Introduction To Embedded Systems: Using Microcontrollers And The MSP430

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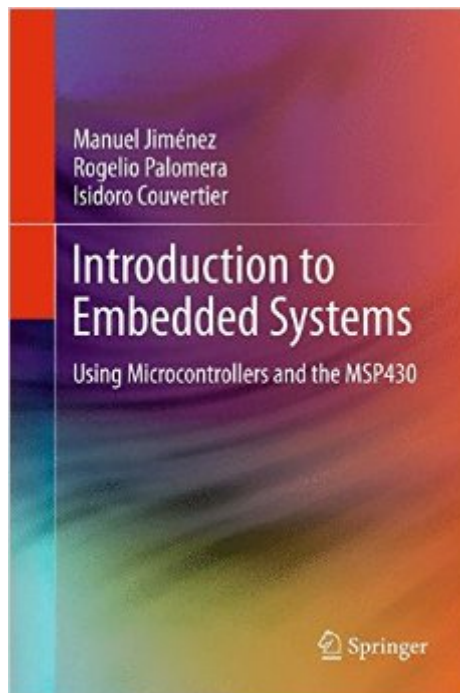
Introduction to Embedded Systems

Using Microcontrollers and the MSP430

Springer

Synopsis

This textbook serves as an introduction to the subject of embedded systems design, using microcontrollers as core components. It develops concepts from the ground up, covering the development of embedded systems technology, architectural and organizational aspects of controllers and systems, processor models, and peripheral devices. Since microprocessor-based embedded systems tightly blend hardware and software components in a single application, the book also introduces the subjects of data representation formats, data operations, and programming styles. The practical component of the book is tailored around the architecture of a widely used Texas Instrumentâ ™s microcontroller, the MSP430 and a companion web site offers for download an experimenterâ ™s kit and lab manual, along with Powerpoint slides and solutions for instructors.

Book Information

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Customer Reviews

A very comprehensive textbook, from numbering systems, microprocessor concepts, through extensive MSP430 coverage. Excellent coverage on IO, LCD and LED interfacing, motor interfacing, more. While I have used numerous TI Workshops and web content, am very pleased with purchasing this book, for its "University" quality content.

Going through this book is a great experience. Most books teach you the theory about microcontrollers, but few of them go further.than that. Introduction to Embedded Systems: Using Microcontrollers and the MSP430 however, uses the MSP430 family to give you the experience of

seeing actual examples, in real life, about the theory you are reading.In every topic on this book you will see the following pattern:Theory about important embedded systems/microcontrollers concepts --> How to apply that concept in real world using an MSP430, with real code (C and assembly language) in realistic applications.The book is well organized and very visual, allowing the user to visualize even the most abstract concepts.In my opinion, one of the best microcontrollers books of this generation and I would recommend it for an embedded systems course at university level.

Book companion website: [...]This book does a good job of explaining the basics of microcomputer architecture and how to interface MCU's with external peripherals such as LED's, motors, keypads, push buttons, etc. It also explains well how internal peripherals, such as Interrupts and Timers, work as well.Given that it is in it's first edition, it has some small grammatical errors, but they are minor and should be corrected for future editions of the book.Some ideas for chapters which should be added in the future are:- Chapter on basics of Digital Logic , for students who have not taken a course in digital circuits before. If this is not a possibility, then maybe an appendix with the truth tables of all major logic circuits would help.- Chapter on simple control systems for embedded systems. Some projects require knowledge of control systems, and having a chapter about it would come in handy. This is also something that other similar books, such as Embedded System Design by Frank Vahid, include.All in all, a very good introductory book for courses in embedded system and microprocessors/microcontrollers.

Love this book, great explanations and drawings to help reader understand. I love the size and how it looks. It is now my bible.

Very good book and explains thoroughly.

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