# UC/OS-III, The Real-Time Kernel, Or A High Performance, Scalable, ROMable, Preemptive, Multitasking Kernel For Microprocessors, Microcontrollers & DSPs (Board NOT Included)

# Synopsis

This book puts the spotlight on how a real-time kernel works. Using Micrium's uC/OS-III as a reference, the book consists of two complete parts. The first describes real-time kernels in generic terms. Part II provides examples to the reader, using STMicroelectronics' STM32F107 microcontroller, based on the popular ARM Cortex-M3 architecture. A companion evaluation board (uC/Eval-STM32F107) NOT INCLUDED, and tools (IAR Systems Embedded Workbench for ARM), enable the reader to be up and running quickly, and have an amazing hands-on experience, leading to a high level of proficiency. This book is written for serious embedded systems programmers, consultants, hobbyists, and students interested in understanding the inner workings of a real-time kernel. uC/OS-III is not just a great learning platform, but also a full commercial-grade software package, ready to be part of a wide range of products. uC/OS-III is a highly portable, ROMable, scalable, preemptive real-time, multitasking kernel designed specifically to address the demanding requirements of today's embedded systems. uC/OS-III is the successor to the highly popular uC/OS-II real-time kernel but can use most of uC/OS-II's ports with minor modifi cations. Some of the features of uC/OS-III are: Preemptive multitasking with round-robin scheduling of tasks at the same priority Supports an unlimited number of tasks and other kernel objects Rich set of services: semaphores, mutual exclusion semaphores with full priority inheritance, event flags, message queues, timers, fixed-size memory block management, and more Built-in performance measurements

# Book Information

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## Customer Reviews

If you use the uC/OS-III ("micro see oh ess three") real time operating system, this book is compulsory. It's the only reference that covers all features of the 2009 release of this popular RTOS. Unlike some other "only references" on their subjects, I find this one well-written, well-organized, and easy to use. Roughly the first half of the book explains the OS operation in extraordinary detail. This isn't an OS for naÃƒÂ ve users. It comes in source form, for embedded system developers who need to port it to novel processors and who need to understand every instruction when the debugging turns ugly. The text supports those developers well, explaining the intent and usage of all the major OS subsystems. Appendices in the second half of this massive book present the programmers' reference, including configuration controls. Embedded systems are as different from each other as your car's airbags are from your cell phone, so these options let you include all and only the features needed for the application at hand - an important way to reduce ROM requirements in cost-critical applications. The last 150 pages walk the user through examples based on Micrium's eval board. As a reference, I fault this book only for its maddeningly brief index - but weaknesses there are largely made up for in the detailed (15 page) table of contents.I'm not creating embedded systems right now, though. I'm teaching an OS course, one where the students will appreciate a concentration on real-time and embedded systems. This makes a great secondary reference for that class, as a case study in what an industrial-strength RTOS looks like. Best of all, it deals with the OS source, sometimes line by line.

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