

:::NEW PRODUCT

# Nallatech 250S+ Near-Storage FPGA Accelerator

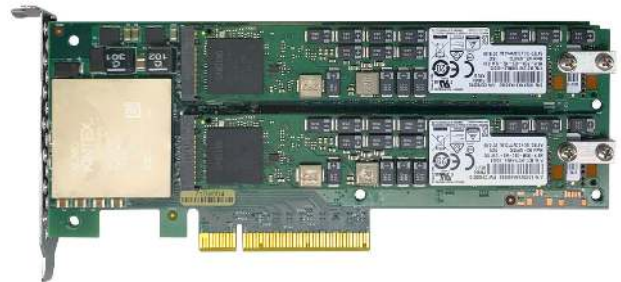


The 250S+ is a high performance PCIe-based Flash SSD with localized FPGA acceleration capability.

- **8-lane PCIe Gen 4 card**
- **(1) Xilinx KU15P Ultrascale+ FPGA**
- **(4) M.2 NVMe SSDs or Cables**
- **(1) bank of local DDR4 or MRAM 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	3.84TB Version	6.4TB Version	25.6TB Cabled
# of M.2 NVMe SSDs	4	4	4
Storage Capacity (TB)	3.84	6.4	25.6
Available Cables	-	-	OCULink or MiniSAS-HD
<b>Data Transfer Rate</b> (128KB data size)			
- Sequential Read (GB/s)	7.2	8.0	13.2
- Sequential Write (GB/s)	3.52	5.6	11.8
<b>Data I/O Speed</b> (4KB data size, sustained)			
- Random Read (KIOPS)	1400	1720	3200
- Random Write (KIOPS)	120	132	640
<b>Latency (Sustained workload)</b>			
- Random Read/Write (typical)	85/50us	85/50us	90/20us
- Sequential Read/Write (typical)	15/15us	15/15us	90/20us
Endurance DWPD Drive Writes Per Day	1.3 (3 years)	10 (5 years)	5 (5 years)

# Nallatech 2505+ FPGA Accelerator Card

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## Form Factor

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

## Host Interface

- » 8-lane PCI-Express Gen 4
- » Actual performance is host computer chipset and operating system dependent

## Processing

- » Xilinx Ultrascale device in FFVA1156 package
- » Default configuration: KU15P, speed grade 2

## DDR4 SDRAM Memory

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

## Application Development

- » Contact Nallatech

## Electrical

- » On-card power derived from 12V PCIe slot
- » FPGA power dissipation <35W

## 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

## Ordering codes / model numbers:

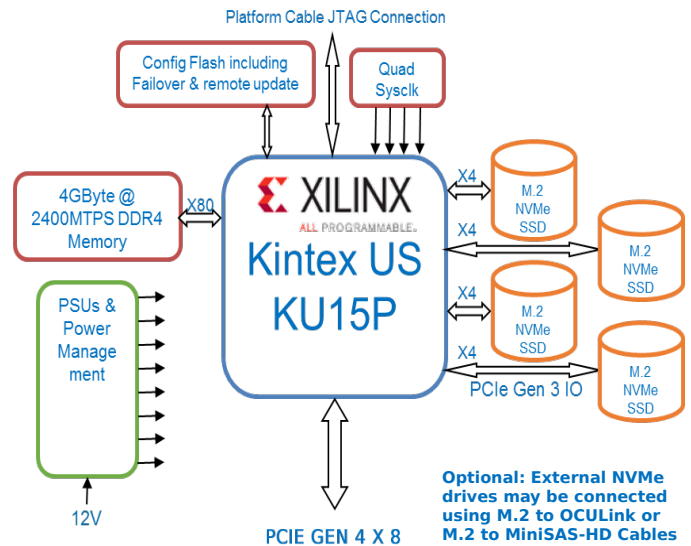
250S-15P2-4004-0P – 250S+ Only  
250S-15P2-4004-4P – 250S+ fitted with 4x OCULink cables  
250S-15P2-4004-5P – 250S+ fitted with 4x MiniSAS-HD cables  
250S-15P2-4094-0P – 250S+ fitted with 4x 960GB NVMe SSD Sticks  
250S-15P2-4194-0P – 250S+ fitted with 4x 1.92TB NVMe SSD Sticks

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

## Corporate Offices

741 Flynn Road  
Camarillo, CA 93012, USA  
Tel: (805) 383-8997  
Toll Free: 1-877-44-NALLA  
Fax: (805) 384-4899

1 Napier Park  
Cumbernauld, G68 0BH, UK  
Tel: +44 (0)1236 789567  
Fax: +44 (0)1236 789599



## Cooling

- » Standard: double width passive heatsink
- » Optional: Contact Nallatech for alternative cooling

## 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

- » 250S+ FPGA card
- » (4) M.2 NVMe SSD Sticks or Cables
- » Built-In-Self-Test (BIST)
- » Standard full and optional half-height PCI brackets are available
- » 1 year access to online support lounge
- » 1 year hardware warranty

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

 **Nallatech**  
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