GLOBALFOUNDRIES and Cadence Deliver First SoC Enablement Solution Featuring ARM Cortex-A17 Processor in 28nm-SLP Process

December 17, 2014

GLOBALFOUNDRIES also tapes out second ARM Cortex-A17 processor using full Cadence digital implementation and signoff flow

SAN JOSE, Calif., December 17, 2014 —Cadence Design Systems, Inc. (NASDAQ: CDNS), a leader in global electronic design innovation, and GF, a leading provider of advanced semiconductor manufacturing technology, today announced the delivery of quad-core silicon built around the ARM® Cortex®-A17 processor implemented using GF's 28nm Super Low Power (28nm-SLP) process with High-k Metal Gate (HKMG) technology. GF utilized Cadence® tools exclusively to achieve 2.0GHz processor performance at typical operating conditions, which matched pre-silicon design performance predicted by Cadence Tempus™ Timing Signoff Solution analysis.

The Cadence tools used in this successful design include Encounter® Digital Implementation System, Encounter RTL Compiler, Quantus™ QRC Extraction Solution, Tempus Timing Signoff Solution, Encounter Conformal® Equivalence Checker, Physical Verification System and Litho Physical Analyzer. The flow incorporated physical IP technology from the ARM POP™ IP suite to leverage the full performance range of the 28nm-SLP process.

Based on the success of this design, Cadence and GF have also completed the tapeout of a second chip using the latest ARM Cortex-A17 processor RTL, achieving a 23 percent single-core area reduction versus the previous tapeout, while meeting the 2.0GHz maximum frequency signoff target. The second tapeout included the full suite of ARM POP IP, including the optimized memory instances for Cortex-A17. In addition, the Cadence Voltus™ IC Power Integrity solution was used throughout the design of the next-generation quad-core tapeout to guide and validate the power grid and enable the implementation of advanced power shutoff technologies. Encounter Conformal Low Power was used to verify the power-intent specification for the design.

“Silicon to simulation correlation at 2.0GHz performance further validates the maturity of our 28nm-SLP process, which continues to deliver silicon-proven performance and power targets our high-volume mid-range mobile customers demand,” said Gregg Bartlett, senior vice president, Product Management Group at GF. “We collaborated closely with Cadence and ARM to deliver these designs using our 28nm-SLP process, and our customers can reap the benefits when using the ARM Cortex-A17 processor and the Cadence design flow.”

“SoCs based on the ARM Cortex-A17 processor deliver premium cost-optimized performance for multiple devices including mainstream mobile and other consumer products that take advantage of the millions of software applications designed for 32-bit ARM-based cores,” said Dipesh Patel, executive vice president and general manager, physical design group, ARM. “The Cortex-A17 core is purpose-built for high performance within thermally restricted devices, and the partnership between ARM, Cadence and GF enables designers to use it to meet an array of complex requirements. We also expect it to drive innovation in new applications such as high-end wearables.”

“The full Cadence suite with integrated signoff enabled GF to deliver working silicon with high accuracy,” said Anirudh Devgan, senior vice president, Digital and Signoff Group, Cadence. “GF can now offer an efficient process with an integrated Cadence flow that can allow designers to bring low-power, high-performance designs to the market within tight windows.”

GF's 28nm-SLP technology is ideally suited for the next generation of mobile devices and low power Internet of Things (IoT) solutions, enabling designs with faster processing speeds, smaller feature sizes, lower standby power and longer battery life. The technology is based on GF's "Gate First" approach to HKMG, which has been in volume production for nearly four years. The technology offers a combination of performance, power efficiency and cost that is ideally suited for the mobile and IoT market.

About Cadence

Cadence enables global electronic design innovation and plays an essential role in the creation of today’s integrated circuits and electronics. Customers use Cadence software, hardware, IP, and services to design and verify advanced semiconductors, consumer electronics, networking and telecommunications equipment, and computer systems. The company is headquartered in San Jose, Calif., with sales offices, design centers, and research facilities around the world to serve the global electronics industry. More information about the company, its products, and services is available at www.cadence.com.

About GF

GF is the world’s first full-service semiconductor foundry with a truly global footprint. Launched in March 2009, the company has quickly achieved scale as the second largest foundry in the world, providing a unique combination of advanced technology and manufacturing to more than 160 customers. With operations in Singapore, Germany and the United States, GF is the only foundry that offers the flexibility and security of manufacturing centers spanning three continents. The company’s three 300mm fabs and

five 200mm fabs provide the full range of process technologies from mainstream to the leading edge. This global manufacturing footprint is supported by major facilities for research, development and design enablement located near hubs of semiconductor activity in the United States, Europe and Asia. GF is owned by Mubadala Development Company. For more information, visit http://www.globalfoundries.com.

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