

Multicore microcontroller family delivers up to 1000 MIPS of deterministic parallel compute



X MOS today announced a significant extension to its family of xCORE multicore microcontrollers, with the launch of three new USB-equipped products that address the processing and interfacing needs of a broad range of embedded applications. The new products are the U10-128; U12-128; and the U16-128, which provide 10, 12 and 16 logical cores respectively and deliver up to 1000 MIPS of deterministic parallel compute, along with 128K Bytes of on-chip RAM.

“These new xCORE-USB devices allow us to hit the ‘sweet spot’ in a much broader range of USB-enabled applications,” said Dr Paul Neil, VP of Product Management, X MOS. “Now we can offer not only outstanding performance, but also a complete family of products at a variety of different price-performance levels.”

The new devices join the existing xCORE-USB offering, the eight-core/64KB RAM U8-64 (also marked SU01), which was announced earlier this year. The entire family takes full advantage of the recently announced xSOFTip range of software-based peripherals and processing blocks, which include I2S, TDM, SPDIF, and AES/EBU processing. A wide range of audio DSP blocks are also available including filters, equalizers, stereo spatization, and mixers.

The devices incorporate a High Speed USB 2.0 PHY and unlike other microcontrollers can support 480Mbps data-rates and USB Audio Class 2. This allows the xCORE-USB device family to address a range of demanding applications

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including high performance peripherals, audiophile consumer audio, sound-bars, multi-channel USB audio interfaces, DJ products, USB speakers, and protocol conversion plus bridging.

Other features include a multichannel 12bit 1MSPS analog to digital converter, standby and deep sleep modes for energy-sensitive applications, power on reset, watchdog timer, brownout detection and integrated oscillator circuits.

The xCORE architecture uses a 32bit multicore technology with hardware response to deliver deterministic performance and complete I/O flexibility with a simple high level C programming environment. These latest additions to the xCORE family mean that designers can choose the amount of processing power and DSP they need, resulting in a solution that is much more tightly tailored to the requirement than was previously possible. The low latency and determinism of the architecture allows even demanding time-critical functions such as interfacing and media delivery to be addressed in software, with hardware levels of response.

xCORE devices are supported by the xTIMEcomposer Studio development tools, which give the designer access to the power of multicore processing in a familiar C/C++ environment. Unique in embedded processor development systems, xTIMEcomposer Studio includes static timing analysis and cycle-accurate simulation tools, making it easy for designers to meet precise real-time requirements. The XMOS development tools are available to download free of charge at www.xmos.com/tools [1].

The XS1-U8-64 is available now, priced from \$6.00 in volume. The XS1-U16-128 is sampling now and available in production quantities in Q1 2013, priced \$9.75 in volume. The XS1-U10-128 and XS1-U12-128 will be sampling in Q1 2013, with pricing starting at \$7.60.

Further details are available from an XMOS sales representative: www.xmos.com/products/distributors [2].

For more information on XMOS products including development kits and software, visit www.xmos.com [3].

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