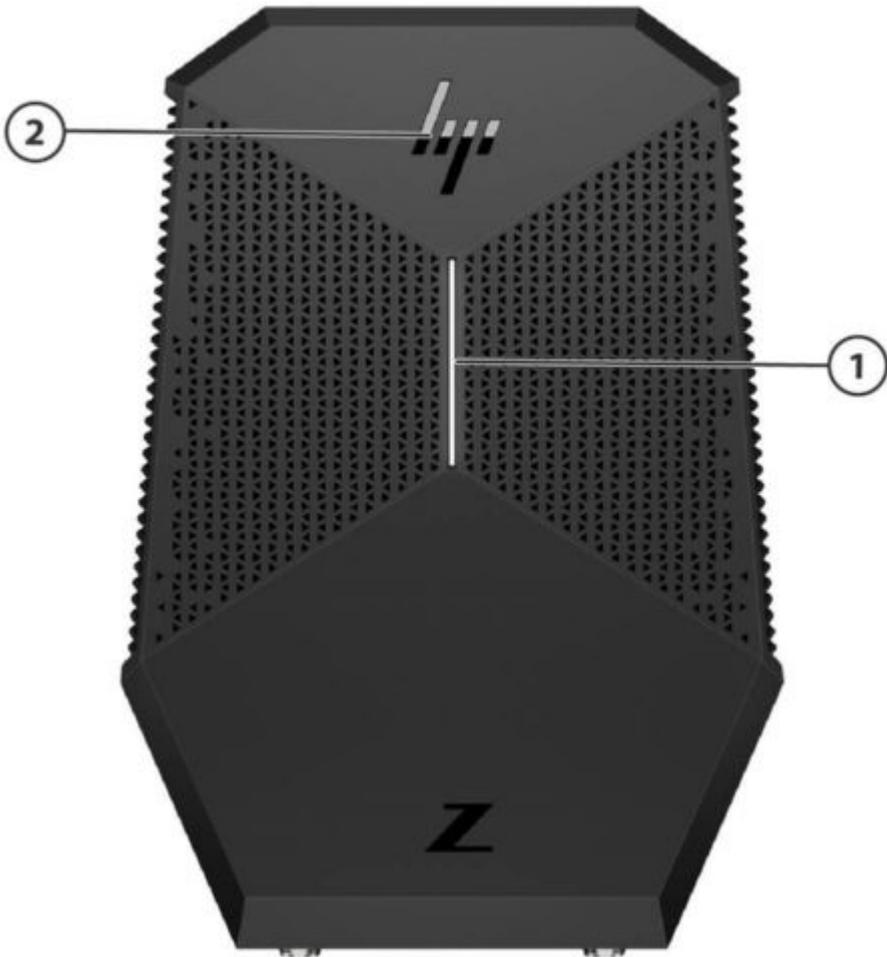


Overview

## HP Z VR Backpack G1 Workstation



Overview



Front View

- 1. Programmable RGB LED Bar
- 2. RGB LED HP logo

### Overview



#### Top View

- |    |                               |     |                      |
|----|-------------------------------|-----|----------------------|
| 1. | HTC Vive™ HMD power port      | 6.  | Audio jack           |
| 2. | (2) USB 3.0 Type A            | 7.  | Power Button         |
| 3. | (1) HDMI 2.0                  | 8.  | Dock Connector       |
| 4. | (1) Mini DisplayPort™ 1.3     | 9.  | Dock Guide Posts     |
| 5. | (1) USB Type-C™, Thunderbolt™ | 10. | External Battery pow |
-

### Overview



**HP Z VR Backpack G1, left side and right side view**

1. Power Button
2. (2) USB 3.0 Type A
3. DC in port

### Overview

#### At A Glance

- Windows 10 Pro edition
- Full performance industrial design, in a wearable form factor using a backpack harness solution. Reinforced chassis, top cover frame features customizable system health RGB LED indicator.
- Docking station solution to convert the HP Z VR Compact Workstation from backpack to desktop use modes.
- Workstation-caliber NVIDIA® Quadro® discrete graphics: NVIDIA® Quadro® P5200 with 16GB GDDR5 memory.
- ISV certified to provide fast and reliable performance with workstation applications, including manipulation of 3D textures.
- 7<sup>th</sup> generation Intel® Core™ i7 with vPro™ technology (vPro™ optional).
- HP Performance Advisor for optimal configuration, compatibility and performance
- Two SODIMMs, for system memory up to 32 GB.
- Supports multi-display, including up to four (4) displays, 2 direct from the HP Z VR Compact Workstation and additional 2 via docking solution.
- One (1) Thunderbolt™ 3 port (supporting DisplayPort™ 1.2, USB 3.1, PCIe Gen 3 devices) on the new USB-C™ connector, for high speed data/video/audio transfer support.
- DTS Headphone:X® and DTS Studio Sound™ audio optimized for high fidelity audio with immersive surround sound with deep, rich bass and crystal clear dialog without distortion at high volume
- Internal battery to support wearable harness use mode with hot swap external batteries: 6-cell (55 WHr)
- Wireless connectivity included:
  - Intel® Dual Band Wireless-M.2/PCIe AC 8265 802.11 AC/a/b/g/n (2x2) WiFi and Bluetooth® 4.2 combo adaptor (vPro)
- Dedicated storage slot: (1) M.2
- Security features including HP Client Security Manager, managed via single console.
- Designed to pass military standard Mil-Std-810G testing. MIL STD 810G testing is pending and is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Damage under the MIL STD test conditions or any accidental damage requires an optional HP Accidental Damage Protection Care Pack.
- Low halogen
- The base factory ordered HP Z VR Backpack G1 Workstation includes the following items:
  - HP Z VR Compact Workstation
  - HP Z VR Backpack Dock
  - HP 330W Smart AC Adapter
  - HP Z VR Backpack Harness
  - 2x HP Z VR Backpack External Battery
  - HP Z VR Backpack External Battery Charger
  - HP 180W Smart AC Adapter
  - HTC Vive Combo Cable

**NOTE: HTC VIVE Business Edition VR System headset sold separately.**

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

### Overview

**Form Factor** Small Form Factor, wearable PC

**Operating Systems** Preinstalled:  

- Windows 10 Pro 64<sup>1</sup>

**Notes:**

- Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>
- In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows® 7 operating system on products configured with Intel and AMD 7<sup>th</sup> generation and forward processors or provide any Windows® 8 or Windows® 7 drivers on <http://www.support.hp.com>.

### Processors\*

| Name                                    | Cores | Clock Speed (GHz) | Intel® Turbo Boost Technology <sup>1</sup> | Cache (MB) | Memory Speed (MT/s) | Hyper-Threading |
|---|-------|-------------------|--|------------|---------------------|-----------------|
| <b>Z2 Mini G3 Performance base unit</b> |       |                   |  |            |                     |                 |
| Intel® Core i7® processor 7820HQ        | 4     | 2.9               | 3.9  | 8          | 2400                | Y               |

<sup>1</sup>The specifications shown in this column represent the maximum turbo frequency with one core active. Turbo boost stepping occurs if denoted as N/A.

<sup>2</sup>Intel HD Graphics 630 is not enabled in the HP Z VR Backpack G1. All graphics for the platform is provided by the NVIDIA® Quadro® I

**NOTES:**

\* Multicore is designed to improve performance of certain software products. Not all customers or software applications will see the same performance. Performance frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering is not

### INTEL® Core™ i7 with vPro™

Intel® Core™ i7 with vPro™ technology is a selectable feature that is available on units configured with select processors, a qualified Intel® Centrino® WLAN module and a preinstalled Windows® operating system. It provides advances in remote manageability, security, energy efficient performance, and wireless connectivity. Intel® Active Management Technology (iAMT) offers built-in manageability and proactive security for networked mobile workstations, even when they are powered off\* or when the operating system is inoperable. It can help identify threats before they reach the network, isolate infected systems, and update regardless of their power state.

\*Requires a Windows operating system, network hardware and software, connection with a power source, and a direct (non-VPN) corporate network connection which is either cable or wireless LAN.

**NOTE:** Some functionality of Intel® Core™ i7 with vPro™ such as Intel® Active Management technology and Intel® Virtualization technology, requires additional third- party software in order to run. Availability of future "virtual appliances" applications for Intel® Core™ i7 with vPro™ technology is dependent on third- party software providers. Compatibility with future "virtual appliances" is yet to be determined.



### Overview

## Graphics

|                          |   |
|--------------------------|---|
| <b>Video Outputs:</b>    | HDMI 2.0<br>Mini DisplayPort™ 1.3<br>USB-C Thunderbolt™ 3 enabled with DisplayPort™ 1.2 |
| <b>Intel Integrated:</b> | Intel® HD graphics 630 is NOT enabled in the HP Z VR Backpack. Disc                     |
| <b>Discrete:</b>         | NVIDIA® Quadro® P5200 with 16GB dedicated GDDR5   |

**NOTE:** NVIDIA® Quadro® mobile professional graphics support up to 6 (included with the HP Z VR Compact Workstation). Connecting a Virtua depending on the HMD requirements, thus reducing the number of simu

NVIDIA® GC6 Technology is supported allowing S0 state power usage

---

### DisplayPort™ 1.2 protocol features supported on Thunderbolt™ 3

- Legacy displays (HDMI, DVI, VGA) may be attached to Thu
- DisplayPort™ monitors capable of supporting DisplayPort™ achieve HBR2 with the use a dongle.
- Thunderbolt™ 3 enabled monitors may be directly attached
- DisplayPort™ 1.2 MST feature ("daisy-chain" feature) is sup enabled devices or DisplayPort™ 1.2 monitors (requires mc a dongle).
- Up to 2 streams (eight lanes) of DisplayPort™ 1.2 are supp displays 24/30-bit color depth at 60 Hz or (1) 5K display su certified Thunderbolt™ cable).
- DisplayPort™ 1.2 w/MST (Multi-stream Transport): Support and WUXGA (1920 x1200) monitors, 24/30-bit color depth :

Thunderbolt™ 3 is superset port supporting DisplayPort™ 1.2, USB 3.1 Install all the latest drivers for your Thunderbolt™ device before connect Thunderbolt™ device (sold separately) must be compatible with Window Windows, see <https://Thunderbolttechnology.net/products>

## Other System Specs

|                        |  |
|------------------------|--|
| <b>Color</b>           | Black  |
| <b>Convertibility</b>  | The HP Z VR Compact Workstation can either be placed in its docking wearable PC for VR or AR usage.                                      |
| <b>Expansion Slots</b> | 1 80mm M.2 slot (PCIe Gen3 x4)<br>1 30mm M.2 slot (PCIe Gen3 x1)*<br>* For WLAN/BT M.2 module only                                       |
| <b>Expansion Bays</b>  | None   |
| <b>Top I/O</b>         | Power button, 2 USB 3.0 ports, 1 HDMI 2.0 output, 1 Mini Display Port™ power output (for HTC Vive™ HMD, the HP HMD Combo cable provided) |
| <b>Side I/O</b>        | 2 USB 3.0 ports, 330W AC Adapter DC In port  |
| <b>Bottom I/O</b>      | Docking connector, 2 Battery DC In ports   |

### Overview

|   |   |
|---|---|
| <b>Chassis Dimensions (H x W x D)</b>     | Standard desktop orientation: 333.5 x 236.4 x 60.9 mm   |
| <b>Weight</b>                             | Exact weights depend upon configuration;<br><br>Minimum Weight: 2.588 kg<br>Typical Weight: 2.588 kg<br>Maximum Weight: 4.658 kg* (when used as a wearable PC backpack with the Z VR Backpack harness and external batteries)<br><br>Max Supported Weight (as used in backpack mode): 4.658 kg*<br>(2588 g (PC) + 920 g (battery x2) + 368 g (housing x2) + 782 g (Backpack)= 4658 g)<br><i>* When used as a wearable PC backpack with the Z VR Backpack harness and external batteries. Exclude Compact Workstation.</i> |
| <b>Temperature</b>                        | Operating: 40° to 95°F (5° to 35°C)<br>Non-operating: -4° to 140°F (-20° to 60°C)<br><b>Notes:</b> De-rate the maximum operating temperature by one degree C (1.8 degrees F) for every 305m (1,000 ft)  |
| <b>Humidity</b>                           | Operating: 8% to 85%<br>Non-operating: 8% to 90%  |
| <b>Maximum Altitude (non-pressurized)</b> | Operating: 3,000 m (10,000 ft)<br>Non-operating: 9,100 m (30,000 ft).   |
| <b>Power Supply</b>                       | 330W 92.6% Efficiency at 115Vac   |
| <b>Chipset</b>                            | Intel® QM 175 chipset   |
| <b>Memory</b>                             | 2 SODIMM slots, supporting up to 32GB non-ECC, DDR4 2400 MT/s   |
| <b>Workstation ISV Certifications</b>     | See the latest list of certifications at <a href="http://www.hp.com/united-states/campaigns/workstations/partnerships.html">http://www.hp.com/united-states/campaigns/workstations/partnerships.html</a>  |

### Supported Components

#### Processors

|   | Factory Configured | Option Kit |
|---|--------------------|------------|
| <b>7th generation Intel® Core™ processor family</b> |                    |            |
| Intel® Core™ i7-7820HQ 2.9/3.9 8M 4C CPU            | Y                  | N          |

#### Monitors / Displays

[HP DreamColor Z24x Professional Display](#)  
[HP DreamColor Z27x Professional Display](#)  
[HP Z34c Curved Display](#)  
[HP Z22n Narrow Bezel IPS Display](#)  
[HP Z23n Narrow Bezel IPS Display](#)  
[HP Z24n Narrow Bezel IPS Display](#)  
[HP Z24nf Narrow Bezel IPS Display](#)  
[HP Z24nq Narrow Bezel IPS Display](#)  
[HP Z24s IPS UHD 4K Display](#)  
[HP Z25n Narrow Bezel IPS Display](#)  
[HP Z27n Narrow Bezel IPS Display](#)  
[HP Z27n Narrow Bezel IPS Display](#)

#### Notes

[Monitors purchased separately.](#)

#### HP Z VR Backpack G1 Accessories

|   | Factory Configured* | Option Kit | Option Kit Part Number |
|---|---------------------|------------|------------------------|
| HP Z VR Backpack Harness <sup>1</sup>         | Y                   | Y          | 2HY47AA                |
| HP Z VR Backpack Battery Pack <sup>2</sup>    | Y                   | Y          | 2HY48AA                |
| HP Z VR Backpack Battery Charger <sup>3</sup> | Y                   | Y          | 2HY51AA                |
| HP Z VR Backpack G1 Dock <sup>4</sup>         | Y                   | Y          | 2LM71AA                |
| HP Z VR Backpack HTC Vive Cables <sup>5</sup> | Y                   | Y          | 2HY49AA                |
| HP 330W Smart AC Power Adapter <sup>6</sup>   | Y                   | Y          | TBD                    |

\* All Factory Configured items listed above are mandatory DIBs (drop-in-the-box items) as part of the product base unit offering.

**NOTE 1:** HP Z VR Backpack Harness includes integrated carbon fiber mounting plate, two external 74Whr battery holders, and HMD parking clip.

**NOTE 2:** HP Z VR Backpack Battery Pack includes quantity two 74Whr external batteries.

**NOTE 3:** HP Z VR Backpack Battery Charger includes one 74 Whr battery charger and one 180W HP Smart AC Power Adapter.

**NOTE 4:** HP Z VR Backpack G1 Dock Option Kit includes the 330W HP Smart AC Power Adapter. For Factory Configured solutions, the 330W HP Smart AC Power Adapter comes with the HP Z VR Compact Workstation base unit.

**NOTE 5:** HTC Vive cables include custom HDMI cable, custom HTC power cable, and a custom USB 3.0 cable.

### Supported Components

**NOTE 6:** The HP 330W Smart AC Power Adapter is structured as part of HP Z VR Compact Workstation base unit out of the factory.

| PCIe SSDs | M.2 PCIe SSDs for HP Workstations | Factory Configured | Option Kit | Option Kit Part Number |
|-----------|-----------------------------------|--------------------|------------|------------------------|
|           | 256GB TLC                         | Y                  | N          |                        |
|           | 512GB TLC                         | Y                  | N          |                        |
|           | 1TB TLC                           | Y                  | N          |                        |

\*\* Choice of one installed in native M.2 slot on HP Z VR Compact Workstation motherboard

**NOTE:** For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows 10) of system disk is reserved for system recovery software.

| Graphics                 |                                     | Factory Configured | Option Kit | Option Kit Part Number | Supported # of cards |
|--------------------------|-------------------------------------|--------------------|------------|------------------------|----------------------|
| <b>Discrete Graphics</b> | NVIDIA® Quadro® P5200 16GB Graphics | Y                  | N          |                        | 1                    |

**Notes** No CPU Integrated Graphics available. Only Discrete Graphics enabled.

| Memory | DDR4-2400 non-ECC Unbuffered SODIMMs |
|--------|--------------------------------------|
|        | HP 16GB (2x8GB) DDR4-2400 ECC RAM    |
|        | HP 32GB (2x16GB) DDR4-2400 ECC RAM   |

**NOTES:** Two channels of DDR4 memory are supported. To realize full performance at least one DIMM must be inserted into each channel.

The CPUs determine the speed at which the memory is clocked. A 2400 MT/s CPU can support memory speed maximum rates of 2400 MT/s. To achieve maximum memory speed, 2400 MT/s memory must be used.

**NOTE:** Only unbuffered DDR4 SODIMMs are supported.

| Multimedia and Audio Devices |   | Factory Configured | Option Kit | Option Kit Part Number |
|------------------------------|---|--------------------|------------|------------------------|
|                              | RealTek ALC3866-CG with Integrated DTS Headphone:X® | Y                  | N          |                        |

### Supported Components

#### Optical and Removable Storage

|  | Factory Configured | Option Kit | Option Kit Part Number |
|--|--------------------|------------|------------------------|
|--|--------------------|------------|------------------------|

#### HP SlimTray Optical Drives

|                               |   |   |         |
|-------------------------------|---|---|---------|
| HP External USB Optical Drive | N | Y | F2B56AA |
|-------------------------------|---|---|---------|

Actual speeds may vary. 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 |
|--|--------------------|------------|------------------------|
| Realtek RTL8153B 10/100/1000 Mbit (no VPro)                                | Y                  | N          |                        |
| Intel® 8265 Wireless LAN (802.11ac) and Bluetooth® 4.2 Module (with VPro™) | Y                  | N          |                        |

**NOTE 1:** Full Intel® vPro™ Technology enabling requires the Intel 8265 Wireless LAN to be enabled and active.

**NOTE 2:** Realtek Ethernet access is only possible through the HP Z VR Backpack G1 Dock. Intel VPro is not supported with Realtek Ethernet.

**NOTE 3:** "Gigabit" Ethernet indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

#### Physical Security

|                                      | Factory Configured | Option Kit | Option Kit Part Number |
|--------------------------------------|--------------------|------------|------------------------|
| HP Keyed Cable Lock 10mm             | N                  | Y          | T1A62AA                |
| HP Master Keyed Cable Lock 10mm      | N                  | Y          | T1A63AA                |
| HP Dual Head Keyed Cable Lock        | N                  | Y          | T1A64AA                |
| HP Dual Head Master Cable Lock       | N                  | Y          | T1A65AA                |
| HP Essential Combination Lock (Herb) | N                  | Y          | T0Y16AA                |
| HP Combination Lock (Stuart)         | N                  | Y          | T0Y15AA                |

### Supported Components

#### Input Devices

|                                     | Factory Configured | Option Kit | Option Kit Part Number |
|-------------------------------------|--------------------|------------|------------------------|
| HP Slim USB Keyboard and Mouse      | N                  | Y          | T6T83AA                |
| HP Slim Wireless Keyboard and Mouse | N                  | Y          | T6L04AA                |
| HP USB Essential Keyboard and Mouse | N                  | Y          | H6L29AA                |

#### Other Hardware

|                         | Factory Configured | Option Kit | Option Kit Part Number |
|-------------------------|--------------------|------------|------------------------|
| HP Stereo 3.5mm Headset | N                  | Y          | T1A66AA                |
| HP Stereo USB Headset   | N                  | Y          | T1A67AA                |

#### Software

|                                       | Factory Configured | Option Kit | Support Notes |
|---------------------------------------|--------------------|------------|---------------|
| HP Performance Advisor                | Y                  | N          | See Note 1    |
| HP Remote Graphics Software (RGS) 7.1 | Y                  | N          | See Note 2    |
| HP Client Security Software           | Y                  | N          | See Note 3    |

**NOTE 1:** Supports, and preinstalled with Windows 10 only. Also available as a free download from <http://www.hp.com/go/performanceadvisor>

**NOTE 2:** RGS available as a free download from <http://www.hp.com/go/rgs>

**NOTE 3:** Windows 10 OS only. HP Client Security available as a SoftPaq download.

**Operating Systems** Windows 10 Pro 64

### System Technical Specifications

#### System Board

**System Board Form Factor** 313 mm x 209 mm (12.3 x 8.23 inches)

**Processor Socket** FCBGA1440

**CPU Bus Speed** DMI link between CPU & PCH

**Chipset** Intel® QM175

**Memory Expansion Slots** 2 SODIMM DDR4 memory slots

**Memory Type Supported** DDR4, SODIMM (Unbuffered), non-ECC

**Memory Modes** Non-Interleaved for single channel. Interleaved when both channels are populated.

**Memory Speed Supported** 2400MHz DDR4

**Memory Protection** None

**Maximum Memory** 32GB

**Memory Configuration (Supported)** 8GB and 16GB non-ECC unbuffered SODIMMs are supported.

**Integrated Graphics** None

NOTE: Integrated Graphics is NOT enabled in the HP Z VR Backpack G1 product

**Discrete Graphics** NVIDIA® Quadro® P5200 with 16GB GDDR5 memory  
Memory width: 256 bit  
NVIDIA® CUDA™ Cores: 2560  
API support: DirectX 12, Shader Version 5.1, Open GL 4.5, OpenCL 1.2  
Display outputs: 6 (only 4 are implemented)  
DisplayPort™ 1.3

**Network Controller** RealTek RTL 8153B 10/100/1000 Mbs LAN. Management capabilities: WOL, PXE 2.1.

**Wireless Network Controller** **M.2 PCIe** Intel® 8265 WLAN/BT. Management capabilities: WOL, PXE 2.1, vPro™/iAMT

**Supported Drive Interfaces** **M.2 PCIe** NVMe SSD – 80mm size, 256GB, 512GB, 1TB

### System Technical Specifications

|                                |  |   |
|--------------------------------|--|---|
| <b>USB Connector(s)</b>        | <b>Top</b>   | 2 USB 3.0 Type-A<br>1 USB 3.1 Type-C™ with Thunderbolt™ 3                                       |
|                                | <b>Side</b>  | 2 USB 3.0 Type-A  |
|                                | <b>Top</b>   | 1 HDMI 2.0  |
| <b>Display Connectors</b>      |  | 1 mini-DisplayPort™ 1.3   |
|                                |  | 1 USB 3.1 Type-C™ (DisplayPort through Thunderbolt™)  |
|                                |  |   |
| <b>Power Connector</b>         | <b>Top</b>   | 12V DC out power jack for HTC Vive™ HMD   |
|                                | <b>Side</b>  | DC-in power jack for external 330W power supply   |
|                                | <b>Bottom</b>  | DC-in integrated with dock connector  |
| <b>Dock Connector</b>          | <b>Bottom</b>  | Proprietary combo connector that mates with the HP Z VR Backpack Dock (HP Part Number: 2LM71AA) |
| <b>HD Integrated Audio</b>     | RealTek ALC3866-CG with software integration of DTS Headphone:X® and DTS Studio Sound™ |   |
| <b>Flash ROM</b>               | Yes  |   |
| <b>Chassis Fan</b>             | Yes: 1 for CPU + memory + system, 1 for GPU + memory                                   |   |
| <b>CMOS Battery Holder</b>     | Yes  |   |
| <b>- Lithium</b>               |  |   |
| <b>Battery</b>                 | 55Whr Lithium Ion, internal  |   |
| <b>Trusted Platform Module</b> | Infineon SLB9670 TPM 2.0   |   |
| <b>Power Supply Headers</b>    | Yes, One DC-in jack for external power supply<br>One 12V DC-out jack for HTC Vive™ HMD |   |
| <b>Power Switch, Power LED</b> | The power and Sleep State LED are combined in the Top-Side power switch.               |   |
| <b>Storage LED Indicator</b>   | None   |   |
| <b>Clear Password Jumper</b>   | Yes  |   |
| <b>Keyboard/Mouse</b>          | Not provided with Base Unit. Separate AMO accessory.                                   |   |

### System Technical Specifications

**Power Supply** 330W HP Smart AC Adapter, 92.6% efficiency, wide-ranging, active PFC Power Supply

**Operating Voltage Range** 115-230 VAC

**Rated Voltage Range** 100–240 VAC

**Rated Line Frequency** 50-60 Hz

**Operating Line Frequency Range** 47–63 Hz

**Rated Input Current** 1.9A @ 90Vac

**ENERGY STAR® qualified (Config Dependent)** Yes

**FEMP Standby Power Compliant** Yes, with Wake-on-LAN disabled: <1W in S5- Power Off

**Surge Tolerant Full Ranging Power Supply (Common mode power surges up to 2000V)** Yes

**Internal Battery** 55Whr Battery operating information shown in table below

|                                    |          |   |
|------------------------------------|----------|---|
| <b>Allowable Temperature Range</b> | 0 ~ 50   | Charge Initial Temperature  |
|                                    | 0 ~ 50   | Continuous Charging   |
|                                    | -10 ~ 60 | For start of discharge below 0°C, the battery pack must have a charge ≥ 80% |
|                                    |          | Storage Temperature   |
|                                    | -20 ~ 60 | 1 month   |
|                                    | -20 ~ 45 | 3 month   |
|                                    | -20 ~ 30 | 6 month   |

**External Battery** 74Whr Battery operating information shown in table below

|                                    |          |   |
|------------------------------------|----------|---|
| <b>Allowable Temperature Range</b> | 0 ~ 45   | Charge Initial Temperature  |
|                                    | 0 ~ 45   | Continuous Charging   |
|                                    | -10 ~ 60 | For start of discharge below 0°C, the battery pack must have a charge ≥ 80% |
|                                    |          | Storage Temperature   |
|                                    | -20 ~ 60 | 1 month   |
|                                    | -20 ~ 45 | 3 month   |
|                                    | -20 ~ 30 | 6 month   |

### System Technical Specifications

#### Declared Noise Emissions

##### Declared Noise Emissions

|                             |                       |                                       |
|-----------------------------|-----------------------|---------------------------------------|
| <b>System Configuration</b> | <b>Processor Info</b> | Intel® Core™ i7-7820HQ 2.9-3.9G/8M/4c |
|                             | <b>Memory Info</b>    | 2 - 16GB DDR4-2400 SO-DIMM Memory     |
|                             | <b>Graphics Info</b>  | NVIDIA® Quadro® P5200 with 16GB GDDR5 |
|                             | <b>Disks/SSD</b>      | 1 - Samsung 1TB PCIe M.2 SSD          |

| <b>Declared Noise Emissions</b> (in accordance with ISO 7779 and ISO 9296) | <b>Sound Power</b> (LWAd, bels) | <b>Deskside Sound Pressure</b> (LpAm, decibels) |
|--|---------------------------------|---|
| <b>Under Operating Load</b> (playing VR content)                           | 42                              | 42  |

#### Physical Security and Serviceability

|   |  |
|---|--|
| <b>Access Panel</b>                                       | No access panel. Tools required to remove top cover (rubber feet covers must be removed first). System is not designed for customer access.  |
| <b>Hard Drives</b>  | None   |
| <b>Expansion Cards</b>                                    | M.2 module requires a screwdriver to service and replace.  |
| <b>Processor Socket</b>                                   | No CPU socket. CPU soldered on motherboard.  |
| <b>Memory</b>   | Tool-less. Must remove shielding cover (for EMI) first (requires tools).   |
| <b>System Board</b>                                       | Screw-In   |
| <b>Single Color Power and HD LED on Front of Computer</b> | The Power LED is on the front of the system. No HDD LED on the system.   |
| <b>Over-Temp Warning on Screen</b>                        | No. System will automatically throttle in over-temperature situations.   |
| <b>Restore CD/DVD Set</b>                                 | None   |
| <b>Dual Function Front Power Switch</b>                   | Yes, causes a fail-safe power off when held for 4 seconds (default)  |
| <b>Cable Lock Support</b>                                 | Yes, but requires use of the HP Z VR Backpack Dock with a Kensington Cable Lock solution (optional): Locks HP Z VR Compact Workstation to the Dock once cable lock is engaged on the |

### System Technical Specifications

docking station. Secures HP Z VR Compact Workstation to docking station.  
3 mm x 7 mm slot on the HP Z VR Backpack Dock station.

**Serial, Parallel,  
Enable/Disable Port  
Control**

No serial or parallel ports are available on the HP Z VR Compact Workstation.

**USB Enable/Disable  
Port Control**

Yes – enable/disable per port control.

**Removable Media  
Write/Boot Control**

Yes, prevents ability to boot from removable media on supported devices (and can disable writes to media)

**Power-On Password**

Yes, prevents an unauthorized person from booting up the workstation

**Setup Password**

Yes, prevents an unauthorized person from changing the workstation configuration

**NIC LEDs (integrated)  
(Green & Amber)**

No. RJ45 NIC port is on the HP Z VR Backpack Dock only

**CPUs and Heatsinks**

Not serviceable.

**Power Supply  
Diagnostic LED**

No. Not applicable.

**Front Power LED**

Yes, white

**Internal Speaker**

No

**System/Emergency  
ROM Flash Recovery**

Crisis recovery feature recovers from corrupted system BIOS by using Boot Block support.

**Cooling Solution**

Air cooled forced convection

**CPU Heatsink Fan**

Yes. Heatsink is common between CPU and GPU assembly areas.

**GPU Heatsink Fan**

Yes. Heatsink is common between CPU and GPU assembly areas.

**Chassis Fan**

Two fan system.

**Memory Heatsink Fan**

No

**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 F2 at POST, and is available as a download from HP Support.

**Access Panel Key Lock**

Not applicable. No chassis access panel.

### System Technical Specifications

**ACPI-Ready Hardware** Advanced Configuration and Power Management Interface (ACPI).  
• 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

**M.2 Card Retention** Yes, all M.2 modules are retained by a single screw

**Flash ROM** Yes

**DIMM Connectors** Yes, 2 SODIMM connectors

### BIOS

**PCI 3.0 Support** Full BIOS support for PCI Express through industry standard interfaces.

**BBS** BIOS Boot Specification v1.01.  
Provides more control over how and from what devices the workstation will boot.

**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.

**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. BIOS Configuration Utility (BCU) 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.

**Thermal Alert** Monitors the temperature state within the chassis. Three modes:  
• 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.

### System Technical Specifications

|   |   |
|---|---|
| <b>Remote ROM Flash</b>   | Provides secure, fail-safe ROM image management from a central network console. Updates can be performed before starting the OS. Updates can be periodically scheduled.   |
| <b>ACPI (Advanced Configuration and Power Management Interface)</b>           | 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 6.0 for full compatibility with 64-bit operating systems. |
| <b>Ownership Tag</b>  | A user-defined string stored in non-volatile memory that is displayed in the BIOS splash screen.  |
| <b>Remote Wakeup/Remote Shutdown</b>  | System administrators can power on, restart, and power off a client computer from a remote location.  |
| <b>ASF 2.0 Compliant</b>  | Yes.  |
| <b>Instantly Available PC (Suspend to RAM - ACPI sleep state S3)</b>          | Allows for very low power consumption with quick resume time.   |
| <b>Remote System Installation via F12 (PXE 2.1) (Remote Boot from Server)</b> | Allows a new or existing system to boot over the network and download software, including the operating system.   |
| <b>ROM revision levels</b>  | Reports the system BIOS revision level in Computer Configuration Utility (F10 Setup). Version is available through an industry standard interface (SMBIOS) so that management SW applications can use and report this information.  |
| <b>System board revision level</b>  | Allows management SW to read revision level of the system board. Revision level is digitally encoded into the HW and cannot be modified.  |
| <b>Start-up Diagnostics (Power-on Self-Test)</b>                              | Assesses system health at boot time with selectable levels of testing.  |
| <b>Auto Setup when new hardware installed</b>                                 | System automatically detects addition of new hardware.  |
| <b>Keyboard-less Operation</b>  | The system can be booted without a keyboard.  |
| <b>Localized ROM Setup</b>  | Common BIOS image supports System Configuration Utility (F10 Setup) menus in 5 languages with local keyboard mappings.  |
| <b>Asset Tag</b>  | The user or IT administrator to set a unique tag string in non-volatile memory.   |
| <b>Per-slot Control</b>   | Allows I/O slot parameters (option ROM enable/disable) to be configured individually.   |

### System Technical Specifications

|   |   |
|---|---|
| <b>Adaptive Cooling</b>                                   | Control parameters are set according to detected hardware configuration for optimal acoustics.  |
| <b>Pre-boot Diagnostics</b>                               | (Pre-video) critical errors are reported via beeps and blinks on the power LED.   |
| <b>Digitally and Cryptographically Signed BIOS</b>        | Helps to prevent the installation of unauthorized versions of a BIOS (a rogue BIOS) from a virus, malware, or other code that could lead to compromised system security, data access, physical service, or even system board replacement.     |
| <b>Boot Block Emergency Recovery Mode (BIOS Recovery)</b> | The HP BIOS offers a write-protected boot block ROM that provides recovery from a failed flashing of the computer BIOS. This special recovery mode prevents the system from becoming unusable or “bricked” when a BIOS update is interrupted. |
| <b>UEFI Specification Revision</b>                        | UEFI 2.5.0  |
| <b>ACPI</b>   | Advanced Configuration and Power Management Interface, Version 6.0  |
| <b>ASF</b>  | Alert Standard Format Specification, Version 2.0  |
| <b>EDD</b>  | - Enhanced Disk Drive Specification Version 1.1<br>- BIOS Enhanced Disk Drive Specification Version 3.0   |
| <b>PCI Express</b>  | PCI Express Base Specification, Revision 3.0.   |
| <b>PMM</b>  | POST Memory Manager Specification, Version 1.01   |
| <b>SATA</b>   | - Serial ATA Specification, Revision 1.0a<br>- Serial ATA II: Extensions to Serial ATA 1.0, Revision 1.0a<br>- Serial ATA II Cables and Connectors Volume 2 Gold<br>- SATA-IO SATA Revision 3.0 Specification                                 |
| <b>SPD</b>  | PC SDRAM Serial Presence Detect (SPD) Specification, Revision 1.2B  |
| <b>TPM</b>  | Trusted Computing Group TPM Specification Version 2.0   |
| <b>USB</b>  | Universal Serial Bus Revision 1.1 Specification<br>Universal Serial Bus Revision 2.0 Specification<br>Universal Serial Bus Revision 3.0 Specification   |

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## Social and Environmental Responsibility

**Eco-Label Certifications & Declarations** This product is low halogen except for power cords, cables and peripherals. Service parts obtained after purchase may not be Low Halogen.

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

**Batteries** The battery in this product complies with EU Directive 2006/66/EC

### System Technical Specifications

Battery size: CR2032 (coin cell)  
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

#### Batteries – Internal 55Whr

The battery in this product complies with EU Directive 2006/66/EC

Battery size: 6 cell  
Battery type: Lithium ion 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~~

Lead greater than 40ppm by weight

#### Restricted Material Usage

This product meets the material restrictions specified in HP's General Specification for the Environment. <http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf>  
HP Inc. is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis.

#### Low Halogen Statement

This product is low halogen except for power cords, cables and peripherals. Service parts obtained after purchase may not be Low Halogen.

#### End-of-Life Management and Recycling

HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. This product is greater than 90% recyclable by weight when properly disposed of at end of life.

#### HP Inc. Corporate Environmental Information

For more information about HP's commitment to the environment:  
Living Progress Report <http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications  
<http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html>

#### Additional Information

ISO 14001 certificates:  
<http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html>

- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.
- Plastic parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product is >90% recycle-able when properly disposed of at end of life
- EPEAT® Silver registered in the U.S. EPEAT registration varies by country. See <http://www.epeat.net> for registration status by country.

#### Packaging

HP Workstation product packaging meets the HP General Specification for the Environment at [http://www.hp.com/hpinfo/globalcitizenship/society/gen\\_specifications.html](http://www.hp.com/hpinfo/globalcitizenship/society/gen_specifications.html)

- Does not contain restricted substances listed in HP Standard 011-1 General Specification for the Environment
- Does not contain ozone-depleting substances (ODS)
- Does not contain heavy metals (lead, mercury, cadmium or hexavalent chromium) in excess of 100 ppm sum total for all heavy metals listed

### System Technical Specifications

- 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 formatting

#### Packaging Materials

##### Internal

Cushions made from fabricated recycled expanded-polyethylene (EPE) or recycled expanded-polypropylene (EPP). May also be made from recycled molded paper-pulp (MPP).

##### External

Carton made from corrugated fiberboard with at least 25% recycled content.

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### Manageability

**Intel® Active Management Technology** The HP Z VR Compact Workstation supports Intel® vPro™ technology when purchased with a vPro™ technology capable CPU: Intel® Core™ i7 processors with Intel® VT-d/VT-x and Intel® TXT technology. (AMT)

**Remote Manageability Software Solutions** Visit: <http://www.hp.com/go/easydeploy>

**System Software Manager** Visit: <http://www.hp.com/go/ssm>

**Service, Support, and Warranty** Limited 1-year limited warranty. Batteries have a default one year limited warranty. Optional HP Care Pack Services are extended service contracts which go beyond your standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at <http://www.hp.com/go/cpc>. Sold separately or as an optional feature. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product. Consult your local HP Customer Support Center for details.

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### Technical Specifications - Processors

| Name  | Cores | Clock Speed (GHz) | Intel® Turbo Boost Technology <sup>1</sup> | Cache (MB) | Memory Speed (MT/s) | Hyper-Threading | Integrated Graphics                 | Featuring Intel® vPro™ Technology | TDP (W) |
|---|-------|-------------------|--|------------|---------------------|-----------------|-------------------------------------|-----------------------------------|---------|
| <b>Z2 Mini G3 Performance base unit</b>   |       |                   |  |            |                     |                 |                                     |                                   |         |
| Intel® Core i7® processor 7820HQ  | 4     | 2.9               | 3.9  | 8          | 2400                | Y               | Intel® HD Graphics 630 <sup>2</sup> | Y                                 | 45W     |
| <p><sup>1</sup>The specifications shown in this column represent the maximum turbo frequency with one core active. Turbo boost stepping occurs in 100MHz increments. Processors that do not have turbo functionality are denoted as N/A.</p> <p><sup>2</sup>Intel HD Graphics630 is not enabled in the HP Z VR Backpack G1. All graphics for the platform is provided by the NVIDIA Quadro P5200 GPU.</p> |       |                   |  |            |                     |                 |                                     |                                   |         |

### Technical Specifications - Storage

|  |   |  |  |
|--|---|--|--|
| <b>M.2 NVMe SSD</b>                        | <b>1TB TLC</b>                                | <b>Capacity</b>                            | 1024GB   |
|  |   | <b>Protocol</b>                            | NVMe   |
|  |   | <b>Form Factor</b>                         | M.2 2280                                       |
|  |   | <b>Controller</b>                          | NVMe   |
|  |   | <b>Rated for 24/7/365 operation</b>        | NO   |
|  |   | <b>Physical Size (Height)</b>              | 0.14 in; 3.65 mm                               |
|  |   | <b>Physical Size (Width)</b>               | 0.87 in; 22 mm                                 |
|  |   | <b>Drive Weight</b>                        | 0.02; 10 g                                     |
|  |   | <b>Interface</b>                           | PCIe NVMe Gen3 x4                              |
|  |   | <b>Synchronous Transfer Rate (Maximum)</b> | Read: Up to 3300 MB/s; Write: Up to 1,775 MB/s |
|  |   | <b>Operating Temperature</b>               | 32° to 158° F (0° to 70° C)                    |
|  |   | <br>                                       |  |
|  |   | <b>M.2 NVMe SSD</b>                        | <b>512GB TLC</b>                               |
| <b>Protocol</b>                            | NVMe  |  |  |
| <b>Form Factor</b>                         | M.2 2280                                      |  |  |
| <b>Controller</b>                          | NVMe  |  |  |
| <b>Rated for 24/7/365 operation</b>        | NO  |  |  |
| <b>Physical Size (Height)</b>              | 0.14 in; 3.65 mm                              |  |  |
| <b>Physical Size (Width)</b>               | 0.87 in; 22 mm                                |  |  |
| <b>Drive Weight</b>                        | 0.02; 10 g                                    |  |  |
| <b>Interface</b>                           | PCIe NVMe Gen3 x4                             |  |  |
| <b>Synchronous Transfer Rate (Maximum)</b> | Read: Up to 3200 MB/s; Write: Up to 1300 MB/s |  |  |
| <b>Operating Temperature</b>               | 32° to 158° F (0° to 70° C)                   |  |  |
| <br>                                       |   |  |  |
| <b>M.2 NVMe SSD</b>                        | <b>256GB TLC</b>                              |  |  |
|  |   | <b>Protocol</b>                            | NVMe   |
|  |   | <b>Form Factor</b>                         | M.2 2280                                       |
|  |   | <b>Controller</b>                          | NVMe   |
|  |   | <b>Rated for 24/7/365 operation</b>        | NO   |
|  |   | <b>Physical Size (Height)</b>              | 0.14 in; 3.65 mm                               |
|  |   | <b>Physical Size (Width)</b>               | 0.87 in; 22 mm                                 |
|  |   | <b>Drive Weight</b>                        | 0.02; 10 g                                     |
|  |   | <b>Interface</b>                           | PCIe NVMe Gen3 x4                              |
|  |   | <b>Synchronous Transfer Rate (Maximum)</b> | Read: Up to 3200 MB/s; Write: Up to 1255 MB/s  |
|  |   | <b>Operating Temperature</b>               | 32° to 158° F (0° to 70° C)                    |

### Technical Specifications - Graphics

|  |                                   |  |
|--|-----------------------------------|--|
| <b>NVIDIA® Quadro® P5200 16GB Graphics</b> | <b>Maximum Resolution</b>         | DisplayPort 1.3:<br>- up to 4096x2160 x 30 bpp @ 60Hz<br>- supports High Bit Rate 2 (HBR3) and Multi-Stream Transport (MST)<br><br>HDMI 2.0 output:<br>- up to 4096x2160 x 30 bpp @ 60Hz   |
|  | <b>Image Quality Features</b>     | Stereoscopic 3D display support including NVIDIA® 3D Vision™ technology, 3D DLP, Interleaved, and passive stereo   |
|  | <b>Display Output</b>             | Maximum number of displays:<br>- 4 direct attached monitors<br><br>Maximum number of DisplayPort™ displays possible per DisplayPort™ output (Multiple displays daisy-chained from one DisplayPort™ 1.3 port requires DisplayPort™ 1.2 MST capable displays or DP1.3 MST capable hub):<br>- 4 1920x1200 @ 60 Hz<br>- 2 2560x1600 @ 60 Hz<br>- 1 4096x2160 @ 60 Hz<br><br>Maximum number of monitors across all available Quadro P5200 outputs is 4. |
|  | <b>Supported Graphics APIs</b>    | OpenGL 4.5<br>DirectX 12<br><br>API support includes:<br>CUDA C, CUDA C++, DirectCompute 5.0, OpenCL, Java, Python, and Fortran  |
|  | <b>Available Graphics Drivers</b> | Microsoft Windows 10<br><br>HP qualified drivers may be preloaded or available from the HP support Web site:<br><a href="http://welcome.hp.com/country/us/en/support.html">http://welcome.hp.com/country/us/en/support.html</a>  |

### Technical Specifications - Network

|  |                                |  |
|--|--------------------------------|--|
| <b>Realtek RTL8153B GbE Controller</b> | <b>Connector</b>               | RJ-45  |
|  | <b>Controller</b>              | Realtek RTL8153B GbE platform LAN connect networking controller, USB 3.0 bus connection to host.   |
|  | <b>Memory</b>                  | Tx and Rx packet buffer memory   |
|  | <b>Data Rates Supported</b>    | 10/100/1000 Mbps   |
|  | <b>Compliance</b>              | 802.1as/1588, 802.1p, 802.1Q, 802.3, 802.3ab, 802.3az, 802.3i, 802.3u  |
|  | <b>Bus Architecture</b>        | USB 3.0  |
|  | <b>Data Transfer Mode</b>      | USB-based interface for active state operation (S0 state) and SMBus for host and management traffic (Sx low power state)   |
|  | <b>Power Requirement</b>       | Requires 3.3V (integrated regulators for core Vdc)   |
|  | <b>Boot ROM Support</b>        | Yes  |
|  | <b>Network Transfer Mode</b>   | Full-duplex; Half-duplex (not supported for the 1000BASE-T transceiver)  |
|  | <b>Network Transfer Rate</b>   | 10BASE-T (half-duplex) 10 Mbps<br>10BASE-T (full-duplex) 20 Mbps<br>100BASE-TX (half-duplex) 100 Mbps<br>100BASE-TX (full-duplex) 200 Mbps<br>1000BASE-T (full-duplex) 2000 Mbps |
|  | <b>Management Capabilities</b> | WOL, auto MDI crossover, PXE, RSS, ACPI, Advanced cable diagnostic, loopback modes, LPM, VLAN, Multicast Listener Discovery (MLD)  |

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|   |                                |   |
|---|--------------------------------|---|
| <b>Intel® 8265 Wireless LAN (802.11ac) and Bluetooth 4.2 Module</b> | <b>Connector</b>               | M.2 (Supports 2230 form factor; E Key) Motherboard Interface  |
|   | <b>Controller</b>              | Intel® Dual Band Wireless-AC 8265   |
|   | <b>Compliance</b>              | Wireless LAN: IEEE 802.11abgn, 802.11ac, 802.11d, 802.11e, 802.11i, 802.11h, 802.11w, WMM, WMM-PS, WPA, WPA2, WPS2, Protected Management Frames<br>FIPS, FISMA<br>Bluetooth®: Dual Mode Bluetooth® 2.1, 2.1+EDR, 3.0, 4.0, BLE, and 4.2             |
|   | <b>Antenna</b>                 | 2x2   |
|   | <b>Tx/Rx Streams</b>           | 2x2   |
|   | <b>Bands</b>                   | 2.4 GHz, 5GHz   |
|   | <b>Bus Architecture</b>        | PCI Express Gen3 x1 and USB 2.0   |
|   | <b>Management Capabilities</b> | Wake on WLAN (in all sleep states, excluding Max Power Savings mode), WFA Management Frame Protection (802.11w), F10 BIOS Menu option to disable/enable WLAN and Bluetooth® radios, supports seamless roaming between 802.11 wireless access points |
|   | <b>Throughput</b>              | Max PHY throughput 867 Mbps (802.11ac) for WLAN   |

### Technical Specifications - Network

**Notes**

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

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### Technical Specifications – Power

|   |   |   |   |  |
|---|---|---|---|--|
| <b>HP 330W Smart AC Adapter (for HP Z VR Compact Workstation)</b> | <b>Dimensions</b>   | 5.9 x 5.9 x 1.48 in (150 x 150 x 37.5 mm) |   |  |
|   | <b>Weight</b>   | 2.43lb / 1.1kg nominal                    |   |  |
|   | <b>Input</b>  | 100 to 240 VAC                            |   |  |
|   |   | Input Efficiency                          | 92.6% average at 115Vac and 93.2% average at 230Vac               |  |
|   | <b>Output</b>   | Input frequency range                     | 47 to 63 Hz   |  |
|   |   | Input AC current                          | 4.2A RMS at 90 VAC, maximum                                       |  |
|   |   | Output power                              | 330W nominal  |  |
|   |   | DC output                                 | 19.5 VDC nominal  |  |
|   |   | Hold-up time                              | 10 msec at 115 VAC input with maximum load                        |  |
|   |   | Output current limit                      | 34A (5ms)   |  |
|   |   | Over voltage protection                   | Shall not exceed 29 Volts for no longer than 250ms, auto shutdown |  |
|   |   | <b>Connector</b>                          | 3 pin/grounded, mates with interchangeable cords                  |  |
|   | <b>Environmental Design</b>   | Operating temperature                     | 32° to 95° F (0° to 35° C)  |  |
|   |   | Non-operating (storage) temperature       | -4° to 185° F (-20° to 85° C)                                     |  |
| Altitude  |   | Up to 16400 ft (5000 m)                   |   |  |
| Humidity  |   | up to 95%, non-condensing                 |   |  |
| Storage Humidity  |   | up to 95%, non-condensing                 |   |  |
| <b>EMI and Safety Certifications</b>                              | CE Mark- full compliance with LVD and EMC directives; Worldwide safety standards- IEC950, EN60950, UL1950, Class 1, SELV; Agency approvals- C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR22 Class B, CCIB, NOM-1 NYCE; MTBF- over 200,000 hours at 25°C ambient condition. |   |   |  |
| <b>HP 180W Smart AC Adapter (for external battery charger)</b>    | <b>Dimensions</b>   | 7.1 x 3.35 x 1.65 in (180 x 85 x 42mm)    |   |  |
|   | <b>Weight</b>   | 1.81 lb (820 g)                           |   |  |
|   | <b>Input</b>  | 90 to 264 VAC                             |   |  |
|   |   | Input Efficiency                          | 89% min at 115 VAC  |  |
|   | <b>Output</b>   | Input frequency range                     | 47 to 63 Hz   |  |
|   |   | Input AC current                          | 2.5 A at 90 VAC, 1.45 A at 180 VAC                                |  |
|   |   | Output power                              | 180W nominal  |  |
|   |   | DC output                                 | 19.5V nominal   |  |
|   |   | Hold-up time                              | >5 msec at 115 VAC input  |  |
|   |   | Output current limit                      | Not exceed 240VA for more than 60s, automatic shutdown            |  |
|   |   | Over voltage protection                   | 29V max for no longer than 250ms, automatic shutdown              |  |
|   |   | <b>Connector</b>                          | 3 pin/grounded, mates with interchangeable cords                  |  |
|   | <b>Environmental Design</b>   | Operating                                 |   |  |

### Technical Specifications – Power

|                                      |                                     |   |
|--------------------------------------|-------------------------------------|---|
|                                      | temperature                         | 41° to 95° F (5° to 35° C)  |
|                                      | Non-operating (storage) temperature | -4° to 185° F (-20° to 85° C)   |
|                                      | Altitude                            | 0 to 16405 ft (0 to 5000 m) with 32° C max ambient temperature at max altitude  |
|                                      | Humidity                            | 20% to 95%  |
| <b>EMI and Safety Certifications</b> |                                     | Worldwide safety and EMC approvals including CE, UL, CSA or cUL, GS, Australian Electric Permit, C-tick, NOM, CCC, KC, GOST, SABS, S mark, BSMI, ISC, PSE, PSB and SII. |

| Option Type        | Description                              | Part Number |
|--------------------|--|-------------|
| HP Z VR Backpack   | HP Z VR Backpack Harness                 | 2HY47AA     |
|                    | HP Z VR Backpack Battery Pack            | 2HY48AA     |
|                    | HP Z VR Backpack Battery Charger         | 2HY51AA     |
|                    | HP Z VR Backpack HTC Vive Combo Cable    | 2HY49AA     |
|                    | HP Z VR Backpack G1 Dock                 | 2LM71AA     |
| Input/Output       | HP Slim USB Keyboard and Mouse           | T6T83AA     |
|                    | HP Slim Wireless Keyboard and Mouse      | T6L04AA     |
|                    | HP USB Essential Keyboard and Mouse      | H6L29AA     |
|                    | HP Stereo 3.5mm Headset                  | T1A66AA     |
|                    | HP Stereo USB Headset                    | T1A67AA     |
|                    | USB-C to HDMI 1.4                        | N9K77AA     |
|                    | HP USB-C to DisplayPort Adapter          | N9K78AA     |
| Power              | HP 180W AC adapter                       | TBD         |
|                    | HP 330W Smart AC Adapter                 | TBD         |
| Security           | HP Essential Combination Lock (Herb)     | T0Y16AA     |
|                    | HP Combination Lock (Stuart)             | T0Y15AA     |
|                    | HP Dual Head Keyed Cable Lock (Sumo)     | T1A64AA     |
|                    | HP Dual Head Master Cable Lock (Sumo MK) | T1A65AA     |
|                    | HP Keyed Cable Lock 10mm                 | T1A62AA     |
|                    | HP Master Keyed Cable Lock               | T1A63AA     |
| Storage - external | HP External USB Optical Drive            | F2B56AA     |

Summary of Changes

| Date of change: | Version History: |  | Description of change: |
|-----------------|------------------|--|------------------------|
|                 | From v1 to v2    |  |                        |

title

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