



Arria 10 GX Dual FPGA Board

Introducing ground-breaking single precision floating point performance of up to 1.5 TFLOPS per device. The BittWare 510T Datacenter Co-Processor is a standard-height, dual-slot PCIe board designed to deliver fast and efficient performance per watt. The OpenCL-programmable 510T features two Intel Arria 10 FPGAs, along with four banks of DDR4 external memory per FPGA.

Tool Flow Flexibility for Software- or Hardware-Based Development



- OpenCL support for software-orientated customers
- Abstraction for faster development
- Push-button flow for FPGA executable, driver, and API
- Add optimized HDL IP cores to OpenCL designs as libraries



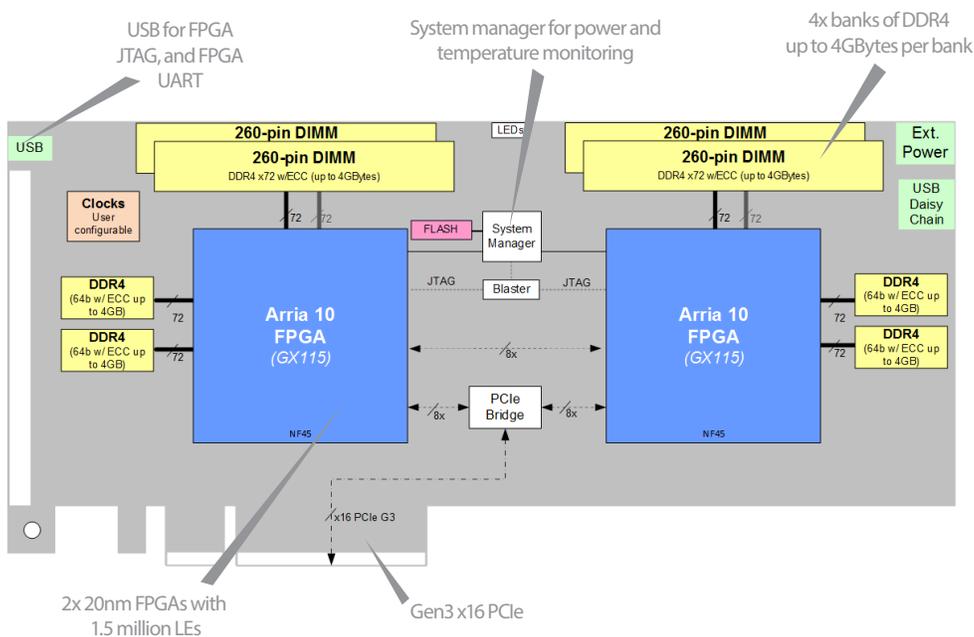
- Traditional VHDL/Verilog support for hardware-orientated customers
- Hand-code for ultimate performance
- High-Level Synthesis (HLS) available for rapid development
- FPGA card designed to support standard Intel IP cores for Stratix 10

key features

Dual Intel Arria 10
GX 1150

up to 32Gbytes
DDR4

OpenCL
BSP



Key Applications

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

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

Additional Services

Take advantage of BittWare's range of design, integration, and support options



Customization

[Additional specification options](#) or [accessory boards](#) to meet your exact needs.



Server Integration

Available pre-integrated in our [TeraBox servers](#) in a range of configurations.



Application Optimization

Ask about our services to help you port, optimize, and benchmark your application.



Service and Support

BittWare Developer Site provides online documentation and issue tracking.

Board Specifications

FPGAs	<ul style="list-style-type: none"> Two Intel Arria 10 GX <ul style="list-style-type: none"> 1150GX in F45 package Core speed grade -2: I/O speed grade -3 Contact BittWare for other Arria 10 GX options
On-board Flash	<ul style="list-style-type: none"> Flash memory for booting FPGA
On-board memory	<ul style="list-style-type: none"> Eight banks of DDR4 SDRAM x 72 bits Four 4GB banks per FPGA (32GB total) Transfer rate: 2133 MT/s
Host interface	<ul style="list-style-type: none"> x16 Gen3 interface
System manager	<ul style="list-style-type: none"> On-board Intel USB Blaster II Power and temperature monitoring Fault condition reporting to FPGA
Cooling	<ul style="list-style-type: none"> Standard: double-width active heatsink (embedded fan) Optional: double-width passive heatsink
Electrical	<ul style="list-style-type: none"> On-board power derived from 12V PCIe slot & one AUX connectors (8-pin) Power dissipation is application dependent Typical max power consumption 225W
Environmental	<ul style="list-style-type: none"> Operating temperature: 5°C to 35°C

Quality

- Manufactured to IPC-A-610 Class 2
- RoHS compliant

Form factor

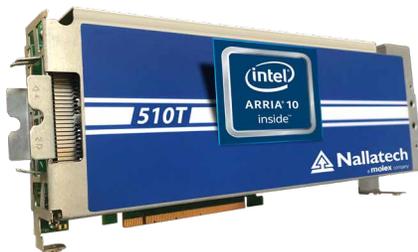
- Standard-height PCIe dual-slot board
- 4.37 x 10.5 inches (106.65 x 266.7 mm)

Development Tools

FPGA development	BIST - Built-In Self-Test for CentOS 7 provided with source code (pinout, gateway, PCIe driver & host test application)
Application development	Supported design flows - Intel FPGA OpenCL SDK, Quartus Prime Pro (HDL, Verilog, VHDL, etc.)

Deliverables

- 510T FPGA board
- USB cable (front panel access)
- Built-In Self-Test (BIST)
- OpenCL HPC Board Support Package (BSP)
- 1-year access to online Developer Site
- 1-year hardware warranty



The 510T ships with Nallatech product branding.

To learn more, visit www.BittWare.com

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