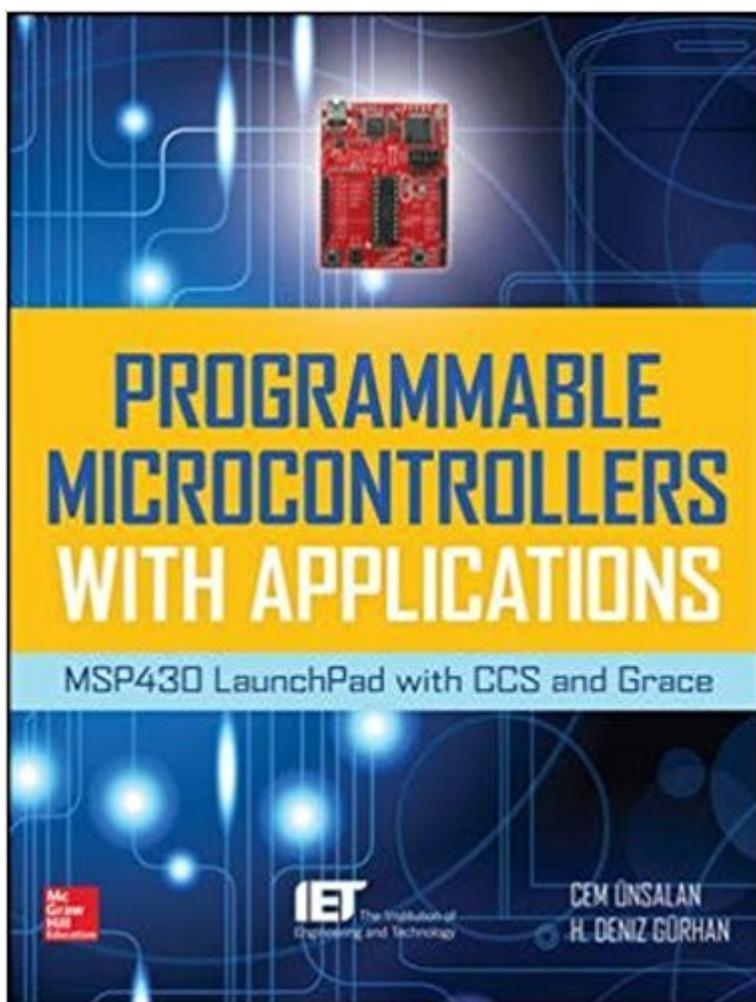The book was found

Programmable Microcontrollers With Applications: MSP430 LaunchPad With CCS And Grace (Electronics)

Synopsis

MASTER THE MSP430 MICROCONTROLLER AND DEVELOPMENT PLATFORM Expand your electronics design skills to include the MSP430 family of ultra-low-power microprocessors with help from this practical guide. Programmable Microcontrollers with Applications: MSP430 LaunchPad with CCS and Grace thoroughly explains each concept and provides illustrated examples and projects. Find out how to configure the MSP430, efficiently program custom functions, process analog and digital signals, and interface with external components. Sample code and reference information are available on the companion website. COVERAGE INCLUDES: * Digital circuit and microcontroller fundamentals * MSP430 architecture and CCS development environment * LaunchPad platform and Grace configuration tool * C and Assembly language programming and debugging * Interrupts, digital I/O, and D/A and A/D converters * Data storage and coding practices for flash memory * Oscillators, clocks, low-power modes, and timers * Digital and analog communication ports and protocols * Schematics and assembly instructions for 12 projects

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Customer Reviews

Cem Unsalan, Ph.D., has worked in signal and image processing for 15 years. After getting a Ph.D. from The Ohio State University in 2003, he started working at Yeditepe University, Turkey, where he established the DSP Lab and has been teaching microprocessors and digital signal processing

courses for seven years. Dr. Unsalan has published 16 journal publications and has published four international books. He holds one patent. H. Deniz Gurhan received his B.Sc. from Yeditepe University. He is pursuing a Ph.D. degree in digital signal processing and embedded systems at the same university and works in the DSP Laboratory.

This book is a rare gem. Most MCU programming books fall into one of two categories: the first is the general undergraduate sophomore/junior level digital design or embedded systems textbook which does some hand-waving at various MCU architectural aspects then shows some incomplete snippets of code related to accessing and manipulating those features. A good example would be "Embedded Systems, An Introduction Using the Renesas RX62N Microcontroller", it has some interesting info but not very practical for application or implementation of a product or design. The second category, which I find generally unhelpful, is a book like Jonathan W Valvano's Arm book which might be useful in conjunction with his course but has incomplete coding examples and a bunch of generic info that look like it came right out of the data sheet. In addition I dont like seeing pages of Assembly code examples. I dont know many engineers that spend much time writing in Assembly for real life applications. Older academics seem to love assembly coding as it reminds them of their old glory days.What this book does so well is applying practical C programming to the MSP430 rev. 1.4 and rev 1.5 showing complete programs in C, and yes some assembly, and then explaining how the code works in the Code Composer environment. While Keil doesn't make non-Arm based free IDE's you could probably use IAR's free version of their IDE if you dont fancy CSS (but another Eclipse based plug in). The book also takes time explaining how to use the different features of the CSS IDE, that is very rare in itself, you are usually on your own with the IDE.Some especially good points about this book are its one of the few teach yourself books suitable for the working engineer (or advanced Hobbyist who has moved passed the Arduino or Energia environments. While both authors are Turkish the English diction is fine with just occasional, innocuous, non-standard verbiage which doesn't really affect the overall quality of the book. Another outstanding feature is how meticulous and diligent the authors have been with providing functional code for version 1.4 and 1.5 of the MSP430. Unlike many books, their code works and compiles consistently and I've seen very few errors. The authors have obviously spent a lot of time making a very high quality, useful book of original material that is very useful in gaining competency in programming the MSP430, it's one of my rare engineering books thats done so well done I plan to read it cover to cover.

While the other reviews on this site are fairly accurate in terms of the quality of this book, and I have to agree with them in most part, I found one major problem. Barely any of the examples of code have comments. I mean, it's pretty much rule #1 to comment your own code when programming, not only so that you can remember what you did, but so that anyone else can figure it out. If you're trying to teach someone how to code from a book, then comments are even more necessary. If it wasn't for that, then this would definitely be a five star book.

I started reading this textbook a week ago and so far I have read the first 9 chapters of this book. I am learning the material on my own and I will base my review of the text on what I have read so far.The book is easy to read. It is intended for undergraduate engineering students but you should be okay if you have knowledge of digital logic, C programming and Assembly language. I like how the example code is explained in detail and the layout of the textbook is nice too. The code is inline with the text and it makes it easy to read the text and look at the code without having to flip pages.I am a recent BSEE/MSEE graduate and I had some knowledge of microcontrollers and assembly language prior to buying this textbook. When I took my course in microntrollers, I did not understand the subject too well. That is why I decided to buy this textbook along with the Launchpad so that I could be a better engineer and hopefully it will help me get hired. Previous knowledge of C and Assembly programming will help a lot. This being my second time around learning microcontrollers, I feel comfortable with the material so far.The textbook uses TI's Code Composer Studio IDE. It is easy software to understand. It has a debug window and you can see the disassembly and monitor the values in the registers. There is an entire chapter dedicated to the IDE and it is helpful to get started with the software. Example code is available on the companion website and that makes it easy to follow along with the textbook while at the same time programming the board with the provided code. Each chapter contains problems but solutions are only available to faculty. It would be nice if solutions had been provided at the end of the book (like math textbooks) but I guess that would add several pages to the textbook. It is fun to work on the problems anyway. So far I have been successful with the problems I have attempted. Right now, I am stuck on a question that deals with Interrupts and Assembly language. Hopefully, I get it working within the next few hours so I can move on to the next question. I recommend doing the problems at the end of the chapter. They have not been too difficult yet but it will help you learn and better understand the material.I want to mention that if your Launchpad is Rev.1.5 you need to enable the pull-up/pull-down resistors in each example code. The author mentions this in the text but it is easy to forget. I struggled for one day with my push button thinking that it would not work because it was always low. The solution was to

set the bit to 1 in the P1REN register and set the appropriate bit in P1OUT to 1 as well. After that the code worked with my board. It appears that the code will work with the Rev.1.4 Launchpads without trouble. Some of the code does not take into account the switch bouncing (for Rev1.5 Launchpads) so the code might not work as is. For example, if I press the push button once, the MSP430 might see it pushed two or three times because of the switch bounce. The author also mentions that capacitors (used for hardware switch debouncing) were removed in Rev1.5 boards and that software delays can be implemented to deal with switch bouncing. Most of the example code does not contain delays to deal with this so you will have to work on that. I believe Rev.1.4 boards should have no issue with switch bounce because of the installed capacitors (low pass filters). The author explains this in chapter eight but I would guess that the example code is intended for Rev.1.4 boards. To summarize, if your board is Rev1.5, enable the pull-up resistor (push button is active-low), and implement software delays to deal with switch bouncing.I would definitely recommend this book to anyone wanting to learn microcontrollers. Some previous knowledge of microcontrollers and C-, Assembly-language will help a lot. I didn't mention this earlier but some knowledge of digital logic will be helpful as well. Don't forget to check if your board is Rev.1.5... you will probably have to modify some of the example code (add a line or two of code). The code will compile and run on your board but the switch bouncing kind of ruins it so try to implement a delay in the code to get around this. Sometimes I press the push button once but the microcontroller will register it being pressed more than once so that is a bit inconvenient.I never thought I would be this excited about programming until this textbook! I recommend it!

To get a real control over MCU, it is a first step, deeper register control tutorials must follow. I recommend MSP430 Microcontroles Basics from J. H. Davies after this book.

The book is helpful for programmers who already started those in search of the ideal applications for understanding MSP430G2553 LaunchPad. I recommend the book, particularly found what I wanted.

It's a decent MSP430 intro and reference. I used it as a textbook, and I'm still keeping it.

An excellent text book for teaching!

This is a good computer architecture book.

Programmable Microcontrollers with Applications: MSP430 LaunchPad with CCS and Grace (Electronics) Fundamentals of Microcontrollers and Applications in Embedded Systems with PIC Microcontrollers Crush Step 3 CCS: The Ultimate USMLE Step 3 CCS Review, 1e Introduction to Embedded Systems: Using Microcontrollers and the MSP430 Basic Arduino Projects: 26 Experiments with Microcontrollers and Electronics MSP430 Microcontroller Basics Coding Review for National Certification: Passing the CPC and CCS-P Exams Certified Coding Specialist (CCS) Exam Preparation Professional Review Guide for CCS-P Examinations, 2017 Edition Loose-leaf Version for Microeconomics: Principles for a Changing World 4E & LaunchPad for Chiang's Microeconomics: Principles for a Changing World 4E (Six Months Access) Pocket Guide to Public Speaking 5e & LaunchPad (Six Month Access) Loose-leaf Version for Biochemistry 8e & LaunchPad (Twelve Month Access) Loose-leaf Version for Scientific American Nutrition for a Changing World with 2015 Dietary Guidelines & LaunchPad (Six-Month Access) Loose-leaf Version for Fundamentals of Abnormal Psychology 8e & LaunchPad for Fundamentals of Abnormal Psychology 8e (6 month access) Mitsubishi FX Programmable Logic Controllers, Second Edition: Applications and Programming Programmable Logic Controllers: Principles and Applications (5th Edition) Mitsubishi FX Programmable Logic Controllers: Applications and Programming Programmable Logic Controllers: Programming Methods and Applications Scaling and Integration of High-Speed Electronics and Optomechanical Systems (Selected Topics in Electronics and Systems) Programming with MicroPython: Embedded Programming with Microcontrollers and Python