Atmel Adds DSP Group's Teak DSP Core to IP Library

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SAN JOSE, CALIFORNIA, August 14, 2000 — Atmel Corporation (NASDAQ: ATML) and DSP Group, Inc., (NASDAQ: DSPG) the leader in the development and marketing of high-performance, cost-effective digital signal processing cores announced today that Atmel has licensed DSP Group's Teak® DSP Core for use in the design of high-performance DSP Systems-on-a-Chip (SoCs) in the areas of speech and audio processing, multimedia, wireless, high speed modems and telecommunications applications.

The Teak core is a high-performance, 16-bit, fixed-point DSP core using a Dual MAC (multiply-accumulate) architecture that enables peak performance of 260 MIPS. The Teak core has a parallel instruction capability, can handle double-word memory read and write instructions, and performs high-speed interrupts and fast context switching. The Teak core also includes an extended program addressing space and new instructions that accelerate the performance of various DSP algorithms.

Since the Teak core is 100% code-compatible with DSP Group's OakDSPCore®, it offers a natural migration path for designs done using the OakDSPCore that needs higher performance. The Teak core is a "soft core," a fully synthesizable core that can be combined with any other soft IP cores and can be implemented using any process technology. The Teak core provides several levels of modularity in RAM, ROM and I/O. The single-edge clocking system allows the use of full or partial scan testing methodologies. Emulation, debugging and testing are supported via JTAG. The Teak core has a built-in interprocessor communication that supports multi-DSP SoCs for super high-performance, as well as operation with CPU cores. When implemented with Atmel's 0.18-µm CMOS design rules, the Teak core occupies an area of merely 1.5 mm2 and consumes about 150 mW.

According to Alfredo Vadillo, Atmel's business director for cell-based ASICs, "The addition of the Teak core to Atmel's IP library enhances the company's substantial IP offering and gives us a window on advanced System-on-a-Chip implementations in wireless telecommunications, speech and video processing applications. It will be an excellent complement to our existing SLI portfolio."

Atmel has an extensive portfolio of both hard and soft IP that includes: the ARM7TDMI™, 8051 and AVR® microcontrollers, the OakDSPCore and Lode™ DSP Core processors; as well as connectivity IP, like USB Hub and Function, PCI (33 MHz and 66 Mhz) and 1394 (Firewire™). IP for baseband processing of 802.11, Bluetooth™, embedded FPGA cores and Voice Over IP (VoIP) are also available.

"Since the Teak instruction set is identical to that of the OakDSPCore, it will be particularly attractive to our customers who are currently using OakDSPCore and need to migrate to a higher performance solution, but don't want to re-write their code from scratch. With a peak throughput of 260 MIPS, we expect to be delivering Teak-based SoCs in the form of ASIC and ASSPs targeted at wireless communications, disk drive/DVD/CD-ROM and telecommunications," Vadillo concluded.

"Atmel's excellence in integration of DSP cores, mixed signal and nonvolatile memory gives them a significant advantage in various markets, especially the cellular phone market," said Bat-Sheva Ovadia, DSP Group's vice president of marketing and business development of the Technology Licensing Division. "We are proud that Atmel, like many of our clients, places its trust in our next-generation cores and has chosen a DSP Group core once again."

About Atmel Corporation

Founded in 1984, Atmel Corporation is headquartered in San Jose, California, with manufacturing facilities in Colorado Springs, Colorado; Irving, Texas; Grenoble, Nantes and Rousset France; and Heilbronn, Germany. Atmel designs, manufactures and markets on a worldwide basis advanced logic, mixed-signal, non-volatile memory, and RF semiconductors. Atmel is also a leading provider of system level integration semiconductor solutions using advanced CMOS, BiCMOS, Bipolar and SiGe process technologies.

Atmel product and financial information are available from its Fax-on-Demand service. In North America call 1-800-292-8635 or Internationally, call 1-408-441-0732. Requests may be made via e-mail to literature@atmel.com or by visiting Atmel's web site at www.atmel.com.

About DSP Group, Inc.

DSP Group, Inc. is a global leader in the development and marketing of high-performance, cost-effective, licensable digital signal processing cores. The company's family of DSP cores provides ideal solutions for low-power, cost-driven applications, such as cellular, broadband communication, VoIP, multimedia, advanced telecommunication systems, disk drive controllers and many other types of embedded control applications. By combining its DSP core technologies with its proprietary, advanced speech-processing algorithms – DSP Group also delivers a wide range of enabling, application specific ICs for full-featured integrated telephony products and applications, including digital spread spectrum wireless technologies. DSP Group, Inc. maintains an international presence with offices located around the globe. Additional information about DSP Group, Inc. is available on the World Wide Web at: http://www.dspg.com.

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