Arria 10 GX Low Profile PCIe FPGA Board with QSFP and DDR4 on BittWare Spider Platform

BittWare’s A10SA4 is a low-profile PCIe x8 card based on the Intel Arria 10 GX FPGA. Designed specifically to support large FPGA loads, the board offers an FPGA with up to 1150K logic elements, optional 10/40GbE high-speed networking, and up to 16GBytes DDR4 SDRAM – all of which make it ideal for server-based applications. OpenCL support enables a high-level software-like development flow, which greatly simplifies FPGA development.

The A10SA4 is designed with BittWare’s Spider platform, which is a low-profile PCIe platform optimized for thermal performance. The Spider platform combines a low-profile PCIe form-factor for high density, the ability to run larger loads, and a robust passive heatsink option designed for servers.

Tool Flow Flexibility for Software- or Hardware-Based Development

- OpenCL support for software-oriented 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-oriented customers
- Hand-code for ultimate performance
- High-Level Synthesis (HLS) available for rapid development
- FPGA card designed to support standard Intel IP cores for Arria 10
**Board Specifications**

**FPGA**
- Intel Arria® 10 FPGA
  - 1150 GX in NF40 package
  - Core speed grade - 2; I/O speed grade - 3
  - Contact BittWare for other FPGA options

**On-board memory**
- Two banks DDR4 with ECC, up to 8 GBytes (x72) each
- Flash with support for multiple boot images

**Host interface**
- x8 Gen3 interface direct to FPGA (x16 mechanical)

**Utility header**
- USB 2.0 interface for debug and programming FPGA and Flash
- Built-in Intel USB-Blaster

**Timestamping (optional)**
- 1 PPS input/output
- Reference clock input/output

**QSFP cages**
- Optional QSFP cage on front panel, supporting 40GbE or 4x 10GbE
- Can be optionally adapted for use as SFP+

**Development Tools**

**Application development**
- HDL development - BittWorks II Toolkit: host, command, and debug tools for BittWare hardware
  - OpenCL development - Board Support Package, Intel SDK for OpenCL

**FPGA development**
- FPGA Examples - example Quartus projects
  - Intel Tools - Quartus II software

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