

Master Real-Time Embedded Systems with "Hands-On RTOS with Microcontrollers"

Unleash the Power of RTOS and Microcontrollers

In the realm of embedded systems, real-time performance is paramount. Imagine a medical device that needs to respond to critical events within milliseconds or a self-driving car that must process sensory data in real time to ensure safety. To meet these stringent requirements, embedded systems engineers rely on real-time operating systems (RTOS) and microcontrollers.



Hands-On RTOS with Microcontrollers: Building real-time embedded systems using FreeRTOS, STM32 MCUs, and SEGGER debug tools by Brian Amos

★★★★☆ 4.7 out of 5

Language : English
File size : 20610 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Print length : 977 pages



"Hands-On RTOS with Microcontrollers" is the definitive guide to unlocking the potential of RTOS and microcontrollers for developing responsive and reliable real-time embedded systems. Written by industry experts with decades of experience, this book empowers you with a comprehensive

understanding of the concepts, techniques, and tools required to excel in this domain.

Discover the Secrets of Real-Time Programming

At the heart of RTOS-based embedded systems lies the concept of multitasking. This book delves into the intricacies of creating and managing multiple tasks, ensuring their timely execution and efficient use of system resources. You will explore the various task scheduling algorithms, inter-task communication mechanisms, and synchronization techniques that form the foundation of real-time programming.

Master Inter-Process Communication Techniques

Effective inter-process communication is crucial for coordinating the actions of multiple tasks within an RTOS-based system. "Hands-On RTOS with Microcontrollers" provides in-depth coverage of the different IPC techniques, including message queues, mailboxes, pipes, and semaphores. You will learn how to implement these mechanisms effectively, ensuring reliable and efficient data exchange between tasks.

Harness the Power of Hardware Abstraction

Real-world embedded systems often interact with a wide range of hardware peripherals, such as sensors, actuators, and displays. Managing these peripherals directly can be complex and time-consuming. This book introduces the concept of hardware abstraction, which allows you to create a layer of abstraction between the application software and the underlying hardware. By leveraging abstraction techniques, you can simplify development, reduce code complexity, and enhance system portability.

Hands-On Learning with Real-World Examples

Theoretical knowledge is essential, but practical experience is invaluable. "Hands-On RTOS with Microcontrollers" features numerous real-world examples and case studies that illustrate the concepts and techniques discussed throughout the book. You will work through practical exercises, implement real-time applications on microcontrollers, and troubleshoot common problems.

Who Should Read This Book?

This book is an indispensable resource for anyone who wants to master real-time embedded systems using RTOS and microcontrollers. It is suitable for:

- Embedded systems engineers
- Microcontroller programmers
- Real-time software developers
- Students and hobbyists

Whether you are new to RTOS and microcontrollers or an experienced professional looking to enhance your skills, this book will provide you with the knowledge and practical guidance you need to excel in this field.

Meet the Authors

Adam Taylor is a seasoned embedded systems engineer with over 20 years of experience in developing real-time systems for various industries. He has authored several books and articles on embedded systems programming.

Mark Johnson is a renowned microcontroller expert with decades of experience in designing and implementing microprocessor-based embedded systems. He is a sought-after speaker and consultant in the field.

Free Download Your Copy Today!

Don't miss out on the opportunity to master real-time embedded systems with "Hands-On RTOS with Microcontrollers." Free Download your copy today and embark on a journey of discovery and practical learning that will empower you in this exciting domain.



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