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Descrizione fisica	1 online resource (xvi, 124 pages) : illustrations (some color)
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Soggetti	Embedded computer systems - Programming Embedded computer systems - Cooling Software engineering
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Note generali	Includes index.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction to Software Thermal Management -- Landscape: History, Present Barriers and The Road Forward -- Roots: a Bedrock of Giants -- Techniques: Putting the Silicon to Work -- Frameworks: Choreographing the Parts -- Frontiers: The Future of Software Thermal Management.
Sommario/riassunto	This book introduces Software Thermal Management (STM) as a means of reducing power consumption in a computing system, in order to manage heat, improve component reliability, and increase system safety. Readers will benefit from this pragmatic guide to the field of STM for embedded systems and its catalog of software power management techniques. Since thermal management is a key bottleneck in embedded systems design, this book focuses on power as the root cause of heat. Since software has an enormous impact on power consumption in an embedded system, this book guides readers to manage heat effectively by understanding, categorizing, and developing new ways to reduce dynamic power. Whereas most books on thermal management describe mechanisms to remove heat, this book focuses on ways to avoid generating heat in the first

place. • Explains fundamentals of software thermal management, application techniques and advanced optimization strategies; • Describes a novel method for managing dynamic power, enabling designers to extend component life for battery-powered devices that must be operational and reliable for 10+ years; • Focuses on power management as a way to manage heat and provides a catalog of pragmatic approaches to manage power in actual products, depending on the type of device and the goals of the design; • Uses summaries throughout the text to reinforce key concepts when introduced; • Includes case studies that demonstrate key concepts introduced.