

CAST Rolls Ten Years of 8051 Experience into Configurable Processor Core

8051-compatible IP core runs eight times faster than original, gives designers new flexibility and value based on 100+ customer experiences

SANTA CLARA, California, DesignCon, February, 4, 2006 — Semiconductor intellectual property (IP) provider CAST, Inc. today announced a highly-configurable IP core that can implement 8051-compatible processors with a variety of features and capabilities. This makes it easier for designers to get a customized 8051 that matches their particular requirements, from fitting into small, inexpensive devices to handling complex and demanding applications.

“The 8051 is still a real workhorse in the world of embedded controllers,” said Hal Barbour, president of CAST. “We’ve had customers use them for everything from washing machines to space probes. Now we’re making it easier than ever for designers to select and CAST to deliver exactly the best 8051 configuration for each specific situation, further trimming development time and project costs.”

The base R8051XC core executes the popular MCS® 51 instruction set, and is architected to use a reduced instruction cycle time for faster operation. Completing instructions in fewer clock cycles, the R8051XC achieves an average eight-times performance increase over the original 80C51 (depending on the actual instructions being executed).

Designers can choose from numerous options that add processing capability or peripherals compatibility. These include: hardware interrupts; interfaces for serial communication interfaces; standard I2C and SPI interfaces; external memory interfaces; a timer system with compare- and capture-reload resources; a watchdog timer; additional 8-bit input/output ports; a multiplication and division unit; and a power management unit. Integrated on-chip debugging is also available, either the proprietary On-Chip Debug Support (OCDS) or the On-Chip Instrumentation (OCI) block from partner First Silicon Solutions (FS2).

See a block diagram and get more details at www.cast-inc.com/cores/r8051xc.

Customers can configure and purchase a core with a custom set of options; buy the fully-configurable version that includes all the options; or choose from three standard configurations, the minimum CPU version and two versions that resemble the R8051 (traditionally supporting Intel peripherals) and R80515 (Infineon peripherals). The latter two versions replace the company's R8051 and R80515 products.

The R8051XC is an evolutionary step for the 8051 family of processors CAST has been delivering for ten years. Developed by long-time partner Evatronix SA (www.evatronix.pl), these 8051 cores have been quality-enhanced and silicon-proven through a hundred successful customer projects.

The R8051XC is competitively efficient in area and performance, as shown by these representative results (using worst-case conditions using optimization for a frequency of 100 MHz with a UMC 0.18 micron ASIC library):

<u>Configuration</u>	<u>Approx. Area</u>
base CPU	6,570 gates
R8051-like	10,656 gates
R80515-like	17,364 gates
with all options	24,451 gates

The R8051XC is shipping now. Pricing varies by configuration and package; see www.cast-inc.com for more information.

About CAST, Inc.

CAST provides over 100 popular and standards-based IP cores for ASICs and FPGAs. Privately owned and operating since 1993, CAST has established a reputation for high-quality IP products, simple licensing, and responsive technical support. The company is headquartered near New York City, partners with IP developers around the world, and works with select sales consultants and distributors throughout Europe and Asia.

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