PRODUCT BRIEF

HPC SoC Platform*

SEMIFIVE SoC Platforms can quickly turn your critical IPs or winning specifications into fully functioning SoC at a fraction of risk, time, and effort. The HPC SoC Platform offers the best solution to build custom high-performance compute, cloud servers, hyperscale data centers, enabled with silicon-proven design components on Samsung 5nm process and extensive hardware/software environments to instantly get your chip ready for systems.
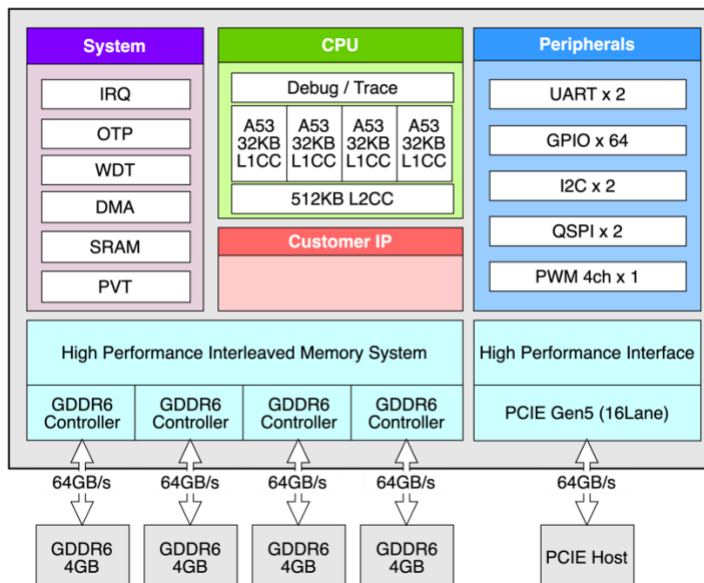
Highlights

- Optimized for high performance compute and advanced AI acceleration
- Support latest interfaces PCIe Gen 5 and GDDR6
- Built using Samsung Foundry's state of art 5nm FinFET (EUV enabled) process technology
- Complete solution with:
  - o Package design and implementation
  - o Evaluation board
  - o Software and drivers

Target Applications

- Hyperscale Data Centers
- Cloud Servers
- Network Processors
- High performance AI accelerators

Block diagram

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* Note: Features listed are subject to change. Contact SEMIFIVE for the latest updates

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Key features*

Process node	• Samsung Foundry 5nm FinFET
Die size	• 10.8mm x 13.8mm
Target operating frequency	• 1.5 GHz
CPU core	• Quad-core Cortex A53 (@1.5GHz) • Include Debug & Trace
Memory interface	• GDDR6 • x32 4ch @16Gbps

I/O Interfaces	• PCIe Gen 5 x16 Lanes
	• Off-chip component
	   o SPI x6 CH
	   o I2C x2 CH (up to 3.4MHz)
	• Timer includes PWM x 4CH
	• UART x2 CH
	• Configurable GPIOs

System controller	• Interrupt Controller • DMA 32 Channel • Watch-dog Timer 32bit counter • 12b PVT (Power, Voltage & Temperature) monitor • 32Kb OTP
Software	• Yocto-based Linux build system • Boot process and Linux device driver • Reference Linux BSP for the evaluation Board • DDR tuning S/W • Debug solutions (GDB/TRACE32)

SoC Platform Engagement Models

Max Efficiency Model
By reusing the platform architecture and feature subblock tailored for this domain, customers can focus on their differentiation and maximize efficiency of SoC development. Perfect for SoC prototyping or high-value applications that require super-fast time-to-market speed.

Max Flexibility Model
SEMIFIVE Platform technology offers flexibility to configure the platform architecture to your application's special requirements. SEMIFIVE can also develop new subblock design to add features necessary for the application. It's the best way to explore the trade-offs between time and cost.

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