PCIe 5.0 SSD

High performance for any workload

PBlaze®7 7940 Series NVMe™ SSD

PBlaze7 7940 Series NVMe SSD, adopting PCIe 5.0 interface and supporting NVMe 2.0, delivers 2.5 times the performance and 1.5 times the power efficiency compared to conventional PCIe 4.0 SSDs. This exceptional performance enables it to meet the growing storage performance demands for cutting-edge digital technology applications.

PCIe 5.0, High performance

Developed on MUFP, the PBlaze7 7940 series 4K random read/write performance, achieving up to 2,800K IOPS / 730K IOPS. Additionally, the sequential read and write performance has experienced a significant 100% improvement, reaching 14GB/s and 10GB/s respectively. It also reduced the read and write latency to 58 / 9µs to ensures QoS and consistent performance, making the latency-sensitive applications running smoothly.

High-capacity and Diverse Form Factors

The PBlaze7 7940 series is available in capacities ranging from 3.2TB to 30.72TB, offered in diverse form factors including 2.5-inch U.2, E3.S and E1.S. This extensive range of options ensures compatibility with diverse deployment environments.

Optimal Power Efficiency

PBlaze7 7940 series boasts superior energy efficiency, delivering up to 970MB/s sequential read performance per watt. Through extensive hardware design and firmware optimization, the PBlaze7 7940 series achieves higher hardware utilization and minimizes its impact on server heat dissipation. Meanwhile with power mode settings ranging from 12W to 25W, PBlaze7 7940 series provides accurate and dynamic power control.

Richer Enterprise Features

PBlaze7 7940 series upgraded to NVMe 2.0 and OCP 2.0 specifications, providing advanced enterprise features including NVMe-MI 1.2b out-of-band management, end-to-end data protection, TCG Opal 2.0, 128K Write Atomicity Normal, ARP and more.

Key Features

PCIe 5.0, NVMe2.0
3.2TB - 30.72TB Capacity
2800K IOPS
14 GB/s Sequential Read
10 GB/s Sequential Write
Latency R/W 58/9µs

Reliability

TCG Opal2.0
128K Write Atomicity Normal
AES 256 Data Encryption
Sanitize
Full Data Path Protection
Power Failure Protection
Secure Download and Secure Boot

Easy-to-use

ARP
NVMe-MI 1.2b
Telemetry
Firmware Upgrade without Reset
Persistent Event Log
Latency Statistics & High Latency Logging

Advanced Feature Support

Timestamp
Weighted Round Robin
8TB/s Enterprise TRIM

PCIe 5.0 SSD

PBlaze®7 7940 Series NVMe™ SSD

PRODUCT BRIEF

PBlaze7 7940 Series [1]	*7940*				*7946*		
User Capacity (TB)	3.84	7.68	15.36	30.72	3.2	6.4	12.8
128KB Sequential Read(GB/s)	14	14	13.5	14	14	14	13.5
128KB Sequential Write(GB/s)	5.7	10	9.5	9.5	5.7	10	9.5
Sustained Random Read (4KB) IOPS	2700K	2800K	2800K	2750K	2700K	2800K	2800K
Sustained Random Write (4KB) IOPS (Steady State)	300K	500K	500K	410K	540K	730K	720K
Lifetime Endurance DWPD [2]	1				3		
Random R/W Latency [3]	58 / 9 µs						
Sequential R/W Latency [3]	8 / 9 µs						
Form Factor [4]	2.5-inch U.2, E1.S, E3.S, HHHL AIC						
Interface	PCIe 5.0 x 4						
Operating Temperature	Case: 0°C to 77°C						
Uncorrectable Bit Error Rate	$< 10^{-18}$						
Mean Time Between Failures	2.5 million hours						
Protocol	NVMe 2.0, OCP 2.0						
NAND Flash Memory	3D TLC NAND						
Operation System	RHEL, SLES, CentOS, Ubuntu, Windows Server, VMware ESXi						
Power Consumption	< 25 W						
Basic Feature Support	Power Failure Protection, Full Data Path Protection, S.M.A.R.T, Flexible Power Management,Hot Pluggable						
Advanced Feature Support [5]	TRIM, Multi-namespace, AES 256 Data Encryption & Crypto Erase, EUI64/NGUID, Variable Sector Size Management & NVMe End-to-End Data Protection (DIF/DIX)[5], Firmware Upgrade without Reset, Timestamp, Weighted Round Robin, Sanitize, Persistent Event Log, Telemetry, Secure Download, Secure Boot, Get LBA Status, Write Zeroes, Write Uncorrectable TCG OPAL2.0, 128K Write Atomicity Normal[5], NVMe-MI, ARP						
Software Support	Open-source management tool, CLI debug tool OS in-box driver (Easy system integration)						

Applications & Workloads

- Database
- Searching, Indexing, CDN
- Cloud and Hyper-scale Computing
- High Performance Software-defined Storage
- Deep Learning and Big Data Analytics
- High Performance Storage System
- ERP, SAP HANA
- BOSS, Banking, Taxing
- High Frequency Trading
- Online Payment

For more information, please visit:
www.memblaze.com

Phone:
400-650-7995

Email:
contact@memblaze.com

NOTES:

[1] Performance may vary due to different system configurations and firmware version.
[2] DWPD, Drive Writes per Day for 5 years.
[3] Average latency & Sequential latency measured with 4KB random I/O pattern.
[4] Only U.2 support 30.72T.
[5] The 30.72T U.2 only supports sector size of 512 and 4K Bytes and does not support 128K Write Atomicity Normal.