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Accelerating Innovation

Synopsys and Siano Mobile Silicon

Siano Achieves First-Pass Silicon Success for Mobile Digital TV Receiver Chips with Synopsys DesignWare ARC Processor Core

"The ARC cores are extremely flexible with a small footprint that allows us to adapt our solutions to our customers' needs. Based on our past experience with Synopsys, we knew their versatile processor offering would meet Siano's performance requirements and result in first-pass silicon success."

Ronen Jashek
Vice President of Marketing, Siano Mobile Silicon

Business

Siano is a leading supplier of mobile broadcast DTV solutions. Pioneers of the multi-standard approach, Siano provides high-performance and fast time-to-market digital TV solutions for cellular-handheld, consumer electronics, automotive and public transportation device makers and solution/services providers. Siano's product portfolio includes multi-standard (DVB-T\H, T-DMB, DAB\DAB+, ISDB-T) or dedicated receiver chips for CMMB (China), ISDB-T (Brazil & Japan), and ATSC-M/H (North America), enabling portable and mobile device makers to enhance their customer base and generate additional revenues. Siano also offers a system-level family of products that includes Carmel, an intuitive, user-friendly accessory that connects directly to iPads and iPhones to enable high-quality live broadcast TV, and Meron, a compact, lightweight wireless accessory that delivers free high-quality broadcast TV to Android or Apple™ (iOS) smartphones or tablets, via WiFi.

Challenges

- Meet aggressive time-to-market window for receiver IC production and integration
- Decrease manufacturing costs by providing dramatically smaller-sized die areas
- Improve overall receiver chip quality and performance

Synopsys Solution

- DesignWare® ARC® 610 Processor Core
- DesignWare ARC XY Advanced DSP

Benefits

- Achieved first-pass silicon success
- Reduced integration risk with silicon-proven DesignWare IP
- Exceeded performance requirements in minimizing integration effort and increasing product development cycle time

Overview

Siano offers a superior combination of flexibility, compactness, and efficient power consumption in its integrated, single-die MDTV receiver chips. Siano's ICs are integrated into mobile handsets, navigation devices, personal TVs and other consumer electronics that need to broadcast live TV. Siano's chips are also used in automotive applications where extreme mobility and performance is required.
To deliver the high-performance and low-power solutions their customers require, Siano needed to improve the performance of their ICs and accelerate time-to-market. To support this goal, Siano required a reliable embedded processor solution that would meet their performance goals, minimize integration effort and speed their product development cycles. Having used Synopsys' DesignWare ARC processor cores in many previous designs, Siano was confident the ARC core was the right choice for a new receiver chip on a very aggressive schedule.

High-Quality DesignWare IP

Siano knew that to meet their time-to-market goal, they must achieve first-pass silicon success. High-quality IP from an IP vendor with a track record of demonstrated silicon success was therefore a requirement. All of Siano's receiver chips, including the SMS3230, SMS3130, and SMS2270, successfully use the ARC 610 core and ARC XY Advanced DSP configurable DSP processor. Based on this longstanding relationship, Siano did not feel the need to evaluate other IP providers, because they were confident that with Synopsys' DesignWare ARC core, they would easily meet their tight time-to-market window. By leveraging the ARC extension and augmenting the ARC processors with a large set of accelerators in combination with the ARC XY DSP functionality, Siano was able to quickly implement a small and power-efficient design and meet their target schedule with first-pass silicon success.

In addition, ARC's flexible programmable engine provides Siano with design scalability, enabling them to quickly respond to ever-changing market requirements. "The ARC cores have a very small footprint and excellent programmability, which makes it possible for us to adapt our products to our customers' needs," explained Ronen Jashek, vice president of marketing at Siano.

Siano integrated the DesignWare ARC core into their design quickly and achieved first-pass silicon success well within their development schedule. With another design integrating Synopsys' DesignWare ARC processors successfully completed, Siano intends to continue to use the ARC processor core for future designs.

"All of our IC products use ARC, so choosing the ARC processor for our latest design just made sense as the best way to reduce integration effort and risk. We knew exactly what we were getting and that it would perform as expected, which gave us the freedom to focus our efforts on other aspects of our design."

Ronen Jashek
Vice President of Marketing, Siano Mobile Silicon