

Synopsys and Open-Silicon

Open-Silicon Achieves First-Pass Silicon Success and Exceeds Performance Requirements with DesignWare IP Solutions



As an established IP vendor with high-quality, silicon-proven MIPI DigRF and Ethernet IP solutions, Synopsys helped us reduce our integration risk and achieve first-pass silicon success.”



Colin Baldwin, Director of Marketing, Open-Silicon

Business

Open-Silicon is a system-on-chip (SoC) and ASIC design company that provides customers with proven, low-risk access to the world's best IP, foundry, test, and packaging technologies.

Challenges

- ▶ Meet end-customer's aggressive six month time-to-market schedule
- ▶ Acquire silicon-proven MIPI and Ethernet IP solutions
- ▶ Reduce integration risk for complex design

DesignWare IP Solution

- ▶ MIPI 3G DigRF controller and PHY
- ▶ 10/100 Ethernet controller

Benefits

- ▶ Achieved first-pass silicon success and met aggressive time-to-market window for end-customer
- ▶ Acquired silicon-proven MIPI and Ethernet IP that met all of the end-customer's design requirements
- ▶ Received expert training and technical support to meet the tight project schedule

Overview

Open-Silicon's OpenMODEL™ is the semiconductor industry's first end-to-end custom SoC development solution that provides a seamless, low-cost and low-risk alternative to traditional models for complex SoC design and development. The OpenMODEL solution enables designers to choose their foundry, package supplier and IP available on the open market, or they can collaborate with Open-Silicon to propose solutions based upon their IP qualification and design experience.

Open-Silicon's end-customer enlisted their OpenMODEL solution to develop an SoC for a highly complex satellite base-station chipset platform. This SoC utilizes the 3G Universal Mobile Telecommunications System (UMTS) standard, which enables mobile devices to communicate over satellite networks. Engineered as a cost-effective and highly integrated architecture for satellite base-stations, this SoC offers unparalleled performance.



The high-quality, configurable DesignWare MIPI DigRF and Ethernet IP solutions were instrumental in helping us deliver this project on time to our customer. We will continue to rely on Synopsys' DesignWare IP for our future projects."

Hans Bouwmeester, Director of IP, Open-Silicon

Leading DesignWare IP Solution

Open-Silicon's customer needed to design a satellite base-station SoC, a highly complex component of a mobile satellite chipset platform, with a small form factor and very low power consumption. This SoC incorporates a MIPI DigRF v3 interface to provide chip-to-chip communication with the RF integrated circuit (IC) and a 10/100 Ethernet MAC controller to connect to a PC and Local Area Network (LAN).

"Using Synopsys' silicon-proven DesignWare® MIPI 3G DigRF and Ethernet IP solutions allowed us to focus our engineering talent on our core competencies and lower the risk of integrating the interface into our designs" said Hans Bouwmeester, Director of IP, Open-Silicon.

The DesignWare MIPI 3G DigRF controller and PHY IP solution supported several power-saving features implemented on the customer's chip, including shutdown and sleep modes, which helped meet the very low power requirements.

High-Quality IP and Excellent Support

Implementing a pre-verified, comprehensive IP solution from a single vendor greatly lowered the integration risk and allowed Open-Silicon to complete the design and verification work of the entire chip within their end-customer's aggressive six month project schedule.

"With our successful track record of using Synopsys' high-quality DesignWare IP, we had confidence that the IP would function as expected and enable us to deliver a reliable product to our end-customer," said Hans Bouwmeester, Director of IP, Open-Silicon.

Synopsys' comprehensive product documentation and knowledgeable and responsive technical support team enabled Open-Silicon to easily integrate the DesignWare IP products within a matter of weeks and contributed to the first-pass silicon success for the SoC. With their history of successful collaboration with Synopsys and 100 percent silicon success rate in integrating over 50 DesignWare interface and analog IP products, Open-Silicon is well positioned to continue getting their customers' silicon built on time and functionally correct.

"Partnering with Synopsys gave us full access to leading IP solutions, expert technical training and exceptional support. This significantly eased our integration efforts and helped us meet our aggressive development schedule."



Taher Madraswala, Vice President of Engineering, Open-Silicon



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