

Intel® Agilex™ FPGA

Agility and Flexibility for the Data-Centric World

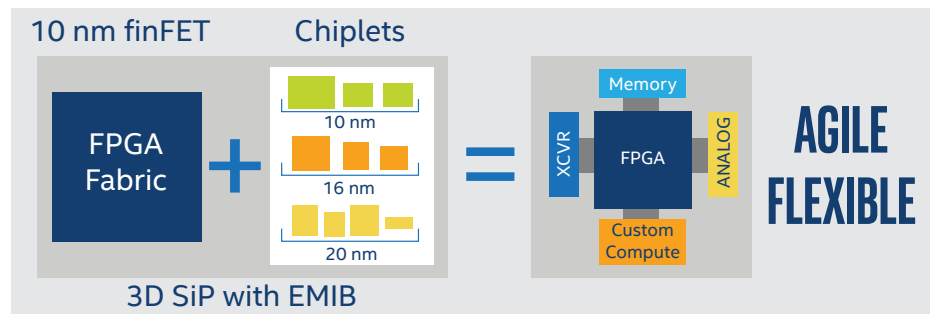
UP TO

40% HIGHER PERFORMANCE ^{1,3†}

40% LOWER POWER ^{1,3†}

40 TFLOPS ^{2,3†}

The Intel® Agilex™ FPGA family brings together the power of Intel's 10 nm process technology, 3D heterogeneous system-in-package (SiP) integration with Intel's proprietary Embedded Multi-Die Interconnect Bridge (EMIB), and an innovative chiplet-based architecture to deliver customized connectivity and acceleration for a variety of applications.



PROCESS DATA

MOVE DATA

STORE DATA

The new architecture allows the FPGA fabric to be combined with purpose-built tiles, such as transceivers, processor interfaces, optimized I/O, custom computing, Intel eASIC™ devices, and many other functions to create solutions that are uniquely optimized for each application.

From the edge through the network to the cloud, an explosion of data is driving the need for flexibility and agility in the products that process, move, and store data. Advances in analytics are compelling hardware systems to cope with evolving standards, support varying workloads, and integrate multiple functions.

MARKETS DEMANDING CUSTOMIZATION

<p>EDGE</p> <p>Real-Time Actionable Intelligence</p>	<p>NETWORK</p> <p>High-Bandwidth Aggregation and Processing</p>	<p>DATA CENTER</p> <p>Managing, Organizing, and Processing the Explosion of Data</p>
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Intel® Agilex™ FPGA Series

F-SERIES

For wide range of applications

Up to 58G transceivers
PCIe* Gen4
DDR4 SDRAM
Quad-core Arm* Cortex*-A53 SoC option

I-SERIES

For high-performance processor interface and bandwidth-intensive applications

Up to 112G transceivers
PCIe Gen5
DDR4 SDRAM
Quad-core Arm Cortex-A53 SoC
Compute Express Link (CXL) to Intel® Xeon® Scalable processor option

M-SERIES

For compute-intensive applications

Up to 112G transceivers
PCIe Gen5
DDR5 and Intel Optane™ DC persistent memory support
Quad-core Arm Cortex-A53 SoC
Compute Express Link (CXL) to Intel Xeon Scalable processor option
High Bandwidth Memory option

Intel Agilex FPGAs – Key Attributes

KEY ATTRIBUTES

Compute Express Link (CXL)	First FPGA with a cache and memory coherent interconnect to Intel Xeon® scalable processors for high-speed, low-latency and efficient performance between CPU and FPGA.
Transceiver data rates	Support up to 112 Gbps data rates for data intensive applications and hardened media access control, physical coding sublayer (PCS), and forward error correction (FEC) up to 400 Gbps Ethernet (GbE) for networking applications.
Hardened PCIe PCI Express* (PCIe*) Gen5 support	2X higher bandwidth compared with PCIe Gen4 interface allows for higher data throughput.†
2nd generation Intel Hyperflex™ FPGA Architecture	Enables significant design optimization to deliver up to 40% higher performance, or up to 40% lower total power compared with Intel Stratix® 10 FPGAs.†
DSP innovation	Hardened BFLOAT16 and up to 40 tera floating point operations per second (TFLOPS) ² of digital signal processing (DSP) performance (FP16) for higher performance/watt.
Advanced memory support	Industry's only FPGA to support industry standard DDR5, high-bandwidth memory (HBM), and Intel Optane™ DC persistent memory support.
Intel eASIC™ devices	Structured ASIC solutions with reusable intellectual property (IP) cores provide a custom logic continuum to enable scaling while saving on cost and power.

For More Information

- Intel Agilex FPGA homepage: www.intel.com/agilex
- Intel Agilex FPGA Architecture White Paper: www.intel.com/agilex-wp
- Compute Express Link: www.computeexpresslink.org
- Contact an Intel sales representative for inquiries



¹ Compared to Intel Stratix® 10 FPGAs

² With FP16 configuration

³ Based on current estimates

† Tests measure performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance.

Consult other sources of information to evaluate performance as you consider your purchase. For more complete information about performance and benchmark results, visit www.intel.com/benchmarks.

All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest Intel product specifications and roadmaps.

Features and benefits of Intel's technologies depend on system configuration, hardware, software and services. No computer system can be absolutely secure.

Learn more at www.intel.com.

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