



2012 IEEE Radio & Wireless Week



FINAL PROGRAM

Santa Clara, California, USA

The Santa Clara Marriott

15–18 January, 2012

RWW & RWS

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*University of
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Mohamed Mahfouz,
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RWS, PAWR, WiSNet, BioWireless

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<http://www.radiowirelessweek.org>



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MTT-S



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General Chair's Invitation to the IEEE Radio and Wireless Week

I have the great honor and pleasure to invite you to the 2012 IEEE Radio and Wireless Week (RWW). This will be the sixth RWW and the first in Northern California & the Silicon Valley.

RWW2012 will be held at the Santa Clara Marriott, Santa Clara, California, USA, 15-18 January 2012. Santa Clara is a particularly appropriate site for RWW since it is in middle of the Silicon Valley – which is now turning into a hot bed of wireless and mobile product and application development. This increasing focus on wireless and mobile fits well with the focus of RWW. RWW2012 will consist of five related conferences that focus on the intersection between radio systems and wireless technology, creating a unique forum for engineers to discuss hardware design and system performance of state-of-the-art wireless systems and their end use applications. This multidisciplinary IEEE event will offer the latest information on wireless communications and networking, associated enabling technologies and emerging new services and applications. This multidisciplinary diversity is underlined by the four diverse IEEE societies that are co-sponsors of the RWW events: MTT-S, AP-S, ComSoc and EMB-S. More details on the individual conferences can be found by clicking on the links to the left.

In addition to the traditional three parallel sessions of podium technical talks and poster sessions, there will be an IEEE Distinguished Lecturer track, workshops, panels, and a relevant industry exhibition. A highlight on Tuesday will be the Plenary talk by Prof. Arogyaswami Paulraj, Professor Emeritus, Stanford University. Prof. Paulraj is the 2011 IEEE Alexander Graham Bell Medalist.

For RWW2012 there will be two new activities: On Sunday evening there will be an open panel session for all wireless professionals (local and conference attendees) and on Tuesday afternoon there will be a new demo track that will provide an interactive forum with hands-on demonstrations of the latest wireless experiments and innovations.

To support the future of wireless activities, each conference will have a student paper competition with awards that will be presented at the Tuesday banquet. On Monday afternoon, all the student finalists will present their work in the poster session – a must-see event.

As you can see, there is something at RWW for everyone in the wireless community. The full technical program will be posted soon. It is our hope that you take this opportunity to catch up with old associates, make new friends, and develop new and exciting research collaborations by attending RWW2012.

I would like to invite everyone to join us for 3 ½ days of great technical presentations, career-building networking, informative commercial exhibition and some fun 15-18 January 2012 in the Silicon Valley (Santa Clara, CA).

RWW2012 General Chair,

John Barr



General Chair
John Barr



Technical Program Chair
Takao Inoue

RWS 2012 Technical Program Committee

Passive Antennas

Chair: Silvio Barbin
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Transceivers and Front-end Technologies SOC and SiP

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Chunna Zhang

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Nathalie Deltimple
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Mohammad Madhian
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Xinwei Wang

MIMO Signal Processing and Smart Antennas

Chair: Chan-Byoung Chae
Robert Heath Jr.
Karl Molnar
Dimitris Toumpakaris

Ramy Bhaagavatula
T.J. Lim
Tony Quek
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High-speed and Broadband Wireless Technologies

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Liang Zhou

Beatrice Cabon
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Idelfonso Tafur Monroy
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Software Defined Radios and Cognitive Radios

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Giuseppe Abreu
Gamal Hegazi

Wireless Systems Architecture and Modeling

Chair: Markos Anastasopoulos
Nuno Borges Carvalho
Rahul Khanna
Eiji Okamoto
Ankit Tiwari

Tetsushi Ikegami
Huan-Bang Li
Minyoung Park

Emerging Wireless Technologies and Applications

Chair: Debabani Choudhury
Zhizhang Chen
Shigeo Kawasaki
Gianfranco Manes

Upkar Dhaliwal
Changzhi Li
Yiqing Zhou

Digital Signal Processing as Applied to Wireless

Chair: Takao Inoue
Shin Hara
Jia-Chin Lin
Marian Verhelst

Davide Dardari
Jinhua Jiang
Huaping Liu

Passive Components and Packaging

Chair: Rashaunda Henderson
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Xun Gong
Kevin Leong
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Roberto Gomez-Garcia
Charlie Jackson
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Zaher Bardai

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Steve Rosenau, Loral/Space Systems

Signage:

Bela Szendrenyi, Verigy

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Steve Kenney, Georgia Tech.
Afshin Daryoush, Drexel University
George Ponchak, NASA Glenn Research Center

The 12TH Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems

Message from the SiRF General Chair:

Jae-Sung Rieh
Korea University

IEEE Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems (SiRF) has continuously contributed to the popular adaption of Si technology to the RF/microwave applications. Around the time when it was first launched in 1998, it was still challenging to implement RF/microwave systems based on silicon technology. Today, barely more than 10 years later, many conferences and journals related to RF/microwave applications are flooded with silicon-based circuits and systems. SiRF has a good reason to be proud of the new reality as it has contributed to this trend and can certainly be credited for it. In addition to the contributions it has made so far, SiRF will continue to expand the frontier of the RF/microwave applications of silicon in various directions.

SiRF has been a unique conference in that it covers a wide spectrum of topics related to Si-based RF circuits, ranging from materials to passives, MEMS, high-speed devices, integrated circuits, and applications that are all based on Si. This feature has provided a precious opportunity for attendees to view this fast-evolving field from different standpoints and also offers a space for exchanging ideas between diverse fields related to Si applications. Another favorable feature that has been added is the fact that SiRF joined RWW (Radio and Wireless Week), which has recently extended to cover 5 conferences: Radio and Wireless Symposium (RWS), Topical Conference on Power Amplifiers for Wireless and Radio Applications (PAWR), Topical Conference on Biomedical Wireless Technologies, Networks, and Sensing Systems (BioWireless), and Topical Meeting on Wireless Sensors and Sensor Networks (WisNet), and SiRF. This format will provide the attendants with a great chance to be exposed to even more diverse fields related to RF by selecting package registration.

This year, SiRF will move to the West Coast again and be held in Santa Clara, CA, on 16-18 January, 2012. Over the three days of conference, 10 technical sessions will be held, including one poster session for interactive discussion and one SiRF/RWS joint session for intermixing between the two conferences. Most of the podium sessions will open with carefully selected invited talks by world-leading experts in this field. The popular best student paper competition will be held again to promote the contribution from students, which will add excitement to the conference. I cordially invite you to attend this conference and be part of this exciting event.



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Katsuyoshi Washio, Tohoku University
Liang-Hung Lu, National Taiwan University

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Mingta Yang, Qualcomm
Katsuyoshi Washio, Tohoku Univ.
Monir El-Diwany, National Semiconductor

Passives and MEMS

Chair: Xun Gong, University of Central Florida
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Manos Tentzeris, Georgia Tech
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Guogong Wang, Hittite
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Chien-Nan Kuo, National Chiao Tung University
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Didier Belot, ST Microelectronics
Jurgen Hasch, Bosch

Smart Materials and Nanotechnologies

Chair: Luca Pierantoni, Università Politecnica delle Marche, Italy
Vice Chair: Fabio Cocetti, LAAS-CNRS, France
Toulouse, France
Peter Russer, Technical Univ. Munich, Germany
Davide Mencarelli, Univ. Politecnica Marche, Italy

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Kazuya Masu, Tokyo Institute of Technology

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Hermann Schumacher, Ulm University
Katsuyoshi Washio, Tohoku Univ.
Robert Weigel, University of Erlangen

ADVANCE REGISTRATION

Advance registration for RWW 2012 is open now until January 1, 2012. Higher fees apply for registrations processed after 1 January and onsite. Please visit <http://www.radiowireless-week.org> and follow the registration links.

Proof of IEEE Membership, Student Membership and/or Life Member credentials are required at check in. Attendees without proof of such may be charged a higher price at registration check-in. Please remember to bring proof with you to the Symposium.

Visa, MasterCard, American Express and Checks are accepted. Please make checks payable to Fly Events LLC and mail to: Fly Events LLC, Attn: RWW 2012, P.O. Box 29, Milltown, NJ 08850. Registration charges will appear as Starcite-IEEE RWW 2012 on your statement.

Should you have special dietary requirements or circumstances requiring special attention please e-mail info@flyevents.net

REGISTRATION HOURS

Registration is open during the following times at the California Registration Desk located in the Santa Clara Marriott:

Saturday, 14 January: 07:00-17:00
Sunday, 15 January: 07:00-17:00
Monday, 16 January: 07:00-17:00
Tuesday, 17 January: 07:00-17:00
Wednesday, 18 January: 07:00-10:00

EXHIBIT HOURS

The exhibition area is open during the following times located in the Assembly Corridor at the Santa Clara Marriott:

Monday, 16 January: 13:00 - 17:00
Tuesday, 17 January: 09:00-17:00

For the latest information and details on how to become a sponsor and exhibit at RWW please visit: <http://www.radiowirelessweek.org>.

RWW Topical Conferences

Power Amplifiers for Radio and Wireless Applications (PAWR)

Interest in power amplifier technology remains at an all time high because of the emergence of new device materials such as GaN that offer improved performance, and the need for ever greater linearity and efficiency by the world's expanding wireless communication infrastructure. This year, the RWS' newly formed Topical Conference on Power Amplifiers for Wireless and Radio Applications (PAWR) will feature a full day of power amplifier focused sessions, including the latest advances on power amplifier technology, efficiency enhancement techniques, system analysis, modeling, distortion reduction, and for the second year, an interactive workshop answering questions on power amplifier linearization and efficiency enhancement.

Technical Committee:

Distortion Reduction Techniques in RF Power Amplifiers

Chair: Allen Katz
Slim Boumaiza
Armando Cova
Kiki Ikossi
Peter Kenington
Yang Li
Shabbir Mochchalla
Timo Rahkonen
Joe Staudinger

High Efficiency RF Power Amplifiers

Chair: Frederick Raab
James Komiak
Song Lin
Chao Lu
Mohammad Madihian
Arturo Mediano
Dave Runton
Ali Tombak
John Walker

RF Power Amplifier Technology

Chair: Marc Franco
Nick Cheng
Nathalie Deltimple
Murat Eron
Gary Hau
Bumman Kim
Chan-Ho Lee
Donald Lie
Zoya Popovic

Power Amplifier Modeling and System Analysis

Chair: Almudena Suarez
Peter Aaen
Robert Caverly
Andrei Grebennikov
Wolfgang Heinrich
Stephen Maas
Jan-Erik Mueller
Francis Rotella
Eric Strid

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Wireless Sensors and Sensor Networks (WiSNet)

WiSNet is dedicated to the advancement of wireless sensors for commercial and industrial applications and will be held to specifically focus on the latest developments in these areas of RF Sensors and Sensor Networks. Wireless sensors and sensor networks are critical system components for manufacturing, monitoring, safety, as well as positioning and tracking applications. This year, WiSNet2012 will be a full day topical conference focused on the latest developments in these areas. Different sessions will focus on sensors and smart sensor networks ranging from UHF, RFID applications to millimeter-wave radar systems. Furthermore novel ideas for wireless localization techniques and sensors for harsh environments will be the focus of two individual sessions.

Technical Committee:

Sensors for Communication, Radar, and Positioning

Chair: Martin Vossiek
Changzhi Li
Kourosh Kalantar-Zadeh
Aly Fathy
Reinhard Feger
Juraj Bartolic
Reinhard Knöchel
Fabian Kirsch
Huei Wang

Sensors for Localization, Tracking, and RFID

Chair: Manos M. Tentzeris
Xianming Qing
Keat G. Ong
Apostolos Georgiadis
Stefan Schwarzer
Robert Weigel
Hao Xin

Integrated Sensors

Chair: Linus Maurer
Huei Wang
Reinhard Feger
Benjamin Laemmle
Hao Xin

Sensor Networks

Chair: Dietmar Kissinger
Andre Schwarzmeier
Massood Z. Atashbar

Biomedical Wireless Technologies, Networks, and Sensing Systems (BioWireleSS)

The IEEE Topical Conference on Biomedical Wireless Technologies, Networks, and Sensing Systems (BioWireleSS) will premier in sunny Santa Clara, California. This two day topical conference will be a vital part of the IEEE Radio and Wireless Symposium, featuring the latest developments in wireless biomedical technologies, networks and sensing systems. The wireless revolution has begun to infiltrate the medical community with patient health monitoring, telesurgery, mobile wireless biosensor systems, and wireless tracking of patients and assets becoming a reality. The rapid evolution of wireless technologies coupled with powerful advances in adjacent fields such as biosensor design, low power battery operated systems, and diagnosing and reporting for intelligent information management has opened up a plethora of new applications for wireless systems in medicine.

Technical Committee:

Wireless Technologies for Biosignals and Modeling in Medical

Chair: Jung-Chih Chiao
Co-Chair: Alper Bozkurt
Rizwan Bashirullah
Mohammad Haider
Usmah Kawoos
Changzhi Li
Victor Lubecke
Natalia Nikolova
Marc Notten

Wireless Position and Localization in Medicine

Chair: Mohamed Mahfouz
Co-Chair: Andreas Stelzer
Carlos Christoffersen
Upkar Dhaliwal
Michael Kuhn
Victor Lubecke
Natalia Nikolova
David Ricketts
Arye Rosen

PAN BAN Energy Scavenging and Remote Patient Monitoring

Chair: David Ricketts
Co-Chair: Dominique Schreurs
Hiroyuki Arai
Alper Bozkurt
Yong Xin Guo
Syed Islam

Micro-Sensors and In-vivo Microsystems

Chair: Rizwan Bashirullah
Co-Chair: Changzhi Li
Usmah Kawoos
Jung-Chih Chiao
Marc Notten
Michael Kuhn
Arye Rosen

Microwaves in Biological Applications and Interaction with Biological Tissues

Chair: Changzhi Li
Co-Chair: Mohammad-Reza Tofighi
Carlos Christoffersen
Yong Xin Guo
Victor Lubecke
Dominique Schreurs

Medical Imaging and Applications

Chair: Arye Rosen
Co-Chair: Natalia Nikolova
Anand Gopinath
Mohammad Haider
Usmah Kawoos
Victor Lubecke

SOCIAL EVENTS

Complimentary Daily Breakfast

Place: California Ballroom Foyer
Time: 07:00-08:00

Complimentary Daily Coffee Breaks

Place: California Ballroom Foyer
Time: 9:30-10:10, 15:00-15:40

Daily Lunch

A lunch buffet will be served Monday-Wednesday in the Grand Ballroom from 11:45-13:30

RWW Reception

Place: Hall of Cities
Time: 18:00-19:30, Monday

RWW/SiRF Awards Banquet

Place: Grand Ballroom
Time: 18:00-21:00, Tuesday

Tutorial: National & International Spectrum Management Policies and Processes for Wireless Professionals

Room: Seattle

Organizer and Speaker:
Nelson Pollack
Spectrum Analytics, LLC, US

The RF spectrum is a highly regulated and closely managed resource that is subject to the policy and technical decisions made by numerous national and international spectrum-approval granting organizations.

This tutorial provides practical information and insights that will be of immediate use and long-term value to a wide range of military, government, industry, and educational wireless professionals interested in wireless spectrum-dependent system design, development, acquisition, and deployment.

The tutorial surveys the major analytical tools and techniques used by spectrum management personnel to quantify the electromagnetic compatibility of military and civil spectrum-dependent systems in all intended electromagnetic environments.

The tutorial details the specialized requirements for military systems to obtain spectrum approval, including the submission of a completed DD Form 1494 and a spectrum supportability risk assessment (SSRA) at major acquisition milestones.

The implication of current "hot topic" spectrum issues, such as the National Broadband Plan and the agenda of the 2012 World Radiocommunication Conference (WRC-12), for future military and civil spectrum access will be highlighted.

SiRF STUDENT PAPER CONTEST

Continuing the tremendous success from previous years, the SiRF 2012 is proud to present its Student Paper Competition. The papers in the competition represent the accomplishments of individual students and undergo an arduous review process to identify and acknowledge the best and brightest students in our research community. The high standards of reviewers and judges ensure that the best papers of the Student Paper Competition also rank among the best papers of the SiRF 2012.

The student finalists will present their papers at their appropriate regular sessions, and also make special presentations at the Poster Session on Monday, January 16, from 1:30 PM to 3:10 PM. All SiRF 2012 participants are welcome and encouraged to visit the student papers during the Poster Session, at which time they will also be evaluated by a group of judges. The awards will be announced and presented during the RWW Banquet.

Advances of Nanoelectronics in RF Technology

Room: Portland

Organizers:
Luca Pierantoni
Universita Politecnica delle Marche, Italy
Fabio Coccetti
LAAS, France

In view of the new scenarios that nanotechnology discloses, a multitude of research projects based on novel materials and nano-science concepts have been developed to pave the way for a new generation of nanoelectronic devices and systems, yielding not only higher integration densities as well as substantially improved electro-thermal-mechanical properties, but also unprecedented possibilities for novel or drastically improved devices/systems in the microwave/RF engineering domain of applications.

As a matter of fact, nano-materials and nano-devices often exhibit their most interesting properties at microwave and millimeter-wave frequencies. Therefore, the area of nanoelectronics is an enormous opportunity for the microwave community, which can utilize its established body of modelling, design and measurement techniques with the aim to bridge the gap between nano-science and a new generation of extremely integrated circuits. Our goal is to present a meaningful overview of new microwave materials and devices based on recent achievements of nanotechnology. We introduce nanoscale packaging and interconnects, discuss the perspectives of the graphene use in biomedicine, and explore nanotechnology-enabled integrated antennas.

Speakers:

1. P. Russer, P. Lugli, and J. A. Russer, Institute for Nanoelectronics, Technische Universität München, Germany
Wolfgang Porod, University of Notre Dame, US
L. Pierantoni, Università Politecnica delle Marche, Italy
Title: Integrated Antennas Enabled by RF Nanotechnology
2. C. Palego, C. Merla, M. Balucani, F. Apollonio, M. Liberti, and J. Hwang, University of Rome La Sapienza, Italy
Title: Nanotechnology in Biomedicine: the Perspectives of the Graphene Advent
3. Dimitrios L. Sounas and C. Caloz, Ecole Polytechnique de Montreal, Canada
Title: Graphene-based Gyrotropic Microwave and THz Components
4. T. Monti, A. Di Donato, and M. Farina, Università Politecnica delle Marche, Italy
Title: High Resolution Imaging of Nanoscale Structures by Near-Field Scanning Microwave Microscopy
5. Dominique Baillargeat, XLIM, University of Limoges, France
Title: Carbon-based Nanostructures for RF Nanopackaging

Telemedicine: Wireless Sensor and Body Area Networks

Room: Santa Barbara

Organizers:
Jasmin Walk, Thomas Ussmueller, and Georg Fischer
Friedrich-Alexander University of Erlangen-Nuremberg, Germany

Today's healthcare systems are faced with a number of new requirements. Innovative technical solutions and concepts are necessary to guarantee high quality health care for future generations. Within the framework of telemedicine, new solutions to this requirement are addressed. In this workshop, the whole range from the basics of telemedicine to newest sensor applications are covered. Hence the addressed topics are of particular relevance for everybody between researchers and end-users.

The workshop provides a perspective on the following key areas: wireless sensor nodes, body area networks and patient-oriented implementation. An introduction on the fundamentals of telemedicine and the unique challenges in medical sensor applications will be presented. According to this, a keynote on telemedicine sensor nodes will be given and the problems of electromagnetic wave propagation in and on the human body will be discussed. The influence on the patient's daily life has to be minimized as far as possible, hence the second part of the workshop addresses new implementation techniques of biosensing and biomonitoring applications like inkjet-printed RF modules. Finally a talk about textile electrodes and sensor integration in textiles will complete the workshop and give examples for new ways of tomorrow's healthcare.

Speakers:

1. Jasmin Walk, Robert Weigel, Georg Fischer, and Thomas Ussmueller, Friedrich-Alexander University Erlangen-Nuremberg, Germany
Title: General Introduction: Telemedicine at the example of sensor implants
2. Peter Langendörfer, Thomas Basmer, Krzysztof Piotrowski, and Steffen Ortmann, IHP GmbH, Germany
Title: Wireless Telemedicine Sensor nodes: Requirements and Challenges Ahead
3. Dirk Manteuffel, Christian-Albrechts-Universität of Kiel, Germany
Title: Electromagnetic Radio Link Modeling for In- and On-Body Medical Applications
4. Jasmin Grosinger and Arpad L. Scholtz Vienna University of Technology, Austria
Title: Antennas and Wave Propagation in Wireless Body Area Networks in the 900 MHz and 2.5 GHz Regime
5. M.M.Tentzeris, R.Vyas, V.Lakafosis, A.Traillie, H.Lee, and S.Kim, Georgia Institute of Technology, US
Title: Inkjet-printed RF modules for biosensing and biomonitoring applications
6. K. Gnewuch, D. Zschenderlein, and U. Möhring, TITV e.V. Greiz, Germany
Title: Monitoring and Prevention with Textile Electrodes
7. K. Ullrich, F. Siegl, D. Zschenderlein, and U. Möhring, TITV e.V. Greiz, Germany
Title: Interconnection Techniques to connect Textiles Substrates and Electronical Components

Wireless Sensor Network Technologies for the "Internet of Things" Implementation

Room: Newport Beach

Organizers:
Nuno Borges Carvalho
Universidade de Aveiro, Portugal
Ana Collado
CTTC, Spain
Apostolos Georgiadis
CTTC, Spain

Internet of Things will create new possibilities and applications in sensing networks and wireless communication. The main objective is mainly that all the physical objects will communicate to each other. However, many technologies competing for this reality are all still in the emerging state. Experts from all over the world will present various approaches to the Internet of things, technology aspects including energy harvesting, printed circuits, RFID and some applications for location sensing, as well as Body Area Networks and Wireless Sensor Networks.

Speakers:

1. Ana Collado and Apostolos Georgiadis, CTTC, Spain
Title: Energy Harvesting Techniques for Autonomous RFID and Wireless Sensor Networks: Challenges and Applications
2. Luca Roselli, Giulia Orecchini, Federico Ailmenti, and Manos Tentzeris, University of Perugia / DIEI, Italy
Title: Print RFID technology
3. M. Tentzeris, Georgia Institute of Technology, US
Title: Autonomous "Green" Wireless Sensor Nodes on Flexible Low-Cost Substrates
4. Nuno Borges Carvalho and Luis Bras Instituto de Telecomunicações – Universidade de Aveiro, Portugal
Title: WSN for Indoor Location: Challenges and Proposals

RWW STUDENT PAPER CONTEST

RWW 2012 Student Paper Chairs will select finalists among the student paper submissions, from each conference (RWS, PAWR, BioWireless, and WISNet). During the poster presentation, judges will visit the student posters and grade the papers in the following five areas: novelty of the research, quality of the poster, quantity of information presented, preparedness of the presenter, and interest to the RWW community. The committee of judges will then select the first- and the second-place winners from each conference for a total of 8 winners. The awards will be announced and presented during the RWW Banquet. Please visit the student paper competition and support outstanding work by future researchers in industry and academia.

Panel Session - Spectrum Sharing and Frequency Reuse 19:00-21:00
 Room: Seattle, Portland and Santa Barbara

Co-chairs:
 Jeffrey Pawlan
 Michael Marcus

Sponsors:
 MTT-20 MTT Technical Committee on Wireless Communications
 Communications Society (ComSoc), SCV Chapter

Abstract:
 The growing demand for wireless services makes "green field" spectrum very difficult to find. There is an increase in interest in providing new wireless services by sharing available and underutilized spectrum. These approaches have to be designed so that they do not have an impact on the environment. The environmental issues have led to several spectrum policy battles in recent years. This is because there are vastly different viewpoints on what is considered a harmful interference and what is considered a reasonable receiver in a given context. These battles can discourage investment in innovative wireless technology that requires non-routine approvals. This session takes a technical and policy perspective on the underlying causes behind the controversies. It reviews recent controversial examples such as GPS/LightSquared, AWS-3, UWB, and Northpoint.

- Presentations:**
1. Michael Marcus, *Whitespace communications and the adaptive sharing of TV channels in the USA*
 2. Jeffrey Pawlan, *SDR and Cognitive Radio hardware and how it facilitates frequency reuse and spectrum sharing*
 3. Nuno Borges Carvalho, *Whitespace communications in Europe*
 4. Antoinette Cook Bush, *Challenges of seeking in parallel both regulatory approval and investment capital for innovative wireless technologies in contexts where nonroutine approval for the technologies are needed*
 5. Michael Marcus, *The future of sharing satellite downlink bands with terrestrial communications*
 6. Richard Reaser, *GPS and LightSquared: A case study in sharing*

Santa Clara Marriot - Official RWW Meeting Venue

Transportation

Norman Y. Mineta San Jose International Airport - SJC

Phone: 1 408 277 4759
 Hotel direction: 4 mile(s) S
 Alternate transportation: South & East Bay Shuttle (408) 866-6660; fee: 25 USD (one way); reservation required
 Estimated taxi fare: 25.00 USD (one way)

San Francisco International Airport - SFO

Hotel direction: 30 mile(s) N
 Alternate transportation: South & East Bay Shuttle; fee: 69 USD (one way); reservation required
 Estimated taxi fare: 120.00 USD (one way)

Oakland International Airport - OAK

Hotel direction: 30 mile(s) NE
 Alternate transportation: Atlas Shuttle; fee: 69 USD (one way); reservation required
 Estimated taxi fare: 120.00 USD (one way)

Bus Station

Greyhound 4 mile(s) W

Subway Station

Fremont BART 10 mile(s) NE

Train Station

Santa Clara Caltrain 5 mile(s) SE

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 Santa Clara, California 95054
 Phone: 1-408-986-1436

Parking

On-site parking, fee: 3 USD hourly, 9 USD daily
 Valet parking, fee: 18 USD daily

Driving Directions:

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The RWW2012 Planning Committee has secured a favorable rate for all RWW attendees at the official meeting venue. In order to receive the special rate, please book your accommodations by 31 December 2011 at 5:00pm Pacific Time. Please note the discounted rates are only available over official Symposium dates. For reservations outside the official dates or for government rates please contact the hotel directly.

Mention "IEEE RWW 2012" to receive the negotiated room rate. Reservation requests received by the hotel after 31 December 2011 will be accepted on a space and rate available basis, and the group rate may not apply. All attendees booking within the official RWW room block will receive complimentary self-parking and internet access in their guest room free of charge.

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 Accessibility
 Service animals allowed for persons with disabilities

MONDAY, 16 JANUARY 2012



RWW Session: MO1A

RWW Distinguished Lecturers I

Chair: Jim Sowers, Space Systems/Loral
Co-Chair: Norman Chiang, Space Systems/Loral

Room: California 1-3

RWS Session: MO1B

Recent Advances in Software Defined Radios and Cognitive Radios

Chair: Gamal Hegazi, Rockwell Collins, Government Systems
Co-Chair: Abbas Omar, University of Magdeburg

Room: California 4

PAWR Session: MO1C

High-Efficiency Power Amplifiers and Techniques

Chair: Frederick H. Raab, Green Mountain Radio Research
Co-Chair: Song Lin, Miteq Inc.

Room: California 5

SiRF Session: MO1D

Novel Millimeterwave RFIC Circuits Building Blocks

Chair: Austin Chen, Skyworks Solutions
Co-Chair: Vince Fusco, Queens University of Belfast

Room: California 7-9

08:00

Time: 08:00-08:50

MO1A-1 A Look at Some of the Principles of Wireless Communication from a Maxwellian Viewpoint

T. K. Sarkar, Syracuse University, Syracuse, United States

MO1B-1: A Dynamically Reconfigurable Architecture Enabling All-Digital Transmission for Cognitive Radios

N. V. Silva¹, A. S. Oliveira¹, Ulf Gustavsson², N. B. Carvalho¹, ¹Universidade de Aveiro, Aveiro, Portugal, ²Ericsson AB, Stockholm, Sweden

MO1C-1 The MPM - A Low SWaP RF Power Amplifier (Invited)

C. M. Armstrong, L-3 Communications Electron Devices, San Carlos, United States

MO1D-1 Si IC Development for High Efficiency Envelope Tracking Power Amplifiers (Invited)

P. Asbeck¹, L. Larson¹, D. Kimball¹, M. Kwak¹, M. Hassan¹, C. Hsia¹, C. Presti¹, A. Scuderi², ¹UCSD, La Jolla, United States, ²ST Microelectronics, Catania, Italy

08:20

MO1B-2 Automatic Classification of Analog Modulation Schemes

H. Xiao¹, Y. Shi¹, W. Su², J. Kosinski², ¹New Jersey Institute of Technology, Newark, United States, ²U.S. Army, Fort Monmouth, United States

MO1C-2 High-Efficiency Class-F-1 Power Amplifier Design with Input Harmonic Manipulation

L. Dong, Q. Lei, F. You, S. He, University of Electronic Science and Technology of China, Chengdu, China

Time: 08:50-09:40

MO1A-2 Microwave Near-Field Imaging of Human Tissue: Hopes, Challenges, Outlook

N. K. Nikolova, McMaster University, Hamilton, Canada

MO1B-3 Differential RCS and Sensitivity Calculation of RFID Tags with Software-Defined Radio

D. De Donno, L. Catarinucci, R. Colella, F. Ricciato, L. Tarricone, University of Salento, Lecce, Italy

MO1C-3 A Supply Modulator with Nested Structure for Wideband Envelope Tracking Power Amplifier

Z. Wang, Nokia Siemens Networks (NSN), Beijing, China

MO1D-2 A 245 GHz CB LNA and SHM Mixer in SiGe Technology

Y. Mao^{1,2}, K. Schmalz^{1,2}, J. Borngräber^{1,2}, J. C. Scheytt^{1,2}, ¹IHP, Frankfurt (Oder), Germany, ²IHP, Frankfurt (Oder), Germany

09:00

MO1B-4 Design of Frequency Agile Filters in RF Frontend Circuits

S. Kaehlert, D. Bormann, T. D. Werth, M. Wej, L. Liao, S. Heinen, RWTH-Aachen University, Aachen, Germany

MO1C-4 High Efficiency X-band Class-E GaN MMIC High-Power Amplifiers

J. Moon, H. Moyer, P. Macdonald, D. Wong, M. Antcliffe, M. Hu, P. Willadsen, P. Hashimoto, C. McGuire, M. Micovic, M. Wetzel, D. Chow, HRL Laboratories, Malibu, United States

MO1D-3 60GHz Low Noise Amplifiers with 1kV CDM Protection in 40nm LP CMOS

K. Raczkowski¹, S. Thijs¹, J. Tseng³, T. Chang³, M. Song³, D. Linten¹, B. Nauwelaers², P. Wambacq¹, ¹Imec, Heverlee, Belgium, ²K. U. Leuven, Heverlee, Belgium, ³TSMC, Hsinchu, Taiwan

09:20

MO1C-5 35 W Bi-Level Supply Modulated Doherty Amplifier for 3G LTE Base Station

J. Kim^{1,2}, J. Jung¹, C. Park², ¹ETRI, Daejeon, Republic of Korea, ²KAIST, Daejeon, Republic of Korea

MO1D-4 F - Band Injection Locked Tripler Based On Colpitts Oscillator

A. Vishnipolsky, E. Socher, Tel Aviv University, Tel Aviv, Israel

MONDAY, 16 JANUARY 2012



RWW Session: MO2A

RWW Distinguished Lecturers II

Chair: Norman Chiang, Space Systems/Loral
Co-Chair: Jim Sowers, Space Systems/Loral

Room: California 1-3

RWS Session: MO2B

MIMO Technologies

Chair: Chan-Byoung Chae, Yonsei University

Room: California 4

PAWR Session: MO2C

RF Power Amplifier Technology

Chair: Marc J. Franco, RFMD
Co-Chair: Nathalie Deltimple, IMS Laboratory

Room: California 5

SiRF Session: MO2D

RF Passive Devices and MEMS Switches

Chair: Xun Gong, University of Central Florida
Co-Chair: Pierre Blondy, University of Limoges

Room: California 7-9

10:10

Time: 10:10-11:00

MO2A-1 Autonomous Aero-Visual and Sensor Based Inspection Network for Power Grid and Asset Monitoring

A. K. Somani, Iowa State University, Ames, United States

MO2B-1 Distributed Antenna System in LTE-Advanced: Benefits of Dynamic Multi-Point Cooperation (Invited)

H. Lee, Y. Kim, B. Clerckx, J. Lee, Samsung Electronics, Seoul, Republic of Korea

MO2C-1 A Compact, High Efficiency 1KW VHF LDMOS Power Amplifier (Invited)

D. Lester, Freescale Semiconductor, Tempe, United States

MO2D-1 Three Dimensional Metal Micromachining: A Disruptive Technology for Millimeter-Wave Filters (Invited)

J. R. Reid, J. M. Oliver, K. Vanhille, D. Sherrer, Nuvotronics, LLC, Radford, United States

10:30

MO2B-2 A 2x1 Compact Dual Band MIMO Antenna System for Wireless Handheld Terminals

M. A. Jan¹, D. N. Alo², M. S. Sharawi¹, ¹King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, ²Oakland University, Rochester, United States

MO2C-2 Optimization Theory Applied to Dynamic Biasing for Power Amplifier Performance Enhancement

J. F. Miranda Medina¹, K. M. Gjertsen², M. Olavsbråten¹, ¹NTNU, Trondheim, Norway, ²Ceragon, Bergen, Norway

10:50

MO2B-3 Analyzing Capacity of Cooperative MIMO Using Beamforming in Measured Channel Data

M. Rahimi, E. de Carvalho, G. F. Pedersen, Aalborg University, Aalborg, Denmark

MO2C-3 Wideband Class AB RF Power Amplifier Using CMOS Compatible SOI-MESFET device on 150nm Technology

M. Ghajar¹, W. Lepkowski^{2,1}, S. Wilk^{2,1}, B. Bakkaloglu^{1,2}, T. Thornton^{1,2}, ¹Arizona State University, Tempe, United States, ²SJT Micropower Inc, Fountain Hills, United States

MO2D-2 Robust RF Switch with Low Insertion Loss and High Power Handling Capability in a Standard 65nm CMOS Technology

J. Rascher¹, S. Pinarello^{2,1}, J. Mueller², G. Fischer¹, R. Weigel¹, ¹Friedrich-Alexander-University Erlangen-Nuremberg, Erlangen, Germany, ²Intel Mobile Communication, Neubiberg, Germany

11:10

Time: 11:00-11:50

MO2A-2 Advanced Doherty PAs for Multi-Bands and SDR Applications

F. M. Ghannouchi, University of Calgary, Calgary, United States

MO2B-4 Learning Algorithm for Reconfigurable Antenna State Selection

N. Gulati, D. Gonzalez, K. R. Dandekar, Drexel University, Philadelphia, United States

MO2C-4 A 90nm CMOS PA Module for 4G Applications with Embedded PVT Gain Compensation Circuit

O. Degani, A. Israel, F. Cossoy, V. Volokotin, K. Levy, E. Schwartz, E. Papir, M. Arbiv, I. Refaeli, D. Gidony, S. Rivel, Intel, Haifa, Israel

MO2D-3 RF-MEMS Switch Module in a 0.25 μm BiCMOS Technology

M. Kaynak¹, M. Wietstruck¹, W. Zhang¹, J. Drews¹, R. Scholz¹, D. Knoll¹, F. Komdorfer¹, C. Wipfl¹, K. Schulz¹, M. Elkhoully¹, K. Kaletta², K. Zoschke², M. Wilke², O. Ehrmann², V. Mühlhaus³, G. Liu⁴, T. Purtova⁴, A. C. Ulusoy⁴, H. Schumacher¹, B. Tillack^{1,5}, ¹IHP Microelectronics, Frankfurt Oder, Germany, ²Fraunhofer IZM, Berlin, Germany, ³Dr. Mühlhaus Consulting & Software GmbH, Witten, Germany, ⁴Ulm University, Ulm, Germany, ⁵Technische Universität Berlin, Berlin, Germany

11:30

MO2B-5 Optimal User Pairing in Cooperative Wireless Network Coding with Constrained Power Minimization

T. Rasheed¹, M. H. Ahmed¹, O. A. Dobre¹, M. Saad², ¹Memorial University of Newfoundland, St. John's, Canada, ²University of Sharjah, University City, Sharjah, United Arab Emirates

MO2C-5 Bi-Dimensional Shaping Function in Concurrent Dual Band GaAs Envelope Tracking Power Amplifier

A. Cidronali¹, F. Zucchelli¹, N. Giovannelli², S. Maddio¹, G. Manes¹, ¹University of Florence, Florence, Italy, ²Nujira, Ltd, Cambridge, United Kingdom

MO2D-4 Loss Mechanisms and Quality Factor Improvement for Inductors in High-Resistivity SOI Processes

W. B. Kuhn, Kansas State University, Manhattan, United States

RWS Session: MO3A

Advanced Antennas Design

Chair: Aly Fathy, University of Tennessee
Co-Chair: Luiz C. Kretly, University of Campinas

Room: California 1-3

RWS Session: MO3B

High-speed and Broadband Wireless Technologies

Chair: Jianping Yao, University of Ottawa
Co-Chair: Afshin Daryoush, Drexel University

Room: California 4

PAWR Session: MO3C

Distortion Reduction Techniques in RF Power Amplifiers

Chair: Slim Boumaiza, University of Waterloo
Co-Chair: Murat Eron, MITEQ

Room: California 5

MONDAY Rump Session Emerging PA Architectures and Technologies

Time: 19:00-21:00
Room: California 1-3

13:30

MO3A-1 Ultra-Wide Band Vivaldi Antenna Array using Low Loss SIW Power Divider and GCPW Wide Band Transition

R. Kazemi^{1,2}, A. E. Fathy², R. A. Sadeghzadeh¹, K. N. toosi University of Technology, Tehran, Iran, ²The University of Tennessee, Knoxville, United States

MO3B-1 A Compact Integrated 100 GS/s Sampling Module for UWB See Through Wall Radar with Fast Refresh Rate for Dynamic Real Time Imaging

Q. Liu, Y. Wang, A. E. Fathy, University of Tennessee, Knoxville, United States

MO3C-1 Linearizing High Power Amplifiers (with emphasis on Predistortion and GaN devices) (Invited)

A. Katz^{1,2}, R. Dorval², ¹The College of New Jersey, Ewing, United States, ²Linearizer Technology, Inc., Hamilton, United States

Panel Moderator: Robert Caverly, Villanova University

Panel co-Moderator: Joe Staudinger, Freescale

Panelists: Steve Cripps, HyWave
 Marc Franco, RFMD
 Al Katz, Linearizer Technology
 Joseph Staudinger, Freescale

And other distinguished panelists from academia and industry

13:50

MO3A-2 Tunable Reflectarray Unit Cell Element Using BST Technology

Y. Shen, S. Ebadi, P. Wahid, X. Gong, University of Central Florida (UCF), Orlando, United States

MO3B-2 10-Gbit/s Bi-directional Wireless Data Transmission System Using 120-GHz-band Ortho-mode Transducers.

J. Takeuchi, A. Hirata, H. Takahashi, N. Kukutsu, NTT Microsystem Integration Laboratories, NTT Corporation, Atsugi-shi, Japan

MO3C-2 Envelope Tracking GaAs HBT PA Performance Characterization Under High Load Mismatch Conditions

G. J. Wimpenny, J. Hildersley, T. Vlasits, S. Cummins, N. Padfield, Nujira Ltd, Cambourne, United Kingdom



14:10

MO3A-3 Printed Antenna Design Using Sensitivity Analysis Based on Method of Moment Solutions

Y. Zhang^{1,2}, A. Pimpale², M. K. Meshram³, N. K. Nikolova¹, ¹McMaster University, Hamilton, Canada, ²Research In Motion, Waterloo, Canada, ³Banaras Hindu University, Banaras, India

MO3B-3 A 38 GHz-Band 1 Gbps TDD FWA System Using Co-polarization Dual Antenna with High Spatial Isolation

J. Sato¹, Y. Toriyama⁴, T. Taniguchi⁵, T. Hirano², M. Zhang³, ¹Japan Radio Co., Ltd., Mitaka-shi, Japan, ²Tokyo Institute of Technology, Meguro-ku, Japan, ³Tokyo Institute of Technology, Meguro-ku, Japan, ⁴Japan Radio Co., Ltd., Mitaka-shi, Japan, ⁵Japan Radio

MO3C-3 High Efficiency Wideband Envelope Tracking Power Amplifier with Direct Current Sensing for LTE Applications

M. Kwak¹, J. Jeong², M. Hassan¹, J. J. Yan¹, D. F. Kimball¹, P. Asbeck¹, L. E. Larson¹, ¹University of California at San Diego, La Jolla, United States, ²The University of Seoul, Seoul, Republic of Korea



Triton Museum of Art

14:30

MO3A-4 A Low-Profile Textile Antenna for Reception of Digital Television and Wireless Communications

D. L. Paul, M. G. Paterson, G. S. Hilton, University of Bristol, Bristol, United Kingdom

MO3B-4 A 0.7V 4.1mW 850Mbps/ch Inductive-Coupling Transceiver with Adaptive Pulse Width Controller in 65nm CMOS

T. Matsubara¹, I. Hayashi², A. H. Johari¹, T. Kuroda¹, H. Ishikuro¹, ¹Kieo University, Yokohama, Japan, ²STARC, Meguro, Japan

MO3C-4 Digital Predistortion for Dual-Input Doherty Amplifiers

H. Cao¹, J. Qureshi², T. Eriksson¹, C. Fager¹, L. de Vreede², ¹Chalmers University of Technology, Gothenburg, Sweden, ²Delft University of Technology, Delft, Netherlands



Intel Museum

14:50

MO3A-5 Small GPS Antenna with Lumped Elements and Interdigital Structure

J. Park^{1,2}, J. Choi², T. Lee², Y. Kim², ¹Samsung Electronics, Suwon-Si, Republic of Korea, ²Korea University, Seoul, Republic of Korea

MO3B-5 A Delay-Robust Random Access Preamble Detection Algorithm for LTE System

S. Kim, K. Joo, Y. Lim, Innwireless Co., Seongnam-si, Republic of Korea

MO3C-5 High Efficiency Linear GaAs MMIC Amplifier for Wireless Base Station and Femto Cell Applications

Y. Wei, J. Staudinger, M. Miller, Freescale Semiconductor Inc, Tempe, United States

SiRF/PAWR Session: MO3P

Chair: Kazuya Masu, Tokyo Institute of Technology

Co-Chair: Joe Staudinger, Freescale

Room: California Ballroom 6



MO3P-1 A 2.5-2.7GHz Broadband 40W GaN HEMT Doherty Amplifier with higher than 45% drain efficiency for multi-band Application
N. Yoshimura, H. Umetsu, N. Watanabe, H. Deguchi, N. Ui, Sumitomo Electric Device Innovations, Inc., Nakakoma-gun, Japan

MO3P-2 Asymmetrical Doherty Amplifier using GaN HEMTs for High Power Applications
T. Kitahara, T. Yamamoto, S. Hiura, Toshiba Corporation, Yokohama, Japan

MO3P-3 3.4-mW Common-Gate and Current-Reused UWB LNA
J. Lee, H. Park, H. Chang, T. Yun, Hanyang University, Seoul, Republic of Korea

MO3P-4 Tunable Linear Active Resistor for RF Applications
X. Xiang, J. Sturm, Carinthia University of Applied Sciences, Villach, Austria

MO3P-5 A Tx RF 0.1dB IL Bandpass Filter for Fully Digital Cellular Transmitters in 65-nm CMOS
F. Robert^{1,4}, P. Cathelin¹, A. Diet³, P. Triaire¹, F. Epifano², M. Villegas⁴, G. Baudoin⁴, ¹ST-Ericsson SAS, Grenoble, France, ²ST-Ericsson, Plan les Ouates, Switzerland, ³L2s DRE UMR8506, Gif S/ Yvette, France, ⁴University PARIS-EST, Noisy Le Grand, France

MO3P-6 A 62 GHz Reflectometer for Biomedical Sensor Readout in SiGe BiCMOS Technology
B. Laemmle¹, K. Schmalz¹, C. Scheytt², D. Kissinger², R. Weigel¹, ¹University of Erlangen-Nuremberg, Erlangen, Germany, ²IHP, Frankfurt (Oder), Germany

MO3P-7 Minimizing Matching Network Loss in Output Harmonic Matched Power Amplifiers Using Harmonic Load-Pull Measurement
M. M. Ebrahimi, M. Helaoui, F. M. Ghannouchi, University of Calgary, Calgary, Canada

MO3P-8 A Wide Tuning Range High Output Power 56 - 74 GHz VCO With On-Chip Transformer Load in SiGe Technology
I. H. Nasr¹, B. Laemmle¹, H. Knapp², G. Fischer¹, R. Weigel¹, D. Kissinger¹, ¹University of Erlangen-Nuremberg, Erlangen, Germany, ²Infineon Technologies, Neuburg, Germany

MO3P-9 Silicon Integrated Dielectric Resonator Antenna Solution for 60GHz Front-Rnd Modules
J. P. Guzman¹, C. Calvez¹, R. Pillard², F. Gianesello², M. Ney¹, D. Gloria², C. Person¹, ¹Lab-STICC/MOM UMR CNRS 3192 - Telecom Bretagne, Brest, France, ²STMicroelectronics - T-R&D, STD, TPS Lab, Crolles, France

MO3P-10 SiGe Building Blocks for On-Chip X-Band T/R Modules
T. Dinc, S. Zehir, Y. Gurbuz, Sabanci University, Istanbul, Turkey

MO3P-11 A 140 GHz Single-Ended Injection Locked Frequency Divider with Inductive Feedback in SiGe HBT Technology
J. Yun, H. Kim, H. Seo, J. Rieh, Korea University, Seoul, Republic of Korea

MO3P-12 On Gm-Boosting and Cyclostationary Noise Mechanisms in Low-Voltage CMOS Differential Colpitts VCOs
A. Koukab, O. T. Amiri, Swiss Federal Institute of Technology in Lausanne (EPFL), Lausanne, Switzerland

MO3P-13 A Highly Efficient 1-Watt Broadband Class-J SiGe Power Amplifier at 700MHz
R. Wu, J. Lopez, Y. Li, D. Y. C. Lie, Texas Tech University, Lubbock, United States

MO3P-14 Impact of Extrinsic Capacitances on FinFETs RF Performance
J. C. Tinoco¹, J. Alvarado¹, A. G. Martinez-Lopez², J. P. Raskin³, ¹Facultad de Ingenieria - UNAM, Mexico D. F., Mexico, ²Universidad Veracruzana, Boca del Rio, Mexico, ³Université catholique de Louvain, Louvain-la-Neuve, Belgium

MO3P-15 CMOS Integrated Antenna-Coupled Field-Effect-Transistors for the Detection of 0.2 to 4.3 THz
S. Boppel¹, A. Lisauskas¹, D. Seliuta², L. Minkevičius², I. Kašalynas², G. Valušis², V. Krozer¹, H. G. Roskos¹, ¹Johann Wolfgang Goethe-Universität Frankfurt, Frankfurt, Germany, ²Center for Physical Science and Technology, Vilnius, Lithuania

MO3P-16 Inductor Modeling with Layout-Dependent Effects in 40nm CMOS Process
E. Lourandakis, K. Nikellis, S. Stefanou, S. Bantas, Helic S.A., Maroussi, Greece

MO3P-17 A Simple Predistorter in Fixed Microwave Radio System with the Transmission Power Control
T. Iwamatsu¹, J. Zhou², H. Li², Z. Shi², P. Chen², B. Zhao², K. Kakinuma³, ¹Fujitsu Laboratories Ltd., Shin Yokohama, Japan, ²Fujitsu R&D Center Ltd., Beijing, China, ³Fujitsu Wireless Systems Ltd., Kumagaya, Japan

MO3P-18 Wideband 60 GHz SiGe-BiCMOS Vector Modulator for Ultra-High-Datarate Wireless Transmitters
M. Hellfeld, C. Carta, F. Ellinger, Technical University of Dresden, Dresden, Germany

MO3P-19 A Descriptive Study on AM-AM and AM-PM Conversion Phenomena Through EVM-SNR Relation
C. Dudak, N. D. Kahyaoglu, Turkish Scientific and Technological Research Council, Ankara, Turkey

MO3P-20 High Frequency Noise Potentialities of Reported CMOS 65 nm SOI Technology on Flexible Substrate
Y. Tagro¹, A. Lecavelier¹, L. Poulain¹, S. Lepillet¹, D. Gloria^{2,2}, C. Raynaud^{2,2}, E. Dubois¹, F. Danneville¹, ¹IEMN, Villeneuve d'Ascq, France, ²STMicroelectronics, Crolles, France

MO3P-21 A 21-GHz Self-Oscillating Down-Converter Mixer
F. Starzer¹, H. P. Forstner², L. Maurer³, A. Stelzer^{4,1}, ¹Johannes Kepler University of Linz, Linz, Austria, ²Infineon Technologies AG, Neuburg, Germany, ³Dice GmbH & Co KG, Linz, Austria, ⁴Johannes Kepler University of Linz, Linz, Austria

MO3P-22 A New Method to Analyze the Behavior of SiGe:C HBTs under RF Large Signal Stress
C. Wipf, IHP, Frankfurt(Oder), Germany

MO3P-23 Design of a 600W Doherty using Generation 2 HVHBT with 55% WCDMA Efficiency Linearized to -55dBc for 2c11 6.5dB PAR
T. Landon, C. Steinbeiser, P. Page, R. Hajji, G. Burgin, R. Branson, O. Krutko, J. Delaney, L. Witkowski, TrnQuint Semiconductor, Richardson, United States

MO3P-24 Nanopore Test Circuit for Single-Strand DNA Sequencing
C. Palego¹, J. C. Hwang¹, C. Merla², F. Apolloonio², M. Libert², ¹Lehigh University, Bethlehem, United States, ²La Sapienza University, Rome, Italy

MO3P-25 RF Behavior of Undoped Channel Ultra-Thin Body with Ultra-Thin BOX MOSFETs
M. Md Arshad^{1,3}, M. Emam¹, V. Kilchytyska¹, F. Andrieu², D. Flandre¹, J. Raskin¹, ¹Université catholique de Louvain, Louvain-la-Neuve, Belgium, ²CEA-Leti MINATEC, Grenoble, France, ³Universiti Malaysia Perlis, Kangar, Perlis, Malaysia

MO3P-26 High Resolution Imaging of Few-Layer Graphene by Near-Field Scanning Microwave Microscopy
T. Monti, A. Di Donato, M. Farina, Università Politecnica delle Marche, Ancona, Italy

MO3P-27 Linearity Considerations for a High Power Doherty Amplifier
M. Masood¹, J. Staudinger², J. Wood², M. Bokarius², J. S. Kenney¹, ¹Georgia Institute of Technology, Atlanta, United States, ²Freescale Semiconductor, Tempe, United States

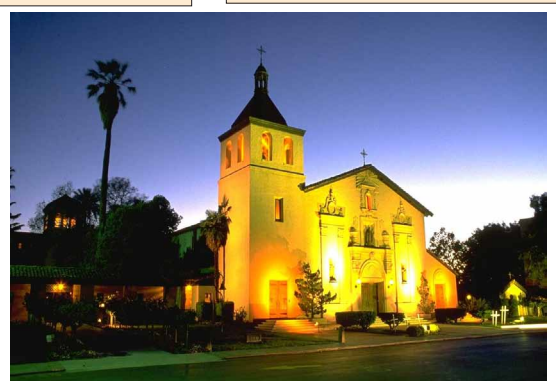
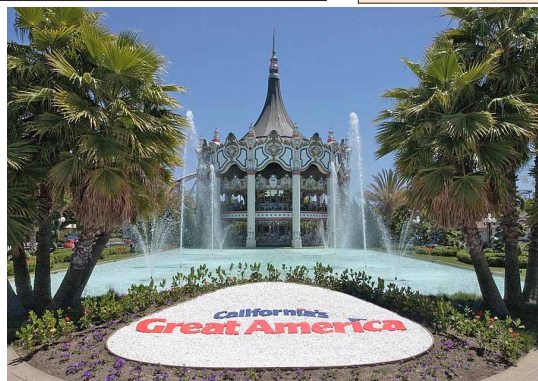
MO3P-28 A DC to 6 GHz Balanced Elliptic Low-Pass Filter in CMOS 130nm Technology.
M. Shahidzadeh Mahani, R. Abhari, McGill University, Montreal, Canada

MO3P-29 Optimized Hardware for Polynomial Digital Predistortion System Implementation
N. Mrabet^{1,2}, I. Mohammad¹, F. Mlkadem¹, C. Rebaï², S. Boumaiza¹, ¹University of Waterloo, Waterloo, Canada, ²Ecole Supérieure des Communications de Tunis, Rawoud, Tunisia

MO3P-30 Performance of Coplanar Interconnects for Millimeter-Wave Applications
R. Islam, R. M. Henderson, University of Texas at Dallas, Richardson, United States

MO3P-31 Effect of Arsenic and Phosphorus Doping on Polysilicon Resistor Noise and TCR
J. H. Kim, J. J. Kim, K. O. Lee, C. E. Lee, J. H. Lee, D. S. Kim, N. J. Kim, K. D. Yoo, DongbuHi-tec Co., Ltd, Bucheon, Republic of Korea

MO3P-32 Impact of High Frequency Correlated Noise on SiGe HBT Low Noise Amplifier Design
P. Shen^{1,2}, G. F. Niu¹, Z. Y. Xu¹, W. R. Zhang², ¹Auburn University, Auburn, United States, ²Beijing University of Technology, Beijing, China



RWS Session: MO4A

Complex antenna structures and applications

Chair: Silvio E. Barbin, University of São Paulo
Co-Chair: Ahmed A. Kishk, Concordia University

Room: California 1-3

RWS Session: MO4B

Wireless Sensor Network Architecture and Technologies

Chair: Markos Anastasopoulos, National Technical University of Greece

Room: California 4

PAWR Session: MO4C

RF Power Amplifier Modeling and System Analysis

Chair: Almudena Suarez, University of Cantabria
Co-Chair: Robert H. Caverly, Villanova University

Room: California 5

SiRF Session: MO4D

Silicon RF Modeling and Emerging Device Technologies

Chair: Julio Costa, RFMD
Co-Chair: Katsuyoshi Washio, Tohoku University

Room: California 7-9

15:40

MO4A-1 Electrically-Steerable Parasitic Array Radiator (ESPAR) Antenna Design for Arrays with Two and Three Parasitically-Coupled Elements

J. J. Luther, S. Ebadi, X. Gong, University of Central Florida, Orlando, United States

MO4B-1 Innovative Approach to Server Performance and Power Monitoring in Data Centers using Wireless Sensors (Invited)

R. Khanna¹, D. Choudhury¹, P. Chi-ang², H. Liu², L. Xia², ¹Intel Corporation, Hillsboro, United States, ²Oregon State University, Corvallis, United States

MO4C-1 Push-Pull Modes: A Microwave PA Mystery (Invited)

S. C. Cripps, Cardiff University, Cardiff, United Kingdom

MO4D-1 SiGe HBT Compact Modeling for Production-Type Circuit Design (Invited)

M. Schroter^{1,2}, S. Chaudhry³, J. Zheng³, A. Mukherjee¹, A. Pawlak¹, S. Lehmann¹, ¹Technical University Dresden, Dresden, Germany, ²University of California San Diego, La Jolla, United States, ³TowerJazz, Newport Beach, United States

16:00

MO4A-2 Effects of Inter-Element Spacing on Mutual Coupling and Resonant Properties in Reflectarray Unit Cell Design

K. Karnati, S. Ebadi, X. Gong, University of Central Florida (UCF), Orlando, United States

MO4B-2 A Passive Wireless Sensor with Reflective Nonlinear Transmission Lines for Capacitive Signal Transduction

F. Yu, Y. Ma, E. C. Kan, Cornell University, Ithaca, United States

MO4C-2 Efficiency Analysis of the Asymmetric 2-Level Outphasing PA with Rayleigh Enveloped Signals

Z. Abou-Chahine^{1,2}, T. Felgentreff¹, G. Fischer², R. Weigel², ¹Nokia Siemens Networks, Ulm, Germany, ²Friedrich-Alexander-Universitaet Erlangen-Nurnberg, Erlangen, Germany

MO4D-2 Half-Terahertz SiGe BiCMOS Technology (Invited)

H. Rücker, B. Heinemann, A. Fox, IHP, Frankfurt (Oder), Germany

16:20

MO4A-3 Design of Axial-mode Helical Antennas for Doppler-based Continuous Non-contact Vital Signs Monitoring Sensors

A. Boothby¹, R. Hwang², V. Das¹, J. Lopez¹, D. Y. C. Lie¹, ¹Texas Tech University, Lubbock, United States, ²Cornell University, Ithaca, United States

MO4B-3 The Impact of Antenna Characteristics on Target Detection in FMCW-Radar System Simulations for Automotive Applications

M. Dudek, I. Nasr, D. Kissinger, R. Weigel, G. Fischer, Friedrich-Alexander University, Erlangen, Germany

MO4C-3 Behavioral Modeling of Si LDMOS Pre-Matched Devices with Application to Doherty Power Amplifiers

J. Staudinger, P. Hart, D. Holmes, Freescale Semiconductor, Tempe, United States

MO4D-3 Compact Modeling Based Extraction of RF Noise in SiGe HBT Terminal Currents

Z. Xu, G. Niu, Auburn University, Auburn, United States

16:40

MO4A-4 Isolation Enhancement of Dual-Polarized Slot-Loop Antennas for MIMO Applications

K. Lin, Y. Lin, National Taiwan University, Taipei, Taiwan

MO4B-4 Coverage Performance of UWB In-car Wireless Communication in the Presence of Multiple Terminals

T. Arai, T. Shirai, Y. Watanabe, F. Maehara, Waseda University, Shinjuku-ku, Japan

MO4C-4 Equivalent Circuit GaN HEMT Model Accounting for Gate-Lag and Drain-Lag Transient Effects

J. B. King, T. J. Brazil, University College Dublin, Dublin, Ireland

MO4D-3 Compact Modeling Based Extraction of RF Noise in SiGe HBT Terminal Currents

Z. Xu, G. Niu, Auburn University, Auburn, United States

17:00

MO4A-5 A Size-Reduced Wearable Antenna for Zigbee Indoor Localization

E. O. El Khashab, H. F. Hammad, German University in Cairo, Cairo, Egypt

MO4C-5 Behavioral Modeling of High Power RF Amplifiers Using Pruned Volterra Scheme with IIR Basis Functions

M. Masood¹, J. Wood², J. Staudinger², J. S. Kenney¹, ¹Georgia Institute of Technology, Atlanta, United States, ²Freescale Semiconductor, Tempe, United States

MO4D-3 Compact Modeling Based Extraction of RF Noise in SiGe HBT Terminal Currents

Z. Xu, G. Niu, Auburn University, Auburn, United States

RWS Session: TU1B

Wireless Technologies for Power Transfer, Networking and Communication

Chair: Zhizhang Chen, Dalhousie University
Co-Chair: Debabani Choudhury, Intel Corporation

Room: California 1-3

SiRF Session: TU1C

Novel RFIC Building Block Circuits for Advanced System Applications

Chair: Lawrence Larson, Brown University
Co-Chair: Hsieh-Hung Hsieh, TSMC

Room: California 7-9

BioWireleSS Session: TU1D

Wireless Technologies for Biosignals and Modeling in Medical Applications

Chair: Jung-chih Chiao, University of Texas Arlington

Room: California 5

TU2 Plenary Session

Arogyaswami J. Paulraj

Key Enabler of Wireless Broadband, Received 2011 IEEE Alexander Graham Bell Medal

Time: 10:10-11:50
Room: California 4

Title: On Scaling Wireless Capacity

Abstract:

The need for massive scaling of wireless capacity in mobile networks (say BPS/Sq. Km.) is obvious. There are many leverages for scaling that can come from adding bandwidth, multiple antennas, coding-decoding, relays, cooperation, interference management, scheduling, aggregation, time shifting, cell splitting, compute partitioning, spectrum management, etc. This talk will pick on some of these areas and discuss their potential scaling capacity value and associated implementation hurdles.

08:00

TU1B-1 Electromagnetic Field Focusing for Short-Range Wireless Power Transmission (Invited)

A. Poon, Stanford University, Stanford, United States

TU1C-1 Synthesizing Artificial Dielectric in CMOS with Digitally Controlled Permittivity for Radio-on-a-Chip Applications (Invited)

M. F. Chang, UCLA, Los Angeles, United States

TU1D-1 RF Based Feedback System for Cardiopulmonary Resuscitation

M. Hofmann¹, J. C. Edelmann^{2,1}, A. Bolz², R. Weigel¹, G. Fischer¹, D. Kissinger¹, ¹University of Erlangen-Nuremberg, Erlangen, Germany, ²Karlsruhe Institute of Technology, Karlsruhe, Germany

08:20

TU1B-2 Human-Area Networking Technology Based on Near-Field Coupling Transceiver

Y. Kado¹, T. Kobase¹, T. Yanagawa¹, T. Kusunoki¹, M. Takahashi¹, R. Nagai¹, O. Hiromitsu¹, A. Hataya¹, H. Simasaki¹, M. Shinagawa², ¹Kyoto Institute of Technology, Kyoto-shi, Japan, ²Hosei University, Koganei-shi, Japan

TU1D-2 Breathing Rate Estimation from a Non-Contact Biosensor Using an Adaptive IIR Notch Filter

T. Ballal¹, R. B. Shouldice², C. Heneghan², A. Zhu¹, ¹University College Dublin, Dublin, Ireland, ²BiancaMed, Dublin, Ireland

08:40

TU1B-3 Arbitrary Power and Positioning Techniques for 2D Wireless Power Transmission Systems

T. Terada, H. Shinoda, Hitachi, Ltd., Central Research Laboratory, Kokubunji-shi, Japan

TU1C-2 A 6-bit Wideband Variable Gain Amplifier with Low Group Delay Variation in 90nm CMOS

M. Parlak¹, M. Matsuo², J. Buckwalter¹, ¹University of California, San Diego, La Jolla, United States, ²Panasonic Silicon Valley Laboratory, Cupertino, United States

TU1D-3 Using Audio to Enhance Trustworthiness in Wireless Localization for Medical Environments

E. Martin, R. Bajcsy, University of California Berkeley, Berkeley, United States



Plenary Speaker:

Arogyaswami Paulraj is a Professor Emeritus at Stanford University and Sr. Advisor at Broadcom Corp.

Paulraj is the pioneer of MIMO wireless communications, a technology break through that enables improved wireless performance. MIMO is now incorporated into all new wireless systems.

Paulraj has received several awards in the US, notably the IEEE Alexander Graham Bell Medal. He is a fellow of seven scientific academies including the US National Academy of Engineering and the Royal Swedish Academy of Engineering Sciences. He is a fellow of IEEE and AAAS.

In 1999, Paulraj founded Iospan Wireless Inc - which developed the first MIMO-OFDMA wireless system. Iospan was acquired in by Intel Corporation in 2003. He was in 2004, Paulraj co-founded Beceem Communications Inc and the company was acquired by Broadcom Corp. in 2010.

During his 30 years in the India, he founded three national level laboratories and headed one of India's most successful defense R&D projects APSOH sonar. His many awards in India include the Padma Bhushan, the second highest national award.

09:00

TU1B-4 Wireless Power Transmission Using Small Coupler for Mobile Devices

H. Shinoda, T. Terada, Central Research Laboratory, Hitachi, Ltd., Kokubunji, Japan

TU1C-3 An Integrated Ku-Band Nanosecond Time-Stretching System Using Improved Dispersive Delay Line (DDL)

B. Xiang, A. Kopa, Z. Fu, A. B. Alyssa, Cornell University, Ithaca, United States

TU1D-4 Antenna Evaluation of a Non-Contact Vital Signs Sensor for Continuous Heart and Respiration Rate Monitoring.

V. Das¹, A. Boothby¹, R. Hwang², T. Nguyen¹, J. Lopez¹, D. Y.C.Lie¹, ¹Texas Tech University, Lubbock, United States, ²Cornell University, Ithaca, United States

09:20

TU1B-5 Adaptive Channel Diversity Method based on ISA100.11a Standard for Wireless Industrial Monitoring

M. Miyazaki, R. Fujiwara, K. Mizugaki, M. Kokubo, Hitachi Ltd., Tokyo, Japan

TU1C-4 An Integrate-and-Dump Receiver for High Dynamic Range Photonic Analog-to-Digital Conversion

T. D. Gathman, J. F. Buckwalter, University of California-San Diego, La Jolla, United States

TU1D-5 Detection Sensitivity and Power Consumption vs. Operation Modes Using System-on-Chip Based Doppler Radar Occupancy Sensor

C. Song^{2,1}, E. Yavari¹, A. Singh¹, O. Boric-Lubecke¹, ¹University of Hawaii at Manoa, Honolulu, United States, ²Concentris Systems, LLC., Honolulu, United States

RWS Session: TU3A

Band Pass Filters

Chair: Xun Gong, University of Central Florida
Co-Chair: Roberto Gomez-Garcia, University of Alcalá

Room: California 1-3

RWS Session: TU3B

Propagation Channel Modeling and Utilization

Chair: Hiroshi Shirai, Chuo University
Co-Chair: Shinobu Nanba, KDDI R&D Laboratories Inc.

Room: California 4

SiRF Session: TU3C

RFICs for Millimeterwave Phased Array Systems

Chair: Lance Kuo, Raytheon
Co-Chair: Kenichi Okada, Tokyo Institute of Technology

Room: California 7-9

BioWireleSS Session: TU3D

Remote Patient Monitoring

Chair: David Ricketts, Carnegie Mellon University

Room: California 5

13:30

TU3A-1 A Compact High Selectivity Seventh-Order UWB Bandpass Filter With Ultra-Stopband Attenuation

R. T. Hamed, D. Mirshekar-Syahkal, University of Essex, Colchester, United Kingdom

TU3B-1 Cellular Broadband Millimeter Wave Propagation and Angle of Arrival for Adaptive Beam Steering Systems (Invited)

T. S. Rappaport, E. Ben-Dor, J. N. Murdock, Y. Qiao, J. I. Tamir, The University of Texas at Austin, Austin, United States

TU3C-1 Silicon CMOS/BiCMOS Transceiver Circuits for THz Applications (Invited)

U. Pfeiffer, University of Wuppertal, Wuppertal, Germany

TU3D-1 Antenna Array Technology for Radar Respiration Measurement in Motion-Adaptive Lung Cancer Radiotherapy

C. Gu¹, Z. Salmani², H. Zhang², C. Li¹, ¹Texas Tech University, Lubbock, United States, ²University of North Texas, Denton, United States

13:50

TU3A-2 Millimeter-wave Liquid-Crystal-Based Tunable Bandpass Filter

M. Yazdanpanahi, D. Mirshekar-Syahkal, University of Essex, Colchester, United Kingdom

TU3B-2 Using Spherical Harmonics for Modeling Antenna Patterns

A. Schmitz, T. Karolski, L. Kobbelt, RWTH Aachen University, Aachen, Germany

TU3C-2 A CMOS Fully Integrated Antenna Array Transmitter with On-chip Skew and Pulse-Delay Adjustment for Millimeter-Wave Active Imaging

N. N. Khanh¹, M. Sasaki¹, K. Asada^{1,2}, ¹the University of Tokyo, Tokyo, Japan, ²the University of Tokyo, Tokyo, Japan

TU3D-2 AC/DC Coupling Effects on CW and Pulse Transmission Modes in Doppler Radar Physiological Monitoring System

E. Yavari, O. Boric-Lubecke, V. Lubecke, University of Hawaii at Manoa, Honolulu, United States

14:10

TU3A-3 A Dual-Band Bandpass Filter Using Dual and Triple-Mode Resonators

J. Lee, Y. Lim, Chonnam National University, Gwangju, Republic of Korea

TU3B-3 An Intelligent High Availability AMC Design

S. Ben-Guedria, J. Frigon, B. Sansò, Ecole Polytechnique de Montreal, Montreal, Canada

TU3C-3 Analog Baseband Beam-Former for Use in a Phased-Array 60 GHz Transmitter

V. Szortyka^{2,1}, K. Raczkowski¹, R. Vandebriel¹, M. Kuijk², P. Wambacq^{1,2}, ¹Imec, Heverlee, Belgium, ²Vrije Universiteit Brussel, Brussels, Belgium

TU3D-3 VitalTrack: A Doppler Radar Sensor Platform for Monitoring Activity Levels

G. Reyes¹, D. Wang¹, R. Nair¹, C. Li², X. Li¹, J. Lin¹, ¹Gainesville, United States, ²Lubbock, United States

14:30

TU3A-4 New Approach for Configuring a Parallel-Planar Dual-Band Bandpass Filter by Employing Multi-layered LTCC Technologies

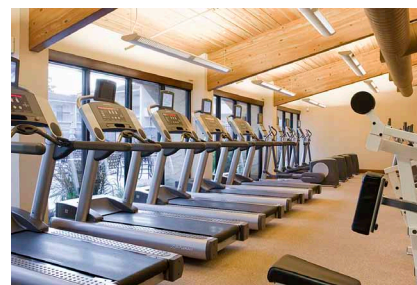
Y. Takagi, K. Satoh, S. Narahashi, NTT docomo, Yokosuka, Japan

TU3B-4 2x2 MIMO Channel Characteristics Under Received Power Imbalance Through Indoor Propagation Measurements

S. Nanba, Y. Hirota, Y. Kishi, KDDI R&D Laboratories Inc., Fujimino-shi, Japan

TU3C-3 Analog Baseband Beam-Former for Use in a Phased-Array 60 GHz Transmitter

V. Szortyka^{2,1}, K. Raczkowski¹, R. Vandebriel¹, M. Kuijk², P. Wambacq^{1,2}, ¹Imec, Heverlee, Belgium, ²Vrije Universiteit Brussel, Brussels, Belgium



TUESDAY, 17 JANUARY 2012



RWS Session: TU5A

Passives

Chair: Dariush Mirshekar, University of Essex
Co-Chair: Rashaunda Henderson, University of Texas at Dallas

Room: California 1-3

RWS Session: TU5B

DSP Techniques in Wireless Communication Systems

Chair: Takao Inoue, National Instruments

Room: California 4

SiRF Session: TU5C

Millimeter-wave Circuits for Si-based Transceiver Systems

Chair: Chien-Nan Kuo, National Chiao Tung University
Co-Chair: Yongshik Lee, Yonsei University

Room: California 7-9

BioWireleSS Session: TU5D

Micro-Sensors and In-vivo Microsystems

Chair: Rizwan Bashirullah, University of Florida

Room: California 5

16:00

TU5A-1 Combining 2G and 3G (4G) BTS Outputs Sharing the Same Frequency Band

G. Resnati¹, S. Tamiazzo¹, G. Macchiarella², ¹Commscope Italy, Agrate B., Italy, ²Politecnico di Milano, Milano, Italy

TU5B-1 Effect of Input-Signal Statistical Property in Delta-Sigma Modulator with Non-Uniform Quantization

T. Kitayabu¹, H. Ishikawa¹, M. Hagiwara², H. Shirai², ¹KDDI R&D Laboratories Inc., Fujimino, Japan, ²Chuo University, Bunkyo, Japan

TU5C-1 A 64 to 81 GHz PLL with Low Phase Noise in an 80 GHz SiGe HBT Technology

G. Liu, A. Trasser, H. Schumacher, Ulm University, Ulm, Germany

TU5D-1 Smart Instruments: Wireless Technology Invades the Operating Room (Invited)

M. R. Mahfouz, G. To, M. J. Kuhn, University of Tennessee, Knoxville, United States

16:20

TU5A-2 Development of an Ultra Wide Band GCPW to SIW Transition

R. Kazemi^{1,2}, A. E. Fathy², S. Yang², R. A. Sadeghzadeh¹, ¹K. N. toosi University of Technology, Tehran, Iran, ²The University of Tennessee, Knoxville, United States

TU5B-2 A Type-Based Equalization Technique for Frequency Response Distortion Compensation

X. Huang, M. Caron, Communications Research Centre Canada, Ottawa, Canada

TU5C-2 Dual-Band Millimeter-Wave VCO with Embedded RF-MEMS Switch Module in BiCMOS Technology

G. Liu¹, M. Kaynak², T. Purtova¹, A. C. Ulusoy¹, B. Tillack^{2,3}, H. Schumacher¹, ¹Ulm University, Ulm, Germany, ²IHP GmbH (Innovations for High Performance Microelectronics), Frankfurt (Oder), Germany, ³Berlin Institute of Technology, Berlin, Germany

TU5D-2 Implantable Wireless Microcoils for 7Tesla Magnetic Resonance Imaging of the Rat Brain: Optimization of the PDMS Packaging

M. Couty^{1,2}, A. Rubin^{4,1}, M. Woytasik¹, E. Dufour-Gergam¹, M. Tatoulian², J. Ginefri³, L. Darrasse³, F. Boumezbeur⁴, F. Lethimonnier⁴, ¹Institute of Fundamental Electronics, Orsay, France, ²Chimie Paris Tech, Paris, France, ³IR4M, Orsay, France, ⁴CEA Neurospin, Gif-sur-Yvette, France

16:40

TU5A-3 Design of a Low Loss Wideband Millimeter-Wave Balun on a Multilayer Liquid Crystal Polymer Technology

C. L. Kameni Ngassa, B. Lacroix, J. Papapolymerou, Georgia Institute of Technology, Atlanta, United States

TU5B-3 60-GHz OFDM Experimental System Employing Decision-Directed Phase Noise Compensation

S. Suyama, Y. Hashimoto, H. Suzuki, K. Fukawa, Tokyo Institute of Technology, Tokyo, Japan

TU5C-3 16.9-mW 33.7-dB Gain mmWave Receiver Front-End in 65 nm CMOS

C. Li, C. Kuo, National Chiao Tung University, Hsinchu City, Taiwan

TU5D-3 Miniaturized Antenna and Integrated Rectifier Design for Remote Powering of Wireless Sensor Systems

O. Kazanc¹, N. Joehl², F. Mazzilli¹, F. Maloberti³, C. Dehollain¹, ¹Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland, ²Advanced Silicon SA, Lausanne, Switzerland, ³University of Pavia, Pavia, Italy

17:00

TU5A-4 Design of Stripline Beam-Former Network Components for Low-Profile, Organic Phased Arrays in the X Band.

C. A. Donado Morcillo, C. E. Patterson, J. Papapolymerou, Georgia Institute of Technology, Atlanta, United States

TU5B-4 Low-complexity Implementation of Per-survivor Processing for Carrier-phase Tracking in Uncertain Environment

N. Safari, A. Vahlin, S. A. Lund, Ceragon Networks, Bergen, Norway

TU5C-4 An X-Band to Ka-Band SPDT Switch Using 200 nm SiGe HBTs

C. H. Poh, R. L. Schmid, J. D. Cressler, J. Papapolymerou, Georgia Institute of Technology, Atlanta, United States

TU5D-4 Low-Cost Electrodes for Acutely Implanted Neural Recording and Stimulation Systems

A. Bozkurt, North Carolina State University, Raleigh, United States

RWS/SiRF BANQUET

Tuesday Evening, 17 January 2012 from 18:00-21:00
Room: Grand Ballroom

Join your friends, co-workers and fellow researchers in an informal setting of lively discussion, dinner and wine. In addition, see the student paper award winners from the RWS, PAWR, WiSNet, BioWireless and SiRF receive their awards.

WiSNet Session: WE1A

Power Considerations and Novel Applications of Wireless Sensors

Chair: Manos Tentzeris, Georgia Tech
Co-Chair: Apostolos Georgiadis, CTTC

Room: California 1-3

RWS Session: WE1B

Low Power Ultra-Wideband Oscillators and Low Noise Amplifiers I

Chair: Telesphor Kamgaing, Intel Corporation
Co-Chair: Qingqing Liang, Institute of Chinese Academic and Science

Room: California 4

BioWireless Session: WE1C

Wireless Position and Localization in Medicine

Chair: Mohamed Mahfouz, University of Tennessee Knoxville

Room: California 5

SiRF Session: WE1D

Emerging Circuit Technologies

Chair: Luca Pierantoni, Università Politecnica delle Marche
Co-Chair: Fabio Coccetti, LAAS

Room: California 7-9

08:00

WE1A-1 An Overview of RFID Localization Techniques (Invited)

M. Vossiek, R. Miesen, Chair for Microwave Engineering and High Frequency Technology, University of Erlangen-Nuremberg, Erlangen, Germany

WE1B-1 A Low-Power 3.2–9.7 GHz Ultra-Wideband Low Noise Amplifier with Excellent Stop-band Rejection Using 0.18 μ m CMOS Technology

J. Chang, Y. Lin, J. Lee, C. Wang, National Chi Nan University, Puli, Taiwan

WE1C-1 Design of Wireless Inertial Trackers for Human Joint Motion Analysis

G. To, M. Mahfouz, University of Tennessee, Knoxville, United States

WE1D-1 Radio Frequency Nanoelectronics Based on Carbon Nanotubes (Invited)

N. Rouhi, D. Jain, P. J. Burke, University of California, Irvine, Irvine, United States

08:20

WE1A-2 A 927 MHz Solar Powered Active Antenna Oscillator Beacon Signal Generator

F. Giuppi¹, A. Georgiadis², S. Via², A. Collado², R. Vias³, M. M. Tentzeris³, M. Bozzi¹, ¹University of Pavia, Pavia, Italy, ²Centre Tecnològic de Comunicacions de Catalunya, Castelldefels, Spain, ³Georgia Institute of Technology, Atlanta, United States

WE1B-2 Analysis and Design of a 3–26 GHz Low-Noise Amplifier in SiGe HBT Technology

P. K. Saha, S. Shankar, R. Schmid, R. Mills, J. D. Cressler, Georgia Institute of Technology, Atlanta, United States

WE1C-2 SFCW Microwave Radar for In-Door Fall Detection

M. Mercuri¹, D. Schreurs¹, P. Leroux^{3,2}, ¹K.U.Leuven, Leuven, Belgium, ²K.U.Leuven, Leuven, Belgium, ³K.H.Kempen, Geel, Belgium

WE1D-2 Graphene: An Emerging RF Technology (Invited)

J. Moon¹, M. Antcliffe¹, H. Seo¹, S. Lin¹, A. Schmitz¹, D. Wong¹, D. Gaskill², P. Campbell², K. Lee³, P. Asbeck³, ¹HRL Laboratories LLC, Malibu, United States, ²Naval Research Laboratories, SW, United States, ³University of California San Diego, La Jolla, United States

08:40

WE1A-3 Magnetic Front-End with Complex Geometry for Application of Wireless Sensor Networks in Water and Liquids

R. Stefanelli, M. Demaria, M. Marroccoli, D. Trincherio, iXem Labs - Politecnico di Torino, Torino, Italy

WE1B-3 A 0.4-V 1.08-mW 12-GHz High-Performance VCO in 0.18- μ m CMOS

T. Wang, C. Li, National Taipei University of Technology, Taipei, United States

WE1C-3 Ultra Wideband 3-D Tracking of Multiple Tags for Indoor Positioning in Medical Applications Requiring Millimeter Accuracy

M. J. Kuhn¹, M. R. Mahfouz¹, N. Rowe², E. Elkhoully², J. Turmmire², A. E. Fathy², ¹University of Tennessee, Knoxville, United States, ²University of Tennessee, Knoxville, United States

WE1D-2 Graphene: An Emerging RF Technology (Invited)

J. Moon¹, M. Antcliffe¹, H. Seo¹, S. Lin¹, A. Schmitz¹, D. Wong¹, D. Gaskill², P. Campbell², K. Lee³, P. Asbeck³, ¹HRL Laboratories LLC, Malibu, United States, ²Naval Research Laboratories, SW, United States, ³University of California San Diego, La Jolla, United States

09:00

WE1A-4 High Temperature, Wireless Seismometer Sensor for Venus

G. E. Ponchak¹, M. C. Scardelletti¹, B. Taylor², S. Beard², R. D. Meredith¹, G. M. Beheim¹, G. W. Hunter¹, W. S. Kiefer³, ¹NASA Glenn Research Center, Cleveland, United States, ²INPROX Technology Corporation, Boston, United States, ³Lunar and Planetary Institute, Houston, Texas, USA

WE1B-4 Effect of Envelope Amplifier Nonlinearities on the Output Spectrum of Envelope Tracking Power Amplifiers

M. Hassan¹, L. E. Larson¹, V. W. Leung², P. M. Asbeck¹, ¹University of California at San Diego, La Jolla, United States, ²Qualcomm Inc., San Diego, United States

WE1C-4 Localization of a Functional Capsule for Wireless Neuro-Endoscopy

D. Manteuffel, M. Grimm, University of Kiel, Kiel, Germany

WE1D-2 Graphene: An Emerging RF Technology (Invited)

J. Moon¹, M. Antcliffe¹, H. Seo¹, S. Lin¹, A. Schmitz¹, D. Wong¹, D. Gaskill², P. Campbell², K. Lee³, P. Asbeck³, ¹HRL Laboratories LLC, Malibu, United States, ²Naval Research Laboratories, SW, United States, ³University of California San Diego, La Jolla, United States

09:20

WE1A-5 Magnetic Resonant Wireless Power Delivery for Distributed Sensor and Wireless Systems.

B. J. Lee, A. Hillenius, D. S. Ricketts, Carnegie Mellon University, Pittsburgh, United States

WE1B-5 4G Antenna Tuner Integrated in a 130 nm CMOS SOI Technology

F. Sonnerat^{1,2}, R. Pilard¹, F. Gianesello¹, F. Le Penneç², C. Person², D. Gloria¹, ¹STMicroelectronics, Crolles, France, ²Telecom Bretagne, Brest, France

WE1C-5 Leveraging Bluetooth and Wireless Accelerometers to Enhance Gait Analysis and Positioning in Medical Environments

E. Martin, R. Bajcsy, UC Berkeley, Berkeley, United States

WE1D-3 Feasibility Study of a Fully Organic Frequency Doubler for Harmonic RFID Applications

L. Roselli¹, F. Alimenti¹, M. Virili¹, F. Lolli¹, B. Popescu², D. Popescu², S. Locci², P. Lugli², ¹University of Perugia, Perugia, Italy, ²Technical University of Munich, Munich, Germany

WEDNESDAY, 18 JANUARY 2012



WiSNet Session: WE2A

Sensors for Communication, Radar and Positioning

Chair: Dietmar Kissinger, University of Erlangen-Nuremberg
Co-Chair: Robert Miesen, University of Erlangen-Nuremberg

Room: California 1-3

RWS Session: WE2B

Low Power Ultra-Wideband Oscillators and Low Noise Amplifiers II

Chair: Telesphor Kamgaing, Intel Corporation
Co-Chair: Chunna Zhang, Maxim Integrated Products

Room: California 4

BioWireleSS Session: WE2C

RF/Microwaves in Biological Applications and Interaction with Biological Tissues

Chair: Changzhi Li, Texas Tech University

Room: California 5

SiRF Session: WE2D

Advanced Circuit Techniques, Packaging, and Modeling

Chair: Donald Lie, Texas Tech University
Co-Chair: Liang-Hung Lu, National Taiwan University

Room: California 7-9

10:10

WE2A-1 Hidden Markov Estimation of Bistatic Range From Cluttered Ultra-Wideband Impulse Responses

M. McCracken, N. Patwari, University of Utah, Salt Lake City, United States

WE2B-1 CMOS, Cognitive and mmW: A Wireless Revolution (Invited)

J. Laskar, InSite Partners, Cupertino, United States

WE2C-1 Advances in Bioelectromagnetics for Implantable Systems (Invited)

C. J. Cela¹, A. K. RamRakhiani¹, S. Srinivas¹, G. J. Hayes³, M. Dickey², G. Lazzi¹, ¹University of Utah, Salt Lake City, United States, ²NC State University, Raleigh, United States, ³NC State University, Raleigh, United States

WE2D-1 Robust 60 GHz 90nm and 40nm CMOS Wideband Neutralized Amplifiers with 23dB gain 4.6dB NF and 24% PAE

E. Cohen^{1,2}, S. Ravid¹, D. Ritter², ¹Intel, Haifa, Israel, ²Technion, Haifa, Israel

10:30

WE2A-2 A Novel Ultrasonic Indoor Localization System with Simultaneous Estimation of Position and Velocity

M. Scherhaeufl, R. Pfeil, M. Pichler, A. Berger, Linz Center of Mechatronics GmbH, Linz, Austria

WE2B-2 125 GHz CMOS Oscillator Controlled by p-Type Bulk Voltage

N. Ono¹, M. Motoyoshi^{3,2}, K. Katayama², M. Fujishima², ¹Semiconductor Technology Academic Research Center, Tokyo, Japan, ²Hiroshima University, Hiroshima, Japan, ³University of Tokyo, Tokyo, Japan

WE2C-2 Physical Phantoms for Microwave Imaging of the Breast

Y. Baskharoun, A. Trehan, N. K. Nikolova, M. D. Noseworthy, McMaster University, Hamilton, Canada

WE2D-2 High Sensitivity Detector with Robust PVT Performance for 60GHz BiST Phased Array Systems in 90nm CMOS

E. Cohen^{1,2}, A. Israel¹, O. Degani¹, D. Ritter², ¹Intel, Haifa, Israel, ²Technion, Haifa, Israel

10:50

WE2A-3 Performance of Coherent Time Delay Estimation Techniques for Frequency Hopping GSM Signals

A. Goetz, R. Rose, S. Zorn, G. Fischer, R. Weigel, Friedrich-Alexander-University Erlangen-Nuremberg, Erlangen, Germany

WE2B-3 Analysis and Measurement of the Stability of Dual-Resonator Oscillators

H. Ghaed¹, G. Chen², D. Blaauw¹, D. Sylvester¹, ¹University of Michigan, Ann Arbor, United States, ²Intel, Hillsboro, United States

WE2C-3 SAR Assessment and Analysis of Cumulative Body Exposure to Multi Transmitters from a Mobile Phone

Z. Mahfouz^{1,2}, A. Gati¹, D. Lautru², J. Wiart^{1,3}, V. Hanna², ¹France Télécom Division, Issy Les Moulineaux, France, ²UPMC Univ Paris 06, Paris, France, ³Whist Lab, Paris, France

WE2D-3 High Performance RF Inductors Integrated in Advanced Fan-Out Wafer Level Packaging Technology

C. Durand¹, F. Gianesello¹, R. Pilard¹, D. Gloria¹, Y. Imbs², R. Coffy², L. Marechal², Y. Jin³, Y. Dodo¹, ¹STMicroelectronics, Crolles, France, ²STMicroelectronics, Grenoble, France, ³STMicroelectronics, Singapore

11:10

WE2A-4 The Enhanced Six-Port Architecture: A Measurement Based Proof of Concept

A. Koelpin, S. Lindner, G. Vinci, B. Laemmler, R. Weigel, University of Erlangen-Nuremberg, Erlangen, Germany

WE2B-4 Wide Bandwidth GSM/WCDMA/LTE Base Station LNA with Ultra-Low Sub 0.5 dB Noise Figure

J. Staudinger, R. Hooper, M. Miller, Y. Wei, Freescale Semiconductor Inc, Tempe, United States

WE2C-4 Analysis of Passive Electromagnetic Exposure to Multisources Distributed in Outdoors Places

C. P. Costa¹, G. Fontgalland¹, S. E. Barbin², ¹University, Campina Grande, Brazil, ²University, Sao Paulo, Brazil

WE2D-4 A Comparison of Intermodulation Distortion Performance of HICUM and VBIC Compact Models for pnp SiGe HBTs on SOI

S. Sethi¹, J. D. Cressler¹, J. A. Babcock², G. Cestra², T. Krakowski², J. Tang², A. Buchholz², ¹Georgia Tech, Atlanta, United States, ²National Semiconductor, Santa Clara, United States

11:30

WE2A-5 A Wireless Smart Sensor Network based on Multi-function Interferometric Radar Sensors for Structural Health Monitoring

C. Gu¹, J. Rice², C. Li¹, ¹Texas Tech University, Lubbock, United States, ²Texas Tech University, Lubbock, United States

WE2B-5 A 2.87±0.19 dB NF 3.1~10.6 GHz Ultra-Wideband Low-Noise Amplifier Using 0.18 um CMOS Technology

C. Wu, Y. Lin, J. Lee, C. Wang, National Chi Nan University, Puli, Taiwan

WE2C-5 An Empirical Investigation of the Capacitive Body Coupled Communications Channel for Body Area Networks

S. Attard¹, S. Zammit², ¹Imperial College London, London, United Kingdom, ²University of Malta, Msida, Malta

WE2D-5 Concept of Vertical Bipolar Transistor with Lateral Drift Region, Applied to High Voltage SiGe HBT

R. Sorge, A. Fischer, R. Pliquet, C. Wipf, R. Barth, IHP, Frankfurt(Oder), Germany

RWW Interactive Poster Session
13:30-15:10

RWW Session: WE3P

Chair: Mehdi Shadaram, The University of Texas at San Antonio

Room: California 6

WE3P-3 Highly Reliable Wireless Body Area Network Using Error Correcting Codes
Y. Hamada¹, K. Takizawa^{1,2}, T. Ikegami¹,
¹Meiji University, Kawasaki, Japan,
²National Institute of Information and Communication, Yokosuka, Japan

WE3P-4 An Efficient Wireless Power Link for Implanted Biomedical Devices via Resonant Inductive Coupling
G. Yilmaz, C. Dehollain, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland

WE3P-7 Modeling Sensor Position Uncertainty for Robust Target Localization in Wireless Sensor Networks
Z. Luo, T. C. Jannett, University of Alabama at Birmingham, Birmingham, United States

WE3P-8 Energy-Based Target Localization in Multi-Hop Wireless Sensor Networks
Z. Luo, T. C. Jannett, University of Alabama at Birmingham, Birmingham, United States

WE3P-9 A 77 GHz Direction of Arrival Detector System with SiGe Integrated Six-Port Receiver
G. Vinci, B. Laemmle, F. Barbon, R. Weigel, A. Koelpin, University of Erlangen-Nuremberg, Erlangen, Germany

WE3P-10 A Wireless Orientation Sensor Using Magnetoquasistatic Fields and Complex Image Theory
D. D. Arumugam^{1,2}, J. D. Griffin², D. D. Stancil^{3,2}, D. S. Ricketts¹,
¹Carnegie Mellon University, Pittsburgh, United States,
²Disney Research, Pittsburgh, United States,
³North Carolina State University, Raleigh, United States

WE3P-11 Coupling Passive Sensors to UHF RFID Tags
H. Chen, S. Bae, A. Bhadkamkar, Y. Mak, D. W. van der Weide, University of Wisconsin, Madison, United States

WE3P-12 A Survey on Secure Localization for Range Based Methods
E. Martin, R. Bajcsy, University of California, Berkeley, Berkeley, United States

WE3P-13 Compact Capacitively Loaded LG-CPW 90° Coupler for V-Band Balanced Amplifiers
I. Haroun¹, Y. Hsu², D. Chang²,
¹Communications Research Centre Canada, Ottawa, Canada,
²Chip Implementation Center, Hsinchu, Taiwan

WE3P-14 A Compact 81-86 GHz Branch Line Coupler using End-Loaded Transmission Lines
I. Haroun^{1,2},
¹Communications Research Centre Canada, Nepean, Canada,
²University of Western Ontario, London, Canada

WE3P-15 High LO-to-RF Isolation Wideband Gilbert Upconversion Micromixer Using a Phase-Inverter Rat-Race Coupler in 0.35µm SiGe HBT Technology
J. Syu, C. Meng, P. Wu, National Chiao Tung University, Hsinchu, Taiwan
(Included in IEEE Xplore)

WE3P-16 An Implementation of Downlink Asynchronous HARQ for LTE TDD System
M. Kim, S. Kim, Y. Lim, Innoreless, Seongnam-si, Republic of Korea

WE3P-17 High Gain Dipole Elliptic-shaped Patch Antenna for Dual Band Wlan 2.4 and 5GHz Applications
S. Razavizadeh, Islamic Republic of Iran Broadcasting University, Tehran, Iran

WE3P-18 Evaluation of Radio Link Selection with Analytic Hierarchy Process Algorithm in Heterogeneous Radio Networks
A. Yamaguchi, M. Sasaki, K. Yamazaki, Y. Imagaki, KDDI R&D Laboratories Inc., Fujimino, Japan

WE3P-19 A System-on-Package Module by Embedding a Mobile TV IC in Printed-Circuit-Board
J. Ryu^{1,2}, S. Park¹, D. Kim¹, J. Kim¹, H. Kim², J. Park¹,
¹Korea Electronics Technology Institute, Seongnam, Republic of Korea,
²Hanyang University, Seoul, Republic of Korea

WE3P-20 A Study of the Effect of Jitter on UWB System Positioning Accuracy
E. Elkhouly¹, Q. Liu¹, M. Kuhn², M. Mahfouz², A. Fathy¹,
¹University of Tennessee, Knoxville, United States,
²University of Tennessee, Knoxville, United States

WE3P-21 A 10GBits/s 2.1pJ/bit OOK Demodulator at 60GHz for Wireless Chip-to-Chip Communication
S. Foulon^{1,2}, S. Pruvost¹, C. Loyez², N. Rolland², V. Avramovic²,
¹STMicroelectronics, Crolles, France,
²IEMN, Villeneuve d'Ascq, France

WE3P-22 CPW-Coupled-Fed Elliptical Monopole Antenna for UWB Applications
J. Zhang, X. L. Sun, S. W. Cheung, T. I. Yuk, Z.B. Ni, The University of Hong Kong, Hong Kong, Hong Kong

WE3P-23 A Small Patch Antenna Using a Single CRLH TL Unit Cell
X. L. Sun, J. Zhang, S. W. Cheung, T. I. Yuk, The University of Hong Kong, Hong Kong, Hong Kong

WE3P-24 High Gain Microstrip Fed Slot Coupled Hybrid Antenna for MMW Applications
A. Elboushi¹, A. Sebak^{2,1},
¹Concordia University, Montreal, Canada,
²King Saud University, Riyadh, Saudi Arabia

WE3P-25 High-Selective Wideband Combine Filters based on Miniaturized-Engineered Resonators, Inter-Resonator Tapped-In Coupling, and Probe Coupling
B. Mohajer-Iravani, M. EL Sabbagh, Syracuse University, Syracuse, United States

WE3P-26 Technological Locks for 60 GHz High Data Rate Impulse Radio Multi-Band OOK Front End, with Channel Effect Consideration
R. Abdaoui¹, A. Diet², M. Villegas¹, G. Baudoin¹,
¹Université Paris-Est, ESYCOM, Noisy le grand, France,
²L2S-DRE umr 8506, Gif Sur Yvette, France

WE3P-27 DietVolume: Food Volume Estimation Through Metric 3D Reconstruction on a Mobile Phone
F. Kong, J. Tan, Michigan Technological University, Houghton, United States

Radio Wireless Week 2012 Demo Track - Tuesday, 17 January 14:30-16:00

Room: California Ballroom 6

The technical program for the 2012 IEEE Radio and Wireless Week (RWW) will have a new and exciting demo track on Tuesday afternoon. Relevant and interesting new developments from a variety of wireless innovations will be presented by industry experts. The demo track will provide an interactive forum with hands-on demonstrations of the latest wireless experiments.

1. "Dynamically Reconfigurable Architecture Enabling All-Digital Multichannel Multimode Transmission for Cognitive Radios", Nelson Silva
2. "Demonstration of Software Defined Radio", Jeffrey Pawlan
3. "Electromagnetic Geo-referenced Footprints for Energy Harvesting Systems", Ludimar Barreto and Ximbo Guenda
4. "Learning Algorithm for Reconfigurable Antenna State Selection", David Gonzalez
5. "All - Digital Transmitter", Kostas Galanopoulos
6. "A Software Definable GNSS RF Signal Generator", Ammar Kouki

All participants are encouraged to attend the demo track session on Tuesday and benefit from the variety and richness of the six informal demo sessions running in parallel. We look forward to seeing you in Santa Clara for RWW 2012 in the Santa Clara Marriott, Santa Clara, California, USA, 15-18, January 2012 and on Tuesday afternoon for the demo sessions.

Seyed Tabatabaei, T-Optics
Jeffrey Pawlan, Pawlan Communications

WE3P-28 Adaptive Sensing for Increased Spectrum Utilization in Dynamic Cognitive Radio Systems
D. Treeumnuk, D. C. Popescu, Old Dominion University, Norfolk, United States

WE3P-29 Balun with Passband Characteristic for Ultra-Wideband (UWB) Impulse Radio Transmitter
R. Dong¹, R. K. Pokhare², H. Kanaya¹, K. Yoshida¹, ¹Kyushu University, Fukuoka, Japan, ²Kyushu University, Fukuoka, Japan

WE3P-30 Empirical Study on 60GHz In-Vehicle Radio Channel
R. Nakamura, A. Kajiwara, The University of Kitakyushu, Kitakyushu, Japan

WE3P-31 Simulation Evaluation of Tag Movement Direction Estimation Methods in RFID Gate Systems
Y. Oikawa, NEC TOKIN Corporation, Shiroishi, Japan

WE3P-32 Optimal Subcarrier Assignment for Single Cell Multiuser OFDM System
O. Takyu¹, Y. Umeda², ¹Shinshu University, Nagano, Japan, ²Tokyo University of Science, Noda, Japan

WE3P-33 Electromagnetic Georeferenced Footprints for Energy Harvesting Systems
L. Guenda¹, A. Collado², N. B. Carvalho¹, A. Georgiadis², K. Niotaki³, ¹Instituto de Telecomunicacoes, Aveiro, Portugal, ²CTTC, Castelldefels, Spain, ³Aristotle University of Thessaloniki, Thessaloniki, Greece

WE3P-34 A Planar Resonant-type EM Wave Absorber Using a Periodic Surface
D. Sim¹, Y. Chong¹, J. Choi¹, S. Park², ¹ETRI, Daejeon, Republic of Korea, ²KAIST, Daejeon, Republic of Korea

WE3P-35 Sub-Sampling Technique for Spectrum Sensing in Cognitive Radio Systems
A. Kwan, S. A. Bassam, F. M. Ghan-nouchi, iRadio Lab, Schulich School of Engineering, University of Calgary, Calgary, Canada

WE3P-36 Analytical Modeling of Transducer Gain and Gain Compression in Degenerate Parametric Amplifiers
B. Gray¹, M. Pontón², A. Suárez², S. Kenney¹, ¹Georgia Institute of Technology, Atlanta, United States, ²University of Cantabria, Santander, Spain

WE3P-37 Mobile WiMAX Performance Analysis Including Polar $\Sigma\Delta$ Architecture Under Various Environmental Conditions
O. Zlydareva¹, M. Suarez², ¹Eindhoven University of Technology, Eindhoven, Netherlands, ²Instituto de Tecnología de Inteligencia Artificial, Warsaw, Poland

WE3P-38 Adaptive Bit Allocation for OFDM Cognitive Radio Systems with Imperfect Channel Estimation
E. Bedeer¹, M. Marey¹, O. Dobre¹, K. Baddour², ¹Memorial University of Newfoundland, St. John's, Canada, ²Communications Research Centre, Ottawa, Canada

WE3P-39 Doubling the Throughput of a Digital Microwave Radio System by the Implementation of a Cross-Polarization Interference Cancellation Algorithm
P. Noel, M. Klemes, DragonWave Inc, Kanata, Canada

WE3P-40 MIMO Capacity Upper Bound for κ - μ and η - ν Faded Channels
V. M. Vergara¹, S. E. Barbin², ¹University of New Mexico, Albuquerque, United States, ²Polytechnic School of Engineering University of São Paulo, São Paulo, Brazil

WE3P-41 Double Stage and Combining Detection for Cyclo-Stationary Feature
O. Takyu¹, H. Yano², T. Fujii³, T. Ohtsuki², ¹Shinshu University, Nagano, Japan, ²Keio University, Yokohama, Japan, ³The University of Electro-Communications, Chofu, Japan

WE3P-42 M-FSK Signal Recognition in Fading Channels for Cognitive Radio
H. Wang¹, O. Dobre¹, C. Li¹, R. Inko², ¹Memorial University of Newfoundland, St. John's, Canada, ²Defence Research and Development Canada, Ottawa, Canada

WE3P-43 Tunability of an Area-Efficient Microstrip Patch Antenna at 60GHz
B. D. Horwath, T. Al-Attar, Santa Clara University, Santa Clara, United States

WE3P-44 Metamaterial Cell Patterns Applied to Quasi-Yagi Antenna for RFID Applications
H. X. Araujo¹, S. E. Barbin², L. C. Kretly¹, ¹University of Campinas, Campinas, Brazil, ²University of Sao Paulo, Sao Paulo, Brazil

WE3P-45 Directive Dielectric Resonator Antenna Excited by Probe or Narrow Slot
A. A. Kishk, Concordia University, Montreal, Canada

WE3P-46 Real-Time Scheduling With Security Awareness for Packet Switched Networks
M. Saleh¹, L. Dong², ¹Western Michigan University, Kalamazoo, United States, ²Baylor University, Waco, United States

WE3P-47 Self-Powered Smart Meter with Synchronized Data
F. Cai, E. Farantatos, R. Huang, A. Meliopoulos, J. Papapolymerou, Georgia Institute of Technology, Atlanta, United States

WE3P-48 Frequency Agile RF Filter for Interference Attenuation
M. W. Wyville¹, R. C. Smiley², J. S. Wight¹, ¹Carleton University, Ottawa, Canada, ²Ericsson, Ottawa, Canada

WE3P-49 Spectrum Sharing Technique for Cognitive UWB Systems over Indoor UWB Channel
F. Sarabchi, C. Nerguizian, Poly-GRAMES Research Centre, Montreal, Canada

WE3P-50 Polarized Antenna-Based MIMO for Mobile Terminals
Y. Okoshi, T. Maeyama, Takushoku University, Hachioji-shi, Japan

WE3P-51 Improving Coding Efficiency by Compromising Linearity in Delta-Sigma Based Transmitters
M. Ebrahimi, M. Helaoui, F. Ghan-nouchi, University of Calgary, Calgary, Canada

WE3P-52 Phase Calibration Techniques for Injection-Locked Based LO-Path Phase-Shifting Phased-Array Architectures
Y. Soliman, R. Mason, Carleton University, Ottawa, Canada

WE3P-53 An Optimized Encryption Framework Based on the Modified-DES Algorithm: A Trade-Off between Security and Throughput in Wireless Channels
W. Y. Zibideh, M. M. Matalgah, University of Mississippi, University, United States

WE3P-54 Evaluation of a Wireless In-Shoe Sensor Based on ZigBee Used for Drop Foot Stimulation
C. A. Mecheraoui^{1,2}, J. Cobb², I. Swain^{1,2}, ¹Salisbury District Hospital, Salisbury, United Kingdom, ²Bournemouth University, Pool, United Kingdom



Santa Clara Marriott



Santa Clara Marriott Lounge

WiSNet Session: WE4A

Wireless Sensor Networks

Chair: Akash K. Singh, IBM
Co-Chair: Massood Zandi Atashbar, Western Michigan University

Room: California 1-3

RWS Session: WE4B

Advances in SoC Transceiver Architectures and Integration

Chair: Shoichi Narahashi, NTT DOCOMO, INC
Co-Chair: Nathalie Deltempo, IMS Laboratory

Room: California 4

SANTA CLARA ATTRACTIONS

The 2012 Radio and Wireless Week (RWW) will be held at the Santa Clara Marriott in the heart of Silicon Valley. The hotel is located just minutes from the San Jose International Airport (SJC) and is a neighbor to Intel, Yahoo!, Cisco Systems, Applied Materials, McAfee and EMC2. Guests staying at the Marriott within the RWW room block will receive free wireless access in their guest rooms as well as free parking.

Santa Clara - Silicon Valley Central has attractions for everyone. Whether it's riding roller coasters, learning how computer chips are made, shopping at upscale malls, or visiting the past, you can find it in Silicon Valley. To name a few...

Intel Museum

An interactive museum which introduces visitors to the micro-miniature world of computer chips. Open Monday through Saturday.

Mission Santa Clara de Asis

The eighth of 21 missions built in California, founded in 1777 by the Spanish Franciscans. (California Historical Landmark No. 338)

Santa Clara Woman's Club Adobe

One of the oldest adobes in California. Built about 1790, this structure was originally part of a row of houses for married Indian couples. (California Historical Landmark No. 249)

Shrine of Our Lady of Peace

Dedicated to the Immaculate Heart of Mary, this 32-foot stainless steel sculpture is a reminder to visitors to work and pray daily for peace.

South Bay Historical Railroad Society

Founded in 1985 to preserve the heritage of American railroading, the Historical Railroad Society is located in the historic Santa Clara Depot.

The Tech Museum

Hands-on, imaginative, high-tech exhibits showcase the past, present, and future of Silicon Valley. The museum is also home to a state-of-the-art IMAX Dome Theater.

Triton Museum of Art

Rotating exhibits highlight the museum's permanent collection of 19th and 20th century American art. Also permanent is Triton's sculpture garden located on the seven-acre grounds.

Winchester Mystery House

A beautiful, but bizarre 160-room Victorian mansion built by the Winchester heiress. (California Historical Landmark No. 868)

15:40

WE4A-1 Inkjet-Printed Wireless Sensing Modules: The Enabling Technology for IoT and "Smart Skin" Applications (Invited)

M. Tentzeris, Georgia Institute of Technology, Atlanta, United States

Presentation without an associated paper

WE4B-1 Direct Conversion CMOS RF Transceiver Design Techniques to Improve Co-Existence Challenges in Multi-Comm SoCs (Invited)

R. Sadhwani, A. Kidwai, L. Feng, Intel, Hillsboro, United States

16:00

WE4A-2 Data Streaming in ZigBee WSNs: Simple Steps to Optimize Network Performance

N. Vljajic, G. Spanogiannopoulos, D. Stevanovic, York University, Toronto, Canada

WE4B-2 A Fully Integrated SiGe E-BAND Transceiver Chipset for Broadband Point-to-Point Communication

O. Katz, R. Ben-Yishay, R. Carmon, B. Sheinman, F. Szenher, D. Papae, D. Elad, IBM Haifa Labs, Haifa, Israel

16:20

WE4A-3 Real-Time Data Collection in a Spatially Extended TDMA-Based Wireless Sensor Network

A. Berger¹, A. Pötsch¹, A. Springer²,
¹Linz Center of Mechatronics, Linz, Austria,
²Johannes Kepler University Linz, Linz, Austria

WE4B-3 A 1mm² Two Stage LNA and SP2T Switch RFIC FEM for WLAN 802.11a Applications

L. Ma, C. Hale, R. Baeten, RF Micro Devices, Greensboro, United States

16:40

WE4A-4 Scalable Network Joining Mechanism in Wireless Sensor Networks

H. Kim, J. Han, Y. Lee, Seoul National University, Seoul, Republic of Korea

WE4B-4 Design of Signal Modulator for RF Polar Transmitter

T. Podsiadlik^{1,2}, J. Dooley^{1,2}, R. Farrell^{1,2}, A. Grebennikov²,
¹National University of Ireland, Maynooth, Maynooth, Ireland,
²Alcatel-Lucent, Dublin 15, Ireland

17:00

WE4A-5 Space Free Localization for Sensor Networks Using Self-Organizing Maps

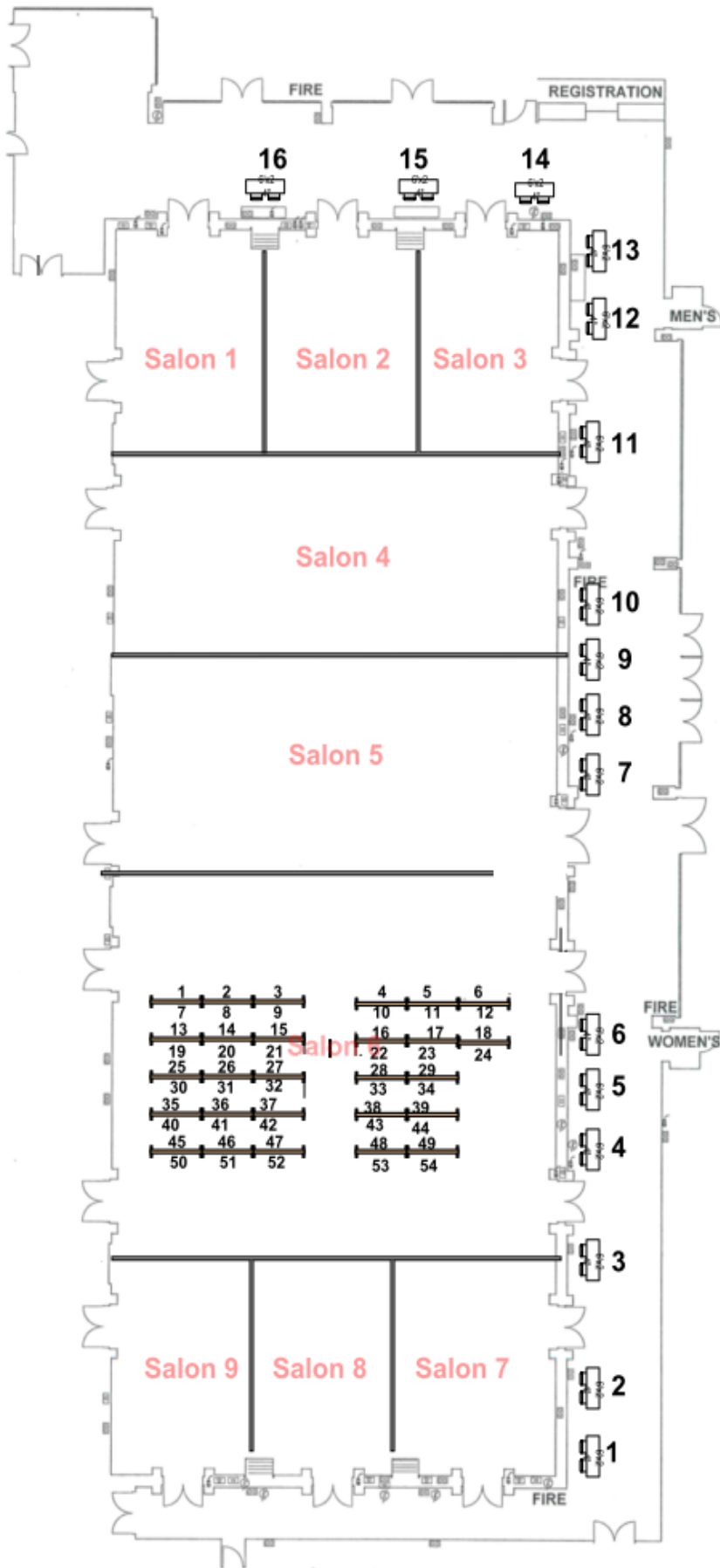
Y. Takizawa, S. Ohno, N. Adachi, Kansai University, Suita, Japan

WE4B-5 Analysis of Design Specification for Digital Polar RF Transmitter at System and Architectural Level

J. Guan, A. F. Aref, R. Negra, RWTH Aachen University, Aachen, Germany



Exhibit Space Layout



Company Name	Booth #
Agilent Technologies	3
Ambit Innovations	12
Anritsu	15
ARC Technologies	6
AWR	13
CST of America	7
Giga-Tronics	11
I-PEX	9
Maury Microwave Corporation	4
Microwave Journal	16
Rogers Corporation	8
Rohde & Schwarz	14
Sonnet Software	10
Springer	2
SSI Cable Corp.	5
Techmaster Electronics	1

PROSPECTOR SUITE



HALL OF CITIES



GRAND BALLROOM

RESTROOMS



2012 IEEE Radio Wireless Week at a Glance

Sponsored IEEE Microwave Theory &
by: Techniques Society (MTT-S)

Activity	Sunday, 15 January		Monday, 16 January				Tuesday, 17 January				Wednesday, 18 January		
	A	E	M	N	A	E	M	N	A	E	M	N	A
RWW Workshops													
RWW Plenary													
RWS Sessions													
PAWR Sessions													
WiSNet Sessions													
BioWireleSS Sessions													
SIRF Sessions													
Distinguished Lecturers													
Rump Session													
Panel													
Demo Tracks													
Student Paper Finalist Contest													
SIRF/PAWR Posters													
RWS/BioWireleSS/WiSNet Posters													
Exhibits													
Breakfast													
Breaks													
Lunch													
RWW Reception													
RWW Banquet													

M = Morning, N = Noon, A = Afternoon, E = Evening