIOS setting protection Manageability Integration Kit (MIK) plug-in for Microsoft SCCM
HP Sure Start with Runtime Intrusion Detection (select AMD products) ⁶		
HP Sure Start Gen4 ⁷	2018	<ul style="list-style-type: none"> Protected storage—strong cryptographic methods to store BIOS settings, user credentials, and other settings in the HP Endpoint Security Controller hardware to provide integrity protection, tamper detection, and confidentiality protection for that data Secure boot database protection—enhanced protection of databases and keys stored by BIOS that are critical to the integrity of the OS secure boot feature versus standard UEFI BIOS implementation On Intel platforms, enhanced protection and recovery of the Intel Management Engine Firmware Third-party security certification of HP Endpoint Security Controller—testing by an independent and accredited laboratory to validate that the HP ESC hardware core functionality works as claimed per publicly available criteria, methodology, and processes¹ HP business PCs with HP Sure Start exceed the NIST Platform Firmware Resiliency guidelines (Special Publication 800-193) for host processor boot firmware and other critical platform device firmware, as discussed in Appendix C.

⁵ HP Sure Start Gen3 is available on HP Elite products equipped with Intel 7th generation processors.

⁶ HP Sure Start with Runtime Intrusion Detection is available on HP Elite products equipped with AMD 7th generation processors.

⁷ HP Sure Start Gen4 is available on HP Elite and HP Pro 600 products equipped with 8th generation Intel or AMD processors.

Appendix B—System Management Mode (SMM) overview

System Management Mode (SMM) is an industry-standard approach used for PC advanced power-management features and other OS-independent functions while the OS is running. While the SMM term and implementation is specific to x86 architectures, many modern computing architectures use a similar architectural concept.

SMM is configured by the BIOS at boot time. The SMM code is populated into the main (DRAM) memory. Then BIOS uses special (lockable) configuration registers within the chipset to block access to this area when the microprocessor is not executing in an SMM context. At runtime, entry into SMM mode is event-driven. The chipset is programmed to recognize many types of events and timeouts. When such an event occurs, the chipset hardware asserts the System Management Interrupt (SMI) input pin. At the next instruction boundary, the microprocessor saves its entire state and enters SMM.

As the microprocessor enters SMM, it asserts a hardware output pin, SMI Active (SMIACT). This pin serves notice to the chipset hardware that the microprocessor is entering SMM. An SMI can be asserted at any time, during any process operating mode, except from within SMM itself. The chipset hardware recognizes the SMIACT signal and redirects all subsequent memory cycles to a protected area of memory (sometimes referred to as the SMRAM area), reserved specifically for SMM. Immediately after receiving the SMI input and asserting the SMIACT output, the microprocessor begins to save its entire internal state to this protected memory area.

After the microprocessor state has been stored to SMRAM memory, the special SMM handler code that also resides in SMRAM (placed there by system BIOS at boot time) begins to execute in a special SMM operation mode. While operating in this mode, most hardware and memory isolation mechanisms are suspended, and the microprocessor can access virtually all resources in the platform to enable it to perform required tasks. The SMM code completes the required task, and then it's time to return the microprocessor to the previous operating mode. At that point, the SMM code executes the Return from System Management Mode (RSM) instruction to exit SMM. The RSM instruction causes the microprocessor to restore its previous internal state data from the copy saved in SMRAM upon SMM entry. Upon completion of RSM, the entire microprocessor state has been restored to the state just prior to the SMI event, and the previous program (OS, applications, hypervisor, etc.) resumes execution right where it left off.

Appendix C—NIST SP 800-193: Platform Firmware Resiliency Guidelines

Released in May 2018, the NIST SP 800-193: Platform Firmware Resiliency Guidelines describe guidelines for security mechanisms to protect platform firmware against unauthorized changes, detect unauthorized changes that occur, and recover from these unauthorized changes.

These guidelines outline three different resiliency properties:

1. Protected: meets all Protection and Secure Update requirements
2. Recoverable: meets all Detection and Recovery requirements
3. Resilient: meets all Protection, Detection, and Recovery requirements

Of these three properties, Resilient is the strongest, providing the most benefit to HP Customers. [HP Sure Start Gen3 and Gen4 meet and exceed all Resilient guidelines in NIST SP 800-193 for host processor boot firmware, also known as the UEFI BIOS](#). Further, HP Sure Start Gen3 and Gen4 also meet requirements for other Critical Platform Device Firmware, as shown in Table 1 below.

Prior NIST guidelines for BIOS security

NIST SP 800-193 goes beyond NIST SP 800-147, which only addressed protection and the secure update of the platform's UEFI BIOS. HP Sure Start Gen4 and prior generations of HP Sure Start, along with HP BIOSphere Gen4 and prior generations of HP BIOSphere, all support NIST SP 800-147.

NIST SP 800-193 also goes beyond NIST SP 800-155, which outlined security components and guidelines to establish a secure BIOS integrity measurement and reporting chain. Likewise, HP Sure Start Gen4 and prior generations of HP Sure Start, along with HP BIOSphere Gen4 and prior generations of HP BIOSphere, all support NIST SP 800-155.

NIST SP 800-193 Critical Platform Devices in HP Commercial PCs

NIST SP 800-193 acknowledges that the definition of Critical Platform Devices can vary. Critical Platform Devices are defined in section 3.2 (Resiliency Properties):

“For a platform as a whole to claim resiliency to destructive attacks, the set of platform devices necessary to minimally restore operation of the system, and sufficient to restore reasonable functionality, should themselves be resilient. We call this set of devices critical platform devices. The particular resiliency properties may vary from platform-to-platform.”

For that reason, it is important to define this set of devices and applicable firmware for HP Commercial PCs. NIST SP 800-193 provides a reference platform architecture in Section 2 along with a list of devices which are “often critical to the normal and secure operation of a platform.” The table below provides a mapping to each of those devices/subsystems to the applicable firmware components in the HP Commercial Notebook PCs.

Note that each customer environment should be evaluated to determine whether there are additional peripheral devices that are critical to restore reasonable functionality specific to the customer's deployment.

Table 1: Critical Platform Device Firmware Protected by HP Sure Start or other technology

NIST SP 800-193 Platform Architecture Reference	HP Commercial PC critical platform device firmware	Protected by
1. Embedded Controller (EC)/Super I/O (SIO) 4. Host Processor 6. Graphics Processing Unit (GPU) when implemented as Unified Memory Architecture (UMA) 8. Host Controller (HC) for mass storage device 11. Host Processor Boot Firmware 12. Platform Runtime Firmware 13. Power Supply 15. Fans	HP ESC firmware HP UEFI BIOS firmware	HP Sure Start Gen3 and Gen4
2. Trusted Platform Module (TPM)	Discrete TPM component firmware ¹	TPM
3. Baseboard Management Controller (BMC)/Management Engine (ME)	Intel Management Engine firmware AMD Secure Processor firmware	
5. Network Interface Controller (NIC)	Intel integrated GbE NIC firmware ²	HP Sure Start Gen3 and Gen4
7. Serial Peripheral Interface (SPI) Flash	Descriptor firmware	HP Sure Start Gen3 and Gen4
9. Hard Disk Drive (HDD)/Solid State Drive (SSD)	HDD/SSD firmware ³	
10. Embedded MultiMediaCard (eMMC)/Universal Flash Storage (UFS)	N/A ⁴	N/A ⁴
14. Glue Logic (CPLD's, FPGA's)	N/A ⁴	N/A ⁴

¹ This component is not critical to boot of the platform.

² This component is not critical to minimally restore operation of the system but is required to establish Ethernet connectivity in environments where that connectivity is deemed critical to platform resiliency.

³ Mass storage devices are outside the scope of this document. Resiliency capabilities vary by storage supplier and by storage device. Not all suppliers or devices currently meet all Resiliency requirements in 800-193.

⁴ No devices of this type are included.

Acronyms

- BIOS – Basic Input/Output System (aka host processor boot firmware)
- CPU – Central processing unit
- ESC – HP Endpoint Security Controller
- Gen3+ – Applies to both HP Sure Start Gen3 and HP Sure Start Gen4
- Gen4 – Applies to only HP Sure Start Gen4
- HMAC – Hash-based message authentication code
- HW – Hardware
- OS – Operating system
- POST – Power-On Self-Test
- RoT – Root of Trust (defined in NIST SP 800-193)
- RTD – Root of Trust for Detection (defined in NIST SP 800-193)
- RTRec – Root of Trust for Recovery (defined in NIST SP 800-193)
- SMM – System Management Mode
- UEFI – Unified Extensible Firmware Interface

Table 2: Required functions for Host Processor Boot Firmware

The table below provides a summary of each function described by NIST SP 800-193.

NIST SP 800-193	HP Sure Start	
Roots of Trust (Section 4.1)	Meets all Resiliency Requirements	<p>Gen3+ uses a hardware-based RoT (the HP ESC) with immutable boot firmware, which cryptographically verifies subsequent firmware before launching it, creating a Chain of Trust.</p> <p>Gen3+ includes a key store and approved digital signing algorithms based on FIPS 186-4 to verify the digital signature of firmware update images.</p> <p>Gen3+ uses authenticated update, detection, and recovery mechanisms, which are anchored in Gen3+'s HW-based RoT.</p>
Protection and Update of Mutable Code (Section 4.2.1)	Meets all Resiliency Requirements	<p>Gen3+ uses an authenticated update mechanism anchored in Gen3+'s HW-based RoT.</p> <p>Firmware update images are digitally signed by HP's code signing service (HP Secure Sign) and verified by Gen3+ prior to updating.</p> <p>Gen3+ integrity protects the HP ESC and UEFI flash regions, so that only its authenticated update mechanism or a secure local update through physical presence can modify those flash regions.</p> <p>Gen3+ has no known authenticated update bypass mechanisms and contains the ability to prevent rollback to earlier authentic firmware images with known security vulnerabilities.</p>
Protection of Immutable Code (Section 4.2.2)	Meets all Resiliency Requirements	Gen3+ uses a hardware-based RoT (the HP ESC) with immutable boot firmware.
Runtime Protection of Critical Platform FW (Section 4.2.3)	Meets all Resiliency Requirements	<p>Critical Platform Firmware executing in volatile storage (RAM) runs and:</p> <ol style="list-style-type: none"> 1) ceases its operation prior to the loading of system software. That is, it runs during POST and stops before the OS is loaded. 2) is protected from system software using SMM protections enforced by the CPU
Protection of Critical Data (Section 4.2.4)	Meets all Resiliency Requirements	<p>Gen4 Critical Data, such as Secure Boot authenticated variables, are only modifiable through defined APIs provided by device firmware. These APIs employ a mechanism to authenticate that the data is originating from an authorized source before applying the change.</p> <p>Gen4 Critical Data, such as per-platform unique factory configuration settings, are only modifiable through defined APIs provided by device firmware. These APIs employ a mechanism to authenticate that the request is originating from an authorized HP service provider before they allow the change.</p> <p>Gen4 Critical Data, such as BIOS settings that can be configured in the field, are only modifiable through defined APIs. These APIs are accessed only via a system administrator who has configured the BIOS administrator password.</p> <p>Gen3+ factory default settings, which are not per-platform-specific, employ the same protection as the code. This includes integrity and authenticity verification via digital signature. These setting updates are controlled and protected in the same manner as the firmware.</p>
Detection of Corrupted Code (Section 4.3.1)	Meets all Resiliency Requirements	<p>A successful attack on the platform firmware will not impact Gen3+'s RTD. The RTD is maintained in a private flash area inaccessible to the system software that might compromise the platform firmware.</p> <p>Firmware code is validated by Gen3+'s RTD using approved digital signature algorithms and cryptographic hashes.</p>

NIST SP 800-193	HP Sure Start	
Detection of Corrupted Critical Data (Section 4.3.2)	Meets all Resiliency Requirements	<p>A successful attack on the Active Critical Data will not impact Gen3+'s RTD. The RTD is maintained in a private flash area inaccessible to the system software that might compromise Active Critical Data.</p> <p>Gen3+ can save and validate critical data through use of digest hashes prior to using that critical data, and Gen3+ can initiate a recovery of the critical data if corruption is detected.</p>
Recovery of Mutable Code (Section 4.4.1)	Meets all Resiliency Requirements	<p>Gen3+'s ESC implements the recovery capability.</p> <p>A successful attack on the platform firmware will not impact Gen3+'s RTRec. The RTRec is maintained in a private flash area inaccessible to the system software that might compromise the platform firmware.</p> <p>Gen3+'s RTRec has access to a locally stored copy of the platform's UEFI image in its private flash area, which is inaccessible to (protected from) system software.</p> <p>Gen3+ can update the locally stored authentic UEFI image in its private flash area through an Authenticated Update mechanism.</p>
Recovery of Critical Data (Section 4.4.2)	Meets all Resiliency Requirements	<p>Gen3+'s ESC implements the recovery capability.</p> <p>A successful attack on Active Critical Data will not impact Gen3+'s RTRec. The RTRec is maintained in a private flash area inaccessible to the system software that might compromise Active Critical Data.</p> <p>Gen3+ can recover critical data back to factory defaults including per-platform-specific data that is backed up in isolated & protected storage.</p> <p>Gen3+ can recover non-per-platform-specific defaults from the backup BIOS image stored in isolated and protected storage.</p> <p>Gen3+ does not use policies included as part of Critical Data to restore critical data.</p>
Logging and notification	Exceeds all Resiliency Requirements	<p>Gen3+ will notify user of corruption and log the event.</p> <p>Gen3+'s detection mechanism is capable of logging events when corruption is detected.</p> <p>Gen3+ will notify user of a recovery event and log the event.</p> <p>Gen3+'s detection mechanism is capable of logging events when a recovery action has taken place.</p>
Policy-based controls	Exceeds all Resiliency Requirements	<p>Gen3+'s detection mechanism has policies which control the action taken by the Runtime Detection.</p>
Automatic or manual recovery options	Exceeds all Resiliency Requirements	<p>Gen3+ Runtime Detection can initiate a recovery process automatically or after notification of detection corruptions to the user.</p> <p>Gen3+ can automatically perform its recovery operations without user interaction or it may require user approval, dependent on policy setting.</p> <p>Gen3+ gains approval from the user before replacing the current Critical Data, based on recovery policy setting.</p> <p>Gen3+ can recover Critical Data back to a last-known good state.</p> <p>Gen3+ gains approval from the user before replacing the current Critical Data, based on recovery policy setting.</p>
Local or remote recovery	Exceeds all Resiliency Requirements	<p>Gen3+ can automatically perform its recovery operations without user interaction or it may require user approval, dependent on policy setting.</p>

NIST SP 800-193 HP Sure Start

Rollback prevention	Exceeds all Resiliency Requirements	Gen3+ and the UEFI boot block both have controls in place to protect against recovery to an earlier firmware version with security weaknesses.
Runtime Intrusion Detection	Additional Functionality not required in NISTSP800-193	NIST SP 800-193 is silent on what happens to firmware once it is loaded from nonvolatile storage (flash) into volatile storage (RAM) for execution. Gen3+ provides runtime intrusion detection of UEFI SMM code loaded into SMM RAM.
Physical attack detection	Additional Functionality not required in NISTSP800-193	Gen4 provides protection against physical attacks to the protected backup copy of dynamic critical data. AES encryption is used on a per-component unique key to provide confidentiality of private data. In addition, HMAC integrity measurements provide tamper prevention/detection of those keys.

Sign up for updates
hp.com/go/getupdated

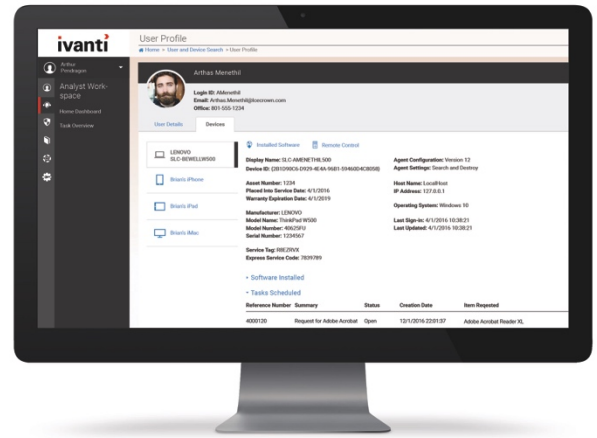
© Copyright 2018, 2019 HP Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

AMD is a trademark of Advanced Micro Devices, Inc. Intel is a trademark of Intel Corporation in the U.S. and other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.



Ivanti Endpoint Security for Endpoint Manager

Ivanti Endpoint Security for Endpoint Manager, powered by Landesk, prevents, detects, and remediates even the most sophisticated ransomware and other threats. Powerful, multi-layered protections automate discovery, inventory, and patch management, prevent malware from running or spreading, and enable remote control and remediation of infected systems. Flexible reporting and information visualization features improve compliance and help you pass more audits. And integration with Ivanti® Endpoint Manager increases efficiency and control over your IT environment.



Protect Your Environment from Ransomware and Other Modern Threats

With Ivanti Endpoint Security for Endpoint Manager, you can see everything necessary to find and remediate malware, diagnose problems, and identify faulty or non-approved processes. If ransomware invades your network, Endpoint Security will catch it, kill it, notify other connected machines, and block the malware from running on them. Powerful remote capabilities mean you can isolate, investigate, and clean endpoints across the network. Additionally, device blocking and connection control let you monitor and restrict access for I/O devices. Application control features guard against zero-day exploits, stealth attacks, and other sophisticated threats. And data protection features prevent malicious software from encrypting your files.

Discover and Inventory All Your Networked Devices and Software

Active and passive discovery technologies identify and inventory all IP-enabled devices in real time—even so-called “rogue” systems and those behind firewalls. Automatic discovery also helps you find all the software on those devices, including usage details. And when used with the Ivanti® Cloud Services Appliance, Ivanti Endpoint Security for Endpoint Manager can inventory systems and devices in the cloud, without the need for virtual private network (VPN) connections.

Ensure Your User Environment Is Stable and Secure with Automated Patching

Ivanti Endpoint Security for Endpoint Manager simplifies patch management with best practices, automated processes, no impact on users, and fast deployment. It patches all devices and third-party software across your network reliably—even those devices that are on the road, at a remote site, or asleep.

Harden Endpoints with Device and Connection Blocking

Device control and application firewall capabilities limit the types of external devices or connections that endpoints can access. You can also detect and lock out malware on storage devices that connect to endpoints, and block malware from “calling home,” rendering most of it useless. The solution logs which files are copied to external devices, so you can rest assured you’ll pass your security audit.

Protect Against Zero-Day Threats with Advanced Application Control

Application control features protect against file-based and fileless attacks by preventing malicious software and scripts from executing, and by using memory protection techniques. Learning capabilities minimize false positives and allow legitimate apps to run uninterrupted. A cloud-based

reputation database provides further insights about which apps should be allowed to run in your environment.

Protect Your Customer Data—and Your Bottom Line—with Greater Compliance

Ivanti Endpoint Security for Endpoint Manager provides standardized configurations and workflows for a variety of government and industry regulations, including PCI-DSS, SCAP, FERPA, HIPAA/HITECH, and SOX. This means you can safeguard customer data, preserve your enterprise's reputation, demonstrate compliance to auditors and executives, and protect the bottom line against financial penalties and lawsuits.

See Threats, Act Quickly, Show Results with Workspaces, Dashboards, and Reports

Ivanti Endpoint Security for Endpoint Manager also provides an array of reports and executive dashboards to help you monitor the effectiveness of your security efforts. These include detailed reports on policy enforcement, compliance levels, user behavior, patch status, real-time security outbreak alerts, and much more.

Reduce Risk by Integrating Endpoint Security with Endpoint Manager

As its name implies, our solution integrates with Ivanti Endpoint Manager to unify endpoint security and management. This enables fast automation of both security and IT management policies, optimizing IT time and

resources. Gain unequalled visibility across IT security and management activities to reduce risk and improve decision-making. Endpoint Manager integration also adds the enhanced mobile protections of Ivanti® Mobility Manager.

Manage and Secure Remote Devices

The solution uses FIPS140-2 certified encryption to secure management data of remote devices connected through the Ivanti Cloud Services Appliance.

Integrate Your Preferred Antivirus Solution

In addition to providing Ivanti® Antivirus Manager to protect against known malware, Ivanti Endpoint Security for Endpoint Manager integrates with and lets you manage third-party antivirus solutions of your choice.

Copyright © 2017, Ivanti, Inc. All rights reserved. IVI-1853 05/17 AB/BB/DH/DR



www.ivanti.com



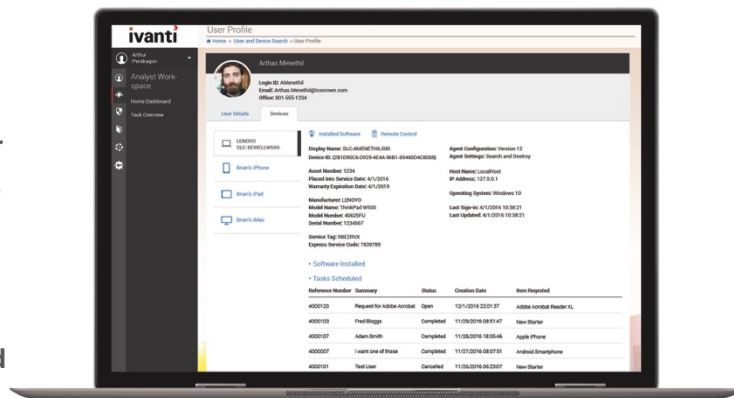
[1.800.982.2130](tel:1.800.982.2130)



sales@ivanti.com

Ivanti Endpoint Manager

Ivanti is a recognized leader in unified endpoint management. Ivanti® Endpoint Manager, powered by Landesk, increases user and IT productivity by helping IT administrators gather detailed device data, automate software and OS deployments, and quickly fix user issues. It integrates and unifies the management of all end-user devices and provides core data and services leveraged by other Ivanti solutions and Ivanti partners.



Discover the Data that Helps IT Control Assets, Compliance, Costs, and Security

Know what's there before anyone else does. Ivanti Endpoint Manager provides extensive data about managed and unmanaged devices through industry-leading discovery and inventory technology. This information is key for boosting your level of insight into and control over business risks and costs due to:

- Software compliance fines and over-purchasing licenses
- Failing to meet corporate service level agreements
- Security vulnerabilities on end-user devices
- Excessive energy bills

Unify Endpoint Management

Don't get overwhelmed by all your endpoints: No matter what leading device or OS your users have in their hands, you can manage various endpoints and operating systems with Ivanti Endpoint Manager including:

- PCs/Servers: Windows, macOS, Linux, Unix, and Chromebooks
- Mobile devices: OS, Android, and Windows
- IoT: tvOS and Raspbian

Gain one-click access to see, configure, and manage the IT policies and processes related to your users and groups and all their associated devices. Intelligent actions such as setting policies or distributing software take effect only on the user devices where it makes sense.

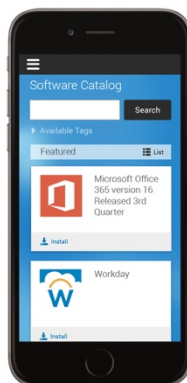
Provide Insight and Take Immediate Action

IT needs the right information, at the right time, in the right place to take decisive action. Ivanti Endpoint Manager provides an array of role-based workspaces with integrated dashboards for end users, administrators, and IT executives. And with the ability to customize dashboards and reports with Ivanti Xtraction, you have the needed visibility to show how effective your IT initiatives are. These insightful dashboard, customizable reporting, and alerting tools include:

- Information and visual content about each user and all their devices
- Business value dashboards that can link to multiple IT and business data sources
- Role-based console and workspaces with integrated actions
- Gantt charts and status for automated software rollout projects
- Proactive monitoring alerts to identify potential issues for systems and users

Improve Productivity and Modernize IT

Ivanti Endpoint Manager is core to enabling a more user-centered approach to unified IT. Automate IT tasks and modernize the experience to improve productivity for both IT staff and end users. Minimize issues that threaten user productivity caused by system outages, device downtime, and change and configuration activities. Keep pace with the insane cadence of OS migrations and updates from Windows 10 and macOS. Save IT administrators from jumping between multiple consoles and free up time for more business-related initiatives.



On-Premises, In the Cloud, or as a Managed Service

Gain the flexibility around how you deliver IT and how you expense your IT. Where some vendors provide only one delivery model, Ivanti gives you the same endpoint management functionality and benefits either on-premises or in the cloud. When in the cloud, choose to use your own administrative resources or leverage Ivanti's expertise to handle your core management needs.

True Unified Endpoint Management for All Your Devices

Ivanti Endpoint Manager enables you to manage every user and any number of devices they employ. The following table provides a quick overview of the leading management capabilities available for each end-user device:

Windows and MacOS		Mobile Device Management		Other Platforms and Add-Ons	
What's Included	Capabilities	What's Included	Capabilities	Other Platforms	Capabilities
Core Management	Active, passive, and agentless discovery and inventory Configuration and policy management	Core Mobile Device Management	Active, passive, and agentless discovery and inventory Enrollment and device restrictions	Linux	Active and passive discovery and inventory Software distribution
Remote Assistance	Secure remote control—from any HTML 5 browser		Device lock and selective wipe	Chromebook	Active and passive discovery and inventory
OS and Software Management	OS provisioning and migration		Self-service workspace for end users to access apps, docs, and links	Unix	Active and passive discovery and inventory
	Software packaging, distribution, and automated rollout projects	Mobile Application Management	User-targeted application distributions	Top Add-Ons	Capabilities
Dashboards, Custom Reporting, and Alerts	Ivanti Xtraction business value dashboards—powerful insight without a spreadsheet expert	Role-based Management Experience	Manage user and mobile device needs through single Admin console	Cloud Services Appliance	Manage remote offices/users through Internet connection without needing a VPN
	Custom reports and queries		IT Analyst Workspace—apply policies, deploy apps to specific users, initiate remote-control sessions	Patch for Endpoints	Automate vulnerability assessment and patch management for the most at-risk software
	System alerts to provide proactive service and support			Endpoint Security for Endpoint Manager	Detect and prevent threats before they impact the business and respond swiftly to infections
Self Service	Self-service workspace for the end user—apps, docs, and links	MDM Managed Platforms		Asset Optimizer	Eliminate unused software licenses, drive immediate license savings, and ensure audit preparedness
Role-based Management Experience	Manage all users and platforms through a single Admin console or assign focused admin tasks to an IT Analyst Workspace		iOS Android Windows macOS	Additional Xtraction Connectors	Access data from multiple business and IT sources to create business-value dashboards
Power Management	Configure and leverage latest OS features—model your energy savings			ServiceNow Connector	Available on the ServiceNow store—provides data sync and connections to Endpoint Manager actions





All quotes and prices are contingent upon the use and acceptance of Ivanti standard license, support, and services terms and agreements. Quotes and prices may be adjusted if an end user requires changes or additions to such standard terms or agreements.

Quote Number: Q-331186
Created Date: August 21, 2018
Expiration Date: September 20, 2018
Payment Terms: Net 30
Currency: BRL
Prepared By: Paulo Costa
Phone:
Email: paulo.costa@ivanti.com
Estimated Support Points: 348691.00

Partner: Torino Informática Ltda
Address: Rua Rita de Carvalho Monteiro, 120
Sorocaba, SP, 18085750
BRAZIL

Customer: SUPERINTENDÊNCIAS DE ADMINISTRAÇÃO DO
MINISTÉRIO DA FAZENDA NOS ESTADOS - ES
Address: Rua Pietrângelo de Biase, 56 Centro
Vitória, ES, 29010-190
BRAZIL

#	Quantity	Product Output Name	Product Description	Version	Deal Type	Start Date	End Date	MSRP	Registration	Final Unit Price	Total Price
1	5,450	LDPM-AO-L	Ivanti Patch Manager License (Add-on to Ivanti MS), powered by Landesk	9.50	New			R\$ 0.02	<input type="checkbox"/>	R\$ 0.02	R\$ 109.00
2	5,450	LDPM-S-06	Ivanti Patch Manager - Subscription, powered by Landesk	10.0	New	21-Dec-2018	20-Dec-2019	R\$ 7.00	<input type="checkbox"/>	R\$ 3.68	R\$ 20,056.00
3	5,450	LDMS-L-06	Ivanti Endpoint Manager	10.0	New			R\$ 66.00	<input type="checkbox"/>	R\$ 32.18	R\$ 175,381.00
4	5,450	LDMSPMA-M-06	Ivanti Endpoint Manager PMA, powered by Landesk (formerly Management Suite)		New	21-Dec-2018	20-Dec-2019	R\$ 14.52	<input type="checkbox"/>	R\$ 7.08	R\$ 38,586.00
5	5,450	LDAV-L	Ivanti Antivirus Manager-License Add-on to Ivanti MS, IvantiSS, or IvantiPM, powered by Landesk	9.50	New			R\$ 0.02	<input type="checkbox"/>	R\$ 0.02	R\$ 109.00
			Ivanti Antivirus Manager - Add-on to Ivanti MS or IvantiSS, powered by								



All quotes and prices are contingent upon the use and acceptance of Ivanti standard license, support, and services terms and agreements. Quotes and prices may be adjusted if an end user requires changes or additions to such standard terms or agreements.

#	Quantity	Product Output Name	Product Description	Version	Deal Type	Start Date	End Date	MSRP	Registration	Final Unit Price	Total Price
6	5,450	LDAV-S-06	Landesk	10.0	New	21-Dec-2018	20-Dec-2019	R\$ 9.00	<input type="checkbox"/>	R\$ 4.73	R\$ 25,778.50
7	5,450	WMSDFDE-L-06	WinMagic FDE Lic	1.00	New			R\$ 94.20	<input type="checkbox"/>	R\$ 45.92	R\$ 250,264.00
8	5,450	WMSDFDE-M-06	WinMagic FDE Mnt		New	21-Dec-2018	20-Dec-2019	R\$ 20.72	<input type="checkbox"/>	R\$ 10.10	R\$ 55,045.00

Total: R\$ 565,328.50

Notes and Conditions

All quotes and prices are subject to the terms of the license agreement with Ivanti. Tax is estimated and may be subject to change at final invoice. Customer has the option to renew its license subscription and/or maintenance annually. Ivanti will not increase the price of the maintenance renewal or subscription renewal more than five percent (5%) per annum or as otherwise agreed. Ivanti reserves the right to change the maintenance renewal price or subscription renewal price including the right to add reinstatement fees for maintenance renewal items which are not renewed before expiration of the maintenance term. The applicable terms and conditions for a Statement of Work (SOW) to be performed in 10 days or less are found at: <http://rs.Ivanti.com/downloads/sows/Online-SOW-Ivanti-generic-time-and-materials-en.pdf>.

SecureDoc™ Enterprise Server



Reducing TCO and Maximizing IT Management

WinMagic's SecureDoc Enterprise Server (SES) offers organizations total control over their data security environment ensuring maximum security and transparency in regular work flow. With industry-leading full disk encryption (FDE) technology and industry-first technology like PBConnex™, SES enables customers to streamline their IT processes and as a result, help reduce the total IT cost of ownership.

SES manages everything encryption within the enterprise, whether it's FDE, removable media or individual files and folders. It places all security-related management under one centralized enterprise server, including policies, password rules, and the manageability of encryption across PC, Mac and Linux platforms alike. It also easily integrates with industry-standard technologies such as Opal-compliant Self-Encrypting Drives (SEDs), NVMe and TCG Enterprise Drives, while also managing native OS encryption solutions such as Microsoft BitLocker, Mac OS X FileVault2, iOS and Android.

Features at a Glance

- Manage software-based FDE for laptops, desktops and tablets etc.
- Support for Microsoft Windows BitLocker (Win 10, Win 8, Win 7 and Vista)
- Support for Mac OS X FileVault 2
- Full Opal Self-Encrypting Drive (SED) management support
- TCG Enterprise Drive Support
- Non-Volatile Memory Express (NVMe) SSD SED Support
- Mobile Device Management (MDM) iOS and Android devices
- Centralized management through standard server-based or web console
- Only full-disk encryption solution to offer wired and wireless pre-boot network authentication via PBConnex
- Manage and encrypt removable media, removable media container and individual files & folders
- FIPS 140-2 validated



SecureDoc Enterprise Server (SES) offers a unified view of all device types from a single management console because most people today carry many devices with a variety of operating systems.



PBConnex

SecureDoc with PBConnex is the only data encryption and management solution that allows for pre-boot network authentication either wired or wirelessly. PBConnex utilizes network based resources to authenticate users, enforce access controls, and manage end point devices before the operating system loads. This unique and ground-breaking approach to Full Disk Encryption (FDE) management also results in significant cost savings for organizations by streamlining the time and cost associated with things such as password resets and device staging. In addition multiple users can safely use the same device without ever putting confidential data at risk.

Manage Everything Encryption Related

SecureDoc is the only solution in the industry today that can manage everything regarding encryption within the enterprise. SecureDoc's encryption software uses a FIPS 140-2 certified AES-NI 256-bit cryptographic engine to encrypt data and is compatible with all editions of Microsoft Windows 10, Windows 8, Windows 7, Vista and XP. For customers that prefer to leverage the native operating system encryption solutions available with Windows, Apple's OS X and iOS or Android, SES can manage those too.

BitLocker Management

SES supports the full management of Microsoft's BitLocker encryption solution but also adds increased value to customers by enabling pre-boot network authentication, multi-factor authentication, challenge/response password recovery, single sign-on, port control, automatic TPM provisioning and more. SES is the best solution in the industry at managing BitLocker deployments, offering innovative features found within SecureDoc in combination with Windows native encryption. It's the best of both worlds for customers that want a more robust management solution for their BitLocker deployments.

FileVault 2 Management

Recognizing that customers have mixed IT hardware environments, SecureDoc also offers the ability to manage Mac OS X's FileVault 2. Taking advantage of the native encryption provided by Mac OS X, SecureDoc for FileVault 2 can give administrators the control they need to manage their Apple hardware. FileVault 2 enterprise management gives businesses the flexibility to choose how they want to encrypt and manage their Apple devices yet still have the ability to have all their devices managed by SES's central management console.

Mobile Device Management (MDM)

For smartphones and tablets, SecureDoc's Mobile Device Management feature offers customers a holistic view to their status of the mobile devices; allowing them to manage the deployment of Android® and iOS® devices and also to ensure that the appropriate security and password policies are enforced. SecureDoc MDM offers the 'proof' that IT administrators require to ensure compliance with key industry regulations while at the same time offering a strong solution for bring your own device (BYOD) environments.

Self-Encrypting Drives (SEDs)

SEDs are fast becoming the standard for customers who want a level of security built right into their devices. SES offers the best SED management in the industry supporting both Opal 1 & 2 specifications. Through the innovative use of PBConnex in combination with expert SED management, SecureDoc OSA (Operating System Agnostic), allows organizations to run virtually any OS on an SED and not worry about compatibility issues.

SecureDoc OSA allows SecureDoc users to encrypt their hard drive without needing to install any software in the OS. Using Opal SEDs, management and authentication is performed at pre-boot which eliminates the need to create an OS-specific installation package. It's an ideal solution for Linux or Unix deployments and removes the complexity of managing multi-OS environments.



info@winmagic.com | www.winmagic.com TRY US



Certificado de Registro

SISTEMA DE GESTÃO DA QUALIDADE - ISO 9001:2015

Certificamos que:

HP Brasil Indústria e Comércio de
Equipamentos Eletrônicos Ltda.
Alameda Xingu, 350
Alphaville
Barueri
São Paulo
06455-030
Brasil

Possui o Certificado Número:

FS 583945

e opera um Sistema de Gestão da Qualidade conforme os requisitos da ISO 9001:2015 para o escopo à seguir:

Gerenciamento da cadeia produtiva de computadores desktops, workstation e portáteis.

Supply chain management for desktops, workstations and portables.

Adminstración de la cadena de suministro para computadoras, estaciones de trabajo y portátiles.



Assina pelo BSI:

Carlos Pitanga, SVP, System Certification and Compliance

Data de Registro Original: 2012-01-23

Data da Última Revisão 2018-04-02

Data efetiva: 2018-05-09

Data de validade: 2021-05-08

Página: 1 de 2



...making excellence a habit.™

Certificado Nº: **FS 583945**

Localização

Atividades Certificadas

HP Brasil Indústria e Comércio de
Equipamentos Eletrônicos Ltda.
Alameda Xingu, 350
Alphaville
Barueri
São Paulo
06455-030
Brasil

Gerenciamento da cadeia produtiva de computadores
desktops, workstation e portáteis.

Supply chain management for desktops, workstations and
portables.

Administración de la cadena de suministro para
computadoras, estaciones de trabajo y portátiles.

HP Brasil Indústria e Comércio de
Equipamentos Eletrônicos Ltda.
Av. Liberdade, 6315 - Prédio 5 - Bloco 01
Iporanga
Sorocaba
São Paulo
18087-170
Brasil

Gerenciamento da cadeia produtiva de computadores
desktops, workstation e portáteis.

Supply chain management for desktops, workstations and
portables.

Administración de la cadena de suministro para
computadoras, estaciones de trabajo y portátiles.

Data de Registro Original: 2012-01-23

Data efetiva: 2018-05-09

Data da Última Revisão 2018-04-02

Data de validade: 2021-05-08

Página: 2 de 2

Este certificado é de propriedade do BSI e deverá ser devolvido ao BSI se solicitado.
Um certificado eletrônico pode ser autenticado [on line](#).
Cópias impressas podem ser validadas no www.bsigroup.com/ClientDirectory
Para ser lido conjuntamente com o escopo ou o apêndice em anexo.

BSI Brasil: Rua Gomes de Carvalho, 1069 - 18º andar - Cj. 183, Vila Olímpia - São Paulo - SP - 04547-004 Telefone: +55 11 2148-9600

BUREAU VERITAS
Certification



HP INC.

HQ: 1501 PAGE MILL RD.
PALO ALTO, CA 94304 USA

THIS IS A MULTI-SITE CERTIFICATE, ADDITIONAL SITE(S) ARE LISTED ON THE NEXT PAGE(S)

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 14001:2015

Scope of certification

WORLDWIDE MANUFACTURING OF COMPUTING AND IMAGING PRODUCTS AND RELATED OPERATIONS

Original cycle start date: **July 23 2012**

Certification / Recertification cycle start date: **July 22 2018**

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on:

July 21 2021

Certificate No. **US012100** Version: **1**

Signed on behalf BVCH SAS – UK Branch

Certification body address: **5th Floor, 66 Prescott Street, London E1 8HG, United Kingdom**
Local office: **16800 Greenspoint Park Drive, Suite 300S, Houston, TX 77060**

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization. To check this certificate validity please call: **+(800) 937-9311**



0008





HP INC.

APPENDIX TO CERTIFICATE NO. : US012100-1

ISO 14001:2015

Certified Locations

SITE	ADDRESS	SCOPE
HQ - PALO ALTO, CA	1501 PAGE MILL RD. PALO ALTO, CA 94304 USA	WORLDWIDE MANUFACTURING OF COMPUTING AND IMAGING PRODUCTS AND RELATED OPERATIONS
CORVALLIS	1070 NE CIRCLE BLVD., CORVALLIS, OR, 97330 USA	INKJET/PLEZO PRINthead AND PEN PRODUCTION, TESTING AND FACILITIES SUPPORT OPERATIONS
SAN DIEGO	16399 WEST BERNARDO DRIVE, SAN DIEGO, CA 92127	INK JET PRINthead AND PEN PRODUCTION, TESTING AND FACILITIES SUPPORT OPERATIONS.

Version: 1

Signed on behalf BVCH SAS – UK Branch

Certification body address: 5th Floor, 66 Prescott Street, London E1 8HG, United Kingdom
Local office: 16800 Greenspoint Park Drive, Suite 300S, Houston, Texas USA

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation. To check this certificate validity please call: +(800) 937-9311





HP INC.

APPENDIX TO CERTIFICATE NO. : US012100-1

ISO 14001:2015

Certified Locations

SITE	ADDRESS	SCOPE
PUERTO RICO	HIGHWAY 110 NORTH KM, 28 BUILDING #2 AGUADILLA, PUERTO RICO 00603	INK LARGE FORMAT AND SUPPLIES, 3D, INKJET CARTRIDGES AND HEMI PRODUCTS MANUFACTURING. R&D, CONTROL TOWERS AND FACILITIES SUPPORT OPERATIONS.
BRAZIL	HPI BRASIL: HP BRASIL INDUSTRIA E COMERCIO EQUIPAMENTOS ELECTRONICOS ALAMENDA XINGU 350, ALPHAVILLE INDUSTRIAL- BARUERI/SP	BRAZIL TS, PPS, SALES & SUPPLY CHAIN OFFICES, BACK OFFICES & FACILITIES SUPPORT OPERATIONS
BARCELONA	CAMÍ DE CAN GRAELLS, 1-21, 08174 SANT CUGAT DEL VALLES (BARCELONA), SPAIN	LARGE FORMAT PRINTING (LFP) AND 3D PRINTING (3DP) DESIGN, PROTOTYPING AND TESTING; DEMO & TRAINING CENTER FOR GRAPHICS SOLUTIONS BUSINESS (GSB), LFP AND 3DP; ADMIN OFFICES AND FACILITIES SUPPORT OPERATIONS

Version: 1

Signed on behalf BVCH SAS – UK Branch

Certification body address: 5th Floor, 66 Prescott Street, London E1 8HG, United Kingdom
Local office: 16800 Greenspoint Park Drive, Suite 300S, Houston, Texas USA

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation. To check this certificate validity please call: +(800) 937-9311





HP INC.

APPENDIX TO CERTIFICATE NO. : US012100-1

ISO 14001:2015

Certified Locations

SITE	ADDRESS	SCOPE
ISRAEL INDIGO	SDEROT HAVATZ 24, KIRYAT GAT ISRAEL 82000	MANUFACTURING OF DIGITAL PRESSES AND IMAGING PRODUCTS, AND FACILITIES SUPPORT OPERATIONS
ISRAEL SCITEX	8B HATZORAN ST, NETANYA, ISRAEL(120) HASHITA 10 SOUTH INDUSTRIAL PARK, CAESAREA, ISRAEL SDEROT HAVATZ 24, KIRYAT GAT ISRAEL 82000 (900)	MANUFACTURING OF INDUSTRIAL PRESSES, MANUFACTURING OF PRINT HEADS AND MANUFACTURING OF UV BASED INKS
SOUTH AFRICA	12 AUTUMN STREET, RIVONIA, SANDTON 2128, SOUTH AFRICA	SALES, INSTALLATION AND SUPPORT SERVICES OF INFORMATION TECHNOLOGY PRODUCTS

Version: 1

Signed on behalf BVCH SAS – UK Branch

Certification body address: 5th Floor, 66 Prescott Street, London E1 8HG, United Kingdom
Local office: 16800 Greenspoint Park Drive, Suite 300S, Houston, Texas USA

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation. To check this certificate validity please call: +(800) 937-9311



0008





HP INC.

APPENDIX TO CERTIFICATE NO. : US012100-1

ISO 14001:2015

Certified Locations

SITE	ADDRESS	SCOPE
SINGAPORE AND INDIGO	4 TUAS WEST AVENUE SINGAPORE 638429	MANUFACTURING ASSEMBLY OF HP INKJET CARTRIDGES, INTERMEDIATE ASSEMBLY AND WAFER FABRICATION OF HP INKJET PRINTHEADS, MANUFACTURING OF ELECTRO-INK SUPPLIES AND SUBSTRATE CERTIFICATIONS, AND FACILITIES SUPPORT OPERATIONS
	138 DEPOT ROAD SINGAPORE 109683	
	438A ALEXANDRA ROAD, ALEXANDRA TECHNOPARK BLK A, SINGAPORE 119967	
	1150 DEPOT ROAD SINGAPORE 1096673	
	1A DEPOT CLOSE, SINGAPORE 109842	

Version: 1


Signed on behalf BVCH SAS – UK Branch

Certification body address: 5th Floor, 66 Prescott Street, London E1 8HG, United Kingdom
Local office: 16800 Greenspoint Park Drive, Suite 300S, Houston, Texas USA

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation. To check this certificate validity please call: +(800) 937-9311



0008



BUREAU VERITAS
Certification



HP INC.

APPENDIX TO CERTIFICATE NO. : US012100-1

ISO 14001:2015

Certified Locations

SITE	ADDRESS	SCOPE
PULAU PINANG (PENANG),	HP MALAYSIA MANUFACTURING SDN. BHD. PMT 731, PERSIARAN CASSIA SELATAN 2, TAMAN PERINDUSTRIAN BATU KAWAN, 14100 SIMPANG AMPAT, PULAU PINANG, MALAYSIA	MANUFACTURING ASSEMBLY OF HP INKJET PRINTHEADS, WITH INKJET SUPPLIES RELIABILITY TESTING AND FACILITIES SUPPORT OPERATIONS.
INDIA	PLOT NO. 9-11A & 35-37A, SECTOR-V, INTEGRATED INDUSTRIAL ESTATE, PANTNAGAR(SIDCUL), RUDRAPUR-263153 US NAGAR, UTTARAKHAND STATE, INDIA	MANUFACTURING OF COMPUTER SYSTEMS, AND FACILITIES SUPPORT OPERATIONS

Version: 1

Signed on behalf BVCH SAS – UK Branch

Certification body address: 5th Floor, 66 Prescott Street, London E1 8HG, United Kingdom
Local office: 16800 Greenspoint Park Drive, Suite 300S, Houston, Texas USA

Further clarifications regarding the scope of this certificate and the applicability of the
management system requirements may be obtained by consulting the organisation. To check
this certificate validity please call: +(800) 937-9311



0008





Ministério do Meio Ambiente
Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis
CADASTRO TÉCNICO FEDERAL
CERTIFICADO DE REGULARIDADE - CR



Registro n.º	Data da consulta:	CR emitido em:	CR válido até:
6313942	16/08/2019	16/08/2019	16/11/2019

Dados básicos:

CNPJ : 22.086.683/0003-46
Razão Social : HP BRASIL INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICOS LTDA
Nome fantasia : HP BRASIL INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICOS LTDA
Data de abertura : 04/05/2015

Endereço:

logradouro: AV. LIBERDADE
N.º: 350 Complemento: PRÉDIO 5 - BLOCO 1
Bairro: APARECIDINHA Município: SOROCABA
CEP: 18087-170 UF: SP

**Cadastro Técnico Federal de Atividades Potencialmente Poluidoras
e Utilizadoras de Recursos Ambientais – CTF/APP**

Código	Descrição
5-2	Fabricação de material elétrico, eletrônico e equipamentos para telecomunicação e informática
18-81	Comércio de produtos químicos e produtos perigosos - Resolução CONAMA nº 401/2008 (importação, pilhas, baterias)

Conforme dados disponíveis na presente data, CERTIFICA-SE que a pessoa jurídica está em conformidade com as obrigações cadastrais e de prestação de informações ambientais sobre as atividades desenvolvidas sob controle e fiscalização do Ibama, por meio do CTF/APP.

O Certificado de Regularidade emitido pelo CTF/APP não desobriga a pessoa inscrita de obter licenças, autorizações, permissões, concessões, alvarás e demais documentos exigíveis por instituições federais, estaduais, distritais ou municipais para o exercício de suas atividades

O Certificado de Regularidade emitido pelo CTF/APP não habilita o transporte e produtos e subprodutos florestais e faunísticos.

Chave de autenticação	HVTY687VVFNSSFLT
------------------------------	------------------

About Links

- About the RBA (about/rba/)
- History (about/history/)
- Board and Advisers (about/board-advisers/)
- Members (about/members/)
- Staff (about/staff/)
- Vendor Partner Program (about/vendor-partner-program/)
- GDPR Compliance (about/gdpr-compliance/)

Learn about our news & events

Enter your work email below.

Subscribe

Members

The Responsible Business Alliance is the world's largest industry coalition dedicated to corporate social responsibility in global supply chains.

Beginning with eight members in 2004, today the RBA is comprised of more than 150 electronics, retail, auto and toy companies with combined annual revenue greater than \$5 trillion, directly employing over 6 million people. In addition to RBA members, thousands of companies that are Tier 1 suppliers to those members are required to implement the RBA Code of Conduct. More than 3.5 million people from over 120 countries contribute to the manufacture of RBA members' products.

Learn about member benefits and requirements (join-us/)

A

- AcBel Polytech Inc.
- Acer
- Advanced Micro Devices
- Allegro MicroSystems, LLC
- Alphabet Inc.
- Amazon.com, Inc.
- Amkor Technology, Inc.
- Amphenol Corporation
- Analog Devices, Inc.
- Apple Inc.
- Applied Materials
- Arista Networks
- Arlo Technologies, Inc.
- ARRIS Group
- ASE Technology Holding Co., Ltd.
- ASML Holding
- ASUSTeK Computer Inc.
- Atea ASA
- Avaya

30/08/2019

Search...

Responsible Business Alliance
Advancing Sustainability Globally
Foundation (rba-foundation/)

Home / [www.responsiblebusiness.org](#) / Members

JOIN RBA (Join us/)

Best Buy

BMW Group

Brother Industries Ltd.

BT plc

[\(https://www.linkedin.com/company/responsible-business-alliance/\)](https://www.linkedin.com/company/responsible-business-alliance/)



<https://twitter.com/RBAllianceOrg>

Member Service Portal (<https://responsiblebusiness.sharefile.com/>)

[\(https://www.rba-online.org/\)](https://www.rba-online.org/)

eLearning Academy (<https://rbacademy.litmos.com>)

Cadence Design Systems

Celestica

Chicony Electronics Co., Ltd

Ciara

Ciena

Cisco

Citrix

Compal Electronics

Cypress Semiconductor

Corp.

Cirrus Logic, Inc.

Reserve your place

[@RBAllianceOrg](#) & [#RMI](#)

annual conferences +

member mtgs in Santa Clara,

California, Oct. 21-23.

bit.ly/2NOW1Fc

[#ResponsibleBusiness](#)

[#ResponsibleMinerals2019](#)



[\(HTTP://WWW.RESPONSIBLEBUSINESS.ORG/\)](http://www.responsiblebusiness.org/)

CODE OF CONDUCT

VAP

TOOLS

INITIATIVES

FOCUS AREAS

[EVENTS & TRAINING](#)

[NEWS](#)

[ABOUT](#)

[CONTACT \(CONTACT/\)](#)

Home

rba.sw...

D

Dell Inc.

Dustin AB

Aug 28, 2019

E

Edwards Ltd.

Ericsson

F

Fabrinet

Facebook

Fairphone B.V.

Fitbit, Inc.

Flex

Ford Motor Company

Foxconn

Fujitsu Limited

Funai Electric Co., Ltd.

G

GlobalFoundries

H

Hasbro, Inc.

Hewlett Packard Enterprise

Hi-P (Xiamen) Precision

Plastics Manufacturing Co.
Ltd

Hisense USA Corporation

HP Inc.

HTC Corp.

Huawei Technologies Co.,
Ltd.

I

IBM Corporation

Infineon Technologies
Americas Corp.

Insight Enterprises, Inc.

Intel Corporation

Inventec Corporation

J

Jabil

Jasco

JB HI-FI Limited

Juniper Networks



Responsible Busi

[@RBAllianceOrg](#)

Join us in Guadalajara,
Mexico next week for an
[@RBAllianceOrg](#) outreach
mtg on Sept 5 to learn about
[#USMCA](#), Mexican [#labor](#)
reform, freedom of
association, [#MigrantWorkers](#)
& [#EthicalRecruitment](#)
bit.ly/2XDh95y

RBA Outreach Meeting

rba.swoogo.com

Aug 28, 2019

Responsible Business
Retweeted



Lam Research

[@LamResearch](#)

[#LamResearch](#) is a proud
member of [@RBAllianceOrg](#),
the world's largest industry
coalition dedicated to [#CSR](#)
in global supply chains. Learn
more: bddy.me/347vGKI
[#LamCares](#)



- Keysight Technologies, Inc.
- Kingston Technology
- KLA-Tencor

[\(https://www.linkedin.com/company/responsible-business-alliance/\)](#)
[Keurig Dr Pepper](#)



[\(https://twitter.com/RBAllianceOrg\)](#)

[Member Service Portal \(https://responsiblebusiness.sharefile.com/\)](#) [RBA-Online](#)
[\(https://www.rba-online.org/\)](#) [eLearning Academy \(https://rbaacademy.litmos.com\)](#)

L



[\(HTTP://WWW.RESPONSIBLEBUSINESS.ORG/\)](#)

[CODE OF CONDUCT](#)

[VAP](#)

[TOOLS](#)

[INITIATIVES](#)

[FOCUS AREAS](#)

- Lam Research Corporation
- LG Electronics
- Lenovo
- Logitech Inc.
- Maxxam
- Microwell Company

[EVENTS & TRAINING](#)

[NEWS](#)

[ABOUT](#)

[CONTACT](#)

[CONTACT](#)

M

- Marvell
- Media-Saturn-Holding GmbH
- Micron Technology, Inc.
- Microsoft
- ModusLink
- Molex
- Motorola Solutions, Inc.

N

- NetApp
- NETGEAR
- New Kinpo Group
- Nexperia
- Nielsen
- Nikon Corporation
- Nu Mark
- Nvidia Corporation
- NXP Semiconductors

O

- ON Semiconductor
- Oracle America, Inc.
- Orbotech Ltd.

P

- Pegatron
- Philips
- Plexus
- Poly
- Positivo Tecnologia S.A.
- Powertech Technology Inc.
- Pure Storage, Inc.

Q

- Qorvo, Inc.
- Qualcomm
- Quanta Computer Inc.

S

- Samsung Electronics
- Sanmina
- Schneider Electric
- Seagate Technology
- Seiko Epson Corporation
- Semtech Corporation
- Senju Metal Industry Co., Ltd.
- Simatelex Manufactory Co. Ltd.
- SK hynix Inc.
- Sky CP Ltd
- Skyworks Solutions, Inc.
- SMART Modular Technologies
- Snap Inc.



- [Cisco Wireless Responsible Business Alliance](#) ([http://www.wirelessresponsiblebusiness.org/](#))
- [Signify](#) ([http://www.signify.com/](#))
- [Siltronic AG](#) ([http://www.siltronic.com/](#))

- [Sony Corporation](#) ([http://www.sony.com/](#))
- [STMicroelectronics](#) ([http://www.st.com/](#))
- [Symantec](#) ([http://www.symantec.com/](#))
- [Synopsys, Inc.](#) ([http://www.synopsys.com/](#))

Member Service Portal ([https://responsiblebusiness.sharefile.com/](#)) [RBA-Online](#) ([https://www.rba-online.org/](#)) [eLearning Academy](#) ([https://rbaacademy.litmos.com](#))



[\(HTTP://WWW.RESPONSIBLEBUSINESS.ORG/\)](#)

CODE OF CONDUCT **VAP** **TOOLS** **INITIATIVES** **FOCUS AREAS**

EVENTS & TRAINING

- [Taiwan Chinsan Electronics Industrial Co., Ltd.](#)
- [Taiwan Semiconductor Manufacturing Company, Ltd.](#)
- [TCL North America](#)
- [Technicolor SA](#)
- [Tesla, Inc.](#)
- [Texas Instruments](#)
- [3M Electronics and Energy Business Group](#)
- [Tokyo Electron Limited](#)
- [TomTom International BV](#)
- [Toshiba Corp.](#)
- [TT Electronics Plc](#)

V

- [Venturer Electronics Inc.](#)
- [Veritas](#)
- [Vishay Intertechnology, Inc.](#)
- [VIZIO Inc.](#)
- [Volvo Car Group](#)
- [V.S. Plus Sdn Bhd](#)

W

- [Walmart](#)
- [Western Digital](#)
- [Wistron Corp.](#)

X

- [Xerox](#)
- [XP Power](#)

Z

- [Zebra Technologies Corporation](#)
- [ZTE \(USA\), Inc.](#)

CODE OF CONDUCT

[Code of Conduct \(code-of-conduct/\)](#)
[Standards & Accountability \(code-standards-and-accountability/\)](#)

INITIATIVES

[Responsible Minerals Initiative \(initiatives/rmi/\)](#)
[Responsible Labor Initiative \(initiatives/rli/\)](#)
[Responsible Factory Initiative \(initiatives/rfi/\)](#)

TRAINING & EVENTS

[Training & Events \(training-events/\)](#)
[Factory Lead Certification \(training/flcp/\)](#)
[Training Resources \(training/resources/\)](#)

NEWS

[News \(news/\)](#)
[Publications \(publications/\)](#)
[Podcast \(podcast/\)](#)
[RBA Compass Awards \(compass-awards/\)](#)

VAP

[About VAP \(vap/about-us/\)](#)

ISSUES

MANAGEMENT

[Responsible Management](#)

TOOLS

[RBA Online \(rba-online.org\)](#)

ABOUT RBA

[About the RBA \(about/history/\)](#)

[\(http://www.responsiblebusiness.org/\)](#)

Founded in 2004 by a group of leading electronics companies committed to supporting the rights and well being of workers and communities worldwide affected by the global electronics supply chain.



Intel vPro® Platform

TODAY, IT PROS FACE PROBLEMS FROM EVERY DIRECTION

Now there's a platform that helps solve them all.

[See the latest processors](#)



[Benefits](#) [Learn More](#) [Case Studies](#) [Platform Technologies](#) [Related](#)

INTEL VPRO® PLATFORM BENEFITS¹



Performance

Get a premium computing experience with optimized performance and battery life for increased productivity.



Security

Help protect your business with endpoint security features that have a deeper layer of built-in protection.





Manageability

Powerful PC management now possible with remote management solutions.



Stability

Experience improved stability to help simplify PC lifecycle complexity.

Learn More About the Intel vPro® Platform and Solutions



Solutions for the Modern Business

Explore how Intel vPro® platform solutions increase productivity, manageability, and security for your business.

[Read the infographic](#)



A Foundation for Digital Transformation

Deliver powerful performance, hardware-enhanced security, and new levels of productivity with the Intel vPro® platform.

[Read the brief](#)



Economic Impact of the Intel vPro® Platform

Read this Forrester study on the economic impact of the Intel vPro® platform.




[Read the Forrester TEI report](#)



The Economic Case for the Intel vPro® Platform

This white paper describes how the Intel vPro® platform can reduce TCO by impacting the lifetime incident profile for an installed base of computing endpoints.

[Read the white paper](#)

USA (English)   

Atos

Estimate Total Cost of Ownership for PC Deployments

Use the Intel vPro® platform TCO Estimator to discover the potential savings from deploying devices based on the Intel vPro® platform.

[Go to the estimator](#)

Cloud-Based Unified Endpoint Management Empowers the Enterprise

Atos and Intel's cloud-based unified endpoint management solution helps admin remotely manage PCs with the Intel vPro® platform.

[Read the solution brief](#)



Advantages from Upgrading with the Intel vPro® Platform

Newer hardware powered by Intel vPro® brings huge advantages in TCO, productivity, security, and manageability.

[Read the brief](#)

Transform Your Business with the Intel vPro® Platform



Intel vPro® Platform Helps Law Firm Keep Data Secure

Intel® Core™ vPro® processor-based laptops help employees at the law firm - Lancaster, Brooks & Welch LLP to be mobile, efficient, and productive, delivering exceptional customer service.

[Read the case study](#)



Intel vPro® Platform Helps Lightbridge Academy Focus on Future

Intel® Core™ vPro® processor-based PCs help the Lightbridge Academy stay productive while helping to develop the leaders of tomorrow today.

[Read the case study](#)

BUILT FOR BUSINESS INNOVATION

Transform computing endpoints into strategic corporate assets by selecting devices built on the Intel vPro® platform.



Get Unmatched Identity Protection

Intel® Authenticate Solution provides easy-to-deploy end-to-end hardware-enhanced identity protection and customizable Multifactor Authentication (MFA).

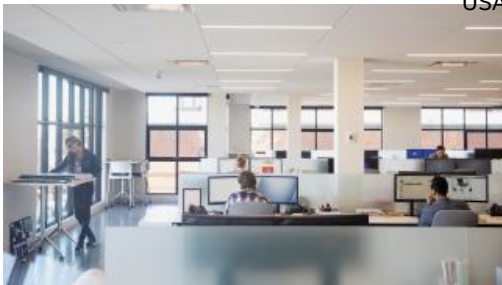
[Learn more about Intel® Authenticate Solution](#)



Simplify Remote Management

Save time and reduce on-site support costs with remote discovery and recovery with Intel® Active Management Technology – even in cases of power loss or OS failure.

[Learn more about Intel® Active Management Technology](#)



PC Lifecycle Management with Intel® Stable Image Platform Program (Intel® SIPP)

Intel® Stable Image Platform Program (Intel® SIPP) enables a predictable transition from one technology generation to the next.

Learn more about Intel® Stable Image Platform Program (Intel® SIPP)

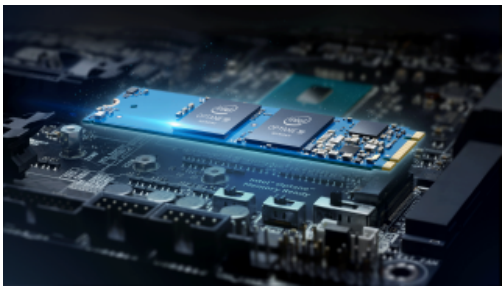
Related Products and Solutions



Thunderbolt™ 3 Technology

Get a fast and simple connection for displays and devices through a single, compact port.

[Learn more](#)



Intel® Optane™ Memory

The first all-new class of memory in 25 years creates a bridge between the DRAM and storage to eliminate processing bottlenecks and improve performance in demanding applications.

[Learn more](#)



Enterprise Class SSDs

Designed for demanding business needs, Intel® 3D NAND SSD products provide reliable, high-speed storage with advanced security capabilities.

[Learn more](#)



Intel Unite® Solution

Make sure meetings start easily and on time—without calls to IT—with an extensible platform that streamlines existing tools and intelligent spaces. Intel Unite® solution makes workplace collaboration practical and scalable.

[Learn more](#)



Windows* 10 Migration with Intel vPro® Platform

Learn how new computers built on the Intel vPro® platform and Windows* 10 set a new pace for innovation.

[Learn more](#)






Processors Built on Intel vPro® Technology

New 8th Gen Intel® Core™ vPro® processor-based computers help meet business intelligence needs – to analyze, share, transform, and predict patterns fast.

[Shop now](#)



Intel® Wi-Fi 6 (GIG+) Technology

USA (English)   

See how Intel® Wi-Fi 6 (GIG+) can create a WiFi-only workplace to reduce costs, increase performance, and improve security.

[Learn more](#)

Read What Our Partners are Saying About the Latest Intel® Core™ vPro® Processor



"Accenture will take advantage of the next wave of security and manageability advancements in the latest Intel® Core™ vPro® processor. These developments coupled with Accenture solutions will help clients transform their business in the cloud and bring new innovative services to market on their journey to digital transformation." – Jack Sepple, Accenture Cloud, and Accenture Operations Group Technology Officer.

"Intel is delivering the next wave of innovation with the latest Intel® Core™ vPro® processor with advanced security capabilities, new management features, and performance designed to be a catalyst for the digital transformation." – John J. Minnick, senior director, Global Strategic Technology Partner Team, Atos, Inc.



"Technology leaders require devices that deliver productivity for employees while providing IT the management and security capabilities for maximum PC uptime and increased protection against threats. The latest Intel® Core™ vPro® processor with CompuCom's End-User Orchestrator™ solution delivers productivity, remote manageability, and security to drive increased value for customers." – Justin Mennen, CIO at CompuCom.



Product and Performance Information

USA (English)   

¹ Intel® technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No product or component can be absolutely secure. Check with your system manufacturer or retailer or learn more at <https://www.intel.com>

Company Information

Our Commitment

Communities


Investor Relations

Contact Us

Newsroom

Jobs









© Intel Corporation

Terms of Use

*Trademarks

Privacy

Cookies

Supply Chain Transparency

Site Map



MENU



Intel® Active Management Technology Developers Guide

Enviado em agosto 10, 2016

Welcome to the Intel® Active Management Technology (Intel® AMT) Developers Guide. The goal of this guide is to simplify the adoption of Intel AMT functionality by IT technicians and developers.

What is Intel® vPro™ Technology?

Intel® vPro™ technology is a marketing term that includes a variety of underlying technologies. Some of those technologies are Intel AMT, Intel® Virtualization Technology (Intel® VT), and Intel® Trusted Execution Technology (Intel® TXT).

While Intel vPro technology is conveniently built into the devices, some of its unique features require action to deploy them, based on the organization's needs and policies. Thanks to Intel® Setup and Configuration Software, IT managers can configure Intel AMT in a matter of minutes for the purpose of remote management.

As Intel vPro is primarily hardware, a device cannot be upgraded to the Intel vPro specification after purchase. This technology comprises multiple components:

- Intel vPro enabled processor
- Chipset

- Wired and wireless LAN adapters
- OEM BIOS enablement

What is Intel® AMT?

Intel AMT is built into the Intel vPro processor family, consisting of the Intel® Core™ i5 processor, Intel® Core™ i7 processor, Intel® Core™ M processor and Intel® Xeon® processor family products (Windows* Client OS only), Intel® chipsets, and network adapters that solve these critical IT challenges.

Intel AMT can be found on devices outside of the Intel vPro family, however only vPro devices can be configured for remote management. The configuration process is what allows the device to be accessed for the purpose of in-band and out-of-band remote access.

Configuration can enable a wide variety of features, such as:

- Discovery
- General information
- Hardware asset information
- KVM
- SOL Redirection
- Storage Redirection
- Remote access
- Remote control
- User consent
- Agent presence
- Alarm clock
- Event manager

- Fast call for help
- System defense
- Eventing and alerting

*No product or component can be absolutely secure.

- **Desenvolvedores de hardware**

- [Firmware](#)
- [Modelagem e simulação](#)
- [Centro de design e recursos](#)
- [Compre na Intel](#)

- **Gerencie suas ferramentas**

- [Centro de download](#)
- [Suporte prioritário](#)
- [Centro de registro](#)

- **Código aberto**

- [01.org](#)
- [GitHub*](#)

- **Conecte-se**

- [Fóruns](#)
- [Conheça os especialistas](#)
- [Boletim Informativo](#)
- [Atualizações recentes](#)
- [Canal no YouTube*](#)

 [Obtenha o boletim informativo](#)

Siga-nos:



[Termos de Uso](#)

[*Marcas comerciais](#)

[Privacidade](#)

[Cookies](#)

[Preferências de email](#)

Intel® vPro™ Platforms/Intel® Active Management Technology (Intel® AMT) Lab Setup Guide Video



Documentation

Content Type	Install & Setup
Article ID	000026592
Last Reviewed	06/21/2019

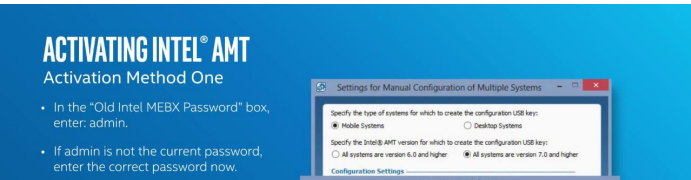
This animated video is a guide on how you can quickly set up a lab environment for Intel® vPro™ Platforms specifically focusing on Intel® Active Management Technology (Intel® AMT). This step-by-step guide shows you how to:

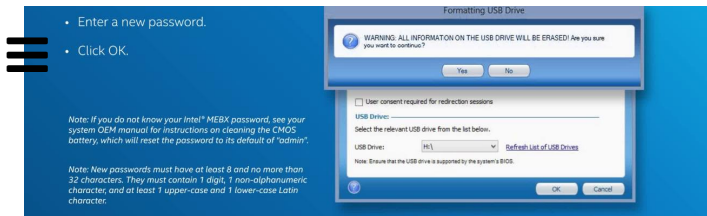

- Identify systems with Intel® AMT.
- Activate and set up a lab environment to test use cases with Intel AMT.
- Manage systems with Intel AMT illustrating the top three system management use cases.

Contact your system manufacturer or Intel Sales to ask for help with activating your entire fleet or environment of Intel vPro Platforms that contain Intel AMT if:

- You need assistance.
- You have questions after completing your lab work.

A specialist for Intel vPro Platforms can guide you in selecting the activation model that best fits your environment.



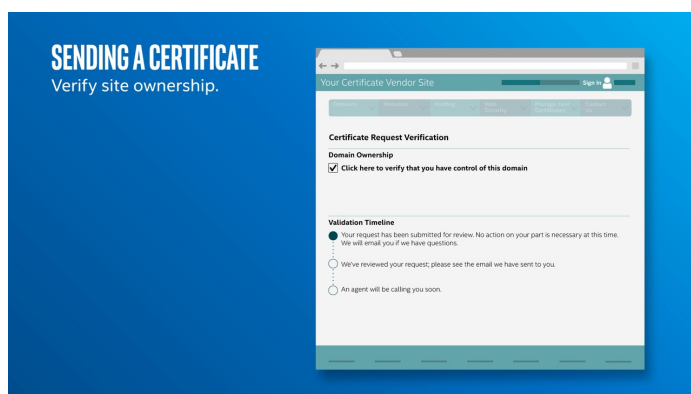
USA (English)   [To download full video](#)

Intel® vPro™ Technology / Intel® Active Management Technology (Intel® AMT) Certificate Setup and Configuration

Intel® Active Management Technology (Intel® AMT), a feature of Intel® vPro™ technology, offers a wide range of built-in capabilities and plug-ins for management and security applications. These capabilities and plug-ins allow IT to better discover, heal, and protect their network computing assets. In order to take advantage of these capabilities, a client Intel® AMT computer must first be set up and configured to work in the enterprise network. This state is commonly referred to as **being provisioned**. You can use different methods to provision a client system.

Some provisioning methods require physical interaction with the client system. However, remote configuration is a provisioning option that allows a client system to be provisioned with zero physical interaction. Remote configuration is ideal for systems that have already been deployed into an environment, but haven't yet been provisioned, allowing IT to provision systems without visiting each system individually.

To use remote configuration for provisioning a system, you need a special remote configuration (RCFG) certificate. This video gives a step-by-step procedure on how to set up the remote configuration certificate. It explains what certificate vendors support the Intel® vPro™ technology/Intel® AMT. The video shows you how to acquire, set up, and install the certificate for remote configuration.

[To download full video](#)

Intel® vPro™ Technology / Intel® Active Management Technology (Intel® AMT) with Wireless Configuration

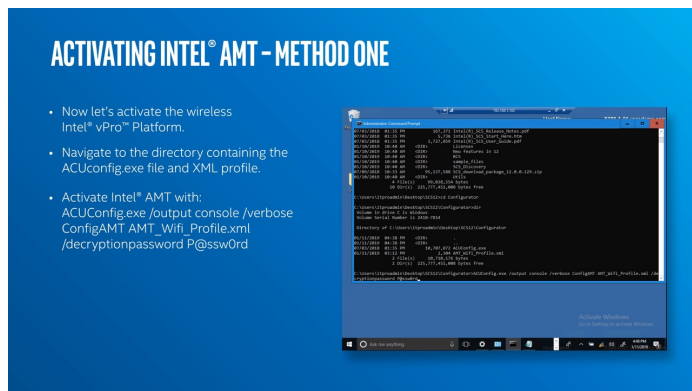
USA (English)



Intel® Active Management Technology (Intel® AMT) supports wired and wireless networks. For wireless devices on battery or AC power, out-of-band (OOB) communication is available when the system is connected to the corporate network, even if the OS is down. OOB communication is also available for wireless or wired notebooks that are connected to the corporate network over a host OS-based virtual private network (VPN) when notebooks are working properly.

Wireless Intel® Active Management Technology (Intel® AMT) interfaces are disabled by default and must be enabled and configured with a wireless profile. This wireless profile is pushed to the client using one of several methods. This video describes how to:

- Activate Intel® Active Management Technology with wireless configuration.
- Manage Intel® Active Management Technology in both Admin and Client Control mode configurations.



To download full video

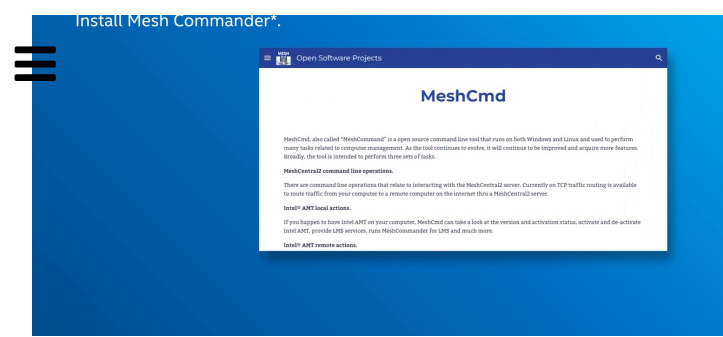
Intel® vPro™ Technology / Intel® Active Management Technology (Intel® AMT) with Linux*

Intel® Active Management Technology (Intel® AMT) Linux* support includes two components that allow interaction between the Intel® AMT FW and the Linux OS:

- Intel® MEI (Intel® Management Engine Interface) driver
- LMS (Local Management Service).

The Intel® MEI driver allows the application to communicate with the FW using host interface, and LMS allows applications to access the Intel® AMT FW through the local Intel® Management Engine Interface (Intel® MEI). In this video, we will show you how to activate the Intel® AMT and manage the device using the Mesh Commander application. The video will show it running on the Ubuntu* operating system.





To download full video

Related topic

Intel® Setup and Configuration Software (Intel® SCS) doesn't store AMT passwords in the Database when using Database Mode.

Related Products

Intel® Active Management Technology (Intel® AMT)

Intel® vPro™ Platform


Need more help?

Contact support

Give Feedback

Company Information

Our Commitment

 Communities

USA (English)   

Investor Relations

Contact Us

Newsroom

Jobs



© Intel Corporation

Terms of Use

*Trademarks

Privacy

Cookies

Supply Chain Transparency

Site Map



Office Professional 2019

Microsoft Corporation

★★★★★

R\$2.159,00

Comprar agora

- Compra avulsa para um computador
- Versões clássicas de 2019 dos aplicativos Word, Excel, PowerPoint e Outlook, além do Publisher e o Access
- Suporte da Microsoft incluído por 60 dias, sem custo adicional
- Licenciado para uso comercial e doméstico

Todos os idiomas incluídos. Compatível com Windows 10*

*Para ver as versões compatíveis do Windows 10 e outros requisitos de recurso, acesse office.com/systemrequirements.

Visão geral

Requisitos

FAQ

Opiniões

Principais recursos

Os itens essenciais para fazer tudo. O Office Professional 2019 é destinado a pequenas empresas em expansão que desejam os aplicativos clássicos do Office, além do Outlook, do OneDrive, do Publisher e do Access¹. Uma compra única instalada em 1 PC para uso no trabalho.

Uma compra
única

Instale em um PC

Aplicativos
clássicos do
Office



Word



Excel



PowerPoint



Outlook



Publisher



Access

Não encontrou o aplicativo de que você precisa? [Exibir todas as opções](#)

Principais perguntas

> Qual é a diferença entre o Office 365 e o Office 2019?

> Como sei se o meu computador/dispositivo móvel/navegador pode executar o Office?

➤ Preciso de acesso à Internet para usar o Office?

➤ Como baixar, instalar, reinstalar, ativar ou atualizar o Office?

➤ As pessoas que usam versões anteriores do Office podem abrir os documentos que eu criei com o Office 365 ou o Office 2019?

➤ Existem tutoriais sobre como usar os aplicativos e serviços do Office?

➤ Consulte todas as nossas perguntas frequentes, pesquise nossos artigos abrangentes do Suporte do Office ou fale com um especialista.

EXIBIR TUDO >

[1] Publisher e Access apenas para PC

EPEAT Registry

Your Resource for Sustainable Electronics

HP Z8 G4 Workstation (ENERGY STAR)

PRODUCT SUMMARY:

Product Type:	Workstation
Country:	Brazil
Manufacturer:	HP
EPEAT Rating:	Silver
Registration Date:	2019-02-26
Product Status:	Active
Exceptions:	
Manufacturer Part Number(s):	

EPEAT RATING SCORE DETAIL

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. [Click here](#) to see a list of the required criteria for this product category.

This product has met the necessary required criteria

~~This product has met the necessary required criteria.~~

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

- Products that meet all required criteria and achieve less than 50% of the optional points are rated at **EPEAT Bronze**.
- Products that meet all required criteria and achieve 50 - 74% of the optional points are rated at **EPEAT Silver**.
- Products that meet all required criteria and achieve 75 - 100% of the optional points are rated at **EPEAT Gold**.

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
▼ 4.1 Substance Management	11 / 16
(4.1.2.1) Restrictions of the use of cadmium	1
(4.1.4.1) Restriction of the use of beryllium	1
(4.1.5.2) Further reduction of bromine and chlorine content of plastic materials	0
(4.1.6.1) Avoidance or elimination of substances on EU REACH Annex XIV (authorization list)	1
(4.1.6.2) Reduction of substances on the EU REACH Candidate List of SVHCs	0
(4.1.8.1) Chemical assessment and selection	0
(4.1.9.1) IEC 62474 declarable substances	1
(4.1.9.2) Requesting substance inventory	1
(4.1.9.3) Acquiring substance inventory	2
(4.1.10.1) Reduce fluorinated gas emissions from flat panel display manufacturing	2
(4.1.10.2) Reduce fluorinated greenhouse emissions from semiconductor production	2
▼ 4.2 Materials Selection	2 / 3
(4.2.1.2) Higher post-consumer recycled, ITE-derived post-consumer recycled plastic, or bio-based content	1
(4.2.1.3) Post-consumer recycled, ITE-derived post-consumer recycled plastic	1
▼ 4.4 Product longevity/life-cycle extension	1 / 2
(4.4.2.2) Publicly available service information	0
(4.4.2.5) Product upgradeability and repairability	1

▼ 4.5 Energy Conservation

▼ 4.6 Energy conservation	2 / 2
(4.5.1.3) Energy efficiency for internal power supplies	2
▼ 4.7 Packaging	1 / 2
(4.7.3.2) Packaging composed of recycled, and/or biobased, and/or sustainably forested content	0
(4.7.4.1) Offering of a bulk packaging option	1
▼ 4.8 Life cycle assessment and carbon footprint	6 / 6
(4.8.1.1) Product life cycle assessment and public disclosure of analyses	2
(4.8.1.2) Product specific greenhouse gas emissions—product carbon footprint	2
(4.8.2.1) Corporate carbon footprint	1
(4.8.2.2) Greenhouse gas emissions from product transport	1
▼ 4.9 Corporate Environmental Performance	7 / 9
(4.9.1.2) Third party certified environmental management system (EMS) for supplier manufacturing facilities	1
(4.9.2.2) Corporate environmental performance reporting by suppliers	1
(4.9.3.1) Energy management system/energy performance improvement – manufacturers	1
(4.9.3.2) Energy management system/energy performance improvement for suppliers	2
(4.9.4.1) Renewable energy use by manufacturer	2
(4.9.4.2) Renewable energy use by manufacturer suppliers	0
▼ 4.10 Corporate social responsibility	1 / 6
(4.10.1.1) Socially responsible supplier manufacturing: Labor	0
(4.10.1.2) Socially responsible manufacturing: OHS	0
(4.10.2.2) Participation in an in-region program that advances responsible sourcing of conflict minerals	1
(4.10.2.3) Smelter and refiner participation in OECD-aligned third party mechanisms	0
Total Optional Criteria Score	31 / 46

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us [\[mailto:lfernandez@greenelectronicscouncil.org\]](mailto:lfernandez@greenelectronicscouncil.org).

EPEAT Registry

Your Resource for Sustainable Electronics

HP Z27n G2 27-inch Monitor

PRODUCT SUMMARY:

Product Type:	Monitors
Country:	Brazil
Manufacturer:	HP Inc.
EPEAT Rating:	Gold
Registration Date:	2017-12-06
Product Status:	Active
Exceptions:	
Manufacturer Part Number(s):	

EPEAT RATING SCORE DETAIL

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria.

This product has met the necessary required criteria

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

- Products that meet all required criteria and achieve less than 50% of the optional points are rated at **EPEAT Bronze**.
- Products that meet all required criteria and achieve 50 - 74% of the optional points are rated at **EPEAT Silver**.
- Products that meet all required criteria and achieve 75 - 100% of the optional points are rated at **EPEAT Gold**.

Score Details are not available. Contact [EPEAT \[mailto:info@greenelectronicscouncil.org\]](mailto:info@greenelectronicscouncil.org) directly to obtain score details for this product.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us [\[mailto:lfernandez@greenelectronicscouncil.org\]](mailto:lfernandez@greenelectronicscouncil.org).



Microsoft

Hardware certification report **Approved**

Private product ID: **14473375303243457**
Shared product ID: **1152921504607413198**
Submission ID: **1152921504627396447**
Submission date: **1/29/2018**
Completion date: **1/29/2018**
Company: **HP Inc.**
Product name: **Z8G4 RS3 Logo**
Category: **System**
Product type: **Desktop**
Qualification level: **Certified for Microsoft Windows 10 Client family version 1709, x64**
Marketing name: **HP Z8 G4 Workstation**



Microsoft

Hardware certification report **Approved**

Private product ID: **13572960123081032**
Shared product ID: **1152921504607340431**
Submission ID: **1152921504627032355**
Submission date: **9/18/2017**
Completion date: **9/18/2017**
Company: **HP Inc.**
Product name: **HP Z27n G2 Display**
Category: **Device**
Product type: **Monitor**
Qualification level: **Certified for Microsoft Windows 10 Client family version 1703, x64**
Certified for Microsoft Windows 10 Client family version 1703, x86
Logo - Device - Compatible with Windows 7
Logo - Device - Compatible with Windows 7 x64
Certified for Microsoft Windows 8 Client family, x86
Certified for Microsoft Windows 8 Client family, x64
Certified for Microsoft Windows 8.1 Client family, x86
Certified for Microsoft Windows 8.1 Client family, x64
Signature Only - Microsoft Windows Vista family, x86
Signature Only - Microsoft Windows Vista family, x64
Marketing name: **N/A**



ENERGY STAR CERTIFIED Computers

HP - HP Z8 G4 Workstation ENERGY STAR : Z8 G4

Specifications

Brand Name:	HP
Model Name:	HP Z8 G4 Workstation ENERGY STAR
Model Number:	Z8 G4
Type:	Workstation
Workstations: Processor Brand:	Intel
Workstations: Processor Name:	Xeon
Workstations: Operating System Name:	Windows 10
Workstations: Base Processor Speed Per Core (GHz):	2.5
Workstations: System Memory (GB):	128
Workstations: Graphics Category:	G7
Workstations: Hard Drives (count):	1
Workstations: Off Mode (watts):	5.7
Workstations: Sleep Mode (watts):	10.6
Workstations: Long Idle (watts):	98.0
Workstations: Short Idle (watts):	100.1
Workstations: Weighted Power of Model (watts):	57.8
Sleep Mode Default Time Upon Shipment (min.):	30
Display Sleep Mode Default Time Upon Shipment (min.):	10
WOL (Wake on LAN) From Sleep:	Shipped Enabled Under All Conditions
Will the Speed of Any Active 1 GB/s or Higher Ethernet Network Links be Reduced to Less Than 1 GB/s When Transitioning to Sleep or Off Mode?:	Yes
Ethernet Capability:	Yes
Date Available On Market:	2017-10-16
Date Certified:	2018-09-20
Markets:	United States, Taiwan, Canada
ENERGY STAR Certified:	Yes

Additional Model Information

Captured On:

08/29/2019



ENERGY STAR CERTIFIED Displays

HP - HP Z27n G2 27-inch Display : Z27n G2

Specifications

Brand Name:	HP
Model Name:	HP Z27n G2 27-inch Display
Model Number:	Z27n G2
Display Type:	Monitor
Screen Size (inches):	27.0
Screen Area (square inches):	310.47
Native Resolution (pixels):	2560 x 1440
Total Native Resolution (megapixels):	3.7
Backlight Technology:	LED
Model Features:	None
Signal or Data Interfaces:	HDMI 1.4,DisplayPort 1.2,USB-3.1 C,DVI
Power Source:	Ac power supply
On Mode Power (watts):	24.89
Markets:	United States, Taiwan, Japan, Canada
Features Enabled in Default On Mode:	None
Sleep Mode Power (watts):	0.46
Features Enabled in Default Sleep Mode:	None
Off Mode Power (watts):	0.14
Monitor Total Energy Consumption at 115 Volts (kWh/yr):	78.93
Maximum Total Energy Consumption Limit for Monitor Certification (kWh/yr):	81.3
Maximum Luminance (candelas per square meter):	375.0
Enhanced-Performance Display?:	EPD I (32.9% CIE LUV/99% sRGB area or greater)
Display Contrast Ratio at 0 deg. Horiz. Viewing Angle:	1000
Reported Contrast Ratio at -85 Degrees (Left) Horizontal Viewing Angle:	89
Reported Contrast Ratio at +85 Degrees (Right) Horizontal Viewing Angle:	89
ENERGY STAR Certified:	Yes

Additional Model Information

Captured On:
08/29/2019



DECLARATION OF CONFORMITY
according to ISO/IEC 17050-1 and EN 17050-1

DoC #: HSTND-9691-L- R1 Original/en

Manufacturer's Name: HP Inc.
Manufacturer's Address: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

declare, under its sole responsibility that the product

Product Name and Model:²⁾ HP Z27n G2
Regulatory Model Number:¹⁾ HSTND-9691-L
Product Options: None

conforms to the following Product Specifications and Regulations:

Safety

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

Ecodesign

Regulation (EC) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

The product herewith complies with the requirements of the Low Voltage Directive 2014/35/EU, the EMC Directive 2014/30/EU, the Ecodesign Directive 2009/125/EC, the RoHS Directive 2011/65/EU and carries the **CE**-marking accordingly.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Additional Information:

- 1) This product is assigned a Regulatory Model Number which stays with the regulatory aspects of the design. The Regulatory Model Number is the main product identifier in the regulatory documentation and test reports, this number should not be confused with the marketing name or the product numbers.
- 2) This product was tested in a typical HP environment.

Palo Alto, CA
26-09-2016


Gilles Soulard, Manager
Product Compliance Center



HP Inc.
1501 Page Mill Road, Palo Alto, CA
Gilles Soulard, Manager
Product Compliance Center

Local contact for regulatory topics only:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

<http://www.hp.eu/certificates>



KONFORMITÄTSERKLÄRUNG
nach ISO / IEC 17050-1 und EN 17050-1

DoC #: HSTND-9691-L-R1Übersetzung/de

Herstellername:

HP Inc.

Adresse des Herstellers:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

erklärt, dass das Produkt

Produktname und Modell:²⁾

HP Z27n G2

Regulatorische Model Nummer:¹⁾

HSTND-9691-L

Produktoptionen:

Keine Optionen

entspricht den folgenden Produktspezifikationen und Vorschriften:

Sicherheit:

IEC 60950-1:2005 +A1:2009 +A2:2013

EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011

+A2:2013 /+AC:2011

EN 62479:2010

EMV

EN 55032:2012 Class B

EN 55024:2010

EN 61000-3-2:2014

EN 61000-3-3:2013

FCC CFR 47 Part 15

ICES-003, Issue 6

Öko-Design

Verordnung (EG) Nr. 1275/2008

EN 50564:2011

IEC 62301:2011

RoHS

EN 50581:2012

Das Produkt erfüllt die Anforderungen der Niederspannungsrichtlinie 2014/35/EU, der EMV-Richtlinie 2014/30/EU, die Ökodesign-Richtlinie 2009/125/EG, die RoHS-Richtlinie 2011/65/EU und trägt das **CE**-Kennzeichnung entsprechend.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Zusätzliche Information:

- 1) Für die regulatorischen Aspekte zum Design wurde diesem Produkt eine Regulatorische Model Nummer zugeordnet. Zur Produktidentifizierung in der regulatorischen Dokumentation und den Prüfberichten wird diese Regulatorische Model Nummer verwendet und sollte nicht zu Verwechslungen von Marketingnamen oder Produktnummern führen.
- 2) Dieses Produkt wurde in einer typischen HP Konfiguration getestet.

Palo Alto, CA
26-09-2016

überprüfen Sie die Unterschrift auf der ursprünglichen

Erklärung beigefügt

Gilles Soulard, Manager
Product Compliance Center

Lokale Ansprechpartner für Richtlinien und Bestimmungen:

EU:

HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

U.S.:

HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DÉCLARATION DE CONFORMITÉ
selon la norme ISO / IEC 17050-1 et EN 17050-1

DoC #: HSTND-9691-L-R1Traduction/fr

Nom du fabricant:

HP Inc.

Adresse du fabricant:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

déclare que le produit

Nom du produit et le modèle:²⁾ HP Z27n G2

Numéro de modèle réglementaire:¹⁾ HSTND-9691-L

Options du produit: Pas d'options

est conforme aux normes et règlements de produit suivantes:

Sécurité:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

écoconception

Règlement (UE) n° 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Ce produit est conforme aux exigences de la Directive Basse Tension 2014/35/UE, la directive CEM 2014/30/UE, la directive sur l'écoconception 2009/125/CE, la directive RoHS 2011/65/UE et porte la marque **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informations complémentaires:

- 1) A ce produit est assigné un numéro de modèle réglementaire qui reste avec les aspects réglementaires de la conception. Le numéro de modèle réglementaire est le principal identificateur de produit dans la documentation réglementaire et les rapports d'essais, ce nombre ne doit pas être confondu avec le nom commercial ou les numéros de produit.
- 2) Ce produit a été testé dans un environnement typique HP en conjonction avec un système hôte HP.

Palo Alto, CA
26-09-2016

vérifier la signature sur la déclaration d'origine annexé

Gilles Soulard, Manager
Product Compliance Center

Contact local pour les réglementations uniquement:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DICHIARAZIONE DI CONFORMITA'
secondo la norma ISO / IEC 17050-1 e EN 17050-1

DoC #: HSTND-9691-L-R1Traduzione/it

Nome del Fornitore:
Indirizzo del Fornitore:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

dichiara che il prodotto

Nome del prodotto e modello:²⁾ HP Z27n G2
Numero di modello normativo:¹⁾ HSTND-9691-L
Opzioni del prodotto: Nessuna opzione

è conforme alle seguenti specifiche e regolamenti di prodotto:

Sicurezza

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

Ecodesign

Regolamento (CE) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Questo prodotto è conforme ai requisiti della direttiva Bassa Tensione 2014/35/UE, la direttiva EMC 2014/30/UE, la direttiva sulla Progettazione Ecocompatibile 2009/125/CE, la direttiva RoHS 2011/65/UE e porta il marchio **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informazioni aggiuntive:

- 1) A questo prodotto è assegnato un Numero di modello normativo (RMN) che rimane con gli aspetti normativi della progettazione. Il numero di modello normativo è l'identificativo principale del prodotto nella documentazione normativa e rapporti di prova, questo numero non deve essere confuso con il nome commerciale o il numero di prodotto.
- 2) Questo prodotto è stato testato in un tipico ambiente HP.

Palo Alto, CA
26-09-2016

controllare la firma sulla dichiarazione originale allegata
Gilles Souldard, Manager
Product Compliance Center

Contatto locale solo per informazioni sulla conformità al marchio CE:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DECLARACIÓN DE CONFORMIDAD
según la norma ISO / IEC 17050-1 y EN 17050-1

DoC #: HSTND-9691-L-R1Traducción/es

Nombre del fabricante:
Dirección del fabricante:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

declara que el producto

Nombre del producto y modelo:²⁾ HP Z27n G2
Número de modelo reglamentario:¹⁾ HSTND-9691-L
Opciones del producto: Sin opciones

cumple con las siguientes especificaciones y normas de productos:

Seguridad:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

Diseño ecológico

Reglamento (CE) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Este producto cumple con los requisitos de la Directiva de baja tensión 2014/35/UE, la Directiva EMC 2014/30/UE, la Directiva sobre diseño ecológico 2009/125/CE, la Directiva RoHS 2011/65/UE y lleva la marca **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Información Adicional:

- 1) A este producto se asigna un número de modelo regulatorio que cumple con los aspectos regulatorios del diseño. El número de modelo normativo es el identificador principal del producto en la documentación reglamentaria e informes de ensayo, este número no se debe confundir con el nombre comercial o los números del producto.
- 2) Este producto se ha probado en un entorno típico de HP.

Palo Alto, CA
26-09-2016

comprobar la firma de la primera declaración anexa

Gilles Soulard, Manager
Product Compliance Center

Contacto local únicamente para temas de normativa:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DEKLARACJA ZGODNOŚCI
zgodnie z normą ISO / IEC 17050-1 i EN 17050-1

DoC #: HSTND-9691-L-R1Tłumaczenie/pl

Nazwa producenta:

HP Inc.

Adres producenta:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

oświadcza, że produkt

Nazwa produktu i modelu:²⁾

HP Z27n G2

Numer modelu:¹⁾

HSTND-9691-L

Opcje produktu:

Brak opcji

jest zgodny z następującymi specyfikacjami produktu i rozporządzeń:

Bezpieczeństwo:

IEC 60950-1:2005 +A1:2009 +A2:2013

EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011

+A2:2013 /+AC:2011

EN 62479:2010

EMC

EN 55032:2012 Class B

EN 55024:2010

EN 61000-3-2:2014

EN 61000-3-3:2013

FCC CFR 47 Part 15

ICES-003, Issue 6

Ekoprojektu

Rozporządzenie (WE) nr 1275/2008

EN 50564:2011

IEC 62301:2011

RoHS

EN 50581:2012

Niniejszy produkt jest zgodny z wymaganiami Dyrektywa o niskim napięciu 2014/35/WE, Dyrektywa EMC 2014/30/WE, Dyrektywa w sprawie ekoprojektu 2009/125/WE, Dyrektywa RoHS 2011/65/WE i posiada odpowiednio oznakowanie **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatkowe informacje:

- 1) Produkt ten został przypisany numer modelu z aspektów regulacyjnych projekt. Numer modelu jest głównym identyfikatorem produktu w dokumentacji normatywnej i raporty z badań, liczba ta nie powinna być mylona z nazwą handlową lub też liczby produktów.
- 2) Produkt był testowany w typowym środowisku HP, w połączeniu z systemem gospodarza HP.

Palo Alto, CA

26-09-2016

sprawdzić podpis na oryginale deklaracji załączonej

Gilles Soulard, Manager

Product Compliance Center

Lokalny kontakt na temat przepisów:

EU:

HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

U.S.:

HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DECLARAȚIE DE CONFORMITATE
în conformitate cu ISO / IEC 17050-1 și EN 17050-1

DoC #: HSTND-9691-L-R1Traducere/ro

producătorului Nume:
Adresa producătorului:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

declară că produsul

Nume produs și model:²⁾ HP Z27n G2
Numărul de model de reglementare:¹⁾ HSTND-9691-L
Opțiuni de produse: Nu există opțiuni

în conformitate cu următoarele specificații și regulamentelor de produse:

Siguranță:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

ecodesign

Regulamentul (CE) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Produsul prezentat aici, corespunde cu cerințele Directivei de joasă tensiune 2014/35/UE, la Directiva EMC 2014/30/UE, Directiva privind proiectarea ecologică 2009/125/CE, la Directiva RoHS 2011/65/UE și poartă marcajul **CE** în consecință.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informații suplimentare:

- 1) Acest produs este atribuit un număr de model de reglementare care rămâne cu aspectele de reglementare ale proiectare. Numărul de model de reglementare este identificatorul principal produs în documentația de reglementare și rapoarte de încercare, acest număr nu trebuie confundat cu numele de marketing sau umerele de produs.
- 2) Acest produs a fost testat într-un mediu tipic HP împreună cu un sistem gazdă HP.

Palo Alto, CA
26-09-2016

verifica semnătura de pe declarația inițială anexat
Gilles Soulard, Manager
Product Compliance Center

Local de contact pentru subiecte de reglementare numai:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



CONFORMITEITSVERKLARING
volgens ISO / IEC 17050-1 en EN 17050-1

DoC #: HSTND-9691-L-R1Vertaling/nl

Naam van de fabrikant:

HP Inc.

Adres van de fabrikant:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

verklaart, dat het product

Naam van het product en model:²⁾ HP Z27n G2

Regulatory Model Number:¹⁾ HSTND-9691-L

Product opties: Geen opties

voldoet aan de volgende productspecificaties en wetgeving:

Veiligheid:

IEC 60950-1:2005 +A1:2009 +A2:2013

EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011

+A2:2013 /+AC:2011

EN 62479:2010

EMC

EN 55032:2012 Class B

EN 55024:2010

EN 61000-3-2:2014

EN 61000-3-3:2013

FCC CFR 47 Part 15

ICES-003, Issue 6

ecodesign

Verordening (EG) nr 1275/2008

EN 50564:2011

IEC 62301:2011

RoHS

EN 50581:2012

Het product voldoet aan de eisen van de LVD-richtlijn 2014/35/EU, de EMV-Richtlijn 2014/30/EU, de Ökodesign-Richtlijn 2009/125/EG, de RoHS-Richtlijn 2011/65/EU en draagt het k **CE**-keurmer.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Extra informatie:

- 1) Dit product is voorzien van een wettelijk modelnummer die blijft bij de regelgevende aspecten van de ontwerp. Het voorgeschreven modelnummer is het belangrijkste product-id in de regelgeving documentatie en testrapporten, moet dit nummer niet verwarren met de merknaam of de productnummers.
- 2) Dit product werd getest in het HP-omgeving in combinatie met een HP hostsysteem.

Palo Alto, CA
26-09-2016

controleren van een handtekening op het oorspronkelijke
verklaring gehecht
Gilles Soulard, Manager
Product Compliance Center

Lokale contactpersoon voor mbtvoorschriften:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



MEGFELELŐSÉGI NYILATKOZAT
az ISO / IEC 17050-1 és EN 17050-1

DoC #: HSTND-9691-L-R1Fordítás/hu

A gyártó neve:

HP Inc.

Gyártó címe:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

kijelenti, hogy a termék

A termék neve és a modell:²⁾

HP Z27n G2

Szabályozási Modell száma:¹⁾

HSTND-9691-L

Termék opciók:

Nincs lehetőség

megfelel az alábbi termék dokumentáció és rendeletek:

Biztonság:

IEC 60950-1:2005 +A1:2009 +A2:2013

EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011

+A2:2013 /+AC:2011

EN 62479:2010

EMC

EN 55032:2012 Class B

EN 55024:2010

EN 61000-3-2:2014

EN 61000-3-3:2013

FCC CFR 47 Part 15

ICES-003, Issue 6

Környezetbarát tervezési

Rendelet (EC) No. 1275/2008

EN 50564:2011

IEC 62301:2011

RoHS

EN 50581:2012

A termék eleget tesz az alacsony feszültségre vonatkozó 2014/35/EU irányelv, az EMÖ 2014/30/EU irányelv, a környezetbarát tervezésről szóló 2009/125/EK irányelv, az RoHS 2011/65/EU irányelv viseli a **CE** jelzést viseli.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

További információ:

- 1) Ez a termék tartozik egy hatósági azonosítási típuszám ami marad szabályozási szempontból a design. A szabályozási modellszámmal a fő termék azonosítóját a szabályozási dokumentációban és vizsgálati jelentések, ez a szám nem keverendő össze a kereskedelmi névvel vagy a termék számokat.
- 2) Ez a termék tesztelése egy tipikus HP környezetben együtt egy HP gazda rendszert.

Palo Alto, CA

26-09-2016

ellenőrzi az aláírást az eredeti nyilatkozatot mellékelt

Gilles Soulard, Manager

Product Compliance Center

Helyi kapcsolattartó a jogi tudnivalókkal:

EU:

HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

U.S.:

HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DECLARAÇÃO DE CONFORMIDADE
de acordo com a ISO / IEC 17050-1 e EN 17050-1

DoC #: HSTND-9691-L-R1Tradução/pt

Nome do fabricante:
Endereço do fabricante:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

declara, que o produto

Nome do produto e modelo:²⁾ HP Z27n G2
Número de Modelo de Regulamentação:¹⁾ HSTND-9691-L
Opções do produto: Não há opções

está em conformidade com as seguintes especificações e regulamentos do produto:

Segurança:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

ecodesign

Regulamento (CE) n.º 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

O produto está em conformidade com os requisitos da a Directiva de Baixa Tensão 2014/35/UE, a Directiva EMC 2014/30/UE, a Directiva Ecodesign 2009/125/CE, a Directiva RoHS 2011/65/UE e leva a marca **CE** de acordo.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informações adicionais:

- 1) Este produto recebeu um Número de modelo de regulamentação que fica com os aspectos regulatórios do design. O Número de Modelo de Regulamentação é o identificador principal do produto na documentação regulamentar e relatórios de ensaio, este número não deve ser confundido com o nome comercial ou os números dos produtos.
- 2) Este produto foi testado em um ambiente típico de HP.

Palo Alto, CA
26-09-2016

verificar a assinatura na declaração original anexado

Gilles Soulard, Manager
Product Compliance Center

O contato local para tópicos regulamentares apenas:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ

σύμφωνα με το πρότυπο ISO / IEC 17050-1 και EN 17050-1

DoC #: HSTND-9691-L-R1 Μετάφραση/el

Όνομα κατασκευαστή:

HP Inc.

Διεύθυνση του κατασκευαστή:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

δηλώνει ότι το προϊόν

Όνομα προϊόντος και μοντέλου:²⁾ HP Z27n G2

Αριθμός Μοντέλο κατά τους κανονισμούς:¹⁾

HSTND-9691-L

Επιλογές Προϊόντος:

Δεν υπάρχουν επιλογές

συμμορφώνεται προς τις εξής προδιαγραφές και κανονισμοί:

Ασφάλεια:

IEC 60950-1:2005 +A1:2009 +A2:2013

EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011

+A2:2013 /+AC:2011

EN 62479:2010

EMC

EN 55032:2012 Class B

EN 55024:2010

EN 61000-3-2:2014

EN 61000-3-3:2013

FCC CFR 47 Part 15

ICES-003, Issue 6

οικολογικού σχεδιασμού

Κανονισμός (ΕΚ) αριθ 1275/2008

EN 50564:2011

IEC 62301:2011

RoHS

EN 50581:2012

Το παρόν προϊόν συμμορφώνεται με τις απαιτήσεις του η Οδηγία Χαμηλής Τάσης 2014/35/ΕΕ, η Οδηγία EMC 2014/30/ΕΕ, η Οδηγία για τον οικολογικό σχεδιασμό 2009/125/ΕΚ, η Οδηγία RoHS 2011/65/ΕΕ και φέρει τη σήμανση **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Πρόσθετες πληροφορίες:

- 1) Αυτό το προϊόν έχει εκχωρηθεί ένας ρυθμιστικός αριθμός μοντέλου που μένει με τις ρυθμιστικές πτυχές των σχεδιασμού. Ο αριθμός Ρυθμιστική μοντέλου είναι το κύριο αναγνωριστικό του προϊόντος με την κανονιστική τεκμηρίωση και εκθέσεις δοκιμών, ο αριθμός αυτός δεν πρέπει να συγχέεται με την εμπορική ονομασία ή τους αριθμούς προϊόντος.
- 2) Αυτό το προϊόν έχει δοκιμαστεί σε ένα τυπικό περιβάλλον HP.

Palo Alto, CA
26-09-2016

ελέγξε την υπογραφή για την αρχική δήλωση που

προσαρτάται

Gilles Soulard, Manager
Product Compliance Center

Τοπική επαφής για θέματα κανονισμών μόνο:

EU:

HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

U.S.:

HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



FÖRKLARING OM ÖVERENSSTÄMMELSE
i enlighet med ISO / IEC 17050-1 och EN 17050-1

DoC #: HSTND-9691-L-R1Översättning/sv

Tillverkarens namn:

HP Inc.

Tillverkarens adress:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

förklarar att produkten

Namn och modell:²⁾

HP Z27n G2

Regleringsmodellnummer:¹⁾

HSTND-9691-L

Produktalternativ:

Inga optioner

överensstämmer med följande produktspecifikationer och förordningar:

Säkerhet:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

ekodesign

Förordning (EG) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Produkten uppfyller därmed kraven i Lågspänningsdirektivet 2014/35/UE, EMC-direktivet 2014/30/UE, Ekodesigndirektivet 2009/125/CE, RoHS-direktivet 2011/65/UE och är **CE**-märkning i enlighet därmed.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ytterligare information:

- 1) Den här produkten har tilldelats ett kontrollmodellnummer som stannar med de regulatoriska aspekterna av design. Kontrollmodellnumret är den viktigaste produktbeteckning i lagstiftnings dokumentation och provningsrapporter, detta nummer ska inte förväxlas med produktnamn eller produktnummer.
- 2) Produkten testades i en typisk HP-miljö tillsammans med en HP-värdsystem.

Palo Alto, CA
26-09-2016

kontrollera signaturen på den ursprungliga deklARATIONEN som bifogas

Gilles Soulard, Manager
Product Compliance Center

Lokal kontakt ENDAST med frågor:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



PROHLÁŠENÍ O SHODĚ
podle normy ISO / IEC 17050-1 a ČSN EN 17050-1

DoC #: HSTND-9691-L-R1Překlad/cs

Jméno výrobce:

HP Inc.

Adresa výrobce:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

prohlašuje, že výrobek

Název produktu a model:²⁾

HP Z27n G2

Regulační číslo modelu:¹⁾

HSTND-9691-L

Možnosti výrobku:

Žádné volby

vyhovuje následujícím specifikacím a nařízení produktu:

Bezpečnost:

IEC 60950-1:2005 +A1:2009 +A2:2013

EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011

+A2:2013 /+AC:2011

EN 62479:2010

EMC

EN 55032:2012 Class B

EN 55024:2010

EN 61000-3-2:2014

EN 61000-3-3:2013

FCC CFR 47 Part 15

ICES-003, Issue 6

ekodesignu

Nařízení Rady (ES) č 1275/2008

EN 50564:2011

IEC 62301:2011

RoHS

EN 50581:2012

Tento výrobek splňuje požadavky Směrnice o nízkém napětí 2014/35/UE, Směrnice EMC 2014/30/UE, Směrnice o ekodesignu 2009/125/CE, Směrnice RoHS 2011/65/UE a nese označení CE v souladu s **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Další informace:

- 1) Tento produkt je přiděleno regulační číslo modelu, který zůstává s regulačními aspekty konstrukce. Počet Regulační model je hlavním identifikátorem produktu v regulační dokumentaci a protokoly o zkouškách, toto číslo by nemělo být zaměňováno s marketingovým názvem nebo čísla produktu.
- 2) Tento výrobek byl testován v typické prostředí HP ve spolupráci s hostitelským systémem HP.

Palo Alto, CA

26-09-2016

zkontrolovat podpis na původní prohlášení připojeném

Gilles Soulard, Manager
Product Compliance Center

Lokální kontakt pro informace pouze o směrnících:

EU:

HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

U.S.:

HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ
в съответствие с ISO / IEC 17050-1 и EN 17050-1

DoC #: HSTND-9691-L-R1Превод/bg

Наименование на производителя: **HP Inc.**
Производителя Адрес: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

заявява, че продуктът

Име на продукта и модел:²⁾ HP Z27n G2
Нормативен номер на модела:¹⁾ HSTND-9691-L
Опции на продукта: Няма опции

съответства на следните спецификации на продукта и регламенти:

Безопасност:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

екодизайна

Регламент (EC) № 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Този апарат в съответствие с изискванията на Директивата за ниско напрежение 2014/35/EC, Директивата EMC 2014/30/EC, Директивата за екодизайна 2009/125/OT, Директивата RoHS 2011/65/EC и носи маркировката съответно **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Допълнителна информация:

- 1) Този продукт има нормативен номер на модела, който остава с регулаторните аспекти на дизайн. Номер на Нормативен модел е идентификатора основен продукт в нормативната документация и протоколи от изпитвания, този брой не трябва да се бърка с пазарното име или номера на продукта.
- 2) Този продукт е изпробван в типична HP среда във връзка с хост система HP.

Palo Alto, CA
26-09-2016

проверка на подписа върху оригинала на декларацията,

приложена

Gilles Souldard, Manager
Product Compliance Center

Local контакт за регулаторни теми само:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



VYHLÁSENIE O ZHODE

podľa normy ISO / IEC 17050-1 a STN EN 17050-1

DoC #: HSTND-9691-L-R1Preklad/sk

Meno výrobcu:
adresa výrobcu:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

prehlasuje, že výrobok

Názov produktu a model:²⁾ HP Z27n G2
Regulačné číslo modelu:¹⁾ HSTND-9691-L
Možnosti výrobu: Žiadne voľby

spĺňa nasledujúce špecifikácie a nariadenia produktu:

Bezpečnosť:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

ekodizajne

Nariadenie Rady (ES) č 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Tento výrobok spĺňa požiadavky Smernice o nízkom napätí 2014/35/UE, Smernice EMC 2014/30/UE, Smernice o ekodizajne 2009/125/CE, Smernice RoHS 2011/65/UE a nesie označenie CE v súlade s **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ďalšie informácie:

- 1) Tento produkt je pridelené regulačné číslo modelu, ktorý zostáva s regulačnými aspektmi konštrukcie. Počet Regulačný model je hlavným identifikátorom produktu v regulačnej dokumentácii a protokoly o skúškach, toto číslo by sa nemalo zamieňať s marketingovým názvom alebo s výrobnými číslami.
- 2) Tento výrobok bol testovaný v typickej prostredí HP v spolupráci s hostiteľským systémom HP .

Palo Alto, CA
26-09-2016

skontrolovať podpis na pôvodnú vyhlásení pripojenom
Gilles Soulard, Manager
Product Compliance Center

Lokálne kontakty pre informácie iba o smerniciach:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



OVERENSSTEMMELSESERKLÆRING
i henhold til ISO / IEC 17050-1 og EN 17050-1

DoC #: HSTND-9691-L-R10 *oversættelse/da*

Producentens navn:
Producentens adresse:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

erklærer, at produktet

Produktnavn og Model:²⁾ HP Z27n G2
Lovpligtigt modelnummer:¹⁾ HSTND-9691-L
Produkt Valg: Ingen optioner

opfylder følgende produktspecifikationer og forordninger:

Sikkerhed:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

miljøvenligt design

Forordning (EF) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Produktet overholder kravene ilavspændingsdirektivet 2014/35/EU, EMC-direktivet 2014/30/EU, direktivet om miljøvenligt design 2009/125/EC, RoHS-direktivet 2011/65/EU og bærer **CE**-mærket i overensstemmelse hermed.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Yderligere information:

- 1) Dette produkt er tildelt et lovpligtigt modelnummer, som forbliver de lovgivningsmæssige aspekter af den design. Det lovpligtige modelnummer er det vigtigste produkt-id i den lovgivningsmæssige dokumentation og testrapporter, bør dette antal ikke forveksles med navn markedsføringen eller varenumre.
- 2) Dette produkt blev testet i en typisk HP-miljø i forbindelse med en HP host system.

Palo Alto, CA
26-09-2016

kontrollere signaturen på den oprindelige erklæring, der er

knyttet

Gilles Soulard, Manager
Product Compliance Center

Lokal kontaktperson for regulative emner:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



VAATIMUSTENMUKAISUUSVAKUUTUS

ISO / IEC 17050-1: n ja EN 17050-1

DoC #: HSTND-9691-L-R1Käännös/fi

Valmistajan nimi:
Valmistajan osoite:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

ilmoittaa, että tuote

Tuotteen nimi ja malli:²⁾ HP Z27n G2
Säädösmallinumero:¹⁾ HSTND-9691-L
Tuotevaihtoehdot: No vaihtoehdot

täyttää seuraavat tuotevaatimukset ja asetukset:

Turvallisuus:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

Ecodesign

Asetuksen (EY) N:o 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Tuote täyttää vaatimukset Pienjännitedirektiivin 2014/35/EU, EMC-direktiivin 2014/30/EU, Ekologista suunnittelua koskevan direktiivin 2009/125/EY, RoHS-direktiivin 2011/65/EU ja siinä on vastaava **CE**-merkintä.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Lisätiedot:

- 1) Tämä tuote on annettu virallinen numero, joka pysyy hallinnolliset näkökohdat suunnittelu. Säädöksiä koskeva mallinumero on tärkein tuotteen tunniste sääntely asiakirjat ja testausselostet, tätä numeroa ei pidä sekoittaa tuotteen nimeen tai tuotteen numeroita.
- 2) Tämä tuote testattu tyypillisessä HP ympäristöministeriö yhdessä HP isäntä järjestelmä.

Palo Alto, CA
26-09-2016

Tarkista allekirjoitus alkuperäisen ilmoituksen liitteenä

Gilles Soulard, Manager
Product Compliance Center

Paikallinen yhteyshenkilö säännöksistä antavat:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



ATITIKTIES DEKLARACIJA
pagal ISO / IEC 17050-1 ir EN 17050-1

DoC #: HSTND-9691-L-R1Vertimas/lt

Gamintojo pavadinimas:

HP Inc.

Gamintojo adresas:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

pareiškia, kad produktas

Produkto pavadinimas ir modelis:²⁾ HP Z27n G2

Normatyvinis modelio numeris:¹⁾ HSTND-9691-L

Prekės pasirinkimai: Nėra variantai

atitinka šias produkto specifikacijas ir reglamentų:

Sauga:

IEC 60950-1:2005 +A1:2009 +A2:2013

EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011

+A2:2013 /+AC:2011

EN 62479:2010

EMS

EN 55032:2012 Class B

EN 55024:2010

EN 61000-3-2:2014

EN 61000-3-3:2013

FCC CFR 47 Part 15

ICES-003, Issue 6

Ekologinio


Reglamentas (EB) Nr 1275/2008

EN 50564:2011

IEC 62301:2011

RoHS

EN 50581:2012

Šis gaminys atitinka reikalavimus, Žemų įtampų direktyva 2014/35/ES, EMS direktyva 2014/30/ES, Ekologinio projektavimo direktyva 2009/125/EB, RoHS direktyva 2011/65/ES ir yra pažymėtas  ženklui atitinkamai.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Papildoma informacija:

- 1) Šis produktas pažymėtas normatyviniu modelio numeriu, kuris lieka su reglamentavimo aspektų dizainas. Normatyvinis modelio numeris yra pagrindinė produkto identifikatorius reguliavimo dokumentus ir bandymų ataskaitos, šis skaičius neturėtų būti painiojamas su prekės pavadinimu arba gaminio numeriais.
- 2) Ši prekė buvo išbandytas standartinės HP aplinkoje kartu su HP priimančioji sistema.

Palo Alto, CA
26-09-2016

patikrinti parašą, pridėto pradinio deklaracijos
Gilles Soulard, Manager
Product Compliance Center

Vietinis kontaktas normatyviniais klausimais tik:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



SAMSVARSERKLÆRING

i henhold til ISO / IEC 17050-1 og EN 17050-1

DoC #: HSTND-9691-L-R10versettelse/no

Produsentens navn:
Produsentens adresse:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

erklærer at dette produktet

Produktnavn og modell:²⁾ HP Z27n G2
Forskriftsmessig modellnummer:¹⁾ HSTND-9691-L
Produktvalg: Ingen opsjoner

er i samsvar med følgende produktspesifikasjoner og forskrift:

Sikkerhet:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

økodesign

Forordning (EF) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Produktet er i samsvar med kravene i lavspenningsdirektiv 2014/35/EU, EMC-direktiv 2014/30/EU, den økodesign direktiv 2009/125/EF, RoHS-direktiv 2011/65/EU og bærer derfor **CE**-merket.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tilleggsinformasjon:

- 1) Dette produktet er tildelt et modellnummer som holder med de regulatoriske aspekter av design. Forskriftsmodellnummeret er den viktigste produkt-ID i regulatoriske dokumentasjon og testrapporter, bør dette nummeret ikke forveksles med markedsføringsnavnet eller produktnumrene.
- 2) Produktet ble testet i et typisk miljø HP i forbindelse med en HP-vertssystemet.

Palo Alto, CA
26-09-2016

siekk signaturen på originalerklæringen annektert
Gilles Soulard, Manager
Product Compliance Center

Lokal kontakt for spørsmål om forskrifter:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



IZJAVA O SKLADNOSTI

v skladu z ISO / IEC 17050-1 in EN 17050-1

DoC #: HSTND-9691-L-R1Prevajanje/sl

Ime proizvajalca:
Naslov proizvajalca:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

izjavlja, da izdelek

Ime izdelka in model:²⁾ HP Z27n G2
Upravna številka modela:¹⁾ HSTND-9691-L
Možnosti izdelka: Ni opcije

v skladu z naslednjimi specifikacijami in predpisi o izdelku:

Siguranță:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

okoljsko primerni zasnovi

Regulamentul (CE) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Izdelek je skladen z zahtevami Direktiva o nizki napetosti 2014/35/EU, Direktiva EMC 2014/30/EU, Direktiva o okoljsko primerni zasnovi 2009/125/ES, Direktiva RoHS 2011/65/EU in nosi oznako **CE** v skladu s tem.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatne informacije:

- 1) Ta izdelek je dodeljena upravna številka modela, ki ostane pri regulativnih vidikih zasnova. Število Regulativni model je glavni identifikator izdelka v regulativnem dokumentacije in poročila o preskusih, to število ne sme zamenjevati s tržnim imenom ali številkami izdelka.
- 2) Acest produs fost testat într-un Mediu tipic HP împreună cu un sistem Gazda HP.

Palo Alto, CA
26-09-2016

verifica semnătura de pe declarația inițială anexat
Gilles Soulard, Manager
Product Compliance Center

Lokalni kontakt za upravnimi temami:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



VASTAVUSDEKLARATSIOON
vastavalt ISO / IEC 17050-1 ja EN 17050-1

DoC #: HSTND-9691-L-R1Tõlkimine/et

Tootja nimi:
Tootja aadress:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

kinnitab, et toode

Toote nimi ja mudel:²⁾ HP Z27n G2
Normatiivne mudelinumber:¹⁾ HSTND-9691-L
Toote lisaseadmed: No valikud

vastab järgmistele tootespetsifikatsioonidele ja määrused:

Ohutus:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

Ökodisaini

Määruse (EÜ) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Käesolev toode vastab nõuetele Madalpinge direktiivi 2014/35/EL, EMC direktiivi 2014/30/EL, Ökodisaini direktiivi 2009/125/EÜ, RoHS direktiivi 2011/65/EL ning kannab **CE**-märgistusega.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Lisainfo:

- 1) See toode on määratud normatiivne mudelinumber mis jääb regulatiivsed aspektid disain. Normatiivne mudelinumber on peamine toode tunnuse reguleerivad dokumendid ja katseprotokollid, see number ei tohiks segamini ajada toote nime või toode numbrid.
- 2) See toode on testitud tüüpiliste HP keskkonnas koos HP vastuvõtva süsteemi .

Palo Alto, CA
26-09-2016

kontrollida allkirja esialgse deklaratsiooni lisatud
Gilles Soulard, Manager
Product Compliance Center

Kohalik kontakt Ainult normatiivsete küsimuste korral:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



IZJAVA O SUKLADNOSTI
u skladu s ISO / IEC 17050-1 i EN 17050-1

DoC #: HSTND-9691-L-R1Prijevod/hr

Naziv proizvođača:
Proizvođača adresa:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

izjavljuje da je proizvod

Naziv proizvoda i Model:²⁾ HP Z27n G2
Broj modela prema propisima:¹⁾ HSTND-9691-L
Mogućnosti proizvoda: Nema opcija

sukladan sljedećim specifikacijama proizvoda i propisa:

Sigurnost:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

Ekološki dizajn

Uredba (EZ) br 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Navedeni proizvod sukladan sa zahtjevima Direktiva o niskom naponu 2014/35/EU, EMC Direktivom 2014/30/EU, Ekološki dizajn Direktivom 2009/125/EC, RoHS Direktivom 2011/65/EU i nosi **CE** oznaka u skladu s tim.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatne informacije:

- 1) Ovaj proizvod je dodijeljen broj modela prema propisima koji ostaje s regulatornim aspektima Dizajn. Broj modela prema propisima je glavni identifikator proizvod u regulatornom dokumentacije i izvješća o ispitivanju, ovaj broj ne treba brkati s marketinškim nazivom ili brojeve proizvoda.
- 2) Ovaj proizvod je ispitan u tipičnoj HP okoliš u suradnji s HP-host sustava.

Palo Alto, CA
26-09-2016

provjeriti potpis na izvorne izjave priložen
Gilles Souldard, Manager
Product Compliance Center

Lokalno kontakt za pravna pitanja samo:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



ATBILSTĪBAS DEKLARĀCIJA
saskaņā ar ISO / IEC 17050-1 un EN 17050-1

DoC #: HSTND-9691-L-R1Tulkojums/lv

Ražotāja nosaukums:

HP Inc.

Ražotāja adrese:

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

paziņo, ka produkts

Produkta nosaukums un modelis:²⁾ HP Z27n G2

Regulējošais modeļa numurs:¹⁾ HSTND-9691-L

Izstrādājuma iespējas: Nav iespējas

atbilst šādām iekārtas specifikācijām un regulām:

Sābhālteacht:

IEC 60950-1:2005 +A1:2009 +A2:2013

EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011

+A2:2013 /+AC:2011

EN 62479:2010

EMC

EN 55032:2012 Class B

EN 55024:2010

EN 61000-3-2:2014

EN 61000-3-3:2013

FCC CFR 47 Part 15

ICES-003, Issue 6

ekodizains

Rialachán (CE) Uimh 1275/2008

EN 50564:2011

IEC 62301:2011

RoHS

EN 50581:2012

Produkts ar šo atbilst prasībām Zemsprieguma direktīva 2014/35/ES, EMC direktīva 2014/30/ES, Ekodizaina direktīva 2009/125/EK, RoHS direktīva 2011/65/ES un veic **CE** marķējums atbilstoši.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Papildus informācija:

- 1) Šis produkts ir piešķirts regulējošais modeļa numurs, kas paliek ar normatīvajiem aspektiem dizainu. Regulējošais modeļa numurs ir galvenais produkta identifikators pārvaldes dokumentācijā un testēšanas pārskati, šis skaits nedrīkst sajaukt ar mārketinga nosaukumu vai produktu numuriem.
- 2) Rinneadh tástáil ar táirge SEO i dtimpeallacht HP tipiciúil i gcomhar le CORAS óstach HP.

Palo Alto, CA

26-09-2016

seiceáil par síniú ar dearbhú bunaidh i gceangal

Gilles Soulard, Manager
Product Compliance Center

Vietējā kontaktpersona jautājumos par reglamentāciju tikai:

EU:

HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

U.S.:

HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



LEYFISYFIRLÝSING

samkvæmt ISO / IEC 17050-1 og EN 17050-1

DoC #: HSTND-9691-L-R1Þýðing/is

Framleiðanda Heiti:

Heimilisfang framleiðanda:

HP Inc.

1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

Því yfir, að varan

Nafn vöru og Model:²⁾

HP Z27n G2

Regulatory Model Number:¹⁾

HSTND-9691-L

Valmöguleikar vöru:

Engar valkosti

Í samræmi við eftirfarandi forskriftir vara og reglugerðir:

Öryggi:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

visthönnun

Reglugerð (EB) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Varan hér með í samræmi við kröfur Lágspennu tilskipun 2014/35/EU, EMC tilskipun 2014/30/EU, Tilskipun um vistvæna hönnun 2009/125/EB, RoHS tilskipun 2011/65/EU og ber **CE**-merkið í samræmi.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Viðbótarupplýsingar:

- 1) Þessi vara er útlutað Regulatory tegundarnúmer sem dvelst hjá reglugerðum þætti í hönnun. The Regulatory Model Number er helsta vara auðkenni í reglugerðum skjöl og prófunarskýrslur, þetta númer ætti ekki að rugla saman við nafn markaðssetningu eða vörunúmerum.
- 2) Þessi vara var prófað í dæmigerðum HP umhverfi í tengslum við HP móti kerfinu.

Palo Alto, CA
26-09-2016

athuga undirskrift á upprunalegu yfirlýsingu fylgir

Gilles Soulard, Manager
Product Compliance Center

Upplýsingaskrifstofa fyrir reglusetningu efni eingöngu:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DIKJARAZZJONI TA 'KONFORMITÀ
skond ISO / IEC 17050-1 u EN 17050-1

DoC #: HSTND-9691-L-R1Traduzzjoni/mt

Isem tal-manifattur:
Indirizz tal-manifattur:

HP Inc.
1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

jiddikjara, li l-prodott

Isem tal-prodott u Mudell:²⁾ HP Z27n G2
Mudell regolatorju Numru:¹⁾ HSTND-9691-L
Għażliet tal-prodott: ebda għażliet

jikkonforma mal-Prodott Speċifikazzjonijiet li ġejjin u Regolamenti:

Sigurtà:

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

Ekodisinn

Regolament (KE) Nru 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Il-prodott hawnhekk jikkonforma mar-rekwiżiti tal-Direttiva Vultaġġ Baxx 2014/35/UE, Direttiva EMC 2014/30/UE, Direttiva tal-Ekodisinn 2009/125/KE, Direttiva RoHS 2011/65/UE u jkollu l-marka **CE** kif xieraq

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informazzjoni addizzjonali:

- 1) Dan il-prodott huwa assenjat għal mudell regolatorju Numru li jibqa 'mal-aspetti regolatorji ta' l- disinn. Il-Numru tal-Mudell regolatorja hija l-identifikatur tal-prodott ewlieni fid-dokumentazzjoni regolatorju u rapporti tat-test, dan in-numru ma għandux jiġi mfixxkel ma 'isem marketing jew in-numri tal-prodott.
- 2) Dan il-prodott ġie ttestjata f'ambjent HP tipiku flimkien ma 'sistema ospitanti HP.

Palo Alto, CA
26-09-2016

jivverifika l-firma fuq id-dikjarazzjoni oriġinali annessa

Gilles Soulard, Manager
Product Compliance Center

Kuntatt lokali għal suġġetti regolatorji biss:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



UYGUNLUK BEYANI
ISO / IEC 17050-1 ve EN 17050-1 uygun olarak

DoC #: HSTND-9691-L-R1Çeviri/tr

Üretici Adı: HP Inc.
Üretici Adresi: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

beyan eder, ürün

Ürün Adı ve Modeli:²⁾ HP Z27n G2
Yasal Model Numarası:¹⁾ HSTND-9691-L
Ürün Opsiyonları: Opsiyon yok

aşağıdaki Ürün spesifikasyonlarına ve Yönetmeliklere uygun olduğunu beyan eder:

Güvenlik

IEC 60950-1:2005 +A1:2009 +A2:2013
EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 62479:2010

EMC

EN 55032:2012 Class B
EN 55024:2010
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC CFR 47 Part 15
ICES-003, Issue 6

Ekotasarım

Yönetmelik (EC) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS

EN 50581:2012

Ürün, bu belgeyle birlikte, şu şartlarına uygundur Düşük Voltaj Direktifi 2014/35/AB, EMC Direktifi EMC 2014/30/AB, Ekotasarım Direktifi 2009/125/EC, RoHS Direktifi 2011/65/AB ve uygun **CE** işaretini taşır.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ek Bilgiler:

- 1) Bu ürüne tasarım sırasında, teknik mevzuatlar gözetilerek bir Yasal Model Numarası atanmıştır. Yasal Model Numarası, ana ürün için düzenleyici belgelerinde ve test raporlarında tanımlayıcıdır. Bu numara pazarlama adı veya ürün numaraları ile karıştırılmamalıdır.
- 2) Bu ürün, tipik bir HP ortamında test edilmiştir .

Palo Alto, CA
26-09-2016

imza için orjinal DoC ve bakınız
Gilles Soulard, yetkili
Product Compliance Center

Sadece teknik yasal konular için kontak:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DECLARATION OF CONFORMITY
according to ISO/IEC 17050-1 and EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B- R1 Original/en

Manufacturer's Name: HP Inc.
Manufacturer's Address: 3390 East Harmony Road, Fort Collins, Colorado 80528 USA

declare, under its sole responsibility that the product

Product Name and Model:²⁾ HP Z8 G4 Workstations
Regulatory Model Number:¹⁾ FCLSA-1703A or FCLSA-1703B
Product Options: All

conforms to the following Product Specifications and Regulations:

Safety

EN 60950-1:2006 + A11:2009 +A1:2010 +A12:2011
+A2:2013 /+AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 +A1:2009 +A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Ecodesign

Regulation (UE) No. 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Regulation (EC) No. 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

The product herewith complies with the requirements of the Low Voltage Directive 2014/35/EU, the EMC Directive 2014/30/EU, the Ecodesign Directive 2009/125/EC, the RoHS Directive 2011/65/EU and carries the **CE**-marking accordingly.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Additional Information:

- 1) This product is assigned a Regulatory Model Number which stays with the regulatory aspects of the design. The Regulatory Model Number is the main product identifier in the regulatory documentation and test reports, this number should not be confused with the marketing name or the product numbers.
- 2) This product was tested in a typical HP environment.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Local contact for regulatory topics only:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

<http://www.hp.eu/certificates>



KONFORMITÄTSERKLÄRUNG
nach ISO / IEC 17050-1 und EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Übersetzung/de

Herstellernamen:

HP Inc.

Adresse des Herstellers:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

erklärt, dass das Produkt

Produktname und Modell:²⁾ HP Z8 G4 Workstations

Regulatorische Model Nummer:¹⁾ FCLSA-1703A or FCLSA-1703B

Produktoptionen: Alle Optionen

entspricht den folgenden Produktspezifikationen und Vorschriften:

Sicherheit:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMV

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Öko-Design

Verordnung (EG) Nr. 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Verordnung (EG) Nr. 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Das Produkt erfüllt die Anforderungen der Niederspannungsrichtlinie 2014/35/EU, der EMV-Richtlinie 2014/30/EU, die Ökodesign-Richtlinie 2009/125/EG, die RoHS-Richtlinie 2011/65/EU und trägt das **CE**-Kennzeichnung entsprechend.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Zusätzliche Information:

- 1) Für die regulatorischen Aspekte zum Design wurde diesem Produkt eine Regulatorische Model Nummer zugeordnet. Zur Produktidentifizierung in der regulatorischen Dokumentation und den Prüfberichten wird diese Regulatorische Model Nummer verwendet und sollte nicht zu Verwechslungen von Marketingnamen oder Produktnummern führen.
- 2) Dieses Produkt wurde in einer typischen HP Konfiguration getestet.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Lokale Ansprechpartner für Richtlinien und Bestimmungen:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DÉCLARATION DE CONFORMITÉ
selon la norme ISO / IEC 17050-1 et EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1 Traduction/fr

Nom du fabricant:

HP Inc.

Adresse du fabricant:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

déclare que le produit

Nom du produit et le modèle:²⁾ HP Z8 G4 Workstations

Numéro de modèle réglementaire:¹⁾ FCLSA-1703A or FCLSA-1703B

Options du produit: Toutes les options

est conforme aux normes et règlements de produit suivantes:

Sécurité:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

écoconception

Règlement (CE) n ° 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Règlement (UE) n ° 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Ce produit est conforme aux exigences de la Directive Basse Tension 2014/35/UE, la directive CEM 2014/30/UE, la directive sur l'écoconception 2009/125/CE, la directive RoHS 2011/65/UE et porte la marque **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informations complémentaires:

- 1) A ce produit est assigné un numéro de modèle réglementaire qui reste avec les aspects réglementaires de la conception. Le numéro de modèle réglementaire est le principal identificateur de produit dans la documentation réglementaire et les rapports d'essais, ce nombre ne doit pas être confondu avec le nom commercial ou les numéros de produit.
- 2) Ce produit a été testé dans un environnement typique HP en conjonction avec un système hôte HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Contact local pour les réglementations uniquement:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DICHIARAZIONE DI CONFORMITA'
secondo la norma ISO / IEC 17050-1 e EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1 Traduzione/it

Nome del Fornitore:
Indirizzo del Fornitore:

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

dichiara che il prodotto

Nome del prodotto e modello:²⁾ HP Z8 G4 Workstations
Numero di modello normativo:¹⁾ FCLSA-1703A or FCLSA-1703B
Opzioni del prodotto: Tutte le opzioni

è conforme alle seguenti specifiche e regolamenti di prodotto:

Sicurezza

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Ecodesign

Regolamento (UE) No. 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Regolamento (CE) No. 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Questo prodotto è conforme ai requisiti della direttiva Bassa Tensione 2014/35/UE, la direttiva EMC 2014/30/UE, la direttiva sulla Progettazione Ecocompatibile 2009/125/CE, la direttiva RoHS 2011/65/UE e porta il marchio **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informazioni aggiuntive:

- 1) A questo prodotto è assegnato un Numero di modello normativo (RMN) che rimane con gli aspetti normativi della progettazione. Il numero di modello normativo è l'identificativo principale del prodotto nella documentazione normativa e rapporti di prova, questo numero non deve essere confuso con il nome commerciale o il numero di prodotto.
- 2) Questo prodotto è stato testato in un tipico ambiente HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Contatto locale solo per informazioni sulla conformità al marchio CE:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DECLARACIÓN DE CONFORMIDAD
según la norma ISO / IEC 17050-1 y EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1 Traducción/es

Nombre del fabricante:
Dirección del fabricante:

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

declara que el producto

Nombre del producto y modelo:²⁾ HP Z8 G4 Workstations
Número de modelo reglamentario:¹⁾ FCLSA-1703A or FCLSA-1703B
Opciones del producto: Todas las opciones

cumple con las siguientes especificaciones y normas de productos:

Seguridad:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Diseño ecológico

Reglamento (CE) n° 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Reglamento (CE) No. 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Este producto cumple con los requisitos de la Directiva de baja tensión 2014/35/UE, la Directiva EMC 2014/30/UE, la Directiva sobre diseño ecológico 2009/125/CE, la Directiva RoHS 2011/65/UE y lleva la marca **CE**.

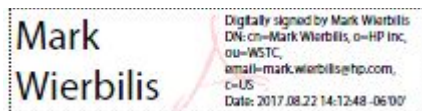
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Información Adicional:

- 1) A este producto se asigna un número de modelo regulatorio que cumple con los aspectos regulatorios del diseño. El número de modelo normativo es el identificador principal del producto en la documentación reglamentaria e informes de ensayo, este número no se debe confundir con el nombre comercial o los números del producto.
- 2) Este producto se ha probado en un entorno típico de HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Contacto local únicamente para temas de normativa:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DEKLARACJA ZGODNOŚCI
zgodnie z normą ISO / IEC 17050-1 i EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Tłumaczenie/pl

Nazwa producenta:

HP Inc.

Adres producenta:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

oświadcza, że produkt

Nazwa produktu i modelu:²⁾

HP Z8 G4 Workstations

Numer modelu:¹⁾

FCLSA-1703A or FCLSA-1703B

Opcje produktu:

Wszystkie opcje

jest zgodny z następującymi specyfikacjami produktu i rozporządzeń:

Bezpieczeństwo:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Ekoprojektu

Rozporządzenie (WE) nr 617/2013

EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6

Rozporządzenie (WE) nr 1275/2008

EN 50564:2011

RoHS

EN 50581:2012

Niniejszy produkt jest zgodny z wymaganiami Dyrektywa o niskim napięciu 2014/35/WE, Dyrektywa EMC 2014/30/WE, Dyrektywa w sprawie ekoprojektu 2009/125/WE, Dyrektywa RoHS 2011/65/WE i posiada odpowiednio oznakowanie **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatkowe informacje:

- 1) Produkt ten został przypisany numer modelu z aspektów regulacyjnych projekt. Numer modelu jest głównym identyfikatorem produktu w dokumentacji normatywnej i raporty z badań, liczba ta nie powinna być mylona z nazwą handlową lub też liczby produktów.
- 2) Produkt był testowany w typowym środowisku HP, w połączeniu z systemem gospodarza HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Lokalny kontakt na temat przepisów:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DECLARATIE DE CONFORMITATE
în conformitate cu ISO / IEC 17050-1 și EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Traducere/ro

producătorului Nume:
Adresa producătorului:

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

declară că produsul

Nume produs și model:²⁾ HP Z8 G4 Workstations
Numărul de model de reglementare:¹⁾ FCLSA-1703A or FCLSA-1703B
Opțiuni de produse: Toate opțiunile

în conformitate cu următoarele specificații și regulamentelor de produse:

Siguranță:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

ecodesign

Regulamentul (CE) nr 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Regulamentul (CE) nr 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Produsul prezentat aici, corespunde cu cerințele Directivei de joasă tensiune 2014/35/UE, la Directiva EMC 2014/30/UE, Directiva privind proiectarea ecologică 2009/125/CE, la Directiva RoHS 2011/65/UE și poartă marcajul **CE** în consecință.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informații suplimentare:

- 1) Acest produs este atribuit un număr de model de reglementare care rămâne cu aspectele de reglementare ale proiectare. Numărul de model de reglementare este identificatorul principal produs în documentația de reglementare și rapoarte de încercare, acest număr nu trebuie confundat cu numele de marketing sau umerele de produs.
- 2) Acest produs a fost testat într-un mediu tipic HP împreună cu un sistem gazdă HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Local de contact pentru subiecte de reglementare numai:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



CONFORMITEITSVERKLARING
volgens ISO / IEC 17050-1 en EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Vertaling/nl

Naam van de fabrikant:

HP Inc.

Adres van de fabrikant:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

verklaart, dat het product

Naam van het product en model:²⁾ HP Z8 G4 Workstations

Regulatory Model Number:¹⁾ FCLSA-1703A or FCLSA-1703B

Product opties: Alle opties

voldoet aan de volgende productspecificaties en wetgeving:

Veiligheid:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

ecodesign

Verordening (EG) nr. 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Verordening (EG) nr 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Het product voldoet aan de eisen van de LVD-richtlijn 2014/35/EU, de EMV-Richtlijn 2014/30/EU, de Ökodesign-Richtlijn 2009/125/EG, de RoHS-Richtlijn 2011/65/EU en draagt het k **CE**-keurmer.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Extra informatie:

- 1) Dit product is voorzien van een wettelijk modelnummer die blijft bij de regelgevende aspecten van de ontwerp. Het voorgeschreven modelnummer is het belangrijkste product-id in de regelgeving documentatie en testrapporten, moet dit nummer niet verwarren met de merknaam of de productnummers.
- 2) Dit product werd getest in het HP-omgeving in combinatie met een HP hostsysteem.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Lokale contactpersoon voor mbtvoorschriften:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



MEGFELELŐSÉGI NYILATKOZAT
az ISO / IEC 17050-1 és EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Fordítás/hu

A gyártó neve:

HP Inc.

Gyártó címe:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

kijelenti, hogy a termék

A termék neve és a modell:²⁾

HP Z8 G4 Workstations

Szabályozási Modell száma:¹⁾

FCLSA-1703A or FCLSA-1703B

Termék opciók:

Minden opció

megfelel az alábbi termék dokumentáció és rendeletek:

Biztonság:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+A2:2013 / +AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Környezetbarát tervezési

Regulation (EC) No. 617/2013

EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6

Rendelet (EC) No. 1275/2008

EN 50564:2011

RoHS

EN 50581:2012

A termék eleget tesz az alacsony feszültségre vonatkozó 2014/35/EU irányelv, az EMÖ 2014/30/EU irányelv, a környezetbarát tervezésről szóló 2009/125/EK irányelv, az RoHS 2011/65/EU irányelv viseli a **CE** jelzést viseli.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

További információ:

- 1) Ez a termék tartozik egy hatósági azonosítási típusszám ami marad szabályozási szempontból a design. A szabályozási modellszámmal a fő termék azonosítóját a szabályozási dokumentációban és vizsgálati jelentések, ez a szám nem keverendő össze a kereskedelmi névvel vagy a termék számokat.
- 2) Ez a termék tesztelése egy tipikus HP környezetben együtt egy HP gazda rendszert.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Helyi kapcsolattartó a jogi tudnivalókkal:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DECLARAÇÃO DE CONFORMIDADE
de acordo com a ISO / IEC 17050-1 e EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Tradução/pt

Nome do fabricante:

HP Inc.

Endereço do fabricante:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

declara, que o produto

Nome do produto e modelo:²⁾ HP Z8 G4 Workstations

Número de Modelo de Regulamentação:¹⁾ FCLSA-1703A or FCLSA-1703B

Opções do produto: Todas as opções

está em conformidade com as seguintes especificações e regulamentos do produto:

Segurança:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

ecodesign

Regulamento (CE) n.º 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Regulamento (CE) n.º 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

O produto está em conformidade com os requisitos da a Directiva de Baixa Tensão 2014/35/UE, a Directiva EMC 2014/30/UE, a Directiva Ecodesign 2009/125/CE, a Directiva RoHS 2011/65/UE e leva a marca **CE** de acordo.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informações adicionais:

- 1) Este produto recebeu um Número de modelo de regulamentação que fica com os aspectos regulatórios do design. O Número de Modelo de Regulamentação é o identificador principal do produto na documentação regulamentar e relatórios de ensaio, este número não deve ser confundido com o nome comercial ou os números dos produtos.
- 2) Este produto foi testado em um ambiente típico de HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

O contato local para tópicos regulamentares apenas:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ

σύμφωνα με το πρότυπο ISO / IEC 17050-1 και EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1 Μετάφραση/el

Όνομα κατασκευαστή:

HP Inc.

Διεύθυνση του κατασκευαστή:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

δηλώνει ότι το προϊόν

Όνομα προϊόντος και μοντέλου:²⁾ HP Z8 G4 Workstations

Αριθμός Μοντέλο κατά τους κανονισμούς:¹⁾

FCLSA-1703A or FCLSA-1703B

Επιλογές Προϊόντος:

Όλες οι επιλογές

συμμορφώνεται προς τις εξής προδιαγραφές και κανονισμοί:

Ασφάλεια:

EMC

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

οικολογικού σχεδιασμού

Ο κανονισμός (ΕΚ) αριθ. 617/2013

EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6

Κανονισμός (ΕΚ) αριθ 1275/2008

EN 50564:2011

RoHS

EN 50581:2012

Το παρόν προϊόν συμμορφώνεται με τις απαιτήσεις του η Οδηγία Χαμηλής Τάσης 2014/35/ΕΕ, η Οδηγία EMC 2014/30/ΕΕ, η Οδηγία για τον οικολογικό σχεδιασμό 2009/125/ΕΚ, η Οδηγία RoHS 2011/65/ΕΕ και φέρει τη σήμανση **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Πρόσθετες πληροφορίες:

- 1) Αυτό το προϊόν έχει εκχωρηθεί ένας ρυθμιστικός αριθμός μοντέλου που μένει με τις ρυθμιστικές πτυχές των σχεδιασμό. Ο αριθμός Ρυθμιστική μοντέλου είναι το κύριο αναγνωριστικό του προϊόντος με την κανονιστική τεκμηρίωση και εκθέσεις δοκιμών, ο αριθμός αυτός δεν πρέπει να συγχέεται με την εμπορική ονομασία ή τους αριθμούς προϊόντος.
- 2) Αυτό το προϊόν έχει δοκιμαστεί σε ένα τυπικό περιβάλλον HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Τοπική επαφής για θέματα κανονισμών μόνο:

EU:

HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

U.S.:

HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



FÖRKLARING OM ÖVERENSSTÄMMELSE

i enlighet med ISO / IEC 17050-1 och EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1 Översättning/sv

Tillverkarens namn:

HP Inc.

Tillverkarens adress:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

förklarar att produkten

Namn och modell:²⁾

HP Z8 G4 Workstations

Regleringsmodellnummer:¹⁾

FCLSA-1703A or FCLSA-1703B

Produktalternativ:

Alla optioner

Överensstämmer med följande produktspecifikationer och förordningar:

Säkerhet:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

ekodesign

Förordning (EG) nr 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Förordning (EG) nr 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Produkten uppfyller därmed kraven i Lågspänningsdirektivet 2014/35/UE, EMC-direktivet 2014/30/UE, Ekodesigndirektivet 2009/125/CE, RoHS-direktivet 2011/65/UE och är **CE**-märkning i enlighet därmed.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ytterligare information:

- 1) Den här produkten har tilldelats ett kontrollmodellnummer som stannar med de regulatoriska aspekterna av design. Kontrollmodellnumret är den viktigaste produktbeteckning i lagstiftnings dokumentation och provningsrapporter, detta nummer ska inte förväxlas med produktnamn eller produktnummer.
- 2) Produkten testades i en typisk HP-miljö tillsammans med en HP-värdsystem.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Lokal kontakt ENDAST med frågor:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



PROHLÁŠENÍ O SHODĚ
podle normy ISO / IEC 17050-1 a ČSN EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Překlad/cs

Jméno výrobce:

HP Inc.

Adresa výrobce:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

prohlašuje, že výrobek

Název produktu a model:²⁾

HP Z8 G4 Workstations

Regulační číslo modelu:¹⁾

FCLSA-1703A or FCLSA-1703B

Možnosti výrobku:

Všechny volby

vyhovuje následujícím specifikacím a nařízení produktu:

Bezpečnost:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

ekodesignu

Nařízení (ES) č. 617/2013

EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6

Nařízení Rady (ES) č. 1275/2008

EN 50564:2011

RoHS

EN 50581:2012

Tento výrobek splňuje požadavky Směrnice o nízkém napětí 2014/35/UE, Směrnice EMC 2014/30/UE, Směrnice o ekodesignu 2009/125/CE, Směrnice RoHS 2011/65/UE a nese označení CE v souladu s **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Další informace:

- 1) Tento produkt je přiděleno regulační číslo modelu, který zůstává s regulačními aspekty konstrukce. Počet Regulační model je hlavním identifikátorem produktu v regulační dokumentaci a protokoly o zkouškách, toto číslo by nemělo být zaměňováno s marketingovým názvem nebo čísla produktu.
- 2) Tento výrobek byl testován v typické prostředí HP ve spolupráci s hostitelským systémem HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Lokální kontakt pro informace pouze o směrnících:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ
в съответствие с ISO / IEC 17050-1 и EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Превод/bg

Наименование на производителя: **HP Inc.**

Производителя Адрес: 3390 East Harmony Road, Fort Collins, Colorado 80528 USA

заявява, че продуктът

Име на продукта и модел:²⁾ HP Z8 G4 Workstations

Нормативен номер на модела:¹⁾ FCLSA-1703A or FCLSA-1703B

Опции на продукта: Всички опции

съответства на следните спецификации на продукта и регламенти:

Безопасност:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

екодизайна

Регламент (ЕО) No 617/2013

EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6

Регламент (ЕС) № 1275/2008

EN 50564:2011

RoHS

EN 50581:2012

Този апарат в съответствие с изискванията на Директивата за ниско напрежение 2014/35/ЕС, Директивата EMC 2014/30/ЕС, Директивата за екодизайна 2009/125/ОТ, Директивата RoHS 2011/65/ЕС и носи маркировката съответно **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Допълнителна информация:

- 1) Този продукт има нормативен номер на модела, който остава с регулаторните аспекти на дизайн. Номер на Нормативен модел е идентификатора основен продукт в нормативната документация и протоколи от изпитвания, този брой не трябва да се бърка с пазарното име или номера на продукта.
- 2) Този продукт е изпробван в типична HP среда във връзка с хост система HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Local контакт за регулаторни теми само:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



VYHLÁSENIE O ZHODE

podľa normy ISO / IEC 17050-1 a STN EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Preklad/sk

Meno výrobcu:
adresa výrobcu:

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

prehlasuje, že výrobok

Názov produktu a model:²⁾ HP Z8 G4 Workstations
Regulačné číslo modelu:¹⁾ FCLSA-1703A or FCLSA-1703B
Možnosti výrobu: Všetky voľby

spĺňa nasledujúce špecifikácie a nariadenia produktu:

Bezpečnosť:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

ekodizajne

Nariadenie (ES) č 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Nariadenie Rady (ES) č 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Tento výrobok spĺňa požiadavky Smernice o nízkom napätí 2014/35/UE, Smernice EMC 2014/30/UE, Smernice o ekodizajne 2009/125/CE, Smernice RoHS 2011/65/UE a nesie označenie CE v súlade s **CE**.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ďalšie informácie:

- 1) Tento produkt je pridelené regulačné číslo modelu, ktorý zostáva s regulačnými aspektmi konštrukcie. Počet Regulačný model je hlavným identifikátorom produktu v regulačnej dokumentácii a protokoly o skúškach, toto číslo by sa nemalo zamieňať s marketingovým názvom alebo s výrobnými číslami.
- 2) Tento výrobok bol testovaný v typickej prostredí HP v spolupráci s hostiteľským systémom HP.

Fort Collins, Colorado
22-08-2017

Mark
Wierbilis

Digitally signed by Mark Wierbilis
DN: cn=Mark Wierbilis, o=HP Inc,
ou=WSTC,
email=mark.wierbilis@hp.com,
c=US
Date: 2017.08.22 14:12:48 -06'00'

Mark Wierbilis, Manager
Workstation Global Business Unit

Lokálne kontakt pre informácie iba o smerniciach:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



OVERENSSTEMMELSESERKLÆRING
i henhold til ISO / IEC 17050-1 og EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1 Oversættelse/da

Producentens navn:
Producentens adresse:
erklærer, at produktet

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

Produktnavn og Model:²⁾ HP Z8 G4 Workstations
Lovpligtigt modelnummer:¹⁾ FCLSA-1703A or FCLSA-1703B
Produkt Valg: Alle optioner

opfylder følgende produktspecifikationer og forordninger:

Sikkerhed:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

miljøvenligt design

Forordning (EF) nr. 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Forordning (EF) nr 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Produktet overholder kravene til lavspændingsdirektivet 2014/35/EU, EMC-direktivet 2014/30/EU, direktivet om miljøvenligt design 2009/125/EC, RoHS-direktivet 2011/65/EU og bærer **CE**-mærket i overensstemmelse hermed.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Yderligere information:

- 1) Dette produkt er tildelt et lovpligtigt modelnummer, som forbliver de lovgivningsmæssige aspekter af den design. Det lovpligtige modelnummer er det vigtigste produkt-id i den lovgivningsmæssige dokumentation og testrapporter, bør dette antal ikke forveksles med navn markedsføringen eller varenummer.
- 2) Dette produkt blev testet i en typisk HP-miljø i forbindelse med en HP host system.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Lokal kontaktperson for regulative emner:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



VAATIMUSTENMUKAISUUSVAKUUTUS

ISO / IEC 17050-1: n ja EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1 Käännös/fi

Valmistajan nimi:
Valmistajan osoite:

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

ilmoittaa, että tuote

Tuotteen nimi ja malli:²⁾

HP Z8 G4 Workstations

Säädösmallinumero:¹⁾

FCLSA-1703A or FCLSA-1703B

Tuotevaihtoehdot:

Kaikki vaihtoehdot

täyttää seuraavat tuotevaatimukset ja asetukset:

Turvallisuus:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Ecodesign

Asetuksen (EY) N: o 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Asetuksen (EY) N: o 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Tuote täyttää vaatimukset Pienjännitedirektiivin 2014/35/EU, EMC-direktiivin 2014/30/EU, Ekologista suunnittelua koskevan direktiivin 2009/125/EY, RoHS-direktiivin 2011/65/EU ja siinä on vastaava **CE**-merkintä.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Lisätiedot:

- 1) Tämä tuote on annettu virallinen numero, joka pysyy hallinnolliset näkökohdat suunnittelu. Säädöksiä koskeva mallinumero on tärkein tuotteen tunniste sääntely asiakirjat ja testausselostet, tätä numeroa ei pidä sekoittaa tuotteen nimeen tai tuotteen numeroita.
- 2) Tämä tuote testattu tyypillisessä HP ympäristöministeriö yhdessä HP isäntä järjestelmä.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Paikallinen yhteyshenkilö säännöksistä antavat:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



ATITIKTIES DEKLARACIJA
pagal ISO / IEC 17050-1 ir EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1 Vertimas/lt

Gamintojo pavadinimas:

HP Inc.

Gamintojo adresas:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

pareiškia, kad produktas

Produkto pavadinimas ir modelis:²⁾ HP Z8 G4 Workstations

Normatyvinis modelio numeris:¹⁾ FCLSA-1703A or FCLSA-1703B

Prekės pasirinkimai: Visi variantai

atitinka šias produkto specifikacijas ir reglamentų:

Sauga:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMS

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Ekologinio

Reglamentas (EB) Nr 617/2013

EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6

Reglamentas (EB) Nr 1275/2008

EN 50564:2011

RoHS

EN 50581:2012

Šis gaminys atitinka reikalavimus, Žemų įtampų direktyva 2014/35/ES, EMS direktyva 2014/30/ES, Ekologinio projektavimo direktyva 2009/125/EB, RoHS direktyva 2011/65/ES ir yra pažymėtas  ženklą atitinkamai.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Papildoma informacija:

- 1) Šis produktas pažymėtas normatyviniu modelio numeriu, kuris lieka su reglamentavimo aspektų dizainas. Normatyvinis modelio numeris yra pagrindinė produkto identifikatorius reguliavimo dokumentus ir bandymų ataskaitos, šis skaičius neturėtų būti painiojamas su prekės pavadinimu arba gaminio numeriais.
- 2) Ši prekė buvo išbandytas standartinės HP aplinkoje kartu su HP priimančioji sistema.

Fort Collins, Colorado
22-08-2017


Mark Wierbilis, Manager
Workstation Global Business Unit

Vietinis kontaktas normatyviniais klausimais tik:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



SAMSVARERKLÆRING

i henhold til ISO / IEC 17050-1 og EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R10versettelse/no

Produsentens navn:

HP Inc.

Produsentens adresse:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

erklærer at dette produktet

Produktnavn og modell:²⁾

HP Z8 G4 Workstations

Forskriftsmessig modellnummer:¹⁾

FCLSA-1703A or FCLSA-1703B

Produktvalg:

Alle opsjoner

er i samsvar med følgende produktspesifikasjoner og forskrift:

Sikkerhet:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+A2:2013 / +AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

økodesign

Forordning (EF) nr. 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Forordning (EF) nr 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Produktet er i samsvar med kravene i lavspenningsdirektiv 2014/35/EU, EMC-direktiv 2014/30/EU, den økodesign direktiv 2009/125/EF, RoHS-direktiv 2011/65/EU og bærer derfor **CE**-merket.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tilleggsinformasjon:

- 1) Dette produktet er tildelt et modellnummer som holder med de regulatoriske aspekter av design. Forskriftsmodellnummeret er den viktigste produkt-ID i regulatoriske dokumentasjon og testrapporter, bør dette nummeret ikke forveksles med markedsføringsnavnet eller produktnumrene.
- 2) Produktet ble testet i et typisk miljø HP i forbindelse med en HP-vertssystemet.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Lokal kontakt for spørsmål om forskrifter:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



IZJAVA O SKLADNOSTI

v skladu z ISO / IEC 17050-1 in EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Prevajanje/sl

Ime proizvajalca:
Naslov proizvajalca:

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

izjavlja, da izdelek

Ime izdelka in model:²⁾ HP Z8 G4 Workstations
Upravna številka modela:¹⁾ FCLSA-1703A or FCLSA-1703B
Možnosti izdelka: Vse opcije

v skladu z naslednjimi specifikacijami in predpisi o izdelku:

Siguranča:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

okoljsko primerni zasnovi

Reglamentul (CE) nr 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Reglamentul (CE) nr 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Izdelek je skladen z zahtevami Direktiva o nizki napetosti 2014/35/EU, Direktiva EMC 2014/30/EU, Direktiva o okoljsko primerni zasnovi 2009/125/ES, Direktiva RoHS 2011/65/EU in nosi oznako **CE** v skladu s tem.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatne informacije:

- 1) Ta izdelek je dodeljena upravna številka modela, ki ostane pri regulativnih vidikih zasnova. Število Regulativni model je glavni identifikator izdelka v regulativnem dokumentacije in poročila o preskusih, to število ne sme zamenjevati s tržnim imenom ali številkami izdelka.
- 2) Acest produs fost testat într-un Mediu tipic HP împreună cu un sistem Gazda HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Lokalni kontakt za upravnimi temami:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



VASTAVUSDEKLARATSIOON
vastavalt ISO / IEC 17050-1 ja EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Tõlkimine/et

Tootja nimi:
Tootja aadress:

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

kinnitab, et toode

Toote nimi ja mudel:²⁾ HP Z8 G4 Workstations
Normatiivne mudelinumber:¹⁾ FCLSA-1703A or FCLSA-1703B
Toote lisaseadmed: Kõik valikud

vastab järgmistele tootespetsifikatsioonidele ja määrused:

Ohutus:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

ökodisaini

Määruse (EÜ) nr 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Määruse (EÜ) nr 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Käesolev toode vastab nõuetele Madalpinge direktiivi 2014/35/EL, EMC direktiivi 2014/30/EL, Ökodisaini direktiivi 2009/125/EÜ, RoHS direktiivi 2011/65/EL ning kannab **CE**-märgistusega.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Lisainfo:

- 1) See toode on määratud normatiivne mudelinumber mis jääb regulatiivsed aspektid disain. Normatiivne mudelinumber on peamine toode tunnuse reguleerivad dokumendid ja katseprotokollid, see number ei tohiks segamini ajada toote nime või toode numbrid.
- 2) See toode on testitud tüüpiliste HP keskkonnas koos HP vastuvõtva süsteemi.

Fort Collins, Colorado
22-08-2017

Mark
Wierbilis

Digitally signed by Mark Wierbilis
DN: cn=Mark Wierbilis, o=HP Inc,
ou=WSTC,
email=mark.wierbilis@hp.com,
c=US
Date: 2017.08.22 14:12:48 -06'00'

Mark Wierbilis, Manager
Workstation Global Business Unit

Kohalik kontakt Ainult normatiivsete küsimuste korral:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



IZJAVA O SUKLADNOSTI
u skladu s ISO / IEC 17050-1 i EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Prijevod/hr

Naziv proizvođača:
Proizvođača adresa:

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

izjavljuje da je proizvod

Naziv proizvoda i Model:²⁾ HP Z8 G4 Workstations
Broj modela prema propisima:¹⁾ FCLSA-1703A or FCLSA-1703B
Mogućnosti proizvoda: Sve opcije

sukladan sljedećim specifikacijama proizvoda i propisa:

Sigurnost:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Ekološki dizajn

Uredba (EZ) br 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Uredba (EZ) br 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Navedeni proizvod sukladan sa zahtjevima Direktiva o niskom naponu 2014/35/EU, EMC Direktivom 2014/30/EU, Ekološki dizajn Direktivom 2009/125/EC, RoHS Direktivom 2011/65/EU i nosi **CE** oznaka u skladu s tim.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatne informacije:

- 1) Ovaj proizvod je dodijeljen broj modela prema propisima koji ostaje s regulatornim aspektima Dizajn. Broj modela prema propisima je glavni identifikator proizvod u regulatornom dokumentacije i izvješća o ispitivanju, ovaj broj ne treba brkati s marketinškim nazivom ili brojeve proizvoda.
- 2) Ovaj proizvod je ispitan u tipičnoj HP okoliš u suradnji s HP-host sustava.

Fort Collins, Colorado
22-08-2017

Mark
Wierbilis

Digitally signed by Mark Wierbilis
DN: cn=Mark Wierbilis, o=HP Inc,
ou=WSTC,
email=mark.wierbilis@hp.com,
c=US
Date: 2017.08.22 14:12:48 -06'00'

Mark Wierbilis, Manager
Workstation Global Business Unit

Lokalno kontakt za pravna pitanja samo:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



ATBILSTĪBAS DEKLARĀCIJA
saskaņā ar ISO / IEC 17050-1 un EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Tulkojums/lv

Ražotāja nosaukums:

HP Inc.

Ražotāja adrese:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

paziņo, ka produkts

Produkta nosaukums un modelis:²⁾ HP Z8 G4 Workstations

Regulējošais modeļa numurs:¹⁾ FCLSA-1703A or FCLSA-1703B

Izstrādājuma iespējas: Visas iespējas

atbilst šādām iekārtas specifikācijām un regulām:

Sābhāilteacht:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

ekodizains

Rialachán (CE) Uimh 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Rialachán (CE) Uimh 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Produkts ar šo atbilst prasībām Zemsprieguma direktīva 2014/35/ES, EMC direktīva 2014/30/ES, Ekodizaina direktīva 2009/125/EK, RoHS direktīva 2011/65/ES un veic **CE** marķējums atbilstoši.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Papildus informācija:

- 1) Šis produkts ir piešķirts regulējošais modeļa numurs, kas paliek ar normatīvajiem aspektiem dizainu. Regulējošais modeļa numurs ir galvenais produkta identifikators pārvaldes dokumentācijā un testēšanas pārskati, šis skaits nedrīkst sajaukt ar mārketinga nosaukumu vai produktu numuriem.
- 2) Rinneadh tástáil ar táirge SEO i dtimpeallacht HP tipiciúil i gcomhar le CORAS óstach HP.

Fort Collins, Colorado
22-08-2017

Mark
Wierbilis

Digitally signed by Mark Wierbilis
DN: cn=Mark Wierbilis, o=HP Inc,
ou=WSTC,
email=mark.wierbilis@hp.com,
c=US
Date: 2017.08.22 14:12:48 -06'00'

Mark Wierbilis, Manager
Workstation Global Business Unit

Vietējā kontaktpersona jautājumos par reglamentāciju tikai:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



LEYFISYFIRLÝSING

samkvæmt ISO / IEC 17050-1 og EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Þýðing/is

Framleiðanda Heiti:

HP Inc.

Heimilisfang framleiðanda:

3390 East Harmony Road, Fort Collins, Colorado 80528 USA

Því yfir, að varan

Nafn vöru og Model:²⁾

HP Z8 G4 Workstations

Regulatory Model Number:¹⁾

FCLSA-1703A or FCLSA-1703B

Valmöguleikar vöru:

Allir valkosti

Í samræmi við eftirfarandi forskriftir vara og reglugerðir:

Öryggi:

EMC

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

visthönnun

Reglugerð (EB) nr. 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Reglugerð (EB) nr 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Varan hér með í samræmi við kröfur Lágspennu tilskipun 2014/35/EU, EMC tilskipun 2014/30/EU, Tilskipun um vistvæna hönnun 2009/125/EB, RoHS tilskipun 2011/65/EU og ber **CE**-merkið í samræmi.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Viðbótarupplýsingar:

- Þessi vara er úthlutað Regulatory tegundarnúmer sem dvelst hjá reglugerðum þætti í hönnun. The Regulatory Model Number er helsta vara auðkenni í reglugerðum skjöl og prófunarskýrslur, þetta númer ætti ekki að rugla saman við nafn markaðssetningu eða vörunúmerum.
- Þessi vara var prófað í dæmigerðum HP umhverfi í tengslum við HP móti kerfinu.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Upplýsingaskrifstofa fyrir reglusetningu efni eingöngu:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



DIKJARAZZJONI TA 'KONFORMITÀ
skond ISO / IEC 17050-1 u EN 17050-1

DoC #: FCLSA-1703A or FCLSA-1703B-R1Traduzzjoni/mt

Isem tal-manifattur:
Indirizz tal-manifattur:
jiddikjara, li l-prodott

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

Isem tal-prodott u Mudell:²⁾ HP Z8 G4 Workstations
Mudell regolatorju Numru:¹⁾ FCLSA-1703A or FCLSA-1703B
Għażliet tal-prodott: għażliet kollha

jikkonforma mal-Prodott Speċifikazzjonijiet li ġejjin u Regolamenti:

Sigurtà:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+ A2:2013 / + AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Ekodisinn

Ir-Regolament (KE) Nru 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Regolament (KE) Nru 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Il-prodott hawnhekk jikkonforma mar-rekwiżiti tal-Direttiva Vultaġġ Baxx 2014/35/UE, Direttiva EMC 2014/30/UE, Direttiva tal-Ekodisinn 2009/125/KE, Direttiva RoHS 2011/65/UE u jkollu l-marka **CE** kif xieraq

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informazzjoni addizzjonali:

- 1) Dan il-prodott huwa assenjat għal mudell regolatorju Numru li jibqa 'mal-aspetti regolatorji ta' l- disinn. Il-Numru tal-Mudell regolatorja hija l-identifikatur tal-prodott ewlieni fid-dokumentazzjoni regolatorju u rapporti tat-test, dan in-numru ma għandux jiġi mfixkel ma 'isem marketing jew in-numri tal-prodott.
- 2) Dan il-prodott ġie ttestjata f'ambjent HP tipiku flimkien ma 'sistema ospitanti HP.

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, Manager
Workstation Global Business Unit

Kuntatt lokali għal suġġetti regolatorji biss:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates



UYGUNLUK BEYANI

ISO / IEC 17050-1 ve EN 17050-1 uygun olarak

DoC #: FCLSA-1703A or FCLSA-1703B-R1Çeviri/tr

Üretici Adı:
Üretici Adresi:

HP Inc.
3390 East Harmony Road, Fort Collins, Colorado 80528 USA

beyan eder, ürün

Ürün Adı ve Modeli:²⁾

HP Z8 G4 Workstations

Yasal Model Numarası:¹⁾

FCLSA-1703A or FCLSA-1703B

Ürün Opsiyonları:

Tüm opsiyonlar

aşağıdaki Ürün spesifikasyonlarına ve Yönetmeliklere uygun olduğunu beyan eder:

Güvenlik

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
+A2:2013 /+AC:2011
EN 60825-1:2014
EN 62471:2008
IEC 60950-1:2005 + A1:2009 + A2:2013

EMC

EN 55024:2010
EN 55032:2012 Class B
EN 61000-3-2:2014
EN 61000-3-3:2013
AS/NZS CISPR 32:2015

Ekotasarım

Yönetmelik (AB) No. 617/2013
EPRI 306 Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.6
Yönetmelik (EC) No. 1275/2008
EN 50564:2011

RoHS

EN 50581:2012

Ürün, bu belgeyle birlikte, şu şartlarına uygundur Düşük Voltaj Direktifi 2014/35/AB, EMC Direktifi EMC 2014/30/AB, Ekotasarım Direktifi 2009/125/EC, RoHS Direktifi 2011/65/AB ve uygun CE işaretini taşır.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ek Bilgiler:

- 1) Bu ürüne tasarım sırasında, teknik mevzuatlar gözetilerek bir Yasal Model Numarası atanmıştır. Yasal Model Numarası, ana ürün için düzenleyici belgelerinde ve test raporlarında tanımlayıcıdır. Bu numara pazarlama adı veya ürün numaraları ile karıştırılmamalıdır.
- 2) Bu ürün, tipik bir HP ortamında test edilmiştir .

Fort Collins, Colorado
22-08-2017



Mark Wierbilis, yetkili
Workstation Global Business Unit

Sadece teknik yasal konular için kontak:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

www.hp.eu/certificates

Cadastro das empresas habilitadas com seus produtos e modelos aprovados

Nome Fantasia:	FLEXTRONICS TECNOLOGIA
Razão Social:	FLEXTRONICS INTERNATIONAL TECNOLOGIA LTDA
CNPJ:	74.404.229/0005-51
Endereço:	Av. Liberdade, 6315 Iporanga Sorocaba / SP - 18087170
Contato:	Jorge Funaro jorge.funaro@flextronics.com (15) 4009-6330 www.flextronics.com
Produto:	Unidade de processamento digital, de pequena capacidade, baseada em microprocessadores
Processo MCT/Data:	01200.000731/2003-12 de 19/03/2003
CNPJ da Incentivada:	74404229000551
Portaria MCT/MDIC/MF:	279, de 26/05/2003 DOU 28/05/2003 ()
Modelos:	FLX-111; FLX-121; FLX-122; FLX-123; FLX-124; FLX-125; FLX-126; FLX-127; FLX-211; FLX-212; FLX-213; FLX-221; FLX-222; FLX-223; TERMINAL TLX 400 ? WEB; TERMINAL TLX 401 ? WEB; TERMINAL TLX 402 ? WEB; TERMINAL TLX 403 ? WEB; FLX-300; FLX-301; FLX-302; FLX-303; FLX-304; FLX-305; FLX-306; FLX-307; FLX-308.(23-06-08: L3K E100)(10-09-08: IBM X3550 M2)(10-09-08: IBM X3650 M2)(02-10-08: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC A62)(05-01-09: TC M58P)(05-01-09: IBM X3400 M2 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(05-01-09: UNIDADES DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(05-01-09: IBM X3800 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(05-01-09: IBM X3850 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(05-01-09: IBM X3500)(05-01-09: IBM X3550)(05-01-09: IBM X3400)(05-01-09: IBM X3650)(05-01-09: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC A61)(05-01-09: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR L3K J200)(05-01-09: TC M57E)(05-01-09: TC A57)(05-01-09: IBM BLADE HS12)(05-01-09: TC M58)(05-01-09: IBM X3500 M2 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(08-01-09: IBM X3655 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(08-01-09: IBM X3455 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(08-01-09: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC A55) (08-01-09: IBM X3950 M2 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(08-01-09: IBM X3755 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(08-01-09: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC M55E)(08-01-09: IBM BLADE LS41 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(08-01-09: IBM BLADE HS - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(08-01-09: IBM X3850 M2 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(08-01-09: IBM X3200 M2 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(08-01-09: IBM BLADE LS21 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(12-01-09: TC M57)(12-01-09: TC M57P)(14-05-09: LENOVO E200)(14-05-09: IBM BLADE LS)(24-06-09: TC M58E)(09-12-09: IBM X3200 M3)(23-02-10: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC M90)(15-03-10: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC M90P)(09-04-10: IBM X3550 M3 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(09-04-10: IBM X3650 M3 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(09-04-10: IBM X3400 M3 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(09-04-10: IBM X3500 M3 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(09-04-10: IBM X3950 X5 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(09-04-10: IBM X3850 X5 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(06-05-10: IBM BLADE H5X - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(06-05-10: IBM X3690 X5 - UNIDADE DIGITAL DE PROCESSAMENTO DE Mídia CAPACIDADE)(28-05-10: IBM BLADE HX5 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR)(28-05-10: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC A63) (22-07-10: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC A70)(23-08-10: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC M70E) (22-09-10: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC M75) (15-10-10: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC M75E) (24-03-11: TC M91P) (24-03-11: TC M91) (26-04-11: TC M76) (06-05-11: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC M81) (08-07-11: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR LENOVO H420) (08-07-11: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC EDGE71) (28-10-11: IBM X3100 M4) (28-10-11: THINKCENTRE EGDE 91) (30-03-12: IBM X3500 M4 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR) (30-03-12: IBM X3650 M4 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR) (30-03-12: IBM X3550 M4 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR) (18-05-12: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC M92) (18-05-12: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR TC M92P) (11-06-12: IBM X3630 M4 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR) (11-06-12: IBM X3530 M4 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR) (12-06-12: IBM BLADE HS23E - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR) (12-06-12: UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR THINKCENTRE EDGE 92) (25-06-12: IBM X3750 M4 - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR) (02-08-12: MICROCOMPUTADOR THINKCENTRE M92P) (06-08-12: THINKCENTRE EDGE72) (30-08-12: IBM FLEX SYSTEM X440 - UNIDADE DIGITAL DE PROCESSAMENTO) (30-08-12: IBM FLEX SYSTEM X240 - UNIDADE DIGITAL DE PROCESSAMENTO) (30-08-12: IBM FLEX SYSTEM X220 - UNIDADE DIGITAL DE PROCESSAMENTO) (09-08-13: IBM FLEX SYSTEM X222 - UNIDADE DIGITAL DE PROCESSAMENTO)(30-09-13: IBM X3650 M4 HD - UNIDADE DIGITAL DE PROCESSAMENTO PARA MICROCOMPUTADOR) (22-11-13: HP Z420 WORKSTATION) (22-11-13: HP Z620 WORKSTATION) (22-11-13: HP Z820 WORKSTATION) (22-11-13: HP Z230

	WORKSTATION) (22-11-13: HP PRODESK 600 G1 SFF BUSINESS PC) (22-11-13: HP ELITEDESK 800 G1 SFF BUSINESS PC) (17-12-13: HP COMPAQ PRO 4300 SFF BUSINESS PC) (17-12-13: HP COMPAQ PRO 6300 MT BUSINESS PC) (17-12-13: HP COMPAQ PRO 6305 MT BUSINESS PC) (17-12-13: HP COMPAQ PRO 6305 SFF BUSINESS PC) (17-12-13: HP COMPAQ ELITE 8300 SFF BUSINESS PC) (03-02-14: IBM NEXTSCALE NX360 M4) (03-02-14: IBM X3650 M4 BD) (19-02-14: IBM X3850 X6) (12-03-14: HP 402 G1 SFF BUSINESS PC) (14-03-14: UCSB- B200 M3) (14-03-14: UCSB- B420 M3) (14-03-14: UCSC- C220 M3) (14-03-14: UCSC- C240 M3) (14-03-14: N20- C6508) (28-05-14: HP ELITEDESK 800 G1 DM) (28-05-14: HP PRODESK 600 G1 DM)(11-09-14: HP ELITEDESK 700 G1 SFF BUSINESS PC)(13-10-14: HP ELITEDESK 705 G1 SFF BUSINESS PC) (15-10-14: HP Z440 WORKSTATION) (15-10-14: HP Z640 WORKSTATION) (15-10-14: HP Z840 WORKSTATION) (24-12-14: HP ELITEDESK 705 G1 DM) (24-12-14: UCSB-5108-AC2-U-BR) (25-03-15: UCSC- C220 M4) (25-03-15: UCSB- B200 M4) (25-03-15: UCSC- C240 M4) (25-03-15: UCSC- C220 M4) (25-03-15: UCSB- B200 M4) (25-03-15: UCSC- C240 M4) (01-04-15: HP 260 G1 DM) (14-09-15: UCSB- B420 M4) (01-10-15: HP 200 G1 SLIM TOWER BUSINESS PC)(12-11-15: HP PRODESK 600 G2 SFF) (12-11-15: HP ELITEDESK 800 G2 SFF)(23-12-15: HP ELITEDESK 800 G2 DM 65W) (23-12-15: HP ELITEDESK 800 G2 DM 35W) (11-01-16: HP ELITEDESK 705 G2 SFF) (22-01-16: HP ELITEDESK 705 G2 DM) (22-01-16: HP PRODESK 400 G3 SFF) (18-02-16: HP PRODESK 400 G2 DM) (18-03-16: HP WORKSTATION Z240 TOWER BRZL) (10-08-16: HP 260 G1 DM) (11-08-16: HP ELITEDESK 705 G2 DM) (11-08-16: HP ELITEDESK 800 G2 DM 35W) (11-08-16: HP ELITEDESK 800 G2 DM 65W) (24-08-16: HP PRODESK 400 G2 DM) (24-08-16: COMPAQ PRESARIO CQ-14) (17-10-16: UCS-BR-C240M4-P1) (17-10-16: UCS-BR-C240M4-V2) (17-10-16: UCS-BR-C240M4-V1) (17-10-16: UCS-BR-C240M4-E2) (17-10-16: UCS-BR-C240M4-E1) (18-10-16: HX240C-M4SX-BR) (18-10-16: HX220C-M4S-BR) (27-10-16: HP WORKSTATION Z240 TOWER BRZL) (27-10-16: HP Z440 WORKSTATION) (11-11-16: HP ELITEDESK 705 G3 DM) (11-11-16: HP ELITEDESK 705 G3 SFF) (17-02-17: HP PRODESK 400 G4 SFF) (03-03-17: HP ELITEDESK 800 G3 SFF) (27-04-17: HP ELITEDESK 800 G3 DM) (27-04-17: HP PRODESK 400 G3 DM) (30-05-17: RH2288H V3) (27-07-17: HXAF240C-M4SX-BR) (27-07-17: HXAF220C-M4S-BR) (02-08-17: COMPAQ PRESARIO CQ-14) (30-08-17: FUSIONCUBE 2000) (20-10-17: HP ELITEDESK 705 G3 SFF) (29-11-17: UCSB-B200- M5-U-BR) (08-02-18: HP Z4 G4 WORKSTATION)(22-02-18: RH2288H V5) (06-04-18: UCSC-C240-M5) (06-04-18: UCSC-C220-M5) (05-07-18: HP PRODESK 285 G3 MT) (31-07-18: HP DESKTOP PRO A MT) (31-07-18: PEQ SY660) (31-07-18: PEQ SY480) (31-07-18: PEQ BL460C) (31-07-18: PEQ DL560) (31-07-18: PEQ DL360) (31-07-18: PEQ DL380) (31-07-18: PEQ ML350) (17-08-18: UCSC-C240-M5L-BR) (17-08-18: UCSC-C220-M5L-BR) (17-08-18: HP ELITEDESK 800 G4 SFF) (17-08-18: HP PRODESK 400 G5 SFF) (17-08-18: HP ELITEDESK 800 G4 DM) (10-09-18: HP PRODESK 400 G4 DM) (10-09-18: HP WORKSTATION Z2G4 TOWER BRZL) (10-09-18: HP ELITEDESK 705 G4 DM) (10-09-18: HP ELITEDESK 705 G4 SFF) (19-09-18: C240 M5) (19-09-18: C220 M5) (26-11-18: PEQ SIMPLIVITY 380) (22-01-19: HP DESKTOP PRO G2) (28-08-19: HP Z8 G4) (28-08-19: ELITEDESK 800 G5 DM) (28-08-19: PRODESK 400 G6 SFF) (28-08-19: HX-B200-M5-U-BR) (28-08-19: HX-C220-M5SX-BR)
Produto:	Unidade de saída por vídeo (Monitor de vídeo a LCD)
Processo MCT/Data:	01250.005332/2018-39 de 31/01/2018
CNPJ da Incentivada:	74404229000551
Portaria MCT/MDIC/MF:	4000, de 02/08/2018 DOU 31/08/2018 - Produto Transferido da Portaria: 760, de 13/12/2001 DOU 14/12/2001 (http://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=515&pagina=15&data=31/08/2018)
Modelos:	7VLR; 5E; 4VN; 7VLR(11-12-17: MONITOR HP V19B) (24-01-18: MONITOR HP V22B) (24-01-18: MONITOR HP V22H) (24-01-18: MONITOR 21,5") (24-01-18: MONITOR 22") (24-01-18: MONITOR HP V24B) (24-01-18: MONITOR HP V24H) (24-01-18: MONITOR 23,6") (24-01-18: MONITOR 24")
Produto:	Unidade de saída por vídeo (monitor), com tubo de raios catódicos, policromática
Processo MCT/Data:	01200.005251/2003-48 de 25/11/2003
CNPJ da Incentivada:	74404229000551
Portaria MCT/MDIC/MF:	215, de 11/04/2005 DOU 12/04/2005 ()
Modelos:	P77; EXCAL; MON FLX 01; MON FLX 02

	Produto:	Unidade digital de armazenamento de dados em meio magnético
	Processo MCT/Data:	01200.006626/2007-11 de 22/11/2007
	CNPJ da Incentivada:	74404229000551
	Portaria MCT/MDIC/MF:	890, de 01/12/2008 DOU 03/12/2008 ()
	Modelos:	IBM 2421 931; IBM 2421 932; IBM 2421 9B2; IBM 2421 92E; IBM2421 9AE;IBM 2422 931; IBM2422 932; IBM 2422 92E; IBM2422 9AE; IBM 24230931; IBM2423 932; IBM2423 92B2;IBM2423 92E; IBM2424 931; IBM2424 932; IBM 2424 9B2;IBM2424 92E; IBM2424 9AE(05-01-09: 1812-81A)(05-01-09: 1814-72A)(05-01-09: 1814-70A) (08-01-09: IBM 2422 9B2 - OUTRAS UNIDADES DE DISCOS MAGNÉTICOS)(08-01-09: IBM 2423 9B2 - OUTRAS UNIDADES DE DISCOS MAGNÉTICOS)(08-01-09: IBM 2423 9AE - OUTRAS UNIDADES DE DISCOS MAGNÉTICOS) (22-10-10: IBM 2421 951) (22-10-10: IBM 2422 951) (22-10-10: IBM 2423 951) (22-10-10: IBM 2424 951 -) (22-10-10: IBM 2421 95E) (22-10-10: IBM 2422 95E) (22-10-10: IBM 2423 95E) (22-10-10: IBM 2424 95E) (08-04-11: X SERIES) (08-04-11: NL SERIES) (13-09-12: IBM 2421 961) (13-09-12: IBM 2424 961) (13-09-12: IBM 2424 96E) (13-09-12: IBM 2421 96E) (13-09-12: IBM 2422 961) (13-09-12: IBM 2422 96E) (13-09-12: IBM 2423 961) (13-09-12: IBM 2423 96E)(22-10-15: IBM 2831 980) (22-10-15: IBM 2831 981) (22-10-15: IBM 2831 982) (22-10-15: IBM 2831 98B) (22-10-15: IBM 2831 98E) (22-10-15: IBM 2831 98F) (22-10-15: IBM 2832 980) (22-10-15: IBM 2832 981) (22-10-15: IBM 2832 982) (22-10-15: IBM 2832 98B) (22-10-15: IBM 2832 98E) (22-10-15: IBM 2832 98F) (22-10-15: IBM 2833 980) (22-10-15: IBM 2833 981) (22-10-15: IBM 2833 982) (22-10-15: IBM 2833 98B) (22-10-15: IBM 2833 98E) (22-10-15: IBM 2833 98F) (22-10-15: IBM 2834 980) (22-10-15: IBM 2834 981) (22-10-15: IBM 2834 982) (22-10-15: IBM 2834 98B) (22-10-15: IBM 2834 98E) (22-10-15: IBM 2834 98F)(17-06-16: IBM 2076 524) (17-06-16: IBM 2076 624) (17-06-16: IBM 2076 12F) (17-06-16: IBM 2076 24F) (17-06-16: IBM 2073 720) (11-11-16: IBM 2831 984) (11-11-16: IBM 2831 84E) (11-11-16: IBM 2831 985) (11-11-16: IBM 2831 85B) (11-11-16: IBM 2831 986) (11-11-16: IBM 2831 86E) (11-11-16: IBM 2832 984) (11-11-16: IBM 2832 84E) (11-11-16: IBM 2832 985) (11-11-16: IBM 2832 85B) (11-11-16: IBM 2832 986) (11-11-16: IBM 2832 86E) (11-11-16: IBM 2833 984) (11-11-16: IBM 2833 84E) (11-11-16: IBM 2833 985) (11-11-16: IBM 2833 85B) (11-11-16: IBM 2833 986) (11-11-16: IBM 2833 86E) (11-11-16: IBM 2834 984) (11-11-16: IBM 2834 84E) (11-11-16: IBM 2834 85B) (11-11-16: IBM 2834 86E) (11-11-16: IBM 2834 986) (11-11-16: IBM 2834 86E) (19-01-17: IBM 2076 85E) (19-01-17: IBM 2076 85E) (19-01-17: IBM 2833 85E) (19-01-17: IBM 2834 85E) (25-09-17: IBM 2076 92F) (25-09-17: IBM 2077 124) (25-09-17: IBM 2077 212) (25-09-17: IBM 2077 224) (25-09-17: IBM 2077 312) (25-09-17: IBM 2077 324) (25-09-17: IBM 2077 12E) (25-09-17: IBM 2077 12F) (25-09-17: IBM 2077 92F) (25-09-17: IBM 2077 A9F) (25-09-17: IBM 2077 AF3) (25-09-17: IBM 2077 AFF) (25-09-17: IBM 2077 24E) (25-09-17: IBM 2077 24F) (25-09-17: IBM 2076 A9F) (25-09-17: IBM 2076 AF6) (25-09-17: IBM 2076 AFF) (25-09-17: IBM 2077 112) (02-10-17: IBM 2145 12F) (02-10-17: IBM 2145 92F) (02-10-17: IBM 2145 SV1) (02-10-17: IBM 2145 24F) (02-10-17: IBM 2147 12F) (02-10-17: IBM 2147 92F) (02-10-17: IBM 2147 SV1) (02-10-17: IBM 2147 24F)

Nome Fantasia:	FLEXTRONICS TECNOLOGIA
Razão Social:	FLEXTRONICS INTERNATIONAL TECNOLOGIA LTDA
CNPJ:	74.404.229/0009-85
Endereço:	Rod. Senador José Ermírio de Moraes, Km 11 Aparecidinha Sorocaba / SP - 18087090
Contato:	Jorge Funaro jorge.funaro@flextronics.com (15) 4009-6200 www.flextronics.com

	Produto:	Traçador gráfico ("plotter")
	Processo MCT/Data:	01200.003114/2013-41 de 22/07/2013
	CNPJ da Incentivada:	74404229000985
	Portaria MCT/MDIC/MF:	532, de 20/05/2014 DOU 21/05/2014 ()
	Modelos:	

Nome Fantasia:	Furukawa
Razão Social:	FURUKAWA INDUSTRIAL S/A PRODUTOS ELETRICOS
CNPJ:	51.775.690/0018-30
Endereço:	Av. Pirelli, nº 1100, bloco D Centro Sorocaba / SP - 18103085
Contato:	Foad Shaikhzadeh foad@furukawa.com.br (41)30212300 www.furukawa.com.br

	Produto:	Cabo de fibra óptica com revestimento externo de material dielétrico
	Processo MCT/Data:	01200.000364/2013-29 de 08/02/2013
	CNPJ da Incentivada:	51775690001830
	Portaria MCT/MDIC/MF:	1023, de 02/10/2013 DOU 03/10/2013 - Produto Transferido da Portaria: 235, de 13/05/2003 DOU 14/05/2003 ()

Modelos:	COA-SM-MF 30 COG; COA-SM-MF 30 COR; COA-SM-MF 20 COG; COA-SM-MF 20 COR; COA-SM-MF 20 LSZH; COA-SM-MF 16 COG; COA-SM-MF 16 COR; COA-SM-MF 16 LSZH; COA-MM-MF 30 COG; COA-MM-MF 30 COR; COA-MM-MF 30 LSZH; COA-MM-MF 20 COG; COA-MM-MF 20 COR; COA-MM-MF 20 LSZH; COA-MM-MF 16 COG; COA-MM-MF 16 COR; COA-MM-MF 16 LSZH; COA-SM-DP 30 COG; COA-SM-DP 30 COR; COA-SM-DP 30 LSZH; COA-SM-DP 20 COG; COA-SM-DP 20 COR; COA-SM-DP 20 LSZH; COA-SM-DP 16 COG; COA-SM-DP 16 COR; COA-SM-DP 16 LSZH; COA-MM-DP 30 COG; COA-MM-DP 30 COR; COA-MM-DP 30 LSZH; COA-MM-DP 20 COG; COA-MM-DP 20 COR; COA-MM-DP 20 LSZH; COA-MM-DP 16 COG; COA-MM-DP 16 COR; COA-MM-DP 16 LSZH; COA-SM-BF 30 COG; COA-SM-BF 30 COR; COA-SM-BF 30 LSZH; COA-SM-BF 20 COG; COA-SM-BF 20 COR; COA-SM-BF 20 LSZH; COA-MM-BF 30 COG; COA-MM-BF 30 COR; COA-MM-BF 30 LSZH; COA-MM-BF 20 COG; COA-MM-BF 20 COR; COA-MM-BF 20 LSZH; COA-SM-DPP COG; COA-SM-DPP COR; COA-SM-DPP LSZH; COA-MM-DPP COG; COA-MM-DPP COR; COA-MM-DPP LSZH. CFOA-SM-DDG (02 A 144 FIBRAS ÓPTICAS); CFOA-MM-DDG (02 A 144 FIBRAS ÓPTICAS); CFOA-SM-DDS (02 A 144 FIBRAS ÓPTICAS); CFOA-MM-DDS (02 A 144 FIBRAS ÓPTICAS); CFOA-SM-QTG (02 A 48 FIBRAS ÓPTICAS); CFOA-MM-QTG (02 A 48 FIBRAS ÓPTICAS); CFOA-SM-UT (02 A 12 FIBRAS ÓPTICAS); CFOA-MM-UT (02 A 12 FIBRAS ÓPTICAS); CFOA-SM-DDR (02 A 36 FIBRAS ÓPTICAS); CFOA-MM-DDR (02 A 36 FIBRAS ÓPTICAS); CFOA-SM-QTR (02 A 48 FIBRAS ÓPTICAS); CFOA-MM-QTR (02 A 48 FIBRAS ÓPTICAS); CFOA-SM-UTR (02 A 12 FIBRAS ÓPTICAS); CFOA-MM-UTR (02 A 12 FIBRAS ÓPTICAS); CFOA-SM-AS80 G (02 A 36 FIBRAS ÓPTICAS); CFOA-MM-AS120 G (02 A 36 FIBRAS ÓPTICAS); CFOA-MM-AS80 G (02 A 36 FIBRAS ÓPTICAS); CFOA-MM-AS120 G (02 A 36 FIBRAS ÓPTICAS); CFOA-SM-QTG-AS80 (02 A 48 FIBRAS ÓPTICAS); CFOA-MM-QTG-AS80 (02 A 48 FIBRAS ÓPTICAS); CFOA-SM-QTG-AS120 (02 A 48 FIBRAS ÓPTICAS); CFOA-MM-QTG-AS80 (02 A 48 FIBRAS ÓPTICAS); CFOA-SM-FRP-AS80 (02 A 12 FIBRAS ÓPTICAS); CFOA-MM-FRP-AS80 (02 A 12 FIBRAS ÓPTICAS); CFOI-SM-UT COG (02 A 12 FIBRAS ÓPTICAS); CFOI-MM-UT COG (02 A 12 FIBRAS ÓPTICAS); CFOI-SM-EO COG (02 A 144 FIBRAS ÓPTICAS); CFOI-SM-EO COR (02 A 144 FIBRAS ÓPTICAS); CFOI-SM-EO LSZH (02 A 144 FIBRAS ÓPTICAS); CFOI-MM-EO COG (02 A 144 FIBRAS ÓPTICAS); CFOI-MM-EO COR (02 A 144 FIBRAS ÓPTICAS); CFOI-MM-EO LSZH (02 A 144 FIBRAS ÓPTICAS); CFOI-SM-MF COG (02 A 36 FIBRAS ÓPTICAS); CFOI-SM-MF COR (02 A 36 FIBRAS ÓPTICAS); CFOI-SM-MF LSZH (02 A 36 FIBRAS ÓPTICAS); CFOI-MM-MF COG (02 A 36 FIBRAS ÓPTICAS); CFOI-MM-MF COR (02 A 36 FIBRAS ÓPTICAS); CFOI-MM-MF LSZH (02 A 36 FIBRAS ÓPTICAS); CFOT-SM-UT COG (02 A 12 FIBRAS ÓPTICAS); CFOT-MM-UT COG (02 A 12 FIBRAS ÓPTICAS); CFOT-SM-EO COG (02 A 144 FIBRAS ÓPTICAS); CFOT-SM-EO COR (02 A 144 FIBRAS ÓPTICAS); CFOT-SM-EOLSZH (02 A 144 FIBRAS ÓPTICAS); CFOT-MM-EO COG (02 A 144 FIBRAS ÓPTICAS); CFOT-MM-EO COR (02 A 144 FIBRAS ÓPTICAS); CFOT-SM-MF COG (02 A 36 FIBRAS ÓPTICAS); CFOT-SM-MF COR (02 A 36 FIBRAS ÓPTICAS); CFOT-SM-MF LSZH (02 A 36 FIBRAS ÓPTICAS); CFOT-MM-MF COG (02 A 36 FIBRAS ÓPTICAS); CFOT-MM-MF COR (02 A 36 FIBRAS ÓPTICAS); CFOT-MM-MF LSZH (02 A 36 FIBRAS ÓPTICAS); (15-06-11:CORDÃO COA-SM-MF-29 LSZH) (15-06-11:CORDÃO COA-SM-MF 25 COG) (15-06-11:CORDÃO COA-SM-MF 18 LSZH) (15-06-11:CORDÃO COA-SM-MF 18 COG) (15-06-11:CORDÃO COA-SM-MF 18 COR) (15-06-11:CORDÃO COA-BL A/B-MF 18 LSZH)(15-07-11: CORDÃO COA-MM-MF 18 COG)(15-07-11: CORDÃO COA-MM-MF 18 COR)(15-07-11: CORDÃO COA-MM-MF 18 LSZH)(15-07-11: CORDÃO COA-MM-MF 25 COG)(15-07-11: CORDÃO COA-MM-DP 18 COG)(15-07-11: CORDÃO COA-MM-DP 18 COR)(15-07-11: CORDÃO COA-MM-DP 18 LSZH)(15-07-11: CORDÃO COA-MM-DP 25 COG)(15-07-11: CORDÃO COA-SM-DP 18 COG)(15-07-11: CORDÃO COA-SM-DP 18 COR)(15-07-11: CORDÃO COA-SM-DP 18 LSZH)(15-07-11: CORDÃO COA-SM-DP 25COG)(15-07-11: CABO CFOA-SM-AS80-G 48 RC)(15-07-11: CABO CFOA-SM-AS80-G 60 RC)(15-07-11: CABO CFOA-SM-AS80-G 72 RC)(15-07-11: CABO CFOA-SM-AS80-G 96 RC)(15-07-11: CABO CFOA-SM-AS80-G 144 RC)(15-07-11: CABO CFOA-SM-AS120-G 48 RC)(15-07-11: CABO CFOA-SM-AS120-G 60 RC)(15-07-11: CABO CFOA-SM-AS120-G 72 RC)(15-07-11: CABO CFOA-SM-AS120-G 96 RC)(15-07-11: CABO CFOA-SM-AS120-G 144 RC)(15-07-11: CABO CFOA-SM-AS80-G 48 NR)(15-07-11: CABO CFOA-SM-AS80-G 60 NR)(15-07-11: CABO CFOA-SM-AS80-G 72 NR)(15-07-11: CABO CFOA-SM-AS80-G 96 NR)(15-07-11: CABO CFOA-SM-AS80-G 144 NR)(15-07-11: CABO CFOA-SM-AS120-G 48 NR)(15-07-11: CABO CFOA-SM-AS120-G 60 NR)(15-07-11: CABO CFOA-SM-AS120-G 72 NR)(15-07-11: CABO CFOA-SM-AS120-G 96 NR)(15-07-11: CABO CFOA-SM-AS120-G 144 NR)(15-07-11: CABO CFOA-MM-AS-F8 02)(15-07-11: CABO CFOA-MM-AS-F8 04)(15-07-11: CABO CFOA-MM-AS-F8 06)(15-07-11: CABO CFOA-MM-AS-F8 12)(15-07-11: CABO CFOA-SM-AS-F8 02)(15-07-11: CABO CFOA-SM-AS-F8 04)(15-07-11: CABO CFOA-SM-AS-F8 06)(15-07-11: CABO CFOA-SM-AS-F8 12)(16-09-11: CABO CFOA-MM-ASF120-S 10 RC)(16-09-11: CABO CFOA-MM-ASF120-S 12 RC) (16-09-11: CABO CFOA-MM-ASF120-S 02 NR)(16-09-11: CABO CFOA-MM-ASF120-S 04 NR)(16-09-11: CABO CFOA-MM-ASF120-S 06 NR)(16-09-11: CABO CFOA-MM-ASF120-S 08 NR)(16-09-11: CABO CFOA-MM-ASF120-S 10 NR)(16-09-11: CABO CFOA-MM-ASF120-S 12 NR)(16-09-11: CABO CFOA-MM-ASF120-S 02 RC)(16-09-11: CABO CFOA-MM-ASF120-S 04 RC)(16-09-11: CABO CFOA-MM-ASF120-S 06 RC)(16-09-11: CABO CFOA-MM-ASF120-S 08 RC)(16-09-11: CABO CFOA-MM-ASF120-S 02 NR)(16-09-11: CABO CFOA-MM-ASF120-S 04 NR)(16-09-11: CABO CFOA-MM-ASF120-S 06 NR)(16-09-11: CABO CFOA-MM-ASF120-S 08 NR)(16-09-11: CABO CFOA-MM-ASF120-S 10 NR)(16-09-11: CABO CFOA-MM-ASF120-S 12 NR)(16-09-11: CABO CFOA-MM-ASF120-S 02 RC)(16-09-11: CABO CFOA-MM-ASF120-S 04 RC)(16-09-11: CABO CFOA-MM-ASF120-S 06 RC)(16-09-11: CABO CFOA-MM-ASF120-S 08 RC)(16-09-11: CABO CFOA-MM-ASF120-S 10 RC)(16-09-11: CABO CFOA-MM-ASF120-S 12 RC)(07-10-11: CABO CFOA-SM-DDR-S 02 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 04 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 06 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 08 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 10 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 12 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 18 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 24 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 36 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 48 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 60 LSZH)(07-10-11: CABO CFOA-SM-DDR-S 72 LSZH)(07-10-11: CABO CFOA-MM-DDR-G 48 NR) (07-10-11: CABO CFOA-MM-DDR-G 60 NR)(07-10-11: CABO CFOA-MM-DDR-G 72 NR)(07-10-11: CABO CFOA-SM-DDR-G 48 NR)(07-10-11: CABO CFOA-SM-DDR-G 60 NR)(07-10-11: CABO CFOA-SM-DDR-G 72 NR)(07-10-11: CABO CFOA-SM-DDR-G 96 NR)(07-10-11: CABO CFOA-SM-DDR-G 120 NR)(07-10-11: CABO CFOA-SM-DDR-G 144 NR)(07-10-11: CABO CFOA-SM-DDR-G 168 NR)(07-10-11: CABO CFOA-SM-DDR-G 192 NR)(07-10-11: CABO CFOA-SM-DDR-G 216 NR)(07-10-11: CABO CFOA-SM-DDR-G 240 NR)(07-10-11: CABO CFOA-SM-DDR-G 264 NR)(07-10-11: CABO CFOA-SM-DDR-G 288 NR)(07-10-11: CABO CFOA-SM-DDR-G 312 NR)(07-10-11: CABO CFOA-SM-DDR-G 336 NR)(07-1
----------	---

Nome Fantasia:	HB
Razão Social:	HUAWEI DO BRASIL TELECOMUNICAÇÕES LTDA
CNPJ:	02.975.504/0004-03
Endereço:	Av Jerome Case, 2600 Eden Sorocaba / SP - 18087220
Contato:	Wei Yao legalbr@huawei.com (11) 5105-5115 www.huawei.com/pt/

Produto:	Aparelho de comutação e controle, do tipo unidade interna, para transmissor com receptor incorporado, digital, com frequência de transmissão superior ou igual a 6 GHz e inferior ou igual a 38 GHz
Processo MCT/Data:	01200.704738/2016-21 de 20/09/2016
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	1521, de 16/03/2018 DOU 12/04/2018 (http://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=515&pagina=30&data=12/04/2018)
Modelos:	(27-04-18: IDU950A)
Produto:	Aparelho emissor com receptor incorporado, digital, com frequência de transmissão superior ou igual a 6 GHz e inferior ou igual a 38 GHz e taxa de transmissão superior ou igual a 34 Mbps
Processo MCT/Data:	01200.002188/2012-89 de 05/07/2012
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	575, de 19/06/2013 DOU 20/06/2013 ()
Modelos:	(22-01-14: RTN910) (22-01-14: RTN980) (22-01-14: RTN950) (22-01-14: RTN905)(30-08-17: RTN950A) (08-02-19: RTN980L)
Produto:	Aparelho para estação rádio-base de telefonia celular com funções de comutação, controle e supervisão (Unidade de Banda-Base - BBU)
Processo MCT/Data:	01200.002507/2014-18 de 16/06/2014
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	408, de 12/06/2015 DOU 15/06/2015 ()
Modelos:	(08-09-15: BBU) (07-05-19: BBU5900)
Produto:	Aparelho transmissor (emissor) com aparelho receptor incorporado de telefonia celular para estação base
Processo MCT/Data:	01200.001346/2011-01 de 23/05/2011
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	744, de 19/10/2012 DOU 22/10/2012 ()
Modelos:	(08-11-12: DBS 3900)(07-11-16: DBS 3910) (23-04-19: DBS5900) (05-08-19: BTS3900)
Produto:	Aparelho transmissor (emissor) com receptor incorporado de telefonia celular, para estação de rádio-base (Unidade de Rádio Remota - RRU)
Processo MCT/Data:	01200.002507/2014-18 de 16/06/2014
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	408, de 12/06/2015 DOU 15/06/2015 ()
Modelos:	(08-09-15: RRU)
Produto:	Concentrador de linhas de assinante para redes de fibras ópticas
Processo MCT/Data:	01200.002188/2012-89 de 05/07/2012
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	575, de 19/06/2013 DOU 20/06/2013 ()
Modelos:	(14-09-15: MA5600T) (14-09-15: MA5603T) (14-09-15: MA5608T) (14-09-15: MA5616) (14-09-15: MA5800-X17) (14-09-15: MA5800-X7) (14-09-15: MA5800-X2) (14-01-19: MA5800-X17) (01-03-19: MA5800-X7) (29-03-19: MA5800-X15)

Produto:	Cordão óptico conectorizado, com fibras embainhadas individualmente, com revestimento externo de material dielétrico
Processo MCT/Data:	01200.001929/2015-57 de 28/05/2015
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	75, de 22/01/2016 DOU 25/01/2016 (http://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=1&pagina=2&data=25/01/2016)
Modelos:	(10-02-16: COSAC GJYXFCH-1B6A2)
Produto:	Distribuidor de conexões para redes de comunicação de dados por fibras ópticas
Processo MCT/Data:	01200.001581/2015-06 de 04/05/2015
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	1093, de 07/12/2015 DOU 08/12/2015 (http://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=1&pagina=31&data=08/12/2015)
Modelos:	(23-12-15: SSC2209 PRE-BUTT 8 PORTAS) (20-01-16: SSC2209-TM-8)
Produto:	Equipamento para controle de estação base de telefonia celular (Base Station Controller -BSC)
Processo MCT/Data:	01200.000486/2016-68 de 22/02/2016
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	1661, de 29/03/2017 DOU 30/03/2017 (http://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=1&pagina=35&data=30/03/2017)
Modelos:	(27-04-17: BSC6910) (27-04-17: RNC6910)
Produto:	Multiplexador por divisão de comprimento de onda
Processo MCT/Data:	01200.001346/2011-01 de 23/05/2011
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	744, de 19/10/2012 DOU 22/10/2012 ()
Modelos:	(14-01-19: OSN 9800 UPS) (14-01-19: OSN1800V) (14-01-19: OSN 9800 U32) (14-01-19: OSN 9800 M24) (14-01-19: OSN 9800 U32E) (14-01-19: OSN 8800 T32/E) (27-02-19: OSN 9800 U32E+UPS) (01-03-19: OSN1800V+II) (04-04-19: OSN 8800 UPS) (04-04-19: OSN1800 II) (04-04-19: OSN6800) (04-04-19: OSN8800 T16)
Produto:	Multiplexador por divisão de tempo, digital síncrono, com velocidade de transmissão igual ou inferior a 155 Mb/s
Processo MCT/Data:	01200.001346/2011-01 de 23/05/2011
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	744, de 19/10/2012 DOU 22/10/2012 ()
Modelos:	(13-05-16: OPTIX PTN910)
Produto:	Roteador digital para rede com fio, com velocidade de interface serial inferior a 4 Mb/s
Processo MCT/Data:	01200.001409/2011-11 de 27/05/2011
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	682, de 26/09/2012 DOU 01/10/2012 ()
Modelos:	(14-01-19: NE40E-X8A) (14-01-19: CX600-X2-M16) (14-01-19: NE40E-X16A) (28-01-19: ATN950C) (23-04-19: ATN 910C) (23-04-19: NE40E-X2-M8A) (23-04-19: NE40E-X2-M16A)

Produto:	Roteador digital para rede sem fio
Processo MCT/Data:	01200.001409/2011-11 de 27/05/2011
CNPJ da Incentivada:	02975504000403
Portaria MCT/MDIC/MF:	682, de 26/09/2012 DOU 01/10/2012 ()
Modelos:	

Voltar

(/SISEPIN/leideinformatica/empresashabilitadas/CadastroEmpresashabilitadasProdutosModelos?ufSelecionada=Todas&municipio=Suacaba?pagina=6) (pagina=8)


THE ECO DECLARATION



Ecma/TC38-TG3/2015/026
(Rev. 1 – 15 April 2015)

Annex B2 - Product environmental attributes Computers and computer monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P15.

Brand *	HP	Logo 
Company name *	HP	
Contact information *	HP Sustainability and Compliance Center	
e-mail address	sustainability@hp.com	
Internet site *	http://www.hp.com/hpinfo/globalcitizenship/environment/	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	Workstation PC
Commercial name *	HP Z8 G4 Workstation
Model number *	Z8 G4
Issue date *	10/16/2017
Intended market *	<input checked="" type="checkbox"/> Global <input type="checkbox"/> Europe <input type="checkbox"/> Asia, Pacific & Japan <input type="checkbox"/> Americas <input type="checkbox"/> Other
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2


Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:

P4.1 – P4.3 Consumable materials

P9.1 TEC and Print speed


P10.2 - P10.3 Chemical emissions from printing products

P11.1 - P11.3 Consumable materials for printing products.

Model number *	Z8 G4	Logo	
Issue date *	10/16/2017		

Product environmental attributes - Legal requirements		Requirement met		
Item		Yes	No	n.a.
P1	Hazardous substances and preparations			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorocarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 µg/cm ² /week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/reachdesktop-pcs.html	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P2	Batteries			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P3	Conformity verification & Eco design (ErP)			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): http://www8.hp.com/uk/en/certifications/technical/regulations-certificates.html sustainability@hp.com	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P3.2*	The product complies with the Eco design requirements for energy-related products, (see legal reference). Required information is; <input type="checkbox"/> given in item P15 or added to this document, <input checked="" type="checkbox"/> available at (add URL): http://h22235.www2.hp.com/hpinfo/globalcitizenship/environment/productdata/europeErPLot3desktop-pc.html	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P5	Product packaging			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P6	Treatment information			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating "Yes" means that the product is compliant with the mandatory requirements.

Model number *	Z8 G4	Logo	
Issue date *	10/16/2017		

Product environmental attributes - Market requirements (See General NOTE GN below)			
- Environmental conscious design			Requirement met
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No n.a.
P7 Design			
Disassembly, recycling			
P7.1*	Parts that have to be treated separately are easily separable	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.2*	Plastic materials in covers/housing have no surface coating.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.8*	Upgrading can be done using commonly available tools	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.9	Spare parts are available after end of production for: 5 years		<input type="checkbox"/>
P7.10	Service is available after end of production for: 5 years		<input type="checkbox"/>
Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: >ABS<, >PC< Material type: >PC+ABS<, >PBT-GF30FR(40)< Material type: >PBT-I-GF25FR(40)<		
P7.12	Insulation materials of external electrical cables are PVC free.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P7.13	Insulation materials of internal electrical cables are PVC free.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all <input type="checkbox"/> PCBs > 25 g <input checked="" type="checkbox"/> are low halogen as defined in IEC 61249-2-21. (See 1NOTE B2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking: >ABS<, >PC+ABS<, >PC<, >PBT-I-GF25FR(40)<, >PBT-GF30FR(40)<	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive) <input type="checkbox"/> , TBBPA (reactive) <input type="checkbox"/> (See NOTE B3), Other; chemical name: , CAS #: Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4: FR-60, FR-40	<input type="checkbox"/>	<input type="checkbox"/>
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: " Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4: >ABS<, >PC+ABS<, >PC<, >PBT-I-GF25FR(40)<, >PBT-GF30FR(40)<	<input type="checkbox"/>	<input type="checkbox"/>
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases: R51/53 and Hazard statements: Toxic to aquatic life with long-lasting effect Risk phrases: R52/53 and Hazard statements: Harmful to aquatic life with long-lasting effects The source(s) for these classifications is/are found at (add URL(s)): http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database (See note B5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.20*	Postconsumer recycled plastic material content is used in the product (See Note B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is 11.6%. Or The weight of recycled material is g.	<input checked="" type="checkbox"/>	<input type="checkbox"/>


GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see <http://www.ecma-international.org/publications/standards/Ecma-370.htm>

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

Model number *	Z8 G4	Logo	
Issue date *	10/16/2017		


Product environmental attributes - Market requirements (continued)		Requirement met		
Item		Yes	No	n.a.

Material and substance requirements (continued)				
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is %. or b) The weight of the biobased plastic material is g.			<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp. If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
P8 Batteries				
P8.1*	Battery chemical composition: <i>lithium/manganese dioxide</i>			<input type="checkbox"/>
P9 Energy consumption (See NOTE B8)				
P9.1 For the product the following power levels or energy consumptions are reported:				
Energy mode *	Power level at 100 V AC	Power level at 115 V AC	Power level at 230 V AC	Reference/Standard for energy modes and test method *
EPS No-load (External power supply / charger plugged in the wall outlet but disconnected from the product.)	W	W	W	<i>EPS Energy Report Data</i>
PTEC * Typical Energy Consumption	<i>57.44</i> W	<i>57.81</i> W	<i>57.15</i> W	<i>ENERGY STAR® Program Requirements for Computers: Ver. 6.1</i>
ETEC * Annual Energy Consumption	kWh/year	kWh/year	kWh/year	<i>ENERGY STAR® Program Requirements for Computers: Ver. 6.1</i>
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :				<i>ENERGY STAR® Program Requirements for Computers: Ver. 6.1</i>
Display resolution * : megapixels				<i>ENERGY STAR® Program Requirements for Computers: Ver. 6.1</i>
Default time to enter energy save mode: minutes				<i>ENERGY STAR® Program Requirements for Computers: Ver. 6.1</i>
P9.2*	Information about the energy save function is provided with the product.			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
P9.3	Energy efficiency class (monitors only):			<input checked="" type="checkbox"/>
P10 Emissions				
Noise emission – Declared according to ISO 9296 (See NOTE B9)				
P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,C}$ (B)	
	Idle	* <i>Fans on, HDD spinning (if applicable)</i>	* <i>3.6</i>	
	Operation	* <i>Fans on, HDD spinning</i>	* <i>3.7</i>	
	Other mode			
Measured according to: <input checked="" type="checkbox"/> ISO 7779 <input checked="" type="checkbox"/> ECMA-74 <input type="checkbox"/> Other (only if not covered by ECMA-74)				

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available;
see <http://www.ecma-international.org/publications/standards/Ecma-370.htm>

NOTE B9 A Guidance document on Acoustic Noise is available;
see <http://www.ecma-international.org/publications/standards/Ecma-370.htm>

Model number *	Z8 G4		Logo	
Issue date *	10/16/2017			


Product environmental attributes - Market requirements (continued)			Requirement met														
Item			Yes	No	n.a.												
Electromagnetic emissions																	
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
P12 Ergonomics for computing products																	
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
P13 Packaging and documentation																	
P13.1*	Product packaging material type(s): PAPER/Corrugated weight (kg): 2.07 Product packaging material type(s): PLASTIC/Polyethylene Expanded - EPE weight (kg): 0.45 Product packaging material type(s): PLASTIC/Polyethylene low density – LDPE weight (kg): 0.04																
P13.2*	Product plastic primary packaging is free from PVC.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: 0 %				<input type="checkbox"/>												
P13.4*	Specify media for user and product documentation (tick box): Electronic <input checked="" type="checkbox"/> , Paper <input type="checkbox"/> , Other <input type="checkbox"/>				<input type="checkbox"/>												
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify: Totally chlorine-free Elemental chlorine-free Processed chlorine-free		<input checked="" type="checkbox"/>	<input type="checkbox"/>													
P14 Voluntary programs																	
P14.1	The product meets the requirements of the following voluntary program(s): <table> <tr> <td>ENERGY STAR®</td> <td>Criteria version: 6.1</td> <td>Date: 10/16/2017</td> <td>Product category: Workstation</td> </tr> <tr> <td>Eco-label: EPEAT</td> <td>Criteria version: IEEE 1680.1</td> <td>Date: 10/16/2017</td> <td>Product category: Workstation</td> </tr> <tr> <td>Eco-label:</td> <td>Criteria version:</td> <td>Date:</td> <td>Product category:</td> </tr> </table>					ENERGY STAR®	Criteria version: 6.1	Date: 10/16/2017	Product category: Workstation	Eco-label: EPEAT	Criteria version: IEEE 1680.1	Date: 10/16/2017	Product category: Workstation	Eco-label:	Criteria version:	Date:	Product category:
ENERGY STAR®	Criteria version: 6.1	Date: 10/16/2017	Product category: Workstation														
Eco-label: EPEAT	Criteria version: IEEE 1680.1	Date: 10/16/2017	Product category: Workstation														
Eco-label:	Criteria version:	Date:	Product category:														
P15 Additional information (See NOTE B10)																	
P9	Energy consumption of computer products; description of the tested product configuration:																
All Sections	1. Product environmental information contained in this declaration is valid as of the date the declaration is published. Changes to external standards referenced in the IT Eco-Declaration may invalidate some information contained in this declaration over																
P1	1. This product does not include DEHP, BBP, DIBP, or DBP.																
P9	1. European Union Commission Regulation 1275/2008- Energy Efficiency Information:																
	Mode / Condition	Power Consumption in Watts at 230 VAC Input Voltage	Default Time to Mode / Condition (if applicable)														
	Off Mode (if applicable)		Not Applicable														
	Standby Mode (if applicable)	Not Applicable	Not Applicable														
	Network Standby / Sleep / Long Idle Mode if all wired network ports are connected and all wireless network ports are activated (if applicable)																
	Network Standby / Sleep / Long Idle Mode (if applicable)																
2. European Union Commission Regulation 1275/2008- Wireless Network Instructions: Where applicable, activate and deactivate a wireless network using the instructions provided in the product user guide or the operating system. Information is also available at www.hp.com/support .																	

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive) * * Specific exemptions apply for certain products and applications.	P1.1
Regulation (EC) 1907/2006(REACH, Annex XVII)	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2013/56/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2.3, P8.1
Directive 2006/95/EC (Low Voltage Directive)	P3.1
Directive 2004/108/EC (EMC Directive)	P3.1
Directive 1999/5/EC (R&TTE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Regulation (EC) No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive)	P6.1

Company environmental profile - THE ECO DECLARATION

Brand	HP	
Company name *	HP	
Contact information *	HP Sustainability and Compliance Center (SCC) sustainability@hp.com	
Internet site *	www.hp.com/hpinfo/globalcitizenship/environment/index.html	
Issue date *	2014-06-01	
Intended market *	<input checked="" type="checkbox"/> Global <input type="checkbox"/> Europe <input type="checkbox"/> Asia, Pacific & Japan <input type="checkbox"/> Americas <input type="checkbox"/> Other	
Additional information		

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

The declaration may be published only when all rows and/or fields marked with an * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under C7.

Company environmental profile - Legal requirements		Requirement met		
Item		Yes	No	n.a.
C1	Product recycling			
C1.1*	The company participates in a system or has its own system for collection and recycling of end of life products in countries where the company puts them on the market and where required (see legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C2	Battery recycling			
C2.1*	The company participates in a system or has its own system for collection and recycling of batteries in countries where the company puts products on the market (see legal reference) or pays eco tax / fee where required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C3	Packaging recycling			
C3.1*	The company participates in a system or has its own system for collection and recycling of packaging material in countries where the company puts products on the market and where required (see legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	


Company environmental profile - Market requirements		Requirement met		
Item		Yes	No	n.a.
C4	Environmental policy and environmental management			
C4.1*	The company has a documented environmental policy approved by the management.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C4.2*	The company has an environmental management system covering: Product development Manufacturing If so certified according to: <input checked="" type="checkbox"/> ISO 14001 <input checked="" type="checkbox"/> Other as specified in C7	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
C4.3	The company regularly publishes an environmental report. If so, it meets the recommendations of <input checked="" type="checkbox"/> The Global Reporting Initiative <input type="checkbox"/> Other as specified in C7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C5	Recycling			
C5.1*	Information about the product, battery & packaging take back system (C1, C2 and C3) is available in printed or electronic format.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C6	Voluntary programs			
C6.1	The company meets the requirements of the following voluntary program/s: Voluntary Agreement: Criteria version: Date: Product category: Voluntary Agreement: Criteria version: Date: Product category:			
C7	Additional information			
	<p>HP has received ISO 14001 certification for its manufacturing operations (Worldwide Manufacturing of Computing and Imaging Products and Related Operations) and for product design for its Personal Systems Products and LaserJet and Enterprise Printing Products. The product design certifications include HP-wide product environmental design processes (such as HP's General Specification for the Environment) that cover all HP products.</p> <p>HP is committed to responsible business practices and transparency in its global citizenship policies and performance. We have a long history of working with suppliers to monitor and improve their social and environmental responsibility (SER) performance when required, as well as improving standards in the industry. HP endorses the EICC Code of Conduct in its entirety, and we have supplemented it with additional requirements specific to freedom of association as well as HP's Student and Dispatch Worker Guidance Standard for Supplier Facilities in the People's Republic of China (PRC). HP also has a strong Global Human Rights Policy in place. HP expects its suppliers to establish policies and processes regarding conflict minerals. HP conducts due diligence on its supply chain annually including requesting information about our suppliers' own due diligence and the smelters and refiners used. HP was the first IT company to publish its supply chain smelter list. HP follows the Global Reporting Initiative (GRI) guidelines as a basis for reporting. The GRI index provides easy reference to HP's Living Progress Report (LPR) content. HP offers take back services of products and printing suppliers in some 70 countries. Please refer to HP's Living Progress Report for more details on our global efforts.</p>			

Legal references Europe Annex A

Reference	Declaration item
Directive 2012/19/EU (WEEE directive)	C1.1
Directive 2006/66/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	C2.1
Directive 2004/12/EC (Packaging Directive)	C3.1
Decision 97/129/EC (Secondary packaging legislation)	C3.1

Annex B2 - Product environmental attributes Computers and computer monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P15.

Brand *	HP	<div>Logo</div> <div></div>
Company name *	HP	
Contact information *	HP Sustainability and Compliance Center	
e-mail address	sustainability@hp.com	
Internet site *	http://www.hp.com/hpinfo/globalcitizenship/environment/	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	Display
Commercial name *	HP Z27n G2 27-inch Monitor
Model number *	Z27n G2
Issue date *	12/7/2017
Intended market *	<input checked="" type="checkbox"/> Global <input type="checkbox"/> Europe <input type="checkbox"/> Asia, Pacific & Japan <input type="checkbox"/> Americas <input type="checkbox"/> Other
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2


Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:

P4.1 – P4.3 Consumable materials

P9.1 TEC and Print speed


P10.2 - P10.3 Chemical emissions from printing products

P11.1 - P11.3 Consumable materials for printing products.

Model number *	Z27n G2	Logo	
Issue date *	12/7/2017		

Product environmental attributes - Legal requirements		Requirement met		
Item		Yes	No	n.a.
P1	Hazardous substances and preparations			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorocarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 µg/cm ² /week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/reachdesktop-pcs.html	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P2	Batteries			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P3	Conformity verification & Eco design (ErP)			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): http://www8.hp.com/uk/en/certifications/technical/regulations-certificates.html sustainability@hp.com	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P3.2*	The product complies with the Eco design requirements for energy-related products, (see legal reference). Required information is; <input checked="" type="checkbox"/> given in item P15 or added to this document, <input type="checkbox"/> available at (add URL):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P5	Product packaging			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P6	Treatment information			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating "Yes" means that the product is compliant with the mandatory requirements.

Model number *	Z27n G2	Logo	
Issue date *	12/7/2017		

Product environmental attributes - Market requirements (See General NOTE GN below)			
- Environmental conscious design			Requirement met
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No n.a.
P7 Design			
Disassembly, recycling			
P7.1*	Parts that have to be treated separately are easily separable	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.2*	Plastic materials in covers/housing have no surface coating.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P7.8*	Upgrading can be done using commonly available tools	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P7.9	Spare parts are available after end of production for: 5 years		<input type="checkbox"/>
P7.10	Service is available after end of production for: 5 years		<input type="checkbox"/>
Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: >ABS< Material type: PC, PET Material type: >SMMA<		
P7.12	Insulation materials of external electrical cables are PVC free.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P7.13	Insulation materials of internal electrical cables are PVC free.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all <input type="checkbox"/> PCBs > 25 g <input checked="" type="checkbox"/> are low halogen as defined in IEC 61249-2-21. (See 1NOTE B2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking: >PVC-FR(62)<	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive) <input type="checkbox"/> , TBBPA (reactive) <input type="checkbox"/> (See NOTE B3), Other; chemical name: , CAS #: Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4: FR(40)	<input type="checkbox"/>	<input type="checkbox"/>
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: " Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4: >PVC-FR(62)<	<input type="checkbox"/>	<input type="checkbox"/>
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; R51-53 and Hazard statements: Toxic to aquatic life with long-lasting effects The source(s) for these classifications is/are found at (add URL(s)): http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database (See note B5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
P7.20*	Postconsumer recycled plastic material content is used in the product (See Note B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is 46%.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.


NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see <http://www.ecma-international.org/publications/standards/Ecma-370.htm>

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

or	
b) The weight of recycled material is	g.

Model number *	Z27n G2	Logo	
Issue date *	12/7/2017		


Product environmental attributes - Market requirements (continued)			Requirement met		
Item			Yes	No	n.a.

Material and substance requirements (continued)							
P7.21*	Biobased plastic material content is used in the product (See NOTE B7):				<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	If YES; at least one of the two alternatives below shall be answered;						
	a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is %.						
	or						
	b) The weight of the biobased plastic material is g.						
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp.				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg						
P8 Batteries							
P8.1*	Battery chemical composition:						<input checked="" type="checkbox"/>
P9 Energy consumption (See NOTE B8)							
P9.1	For the product the following power levels or energy consumptions are reported:						
Energy mode *	Power level at 100 V AC	Power level at 115 V AC	Power level at 230 V AC	Reference/Standard for energy modes and test method *	<input type="checkbox"/>		
EPS No-load (External power supply / charger plugged in the wall outlet but disconnected from the product.)	W	W	W	EPS Energy Report Data	<input checked="" type="checkbox"/>		
PTEC * Typical Energy Consumption	W	W	W	ENERGY STAR® Program Requirements for Computer Monitor: Ver. 7.0	<input checked="" type="checkbox"/>		
ETEC * Annual Energy Consumption	79.26 kWh/year	78.93 kWh/year	79.23 kWh/year	ENERGY STAR® Program Requirements for Computer Monitor: Ver. 7.0	<input type="checkbox"/>		
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :				ENERGY STAR® Program Requirements for Computer Monitor: Ver. 7.0	<input checked="" type="checkbox"/>		
Display resolution * : 1440*2560 megapixels				ENERGY STAR® Program Requirements for Computer Monitor: Ver. 7.0	<input type="checkbox"/>		
Default time to enter energy save mode: minutes				ENERGY STAR® Program Requirements for Computer Monitor: Ver. 7.0	<input checked="" type="checkbox"/>		
P9.2*	Information about the energy save function is provided with the product.				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P9.3	Energy efficiency class (monitors only): B						<input type="checkbox"/>
P10 Emissions							
Noise emission – Declared according to ISO 9296 (See NOTE B9)							
P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, L _{WA,c} (B)				
	Idle	*	*				
	Operation	*	*				
	Other mode						
Measured according to: <input type="checkbox"/> ISO 7779 <input type="checkbox"/> ECMA-74							
<input type="checkbox"/> Other (only if not covered by ECMA-74)							

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available;
see <http://www.ecma-international.org/publications/standards/Ecma-370.htm>

NOTE B9 A Guidance document on Acoustic Noise is available;
see <http://www.ecma-international.org/publications/standards/Ecma-370.htm>

Model number *	Z27n G2	Logo	
Issue date *	12/7/2017		


Product environmental attributes - Market requirements (continued)		Requirement met		
Item		Yes	No	n.a.
Electromagnetic emissions				
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P12 Ergonomics for computing products				
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P13 Packaging and documentation				
P13.1*	Product packaging material type(s): PAPER/Corrugated & PAPER/Paperboard weight (kg): 1.218 Product packaging material type(s): PLASTIC/Polystyrene Expanded - EPS weight (kg): 0.687 Product packaging material type(s): PLASTIC/Polyethylene high density - HDPE weight (kg): 0.028 Product packaging material type(s): COMPOSITE/paper/carton+plastic weight (kg): 0.003 Product packaging material type(s): PLASTIC/Other weight (kg): 0.017			
P13.2*	Product plastic primary packaging is free from PVC.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: 75 %			<input type="checkbox"/>
P13.4*	Specify media for user and product documentation (tick box): Electronic <input checked="" type="checkbox"/> , Paper <input type="checkbox"/> , Other <input type="checkbox"/>			<input type="checkbox"/>
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify: Totally chlorine-free Elemental chlorine-free Processed chlorine-free	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
P14 Voluntary programs				
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Criteria version: 7.1 Date: 12/7/2017 Product category: Commercial Displays Eco-label: EPEAT Criteria version: IEEE 1680.1 Date: 12/7/2017 Product category: Commercial Displays Eco-label: TCO - Edge Criteria version: 2.0 Date: 12/7/2017 Product category: Commercial Displays			
P15 Additional information (See NOTE B10)				
P9	Energy consumption of computer products; description of the tested product configuration:			
All Sections	1. Product environmental information contained in this declaration is valid as of the date the declaration is published. Changes to external standards referenced in the IT Eco-Declaration may invalidate some information contained in this declaration over			
P1	1. This product does not include DEHP, BBP, DIBP, or DBP.			
P9	1. European Union Commission Regulation 1275/2008- Energy Efficiency Information:			
	Mode / Condition	Power Consumption in Watts at 230 VAC Input Voltage	Default Time to Mode / Condition (if applicable)	
	Off Mode (if applicable)	0.18 W	Not Applicable	
	Standby Mode (if applicable)	Not Applicable	Not Applicable	
	Network Standby / Sleep / Long Idle Mode if all wired network ports are connected and all wireless network ports are activated (if applicable)	Not Applicable	Not Applicable	
	Network Standby / Sleep / Long Idle Mode (if applicable)	Not Applicable	Not Applicable	
2.European Union Commission Regulation 1275/2008- Wireless Network Instructions: Where applicable, activate and deactivate a wireless network using the instructions provided in the product user guide or the operating system. Information is also available at www.hp.com/support . 3.COMMISSION DELEGATED REGULATION (EU) No 1062/2010 – Energy Efficiency Index: 0.285 Energy Efficiency Class:A				

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive) * * Specific exemptions apply for certain products and applications.	P1.1
Regulation (EC) 1907/2006(REACH, Annex XVII)	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2013/56/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2.3, P8.1
Directive 2006/95/EC (Low Voltage Directive)	P3.1
Directive 2004/108/EC (EMC Directive)	P3.1
Directive 1999/5/EC (R&TTE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Regulation (EC) No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive)	P6.1

Company environmental profile - THE ECO DECLARATION

Brand	HP	
Company name *	HP	
Contact information *	HP Sustainability and Compliance Center (SCC) sustainability@hp.com	
Internet site *	www.hp.com/hpinfo/globalcitizenship/environment/index.html	
Issue date *	2014-06-01	
Intended market *	<input checked="" type="checkbox"/> Global <input type="checkbox"/> Europe <input type="checkbox"/> Asia, Pacific & Japan <input type="checkbox"/> Americas <input type="checkbox"/> Other	
Additional information		

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

The declaration may be published only when all rows and/or fields marked with an * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under C7.

Company environmental profile - Legal requirements		Requirement met		
Item		Yes	No	n.a.
C1	Product recycling			
C1.1*	The company participates in a system or has its own system for collection and recycling of end of life products in countries where the company puts them on the market and where required (see legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C2	Battery recycling			
C2.1*	The company participates in a system or has its own system for collection and recycling of batteries in countries where the company puts products on the market (see legal reference) or pays eco tax / fee where required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C3	Packaging recycling			
C3.1*	The company participates in a system or has its own system for collection and recycling of packaging material in countries where the company puts products on the market and where required (see legal reference)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Company environmental profile - Market requirements		Requirement met		
Item		Yes	No	n.a.
C4	Environmental policy and environmental management			
C4.1*	The company has a documented environmental policy approved by the management.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C4.2*	The company has an environmental management system covering: Product development Manufacturing If so certified according to: <input checked="" type="checkbox"/> ISO 14001 <input checked="" type="checkbox"/> Other as specified in C7	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
C4.3	The company regularly publishes an environmental report. If so, it meets the recommendations of <input checked="" type="checkbox"/> The Global Reporting Initiative <input type="checkbox"/> Other as specified in C7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C5	Recycling			
C5.1*	Information about the product, battery & packaging take back system (C1, C2 and C3) is available in printed or electronic format.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C6	Voluntary programs			
C6.1	The company meets the requirements of the following voluntary program/s: Voluntary Agreement: Criteria version: Date: Product category: Voluntary Agreement: Criteria version: Date: Product category:			
C7	Additional information			
	<p>HP has received ISO 14001 certification for its manufacturing operations (Worldwide Manufacturing of Computing and Imaging Products and Related Operations) and for product design for its Personal Systems Products and LaserJet and Enterprise Printing Products. The product design certifications include HP-wide product environmental design processes (such as HP's General Specification for the Environment) that cover all HP products.</p> <p>HP is committed to responsible business practices and transparency in its global citizenship policies and performance. We have a long history of working with suppliers to monitor and improve their social and environmental responsibility (SER) performance when required, as well as improving standards in the industry. HP endorses the EICC Code of Conduct in its entirety, and we have supplemented it with additional requirements specific to freedom of association as well as HP's Student and Dispatch Worker Guidance Standard for Supplier Facilities in the People's Republic of China (PRC). HP also has a strong Global Human Rights Policy in place. HP expects its suppliers to establish policies and processes regarding conflict minerals. HP conducts due diligence on its supply chain annually including requesting information about our suppliers' own due diligence and the smelters and refiners used. HP was the first IT company to publish its supply chain smelter list. HP follows the Global Reporting Initiative (GRI) guidelines as a basis for reporting. The GRI index provides easy reference to HP's Living Progress Report (LPR) content. HP offers take back services of products and printing suppliers in some 70 countries. Please refer to HP's Living Progress Report for more details on our global efforts.</p>			

Legal references Europe Annex A

Reference	Declaration item
Directive 2012/19/EU (WEEE directive)	C1.1
Directive 2006/66/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	C2.1
Directive 2004/12/EC (Packaging Directive)	C3.1
Decision 97/129/EC (Secondary packaging legislation)	C3.1