XMOS Introduces Real-Time Platform for Energy-Efficient Motor Control

XMOS today unveiled a new motor control platform, enabling developers to deliver innovative and highly efficient motor control designs. The XMOS motor control platform is comprised of:

· XCore processors, the industry’s only hard real-time, multi-threaded processor architecture

· XMOS motor control hardware board, with support for dual axis motor control and communication

· A suite of control, processing and interfacing functions, to help designers quickly develop advanced motor drives entirely in high level software programming languages

Predictable real-time behavior of control loops is critical for high quality motor control designs. The XCore processor architecture, combined with the XTA static timing analysis tool, provides a programmable platform, which delivers guaranteed timing of software execution - without requiring an RTOS.

Integrating the capabilities of processors, DSPs and FPGAs, XCore processors offer scalable performance starting at 500 MIPS. XMOS provides predictability and full programmability at low cost, to meet the rapidly increasing performance requirements of motor control applications, especially in designs for high-efficiency synchronous motors.

“Our customers have requested a flexible, high performance silicon platform that will help them save time in the design process. The new motor control platform from XMOS is designed to provide BOM savings by integrating real-time control, flexible I/O and DSP into a single, programmable digital IC,” said Joerg Bertholdt, VP of marketing at XMOS. “By replacing several digital components through a single XMOS device, the motor control platform from XMOS provides BOM savings in development costs and time through a unified design flow.”

XMOS Motor Control Board Key Features

· Two XMOS XS1-L processors:

o XS1-L1 500 MIPS processor handling three-phase BLDC motor control loops

o XS1-L2 1000MIPS processor handling communication, logging and motion control

· Six-channel 14-bit 600KSPS ADC with individual sample/hold

· Two-channel hall effect encoder input

· Isolated power section supporting up to 24V and 10A total

· 7.7 Watt Faulhaber BLDC 24v motor

· 32MB of SDRAM

· General I/O including 12 ch 10b ADC, Ethernet, CAN, LCD and GPIO

· Power supply, demonstration software and documentation

Availability

The XMOS motor control platform is currently being used by lead customers and will be demonstrated at Electronica Hall A4, Booth 242, Nov. 9-12. General availability is scheduled for December.