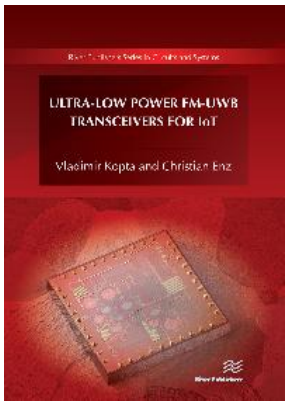

River Publishers Series in Electronic Materials, Circuits and Devices

Ultra-Low Power FM-UWB Transceivers for IoT

Authors:
Vladimir Kopta, CSEM SA, Switzerland
Christian Enz, EPFL, Switzerland
ISBN: 9788770221443
e-ISBN: 9788770221436
Available From: December 2019
Price: € 95.00

Description:

Over the past two decades we have witnessed the increasing popularity of the internet of things. The vision of billions of connected objects, able to interact with their environment, is the key driver directing the development of future communication devices. Today, power consumption as well as the cost and size of radios remain some of the key obstacles towards fulfilling this vision.

Ultra-Low Power FM-UWB Transceivers for IoT presents the latest developments in the field of low power wireless communication. It promotes the FM-UWB modulation scheme as a candidate for short range communication in different IoT scenarios. The FM-UWB has the potential to provide exactly what is missing today. This spread spectrum technique enables significant reduction in transceiver complexity, making it smaller, cheaper and more energy efficient than most alternative options.

The book provides an overview of both circuit-level and architectural techniques used in low power radio design, with a comprehensive study of state-of-the-art examples. It summarizes key theoretical aspects of FM-UWB with a glimpse at potential future research directions. Finally, it gives an insight into a full FM-UWB transceiver design, from system level specifications down to transistor level design, demonstrating the modern power reduction circuit techniques.

Ultra-Low Power FM-UWB Transceivers for IoT is a perfect text and reference for engineers working in RF IC design and wireless communication, as well as academic staff and graduate students engaged in low power communication systems research.

Keywords: IoT, WSN, FM, low-power, UWB, wideband, CMOS, RF, circuits, analog