

Introducing ground-breaking single precision floating point performance of up to 10 TFLOPS per device, the OpenCL-programmable 520 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
- Four 100G Network Ports

Four network ports enable dramatic FPGA-to-FPGA scaling independent of the PCIe bus, plus support for an array of serial I/O protocols operating up to 100G.

Designed to address a range of computeintensive and latency-critical applications

- Machine Learning
- Gene Sequencing
- Oil & Gas
- Real-time Network Analytics



» Intel FPGA OpenCL Software Development Kit (SDK)

Scalable compute node with serial I/O for creation

- 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)

of directly-coupled, dense FPGA clusters

- 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 D

::NEW PRODUCT

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

Processina

- » Intel Stratix 10 F1760 NF43 package
- » Default configuration: GX 280
- » Core speed grade -2, I/O speed grade -1
- » Contact Sky Blue or Zerif for other FPGA options

DDR4 SDRAM Memory

- » Four banks of DDR4 SDRAM x 72 bits
- » 4GB per bank (16GB total)
- » 2400MT/s per bank (9600MT/s total)

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 » Operating temperature: 0°C to 35°C

Ouality

- » 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.



Four 100G QSFP28 Network Ports

- » Flexible low jitter clocking supporting multiple telecoms standards up to 100G
- » Each QSFP28 can be independently clocked
- » Network recovered clocking supported
- » Clocking options user programable
- » 1PPS input (optional)

Coolina

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

Environmental

- » Cooling: Air convection

Deliverables

- » 520 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

International Distributors



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