Speedcore eFPGA technology has been in production and shipping to end customers since 2016. Achronix's customers include some of the largest technology companies in the world. These companies have recognized that Speedcore IP is disruptive technology that allows them to dramatically increase the overall performance of their systems.

There are many benefits to embedding Speedcore technology into an SoC. Compared to a separate standalone FPGA, Speedcore eFPGA IP offers the following:

- 75% lower power
- 90% lower cost
- 100× lower latency
- 10× higher bandwidth
Proven Technology

The cost and risk of building an SoC is too high to gamble with unproven embedded IP. Achronix is the only company shipping both eFPGAs and standalone FPGAs in high-volume production. Designers can be 100% confident that Speedcore IP will work correctly because it has been fully verified and is silicon proven.

Process Technology

Speedcore IP is available in TSMC’s 7nm FinFET, 12nm FFC and 16nm FFC process nodes. For other process technologies, Achronix can easily port Speedcore IP to support these requirements. Contact Achronix for more details on porting Speedcore technology.

Evaluating Speedcore eFPGA

Achronix makes it easy to evaluate Speedcore technology before committing to its deployment in an SoC:

1. Achronix ACE design tools can be used to compile designs with an example instance of a Speedcore eFPGA to evaluate performance, resource usage and compile times.

2. Achronix uses its Speedcore Die Size Builder tool to estimate the eFPGA instance size.

3. Evaluation designs can be loaded into the Achronix VectorPath acceleration card to verify functionality and performance.

Moreover, Speedcore IP comes with over a thousand pages of detailed documentation to assist in integrating the technology into your SoC. Achronix also offers several on-site tutorials:

- Benchmarking and evaluation
- Physical design implementation
- Clock and reset network design
- Timing closure
- Configuration
- Verification

Speedcore Supports a Range of Applications

In addition to the straightforward physical advantages of embedding Speedcore technology in complex devices, designers are adding unique, long-term value to their SoC designs. Speedcore IP cores serve as reconfigurable coprocessors and hardware accelerators to support a wide range of tasks that are significantly more efficient on bit-oriented FPGAs compared to word-oriented CPU architectures — functions such as SQL offload engines, inline I/O processing, cryptography, search engine algorithmic acceleration, compression, and enhanced multimedia processing. The range of applications in production or currently being implemented by SoC designers using Speedcore IP continues to expand.

About Achronix

Achronix Semiconductor Corporation is a privately held, fabless semiconductor corporation based in Santa Clara, California and offers high-performance FPGA solutions.

Achronix offerings include programmable FPGA fabrics, discrete high-performance and high-density FPGAs with hardwired system-level blocks, datacenter and HPC hardware accelerator boards, and best-in-class EDA software supporting all Achronix products.