Practical Microcontroller Engineering with ARM Technology

Description:
This book introduces the basic concepts and practical techniques in designing and building ARM® microcontrollers in industrial and commercial applications.

Practical Microcontroller Engineering with ARM® Technology provides the full scope of components and materials related to ARM® Cortex® M4 microcontroller systems. Chapters 2 through 9 provide the fundamentals and detailed discussions about ARM® Cortex®–M4 MCU applications with the most widely used peripherals such as flash memory, EEPROM, ADC, DAC, PWM, UART, USB, I2C, SSI, LCD and GPTM. The remaining chapters cover advanced and optional peripherals such as Control Area Network (CAN), Quadrature Encoder Interface (QEI), Analog Comparators (ACMP) and detailed discussions of Floating Point Unit (FPU) and ARM® Cortex®–M4 Memory Protection Unit (MPU).

Special features of this book:
- The first microcontroller textbook to provide complete and systemic introductions and technologies to cover all components and materials related to ARM® Cortex®–M4 microcontroller system, including hardware and software as well as practical applications with real examples
- ARM® assembly and C codes to assist users to develop professional projects with any language easily and efficiently
- 70+ real-life example projects on the most popular peripherals with detailed line-by-line explanations and illustrations
- Both the Direct Register Access (DRA) model and the Software Driver (SD) model programming techniques with complete and applicable projects
- End-of-Chapter homework problems, including true/false and multiple choice questions, as well as lab projects
- 12 chapters of teaching slides, homework and lab solutions for Instructors

Written for both students and experienced programmers, this book covers ARM Cortex-M4 in an easy-to-understand format, while providing the reader with the ability to test their knowledge through exercises throughout the book.

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Contents:
Preface xxix
Acknowledgments xxxi
Trademarks and Copyrights xxxiii
Copyright Permissions xxxv
About the Companion Website xxxix
Chapter 1 Introduction to Microcontrollers and This Book 1
1.1 Microcontroller Configuration and Structure 2
1.2 The ARM Cortex M4 Microcontroller System 3
1.3 The TM4C123GH6PM Microcontroller Development Tools and Kits 4
4.5 Using C Language to Develop ARM Cortex–M4 Microcontroller Applications 197
4.6 Chapter Summary 243
Chapter 5 ARM Microcontroller Interrupts and Exceptions 261
5.1 Overview and Introduction 261
5.2 Exceptions and Interrupts in the ARM Cortex–M4 MCU System 263
5.3 Exceptions and Interrupts in the TM4C123GH6PM Microcontroller System 273
5.4 Developing GPIO Port Interrupt Projects to Handle GPIO Interrupts 285
5.5 Comparison Among Four Interrupt Programming Methods 317
5.6 Chapter Summary 318
Chapter 6 ARM Microcontroller Memory System 333
6.1 Overview and Introduction 333
6.2 Memory Architecture in the TM4C123GH6PM MCU System 334
6.3 Memory Map in TM4C123GH6PM MCU System 361
6.4 Bit–Band Operations 362
6.5 Memory Requirements and Memory Properties 370
6.6 Memory System Programming Methods 375
6.7 Memory System Programming Projects 380
6.8 Chapter Summary 420
Chapter 7 ARM Cortex–M4 Parallel I/O Ports Programming 433
7.1 Overview and Introduction 433
7.2 GPIO Module Architecture and GPIO Port Configuration 434
7.3 GPIO Port Control Registers 437
7.4 On–Board Keypad Interface Programming Project 440
7.5 Analog–to–Digital Converter Programming Project 446
7.6 PWM–Controlled DC and Step Motors Programming Project 486
7.7 The PWM API Functions in the TivaWare Peripheral Driver Library 521
7.8 Chapter Summary 525
Chapter 8 ARM Cortex–M4 Serial I/O Ports Programming 547
8.1 Overview and Introduction 547
8.2 GPIO Module Architecture and GPIO Port Configuration 548
8.3 Synchronous Serial Interface (SSI) 551
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