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## FM-UWB Transceivers for Autonomous Wireless Systems

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### Description:

Significant research effort has been devoted to the study and realization of autonomous wireless systems for wireless sensor and personal-area networking, the internet of things, and machine-to-machine communications. Low-power RF integrated circuits, an energy harvester and a power management circuit are fundamental elements of these systems.

*An FM-UWB Transceiver for Autonomous Wireless Systems* presents state-of-the-art developments in low-power FM-UWB transceiver realizations. The design, performance and implementation of prototype transceivers in CMOS technology are presented. A working hardware realization of an autonomous node that includes a prototype power management circuit is also proposed and detailed in this book.

Technical topics include:

- Low-complexity FM-UWB modulation schemes
- Low-power FM-UWB transceiver prototypes in CMOS technology
- CMOS on-chip digital calibration techniques
- Solar power harvester and power management in CMOS for low-power RF circuits

*An FM-UWB Transceiver for Autonomous Wireless Systems* is an ideal text and reference for engineers working in wireless communication industries, as well as academic staff and graduate students engaged in electrical engineering and communication systems research.

**Keywords:** Ultrawideband, FM-UWB, low-power RF transceiver, autonomous wireless systems, SAR-FLL, digital calibration, RF-CMOS, programmable RF matching, regenerative RF amplifier, current-controlled oscillator, frequency tripling PA, bias current reuse, power harvester, power management, solar antenna, switched-capacitor, DC-DC converter, charge pump, LDO, RF circuit design

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