

Enterprise Inspired. Performance Optimized.

Solidigm™ D7-P5520 & D7-P5620 (formerly Intel®)



Industry's most advanced PCIe 4.0 SSDs

- Expanded range of form factors and capacities support broad range of configurations
- Common hardware and firmware streamline qualifications
- Elevated performance – up to 42% faster random reads and 43% better QoS – and advanced feature set bring value to a range of workloads¹

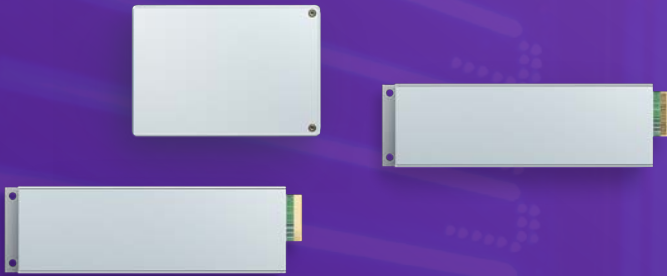
Unlock Cloud and Enterprise Workloads while reducing TCO

- Accelerate top cloud workloads such as cloud compute and eCommerce up to 11%²
- Accelerate top enterprise workloads such as general purpose Servers up to 15%³ and databases up to 39%⁴
- Expanded capacity ranges enables up to 50% smaller storage footprint and 44% lower power consumption⁵

Change advanced feature set to: Relentless focus on the highest quality & reliability

- Up to 90% IOPS consistency and <0.3% performance variability over the life of the drive⁶
- Industry-leading quality and reliability designed-in⁷
- Validated and tested above and beyond industry standards and norms⁸

HPE Selection Guide



Read Intensive D7-P5520

Form Factor	Capacity	DWPD
U.2 15mm	1.92TB	1
U.2 15mm	3.84TB	1
U.2 15mm	7.68TB	1

Mixed Use D7-P5620

Form Factor	Capacity	DWPD
U.2 15mm	1.6TB	3
U.2 15mm	3.2TB	3
U.2 15mm	6.4TB	3



1. Elevated performance. Comparing product specs of the 3.84TB Solidigm D7-P5520 with 130us 4 9s latency and 1000K/200K Random R/W IOPS to 3.84TB Solidigm D7-P5510 with 230 us 4 9s latency and 700K/170K Random R/W IOPS. Test and System Configuration: Intel® Xeon® Gold 6254 CPU @ 3.10GHz 24.75MB 200W 18 cores, BIOS: SE50C620.86B.02.01.0011.032620200659, CPU Sockets: 2, RAM Capacity: 32GB, RAM Model: DDR4, RAM Stuffing: N/A, DIMM Slots Populated: Slot(s): 2, PCIe Attach: CPU (not PCH lane attach), Chipset: Intel® C610 Chipset, Switch/ReTimer Model/Vendor: Intel A2U44X25NVMEK, NVMe Driver: Inbox, C-states: Disabled, Hyper Threading: Disabled, CPU Governor (through OS): Performance Mode, OS: CentOS 8.2.2004, Kernel: 5.4.49 FIO tool used for IO data. **2. Cloud Compute and eCommerce acceleration.** Workload IO characteristics based on research of publicly available materials conducted by Solidigm. Comparing 7.68TB Solidigm D7-P5520, Samsung PM9A3 and Solidigm D7-P5510. Measured results of BW 1784, 1526, 1695 MB/s respectively and, latency 181 and, 232, 203 usec respectively. Transfer size of 8KB with a QD=32. Test and System Configuration: Intel® Server Board M50CYP2SB2U, Intel® ICE LAKE - P5 4GXRAV D, Number of CPUs: 2, Number of Cores: 36, DRAM: DDR4 - 64GB, OS: CentOS Linux release 7.5.1804, Kernel Version: 3.10.0-862.el7.x86_64, IO measured using FIO tool. **3. General Purpose Server acceleration.** Workload IO characteristics based on research of publicly available materials conducted by Solidigm. Comparing 7.68TB Solidigm D7-P5520, Solidigm D7-P5510 and, Samsung PM9A3. Workload of 80/20 Sequential Read and Random read on two namespaces concurrently with 32KB transfer size and QD=32. Aggregate bandwidth measured of 6980, 6070, 5606 MB/sec and latency of 295, 341, 370 usec for D7-P5520, D7-P5510, PM9A3 respectively. Test and System Configuration: Intel® Server Board S2600WFT, Intel® Xeon® Gold 6254, Speed: 3.1GHz, Number of CPUs: 2, Number of Cores: 36, DRAM: DDR4 - 32GB, OS: CentOS Linux release 7.5.1804, Kernel Version: 3.10.0-862.el7.x86_64, G4SAC Gen4 switch PCIe card with Microsemi switch. IO

measured using FIO tool. **4. Database acceleration.** Workload IO characteristics based on research of publicly available materials conducted by Solidigm. Comparing Solidigm D7-P5520, Samsung PM9A3 and Solidigm D7-P5510 measured BW of 2294, 2257, 1750 MB/s and measured latency of 248, 412, 292 usec respectively using 16KB transfer size, 70/30 R/W and QD=32. Source: Test and System Configuration: Intel® Server Board M50CYP2SB2U, Intel® ICE LAKE - P5 4GXRAV D, 2 CPUs, 36 Cores: 36, DRAM: DDR4 - 64GB, OS: CentOS Linux release 7.5.1804, Kernel Version: 3.10.0-862.el7.x86_64, IO measured using FIO tool. **5. Reduce Storage Footprint and Power Consumption when ISO for 368TB 2U Server.** Comparing 48 x U.2 7.68TB Solidigm™ D7-P5510 and 24 x U.2 15.36TB Solidigm™ D7-P5520. Max average write power from product specifications. **6. IOPS consistency and variability.** Refer to Solidigm™ D7-P5520 and D7-P5620 product spec for IOPS consistency. IOPS variability measured after adjusting SSD cycle limit to simulate end of life behavior. Results are estimated or simulated. Actual results may vary. **7. Quality and Reliability Designed-in with Enhanced PLI and Robust E2D data protection.** Enhanced Power Loss Imminent - Designed-in a firmware check to validate that data was saved accurately upon power restoration. We believe others do not have this additional firmware check. Robust End-to-End Data Protection - Built-in redundancy where both ECC and CRC can be active at the same time. Protecting all critical storage arrays within the controller - instruction cache, data cache, indirection buffers and phy buffers Extending ECC coverage of SRAM to over 99% which we believe is among the highest in the industry. Bricking of the drive if unsure a silent error has happened. **8. UBER tested to 10X beyond JEDEC specification.** Solidigm drives are tested to 1E-17 under full range of conditions and cycle counts throughout the life of the drive which is 10X higher than 1E-16 specified in JEDEC - Solid State Drive Requirements and Endurance Test Method (JESD218). <https://www.jedec.org/standards-documents/focus/flash/solid-state-drives>.