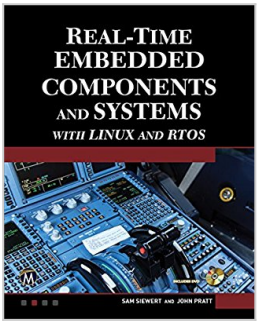

Real-Time Embedded Components and Systems with Linux and RTOS (Engineering)

By Sam Siewert, John Pratt

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This book is intended to provide a senior undergraduate or graduate student in electrical engineering or computer science with a balance of fundamental theory, review of industry practice, and hands-on experience to prepare for a career in the real-time embedded system industries. It is also intended to provide the practicing engineer with the necessary background to apply real-time theory to the design of embedded components and systems. Typical industries include aerospace, medical diagnostic and therapeutic systems, telecommunications, automotive, robotics, industrial process control, media systems, computer gaming, and electronic entertainment, as well as multimedia applications for general-purpose computing. This updated edition adds three new chapters focused on key technology advancements in embedded systems and with wider coverage of real-time architectures. The overall focus remains the RTOS (Real-Time Operating System), but use of Linux for soft real-time, hybrid FPGA (Field Programmable Gate Array) architectures and advancements in multi-core system-on-chip (SoC), as well as software strategies for asymmetric and symmetric multiprocessing (AMP and SMP) relevant to real-time embedded systems, have been added. Companion files are provided with numerous project videos, resources, applications, and figures from the book. Instructors' resources are available upon adoption.

FEATURES:

• Provides a comprehensive, up to date, and accessible presentation of embedded systems without sacrificing theoretical foundations

• Features the RTOS (Real-Time Operating System), but use of Linux for soft real-time, hybrid FPGA architectures and advancements in multi-core system-on-chip is included

• Discusses an overview of RTOS advancements, including AMP and SMP configurations, with a discussion of future directions for RTOS use in multi-core architectures, such as SoC

• Detailed applications coverage including robotics, computer vision, and continuous media

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