

PCIe 3.0 SSD Storage Platform

for Datacenter Servers and Storage Arrays

Turnkey Storage Solution with FLASH Controller, Customizable Firmware, and SSD Designs

FADU's PCIe 3.0 NVMe SSDs are designed to meet the increasing demands placed on Hyperscaler, Hyper-converged, Enterprise, and Edge data centers.

At the heart of FADU's SSDs is an innovative SSD controller architecture that enables ultra-low and consistent latency while virtually eliminating thermal throttling issues. As a result, FADU SSDs deliver industry leading KIOPS/Watt performance while supporting superior QoS.

In the industry's first E1.S form factor SSD, FADU's PCIe 3.0 SSD consumes up to 30% less power and operates up to twice as fast as other PCIe 3.0 SSDs. Consistent low-latency delivers stable, superior Quality of Service (QoS) at any workload.

The SSDs support a variety of features for modern data centers, including hardware-based security, advanced telemetry, virtualization functions, data path, and power loss protection.

FADU's PCIe 3.0 SSD Platform is based on industry standard specifications including NVMe 1.3, PCIe 3.0 x 4, and OCP NVMe Cloud SSD 1.0.

Storage Platform
BRAVO

Interface
PCIe 3.0 x 4

Specifications
NVMe 1.4 | OCP NVMe Cloud SSD 1.0

FLASH Controller
FADU FC3081

SSD Designs
M.2 | E1.S Form Factors
1TB | 2TB | 4TB Capacities

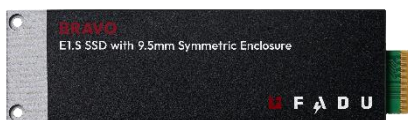
SSD Performance Up To

Sequential Read	3,400 MB/s
Sequential Write	2,400 MB/s
Random Read	800 KIOPS
Random Write	95 KIOPS

SSD Power Consumption
Active: <10W Idle: <3W

Benefits

- Industry-leading KIOPS/Watt with up to 25% lower power than other PCIe 3.0 SSDs
- Consistent, low latency for superior Quality of Service (QoS) up to 4x better than most industry leading SSDs
- Leading edge, trusted industry security standards



E1.S



M.2



FC3081 Controller

PCIe 3.0 SSD Specifications

FADU PCIe 3.0 SSDs deliver industry-leading performance at low power for higher sustained QoS at low latency.

Specifications	PCIe 3.0 SSDs				Notes
Interface	PCIe 3.0 x 4				
NVMe	NVMe 1.4				
OCP Compliance	OCP NVMe Cloud SSD 1.0				
Controller	FADU FC3081				
NAND	SKH V6 128 Layer 4D eTLC				
Form Factor	M.2 22110 - Small SSD Form Factor				
	E1.S (5.9mm/9.5mm/15mm/25mm) - Enterprise Datacenter SSD Form Factor (EDSFF) optimized for 1U platforms				
E1.S and M.2 OP7 Performance	M.2	E1.S			
Capacity (GB)	960	960	1,920	3,840	
Sequential Read (MB/s)	3,400	3,400	3,400	3,400	Queue Depth = 128 IO Size = 128KB
Sequential Write (MB/s)	1,500	1,500	2,400	2,400	
Random Read (KIOPS)	800	800	800	800	Queue Depth = 128 IO Size = 4KB
Random Write (KIOPS)	30	30	75	95	
Random Read Latency (μs)	70	70	70	70	Queue Depth = 1 IO Size = 4KB
Random Write Latency (μs)	20	20	15	15	
QoS (99.9%) Random Read (μs)	150/400	150/400	150/300	150/300	Queue Depth = 1/64 IO Size = 4KB
QoS (99.9%) Random Write (μs)	200/5300	200/5300	60/2000	60/1500	
Power Consumption					
Active (W)	< 6.0	< 7.5	< 9.5	< 10.0	
Idle (W)	< 2.0	< 3.0			
Reliability					
MTBF (Hour)	2.0 M				
UBER	1 Sector per 10 ¹⁷ Read				
Retention	3 Months @ 40°C (EOL)				
Warranty					
DWPD	1.3				
Period	3 Years				
Operating Temperature (°C)	0 ~ 70				

PCIe 3.0 SSD Security Features

PCIe 3.0 SSDs offer state-of-the-art security features to ensure data integrity in Hyperscaler, Hyper-Converged, Enterprise, and Edge data center storage.

Security Features	Benefit
Data-path E2E Protection (SECDED)	End-to-end data protection ensures the integrity of data transmission along the entire pathway from the host to the SSD storage medium
Internal RAID	Supports internal redundant array of independent disks to protect data
Self Encrypting Drive (AES-XTS)	Self-encrypting drives (SEDs) provide strong data encryption on the fly without performance degradation
Secure Boot	Supports secure boot to prevent malicious software from loading at start up
TCG/TCG OPAL 2.01	Supports Trusted Computing Group OPAL standards

PCIe 3.0 SSD Data Center Features

PCIe 3.0 SSDs are designed for streamlined and standardized monitoring and management in scalable data center environments with a high degree of configurability, reducing the total cost of ownership.

Data Center Features	Benefit
Multiple Namespaces (NS)	Data center level requirement support (Max 16NS)
SMART / Health Log / Telemetry Log	Fully supports all OCP log requirements, providing data center-level monitoring and debugging capabilities
Latency Monitoring Feature	Addresses bottlenecks and performance issues quickly and efficiently
NVMe-MI 1.0a	Standardized SSD monitoring system support for enhanced and streamlined maintenance
Power Loss Protection (PLP)	Ensures data is not lost while the SSD is writing data during a power failure
Multiple Sector Size Support	Support for 512 and 4096-byte sectors to satisfy multiple platforms, various workloads, and operating systems