

## 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



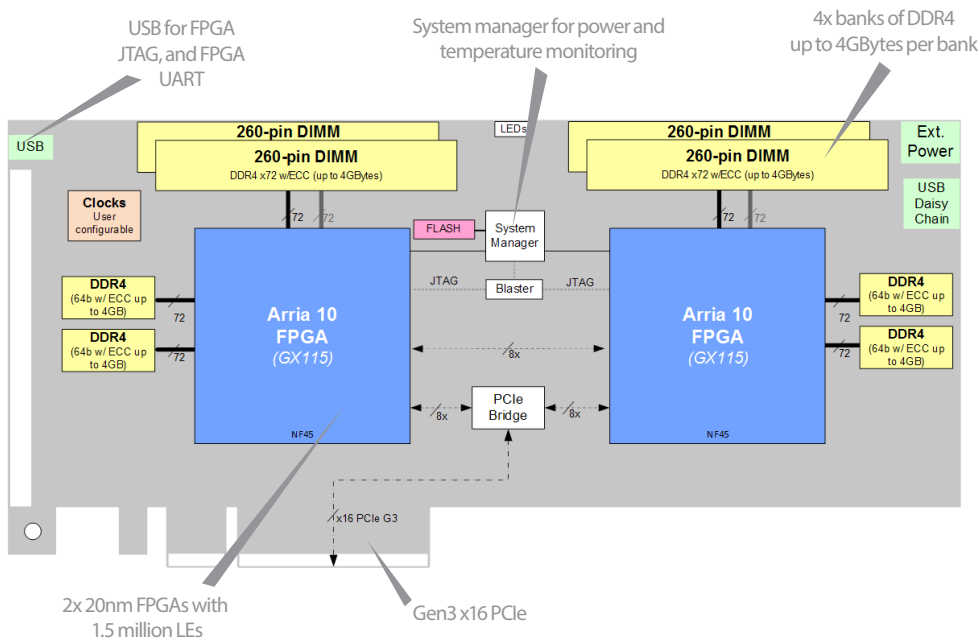
- Traditional VHDL/Verilog support for hardware-orientated customers
- Hand-code for ultimate performance
- High-Level Synthesis (HLS) available for rapid development
- FPGA card designed to support standard Intel IP cores for Stratix 10

## 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.



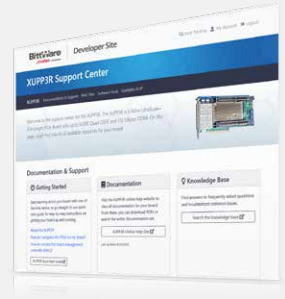
## Server Integration

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

|             |  |
|-------------|--|
| Quality     | <ul style="list-style-type: none"> <li>Manufactured to ISO9001:2008 IPC-A-610-Class</li> <li>RoHS compliant</li> </ul>                 |
| Form factor | <ul style="list-style-type: none"> <li>Standard-height PCIe dual-slot board</li> <li>4.37 x 10.5 inches (106.65 x 266.7 mm)</li> </ul> |

## Development Tools

|                         |  |
|-------------------------|--|
| FPGA development        | <b>BIST</b> - Built-In Self-Test for CentOS 7 provided with source code (pinout, gateway, PCIe driver & host test application) |
| Application development | <b>Supported design flows</b> - 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

To learn more, visit [www.BittWare.com](http://www.BittWare.com)

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