ARM Introduces Industry's Fastest Processor For Low-Power Mobile And Consumer Applications

ARM today announced its new Cortex-A8 processor which will revolutionize consumer and low-power mobile devices, enabling the delivery of higher levels of entertainment and innovation to end users. Launched at the second annual ARM Developers' Conference, in Santa Clara, California, the ARM Cortex-A8 processor delivers up to 2,000 DMIPS making it ideal for demanding consumer products running multi-channel video, audio, and gaming applications.

For next-generation mobile devices, the ARM Cortex-A8 processor delivers industry-leading performance and power efficiency while using less than 300 mW in 65nm technology. For the first time, low-cost, high-volume products will have access to desktop levels of performance using the Cortex-A8 processor.

The exceptional speed and power efficiency of the Cortex-A8 processor is enabled by new ARM Artisan libraries supporting Intelligent Energy Manager (IEM) technology and implementing advanced leakage control. The processor is supported by a wide range of ARM technologies for rapid system design including RealView DEVELOPER software development tools; RealView ARCHITECT ESL tools and models; CoreSight debug and trace technology; and software library support through the OpenMAX multimedia processing standard.

ARM has already secured five licensees for the Cortex-A8 processor, including Freescale, Matsushita, Samsung and Texas Instruments, and future support from major EDA and Operating System vendors.

"With the Cortex-A8 processor, ARM has demonstrated its commitment to enabling the next generation of advanced cell phones, media players and new portable devices requiring robust digital signal processing and control capabilities," said Will Strauss, president and principal analyst of market watcher Forward Concepts. "The performance specifications are truly stunning and I expect that the Cortex-A8 processor will ensure ARM's continued leadership in the portable electronics market."

The Cortex-A8 processor is the first applications processor based on the next-generation ARMv7 architecture, and features Thumb-2 technology for greater performance, energy efficiency, and code density. It includes the first implementation of the powerful NEON signal processing extensions to accelerate media codecs such as H.264 and MP3. The Cortex-A8 solution also includes Jazelle-RCT Java acceleration technology to optimize Just In Time (JIT) and Dynamic Adaptive Compilation (DAC), and reduces memory footprint by up to three times. Additionally, the new processor features TrustZone technology for secure transactions and Digital Rights Management (DRM), and IEM capability for low power.

"The rapid convergence of digital entertainment and mobile communications technology requires new levels of system performance and security within a tight cost and power footprint," said Mike Inglis, EVP, Marketing ARM. "The new ARM Cortex-A8 processor and supporting technologies brings unprecedented levels of performance and energy efficiency to the home and mobile markets and will result in innovative new devices with media-rich applications coming to the consumer."

The Cortex-A8 processor features an advanced superscalar pipeline which can execute multiple instructions at the same time and deliver more than 2.0 DMIPS per MHz. The processor integrates a size configurable level 2 cache which works in conjunction with fast 16K or 32K level 1 caches to minimize access time and

maximize throughput. The Cortex-A8 processor uses advanced branch prediction techniques and has dedicated NEON integer and floating-point pipelines for media and signal processing. The Cortex-A8 processor will run at more than 600 MHz in low-power 65nm processes with the core using less than 4 mm2 of silicon (excluding NEON, Trace technology and L2 cache). High-performance consumer designs will run the Cortex-A8 processor at up to 1 GHz in high-performance 90nm and 65nm processes.

The ARM Cortex-A8 processor is available for licensing now, along with the majority of the supporting technology. First availability for the Advantage-CE library in leading 65nm technologies will be 1Q06.

Source: ARM