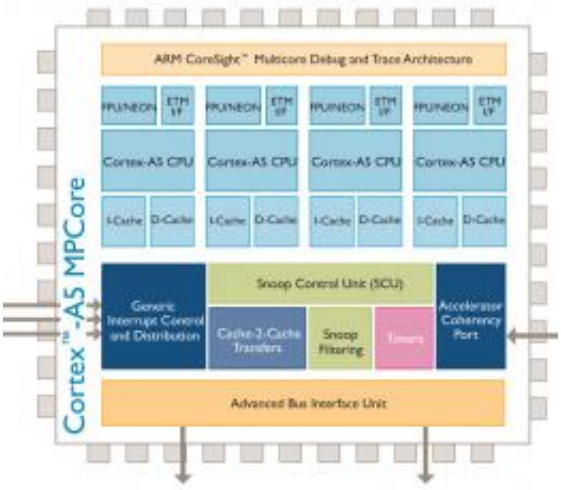
ARM Introduces New Cortex-A5 Power-Efficient and Cost-Effective Multicore Processor

October 21 2009



(PhysOrg.com) -- ARM today announces the launch of the ARM Cortex-A5 MPCore processor, the smallest, lowest power ARM multicore processor capable of delivering the Internet to the widest possible range of devices, from ultra low cost handsets, feature phones and smart mobile devices, to pervasive embedded, consumer and industrial devices.

Available as an extremely area- and power-efficient uniprocessor or up to a 4x multicore processor, the Cortex-A5 processor unleashes the outstanding performance and power scalability required for the

compelling usage scenarios demanded by each of these markets.

The Cortex-A5 uniprocessor provides a high-value migration path for the large number of existing ARM926EJ-S and ARM1176JZ-S processor licensees. By delivering better performance than the ARM1176JZ-S processor within the raw power and silicon area footprint of the ARM926EJ-S processor, the Cortex-A5 uniprocessor offers nearly twice the power-efficiency relative to these earlier and extremely popular predecessors. This increases the quality of the user experience while reducing costs and end-user device size.

This performance is further enhanced by the Cortex-A5 multicore processor which utilizes the successful ARM MPCore technology. The widely-adopted ARM MPCore technology increases performance scalability and control over power consumption to exceed the performance of today's comparable high-performance devices while remaining within the tight mobile power constraints. To date ARM MPCore processors have been licensed by more than 15 leading semiconductor companies including Broadcom Corporation, NEC Electronics (Europe) GmbH, NVIDIA, Renesas Technology America, Inc., Toshiba America Electronic Components and Sarnoff Corporation, and have been implemented in numerous applications on the market today. This technology greatly expands the addressable application spectrum while enabling new and more efficient modes of operation.

The Cortex-A5 processor includes TrustZone security technology along with a NEON multimedia processing engine first introduced with the Cortex-A8 processor. NEON technology is a 128-bit SIMD (Single Instruction, Multiple Data) architecture extension for the Cortex-A series processors, providing flexible and compelling acceleration for intensive multimedia applications.

The Cortex-A5 processor is fully application compatible with the Cortex-

A8 and Cortex-A9 processors. This enables immediate access to an established developer and software ecosystem including Android, Adobe Flash, Java Platform Standard Edition (Java SE), JavaFX, Linux, Microsoft Windows Embedded, Symbian and Ubuntu, along with more than 600 ARM Connected Community members.

The processor has been licensed by numerous ARM Partners including Samsung Electronics Co., Ltd, a global leader in semiconductor, telecommunication, digital media and digital convergence technologies.

Supporting Technology

The Cortex-A5 processor incorporates, and is supported by, a broad range of ARM technology to provide ARM Partners with a smooth path through the development, verification and production of full function, compelling devices while significantly reducing time-to-market.

The new processor is supported by the immediate availability of a High Performance Optimization Package of physical IP to enable leadership implementations in a 40nm process. This optimization package comprises ARM low leakage, high performance logic libraries featuring multi-channel design along with optimized memory instances engineered specifically for the Cortex-A5 processor architecture. The optimized package is available initially for the TSMC 40LP process and further performance benefits can be achieved through the use of multi-Vt and overdrive implementation techniques.

The ARM AMBA and CoreSight system development IP and tools products address the critical challenges of efficiently moving, storing and observing data between cores and memory to optimize the system performance and power consumption of ARM Cortex processor-based SoC designs. The AMBA system development components enable system designers to maximise the utilization of system bandwidth,

reduce latency and cut time to market of high-performance SoC designs, while the ARM CoreSight technology provides complete on-chip debug and real-time trace visibility, reducing risk and speeding development of high quality system software.

For systems that demand high-quality graphics and video processing the extremely power- and area-efficient Mali Graphics Processing Units (GPUs) and Mali-VE Video Engines provide ideal solutions. The Cortex-A5 processor when combined with the Mali-200, Mali-400MP GPUs and the Mali-VE3, Mali-VE6 Video Engines ensure highly efficient and flexible designs that scale with requirements to deliver the rich multimedia user experience necessary for success in the highly competitive market for consumer products.

ARM also provides a complete range of complementary software tools to enable software development, optimization and test ahead of silicon availability, significantly reducing application time-to-market and ensuring the highest degree of software quality. Tools available at launch include Fast Models, instruction-accurate models ideal for creating, running and optimizing software in simulation, RealView Development Suite (RVDS) 4.0 Pro, incorporating the best-in-class ARM Compiler and market-leading ARM Profiler, enabling applications to easily achieve both high performance and optimal code size.

The Cortex-A5 processor has multiple lead licensees developing leadership mass-market silicon today, is now available for general licensing, and will be delivered in the fourth quarter of 2009.

Provided by ARM