1. Record Nr. UNINA9910299849503321

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Titolo	Temperature- and Supply Voltage-Independent Time References for Wireless Sensor Networks / / by Valentijn De Smedt, Georges Gielen, Wim Dehaene
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-09003-8
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (422 p.)
Collana	Analog Circuits and Signal Processing, , 1872-082X ; ; 128
Disciplina	681.2
Soggetti	Electronic circuits Electrical engineering Circuits and Systems Communications Engineering, Networks Electronic Circuits and Devices
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Part I Theoretical background on Oscillators and Time References -- Oscillators and Time References -- Jitter and Phase Noise in Oscillators -- Long-term Oscillator Stability -- Part II Oscillator Designs for Temperature and Voltage Independence -- Design of two Wien Bridge Oscillators -- The Pulsed Oscillator Topology -- Injection-Locked Oscillators -- Oscillator-Based Sensor Interfaces -- Part III Wireless Sensor Nodes -- Design of a Low-power Wireless RFID tag -- Conclusion.
Sommario/riassunto	This book investigates the possible circuit solutions to overcome the temperature- and supply voltage-sensitivity of fully-integrated time references for ultra-low-power communication in wireless sensor networks. The authors provide an elaborate theoretical introduction and literature study to enable full understanding of the design challenges and shortcomings of current oscillator implementations. Furthermore, a closer look to the short-term as well as the long-term frequency stability of integrated oscillators is taken. Next, a design strategy is developed and applied to 5 different

oscillator topologies and 1 sensor interface.All 6 implementations are subject to an elaborate study of frequency stability, phase noise, and power consumption. In the final chapter all blocks are compared to the state of the art. The main goals of this book are: • to provide a comprehensive overview of timing issues and solutions in wireless sensor networks; • to gain understanding of all underlying mechanisms by starting from the oscillator basics; • to provide and demonstrate a design strategy by describing the development of 6 state of the art process-, temperature- and supply voltage- independent building blocks and discussing the design trade-offs; • to demonstrate the reliability and functionality of the developed building blocks by integrating them in a complete, autonomous, flexible wireless tag; • to be a reference work for beginners as well as more experienced oscillator and ultra-low-power circuit design engineers. .