

Solving Real Issues In Storage – The Newport Platform

Moving Big Data across busses and networks adds latency to any compute environment. The Newport platform is a Third-generation Non-Volatile Memory Express® (NVMe™) storage solution that was built to address the compute latency of traditional architectures. This is especially true in distributed analytics which can involve PB scale data sets. In use cases where the movement of these large data sets from storage to server memory to CPU is required, the use of Computational Storage Devices (CSDs) as part of the architecture can make significant improvements in overall application performance while simultaneously lowering power and TCO budgets.

High Capacity, Low Power NVMe Storage – The HCS-8100

The Newport Platform comes in two primary SKU's. The HCS-8100 strives to hit the **highest NVMe capacity points** on the market today at the lowest power budget available. The High Capacity Storage (HCS) devices use an NVMe 1.3 protocol over a PCIe Gen3 x4 interface. NGD Systems' patented and proprietary QoS technology manages power, flash endurance, and stable latency response characteristics. Starting with 3D flash media as the primary storage element, and enabled by a patented LDPC engine, NGD Systems ensures complete end to end reliability. The product is offered in multiple form factors and capacity points. It is currently based on 3D TLC NAND and can be sourced with different media vendors upon request.

Application Acceleration and Scaling – The ICS-8100

Rather than bring data to the CPU, why not bring the CPU to the data. It's faster, cheaper, and more power efficient. With **In-Situ Processing** capabilities built in, the Computational Storage Drives (CSDs) are built to address the inherent performance bottlenecks associated with Big Data movement in traditional server architectures. The ICS-8100 processes the data where it resides, in the NVMe SSD, without using host CPU or memory resources. This approach, managed through standard APIs, affords significant flexibility when coupled with the standard form factors offered by the Newport Platform.

Key Markets and Applications

The Newport platform brings sizable advantages to those markets where high capacity SSD storage, low power, and parallel processing are all part of the application space. These markets include but are not limited to:

Hyperscale / Data Center



By utilizing CSDs for these workloads, hyperscale data centers reduce CapEx, OpEx, power/cooling, and physical footprint.

Content Delivery Networks



CSDs allows access control to occur at the point of storage, reducing TCO and improving quality and number of concurrent streams

AI / Edge Compute



With a growing need to store and analyze data at the edge, a more cost effective and offload need to CSDs exists.

Key Capabilities

Industry Leading Capacity

- Up to 32 TB capacity
- Low Watts per TB
- Vendor Agnostic Media
- Computational Resources

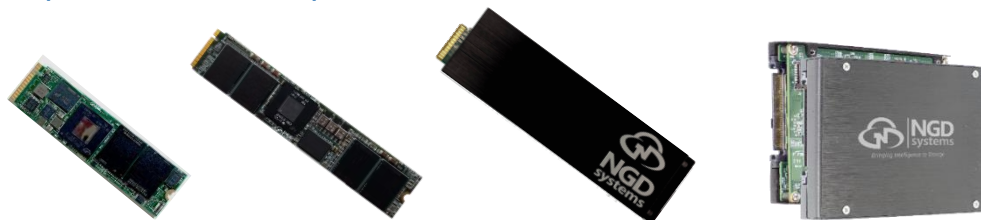
Application Aware In-Situ Processing

- Performs compute via In-Situ Processing
- Augment CPU without compromise
- Improved data mobility

Reliable Storage

- End-to-end data protection
- Advanced LDPC ECC
- Patented Elastic FTL
- QoS Management

Newport Platform Product Specifications, Capacities and Part Numbers



	M.2 - 2280	M.2 - 22110	EDSFF – E1.S	U.2 – 2.5-inch SFF
Raw Capacity		Up to 8TB	Up to 12TB	Up to 32TB
Read Performance ¹	4K Random – 200K 128K+ Sequential – 1.6GB/s			
Write Performance ¹	4K Random 35K	4K Random 35K	4K Random 200K	4K Random 200K
Avg. Active Power (W)	6	8	12	12
Supply Voltage (V)	3.3	3.3	12	12
Temp Ranges With Airflow ² (°C)	0 to 60 Additional Temp Ranges Available			
Dimension – W x L x H (mm)	22 x 80 x 5	22 x 110 x 5	31.5 x 111.5 x 6	69.85 x 100.45 x 15
Warranty ³	3 Year Standard			

HCS-8100 Part Number Reference

Part Number	Raw Capacity (TB)	Workload - DWPD	Formatted Capacity (TB)	Form Factor
HN0800-xxxT1-C	040	Read Centric - 1	3.84	M.2 (2280)
HN0800-xxxT4-C	040	Mixed Use - 3	3.2	M.2 (2280)
HN1000-xxxT1-C	040, 080	Read Centric - 1	3.84, 7.68	M.2 (22110)
HN1000-xxxT4-C	040, 080	Mixed Use - 3	3.2, 6.4	M.2 (22110)
HN5500-xxxT1-C	060, 120	Read Centric - 1	5.76, 11.52	EDSFF (E1.S)
HN5500-xxxT4-C	060, 120	Mixed Use - 3	4.8, 9.6	EDSFF (E1.S)
HN2500-xxxT1-C	080, 160, 320	Read Centric - 1	7.68, 15.36, 30.72	2.5" U.2 15mm
HN2500-xxxT4-C	080, 160, 320	Mixed Use - 3	6.4, 12.8, 25.6	2.5" U.2 15mm

ICS-8100 Part Number Reference

Part Number	Raw Capacity (TB)	Computational Storage - DWPD	Formatted Capacity (TB)	Form Factor
IN0800-xxxT4-C	040	Compute - 3	3.2	M.2 (2280)
IN1000-xxxT4-C	040, 080	Compute - 3	3.2, 6.4	M.2 (22110)
IN5500-xxxT4-C	060, 120	Compute - 3	4.8, 9.6	EDSFF (E1.S)
IN2500-xxxT4-C	080, 160, 320	Compute - 3	6.4, 12.8, 25.6	2.5" U.2 15mm

¹ Performance Results can be impacted by temperature range

² On-board temperature sensors for 'case temp' on all devices can be read with SMART
Ambient Temperature ranges require minimum airflow – See datasheet

³ Additional Warranty options available for either higher endurance or longer