



Toshiba offers enhanced ARM® Cortex™ processor options to European ASIC and Foundry customers

New licensing agreement plus local support delivers ARM Cortex-A9MP, Cortex-R4F, NEON® SIMD and PrimeCell peripheral options to European Custom CMOS SoCs

Toshiba Electronics Europe (TEE) is now offering the ARM® Cortex™-A9MP and the ARM Cortex-R4F processor cores for use with the company's full range of ASIC technologies - including processes down to 40nm. With local support from Toshiba's European LSI Design and Engineering Centre (ELDEC), European customers can choose the ARM cores to improve performance, reduce power consumption and minimise board space in ASIC and ASSP designs for applications ranging from mobile devices to consumer electronics applications.

The availability of the new core offerings for European customers comes as a result of a major technology licensing agreement between Toshiba Corporation and ARM. This agreement – which follows an earlier agreement covering the ARM Cortex-M3 32-bit RISC processor core - encompasses the two ARM Cortex processors as well as ARM's NEON® SIMD technology, PrimeCell peripherals and CoreSight™ on-chip trace and debugging. These ARM technologies are now available across the full Toshiba technology and service portfolio. This includes

cell-based ICs, embedded arrays, Toshiba's proprietary Universal Array™, custom SoC (ASIC) development and foundry services.

The Cortex-A9 MPCore multicore processor is ARM's second generation MPCore and the first to combine the Cortex application class architecture with multiprocessing capabilities for scalable performance. Capable of delivering 2.50DMIPS/MHz per CPU and featuring advanced power management techniques, the new core is ideal for smartphones, mobile internet devices and consumer electronics applications.

The Cortex-R4F is targeted at high volume, deeply embedded applications including computer peripherals, embedded real-time systems and wireless modems. Capable of running at clock speeds up to 400MHz, Cortex-R4F provides greater performance than any other processor with a similar die size.

NEON technology is a 64/128-bit hybrid SIMD architecture developed by ARM to accelerate the performance of multimedia and signal processing applications including video encode/decode, 3D graphics, speech processing, compressed audio decoding, image processing, telephony, and sound synthesis. ARM PrimeCell Peripherals are re-usable IP macrocells that enable the rapid assembly of SoC designs, while CoreSight on-chip debug and trace simplifies and speeds development of ARM-based SoCs.

Toshiba's ASIC and Foundry business encompasses a wide range of CMOS technologies including the latest 90nm and 65nm processes and, in the future, 40nm solutions. Other CMOS platforms offer process technologies ranging from 0.6µm to 0.13µm. In addition to the new ARM Cortex™-A9MP and the ARM Cortex-R4F processor cores, the company has licensed the fully synthesisable and configurable Cortex-M3 core, ARM7TDMI-S™, ARM946E-S™, ARM926EJ-S™, ARM1026EJ-S™, ARM1136J-S™ and ARM1176JZ(F)-S™ cores. The full range of ARM processor cores is available across Toshiba CMOS ASIC technology platforms.

For more information on Toshiba's ASIC and Foundry business, please visit www.toshiba-components.com/ASIC.

About Toshiba

Toshiba Corporation is a leader in information and communications systems, electronic components, consumer products and power systems. The company's integration of these wide-ranging capabilities assures its position as an innovator in advanced components, products and systems. Toshiba operates a global network of more than 740 companies, with 198,000 employees worldwide and annual sales surpassing US\$76 billion.

Toshiba Electronics Europe (TEE) is the European Headquarters for the electronic components business of Toshiba Corporation, which is the world's fourth largest semiconductor vendor according to estimates by Dataquest.

Providing design, manufacturing, marketing and sales, TEE was formed in 1973 in Neuss, Germany. The company now has headquarters in Düsseldorf, Germany and subsidiaries in France, Italy, Spain, Sweden and the United Kingdom. Company president is Mr. Hitoshi Otsuka and the total number of personnel in Europe is around 400.

Toshiba Electronics Europe offers one of the industry's broadest IC and discrete product lines including high-end memory, microcontrollers, ASICs, ASSPs and display products for automotive, multimedia, consumer, telecoms and networking applications. The company also has a wide range of power semiconductor solutions.

For more company information visit Toshiba's web site at www.toshiba-components.com

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