BittWare a molex company

A10SA4
PCIe FPGA Board

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

BittWare OpenCL FPGA Tools

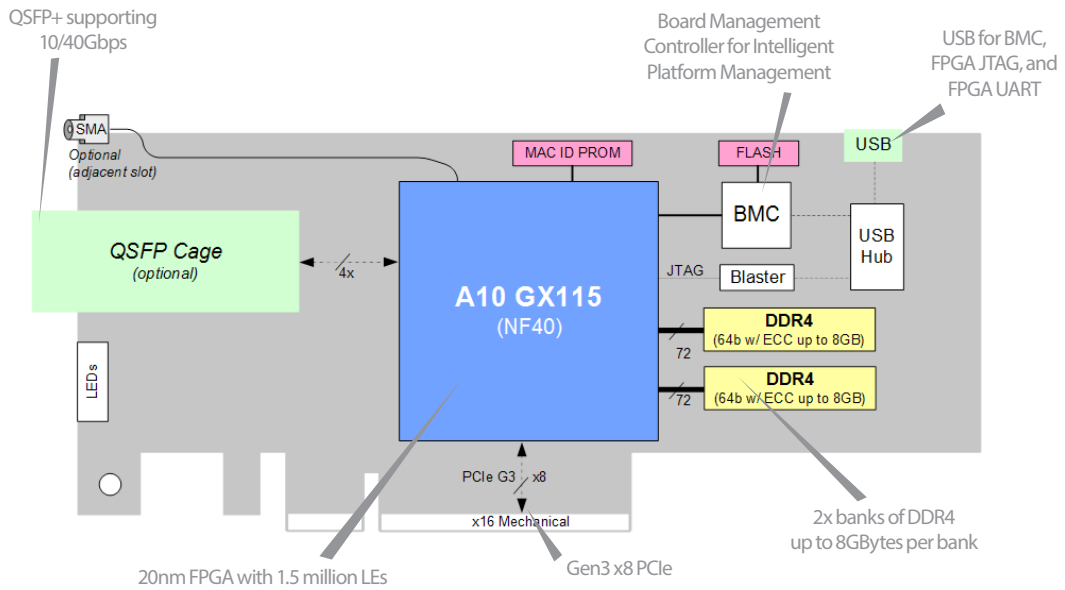
- OpenCL support for software-orientated customers
- Abstraction for faster development
- Push-button flow for FPGA executable, driver, and API
- Add optimized HDL IP cores to OpenCL designs as libraries

BittWare HDL FPGA Tools

- 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 Arria 10

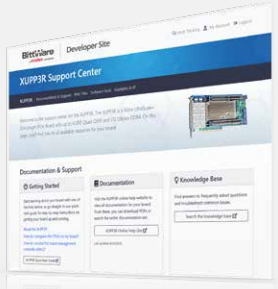
key features

Intel Arria 10 GX 1150 | **QSFP28 for 10/40Gbps** | **OpenCL BSP**



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

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+

Board Management Controller	• Voltage, current, temperature monitoring • Power sequencing and reset • Field upgrades • FPGA configuration and control • Clock configuration • I^2C bus access • USB 2.0 and JTAG access • Voltage overrides
Cooling	• Standard: single-width passive heatsink • Optional: single-width active heatsink • Optional: open-frame
Electrical	• On-board power derived from 12V PCIe slot • Power dissipation is application dependent
Environmental	• Operating temperature 5°C to 35°C
Size	• Low profile (half-height, half-length) PCIe slot board • 168mm x 68.9mm

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

intel FPGA Design Solutions Network Platinum

To learn more, visit **www.BittWare.com**

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