Oticon Standardizes on Synopsys Low Power Implementation Solution

Achieves aggressive 400 microwatt power goal on multi-core hearing aid DSP IC

MOUNTAIN VIEW, Calif., Jan. 23, 2013 /PRNewswire/ --

Highlights:

- Oticon uses Synopsys' low power solution to design its most power-efficient hearing aid DSP IC
- Several advanced low power techniques, Synopsys Embedded Memories and Standard Cells used to meet 400 microwatt budget
- Oticon improved designer productivity with Synopsys' Lynx Design System

Synopsys, Inc. (Nasdaq:SNPS), a global leader providing software, IP and services used to accelerate innovation in chips and electronic systems, today announced that Oticon has standardized on Synopsys' Galaxy™ Implementation Platform and Lynx Design System for low power implementation. The advanced capabilities and extensive support for IEEE-1801 Unified Power Format (UPF) in the Synopsys® solution enabled Oticon to meet an aggressive 400 microwatt power budget while operating well below one volt for its next-generation multi-core DSP-based IC.

"Using Synopsys' low power implementation solution and Lynx Design System enabled us to deploy advanced techniques such as multi-voltage and low Vdd for low power designs," said Mogens Balsby, senior director of silicon engines at Oticon. "With the combination of tools and Lynx, we were able to customize the flow, target a new technology node, move to production and tape out in eight months to stay ahead of the project schedule."

Overcoming Low Power Challenges
Oticon had to overcome design challenges including:

- **Stringent Power Budgets:** The design supply voltage is set to a lower voltage than typical portable applications, adding an additional level of complexity. Ensuring consistent, safe operation with long battery life is a key aspect of portable medical devices such as a hearing aid.
- **Multi-Scenario Implementation and Analysis:** Signoff closure required concurrent optimization across more than 200 multi-corner, multi-mode (MCMM) scenarios.

"Portable medical devices such as the advanced hearing aids that Oticon manufactures have very tight power budgets," said Bijan Kiani, vice president of product marketing for design and manufacturing products at Synopsys. "Having successfully developed and deployed low power innovation for more than 15 years, Synopsys continues to deliver new low power technologies that help companies like Oticon achieve their design goals."

Galaxy Implementation Platform and Lynx Design System for Low Power Designs
The Synopsys Galaxy Implementation Platform for low power design is a comprehensive, silicon-proven solution with power-awareness built in throughout the design cycle. When combined with the Discovery™ Verification Platform, advanced low power designs can be verified, implemented and analyzed for signoff.

The Lynx Design System is a complete chip design environment that includes a tapeout-proven, production-ready design flow enabled by tools in the Galaxy Implementation Platform. In addition, Lynx's patented visualization capabilities help create and track designs throughout the implementation cycle.

Details of the Synopsys Advanced Low Power Solution can be found at: https://www.synopsys.com/LowPower

About Synopsys
Synopsys, Inc. (Nasdaq:SNPS) accelerates innovation in the global electronics market. As a leader in electronic design automation (EDA) and semiconductor IP, its software, IP and services help engineers address their design, verification, system and manufacturing challenges. Since 1986, engineers around the world have been using Synopsys technology to design and create billions of chips and systems. Learn more at www.synopsys.com.

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