Intel Announces New Programmable Solutions for Networking and Cloud Workloads

New Agilex 7 FPGAs and eASIC devices provide power-efficient performance and cost-effective solutions for CSPs and CoSPs.

Feb. 27, 2023 — Intel is expanding its infrastructure processing unit (IPU) leadership with new FPGA and structured ASIC support for OEMs/ODMs. The new offerings enable migration to 400G IPU solutions supporting increased mobile data for 5G and beyond. New Intel Agilex® 7 FPGA I-Series AGI 041 and eASIC structured ASIC N5X080 devices provide power-efficient performance for cloud, comms and embedded applications.

Leading the Transition to 400G Infrastructure

Cloud service providers (CSPs) are beginning the transition from 200G to 400G in 2023, with communication service providers (CoSPs) to follow in 2024. Intel Agilex 7 FPGA I-Series AGI 041 devices enable next-generation 400G infrastructure acceleration solutions. AGI 041 devices deliver the right balance of capacity, power efficiency and performance for 400G IPU and networking solutions with multihost PCIe 5.0 / CXL, Crypto Hard IP, 116Gbps transceivers and 400 GbE Hard IP.

AGI 041 devices are ideal for the following applications:
- Infrastructure acceleration (IPU).
- Network storage (NVMe-oF, RoCE).
- CXL attached memory/compute.
- 5G core/NFVi.
- Network appliance.
- Security appliance.
- Test and measurement.

Built on the advanced Intel Agilex architecture, AGI 041 devices are manufactured by Intel and leverage Intel's geographically diverse manufacturing and packaging facilities to provide a resilient supply chain.

Customizable and Adaptable Radio Solutions

The radio access network (RAN) industry is highly competitive and requires a delicate balance of high performance, low latency, energy efficiency and cost effectiveness. Every system integrator has its own unique requirements and features that set it apart from the competition. The rapidly evolving technology standards only add to the need for a flexible processing system. Intel's Agilex 7 FPGA F-Series offers just that, combining the flexibility of programmable logic with specialized hardened transceivers to cater to the demanding requirements of RAN workloads.

Intel's customers and partners benefit from the use of the F-series FPGAs for various applications, including:
- Developing vRAN accelerators for both chip-down and IPU deployments.
- Deploying traditional baseband units with high throughput and low latency.
- Utilizing fronthaul gateways to deploy NRUs in brownfield scenarios.

- Designing advanced ORAN systems and implementing mmWave, macro, small cell and beamforming mMIMO radios.
- Building end-to-end private networks.

Clear Path for Scaling and Deployment

Leveraging the "custom logic continuum," Intel provides the unique ability to further optimize cost and power with 400G infrastructure solution through Intel eASIC structured ASICs.

For networking workloads, N5X080 devices are capable of reducing core power by up to 60% versus an FPGA, while reducing prototyping time by 50% compared to a traditional ASIC.

More: [Intel announces Intel Agilex® 7 FPGAs and Intel® eASIC N5X080 Structured ASIC devices for Datacenter and Network Infrastructure Workloads at MWC](#) (Mike Fitton)

About Intel

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