

1. Record Nr.	UNINA9910784362403321
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Titolo	Analog and digital circuits for electronic control system applications [[electronic resource]] : using the TI MSP430 microcontroller / / by Jerry Luecke
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier/Newnes, c2005
ISBN	1-281-00991-1 9781417549742 9786611009915 0-08-047581-7
Descrizione fisica	1 online resource (329 p.)
Disciplina	629.8/9
Soggetti	Electronic circuit design Electronic control Programmable controllers
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Cover; Contents; Foreword; Preface; Acknowledgments; Chapter 1: Signal Paths from Analog to Digital; Introduction; A Refresher; Accuracy vs. Speed-Analog and Digital; Interface Electronics; The Basic Functions for Analog-to-Digital Conversion; Summary; Chapter 1 Quiz; Chapter 2: Signal Paths from Digital to Analog; Introduction; The Digital-to-Analog Portion; Filtering; Conditioning the Signal; Transducing the Signal; Summary; Chapter 2 Quiz; Chapter 3: Sensors; Introduction; Temperature Sensors; Angular and Linear Position; Rotation; Magnetoresistor Sensor; Pressure; Light Sensors Other Sensors Summary; Chapter 3 Quiz; Chapter 4: Signal Conditioning; Introduction; Amplification; Bipolar NPN Amplifier; Amplifier Frequency Response; Coupling; Small-Signal vs. Large Signal; Classes of Amplifiers; Field-Effect Transistor Amplifiers; A N-Channel JFET Amplifier Design; An NPN MOSFET Amplifier; Operational Amplifiers; Conditioning the Output of a Pressure Sensor; A More Sophisticated Pressure Sensor Amplifier; Current Mirror; Applications of Op Amps; Oscillators; Power Amplifiers; Class B Audio Power Amplifier;

Special Signals; RC Time Constants; Frequency Selection
Typical Application of FiltersSummary; Chapter 4 Quiz; Chapter 5:
Analog-to-Digital and Digital-to-Analog Conversions; Introduction;
Decimal Equivalent of a Binary Number; Digital Codes of ADC; A
Resistor Network DAC; A Simple Resistor-String DAC; A Simple
Current-Steering DAC; Analog-to-Digital Converters (ADC); Successive
Approximation Register (SAR) ADC; Capacitor Charge-Redistribution
ADC; Highest Speed Conversions; Sample and Hold and Filters;
Summary; Chapter 5 Quiz; Chapter 6: Digital System Processing;
Introduction; Digital Processor or Digital Computer; What is a
Microprocessor?
What is a Microcomputer?System Clarifications; Digital Signal
Representations; Clock, Timing and Control Signals; Interrupts; Status
Bits; More About Software; Sophisticated Programming Languages; How
Parts of a Processor Perform Their Functions; Memory and
Input/Output; Addressing Modes; Summary; Chapter 6 Quiz; Chapter 7:
Examples of Assembly-Language Programming; Introduction; A
Processor for the Examples; About the MSP430 Family; The CPU;
Program Memory and Data Memory; Peripherals; Operation Control and
Operating Modes; Watchdog Timer; System Reset; Interrupts
Oscillators and Clock GeneratorsTimers; Addressing Modes; More on
MSP430 Control; Further Thoughts; Labels; Instructions; Operands;
Hexadecimal Numbers; Comments; Programming Examples;
Subprogram No. 1; Subprogram No. 2; Subprogram No. 3; Variation of
Threshold; Summary; Chapter 7 Quiz; Chapter 8: Data
Communications; Introduction; The Data Transmission System; Parallel
and Serial Transmission; Protocols; High-Speed Data Transmissions;
Serial Data Communications Advances; A Return to the Format; Shift
Registers; USART Serial Communications; The UART Function with
Software.
Technology Advances

Sommario/riassunto

Today's control system designers face an ever-increasing "need for speed? and accuracy in their system measurements and computations. New design approaches using microcontrollers and DSP are emerging, and designers must understand these new approaches, the tools available, and how best to apply them. This practical text covers the latest techniques in microcontroller-based control system design, making use of the popular MSP430 microcontroller from Texas Instruments. The book covers all the circuits of the system, including:
·Sensors and their output signals·Design and app

2. Record Nr.	UNISALENT0991003488939707536
Autore	Coleman, Thomas F.
Titolo	Handbook for matrix computations / Thomas F. Coleman, Charles Van Loan
ISBN	0898712270
Descrizione fisica	vii, 264 p. ; 23 cm
Collana	Frontiers in applied mathematics ; 4
Classificazione	AMS 65F
Altri autori (Persone)	Van Loan, Charles F.
Disciplina	512.5
	515
Soggetti	Matrices - Data processing Numerical linear algebra
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes bibliography: p. 261 and index