(intel®)

Intel® FPGA Programmable Acceleration Card N3000 for Networking

Introduction

Intel® FPGA Programmable Acceleration Card N3000 (Intel FPGA PAC N3000) is a highly customizable FPGA SmartNIC which enables high-throughput, low latency, and high-bandwidth applications. It allows the optimization of data plane performance to reduce total cost of ownership while maintaining a high degree of flexibility. End-to-end industry-standard and open-source tool support allow users to quickly adapt to evolving workloads and industry standards. Intel is accelerating 5G and network functions virtualization (NFV) adoption for ecosystem partners, such as telecommunications equipment manufacturers (TEMs), virtual network functions (VNF) vendors, system integrators, and telcos, to bring scalable and high-performance solutions to market. This product includes a variant that is designed to be Network Equipment Building System (NEBS)-friendly, and features a Root-of-Trust device that helps protect systems from FPGA-hosted security exploits.

Targeted Workloads

- Virtual radio access network (vRAN)
- Open Virtual Switch (OvS)
- Contrail, Tungsten Fabric
- Segment routing for IPv6 (SRv6) vector packet processing (VPP)
- Networks security applications such as virtual firewall (vFW) and internet protocol security (IPSec)
- virtual Broadband Networking Gateway (vBNG)
- virtualized Evolved Packet Core (vEPC), 5G Next-Generation Core Network (5GC)

Key Components and Interfaces

1. Features
   a. Intel Arria® 10 FPGA
   b. High-speed network interface support
      i. 10 Gbps
      ii. 25 Gbps
   c. High-bandwidth, low-latency memory support
      i. 9 GB DDR4
      ii. 144 Mb QDR-IV
   d. High-speed host interface : PCIe* Gen 3x16
   e. Dual Intel Ethernet Converged Network Adapter XL710
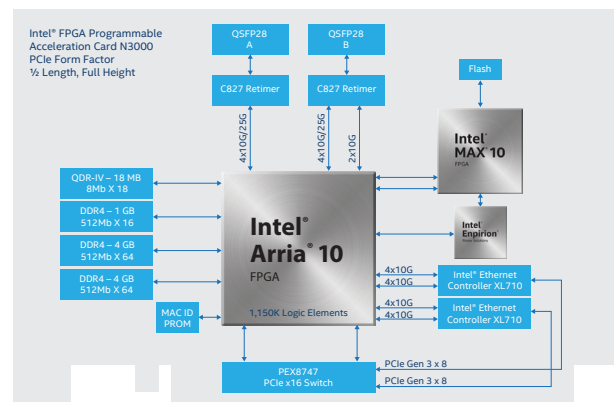
2. Board Management
   a. Intel MAX® 10 FPGA Baseboard Management Controller (BMC)
      i. Temperature and voltage readout
      ii. Platform Level Data Model (PLDM)
      iii. Remote update of FPGA flash memory and BMC
3. Development Tools
   a. Data Plane Developer Kit (DPDK)
   b. Open Programmable Acceleration Engine (OPAE)

Form Factor

- Full height, half length

Power Management

- Intel Enpirion® Power Solutions
  - Low-noise and high-efficiency voltage regulators

For More Information

- Visit the Intel FPGA PAC N3000