1. Record Nr. UNINA9910137172103321

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Titolo	Practical microcontroller engineering with ARMª technology / / Ying Bai
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley : , : IEEE Press, , [2015] [Piscataqay, New Jersey] : , : IEEE Xplore, , [2015]
ISBN	1-119-05839-2 1-119-05800-7
Descrizione fisica	1 online resource (1031 p.)
Disciplina	629.89
Soggetti	Microcontrollers
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction to Microcontrollers and This Book -- ARM(a) Microcontroller Architectures -- ARM(a) Microcontroller Development Kits -- ARM(a) Microcontroller Software and Instruction Set -- ARM(a) Microcontroller Interrupts and Exceptions -- ARM(a) Microcontroller Memory System -- ARM(a) Cortex(a)-M4 Parallel I/O Ports Programming -- ARM(a) Cortex(a)-M4 Serial I/O Ports Programming -- ARM(a)Cortex(a)-M4 Timer and USB Programming -- ARM(a) Cortex(a)-M4 Other Peripherals Programming -- ARM(a) Floating Point Unit (FPU) -- ARM(a) Memory Protection Unit (MPU).
Sommario/riassunto	This book introduces the basic concepts and practical techniques in designing and building ARM (R) microcontrollers in industrial and commercial applications Practical Microcontroller Engineering with ARM (R) Technology provides the full scope of components and materials related to ARM (R) Cortex (R) M4 microcontroller systems. Chapters 2 through 9 provide the fundamentals and detailed discussions about ARM (R) Cortex (R) -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(R) Cortex(R)-

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 (R) Cortex (R)-M4 microcontroller system, including hardware and software as well as practical applications with real examples. ARM (R) 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. Dr. Ying Bai is a Professor in the Department of Computer Science and Engineering at Johnson C. Smith University (JCSU). Before joining JCSU, Dr. Bai worked as a software and senior software engineer at Motorola MMS, Schlumberger ATE Technology, Immix TeleCom, and LAM Research. He has published twelve (12) books with publishers such as Prentice Hall, CRC Press LLC, Springer, Cambridge University Press and Wiley-IEEE Press in recent years.