

::NEW PRODUCT

Nallatech **520C** Compute Acceleration Card



Introducing ground-breaking single precision floating point performance of up to 10 TFLOPS, the OpenCL-programmable 520C features an Intel Stratix 10 FPGA, along with four banks of DDR4 external memory.

- **Up to 10 TFLOPS of peak single precision performance**
- **25MBytes of L1 cache @ up to 94 TBytes/s peak bandwidth**
- **2X Core performance gains over Arria 10**
- **70% lower power consumption**
- **Highest density FPGA fabric**

The Nallatech 520C Compute Acceleration Card is an FPGA co-processor designed to deliver ultimate performance per watt for compute-intensive datacenter applications.

Designed to address a range of compute-intensive and latency-critical applications

- **Machine Learning**
- **Gene Sequencing**
- **Oil & Gas**
- **Video Transcoding**



OpenCL-programmable FPGA co-processor for ultimate application performance



OpenCL

» Intel FPGA OpenCL Software Development Kit (SDK)

- Abstraction enables faster and higher level software development flow
- Emulate OpenCL application code on x86 platforms in seconds
- Push button flow generates FPGA executable, driver and API
- Add optimized HDL IP cores to OpenCL designs as libraries

» Hardware Description Language (HDL)

- Traditional VHDL/Verilog tool flow support
- Aimed at hardware-orientated customers
- Hand-code HDL for ultimate performance
- FPGA card designed to support standard Intel IP cores for Stratix 10



Nallatech 520C

Compute Acceleration Card

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Form Factor

- » Full-height, double-width PCI Express card
- » 4.376 x 10.5 inches (111 x 266.7 mm)

Host Interface

- » 16-lane PCI-Express Gen 3.0
- » Actual performance is host computer chipset and operating system dependent

Processing

- » Intel Stratix 10 F1760 NF43 package
- » Default configuration: GX2800
- » Core speed grade -2, I/O speed grade -2
- » Contact Sky Blue or Zerif for other FPGA options

DDR4 SDRAM Memory

- » Four banks of DDR4 SDRAM x 72 bits
- » 8GB per bank
(32GB total / 64GB version also available)
- » Transfer Rate: 2400 MT/s

Application Development

- » Supports multiple design flows including Intel FPGA OpenCL SDK and HDL

Electrical

- » On-card power derived from 12V PCIe slot and two AUX connectors (one 8-pin, one 6-pin)
- » Power dissipation is application dependent
- » Typical power consumption ~225W
- » Card designed to deliver up to 300W power consumption

Quality

- » Manufactured to ISO9001:2008 IPC-A-610-Class III
- » RoHS compliant

Power Supply Monitoring & Reporting

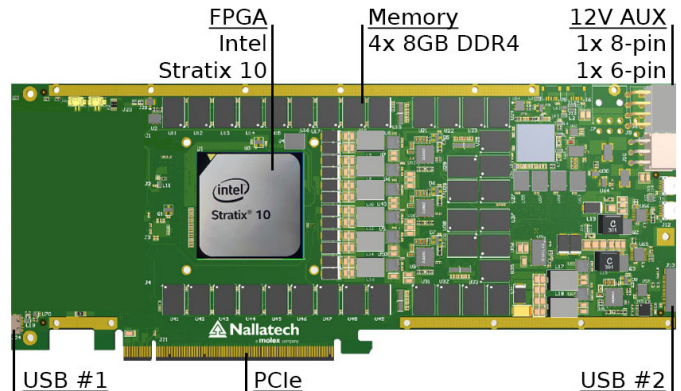
- » On-board Intel USB Blaster
- » Power and temperature monitoring
- » Fault condition reporting to FPGA

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.

Contact

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microsystems

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PCI backplate

- » USB for programming, debug and monitoring
- » User programmable tri-color LEDs

Cooling

- » Standard: double-width active heatsink (embedded fan)
- » Optional: double-width passive heatsink

Environmental

- » Cooling: Air convection
- » Operating temperature: 0°C to 35°C

Deliverables

- » 520C FPGA card
- » USB cable (front panel access)
- » Built-In-Self-Test (BIST)
- » OpenCL "HPC" Board Support Package (BSP)*
- » 1 year access to online support lounge
- » 1 year hardware warranty

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

* Please check with Sky Blue or Zerif for availability
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