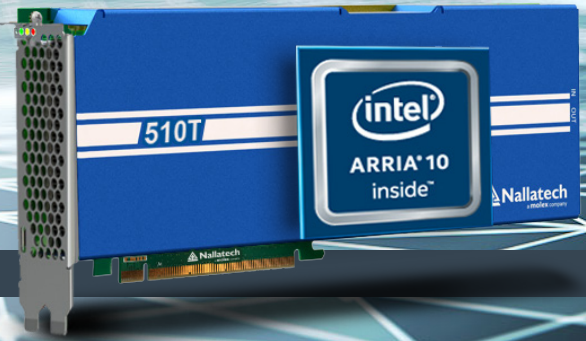


Nallatech 510T

Compute Acceleration Card



Introducing ground-breaking single precision floating point performance of up to 1.5 TFLOPS per device, the OpenCL-programmable 510T features an Intel Arria 10 FPGA, along with eight banks of DDR4 external memory per FPGA.

- **Up to 3 TFLOPS of peak single precision performance**
- **Up to 150 GBytes/s Peak Aggregate Memory Bandwidth**
- **Two Arria 10 1150 GX FPGAs**
- **75GB/s Peak DDR4 Memory Bandwidth per FPGA (4 Banks per FPGA)**

The Nallatech 510T Datacenter Co-Processor is designed to deliver fast and efficient performance per watt.

FPGA computational acceleration has increasingly improved performance in the following markets:

- Compute, Network & Storage
- Finance & Risk Analysis
- Datacenter
- HPC
- Communications
- Industrial, Broadcast
- Medical
- Automotive



OpenCL-programmable FPGA co-processor for ultimate application performance



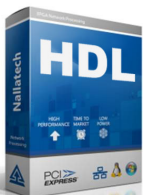
OpenCL

» 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 Arria 10



Nallatech 510T

Compute Acceleration Card

Form Factor

- » Full-height, double-width PCI Express card
- » 4.37 x 10.5 inches (106.65 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 Arria 10 F45 package
- » Default configuration: 1150GX
- » Core speed grade -2, I/O speed grade -3
- » Contact Sky Blue Microsystems for other FPGA options

DDR4 SDRAM Memory

- » Eight banks of DDR4 SDRAM x 72 bits
- » Four 4GB banks per FPGA (32GB total)
- » Transfer rate: 2133 MT/s

Application Development

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

Electrical

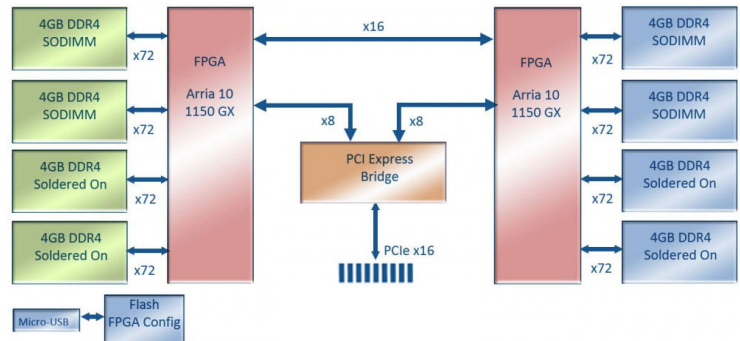
- » On-card power derived from 12V PCIe slot and one AUX connectors (one 8-pin)
- » Power dissipation is application dependent
- » Card designed to deliver up to 225W power consumption

Quality

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

Power Supply Monitoring & Reporting

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



PCI backplate

- » USB for programming, debug and monitoring
- » User programmable 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

- » 510T 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

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

* Please check with Sky Blue Microsystems for availability
V2-5a: 2017/10/02

Contact

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Nallatech
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