

# Nallatech 2505

## Near-Storage FPGA Accelerator

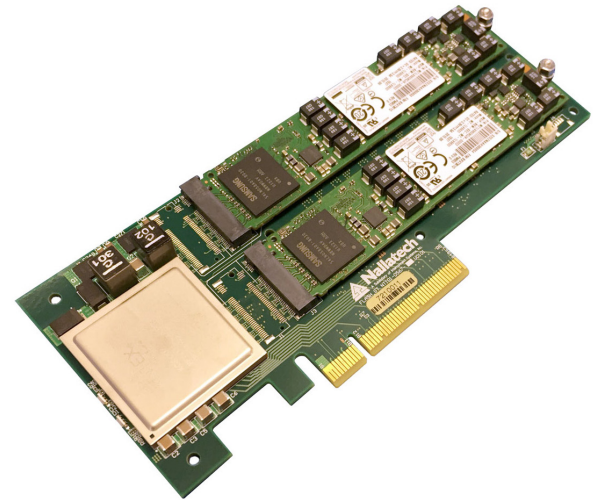


The 2505 is a high performance PCIe-based Flash SSD with localized FPGA acceleration capability.

- **8-lane PCIe Gen 3 card**
- **(1) Xilinx KU060 Ultrascale FPGA**
- **(2) 960GB or 1.92TB M.2 NVMe SSDs**
- **(1) bank of local DDR4 memory**

Designed to address datacentric and distributed compute algorithms

- **Database Acceleration**
- **Inline Compression**
- **Inline Encryption**
- **Checkpoint Restarting**
- **Burst Buffer Caching**



## Fully Programmable, Inline Storage FPGA Accelerator with Multiple M.2 NVMe SSDs

SSD SPECIFICATIONS	1.92TB Version	3.84TB Version
Model	250S-2T	250S-4T
# of M.2 NVMe SSDs	2	2
Storage Capacity (TB)	1.92	3.84
<b>Data Transfer Rate</b> (128KB data size)		
- Sequential Read (GB/s)	3.6	4.0
- Sequential Write (GB/s)	1.86	2.4
<b>Data I/O Speed</b> (4KB data size, sustained)		
- Random Read (KIOPS)	700	860
- Random Write (KIOPS)	60	80
<b>Latency</b> (Sustained workload)		
- Random Read/Write (typical)	85/50us	85/50us
- Sequential Read/Write (typical)	15/15us	15/15us
Endurance DWPD Drive Writes Per Day (3 years)	1.3	1.3

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## FPGA Accelerator Card

;;NEW PRODUCT

### Form Factor

- » Single width PCI Express card
- » Half Height, Half Length (HHHL)
- » 2.713 x 6.6 inches

### Host Interface

- » 8-lane PCI-Express Gen 3
- » Actual performance is host computer chipset and operating system dependent

### Processing

- » Xilinx Ultrascale device in FFVA1156 package
- » Default configuration: KU060, speed grade 2

### DDR4 SDRAM Memory

- » One bank of DDR4 SDRAM x 80 for FPGA fabric
- » 4GB @ 2400 MT/s

### Application Development

Contact Sky Blue or Zerif

### Electrical

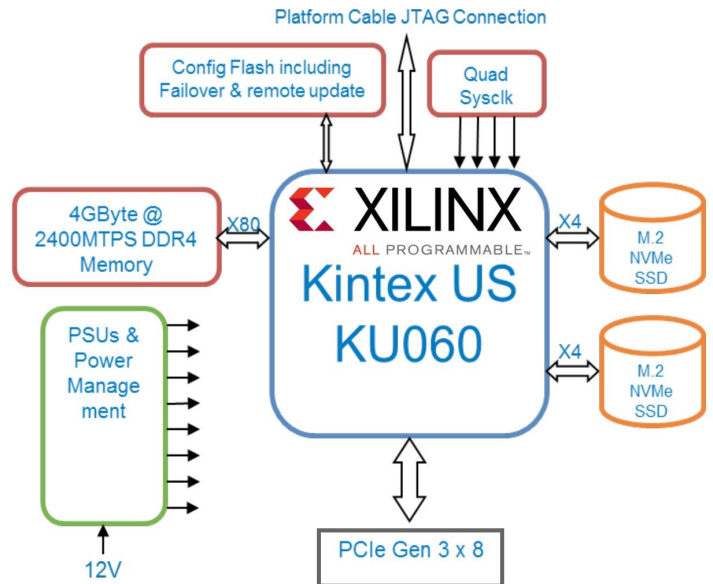
- » On-card power derived from 12V PCIe slot
- » FPGA power dissipation <25W

### Quality

- » Manufactured to ISO9001:2000 IPC-A-610-Class III
- » RoHS compliant

### Power Supply Monitoring & Reporting

- » Voltage monitoring
- » Temperature monitoring
- » Fault condition reporting to FPGA



### Cooling

- » Standard: single-width passive heatsink
- » Optional: Active heatsink

### Environmental

- » Cooling: Air convection
- » Operating temperature: 0°C to 35°C
- » Storage temperature: -20°C to 80°C
- Relative humidity: 45 to 95% (non-condensing)

### Deliverables

- » 2505 FPGA card
- » 2 960GB or 1.92TB M.2 NVMe SSD Sticks
- » Built-In-Self-Test (BIST)
- » Full and half-height PCI brackets are available
- » 1 year access to online support lounge
- » 1 year hardware warranty

**Customization:** Technical specifications (e.g. FPGA type, size, external memory capacity etc.) can be modified to meet the exact needs of commercial customer applications as off-the-shelf product available to the general market.

**Application optimization:** Sky Blue and Zerif provides consultancy services assisting customers in the porting, optimization and benchmarking of applications executed on Nallatech FPGA accelerators.

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