

PetalO unveils Peta8118 Series PCIe4 NVMe SSD for Data Center

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PetalO Ltd., a fabless company focusing on high performance and low power SSD controllers for enterprise data center applications, announced today the general availability of its flagship Peta8118 SSD U.2 platform solutions based on its world leading Titanium-DC SoC controller.

The Titanium-DC controller was designed using TSMC FinFET 16nm process node with the latest PCIe Gen4x4 interface and 8-channels at 1200MT/s NAND interface speed supporting the latest generation of TLC and QLC NANDs. It can deliver unprecedented 7.0GB/s sequential read and 1.2MIOPS 4K random read performances at the lowest possible power consumption. Complete SSD drive level performance metrics based on different NAND interface speeds are listed in the tables below.

PetalO's proprietary Titanium series controller architecture, which fully supports the latest NVMe 1.4 specifications, enables best-in-class QoS and I/O Determinism and can also effectively support ZNS and Open Channel emerging protocols. PetalO's goal is to provide the highest performance, flexibility, and reliability required to meet the most demanding customer-specific data center requirements.

Peta8118 U.2 SSD samples are available in 1.6TB, 3.2TB, and 6.4TB capacity to partners and customers for evaluation and product development now. Peta8118 E1.S (EDSFF 1U Short) and M.2 form factor SSDs will be available in July 2020.

PetalO is also augmenting the Titanium controller family with Titanium-XP, a 16-channels version, to support 64TB SSD capacity and to further increase SSD level performances. Titanium-XP will include the proprietary three-dimensional Computational Engine, which is optimized for cutting-edge AI & ML applications and near-memory data processing functions. For these applications, PetalO's unique Computational Engine provides a cost-effective solution. Several innovative patents are under filing. Titanium-XP will be available early next year.

Peta8118-U.2 and Peta8118-E1.S Performances (*)

Workload	3.2 TB		6.4 TB	
	TLC 800MT/s	TLC 1200MT/s	TLC 800MT/s	TLC 1200MT/s
Sequential Read	5.1 GB/s	7.0 GB/s	5.1 GB/s	7.0 GB/s
Sequential Write	2.1 GB/s	3.2 GB/s	3.2 GB/s	3.2 GB/s
4KB Random Read	650 KIOPS	650 KIOPS	950 KIOPS	1.2 MIOPS
4KB Random Write Peak	510 KIOPS	560 KIOPS	560 KIOPS	560 KIOPS
4KB Random Write Sustained	160 KIOPS	260 KIOPS	240 KIOPS	280 KIOPS
Power	< 10W	< 16W	< 12W	< 16W

Peta8118-M.2 Performances (*)

Workload	1.6 TB		1.92 TB	
	TLC 800MT/s	TLC 1200MT/s	TLC 800MT/s	TLC 1200MT/s
Sequential Read	5.1 GB/s	7.0 GB/s	5.1 GB/s	7.0 GB/s
Sequential Write	1.0 GB/s	3.1 GB/s	1.0 GB/s	3.1 GB/s
4KB Random Read	365 KIOPS	365 KIOPS	365 KIOPS	365 KIOPS
4KB Random Write Peak	250 KIOPS	560 KIOPS	250 KIOPS	560 KIOPS
4KB Random Write Sustained	85 KIOPS	200 KIOPS	40 KIOPS	90 KIOPS
Power	< 8W	< 8W	< 8W	< 8W

(*) Performance values based on TLC flash from global four major NAND vendors