



GLOBALFOUNDRIES®



FX-7™ ASIC

Next-generation design system
for the data-driven era

Highlights

- Enhanced HSS portfolio features 112G solutions and 60G solutions optimized for area, performance and power
- Industry-leading TCAM capable of billions of searches per second
- Broad array of memory compilers includes customized bitstack and density/ performance-tuned solutions
- Hybrid ASIC/COT business model enables highly optimized designs
- Pairs decades of ASIC expertise with leading-edge 7 nm FinFET process technology, 7LP, manufactured at state-of-the-art facilities in Saratoga County, NY

Unlock New Levels of Performance and Power Efficiency

The FX-7™ ASIC design system is optimized for performance-driven hardware in next-generation data center, machine learning, automotive, wired communications and 5G wireless applications.

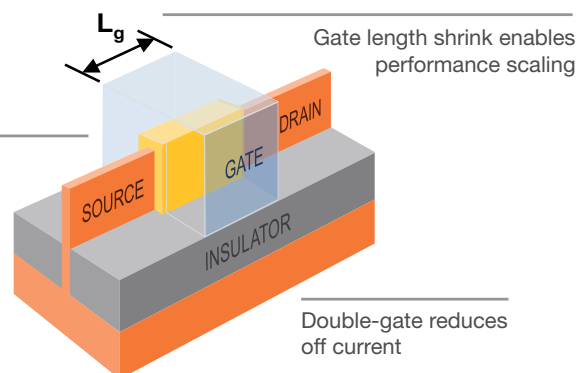
The design system takes advantage of the GLOBALFOUNDRIES leading-edge 7LP FinFET technology platform for full-node geometry and power scaling that help take performance, power efficiency and density to new levels. Compared to the GF 14 nm FinFET technology platform, 14LPP, 7LP can provide:

- More than 40% better performance
- More than 60% lower total power

GF 7LP FinFET Architecture

FET is turned on its edge

- Lower supply voltage
- Reduced off-state leakage
- Faster switching speed – high drive current



FX-7 solutions build on the learning from GF's production proven 14 nm platform, a strong record of first-time-right silicon successes and decades of experience helping customers bring some of the industry's most sophisticated ASIC designs to market. Manufactured at the state-of-the-art GF Fab 8 facility in Saratoga County, New York, FX-7 uses a high-volume, optical lithography-based process that is EUV compatible, enabling technology you can build on today and advances you can leverage in the future.

Design System Highlights

The FX-7 ASIC platform provides you with a tightly integrated, end-to-end solution that combines an in-house foundry, demonstrated in-house ASIC expertise and differentiated IP. Design system highlights include:

- Low, ultra-low and overdrive supply voltages for power/performance optimization
- Multiple metal stacks, up to 15 layers of metallization
- Integrated MIM cap for added noise reduction without impacting silicon area
- Dense and high-performance design libraries for design flexibility and design trade-offs
- Extensive high speed SerDes (HSS) portfolio supporting key data rates for next-gen memory interfaces, higher-speed I/Os and advanced integration, enhanced with industry-leading 112G solutions
- Fastest embedded networking TCAM in industry, enabling billions of searches per second
- Broad suite of embedded SRAMs optimized for performance, density and I/O width
- Licenses for popular ARM® processor IP
- Advanced 2.5/3D packaging options

Enabling First-Time-Right Designs

The GF ASIC design methodology aids in reducing optimization costs by leveraging industry-standard EDA design tools and enabling the seamless integration of HSS, leading-edge cores, embedded memory, logic elements, I/Os and other proven IP. This combination can help you achieve system-level differentiation and get to market faster, while minimizing risk because GF owns yield.

The comprehensive design flow includes an integrated methodology, verified by test chips, and a multiphase netlist sign-off process with rigorous entrance and exit milestone requirements. To help ensure you get first-time-right hardware, the methodology is complemented by continually enhanced models, extensive characterization and expertise from in-house ASIC teams in GF design centers across the globe.

Customized Service Levels

Multiple ASIC business engagement models enable you to choose how we work together in taking your design from product definition to production. To help you achieve the highest levels of optimization, the FX-7 design system includes a hybrid ASIC/COT business engagement model that takes advantage of processing elements you design combined with HSS and memory IP from GF.

FX-7 design kits are available now. Contact your GF ASIC representative for more information.

FX-7 design system at a glance

Low, ultra-low and overdrive supply voltages

Multi-Vt design libraries

ARM® cores	Wide array of cores and peripherals available
HSS	Advanced 112G solutions
	60G performance, power and area-optimized solutions
	Broad Ethernet and PCI-Express portfolio
	HBM and DDR/LPDDR memory interfaces
Memory compilers	Dense embedded SRAMs
	Performance embedded SRAMs
	Leading-edge embedded TCAM
	Algorithmic multiport / customized bitstacked solutions
	High density, one-time programmable memory
	ROM
	Register array
Register files	
Packaging	Comprehensive, advanced packaging portfolio that builds on continued 2.5/3D technology leadership



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