# Imagination Technologies Adopts Synopsys STAR Memory System for Embedded Memory Test and Repair for New MIPS Processor

STAR Memory System's Multi-Memory Bus Processor Cuts Test Logic Area While Maintaining High CPU Performance

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**Highlights:**

- Imagination selected DesignWare STAR Memory System with multi-memory bus (MMB) processor to broaden memory BIST implementation options for its new heterogeneous MIPS I6500 processor
- STAR Memory System enabled Imagination to achieve high test coverage and minimize processor memory BIST performance and area impact
- MMB processor provides common test and repair logic for all memory instances mapped to a shared bus
- DesignWare STAR Memory System has been used in billions of chips with more than one thousand designs in volume production

Synopsys, Inc. (Nasdaq: SNPS) today announced that Imagination Technologies is leveraging Synopsys' DesignWare® STAR Memory System® for memory built-in self-test (BIST) and repair of its new MIPS I6500 processor. The DesignWare STAR Memory System's multi-memory bus (MMB) processor provides common test and repair logic for all memory instances mapped to a shared bus, minimizing BIST impact on CPU performance and area. In addition, the MMB processor in the DesignWare STAR Memory System offers the flexibility to either decouple test logic from the block under test or optimally place the test logic within the block to reduce total die size while maintaining performance.

The MMB processor in the DesignWare STAR Memory System provides the automation and logic needed to quickly implement a comprehensive test and repair strategy for memory instances mapped on a test bus within a CPU-based system-on-chip (SoC). Using the MMB processor, designers can perform high speed diagnostics, column or/and row repair, soft or hard repair and test specific memory sub-groups. The MMB processor is ideally suited for high-performance design blocks and processor subsystems with L1, L2 or L3 caches optimized for maximum performance and minimal area.

"Synopsys and Imagination share a common goal of enabling designers to create high-performance SoCs," said Jim Nicholas, executive vice president, MIPS Business Unit at Imagination. "As an IP provider to many silicon design companies, it is important for Imagination to collaborate with industry partners to optimize the implementation of our licensable CPU cores. Using the DesignWare STAR Memory System with MMB processor for our new MIPS I6500 processor can significantly reduce the processors' memory BIST area and accelerate CPU memory test integration effort while meeting our customers' performance goals."

"As the amount of cache memory in high-performance CPUs and GPUs increases, minimizing memory BIST impact on the functional path is critical," said John Koeter, vice president of marketing for IP and prototyping at Synopsys. "By using the MMB processor in the proven DesignWare STAR Memory System, designers can reduce their on-die test footprint without sacrificing performance and product quality goals. This announcement expands our relationship with Imagination in support of its advanced processor IP cores, including the high-performance MIPS I6500."

**Availability & Resources**

The DesignWare STAR Memory System with MMB processor is available now.

- Learn more about the DesignWare STAR Memory System
- Download the DesignWare STAR Memory System datasheet

**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 enable designers to reduce integration risk and accelerate time-to-market. For more information on DesignWare IP, visit http://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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