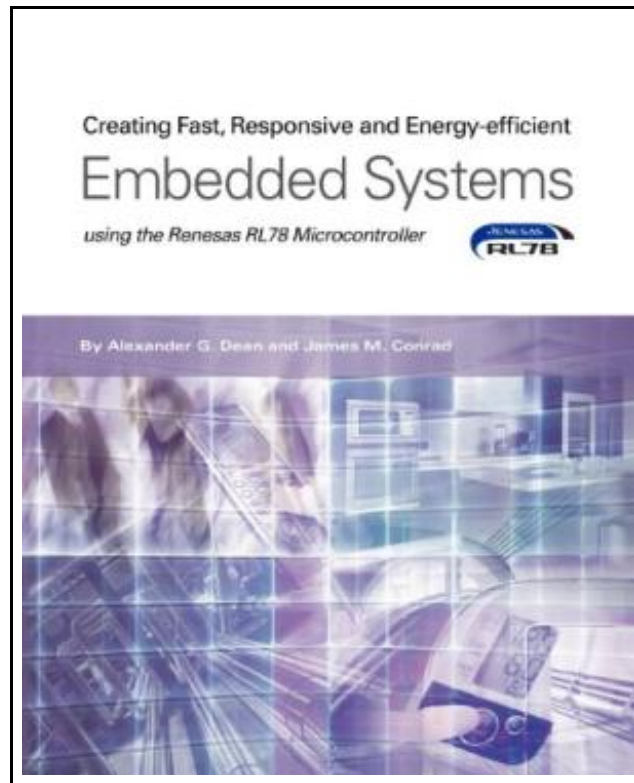# Creating Fast, Responsive and Energy-Efficient Embedded Systems Using the Renesas Rl78 Microcontroller (Paperback)

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Reviews

It is great and fantastic. I actually have read and so i am certain that i am going to going to go through once again yet again in the future. I realized this ebook from my dad and i encouraged this book to find out.
(Dr. Kayden Gerlach)

CREATING FAST, RESPONSIVE AND ENERGY-EFFICIENT EMBEDDED SYSTEMS USING THE RENESAS RL78 MICROCONTROLLER (PAPERBACK)

Micrium, 2012. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.Embedded microcontrollers enable products with sophisticated control, precise timing, low unit cost, low development cost, and high design flexibility. This book shows how to design and optimize embedded systems using the energy-efficient RL78 family of microcontrollers from Renesas Electronics Inc. The book is suitable for practicing engineers and both undergraduate and graduate classes on embedded systems. The first section of the book provides an introduction to developing embedded systems efficiently. - Basic microcontroller concepts - Processor core, instruction set architecture and interrupt system - Peripherals for digital and analog interfacing, serial communications, timing control, system robustness and acceleration, clock system control and low-power standby modes - Software development concepts including software engineering, development tool-chain, and compiler concepts The second section dives into optimizing embedded systems for three different goals. - Program speed depends on designing an efficient program and then helping the compiler generate fast object code. Execution time profiling finds the slow parts of the program quickly and guides speed optimization efforts. Examining object code helps determine if the compiler is working well enough. - Program responsiveness to events depends on the task scheduling approach and the use of preemption and prioritization. Real-time system analysis enables the calculation of response times and schedulability. - System energy efficiency depends on balancing a system s static and dynamic power consumption. A good design will trade off supply voltage, operating frequency, standby and shutdown modes to meet energy or power goals.

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