

# New and Featured Titles from Cambridge!

## The Cambridge RF and Microwave Engineering Series

*Coming Soon!*

### High-Frequency Integrated Circuits

Sorin Voinigescu

US\$95.00; Hb: 978-0-521-87302-4; 872 pp.

*Coming Soon!*

### Microwave and Wireless Measurement Techniques

Nuno Borges Carvalho and Dominique Schreurs

US\$125.00; Hb: 978-1-107-00461-0; 400 pp.

*Coming Soon!*

### Transmission Lines Equivalent Circuits, Electromagnetic Theory, and Photons

Richard Collier

US\$95.00; Hb: 978-1-107-02600-1; 368 pp.

### LCP for Microwave Packages and Modules

*Edited by*  
Anh-Vu H. Pham,  
Morgan J. Chen, and  
Kunia Aihara

US\$120.00; Hb: 978-1-107-00378-1; 266 pp.

### Handbook of RF and Microwave Power Amplifiers

*Edited by* John L.B. Walker  
US\$159.00; Hb: 978-0-521-76010-2; 704 pp.

### Nonlinear Transistor Model Parameter Extraction Techniques

*Edited by* Matthias Rudolph,  
Christian Fager, and  
David E. Root

US\$138.00; Hb: 978-0-521-76210-6; 366 pp.

### Nonlinear RF Circuits and Nonlinear Vector Network Analyzers

*Interactive Measurement and Design Techniques*

Patrick Roblin

US\$133.00; Hb: 978-0-521-88995-7; 300 pp.



## Announcing the EuMA High Frequency Technology Book Series

### Wavelet Radio Adaptive and Reconfigurable Wireless Systems Based on Wavelets

Homayoun Nikookar

US\$120.00; Hb: 978-1-107-01780-1; 224 pp.

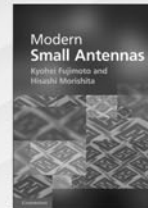


*Coming Soon!*

### Modern Small Antennas

Kyohei Fujimoto and Hisashi Morishita

US\$110.00; Hb: 978-0-521-87786-2; 512 pp.



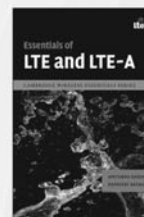
## Cambridge Wireless Essentials Series

*Coming Soon!*

### Essentials of Mobile Handset Design

Abhi Naha and Peter Whale

US\$65.00; Hb: 978-1-107-01004-8; 249 pp.



### Essentials of LTE and LTE-A

Amitabha Ghosh and Rapeepat Ratasuk

US\$69.00; Hb: 978-0-521-76870-2; 264 pp.

Prices subject to change.

Visit [www.cambridge.org/us/engineering](http://www.cambridge.org/us/engineering) to view our full Engineering catalog.

[www.cambridge.org/us/engineer](http://www.cambridge.org/us/engineer)

@CambUP\_engineer

800.872.7423 (North America)

+44 1223 326050 (Europe, Middle East, and Africa)



CAMBRIDGE  
UNIVERSITY PRESS

CAMBRIDGE

JOURNALS

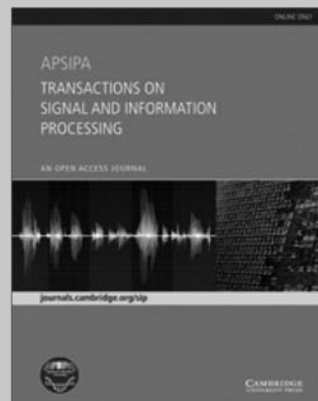
# APSIPA Transactions on Signal and Information Processing

## Editor-in-Chief

Antonio Ortega, *University of Southern California, USA*

A new Open Access, e-only journal for 2012 launching in partnership with the Asia-Pacific Signal and Information Processing Association (APSIPA).

The Journal will serve as an international forum for signal and information processing researchers across a broad spectrum of research, ranging from traditional modalities of signal processing to emerging areas where either (i) processing reaches higher semantic levels (e.g., from speech recognition to multimodal human behaviour recognition) or (ii) processing is meant to extract information from datasets that are not traditionally considered signals (e.g., mining of Internet or sensor information).



## ***APSIPA Transactions on Signal and Information Processing***

is available online at:  
<http://journals.cambridge.org/sip>

### **To subscribe contact Customer Services**

#### **in Cambridge:**

Phone +44 (0)1223 326070

Fax +44 (0)1223 325150

Email [journals@cambridge.org](mailto:journals@cambridge.org)

#### **in New York:**

Phone +1 (845) 353 7500

Fax +1 (845) 353 4141

Email

[subscriptions\\_newyork@cambridge.org](mailto:subscriptions_newyork@cambridge.org)

### **Free email alerts**

Keep up-to-date with new  
material – sign up at

[journals.cambridge.org/register](http://journals.cambridge.org/register)

For free online content visit:  
<http://journals.cambridge.org/sip>



**CAMBRIDGE**  
UNIVERSITY PRESS

CAMBRIDGE

JOURNALS

# Knowledge is no longer shelved

The *Cambridge Journals Digital Archive* contains more than 160 journals, more than 3 million pages and more than 8 million linked references. Knowledge is now more visible and more searchable than ever.



[journals.cambridge.org/archives](http://journals.cambridge.org/archives)

 CAMBRIDGE  
UNIVERSITY PRESS

INTERNATIONAL JOURNAL OF

**MICROWAVE AND WIRELESS TECHNOLOGIES****CONTENTS**

## EDITORIAL

**Special Issue on the German RoCC Project**

Wolfgang Menzel and Thomas Walter 1

## TUTORIAL AND REVIEW PAPER

**Radar on a chip for cars – the RoCC project**

Rudolf Lachner 3

## INDUSTRIAL AND ENGINEERING PAPERS

**A 79 GHz SiGe short-range radar sensor for automotive applications**

Joachim Massen, Michael Frei, Wolfgang Menzel and Ulrich Möller 5

**Development of a mid range automotive radar sensor for future driver assistance systems**

Raik Schnabel, Raphael Hellinger, Dirk Steinbuch, Joachim Selinger, Michael Klar and Bernhard Lucas 15

## RESEARCH PAPERS

**Low-cost eWLB packaging for automotive radar MMICs in the 76–81 GHz range**

J. Böck, M. Wojnowski, C. Wagner, H. Knapp, W. Hartner, M. Treml, F. J. Schmückle, S. Sinha and R. Lachner 25

**Angular measurements in azimuth and elevation with 77 GHz radar sensors**

Klaus Baur, Marcel Mayer, Steffen Lutz and Thomas Walter 35

**Next generation integrated SiGe mm-wave circuits for automotive radar sensors**

Nils Pohl, Herbert Knapp, Christian Bredendiek and Rudolf Lachner 43

**Feasibility of automotive radar at frequencies beyond 100 GHz**

Mike Köhler, Jürgen Hasch, Hans Ludwig Blöcher and Lorenz-Peter Schmidt 49

**Antenna-in-package (AiP) in mm-wave band**

Mahmoud Alhenawy and Martin Schneider 55

**Low-power CMOS LNA based on dual resistive-feedback structure with peaking inductor for wideband application**

Meng-Ting Hsu, Shih-Yu Hsu and Yu-Hwa Lin 65

**Wideband transformer-coupled E-band power amplifier in 90 nm CMOS**

Igor Gertman and Eran Socher 71

**Optimization of a broadband directional gain microstrip patch antenna for X-Ku band application**

Anubhuti Khare and Rajesh Nema 77

## INDUSTRIAL AND ENGINEERING PAPER

**Digital-beam-forming extension for a two-channel E-band FMCW-sensor**

Markus Goppelt, Peter Feil and Winfried Mayer 85

## RESEARCH PAPER

**A proposed simulation technique to study the series resistance and related millimeter-wave properties of Ka-band Si IMPATTs from the electric field snapshots**

Aritra Acharyya, Suranjana Banerjee and J. P. Banerjee 91