Synopsys Expands DesignWare IP Portfolio with MIPI IP Solutions

Silicon-Proven 3G DigRF, CSI-2 Controller and D-PHY Accelerate Development of Mobile Devices

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MOUNTAIN VIEW, Calif., Jan. 25 /PRNewswire-FirstCall/ -- Synopsys, Inc. (NASDAQ: SNPS), a world leader in software and IP for semiconductor design, verification and manufacturing, today announced the addition of silicon-proven DesignWare® MIPI IP consisting of 3G DigRF Controllers and PHY, Camera Serial Interface 2 (CSI-2) Host Controller and D-PHY to its IP portfolio. The Mobile Industry Processor Interface (MIPI) Alliance defines a set of standard hardware interfaces between mobile baseband processors, RF integrated circuits (ICs) and peripherals typically found in smartphones and multimedia handheld devices. Leading providers of system-on-chips (SoCs) are adopting these standards to improve interoperability and reduce system cost for their next-generation products. Synopsys has more than a decade of expertise in delivering high-speed interfaces, and its DigRF, CSI-2 and D-PHY solutions enable designers of baseband ICs and application processors to quickly integrate high-quality MIPI interfaces into their complex SoCs with less risk.

MIPI DigRF v3 is a low-power, low pin-count interface that simplifies the integration and interoperability between the RF transceiver IC and baseband IC (BBIC). The six-pin digital interconnect reduces system cost and lowers Electromagnetic Interference (EMI) for dual and single-mode 3GPP 2.5/3G mobile terminals. The silicon-proven DesignWare 3G DigRF IP solution consisting of controllers, dual-mode PHY and verification environments is compliant with the latest standard specification and enables easy integration of the MIPI DigRF v3 standard in both digital baseband and RF ICs. The PHY includes an analog phase-locked loop (PLL) and is developed as a hard IP block to help ensure the integrity of the high-speed clocks and signals required to meet the strict timing requirements of the protocol. Available in advanced 65- and 40-namometer (nm) process technologies, this high-quality solution has been implemented in multiple baseband and RF IC designs.

"As a leading provider of open market ASIC solutions working with multiple foundries, sourcing high-quality IP is key to our success," said Shri Gokhale, chief operating officer at Open-Silicon. "The Synopsys DesignWare 3G DigRF IP enabled us to focus on our core competencies and successfully service our customer with a product that can easily interface with leading RF ICs in the market. As one of the first members of Synopsys' IP OEM partner program, Open-Silicon is able to tightly integrate our engineers with the Synopsys IP engineering teams, allowing for a best-in-class IP integration experience for our customers."

Implemented by leading phone manufacturers, camera sensor vendors and image processor suppliers, the MIPI CSI-2 specification provides an efficient low-power, low pin count interface between camera sensors and application processors. To meet the needs of a wide range of camera sensors ranging from economical low-end to the most demanding multi-megapixel cameras, the DesignWare CSI-2 Host Controller is configurable from one to four data lanes for a total throughput of up to 4 Gbps. Complementing the CSI-2 host controller is the DesignWare MIPI D-PHY, which is a fully-integrated hard macro available as a unidirectional or a bi-directional PHY. The unidirectional configuration is optimized to enable the implementation of very compact and low power CSI-2 host applications. The bi-directional configuration enables a single PHY to support multiple MIPI interfaces, greatly simplifying the development of designs implementing multiple MIPI interfaces such as CSI-2, DSI and UniPro. Delivering up to 1 Gbps per lane, the DesignWare MIPI D-PHY meets the bandwidth demands of today's advanced cameras and display peripherals and is silicon-proven on 65-nm and 40-nm nodes.

"We are seeing an increasing momentum in the adoption of the MIPI Alliance interfaces standards," said Joel Huloux, chairman of the board, MIPI Alliance, Inc. "Synopsys' contribution to the different working groups and established position as a leading IP provider will help strengthen the MIPI ecosystem and further accelerate the adoption of the MIPI interfaces."

"MIPI has become the de-facto industry standard for chip-to-chip interfaces within mobile terminals," said John Koeter, vice president of marketing for the Solutions Group at Synopsys. "With the addition of silicon-proven CSI-2, DigRF and D-PHY to the DesignWare IP portfolio, designers can now turn to a single, trusted vendor to help them successfully develop innovative mobile designs using MIPI interfaces with significantly less risk."

Availability

The DesignWare 3G DigRF master and slave controllers and PHY, CSI-2 host controller and D-PHY are available now in leading 65-nm and 40-nm process technologies. For more information, visit: http://www.synopsys.com/mipi

About DesignWare IP

Synopsys is a leading provider of high-quality, silicon-proven interface and analog IP solutions for system-on-chip designs. Synopsys' broad IP portfolio delivers complete interface IP solutions consisting of controllers, PHY and verification IP for widely used protocols such as USB, PCI Express, DDR, SATA, HDMI, MIPI and Ethernet. The analog IP family includes Analog-to-Digital Converters, Digital-to-Analog Converters, Audio Codecs, Video Analog Front Ends, Touch Screen Controllers and more. In addition, Synopsys offers SystemC transaction-level models to build virtual platforms for rapid, pre-silicon development of software. With a robust IP development methodology, extensive investment in quality and comprehensive technical support, Synopsys enables designers to accelerate time-to-market and reduce integration risk.

For more information on DesignWare IP, visit: http://www.synopsys.com/designware.

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About Synopsys

Synopsys, Inc. (NASDAQ: SNPS) is a world leader in electronic design automation (EDA), supplying the global electronics market with the software, intellectual property (IP) and services used in semiconductor design, verification and manufacturing. Synopsys' comprehensive, integrated portfolio of implementation, verification, IP, manufacturing and field-programmable gate array (FPGA) solutions helps address the key challenges designers and manufacturers face today, such as power and yield management, software-to-silicon verification and time-to-results. These technology-leading solutions help give Synopsys customers a competitive edge in bringing the best products to market quickly while reducing costs and schedule risk. Synopsys is headquartered in Mountain View, California, and has more than 65 offices located throughout North America, Europe, Japan, Asia and India. Visit Synopsys online at http://www.synopsys.com/.

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