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# Embedded Systems With ARM Cortex-M3 Microcontrollers In Assembly Language And C
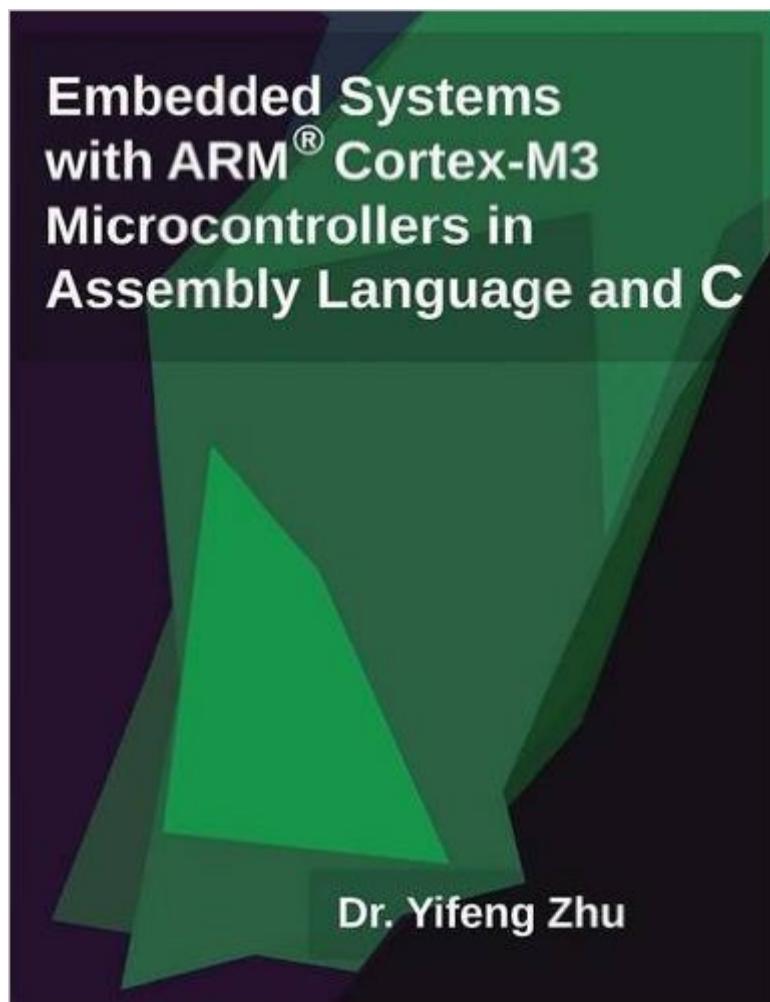


Embedded Systems
with ARM® Cortex-M3
Microcontrollers in
Assembly Language and C

Dr. Yifeng Zhu

# Synopsis

This book introduces basic programming of ARM Cortex chips in assembly language and the fundamentals of embedded system design. It presents data representations, assembly instruction syntax, implementing basic controls of C language at the assembly level, and instruction encoding and decoding. The book also covers many advanced components of embedded systems, such as software and hardware interrupts, general purpose I/O, LCD driver, keypad interaction, real-time clock, stepper motor control, PWM input and output, digital input capture, direct memory access (DMA), digital and analog conversion, and serial communication (USART, I2C, SPI, and USB). The book has the following features:Emphasis on structured programming and top-down modular design in assembly languageLine-by-line translation between C and ARM assembly for most example codesMixture of C and assembly languages, such as a C program calling assembly subroutines, and an assembly program calling C subroutinesÂ Implementation of context switch between multiple concurrently running tasks according to a round-robin scheduling algorithm

# Book Information

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# Customer Reviews

I am not sure where does all these 5 stars come from. Maybe they are the author's friends?I have bought hundreds of books online and this is first book I feel obligated to give a one star. I am shocked by the irresponsibility by the author.Typos and mistakes are everywhere. Some times you can find more than ten typos in a page. In some sections every r2 is printed as r6. Some sections every '1' is printed as '2'. (I am not sure if the author is capable of counting from 0 to 9)To give you an example, let's see how the author solves the problem "counting the number of 1-bits in a 32 bit

integer". Savor the masterpiece:// Count the number of ones in x// Result saved in counterint main(void) { unsigned int x=0xAAAAAAAA; unsigned int y, z; unsigned int counter = 0; counter = x >> 31; while(x > 0) { y = x > 31; if (x < y) { counter += z + 1; } else { counter += z; } x = y; } while(1)}I cannot tell you what's wrong with this program because I have no idea how the author's mind works. The author uses 2 pages to give you a detailed explanation of how that masterpiece generates a 16. Yes indeed 0xAAAAAAAA does have 16 ones in it. However the award winning piece also tells you 0xFFFFFFFF has 16 ones in it and 0x22222222 has 16 ones in it. Actually I would rather call this "program" a "16-generator".So I just want to give you an simple. Don't take it too serious. These kind of masterpieces is every in the book. I think it may take me 60-150 pages of A4 pages to list them all.

Embedded Systems with ARM Cortex-M Microcontrollers in Assembly Language and C Embedded Systems with ARM Cortex-M3 Microcontrollers in Assembly Language and C Embedded Systems: Real-Time Operating Systems for Arm Cortex M Microcontrollers Embedded Systems (Introduction to Arm\xae Cortex\u2122-M Microcontrollers) TI MSP432 ARM Programming for Embedded Systems: Using C Language (Mazidi & Naimi ARM Books) ARM Assembly Language Programming & Architecture: Second Edition (Mazidi & Naimi ARM Books Book 1) Arm Action, Arm Path, and the Perfect Pitch: Building a Million-Dollar Arm The Zynq Book: Embedded Processing with the Arm Cortex-A9 on the Xilinx Zynq-7000 All Programmable Soc Fundamentals of Microcontrollers and Applications in Embedded Systems with PIC Microcontrollers PC Assembly Language: learn how computer work easy ways to learn assembly language The Definitive Guide to the ARM Cortex-M3, Second Edition Digital Signal Processing Using the ARM Cortex M4 ARM Assembly Language: Fundamentals and Techniques, Second Edition ARM Assembly Language: Fundamentals and Techniques Body Language: Body Language Training - Attract Women & Command Respect, by Mastering Your High Status Body Language (Body Language Attraction, Body Language ... Language Secrets, Nonverbal Communication) Microcontrollers: From Assembly Language to C Using the PIC24 Family Fast and Effective Embedded Systems Design: Applying the ARM mbed Some Assembly Required: Assembly Language Programming with the AVR Microcontroller Arm Knitting: 24 Simple and Popular Arm Knitting Patterns: ( Modern Crochet, Knitting Projects, Cochet Projects, DIY Projects, Crochet For Beginners, Crochet ... Tunisian Crochet,Make Money With Crochet)) AVR Microcontroller and Embedded Systems: Using Assembly and C (Pearson Custom Electronics Technology)