Starblaze Achieves Volume Production of Storage SoC with Synopsys Security and Foundation IP

DesignWare True Random Number Generators, Logic Libraries, Embedded Memories and STAR Memory System Provide Low-Risk Path to First-Pass Silicon Success

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Highlights:

- Starblaze achieved first-pass silicon success and volume production of its STAR1000 SSD controller, demonstrating the high quality and reliability of DesignWare IP
- True Random Number Generators provide standards-compliant, cryptography-quality random numbers critical to building security into SoCs
- Logic Libraries, Embedded Memories and HPC Design Kits deliver superior performance, power and area in 28-nm process
- STAR ECC Compiler enables soft-error tolerance, which is critical for SSD controllers
- Starblaze reduced SoC area by 7 percent with integrated STAR Memory System embedded test and repair

Synopsys, Inc. (Nasdaq: SNPS) today announced that Starblaze has achieved volume production for its STAR1000 enterprise solid state drive (SSD) system-on-chip (SoC) using Synopsys' DesignWare® Security and Foundation IP. Starblaze selected the DesignWare True Random Number Generators (TRNGs) because they are FIPS 140-2 certified in customer field deployments and offers a high-quality entropy source to enable the highest level of security. In addition, the high-speed, high-density and ultra-high density DesignWare Logic Libraries and Embedded Memories and High Performance Core (HPC) Design Kits deliver superior performance, power and area for Starblaze's SoC. By integrating the STAR Memory System® memory test and repair solution, Starblaze reduced their SoC area by 7 percent compared to competitive solutions and achieved high-quality test results. Using DesignWare IP, Starblaze met new security requirements for the China market and delivered a production-ready design within a tight project schedule.

"With increased demand for data protection against malicious attacks, we needed to develop our storage SSD SoC with strong security based on proven, standards-compliant IP," said Sky Shen, CEO at Starblaze. "The combination of Synopsys' DesignWare Security and Foundation IP enabled us to implement the highest level of security while achieving the best combination of power, performance and area for our SoC."

Achieving Required Security Levels

To reach the new security levels required for the China market, Starblaze integrated the standards-compliant DesignWare True Random Number Generator to generate keys and other cryptography data required by the security protocols in their enterprise storage SoC. The security IP enables protection against malicious attacks and security backdoor issues, which is critical for Starblaze's SoCs. Synopsys' high-quality DesignWare TRNG IP is portable across technologies and has been successfully deployed in many applications including industrial automation, automotive and mobile devices.

Reaching the Optimum Balance of Performance, Power and Area

Starblaze selected the DesignWare HPC Design Kit's suite of high-speed and high-density memory instances and standard cell libraries with multi-bit flip flops to optimize their DSP cores and SoC for the optimum balance of performance, power, and area. The DesignWare Embedded Memories provided advanced power management features such as light sleep, deep sleep, shut down and dual power rails, which allowed Starblaze to meet their stringent low-power requirements. With the STAR Memory System integrated test and repair solution, Starblaze could detect and repair manufacturing faults to enable the highest possible yield.

"As the enterprise SSD market is evolving rapidly, designers are required to deliver SoCs that meet more stringent security standards, meet high performance requirements and reduce power consumption in a smaller area," said John Koeter, vice president of marketing for IP at Synopsys. "By providing silicon-proven security and foundation IP that has been optimized for performance, power and area, Synopsys enables companies such as Starblaze to achieve their design goals and get to volume production faster and with less risk."

About DesignWare IP

Synopsys is a leading provider of high-quality, silicon-proven IP solutions for SoC designs. The broad DesignWare IP portfolio includes logic libraries, embedded memories, embedded test, analog IP, wired and wireless interface IP, security IP,

embedded processors and subsystems. To accelerate prototyping, software development and integration of IP into SoCs, Synopsys' IP Accelerated initiative offers IP prototyping kits, IP software development kits and IP subsystems. Synopsys' extensive investment in IP quality, comprehensive technical support and robust IP development methodology enables designers to reduce integration risk and accelerate time-to-market. For more information on DesignWare IP, visit www.synopsys.com/designware.

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As the world's 15th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software security and quality solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest security and quality, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

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