

XpressGXA10-LP1150

Low-profile PCIe Network Processing FPGA Board
Featuring 80G Ethernet

- Low-profile PCIe Altera Arria 10 GX 1150 KLE board
- Designed for ultra low latency applications
- PCIe Gen3 x8 interface
- 4 GB DDR4 (1x 72bits)
- Up to 144 MB QDR2+ (4x 18bits)
- Dual QSFP+ cages 10/40 GbE ports
- 16x transceiver expansion port



Target applications:

Finance
Acceleration
Data center
Networking
Security

ALTERA
now part of Intel

Arria[®] 10 **PCI EXPRESS** **3**

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Benefits

- On board one DDR4 plus four QDR2+ independent banks
- Fail safe configuration flash sector
- Configuration via protocol (CvP)
- JTAG connector
- High speed extension connector for inter board communication (16 transceiver lanes)

Full Specifications

FPGA and Configuration Modules

- ALTERA Arria 10 GX 20nm FPGA
 - 10AX115N4F40I3SG or • 10AX115N4F40I1SG
- EPCQL1024 for Active Serial (AS) configuration mode (2 sectors for fail safe feature)

Communication Interfaces

- PCI Express x8 (Gen 1, 2 or 3)
- 2x QSFP+ quad optical cage (2x 4 XCVR: 10.3125 Gb/s per link)
 - 10GbE/40GbE/80GbE networking interface
 - Other protocols supported by the QSFP modules

Memory

- On board 4GB DDR4
 - 1 bank 72 bits (ECC)
 - 1866MT/s (FPGA speed grade 3)
 - 2400MT/s (FPGA speed grade 1)
- On board QDR-II+ up to 144 Mb QDR-II+
 - 4 independent banks, 18-bits
 - 500MHz (FPGA speed grade 3)
 - 633MHz (FPGA speed grade 1)
- Flash
 - Configuration via Protocol (CvP) allowing to improve the PCIe access and permits to the software to load external image in the Arria 10

Operating Range

- 0°C to 70°C

Deliverables

- Low-profile (half-height) form factor PCIe Board
- XpressGXA10 Board Support Package
- Power Supply adapter cable for standard ATX server
- JTAG adapter cable for external USB Blaster cable
- Optional
 - OpenCL HPC BSP
 - OpenCL 10G MAC BSP
- Mechanical files (3D DWF/STEP models and 2D drawings) (upon request)

Ordering informations

Part number

- Basic = XpressGXA10-LP1150B
- Ultra = XpressGXA10-LP1150U
- Turbo = XpressGXA10-LP1150T

Description

- Altera Arria 10 GX 10AX115N4F40I3SG, 4GB DDR4
- Altera Arria 10 GX 10AX115N4F40I3SG, 4GB DDR4, 4 banks of 144Mbit QDR2+
- Altera Arria 10 GX 10AX115N2F40I1SG, 4GB DDR4, 4 banks of 72Mbit QDR2+ Xtrem

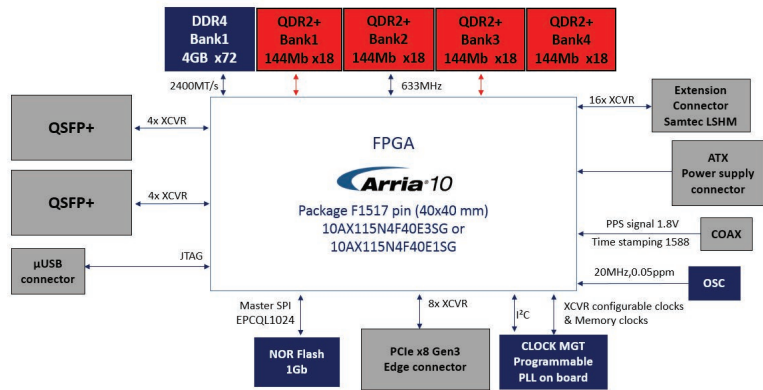
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Other resources

- Board capabilities extension or board-to-board connection over SAMTEC LSHM connector (LSHM-150-01-F-DH-A-S-K-TR) (16 transceivers Rx/Tx)
- On board programmable PLL oscillator (Si5341), highly flexible and configurable clock generator. The clock generator Si5341 is controlled by the FPGA through an I²C serial interface
- JTAG connector for external USB blaster
- On board oscillator high precision provides clock accurate 20MHz-0.05ppm for Precision Time Protocol (PTP) Ethernet, synchronization protocol standardized IEEE 1588
- One coax connector for PPS (pulse per second) that allows a synchronization of multiple electronics parts

Power

- External auxiliary connector (12V)
- Max 80W
- The XpressGXA10-LP1150 is delivered with a custom passive heatsink

Board Dimensions

- Length : 167.7mm (6.59inches)
- Height : 68.9mm (2.71 inches) / Low Profile PCIe
- Thickness : 1.57 mm (0.062 inches) / Standard Thickness PCIe

Standards and compliance

- RoHS/REACH compliant
- UL certified
- ISO9001 Facility

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