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Titolo	Embedded Systems Design for High-Speed Data Acquisition and Control / / by Maurizio Di Paolo Emilio
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Descrizione fisica	1 online resource (170 p.)
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Lingua di pubblicazione	Inglese
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Review of Microelectronics -- Features of Embedded System -- Microcontroller Design -- Design Techniques of Embedded System -- Real Time Operating System -- Design PCB for Embedded System -- Features of High Speed Data Acquisition and Control System -- Embedded board for High-Speed Data Acquisition and Control System.
Sommario/riassunto	This book serves as a practical guide for practicing engineers who need to design embedded systems for high-speed data acquisition and control systems. A minimum amount of theory is presented, along with a review of analog and digital electronics, followed by detailed explanations of essential topics in hardware design and software development. The discussion of hardware focuses on microcontroller design (ARM microcontrollers and FPGAs), techniques of embedded design, high speed data acquisition (DAQ) and control systems.

Coverage of software development includes main programming techniques, culminating in the study of real-time operating systems. All concepts are introduced in a manner to be highly-accessible to practicing engineers and lead to the practical implementation of an embedded board that can be used in various industrial fields as a control system and high speed data acquisition system. • Describes fundamentals of embedded systems design in an accessible manner; • Takes a problem-solving approach to the topic, offering a hands-on guide for practicing engineers; • Covers hardware design and software development needed to design high-speed data acquisition and control systems; • Describes real-time operating systems for embedded system; • Includes a project to build an embedded board that can be used in various industrial fields as a control system and high speed data acquisition system.
